# COUNTRYSIDE DISC

USER GUIDE

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# 1.  USER'S INTRODUCTION

The Countryside Disc is a two sided videodisc which will introduce you to many aspects of today's countryside.

> Agriculture
> The Environment
> The Rural Community

There are three different approaches to the subject:

## CASE STUDIES

This section of the videodisc is found on Side Two and is intended as a simple introduction for non-specialist users. You will be able to look at two fifteen minute introductory films examining upland farming or lowland farming which raise a number of issues about today's countryside. As the film runs a keyword index will appear alongside the picture. Selecting the keyword of your choice will take you to text and still photographs which will give you more detail about the particular issue.

## SIMULATION

Side One of the videodisc contains an extensive and complex simulation of a farm and its surrounding area. The simulation will allow you to explore some of the issues facing the countryside today. You will be able to look around, find out more information about the area and choose what to do. Users will have to consider many issues relating to agriculture, the environment and to the rural community. You will receive feedback on the actions you choose. The simulation is completely free and you can do as much or as little as you like. The simulation is divided into three main sections:

### Walk
You are free to visit any part of the farm or its surroundings. At any point you can see a complete panorama and you can get a description of the point together with a list of the plant and animal species present.

### Office
When you visit your office you will be able to find out more details. There will be spokespersons for various interest groups who will give you their view about what should be done. You will be able to watch an interview with the present farmer and consult case studies about certain actions. You can use the computer to find out about the current financial position of the farm.

### Plan
You have complete freedom to choose what you would like to do with the farm and its surroundings. There are a very large number of actions you can choose and the computer will make sure that certain criteria have been met, e.g. you have enough tractors, enough person power, etc., but otherwise you will be free to choose for yourself.

### Submit
When you have selected your actions, you can submit your plan for the future of the farm. You will then be able to receive reactions to your plan. In the Walk the list of plants and animals will change as a result of the actions you have taken. In the Office you will be able to get the reactions of the interest groups and look at the financial implications on the balance sheet. You are free to change your plan as often as you wish.

## DATA

There is a large database of over 9,000 items about the countryside today. Information is available as charts, maps, photographs and text and can be retrieved using a keyword or via a thesaurus. On the whole it is anticipated that the database will be used by people who already have knowledge of the countryside and a familiarity with its problems. The database forms part of the second side of the disc and full instructions on how to use the data is given later in the User Guide.

Wherever you are on the disc you can obtain help and advice. You should select either **Info** (short for information) or **Help** from the menu bar. Whenever you see **Help** you will obtain text telling you the options available and what actions you can take. On selecting **Info** you will be offered the chance to watch the **Guide**. The **Guide** will give you advice and anything he says is also available as text via the menu.

There are two main ways in which you can alter the information stored on the videodisc. Firstly, at the start of the **Simulation** you have access to the **Change** option. The Change Editor contains all the financial values for the **Simulation**. You are free to change any of these values, and any that you do alter will automatically be incorporated into the model. You can, therefore, change the **Simulation** to suit either the current market or any situation of your own construction. For the **Database** on Side Two you can use a piece of additional software available from BBC Enterprises called "DataMerge". This software package will allow you to take your own data or updated data on floppy disc and enter it into the system. Through "DataMerge" any software on floppy disc will be treated in exactly the same way as data on the videodisc.

### A Note to Teachers and Trainers

The Countryside Disc is a videodisc about all aspects of the countryside today. It can be used by pupils and students in educational environments or by professional users. The disc will be equally useful to beginners and experts alike. The different users will select different material from different parts of the disc. As they gain more experience, so they will use more and more of the material available. The **Simulation** has been specifically designed to provide a resource for the 'problem solving' or 'process led' approach to teaching and learning. Later sections of this User Guide explain how the disc can be used for different groups of users.

# GETTING STARTED

Full details of how to set up the equipment are given in the User Guide supplied with the hardware. The following is intended only as a summary.

The various components of the system should be connected as shown below:

```
   BROAD                    EURO LEAD (SCART)
   MULTIWAY
   CABLE                                RGB LEAD


   ┌──────────┐     ┌──────────┐     ┌──────────┐
   │ VIDEODISC│     │ COMPUTER │     │ MONITOR  │
   │  PLAYER  │     │          │     │          │
   │          │     │          │     │          │
   └──────────┘     └──────────┘     └──────────┘
        ┌──────────┐                ┌────────────┐
        │  DISC    │                │ TRACKERBALL│
        │  DRIVE   │                │            │
        └──────────┘                └────────────┘
```
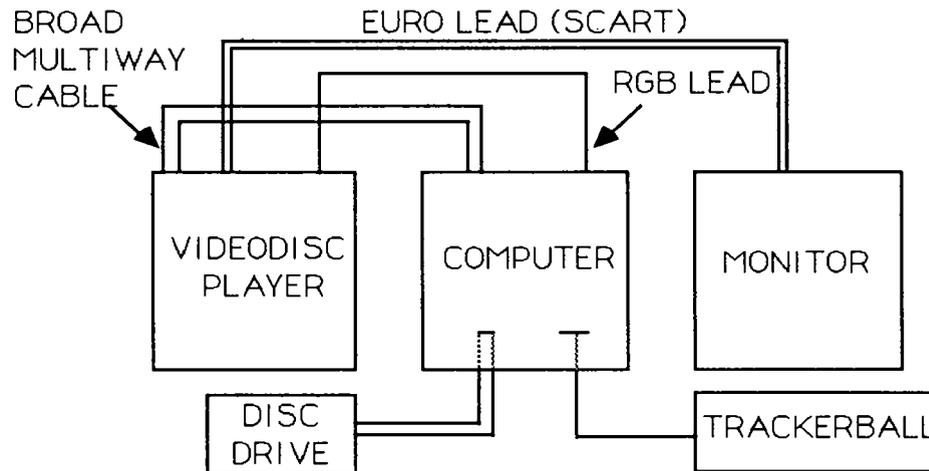
Turn on the computer, the monitor and the videodisc player. Press the Eject button on the videodisc player and the drawer will emerge from the front. Place the videodisc with your chosen side uppermost into the drawer and gently press it closed. It will automatically be drawn into the player. To start the program, you should follow this procedure:

1.      Press the keys CTRL and Q together. Whilst still holding down these two keys, press the BREAK key. Then release the BREAK key and finally release the CTRL and the Q keys.

2.      Press down the SHIFT key and whilst holding it down press the BREAK key. Then release the BREAK key followed by the SHIFT key.

The software will then load into the computer. This will take between 45 and 60 seconds. You will see a message telling you that the Countryside software is being loaded. Once the loading is complete the title sequence will play automatically. The first part of the title sequence has no sound, but you should hear music over the spinning disc which introduces "The Countryside Disc". If you do not wish to see all the title sequence you can press the ESCAPE key on the top left of the keyboard and the disc will move automatically to the main menu. On Side One you can select Simulation from the menu and on Side Two you can select either Case Studies or Data.

### Adjusting the Picture Position

It is possible that the computer generated text and graphics may not be in exactly the correct position over the background video pictures. This will be particularly noticeable in Walk and when films are playing. The position of the computer generated material can be finely tuned by a control on the rear of the videodisc player. Locate a small plastic screw set into the rear panel of the player and marked 'Horizontal Shift'. Use a small screwdriver to turn the screw until the picture is in the correct position. You can check the correct position in a number of ways. Firstly, you can use the handset to locate the test frame at Frame No. 11323. Move the pointer on the screen until it is at the far left of its area. This should correspond to the far left mark on the check frame. Repeat this procedure for the righthand side. Alternatively, you could select a film sequence from the television set in the office in the Simulation. When the film is playing the blue rectangle should completely cover the picture underneath it without any overlap to the left or right.

## The Computer Configuration

The computer should have been set up by your dealer to work with an Advanced Interactive Videodisc system. However, if you are experiencing difficulties, it may be because the "Configuration" has been accidentally changed. This can be checked as follows:

1.    At the prompt (the flashing cursor) type:

      * STATUS   [RETURN]

      This is the way of asking the machine to display its "Status" and the result will be a list on screen.

2.    The list should read as follows:

                    BAUD 7
                    No boot
                    Caps
                    DATA 5
                    No directory
                    Internal Tube
                    FDrive 1
                    File 13
                    Hard
                    Ignore 10
                    Lang 12
                    Mode 0
                    Tube
                    Print 1
                    Repeat 3
                    Scroll
                    TV 255,0
                    VFS Dir
                    Eject

3.    If any of these are different they can be changed as follows. For instance, if the words "No tube" rather than "Tube" appear in the list, then type:

            * CONF. TUBE  [RETURN]

      The abbreviation * CONF. stands for Configure and changes the "Status" of the computer.

      If the display has "Lang 13" rather than "Lang 12", then type:

            * CONF. LANG 12  [RETURN]

      You can continue in this way making all the changes as required. You can check the revised "Status" by again typing:

            * STATUS [RETURN]

      The list should now be revised as required.

## 2.  HOW TO OPERATE THE SYSTEM

Although all functions can be controlled from the keyboard,  the best way to operate this system is by using a trackerball (or mouse).  You interact with the system by moving a pointer on the screen and then pressing either the "Action" button or "Change" button (the left and middle buttons on the trackerball). In general terms, if you want to do something then "point and press", i.e., move the arrow to the item required and press the "Action" button.  Throught out this User Guide this procedure will be referred to in the following way ".....select **Main** from the menu bar".

### Making Choices

The first screen you will see after the titles is divided into four sections:
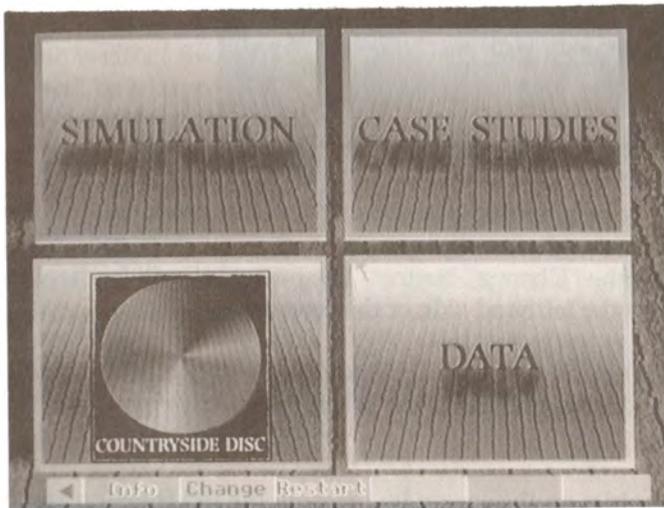


You should select over the appropriate box to gain access to the part of the disc you require.

Throughout the disc you will see a main menu bar across the bottom of the screen.  A typical menu bar is shown below:

| ◀ | Info | Menu | | Walk | Office | Plan |
|---|------|------|---|------|--------|------|

Using the menu bar you can select any item simply by pointing at it (the pointer will change to a cross) and selecting it with the "Action" button on the trackerball.  The exact contents of the menu bar will change according to where you are in the disc.  However, there will always be **Info** or **Help**.

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When you select certain options you will be presented with a menu as a list on the screen.
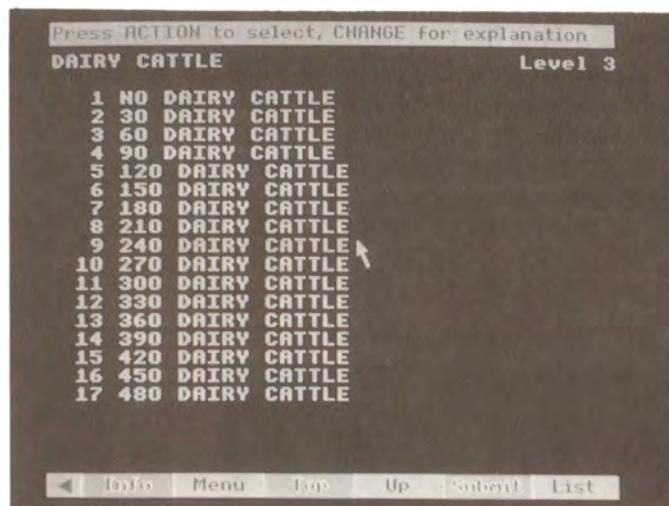


To select an item from the list move the pointer over the chosen item and press the "Action" button. Sometimes the list will be made up of more than one page. To see the next page move the pointer to the righthand side of the screen and press the "Change" button. The next page will be displayed. To see the previous page repeat this operation on the lefthand side of the screen.

On the lefthand side of the menu bar there is a blue triangle pointing to the left. If you select this triangle the menu bar will be removed. To re-display the menu bar select the yellow right pointing triangle in the bottom left of the screen.

You can remove all the computer graphics on the screen by pressing the red function key F9. To reinstate the computer graphics press F9 again.

The functions on the menu bar are replicated by the red function keys as follows:

F0 removes or displays the menu bar

F1 - F6 mimic the six boxes on the menu bar

F7 and F8 move you backwards or forwards respectively through pages of text or stills

F9 turns the computer overlay on or off.

# 3.   CASE STUDIES

Case studies can be found on Side Two of the videodisc.

To gain access to the case studies place the pointer anywhere over the appropriate box and press the "Action" button.  After a short pause there will be a choice of:

> Upland Farming
> Lowland Farming

Either of these options can be selected by placing the pointer over the appropriate line and pressing the "Action" button.

A film will appear in either the lefthand side or the righthand side of the screen and on the other side of the screen there will be a large blue box.  As the film plays, a number of keywords will appear in the blue box which are associated with the main points of the film.  If you want to find out more information about these key points, select the appropriate keyword and  you will be taken to pages of text and pictures.

Text and picture "essays" vary in length.  To see the next page, place the pointer on the righthand side of the screen and press the "Change" button.  To go back to the previous page do the same thing with the pointer on the lefthand side of the screen.

The esssays cover such topics as:

> Buildings
> Landscape
> Farming Methods
> Tourism
> Wildlife
> Government Policy

To return to the list of the sections within the Case Study you have chosen select the return arrow above the menu bar in the bottom lefthand corner - you can then select another section or return to a higher level list by selecting the return arrow again.

**The Case Studies are intended for use by users who are coming to this subject area for the first time. The films will  introduce the topics of Upland and Lowland farming.  The text and picture essays associated with each of the Studies will provide information and amplification on each of the topics mentioned in the course of the film.  After the Case Studies users are free to go on to the Simulation and/or the Database.**

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## 4.  SIMULATION

The Simulation occupies the whole of Side One of the videodisc.

After the opening titles for the disc you will be presented with the following page:
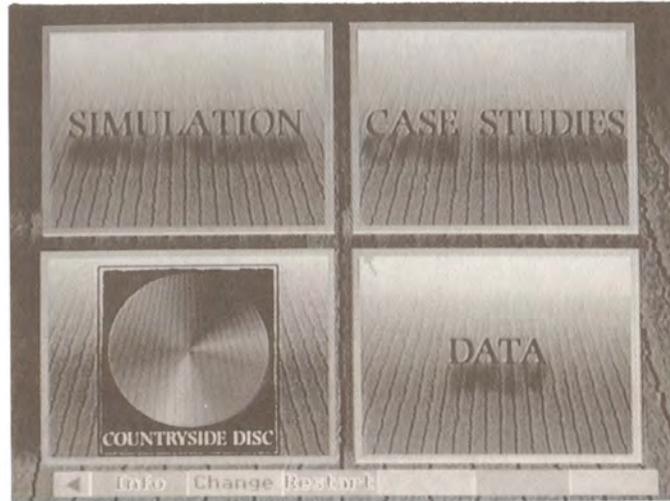


On the menu bar you have three options:

| ◀ | Info | Change | Restart | | | |
|---|------|--------|---------|---|---|---|
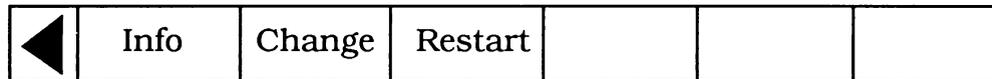
If you select **Info** you will obtain a page of text telling you what you can do at this point. If you select **Re-start** you will begin the **Simulation** again.  At this point it may not seem significant, but it assumes a significance later on.  When you are using the **Simulation** the computer will remember all the actions you take in the various plans that you submit.  Even when you move around the **Simulation** your own plans will remain.  However, you may wish to start again from the beginning.  In order to do this, you select the **Re-start** option and all the changes you have made will be removed.

To select **Simulation** point anywhere within the box and press the "Action" button.  The computer will play an introductory film in which you will meet the Presenter who will tell you about certain aspects of the farm and its surroundings.  Once the film is playing the menu bar will change to include the options **Walk, Office** and **Plan**.  If you wish to you can select any of these options and go directly to that part of the **Simulation**.  If you do not want to watch the whole film you can press the ESCAPE key on the top lefthand corner of the computer keyboard and go directly to the end of the film.  Once there, you will have the same option choices on the menu bar.

The following sections explain in detail how to use the different parts of the **Simulation**, starting with the **Change** option which appears on the first menu bar.

# CHANGE

The Simulation contains an extensive and complex farm business model. There are many hundreds of financial values associated with different parts of the model and obviously these values will change from year to year. Teachers and trainers are advised that they can change all of the values in the model. They do this by accessing the "Change Editor".

By using the Change Editor you can alter any of the financial values in the model. You can change the costs or the income by altering the quarterly cashflow in either a positive or negative way, as appropriate. You can change the opening and closing valuation and in so doing reflect any income from crops, etc. The gross margin will automatically be calculated by the computer. In this way, short or long term changes in costs or prices can be incorporated into the simulation. They can be incorporated for current use or they can be saved on floppy disc and used again.

To access the Change Editor select **Change** on the menu bar from the main menu page and you will be first asked:

### Read values from floppy disc (Y/N?)

If you already have changes on a floppy disc and you wish to use them again you should select "Y" for yes and these values will be put into the database. If you have no previous values stored on floppy disc you should select "N" for no and press RETURN.

### Store the new values on floppy disc (Y/N)?

If you answer 'yes', then any changes you make in the Change Editor will automatically be stored to floppy disc, which means that they can be used again in a subsequent simulation. If you answer 'No', then the computer will remember the changes for the current simulation, but they will be wiped out when the computer is turned off.

You will then be shown a page giving the values for:

### Opening Bank Overdraft
### Overdraft Limit
### Interest Rate for Bank (%)

The appropriate figures are shown in blue boxes. If you wish to change one of the values point at the appropriate box, use the delete key to remove the current value, type in the value of your choice and press the RETURN key. The box will change back to blue to show that the new value has been entered.

If you now wish to change any of the other figures in the model, select **Costs** from the menu bar. You will be shown the first page of actions, together with their appropriate costs. For example, on the first page the first item is "Winter Wheat at Intensity 1, Grade 2 Soil". Beneath the name of the action you will see four boxes as follows:

| -100 | -90 | -30 | 0 |
|---|---|---|---|

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As you will see at the top of the page the four boxes refer to the cashflows in quarters 1, 2, 3 and 4 respectively. The cashflow refers to the money spent on growing the crop. In some other actions it could also refer to the income received from carrying out the action. Any money spent is shown as a negative cashflow with a minus sign which must be entered if any changes are made. The cashflow has been modelled on a quarterly basis to increase the flexibility of the model business plan.

The first page displayed is the lefthand page of a pair. At the righthand end of the menu bar is the word **Right**, on selecting this box you will be shown the righthand page of the pair. The same actions will be shown, together with four more boxes. You will see from the top of the page that the boxes refer to opening valuation, closing valuation, grants, gross margin, as shown below:

| 0 | 757 | 0 | 53 |
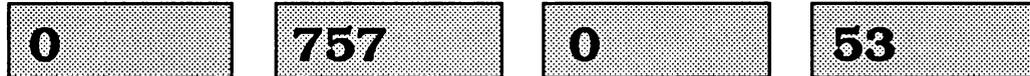
The opening valuation refers to the value at the start of the **Simulation**. Obviously for crops this value is zero as they do not yet exist; however, other actions do have an opening valuation, e.g. the value of the houses, the stock, the machinery, etc. The closing valuation refers to the value of the action at the end of the year. In the case of the crops, the closing valuation will be the market price for that particular crop. (The prices of the crops refer to pounds per hectare.) Some actions have grants associated with them. The value of the grant for a given action can be entered in the third box on the righthand page. The gross margin value in the righthand box will be calculated automatically by the computer on the basis of the difference in valuation minus the cashflow.

To change the value in any of the boxes, simply place the pointer over the appropriate box, use the delete key to remove the existing value, type in the new value (noting whether it is plus or minus) and then press the RETURN key. The new value will appear in the appropriate box and the gross margin will automatically be re-calculated.

There are over twenty pairs of left and righthand pages. Irrespective of whether you are looking at a left or righthand page you can change to the next pair of pages by pointing to the righthand side of the screen and pressing the "Change" button. To move backwards you should point at the lefthand side of the screen and press the "Change" button, the new page will appear with its page number in the top right of the screen. You can change between the left and righthand side of the new page using the **Left** and **Right** boxes in the menu bar.

Rather than move forward one pair of pages at a time, you may wish to move quickly forwards and backwards through the Change Editor. To do this you should select **Find** on the menu bar. The message bar at the top of the screen will then ask you which page you wish to see, enter a number between 1 and 40 and press RETURN. You will then be taken directly to the appropriate page.

When you have finished all the changes you should select the **Exit** option on the menu bar to return to the main menu page. The computer will remember all the changes you have made and use them in the **Simulation** exercise. However, these changes will not be remembered if the computer is turned off.

To save any changes made in the Change Editor you should have selected 'yes' to the question "Do you want to store the new values on floppy disc (Y/N)?"

## Notes on Values

1.  The quarterly cashflows for **crops** usually begin with a negative cashflow to cover the costs of purchasing the seed. This occurs in quarter one for the winter crops and in quarter two for the spring crops. The costs in the remaining quarters are associated with the purchase of pesticides, herbicides, fertilizer, etc. For this reason, the costs at intensity two (the lower intensity) are lower than at intensity one. Values for crops are per hectare.

2.  The value of the **harvested crop** is placed in the box under "closing valuation" - it is not added to the bank balance. This reflects a situation where the crop has been harvested, is being stored on the farm and has not yet been sold. It, therefore, appears on the balance sheet as an increase in valuation, rather than in the bank balance.

3.  There are no valuations for **grass** and **conserved fodder**, as these are not sold as a crop.

4.  The cashflows for **outdoor pigs** reflect the cost of buying the pigs in the first place. The values in quarters three and four refer to selling some of the pigs to market.

5.  There are cashflow costs associated with the **planting of trees** which reflect the cost of the hired-in labour and equipment, together with the cost of the young trees and protective fences, etc. There will be an increase in valuation at the end of 'Year One' identical to the cost of planting the trees. There are grants available for these actions.

6.  For actions such as **camping and caravanning** and converting the **barns** there are large costs associated with establishing the buildings and other things necessary to set up the enterprise. In later quarters there is usually a positive cashflow reflecting the income from the actions, and there should be a significant closing valuation associated with the asset of the new enterprise once it has been set up.

7.  The **housing developments** have a significant positive cashflow; however, they have a negative closing valuation as the value is removed from the estate.

8.  The **hedge** actions have negative cashflows associated with the costs of carrying out the actions by contract labour.

9.  Actions in the **woodlands** usually have a small cashflow. This cashflow is the difference between the cost of carrying out the work and the income associated from the sale of the wood. These are added or subtracted as appropriate and only the difference is shown in the cashflow.

10. The cashflows associated with **ditch** or **pond** actions are those for the hire of contract labour, together with equipment.

