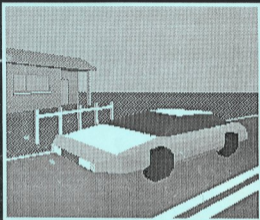


NEWSLETTER Jun/Jul 1992  
Issue No. 7



**3D**

CONSTRUCTION  
KIT USERS GROUP

**3D**

CONSTRUCTION  
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## EDITORIAL

Welcome to issue 7 of the 3D Construction Kit User Group Newsletter.

Since the last Newsletter I have been tinkering about with a new modem, thanks to Chris King. Chris was kind enough to lead me gently and painlessly through my initial tentative steps with handling this new beast. As you will all probably know by now, I am not the worlds finest at getting to grips with strange technology and usually make a dreadful mess of things when I start to dabble in something new. Actually, it was the strangest of feelings to dial into someone else's computer and take a peek ('scuse the pun) at what's on offer there. I decided to try and leave a message for Chris before I logged-off - whole new language opening up for me again here - and, being totally new to the PC keyboard I couldn't find the apostrophe. I wanted to say "I don't know what I would have done without your help" and only got as far as "I don....." followed by a long pause as I frantically searched the keyboard. Imagine my astonishment when the apostrophe suddenly appeared on the screen for me!! It was Chris putting it in for me! I had no idea that he had been watching everything I had been doing (and probably chuckling to himself at my efforts), and that he could break in for a chat! - aren't computers wonderful? Boy were my cheeks rosy though at the thought that he had been watching all my mistakes! He is SO nice, he didn't mind a bit letting me use his BBS to practice on!

I was delighted to see that nearly all of you who were due to re-subscribe after the first year have joined up for another year. I hope that you will enjoy the second year's Newsletters just as much and find them just as interesting. Of course, how interesting they get does rather depend on other members sending in contributions for the various sections. I have had very little these last two months in the way of routines, especially from 8 bit users which is a great pity as, if everyone sent in a little routine for their machine then we would really have a mine of useful information at our fingertips. There are hundreds of members out there, all over the world, come on, don't be shy I would love to hear from you. I promised to do my best to give fair coverage to both 8 and 16/32 bit versions but I cannot do so without the support of 8 bit users. At this point I would like to give my sincere thanks to all of you who did send in contributions which made the first year's Newsletters so successful. I would like you all to know just how much I appreciated all your help and support and I hope that you will continue to help during the next year as well and that many more contributors will join you.

All entries for the competition featured in the last Newsletter have been passed on for judging by Domark Ltd and I hope to have the results in time for publication in the next issue. I hope also that by that time the new version of the Kit - 3D Kit II - will be released so that eager members can see for themselves what delights there are in it. So watch out for the next issue. This issue contains a competition, as promised in the last Newsletter, for 8 Bit users. That is because they were left out of the previous competition. I will have to come up with something for 32 Bit users too so that I can be fair to all. Meanwhile, I sincerely hope that you enjoy this issue and I will see you all again in August for issue 8. Meanwhile, I would love to hear from you so do please write in, don't let the hot summer days stop you - drag your computer out into the garden! and if you can send in a contributions or two it will be greatly appreciated. Bye for now,  
*Mandy*

## LETTERS

*Dear Mandy*

I have recently received your Newsletter number 5 after registering with the User Group:, for which many thanks. I have completed the Kitgame which wasn't too difficult after all (when you know how!). I have also just received your latest Newsletter number 6. However, I must be really slow or something as I just cannot get started into creating anything exciting or writing routines. I'm afraid it is all still very confusing to me. I find it very difficult to do things with this kit parrot-fashion without fully understanding exactly what it is I am supposed to be doing and what all the different functions on the menus do. What I am really in need of is a step-by-step tutorial guide either in the form of writing or a demo on a floppy disc which will explain the whole business of creating a simple game or environment. You see I am just a beginner in this home computing business although I have had a go on a proper Amstrad set-up and I am familiar with Deluxe Paint (but not the animation part). The list of routines and the variables still look a bit incomprehensible at the moment. Any help or suggestions you can give me would be greatly appreciated. Are you yourself a computer programmer?

*Reg McLoughlin* in Birkenhead.

AMIGA

*I have had quite a number of letters recently just like yours, Reg, and you will see that in this issue a simple step-by-step guide to creating a simple game has been started which I hope will help you and others to take things gently from the very basics up to the more complicated puzzle conditions. I hope to be covering each function of the kit in depth over the next issues for anyone who is experiencing difficulties in understanding them too. I hope it will help. No, I don't really consider myself a computer programmer although I can knock together various programs and utilities that I need in BASIC on a number of machines. Machine Code is left to my husband as he is very handy for a lazy person like me so I usually tell him what I need in the way of programs and the like and leave it up to him to provide the more complicated ones. I, like thousands of other people, am a great user of other programmers utilities such as 3D Construction Kit, STAC, STOS, GAC, AMOS, various paint packages etc.....Mandy*

*Dear Mandy*

Hello, it's me again. This time just sending you my entry for the competition and at the same time to mention a little problem I encountered when trying to save an object. Well, in trying to load them back in from a floppy. You see, what happened was that I kept getting an error message saying "Not enough space. Make room before trying again." Many frustrating hours later, I discovered what I had done. After creating my object as a group and saving it, I inadvertently added cuboid 1 with the rest (which is, of course, the earth/ground cube!). So what was happening was that I was trying to load two cuboids for the earth and there was just no room. Just thought, if you print it, it may save someone else from making the same error. By the way, have you ever considered writing a guide book for the 3D Kit? One that gives a more step-by-step procedure. It strikes me that there is a need for this - especially for dunderheads like me!

*Margaret Christmas*, Askrigg  
PC

*Many thanks, Margaret, for sharing your problem with us. It is indeed*



extremely easy to make the mistake of including cuboid 1 within a group when you are creating just one group of objects and loading them back in is impossible unless you delete cuboid 1 from your empty area before attempting this. I am sure that this information will now prevent other users from making the same mistake in the future...Mandy

**Dear Mandy**

Thank you for sending the P.D. disks I ordered and for the friendly note you enclosed. Initially I had some difficulty loading the borders from A.J.Bevan's Amiga Borders Disk, despite loading them into DPaint and saving them out again as you suggested once in the Newsletter. After much experimenting and gnashing of teeth, I discovered that the problem was caused by embedded spaces in the filenames. Once I had removed these, the borders loaded easily. Presumably when you loaded them into DPaint you then saved them out under a different name, which is what cured the problem. Perhaps you could amend the filenames on your master copy of this disk, to spare future users having to rack their brains quite so much? Many thanks for your sterling work on the Newsletters. They are a mine of information and I don't know what we'd do without them. Keep up the hard work!

