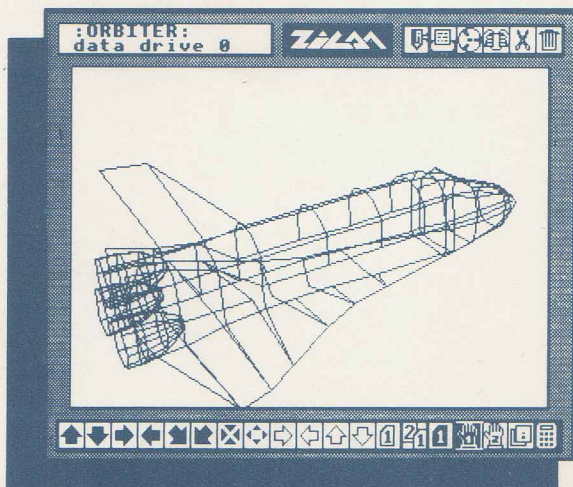
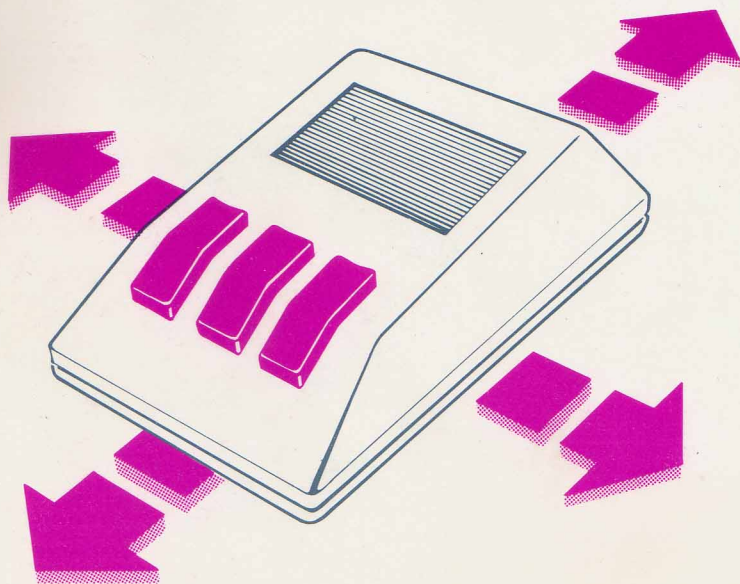


# AMX3D ZIGON

FOR THE  
AMSTRAD  
CPC RANGE



**USERS GUIDE**



# **AMX AMSTRAD ZICON**

## **User Guide**

**Software and Manual by  
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# 1 INTRODUCTION

## 1.1 YOUR SYSTEM

To use the Zicon package you will require the following items.

1. An AMSTRAD CPC micro computer (a 464, 664 or 6128).
2. An AMX MOUSE with interface.
3. A disc drive if not included in your Micro (464 owners only).
4. If you wish to Plot graphics an AMSTRAD RS232c Serial interface will also be needed. And a Plotter of course.

## 1.2 GETTING STARTED

To use Zicon you must prepare the Micro as if you intended to use AMX ART—this means connecting the Mouse and interface as described on page5 of the AMX Mouse user Guide.

It is not necessary to install AMX CONTROL as ZICON has its own "Control" to sense the mouse and perform other functions.

The sequence of events to use Zicon are this:-

1. Connect the Mouse.
2. Power up the Computer.
3. Insert the system disc into Drive A.
4. Type in RUN'ZICON' and press RETURN

On a successful load the title page will appear and instruct you to "Press a key to continue". Pressing any key will activate ZICON.

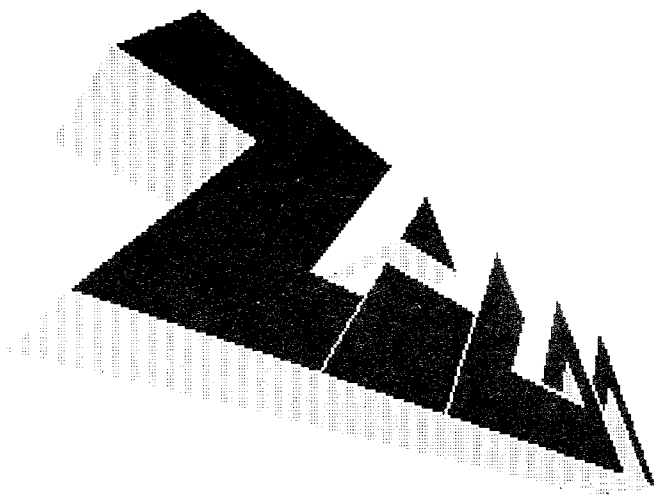


figure 1—ZICON title page

## 1.3 PROBLEMS ?

If you experience any Problems with GETTING STARTED or the running of the program in general then go through this check list:-

1. Is the Mouse and interface connected correctly?
2. Has the Computer been reset (turned OFF and then ON again) since any other software has been run?
3. Is the disc drive connected correctly (CPC 464 only)?
4. Have you got a ROM board? and are any of the ROMS active ?

If after these suggestions Zicon still fails to work then try it on a friends machine.

## 1.4 JARGON

This manual contains various examples of what is commonly known as "COMPUTER-SPEAK". These refer to the way Zicon is presented.

This program operates within a W.I.M.P. enviroment—this means it is used via Windows, Icons, a Mouse and a Pointer. If you are not familiar with the those words then read the AMX MOUSE USER GUIDE.

If you are then ZICON has some new words for you to learn:-

A **MODEL** is a general term which can be given to any one object designed in ZICON, and MODELLING thus means making a MODEL or representation.

**VECTOR GRAPHICS** are line drawings produced from a list of coordinates.

**X,Y and Z PLANES**, are imaginary surfaces lying at right angles to each other which describe the three dimensions of WIDTH,HEIGHT and DEPTH.

**COORDINATES** are values which in ZICON describe the object in terms of the X,Y and Z PLANES.

**POINTS** are three dimensional COORDINATES and consist of an X,Y and Z values.

**LINES** are two POINTS which are connected .You will be unable to see POINTS without Lines as the POINTS themselves have no visual form. They can only be seen in terms of the LINES which join them.

The standard terms "EXECUTE", "MOVE" and "CANCEL" have been used to describe the 3 mouse buttons (as in other AMX software).

## 2 PRE-ZICON

### 2.1 THE THIRD DIMENSION

If you have already used a graphics packages or written any programs which access the screen you will have already used two dimensions, X and Y. The AMSTRAD CPC micro computer graphics screen ( or the screen of any Micro Computer) is described in terms of X and Y. The X value relates to how much to the left or right a screen position is, the Y value is representative of the Up-Down position.

