M O R P H 2

A

Morphological Classification System

for

Mapped Archaeological Data

U S E R ' S G U I D E

N.B. Throughout this manual many words are included in the text in BLOCK CAPITALS (e.g. the COMPLEX includes...), this indicates words that have a very specific meaning as defined in the Glossary, Appendix A. Terminology is always a problem in all but the simplest classification systems, and therefore it is important that the user ascertains that their use and understanding of any of these key words is the same as that of other users. Please read this manual thoroughly before inputting any data.

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1 Introduction

1.1 The background to, and development of, the prototype classification system for crop and soil-marks has been detailed elsewhere (Edis, MacLeod and Bewley, 1989), but the introduction of the new expanded system described here requires a brief history.

1.2 The prototype system was designed and installed between December 1987 and by May 1988. Input of data for the first test area, Kent, then followed, leading to the production of a report on the data in July 1989. Encouraged by preliminary results from this exercise, RCHME and English Heritage agreed early in 1989 to a new project to study the Yorkshire Dales, an area rich in archaeological earthworks.

1.3 Despite its modification and enhancement the basic premises of the system remain the same whether applied to cropmarks or earthworks, and therefore the reasoning in EDIS et al (1989, pp113) remains valid.

"One of the principal advantages of a morphological approach is that it does not attempt to force sites of unconfirmed date and significance into pre-existing archaeological categories. On the contrary, it allows them to be compared, grouped and re-grouped on the basis of their empirically observed physical and spatial attributes - an essential flexibility in the case of sites whose archaeological interpretation can as yet be no more than tentative..... This means that an identity can be established, e.g. 'rectangular enclosure', but has no specific archaeological meaning unless we are able to argue for an interpretation using other evidence derived either from documentation, excavation, field-walking or geophysical survey. Only in the light of such evidence, derived either from the site itself, or from others of the same morphological 'class', is it possible to confirm or suggest that the rectangular enclosure is an Iron Age 'settlement' or mediaeval 'defended site'.

The development of MORPH thus began with the simple question 'how to classify?' On what basis could the aerial photographic data be best ordered so that decisions could be made quickly and reliably about the potential significance and importance of thousands of vulnerable plough-levelled monuments? The most obvious attributes of cropmark sites are the shapes and patterns defined by their filled ditches or ploughed banks. Thus shape and pattern were identified as the primary variables upon which classification would be based.

To some archaeologists, the simple use of morphology as a basis for classification causes alarm, but in our present limited state of knowledge there appears to be no other practical way of ordering and evaluating the mass of complex information provided by cropmarks. Implicit in the new approach, however, is the recognition that this first level of classification is based on just two aspects of the complete archaeological record - the shape and pattern of features that happen to be visible on aerial photographs. Like all provisional classificatory schemes, it must be treated with care and caution. Above all, it must be recognized that morphological classes and archaeological interpretations defined on the basis of aerial photographic

evidence will be liable to constant modification in the light of information obtained from future programmes of aerial and ground investigation."

1.4 As this manual (and MORPH) will demonstrate, all the above reasoning can be equally applied to monuments still surviving as surface earthworks. This is particularly relevant to earthwork sites in those vast areas of upland Britain where transcription from aerial photographs is the first stage in a process of recording which may lead to ground survey.

The main reason for the development of the new system (MORPH) was therefore to allow the primary classification of upstanding, as well as plough-levelled, archaeological sites. An examination of the prototype system showed that most upstanding remains could be described using the same methodology, but some minor modifications and enhancements were necessary.

1.5 Further changes and improvements were made as a consequence of the experience gained whilst inputting the Dales data. In addition the requirements of other bodies (most notably the NAR) have led to some enhancement of the Primary Record Identification table (PRI) and the development of a standard summary report form.

2 Methodology

The starting point for MORPH Description is a translucent map overlay showing the archaeology of the area to be covered. Normally the overlay will be at 1:10,000 scale and will be the result of a primary level of survey as detailed in the NMP spec (RCHME 1993 ??). Information from higher levels of survey can also be incorporated within the system. The actual method of inputting data to the computer system is described in some detail below (Section 4) but some general points will be made here.

2.1 Basic requirements for the MORPH Description process.

It is always preferable that the MORPH Description process should be done by the person who carried out the photo-interpretation, as they will already have thought about each site in some detail and can apply knowledge gained from the photos that is not apparent on the overlay.

The essential requirements for the process of MORPH Description are the map overlay, its base map (for topographical details), and a roamer or scale ruler for reading grid references. (See Appendix D for details of the recommended computer hardware and software).

For all but the most simple of maps a paper working copy of the overlay is helpful. The copy should be used to mark up parish boundaries and identify them with the PARISH codes, and to label with the appropriate record numbers those sites previously recorded by the NAR or county SMR. Keep the working copy legible so it can be used as a reference when working on adjacent maps.

2.2 Preparation.

Before setting up at the computer station make a preliminary assessment of how the archaeology is to be broken up and check completed adjacent map sheets for any GROUP or COMPLEX overlaps (see Appendix ?? for using TESTGRID). (If more than one MORPH system is being used for a project see Appendix G for further notes on numbering).

Make sure that you have to hand the most current list of interpretation codes and the Thesaurus of Archaeological Site Types (See Appendix B).

A selection of the photographs used for interpretation can be useful whilst inputting.

2.3 Inputting procedure.

During inputting clearly mark each COMPLEX on the working copy and mark each SITE with its GROUP and SITE number as it is input.

The inputting process is usually carried out by one person and an experienced operator should find that a target of 75 - 100 SITES input per day is readily attainable. (As a quality control exercise, regular dual inputting sessions will help to maintain a standard approach to the data).

Keep a list of all inputting errors, noting the number of the records and what the corrections should be.

2.4 End of Day Procedure.

When you have finished inputting new records refer to your list of errors (if any) and edit all those records which require correction before exiting MORPH (see 4.6).

Users of AERIAL (see Appendix D.2) should next run and plot the TESTGRID report to check the NGRs (see ??).

A daily back-up should be done which encompasses all files in the C:\USR\DBASE\PROJECT\ sub-directory. It is recommended that at least two sets of back-up discs are used in rotation, better still use a set for each working day and log the date for each back-up done. The MORPH back-up procedures should be treated as entirely separate from your regular system back-up.

3 TYPES of SITE

3.1 TYPE.

The fundamental concept underlying the system is that all mapped archaeological features, whether surviving as earthworks or in the form of crop or soilmarks, can be described as one or more of four basic TYPES: these are ENCLOSURES, LINEAR SYSTEMS, LINEAR FEATURES and MACULAE (for definitions see the Glossary, Appendix A; for a more detailed discussion of each TYPE see also sections 6 - 10 of this manual). A traditional archaeological site can be seen as either a single or multiple example of any one of these TYPES, or as a combination of any two or more TYPES. A single example of any one of these TYPES is considered to be a SITE within a COMPLEX (3.2.1) and forms one MORPH record.

3.1.1 ENCLOSURE.

This SITE TYPE describes single or multiple linear CROP or SOILMARKS, EARTHWORKS or STONEWORKS, which clearly define and surround an area which may or may not include internal features. A morphologically distinct freestanding ENCLOSURE within another ENCLOSURE would normally be described separately. Buildings, where the wall lines are visible, should be described as ENCLOSURES.

The basic rule for deciding if a feature can be described as an ENCLOSURE is that at least one dimension should be measurable (LENGTH, BREADTH OR DIAMETER). If measurement of dimensions is not possible then describe as a LINEAR FEATURE and flag as a possible ENCLOSURE.

When an ENCLOSURE is INCOMPLETE only give those dimensions which can be measured from known side to known side. In the case of a rectangular ENCLOSURE with one end (short side) not visible only a BREADTH can be measured. In this example the turn of a corner suggesting the presence of the invisible fourth side would normally be judged sufficient to allow a LENGTH to be measured.

When the same description applies to two or more ENCLOSURES the record for the first one described can be duplicated and the duplicates, numbered sequentially, appended to the same GROUP (See The ENCLOSURE Table, MULTIPLE DESCRIPTIONS 8.213 and ENCLOSURE COMPLEX 9.2.6).

3.1.2 LINEAR SYSTEM.

This SITE TYPE is used to describe an extensive network of linear features which relate to each other to form a coherent whole. This includes conjoined formations of similar enclosures forming an ENCLOSURE COMPLEX. As a guide the network of linear features must be sufficiently intact that a number of

measurements may be taken and from them at least one representative dimension (i.e. length or breadth) may be estimated for the UNIT SIZE. If these measurements are not possible the SITE should be described as a LINEAR FEATURE which can be flagged as a potential LINEAR SYSTEM.

3.1.3 LINEAR FEATURE.

This SITE TYPE describes one or more linear features which cannot be described as an ENCLOSURE or a LINEAR SYSTEM. Examples of LINEAR FEATURES include trackways, roads and pit alignments.

(N.B. MACULAE can have a LINEAR pattern e.g. a line of small quarries).

Where a SITE is described as a LINEAR FEATURE but it is thought to have been originally part of an ENCLOSURE or LINEAR SYSTEM it is possible to flag this interpretation using the DEFINITION CHECK option. As a guide, if there is enough of a probable enclosure visible for one dimension (known side to known side) to be given then it should be described as an ENCLOSURE, otherwise it should be described as a LINEAR FEATURE but flagged as a potential ENCLOSURE. A similar criterion can be applied when choosing between LINEAR FEATURE and FRAGMENTARY LINEAR SYSTEM (see 3.1.2).

3.1.4 MACULA.

This SITE TYPE is used to describe an area CROP- or SOILMARK, EARTHWORK or STONEWORK of any shape or size. This includes any feature, or group of similar features, from post-pit size (or a single standing stone) up to extensive areas e.g. quarries, pits, cairns and barrows. Specifically excluded are pit-alignments, which should be described as LINEAR FEATURES.

3.1.5 INDUSTRIAL COMPLEX.

INDUSTRIAL COMPLEX is the odd one out amongst the SITE TYPES and is in fact a composite TYPE which has been added to speed the description of industrial landscapes. Although it gets a single SITE record it is actually a GROUP of features each of which could be described using the appropriate TYPE (this should be done if the extra information provided by this method will be found useful). For this reason the INDUSTRIAL COMPLEX option should not be considered as part of the "core" morphological system (see section 10).

It is also possible to describe an area as an INDUSTRIAL COMPLEX, and then add further SITE descriptions to the GROUP for specific (related) elements within this area considered to be of particular interest. In this instance the INDUSTRIAL COMPLEX record should be the first in a GROUP of two or

more records. (Those features given their own descriptions should still have their presence recorded in the INDUSTRIAL COMPLEX description).

N.B. features within the area but which are not part of that industrial process must not be GROUPed with the INDUSTRIAL COMPLEX.

3.1.6 RIDGE AND FURROW

Ridge and Furrow is recorded by either using the LINEAR FEATURE table or the LINEAR SYSTEM table. The LINEAR FEATURE table should be used for single blocks of R & F, extensive areas of R & F should be recorded using the LINEAR SYSTEM table. In all cases the SITE INTERPRETATION should be "Ridge and Furrow" (RFLB). The GROUP INTERPRETATION can be given as "Field System" (FSYS) if necessary.

When using FURTHER NGR DATA (see 5.2.13) the references should be placed at the centres of individual blocks of R & F. (It is not necessary to give every block a grid reference).

The LENGTH and UNIT LENGTH is always measured in the direction of the furlongs.

Reverse S shaped R & F should be described as SINUOUS (LINEAR FEATURE table) or CURVILINEAR (LINEAR SYSTEM table).

R & F should not automatically be GROUPed with the settlement it surrounds and similarly care should be taken not to over- extend a LINEAR SYSTEM description, or a GROUP. The original positions of Parish or Township boundaries should be considered when deciding how to record R & F.

3.2 APPROACHING THE DATA

3.2.1 SITE.

A single example of any one of the TYPES (see 3.1) is considered to be a SITE and forms one MORPH record. A SITE may contain more than one element. e.g. a line of four similar, small quarries might be described as a SITE of TYPE MACULA; PATTERN LINEAR; NUMBER OF MACULAE DESCRIBED 4.

SITES may be related to each other by GROUPing.
(See 3.2.4)

3.2.2 GROUP.

A GROUP consists of one or more SITES. The location, extent and composition of each GROUP is defined solely by its constituent SITES and their individual 8-figure National Grid References and other details.

When a number of physically close SITES show morphological similarities and/or suggest contemporaneity with each other they can be identified as a GROUP. A GROUP of sites can be given a collective interpretation; e.g. an enclosure containing hut circles and pits might be given the GROUP interpretation, "Settlement" (see 5.2.1). In the absence of physical closeness SITES should not be GROUPED despite other affinities or relationships.

SITES within a GROUP should be described in a logical order, e.g. in the example above the enclosure should be described first followed by the hut circles and then the pits. (If necessary the memo field can be used to list specific SITE to SITE associations which are not clear from the GROUP structure - see 3.2.4)

3.2.3 COMPLEX.

A COMPLEX consists of one or more GROUPS. The location, extent and composition of each COMPLEX is defined solely by its constituent SITES and their individual 8-figure National Grid References and other details.

In principle, a COMPLEX should not be thought of as anything other than an area of landscape which contains archaeological features. Normally the limits of a COMPLEX are determined by the spatial continuity of the archaeology. In other words if features are separated by an expanse of sterile ground they should be assigned to different COMPLEXES.

In those areas having a fairly continuous archaeological landscape, COMPLEXES can be very large and it is useful (and psychologically helpful) to break these down into a series of smaller COMPLEXES. Often this can be done by using natural features, such as rivers, as the COMPLEX boundary lines. (Even in areas with sparse archaeological remains major natural features can usefully be used to determine the extent of a COMPLEX). Inevitably there will be some instances where features (e.g. tracks) will cross these limits. In these cases it is permissible to have a spatial overlap between adjoining COMPLEXES, although this should be avoided wherever possible. In practice the extent of a COMPLEX will often be determined by a subjective assessment of the GROUP potential of the SITES of which it is composed.

N.B. COMPLEX does not necessarily mean complicated, a COMPLEX may contain only one isolated SITE. A SITE may vary from a single pit to a large number of similar pits, from a ring ditch to an extensive field system.

3.2.4 NUMBERING OF THE RECORDS

Each SITE description is identified by a unique four-part code called the MORPH number, for example KE.12.4.7. The first two letters are the COUNTY[1] code (KENT in this instance). The first number refers to the COMPLEX, the second number refers to a GROUP within that COMPLEX, and the last to the described SITE within that GROUP. The MORPH NUMBER is held within a PRIMARY RECORD IDENTIFICATION TABLE (the PRI table), and forms the key for all database searching. (N.B. when multiple input stations are in use the database manager will be responsible for ensuring against number clashes. See Appendix G)

3.3 STRUCTURE DIAGRAM.

Fig ?? shows the relationships between the various tables that make up the MORPH database.

[1] When a project area crosses county boundaries the two letter code entered here can be derived from the project title rather than a county name.

4 The Program, MORPH (v2.2)

4.1 Introduction.

For the main part the program works by presenting the user with one or more options, which are selected using the keyboard. Options will be highlighted and there will usually be a message to further explain what a particular option means or will do (these messages normally appear at the bottom of the screen). Data is normally entered via the double-framed boxes which appear towards the bottom of the screen, the specific fields to which the data relates will be indicated on the form above by a small blue arrow.

4.2 Keyboard Responses.

There are a number of standard types of question to which the user can respond:-

4.2.1 "Press any key to continue"

This message means that the program has paused to show you that it has successfully (or not!) completed an operation, pressing any key (the SPACE bar is a good choice) will allow the program to continue.

4.2.2 "OK to Continue or ESC to finish **Y**" or
"OK or ESC **Y**"

One of these messages appear whenever you are about to enter one of the MORPH tables. To enter the table you must press the "Y" key, or to cancel the operation press the "ESC" key.

4.2.3 "Please Type in the Name of the Parish Code Here : _____" or
"Please Enter Number here : ____"

Messages such as these require the input of a code or numeric value following the guidelines for each specific field. Having typed in the code or number press RETURN to confirm the entry. (When editing the data, via BROWSE, typed information already stored in the field will be given as the default, just press RETURN to leave the data unchanged).

4.2.4 "Is the Grid Reference OK [Y/N]"

Some fields require further confirmation, prompted by a request similar to this at the bottom of the screen. Press either "Y" for YES or "N" for NO. Answering NO allows you to correctly re-enter the data.

4.2.5 Highlighted Menus

The majority of responses require the user to make a selection from lists of options presented on screen. The first option in the list will be highlighted and an explanation of this option will appear at the bottom of the screen. Other options can be highlighted by using the cursor keys on the keyboard, as each option is highlighted so the message at the bottom of the screen will change. Having highlighted the option required the user must then press RETURN to select this option.

N.B. It is possible to select options from the menus by pressing the first letter of the option required BUT this is not recommended as it is a very common cause of error. The computer will select the first option in the list with the given starting letter, not always the option you require, e.g. Pressing "P" in an attempt to enter PM in the Period field will actually give a period of PA.

4.3 The Opening Screen.

This screen welcomes you to the system and displays the copyright message.(fig.??)

"Press any key to continue....", and an input box appears at the bottom of the screen asking for the name of the directory you wish to use[2] (e.g.the Yorkshire Dales data is in the c:\usr\dbase\dales sub-directory). Type in the directory name and press return or enter. (If this is a new directory then you will be asked to confirm and then the new directory will be created with a complete set of empty databases). The Main Menu will now be displayed.

4.4 The Main Menu, or Primary Menu, screen (fig.??).

Displayed on this screen are details of the current status of the database to be used, and a menu. From here you may choose to "**Add**" new records, "**Browse**" or edit existing records, or "**Report**" on the database. Selecting "**Exit**" or "**Quit**" will take you out of the system. (For "**Defaults**" see Appendix G). By using the cursor keys to highlight the different options, a brief explanation of the highlighted option will appear on screen. To make a selection highlight the option required and press the return key.

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[2] If you enter the name of a sub-directory which does not already contain the Morph2 databases you will be asked if you wish to create a new database, the program will then create the necessary sub-directory and copy the blank database files into it. DO NOT use the c:\usr\blank sub-directory. If you are working on a Project with multiple input stations then please see Appendix ???

4.5 Inputting New Records.

To begin inputting data select the "**Add**" option from the Main menu.

4.5.1 AUTHOR

You are now required to enter your initials, which will automatically be appended to the AUTHOR field for each record created. (New users please confirm that your chosen initials do not duplicate those of any existing AUTHOR).

4.5.2 COUNTY

This is a two letter code which usually represents the County within which the monuments lie (e.g. "NY" = North Yorkshire), however, it is also possible to use a Project code here (e.g. "TG" = Thames Gravels). The codes to be used will have been agreed as part of the Project Specification.

N.B. The COUNTY code is fixed for all inputting sessions, if you require to change it whilst inputting then you MUST return to the Main Menu and select "**Add**" again. It is not possible to change the COUNTY code by editing the record.

4.5.3 MAP

This is the name of the OS Quarter Sheet (e.g. SE23NE) on which the monument lies, because the Quarter Sheet Number is a part of the NMR numbering system there are specific rules which apply to SITEs and GROUPs that lie on or near to the edge of map sheets (see 5.2.10).

N.B. The MAP number is fixed for all inputting sessions, if you require to change it whilst inputting then you should return to the Main Menu and select "**Add**" again. However, if it is only one or two records that need inputting on a different map sheet then it is possible to input the records and then BROWSE and edit the record to change the MAP number.

4.5.4 MORPH Addition Menu

Your choice from this menu determines the RECORD number of each SITE (see 3.2.4), by allowing the creation of a new COMPLEX or appending SITES to existing GROUPS or COMPLEXES.

If you are unsure that what you want to add is a new COMPLEX, GROUP or SITE refer to section 3.2.

The MORPH number of the last record appended in the current session is displayed in the box at the top of the screen. At the beginning of a session the record number displayed will be 0.0.0.

4.5.4.1

The option to "**ADD RECORD No. MANUALLY**" requires an authorization code only available to the system manager (see Appendix G).

4.5.4.2

Beneath the main menu box DEFAULT VALUES(?) will be displayed if set (see G). The default value indicates a limit below or above which any new COMPLEX numbers will be allocated. It is still possible to add new records to old COMPLEXES created before the default was set.

4.5.4.3

Selecting one of the top three options will take you directly to the PRI screen (see 5.1). Check that the new record number, displayed at the top of the PRI screen, matches your expectations; e.g. if you open a new COMPLEX the GROUP and SITE numbers will both be 1. If you have made a wrong choice pressing ESCape will bring up the message - OK to abandon all changes to this record? (press Y or N). Selecting Y will return you to the ADDITION menu.