11. It is assumed that the actions on the **scrub** are carried out by surplus farm labour and only the material costs are shown.

12. The opening position on the farm is that it has 240 **dairy cattle**. You must enter values in the change editor for all the numbers of dairy cattle in units of thirty. The value in the first quarter represents the difference between the income from the sale of milk and any costs associated with buying or selling the cattle. For similar reasons, the opening valuation always remains the same, however, the closing valuation will decrease if dairy cattle are sold, and increase if dairy cattle are purchased.

13. The costs and valuation for **heifers** of various ages and **sheep** are treated in the same basic way as dairy cattle. In a similar way, the values associated with **beef cattle** can be changed.

14. The cashflows for **workers** reflect their salary in the different quarters which, in turn, reflect the amount of overtime worked. There are no changes in valuations for people.

15. There are five **tractors** on the farm and there is an opening valuation for this collection of machinery. The closing valuation will be less than that for the opening valuation because all machinery depreciates - most of the quarterly cashflows indicate the depreciation and running costs for a tractor. The opening quarter reflects the running costs and the change in value between buying and selling tractors. All the numbers from 1 to 10 should be filled in if any changes are to be made. When changing the values to less than five tractors, the cashflow in the first quarter will be positive representing a sale of equipment, but the quarterly cashflows in the remaining quarters will be lower, as there will be less depreciation on fewer tractors. Of course, the closing valuations will be lower when tractors are sold. Increasing the number of tractors above five will result in first quarter valuations being negative, reflecting the purchase of additional machinery. Similarly, the other quarterly cashflows will increase as there are greater depreciation and running costs associated with a larger fleet of tractors. However, in this case the final valuation will increase.

16. For **combine harvesters** the same system as tractors should be used.

17. There is a cashflow associated with the leasing in or leasing out of **milk quota** and the value is assigned to each group of thirty cattle.

18. There is a cashflow associated with the leasing in and leasing out of **potato quota**. The value is associated with one hectare.

19. If extra livestock is put on the farm extra **barns** will be required. There will be a negative cashflow in the first quarter, but an increase in closing valuation.

20. If **buildings are converted** to new uses such as a farm shop, craft centre, etc, there will be a significant negative cashflow in certain quarters reflecting the work necessary to start the new enterprise. However, income will be earned and this will be shown in the other quarter cashflows. In most cases, there is no change in valuation from opening to closing. Some grants are available for these conversion works.

21. In the case of **houses** there is no cashflow ( i.e. no income) from a house which is tied to an agricultural worker. Houses that are rented have a regular positive cashflow. House values go to zero on sale. The different values of the houses reflect the different size and position and thus their market value.

22. It is important to note that the values associated with **crops** are assigned in different places for different grades of soil. The crops on the Grade 2 land are at the beginning of the Change Editor. The crops on the Grade 3/4 and Grade 5 land appear later.

23. For similar reasons, the **outdoor pigs** appear in two places in the Change Editor, firstly, on Page 4 and then on Page 32.

24. The cashflow values for **casual labour** are given in pounds per hour and they are organised on a month by month basis. Different values must be placed in different quarters for each one of the casual labour months.

25.    At the end of the Change Editor there are some figures associated with the general part of the **bank balance**. These are:

> Rates
> General Overheads
> Mortgage
> Term Loan
> Property Costs
> Trade Creditors

The cashflows for 'mortgage' and 'term loan' decrease slightly from quarter one to quarter three reflecting a small decrease in the capital owed. For similar reasons, the opening and closing valuations are slightly different.

26.    If additional grain is planted and harvested, then it also has to be stored. There are cashflow figures associated with the rental of **storage**.

27.    There is a positive value associated with the first quarterly cashflow for **set aside** reflecting an income from grants.

28.    At the very end of the Change Editor on Page 40 there is an opening and closing valuation associated with the ownership of the **milk quota**: these figures can be changed. Any changes made to the size of the dairy herd are calculated separately, as are any changes made in the leasing in or leasing out of milk quota.

**The Change Editor allows you to alter the starting position on the farm. In that way you can influence the experiences of the users. For example, you could significantly increase or decrease the sale price of the wheat. You could alter the grants available for Set Aside and so make that option more or less attractive. You could change the cost of buying or selling milk quota which would greatly influence peoples attitude towards the dairy operation.**

**Note: Teachers and trainers should make students aware that under the current Government policy on Set Aside at least 20% of the available farmland must be made over.**

## WALK

When you select **Walk** you will be able to "ramble" to any point on the farm or in the nearby village. There are a number of actions available to you at each of the walk points. When you first go to the **Walk** option you will begin your walk as shown below:



At every point on the walk there are eight views, each at 45 degrees to each other. The eight views make up a 360 degree panorama at the point. If you wish to turn to the right you should place the pointer on the righthand side of the screen, press the "Action" button and you will then turn 45 degrees to the right. If you press the button again you will turn a further 45 degrees to the right. If you repeat this action eight times you will turn through a full 360 degree panorama. Similarly, you can turn to the left one step at a time by pointing at the lefthand side of the screen and pressing the "Action" button. As you turn you will see the arrow move on the direction indicator in the top left of screen, which shows the direction in which you are facing. If the arrow head is pointing to the top of the screen, you are pointing north; to the bottom of the screen south, etc.

In the bottom left of the screen you will see a number of arrows. (Sometimes there is only one arrow, but other times there can be up to eight arrows.) Typically, there will be three, four or five arrows available. These arrows indicate the directions in which you are allowed to move. If you select one of the arrows you will move in your chosen direction. The directions are always in one of the eight principal directions on the compass. You do not have to be facing in a particular direction in order to move in that direction, as the moves and the turns are entirely separate. In that way you can move backwards, sideways, etc.

When you first start to walk around the farm you may find some difficulties. You will require a good sense of direction which you will pick up as you become more experienced. At first, it may be particularly difficult to move around and it is suggested you do so through reference to the **Map**. There is a copy of this map at the back of the User Guide to help you navigate.

Across the bottom of the screen is the menu bar.

| ◄ | Info | Menu | | Options | Office | Plan |
|---|------|------|---|---------|--------|------|
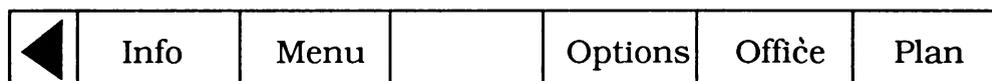
The menu has different choices as follows:

**Info**          Selecting **Info** will take you to a new menu bar where you are able to select textual **Help** or visit the presenter who is your **Guide**.

**Menu**       Selecting over **Menu** will take you back to the main menu page and offer you a choice of **Simulation, Case Study** or **Database**, together with the ability to access the **Change** Editor or to **Restart** the Simulation.

**Options**    Selecting **Options** will take you to a new menu bar - see below.

**Office**      Selecting **Office** will take you directly to the office part of the **Simulation**.

**Plan**         Selecting **Plan** will take you directly to the plan section of the **Simulation**.

When you select **Options** the menu bar will change as follows:

| ◀ | Info | Map | Description | Plants | Animals |
|---|------|-----|-------------|--------|---------|

**Info**          See above.

**Map**         When you select this option you will be shown a map of the farm and all the individual fields and also the wooded areas (in red). (A copy of this map is at the back of the User Guide.) The dots show the position of the walk points and your current position is indicated by the large blue arrow - when you come to the walk for the first time the arrow will be over the point in the north-east corner. (The direction of the arrow indicates the direction you are facing when you return to the walk.) You are free to go directly to any other walk point. To do this you move the pointer to the walk point of your choice and press the "Action" button. The blue arrow will move to the chosen point, and to return to the walk you select the return arrow in the bottom left of the screen. You can also go directly to **Description, Plants** or **Animals**, and in each case you will get text or a list as described below.

         This return arrow is found at the bottom left of the screen. If you select the return arrow you will go back to the walk.

**Description**  Selecting this option will display text about the walk point you have chosen. There is different text for each of the points on the walk.

**Plants**      Selecting this option will display a list of plants on the screen which are found at that particular walk point. There is a different list for each of the points on the walk

which can be used to compare the species in different habitats. You will be given a list of plants on the screen as follows:

```
Carex Acutiformis 2
Carex Disticha    2
Centaurea Nigra   1
Cirsium Arvense   2
Cirsium Palustre  1
Etc.
```

The numbers next to the name refer to the abundance: the values are 1 = Rare; 2 = Common; 3 = Abundant. There will usually be more than one page of species, so to see the next page put the pointer at the righthand side of the screen and press the "Change" button. To go back to a previous page move the pointer to the lefthand side of the screen and press the "Change" button. To see a photograph of any of the plants move the pointer over the name and press the "Action" button and you will be taken directly to the photograph. When you are looking at a photograph the menu bar will change to include **List** and **Text**. If you select **Text** you will obtain descriptive text about the particular plant and if you select **List** you will return to the main list of plants and you can then select another plant and see its picture and text. When you are looking at plants you will see a return arrow in the bottom left of screen; selecting this will take you back to the **Walk**.

**Animals**    When you select this option you will be shown a list on the screen of all the animals that can be found at the particular walk point. Typically, these include birds, mammals, reptiles and insects. The functions in **Animals** work in the same way as in **Plants** - you can select one from the list to see its picture and then obtain text about your choice. You can return to the **Walk** by selecting the return arrow in the bottom left of the screen.

# THE WALK AFTER CHOOSING PLAN

After you have chosen a plan you are free to return to the **Walk** and move around in exactly the same way as before - you will have all the turns, moves and options available to you.

You will also be able to look at the lists of **Plants** and **Animals**; however, these lists will now include reactions to your **Plan**. The actions that you take affect different plants and animals at different points on the walk. When you select the list of **Plants** or **Animals** it will be different to the previous one depending on the actions you have taken. You will see two figures for the abundances - before and after your actions are carried out. In some cases, the abundances will increase and in others they will decrease, and sometimes you will see new species appearing and others disappearing.

**Using the lists of plants and animals you can work out the effects of your plan on the natural species. You must decide if you are happy with these effects or if you wish to change your mind. If you want to change your mind you can return to Plan and try some alternative actions. You should be aware of the effects on the natural species of anything you do.**

## USING THE WALK

The **Walk** is your chance to explore the whole area for yourself. You can move from point to point using the arrows on screen, or you can move using the map. In either case you are completely free to go where you like and to look at what you like. There are no fixed routes - you can explore as much or as little as you want.

If you choose, you can do more than simply walk around. On your travels you could make notes about each area of the farm. You could note the fields and what they are used for; you could note the areas of woodland and mark the positions of the ponds, ditches and scrubland which go to make up the non-agricultural habitats. You could note the position of the houses, look around the village and begin to understand the local community, and explore particular areas such as the woodlands or the riverbank.

If you want to find out about the points and areas in more detail, you can use **Options**. The first option is a general **Description** of each particular walk point. You can also select **Plants** and get a list of all the plants at that point, together with their abundances and in the same way look at the **Animals** at a given point. By comparing the lists of plants and animals along with the descriptions you will be able to see the differences between the various points and the various areas. You should be able to work out which points are rich in plant and animal species and which are relatively poor. You can compare different habitats, for example, you could look at the plant and animal species by the riverbank and compare them with those found by the ditches. You could compare the different woodlands, find out how the areas of scrubland vary because they are not all managed in the same way. Similarly, the ponds have unique species of plants and animals, yet the two ponds are not the same. You can also look at the different hedgerows and compare them with the centres of the fields. At the end of this work you should have an idea of the varied habitats in the area and their associated species.

**The more you know about the farm and its surroundings, the more able you will be to choose an appropriate plan for the future. Your plans will affect different parts of the farm in different ways. You will be able to predict some of the changes if you have a thorough knowledge of the farm.**

# Countryside User Guide

## INFORMATION

Wherever you are in the Simulation you will find Info on the menu bar. If you select the box which is usually on the lefthand end of the menu bar, the information you receive will vary for different parts of the Simulation. It will always be relevant to your needs at that particular moment.

When you select **Info** the menu bar will change as follows:

| ◀ | Help | Return | Guide | | | |
|---|------|--------|-------|---|---|---|
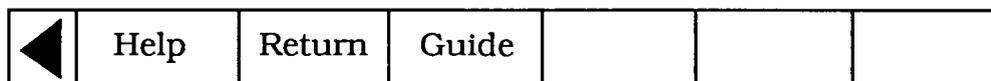
**Help**      When you select **Help** you will be taken to a page of text which will tell you what choices you have at this particular part of the **Simulation** and how to make those choices. The help text is a summary of your options at any point.

**Return**      If you select **Return** you will go back to the point in the **Simulation** where you first selected **Info**.

**Guide**      When you select **Guide** you will meet the Presenter who will tell you about the current part of the **Simulation** you are using and suggest some of the things that you might like to do. As the Presenter speaks, a list of words will begin to appear on the lefthand side of the screen. These words will be:

        Role
        Actions
        Choices
        Background
        Summary

If you want even more detail about what the Presenter is saying you select the appropriate word and another page of text with detailed information will be displayed. If you select the return arrow in the bottom left of the screen you will go back to the end of the **Guide** film. If you select **Return** from the menu bar you will go back to where you left the **Simulation**.

Whenever you are looking at a page of text from **Help** or **Guide** you have the option to print out the page. To do this simply select **Print** from the menu bar. (You must, of course, have a printer attached to your computer.) It may be useful to print out some of the **Help** and **Guide** text to be used while you are working on the **Simulation**.

## OFFICE

**Office** is usually available on the menu bar - to go there simply select that box on the menu bar. The **Office** is a place where you can find out more about the area and includes video sequences of the farmer and a number of interest groups, in addition to a selection of case studies and the computerised farm business records.

When you select **Office** you will see a view of your office as follows:
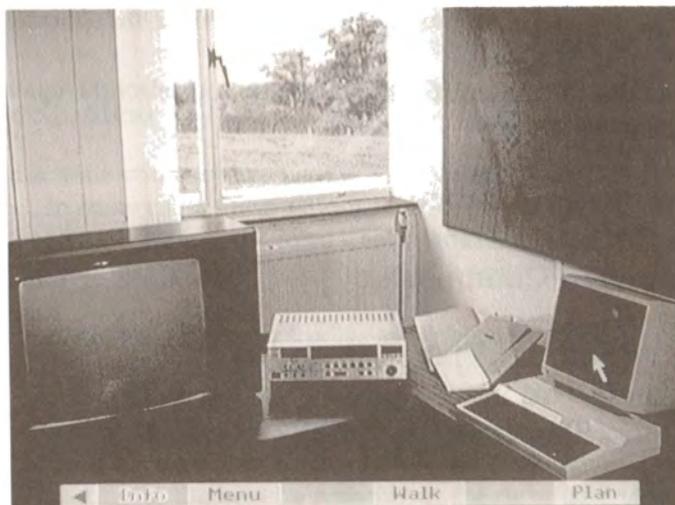


Throughout the Office, there is a menu bar as shown below:

| ◀ | Info | Menu | | Walk | | Plan |
|---|------|------|---|------|---|------|
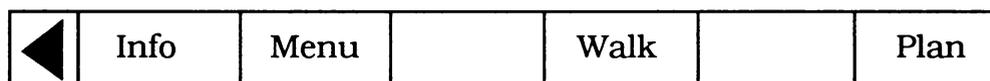
The selections on the menu bar operate as follows:

**Info**      This gives you access to **Help** and guidance from the Presenter. Everything will be relevant to where you are and what you are doing. (See the Information section for further details of how this works.)

**Menu**      Selecting **Menu** will take you back to the main menu for the videodisc. There you will have a chance to select **Data** or **Case Studies**, or to **Re-start** the **Simulation** with the opening values.

**Walk**      Selecting this option takes you directly to the **Walk**. It is the same as pointing at the window.

**Plan**      Selecting this option takes you directly to the **Plan** section of the **Simulation**. There you will be able to choose the various actions and put together your own plan for the management of the farm.

# Countryside User Guide

## Window

There is a view of the farm through the window. If you select anywhere on the window you will go directly to the **Walk**.

## Map

There is a map of the farm and its surroundings on the notice board. If you select anywhere on this map you will go directly to the map in **Walk**.

## Television Set

Through the television you can meet the **Interest Groups**. When you select the television set you will be offered a list of the following interest groups:

> Nature Conservancy Council
> Countryside Commission
> Rural Development Commission
> District Council
> Ministry of Agriculture, Fisheries and Food
> National Farmers Union
> Enterprise Consultant
> Naturalist/Rambler
> Wildlife Advisor
> Parish Council
> Trade Union
> Local

You can look at any, all, or none of the interest groups. To select one simply place the pointer over the interest group and press the "Action" button. You will then see a film of the spokesperson for that interest group, who will give you their view about what should be done. They will appear on one side of the screen and on the other side of the screen a menu will appear. The menu will include:

> Introduction
> Background
> Policy
> Choices
> Summary

If you select one of these menu items the film will stop and you will be taken to a page of text which gives more detail about the particular topic you have selected. The text will be different for each of the interest groups.

You can return directly to the office by selecting **Office** from the menu bar or you can use the return arrow at the bottom left of the screen to move back one stage. If you are looking at text, you will go back to the film; if you are looking at the film, you will go back to the list of Interest Groups; and if you are looking at the list, you will go back to the Office.

## Video Cassette Recorder

To select the video recorder simply point at it and press the "Action" button.

You will then go to a film where you will meet the present farmer, Poul Christensen. He will explain to you what the farm was like when he first took it over and what he had to do to get it into its current state. Mr Christensen will describe the way that the farm is currently managed and why, and will also explain his attitude towards the non-agricultural parts of the farm - the habitats for the plants and animals. He will also give you his views about the way that agricultural policy has changed over the last few years.

By selecting the video recorder and listening to the present farmer you will gain an appreciation of the management of the farm before taking it over for yourself.

## Files (Mini Case Studies)

Before taking certain actions you may wish to know more about what they are and what the consequences will be. In some cases these actions have been carried out in other areas and you can find out about them by choosing to look at the Mini Case Studies to do with the farm, the environment and the rural community. To access the mini case studies you select the files on your desk.

You will be shown the list of the mini case studies available and you can select any one of them by pointing at it and pressing the "Action" button. You will then be shown a page of text.

On the message bar at the top of the screen you will be given the title of the Mini Case Study you have chosen and you will be told what page you are on and how many pages there are to the essay. Once you have read a page you can turn to the next by pointing at the righthand side of the screen and pressing the "Change" button or function key F8 on the keyboard. You can continue reading the essay in this way. If you want to go back to a previous page you point at the lefthand side of the screen and press the "Change" button, or function key F7.

At various points in the essay you will be referred to photographs which are indicated by [see Fig. x]. If you select between the square brackets you will be taken to the appropriate photograph. When you are looking at the photograph you can select **Description** from the menu bar to get text explaining what you are looking at and if you select **Index** you will see a list of all the pictures available in the current essay. You can go directly to any picture by selecting the item with the "Action" button. When you have finished with the picture you select **Main** from the menu bar to go back to the essay where you left it.

When you are reading the essay you will see that the menu bar contains the options **First** and **End**. If you select **First** you will go to the first page of the essay, and if you select **End** you will go to the last page.

If you select the return arrow at the bottom lefthand of the screen you will exit from the essay and return to the list of Mini Case Studies. From there you can select another essay to look at, or if you select the return arrow again you will go back to the **Office**.

You can use the Mini Case Studies to look at other people's experiences of particular actions. You can then decide if you want to carry out the similar actions for yourself.

# Countryside User Guide

## Computer

The computer will give you access to the business plan for the farm and the complete balance sheet. To get access to the figures point at the computer and press the "Action" button.

You will be given a list of the four sections of the farm accounts as follows:

> GROSS MARGINS
> FIXED COSTS
> ESTATE FINANCES
> BALANCE SHEETS FOR THE FARM

To select any of these items simply move your pointer to your choice and press the "Action" button. You will then see a display of the relevant part of the finances. You will get the finances for the current management plan.

If you select the **Gross Margins** page you will see a list of the various agricultural operations. The values down the lefthand side relate to the amount of that operation and the figures down the righthand side indicate the amount of money involved. At the bottom of the page is the Total Farm Gross Margin. The term Gross Margin applies to the monetary difference between the amount of money paid out, e.g. fertilizer, feed, etc., and the income derived from that particular operation, e.g. selling the milk or selling the crop.

All the **Variable Costs** - the costs associated with a particular enterprise - are shown on the **Gross Margins** page. The **Fixed Costs** page details those costs which are general to all the farm operation and include such things as labour, machinery, rates, property costs, etc., and also the interest paid on loans. The Fixed Costs are totalled and then deducted from the farm Gross Margin to give the farming profit or loss. (A loss will be shown with a minus in front of the figure.) There is also a figure for the profit and loss on the non-farming (estates) operations which are detailed on the next page.

The two profit figures are added or subtracted as appropriate to give the so-called **"Change in net worth"**. This figure is not actually cash in hand because it includes changes in valuation on particular actions. It is a statement which combines both the profit or loss on particular activities and any change in the valuation of the farm and its buildings and equipment, and it is considered by accountants as a more accurate measure of the performance of an enterprise. The actual bank balance is given as a separate value at the bottom of this page.

The third page of the balance sheet deals with the **Estate Finances**. It covers actions associated with buildings, houses, woods, ponds, ditches, etc. The page shows two different changes, the first column deals with cashflow and is the difference between income earned and costs expended on a particular action. A negative value means that more money has been spent than has been earned. The second column shows change in valuation and is the difference between the value before and after a particular action is undertaken. In addition, there is a figure for the cashflow for any grants associated with particular actions.

The fourth page is the **Balance Sheet** for the farm. There are two columns, one of which is the opening balance sheet and the other the closing. The difference between the two columns is the change as a result of the actions undertaken. At the start of the simulation the opening column refers to the figures twelve months ago and the closing column refers to the figures at the moment. The first part of the balance sheet deals with the assets and covers such things as land, buildings, machinery, livestock, etc. The rest of the page deals with the liabilities which include such things as mortgage and a bank overdraft. **Note that a positive figure means that there is an overdraft. A negative bank overdraft means that the bank balance is in credit.** The difference between the total assets and the total liabilities is known as the "Net Worth".

---

When you are looking at any of the individual pages of the accounts you can select the return arrow at the bottom left of the screen to go back to the list of accounts to choose another page. If you select **Office** from the menu bar you will return to the main **Office**.

# OFFICE AFTER PLAN

When you have chosen actions to make up your plan and submitted it there are many changes in the **Simulation**. Everything will alter according to the actions YOU have chosen and many of these changes can be examined in the **Office**.

The way everything works in the **Office** will remain the same. You can select the same items in the same way as before. However, the films, text, figures, etc, will all be different from before depending on the actions you have chosen.

## Interest Groups after Plan

You are able to get the comments from the various interest groups. Select the interest group of your choice as before and the interest group spokesperson will give you their reactions to your chosen plan. The **Summary** on the menu alongside the film will also change depending on the actions you have chosen.

## The Video Cassette Recorder after Plan

The film of the farmer will not change when you submit your plan.

## Mini Case Studies

The mini case studies will not change when you submit your plan.

## The Computer after Plan

When you have submitted your plan the finances and the business model will change according to your actions. You can look at the farm accounts by selecting the computer.

The **Gross Margins** page will show the new actions you have chosen. It will summarise the quantities for the various reactions and give you the gross margin.

On Page Two of the accounts you will see the **Fixed Costs** associated with the plan you have chosen. These costs will vary depending on the amount of labour, machinery, etc., needed in your plan. The computer will calculate the difference between the fixed costs and the gross margin to show you your farming profit or loss according to your new plan. A profit is shown as a positive figure and a loss is shown as a negative figure. The computer will also calculate the profit and loss on the non-farming actions on the estate and will show you your change in net worth. Again, an increase in net worth is shown as a positive value and a decrease as a negative value. The bank balance is also displayed on this page - a positive value indicates you are in credit and a negative value indicates you are in debit.