Zicon gives you a whole new value "Z" factor, which can be interpreted as the IN-OUT factor. This doesn't mean that Zicon will make your computer produce Holographic or true 3-D images. We are unfortunately stuck with a 2-D system, the Monitor or TV. It will however work as a 2-D window upon a three dimensional world.

Zicon models have Z—or depth information ,as well as X and Y components ,the computer converts this description into 2-D so that it can be drawn onto the screen. In this process perspective is taken into account. This gives the images "depth"—i.e. objects appear to get smaller the further away they are

To make Zicon as easy to use as possible all objects rotate about the same point in space, this has the coordinate value 0,0,0. This translates to being the centre of the DISPLAY AREA (the blank area taking up most of the screen) unless the graphics have been re-originated (see section 3.3.4).

You may have noticed that the word "Value" has been used a great deal in this section. In most 3-D systems (even on Mainframes) you would be required to type in all the values for POINTS and LINES. In Zicon this is not necessary—it has facilities for constructing shapes from simple definitions. You can't say "CAR" and it will produce a Car, but simple shapes of a defined size can be made at will. Glueing these together will produce your "CAR" or "BOAT" or what ever you want.

### 2.2 FILES—OUTPUT

If you intend to create a complex shape I suggest that one side of a disc is made available for the various files that Zicon produces.

The MODELS themselves are saved with the form "NAME.3d". This enables quick identification of MODEL data on the directory of a disc.

Two other file types are output by ZICON, Graphics and Screens. The Graphic files contain the drawing instructions to reproduce the ZICON images in any MODE; and have the form "NAME.zgr". It is also possible to save the MODE 2 screen so that it may be loaded from BASIC by a single command. The Screens are saved with no colour information, only as Screen memory. They are saved with the filetype ".zsc".

## 2.3 FILES—INPUT

Zicon will only load one type of file, that is one created using ZICON, a "3d" file. You cannot load screens or any other kind of DATA into ZICON. This is because zicon uses VECTOR GRAPHICS and not Screen memory data.

## 2.4 WHAT CAN I ACHIEVE?

The limitations of Zicon are those imposed upon any micro based design system, memory and speed.

The first restriction is that the MODEL can be composed of no more than 400 POINTS and 700 LINES. From use of the original ZICON (on a BBC Micro) which had very little "work space", I can say that this is more than adequate to produce complex screen images and MODELS.

The Transformation of this DATA (as a rotation or move is known) involves a long sequence of maths functions, if the number of POINTS is in excess of 100 this will slow down the re-display time (the time between new images). So expect to wait several seconds if the MODEL is more than a hundred POINTS before a new viewpoint appears.

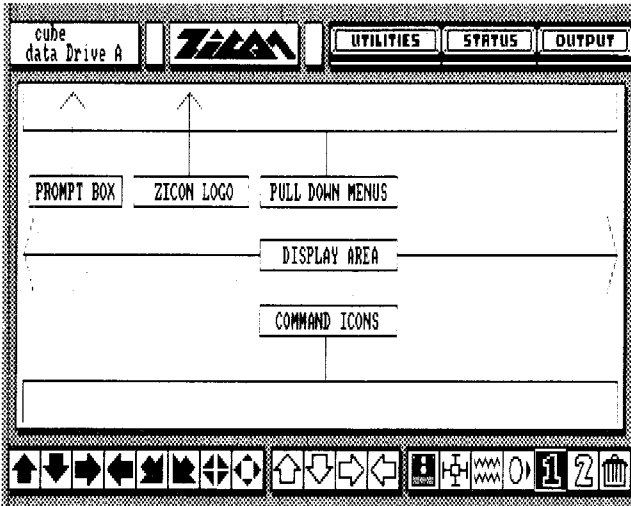


Figure 2 Zicon Screen



# 3 ZICON

## 3.1 Zicon in Operation

The following section is designed to acquaint you with the functioning of Zicon. If you have not installed Zicon do so now.

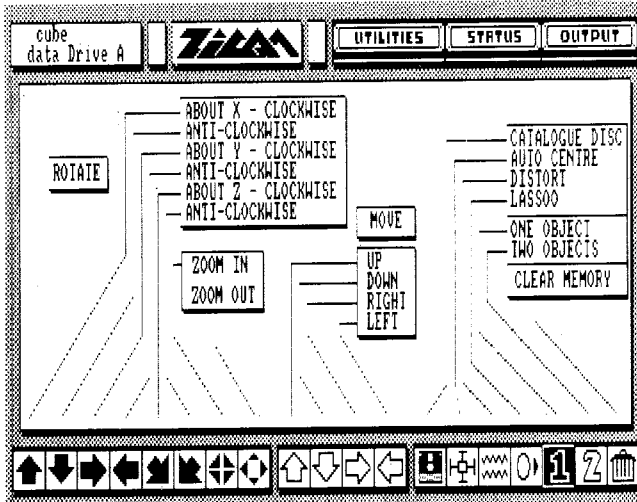


Figure 3 COMMAND ICONS

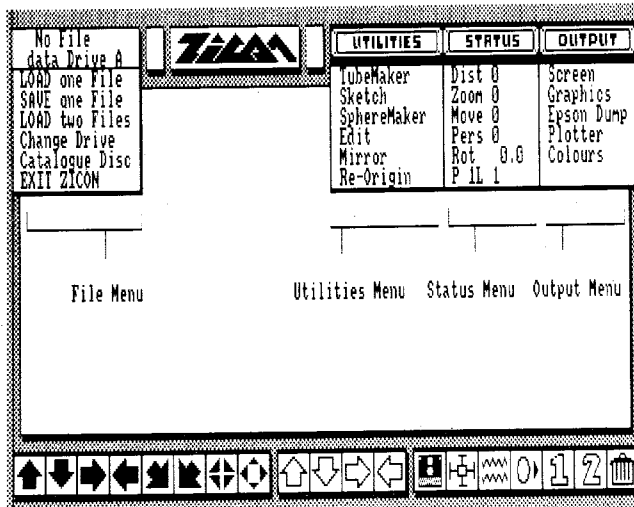


Figure 4 MENUS

### 3.1.1 LOADING MODELS

In learning how to use ZICON it is best to start with a simple object and observe how that can be manipulated.

For this purpose a "CUBE" is supplied on disc with ZICON, but first you must load it.

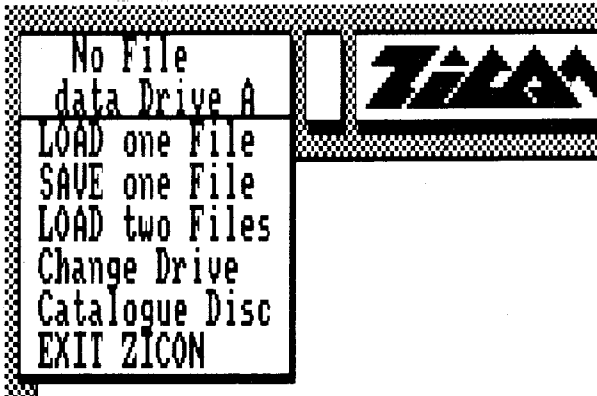


Figure 5 File menu

Shown in Figure. 5 is a Pull Down menu, this is the FILE MENU. To activate this Menu you must move the pointer (a small arrow) to a box at the top left of the screen and press "Execute". The box contains text which tells you which File is currently being used and what Drive is selected for LOADING and SAVING Zicon files. This is called the "PROMPT BOX".