4.5.4.4

Selecting the ADD TO ...OLD COMPLEX,...OLD GROUP options requires you to input (in the boxes which will appear at the bottom of the screen) the relevant old COMPLEX and old GROUP numbers. Having done so you will then be taken to the PRI screen for the new record. Check that the record number matches your expectations.

4.5.4.5

Once you have started inputting a record there is no stepping back allowed, and so care should be taken. If errors do occur they should be jotted down in a list for correction at the end of the session via the BROWSE and edit options.

On successful completion of each record input you will be returned to the Addition Menu.

4.6 Browsing and Editing Existing Records.

To view or edit data already existing in the database select BROWSE from the Main Menu.

You will then be asked to input your initials as AUTHOR (see 4.5.1). (This will only affect the database if you then choose to edit a record).

All the records in the database can be viewed sequentially or a specific record or set of records can be located using the Query facility.

It is important to remember that each MORPH record consists of two or more parts (see Structure diagram fig ??) stored in separate tables. The BROWSE option allows you to view each part of a record according to the table in which the information is held (PRI, ENCLOSURE etc). The tables are linked and it is possible to view the related parts of a record by using the function keys e.g. the ENTRANCE table can be accessed via the "F6" key whilst browsing the LINEAR FEATURE or ENCLOSURE tables.

4.6.1 Morph BROWSE/EDIT Menu.

The "**Browse**" menu presents a list of the tables in which the MORPH records are stored, any of which can be viewed by selecting an option in the usual way.

The commonest way to view data is via the PRI table and so this will be explained in some detail, but the options available when BROWSING the other tables are very similar. Whilst browsing the PRI database it is possible to switch to the related TYPE record (i.e. ENCLOSURE, MACULA etc) as well as the GROUP, ADDITIONAL NGR and ENTRANCE tables for that record. It is then possible to go on and edit the information in these subsidiary tables if required.

When BROWSING any of the tables a help facility is provided using the "F1" function key. Use only those keys which are highlighted, some of the other keys displayed perform functions (not needed in normal usage) that may cause problems with the data structure if incorrectly used. (N.B. after using the help facility it is necessary to first press a key to return to the BROWSE mode, and then press the correct key for the function required).

4.6.2 BROWSING the PRI.

4.6.2.1

The Cursor keys move you up and down through the database one record at a time.

4.6.2.2

The "Home" and "End" keys will take you to the first and last records in the table being BROWSEd.

4.6.2.3

The "F2" key will allow you to edit the record. Editing a record will change the AUTHOR and the date CREATED. After pressing "F2", and confirming that you really wish to edit the record, you will be given the chance to change the MAP NUMBER of the record. From here on, editing is nearly an identical process to inputting as detailed in Section 5. You will find when editing a record that the contents of some fields, those which have been typed in (not selected from menus), will be offered as default values. Field contents which were selected from a menu bar must be re-selected even if correct.

4.6.2.4

The "F3" key allows you to change the TYPE (N.B. see also "F4" key). For example if a SITE which should have been described as a LINEAR SYSTEM has been incorrectly input as a LINEAR FEATURE this function will allow the change to be made without the need to re-input the PRI information. Having selected the new TYPE, inputting is identical to the procedures documented in sections 6 - 10.

4.6.2.5

The "F4" key allows you to Browse the contents of the TYPE table for the currently selected record. If you wish to then edit the contents of the TYPE table this can be done by pressing the "F2" key. Pressing the "ESC" key returns you to the PRI table.

4.6.2.6

(The "F5" key allows you to go directly to a record using the computer record number. N.B. this is not the same as the MORPH RECORD NUMBER, see 3.2.4. See also the "F7" key below.)

4.6.2.7

The "F6" key allows you to Browse the ADDITIONAL NGR table. The ADDITIONAL NGRS are displayed up to six at a time and can be edited by following the instructions at the bottom of the screen. To delete an NGR press the "Delete" key and then enter the number of the NGR you wish to remove. The NGR will now be marked with an asterisk and will be permanently deleted when you exit this screen. (If you wish to delete all the NGR table entries for the selected record this can be done by editing the PRI table and selecting the option NONE for the ADDITIONAL NGRS field. The addition of further NGRS must also be done by editing the PRI table.)

4.6.2.8

The "F7" key allows for either single records to be located or blocks of records to be isolated. Pressing the "F7" key brings up a menu.

The **"Search"** facility provides two options when Browsing the PRI table. By choosing to search by **"Number"** single records can be found by entering their MORPH RECORD NUMBER. Alternatively, choosing **"Location"** will limit the database to those records located within a block defined by two grid references. (After choosing the latter option it is possible to return to viewing the entire database by pressing "F7" and then selecting the **"Disable"** option. This block search option is not available from within the other tables.)

The **"Filter"** option allows groups of records to be isolated according to the contents of any of their fields, this requires some programming knowledge. Examples of such filters might be :-

PRI_INT="MILL" - this will select only those records that have a SITE INTERPRETATION of MILL, or

PRI_PAR="ST123".and.PRI_PER="UM" - which will select all records with a Parish code of ST123 and of Unknown Medieval date. **(**See section Appendix C on Data Structure for other field names**)**.

The **"Disable"** function removes filters set either by choosing the **"Filter"** option or via the **"Search"** by **"Location"** option.

4.6.2.9

The "F8" key allows the GROUP INTERPRETATION and PERIOD to be deleted. N.B. Any attached COMMENTS will also be deleted. (Other SITE records in the GROUP are not altered).

4.6.2.10

The "F9" key allows the GROUP INTERPRETATION and PERIOD and any attached COMMENTS to be edited. (To access the COMMENTS follow the instructions for inputting new COMMENTS see section 5.2.4).

4.6.2.11

The "ESC" key allows you to escape from the Browse mode and returns you to the MORPH Browse/Edit Menu.

4.6.2.12

The "Delete" key will delete a complete MORPH record including any related information in other tables. (However, a related GROUP table entry will only be deleted if there are no other SITE records remaining within the same GROUP).

When you have finished Browsing and editing the database press "ESC" to return to the Browse/Edit menu and return to the Main Menu by selecting the **"Exit"** option.

5 The Primary Record Index

5.1 Definition.

The Primary Record Index (PRI) is the master database in which are stored the administrative, locational and basic interpretative details for each SITE. The morphological description for each SITE is stored in separate tables according to TYPE, flagged within the PRI and related by using the unique site RECORD NUMBER.

Additional information relating to individual SITES or GROUPS can be recorded in the GROUP table.

On the PRI screen the RECORD NUMBER, AUTHOR and CREATED fields for the new SITE will already be displayed but the other fields will be blank. At this point a final opportunity is given to abandon this record ("ESC" key returns you to ADD menu), but if all is well, enter "Y" for Yes and follow the descriptive process, details of which are given in the following Sections. Once you have started inputting a record there is no stepping back allowed, and so care should be taken. If errors do occur they should be jotted down in a list for correction at the end of the session via the BROWSE and edit options.

5.2 The Data Fields.

5.2.1 The GROUP table

When you create a new GROUP you will be given a chance to enter a GROUP INTERPRETATION. Answering "Yes" will allow access to the GROUP table. This is an optional table that can be used to give additional information about a SITE or GROUP of SITEs.

The information in the GROUP table will always be displayed for all SITEs in a GROUP. If you want to change or add a GROUP INTERPRETATION at a later date then this can be done by BROWSEing the relevant PRI record and then pressing the "``F9" key.

N.B. Access to the COMMENTS field is only available through the GROUP table (see 5.2.4).

5.2.2 GROUP INTERPRETATION

This is an optional field which can be used to give a collective interpretation to all the SITEs in a GROUP e.g. The GROUP INTERPRETATION "Settlement" might be given to a GROUP which consists of SITEs interpreted as "Enclosure", "Hut Circle", and "Pits".

Alternatively it can be used to give an additional interpretation to a GROUP consisting of only one SITE e.g. SITE INTERPRETATION "Bell Pit", GROUP INTERPRETATION "Lead Workings".

The GROUP INTERPRETATION should not normally be the same as the INTERPRETATION of any of the SITEs within the GROUP

(When use of the COMMENTS field is required but a GROUP INTERPRETATION is not needed then four asterisks "****" should be entered in this field).

5.2.3 GROUP PERIOD

The GROUP PERIOD should normally be the same as the PERIOD of all the SITEs within the GROUP. (This also applies when the use of the COMMENTS field is required but a GROUP INTERPRETATION is not needed).

5.2.4 COMMENTS

The COMMENTS field is a free text field of unlimited length that can be used to record information specific to a GROUP. These notes should be considered as a short footnote to the record and be written in good English e.g. if the AUTHOR wishes to give further details of the state of preservation not adequately recorded by the FORM and STILL IN EXISTENCE fields.

COMMENTS should not repeat information that is recorded in the PRI or the TYPE tables.

COMMENTS can also be used to make observations on individual SITEs in which case the SITEs should be referred to using the full MORPH NUMBER.

The COMMENTS field can be accessed by pressing F2 whilst the GROUP table window is displayed.

Notes can be typed into the COMMENTS box and then saved using the "Ctrl"-"W" key combination.

N.B. When entering COMMENTS it is essential to also enter the GROUP INTERPRETATION and GROUP PERIOD according to the above guidelines.

5.2.5 AUTHOR

See 4.5.1 Inputting New Records.

5.2.6 COUNTY

See 4.5.2 Inputting New Records.

5.2.7 MAP

See 4.5.3 Inputting New Records, and 4.6.2.3 Browsing and Editing Existing Records.

5.2.8 CREATED

See (4.6.2.3) Browsing and Editing Existing Records.

5.2.9 PARISH

Enter a PARISH code which will normally relate to a separate look-up table for Parishes. For subsequent entries the same PARISH code can be repeated by simply pressing return.

5.2.10 NAR REFERENCE

Enter an existing record number or numbers if available. Only the unique numeric part of an NAR record number is required. Multiple entries should be in the form **5,7,10** or, if sequential, in the form **7-9**.
If the SITE is part of an existing NAR record which is centred on an adjacent map sheet (i.e. has a different map number) then the record must be edited to change the MAP to match that of the original NAR record (see also GROUP 3.2.2).

Existing NAR Linear feature and Roman Road numbers must be entered in full (e.g. **LIN 7** or **RR771)**.

5.2.11 SMR REFERENCE

Enter an existing record number or numbers if available.

With all GROUPS that lie on or near county boundaries ensure that the PARISH code for each SITE reflects the correct county for the SMR REFERENCE given (see appendix C).

5.2.12 NGR

This should normally be a point centrally placed on the feature being described. With enclosures a centre point (i.e.not on ,but in the enclosure) can be given. Where enclosures have internal features that are to be described separately care should be taken to ensure that the NGRs will clearly identify which parts are being described. (The NGR entered will be checked against the map sheet number and a warning given if there appears to be a contradiction. It will sometimes be valid to input an NGR which lies off the given MAP sheet - see 5.2.10).

5.2.13 FURTHER NGR DATA

If the central NGR (see 6.2.12) is sufficient select NONE.

The NGR TABLE allows one or more additional NGRs to be entered to help define more closely the feature or features being described These points should normally lie on drawn features.

These additional NGRs can be used, for example, to mark the ends of a LINEAR FEATURE, or for even longer features mark those points at which the feature makes a major change in direction. Similarly they may be used to ring the limits of an INDUSTRIAL COMPLEX or LINEAR SYSTEM, or in some cases to mark individual maculae within a MACULA description.

With RIDGE & FURROW place additional NGRs at the centre of the furlongs.

N.B. the purpose is simply to aid the correlation of the database and map-based information. Only use the minimum number of points that will adequately identify the feature. Don't get carried away!

The option OTHER should not be used at present.

5.2.14 LOCATION

LOCATION relates to the topographical position of the SITE being described. This can usually be ascertained from the reading of the contours on the base map, but additional knowledge gained from photographs or ground visits can of course be used. There will obviously be some sites for which more than one of the available descriptions might apply, in such cases the author must decide which they feel is the dominant LOCATION (the VARIOUS option is only to be used for extensive features which clearly have more than one type of topographic location)

5.2.15 ASPECT

This can usually be ascertained from the reading of the contours on the base map, but additional knowledge gained from photographs or ground visits can be used. There will obviously be some sites for which more than one option might apply, in such cases the author must decide which they feel is the dominant ASPECT. The ALL option is only for sites which have an open aspect in all directions.

5.2.16 STILL IN EXISTENCE?

STILL IN EXISTENCE enables the AUTHOR, by answering "NO", to flag any sites that are known to have been destroyed before the date of this record. If the SITE is not known to have been destroyed then the answer should be "YES".

"YES" is not a guarantee that the site does indeed still exist.

An EARTHWORK that has subsequently been ploughed has not necessarily been destroyed, as sub-surface features may survive. (The fact that it no longer survives as an earthwork can be recorded in the COMMENTS field see 5.2.4).

5.2.17 FORM OF REMAINS

This field specifically records the nature of the evidence visible on APs. If a site has been seen as an earthwork and subsequently levelled (but has not shown as a cropmark) record it as an EARTHWORK.

5.2.18 SOURCES

This field identifies the type of information available for the mapping and interpretation of the SITE. (N.B. SOURCES is a ranked option with the use of APs being implicit in all options).

5.2.19 PERIOD

The known, or best guess, PERIOD for the SITE. Since it is not possible to assign a multi-period band to a SITE the author must opt for the most likely specific PERIOD or settle for one of UNKNOWN categories.

Classes of monument that are normally related to a specific period should normally be assigned to that PERIOD e.g. INTERPRETATION = ROUND BARROW, PERIOD = BRONZE AGE.

N.B. the RO (ROMAN) option includes native sites usually identified as Romano-British.

5.2.20 INTERPRETATION

Allows the AUTHOR to give, or make a best guess at, the conventional archaeological interpretation of the described SITE.

A list of codes to be used is given in Appendix B.

5.2.21 VALIDITY

The VALIDITY score gives a measure of the AUTHOR's confidence in the given PERIOD and INTERPRETATION.

5.2.22 TYPE OF SITE

Before selecting TYPE it is essential that the concepts underlying each TYPE, and the options available within them, are fully understood (for example, remember that it is possible to flag a LINEAR FEATURE as being a possible enclosure using DEF CHECK, or to describe a contiguous pattern of enclosures as a LINEAR SYSTEM). (See 3.1. See BROWSING the PRI 4.6.2.4 to change TYPE).

6 The MACULA Table

6.1 Definition.

MACULA[3] is one of the basic TYPEs used to describe area CROP- or SOILMARK, EARTHWORK or STONEWORK features of any shape or size. A SITE that is described as TYPE MACULA may be a single area feature or a group of any number of similar area features. The individual elements within a MACULA description must all be of similar size. Examples of MACULAE are post-pits, standing stones, quarries, cairns, barrows. (N.B. This specifically excludes pit-alignments, which should be described as LINEAR FEATURES; barrows visible as ring ditches should of course be described as ENCLOSURES).

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[3] The term "MACULA" has caused a certain amount of discussion and therefore a brief explanation/justification is perhaps useful. Whilst the term is not in common daily use, except in the negative form "immaculate", it does have currency in scientific circles. To quote the Oxford English Dictionary :-

> "MACULA A spot or stain, chiefly in scientific use.....a spot or stain in the skin, now *esp.* one which is permanent." (The examples quoted show that a macula may be of either amorphous or definable shape).

This definition clearly fits the requirement of describing the type of regular and irregular area features often seen on air photographs. By contrast the other commonly cited term "splodge" is not suitable as it includes connotations of an irregular shape. To quote the OED again :-

> "SPLODGE A thick, heavy, or clumsy splotch."
> "SPLOTCH A large irregular spot or patch of light, colour or the like; a blot, smear or stain."

6.2 Data fields.

6.2.1 PATTERN

If there is only one element the pattern is obviously SINGLE, and the NUMBER will automatically default to 1.

If there are exactly two elements within the description then the usual option for the PATTERN would be RANDOM, unless an interpretative choice such as LINEAR is thought to be more appropriate (e.g. two ventilation shafts that probably serve the same mine level).

LINEAR can be used to describe multiple lines of similar MACULAE with or without common alignments.(N.B. if the lines have a regular pattern the ORDERED option should be considered)

NUCLEATED can be used when the nucleus is other than a MACULA.

ORDERED does not necessarily imply a linear-based PATTERN.

POLYFOCAL should only be used after considering the possible benefits of describing each MACULAE cluster as a separate record with NUCLEATED as their PATTERN.

6.2.2. SHAPE

Remember that OBLONG is essentially an elongated MACULA and can be either of angular, rounded or irregular shape.

MIXED should normally only be used when there is more than one element being described. It may be better to separate the MACULAE into more than one record on the basis of SHAPE.

6.2.3 FORM

Remember it is the <u>original</u> FORM that is being described.

FLAT indicates that either the original FORM was flat, or that it is not possible to tell whether the original feature is likely to have been NEGATIVE or POSITIVE.

6.2.4 SIZE

This is a relative measurement and allows for some variation in SIZE among the MACULAE in a single description. If there is a distinct variation in size then more than one MACULA record will be required.

6.2.5 NUMBER

If the PATTERN is SINGLE then the NUMBER will automatically default to 1. For all other PATTERNs the NUMBER of individual MACULAE is entered (an approximation will suffice when there are a large number of component parts).

7 The LINEAR FEATURE table

7.1 Definition.

LINEAR FEATURE is used to describe single linear features, or groups of similar or related linear features which cannot be described as either an ENCLOSURE or a LINEAR SYSTEM. Examples of LINEAR FEATURES are trackways, roads, pit alignments, dykes, and boundaries.
(Please see section on TYPE of SITE 3.1 for further explanation).

Data Fields.

7.2.1 PATTERN

The PATTERN describes the internal relationship between the individual elements of the SITE.

Parallel elements which function as a single unit should be described as SINGLE and the individual elements listed under FORM (e.g. a simple track or road defined by parallel ditches, or a triple-dyke defined by two ditches flanking a pit alignment, or a fragment of a double-ditched enclosure).

PARALLEL should always be used when the INTERPRETATION is RIDGE & FURROW.

7.2.2. SHAPE

SMOOTH BEND indicates a LINEAR FEATURE that turns from one alignment to another via a smooth bend or bends.

SINGLE CURVE indicates a feature which continuously bends in one direction throughout its length.

SINUOUS indicates a linear feature that continuously turns backwards and forwards.

Remember that when describing PERPENDICULAR LINEAR FEATURES, the term ANGULAR BEND only applies if all the individual elements have sharp bends apart from their PERPENDICULAR junctions with other elements.

MIXED should be used where variously shaped multiple features are given a single description, or a single feature has mixed SHAPE attributes (N.B. ANGULAR BEND and SMOOTH BEND assume straight sections between the bends).

RIDGE & FURROW of reverse "S" shape should be described as SINUOUS. If not of reverse "S" type use other SHAPE options as appropriate.

7.2.3 RIDGE & FURROW

This field provides the option to flag LINEAR FEATURES whose interpretation is Ridge and Furrow. Selecting this option automatically enters 0 to all FORM fields.

7.2.4 FORM

The FORM describes the number of banks, ditches etc which make up each element of the description, therefore a DISORDERED pattern of many single ditches would have "1" entered in the DITCH field, but a triple dyke consisting of two ditches flanking a pit alignment should be described as SINGLE, FORM - DITCHES "2", PITS "1". (Ridge and Furrow is automatically entered as 0 to all FORM options).

7.2.5 WIDTH

The WIDTH of the feature is a guide to the size of the component elements, used to highlight those features which are of greater substance (e.g. to differentiate between a simple wall/hedge line and a major boundary dike). The WIDTH relates to the individual elements, except in the case of features described as SINGLE but consisting of two or more parallel elements when the width across the multiple elements should be estimated.

7.2.6 LENGTH

The LENGTH is that of the longest element being described. DISCONTINUOUS features should be measured end to end as though continuous.

For RIDGE & FURROW, LENGTH is always measured along the furlongs.

7.2.7 CONTINUITY

This relates to individual elements and when DISCONTINUOUS or INTERRUPTED are chosen any ENTRANCES may be described.

(N.B. LINEAR FEATURES that are interpreted as being fragments of ENCLOSURES or LINEAR SYSTEMS may in themselves be CONTINUOUS).