The **Estate Finances** page shows you the cashflow and change in valuation associated with any non-farming actions. Negative numbers mean there has been a decrease over the year.

The **Balance Sheet** for the farm will show you the opening figures when you took over the farm and the closing figures at the end of your first year. You will be able to compare the changes in the assets and the liabilities. The final figure is the "Net Worth".

## USING THE OFFICE

The office is the part of the **Simulation** where you can obtain background information about the whole area. It is a way of finding out about the farm, the environment and the rural community before choosing your own plan. You can look at as much or as little as you want to in the office.

You can choose to look at the various **Interest Groups** to find out what other people think about the area. The Interest Groups are a mixture of experts and people who are interested in the area and who have a range of views about why things appear as they do and what should be done. The Groups provide a valuable source of information about how the present situation came about and also have numerous suggestions to overcome what they see as the problems. By looking at all the Interest Groups you can obtain a broad spectrum of opinion about life in a rural area. There will be many new perspectives to consider about the situation. The Interest Groups represent a collection of opinions about the rural scene today and your job is to decide which, if any of them, you wish to listen to and to take notice of. If you believe there are particular concerns of importance you can adjust your plan to take them into account.

The **Farmer** (available through the video cassette recorder) has a particular significance as he is the person currently running the farm which is the main enterprise in this area. The farm affects everything in the surroundings. The way the farm is managed affects not only the profitability of the farm, but also the natural habitats for plants and animals and, indeed, the lives of the local community. In due course, you will have the option of selecting a new plan of actions for the farm. You might decide that inside information from the Farmer about the current plan is of value before choosing a new one.

There are numerous actions to choose from in the **Plan**. Some of those actions are highly dependent on the local circumstances and others are available which have a more wide ranging significance. It is difficult to know which actions to choose in certain circumstances. The **Mini Case Studies** in the office enable you to gain a certain insight into what happened when some of the actions were tried out in other places. They will enable you to broaden your knowledge and experience of countryside matters and are a valuable source of information. You should look at the Mini Case Studies in the same way as the Interest Groups noting the information of significance so that you can bear it in mind when choosing your plan.

Many people will choose to run the farm at a profit, however, your own business plan is entirely your affair. You may choose actions solely for their income or you may choose them for other reasons. In all cases the financial implications of your actions can be seen in the Balance Sheet on the computer. Every single action you take will have financial implications: there will be costs incurred and income earned; there may be grants; there is likely to be a change in valuation. All these figures are calculated and displayed by the computer so you can refer to them if you want to know the exact state of the farm business as you refine and develop your plan.

## PLAN

There are many different ways of managing a farm. These include:

- an intensive livestock operation

- an intensive arable operation

- a low intensity operation

- a diversified operation

- an environmentally sensitive operation

- an operation which benefits the local community

When you select **Plan** you will be able to choose actions for the future management of the farm. There are a large number of actions available and they are divided up into different groups. You select the actions by working through a series of screen displays. You can change as many actions as you wish. The 19 main groups of actions are as follows:

1. Land use
2. Livestock operations
3. Farm workers
4. Machinery requirements
5. Quotas
6. Build barns for livestock
7. Build extra milking parlour
8. Build grain storage
9. Houses
10. Managing scrubland
11. Paths
12. River and riverside
13. Managing Kingston Brake
14. Managing other woods
15. Hedges and headlands
16. Ponds
17. Ditches
18. New farm enterprises
19. Disused railway station

You interact with the actions by pointing at the chosen line and pressing either the "Action" button or the "Change" button. If you point at an action and press the "Change" button you will see a page of text describing that particular action. When you have read the text you should select **Return** from the menu bar to go back to the list of actions you were looking at.

# Countryside User Guide

If you press the "Action" button the outcome depends on where you are in the different levels. If you are at one of the higher levels (Levels 1 and 2), you will move down to the next level. If you are at the bottom level for a particular type of action, then you will actually select that particular action.

At Level 1 the menu bar will be as follows:

| ◀ | Info | Menu | | Walk | Office | List |
|---|------|------|---|------|--------|------|

Using this menu bar you can select:

**Info**  This gives you access to the following options:

Help:   Will give you text about how to select and use the plan.
Return: Will take you back to the normal menu bar.
Guide:  Will take you to meet the Presenter who will explain to you what options are available.
Print:  Will allow you to print out the current screen display.

**Menu**  This will take you back to the main menu for the videodisc.

**Walk**  This will take you directly to the **Walk** section of the **Simulation**.

**Office**  This will take you directly to the **Office** section.

**List**  This will list all the actions for the farm and the surroundings. If you select it when you first arrive in **Plan** it will show you all the actions currently being carried out on the farm. If you select it later it will show your actions if you have made changes. The list will begin with the hedge actions and then list the choices in each of the 47 fields. It will show either the crops, together with their intensities, or the other actions chosen for each field. After the fields the list will go on to show the actions in the ditches, ponds, the livestock operations, the workers and the machinery. In addition, it will list the house actions, together with the information about loans, mortgages, etc. If you select **Return** from the menu bar you will go back to the list of actions.

Once you have moved away from Level 1 the menu bar will be as follows:

| ◀ | Info | Menu | Top | Up | Submit | List |
|---|------|------|-----|-----|--------|------|
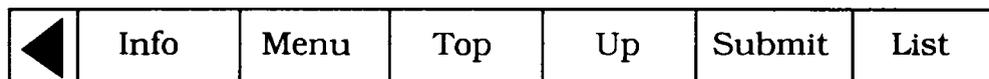
**Info**  This section will be the same as for Level 1 **Info**.

**Menu**  This will take you back to the main menu for the videodisc.

**Top**  If you select this from the menu bar you will be taken back to Level 1.

**Up**  If you select this from the menu bar you will move back up one level, e.g., if you select **Up** when looking at Level 3 you will move back to Level 2.

| | |
|---|---|
| **Submit** | When you are happy with your choice of actions you select **Submit** and the Presenter will explain that the plan has been looked at by everybody concerned. Once you have submitted your plan you can return to the **Office** or the **Walk** to see the consequences. This option is also available if you select **List.** |
| **List** | This section will be the same as for Level 1. |

## Selecting Actions

You choose your actions by moving down through the action hierarchy starting at Level 1, the top level. The following example will show you how to move through the different levels.

Level 1 shows 19 general areas of actions. If you want to alter the number of farm workers, you select Item 3 by pressing the "Action" button. This takes you down to the Level 2 page for Farm Workers. At this level there will be a choice of:

1. Arable workers
2. Stock workers
3. Farmers own effort
4. Students

If you want to change the number of arable workers you move the pointer to the first line and press the "Action" button again. You will now go down to Level 3. Here you will see a list of the possible choices from "0 arable workers" to "10 arable workers". The start up position is highlighted in yellow. If you want to increase the number of arable workers to 4 you move the pointer over "4 arable workers" and press the "Action" button and the highlight will change to your chosen value. The action for "4 arable workers" has now been selected.

To return to Level 1 of the action hierarchy you can select **Top** from the menu bar. You can now choose actions of another type.

If, for example, you want to alter the livestock operations the system works in the same way. You select "livestock operations" from Level 1 to go down to Level 2 where you are offered the choice between "dairy cattle", "heifers", "beef cattle" and "sheep". If you want to change the dairy cattle you move the pointer to item No. 1 and press the "Action" button again. You will then go down to a Level 3 page which will list all the dairy cattle options between "0 dairy cattle" and "480 dairy cattle". The start up position will be indicated by the yellow highlight. If you wish to change the number of cattle you should move the pointer to your chosen selection and again press the "Action" button. The new choice will be highlighted in yellow. As before, you can select **Top** from the menu bar to go back to Level 1 of the **Plan.**

As another example, you might be interested in new farm enterprises. You would, therefore, select line 18 of the Level 1 menu. You are then offered a choice at Level 2 between "converting farm buildings", the "farmhouse enterprise", and the "barn enterprise". If you are interested in converting farm buildings you would select the first line and move to Level 3 where you would be offered conversions for such things as "food production", a "farm shop", a "craft centre", etc. When you select your action the yellow highlight will appear over your choice.

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At this point, you may not want to go directly to the top of the menu. If you are still interested in new farm enterprises, but want to do something other than convert the farm buildings, you have the option to go back to Level 2. The simple way to go back one level is to select Up from the menu bar which takes you from your existing level to the next higher level. In this case, it takes you to Level 2 where you are offered choices of "converting farm buildings", the "farmhouse enterprise" and the "barn enterprise". You could now select the "farmhouse enterprise". Using the Up option will take you up one level and perhaps directly to a sub-set of actions you are interested in.

In general terms, an action is selected by first choosing the general type from the Level 1 menu. On selection with the "Action" button you will be taken to a Level 2 menu which will offer a particular choice of actions. You select your choice from Level 2 and go to Level 3. Normally at Level 3 you will be offered the range of actual actions from which you can make your choice. Occasionally, you will have to go down another level to Level 4 to make the actual choice. You can move Up one level at a time, or you can select Top to go back to Level 1.

Remember that at any point you can move the pointer over an action, press the "Change" button and see an explanation for that action.

## WORKING ON THE PLAN

There is a very large selection of actions to take on the farm and its surroundings and each action will have a particular set of outcomes.

- You may wish to concentrate on running the farm and therefore choose actions as appropriate. However, you should be aware that these agricultural actions do have significant effects on both the environment and the local community.

- You may be particularly interested in the environment and its natural plants and animals and want to concentrate on that area. However, you should also be aware of the financial costs and the effects that there might be on other farm activities.

- On the other hand, you may wish to concentrate on the local community. You may think that jobs, houses and local services should be of prime importance. However, you also need to be aware that these choices will have both financial consequences and be directly bound up with the choices you make elsewhere.

You should decide if you wish to concentrate on one of these areas, or take them all into account when forming your plan. You should choose the actions that you think are appropriate to achieve the desired results. You can then Submit that plan and find out if you have been successful in your chosen goals. You can go back and re-do the plan as often as you like.

If you are interested in the agricultural aspects of the farm, you are likely to be interested in certain Level 1 actions:

1. Land use
2. Livestock operations
3. Farm workers
4. Machinery requirements
5. Quotas
6. Build barns for livestock
7. Build extra milking parlour
8. Build grain storage

Of course, you should be aware that these actions will also have effects on the environment and on the rural community.

If you are interested in the **natural ecology**, then as well as the farm actions, you should also pay particular attention to:

10. Managing scrubland
11. Paths
12. River and riverside
13. Managing Kingston Brake
14. Managing the woods
15. Hedges and headlands
16. Ponds
17. Ditches

Of course, none of these actions will be possible unless you are also planning appropriate management of the farm.

If you are particularly interested in the **rural community**, you should note that the inhabitants are interested in jobs, houses and local services and, therefore, the following actions are likely to be most appropriate:

9. Houses
18. New farm enterprises
19. Disused railway station

However, the local community will also be strongly affected by both the way the farm is managed (particularly in terms of jobs, etc.), and by your choices of actions in the natural environment.

## List

You may have noticed that the first computer page in the **Office** gives you a summary of the current state of the farm. It will tell you in overall terms the number of animals, together with the amount of the different crops.

It is possible to obtain the detailed position on the farm by selecting **List** which will give you all the current actions, both in the fields and all the other types of actions. As you change the various actions the list will be updated and it can be consulted at any time. If you want a print-out of this **List** at any time select **Info** and then **Print** from the menu bar - remember to have your printer ready!

## Land Use

There are 47 fields and every field will have a particular action chosen from a range of alternatives. Normally, the land use will be the growing of a particular crop - sometimes grass for the livestock operation and sometimes arable crops. There can also be non-farming operations associated with some of the fields.

When you select "Land Use" from the Level 1 menu you will go down to three choices at Level 2. For convenience, the farm has been divided up according to the soil types - approximately one third of the farm is good soil of Grade 2; another third of the farm is Grade 3 or 4 soil; the final third of the farm, most of it near the river, is Grade 5 soil. When you select one of the grades you will be given a list of field numbers which have that particular grade of soil.

# Countryside User Guide

The field numbers are shown on the map at the back of the User Guide. Normally you will find that the fields to the west of the farm are Grade 2 soil, the fields in the centre of the farm are Grade 3/4 soils and the fields to the east of the farm near the river are usually Grade 5 soil. Using the map you should be able to choose the particular field you want.

At Level 3 you will be faced with a choice of fields. If you select a particular field you will be taken to Level 4. Here you will see the range of choices available in that particular field with the current action in the field shown in yellow. If you wish to change the action you should move the pointer to the alternative choice and press the "Action" button. In a few cases you will have to go down to Level 5 to make your actual choice.

It should be noted that crops can be grown at different intensities. Normally arable crops can be grown at intensity 1 and 2 and grass at intensity 1, 2 and 3. Intensity 1 represents a high intensity regime with considerable'use of agricultural chemicals, such as fertilizers, pesticides, etc.; cultivation at intensity 2 represents a much lower intensity with only a minimum use of agro-chemicals. You have a choice of intensities so you must balance the production on the land against the cost and the effects on the natural environment.

When you are working on the land actions you are likely to use the Up option fairly often. For example, if you are looking at a particular field and you want to go back to the list of fields of the same soil type you would use Up rather than Top to go directly to the list. On the whole you should find it easier to move around in the land use section using the Up option.

## Actions in Fields

The fields normally support a range of crops and other actions. In general terms a wide variety of crops can be grown on the Grade 2 soil. Therefore, there will be a wide range of choices in the Grade 2 fields. Grade 3 or 4 soil cannot support quite as large a range of crops and, therefore, the choice of actions in both fields will be somewhat reduced. The Grade 5 fields can support only a limited range of crops and, therefore, only a limited choice of actions will be offered in those fields.

Typical crops on Grade 2 soil would include the following, all at different intensities as required:

> Winter wheat
> Spring wheat
> Oilseed rape
> Winter barley
> Spring barley
> Grass
> Maize

The fields on Grade 3/4 land would typically support:

> Spring wheat
> Spring barley
> Grass

The fields on Grade 5 land would normally only offer the option of grassland.

Apart from these general crops and fields there may be specific crops or specific uses in certain fields. The list of where to find these other crops and uses is given below:

Potatoes - 2, 3, 4, 6, 7, 8 , 9, 10, 11, 12, 13, 14, 16.
Sprouts - 2, 6, 7, 8, 9, 10.
Horticulture - 5, 6, 7, 8 , 9, 10.
Set aside - 11, 13, 15, 17, 19, 30.
Outdoor pigs - 15, 17, 18, 19, 30.
Camping and caravanning - 36, 37.
Large housing development - 2.
Small housing development - 10.
Exploratory drilling - 19.
Plant trees - 20, 21, 28, 29, 33, 35, 38, 43.
SSSI - 27.

## Inter-linked Actions

In certain cases it is likely that choosing an action will be dependent on other circumstances. For example, if you select a certain level of livestock operation, you will have to make sure that there is both sufficient grazing and sufficient conserved fodder for winter. Several actions are connected in this way. The main connections are between the farm operations and they include:

Crops in the fields
Livestock operations
Workers
Machinery
Quotas
Barns
Milking parlours
Grain storage

There are many other actions which are linked in the sense that they depend on spending money which in turn is only allowed if the overdraft limit is not exceeded. It might be necessary to generate income by selling houses, before embarking on new farm enterprises such as converting the barns into workshops.

The computer model which controls the simulation has these inter-connections built into it as a set of "rules". Whenever you select an action the computer will consult these rules before deciding whether to allow your choice of action. This is the reason why, on selecting a particular action, the pointer disappears from the screen temporarily. During that time, the computer is examining all the rules, if none of the rules are broken the pointer will return and you will be allowed to continue. If, however, the computer finds that one of the rules has not been satisfied, it will display a message in the message bar at the top of the screen and it will not allow your choice of action. In these circumstances, you could attempt another action or the alternative is to change the related circumstances to make your action allowable.

The main inter-dependent actions occur in the agricultural sections. The following are brief examples of where these may occur:

Livestock Operations    You have a choice of the number of dairy cattle, heifers, beef, sheep, pigs, etc. There are rules governing the requirements for the various livestock operations. In simple terms, livestock require grass for grazing in the summer and conserved food for the winter. The conserved food can be obtained by

planting special crops such as maize or by taking grass for silage from fields specially devoted for the purpose or from grazing fields. If you do not have enough grass or conserved fodder because you have used the field for other purposes, the computer will not allow you to select certain levels of livestock operation. If you wish to increase your livestock operation you must, thèrefore, first decrease the other activities in the fields.

Land Use
You may wish to alter the crops planted in the fields and you are free to adopt quite a wide ranging planting policy. However, you must note that there is always a need for sufficient grazing and conserved fodder if you have a livestock operation.

Farm Workers
Any of the operations on the farm require a certain number of workers. Workers are principally either stock workers who can do other work, or arable workers. The requirement for each action is calculated on a month by month basis and if you have insufficient labour in a given month the computer will not allow an action. You may have to change the number of workers to take into account other actions you wish to carry out on the farm.

Machinery Requirements
Many of the actions on the farm require machinery such as tractors and harvesters. The requirements for a given action are calculated on a monthly basis and if you do not have sufficient machinery the computer will not allow certain actions. You have the option to buy new machinery, but you should make sure that you have enough money in your bank account.

Quotas
Actions such as increasing the dairy herd or the amount of potatoes will be subject to quotas. If you wish to increase the amount of these particular actions, you should first acquire the necessary quotas.

Extra Buildings
Certain actions will require an increase in storage, barns, milking parlours, etc. If you wish to expand the business in these directions you must first build the appropriate buildings. In turn, this may require actions which increase the bank balance.

Houses
You must provide a tied house for all your permanent staff. If you sell houses or rent them out and you are left with insufficient housing for the workers, the computer will not allow your actions.

## Submit

This option is available in **List** or at any of the action hierarchy levels except Level 1. You can select **Submit** when you are happy with your plan. After submitting your plan it will be looked at by the various interest groups and the computer will calculate the business plan. In addition, it will alter the number and types of plants and animals available on the view points in **Walk**. You can devise as many plans as you like and submit them as often as you like.

# THE POSITION ON THE FARM AT THE BEGINNING

The starting position of the farm is as follows:

1.  Intensive grass for grazing and conserving - fields 1, 2, 4, 5, 6, 7, 8, 9, 10, 20, 21, 24, 25, 26, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47.

2.  Maize - fields 3, 14, 22, 23.

3.  Winter Wheat - fields 11, 12, 13, 15, 16, 17, 18, 19, 30.

4.  Special Site of Scientific Interest (SSSI) - field 27

The farm also supports a livestock operation consisting of:

240 dairy cattle

120 heifers less than 1 year old

120 heifers more than 1 year old

120 beef cattle less than 1 year old

120 beef cattle more than 1 year old

There are two disused barns on the farm and a disused railway station on the edge of the village. There are nine houses, five of which are occupied by farm workers, the farmer and his family live in another and the remainder are currently rented out.

The staff on the farm consists of three stock workers, two arable workers, one student and the present farmer who works full time on the farm. There is currently one combine harvester and five tractors with associated machinery.

# 5. INTRODUCTION TO THE COUNTRYSIDE DATABASE

The Countryside Database aims to include data, pictures and text on the countryside in the 1980s. Background information on population, ecology and agriculture is available from a wide variety of sources to enable the fullest understanding of the countryside.

Ways in which the data might be used in curricular studies are listed in Appendix 1 at the back of the User Guide.

## THE ORGANISATION OF MATERIAL

The contents of the database are organised by topic. There is a hierarchical structure of subject-headings under which everything in the database is stored. There are five major headings at the top level of the hierarchy: AGRICULTURE & FORESTRY, THE ENVIRONMENT, RURAL ECONOMY, RURAL SOCIETY, SPECIES PICTURES. Everything on the database is stored under one of these categories. Each category is broken down into smaller headings, and each of those is split into still smaller, more specific groups. At the end of each branch of the hierarchy are the actual items themselves. See Chapter 8 for more details of the hierarchical approach.

The items stored on the database are in various forms:

> **PICTURE SET:** a sequence of still photographs all dealing with the same basic subject, e.g. butterflies.

> **TEXT ESSAY:** a sequence of text pages reviewing some subject or organisation of relevance to the countryside, e.g. Scottish regional parks, the Nature Conservancy Council. Many of these essays are illustrated.

> **MAPPABLE DATASET:** a set of numerical data relating to geographical areas.

> **TABULAR DATASET:** a set of statistical data in table form.

As far as the Countryside Database is concerned, all these different forms can be retrieved in exactly the same way.

## RETRIEVING DATA FROM THE DISC

There are three distinct ways of accessing data on the Countryside Disc:

## ACCURATE NAME

You can call up an item directly by name if you know it is there and have the accurate spelling of its name, (perhaps because you have used the item before). Quotation marks are placed round the name to retrieve it.

## ASSOCIATED KEYWORDS

You can call up an item by means of its associated keywords. Every item in the database has a series of keywords attached, referring to the subjects to which it might have relevance. You can supply the system with a set of keywords which are of interest to you and it will search for matches among the keywords attached to items.

## SUBJECT-HEADING HIERARCHY

You can locate items by following the branching structure of the subject-heading hierarchy. This is an imperfect method of locating everything on a given subject, but is a good method of reviewing the scope of the disc's contents when you do not have a precise idea of your target subjects.

# THE TOP-LEVEL STATE OF THE COUNTRYSIDE DATABASE

The Countryside Disc has a complex system of functions and processes to allow you to display and work with a wide variety of material.

The state in which you enter the database, after selecting DATA from the menu, is the **Find** page. The menu bar reads as follows:

| ◀ | Help | | Menu | | Contents | |
|---|------|---|------|---|----------|---|
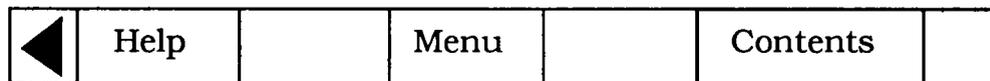
**Help**      This option gives you general text on using the disc, and other options.

**Menu**      This option enables you to select the **Case Studies** or to go to Side 1.

**Contents**  This option gives you a different access to the material in the database.

Both **Find** and **Contents** are dealt with in the following two chapters. They are index-searching functions which enable you to identify items of potential interest to you. After you have finished processing items you can move back up through the levels of the system by repeated selection of the option **Main** from the menu bar.

# 6.   USING THE INDEX

This chapter describes how to use the **Find** option to search the database for pictures, text and data.  It is the most direct method of access if you know the topic you want to pursue.  It enables you to enter, for example, "intensive farming" and get a list of everything the database holds about that subject.

All items held on the database, whether they are articles, sets of pictures or data, have a number of keywords recorded with them and it is these that you will be searching.  You can also enter the name of an item directly if you know it, within quotation marks e.g. "UK MEAT PRODUCTION".

This is a detailed chapter not because it is hard to find material in this way, but because one tends to find more than one can handle - often hundreds of items that match a particular enquiry.  The system has a number of features to make searching more powerful and easier to use.

You will come into the **Find** operation after selecting **Find** from the menu bar anywhere in the system.