After pressing "Execute" over the PROMPT BOX the FILE MENU will appear below it, the pointer will then be replaced by an inverting bar on the menu. The functioning of the pull down menus is identical to that in AMX ART. Pressing "Execute" on one of the options will activate that facility.

The facility we require is "Load one File", so move the bar over that option and press "Execute". The pull down menu will now disappear and you will be asked to enter the name of the file you require in the PROMPT BOX. Making sure that the Zicon disc is in drive A, enter "CUBE" and press return.

**NOTE:** The files created in ZICON all have Filetypes (i.e. .zgr or .3d or .zsc) these are added by Zicon to the name you enter for loading or saving. **SO DON'T ADD THEM YOURSELF.**

A cube should now be drawn in the centre of the DISPLAY AREA, if for any reason it is not then an ALERT (a box containing information in the centre of the DISPLAY AREA) will state why this has not happened.

If you are not sure what files are on a disc then use the catalogue disc option available on the FILE menu. If you only want to know about MODELS then the "DISC" icon will catalogue .3d files only.

It you have a second drive then you can change the the drive from which all input-output is done. The "change drive" option produces an ALERT which tells you which mouse button to press for which drive. The system disc should always be left in DRIVE A in case it is required by Zicon.

### 3.1.2 SAVING MODELS

Having loaded or created a MODEL you can return the FILE menu and SAVE it using the same procedure as above, but by selecting "SAVE one File". If the MODEL has been moved or repositioned in any way after loading then that change will be saved also. As will changes in scale and STATUS (see 3.1.4).

If you save a MODEL file with the same name to the same disc that it was loaded from then the previous file will be overwritten (a .BAK file is produced but you will have to EXIT ZICON to rename it, if you have made a mistake).

### 3.1.3 CLEARING MEMORY

The next most important requirement after getting an object "in" is to rid yourself of it when it is of no further use. The icon chosen for this function is slightly obvious, the BIN ICON. If you press "Execute" over the BIN icon an ALERT will be generated giving you the option to either CLEAR MEMORY (and so destroy the data resident there) or to return to Zicon (data intact). If you select to CLEAR MEMORY this is NOT reversible, so be careful.

### 3.1.4 COMMAND ICONS

The COMMAND icons take up the majority of space at the bottom of the Zicon Screen (below the DISPLAY AREA).

Their function is to enable a MODEL to be rotated, Zoomed and repositioned.

They are in TWO distinct groups, group ONE is in this order (moving from left to right):-

- ROTATE about the X PLANE—CLOCKWISE
- ROTATE about the X PLANE—ANTI-CLOCKWISE
- ROTATE about the Y PLANE—CLOCKWISE
- ROTATE about the Y PLANE—ANTI-CLOCKWISE
- ROTATE about the Z PLANE—ANTI-CLOCKWISE
- ROTATE about the Z PLANE—CLOCKWISE
- ZOOM towards the CENTRE of ROTATION
- ZOOM away from the CENTRE of ROTATION

I suggest that you try each of those icons , and discover what happens, and also experiment with their use in conjunction with the second group (the MOVE icons) as this affects the result depending on how near the MODEL is to the CENTRE of ROTATION (which is the centre of the screen at this time).

The second group are these:-

MOVE—UP  
MOVE—DOWN  
MOVE—RIGHT  
MOVE—LEFT

The "MOVE" Commands will move the object in relation to the direction we are looking (which happens to be towards the centre of rotation), you will notice that the MODEL parallaxes—that is to say, the MODEL is not re-drawn at an alternate position on the screen, perspective has been taken into account. So it will seem to change shape, what is happening is that you are presented with a new viewpoint of the same MODEL.

By combining the COMMANDS in the First and Second groups it is possible to view an object from any angle.

### 3.1.5 STATUS

If you have rotated and moved the Cube using the COMMAND icons then you will have noticed that the MODEL either moved or rotated the same amount each time you selected those options.

The STATUS pull down menu gives you the chance to change the degree of rotation, move or zoom.

This is the list of items you may change:-

DISTANCE	overall distance from centre of rotation.
ZOOM	amount of DISTANCE MOVED in or out with the ZOOM COMMAND icons.
MOVE	the movement factor, the units relate directly to size of MODEL (see TUBEMAKER section for more details).
ANGLE	angle of ROTATION can be in the range 0.1 deg—359.9 deg.
PERSpective	sets the Perspective factor. The normal value is around 1000 units, reducing it to less than 100 units will produce very "WIDE-ANGLE" and distorted images.
"P" and "L"	tells you how many of those limited POINTS and LINES you have used up—and so it is a check of available memory.

All these factors are SAVED out with each MODEL together with the POINT and LINE DATA. When you re-load an object all the STATUS factors (at the time you saved it) will be restored.