**Geoff Barker, Cheltenham**  
AMIGA

I will indeed make the necessary changes to the filenames, Geoff, and thank you for discovering what was causing the problem. I believe I did change the filenames when I saved them out the second time, something like 1, 2, 3 etc but I hadn't realised why the problem existed in the first place. Hopefully, now we should have no further trouble.....Mandy

**Dear Mandy**

Firstly I must thank you for sending the back issues of the User Group magazines. I recommend anyone who has not got them all to send for them at once. They are full of hints and tips to help all us newcomers to the Kit. I have found that by trying out the routines and then storing them on disk, I can play about with them, maybe adapt them for my own use, and learn an awful lot in the process. And, of course, if I discover a good routine from it all, I will send it in to the magazine immediately. I was interested in Phil Nelson's letter in issue 6. I also have had trouble loading things into the Kit. I have got Graphic Workshop which converts between any two formats and I converted a B/W PCX picture to an .IFF file but it would not load into the kit. I have also tried to load pictures in from Fingerpaint and also TheDraw, unsuccessfully. Will the new professional version cater for more paint packages, Mandy? I haven't been able to create any Borders because of this and when I try to load in the two supplied with the PC version the test window slides down and promptly covers them. So I was hoping that some genius would send some to the PD Library. BUT... where are all the PC Whiz-kids?! Come on... we can't let the Amiga and Atari programmers have all the fun! I am not a programmer myself, although I have dabbled and, before the PC, I had a C64. I find playing around with the 3D Kit is helping me to understand how my computer works, as well as having lots of fun! I have been a fan of adventure gaming since before computers were ever popular in the home and I still have a board version of "Railway Rivals" that I purchased from an offer in The Gamer magazine. Why I remembered was because I had to sent to Wales for it and I had to look to see if it was your good self. Although, now I realise you were probably too young!. (What a nice lady.....Ed) I still have an

adventure game called The Morrow Project. The Liberation at Riverton. Which is very complicated and I have never played, mainly because I have no like minded friends. That is where the beauty of the computer comes in. You don't have to have anyone but yourself, do you? Having said that, I was wondering if it might be possible to arrange some sort of get together for Kit Users? Maybe starting out with regional workshops and ending with one big rally. What do you think? Sorry to have gone on at great length, but it is a change for me to talk to someone with similar interests to my own. You don't have to print all of my epistle, if you don't want to, just what you feel is relevant. How about a pen-friend club? OK, I'll shut up now.

**Margaret Christmas, Askrigg**  
PC

Thank you for a lovely letter, Margaret. I am glad to hear that you are finding the back issues a lot of help and when you do get a routine or two to send in I would be delighted. The more input from other users that we get the better the Newsletters will be. There are hundreds of members out there, all over the world, who seem to be too shy to contribute and that is such a pity as we could have bumper sized newsletters coming out on the monthly basis instead of bi-monthly if sufficient material was sent in to fill them. Quite a lot of people who have a PC are finding it difficult to find compatible paint packages and, as many of them point out, Deluxe Paint III is rather an expensive package to rush out and buy just to draw a border for the Kit. I would be extremely grateful if PC owners would write in with their recommendations for suitable art packages, PD or Shareware would be even better, so that a suitable list can be published here. At the same time why not have other computer owners doing the same so that a fully comprehensive list of compatible packages were available for everyone to chose from within their budget? You mentioned that when you loaded in the supplied borders the test window slides down and promptly covers them? You can overcome this if, before you go into TEST mode to view the border, you select SET VIEW WINDOW from the General Menu at the top of the screen. Then you can set the window to sit within your border and it will no longer be covered. Your point about the PC PD Library is a valid one. I hope that more PC owners will contribute to help their fellow PC members. I now have an Amstrad 1640 PC so I can easily handle them providing that all the contributions are sent in and sent out on five and a quarter inch disk - I don't have three inch drive yet. As I mentioned in a previous newsletter, I do have one game that was sent in for PC and I am at present trying to get this transferred to 5.25" so that it can be included in the PD Library. As I am also the editor of Adventure Probe magazine I was naturally delighted to hear that you are interested in Adventure Games. That consists of a group of about 500 computer adventure enthusiasts and it also covers R.P.G and some Strategy games. I am playing one at the moment that I can thoroughly recommend to any PC owner who loves text adventure games. It is called Unnkulian Underworld and is an American Shareware game. There are about five in the series so if you like the first one you can always send for more. In reply to your idea of a get-together for User Group members, well this could easily be arranged if there was sufficient interest. The members of Adventure Probe decided that they wanted an annual convention and it was a great success. We meet in Birmingham each October on a Saturday. We book a convention suite in the Royal Angus Hotel and most of us stay over the weekend too so the fun doesn't last for just one day. The atmosphere is electric as would be the case when groups of like minded enthusiasts meet to discuss their favourite topics. There are local groups who meet too



at various times during the year to hold mini-conventions as they hate to have to wait a full year for the annual convention. As for pen-friends - why not? I would be more than happy to print names and addresses in the Newsletters for everyone to get to know each other. That's what happens with Adventure Probe - everyone now knows each other very well outside the pages of the monthly magazine as well and it makes the magazine one of the friendliest you could find. This reply is beginning to sound rather like a huge plug for Adventure Probe but honestly it isn't supposed to be. Anyone interested in further details can always contact me but not every home computer enthusiast is a computer adventurer.....Mandy

**Dear Mandy**

Thanks for the Newsletters issues 5 and 6, which I found interesting and informative. I have, as you may remember, telephoned you on a couple of occasions regarding the Sound Bank data file, and how to link my own sound samples so as to incorporate them into what I think is an excellent piece of software. This, I believe from our last conversation is now underway, after a little pushing on your part (THANK YOU). As I understand it the 3D Construction Kit is now produced on most major computers and formats, this being the case means that the User Group is doing something that not many programs can do, and that is bringing together different computer users who can help and encourage others, instead of the rivalry I have encountered at times, like "mine is bigger, faster, better sound, clearer graphics, more keys etc., etc". The topic covered in the last two issues of your Newsletter, I needn't mention which, (3D Professional!!!) seems to be making all the group squirm in their computer swivels. I for one, am not squirming because there has been no mention of a version for the 32 bit user. Now you Mandy, have promised in our eagerly awaited bi-monthly pages, to be fair to all users and I know that you include us in that promise. I also know that you have been promised full backup in the User Group by Incentive, so please ask them when (not IF) they will be writing a version for 32 bit users. I don't think I would be understating the fact that it would be well received and supported. In the course of our conversations you mentioned the lack of 32 bit machines at your disposal, although they have given you a PC recently, this being the case, and until someone gives or loans you an Archimedes (you never know!). I would like to offer my services, limited as they are, to you and fellow users. Perhaps to test routines and or Kit games, or set up some PD system. I am, of course, prepared to deal with members direct so as not to increase your workload or their postage. If this is not treading on anyone's toes, then please accept it for the reason I offered, to help all users to help each other.

**John Bidmead, Torquay**

ARCHIMIDES A3000 4MEG

What a kind and most generous offer of help, John. I would be delighted to accept your offer. Now we will be able to expand the PD Library to include 32 bit as well thanks to you. I will include your name and address and telephone number in the helpliners page and I hope that you will soon be contacted by other 32 bit users to get things started. As for the problem with the sound samples. I have indeed been "nagging" poor Kevin at Incentive about this. Aparantly, providing the necessary basic program you need isn't quite as easy as we thought. With Kevin fully occupied with programming the new version of the Kit he has not been able to supply the routine for me to print in this issue but I hope that I will have it for publication in the next one. As the routine is a bit complicated and, being a careful programmer, Kevin refuses to rush any old untested program at

us the only thing I can do now is wait a little longer. I'll keep reminding him about it also (sorry, Kev!). Well, the previously titled "Professional" version of the Kit is nearly ready. It is going to be called 3D CONSTRUCTION KIT II. OK, I suppose it is a little lacking in imagination, and some lovely titles were originally suggested but then the 3D Kit already has a very good established reputation so it is only sensible to call it 3D Kit II. For Amiga, Atari ST and PC owners, it should be available by the time the next newsletter comes out. I surely will keep pressing for this to be produced for other computers too. The Archimedes version of the Kit is the newest of them all and so I doubt if any plans will be made for a second version for your computer for a while yet. I will let you know what develops within the pages of the Newsletters.....Mandy