## WHAT DO YOU WANT TO KNOW ABOUT?

This is the screen display you are presented with:
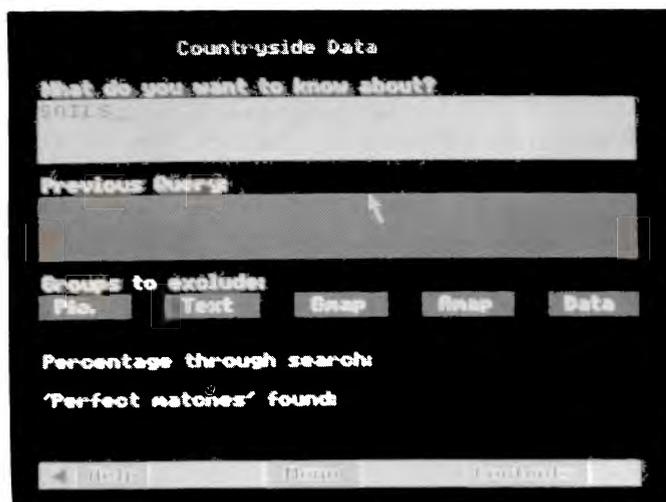


First consider  whether you want to retrieve all types of material,  or restrict them.  The small dark blue boxes contain the words **Pic.**, **Text**, **Gmap**, **Amap** and **Data**.  The third and fourth relate to mappable data (see Chapter 12).  The box **Data** here refers only to data presented as tables and charts.

Selecting any one or more of these boxes will cause the box to change to light blue, and the search system to exclude that type of material.  One box must always be left dark blue (the system will not allow you to omit them all!), but up to four may be removed.

This exclusion must be done before you enter your search word(s) in the top box.  Changes to the type of material boxes are easy to make, if you later wish to narrow or enlarge your search.  Simply put the pointer back into the box, press the "Action" button and return the colour to dark blue.

To make an enquiry, put the pointer into the top box, which will turn light blue. Enter your text from the keyboard. You can use upper-case or lower-case characters or a combination without affecting the result. You can use the cursor keys to move from side to side across text already entered, in order to correct it. Use the DELETE key to erase mistakes, working from the end. At the end of a line the word you are working on will move to the next line. Don't use the RETURN key to move to the next line (this functions as "Action" and will enter your enquiry). When your entry is complete, press the "Action" button or RETURN to enter your enquiry.

If the word you have entered is not in the index, you will see a message to that effect. If it is, it will be highlighted in yellow and a message will tell you that all the references to this keyword are being collected.

You can follow the progress of the search in the boxes at the bottom of the screen. There will then be a short pause while the menu of items found is prepared. This is then displayed as a list of titles for you to choose from.

```
These items have been found:

 1 Gmap  'CLAY-WITH-FLINTS' COVER
 2 Gmap  2ND DOMINANT SOIL TYPE: E+W
 3 Gmap  2ND DOMINANT SOIL-% COVER: E+W
 4 Gmap  AGRICULTURAL CLASSES 1-3: GB
 5 Gmap  ALLUVIAL COVER
 6 Data  ANNUAL TENANT:PRESENT ACREAGE1
 7 Data  ANNUAL TENANT:PRESENT ACREAGE2
 8 Gmap  BOULDER CLAY/OTHER DRIFT COVER
 9 Data  BOUNDARY CHANGES
10 Gmap  BROWN EARTH VARIANTS
11 Gmap  CATION EXCHANGE CAPACITY: S
12 Gmap  CLIMATIC REGIONS: S
13 Gmap  COBALT IN SOIL: S
14 Data  CONFLICT OF INTERESTS1
15 Data  CONFLICT OF INTERESTS2
16 Data  CONTRACT WORK ON UPLAND FARMS
17 Gmap  COPPER IN SOIL: S
18 Gmap  DEEP PEATY SOILS AND PEATS
19 Gmap  DOMINANT SOIL TYPE: E+W
20 Gmap  DOMINANT SOIL-% COVER: E+W
21 Data  FARM MANAGEMENT:POLICY REASON1

   ◄  Help    Main
```

Each title is prefixed by either **Text, Pic., Gmap, Amap** or **Data**, so that you know what type of item it is. Only the first 21 items are shown on the screen, but there may be hundreds more to choose from. You can page backwards and forwards through the list by placing the pointer at the left or right hand side of the screen and pressing the "Change" button on the trackerball or TAB on the keyboard. After each 100 titles, there will be a pause while the next batch of 100 is collected. It is not possible to move back to a previous batch - the enquiry must be re-entered. So it's a good idea to examine the first 100 "hits" carefully before moving on.

Choose the item you want from the list by moving the pointer to the item and pressing the "Action" button. You will then move out of the **Find** operation and into the appropriate display routine. When you have finished examining it, you have the option of selecting **Find** again in order to return to your "hits" list to look at other references.

If you enter more than one word the system looks for all words separately. As the words are found, they are highlighted. It is important to the success of the search that the software uses this strategy. If the phrase was stored as a whole, then retrieval would fail when you entered a variant like "intensive pig farming". So the phrase is first taken apart (for the search) then put together again (in the order the items are presented). This is how it works.

If, for example, you enter **Intensive Pig Farming**, your enquiry will produce 204 items which are referenced by "intensive" and 2522 items referenced by "farming". Of these a number will be referenced by both. These are called "perfect matches" and may well be what you are looking for. The number of these perfect matches is displayed at the bottom of the screen while the search is going on and, more importantly, they always appear as the first items in the "hits" list of titles. So the simple rule is: the most relevant items to your query are likely to be presented first.

Do not neglect the other items retrieved. Looking through them is very likely to produce some relevant entries. For example some of the items under "farming" may have been indexed with the word "mechanized" rather than "intensive", but still be relevant to your search.

Conversely, don't be surprised to see some very odd-looking items in the list. There will, in this example, be a wide range of material on farming in general, as a much used keyword. It is important to realise that this is not an error by the system. The point is that all the "hits" displayed are not necessarily "right answers" to the query in the sense in which you intended it. They are simply offered as suggestions for you to take up or ignore.

Now we can look at the case where a number of topic words are entered, including whole sentences. If you have entered "**intensive and pig farming**", "intensive", "pig" and "farming" are all highlighted; "and" is not. The final list of titles found will be in the following order:

> intensive/pig/farming
> intensive/pigs
> pigs
> intensive/farming
> farming

In practical terms this means - keep browsing through the list until the titles have become irrelevant to your interest. The decision on the order of topic words is made on the basis of their comparative rarity in the index. So a more unusual term like "intensive" is promoted over a common one like "farming".

Although you can enter whole sentences, the system responds to them only as a list of separate words, without regard to any overall meaning. This means it is no use entering a phrase like: "Livestock other than cattle". This will produce a list that is headed by cattle as livestock since the idea of "other than" is not understood. The same is true of all negatives. The best strategy in most cases is to enter a reasonable number of relevant keywords in the form of a list: e.g. "livestock pigs sheep horses".

## SYNONYMS AND WORD STEMS

Some synonyms are internally cross-referenced in the index itself. For example, it doesn't matter whether you use "farming" or "agriculture", you will get the same references. However, comparatively few words are close enough to cross-reference automatically. All cattle are not heifers, although some items may have been keyworded as cattle that you are looking for as heifers. If in doubt, include both words in your enquiry.

A different form of common meaning is that between "fish", "fishes" and "fishing". To avoid having to enter a particular form of a word like this, every reference in the index is held as a word-stem. In this case it would be "fish". In other words, you will be offered the same items whether you enter "fish", "fishes" or "fishing". This makes retrieval much simpler and more reliable, although it can occasionally produce results that will seem surprising. Even more puzzling, enter **organic farming** and you will be offered, as well as organic farming text, items on farm organizations since both have the common stem - "organ". This doesn't happen often.

## ENTERING ITEM NAMES DIRECTLY

If you know - because of an earlier enquiry - the exact name of any item, then you can bypass the index and save time by moving straight to the item itself. To do this simply enter the name within quotes (double inverted commas). For example, if you enter **"liverworts"**, you will be taken straight to the picture set of that name. This only works, however, if you enter the name in its exact form - letter for letter, space for space, otherwise the message "Item name not recognised" will be displayed.

## THE ART OF RETRIEVAL

Finding items from a huge database with software like this is an art rather than an exact science. It is not like the index of a book, where a small number of index words refers to a small number of pages where that word occurs. On the Countryside Disc a word can occur many millions of times and a keyword may reference hundreds of items. Nor is it like an on-line text database, where almost every word is held in the index and a search can be progressively narrowed down by specifying more words.

If you use a very wide term (like "farming") you will get many hundreds of references that will be impossible to handle. If you use a very narrow and particular term (e.g."Charolais" you may get no references, although there may be many references to it in the text itself). Prefer a more medium range term, like "cattle". There are nevertheless many specific names of species in the picture sets, in both their English and Latin forms.

The number of words you enter is also important. A single word will probably produce too many "hits", many irrelevant to your enquiry. A twenty word entry will be very slow to process. A three or four word entry will probably result in the material you want appearing at the top of the list.

Remember to include synonyms in the list and to avoid negatives.

## LEAVING FIND AND RETURNING LATER

If none of the "hits" offered is of interest, you can leave your particular Find enquiry by selecting **Main** from the menu bar. You can then leave **Find** altogether by selecting **Contents**. The more usual way of leaving Find is by looking at one of the items it has offered. Suppose, for example, you are looking at a picture set on moths that you have previously found. Now select **Find** and you see that your previous query is shown in the lowest box. You can use the COPY key on the keyboard to transfer this into the topic enquiry box (once this has been highlighted) if you want to change it before putting the query again. But if you want to move straight to your list of previous hits, you can select the **Old** option on the menu bar and the list will be redisplayed.

The system should give you the flexibility you need to follow up topic queries as well as making new ones.

# 7. CONTENTS - THE HIERARCHICAL APPROACH

Everything on the Countryside Disc Database is organised within a hierarchy of subject headings and this can be used as a means of locating information on the disc. It is an imperfect method of retrieving all the database has to say on a subject, which may be better achieved via keyword-association. The hierarchy is very useful to clarify what sort of subject areas the database is likely to cover. It is a contents list of data, text and pictures. The top two levels of the hierarchy are listed in Appendix 2.

## THE BRANCHING HIERARCHY

The hierarchy starts at its top level by classifying everything under five main subjects: AGRICULTURE & FORESTRY, THE ENVIRONMENT, RURAL ECONOMY, RURAL SOCIETY and SPECIES PICTURES. Each of these is sub-divided into further subject headings, each sub-divided further until eventually, at the bottom end of each "twig" of this tree are the names of the actual items stored under this set of subject headings.

The use of the hierarchy to locate items begins normally with the selection of the **Contents** option from a top-level menu bar of the database. This will produce a display of the top five subject headings.

You select one of these to examine further by moving the pointer over the item required until its number changes colour to yellow and then you press the "Action" button. Immediately the subject you chose will become the heading of a new screen display showing the sub-headings under your nominated topic. Choosing **The Environment** will produce **Climate, Geology, Heritage Preservation, Landscape, Pollution, Soils, Topography, Water Resources, Wildlife** and **Conservation Issues**.

You continue to select a subject from the screen display at each level until eventually you arrive at a list of bottom-level item names. At this stage you can choose to display one of the actual items.

The following five pictures show how you descend from the 5 topics at Level 1 to Level 5 where you can select an item to see:
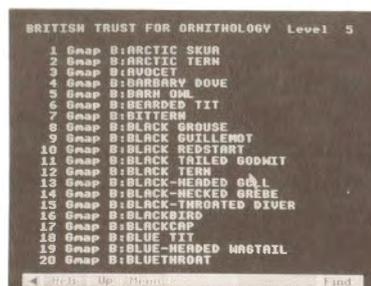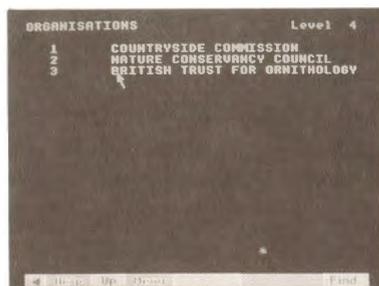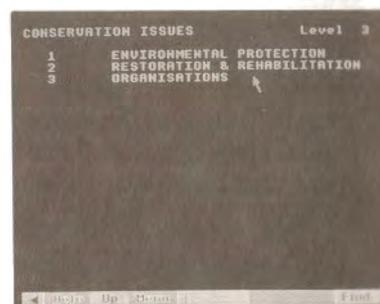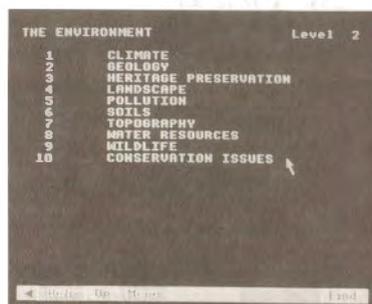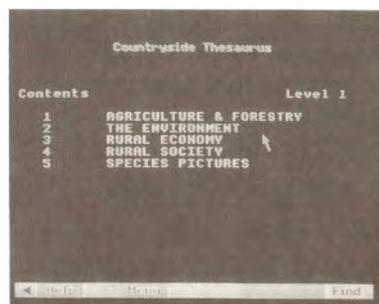
## RETREATING BACK UP THE HIERARCHY

After you have moved on from the first screen of subject headings you will find that the menu bar becomes:

| ◀ | Help | Up | Menu | | | Find |
|---|------|----|----- |---|---|------|

If you feel you have "taken a wrong turn" in your progress down the hierarchy, you can step back up the tree by selecting the Up option from the menu bar. This will display the previous screen from which you descended to the current list of headings. You can then make a different selection at some higher level to move down a more suitable branch.

## REVIEWING CROSS-REFERENCES

Every item in the hierarchy is cross-referenced by our indexers to other parts of the hierarchy where there may be material on similar subjects. Having threaded your way down a branch of the hierarchy and achieved a list of item names, you will find that the menu bar becomes:

| ◀ | Help | Up | Menu | | Cross Ref | Find |
|---|------|----|----- |---|-----------|------|
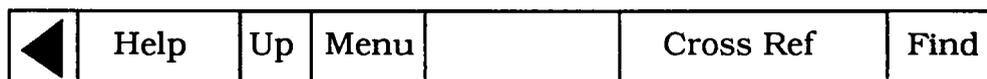
You can display the names of all the other items cross-referenced from items on your basic list by selecting **Cross Ref** from the menu bar. The list of cross-references may extend to several screens and you page back and forth through them in the usual way, by placing the pointer towards the right or left of the screen and pressing the "Change" button to move respectively forwards or backwards, or press F7 for "previous" and F8 for "next". The first screen will always show your primary list of item names.

Hint: Don't be surprised if you sometimes find an empty items-list at the bottom of a branch of the hierarchy. This simply means that there are no items stored directly under this part of the tree, but there are still cross-references to items stored elsewhere. Selecting **Cross Ref** from the menu bar will call up the related items for you to review.

## EXITING FROM CONTENTS

On completion of your exploration of the hierarchy, you simply select one of the items in your final list. Alternatively, if there is no item you wish to work with immediately, you select the other index-search routine from the menu bar - **Find**.

If you have been using an item through **Find** and then choose **Contents** you will find yourself at that point of the hierarchy where your item was lodged. This enables you to check on related items. To return to the top level of **Contents** choose the **Up** option on the menu bar.

When you exit from an item found via **Contents** you will return to your old hit list, which enables you to make a further selection from that list. The item list will not be lost until you generate a new one by one of the other index search procedures.

If you choose **Contents** after using an item via **Find**, you will find yourself at that point of the hierarchy where your item was lodged. This is a useful aid to checking on related items. To make your way to the top level of **Contents** choose the **Up** option on the menu bar.

# 8.   LOOKING AT PICTURE SETS

## INTRODUCTION

The Countryside Disc contains many excellent species pictures, which are on both sides of the disc.  They are grouped in sets by type of plant or creature and cover the main species to be found in Britain.

The text which follows relates only to their use on Side 2, the Countryside Database.

## VIEWING THE PICTURES

You can arrive at a picture set in three ways:

1.    By choosing it from a **Find** "hit" list after the entry of keywords;

2.    By choosing it from the hierarchical **Contents** list,  where section 5 is devoted to species pictures;

3.    By entering its known name directly in the **Find** option.

As you arrive at any picture set, you are presented with the first picture.

To see a list of all the pictures in the set, select **Index** from the menu bar.  This shows you in item order short captions for each picture in the set.  They are set out like this with a maximum of 22 captions to a page:
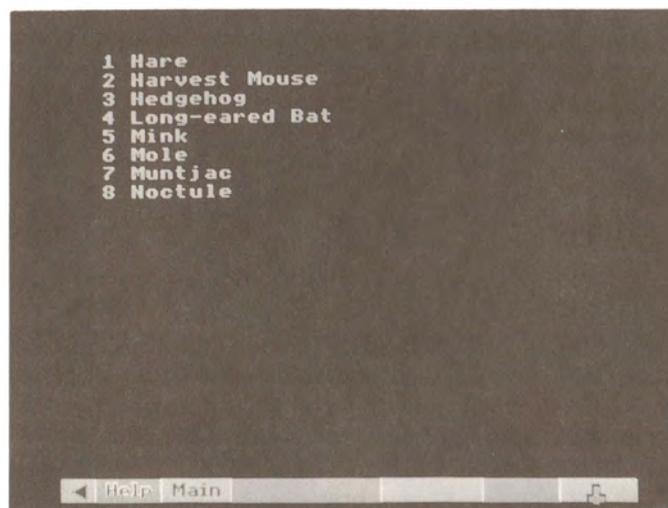


If there are more than 22 pictures in the set, page on to the next list in the usual way.  Select any picture by pointing to it and pressing "Action".  The picture will be shown without caption, but **Description** may be chosen from the menu bar, which will reveal a long caption.  To restore the picture alone, select **Clear** from the menu bar.  Select **Description** to bring back the caption again.

If you want to go further and remove the menu bar itself, this can be done by moving the pointer over the blue triangle at the lefthand end of the menu bar and pressing the "Action" button, or by pressing function key F0. A reversed yellow triangle is left on the screen instead of the menu bar. Select this (or press F0 again) to bring the menu bar back. To remove the yellow triangle also, use function key F9 (there is no trackerball equivalent). This will remove all micro output from the screen, leaving only the photograph. Press F9 again to restore the triangle.

The picture quality of the photograph on the screen can be changed by adjusting the contrast, brightness and colour on your monitor. However some monitors are set to receive a direct RGB signal and this may limit the amount of adjustment you can make. We have tried in producing the disc to keep the picture quality as uniform as possible. We have not wanted to restrict our choice of pictures to those that are ideal for video display. You may have problems with some pictures that contain very fine lines, unless you are using a very high resolution monitor.

To bring up the next picture you use the normal procedure for paging forwards or backwards. Move the pointer anywhere on the right-hand side of the screen (above the menu bar area and below the message area) and press the "Change" button. Conversely you can page backwards through the pictures by pressing "Change" with the pointer on the lefthand side of the screen. Keyboard paging, as usual, is with function keys F7 and F8. If there are no more pictures available as you page forwards or backwards, you will hear a tone.

Remember that all references to pictures on the disc are to whole picture sets. Individual pictures are not indexed until you get to the set itself. However, each picture set is associated in the main index with up to 20 keywords which includes the names of all species, so an important picture or subject within a set will be found as the result of a Find query using this word.

In this case you will still be brought from the index search to the front of the picture set. You will then have to find the picture you want within the set from the front index to the set itself. For example, there is no picture set devoted exclusively to lizards, but the picture set "reptiles" does contain a picture of a lizard. If you enter "lizard" from Find you will be offered the "reptiles" set as a whole. When you have called this up and consulted its own front index, you will find the picture of a lizard as the second picture in the set.

## THE OTHER FUNCTION ON THE MENU BAR: DESCRIPTION

Select this for a long, descriptive caption to be superimposed over the photograph. This will include much factual information about what is in the picture, who took it and so on. Select **Clear** to remove the description.

**Hint:** You can page through photographs with no captions, or with long captions displayed. However, paging forward with the long captions active produces a slight delay betwen pictures as the caption information is picked up from the disc. It is, therefore, faster to page with no caption only, and pick up the full description only when you need it.

# LEAVING PHOTOGRAPHS

You can leave the **Photo** operation at any time by selecting any of the other top-level operations from the menu bar. **Find** or **Contents** will take you back to those two ways of choosing new items to look at.

You can also leave by pressing ESCAPE. This will take you (after a confirmatory prompt) back to the videodisc main menu and reset the system to its starting condition.

# 9. READING TEXT

This chapter decribes how to find and read all the text contained on the Countryside Disc Database.

Whatever its source, all the text looks the same as it is presented on the screen. It is not possible to preserve the typographical layout adopted by different publications.

What follows decribes how to find and read the text you want on any topic. Remember that it is articles as a whole that are indexed. This means that there may be a reference to a particular point in one paragraph of an article that is not reflected in the index. The best strategy, as elsewhere on the disc, is to use medium range keywords like "sheep" rather than very specific terms like "Herdwick".

## READING THE TEXT

You can arrive at a piece of text in three ways:

1. By choosing it from the **Find** "hit" list, after entering keywords;

2. By choosing it from the hierarchical **Contents** list;

3. By entering its known name directly in the **Find** option.

An article with no internal section divisions simply begins at page one. Articles made up of sub-sections begin with a contents page with section headings:
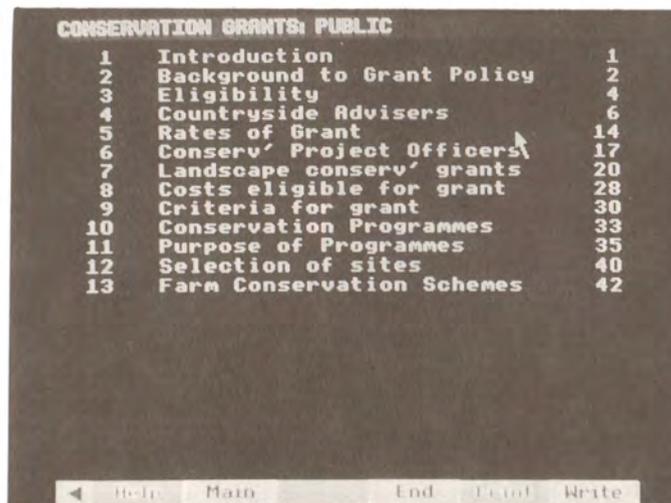


```
CONSERVATION GRANTS: PUBLIC
     1    Introduction                      1
     2    Background to Grant Policy         2
     3    Eligibility                        4
     4    Countryside Advisers               6
     5    Rates of Grant                    14
     6    Conserv' Project Officers         17
     7    Landscape conserv' grants         20
     8    Costs eligible for grant          28
     9    Criteria for grant                30
    10    Conservation Programmes           33
    11    Purpose of Programmes             35
    12    Selection of sites                40
    13    Farm Conservation Schemes         42

  ◀   Help    Main            End    Print   Write
```

The page in which each section begins is shown on the right. You can select any section directly. When you are reading the section itself, you can page forwards and backwards or return to the front contents page by selecting **First** from the menu bar.

When you arrive at the page you want you will see the page heading you selected at the top of the screen, together with the page number. The text itself uses a narrower column than the whole screen and is proportionately spaced. This, together with the colours used, is designed to make it easy on the eye. Yellow is used for words that the authors wanted to emphasise - the equivalent of italics in a book or underlining in typescript.

At any point you can leave the text by selecting **Main** and moving back to the **Find** or **Contents** option.

As you read the text, you may come upon a reference like **[see Figure 3]**. You can select this illustration by moving the pointer within the brackets and pressing "Action". Most of the essays on the Countryside Disc are illustrated.

Return to your text by selecting **Main**.