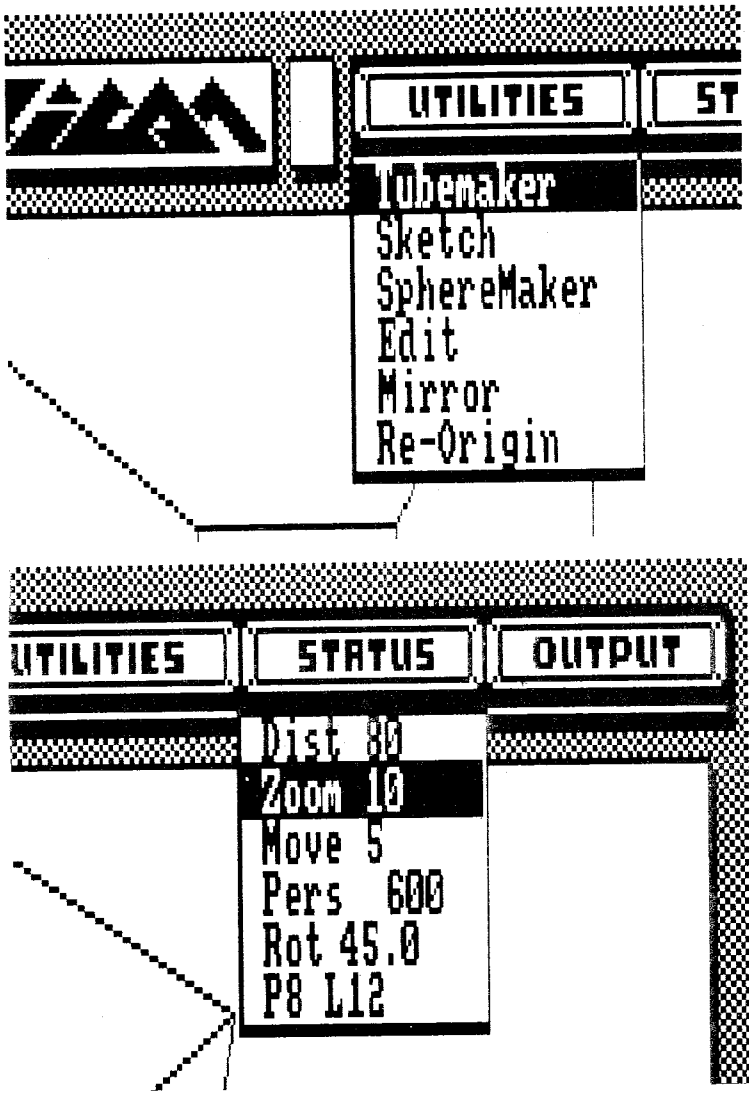


Figure 6 UTILITIES and STATUS MENUS

### 3.1.6 GENERAL RULES

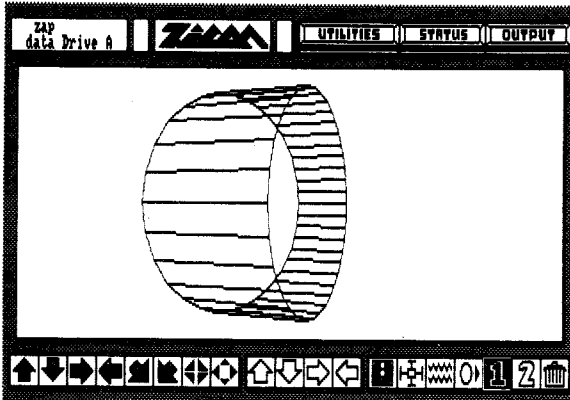
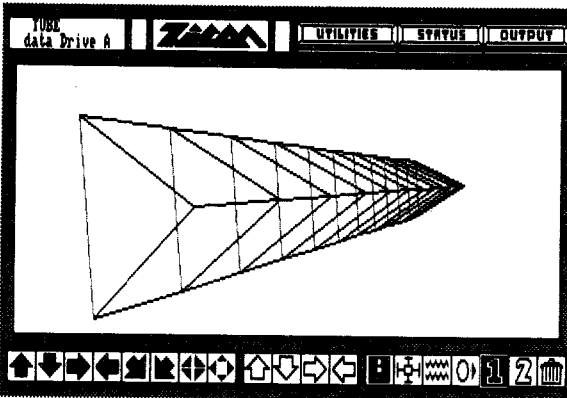
The methods used on ZICON to produce 3-D VECTOR graphics involve what is called Floating point arithmetic. This has inherent inaccuracies if the values used get above a certain size. So a good guideline for "trouble free use of ZICON" is do not let objects or STATUS factors get too large.

## 3.2 METHODS OF CONSTRUCTION

At the start of this chapter you were presented with a "CUBE"; this section will show you how to construct your own shapes and how to combine them into more complex MODELS.

### 3.2.1 TUBEMAKER

The function of TUBEMAKER is to construct TUBES. A "tube" can have any number of sides—within reason—and can be extended out into the Z PLANE by a defined number of sections called LEVELS.



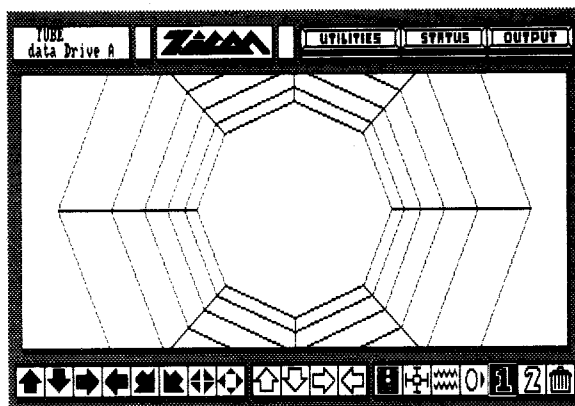
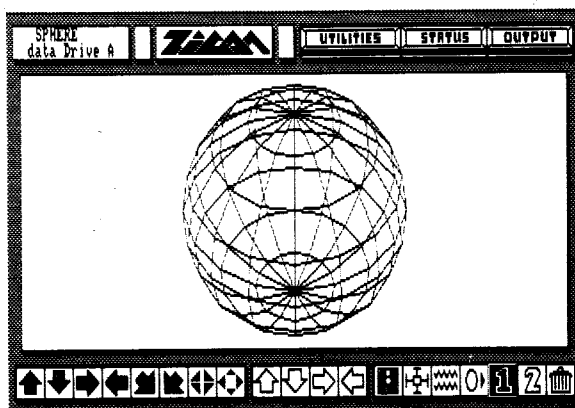


Figure 7. tubes—made by tubemaker

To use TUBEMAKER or any of the facilities documented in "METHODS of CONSTRUCTION" you must choose the option from the Pull down Menu activated by clicking on the box labelled "UTILITIES". This is called the UTILITIES menu.

If you press "Execute" while "TUBEMAKER" is inverted the menu will disappear and a series of questions will be presented in the PROMPT BOX. These are :-

- (1) No. Sides? —enter 4
- (2) No. Levels? —try entering 2
- (3) Side Size? —enter 100
- (4) Level Size? —again enter 100

This example should produce a "CUBE". Now CLEAR MEMORY and try some new values. Say 8 sides, 4 levels,side size 50, level size 20. The general shapes that tubemaker "manufactures" for you can be very useful as most MODELS are made from combining simple MODELS using GLUE (see 3.2.4).

### 3.2.2 SPHEREMAKER

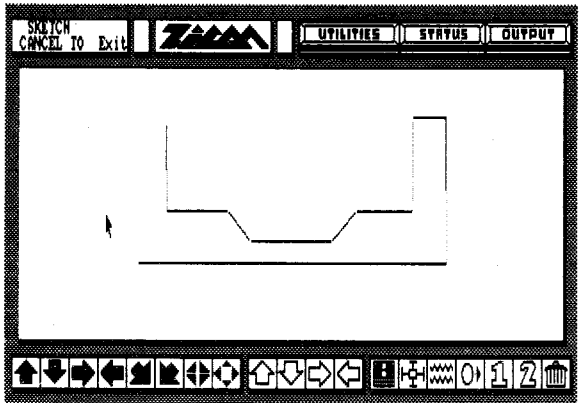
The SPHEREMAKER option is an adaptation of the TUBEMAKER routine for making Spheres. In use it is very similar to TUBEMAKER, but you are only required to input the Diameter and the number of Sides. All the other values are calculated from this information.