**Dear Mandy**

I enclose my cheque to renew my membership to the User Group and also for the PD sound bank disc supplied by Mieke Van Der Poll. I look forward to receiving the disk and to another year of excellent Newsletters which I have found both useful and enjoyable. I have noticed, however, that now having 6 Newsletters (and more to follow as they are produced), that it is becoming increasingly difficult to find any particular reference or advice without having to go through all the booklets again. I have started to make a sort of cross referenced index, and I have done this by sticking a post-it sticker to the back of each issue reminding me for the future of any possible hints or tips enclosed. It might be useful for all members if you could give some thought to either leaving the outside back cover blank for notes or even marking off blank columns which can be used for reference. I have also noticed that some subjects are mentioned in several Newsletters (eg. Make, Borders etc), but these seem to often be in bits and pieces, and at times a little bit technical (to me at least!). It would certainly be of help to me (and I am sure to others) if you could provide a fully tested, step-by-step, idiots guide to both these subjects and also to others such as how to create an intro-screen which then boots into the game from scratch etc, and I look forward to your views on this point. I would also like to know if it is possible to have a "Jet Pack" type effect as used in Dark Side. I would like to thank you for your efforts over the first years membership and also those regular contributors (I won't name them in case I miss anyone out), who are making teh continued effort to share their expertise with others less technically minded such as myself.

**Martin Sullivan, Stockport**

AMIGA

I'll try to leave the back cover blank for you in the future, Martin. Perhaps some kind member could come to the rescue by providing an index of the contents of the first 12 issues for publication in the next issue? I will certainly try to give the step-by-step guides to all the various functions of the Kit and hope that each issue will contain at least one. It would be particularly helpful if some of the more experienced members who have produced games with introduction/loading screens, sound effects and music would write in with their step-by-step guides on how they did this on the various machines for the next issue of the Newsletter together with recommended programs that they used to produce the effects, the listings of what they used to compile the auto-booting of the whole lot etc, as this would be extremely helpful for all. I hate to admit it but I never played Dark Side myself (sorry Ian, and programmers!) so I will have to rely on some kind member to supply me with the necessary details, please do write in so that this point can be cleared up either way, many thanks in advance.....Mandy



WIN! \* WIN! \* WIN! \* WIN! \* WIN! \* WIN! \* WIN! \* WIN! \* WIN! \* WIN!

### COMPETITION!

Now it is the turn of the 8 Bit members of the Kit to win some lovely prizes kindly donated by Incentive Software. Six lucky winners will each receive a copy of VIRTUAL WORLDS and A YEAR'S FREE MEMBERSHIP TO THE USER GROUP! Virtual Worlds consists of the games DRILLER, TOTAL ECLIPSE, THE CRYPT and CASTLE MASTER.

All you have to do is to design a screen with the Kit that could be used as a cover picture for the User Group Newsletters. This can be a screen dump or if you have no printer you could do a free-hand drawing of your screen.

The competition is open to all Commodore, Spectrum and Amstrad members of the User Group. Two winners will be selected from each of Commodore, Spectrum and Amstrad entries and not only will they win prizes but their entries will be used for future covers of the Newsletters. Closing date for entries is 1st August 1992. When entering please don't forget to enclose your name, address, computer, and state (if Commodore or Amstrad) if you prefer disc or tape of Virtual Worlds.

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### 3D KIT GOES ON-LINE

Since the last Newsletter went out I, thanks to Chris King, became the proud owner of a modem! Not only did I immediately dial into King Of The Castle - Chris' own BBS (see letters last issue for further details) - but I found that within a couple of days I was receiving and leaving messages for one of the programmers of the Kit who was a caller to the BBS too! This means that anyone who has a modem can leave messages for me there too and I can chat back! (Aren't computers wonderful?). Chris has set up an area especially for 3D Kit User Group members and the way things are going this will soon be packed full of useful information and routines etc for members to access and exchange. Anyone with a modem, why not dial up the board and see for yourself - and remember that I would love a message from you! The number is (0233) 620228 8pm to 6.45am every night and other times at weekends.

The good news for modem users doesn't end here though - Marco Grubert of Germany also wants to set up a 3D Kit area on his BBS so German members can get Kit on-line information, message etc. The board is called Alpha-Box-Berlin and the telephone number is (030) 744 71 06 and is open between 7am to 1am. Sysop are Prochnow, Cosysop, Crossfire (that's Marco).

As Marco also hopes to have lots of borders, datafiles etc on offer, the sooner members begin Uploading/Downloading their files to both bulletin boards the better for all! Wouldn't it be great if Chris and Marco could exchange all the routines etc so that both German and English users could have access to a huge bank of material?

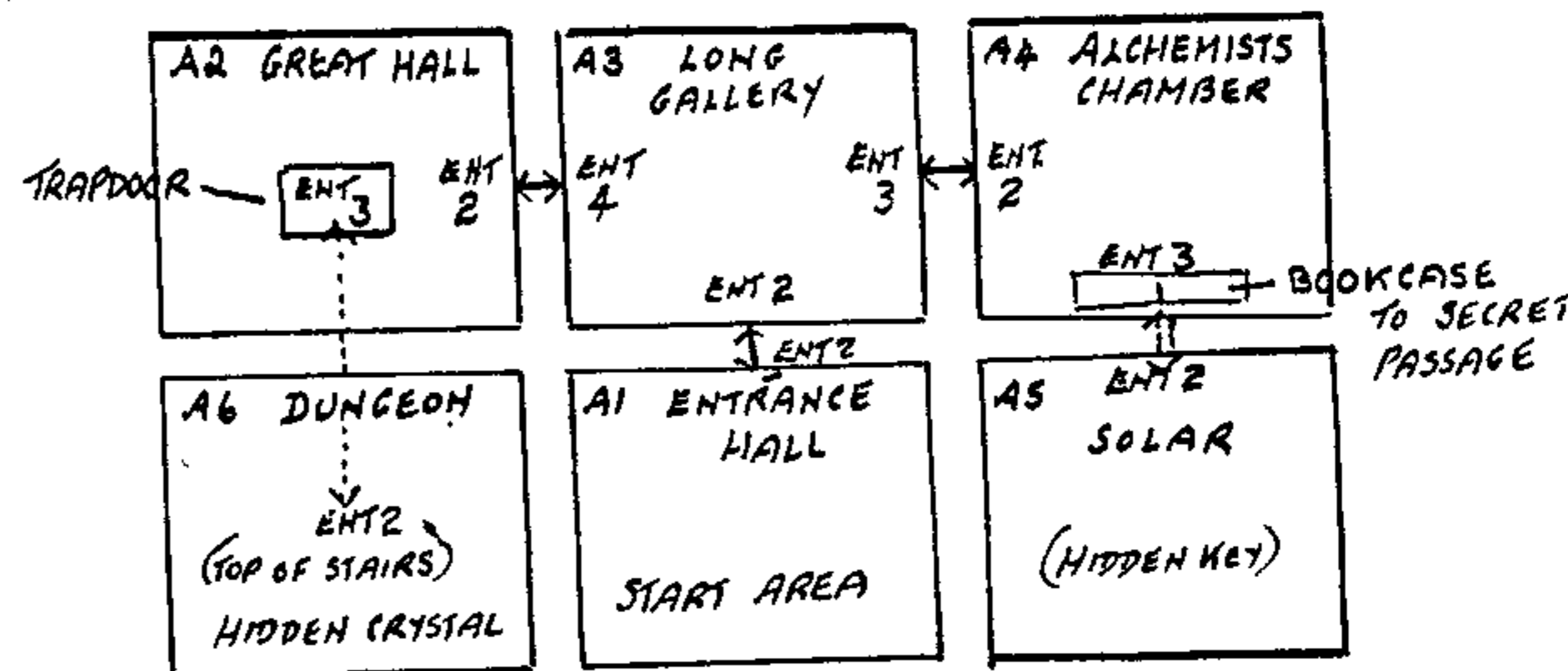
To help the Sysops know who are members of the User Group, perhaps they could use the current issue to check, ie. "What is the third word on page 16 of the current issue?" or something like that - just a thought! Well done to both of them and thanks for their support.