When you are reading an item of text your menu bar will be as follows:

| ◀ | Help | Main | First | End | Print | Write |
|---|------|------|-------|-----|-------|-------|
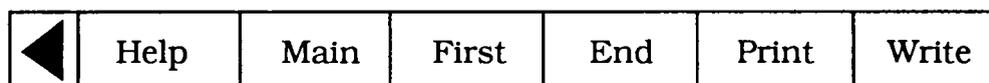
**Help**  Select this option to access the **Text** help or to enter a **System** command

**Main**  Select this option if you wish to leave the item of text and return to the level from which you made the selection.

**Print**  If you have set up a printer selecting **Print** will produce a print out of whatever text is on the screen. If you select **Print** without a suitable printer on-line, you will hear a beep and see an error message to that effect. A serial printer can be used after an appropriate operating system call in **Help**. The printer itself can be configured before the Disc is booted up or via a machine code printer driver called from **System** (within **Help**).

     To print out the next screen, page forward and re-select **Print**. Only the most straightforward type of printing is produced without, for example, highlights. For more complicated results, first save the captions to floppy disc with the **Write** option.

**Write**  To record the text on the screen to magnetic disc, select **Write** from the menu bar. You are asked to confirm that the drive is ready with key [R] for 'Ready'. Pressing any other key will cancel the command. If you press [R] and a suitable drive and disc is not connected to the micro, the system will 'hang': i.e. it will freeze and not respond to any more commands. If you cannot correct the problem (e.g. by closing the drive door), there is no alternative to booting up the videodisc again. Downloading is only possible to an ADFS-format disc. If an ADFS error occurs (e.g. 'Disc full'), this will be displayed at the top of the screen for three seconds.

     Text is stored in a simple ASCII format with no control characters. In this form it can be read into VIEW or most word processing systems. For details of this and the file names used, see Appendix III of the Domesday User Guide.

**First and End** These take you directly to the first or last page in the article. You can then page forwards or backwards from there.

# 10. AN INTRODUCTION TO NUMERICAL DATA ON THE COUNTRYSIDE DISC

This chapter outlines the nature of the numeric data held on the Countryside Disc. It does not go into the ways this data is displayed on the screen, which are dealt with in detail over the two following chapters.

## SOURCES

The statistical data on the Countryside Disc is a cross-section of information about Great Britain currently held in the public domain. It is drawn from a variety of the country's recognised sources of quantitative information, both in the public and private sectors. The major government reports and surveys are represented, including the 1981 Census, together with a very wide range of specialised studies from public bodies and research institutions.

The spread of topics covered in the Countryside Disc data, and the level of detail available for each subject, is broadly representative of the relative attention each subject has received in the UK's research programmes over the early 1980s. Inevitably there are imbalances and gaps. Pure environmental data is not monitored to the same extent as social science data, consequently many datasets are limited in the areas and detail they cover.

The Countryside Disc cannot provide exhaustive quantitative information on all environmental subjects. Its scope, nevertheless, is an informative reflection of how the UK chose to measure its environment and countryside and its progress in the 1980s.

## DIFFERENT TYPES OF DATA

There are various types of numeric data on the Countryside Disc and the system handles each of them slightly differently. It is therefore important to be aware what kind of data is currently being dealt with, as the options available to you will be limited by the type of data you are using.

### Mappable v Tabular

Mappable data consists of statistics which relate to geographical areas. The population of each county, the presence of a certain species in each 10-kilometre square and or the type of soil are all examples of mappable data. These items are shown in hit lists with either the prefix "Gmap" or "Amap".

Tabular data consists of general statistics which are not particularly related to geographical areas, but classified according to a variety of other general factors. Typically these are multi-dimensional displays derived from cross-tabulations. They are shown in hit-lists with the prefix "Data".

### Grid-mappable v Areal-mappable

Within the broad category of mappable data there are two sub-types, according to the kind of geographical unit to which the data refers.

Grid-mappable data is mappable data recorded for regular map-squares either 1Km squares or multiples up to 10Km squares. These are shown in hit lists and Find by the prefix "Gmap".

Areal-mappable data is mappable data recorded for irregular areas of the map. These are shown, in hit lists by the prefix "Amap". There are twenty-two standard types of irregular area recognised by the system, including Standard Regions, Counties, ITV Regions, Postcode Areas, etc. These are referred to as "areal units". When you come to use areal units, for example in the Area function, you can see a list of their standard names by calling up the **Help** sequence.

**Hint:** Where a data set appears in both forms, we have used the conventions of ending the name of the grid-mappable version with a full stop.

## Incidence and Category v Quantitative

Quantitive data is the normal situation where the numeric values recorded measure a quantity of some sort and the relative magnitude of each value is meaningful against an understood scale, e.g. 10,000 people, 55% car-owning, £9,500 per annum, etc.

Incidence and category data is a special kind of mappable data where the values recorded are not quantitative measurements but simply an indication of the presence or absence of some feature (INCIDENCE) or are acting as references to a series of discrete categories (CATEGORY). For example, data on the distribution of species are often incidence datasets, with the species either being observed or not observed in each geographical area. This type of data consists of the numeric values 0 and 1, but these are purely nominative and have no arithmetic value. Similarly, soil survey or bird census data are recorded as a sequence of numbers indicating categories. Detailed explanation of the categories can be found by selecting the **Text** option.

## Additive v Non-additive

Data is additive when different values recorded in the set of data can be added together to produce a meaningful total.

Data is non-additive when adding up values from the set is not meaningful. Only additive data can be totalled by the system as it would be nonsense to allow "incidence" or "category" data to be added together.

## Counts v Ratios

There is a slight variation on the additive/non-additive distinction with particular relevance to mappable data.

Mappable COUNT data is additive data of the type discussed above, recording the absolute number of amount measured over the area, for example the total number of people in an area.

Mappable RATIO data is non-additive data as described above, recording a relative value, e.g. the number or people per household in the area.

The importance for data mapping is that to draw a map of COUNT data, whilst apparently reasonable, is usually meaningless in practice. For example if you were to draw a data-map showing the number of people in each county you would simply be demonstrating the trivial fact that the larger counties tend to have more people than the smaller counties. You will argue that you are in fact looking for an anomalous county, i.e. a large county with few people, but this is far better achieved by plotting RATIO data, i.e. the number of people per household. When there is doubt, the data text accompanying every dataset will clarify the situation. To access this text, see the sections on the **Text** option in the two following chapters.

# Countryside User Guide

## ORGANISATION OF DATA IN DATASETS

Numerical data on the Countryside Disc is organised into many datasets, each identified with an item name of up to 30 characters and accompanied by control information informing the system what kind of data this is, how it has been indexed and classified within the system, and parameters which the system will need when it comes to access this data.

You can forget about the control information; it is there for the system's use and won't concern you in practice. Note, however, that it includes default specifications for an initial display of the data on which you can begin to work with minimum preamble.

Hint: Check Data Text Pages

Don't worry if the initial display of a data map seems to be rubbish, e.g. all one colour. The default is usually set to cope with the spread of data over the whole country and the particular section of this displayed initially for you may not look all that sensible. But if you get a strange map, you can change it immediately to something more meaningful. See the section on the Local/National options in the next chapter.

As mentioned earlier, each data set also has a set of associated text pages written by the experts who prepared the data for the disc and offering important guidance on the use of this data. Most surveys have specific objectives and quirks in both methodology and results. It is important to appreciate these factors if the data is to be interpreted sensibly and the value of studying the data text carefully cannot be overemphasised.

Each mappable dataset contains values of a single statistic listed for all the geographical areas in which it is available.

By contrast, TABULAR datasets are compiled as large, multi-dimensional tables which contain statistics for many different groupings.

The main effect of the limited scope of each mappable dataset, as compared with the much broader scope of tabular datasets, is that comparisons of mappable data will involve a great deal of comparison between datasets. Comparisons of tabular data will all take place within the one dataset, comparing one subset with another.

## MEANINGFUL DISPLAYS OF RAW DATA

The Countryside Disc system concentrates on displaying numeric data in colourful and meaningful screen displays rather than as tables of figures. This does not mean that you are only receiving a pre-arranged presentation of the data each time, as you would in a reference book or report. The basic philosophy is to give you access to, as far as possible, raw data so you can construct your own displays of the data and enable you to draw your own conclusions about its meaning. Therefore, the data on the disc is stored as raw values and there are ways to display these actual numbers. However, the main emphasis is on revealing patterns in the data and allowing the user to change and refine the screen display.

Mappable data is usually displayed as a transparent coloured overlay on top of a video map. We call this a 'data map' and it looks like this:
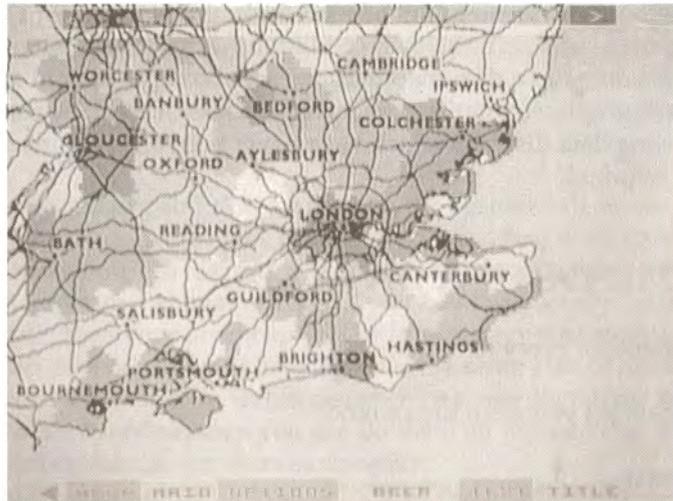


Tabular data is displayed in a range of statistical diagrams such as bar-charts, pie-charts and line-graphs. We call these data-charts and they look like this:
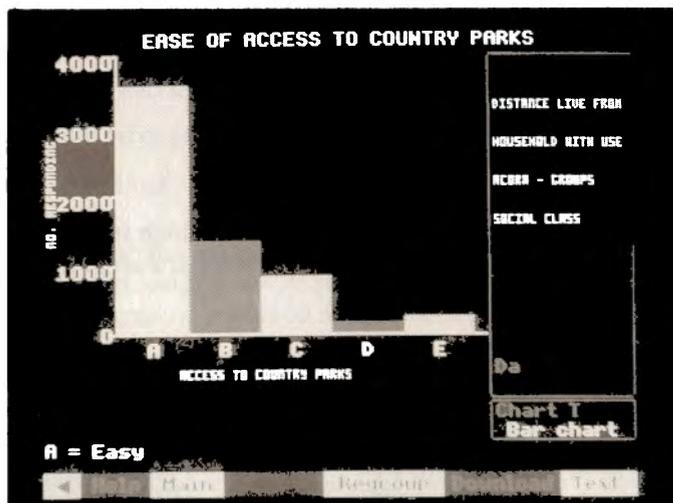


The next two chapters describe how to build and work with these displays.

You need not worry about which display procedure handles which type of data. The system automatically adopts the correct mode when you select a numeric dataset of any kind. Equally, you need not try to remember what processes are possible with different kinds of data. The system will monitor your chosen dataset and guide you through what is available.

# 11. DISPLAYING AND MANIPULATING DATA MAPS

Mappable data is displayed as a coloured overlay on top of a video background map, with the overlay made transparent so that the details of the map can be read through it.

It is worth bearing in mind as you build a data map that you are accomplishing in a few minutes what would take a professional cartographer or statistician perhaps weeks of work by conventional means. In fact, you will often be producing data displays which have never been seen before, simply because of the prohibitive amount of work required.

## THREE MAIN ELEMENTS OF A DATA MAP

There are three main components of every data-map:

> The mappable data set you want to examine
>
> The area of interest
>
> The elements which make up the overlay: either
> grid squares or areal units

The **mappable dataset**, as seen in Chapter 10 is a series of values for a single statistic which you have identified as being of interest to you, listed for all the geographical areas over which it has been measured.

The **area of interest** is the geographical area over which you wish data to be mapped and therefore determines the background for your data map.

The **elements of the overlay** are the individual colour-coded areas which represent the actual data. They might be grid squares of between 1Km and 10Km or one of the standard areal units recognised by the Countryside Disc system.
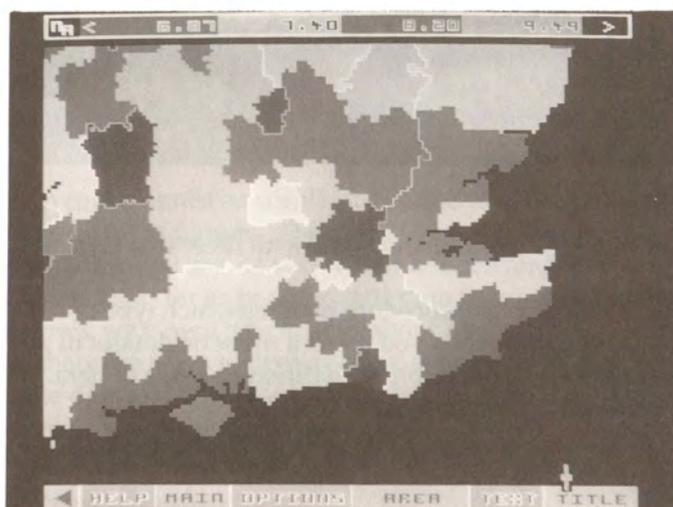


This display shows a mappable dataset before the video map has been introduced - after the map appears this overlay becomes opaque.

# ENTERING THE DATA-MAPPING PROCEDURE

You get into the data-mapping system by using one of the index-search methods (either **Find** or **Contents**) to identify a hit-list of items which refer to the subjects in which you are interested and then select a mappable data set which you would like to display. These have the prefix "**Gmap**" for grid square data or "**Amap**" for areal unit data. Your search can be restricted to mappable data by excluding categories as explained in Chapter 7 under **Find**. The system will automatically invoke the data-mapping procedure.

When it comes to display a mappable dataset for you, the system will assess what instructions it has. From your index-search it knows the name of the new dataset you want to see, but how does it decide on an area of interest to show you? In fact the system will always remember the last area of interest you specified and immediately use that again. Thus, if you have previously drawn a data-map during this session of using the disc, then your new map will be drawn over the same area of interest as last time. This allows you to map several different datasets over the same area of interest without having to repeat the control specifications each time. In fact, it can even be easier than that. If you want to build a string of map overlays, one after the other, then you can do them all without ever leaving the data-mapping sysem, as will be described later in the **Name** sub-option.

Suppose, however, that this is the first data map you have drawn during this session with the disc and you have not previously specified an area of interest. In these circumstances the system will force you to provide this information before going any further. Similarly, if you have a previous area of interest, but you know it is not appropriate to the new data you want to see, then you can explicitly invoke the system to change the specification. Finally, if you have completed a data-map display and would like to replot the equivalent overlay for a different area of interest then you can invoke the re-specification procedure.

This procedure is called **Area** and it is described in detail in the following section.

Hint: Time Saving for Data Maps

It is never a good idea to let the system go ahead and build a redundant map overlay using an old set of parameters, thinking you will change them as soon as it gets on the screen. You will waste a lot of time as there is a huge amount of processing involved and a finely detailed map could take minutes to plot.

Also, if you expect to draw data maps of several mappable variables, it is a good idea to identify all of their item names during your index-search and before electing to display any of them. This will allow you to call them up from the data-mapping procedures without having to come back to the index all the time. It will save you a lot of time. Keep a notebook handy and note down the names of items absolutely letter-perfect: punctuation, spaces and all. There is more detailed explanation of this in the section on the **Name** option later.

You can specify your area of interest by selecting the **Area** option wherever you are in the system. If a mappable data item is selected from a hit list produced via **Find** or **Contents**, then you will automatically be forced into the **Area** option.

## The Area Screen

However it is invoked, **Area** first presents the user with a video map of the whole of the UK, oriented towards the right of the screen. On the left the system displays a series of data-entry boxes, as follows:

**Type of area (eg County):**

| STANDARD REGION |

**Name of area (eg Kent):**

| SOUTH EAST_ |

**Grid Ref. 1:**

**Grid Ref. 2:**

You may also see a blue rectangle already superimposed on the UK map, but only if you have specified an earlier area of interest and the system is reminding you of the boundary of the background map which enclosed it.

### Using areal units to specify a new area of interest

The two upper data entry boxes on the **Area** screen are designed to receive details of the area of interest for your next data map, specified as one of the standard areal units recognised by the Countryside system. See Appendix 3. You make an entry in either box by moving the screen pointer into it. It will highlight indicating that it is active and you key the entry in the normal way, ending by pressing the "Action" button.

After one box has been keyed the system will prompt you for the second entry. For example, having entered a "type" a prompt will appear in the message area that a "name" is also required.

Having received both entries, if the system cannot recognise your areal unit it will beep and display an error in the message area:

Area type not recognised  - see Help

or

Area name not recognised - see Help

This usually arises when you have not used the exact spelling of either entry, as used in Countryside. However, the system is referring you to the fact that the menu bar, as always, carries a **Help** option and at this stage the **Help** system includes a special option: **Areal** which will give details of the types and names of areal units, showing you the expected spelling. After reference to the **Help** pages, you can correct any error by selecting **Reselect** from the menu bar and re-entering the specification from scratch.

You should note that the data-entry boxes are not always long enough to take the full name of their areal unit. In these cases be sure to type all the first 20 characters of the areal unit name, even the spaces, so that the system can make an exact match.

When the system recognises that a valid "areal unit" area of interest has been specified it calls up two important elements needed for the data map:

> A specially drawn background map, stored in one of the video frames, which completely encloses the boundary of the areal unit.

> A digital representation of the boundary of the areal unit so that the system can determine whether any point on the map is inside or outside the areal unit in question.

Given a recognisable areal unit, therefore, the system can immediately find a background for your data map and knows the region within that background which constitutes the actual area of interest.

**Using grid references to specify a more general area of interest**

Sometimes you might wish to specify an area of interest which does not match any of the standard areal units. In this case you use the lower data-entry boxes to specify your area of interest by grid references.

An area specified in this free-form way can only be a rectangle, defined by the grid references of the South-Western and North-Eastern corners. Please note that this rectangle does not have to be the same shape as the screen. It can be square, flat and wide or tall and thin.

As with the upper boxes, you "activate" either of the lower boxes to receive input by moving the pointer into the box, causing it to change colour. You then key the appropriate grid reference, expressed according to either of the standard methods:

> An all-numeric reference comprising a simple Easting and Northing from the National Grid origin, each in up to five digits, with a space separating the two co-ordinates, e.g.

> 05268 01583 (Resolution 100m, 526.8km East, 158.3km North) 0527 0158 (Resolution 1Km, 527km East, 158km North) 053 016 (Resolution 10Km, 530km East, 160km North) 05 02 (Resolution 100Km, 500km East, 200km North)

> Or the other system in which the first two digits in each part are recoded as a pair of letters. Repeating our examples: TQ 268 583 TQ 27 58 TQ 36 TQ

Please note that around each part of the UK map shown on the **Area** screen a pair of calibrated axes has been placed to help you find appropriate grid references. You press "Action" after each entry. It does not matter which you enter first, but after one is keyed successfully, the system will remind you in the message area that the second is required. The system may also use the message area to report problems:

> **Grid reference has an invalid format** means that your input is not a valid reference in either of the schemes. The entry must be re-keyed using the correct grid reference.

Please note that when an area of interest is specified by grid references, the system will not use a video background map, as the chance of finding one which adequately matches the customised area is small. Instead the data map will be plotted on a black background and the user will work with the coloured overlay alone. Other aspects of the system operate normally.

**How you can have second thoughts**

Your area of interest, whether specified by areal unit or grid references, will be drawn as a yellow rectangle over the UK map on the screen.

If you specified an areal unit then the rectangle shows the boundary of the background map which encloses the area of interest and the total background area over which the data map will initially be plotted. (N.B. you can restrict the map to your precise area of interest using the **Window** function described later). Also for areal unit specifications, the system will display in the lower data-entry boxes on the screen a pair of grid references which pinpoint the South-Western (lower left-hand) and North-Eastern (upper right-hand) corners of the yellow rectangle.

If you specified your area of interest by grid references then the yellow rectangle exactly represents the defined area.

If for any reason you are unhappy with the area of interest you have specified then you can select **Reselect** from the menu bar and the system will return you to the start of the **Area** operation to begin again.

**Return from an Area operation**

You will remember that your use of **Area** will be "forced" if you asked to display a mappable data set without having previously specified an area of interest. In this case, after you have specified a satisfactory area, the menu bar will carry the option **Main** and selecting this will immediately complete the data map display you originally asked for.

Similarly, if you select **Area** when examining a data map in order to choose a new area of interest for the current (or subsequent) data map you will need to select **Main** in order to replot the overlay.

Any alternative options offered on the menu bar can be selected at any time during your work with **Area**, in which case your current attempt to specify a new area of interest will be abandoned and any previous specification will continue in force as the current area of interest to be used in data-mapping.

## Plotting the Initial Data Map

You will have arrived at this point in one of two ways:

Firstly you might have selected a mappable dataset to display and the system forced you into **Area** to specify an area of interest, whence selecting **Main** brought you back to complete the plot. Or secondly, you selected a mappable dataset to display and the system immediately went ahead on the basis of an area of interest which had previously been specified, either as a result of a previous mapping operation during this session with the disc, or your explicit selection of **Area** to set up the area of interest.

Either way, the plotting of the data map is now in progress.

**Data loading phase**

The system will now display a message in the message area:

Loading data

This is to reassure you during the pause while it retrieves data from the videodisc. It is going through the entire set of values stored for the variable you have chosen and selecting those which are within the background area enclosing your area of interest. There will be no video display during the data-loading operation.

### Building up the overlay

The map overlay will now begin to build up on the screen. Depending on whether it is plotted in many small or fewer, larger "patches", this may be a time-taking process, perhaps lasting some minutes. The worst case will be for 1km grid square data as this is the finest resolution available. You will see that the overlay is plotted in regular blocks and in coastal areas the sea appears as a single colour. You will also notice that the graphic output of the micro is converted to transparent form during the plotting of the overlay. There will be no video display of the background map until the overlay is complete.

### Adding the background map (if applicable)

When the coloured overlay is complete, the system will display under it the video background map enclosing your area of interest, providing this was specified as one of the system's standard areal units. If you specified the area of interest by grid references then, as noted earlier, no background map will be displayed.

Hint: Brightening the Transparent Overlay and Menu

When the map overlay "goes transparent" the message area and the menu bar go with it and this can make them difficult to read. When you come to perform interactive manipulations on the overlay, you may prefer to toggle off the background map by pressing "Change", which will also bring up the micro output in solid colour, making it easier to read. A further press of "Change" will restore the background map and the transparent overlay.

## What have we got?

At this stage, let's pause to review what we've got on the screen. We'll assume that you have a typical display, background map and all, similar to the example illustrated above.

We've discussed the background map and the general nature of the overlay. Two new elements have also appeared: a display in the message area showing the title of the mappable data set displayed in the overlay, and a new set of sub-options in the menu bar at the bottom:

| ◀ | Help | Main | Options | Area | Text | Key |
|---|------|------|---------|------|------|-----|
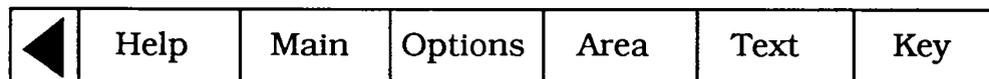
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## The KEY Option

Selecting **Key** from the menu bar displays a key to the colour-coding of the map overlay. The message area now consists of coloured strips:

| N/A | <       100 | 200 | 400 | 600 | > |
|---|---|---|---|---|---|
| (black) | (blue) | (cyan) | (green) | (yellow) | (red) |

Each colour along the key-bar corresponds with a colour used in the map overlay and displays the range of data values it represents. In our example above, the colour blue represents data values up to and including 100; cyan represents data value greater than 100 up to 200; green up to 300 and so on, with red representing all values greater than 600. The choice of colours here follows the conventional "temperature scale" of colours where cool colours like blue tend to represent low values and hotter colours like red represent high values.