**NOTE:** Spheres use up a great many POINTS and LINES if they have more than 16 sides.

### 3.2.3 SKETCH

This feature is very similar to PENCIL MODE on the AMX ART package and is used for line drawing. To draw (2-D) lines in the display area simply choose the SKETCH facility from the UTILITES menu.

A line will be drawn from the centre of the screen to the pointer, it will "rubber-band" as the pointer is moved. To move the start point of the line press the "MOVE" button on the mouse, the line will now begin from the present position of the pointer. To draw press "Execute" and a line will be drawn from the start point to the current pointer position.





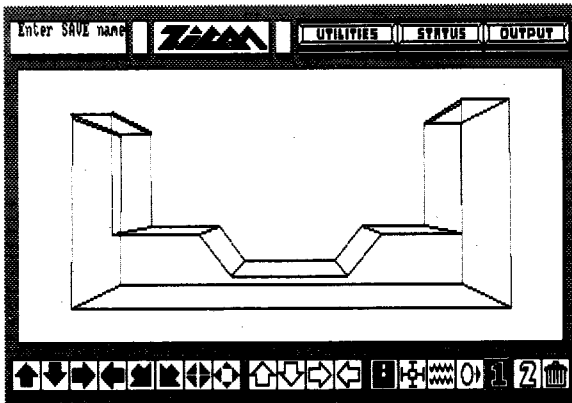


Figure 8. Sketch a shape

To exit from this facility press "Cancel". Before you exit completely from sketch, the PROMPT BOX will enquire "Z-VALUE?" if 0 is enter (or return is pressed) then the SKETCH MODEL will remain flat, having no Z values it will have no depth.

If any other value is entered then the SKETCH will be extended into the Z PLANE, it will be given another LEVEL, the same as the one you sketched and all the interlacing lines will be added. See this in action in figure 5.

### 3.2.4 GLUE

You may or may not have noticed that on the FILE MENU the facility "LOAD two Files" is offered this is part of the GLUE function.

To show you how it operates follow these instructions:-

- Select LOAD two Files
- Enter "CUBE"—a cube will be loaded and drawn
- Enter "CUBE" again.

You have now loaded two CUBEs, you can only see one because they are both in the same place. You will have also noticed that the "1" and "2" below the DISPLAY AREA have inverted. If you click on "1" or "2" they will re-invert and vice versa. If only "1" is inverted then only MODEL one (the first loaded) will move when the COMMAND icons are clicked. If only "2" is inverted then Model two is under your control, and if both are inverted then both MODELS will be treated as ONE and move together.

Try this:-

Click on "1"

Click on 'MOVE LEFT', repeat this until one cube is separated totally from the other.

Click on "2" twice so only "2" is inverted. Select "MOVE UP", and then click on "1" so that both "1" and "2" are inverted. Use any Rotate icon.

Are you getting the idea? Using GLUE you can combine two MODELS together and position them in relation to each other with total accuracy.

**NOTE:** the Zoom COMMAND icons are not MODEL specific—it will zoom on both MODELS irrespective of the "1" and "2" icons.

### 3.2.5 EDIT

Having created an object you may wish to Edit it to some extent. The Edit function is found on the "UTILITIES" pull down menu and when selected will give you a further 3 options with an ALERT. These are LINE ADD, LINE REMOVE and DATA CRUSH.

The LINE ADD facility works by using the pointer to designate where the line is to be drawn. The pointer (an arrow) will become modified by having a small box projecting from its tip. Place this over one POINT (at a junction between LINES) and press "Execute"; the micro will BEEP and draw a small box around the recognised POINT. By repeating this a second time a second POINT will be isolated and a line drawn between the two POINTS.

This can continue until "Cancel" is pressed and EDIT is aborted. When this happens you will be informed in the PROMPT BOX of how many lines you have added.

The LINE REMOVE option works in an identical way to that of LINE ADD. The modified pointer is used to select the two POINTS between which a line is to be removed—if a line exists.

When "cancel" is pressed you will be informed of how many lines have been removed before returning to the normal command mode.

An alternative use for this function is to give the MODEL a solid appearance—this is cheating—but is one way of producing "hidden line" graphics.

The other feature you may require is to CRUSH DATA. What this involves is scanning the POINT DATA for any POINTS which have no associated LINES. The routine will BEEP!, to tell the user that it has found such a POINT and then remove it from the DATA. These POINTS are the result of EDITS use and if you have no use for them it is better that they are removed. The advantages are less DATA to process (making ZICON faster) and more memory for other POINTS.

## 3.2.6 MIRROR

One way of reducing the work necessary for making complex MODELS is to use MIRROR. If the MODEL is symmetrical (one side is a reflection of the other) then why not make one side, MIRROR it and then GLUE the mirror image to the original?

MIRROR can reflect in all 3 PLANES, X, Y and Z. And by Pressing "MOVE" when asked to confirm for each plane any combination of the three can be requested. Pressing "Cancel" will decline the offer in each case.

After the reflection has occurred the MODEL will be re-drawn in its new form.

## 3.3 A SUBTLE TOUCH

### 3.3.1 AUTO CENTERING

Having used the "MOVE" icons to reposition a MODEL you may decide to return the object to a central position. This can be done in one "click" if AUTO CENTRE is selected from below the DISPLAY AREA.

The absolute centre of the MODEL (X,Y and Z) is calculated and then all POINT's offset by the result. After using this facility the MODEL will be drawn at the centre of the screen and after this all rotate commands will cause it to pivot about its own centre.

**NOTE:** this will NOT re-attitude the MODEL only reposition it.

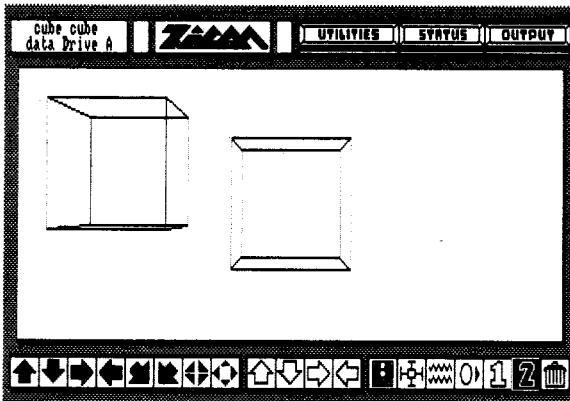


Figure 9 Auto Centre. Before and after.

### 3.3.2 DISTORT

To DISTORT a MODEL select the DISTORT icon and then answer the 3 inquires from the PROMPT BOX. These ask for a percentage for each direction X,Y and Z. Entering 100% or RETURN will make no change. If a value of 200% is entered in the X direction then the MODEL will become twice its original width, if that value had been 50% then it would be halved in that PLANE.