### THE USER GROUP GAME!

In recent weeks I have received a great many letters asking if I could provide some sort of step by step tutorial to writing a game to help beginners to get started and to help explain some of the basics that are causing trouble for a lot of people. I immediately agreed that this would be an excellent idea but then found myself wondering just what was the best way that this could be done. Obvious a very large game is out of the question so a short adventure of around 4/5 areas would be just about right. Readers are most welcome to join in and help with ideas and routines for inclusion in the game. Each issue we will do a little more work until the whole game is completed. If anyone has any particular worries about the use of the Kit then please let me know and perhaps that particular aspect can be covered somewhere within our game. Right, let's get on with it.

First we must set out our scenario and some initial ideas and make a map of the game itself before we start. It may sound a bit silly to make a map but I think you will find that creating entrances between the different areas and planning your game in this way will make everything much simpler in the long run. Our game is going to consist of a castle with six rooms (areas). The basic object of the game is to try and discover the valuable crystal that has been hidden in the dungeon (area 6). To get into the dungeon via a locked trapdoor we will get the player to try to find the key to the trapdoor which is hidden in the solar. The solar can only be entered by a secret passage which is hidden behind a bookcase in the alchemists chamber which is opened when the player moves (activates) a certain book upon the shelves. The puzzles will make sure that the crystal isn't as easy to find as one would expect.

Quite a simple plot but quite sufficient for our needs at present. All members are cordially invited to send in ideas and routines for the puzzles both for 8, 16 and 32 bit versions. For now, though, we will start with the basic skeleton of our game. Using the map shown below create the six areas and, in the versions that allow renaming, rename the areas to those we have chosen, to simplify matters. You can design and furnish your areas however you wish but please remember to include a locked trapdoor in the Great Hall and a bookcase full of ancient tomes in the alchemists chamber. A staircase in the dungeon leading up to the trapdoor and a cupboard or iron maiden (whatever your imagination comes up with) for a place to hide the crystal. Don't worry yet about animations etc as these will follow later as will all the little effects that make a game complete.



Once the areas have been created (it isn't necessary at this stage to have the furnishings designed), we should make the logical entrances to take the player between each area. First mark the entrances that you are going to create within each area as shown on the map so that you know exactly which entrance is going to lead where, and create the entrances as follows.

#### AREA 1: ENTRANCE HALL.

Create a black rectangle placed close up against the far wall. You can use the globals to create the walls if you wish. Walk right up to the rectangle until you look as if you are just about to walk into it and do a U-Turn so that your back is against it. Now create an entrance there. This is so that when you return through the door you will have your back to it - logical if you imagine yourself walking through a door. Now enter the following condition for the rectangle:

<u>8 Bit Versions</u>	<u>16/32 Bit Versions</u>
IF HIT (r) (rectangle number)	IF COLLIDED?
THEN	THEN GOTO (2,3)
GOTO 2 3	ENDIF
ENDIF	

#### AREA 3: LONG GALLERY

Create entrances 2, 3 and 4 in the same way as you did for area 1 by creating rectangles and placing your viewpoint with your back towards them and enter the following conditions:

For rectangle on the south side of the area:

IF HIT (r) (rectangle number)	IF COLLIDED?
THEN	THEN GOTO (2,1)
GOTO 2 1	ENDIF
ENDIF	

For rectangle on the east side of the area:

IF HIT (r) (rectangle number)	IF COLLIDED?
THEN	THEN GOTO (2,4)
GOTO 2 4	ENDIF
ENDIF	

For rectangle on the west side of the area:

IF HIT (r) (rectangle number)	IF COLLIDED?
THEN	THEN GOTO (2,2)
GOTO 2 2	ENDIF
ENDIF	

#### AREA 2: GREAT HALL

Create a rectangle on the east side of the area and create a black rectangle in the centre of the floor to represent the open trapdoor. As soon as the conditions are entered for the trapdoor we can cover this with a flattened cube to represent the closed and locked trapdoor, and enter the following condition for the rectangle on the east side of the hall:

IF HIT (r) (rectangle number)	IF COLLIDED?
THEN	THEN GOTO (4,3)
GOTO 4 3	ENDIF
ENDIF	

For the trapdoor rectangle:

IF HIT (r) (rectangle number)	IF COLLIDED?
THEN	THEN GOTO (2,6)
GOTO 2 6	ENDIF
ENDIF	

Continue in this way until all the entrances have been created. Walk through them all to check them. Now you can furnish your castle until we come to the puzzle conditions in the next issue. Have fun!

## WHAT KIND OF GAME TO MAKE?

By Mandy

Over the past few months one question has cropped up time and time again in the help mail. It is "Do you know what are the best kinds of games that I can make with the 3D Construction Kit?".

I suppose when you look at the software on the market at present it is quite a valid question as some of the software on offer would be rather difficult to produce with the 3D Kit - difficult but by no means impossible! Obviously the program really lends itself to an adventure type of game with wonderful worlds to be explored and puzzles to overcome. Adventure games fall into various categories and we can immediately discount the possibility of producing the good old text type adventure. Looking at the games being produced by companies such as Sierra On-Line we can see distinct possibilities for use with our Kit. In games such as the Leisure Suit Larry series we wouldn't find it at all easy to be able to have a type of "Larry" sprite/figure to control but all the rest of the gameplay would be quite easy to reproduce and with the advantage of being totally 3D!

We wouldn't have to find the various exits on each screen in order to move on to other screens but our players could take on the part of the main character and actually explore thoroughly the scenarios presented to them.

The Role Playing type of game would present us with quite a few problems - character wise, but if we look closely at very successful games such as Dungeon Master and Chaos Strikes Back, which are both of the 3D kind, we get far more in the way of inspiration for our type of 3D Kit games. What utility is better suited to create the dungeons and passages needed? We can easily reproduce the same kind of portcullis/door and button method of operation for moving our players about. Admittedly it would be a tad more difficult to reproduce the horrible monsters that frequent those games (anyone remember those 'orrible worms on level 4?).

On the other hand, one of our readers, Paul Ramsell beautifully portrayed a body lying on the floor surrounded by a pool of blood in one of his adventures and there were plenty of characters dotted here and there which, when activated, would bring up messages on screen as they spoke to you. Pits, traps, teleports and the like are a doddle to produce with the Kit. With animation we can easily produce eerily floating ghosts, hideous moving traps and complicated puzzles such as those produced in Castle Master and The Crypt.

With a little thought and careful planning we can produce a quite effective flight simulation and, with the ability to fire at objects it would be quite easy to produce some form of "shoot 'em up" game. Other types of puzzle games are equally feasible, for an example we have the roll-dice routine (featured in a issue five). Steven Flanagan has also produced a racing routine on the Commodore 64 which is extremely effective. For ideas on how to do this kind of thing, here is an extremely simple idea to start us off. We use one area to design a road and all along it we can put various vehicles at strategic points. When we reach the boundary of our area we can either transport the player into another similarly prepared area or put him back to the start. Now when we press "forward" and pass along the road we are effectively "passing" other vehicles along the road.