The segment at the lefthand end containing the symbol "N/A" over a black background (which appears completely transparent in the translucent form of the overlay), represents areal units where this data is "not available". This caters for surveys which have not recorded data for certain areas. In very exceptional and unlucky circumstances it is possible that you have specified an area of interest for which all of the data is non-available. In this case, rather than plot an entirely invisible overlay which is bound to confuse you, the system reports in main display area:

## All data in this area is missing

Please also note that the key-bar is surrounded by a white border. This becomes an important signalling device later in the **Class** function.

The values shown in the key-bar are known as the "class intervals" since they define the colour-classes into which the range of values for this particular mappable statistic have been divided.

When **Key** is selected, this option is immediately replaced on the menu-bar by **Title**. Selecting **Title** simply goes back to the original display of the title of the mappable data set in the message area and, of course, **Key** reappears on the menu bar.

### Where did the initial class intervals come from?

Every mappable dataset is stored with information which includes some "starter" class intervals in order to get an initial display on to the screen as quickly as possible.

You will also notice that so far you have had no influence over the size and shape of the "patches" making up the overlay. The system also picks these up as a default specification.

Both the class intervals and the overlay parameters can be changed and manipulated, as described in the rest of this chapter.

## THE SPECIAL CASE OF INCIDENCE DATA MAPS

You will remember that an incidence dataset is a mappable set where the values stored are not really numerical quantities but simply indicators (1/0) of the presence or absence of some phenomenon. For incidence data the key-bar is slightly different:

| N/A | Absent | Present |
|-----|--------|---------|

(black)          (blue)          (red)

You will see that there are only two colours in the data map and these represent "presence" or "absence". There are no class intervals in this data map, since they are meaningless.

# What now?

The menu bar at the bottom of the screen now contains a number of sub-options for working with the data map.

| ◀ | Help | Main | Options | Area | Text | Title |
|---|------|------|---------|------|------|-------|

The sub-options are:

| | |
|---|---|
| **Text** | Display the explanatory text attached to this data set |
| **Options** | Explore the data map further |
| **Area** | Re-select your area of interest |

These are described fully in the following sections.

## Text

Selecting this option displays the first page in a series of text pages written by the specialists who compiled this dataset to give you more information about this dataset.

**Hint:** Read Data Text Before Mapping Data

We strongly recommend that you read this text if you wish to draw conclusions from the information in the dataset. All surveys have anomalies, as well as particular methods and aims. These are described in the data text and they are vital for correct interpretation of the data.

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The display and manipulation of data text pages operates exactly like the main system for displaying Text. Please refer to that section for more details on moving around the data text.

Selecting **Main** from the menu bar after finishing with the data text will replot your data map in its latest form.

## Options

Selecting **Options** from the menu bar will display a new menu bar:

| ◀ | Help | Main | Analyse | Link | Correlate | Name |
|---|------|------|---------|------|-----------|------|
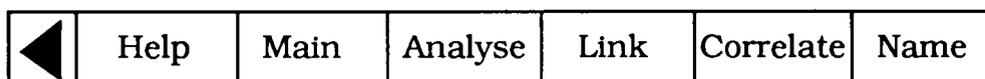
### The Analyse option

Selecting this option allows you to examine and manipulate the data map more closely. It allows you to narrow down the map to the precise boundaries of your area of interest, change the class intervals of the map and their colour-coding, change the areal units of the overlay and interrogate the data map for further information. These functions are described in the next section.

### The Compare options: Link, Correlate and Name

The options **Link, Correlate** and **Name** allow you to make a variety of comparisons both visual and statistical between different mappable data sets. Each function is described in the next section.

### The Main option

Selecting this option from the menu bar on a main data map display will take you out of the data-mapping procedure back into the top-level index-search functions. This will happen if you respond positively to the prompt: **Are you sure you wish to exit (Y/N)?** You may be re-presented with the "hit-list" of item names which resulted from your last search of the index, from which you can select another item to examine. Alternatively, you can initiate a whole new search of the index using **Find** or **Contents**.

## Analyse in more detail

This function allows you to manipulate the overlay part of your data map. Appendix 4 shows the options available when you select **Analyse** in the form of a diagram. Upon selecting the **Analyse** option from the menu bar on a main data map display, the menu bar becomes:

| ◀ | Help | Main | Class | Detail | Window | Retrieve |
|---|------|------|-------|--------|--------|----------|
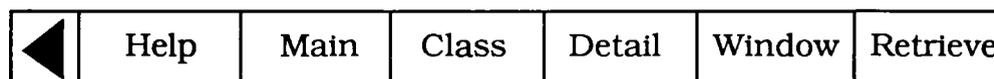
**Window** is only offered if you specified your area of interest using one of the standard areal units recognized by the system. It will not be offered if your area of interest was specified by grid references. When available, this option allows you to confine the overlay to the region which lies inside the precise boundaries of the areal unit which is your area of interest. You will see the extraneous areas being "nibbled away", leaving a data map exactly fitting your area of interest.

Once selected, this option will disappear from the menu bar unless the data displayed are additive, in which case **Total** will appear. Often, this will be the only way to see the actual boundaries of your area of interest.

**Total** appears on the menu bar instead of window when the screen has been windowed, provided that the data displayed are additive e.g. number of animals. When selected there is a delay while the computer sums the data values within the boundary of the area of interest specified earlier within **Area**. The resulting value is displayed in the Message Area. **Clear** then replaces **Total** on the menu bar. When **Clear** is selected the message area returns to its previous display.

**Detail** allows you to re-define the areal units which make up the coloured overlay. You can vary the resolution of the areal units on the data map or change them completely. This option is described more fully below.

**Class** enables you to alter the class intervals by which the data map is plotted. It offers facilities to do this automatically, offering a choice of methods, or allows you to re-specify the intervals manually. You can also ask the system to deal exclusively with the data in the current screen area, or consider the broader national context for this data. This option is discussed more fully below, together with hints and examples.

**Retrieve** allows you to interrogate a data map for more information. You can ask for the name of an areal unit making up part of a map-overlay, the grid-reference of any part of the map, the actual numeric value represented by any of the colour-coded areas or the total of several areas, and you can download the data from the map onto a magnetic disc.

**Main** selected within **Analyse**, takes you back to the main data map.

## Detail in more detail

This function allows you to vary the level of detail shown in your data map. It is important to remember the distinction described in Chapter 10 between the two kinds of mappable data; areal-mappable and grid-mappable. Areal-mappable data is recorded for areal units other than simple grid squares, e.g. counties or standard regions. Grid-mappable data is recorded for grid squares of various sizes.

Upon selecting **Detail** the menu bar will become:

| ◀ | Help | Main | Resolution | Areas | | |
|---|------|------|------------|-------|---|---|
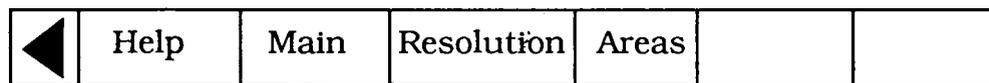
**Areas** is only available if your data set is areal-mappable.

**Resolution** enables you to change the size of the squared pattern making up the overlay. Smaller squares (i.e. increasing the resolution) will result in smoother-looking boundaries, but will increase the number of squares to be plotted. Larger squares will coarsen all the boundaries, but speed up plotting. The size of these squares is called the "raster" size. Each data set holds data recorded for certain raster sizes only and within each dataset, there is a limit to the level of rasterisation the

system can cope with, depending on the size of your area of interest. When you want to alter the resolution, the system will report in the message area at the top of the screen the raster sizes available for your dataset over the current area of interest, as follows:

for grid square data:

### Grids available: 1 2 3 4 5 6 7 8 9 10 km

or for areal unit data

### Raster size: 1 2 3 4 5 6 7 8 9 10 km

Most numbers are shown in blue, with the current size shown in red. To select a new size you place the screen pointer over the required new size and press "Action". The new size is highlighted in yellow. The menu bar at this stage has changed to show:

| ◀ | Help | Main | Replot | Areas | | |
|---|------|------|--------|-------|---|---|
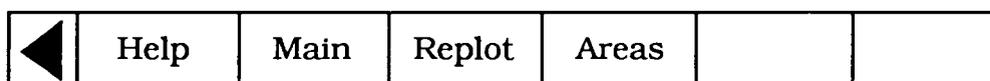
**Replot** asks the system to replot your overlay at the new resolution. This will leave you still in the **Resolution** sub-option in case you wish to make more adjustments.

The grids available for grid square data will depend on the type of data displayed. Many environmental datasets are only produced at 10 km resolution.

**Main** abandons your work on resolution and, keeping your original data map, takes you back to the top of the **Analyse** function.

**Areas** allows you to change the type of areal units by which an areal-mappable data map is plotted. For example you may have a data map in which the colour-coded elements of the overlay are **Postcode Area** and you would now like to see it mapped by **Standard Region**. On selecting **Areas** the message area will display the current type of areal unit, e.g.:

### DISTRICT

You select alternative types of areal units by placing the pointer in the message area and pressing "Change". This will cause the type to change to the next areal unit type in the list of types which are available for this particular data set provided there is an alternative to the type of areal unit displayed. Repeated presses of the button will allow you to scroll through all the available areal unit types. You will notice that the current areal unit type was shown in red whereas all the others are shown in blue. When the required areal unit is shown in the message area you instruct the system to use it by selecting the **Replot** option from the menu bar. The menu bar at this point has changed to:
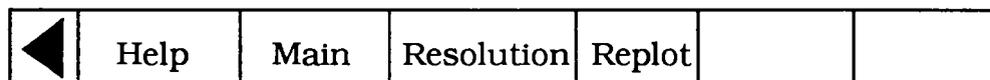
| ◀ | Help | Main | Resolution | Replot | | |
|---|------|------|------------|--------|---|---|

**Main** abandons your work on areal units and, keeping your original data map, takes you back to the **Analyse** function.

**Replot** replots your data map using your new areal units. This can automatically cause a change in resolution, too, if the combination of your current resolution and the new areal units is more than the system can cope with. In these circumstances the system will try to find a suitable coarser resolution at which it can plot this data using your new areal units. If there is none available then the system will object with a caption in the message area:

## No suitable resolution for this area

If, however, the replot succeeds then the system displays the new areal unit in red in the message area and leaves you in **Areas** in case you wish to make further changes.

**Main**, selected within **Detail**, takes you back to **Analyse**.

## Class in more detail

This option allows you to change the class intervals and colours by which the overlay is colour-coded. This option will not be offered if your data map is of incidence data, since class intervals are meaningless in that context. Incidence data is always mapped with only two classes: "present" (coloured red) and "absent" (coloured blue). You also should be aware that whenever you change the class intervals of a data map, the map will not automatically replot. Instead the system will wait for you to change and re-change intervals until you are satisfied. However, as soon as you alter the original intervals the white border around he key in the message-area will begin to flash reminding you that your data map no longer reflects the current classes. To action a replot you need to select **Replot** from the menu bar, as described later.

When available, selecting **Class** will change the menu bar to:

| ◀ | Help | Main | Manual | Automatic | | |
|---|------|------|--------|-----------|---|---|
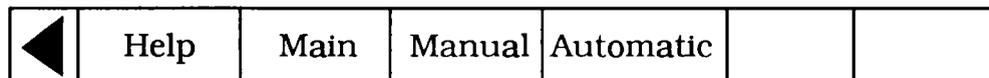
**Manual** instructs the system to accept new class intervals which will be directly keyed by you. It also allows you to alter the colours used to represent each class interval on the data map.

Changing class intervals is achieved by positioning the pointer in the box on the key-bar that you want to change and pressing "Action". This will erase the value already shown in that box and replace it with a cursor towards the left-hand end of the box. You can now key a new value to go into the box with up to eight digits. In the case of a negative value the minus sign will occupy one of these digits and a maximum of seven significant figures can be used. To cater for very large values, scientific notation can also be used (e.g. 750,000 can be represented as 75E4 meaning "75 x 10⁴"). When you have keyed the new value for this box you press "Action" to instruct the system to accept it. Until you have "actioned" the value you can continue to edit it using the DELETE key on the keyboard. You can then move the pointer from box to box altering many interval values.

As noted above, the system will round off the class interval values you supply to be consistent with the accuracy of the data in the map. For example if the data in the map is recorded as whole integers but you supply class intervals with decimal places, then the system will automatically correct your supplied values to the nearest integer.

You can inadvertently produce an inconsistent set of class intervals by specifying overlapping values e.g.:

| N/A< | 15 | 25 | 20 | 45 | 55 | > |
|------|----|----|----|----|----|---|

The system will report this the next time a **Replot** is attempted.

The moment you change a class limit then the white border surrounding the key-bar will begin to flash. This is a warning that the data map currently being displayed no longer reflects the class intervals now shown in the key-bar and you must replot it when you have finished. Unless you action a replot, then your new class intervals will be lost.

Changing colours is straightforward within **Manual**. All you do is position the mouse pointer in the box on the key-bar you wish to alter and press "Change". The background colour of the box will change to the next colour in the palette sequence and repeated presses will cycle the colours until the desired effect is achieved. You will notice that as well as a change in the key-bar, the colours change instantly in the data map as well. This is because a colour change involves no recalculation of class intervals and there is therefore no need for a **Replot**.

**Hint:** Creative Use of Colour-changing

There are several creative uses for this colour-changing facility.

Firstly, you can be artistic in the choice of colours. For example, the default range of colours used most often is selected on a sort of "temperature" scale where lower values are represented by "cool" colours like blue and larger values are represented in progressively "warmer" colours through to the "hottest" red. Alternatively, you can choose colours to relate to appropriate types of data: e.g. plotting woodland in green, wetland in blue, etc.

Secondly, it allows you to do a kind of re-classification without going through the formal procedure. Suppose we have a key-bar as follows:-

| N/A< | 25 | 50 | 75 | 100 | > |
|------|----|----|----|-----|---|
| (black)  (blue) | (cyan) | (green) | (yellow) | (red) |  |

Altering the 25 and 50 boxes to green and the 100 box to red will effectively replot the map in only two intervals - above and below 75:

| N/A< | 25 | 50 | 75 | 100 | > |
|------|----|----|----|-----|---|
| (green)  (green) | (green) | (green) | (red) | (red) |  |

On the map overlay, similarly coloured adjacent areas will merge together, resulting in only two overall regions of the map in green and red. If this seems to produce an over-preponderance of green then changing the colour of the "75" box to red will reclassify the map instantly as "above and below 50" which may produce a more balanced effect.

A special use of the colour-change procedure is to change colours to black. In the map overlay mode black becomes transparent and so this is equivalent to excluding some intervals from a display.

For example if we wanted to map areas above and below 50 but leave out anything over 75, then we could do this instantly with colour changes:

| N/A | < | 25 | 50 | 75 | 100 | > |
|-----|---|----|----|----|-----|---|
| (black) | (green) | | (green) | (red) | (black) | (black) |

Particularly in combination with re-specifying class intervals, this colour-changing is even more powerful when mapping categorical data where the values being mapped aren't really continuous measurements of anything but numerical labels indicating different factors. Suppose we were mapping land cover categories which are integers between 1 and 20 and wanted to plot a map showing only categories 1, 5 and 20. Using **Manual** we could set up our key-bar as follows:

| N/A | < | 1 | 4 | 5 | 19 | > |
|-----|---|---|---|---|----|---|
| (black) | (yellow) | | (black) | (green) | (black) | (red) |

Thus, we have used yellow to show anything up to and including 1 (which can only be 1 itself), anything greater than 1 but less than or equal to 4 (i.e. categories 2, 3 and 4) blanked out as black, category 5 in green, categories 6 and through 19 blanked out as black and anything above 19 (i.e. 20) in red.

We were slightly fortunate in having wanted categories at each end of the scale, i.e. "1" and "20". This allowed us to include three categories in the display. The best case is when four contiguous categories at one end of the scale are required. All four of these (say 17 through 20) can be accommodated on the same map, as follows:

| N/A | < | 15 | 17 | 18 | 19 | > |
|-----|---|----|----|----|----|---|
| (black) | (black) | | (cyan) | (green) | (yellow) | (red) |

By contrast, the worst case is when discrete categories from the middle of the scale are required. In this case we need to use up classes blanking out unwanted data at either end leaving us with a maximum of two displayable categories. (Say we need 8 and 13):

| N/A | < | 7 | 8 | 12 | 13 | > |
|-----|---|---|---|----|----|---|
| (black) | (black) | | (cyan) | (black) | (yellow) | (black) |

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Since entering new class intervals is a relatively time-taking procedure, requiring a replot of the map, it is useful when dealing with category data (or any other data for that matter) to think carefully whenever you are setting up class intervals to see if you can "kill several birds with one stone". For example, using our land-cover category data example above, suppose your immediate interest is to display category 5 only. You can set up the menu bar as follows:

| N/A | < | 4 | 5 | 5 | 5 | > |
|-----|---|---|---|---|---|---|

(black)    (black)         (cyan)          (cyan)          (cyan)          (black)

In this case the three indentical blocks on the menu bar will merge together into one big block showing that "5" is displayed in cyan with everything above or below it blanked out as black. In fact, you have three redundant categories here, so it is worth considering whether there are any other categories you would like to see mapped at some point. If so, why not put them into the classification now, blanking them out as black for the time being but available at any time in the future by an instant colour-change rather than a reclassification. For example, 6 and 7 can be included in the above classification for future use:

| N/A | < | 4 | 5 | 6 | 7 | > |
|-----|---|---|---|---|---|---|

(black)    (black)         (cyan)          (black)          (black)          (black)

**Main** within **Manual** takes you back to the Class function with your new class intervals, but it will not re-draw your data map according to those new intervals.

**Replot** appears on the menu bar in place of **Manual** as soon as that option is selected. Selecting **Replot** causes the data map to be redrawn using the new class intervals. The system remains in **Manual** in case you wish to continue changing class intervals.

**Main** within Class takes you back to the main **Analyse** function. If you have been working on changing class intervals, but you have not actioned a **Replot** of your latest changes, then they will be lost. All colour changes will be preserved, however.

**Automatic** offers several methods of recalculating class intervals automatically. Please note that this is not available for category data sets where the numbers are category labels rather than actual values. Also, the properties of certain datasets make automatic recalculation of intervals impossible. In these cases a warning is displayed in the message area and the old class intervals are reinstated. On selecting **Automatic** the menu bar becomes:

| ◀ | Help | Main | Equal | Nested | Quantiles | Local |
|---|------|------|-------|--------|-----------|-------|

**Local** allows you to re-plot the data map, taking into account only the data within the scope of the screen. When the system first displays a data map using the "starter" parameters stored with the dataset,the image on your screen acts like a "window" showing a small section of a larger map plotted over the whole country. The default class intervals are therefore chosen to give a

reasonable spread of colours over the whole of this national map. They may not look reasonable over the small section you have plotted, depending on how the part of the data in your area of interest differs from the national norm. **Automatic** methods of recalculating class intervals, described in detail below, will continue to operate on a national basis until you instruct the system to the contrary.

**Local** allows you to make that instruction and calculate class intervals and colours taking into account only the data in the area of the screen. When you select **Local** this section of the menu bar will immediately be replaced by **National** which allows you to revert to the previous basis. Nothing else will happen on selecting **Local** or **National**. The system makes a note of the required spread of data when calculating new class intervals, but needs a further instruction to make the recalculation.

**Equal** recalculates class intervals on an equal interval basis. The highest and lowest values in the dataset are found (bearing in mind whether we include data for the whole country or only that within the scope of the screen: see **Local/National** above) and the range betwen them is divided into equal parts. If, for example, a dataset had values from 20% to 60%; **Equal** calculates the five class intervals as:

    1   20-28%
    2   29-36%
    3   37-44%
    4   45-52%
    5   53-60%

which would be represented on the key-bar as:

| N/A | < | 28 | 36 | 44 | 52 | > |
|-----|---|----|----|----|----|---|

**Nested** calculates four class intervals on the basis of "nested means". Three averages are calculated:

    the mean of all the data
    the mean of all values less than the overall mean
    the mean of all values above the overall mean

(N.B. "mean" is the usual average calculated as the sum of the values divided by their number.)

In the percentages example shown on the previous page, these averages are:

    Overall mean   42.8
    Lower mean     28.6
    Upper mean     47.1

**Nested** would calculate four class intervals, displayed as:

| N/A | < | 28.6 | 42.8 | 47.1 | > |
|-----|---|------|------|------|---|

Notice that there are only four class intervals for **Nested**, compared with the usual five. To compensate for this in the key-bar the middle box will be doubled in size. The class value, however, appears only once in the left half:

**Hint:** Though it appears as one double-length class interval, the two halves can still be made to operate separately. Using **Manual** as described below, you can change the value and colour of the blank half, bringing it into play to split the middle class created by **Nested**.

Another problem posed by the reduced number of class intervals produced by **Nested** is the transfer of the previous five colours to the current four classes. In fact the system always changes to new colours for **Nested**: the only class-interval recalculation option which does so.

Whenever the system calculates new class intervals or receives them directly from the user then it matches the precision of the interval cut-off points to that of the original data. For instance, if all the data was expressed in whole percentage points: 22%; 76%; 44%, etc., then the calculation of means with a decimal point is spurious. The system will harmonise its class-limits and round off:

| N/A | < | 29 | 53 | 67 | > |
|-----|---|----|----|----|---|

**Quantiles** calculates intervals so that the number of areal units plotted in each class will be equal. This is the best way to ensure a balance spread of colours across the overlay. It involves ordering all the data values under consideration and then finding the class-limited which divide the sorted list into five equal groups. This can take some time for large numbers of data points.

Hint: 'Skewness in Data'

Unless you have some knowledge of statistics, particularly some theory of distributions and variance, it is probably safer to stick to **Equal** in **Automatic** calculation of class intervals. This is the easiest kind of class interval to interpret visually. For example, if the data values in your map contain a disproportionately high number of large values together with relatively few small values then the **Equal** method will reveal this in the dominance of higher-value colours across the map. The other methods of calculating class intervals are all designed to compensate for any such "skewness" in your data and will tend to conceal it in the map. **Nested** is a quick calculation method to even out skewness if you are fairly sure your data does not contain any extremely high or low values. **Quantiles** takes more calculation time but will also compensate for the effect of extreme "outliers". Examination of the key-bar after a **Quantiles** calculation allows you to place a quantitative measure of the skewness of your data, particuarly in comparison with the results of an **Equal** calculation. Let's take an example: suppose the key-bar looks as follows after an **Equal** recalculation of class intervals:

| N/A | < | 150 | 200 | 250 | 300 | > |
|-----|---|-----|-----|-----|-----|---|

The range of each class-interval is 50 units. From this you can deduce that the minimum value in the data map is 100 (the first interval has to be 50 units like all the others ["150" actually means "100 to 150"] and the maximum value is 350 [the last interval, denoted by ">" actually being "301 to 350"]).

Suppose that **Quantiles** changes the key-bar to:

| N/A | < | 270 | 290 | 300 | 305 | > |
|-----|---|-----|-----|-----|-----|---|

This tells us that 20% of the mapped values are below 270 which the **Equal** key-bar tells us is about 75% of the way through the total range. This means that 80% of the mapped values are concentrated in the top 25% of the range which is a considerable upwards skew.