To increase or decrease the size overall enter the same percentage for all directions.

### 3.3.3 LASSOO

The LASSOO icon enables just ONE POINT to be moved independently of the rest of the MODEL.

A CUBE  
Before and after  
A POINT was 'LASSOOED'

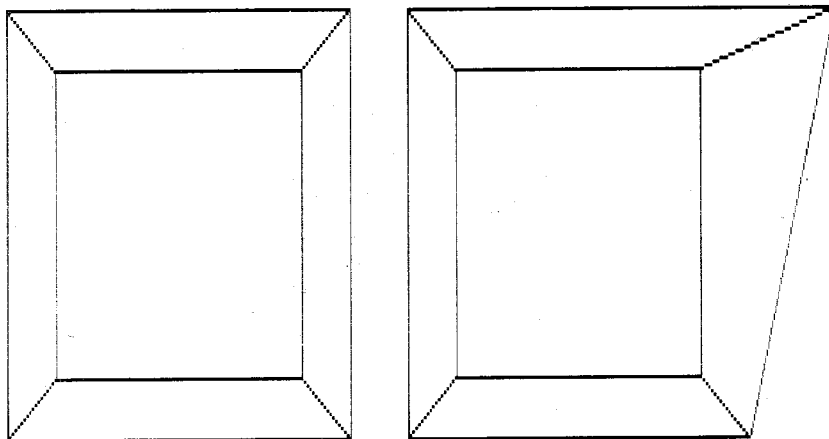


Figure 10 distort a cube

If selected the icon will invert and the pointer will be modified (as in EDIT). By pressing "Execute" with the box placed over the POINT you wish to move it will become highlighted (by having a small box drawn around it).

The COMMAND icons can now be used to move or rotate just that ONE POINT while the rest remain in place. The ZOOM COMMANDS are modified in this mode. If you use the two Zoom icons the POINT will be moved along an imaginary line connecting its original position and the centre of the screen. This enables a many sided "TUBE" to have all the POINTs on a single level either enlarged or shrunk without distorting the circular shape of the tube.

### 3.3.4 RE-ORIGIN GRAPHICS

Until now it has been assumed that the centre of the screen is the centre of our Zicon Universe. If we re-originate the graphics this can be moved to any part of the screen.

If you require this facility it is found on the UTILITIES pull down menu. The PROMPT BOX will state "RE-ORIGIN" to confirm its operation. In this mode the "Move" button will re-originate the graphics using the pointer position as the "ORIGIN". The "Execute" button will exit back to COMMAND MODE leaving the origin as set and pressing "Cancel" will reset the origin to the centre of the screen.

## 3.4 THE FINAL PRODUCT

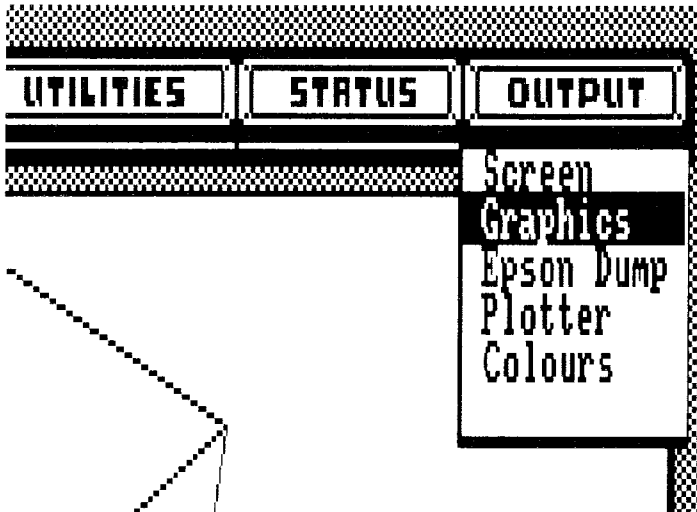


Figure 11. OUTPUT MENU

As in any Graphics software the objective is producing output. The Facilities for output on ZICON are comprehensive and can all be activated by using the "OUTPUT" pull down menu at the top right of the ZICON screen. These are the possibilities.

### 3.4.1 SCREENS

This simply saves the screen to disc under the name you are required to enter. This can be loaded from BASIC with the line;

```
10 LOAD "NAME.zsc"
```

It will include all the ZICON border graphics and icons, but it can be loaded directly into AMX PAGEMAKER as a MODE 2 screen.

If you have an none EPSON compatible printer then this may be a way for you to dump ZICON images if you have a suitable screen dump.

### 3.4.2 DUMP (EPSON)

This screen dumps the DISPLAY AREA to an EPSON compatible printer. If this option is accidentally selected then press "CANCEL" to escape. If the print out is not as desired then your printer is not Epson compatible.

### 3.4.3 GRAPHICS

In order to use the GRAPHICS CO-ORDINATES saved out as a file in this option it is necessary to use the BASIC program listed at the end of this section. It allows you to re-draw the Zicon image in ANY MODE by changing line ten to the mode you desire.

```
10 MODE 2
20 INPUT "NAME OF FILE",A$
30 A$=A$+".ZGR"
40 OPENIN A$
50 INPUT #9,X%,Y%
60 ORIGIN X%,Y%
70 INPUT #9,L%
80 FOR I%=0 TO L%
90 INPUT #,A%,B%,C%,D%
100 MOVE A%,B%: DRAW C%,D%
110 NEXT
120 END
```

This program is supplied on the Zicon disc as Zdraw.Bas together with another version Zdraw2.bas, which shows re-drawing with re-scaling and multiple images.

The routines here can be MERGED with your own code to use Zicon images within your own software.