I said it was extremely simple but you see what I mean? Of course, if our border was made to represent the dashboard and controls of a car the whole thing would look even more realistic.

It is rather difficult to come up with the original ideas for games when you first start using the Kit. I know from the thousands of letters that I have received during the past year that most users decide that the very first thing they are going to try to reproduce is a scale model of their very own home. Once this has been done it is only a small step to moving on to designing another building such as an eerie castle to be explored. As each section is designed, ideas for cunning traps and puzzles emerge and if we let our imagination take flight then we have the makings of an excellent and extremely enjoyable game at our fingertips.

I believe that I have said previously that the 3D Kit is ideal for producing desert landscapes with pyramids and the like. The idea of starting the player off in the middle of a desert area and presenting them with a vast pyramid to be explored would make a great game. Castles, old mansions and all sorts of locations can be created. If we move much further afield, and this often helps when we are not too clever at producing ordinary landscapes, we can create whole new strange worlds on different types of planet which can be really fantastic. Planet of the Daleks is one such example where you take off in your Tardis and land on a beautiful red planet. In this kind of scenario ordinary, everyday types of objects can be left out altogether and you can design the most outrageous types of alien artifacts as you wish.

We don't have to stop at just one world either. It would be quite easy to present the player with a space vehicle of some kind which they could enter (another area for the inside perhaps) and once there, there could be a series of buttons to be pressed to act as controls or to set course for the various destinations. Another area could be used to represent flying through space. Black ground and sky with distant stars (small shapes coloured white, shrunk and moved far away). It would also be possible to move the player through this space in the same way as the player was moved via the boat in the Kitgame from the Beachyhead area to the lighthouse. Then another area could be used to represent the landing site on yet another planet.

As for problems and puzzles, well, for inspiration the newsletters are packed full of little routines to produce all sorts of illusions and puzzles from trapdoors, lifts, invisible triggers and barriers to moving guards that follow you around the area. Trying out some of the routines will provide inspiration for improvement and new ideas and soon you will find that you have collected far too many ideas for puzzles than can be contained in one game alone!

In my experience, such as it is, and knowing many games writers I have learned that they all have one thing in common. They all tend to carry round a little notebook with them at all times in which they jot down ideas that come to them for plots, puzzles and the like. Can you always remember that fantastic idea you had on the train going to work in the morning when you sit down at your computer that night after all the problems and hassles of a full days work? With your notes you are never short of inspiration.

If anyone else would like to write on this subject with their ideas and advice then please feel free to do so - the more ideas the better!

## PUBLIC DOMAIN LIBRARY

NEW ADDITIONS TO THE LIST!

### THE MOUNTAIN ADVENTURE - AMIGA 1meg

An adventure by Mieke Van Der Poll. You find yourself just outside a vast mountain maze and must enter to find the key to unlock the huge gate which closes behind you as you venture in. Very nicely presented game with a lovely loading screen, atmospheric and very pleasant music and, of course, featuring the 26 sound samples that Mieke produced on her other PD disk. The opening screens show a spaceship landing which is extremely well done and effective. There are lots of objects to find and manipulate and in true adventure style you need to light various lamps and chop down doors, apply a little lubrication where necessary and find the necessary objects to perform various tasks to get you through the game. I have not completed it yet but I did manage to kill off a blasted scorpion with the aid of my trusty sword when attacked. There is a time limit and it is easy to get lost so I have to keep trying. I'll get there in the end! I was making extremely good progress when that blasted alien sneaked up behind me and stole my bottle of oil just as I was about to fill up the little lamp I had found. The maze is very well planned and can be quite confusing - I would strongly advise that you make a map as you go along as it is very easy to get lost! A very nice and well presented game which I am sure you will enjoy. Items I especially enjoyed are the OUCH! sound effect you get if you bump into things by accident and the way that you are gently led to do the correct things such as being told how to activate objects to pick them up if you do the wrong thing.

### THE MOUNTAIN ADVENTURE DATA DISK - AMIGA

This disk contains the border, complete datafile with all conditions etc and the sound sample bank. A most useful disk of routines and essential if you want to cheat if you get completely stuck in the game!

### SECRET WEAPON - ATARI ST

This large demo game of Secret Weapon by Robin Ball is beautifully presented with loading screens and atmospheric music. This maybe only a demo of the final game but there is still lots to see and places to explore. I found myself in a strange town where all the inhabitants had been frozen into immobility! Even a mugger and his victim are to be found frozen in the very act. Very useful too as I managed to filch some money from the mugger! The town is beautifully portrayed and very realistic indeed. I was surprised just how much there was to explore. An especially nice touch was when in the public gardens, which is delightfully designed, a robot gardener is liable to throw you out if you step on the flower beds. If you can find the ID card (with the aid of another object), you will gain access into a building where you can search through filing cabinet drawers to find a secret file which tells you that a secret weapon has been invented which freezes all living things. All beautifully presented - well done Robin! A must for Atari ST users to see just what can be achieved with the Kit. Also included on the disk is a datafile containing objects used in the game. Robin tells me that the final version of the game will have many more areas added to it, in which case, judging by the size of the demo, should make it a very large game indeed. Robin would like to get players opinions of this demo so if you send for it please write in and I'll pass your letters on to Robin. The intro screen and the instructions were written with STOS and the presentation is excellent. The final version may be released as Licen@ware as Robin has received no registrations for INFILTRATION,

which is a pity. If all who have bought Infiltration send the registration they will get a map and other goodies for the game. The address is on the helpline pages.

**OTHER DISCS IN THE LIBRARY:**

**SOUND SAMPLES - AMIGA 1 meg**  
By Mieke Van Der Poll. 26 Sample sounds suitable for 1 meg Amiga owners to install on their programs. Also contains a new MakeSampleBank program.

**INVENTORY ROUTINE - AMIGA**  
By J. Hayes. Extremely interesting and useful routine to show how to handle your inventory problems. Listed in the last issue and update in this issue.

**SPEILRAUM - ATARI ST**  
An adventure by Peter Ward which was reviewed in the last issue. The disk contains the runnable game, the datafile and border and two objects.

**BORDERS - ATARI ST**  
A set of very well drawn borders by Robin Ball - very useful for those with no artistic talent.

**DARKNESS CALLS - AMIGA**  
Stand alone program by James Yusuf which was reviewed in the issue 4 Newsletter.

**DARKNESS CALLS DATA DISK - AMIGA**  
A disk containing all the objects used in the stand alone game by James Yusuf. Reviewed in issue 4 Newsletter.

**PLANET OF THE DALEKS - AMIGA**  
By Steve Hilder. This adventure comes in datafile form together with border. This was reviewed in issue 4 Newsletter.

**E.F.T.P.O.T.C.M - AMIGA**  
True title is Escape From The Planet Of The Cardboard Monsters and is a stand alone game written by Andrew Herbert (who I had the pleasure of meeting in person a short time ago!). Also contains many useful utilities for creating loading screens, music etc.

**AMIGA BORDERS - AMIGA**  
A suite of useful borders by A.J.Bevan. Reviewed in issue 4 Newsletter.

**INFILTRATION - ATARI ST**  
Shareware: A stand alone game by Robin Ball which was reviewed in depth in issue 4 Newsletter.

**THE MAZE - ATARI ST 1 meg**  
Datafile and border by David Sambrook which has proved popular.

**ESKAPE - COMMODORE 64**  
Datafile of game by Steven Flanagan. Also contains RACER routine.

All the above discs are available from the usual address at a cost of £1.50 each UK. Overseas £2.50 to cover extra postage and packing.