7.2.8 ENTRANCE

Any ENTRANCES may be described as in the ENCLOSURE table. Note that with LINEAR FEATURES the ENTRANCE POSITION may have two possible options (e.g. NW or SE), in such cases the AUTHOR must make an interpretative guess at which side was the "outside" of a given LINEAR FEATURE, this will then define the ENTRANCE POSITION (the direction faced when looking out).

7.2.9 DEFINITION CHECK

This field allows possible fragments of ENCLOSURES, LINEAR SYSTEMS or SEMI-NATURAL ENCLOSURES to be flagged. SEMI-NATURAL ENCLOSURES are LINEAR FEATURES that may form an enclosure, using natural features, such as a river or a cliff face, to form the other sides of the enclosure.

7.2.10 ROUTE

The ROUTE is described by selecting the single option which best defines the dominant route of a LINEAR FEATURE and only using the VARIOUS option when the other options are clearly not sufficient.

8. The Enclosure Table

8.1 Definition.

ENCLOSURE is one of the basic site TYPEs describing single or multiple linear features which clearly define and surround an area.

A GROUP of ENCLOSURES which would individually be described in exactly the same way, may be described using the MULTIPLE DESCRIPTION option.

N.B. A group of contiguous similar enclosures should normally be described as a LINEAR SYSTEM.

8.2 The Data Fields.

8.2.1 LINEARITY

It is the essential plan of the ENCLOSURE that is being considered. Slightly bowed sides can be catered for and described within the RECTILINEAR option, and conversely straight sides can be noted if the CURVILINEAR option is chosen.

8.2.2 SYMMETRY

If a site is described as CURVILINEAR and ASYMMETRIC then the SHAPE options are automatically bypassed.

8.2.3 SHAPE

For INCOMPLETE ENCLOSURES the SHAPE given should reflect the assumed COMPLETE SHAPE.

N.B. All the RECTILINEAR SHAPE options can have slightly bowed SIDES and/or CURVED corners.

8.2.4 ELONGATED?

ELONGATED means specifically a length to width ratio of greater than 2:1. (Of course ELONGATED is not presented as a possibility when a SHAPE of either SQUARE, CIRCULAR, or SUBCIRCULAR is chosen).

8.2.5 STRAIGHT SIDES(curv)

With curvilinear enclosures which are CIRCULAR or SUBCIRCULAR the "Number of Straight Sides present" option is not presented.

If there are more than two STRAIGHT SIDES reconsider describing the ENCLOSURE as RECTILINEAR.

8.2.6 CORNERS

This is an indication of the sharpness of the corners not the regularity and right-angledness of the ENCLOSURE e.g. a "playing card" Roman fort would have ROUNDED corners whereas a Roman villa enclosure will commonly have ANGLED corners.

8.2.7 SIDES(rect)

For INCOMPLETE ENCLOSURES only those sides which are at least partially visible should be counted.(e.g. an INCOMPLETE RECTANGULAR ENCLOSURE may have only 2 STRAIGHT and 1 CONVEX SIDE).

8.2.8 FORM

For an incomplete element to be counted as part of an enclosure it should interpretatively encompass at least 50% of the enclosed area.

8.2.9 SIZE

Remember that for an ENCLOSURE with multiple elements SIZE should be measured across the innermost circuit to reflect the functional area. (N.B. the dimensions across the outermost circuit can be written in the COMMENTS field if desired)

LENGTH and BREADTH should normally be measured along a centre line.

Only original dimensions should be given e.g. when an ENCLOSURE is INCOMPLETE only give those dimensions which can be measured from known side to known side.

8.2.10 COMPLETENESS

For an ENCLOSURE with multiple elements all those elements must be judged fully visible for the ENCLOSURE to be described as COMPLETE.

8.2.11 INTERNAL/EXTERNAL FEATURES

This field provides an opportunity to flag the presence of either features within an enclosure or small enclosures attached to an ENCLOSURE. Such features may be described separately in the database, but their presence should still be noted here. (e.g. hut-circles lying within, or attached to the outside of, an enclosure; a scatter of rubbish pits within an enclosure; internal sub-divisions).

8.2.12 ENTRANCES

The ENTRANCE table allows for the description of any number of entrances. ENTRANCE FORM provides a range of common types while ENTRANCE ASPECT allows its position on the enclosure to be identified.

8.2.13 Multiple descriptions

A GROUP of ENCLOSURES which would individually be described in exactly the same way, may be described more quickly using the MULTIPLE DESCRIPTION option. (N.B. A contiguous pattern of similar enclosures might best be described as a LINEAR SYSTEM).

The first ENCLOSURE is input in the normal way and then "YES" answered to the question "Is this a MULTIPLE DESCRIPTION?". Next you are asked "Do

you want to add new Grid References?" Normally this option should be taken and a new NGR entered for each further enclosure; the software will then automatically produce duplicate records each with their own unique RECORD NUMBER (separate SITES within a single GROUP). If, however, it is not considered necessary to give each site a different NGR then the AUTHOR is simply prompted for the total number of enclosures being described, the requisite number of records are then automatically appended to the database.

If you accidentally enter this dialogue the quickest way out is to answer No to the NGRs question and enter "1" as the number of enclosures.

N.B. Do not enter extra NGRs in the NGR TABLE as these will be duplicated for each of the individual records.

9 The LINEAR SYSTEM Table

9.1 Definition.

The LINEAR SYSTEM table is designed to deal with areas of land division such as field-systems or contiguous groups of similar enclosures (ENCLOSURE COMPLEXES).

In the PRI record for a LINEAR SYSTEM the additional NGR table should be used to define the limits of the area described, following the guidelines for the NGR TABLE (see 5.2.12).

9.2 Data fields.

9.2.1 PATTERN

Note that ACCRETED specifically indicates growth outwards from a nucleus, RANDOM should be used when the PATTERN of development is unfocused.

9.2.2 SHAPE

For straight Ridge and Furrow use RECTILINEAR. For Reverse S or curved Ridge and Furrow use CURVILINEAR.

9.2.3 FORM

R & F is only used to indicate a field system made up of a series of contiguous blocks of ridge and furrow, a single block of R and F should

be describes using the options in the LINEAR FEATURE table see 7.2.3, and Types of Site 3.1.6.

9.2.4 CONTINUITY

This is a guide to how complete the pattern is within the area being described:-

FRAGMENTARY - The component elements display a high degree of discontinuity. Less than 75% of the pattern is visible but there is sufficient uniformity to allow at least one representative dimension for the UNIT SIZE.

INTERRUPTED - The component elements display occasional discontinuity. Between 75% - 90% of the pattern is visible.

CONTINUOUS - The component elements display little or no discontinuity. At least 90% of the pattern is visible.

9.2.5 UNIT DEFINED TRACKWAYS?

Trackways which are independently defined should be described separately.

9.2.6 ENCLOSURE COMPLEX

"Is this an ENCLOSURE COMPLEX?" - if the system being described is thought to be a field system or similar then 0 should be entered. Sites thought to be ENCLOSURE COMPLEXES require the number of enclosures to be entered.

9.2.7 UNIT SIZE

At least one of the dimensions should be given. The dimensions should be an approximate average representing all the units that make up the system.

For RIDGE & FURROW the UNIT LENGTH is always in the direction of the furlongs.

10 The INDUSTRIAL COMPLEX Table

10.1 Definition.

The INDUSTRIAL COMPLEX table is just a shorthand method of describing some of the key elements present in what are often very extensive areas of

industrial landscape. (N.B. It is possible to describe an area as an INDUSTRIAL COMPLEX, and then add further SITE descriptions for specific elements within this area considered to be of particular interest).

An INDUSTRIAL COMPLEX description forms only one record and can be GROUPed with other SITE records in the same COMPLEX.

When entering the information to the PRI the NGR TABLE option should be used to define approximately the limits of the area being described (see 5.2.12).

Data Fields

All data fields carry an interpretative label, reflecting a common range of features found in industrial contexts. Those features which the author wishes to describe separately should still be flagged within the INDUSTRIAL COMPLEX record. Other features (i.e. not listed in the data fields) can be added to the GROUP using the other TYPEs.

BELL PIT /SHORT SHAFTS, SHAFTS, HUSHES

The PATTERN options presented should be selected according to the guidelines for MACULA PATTERN (see 6.2.1)

ADIT/LEVEL, OPENWORK, PEAT CUTTING, PROCESSING, FLUE, CHIMNEY, BUILDING, LEAT, DAM, TRAMWAY, TRACKWAY

These are simple YES/NO options.

DIMENSIONS OF COMPLEX

The LENGTH and BREADTH, or DIAMETER (in metres) should be entered to give a general idea of the area covered by the INDUSTRIAL COMPLEX.

11 Reporting

11.1 Introduction.

There are a number of ways that the MORPH data can be reported on using the FoxPro and R & R Relational Report Writer runtime modules supplied. You can either select one of a number of pre-defined reports created using FoxPro and R & R, or design your own reports using FoxPro. The output from these reports can be directed to the screen, a file or a printer. The

available reports will probably meet most user requirements but for total flexibility proprietary report writing software is readily available (see Appendix D.2)

From the Main Menu screen (see 4.4) select the option "**Report**" which, as the message indicates, allows you to "Create or modify Simple Reports or run ReportWriter". The Report Menu screen is now displayed.

11.2 The Report Menu.

The first option on the Report Menu is "**Run ReportWriter Modules**", these are a series of pre-defined report formats each with a number of commonly used filters which the user can set if required (see 11.6). The other options on this menu allow you to design your own reports for any one of the listed individual tables e.g. "**Report on the ENCLOSURE Table**". These options provide greater reporting flexibility but require some skill to set up (see 11.9).

11.3 FOXPRO or R&R reports?

There are two types of pre-defined report, those that run directly from within Foxpro and those that require the R&R runtime module. Both types of report have similar filter and destination options (see 11.6 and 11.7). The FoxPro reports will run faster but the R&R reports can be more flexible, e.g. R & R reports give you the opportunity to write a title which will appear as the first line of the report. Some reports are available in both formats but at present the most complex reports are only available through R&R. (N.B. the "**Testgrid**" distribution report is only available through FoxPro).

Enter "F" for the FoxPro Reports Menu (see 11.4) or "R" for the R & R reports Menu (see 11.5).

11.4 FoxPro Reports Menu.

Only three of the options on this menu are currently available; the "**PRI distribution report**", the "**Total distribution Report**" and "**Testgrid**". All three of these reports are primarily intended to create files which are compatible with AERIAL (see D.2) and can be used to produce plotted distributions of the output. (N.B. The files created by all three report types will link to AutoCad).

"**Exit**" will return you to the Main Menu.

11.4.1 The "**PRI distribution report**" only searches the PRI table listing the NGR, the MORPH record number and the INTERPRETATION CODE.

11.4.2. The "**Total distribution Report**" report searches the NGR table in addition to the PRI table so that all NGRs for a given record are included in the output.

11.4.3 Not available.

11.4.4 Not available.

11.4.5 Not available.

11.4.6 "**Testgrid**" is similar to the "**Total...**" report but does not include the INTERPRETATION codes. The Testgrid report is set up with a date filter and is used at the end of each inputting session to test the accuracy of the copy-typed NGRs (see ??). N.B. Other filter options are not available with "**Testgrid**".

11.5. R & R reports Menu.

Only three of the reports on the R & R menu are currently available; the "**PRI distribution report**", "**Total distribution report**" and "**Ray diagrams**". The output of these reports is tailored to the requirements of AERIAL, in fact the "**PRI...**" and "**Total...**" reports are identical in format to their FoxPro equivalents, except for the facility to add a title and change the AERIAL code. (see 11.8).

11.5.1 The "**PRI distribution report**" only searches the PRI table listing the NGR, the MORPH record number and the INTERPRETATION CODE.

11.5.2 The "**Total distribution Report**" report searches the NGR table in addition to the PRI table so that all NGRs for a given record are included in the output.

11.5.3 Not available.

11.5.4 Not available.

11.5.5 Not available.

11.5.6 The "**Ray diagrams**" report searches both the PRI table, stripping out the INTERPRETATION codes and the PERIOD codes, and the NGR

table. When files created using this report are plotted by AERIAL the central NGR (plotted as a cross) for a given record is linked by "rays" to any additional NGRs (plotted as dots) and to the central NGRs of any other SITES in the same GROUP. The rays and crosses are colour-coded by PERIOD.

11.6 "Entire Database or Selection?" - using filters.

For all pre-defined (FoxPro and R & R) reports you will be given the option of reporting on the "Entire Database or Selection?". Choosing "S" for "Selection" allows you to set a limited range of filters while "E" indicates that the report is to be carried out on the entire database.

11.6.1 On selecting "S" a series of prompts allow filters to be set on INTERPRETATION, PARISH, PERIOD or OS Quarter Sheet. Answer "Y" for each required filter and enter the correct code in the box above.

11.6.2 The last "Selection" option, "Do you want to select a block using national grid references?", allows you to restrict the report to those records which lie within a specific area. Answering "Y" takes you to the INDEX BLOCK SEARCH screen where you define the search area by inputting NGRs for the South West and North East corners.

11.7 "Display, Printer or File?" - report destinations.

Having chosen to report on the entire database (or after selecting filters) you are presented with a choice of destinations for the report: "Display, Printer or File?". It is a good idea to "Display" most reports on the screen first in order to check that the results are what you expect before committing them to file or printer.

11.7.1 Display.

The results of the report will be displayed on the screen one page at a time. FoxPro and R & R reports use slightly different display screens, follow the instructions on screen. The screen display for R & R is more flexible (e.g. select "**Window**" then "**Split**" to display twice as much of your report).

11.7.2 Printer.

Output direct to a printer is possible but it is recommended that output be sent to a file and printed via word processing software.

11.7.3 File.

The results of the report will be sent to a text file which can then be used with other software. You will be asked for a file name which must conform to the DOS standard. FoxPro reports will be sent to the c:\usr\foxrep\ sub-directory and R & R reports to the c:\usr\rreps\ sub-directory. To be used with AERIAL, distribution report files should be given a ".dst" or ".cad" extension. (For "**Testgrid**" reports see ??).

11.8 Special Titles.

Having selected an R & R report format (and any filters and destination) you will be given the opportunity to enter a title line that will appear as part of your report; FoxPro reports do not provide this facility.

(For AERIAL users it is possible to change the colour/symbol code for a distribution file by including in the title line an "@" symbol immediately followed by the necessary code e.g. @105. See ??).

11.9 Designing your own reports - The "Report Settings" Screen.

Selecting any one of the individual table reporting options from the Report Menu allows you to design your own report formats from scratch using FoxPro. These options provide greater reporting flexibility but require some skill to set up. A full "Help" facility is provided.

In the centre of the "Report Settings" Screen are displayed the current report settings (Path, Name and Library). At the top of the screen is a menu bar listing the following options: Go, Name, Path, Create, Modify, Library, Run ReportWriter, Quit.

11.9.1 Go. Runs the report shown at "Report name:". Before the report is run you will be asked to specify whether the result should be sent to "Display, Printer or File?" (see 11.7).

Having selected a destination an opportunity to set a filter is given (see 11.10).

11.9.2 Name. When the screen is first opened the "Report Name" is set as "Noname", to change this select **"Name"** and a list of reports in the current directory (the "Report Path") will be displayed. You must type the required report format name in the box at the foot of the screen. If you are creating a new report format type a new name in this box.

11.9.3 Path. Allows you to change the currently set directory.

11.9.4 **Create**. (Requires some programming skills). To create a new report format you must first give it a **"Name"**, if you do not you will be unable to go beyond this point. Selecting **"Create"** takes you to the FoxPro report writer screen (see 11.11)

11.9.5 **Modify**. (Requires some programming skills). This allows you to alter the currently selected report and if desired to save the altered report format under a new report name. Selecting **"Modify"** takes you to the FoxPro report writer screen (see 11.11).

11.9.6 Library. This function is not normally used.

11.9.7 Run ReportWriter. Selecting this option returns you to the Report Menu.

11.9.8 Quit. Selecting this option returns you to the Report Menu.

11.10 Filters.

Having chosen the destination you are next given the opportunity of setting (or disabling) a filter for the report. If you wish to report on the entire selected table choose the "**Disable**" option. Selecting the "**Filter**" option, inexperienced users can restrict their reports to those records with specific field contents by following the format of the example shown. Use the "Page Up" key for a list of field names for the selected table. Setting more complex filters is also possible but requires some programming skills (xBase or SQL), please see your database manager if uncertain how to proceed.

11.11 FoxPro report writer.

To use this module requires some understanding of basic programming, however a full "Help" facility is available at all times via the "F1" key. It is much easier to design a report form if you have a mouse . This documentation assumes you have a mouse, however, all actions are possible via the keyboard (see the "Help" facility).

The main part of the screen represents the blank report form. Along the top of the screen is a standard menu bar with pull-down menu options which can be selected either using the mouse or by pressing "ALT" and the relevant letter. The most important of these is the "**Report**" menu which provides the options necessary to design a report format.

11.11.1 On the "**Report**" menu the "**Quick Report"** facility will produce a report form for all fields in the selected table. The layout of this form can then be manipulated to suit your requirements by positioning the mouse cursor on a field, holding the button down and then dragging the field to its new position. Fields can also be edited or deleted.

11.11.2To build a simple report form using a limited number of fields, select **"Report" menu.** Using the **"Field"** option on the **"Report"** menu you can select the fields you wish to appear on the report output.

Select **"Field"**. This brings up the "Report Expression" window.

Select **"Expr..."**. This brings up a further window which lists, at bottom left all the fields for the table (database) you wish to report on.

To select a field highlight it and double click. The selected field will appear in the blue box above.

Click on **<< OK >>**. This returns you to the "Report Expression" window. Check that the "width" is large enough to accommodate the data.

Click on **<< OK >>**. This returns you to the **"Report"** menu.

Fields should be positioned within the "detail" section of the report form. To do this position the flashing cursor where you want the field information to appear before carrying out the selection process. The lay out of the form can be altered after all the fields have been selected (see 11.11.1).

Remember that **"Help"** is available through the **"System"** menu.

11.11.13 **"Preview"** on the **"Report"** menu allows you to see what your report form looks like with real data in it.

11.11.14 Having designed your report form select **"File"** menu and **"Close"**. This returns you to the "Report Settings" screen (see 11.9).

12 Data Transfer to NAR/NMR

The method of data transfer to the NAR/NMR is currently under review and therefore is not dealt with in detail. Current thinking is that the data will be transferred at the GROUP level i.e. A GROUP of one or more SITES will equate to a single NMR

Monument record. As a guide fig ?? shows the type of text that will be generated from the MORPH database to provide a written description of the GROUP.

However, it is important to remember that the data will be transferred to the NMR at some stage and so should conform to NAR standards as far as is possible.

All known cross references to existing NAR (and SMR records should be entered in the appropriate fields (see 5.2.10 and 5.2.11).

GROUPS should be assigned to a single MAP (see 5.2.10).

A Glossary.

The Glossary is designed as a quick reference guide and gives full definitions of many terms not discussed in detail elsewhere in the manual. Other terms will be more fully understood by reading the Glossary entry in conjunction with the section of the manual relevant to your query.

There are three types of entry in this Glossary, identified in the following manner:-

Block Capitals e.g. ANGLED - indicate Key Words which have a specific meaning within the MORPH system.

Underlined block capitals e.g. CORNERS - indicate a heading from which a Key Word may be selected. All the available options are listed.

Lower case e.g. Adit - indicates an interpretative term only found in the Industrial Complex table.

N.B. Some words (e.g. PATTERN) have different meanings according to where they occur, the entry in the Glossary details each of these meanings.

ACCRETED
- The PATTERN of a LINEAR SYSTEM in which the UNITs appear to have developed outwards from a nucleus.

Adit
- In an INDUSTRIAL COMPLEX, a horizontal mine entrance.

AMORPHOUS
- The SHAPE of a MACULA not otherwise definable.

ANGLED
- The CORNERS of RECTILINEAR ENCLOSURES that are sharp rather than CURVED.

ANGULAR BEND
- The SHAPE of a LINEAR FEATURE with one or more sharp changes in direction.

ANTENNA
- See ANT/FUNN.

ANT/FUNN

- The FORM of an ENTRANCE to an ENCLOSURE or LINEAR FEATURE, which is either antenna or funnel i.e. it has two linear features convergent on a gap in the CIRCUIT or LINEAR FEATURE.

ASPECT
- The topographical aspect of a SITE expressed as a compass point :- N, NW, W, SW, S, SE, E, NE, ALL. (N.B. This is related solely to the LOCATION of the SITE and not its interpretation).

ASYMMETRIC
- An ENCLOSURE which has no SYMMETRY.

