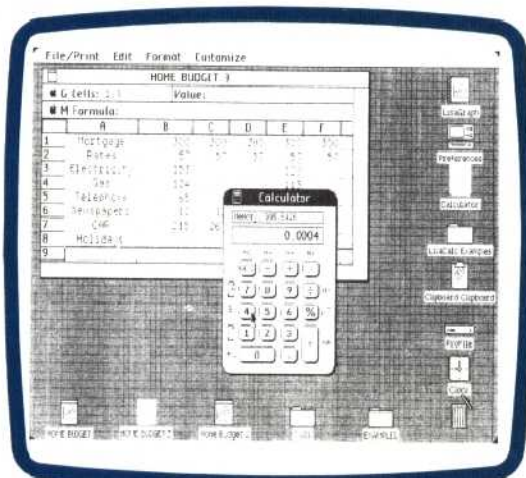### The Right Image
Every function that you perform on the Lisa is represented by a symbol called an 'icon'. To activate the function, the mouse is moved until the cursor is positioned over the icon, and the SELECT button on the mouse is pressed. This 'opens up' the application, which is displayed in detail on the screen

Object-Oriented Programming
To create a Defender-style arcade game using conventional programming would require you to design a number of sample screen layouts, and then write a program from scratch that controlled the whole game. Using object – oriented programming (which at the moment is difficult to do on home computers because suitable programming languages are not available), you would instead concentrate on each element in the game individually.

Starting with the attack ship, your definition would state that it always moved from left to right; that when the joystick is moved forward or back the ship moves up or down accordingly; and that when the FIRE button is pressed a missile is released. Your second definition concerns the missile. It defines its shape and states that it continues in one direction until it makes contact with another object, at which point it disappears. The static gun turret is defined by a simple shape, which changes to an image of an explosion if a missile comes into contact with it. Express these three definitions in a suitable language and string them together and the game is more or less written for you!
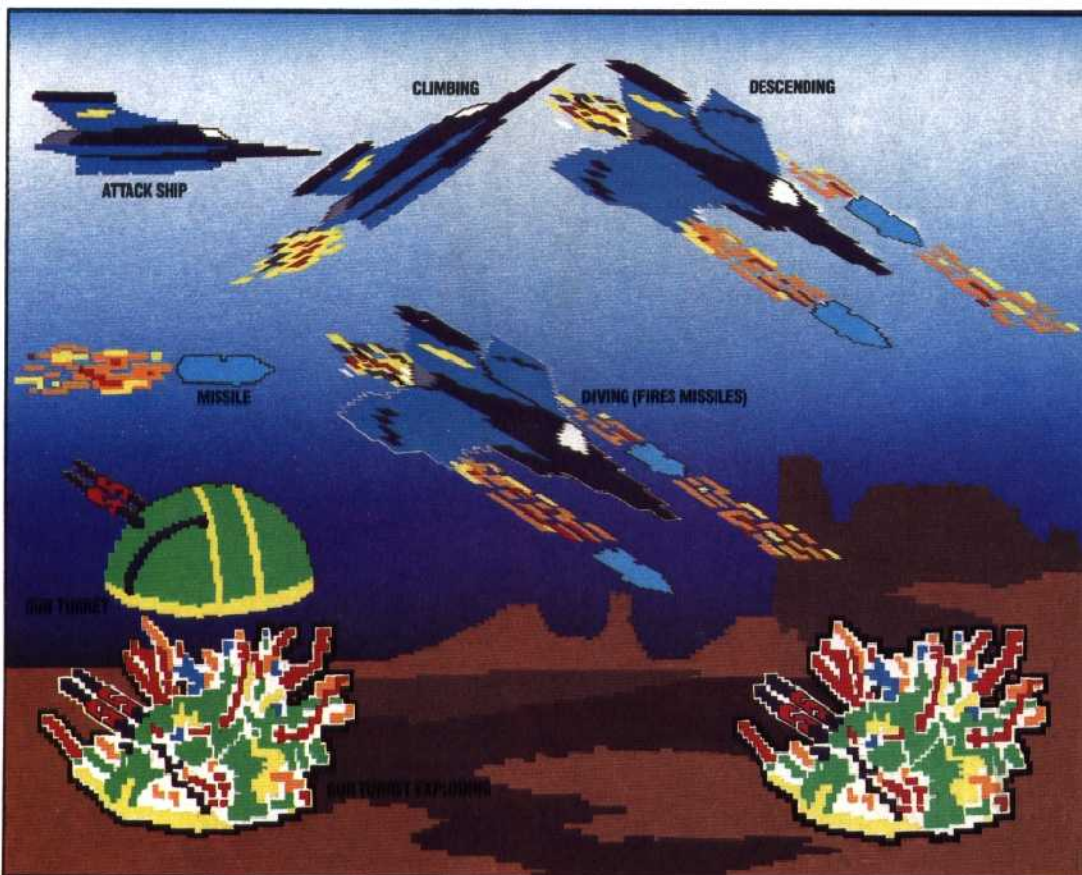
the surface of your desk or table, and is connected to the computer by a trailing wire. Moving the mouse causes a 'cursor' or pointer to move around the screen. In this way it is possible to point on the screen to the data or command you require, and then, by pressing the SELECT button on the top of the mouse, that data can be selected or that

CLIMBING
DESCENDING
ATTACK SHIP
MISSILE
DIVING (FIRES MISSILES)
GUN TURRET
GUN TURRET EXPLODING

TONY LODGE

command executed. The keyboard needs to be used only when new data in the form of text or numbers has to be entered.

At this point, we are ready to discuss the Lisa's software, and again we stress that though the applications for Lisa currently fall entirely within the business area, the principles on which they operate will eventually filter through to home computer applications.

When you first switch the machine on, the image shown on the Lisa's screen represents a desktop with different items arranged on it.

Indeed, almost everything that you do on the Lisa is represented as a visual equivalent of the way you would do something without the computer's help. This is the main reason why beginners find it so much easier to get to grips with the Lisa than with conventional hardware and software. The individual items arranged on the desktop are called 'icons' and each represents a particular function, which is usually labelled beneath it.

Take the example of the clock icon. Moving the cursor over the small clock using the mouse, and pressing the SELECT button will cause a much larger clock to be displayed on the screen, along with the date. If you don't want the large clock to clutter up the desk, it can simply be 'closed down' to its original size again. Similarly, selecting the calculator-shaped icon will 'open up' a larger calculator, which can be used for simple arithmetic. If you aren't happy with the layout of icons on the desktop, you can simply move them around the screen by holding down the SELECT button and moving the mouse. One of the most amusing touches, which highlights the degree to

which the Lisa is modelled on the way we work, is the icon for the rubbish bin. If you no longer require any piece of work, you simply throw it into the rubbish bin icon using the mouse. Having this discipline means that it is very difficult to erase important information accidentally. It is even possible to examine the current contents of the rubbish bin and retrieve them, unless the Lisa has been switched off in the meantime!

Most real work is done on the Lisa using one of six applications systems: LisaWrite, a word processor; LisaCalc, a spreadsheet; LisaGraph, a