All members are invited to send in contributions to the library. It would be helpful if datafiles could be included also whenever possible as they are most useful for struggling beginners to see how things can be done. If you are sending in items for the PC please send them on 5.25 disk.

Anyone sending in PD contributions are invited to select freely from the list as a small thank you for their contribution and help. Let me know what you would like. You can select a back issue instead if you prefer or a free issue added to your subscription.

HOPEFULLY THERE WILL BE MORE ITEMS AVAILABLE FOR THE NEXT ISSUE!

**16 AND 32 BIT ROUTINES**

**INVENTORY**

By *Ozzy Omara* - ATARI STE

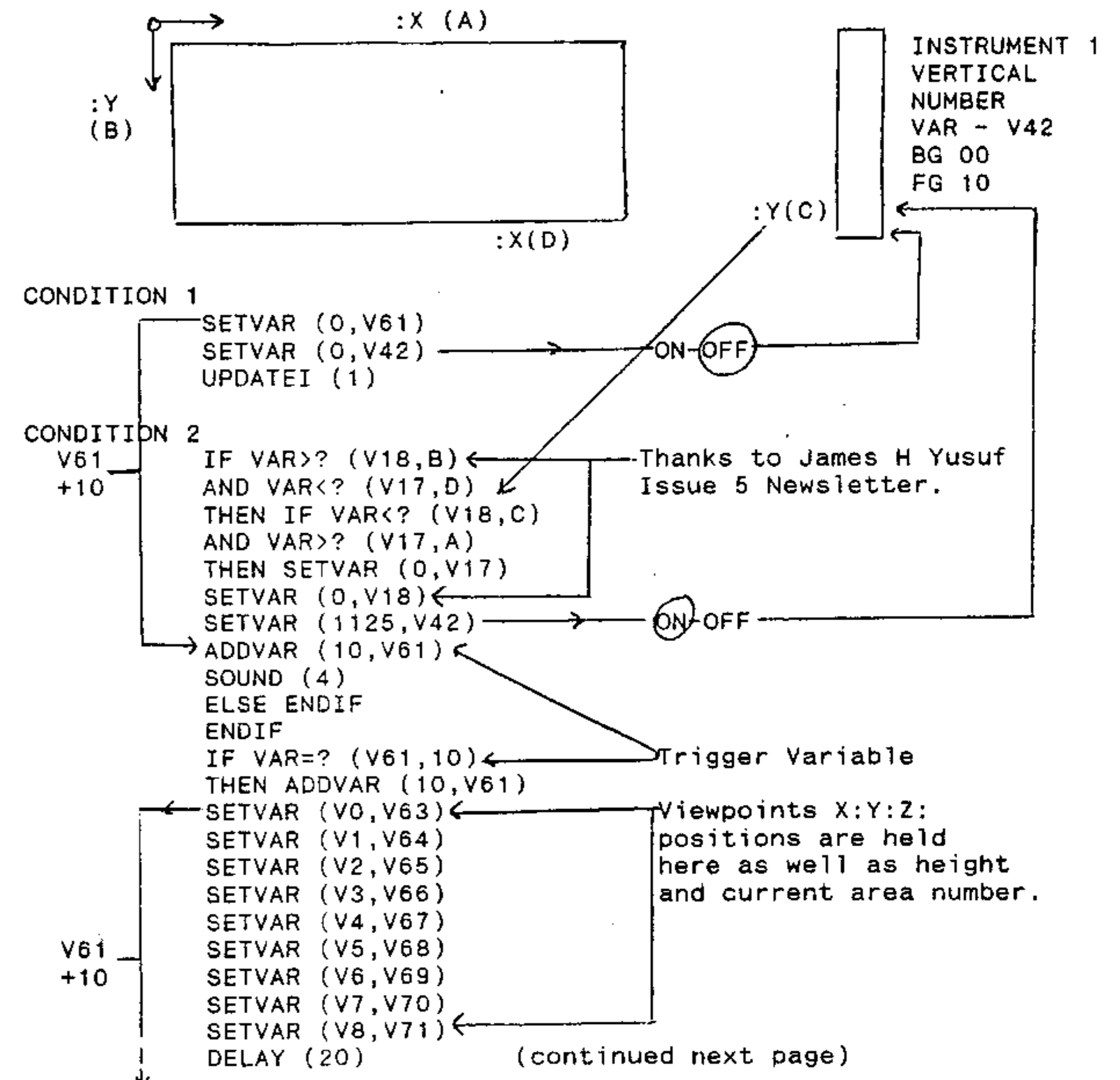
Following the excellent Screen Icons Routine that was printed in number 5 newsletter, Ozzy came up with a routine that would allow the player to be able to actually store their exact position in Area 1 so that another area could be set up as, for example, an information screen and then return the player to the exact position from which they called up the routine.

**OBJECTIVE**

To move from Area 1 via a border icon to Area 2 and return from Area 2 to the same position you left in Area 1.

**PROCEDURE**

Create Area 1 and Area 2 and define the Icon Border. (I used Neochrome Master art package). A, B, C and D are the X:Y:values from the art package.





```

GOTO (1,2)
MODE (1)
END
ENDIF
IF VAR=? (V61,30)
THEN GOTO (1,V71)
MODE (V69)
SETVAR (V63,V0)
SETVAR (V64,V1)
SETVAR (V65,V2)
SETVAR (V66,V3)
SETVAR (V67,V4)
SETVAR (V68,V5)
SETVAR (V69,V6)
SETVAR (V70,V7)
SETVAR (0,V61) ← Trigger set back to zero.
SETVAR (0,V42) ← Instrument turned off.
ELSE ENDIF

```

The response is sticky but fast.  
\*\*\*\*\*

**INVENTORY WITH A DIFFERENCE**  
(UPDATE)  
By *J. Hayes* - AMIGA

Since my Inventory Routine was published in the last issue of the Newsletter I have developed it further. Now it is possible to have one Inventory List for Objects to held in the left hand and another for the right! The "<" key and ">" key selects the list to look at. However, during this I discovered a slight flaw, which was an oversight on my behalf. If the currently referenced object in Vcur is to be removed and it is the ONLY object carried, by doing

```

SETVAR (47,V15)
SUBVAR (Vcur,Vinv)

```

clears out the Inventory - but the VIEW NEXT OBJECT condition relies on having something in the inventory for it to display the next object. The result is, the object the user thought they had "dropped", remains on display - oops! The answer is to include

```

SETVAR (0,Vcur)

```

whenever the current object is removed. This is picked up by the SHOW OBJECT CARRIED condition which prints "NOTHING" in its place. As it ought to when the user hasn't anything to carry!

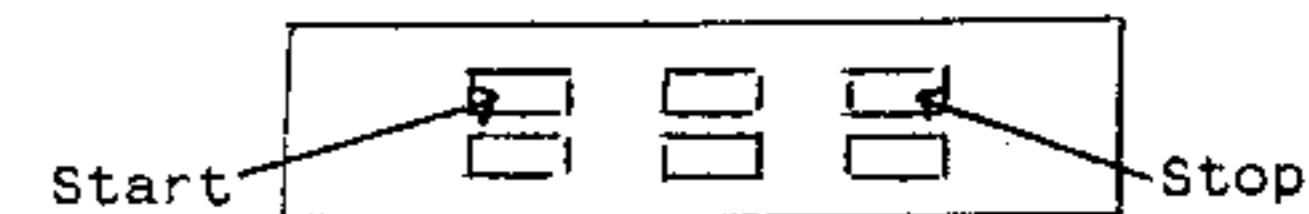
My apologies for this, but it is a technical point you may wish to inform the other users about. Rest assured it will not effect the demonstration you have kindly used in the PD Library as it isn't possible for the user to drop everything!