AUTHOR
- Up to three initials to indicate the author of this description. (Refer to your database manager to avoid duplication of initials).

BANK
- The FORM of the elements of a LINEAR FEATURE or LINEAR SYSTEM, or CIRCUIT of an ENCLOSURE, which was originally a raised mound of earth, or earth and stone - see also FOUNDATION.

Bell Pits/Short Shafts
- Their presence within an INDUSTRIAL COMPLEX expressed as a PATTERN. (A Bell Pit is a primitive method of mining visible as round mounds of spoil with a central depression).

BOTH
- The DEFINITION CHECK of a LINEAR FEATURE that may be part of an ENCLOSURE and/or a LINEAR SYSTEM.

BRAIDED
- The PATTERN of a LINEAR FEATURE which is of interwoven appearance.

BREADTH
- The breadth in metres of an ENCLOSURE (within the innermost CIRCUIT). (See SIZE).
- Of a UNIT within a LINEAR SYSTEM. (See SIZE).
- Of the extent of an INDUSTRIAL COMPLEX. (See DIMENSIONS).

Building
- In an INDUSTRIAL COMPLEX, a building (elsewhere see ENCLOSURE).

Chimney
- In an INDUSTRIAL COMPLEX, an industrial chimney.

CIRCULAR
- The SHAPE of an ENCLOSURE which is a perfect circle.

CLIFF BASE
- The LOCATION of a SITE is on or against the base of a cliff or scar.

COMMENTS
- A field within the GROUP table. This is a free text field for recording additional observations not recordable via the MORPH description (see ??).

COMPLETE
- The COMPLETENESS of an ENCLOSURE which is wholly visible.

COMPLETENESS
- Of an ENCLOSURE :- COMPLETE, INCOMPLETE, MASKED.

COMPLEX

- A COMPLEX may contain only one SITE or a combination of two or more SITES, either superimposed or associated by proximity. SITES within a COMPLEX thought to be archaeologically associated may be assigned to the same GROUP. The limit of a COMPLEX is determined by the extent of the visible archaeology rather than unrelated modern features such as hedges, roads, etc...

CONCAVE SIDES

- The number of SIDES of a RECTILINEAR ENCLOSURE which are slightly concave (curving inward) in plan.

CONTINUITY

- Of a LINEAR FEATURE :- CONTINUOUS, INTERRUPTED, DISCONTINUOUS.
- Of a LINEAR SYSTEM :- CONTINUOUS, INTERRUPTED, FRAGMENTARY

CONTINUOUS

- The CONTINUITY of a LINEAR FEATURE which is unbroken in so far as it is visible.
- In the case of LINEAR SYSTEMS the linear components must be unbroken (occasional small breaks are acceptable) in so far as they are visible.

CONTOUR

- The ROUTE of a LINEAR FEATURE which follows the contours.

CONVEX SIDES

- The number of SIDES of a RECTILINEAR ENCLOSURE which are slightly convex (curving outward) in plan.

CORNERS

- Of RECTILINEAR ENCLOSURES :- ANGLED, CURVED.

COUNTY

- A two letter code indicating the modern administrative boundaries. Alternatively a code derived from the project title may be used, in which case the PARISH codes should be County specific.

CREATED

- The date on which the record was created or last edited (automatically entered from computer clock).

CROP- or SOILMARKS

- The FORM OF REMAINS being described; in this case as marks apparent due to differences in vegetation or the colours of exposed earth.

CROSS LEDGE

- The ROUTE of a LINEAR FEATURE which crosses a ledge (it may thus form a SEMI-NATURAL ENCLOSURE).

CROSS RIVER

- The ROUTE of a LINEAR FEATURE which crosses a river but is not CROSS VALLEY.

CROSS VALLEY

- The ROUTE of a LINEAR FEATURE which crosses a valley.

CROSS CONTOUR

- The ROUTE of a LINEAR FEATURE which runs across the contours of the ground.

CURVED

- The CORNERS of a RECTILINEAR ENCLOSURE which are rounded rather than sharply ANGLED.

CURVILINEAR

- The LINEARITY of an ENCLOSURE which is defined by a curving CIRCUIT or CIRCUITS. (There may be STRAIGHT SIDES present).
- The SHAPE of a LINEAR SYSTEM which is defined by curved elements.

Dam

- In an INDUSTRIAL COMPLEX, a dam, reservoir or pond.

DEFINITION CHECK

- Of a LINEAR FEATURE, providing the option to indicate whether or not the features are potentially part of a LINEAR SYSTEM, ENCLOSURE, BOTH or SEMI-NATURAL ENCLOSURE.

DENDRITIC

- The PATTERN of a LINEAR FEATURE which has a tree-like pattern of branching.

DIAMETER

- The approximate internal diameter in metres of an ENCLOSURE. (See SIZE).
- the extent of an INDUSTRIAL COMPLEX, which is circular or approximately so. (See DIMENSIONS).

DIMENSIONS

- For an INDUSTRIAL COMPLEX is defined by LENGTH and BREADTH, or DIAMETER, measured in metres to provide a guide to the extent of the visible remains.

- See SIZE

DISCONTINUOUS

- The CONTINUITY of a LINEAR FEATURE which has large sections not visible.

DISORDERED

- The PATTERN of a LINEAR FEATURE in which the elements are scattered and lack the conformity of a LINEAR SYSTEM.

DITCH

- The FORM of a LINEAR FEATURE or element of a LINEAR SYSTEM, or the CIRCUIT of an ENCLOSURE which was originally a cut feature (see also PITS).

EARTHWORKS

- The FORM OF REMAINS of a SITE having a 3-dimensional surface appearance (usually covered by vegetation). (See also STONEWORK).

ELONGATED

- The LENGTH of an ENCLOSURE is more than twice its WIDTH.

ENCLOSURE

- One of the basic site TYPEs describing single or multiple linear CROP or SOILMARKS, EARTHWORKS or STONEWORKS, which clearly define and surround an area which may or may not include internal features. A morphologically distinct freestanding ENCLOSURE within another ENCLOSURE would normally be described separately. Buildings, where the wall lines are visible, should be described as ENCLOSURES. See also MULTIPLE DESCRIPTION ?? and LINEAR SYSTEM ??.

ENCLOSURE COMPLEX

- The LINEAR SYSTEM is thought to be a series of conjoined similar ENCLOSURES, enter the number of ENCLOSURES present. If the SITE being described is a pattern of fields, press return for 0.

ENTRANCES

- A small gap in an ENCLOSURE or LINEAR FEATURE which appears to be a deliberate feature. Described as FORM (ENTRANCE) and ENTRANCE POSITION.

ENTRANCE POSITION
- To be entered as a compass point. For a LINEAR FEATURE the position is the direction faced when looking out of the entrance.

EXISTENCE
- See STILL IN EXISTENCE

FAN
- The PATTERN of a LINEAR FEATURE which has multiple branches from a single point. (See also FORKED, DENDRITIC, PERPENDICULAR)

FLAT
- The FORM of a MACULA which was originally flat (or not readily definable as NEGATIVE or POSITIVE).
- The LOCATION of a SITE which is on level ground (but is not more specifically one of the other LOCATION options e.g. VALLEY FLOOR).

Flue
- In an INDUSTRIAL COMPLEX, a flue or flue system.

FORKED
- The PATTERN of a LINEAR FEATURE which has simple branching at acute angles (see also FAN,DENDRITIC and PERPENDICULAR).

FORM
- (N.B. this is distinct from FORM OF REMAINS)
- The interpreted nature of the element or elements forming a LINEAR FEATURE. (if describing R&F enter 0 to all options). The number of each option present is entered :- BANK, DITCH, PITS, FOUNDATION.
- Or the nature of the enclosing element or elements of similar shape and apparent contemporaneity, that form an ENCLOSURE. The number of each option present is entered :- BANK, DITCH, PITS, FOUNDATION.
- Of a LINEAR SYSTEM the (interpreted) nature of the main individual linear elements :- BANK, DITCH, PITS, FOUNDATION, R&F.
- Of a MACULA the (interpreted) original form :- NEGATIVE, POSITIVE, FLAT.
- Of an ENTRANCE :- TIT/CLAV, ANT/FUNN, PIT-DEFINED, TERMINAL DEF., STRUCTURALLY DEF.

FORM OF REMAINS
- The surface appearance of the features described :-CROP- or SOILMARK, EARTHWORK, or STONEWORK, or a combination of these.

FOUNDATION
- The FORM of a LINEAR FEATURE or element of a LINEAR SYSTEM, or CIRCUIT of an ENCLOSURE which appears to originally have had a solid stone foundation structure. The term applies to both extant (including grassed over) and buried walling.

FRAGMENTARY
- The CONTINUITY of a LINEAR SYSTEM which is only partially visible and yet which has sufficient uniformity to allow it to be distinguished from a LINEAR FEATURE.

FUNNEL
- See ANT/FUNN

FURTHER NGR DATA

- Provides the option to give additional NGRs or flag the existence of OTHER digital map information :- NONE, NGR TABLE, OTHER.

GROUP

- An association of SITES within a COMPLEX, derived from an archaeological interpretation of their spatial relationships and/or morphological characteristics. A GROUP may contain only one SITE. N.B. This is a chance to flag archaeological relationships, whereas COMPLEXes indicate only a spatial relationship.

GROUP INTERPRETATION

- A code of up to four letters allowing the AUTHOR to give a "best guess" functional interpretation for the SITE. The code is expanded in the separate Interpretation Code table (??) listed below.

GROUP PERIOD

- See PERIOD

HILLTOP

- The LOCATION of a SITE which is on top of a hill.

Hushes

- Their presence within an INDUSTRIAL COMPLEX expressed as a PATTERN. (A hush is a gully or valley caused by repeated flushing with water released from a dam as a method of prospection for, and extraction of mineral ores.)

INCOMPLETE

- The COMPLETENESS of an ENCLOSURE which is not wholly visible but which is still identifiable as an ENCLOSURE. (See also DEFINITION CHECK).

INDUSTRIAL COMPLEX

- One of the basic TYPEs, a shorthand way of inputting data for complex areas of industrial, particularly mining, activity. For full description see ?? above. It is of course possible, if required, to input all the elements of the INDUSTRIAL COMPLEX using only the other four TYPE options (or even to just add a few SITES to the same GROUP as the INDUSTRIAL COMPLEX).

INTERNAL FEATURES

- See INT/EXT FEATURES

INTERPRETATION CODE

- A code of up to four letters allowing the AUTHOR to give a "best guess" functional interpretation for the SITE. The code is expanded in the separate Interpretation Code table (??) listed below. **RFLB should always be used as the interpretation code when describing RIDGE & FURROW regardless of whether you are describing a LINEAR FEATURE or a LINEAR SYSTEM.** (See also GROUP INTERPRETATION, PERIOD and VALIDITY).

INT/EXT FEATURES

- Describes features lying within, or small external features attached to, an ENCLOSURE, which are interpreted as being broadly contemporary:- NONE, STRUCTURAL, STRUCTURAL/D, NON-STRUCTURAL, NON-STRUCTURAL/D.

INTERRUPTED

- The COMPLETENESS of a LINEAR FEATURE indicating the presence of small gaps which may or may not be further definable as ENTRANCES.
- The CONTINUTY of a LINEAR SYSTEM indicating the presence of small gaps. (See CONTINUOUS).

INTURNED

- The FORM of an ENTRANCE which is defined by the inturning of the ditch or bank terminals.

LARGE
- The SIZE of a MACULA which has a maximum dimension within the range 15-50 metres.
- The WIDTH of a LINEAR FEATURE in which the width of the individual elements described is greater than 2 metres, except in the case of trackways, roads etc. defined by parallel elements, when the total width should be estimated.

Leat
- In an INDUSTRIAL COMPLEX, a leat or other man-made water course (canals should always be described as LINEAR FEATURES).

LEDGE
- The LOCATION of a SITE which is on a ledge i.e. relatively level ground on a hillside which is marked by an abrupt change of slope to front and rear.

LENGTH
- A dimension for the SIZE of an ENCLOSURE,
- Or the main element of a LINEAR FEATURE,
- Or of the extent of an INDUSTRIAL COMPLEX, given in metres.

LINEAR
- The PATTERN of a MACULA description in which the elements are broadly in alignment. The term similarly applies to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

LINEARITY
- The dominant linearity of an ENCLOSURE :- CURVILINEAR, RECTILINEAR.

LINEAR FEATURE
- One of the basic TYPEs describing one or more linear features which cannot be described as an ENCLOSURE or a LINEAR SYSTEM, including trackways, roads and pit alignments.

(N.B. It is possible to flag LINEAR FEATUREs as potential parts of ENCLOSUREs or LINEAR SYSTEMs using DEFINITION CHECK).

(N.B. MACULAE can have a LINEAR pattern e.g. a line of small quarries).

LINEAR SYSTEM
- One of the basic TYPEs describing an extensive network of linear features which relate to each other to form a coherent whole. This includes conjoined formations of similar enclosures forming an ENCLOSURE COMPLEX.

LOCATION
- The dominant topographical characteristic of a SITE's position :- RIDGE, HILL-TOP, SLOPE, PLATEAU, PROMONTORY, FLAT, CLIFF BASE, LEDGE, VALLEY FLOOR, VARIOUS.

MACULA
- One of the basic TYPEs used to describe an area CROP- or SOILMARK, EARTHWORK or STONEWORK of any shape or size. This includes any feature, or group of similar features, from post-pit size (or a single standing stone) up to extensive areas e.g. quarries,pits, cairns and barrows. This specifically excludes pit- alignments, which should be described as LINEAR FEATURES and pit-defined ENCLOSURES.

MASKED
- The COMPLETENESS of an ENCLOSURE which cannot be completely seen but where the missing part is thought to survive, obscured beneath features, man-made or natural.

MEDIUM
- The SIZE of a MACULA which has a maximum dimension within the range 4-15 metres.

MIXED

- The SHAPE of a LINEAR FEATURE where the individual elements have a variety of different shapes.
- The SHAPE of a MACULA where the individual elements display a combination of the other SHAPE options.
- The PATTERN of Bell Pits, Shafts or Hushes in an INDUSTRIAL COMPLEX is a combination of two or more of the other available options.

MULTIPLE DESCRIPTION

- This allows a GROUP of ENCLOSURES of very similar SHAPE and SIZE to be created from a single description. It is possible to give each individual enclosure a different NGR. (See ??)

NAR REFERENCE

- The National Archaeological Record's map sheet reference number e.g. 116. Multiple entries should be in the form 116,118,123 or 116-118. This will be combined with the OS QUARTER SHEET NUMBER on output e.g. SD 98 NW 116-118.

NGR

- The National Grid Reference, usually the central point of a SITE e.g. TQ 1234 1234 (see also FURTHER NGR DATA).

NGR TABLE

- Indicates FURTHER NGR DATA is available in a separate related database. If this option is chosen additional Grid References may be entered.

NEGATIVE

- The FORM of a MACULA which was originally a cut feature, whether still open or filled.

NONE

- FURTHER NGR DATA is not available or necessary.
- Indicates Bell Pits, Shafts or Hushes are not apparent in an INDUSTRIAL COMPLEX.
- INT/EXT FEATURES are not apparent in an ENCLOSURE.

NON-STRUCTURAL

- See STRUCTURAL.

NON-STRUCTURAL/D

- See STRUCTURAL.

NUCLEATED

- The PATTERN of a MACULA description in which the elements are clustered around a single point. The term similarly applies to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

NUMBER OF MACULAE DESCRIBED

- The number of individual elements described in a MACULA description (for larger numbers an estimate is adequate).

OBLONG

- The SHAPE of a MACULA which has a length more than twice its width, whether angular or rounded.

Openwork

- In an INDUSTRIAL COMPLEX, an open-working (other than Hushes) e.g. quarries, clay-pits etc.

ORDERED

- The PATTERN of a LINEAR SYSTEM which is of regular layout without nuclei.

- The PATTERN of a MACULA description in which the elements are of regular layout without nuclei (but not solely LINEAR). The term can similarly apply to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

OS QUARTER SHEET NUMBER
- See QUARTER SHEET NUMBER

OTHER
- FURTHER NGR DATA is available in a separate format elsewhere. (N.B. this option is not presently in use)

OVAL
- The SHAPE of a CURVILINEAR SYMMETRIC ENCLOSURE, which is elliptical or egg-shaped (ovate).

PARALLEL
- The PATTERN of a LINEAR FEATURE where the individual elements run parallel to one another.

PARISH
- A code for the Parish name up to 5 characters long. (Preferably a separate look up table should be established in dBase format). (see also COUNTY and ??).

PATTERN
- Of MACULAE this is the spatial relationship between the individual elements within a MACULA description:- SINGLE, LINEAR, ORDERED, NUCLEATED, RANDOM, POLYFOCAL. (Where there are exactly two maculae the usual option would be RANDOM, however, an interpretative choice, such as LINEAR, NUCLEATED or POLYFOCAL is allowable).
  - Of Bell Pits and Shafts within an INDUSTRIAL COMPLEX:- NONE, SINGLE, LINEAR, ORDERED, NUCLEATED, RANDOM, POLYFOCAL, MIXED.
  - Of Hushes within an INDUSTRIAL COMPLEX:- NONE, SINGLE, LINEAR, ORDERED, RANDOM, MIXED.
- Of LINEAR FEATURES the relationship between the individual elements of the description:- SINGLE, FORKED, PERPENDICULAR, PARALLEL, BRAIDED, FAN, DENDRITIC, DISORDERED.
- Of LINEAR SYSTEMS the relationship between the individual elements of the description:- RANDOM, ORDERED, ACCRETED.

Peat cutting
- In an INDUSTRIAL COMPLEX, evidence of peat/turf cutting.

PERIOD
- The suggested period of a SITE or GROUP, the reliability of which is given by a VALIDITY score. :-
  PA - Palaeolithic
  ME - Mesolithic
  NE - Neolithic
  BA - Bronze Age
  IA - Iron Age
  RO - Roman
  EM - Early Mediaeval (to 1086)
  LM - Mediaeval (1086 - 1540)
  PM - Post Mediaeval (1540 - 1900)
  MO - Modern (20th century)
  UP - Unknown Prehistoric (Roman or earlier)
  UM - Unknown Mediaeval (EM,LM,PM,MO)
  U - Unknown

PERPENDICULAR

- The PATTERN of a LINEAR FEATURE in which the individual elements are aligned at, or close to, right-angles.

PIT-DEFINED
- The FORM of the defining elements of a LINEAR FEATURE, LINEAR SYSTEM, or CIRCUIT of an ENCLOSURE which is an alignment of pits.
- The FORM of an ENTRANCE which is marked by a distinctive arrangement of pits.

PITS
- See PIT-DEFINED

PLATEAU
- The LOCATION of a SITE which is on a plateau.

POLYFOCAL
- The PATTERN of a MACULA description where the individual elements are clustered around more than one nucleus. The term similarly applies to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

POLYGONAL
- The SHAPE of a RECTILINEAR ENCLOSURE with four or more sides, that is not RECTANGULAR or SQUARE.

POSITIVE
- The FORM of a MACULA which was originally a built-up feature, whether still standing or levelled.

PRI
- The Primary Record Index is the master database in which are stored the administrative, locational and basic interpretative details for each SITE, further information being stored in tables according to the TYPE.

Processing
- In an INDUSTRIAL COMPLEX, an open area where raw materials were processed.

PROMONTORY
- The LOCATION of a SITE which is on a promontory.

QUARTER SHEET NUMBER
- The number of the Ordnance Survey Quarter sheet (1:10,000 or 1:10,560) on which the SITE (or the majority of SITES in the GROUP to which the SITE belongs). e.g. SD98NW. This will be used as the first part of the NAR reference number e.g. SD 98 NW 116.

R&F
- See RIDGE & FURROW

RANDOM
- The PATTERN of a LINEAR SYSTEM which is not ORDERED and which has no identifiable nuclei.
- The PATTERN of a MACULA description in which the elements are not LINEAR, nor ORDERED and which have no identifiable nuclei. The term similarly applies to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

RECTANGULAR

- The SHAPE of an ENCLOSURE which is longer than broad (not SQUARE) and has four sides at right-angles to each other,
- Or a MACULA of the same general shape (but not OBLONG).

RECORD NUMBER

- The unique identifier for each SITE consisting of COUNTY code, COMPLEX number, GROUP number and SITE number e.g. NY.156.3.2 .

RECTILINEAR

- The LINEARITY of an ENCLOSURE which is made up of a majority of straight rather than curved elements.
- The SHAPE of a LINEAR SYSTEM which is made up of a majority of straight rather than curved elements.