### 3.4.4 PLOTS

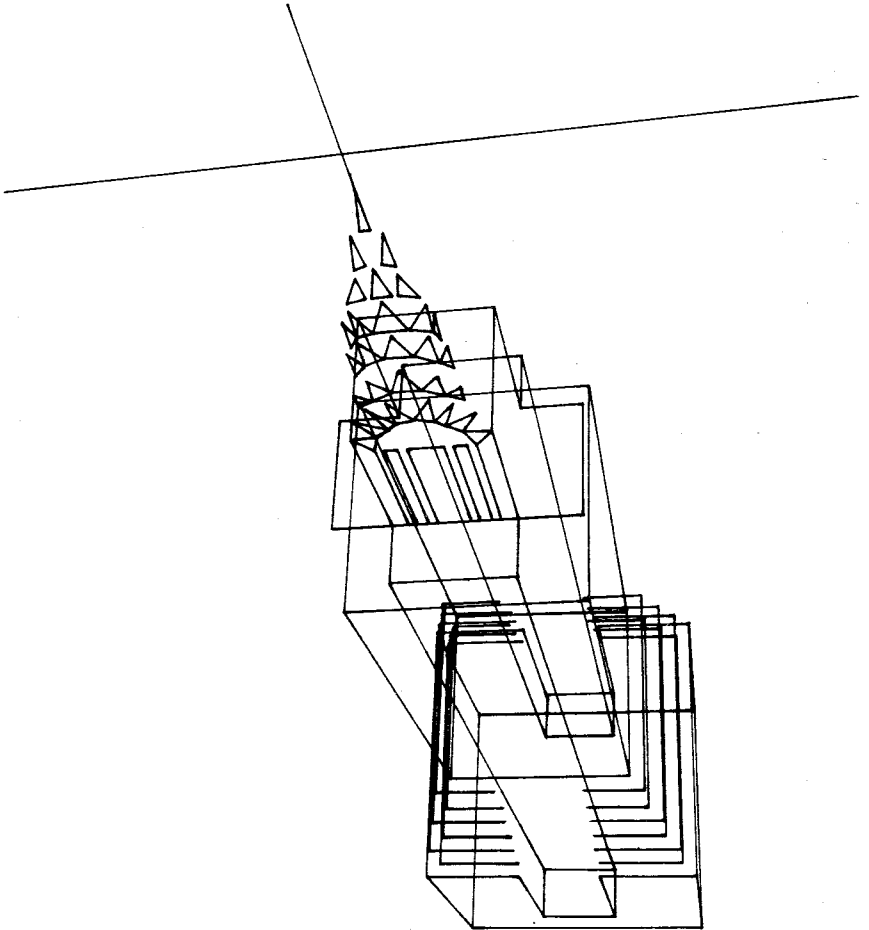


Figure 12 an Example Plot.

To use this you must have an AMSTRAD RS232 connecting your micro to the Plotter.

The Plotter initially supported is the PLOTMATE (serial version), if any other plotters are supported then additional documentation supplied with Zicon will inform you of these.

An ALERT will asked you to confirm "PLOT?" by pressing "MOVE" and then the drawing on the screen will be reproduced on the plotter.

### **3.4.5 COLOURS**

If you have a COLOUR MONITOR you may wish to make your display a little more colourful. You will be asked to enter values into the PROMPT BOX for the INK, PAPER and BORDER. The system will not allow Combinations which make PAPER and INK the same (you would never be able to find the pull down menu to change them back again). The values required are the same as those used in BASIC (0-27).



## 4 LIFE AFTER ZICON?

### 4.1 TECHNIQUE DEVELOP YOUR OWN

With use of Zicon you will begin to discover just how flexible it is, this will encourage you—I hope—to develop your own techniques for making 3-D MODELS.

My own favourite is to create a multi-sided and multi-level “tube” and then use LASSOO on each POINT in turn. This is quite slow but results in a precisely “moulded” shape which can then be edited and then added to with Sketched sections. Though it very much depends on what sort of MODEL you are trying to produce.

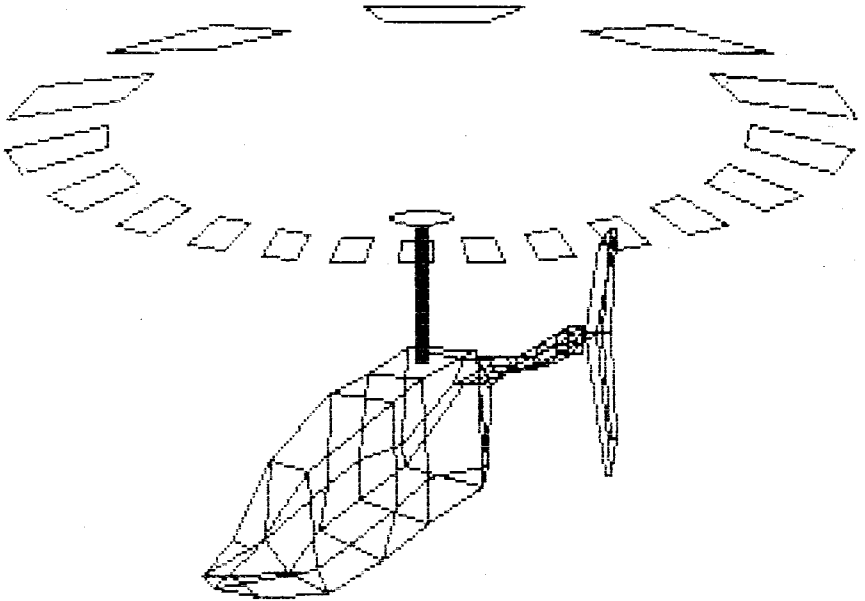
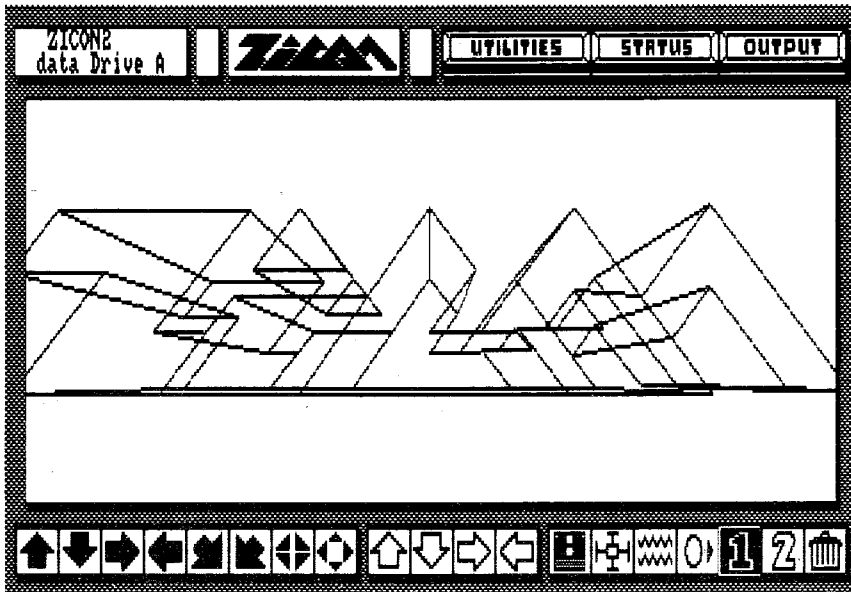
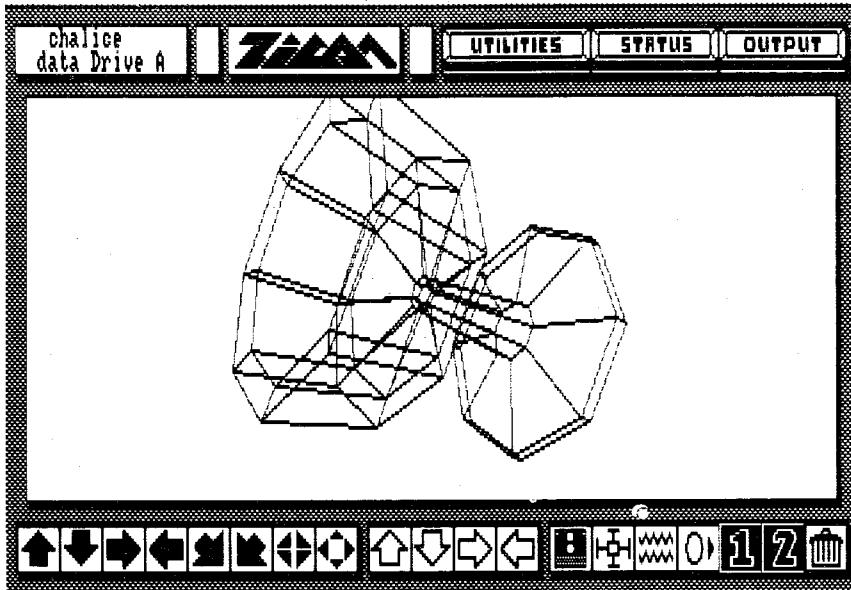