\*\*\*\*\*

**DRIVING AROUND**  
By *Stephen Shield* - PC

Here is a possible solution to being able to give the impression of driving around your environments by being able to move a car dashboard or similar with the viewer:

First create a dashpanel, eg. a cube and any knobs and controls and make them into a GROUP. Move them to the base of the view and make all the items in the group MOVEABLE once in the new position.



GENERAL CONDITION 2:

```

SETVAR (V0,V40) X position.
SUBVAR (130,V40) Adjust X position to keep
dash in view.
SETVAR (V2,V42) Y position.
SUBVAR (64,V42) Adjust Y position to keep
dash in view.

```

Create Animator (1) and edit to

```

INCLUDE (g) (Group number)
MOVETO (V40,20,V42)
RESTART

```

Condition for start button:

```

IF SHOT?
THEN STARTANIM (1)
ENDIF

```

Condition for stop button:

```

IF SHOT?
STOPANIM (1)
ENDIF

```

When run the movement is a bit jerky and only moves forwards, backwards, left and right but this can easily be improved upon.

\*\*\*\*\*

**REALISTIC BOUNCING BALL**  
By *Bobby Rodrigues* - AMIGA

First we must create our "ball" and for this I used six pyramids, edited and slotted together to form a quite acceptable ball. Make them into a group (in my case it was group 8), and for effect I created two "walls" but these can be left out if preferred. I then moved the group (ball) close up against the left hand wall. Once in position, make all the pyramids in the group MOVEABLE. We will use the GROUND cube as our trigger to start the animation and so for couboid 1 make the following condition:

```

IF SHOT?
THEN STARTANIM (1)
ENDIF

```

Create Animator (1) and edit it as follows:

```

INCLUDE (8)
START
LOOP (4)
LOOP (5)
MOVE (40,140,0)
AGAIN
LOOP (4)
MOVE (40,70,0) (continued next page)

```

```

AGAIN
LOOP (3)
MOVE (40,35,0)
AGAIN
LOOP (2)
MOVE (40,17,0)
AGAIN
MOVE (40,8,0)
DELAY (5)
MOVE (40,-8,0)
LOOP (2)
MOVE (40,-17,0)
AGAIN
LOOP (3)
MOVE (40,-35,0)
AGAIN
LOOP (4)
MOVE (40,-70,0)
AGAIN
LOOP (5)
MOVE (40,-140,0)
AGAIN
AGAIN
LOOP (4)
LOOP (5)
MOVE (-40,140,0)
AGAIN
LOOP (4)
MOVE (-40,70,0)
AGAIN
LOOP (3)
MOVE (-40,35,0)
AGAIN
LOOP (2)
MOVE (-40,17,0)
AGAIN
MOVE (-40,8,0)
DELAY (5)
MOVE (-40,-8,0)
LOOP (2)
MOVE (-40,-17,0)
AGAIN
LOOP (3)
MOVE (-40,-35,0)
AGAIN
LOOP (4)
MOVE (-40,-70,0)
AGAIN
LOOP (5)
MOVE (-40,-140,0)
AGAIN
AGAIN
RESTART

```

Quite a long condition but a simple one and the smooth bouncing effect and slight irregularity in the bounce pattern is extremely realistic. Of course the idea would be to adapt this to form part of a puzzle in a game, perhaps a ghost, monster or lethal barrier of some kind. This routine is especially suitable for beginners as it isn't complicated, to enter a simple animation to see how the animation works.

## 8 BIT ROUTINES

### KILLING CUBE

By *Peter Bergmann* - SPECTRUM

The illusion we want to create is that of a cube which moves backwards and forwards across a room which if the player bumps into it will kill him off. First you should create a series of cubes which are placed side by side to stretch right across the room forming one long barrier, rather like one long cube.

To give the illusion that the cube is moving backwards and forwards we will make each one visible and invisible in turn with the following local condition:

```

TOGVIS      n  (Number of the cube on the left side)
TOGVIS      n  (Number of the cube next to it, second cube)
REDRAW
TOGVIS      n  (Number of the second cube)
TOGVIS      n  (Number of the next cube along, third cube)
REDRAW

```

Continue in this way until you have covered all the cubes in the series. So effectively we are making the first cube invisible and the second visible, then the second invisible again and the third visible. When all this is done you should continue with the condition to reverse the procedure until they are each made visible in turn once more to give the effect of the movement back to the starting point. Then by selecting the attributes for all your cubes, make all but the first one INVISIBLE (both current and initial).

To kill the player off if they attempt to pass the cubes and happen to bump into one you would have another set of conditions which say:

```

IFHIT      n  (number of each of the cubes)
PRINT      n      n      n  (Option for printing message)
DELAY      200
ENDGAME

```

To trigger the whole simulated animation you could provide an invisible trigger on the floor of your room just in front of the entrance by creating, say a rectangle, and entering the following condition at the start of the animation routine:

```

IFHIT      n  (Number of the trigger)
THEN
TOGVIS     etc (as above)

```

The player will have to shoot the "moving" obstacle to be able to pass it safely so for this you should add a simple routine to ensure that if any of the cubes are shot all of them will be destroyed. Ie:

```

IFSHOT     n  (number of first cube)
OR IFSHOT  n  (number of second cube)
etc.....
DESTROY    n
DESTROY    n
etc.....
ENDIF

```



## BUTTON PUZZLE

By *Sonja Phillips* - COMMODORE

The idea of the puzzle is to create a series of buttons that, when pressed (activated) by the player in the right sequence the hidden doorway will be revealed. The first button will be visible on the wall of your chamber somewhere and when the player finds and activates it, it will vanish to be replaced by another button somewhere else in the chamber. Only when all the buttons have been found and pressed (activated) will the secret exit to the next room be revealed.

First you should create the buttons you want, I created four, and via the attributes made the second, third, and fourth button invisible whilst leaving the first one, which was rather well hidden in a corner of the chamber visible. The conditions for this are extremely simple but the whole effect is good.

```

IFACTIVE 2 (first button)
THEN
VIS 3
INVIS 2
SYNCSND 11
ENDIF
IFACTIVE 3 (second button)
THEN
VIS 4
INVIS 3
etc.....

```

until you have the conditions to change the visibility of all your buttons in turn. Then with your last button you would have the following:

```

IFACTIVE 5
THEN
VIS 10 (the doorway)
INVIS 5
ENDIF

```

You would, of course, just need the usual condition to transport the player to the next area when they bumped the doorway of:

```

IFHIT 10
THEN
GOTO 2 a (number of the area)
ENDIF

```

The button puzzle could be made even more difficult for the player by placing the various buttons in different rooms (areas). In that case the conditions would have to be changed only to specify the area in which the buttons were hidden such as:

```

IFACTIVE 5 8
THEN
etc

```

This simple puzzle can easily be adapted for all sorts of different puzzle ideas.

(8 BIT ROUTINES WOULD BE APPRECIATED FOR THE NEXT NEWSLETTER)

## PROBLEM PAGES

"Please can you help me? I just cannot programme an object to come towards me wherever I am."