REGULAR

- The SHAPE of a CURVILINEAR ENCLOSURE which is SYMMETRIC but not CIRCULAR, SUB-CIRCULAR or OVAL.

RIDGE

- The LOCATION of a SITE which is on a ridge or the crest of a spur (see also PROMONTORY).

RIDGE & FURROW

- The PARALLEL LINEAR FEATURE being described is thought to be a single block of ridge and furrow cultivation.
- The FORM of a LINEAR SYSTEM which is defined by contiguous blocks of RIDGE & FURROW.

ROUND

- The SHAPE of a MACULA which is more or less circular.

ROUTE

- Is the course taken by a LINEAR FEATURE with respect to its topographical LOCATION. (The choice is to a certain degree interpretative and a level of flexibility is required e.g. a leat whilst requiring to cross contours in order to function may often have a route that is essentially CONTOUR). :- CONTOUR, CROSS CONTOUR, CROSS RIVER, CROSS LEDGE, CROSS VALLEY, VARIOUS.

SEMI-NATURAL ENCLOSURE

- The DEFINITION CHECK of a LINEAR FEATURE that in conjunction with natural features may have formed an enclosure.

Shafts

- Their presence within an INDUSTRIAL COMPLEX expressed as a PATTERN. Shafts are defined as vertical entrances to mines which are not simply Bell Pits.

SHAPE

- The shape of the individual elements within a LINEAR FEATURE description:- STRAIGHT, ANGULAR BEND, SMOOTH BEND, SINGLE CURVE, SINUOUS, MIXED.
- The shape of the individual elements in a MACULA description:- OBLONG, ROUND, RECTANGULAR, AMORPHOUS, MIXED.
- The general plan of an ENCLOSURE :- SQUARE, RECTANGULAR, TRIANGULAR, POLYGONAL,CIRCULAR, SUBCIRCULAR, OVAL, REGULAR.
- The shape of the individual elements defining a LINEAR SYSTEM:- RECTILINEAR, CURVILINEAR, MIXED.

SIDES [Rect]

- The number of STRAIGHT SIDES, CONCAVE SIDES, and CONVEX SIDES of a RECTILINEAR ENCLOSURE should be entered.

SINGLE CURVE

- The SHAPE of a LINEAR FEATURE which curves smoothly in one direction all along its length.

SINGLE

- The PATTERN of a LINEAR FEATURE with only one element, or having parallel elements which function as a single unit.
- The PATTERN of a lone MACULA. The term similarly applies to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

SINUOUS

- The SHAPE of a LINEAR FEATURE which curves and re-curves.

SITE

- SITES are the primary archaeological components of a COMPLEX, individually definable as one of the following TYPEs:- ENCLOSURE, LINEAR SYSTEM, LINEAR FEATURE, MACULA, INDUSTRIAL COMPLEX. A SITE may range from a single standing stone (MACULA) to an extensive field system (LINEAR SYSTEM), or even an area of industrial landscape (INDUSTRIAL COMPLEX). (N.B. a SITE always has a unique RECORD NUMBER although it may be linked to other SITES in a GROUP or COMPLEX).

SIZE

- For an ENCLOSURE is defined by LENGTH and BREADTH, or DIAMETER and is always a distance in metres within the innermost enclosing element. The dimensions should be measured estimates taken from the overlay.
- For a MACULA is an indication of relative size of the individual elements described, using the following scale as a guide:- V. SMALL <1m; SMALL 1-4m; MEDIUM 4-15m; LARGE 15-50m; V. LARGE >50m.
- See DIMENSIONS

SLOPE

- The LOCATION of a SITE which is on sloping ground (but is not more specifically one of the other LOCATION options. e.g. RIDGE).

SMALL

- The SIZE of a MACULA which has a maximum dimension in the range 1 - 4 metres.
- The WIDTH of a LINEAR FEATURE in which the width of the individual elements described is less than or equal to 2 metres. In the case of trackways, roads etc. defined by two or more PARALLEL elements, the total width (e.g. of the road) should be estimated.

SMOOTH BEND

- The SHAPE of a LINEAR FEATURE which changes direction via curved corners rather than angular corners. The sections between the corners should be straight or nearly so. (See ANGULAR BEND and SINUOUS).

SMR REFERENCE

- A 12 character field for entry of a county SMR reference number.

SOURCES

- The available sources used for the transcription, subsequent description, and interpretation of a SITE (see also VALIDITY). It is implicit that the mapped information is normally derived from air photos. This is a ranked option, give the highest value SOURCE:-

  0 - AP derived information, taken from an existing overlay, which cannot be confirmed or rejected by the AUTHOR on the evidence of available photography.
  1 - Poor quality air photographs (includes all photos which are not particularly good for archaeological interpretation purposes e.g. most small scale vertical photos).
  2 - Good quality air photographs.
  3 - Non-destructive fieldwork e.g. field survey, field walking, geophysics.
  4 - Small scale excavation. Use site plans as the basis for transcription if available.
  5 - Large scale excavation. Use site plans as the basis for transcription if available.

SQUARE

- The SHAPE of an ENCLOSURE which is precisely a square, with the proviso that the SIDES can be CONCAVE or CONVEX. (See RECTANGULAR)

STILL IN EXISTENCE

- The SITE is not known to have been destroyed:- YES, NO.

STONEWORK

- The FORM OF REMAINS is such that bare stone is visible e.g. a ruined building, walled enclosure or quarry that has not been covered by vegetation.

STRAIGHT

- The SHAPE of a LINEAR FEATURE is straight or approximately so.

STRAIGHT SIDES

- The number of visible SIDES of a RECTILINEAR ENCLOSURE that are straight.

STRAIGHT SIDES [Curv]

- The number of visible SIDES of a CURVILINEAR ENCLOSURE that are straight.

STRUCTURALLY DEF.

- The FORM of an ENTRANCE that has a structurally defined entrance that does not fit the other available options.

STRUCTURAL

- The INT/EXT FEATURES of an ENCLOSURE which appear to have a recognisable shape or an organised relationship with other features. Other features are NON-STRUCTURAL. The suffix, /D, means that the feature is also described separately. (See ??).

SUBCIRCULAR

- The SHAPE of an ENCLOSURE which approximates to a circle but is not OVAL.

SYMMETRIC

- An ENCLOSURE, either RECTILINEAR or CURVILINEAR, which displays SYMMETRY.

SYMMETRY

- Symmetry about an axis or axes, or around a point:- SYMMETRIC, ASYMMETRIC.

TERMINAL DEF.

- The FORM of an ENTRANCE which is defined only by swollen or otherwise clearly defined ditch or bank terminals.

TIT/CLAV

- The FORM of an ENTRANCE which is similar to those commonly found on Roman camps (Titula (traverses) and/or Claviculae).

Trackway

- In an INDUSTRIAL COMPLEX, roads, tracks etc.

Tramway

- In an INDUSTRIAL COMPLEX, a tramway, railway or ropeway.

TRIANGULAR

- The SHAPE of a RECTILINEAR ENCLOSURE which is triangular in shape.

TYPE

- The four primary morphological options used for the description of mapped archaeology. These are ENCLOSURE, LINEAR SYSTEM, LINEAR FEATURE & MACULA. (Additionally there is the shorthand description INDUSTRIAL COMPLEX).

UNIT

- One of the areas enclosed by the linear components of a LINEAR SYSTEM. (e.g. an individual field or block of R & F, or an ENCLOSURE in an ENCLOSURE COMPLEX).

UNIT BREADTH

- See UNIT SIZE

UNIT LENGTH

- See UNIT SIZE

UNIT SIZE

- An approximate average, if definable, of the length and breadth in metres of UNITs within a LINEAR SYSTEM.

N.B. When dealing with UNITS of RIDGE & FURROW the UNIT LENGTH should always be measured along the furlongs regardless of whether this is longer or shorter than the UNIT BREADTH.

UNIT-DEFINED TRACKWAY

- Refers to a trackway within a LINEAR SYSTEM defined on both sides by linear UNIT boundaries. If the trackway continues beyond the limits of the LINEAR SYSTEM (i.e. is not solely UNIT-DEFINED) it should be given its own description.

VALIDITY

- The AUTHOR's degree of confidence in the interpretation of the SITE as expressed in the INTERPRETATION CODE and the PERIOD. This is entered as a score between 1, indicating a low level of confidence, and 5, indicating a high level of confidence. For reporting purposes these numbers are translated as follows :-

1 - Insufficient data
2 - Potential
3 - Possible
4 - Probable
5 - Certain

Option 1 should normally only be used when the SOURCE is 0.

V. LARGE

- The SIZE of a MACULA which has a maximum dimension greater than 50 metres.

V. SMALL

- The SIZE of a MACULA which has a maximum dimension of less than 1 metre.

VALLEY FLOOR

- The LOCATION of a SITE which lies on a valley floor.

VARIOUS

- The LOCATION of a SITE which lies across more than one of the other available options.
- The ROUTE of a LINEAR FEATURE lies across more than one of the other available options.

WIDTH

- The width of the individual components of a LINEAR FEATURE description :- LARGE, SMALL. In the case of trackways, roads etc. defined by two or more parallel elements but described as SINGLE, the total width (e.g. of the road) should be estimated.

Interpretation Codes

The terms are all taken from the English Heritage/RCHME Thesaurus of Archaeological Site Types except for those marked "*" which have been submitted as candidate terms for inclusion in that document.

The code "****" is a valid entry (but only used in the GROUP table, see ??) which means no interpretation required and therefore has " " as the expanded version in order that the interpretation field will be returned with a blank entry when reported on.

The code " " is not allowed and is therefore always an error when found in the database and returns the message "**** no interpretation code ****" when picked up by a report.

In order to maintain the integrity of this list please do not add new terms without consulting the Air Photography Unit of RCHME.

Report on Intrcode database 04/05/93

Code	Interpret
****	
	**** no interpretation code **** *
ABBY	ABBEY
ADIT	ADIT
AERP	AERIAL ROPEWAY
AIRS	AIR SHAFT
AIRF	AIRFIELD
AMTH	AMPHITHEATRE
ANNX	ANNEX *
AABT	ANTI AIRCRAFT BATTERY
ANGD	ANTI GLIDER DITCH
AQDT	AQUEDUCT
AEUE	AVENUE
BAIL	BAILEY
BANK	BANK
BAR	BARN

BARP BARN PLATFORM
BRW BARROW
BCEM BARROW CEMETERY
BATT BATTERY
BEA BEACON
BELL BELL PIT
BIE BIELD
BOMB BOMB CRATER
BDRY BOUNDARY
BYB BOUNDARY BANK
BYD BOUNDARY DITCH
BYM BOUNDARY MOUND
BYS BOUNDARY STONE
BOUS BOUSE TEAM
BOBR BOWL BARROW
BOWG BOWLING GREEN
BKLN BRICK KILN
BRKW BRICKWORKS
BRID BRIDGE
BLD BUILDING
BLPL BUILDING PLATFORM
CARN CAIRN
CANL CANAL
CSTL CASTLE
CAUS CAUSEWAY
CSRD CAUSEWAYED RING DITCH
CHAP CHAPEL
CHIM CHIMNEY
CHCH CHURCH
CHYD CHURCHYARD
CINU CISTERCIAN NUNNERY
CLAY CLAY PIT
PUDD CLAY PUDDLING PIT
CCAR CLEARANCE CAIRNS
COM COAL MINE
COMN COAL MINING *
COLP COAL PIT *
COWK COAL WORKINGS
COFL CONDENSING FLUE
CONS CONSTRUCTION CAMP
CONW CONSTRUCTION WORKS *
CPM COPPER MINE
COPS COPSE
CNDR CORN DRYING OVEN
CNM CORN MILL
CTM COTTON MILL
COHO COUNTRY HOUSE
CRNG CRANNOG
CRFT CROFT
CRML CRUSHING MILL

CULM CULTIVATION MARKS
CUTR CULTIVATION TERRACE
CURS CURSUS
DAM DAM
DECO DECOY POND
DRPK DEER PARK
DENE DENE HOLE
DV DESERTED VILLAGE
DEWP DEWPOND
DITC DITCH
DOVE DOVECOTE
DRAN DRAIN
DSYS DRAINAGE SYSTEM
DRFL DRESSING FLOOR
DRRD DROVE ROAD
DYKE DYKE
EWK EARTHWORK
ELK ELLING KILN *
ECCM ENCLOSED CREMATION CEMETERY
ENC ENCLOSURE
EXTP EXTRACTIVE PIT
FAIR FAIR
FMH FARMHOUSE
FMS FARMSTEAD
FBDY FIELD BOUNDARY
FSYS FIELD SYSTEM
FWOK FIELDWORK
FIRG FIRING RANGE
FISH FISHPOND
FLG FLAGSTONE QUARRY *
FLM FLAX MILL
FLDF FLOOD DEFENCES
FLUE FLUE
FOLY FOLLY
PATH FOOTPATH
FOGN FORMAL GARDEN
FORT FORT
FORU FORUM
FGSR FUNGUS RING
GARD GARDEN
GEOM GEOLOGICAL MARKS
GOAL GOAL POST ENCLOSURE *
GRAN GRANARY
GRGE GRANGE
GRA GRAVEL PIT
GROT GROTTO
GRUB GRUBENHAUS
GDHT GUARD HOUSE
HAHA HA HA
HRTH HEARTH

HNGE HENGE
HLFT HILLFORT
HOLO HOLLOW WAY
WHIM HORSE WHIM
HOU HOUSE
HNTL HUNTING LODGE
HUSH HUSH
HTCL HUT CIRCLE
INCL INCLINED PLANE
INCM INHUMATION CEMETERY
IDSM INTERRUPTED DITCH SYSTEM *
KILN KILN
KNCK KNOCK STONE
LZBD LAZY BEDS
LDW LEAD WORKINGS
LDWK LEAD WORKS
LEAT LEAT
LMK LIME KILN
LMW LIME WORKS
LIM LIMESTONE QUARRY
LOBW LONG BARROW
LCAR LONG CAIRN
LOHO LONG HOUSE
LYNT LYNCHET
MANR MANOR
MARC MARCHING CAMP
MLS MILESTONE
MIL MILL
MICL MILL (CELESTINE) *
MPD MILL POND
MIRC MILL RACE
MIST MILLSTONE WORKING SITE
MIN MINE
MNCL MINING (CELESTINE) *
MOAT MOAT
MONA MONASTERY
MOTT MOTTE
MTBL MOTTE AND BAILEY
MND MOUND
NATF NATURAL FEATURE
OPEN OPENWORK *
OPDA OPPIDUM
OLAF ORNAMENTAL LANDSCAPE FEATURE *
ORPO ORNAMENTAL POND
OXBW OXBOW LAKE
PTCT PEAT CUTTING
PTST PEAT STORE
PELE PELE TOWER
PILB PILLBOX
PLMD PILLOW MOUND

PIPE PIPELINE
PIT PIT
PITA PIT ALIGNMENT
PCIR PIT CIRCLE
PITC PIT CLUSTER
PLTN PLANTATION *
PLAT PLATFORM
PSET PLATFORM SETTLEMENT
HEAD PLOUGH HEADLAND
POND POND
POST POST HOLE
PSTM POST MILL
POTT POTTERY WORKS
PND POUND
PRAT PRACTICE CAMP
PREC PRECEPTORY
PRCS PROCESSING AREA *
PRFT PROMONTORY FORT
PROS PROSPECTING TRENCH
PYK PYE KILN *
QRRY QUARRY
TYPE RABBIT TYPE *
WARR RABBIT WARREN
RAIL RAILWAY
TURN RAILWAY TURNTABLE
REAV REAVE
RELH RELIGIOUS HOUSE
RES RESERVOIR
REPT RETTING PITS
RFLB RIDGE AND FURROW
RBUT RIFLE BUTTS
RCRN RING CAIRN
RIBA RINGWORK AND BAILEY
ROAD ROAD
RDBW ROUND BARROW
SALT SALTWORKS
SND SAND PIT
SAN SANDSTONE QUARRY
SLBT SEARCHLIGHT BATTERY
SET SETTLEMENT
SHFT SHAFT
SPF SHEEP FOLD
SHOS SHEEP HOUSE
SHIL SHIELING
SHOT SHOOTING STAND
SHSH SHORT SHAFT *
SHVL SHRUNKEN VILLAGE
SIGS SIGNAL STATION
SLA SLATE QUARRY
SLTT SLIT TRENCH

SMM SMELT MILL
SMY SMITHY
SPHP SPOILHEAP
SQBW SQUARE BARROW
STST STACK STAND
STAN STANDING STONE
STS STEPPING STONES
STEN STOCK ENCLOSURE
STK STOCKS
STO STONE
STCL STONE CIRCLE
SPYT STRIP LYNCHET
TAIL TAIL RACE
TEMP TEMPLE
TENS TENNIS COURT
TILW TILE WORKS
TOFT TOFT
TOWR TOWER
TOWN TOWN
TRCK TRACKWAY
TRAM TRAMWAY
AVNU TREE AVENUE
TRNC TREE ENCLOSURE RING
TRHL TREE HOLE
TRRG TREE RING
UNKO UNKNOWN *
VCUS VICUS
VILL VILLA
WAL WALL
WSF WASHFOLD
WACH WATCH TOWER
WATM WATER MEADOW
WCE WATERCOURSE
WELL WELL
WHEP WHEEL PIT
WIND WINDMILL
WMND WINDMILL MOUND
WDBK WOOD BANK
WDBY WOODLAND BOUNDARY *
WOM WOOLLEN MILL

Appendices

A Glossary.

The Glossary is designed as a quick reference guide and gives full definitions of many terms not discussed in detail elsewhere in the manual. Other terms will be more fully understood by reading the Glossary entry in conjunction with the section of the manual relevant to your query.

There are three types of entry in this Glossary, identified in the following manner:-

> Block Capitals e.g. ANGLED - indicate Key Words which have a specific meaning within the MORPH system.
>
> Underlined block capitals e.g. CORNERS - indicate a heading from which a Key Word may be selected. All the available options are listed.
>
> Lower case e.g. Adit - indicates an interpretative term only found in the Industrial Complex table.

N.B. Some words (e.g. PATTERN) have different meanings according to where they occur, the entry in the Glossary details each of these meanings.

ACCRETED
- The PATTERN of a LINEAR SYSTEM in which the UNITs appear to have developed outwards from a nucleus.

Adit
- In an INDUSTRIAL COMPLEX, a horizontal mine entrance.

AMORPHOUS
- The SHAPE of a MACULA not otherwise definable.

ANGLED
- The CORNERS of RECTILINEAR ENCLOSURES that are sharp rather than CURVED.

ANGULAR BEND
- The SHAPE of a LINEAR FEATURE with one or more sharp changes in direction.

ANTENNA
- See ANT/FUNN.

ANT/FUNN
- The FORM of an ENTRANCE to an ENCLOSURE or LINEAR FEATURE, which is either antenna or funnel i.e. it has two linear features convergent on a gap in the CIRCUIT or LINEAR FEATURE.

ASPECT
- The topographical aspect of a SITE expressed as a compass point :- N, NW, W, SW, S, SE, E, NE, ALL. (N.B. This is related solely to the LOCATION of the SITE and not its interpretation).

ASYMMETRIC
- An ENCLOSURE which has no SYMMETRY.

AUTHOR
- Up to three initials to indicate the author of this description. (Refer to your database manager to avoid duplication of initials).

BANK

- The FORM of the elements of a LINEAR FEATURE or LINEAR SYSTEM, or CIRCUIT of an ENCLOSURE, which was originally a raised mound of earth, or earth and stone - see also FOUNDATION.

Bell Pits/Short Shafts

- Their presence within an INDUSTRIAL COMPLEX expressed as a PATTERN. (A Bell Pit is a primitive method of mining visible as round mounds of spoil with a central depression).

BOTH

- The DEFINITION CHECK of a LINEAR FEATURE that may be part of an ENCLOSURE and/or a LINEAR SYSTEM.

BRAIDED

- The PATTERN of a LINEAR FEATURE which is of interwoven appearance.

BREADTH

- The breadth in metres of an ENCLOSURE (within the innermost CIRCUIT). (See SIZE).
- Of a UNIT within a LINEAR SYSTEM. (See SIZE).
- Of the extent of an INDUSTRIAL COMPLEX. (See DIMENSIONS).

Building

- In an INDUSTRIAL COMPLEX, a building (elsewhere see ENCLOSURE).

Chimney

- In an INDUSTRIAL COMPLEX, an industrial chimney.

CIRCULAR

- The SHAPE of an ENCLOSURE which is a perfect circle.