Figure 13 GUNSHIP

### 4.2 AN OBJECT LIBRARY

On the Zicon system disc are various MODELS that I have created using ZICON and my own OBJECT LIBRARY. I recommend that if you wish to use Zicon on regular basis then invest some time in producing an object library. This means making a collection of “useful” bits and pieces (wheels, wings etc) which you can then call upon when constructing a new MODEL. This saves time and lessens effort. The More time you spend making an object library the more components that you will have instantly available.



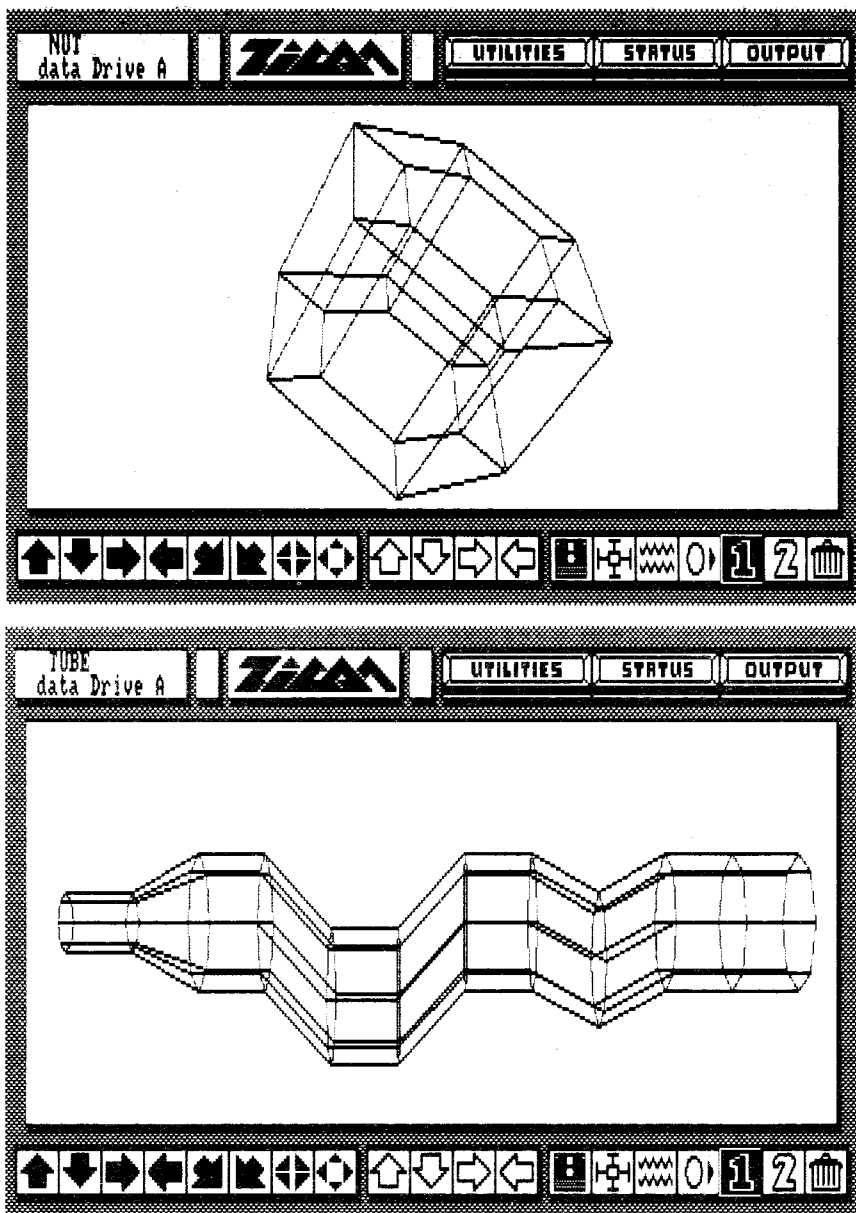


Figure 14 Parts from Marks OBJECT LIBRARY

## 4.3 Your Own Data

With the following information it is possible to enter your own data in a numerical form. This is not for the faint hearted. This is the DATA format:-

point% —integer (2 byte), number of points  
X,Y,Z —floating point (5 byte) coordinates  
lines% —integer (2 byte), number of lines  
point1% —the numbers of points to be joined.  
point2%  
distance  
zoom  
move  
angle(RAD)  
perspective —all floats.

The data conforms to the "start counting from 0" form, so a cube has 11 not twelve lines and 7 points not 8.

If you are confused by this then an example of a cube data is given in the file ZDATA.bas, which can be found on Zicon disc.

## 5 DO's and DO NOT's

It is in your interest to follow these recommendations.

- 1) DO take time to experiment with each facility, the more you understand about how Zicon works the better your Models will become.
- 2) DO make backups of your work—better safe than sorry!
- 3) DO make an object library and keep it on the other side of your work disc.
- 4) DO remember that Zicon produces .BAK files so mistakes can be remedied by renaming .BAK files—if you haven't already erased them.
- 5) DO NOT erase any files from the ZICON disc—you may find that Zicon does not work and AMS will not be sympathetic to your plight.
- 6) DO NOT get confused about file names. Use a numbering system such as CUBE1, CUBE2, CUBE3 etc to locate each version.
- 7) DO NOT try to load anything other than a .3d file into Zicon—the result will not be pleasant.
- 8) DO NOT try to run Zicon on any other micro than those specified (even a PCW 256) as it will not work and you could write to the disc—which is fatal!
- 9) DO NOT let the values in STATUS or the MODEL data get too large (numerically) as this will cause the floating point maths to “overflow”—and DATA will be lost.
- 10) DO NOT keep screens (.zsc) on the same side as a model data, they are 17k per screen and an Amstrad disc only holds 178k. This space should be kept for model data if possible.

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# NOTES

## NOTES



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