**Main** within **Automatic** takes you back up to **Class** with the new class intervals you have calculated, but without replotting the data map according to those new classes.

**Replot** appears on the menu bar in place of the automatic recalculation option you choose. Selecting **Replot** causes the data map to be re-drawn using your new class intervals. The system will remain in **Automatic** in case you want to do more recalculation of class intervals.

Hint: Automatic and Manual Options

You can use the **Automatic** options to recalculate class intervals and then select **Main** to go up into **Class**, then come back down into **Manual** to manipulate the class intervals further before replotting your data map.

You may receive an error message telling you that this **Automatic** re-classing option on a national basis is not available for the data set in question. This is just a quirk of this particular data and cannot be remedied. Possible solutions are to move to **Local** recalculation, or re-classify with **Manual**.

## Retrieve in more detail

This function allows you to interrogate a data map to find out more detail from a particular part of the display. There are slight variations in the way this option works, depending on the type of mappable data being displayed, and these differences are reflected in the menu bar displayed on selecting **Retrieve**.

If your data is grid-mappable and additive, the menu bar will look this:

| ◀ | Help | Main | Sum * | Grid Ref | Download |
|---|------|------|-------|----------|----------|

\* **N.B. If the data is non-adiditive Values is offered instead of Sum. With incidence data neither Sum or Values is offered.**

**Grid Ref** allows you to display the grid reference of any point on a data-map. You place the screen pointer over the desired point and press "Action". The corresponding grid reference will be displayed in the message area. As soon as **Grid Ref** has been selected, it will be replaced on the menu bar by **Clear**. After you have finished displaying grid references, selecting **Clear** will restore the message area to its original contents.

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**Sum** allows you to display additive data values corresponding to any one grid square or the sum of the data values in a number of grid squares. To nominate squares of interest you position the screen pointer within each square and press "Action". The nominated square will turn white and its data value will appear in the message area, together with a note of the units in which the data is measured. If you nominate a second square as above, then that square too will turn white and its value will be added to the value displayed in the message area. In this way a whole series of squares can be nominated and the sum of their data values accumulated. A further facility is provided to nominate rows of squares. You do this by positioning the pointer in a square at one end of the required row and pressing "Change". This will cause that square to begin to flash. You then move the pointer to the square at the other end of the required row and press "Action". All the squares between the two now turn to white, the sum of all their data values is computed and added to whatever was already in the message area. Exactly as previously described with **Grid Ref**, whenever **Sum** causes all the white squares to revert to their former colour in the data map and the message area to be cleared back to its original state displaying either the colour-key to the data map or the title of the data set being mapped.

For areal-mappable data the **Retrieve** menu bar will be:

| ◀ | Help | Main | Values | Rank | Unit | Download |
|---|------|------|--------|------|------|----------|
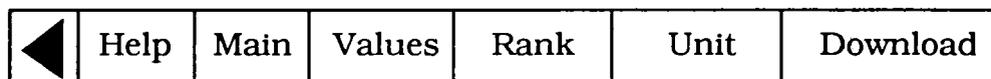
**Rank** is ONLY available for **Areal** mappable datasets. When this option is selected the menu bar becomes:

| ◀ | Help | Main | First | End | | |
|---|------|------|-------|-----|---|---|
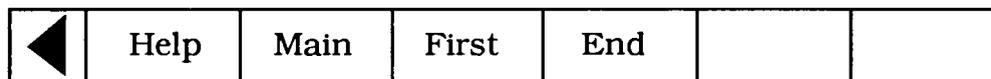
The **First** option is only shown when viewing a page other than the first and the **End** option is only shown when viewing a page other than the last.

Selecting **Rank** produces a ranked list of the variable by the areal units currently shown on the screen. A typical screen will be as follows:

Ranked list of  < variable name >
by  < areal unit >

| Value | % Down List | Cum. Total | % of Grand Total |
|-------|-------------|------------|------------------|
| 1. Kent | | | |
| 2340 | 0 | 2340 | 33 |
| 2. Sussex | | | |
| 2339 | 25 | 4679 | 33 |
| 3. Surrey | | | |
| 2338 | 50 | 7017 | 33 |
| 4. Hampshire | | | |
| 98 | 75 | 7115 | 1 |

**N.B.** Cummulative and % of Grand Total columns are only present for additive data.

If alot of data are displayed on the map a slight delay may occur while sorting takes place. This will be reported in the message area at the top of the screen. If the areal unit list is too long to sort only the ten maximum and ten minimum areal units and their values are found and displayed. In this case there is a single page display listing only the areal unit name and the value, and the following message will appear at the top of the screen:

## The list of Areal Units is too long to sort

Selecting **Main** exits the **Rank** option and the data map will be redisplayed.

**Unit** allows you to display the name of any areal unit colour-coded on the map overlay. You do this by positioning the pointer within the required areal unit and pressing "Action". The name of the nominated areal unit will then appear in the message area at the top of the screen. Nominating further areal units on the display will cause new names to appear in the message area, replacing any already shown there. As before, when **Unit** is selected, it is replaced on the menubar by **Clear**. Selecting **Clear** returns the message area to its former state.

**Values** allows you to display the data value in any areal unit. To do this you position the pointer anywhere in the required unit and press "Action". The nominated area will be flagged with a white square and its data value will appear in the message area. Nominating further units will cause them also to turn white and their data values to be displayed, replacing any previous value shown. As before, when **Values** is selected it is replaced on the menu bar by **Clear**. Selecting **Clear** causes white areas to return to their former colours and the message area reverts to its former state.

**Hint: Clear** will normally restore all white squares and units very quickly. However, if **Help** is visited from **Sum, Values, Unit** or **Grid Ref** then on **Clear** or **Exit** from **Retrieve** via **Main**, the system has to replot to restore the map, which can take time.

**Download** allows you to download the data from your data map to a file on magnetic disc, as a UDDF file which can be used by the DataMerge package for updating. For further details see the DataMerge User Guide.

**Main** takes you back to **Analyse**, and the message area back to its former state.

## The Compare options in more detail

These options allow you to compare the map currently displayed with another variable mapped over the same area of interest. The options available on the menu bar are:

| ◀ | Help | Main | Analyse | Link | Correlate | Name |
|---|------|------|---------|------|-----------|------|
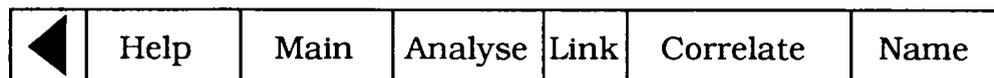
**Name** allows you to call up a new mappable variable for display over the current area of interest. Please note that you will need to know the exact spelling of the new name.

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Assuming that you know this name, selecting **Name** will produce a prompt in the message area asking you to enter it. You key this in and press "Action". It will have to be letter-perfect and many mappable datasets have highly abbreviated item names, so extreme care must be taken in this operation. If an error does occur, however, the system will be able to cope. For example, if the system does not recognise the new name you have keyed, it will "beep" and complain:

## Item name not found

This message will remain on screen for three seconds and then the system will allow you to re-edit the name using DELETE. Alternatively, the system might recognise the name you keyed in but it might not be a mappable dataset. In this case a different complaint will be made:

## Not a mappable data set

Again, after a short interval the system will allow re-editing of the name.

**Correlate** allows you to calculate a statistical measure of correlation between two data maps. It is not available if your data map has less than 25 areas or grid squares, or the data is incidence or category data. **Correlate** operates very similarly to the **Name** option described above. On the selection of **Correlate**, the system requests in the message area the name of a new mappable dataset with which you want to correlate the current display. The name of the new dataset must be keyed letter-perfect, it must be recognised as an item name by the indexing system and the recognised item name must be a mappable dataset. Further, the new dataset must be the same kind of dataset as the current one, i.e. grid-mappable or areal-mappable, and available at the same level of rasterisation and over the same areal units as the current map. Finally, there may be too many data points to correlate within the system's capacity. Appropriate error messages will be given if any of these rules are broken.

Assuming that a new dataset has been nominated the system goes off to compute a Spearman's rank correlation coefficient which is then displayed in the message area. Correlation is represented by a number in the range -1 to +1, where -1 represents a strong inverse relationship, with high values in one dataset associated with low values in the second, and +1 represents a strong direct relationship with high values in one set associated with high values in the second. Correlations around zero indicate no systematic relationship.

**Link** is a special option which allows incidence datasets to be compared. It works by combining one map of presence/absence indicators with another, producing a new map showing only those areas where both phenomena were present. This new map can then be Link'ed to another dataset producing a map of only those areas where all three phenomena are present, and so on.

Again the system operates very similarly to **Name**, asking you to specify the name of the new dataset you wish to **Link** with this map. As before the name will need to be keyed letter-perfect to be recognised by the system and must be a mappable dataset of incidence type, available at the same level of detail as the current map.

The map resulting from a **Link** operation has a special colouring and key-bar:

| N/A | NO DATA | COINCIDENT DATA |
|-----|---------|-----------------|
| (black) | (blue) | (red) |

**Coincident data** in a square or areal unit means that this unit was "present" in both data sets. **No data** means that in one or both of the datasets this area was "absent".

**Hint:** 'Link' used with Converted Mappable Data

Although **Link** is designed to work with incidence-type data, it will work with any mappable data provided it has been converted to look like incidence data. This can be done by altering the class intervals of a data map so that areas which are of interest, are plotted in red, and all other areas may be plotted in any colour except black. This map can now be compared via **Link** with another truly incidence data set.

## DataMerge comparisons

Each of the compare options, **Name, Correlate** and **Link** can make use of mappable data prepared using the DataMerge package. All that is required by the system is to have the filename entered with the tilde (~) prefix which signifies the file to be loaded comes from a DataMerge prepared ADFS floppy disc and not from the videodisc.

# 12. DISPLAYING AND MANIPULATING STATISTICAL CHART DISPLAYS

As described earlier, straightforward statistical data which is not particularly based on geographical areas, is stored on the Countryside Disc in a series of multi-dimensional tables. The content of these tables is displayed by the system as a series of statistical charts which enable the user to investigate and display a huge variety of inter-relationships between the components of each dataset.

This chapter describes the function of the data-charting system with its flexible and speedy analysis options. It seems complicated at first glance because it gives you total control to do virtually anything you like with a statistical chart. Perhaps the best way to approach the charting system is not to try to learn everything at once, but to get to know a few techniques at a time, checking with **Help** as you go.

## DEFINITIONS AND TERMINOLOGY

For clarity of understanding, even for readers with a knowledge of statistics, it is worthwhile going through an explanation of what we mean by certain terms and concepts.

The first thing is to agree what we mean by tabular data. This is the kind of statistical data which can be written down in a table. Let's take a simple example - the proportion of the population in each of several age-groups:

|            |       |
|------------|-------|
| Under 16   | xx.x  |
| 16 to 24   | xx.x  |
| 25 to 34   | xx.x  |
| 45 to 54   | xx.x  |
| Over 55    | xx.x  |

The interesting part of the table is the column of numbers. We call this an array and each number an element of the array. Of course, when displaying a table, details are added to allow the array to be interpreted, e.g. the names of the age groups in our example. However, these are descriptive labels and not part of the data content.

Obviously, each element must be a numerical value and whilst we earlier described our example table as representing "proportions" of the population, we have to be more precise in practice. In fact, we have used "percentage", expressing proportion as a number between 0 and 100. Further, we are entitled to expect that every number in the table conforms to the same overall specification. It would be meaningless to include along with percentages the value 0.25 purporting to represent "a quarter of the population". There must be a common set of units in which the elements will be expressed and we call this the dependent variable.

In our example the dependent variable ("percent population") is broken down or classified according to one factor: age-group. This factor is called the independent or classifying variable.

Our example involves only one independent variable and is therefore a one-dimensional array. In general, the dimensionality of an array is the number of independent variables by which the dependent variable is classified.

Thus, if we expand our example to include a second independent variable (say gender) then a two-dimensional array results:

Percentage of population

|          | Male | Female |
|----------|------|--------|
| Under 16 | xx.x | xx.x   |
| 16 to 24 | xx.x | xx.x   |
| 25 to 34 | xx.x | xx.x   |
| 35 to 44 | xx.x | xx.x   |
| 45 to 54 | xx.x | xx.x   |
| Over 55  | xx.x | xx.x   |

Notice that each independent variable is specified as a list of distinct categories. In age-group there are six categories: "Under 16", "16 to 24", etc. In gender there are only two: "Male" and "Female".

If the dependent variable of our array had been specified as absolute population counts, then we would have been able to calculate an extra category along each independent variable: a total or ALL category. However, this is only possible when the data is additive like population counts. Percentage data, as in our example, is non-additive and therefore we cannot deduce totals. Of course, the original compilers of the dataset may have included an ALL category for us:

Percentage of population

|          | Male | Female | All  |
|----------|------|--------|------|
| Under 16 | xx.x | xx.x   | xx.x |
| 16 to 24 | xx.x | xx.x   | xx.x |
| 25 to 34 | xx.x | xx.x   | xx.x |
| 35 to 44 | xx.x | xx.x   | xx.x |
| 45 to 54 | xx.x | xx.x   | xx.x |
| Over 55  | xx.x | xx.x   | xx.x |

Note that the inclusion of an extra category in an independent variable does not increase the dimensionality of the array. This is still a two-dimensional array but it is now a 6 x 3 array whereas before it was a 6 x 2.

We could go on re-classifying our table by further independent variables, e.g. region, year, socio-economic group, employment status, marital status, etc., etc. to produce arrays of even greater dimensionality.

In its simplest form each diagram illustrates the effect of classifying the dependent variable by ONE of the independent variables with every other independent variable set to ONE of their categories. (Certain more advanced charts can display the influence of TWO classifying variables but, for simplicity, we'll leave that until later).

Going back to our two-dimensional example above: a simple chart would show the dependent variable (percentage of population) classified by one of the dependent variables (say age-group) with the other independent variable (gender) set to one of its categories (say "female"). Thus, a simple chart would display the pattern of percentages of population by age-groups for females only. The subset of the total data set defined by setting all the independent variables other than the primary classifying variable to a particular category is known as the reference population. The whole art of using the statistical charting capabilities of the system is to display the relationship between dependent and classifying variables for a variety of reference populations.

## THE CHART SCREEN

Here is an example of a typical chart screen:
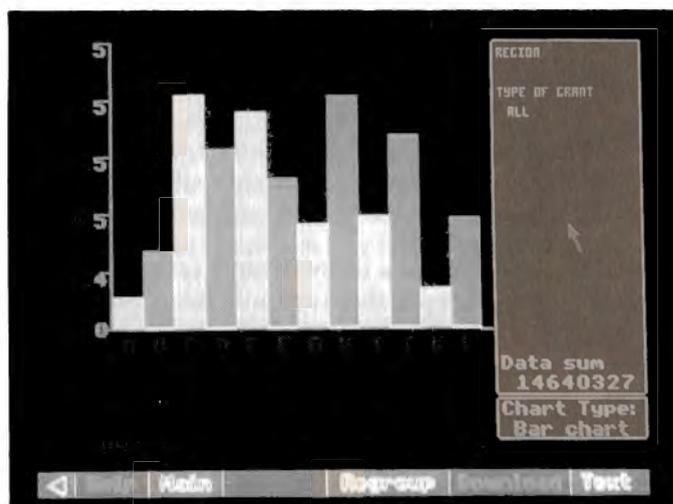


Every chart consists of several main components, in distinct areas of the screen. The message area at the top of the screen and menu bar at the bottom are familiar features, common to many countryside displays. Just below the message area, the title of the dataset currently on display is shown. Below this, to the left, is the chart area itself, bounded by horizontal and vertical axes. The vertical axis (or y-axis) is labelled upwards with the name of the dependent variable of this dataset, together with a scaling factor showing how the original data values have been modified to make a simple chart. Also along the vertical axis is a series of scale points. The horizontal or x-axis is also labelled with the name of the current primary classifying variable and a series of letters corresponding to the categories of that classifying variable. Further down is a message beginning **A = ........** which shows the name of the first of the categories. The others can also be displayed as we shall show. On the right-hand side of the screen are two boxed areas, the upper of which is the variable key area showing the current status of all the variables in the dataset, the lower being the chart key area showing which type of chart is currently in operation. Sometimes the variable key area contains the message **More**. This means that there are more than six classifying variables for this dataset. The first six are shown on the screen and you can call up the rest by placing the screen pointer over the **More** label and pressing "Action".

### Types of chart available

Our example above shows a single bar-chart in which the dependent variable is plotted for each category of the primary classifying variable as a vertical bar with a height corresponding to the value of the dependent variable, measured against a scale along the vertical axis (or y-axis). This is a simple form of the statistical diagram known as a "histogram".

Another type of chart available is the pie-chart in which the several values of the dependent variable are shown as sectors of a circle, with the whole set of sectors adding up to the whole circle and each individual sector's size proportional to its share of the whole:
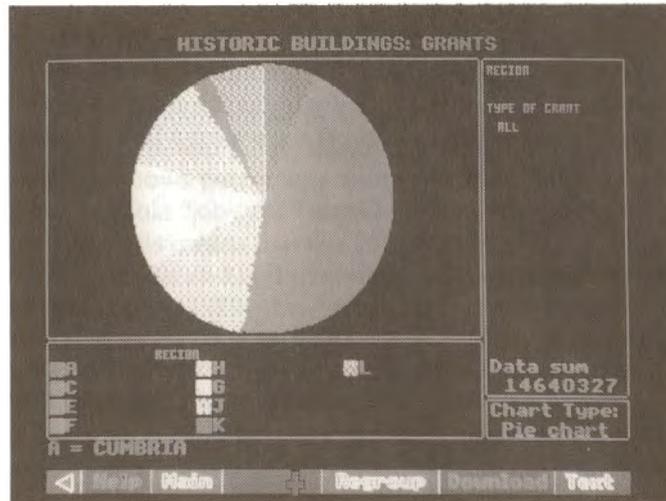


This is equivalent to the single bar-chart except that whereas the former highlights the comparative value of each classification of the dependent variable, the pie-chart focuses on its proportional share of the whole.

The back-to-back bar-chart is similar to the single bar-chart, except that instead of a single bar corresponding to each category of the primary classifying variable, a series of mini-bar-charts is plotted showing the values of the dependent variable for all the categories of a second classifying variable within each category of the primary classifying variable:
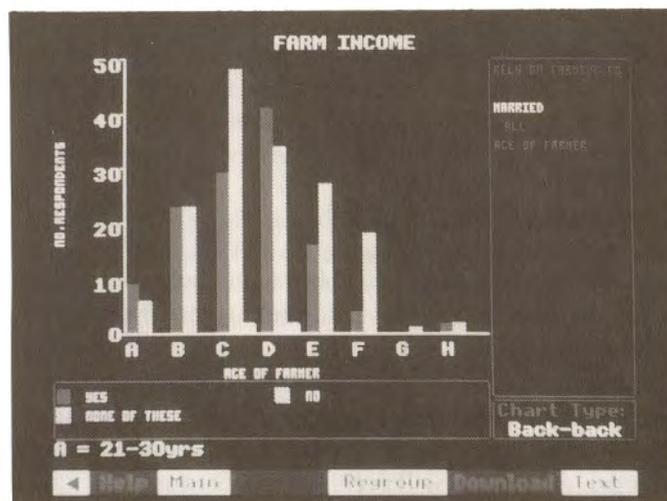
You should be aware that the maximum number of bars capable of being plotted on any bar-chart is 24. Thus, when specifying a back-to-back bar-chart, the product of the numbers of categories in the primary and secondary classifying variables should not be greater than 24. You can vary the number of categories in operation for any classifying variable by the **Regroup** function explained later on.

An alternative to the back-to-back bar-chart is the looping bar-chart in which the mini-bar-charts showing the values of the dependent variable for all categories of the secondary classifying variable within each category of the primary classifying variable are shown full-size in the chart area of the screen, but automatically displayed one after the other with each chart shown for a few seconds and then replaced by the next.

## Entering the charting procedure

As soon as you ask to see an item which is a tabular dataset then the system will immediately invoke the charting procedure and show you an initial display of your data according to some pre-set "starter" parameters specified by the data compilers. This includes the type of chart to be displayed in the first instance, although you can change this, as you will see later.

With the initial chart on the screen you are now free to begin modifying and manipulating the display to get out of it what you particularly want to see.

### Examining data values

The first thing you may want to do with a chart is to check what actual numbers underlie the diagram you are seeing. The actual values of the dependent variable can be displayed at any time from any chart, although the exact mechanism varies slightly from one chart-type to another.

On a bar-chart of any kind, you place the pointer within any bar which is of interest and press "Action". Immediately the exact height of the nominated bar will appear in the message area. The vertical position of the pointer does not matter, provided it is within the area bounded by the two axes. It is the horizontal position which identifies the bar to be examined.

On a pie-chart the label-area below the x-axis is used to nominate data values to be displayed. You place the pointer within the little square indicating the colouring of the sector you wish to examine, press "Action" and the corresponding data value will appear in the message area.

### Revealing the full forms of abbreviated names

Many of the labels and names on the chart are severely abbreviated but you can see the full form of any of these by simply placing the pointer over any abbreviation in the variable key area and pressing "Action". Immediately the full form of the label appears in the message area at the top of the screen. One slight variation on this is the **A = .....** label under the x-axis. This is a cycling label which will take you through all the categories of the primary classifying variable, i.e. tell you what all the letters along the x-axis mean. You place the pointer over this label and press "Change". Immediately the next category label appears in the same place and repeated presses will cycle the labels round.

## Changing the settings of variables in the reference population

In a sense, the chart area of the screen, displaying the relationship between the dependent and primary classifying variable, contains what it is you want to know. The reference population, determined by the status of all the classifying variables other than the primary classifying variable, shows who it is you want to know about.

Imagine a chart where the dependent variable is "percentage of people unemployed", the primary classifying variable is age-group, and the other classifying variables are job-type, industry-type and year. Suppose our chart currently shows percentage unemployment plotted against age-group and in the reference population the variable "job-type" is set to "manual", "industry-type" is set to "manufacturing" and "year" is set to "1979". This means that the information we are asking for is the pattern of unemployment across age groups and at the moment we are displaying that pattern for manual workers in manufacturing industry during 1979. If we want to display a similar pattern for a different group of people, say technical workers in service industries during 1985, then we alter the settings of the variables in the reference population.

The operative area of the screen to accomplish this is the variable key-area on the upper right-hand side. This contains the names of all the classifying variables and beneath each one is the name of the category to which this variable is currently set. There will be one exception to this: one of the category names will be blank. This is the primary classifying variable whose categories are, of course, all shown along the x-axis.

You place the pointer in the key-area over the category-name you want to change and press "Change". The current category will immediately change to the next category in the sequence for this variable and repeated presses will cycle round all the possible categories of this variable. Having altered the setting of one variable, you move on to the next until the entire reference population is as you want it. In this way, and following our previous example, you could set up the new chart showing percentage unemployment by age-group for techncial jobs in service industries for 1985 by changing job-type from "manual" to "technical"; industry-type from "manufacturing" to "service" and year from "1979" to "1985".

Please note that a change in the reference population does not immediately affect the chart. You will, however, see that a flag marked **Replot** has appeared over part of the dataset title indicating that the current chart no longer reflects the true status of the data and when you have finished all your changes you will need to replot it using the **Replot** option described on the next page.