CLIFF BASE

- The LOCATION of a SITE is on or against the base of a cliff or scar.

COMMENTS

- A field within the GROUP table. This is a free text field for recording additional observations not recordable via the MORPH description (see ??).

COMPLETE

- The COMPLETENESS of an ENCLOSURE which is wholly visible.

COMPLETENESS

- Of an ENCLOSURE :- COMPLETE, INCOMPLETE, MASKED.

COMPLEX

- A COMPLEX may contain only one SITE or a combination of two or more SITES, either superimposed or associated by proximity. SITES within a COMPLEX thought to be archaeologically associated may be assigned to the same GROUP. The limit of a COMPLEX is determined by the extent of the visible archaeology rather than unrelated modern features such as hedges, roads, etc...

CONCAVE SIDES

- The number of SIDES of a RECTILINEAR ENCLOSURE which are slightly concave (curving inward) in plan.

CONTINUITY

- Of a LINEAR FEATURE :- CONTINUOUS, INTERRUPTED, DISCONTINUOUS.
- Of a LINEAR SYSTEM :- CONTINUOUS, INTERRUPTED, FRAGMENTARY

CONTINUOUS

- The CONTINUITY of a LINEAR FEATURE which is unbroken in so far as it is visible.
- In the case of LINEAR SYSTEMS the linear components must be unbroken (occasional small breaks are acceptable) in so far as they are visible.

CONTOUR
- The ROUTE of a LINEAR FEATURE which follows the contours.

CONVEX SIDES
- The number of SIDES of a RECTILINEAR ENCLOSURE which are slightly convex (curving outward) in plan.

CORNERS
- Of RECTILINEAR ENCLOSURES :- ANGLED, CURVED.

COUNTY
- A two letter code indicating the modern administrative boundaries. Alternatively a code derived from the project title may be used, in which case the PARISH codes should be County specific.

CREATED
- The date on which the record was created or last edited (automatically entered from computer clock).

CROP- or SOILMARKS
- The FORM OF REMAINS being described; in this case as marks apparent due to differences in vegetation or the colours of exposed earth.

CROSS LEDGE
- The ROUTE of a LINEAR FEATURE which crosses a ledge (it may thus form a SEMI-NATURAL ENCLOSURE).

CROSS RIVER
- The ROUTE of a LINEAR FEATURE which crosses a river but is not CROSS VALLEY.

CROSS VALLEY
- The ROUTE of a LINEAR FEATURE which crosses a valley.

CROSS CONTOUR
- The ROUTE of a LINEAR FEATURE which runs across the contours of the ground.

CURVED
- The CORNERS of a RECTILINEAR ENCLOSURE which are rounded rather than sharply ANGLED.

CURVILINEAR
- The LINEARITY of an ENCLOSURE which is defined by a curving CIRCUIT or CIRCUITS. (There may be STRAIGHT SIDES present).
- The SHAPE of a LINEAR SYSTEM which is defined by curved elements.

Dam
- In an INDUSTRIAL COMPLEX, a dam, reservoir or pond.

DEFINITION CHECK
- Of a LINEAR FEATURE, providing the option to indicate whether or not the features are potentially part of a LINEAR SYSTEM, ENCLOSURE, BOTH or SEMI-NATURAL ENCLOSURE.

DENDRITIC
- The PATTERN of a LINEAR FEATURE which has a tree-like pattern of branching.

DIAMETER

- The approximate internal diameter in metres of an ENCLOSURE. (See SIZE).
- the extent of an INDUSTRIAL COMPLEX, which is circular or approximately so. (See DIMENSIONS).

DIMENSIONS

- For an INDUSTRIAL COMPLEX is defined by LENGTH and BREADTH, or DIAMETER, measured in metres to provide a guide to the extent of the visible remains.

- See SIZE

DISCONTINUOUS

- The CONTINUITY of a LINEAR FEATURE which has large sections not visible.

DISORDERED

- The PATTERN of a LINEAR FEATURE in which the elements are scattered and lack the conformity of a LINEAR SYSTEM.

DITCH

- The FORM of a LINEAR FEATURE or element of a LINEAR SYSTEM, or the CIRCUIT of an ENCLOSURE which was originally a cut feature (see also PITS).

EARTHWORKS

- The FORM OF REMAINS of a SITE having a 3-dimensional surface appearance (usually covered by vegetation). (See also STONEWORK).

ELONGATED

- The LENGTH of an ENCLOSURE is more than twice its WIDTH.

ENCLOSURE

- One of the basic site TYPEs describing single or multiple linear CROP or SOILMARKS, EARTHWORKS or STONEWORKS, which clearly define and surround an area which may or may not include internal features. A morphologically distinct freestanding ENCLOSURE within another ENCLOSURE would normally be described separately. Buildings, where the wall lines are visible, should be described as ENCLOSURES. See also MULTIPLE DESCRIPTION ?? and LINEAR SYSTEM ??.

ENCLOSURE COMPLEX

- The LINEAR SYSTEM is thought to be a series of conjoined similar ENCLOSURES, enter the number of ENCLOSURES present. If the SITE being described is a pattern of fields, press return for 0.

ENTRANCES

- A small gap in an ENCLOSURE or LINEAR FEATURE which appears to be a deliberate feature. Described as FORM (ENTRANCE) and ENTRANCE POSITION.

ENTRANCE POSITION

- To be entered as a compass point. For a LINEAR FEATURE the position is the direction faced when looking out of the entrance.

EXISTENCE

- See STILL IN EXISTENCE

FAN

- The PATTERN of a LINEAR FEATURE which has multiple branches from a single point. (See also FORKED, DENDRITIC, PERPENDICULAR)

FLAT

- The FORM of a MACULA which was originally flat (or not readily definable as NEGATIVE or POSITIVE).
- The LOCATION of a SITE which is on level ground (but is not more specifically one of the other LOCATION options e.g. VALLEY FLOOR).

Flue
- In an INDUSTRIAL COMPLEX, a flue or flue system.

FORKED
- The PATTERN of a LINEAR FEATURE which has simple branching at acute angles (see also FAN,DENDRITIC and PERPENDICULAR).

FORM
- (N.B. this is distinct from FORM OF REMAINS)
- The interpreted nature of the element or elements forming a LINEAR FEATURE. (if describing R&F enter 0 to all options). The number of each option present is entered :- BANK, DITCH, PITS, FOUNDATION.
- Or the nature of the enclosing element or elements of similar shape and apparent contemporaneity, that form an ENCLOSURE. The number of each option present is entered :- BANK, DITCH, PITS, FOUNDATION.
- Of a LINEAR SYSTEM the (interpreted) nature of the main individual linear elements :- BANK, DITCH, PITS, FOUNDATION, R&F.
- Of a MACULA the (interpreted) original form :- NEGATIVE, POSITIVE, FLAT.
- Of an ENTRANCE :- TIT/CLAV, ANT/FUNN, PIT-DEFINED, TERMINAL DEF., STRUCTURALLY DEF.

FORM OF REMAINS
- The surface appearance of the features described :-CROP- or SOILMARK, EARTHWORK, or STONEWORK, or a combination of these.

FOUNDATION
- The FORM of a LINEAR FEATURE or element of a LINEAR SYSTEM, or CIRCUIT of an ENCLOSURE which appears to originally have had a solid stone foundation structure. The term applies to both extant (including grassed over) and buried walling.

FRAGMENTARY
- The CONTINUITY of a LINEAR SYSTEM which is only partially visible and yet which has sufficient uniformity to allow it to be distinguished from a LINEAR FEATURE.

FUNNEL
- See ANT/FUNN

FURTHER NGR DATA
- Provides the option to give additional NGRs or flag the existence of OTHER digital map information :- NONE, NGR TABLE, OTHER.

GROUP
- An association of SITES within a COMPLEX, derived from an archaeological interpretation of their spatial relationships and/or morphological characteristics. A GROUP may contain only one SITE. N.B. This is a chance to flag archaeological relationships, whereas COMPLEXes indicate only a spatial relationship.

GROUP INTERPRETATION
- A code of up to four letters allowing the AUTHOR to give a "best guess" functional interpretation for the SITE. The code is expanded in the separate Interpretation Code table (??) listed below.

GROUP PERIOD
- See PERIOD

HILLTOP

- The LOCATION of a SITE which is on top of a hill.

Hushes

- Their presence within an INDUSTRIAL COMPLEX expressed as a PATTERN. (A hush is a gully or valley caused by repeated flushing with water released from a dam as a method of prospection for, and extraction of mineral ores.)

INCOMPLETE

- The COMPLETENESS of an ENCLOSURE which is not wholly visible but which is still identifiable as an ENCLOSURE. (See also DEFINITION CHECK).

INDUSTRIAL COMPLEX

- One of the basic TYPEs, a shorthand way of inputting data for complex areas of industrial, particularly mining, activity. For full description see ?? above. It is of course possible, if required, to input all the elements of the INDUSTRIAL COMPLEX using only the other four TYPE options (or even to just add a few SITES to the same GROUP as the INDUSTRIAL COMPLEX).

INTERNAL FEATURES

- See INT/EXT FEATURES

INTERPRETATION CODE

- A code of up to four letters allowing the AUTHOR to give a "best guess" functional interpretation for the SITE. The code is expanded in the separate Interpretation Code table (??) listed below. **RFLB should always be used as the interpretation code when describing RIDGE & FURROW regardless of whether you are describing a LINEAR FEATURE or a LINEAR SYSTEM.** (See also GROUP INTERPRETATION, PERIOD and VALIDITY).

INT/EXT FEATURES

- Describes features lying within, or small external features attached to, an ENCLOSURE, which are interpreted as being broadly contemporary:- NONE, STRUCTURAL, STRUCTURAL/D, NON-STRUCTURAL, NON-STRUCTURAL/D.

INTERRUPTED

- The COMPLETENESS of a LINEAR FEATURE indicating the presence of small gaps which may or may not be further definable as ENTRANCES.
- The CONTINUTY of a LINEAR SYSTEM indicating the presence of small gaps. (See CONTINUOUS).

INTURNED

- The FORM of an ENTRANCE which is defined by the inturning of the ditch or bank terminals.

LARGE

- The SIZE of a MACULA which has a maximum dimension within the range 15-50 metres.
- The WIDTH of a LINEAR FEATURE in which the width of the individual elements described is greater than 2 metres, except in the case of trackways, roads etc. defined by parallel elements, when the total width should be estimated.

Leat

- In an INDUSTRIAL COMPLEX, a leat or other man-made water course (canals should always be described as LINEAR FEATURES).

LEDGE

- The LOCATION of a SITE which is on a ledge i.e. relatively level ground on a hillside which is marked by an abrupt change of slope to front and rear.

LENGTH

- A dimension for the SIZE of an ENCLOSURE,
- Or the main element of a LINEAR FEATURE,
- Or of the extent of an INDUSTRIAL COMPLEX, given in metres.

LINEAR

- The PATTERN of a MACULA description in which the elements are broadly in alignment. The term similarly applies to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

LINEARITY

- The dominant linearity of an ENCLOSURE :- CURVILINEAR, RECTILINEAR.

LINEAR FEATURE

- One of the basic TYPEs describing one or more linear features which cannot be described as an ENCLOSURE or a LINEAR SYSTEM, including trackways, roads and pit alignments.

(N.B. It is possible to flag LINEAR FEATUREs as potential parts of ENCLOSUREs or LINEAR SYSTEMs using DEFINITION CHECK).

(N.B. MACULAE can have a LINEAR pattern e.g. a line of small quarries).

LINEAR SYSTEM

- One of the basic TYPEs describing an extensive network of linear features which relate to each other to form a coherent whole. This includes conjoined formations of similar enclosures forming an ENCLOSURE COMPLEX.

LOCATION

- The dominant topographical characteristic of a SITE's position :- RIDGE, HILL-TOP, SLOPE, PLATEAU, PROMONTORY, FLAT, CLIFF BASE, LEDGE, VALLEY FLOOR, VARIOUS.

MACULA

- One of the basic TYPEs used to describe an area CROP- or SOILMARK, EARTHWORK or STONEWORK of any shape or size. This includes any feature, or group of similar features, from post-pit size (or a single standing stone) up to extensive areas e.g. quarries,pits, cairns and barrows. This specifically excludes pit- alignments, which should be described as LINEAR FEATURES and pit-defined ENCLOSURES.

MASKED

- The COMPLETENESS of an ENCLOSURE which cannot be completely seen but where the missing part is thought to survive, obscured beneath features, man-made or natural.

MEDIUM

- The SIZE of a MACULA which has a maximum dimension within the range 4-15 metres.

MIXED

- The SHAPE of a LINEAR FEATURE where the individual elements have a variety of different shapes.
- The SHAPE of a MACULA where the individual elements display a combination of the other SHAPE options.
- The PATTERN of Bell Pits, Shafts or Hushes in an INDUSTRIAL COMPLEX is a combination of two or more of the other available options.

MULTIPLE DESCRIPTION

- This allows a GROUP of ENCLOSURES of very similar SHAPE and SIZE to be created from a single description. It is possible to give each individual enclosure a different NGR. (See ??)

NAR REFERENCE

- The National Archaeological Record's map sheet reference number e.g. 116. Multiple entries should be in the form 116,118,123 or 116-118. This will be combined with the OS QUARTER SHEET NUMBER on output e.g. SD 98 NW 116-118.

NGR

- The National Grid Reference, usually the central point of a SITE e.g. TQ 1234 1234 (see also FURTHER NGR DATA).

NGR TABLE

- Indicates FURTHER NGR DATA is available in a separate related database. If this option is chosen additional Grid References may be entered.

NEGATIVE

- The FORM of a MACULA which was originally a cut feature, whether still open or filled.

NONE

- FURTHER NGR DATA is not available or necessary.
- Indicates Bell Pits, Shafts or Hushes are not apparent in an INDUSTRIAL COMPLEX.
- INT/EXT FEATURES are not apparent in an ENCLOSURE.

NON-STRUCTURAL

- See STRUCTURAL.

NON-STRUCTURAL/D

- See STRUCTURAL.

NUCLEATED

- The PATTERN of a MACULA description in which the elements are clustered around a single point. The term similarly applies to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

NUMBER OF MACULAE DESCRIBED

- The number of individual elements described in a MACULA description (for larger numbers an estimate is adequate).

OBLONG

- The SHAPE of a MACULA which has a length more than twice its width, whether angular or rounded.

Openwork

- In an INDUSTRIAL COMPLEX, an open-working (other than Hushes) e.g. quarries, clay-pits etc.

ORDERED

- The PATTERN of a LINEAR SYSTEM which is of regular layout without nuclei.
- The PATTERN of a MACULA description in which the elements are of regular layout without nuclei (but not solely LINEAR). The term can similarly apply to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

OS QUARTER SHEET NUMBER

- See QUARTER SHEET NUMBER

OTHER

- FURTHER NGR DATA is available in a separate format elsewhere. (N.B. this option is not presently in use)

OVAL

- The SHAPE of a CURVILINEAR SYMMETRIC ENCLOSURE, which is elliptical or egg-shaped (ovate).

PARALLEL

- The PATTERN of a LINEAR FEATURE where the individual elements run parallel to one another.

PARISH

- A code for the Parish name up to 5 characters long. (Preferably a separate look up table should be established in dBase format). (see also COUNTY and ??).

PATTERN

- Of MACULAE this is the spatial relationship between the individual elements within a MACULA description:- SINGLE, LINEAR, ORDERED, NUCLEATED, RANDOM, POLYFOCAL. (Where there are exactly two maculae the usual option would be RANDOM, however, an interpretative choice, such as LINEAR, NUCLEATED or POLYFOCAL is allowable).
  - Of Bell Pits and Shafts within an INDUSTRIAL COMPLEX:- NONE, SINGLE, LINEAR, ORDERED, NUCLEATED, RANDOM, POLYFOCAL, MIXED.
  - Of Hushes within an INDUSTRIAL COMPLEX:- NONE, SINGLE, LINEAR, ORDERED, RANDOM, MIXED.
- Of LINEAR FEATURES the relationship between the individual elements of the description:- SINGLE, FORKED, PERPENDICULAR, PARALLEL, BRAIDED, FAN, DENDRITIC, DISORDERED.
- Of LINEAR SYSTEMS the relationship between the individual elements of the description:- RANDOM, ORDERED, ACCRETED.

Peat cutting

- In an INDUSTRIAL COMPLEX, evidence of peat/turf cutting.

PERIOD

- The suggested period of a SITE or GROUP, the reliability of which is given by a VALIDITY score. :-
  PA - Palaeolithic
  ME - Mesolithic
  NE - Neolithic
  BA - Bronze Age
  IA - Iron Age
  RO - Roman
  EM - Early Mediaeval (to 1086)
  LM - Mediaeval (1086 - 1540)
  PM - Post Mediaeval (1540 - 1900)
  MO - Modern (20th century)
  UP - Unknown Prehistoric (Roman or earlier)
  UM - Unknown Mediaeval (EM,LM,PM,MO)
  U - Unknown

PERPENDICULAR

- The PATTERN of a LINEAR FEATURE in which the individual elements are aligned at, or close to, right-angles.

PIT-DEFINED

- The FORM of the defining elements of a LINEAR FEATURE, LINEAR SYSTEM, or CIRCUIT of an ENCLOSURE which is an alignment of pits.
- The FORM of an ENTRANCE which is marked by a distinctive arrangement of pits.

PITS

- See PIT-DEFINED

PLATEAU

- The LOCATION of a SITE which is on a plateau.

POLYFOCAL

- The PATTERN of a MACULA description where the individual elements are clustered around more than one nucleus. The term similarly applies to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

POLYGONAL

- The SHAPE of a RECTILINEAR ENCLOSURE with four or more sides, that is not RECTANGULAR or SQUARE.

POSITIVE
- The FORM of a MACULA which was originally a built-up feature, whether still standing or levelled.

PRI
- The Primary Record Index is the master database in which are stored the administrative, locational and basic interpretative details for each SITE, further information being stored in tables according to the TYPE.

Processing
- In an INDUSTRIAL COMPLEX, an open area where raw materials were processed.

PROMONTORY
- The LOCATION of a SITE which is on a promontory.

QUARTER SHEET NUMBER
- The number of the Ordnance Survey Quarter sheet (1:10,000 or 1:10,560) on which the SITE (or the majority of SITES in the GROUP to which the SITE belongs). e.g. SD98NW. This will be used as the first part of the NAR reference number e.g. SD 98 NW 116.

R&F
- See RIDGE & FURROW

RANDOM
- The PATTERN of a LINEAR SYSTEM which is not ORDERED and which has no identifiable nuclei.
- The PATTERN of a MACULA description in which the elements are not LINEAR, nor ORDERED and which have no identifiable nuclei. The term similarly applies to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

RECTANGULAR

- The SHAPE of an ENCLOSURE which is longer than broad (not SQUARE) and has four sides at right-angles to each other,
- Or a MACULA of the same general shape (but not OBLONG).

RECORD NUMBER

- The unique identifier for each SITE consisting of COUNTY code, COMPLEX number, GROUP number and SITE number e.g. NY.156.3.2 .

RECTILINEAR

- The LINEARITY of an ENCLOSURE which is made up of a majority of straight rather than curved elements.
- The SHAPE of a LINEAR SYSTEM which is made up of a majority of straight rather than curved elements.

REGULAR

- The SHAPE of a CURVILINEAR ENCLOSURE which is SYMMETRIC but not CIRCULAR, SUB-CIRCULAR or OVAL.

RIDGE

- The LOCATION of a SITE which is on a ridge or the crest of a spur (see also PROMONTORY).

RIDGE & FURROW

- The PARALLEL LINEAR FEATURE being described is thought to be a single block of ridge and furrow cultivation.
- The FORM of a LINEAR SYSTEM which is defined by contiguous blocks of RIDGE & FURROW.

ROUND

- The SHAPE of a MACULA which is more or less circular.

ROUTE

- Is the course taken by a LINEAR FEATURE with respect to its topographical LOCATION. (The choice is to a certain degree interpretative and a level of flexibility is required e.g. a leat whilst requiring to cross contours in order to function may often have a route that is essentially CONTOUR). :- CONTOUR, CROSS CONTOUR, CROSS RIVER, CROSS LEDGE, CROSS VALLEY, VARIOUS.

SEMI-NATURAL ENCLOSURE

- The DEFINITION CHECK of a LINEAR FEATURE that in conjunction with natural features may have formed an enclosure.

Shafts

- Their presence within an INDUSTRIAL COMPLEX expressed as a PATTERN. Shafts are defined as vertical entrances to mines which are not simply Bell Pits.