*Christopher Batchelor-Wylam* - 16 BIT  
As you are a new member you will not have seen the excellent routine in Newsletter issue 3, page 21, by Brian Woodley which explains how you can solve your problem. Here, once again, is Brian's routine: Make the object that you want to come to you MOVEABLE via its attributes and make a note of its starting coordinates. Variables 40 and 41 hold the X and Z coordinates. The first General Condition should contain: SETVAR (X,V40) SETVAR (Z,V41) Substitute the starting coordinates for the X and the Z within the brackets. Now enter the following in your AREA condition:

```

IF VAR<? (V40,V0)
THEN ADDVAR (20,V40)
ENDIF
IF VAR>? (V40,V0)
THEN ADDVAR (-20,V40)
ENDIF
IF VAR<? (V41,V2)
THEN ADDVAR (20,V41)
ENDIF
IF VAR>? (V41,V2)
THEN ADDVAR (-20,V41)
ENDIF
STARTANIM (1)

```

Create animation 1 and enter:

```

INCLUDE (n) (number of object)
MOVETO (V40,20,V41)
RESTART

```

Brian added that this is assuming that the starting Y coordinate of the object is 20. If it is not then change the 20 in the animation to whatever it is.....MANDY

I would like to know if there is any way that I can use a joystick with the PC version of the Kit. I can use a joystick to select icons only but would like to fully use one if it is possible."

*Vic Tandy* - PC

Faculty of Social Biological and Health. Coventry University, Priory Street, Coventry.

I am afraid that I know of no way in which a joystick can be used for PC, Vic. Perhaps other PC owners can help and write direct.....Mandy

"I recently purchased the 3D Kit for my Amiga 500 Plus. It appears that the Kit will work only on the Amiga 500 and not the Plus. Can you advise me if there is a batch program available for the Kit so that I can run it on the A500 Plus?"

*Gary West*, Ashford, Kent - AMIGA

I am assured by the Programmers that the Amiga 500 Plus will work perfectly with version V1.2. Perhaps you have acquired one of the original versions? If so then please return it to be exchanged for Version 1.2, the address you should sent it to is on the back of the box.....Mandy

Please tell me how to make an object (asy a key) and let the player pick it up, then later on in the game only let the player perform an action (say open a door) only if he has first picked up the key."

*Gary Wishart*, Cumbria - SPECTRUM

One way that this could be done would be to create your object (key) -

say it was OBJECT 20 in AREA 4. You could make a condition that if the player picked it up (activated it) it became invisible, with:

```
IFACTIVE 20 4
THEN
INVIS 20 4
ENDIF
```

Then when you came to the locked door you could check if the key were picked up by checking if it were still visible or not with:

```
IFHIT n (number of the door)
AND IFVIS 20 4
THEN
GOTO e a (entrance and area)
ELSE
PRINT n n n (no key message)
ENDIF
```

Checking the visibility of objects in various areas is one extremely useful way of incorporating lots of ideas into your puzzles.....Mandy

What is the best time to put the border, instruments and messages into my game, at the beginning or the end? I am having trouble getting an instrument number to count down. What I have done so far is:

```
General Cond. SETVAR (25,V30)
All object conditions that use variable 30 have:
IF ACTIVATED?
THEN DESTROY (o)
SUBVAR (1,V30)
```

But it doesn't subtract 1 from variable 30. Can you suggest an alternative please?

*Peter J R Laws, Enfield - AMIGA*

First create your general condition and insert SETVAR (V30,25) - note that this is the other way round from your condition as I find it works better that way. Your object conditions should be:

```
IF ACTIVATED?
THEN SUBVAR (1,V30)
UPDATEI (n) (instrument number)
DESTROY (o)
ENDIF .....Mandy
```

I am writing to you for help as I am very frustrated with the 3D Kit. I am not stupid (I think!) but you may think so after reading this, as judging by the letters in the Newsletters I have received the other users of the Kit are far more advanced than I am. I do like the 3D Kit and would like to get more out of it, it is just a case of not being able to. I should say that the first User Group Newsletter I received was issue 4, so perhaps I have missed some vital tips. As far as I can see, there is no way to make, save and reload my own borders. Please advise. In the back of the manual it says variable 00 is viewpoint x position 01 is viewpoint Y etc. In Newsletter 5, page 25, you say variable 1 is time and so on, so I am now completely lost, I also keep seeing mentions of variables above 21 but it has no mention of these in my manual (it does say that there are 256, but does not say what they do). I would like to get more from 3DK but my lack of knowledge of variables that is stopping me. How do you start animation in a stand alone program without the user having to activate anything???? How would I use Deluxe Paint 1, 2 or 3 with the 3DKit?? There is more to ask but I probably wouldn't stop so I'll leave it there. Please help me if you can

*Mark Martin, Hanworth - PC*

Understanding Variables is the key, Mark, once you understand what they are you can handle them. I'll explain as simply as possible.

Variables can be used rather like little notes, switches, reminders and so forth to tell the computer what the current state of affairs is during a game or program. An example in an adventure type game would be to check if the location the player was currently in was either light or dark. You would select a variable, say variable 40 for this and enter something like - if the location is dark then variable 40 = 0 but if the location is light, or if the player has a lamp, then variable 40 = 1. To use this example with the Kit we could use the following: AREA 10 (is the room which is set as dark at the start of the game). CUBOID 4 (is the lamp). In GENERAL CONDITION 2 we would say SETVAR (V40,0) to ensure that variable 40 is going to be used and is set to 0, to show that the area is dark. Then during play the player found the lamp in area 2 we would say something like, if the lamp is taken (say ACTIVATED) then the player has a light source so they wouldn't die if they entered the dark area (10) as follows: Condition for our cube (lamp) IF ACTIVATED? THEN INVIS (4) SETVAR (V40,1) ENDIF Now we would enter a condition for Area 10 to deal with either situation. IF VAR=? (V40,0) THEN ENDGAME. So you see, in this case the variable (40) is being used rather like an on/off switch. Variables can be used for all sorts of things. A useful way of using variables is to check how many times a player has done something and then take action at the appropriate time. Ie. suppose you had a dangerous area that contained poisoned gas. You could use a variable as a counter for each time that the person entered that area and then kill them off when they entered it ten times without the gas mask. This would be done in almost the same way as the previous example. The basic rule with variables as far as the 3DKit is concerned is that if you want to use a variable, either a system variable or a variable of your choice then it must be set at the start of the game in the general conditions. Then you can call up and use it at any time during play adding and subtracting from it etc. The confusion you found with Newsletter 5 on page 25 was my fault. I was referring to the variables used in the 8 bit version of the Kitgame - I forgot to mention this. The actual variables used by the system are listed on page 61 of your manual and as you can see they run from 0 up to 29. The other variables from 30 up to 255 are there blank ready for your own use. YOU select which ones you want to use and what you want to use them for. It might help you to understand variables better if you study the list used by the system. For example variable 11 controls the number of times the player have been shot by a sensor. So if you create a sensor you could use the following condition to let the player be killed off after he has been wounded 20 times:

```
IF VAR=? (V11,20) - if variable 11 reaches 20
THEN ENDGAME - then kill him off
```

Don't be afraid of using the system variables and practice a lot and you will soon get the hang of them. BORDERS: If you have DPaint III ther should be NTSC option on the opening options so a lot of the work is done for you as the borders that are accepted by the system are NTSC. Load DPIII and select NTSC, 320x200 pixels and, depending on if you are using EGA or VGA select the number of colours (see page 15 of the manual). Now design a simple border to try. When you have finished, save it with a filename such as BORDER.LBM. This can now be loaded into 3DKit. Don't forget to SET VIEW WINDOW when the border is loaded or it will be covered with the editor screen and will appear only to flash on briefly. If you have difficulty in loading borders then it is always as well if you save your borders from your art package as a brush instead of a picture. ANIMATION: If you want to start an animation as soon as a player enters an area you could use an AREA condition for that area such as STARTANIM (1) so that as soon as the area was entered it would start.....Mandy