## Choosing a new primary classifying variable for the x-axis

Anyone who has spent time drawing statistical charts will know how tedious it is to complete a complicated plot only to find that you have plotted the dependent variable against the wrong classifying variable. You've plotted agricultural yield by various crops, but you really need it by farm-type. You move the pointer back into the key area and place it over the name of the variable (remember VARIABLE name this time, not category name) and press "Change". Immediately the category name for the nominated variable will become blank and you will notice that the variable which used to be the primary classifying variable, indicated by a blank category name, now has a category name displayed beneath it like all the other ordinary classifying variables. Again, this has no immediate effect on the bulk of the chart, which needs a **Replot**.

## Change the type of chart display

Suppose you have a bar-chart and you need to know how much of the total is represented by each bar. The easiest way to find out is to replot this data as a pie-chart. To select an alternative chart-type you move the screen pointer into the chart-key box, over the name of the chart-type currently in effect and press "Change". The chart-name will immediately change to the next available type of chart for the data in hand and repeated presses will cycle round the full range of available types. Not all chart-types are appropriate to every set of data, but you don't need to worry. The system sorts out what is possible and only offers you viable options. Again, you need to Replot before you will see your new chart.

### Selecting a secondary classifying variable, where required

As described above, certain chart types require both primary and secondary classifying variables. These are the back-to-back and looping bar-charts and the multiple line-graphs. You select a secondary classifying variable exactly like the primary, by placing the pointer over the required variable (not category) name and pressing "Change"

### Plotting a new chart using Replot

Replot is selected from the menu bar to re-draw the chart according to changed specifications. For charts other than bar-charts, and even on bar-charts where you have specified a new chart type or where you have asked for a new primary or secondary classifying variable, this will invovle clearing the chart area completely and plotting a whole new chart.

Where you have changed the reference population for a bar-chart, however, there will be no need to clear the chart area completely; it is simply necessary to adjust the height of the bars. In this case the system tries to aid your understanding of the difference between your old and new charts by "animating" the change from one to the other. Each bar will gradually shrink or grow to its new height. In certain cases this may mean that the new height of a bar cannot be accommodated within the old scale of the y-axis. In this case, rather than abandon the interpretive value of the animation, the oversize bar will simply be plotted with a pointed top, indicating that it exceeds the current height of the y-axis and leaves it to you to re-scale the y-axis if you feel it is necessary.

Replot can result in certain error conditions, flagged by warnings in the message-area:

## Too many groups to plot - please regroup

This means that you are asking for more than 24 bars on a bar-chart or more than four lines on a multiple line-graph. The only remedy is to reselect variables so that the plot becomes within limits, or invoke Regroup to reduce the number of categories of your selected variables.

### Unreliable estimates

This means that you have been too restrictive in your choice of reference population and there are now too few data values in your chosen subset to make meaningful interpretation safe. The only remedy is to increase the scope of the reference population.

**Re-scaling the y-axis**

When necessary you can request a re-scaling of the y-axis by positioning the pointer over the y-axis label and pressing "Change". The y-axis will automatically readjust to a scaling appropriate to the current maximum height of the displayed bars and the bars themselves will adjust in animation to their new correct heights.

## FURTHER OPTIONS AVAILABLE FROM THE MENU BAR

Upon completion of your initial chart display, the menu bar will contain the following options:

| ◀ | Help | Main | Regroup | Download | Text |
|---|------|------|---------|----------|------|
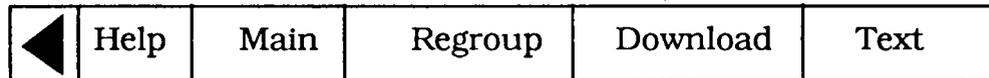
It should be noted that **Regroup** will only be offered when the dataset in question is additive.

> **Text** will give you access to the pages of descriptive information supplied by the experts who compiled this dataset for the Countryside Disc, to aid you in interpreting this data. We strongly recommend that you study the text attached to any dataset from which you want to draw conclusions, and you should read the further notes on this in Chapter 11. After selecting **Text** the menu bar becomes:

| ◀ | Help | Main | Print | | | |
|---|------|------|-------|--|--|--|
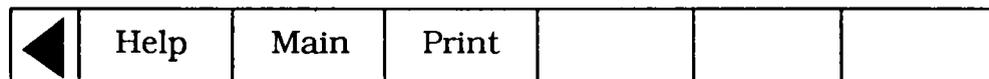
> **Print** allows you to print out the page on the screen, but material on the disc is subject to the usual copyright laws. During printing the menu bar becomes:

| ◀ | Help | Main | Quit | | | |
|---|------|------|------|--|--|--|
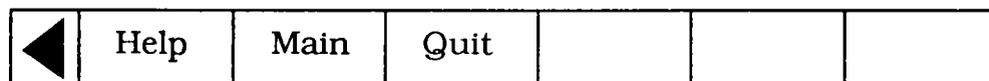
> **Quit** aborts the printing process and returns you to the **Text** option above.

> **Main** from either of the two menus above takes you out of **Text** and back to the main chart display.

> **Download** allows you to download on to a floppy the data underlying the current chart as a UDDF file consistent with the DataMerge package. All download files are ASCII.

> **Regroup** allows you to re-combine the categories of classifying variables into new groupings and to include or exclude these groupings from the chart. **Regroup** will only be available for additive variables since, as we have observed earlier, no automatic re-combination of non-additive data is possible. This means that **Regroup** will not be available for any time-series data which, by definition, is non-additive. **Regroup** is particularly useful for removing data temporarily from the chart, creating new kinds of reference population and reducing the number of categories to within the limits of, say, a back-to-back bar-chart.

When you select **Regroup** and specify the variable for which categories are to be collapsed, the chart area of the screen will be replaced by a series of screens on which the regrouping operations will take place in a logical sequence.

The first screen deals with selecting a variable to regroup. It looks like this:
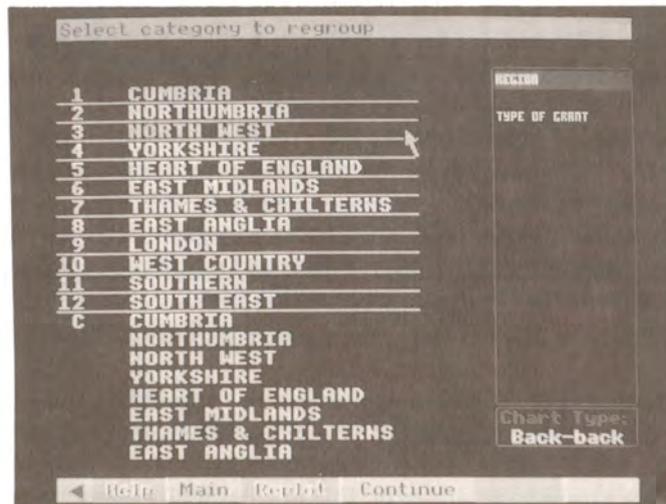


On this screen you simply place the pointer into the key-area on the right, over the name of the variable you want to regroup and press "Action". Immediately the chart area will show current groupings of categories in operation for the nominated variable. For the first time around, the groups displayed will consist of one separate group for each of the categories of this variable and an extra group, known as the "combined" group which includes all the categories. The values of the dependent variable corresponding to this combined group will be the sum of the data values over all the categories of this variable.

The next screen in the sequence deals with selecting groups to re-include. You won't be presented with this screen first time around, and maybe not even thereafter. It only appears when you have chosen to exclude certain groups from the display and this is your opportunity to re-include them. Groups which are currently excluded will be shown in blue and you can choose to re-include them by placing the pointer over an excluded entry so that its group-number changes to yellow and pressing "Action". The blue entry will convert to cyan and the group is re-instated. You can re-include as many excluded groups as you like from this screen.

At this point the menu-bar will have become:

| ◀ | Help | Main | Replot | Continue | | |
|---|------|------|--------|----------|---|---|
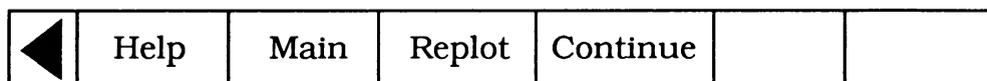
**Main** within **Regroup** will abandon your work and restart the **Regroup** as if you had just entered it from your original chart display.

**Replot** at this stage will restore your original chart display, but with the changes you have specified so far in **Regroup**.

**Continue** at this stage will carry on to the next stage of **Regroup**.

The next screen deals with selecting categories of the nominated variable to regroup, i.e. which category you want to move from one group to another. You place the pointer over the name of the category you want to "pick up" and press "Action". You are then asked to select destination group. You move the pointer to the group into which you wish to place the nominated category, causing its number to turn yellow, and press "Action". The list of groups will then be re-displayed showing your nominated category in its new group and the system will cycle back to ask again, select category to regroup, ready for you to nominate another category to move. You should be aware that the system will not allow you to reduce a variable to only one category. Each variable must be left with at least two categories. When you have completed all the moves you want, you move on to the next stage by selecting **Continue** from the menu bar. (**N.B. Main and Replot are still available for you to abandon or short-circuit the regrouping**).

The prompt now changes to: select groups to be omitted. This is asking which groups are to be excluded from the next chart. You place the pointer over any group to be excluded, causing the group number to turn yellow, and press "Action". The group will then convert to blue, indicating that it will not be taken into account when the next chart is drawn. Note also that the excluded group is no longer included in the "combined" group. Further groups can be excluded in the same way and then **Continue** will take you on to the next stage of **Regroup**.

The prompt becomes: enter new group names and abbreviations. The system does not know how to label your new groups and is asking you to supply the necessary details. The places where input is requested are indicated by blue boxes and a flashing cursor. You position the pointer in each box in turn and key the appropriate labels.

This completes the **Regroup** operation. Selecting **Continue** one more time will take you back to the top of **Regroup** to go round again and make further changes. Selecting **Main** will abandon all you have done this time through **Regroup** and take you back to the beginning as if you had just come from your original chart display and selecting **Replot** will take you back to your chart and re-plot it with your new specifications.

**Main** takes you back out of the chart-display operation altogether and returns you to the main index-searching routines. In the first instance you will be re-presented with the "hit-list" of item names which were identified in response to your last query. You can then select a further item from this list or abandon the list altogether by initiating a new search, using **Find** or **Contents**.

## Using the Countryside Disc Database

Here are some suggestions for studies based on the data side of the Countryside Disc.

## WAGES & EMPLOYMENT

Investigate wage differentials between occupation, (dairyman, stockman, tractor driver, etc.), and contractual status (seasonal, YTS, full time, etc.).

Examine regional differences in earnings by different occupational/contractual groups.

Discuss minimum wages of agricultural workers.

Investigate age and sex differences in relation to wages.

Examine the composition of earnings - overtime, non-pecuniary benefits, normal gross earnings, etc.

## UPLAND LANDSCAPE STUDY

Prepare a profile of families farming in Upland regions,

- farmer profile - age, where born, training, time on farm, marital status

- family profile - working on the farm?

- mobility of farmers.

Investigate changes in farming in Upland regions (past/present/future),

- acreage

- tenure

- type of farming

- diversification.

Discuss the potential of developing upland regions for leisure activities,

- rights of access, e.g. fishing, shooting,public rights of way

- farmers' attitudes towards those rights of access.

Examine the structure of the labour force working on upland holdings.

Examine the economics of farming,

- sources of income farm v non-farm

- notion of part-time farmers.

What are the Upland Farmers' views on,

- farm methods

- National Park designation

- perception of home locality

- conservation.

## RURAL DEPRIVATION

Investigate the differential access socio-economic groups in rural areas have to amenities/services, (age/class/income/education/employment/tenure).

What do people living in the country think about the amenities/services available to them.

How do people living in the country perceive change in their locality.

## FARM PRICES & RENTS

Comment on Agricultural Land Sales identifying regional differences between vendor, buyer, and tenure of holdings.

Compare regional differences in the sales of agricultural land, (number of transactions, aggregate area, average price, and tenure).

Examine the effect of the presence/absence of farm buildings on the price of land.

What are the trends in rent increases in agricultural land for the different regions.

Compare the agricultural land purchases of individuals and corporate bodies.

Discuss the average rents of agricultural land by region, area size group and percentage change.

Information to help with these studies might be obtained from the following datasets.

Wage differentials between agricultural occupation/contractual status of employee.

Overtime earning differentials between agricultural occupation/contractual status.

Regional differences in agricultural earnings of different occupational/contractual groups.

Minimum wages of agricultural workers.

Age and sex differences in agricultural wages.

Composition of agricultural earnings - overtime, non-pecuniary bebfits, normal gross earnings, etc.

Profile of families farming in Upland regions.

Changes in farming in Upland regions.

The potential of developing upland regions for leisure activities.

The structure of the labour force working on upland holdings.

Agricultural holdings - form of business, (sole trader, partnership, etc.).

Diversification - the growth of part-time farming and non-farming enterprises.

Profile of agricultural holdings.

Crop areas: roots, cereals, horticulture, grassland, farm woodland.

Rural youth - work, leisure, views.

Farmers' views.

Rural deprivation - differential access of socio-economic groups in rural areas to amenities/services.

Views of rural dwellers on local amenities/services.

Perception of rural dwellers on change in their locality.

Agricultural Land Sales

The effect of the presence/absence of farm buildings on the price of land.

Who is buying agricultural land?

Average rents of agricultural land by region, area size group and percentage change.

Breeding/wintering patterns for different bird species - identify concentrations, examine other features of identified locations, e.g. type of farming, climate,land cover, etc.

Compare distribution of classified groups of bird species.

Visits to the countryside/holidays.

Caravanning.

Second home ownership.

Distribution of trees by type.

**Appendix 1**

Conifer plantings v Deciduous trees.

Pollution.

Radioactivity.

Chemical use on farms ( pesticides, herbicides, fertilizers).

Land ownership (agricultural, military) / Land tenure.

Distribution of agricultural holdings - by  size of holdings, etc.

Irrigation.

Conservation areas (e.g. SSSIs).

Primary land cover.

Distribution of soil types.

Distribution of land classes.

Geological features (surface solid geology).

Physiographic data/topography - infrastructure.

Mineral deposits.

Mine and quarry locations.

Distribution maps for climate, (average annual rainfall, temperature, hours of sunshine, wind), compared with distribution maps for agriculture/species/altitude maps.

Profile of agriculture, species, etc., in National Parks, areas of outstanding natural beauty, etc. (Selected use of maps.)

Distribution of plant species/flora & fauna/lichens & mosses/mammals/carnivores, rodents,insectivores, herbivores/dragonflies/butterflies, etc. in relation to geological, land class maps, etc.

Landscapes - linked in with changes in agriculture and forestry.

Urban v Rural and Inter-regional population comparisons.

Ownerhip of second homes/holiday homes.

Membership of environmental/countryside groups.

Change in land cover, (area and type).

Minimum wages of agricultural workers.

Age and sex differences in agricultural wages.

Composition of agricultural earnings - overtime, non-pecuniary bebfits, normal gross earnings, etc.

Profile of families farming in Upland regions.

Changes in farming in Upland regions.

The potential of developing upland regions for leisure activities.

The structure of the labour force working on upland holdings.

Agricultural holdings - form of business, (sole trader, partnership, etc.).

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Profile of agricultural holdings.

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Farmers' views.

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Perception of rural dwellers on change in their locality.

Agricultural Land Sales

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Who is buying agricultural land?

Average rents of agricultural land by region, area size group and percentage change.

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Second home ownership.

Distribution of trees by type.

Conifer plantings v Deciduous trees.

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Radioactivity.

Chemical use on farms ( pesticides, herbicides, fertilizers).

Land ownership (agricultural, military) / Land tenure.

Distribution of agricultural holdings - by size of holdings, etc.

Irrigation.

Conservation areas (e.g. SSSIs).

Primary land cover.

Distribution of soil types.

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Geological features (surface solid geology).

Physiographic data/topography - infrastructure.

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Landscapes - linked in with changes in agriculture and forestry.

Urban v Rural and Inter-regional population comparisons.

Ownerhip of second homes/holiday homes.

Membership of environmental/countryside groups.

Change in land cover, (area and type).

## The Top Two Levels of the Database Hierarchy

There are some 1200 terms in the hierarchy stemming from the five main classes: Agriculture and Forestry, the Environment, Rural Economy, Rural Society, and Species Pictures. Here are the first two levels in the order they appear on the disc.

**AGRICULTURE & FORESTRY**

Agricultural ouptut
Agro-chemicals
Farm Size
Farms: Total Manpower
Farm Types
Forestry
Husbandry
Land Utilization
Markets

**THE ENVIRONMENT**

Climate
Geology
Heritage Preservation
Landscape
Pollution
Soils
Topography
Water Resources
Wildlife
Conservation Issues

**RURAL ECONOMY**

Agricultural Capital
Land Values
Ownership
Policy & Planning
Rural Employment
Rural Industry
Regional Designation

**RURAL SOCIETY**

Education
Environmental Politics
Health & Welfare
Housing
Infrastructure
Leisure & Recreation
Population
Services
Community

**SPECIES PICTURES**

Higher Plants
Lower Plants
Birds: A-Z
Mammals: A-Z
Reptiles
Amphibians
Butterflies: A-Z
Moths
Dragonflies: A-Z
Orthoptera
Coleoptera
Diptera
Hymenoptera
Hemiptera
Miscellaneous Insects
Aranea
Miscellaneous Arthropods
Mollusca
Other Invertebrates

**SPECIES PICTURES**

Higher plants
Lower plants
Birds: A-Z
Mammals: A-Z
Reptiles
Amphibians
Butterflies: A-Z
Moths
Dragonflies: A-Z

For details of the hierarchical approach for the disc please see Chapter 7.

## Names of the 22 Areal Units used by the Countryside Mappable Data

There are 22 categories of areal unit on the Countryside Disc, upon boundaries of which are plotted mappable data. One of these area types must be entered in the upper panel shown when Areal mappable data is required, and the actual name of the area entered in the lower panel.

A full list of each category may be found by entering **Help** through the menu bar, and selecting **Areal**. Place the pointer over any one of these and press the "Action" button and a list of names will be displayed. The precise spelling and spacing must be followed, though only 20 characters need to be entered in the lower panel.

1. National Aggregate
2. Country
3. Standard Region
4. ITV Region best fit
5. ITV Region n/o 1
6. ITV Region n/o 2
7. ITV Region n/o 3
8. EEC Level 2 Region
9. Regional Health Authority
10. Police Authority Area
11. County
12. European Assembly Area
13. GPO Postcode Area
14. Local Education Authority
15. CURDS Functional City
16. CIPFA Library Area
17. District Health Authority Area
18. CURDS Local Labour Market Area
19. Travel-to-work Area
20. District
21. Parliamentary Constituency
22. Amalg. Employment Office Area

# Countryside User Guide

## A SCHEMATIC OF MENU OPTIONS UNDER ANALYSE

| | Help | Main | Analyse | Link | Correlate | Name |
|---|---|---|---|---|---|---|

| Class | Detail | Window | Retrieve |
|---|---|---|---|

| Total $^2$ |
|---|

| Resolution | Area $^1$ |
|---|---|

| Values | Rank | Unit | Download |
|---|---|---|---|

| First | End |
|---|---|

| Values $^3$ | | Grid Ref | Download |
|---|---|---|---|

| Manual | Automatic |
|---|---|

| Automatic |
|---|

| Equal | Nested | Quantiles | Local |
|---|---|---|---|

| National |
|---|

**1** If Areal Unit Data

**2** If Additive Data

**3** If additive data Sum replaces Values

# Countryside User Guide

## INDEX

# Countryside User Guide

# KINGSTON HILL FARM AND SURROUNDING AREA

OTHER BARN

FARM YARD 2

N

KINGSTON BRAKE

SCRUB

STREAM

DISUSED
RAILWAY

DISUSED
BARN

RIVER

KEY

WOODS

ROADS

TRACKS

DITCH

POND

VILLAGE

HOUSE

FARM YARD 1          FARM HOUSE
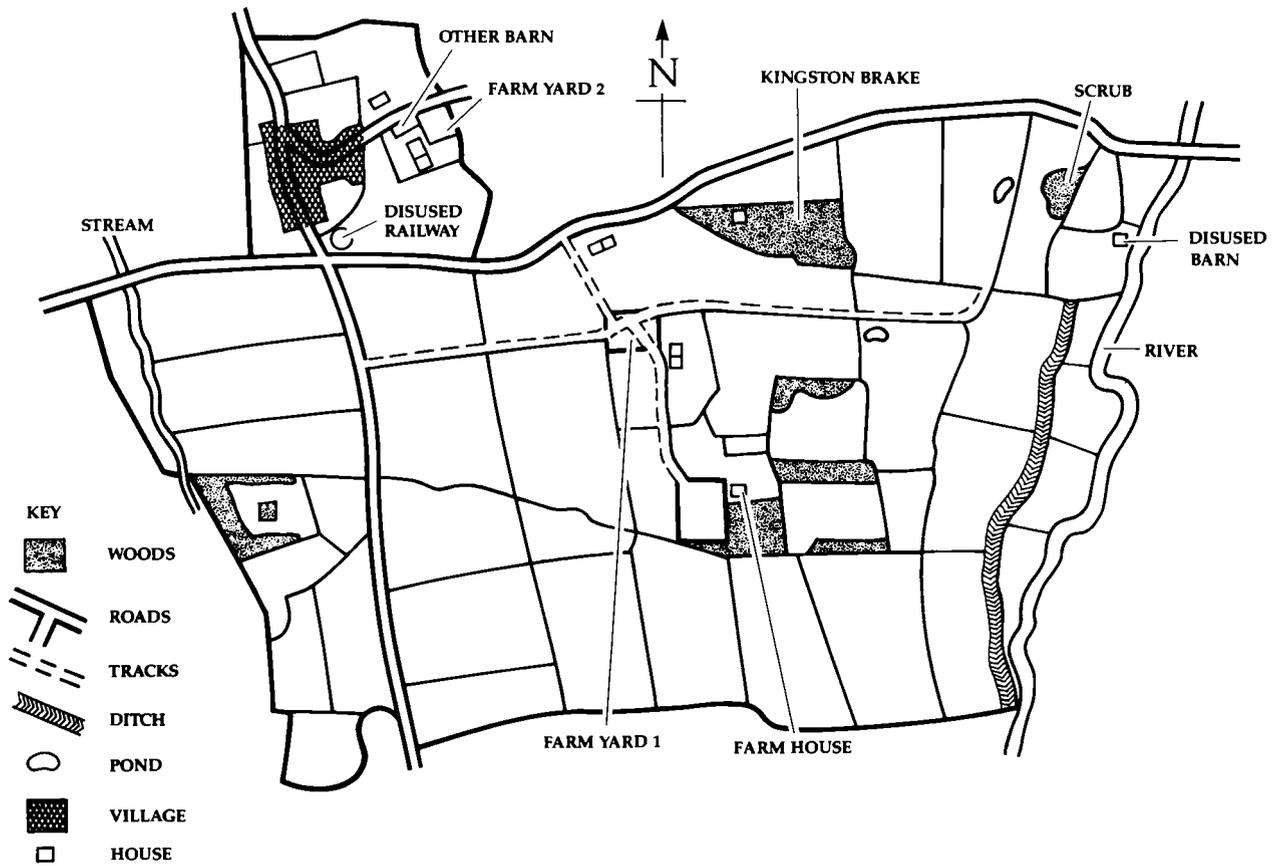
# KINGSTON HILL FARM WITH FIELD NUMBERS

N

34

21          33          47

36

35

20          37

2          11          12          38          41

1

25          40

3          22   24          39          42

13          14          27

4          26

23          44          45

KEY          5   6          15          16          28          29          43

7                                       WOODS

ROADS          17          18          30          31          32          46

9

TRACKS

8

DITCH          19

POND

10

VILLAGE

HOUSE

**BBC**
*ENTERPRISES*