SHAPE

- The shape of the individual elements within a LINEAR FEATURE description:- STRAIGHT, ANGULAR BEND, SMOOTH BEND, SINGLE CURVE, SINUOUS, MIXED.
- The shape of the individual elements in a MACULA description:- OBLONG, ROUND, RECTANGULAR, AMORPHOUS, MIXED.
- The general plan of an ENCLOSURE :- SQUARE, RECTANGULAR, TRIANGULAR, POLYGONAL,CIRCULAR, SUBCIRCULAR, OVAL, REGULAR.
- The shape of the individual elements defining a LINEAR SYSTEM:- RECTILINEAR, CURVILINEAR, MIXED.

SIDES [Rect]

- The number of STRAIGHT SIDES, CONCAVE SIDES, and CONVEX SIDES of a RECTILINEAR ENCLOSURE should be entered.

SINGLE CURVE

- The SHAPE of a LINEAR FEATURE which curves smoothly in one direction all along its length.

SINGLE

- The PATTERN of a LINEAR FEATURE with only one element, or having parallel elements which function as a single unit.
- The PATTERN of a lone MACULA. The term similarly applies to Bell Pits, Shafts and Hushes within an INDUSTRIAL COMPLEX.

SINUOUS

- The SHAPE of a LINEAR FEATURE which curves and re-curves.

SITE

- SITES are the primary archaeological components of a COMPLEX, individually definable as one of the following TYPEs:- ENCLOSURE, LINEAR SYSTEM, LINEAR FEATURE, MACULA, INDUSTRIAL COMPLEX. A SITE may range from a single standing stone (MACULA) to an extensive field system (LINEAR SYSTEM), or even an area of industrial landscape (INDUSTRIAL COMPLEX). (N.B. a SITE always has a unique RECORD NUMBER although it may be linked to other SITES in a GROUP or COMPLEX).

SIZE

- For an ENCLOSURE is defined by LENGTH and BREADTH, or DIAMETER and is always a distance in metres within the innermost enclosing element. The dimensions should be measured estimates taken from the overlay.
- For a MACULA is an indication of relative size of the individual elements described, using the following scale as a guide:- V. SMALL <1m; SMALL 1-4m; MEDIUM 4-15m; LARGE 15-50m; V. LARGE >50m.
- See DIMENSIONS

SLOPE

- The LOCATION of a SITE which is on sloping ground (but is not more specifically one of the other LOCATION options. e.g. RIDGE).

SMALL

- The SIZE of a MACULA which has a maximum dimension in the range 1 - 4 metres.
- The WIDTH of a LINEAR FEATURE in which the width of the individual elements described is less than or equal to 2 metres. In the case of trackways, roads etc. defined by two or more PARALLEL elements, the total width (e.g. of the road) should be estimated.

SMOOTH BEND

- The SHAPE of a LINEAR FEATURE which changes direction via curved corners rather than angular corners. The sections between the corners should be straight or nearly so. (See ANGULAR BEND and SINUOUS).

SMR REFERENCE

- A 12 character field for entry of a county SMR reference number.

SOURCES

- The available sources used for the transcription, subsequent description, and interpretation of a SITE (see also VALIDITY). It is implicit that the mapped information is normally derived from air photos. This is a ranked option, give the highest value SOURCE:-

  0 - AP derived information, taken from an existing overlay, which cannot be confirmed or rejected by the AUTHOR on the evidence of available photography.
  1 - Poor quality air photographs (includes all photos which are not particularly good for archaeological interpretation purposes e.g. most small scale vertical photos).
  2 - Good quality air photographs.
  3 - Non-destructive fieldwork e.g. field survey, field walking, geophysics.
  4 - Small scale excavation. Use site plans as the basis for transcription if available.
  5 - Large scale excavation. Use site plans as the basis for transcription if available.

SQUARE

- The SHAPE of an ENCLOSURE which is precisely a square, with the proviso that the SIDES can be CONCAVE or CONVEX. (See RECTANGULAR)

STILL IN EXISTENCE

- The SITE is not known to have been destroyed:- YES, NO.

STONEWORK

- The FORM OF REMAINS is such that bare stone is visible e.g. a ruined building, walled enclosure or quarry that has not been covered by vegetation.

STRAIGHT

- The SHAPE of a LINEAR FEATURE is straight or approximately so.

STRAIGHT SIDES

- The number of visible SIDES of a RECTILINEAR ENCLOSURE that are straight.

STRAIGHT SIDES [Curv]

- The number of visible SIDES of a CURVILINEAR ENCLOSURE that are straight.

STRUCTURALLY DEF.

- The FORM of an ENTRANCE that has a structurally defined entrance that does not fit the other available options.

STRUCTURAL

- The INT/EXT FEATURES of an ENCLOSURE which appear to have a recognisable shape or an organised relationship with other features. Other features are NON-STRUCTURAL. The suffix, /D, means that the feature is also described separately. (See ??).

SUBCIRCULAR

- The SHAPE of an ENCLOSURE which approximates to a circle but is not OVAL.

SYMMETRIC

- An ENCLOSURE, either RECTILINEAR or CURVILINEAR, which displays SYMMETRY.

SYMMETRY

- Symmetry about an axis or axes, or around a point:- SYMMETRIC, ASYMMETRIC.

TERMINAL DEF.

- The FORM of an ENTRANCE which is defined only by swollen or otherwise clearly defined ditch or bank terminals.

TIT/CLAV

- The FORM of an ENTRANCE which is similar to those commonly found on Roman camps (Titula (traverses) and/or Claviculae).

Trackway

- In an INDUSTRIAL COMPLEX, roads, tracks etc.

Tramway

- In an INDUSTRIAL COMPLEX, a tramway, railway or ropeway.

TRIANGULAR

- The SHAPE of a RECTILINEAR ENCLOSURE which is triangular in shape.

TYPE

- The four primary morphological options used for the description of mapped archaeology. These are ENCLOSURE, LINEAR SYSTEM, LINEAR FEATURE & MACULA. (Additionally there is the shorthand description INDUSTRIAL COMPLEX).

UNIT

- One of the areas enclosed by the linear components of a LINEAR SYSTEM. (e.g. an individual field or block of R & F, or an ENCLOSURE in an ENCLOSURE COMPLEX).

UNIT BREADTH

- See UNIT SIZE

UNIT LENGTH

- See UNIT SIZE

UNIT SIZE

- An approximate average, if definable, of the length and breadth in metres of UNITs within a LINEAR SYSTEM.

N.B. When dealing with UNITS of RIDGE & FURROW the UNIT LENGTH should always be measured along the furlongs regardless of whether this is longer or shorter than the UNIT BREADTH.

UNIT-DEFINED TRACKWAY

- Refers to a trackway within a LINEAR SYSTEM defined on both sides by linear UNIT boundaries. If the trackway continues beyond the limits of the LINEAR SYSTEM (i.e. is not solely UNIT-DEFINED) it should be given its own description.

VALIDITY

- The AUTHOR's degree of confidence in the interpretation of the SITE as expressed in the INTERPRETATION CODE and the PERIOD. This is entered as a score between 1, indicating a low level of confidence, and 5, indicating a high level of confidence. For reporting purposes these numbers are translated as follows :-

1 - Insufficient data
2 - Potential
3 - Possible
4 - Probable
5 - Certain

Option 1 should normally only be used when the SOURCE is 0.

V. LARGE

- The SIZE of a MACULA which has a maximum dimension greater than 50 metres.

V. SMALL

- The SIZE of a MACULA which has a maximum dimension of less than 1 metre.

VALLEY FLOOR

- The LOCATION of a SITE which lies on a valley floor.

VARIOUS

- The LOCATION of a SITE which lies across more than one of the other available options.
- The ROUTE of a LINEAR FEATURE lies across more than one of the other available options.

WIDTH

- The width of the individual components of a LINEAR FEATURE description :- LARGE, SMALL. In the case of trackways, roads etc. defined by two or more parallel elements but described as SINGLE, the total width (e.g. of the road) should be estimated.

B Interpretation Codes.

The terms are all taken from the English Heritage/RCHME Thesaurus of Archaeological Site Types except for those marked "*" which have been submitted as candidate terms for inclusion in that document.

The code "****" is a valid entry (but only used in the GROUP table, see ??) which means no interpretation required and therefore has " " as the expanded version in order that the interpretation field will be returned with a blank entry when reported on.

The code " " is not allowed and is therefore always an error when found in the database and returns the message "**** no interpretation code ****" when picked up by a report.

In order to maintain the integrity of this list please do not add new terms without consulting the Air Photography Unit of RCHME.

For the Intrcode database structure see ??

Report on Intrcode database 04/05/93

Code	Interpretation
****	
	**** no interpretation code **** *
ABBY	ABBEY
ADIT	ADIT
AERP	AERIAL ROPEWAY
AIRS	AIR SHAFT
AIRF	AIRFIELD
AMTH	AMPHITHEATRE
ANNX	ANNEX *
AABT	ANTI AIRCRAFT BATTERY
ANGD	ANTI GLIDER DITCH
AQDT	AQUEDUCT
AEUE	AVENUE
BAIL	BAILEY
BANK	BANK
BAR	BARN
BARP	BARN PLATFORM
BRW	BARROW
BCEM	BARROW CEMETERY
BATT	BATTERY

BEA	BEACON
BELL	BELL PIT
BIE	BIELD
BOMB	BOMB CRATER
BDRY	BOUNDARY
BYB	BOUNDARY BANK
BYD	BOUNDARY DITCH
BYM	BOUNDARY MOUND
BYS	BOUNDARY STONE
BOUS	BOUSE TEAM
BOBR	BOWL BARROW
BOWG	BOWLING GREEN
BKLN	BRICK KILN
BRKW	BRICKWORKS
BRID	BRIDGE
BLD	BUILDING
BLPL	BUILDING PLATFORM
CARN	CAIRN
CANL	CANAL
CSTL	CASTLE
CAUS	CAUSEWAY
CSRD	CAUSEWAYED RING DITCH
CHAP	CHAPEL
CHIM	CHIMNEY
CHCH	CHURCH
CHYD	CHURCHYARD
CINU	CISTERCIAN NUNNERY
CLAY	CLAY PIT
PUDD	CLAY PUDDLING PIT
CCAR	CLEARANCE CAIRNS
COM	COAL MINE
COMN	COAL MINING *
COLP	COAL PIT *
COWK	COAL WORKINGS
COFL	CONDENSING FLUE
CONS	CONSTRUCTION CAMP
CONW	CONSTRUCTION WORKS *
CPM	COPPER MINE
COPS	COPSE
CNDR	CORN DRYING OVEN
CNM	CORN MILL
CTM	COTTON MILL

COHO	COUNTRY HOUSE
CRNG	CRANNOG
CRFT	CROFT
CRML	CRUSHING MILL
CULM	CULTIVATION MARKS
CUTR	CULTIVATION TERRACE
CURS	CURSUS
DAM	DAM
DECO	DECOY POND
DRPK	DEER PARK
DENE	DENE HOLE
DV	DESERTED VILLAGE
DEWP	DEWPOND
DITC	DITCH
DOVE	DOVECOTE
DRAN	DRAIN
DSYS	DRAINAGE SYSTEM
DRFL	DRESSING FLOOR
DRRD	DROVE ROAD
DYKE	DYKE
EWK	EARTHWORK
ELK	ELLING KILN *
ECCM	ENCLOSED CREMATION CEMETERY
ENC	ENCLOSURE
EXTP	EXTRACTIVE PIT
FAIR	FAIR
FMH	FARMHOUSE
FMS	FARMSTEAD
FBDY	FIELD BOUNDARY
FSYS	FIELD SYSTEM
FWOK	FIELDWORK
FIRG	FIRING RANGE
FISH	FISHPOND
FLG	FLAGSTONE QUARRY *
FLM	FLAX MILL
FLDF	FLOOD DEFENCES
FLUE	FLUE
FOLY	FOLLY
PATH	FOOTPATH
FOGN	FORMAL GARDEN
FORT	FORT
FORU	FORUM

FGSR	FUNGUS RING
GARD	GARDEN
GEOM	GEOLOGICAL MARKS
GOAL	GOAL POST ENCLOSURE *
GRAN	GRANARY
GRGE	GRANGE
GRA	GRAVEL PIT
GROT	GROTTO
GRUB	GRUBENHAUS
GDHT	GUARD HOUSE
HAHA	HA HA
HRTH	HEARTH
HNGE	HENGE
HLFT	HILLFORT
HOLO	HOLLOW WAY
WHIM	HORSE WHIM
HOU	HOUSE
HNTL	HUNTING LODGE
HUSH	HUSH
HTCL	HUT CIRCLE
INCL	INCLINED PLANE
INCM	INHUMATION CEMETERY
IDSM	INTERRUPTED DITCH SYSTEM *
KILN	KILN
KNCK	KNOCK STONE
LZBD	LAZY BEDS
LDW	LEAD WORKINGS
LDWK	LEAD WORKS
LEAT	LEAT
LMK	LIME KILN
LMW	LIME WORKS
LIM	LIMESTONE QUARRY
LOBW	LONG BARROW
LCAR	LONG CAIRN
LOHO	LONG HOUSE
LYNT	LYNCHET
MANR	MANOR
MARC	MARCHING CAMP
MLS	MILESTONE
MIL	MILL
MICL	MILL (CELESTINE) *
MPD	MILL POND

MIRC	MILL RACE
MIST	MILLSTONE WORKING SITE
MIN	MINE
MNCL	MINING (CELESTINE) *
MOAT	MOAT
MONA	MONASTERY
MOTT	MOTTE
MTBL	MOTTE AND BAILEY
MND	MOUND
NATF	NATURAL FEATURE
OPEN	OPENWORK *
OPDA	OPPIDUM
OLAF	ORNAMENTAL LANDSCAPE FEATURE *
ORPO	ORNAMENTAL POND
OXBW	OXBOW LAKE
PTCT	PEAT CUTTING
PTST	PEAT STORE
PELE	PELE TOWER
PILB	PILLBOX
PLMD	PILLOW MOUND
PIPE	PIPELINE
PIT	PIT
PITA	PIT ALIGNMENT
PCIR	PIT CIRCLE
PITC	PIT CLUSTER
PLTN	PLANTATION *
PLAT	PLATFORM
PSET	PLATFORM SETTLEMENT
HEAD	PLOUGH HEADLAND
POND	POND
POST	POST HOLE
PSTM	POST MILL
POTT	POTTERY WORKS
PND	POUND
PRAT	PRACTICE CAMP
PREC	PRECEPTORY
PRCS	PROCESSING AREA *
PRFT	PROMONTORY FORT
PROS	PROSPECTING TRENCH
PYK	PYE KILN *
QRRY	QUARRY
TYPE	RABBIT TYPE *

WARR	RABBIT WARREN
RAIL	RAILWAY
TURN	RAILWAY TURNTABLE
REAV	REAVE
RELH	RELIGIOUS HOUSE
RES	RESERVOIR
REPT	RETTING PITS
RFLB	RIDGE AND FURROW
RBUT	RIFLE BUTTS
RCRN	RING CAIRN
RIBA	RINGWORK AND BAILEY
ROAD	ROAD
RDBW	ROUND BARROW
SALT	SALTWORKS
SND	SAND PIT
SAN	SANDSTONE QUARRY
SLBT	SEARCHLIGHT BATTERY
SET	SETTLEMENT
SHFT	SHAFT
SPF	SHEEP FOLD
SHOS	SHEEP HOUSE
SHIL	SHIELING
SHOT	SHOOTING STAND
SHSH	SHORT SHAFT *
SHVL	SHRUNKEN VILLAGE
SIGS	SIGNAL STATION
SLA	SLATE QUARRY
SLTT	SLIT TRENCH
SMM	SMELT MILL
SMY	SMITHY
SPHP	SPOILHEAP
SQBW	SQUARE BARROW
STST	STACK STAND
STAN	STANDING STONE
STS	STEPPING STONES
STEN	STOCK ENCLOSURE
STK	STOCKS
STO	STONE
STCL	STONE CIRCLE
SPYT	STRIP LYNCHET
TAIL	TAIL RACE
TEMP	TEMPLE

TENS	TENNIS COURT
TILW	TILE WORKS
TOFT	TOFT
TOWR	TOWER
TOWN	TOWN
TRCK	TRACKWAY
TRAM	TRAMWAY
AVNU	TREE AVENUE
TRNC	TREE ENCLOSURE RING
TRHL	TREE HOLE
TRRG	TREE RING
UNKO	UNKNOWN *
VCUS	VICUS
VILL	VILLA
WAL	WALL
WSF	WASHFOLD
WACH	WATCH TOWER
WATM	WATER MEADOW
WCE	WATERCOURSE
WELL	WELL
WHEP	WHEEL PIT
WIND	WINDMILL
WMND	WINDMILL MOUND
WDBK	WOOD BANK
WDBY	WOODLAND BOUNDARY *
WOM	WOOLLEN MILL

C Database Structure and Contents.

C.1 The Morph2 classification system is a suite of programs that manage a number of related databases providing a closely structured method of describing archaeological features. This system for morphological description was designed by members of the Air Photography Unit of RCHME and converted into computer form, with many enhancements, by Cultural Heritage Information Consultants. The database structure conforms to the dBase 3 standard, the programs are run using FOXR (the runtime version of FoxPro), and the indexes are of the FoxPro type. Reports are run from within the system using the FoxPro and R&R Relational Report writer runtime modules. Users with their own copy of FoxPro can run the program from the dot prompt by using the command DO MORPBAPA.

The system is complicated and only an expert (with a thorough knowledge of database systems and Morph2 in particular) should consider editing any of the databases other than through the Morph2 system.

C.2 Indexing and Linking Tables.

All tables are linked using the relevant table_NUM index, the index being formed using the following formula:- COUNTY+str(CNO,6,0)+str(GPNO,2,0)+str(SSNO,2,0) except the GROUP table:- COUNTY+str(CNO,6,0)+str(GPNO,2,0)

The PRI is additionally indexed on the LOCATION field used for block searching.

Each record in the PRI table is linked to a single record in either the ENCLOSURE, LINEAR FEATURE, LINEAR SYSTEM, MACULA, or INDUSTRIAL COMPLEX tables according to the contents of the PRI_STYPE field.

One or more records in the PRI table may be linked to a single record in the GROUP table, the presence of information in the GROUP table being indicated by entries in the fields GP_INTERP and GP_PERIOD

GROUP table records may have a free text entry in the GROUPMEMO field, if so it is displayed as a "COMMENTS" box at the bottom of the PRI screen.

Each record in the PRI table may be linked to one or more records in the GRI table, the presence of information in the GRI table is indicated by "NGR TABLE" in the PRI_FNGR field.

Each record in the ENCLOSURE table may be linked to one or more records in the ENTRANCE table. The presence of information in the ENTRANCE table being indicated by a "Y" in the ENC_INT field.

Each record in the LINEAR FEATURE table may be linked to one or more records in the ENTRANCE table. The presence of information in the ENTRANCE table being indicated by a "Y" in the LFD_ENO field.

C.3 Notes on Table Structures

In the column marked "Contents" are listed the terms used in the Glossary and on screen. The actual contents of a specific field in a record will be one of the options available at input time, if these are abbreviated the abbreviations are listed in brackets. "Yes" and "No" are always abbreviated to Y and N.

N.B. Remember some terms such as PATTERN, SHAPE and FORM have different options depending on which table is being used.

PRIMARY RECORD IDENTIFICATION TABLE

Structure for database: C:\USR\DBASE\DALES\PRI.DBF

Field	Field Name	Type	Width	Contents
1	TIMESTAMP	Character	16	Date and time CREATED
2	COUNTY	Character	2	COUNTY
3	PRI_PSH	Character	5	PARISH
4	CNO	Numeric	6	COMPLEX number
5	GPNO	Numeric	2	GROUP number
6	SSNO	Numeric	2	SITE number
7	PRI_1GRE	Numeric	1	NGR 10km square easting
8	PRI_2GRE	Numeric	1	NGR 1km square easting
9	PRI_3GRE	Numeric	1	NGR 0.1km square easting
10	PRI_4GRE	Numeric	1	NGR 0.01km square easting
11	PRI_1GRN	Numeric	1	NGR 10km square northing
12	PRI_2GRN	Numeric	1	NGR 1km square northing
13	PRI_3GRN	Numeric	1	NGR 0.1km square northing
14	PRI_4GRN	Numeric	1	NGR 0.01km square northing
15	PRI_EXT	Character	1	STILL IN EXISTENCE
16	PRI_LOC	Character	12	LOCATION
17	PRI_ASP	Character	3	ASPECT
18	PRI_PER	Character	2	PERIOD
19	PRI_INT	Character	4	INTERPRETATION CODE
20	PRI_CERT	Numeric	1	SOURCES
21	PRI_STYPE	Character	14	Site TYPE (ENCLOSURE, LINEAR FEATURE, LINEAR SYSTEM, MACULA, INDUST COMPLEX)
22	PRI_GLE1	Character	1	NGR letter of 100km square
23	PRI_GLE2	Character	1	NGR letter of 100km square

24	PRI_NAR	Character	10		NAR REFERENCE number
25	PRI_SMR	Character	10		SMR REFERENCE number
26	PRI_VAL	Numeric	1		VALIDITY
27	PRI_FORM	Character	5	FORM	OF REMAINS (C,E,S,C&E,C&S,E&S,C&E&S)
28	AUTHOR	Character	3		AUTHOR
29	PRI_FNGR	Character	9		FURTHER NGR DATA
30	LE	Character	5		5 figure NGR easting *
31	LN	Character	5		5 figure NGR northing *
32	LOCATION	Character	10		10 figure NGR *
33	PRI_MAP	Character	6		OS Quarter Sheet number

** Total ** 145

* - Fields 30, 31, 32 contain numeric only NGRs to ease block searching e.g. a site with NGR SD12345678 would have the following fields:-

LE = 31234 LN = 45678 LOCATION = 3415263748

GROUP TABLE

Structure for database: C:\USR\DBASE\DALES\GROUP.DBF

Field	Field Name	Type	Width	Contents
1	COUNTY	Character	2	COUNTY
2	CNO	Numeric	7	COMPLEX number
3	GPNO	Numeric	2	GROUP number
4	GP_PERIOD	Character	2	PERIOD
5	GP_INTERP	Character	4	INTERPRETATION CODE
6	TIMESTAMP	Character	16	Date and Time CREATED
7	GROUPMEMO	MEMO	10	COMMENTS

** Total ** 43

ADDITIONAL NGR INFORMATION TABLE

Structure for database: C:\USR\DBASE\DALES\GRI.DBF

Field	Field Name	Type	Width	Contents
1	COUNTY	Character	2	COUNTY
2	CNO	Numeric	7	COMPLEX number
3	GPNO	Numeric	2	GROUP number
4	SSNO	Numeric	2	SITE number
5	GRIDREF	Character	12	NGR e.g. SE1234056780
6	TIMESTAMP	Character	16	Date and time CREATED

** Total ** 42

N.B. The GRIDREF field is only accurate to the nearest 10m, the zeroes are added automatically to conform to the standard used by the AERIAL program.

ENCLOSURE TABLE

Structure for database: C:\USR\DBASE\DALES\ENC.DBF

Field	Field Name	Type	Width	Contents
1	TIMESTAMP	Character	16	Date and time CREATED
2	COUNTY	Character	2	COUNTY
3	CNO	Numeric	6	COMPLEX number
4	GPNO	Numeric	2	GROUP number
5	SSNO	Numeric	2	SITE number
6	ENC_LINE	Character	11	LINEARITY
7	ENC_SYMM	Character	10	SYMMETRY
8	ENC_SHAP	Character	11	SHAPE (of an ENCLOSURE)
9	ENC_ELYN	Character	1	ELONGATED
10	ENC_PRES	Numeric	2	STRAIGHT SIDES [Curv]
11	ENC_CORN	Character	6	CORNERS
12	ENC_STRS	Numeric	2	STRAIGHT SIDES
13	ENC_CONS	Numeric	2	CONCAVE SIDES
14	ENC_COVS	Numeric	2	CONVEX SIDES
15	ENC_DNUM	Numeric	2	DITCH circuits
16	ENC_BNUM	Numeric	2	BANK circuits
17	ENC_PNUM	Numeric	2	PIT-DEFINED circuits
18	ENC_FNUM	Numeric	2	FOUNDATION circuits
19	ENC_LTH	Numeric	4	LENGTH
20	ENC_BTH	Numeric	4	BREADTH
21	ENC_DIA	Numeric	4	DIAMETER
22	ENC_COMP	Character	10	COMPLETENESS
23	ENC_INTF	Character	16	INT/EXT FEATURES
24	ENC_INT	Character	1	ENTRANCES (Y or N)
** Total **			123	

ENTRANCE TABLE

Structure for database: C:\USR\DBASE\DALES\ENT.DBF

Field	Field Name	Type	Width	Contents
1	COUNTY	Character	2	COUNTY
2	CNO	Numeric	7	COMPLEX number
3	GPNO	Numeric	2	GROUP number
4	SSNO	Numeric	2	SITE number
5	ENT_POS	Character	2	ENTRANCE POSITION
6	ENT_FORM	Character	13	FORM of an ENTRANCE (TIT/CLAV, ANT/FUNN, PIT-DEFINED, TERMINAL

DEF., INTURNED, STRUCT. DEF.)

7	TIMESTAMP	Character	16	Date and time CREATED
** Total **			45	

LINEAR FEATURE TABLE

Structure for database: C:\USR\DBASE\DALES\LFD.DBF

Field	Field Name	Type	Width	Contents
1	COUNTY	Character	2	COUNTY
2	CNO	Numeric	6	COMPLEX number
3	GPNO	Numeric	2	GROUP number
4	SSNO	Numeric	2	SITE number
5	LFD_PATT	Character	13	PATTERN
6	LFD_SHAP	Character	12	SHAPE
7	LFD_DNO	Numeric	2	DITCH
8	LFD_BNO	Numeric	2	BANK
9	LFD_PNO	Numeric	2	PIT-DEFINED
10	LFD_FNO	Numeric	2	FOUNDATION
11	LFD_RFYN	Character	1	RIDGE AND FURROW
12	LFD_CONT	Character	13	CONTINUITY
13	LFD_ENO	Character	1	ENTRANCES
14	LFD_DCHK	Character	13	DEFINITION CHECK
15	LFD_RTE	Character	13	ROUTE
16	LFD_WDTH	Character	5	WIDTH
17	LFD_LGTH	Numeric	4	LENGTH
18	TIMESTAMP	Character	16	Date and time CREATED
** Total **			112	

MACULA TABLE

Structure for database: C:\USR\DBASE\DALES\MCD.DBF

Field	Field Name	Type	Width	Contents
1	COUNTY	Character	2	COUNTY
2	CNO	Numeric	6	COMPLEX number
3	GPNO	Numeric	2	GROUP number

4	SSNO	Numeric	2	SITE number
5	MCD_PATT	Character	9	PATTERN
6	MCD_SHAP	Character	11	SHAPE
7	MCD_FORM	Character	8	FORM
8	MCD_SIZE	Character	8	SIZE
9	MCD_NUM	Numeric	3	NUMBER OF MACULAE DESCRIBED
10	TIMESTAMP	Character	16	Date and time CREATED
** Total **			68	

LINEAR SYSTEM TABLE

Structure for database: C:\USR\DBASE\DALES\LSD.DBF

Field	Field Name	Type	Width	Contents
1	COUNTY	Character	2	COUNTY
2	CNO	Numeric	6	COMPLEX number
3	GPNO	Numeric	2	GROUP number
4	SSNO	Numeric	2	SITE number
5	LSD_PATT	Character	8	PATTERN
6	LSD_SHAP	Character	11	SHAPE
7	LSD_FORM	Character	11	FORM
8	LSD_CONT	Character	14	CONTINUITY
9	LSD_UDT	Character	1	UNIT-DEFINED TRACKWAY
10	LSD_ENO	Numeric	2	ENCLOSURE COMPLEX
11	LSD_LGTH	Numeric	4	LENGTH
12	LSD_BDTH	Numeric	4	BREADTH
13	TIMESTAMP	Character	16	Date and time CREATED
** Total **			84	

INDUSTRIAL COMPLEX TABLE

Structure for database: C:\USR\DBASE\DALES\IND.DBF

Field	Field Name	Type	Width	Contents
1	COUNTY	Character	2	COUNTY
2	CNO	Numeric	6	COMPLEX number
3	GPNO	Numeric	2	GROUP number
4	SSNO	Numeric	2	SITE number
5	IND_BP	Character	9	BELL PITS
6	IND_SHFT	Character	9	SHAFTS
7	IND_HUSH	Character	7	HUSHES
8	IND_ADIT	Logical	1	ADITS
9	IND_OWYN	Logical	1	OPEN WORKINGS
10	IND_PEAT	Logical	1	PEAT CUTTING
11	IND_PROC	Logical	1	PROCESSING

12	IND_FLUE	Logical	1	FLUE
13	IND_CHIM	Logical	1	CHIMNEY
14	IND_BLD	Logical	1	BUILDING
15	IND_LEAT	Logical	1	LEAT
16	IND_DAM	Logical	1	DAM
17	IND_TRAM	Logical	1	TRAMWAY
18	IND_TRCK	Logical	1	TRACKWAY
19	IND_LGTH	Numeric	4	LENGTH
20	IND_WDTH	Numeric	4	BREADTH
21	IND_DIAM	Numeric	4	DIAMETER
22	TIMESTAMP	Character	16	Date and time CREATED
** Total **			77	

INTERPRETATION CODES TABLE

Structure for database: C:\USR\BLANK\INTRCODE.DBF

Field	Field Name	Type	Width	Contents
1	CODE	Character	4	INTERPRETATION Code
2	INTRPRET	Character	40	Full INTERPRETATION
3	NAR_THES	Logical	1	Thesaurus term?
** Total **			45	

PARISH CODES TABLE

Structure for database: C:\USR\DBASE\DALES\PARISH.DBF

Field	Field Name	Type	Width	Contents
1	CODE	Character	5	PARISH Code
2	PARISH	Character	40	Full PARISH name
			** Total **	110

D Computer Specification.

D.1 Hardware.

The minimum requirement for the Morph database system is:-

An IBM compatible Personal Computer with a 386 (or compatible CPU).

1Mb RAM (2Mb if using Desqview).

A VGA monitor (preferably colour).

A hard disk drive (suggested minimum 40Mb).

The MORPH system files require about 2Mb of hard disk space. The actual database files created by MORPH are fairly economical on space e.g. The Dales Project data, 18,000 records required 8Mb disk space. N.B. It is advisable to always keep 2 or 3Mb of hard disk free as whenever records are deleted a complete copy of the database is temporarily created.

A floppy disk drive (preferably 3.5").

Higher specification machines will improve the speed of the software (a 486 machine with a 100Mb Hard disk and 4Mb RAM is perhaps a suitable specification to aim at).

A digitizing tablet will greatly increase the ease, speed and accuracy with which grid references are obtained. Ideally the digitizer should be large enough to cope with a complete 1:10,000 map overlay. (If used with the AERIAL software the GTCO, or compatible, models are preferred - though other digitizers are supported).

A printer will be useful for reports.

A pen plotter may also be useful for report data.

D.2 Software.

MS-DOS or compatible operating system.

The MORPH program will operate with any version of DOS higher than 3.3. MS-DOS version 5 or higher is recommended because of the extra memory available to run programs. (DR-DOS v6.0 has not been tested but should work equally well. The effects of hard disk compression software like Stacker and Superstor have not been tested).

MORPH (v2.2).

MORPH is written and compiled using FoxPro and is distributed in a runtime version. It is a complete database management system allowing input, editing and reporting of information in a structured relational database. The program may be run from the DOS prompt either as an .EXE file or as a .BAT file. Running from within WINDOWS is not recommended as this will have major effect on performance (but see Desqview below). As well as the program files, the MORPH system requires a number of blank database and report template files along with a specific directory tree structure on the C:\ drive. These will be created as a part of the installation process.

FoxPro, dBase IV etc.

There is no requirement for the user to purchase and install their own database management system. (However, experienced database users may like the added freedom that this will bring to manipulating the database information). The MORPH databases use the industry standard dBASE structure and so can be readily linked to other user designed databases.
N.B. The MORPH system is designed to structure the contents of the relational database and uninformed tinkering with the databases by-passing the MORPH system can easily destroy this structure and the value of the information.

AERIAL.

For AP mapping.

The AERIAL software is designed primarily to transform information on oblique photographs to the plan view and so is a valuable aid to archaeological mapping from APs at any scale. Although the NMP spec is primarily "sketch" mapping the use of AERIAL will greatly increase the accuracy of results and in more complex areas may even speed up sketch mapping by providing an accurate framework within which to work. (To use AERIAL in this manner requires the PC, Digitizer and Plotter as specified above.)

For reading NGRs.

Grid references may be read accurately from overlays simply using a manual roamer, but the facilities of AERIAL allow for the rapid digitization of NGRs from overlays and is best used from within Desqview. This requires the use of a digitizing tablet.

For distribution maps.

The distribution map facility within AERIAL provides a quick way of viewing on screen the spatial distribution of sites in the database. Some of the reports provided in MORPH (see ??) output in a format suitable for direct use within AERIAL.

N.B. AERIAL is not specifically a graphics package and users wishing enhanced paper output should invest in suitable software. (A routine is available to read AERIAL files into AutoCad).

Desqview 386.

Desqview software allows multi-tasking of DOS programs but has lower memory overheads and effects on performance than Windows. This software is primarily of use in allowing the parallel running of the AERIAL and MORPH programs; this provides an easy way to read off grid references from the map whilst inputting data and provides a validation that these NGRs have been correctly entered into the database (see testgrid ??).

Backup software.

Database information should be backed up at least once a day when inputting. If a tape drive is not available it is recommended that specialized software using compression routines should be used to save time and disk space (The backup software provided with PCTOOLS is a good example).

Reporting software.

The MORPH system incorporates a number of pre-defined reports and a facility to define your own reports (see ??), but for greater flexibility and ease of use some users may find a specialist report writer is useful. (We use R & R Relational Report Writer v 5 ; some of the more complex reports in the MORPH system use a runtime version of this software, as does the NAR data transfer routine - see ??).

Disk optimizing software.

The multiple databases used by MORPH will rapidly become fragmented on the hard disk slowing performance noticeably as the amount of data increases. Use of specialized disk optimizing software (following carefully the manufacturers guide) is recommended. (The COMPRESS software provided with PCTOOLS is a good example). (The effects of hard disk compression software like Stacker and Superstor have not been tested).

E Data Validation

The majority of inputs to the MORPH system are validated and structured on input but a certain degree of data checking is still required.

E.1 Grid references

Checks are made during input that NGRs lie on the map the record is assigned to, however, it is possible to override this and so errors can slip through. (For users of AERIAL a method of checking for errors on a daily basis is provided by Testgrid see??). The easiest way to check for incorrect NGRs is using software that will produce a picture of NGRs (e.g. AERIAL see??) and then visually check the pattern of symbols produced. The "Ray diagram" is particularly useful as it will readily bring to attention sites that are grouped together but are not locationally close. Outputting information one quarter sheet at a time, or according to Parish code, or according to COMPLEX number can also help to identify errors.

E.2 Parish Codes

These need to be validated against a separate database of parish codes for the project. Errors of invalid codes are easy to identify, incorrectly assigned Parish codes are more difficult. (Eventually checks within a GIS system will be able to fully validate these). As with Grid references a visual check is often the easiest, a report is designed that assigns different colours to each Parish and inconsistencies can then be easily spotted. This can also work as a check for incorrect Grid references.)

E.3 Interpretation Codes

These need to be validated against the Interpretation codes database held in the c:\usr\blank sub-directory. If new codes are required then these should be obtained from RCHME. Regular updates will be sent to all users (see ??).

There are a few interpretation codes that should only be used in certain circumstances most notably RFLB for Ridge and Furrow. This should always be used as a SITE INTERPRETATION and never as a GROUP INTERPRETATION, therefore a useful validation exercise is to check that all LINEAR FEATURES and LINEAR SYSTEMS flagged as R & F should have RFLB as their SITE INTERPRETATION.

F Error Messages.

F.1 CANCEL,SUSPEND, IGNORE?

This is an error message from foxPro indicating that an error has occurred within the program. It is usually worth trying to IGNORE such messages (it may be necessary to IGNORE several times) however if you are not returned to a screen you recognize then CANCEL may be your only option. It is important to note where you were in the procedure and which record was being worked on. On re-starting the system check that the relevant records are still valid.

F.2 DATA BASE NOT FOUND.

Consult your database manager. Do not use the database in the meantime.

F.3 RECORD NOT FOUND.

If you are absolutely sure that a record from any of the tables is missing then consult your database manager. Do not use the database in the meantime.

G Multiple Input Stations

G.1 In general it is preferable if all inputting for a given NMP project can be done using a single PC. This helps to ensure that the database remains internally consistent and allows for the numbering (see ??) to remain sequential. Adding records to adjacent maps to those already completed and the inevitable slight changes that these will require to existing records are more easily done if a single set of databases is used.

The MORPH system is not a multi-user system as currently configured but it is possible for multiple input stations to be used. In effect these are entirely separate databases, but they are managed in such a way as to allow them to be brought together at the end of a project to form a single database with no duplicate numbers. Because numbers are assigned and managed by the system it is necessary to define DEFAULTS to restrict inputting.

G.2 Defaults

The database manager for a multiple input station project will assign DEFAULTS to the database on each machine which will restrict the numbers used for adding new COMPLEXES. For example, one machine will be assigned COMPLEX numbers 1 - 300, and the second machine will be assigned 301 - 500. It is important to remember that these DEFAULTS are only for new COMPLEXES and that it is still possible to add to existing COMPLEXES.

G.3 Manual Input of Numbers

It is possible to override the DEFAULTS by using the "ENTER NUMBER MANUALLY" ?? option from the "ADD MENU"??. This is useful when you wish to add to a COMPLEX that already exists on a separate work-station but is not available on your database. Obviously there is a clear risk of duplicate numbers occurring and so this facility should only be used with care and the agreement of your Database manager. (This facility is password protected).

G.4 How to set up a multiple input Project

Multiple inputting needs to be closely monitored to ensure that there is no clash of numbering (**N.B. The MORPH system provides no method for renumbering wrongly input records, all incorrect/duplicate records will have to be reinput**). To ease matters it is best to divide the project into blocks each of which will be assigned to a single work-station. Then the project should be timetabled in such a way as to ensure that adjacent maps which are assigned to different work-stations, are never being worked on at the same time.
It is important to ensure that databases on different work-stations are at all times mutually exclusive, that is there should be no duplication of information or numbering.

G.5 Adding information to a database on a different work-station

Changes to an existing record (including adding extra NGRs) must always be done on the work-station on which the record was originally input. Additions to existing GROUPS or COMPLEXES are preferably done on the original work-station but it is possible to add information on another work-station. To do this it is first necessary to obtain the correct number by consulting the database on the first work-station and then input this number on the second work-station using the "INPUT NUMBER MANUALLY" option (this requires a password). e.g. By consulting the database on work-station 1 you find that the GROUP you wish to add to already contains three sites NY.123.4.1, NY.123.4.2 and NY.123.4.3 therefore on the second work station you must manually enter the new number NY.123.4.4.

G.6 Joining databases from multiple work-stations

Software is available to skilled database managers that allows databases to be combined to produce a single Project database for reporting purposes. This can either be done at the end of a Project or can be done on a regular basis if secondary input stations are only to be used occasionally. The software will not combine databases that have duplicate numbering, should this occur you will be warned what has happened, and advised what to do next. The easiest option is to make sure it doesn't happen in the first place. It is particularly important that backup procedures are rigorously adhered to when using multiple input stations.

IV. Testgrid.

A. Testgrid is one of the pre-defined report formats which is available through the FoxPro ReportWriter module (see ??). Testgrid reports on the PRI and NGR table, copying only the NGRs for each record. Testgrid is designed to report to a distribution file in a format compatible with the AERIAL plane transformation software. The report should be run and the file plotted at the end of each inputting session in order to check for incorrect NGRs still within the bounds of the map sheet being worked on (and therefore not picked up by the map-based automatic check).

B. Setting up.

To read NGRs for copy-typing into MORPH, set up AERIAL to plot map detail (at a scale of 21,000 AERIAL gives a 5 x 6 km plot area) with the pen colour set to yellow. This will produce a scatter of yellow dots representing all the NGRs read for that inputting session. Use the "Rearrange" menu on Desqview to position the AERIAL window so that the NGRs are visible when the MORPH window is active.

If you output Testgrid (or any of the distribution reports) to screen you will see that each record is pre-fixed by a three numeral code. This code tells AERIAL what symbol and what pen colour to use when plotting the distribution file. There is also a column which for each record will contain the entry "0.0". This is a height reading (false) to satisfy AERIALs requirement for a three dimensional location (with the Eastings and Northings of the NGR).