
APPENDIX D LIBRARY MANAGEMENT

The library facilities of Accucadd are extensive and fairly complex, and some in-depth knowledge is required to use all of the functions. This appendix explains them in detail.

The sections of this appendix are:

- D.1 Concepts A summary of the concepts used in discussing Accucadd Libraries, with definitions of the terms used.
- D.2 Library Conversion The procedures and utility programs for converting libraries from RoboCAD 20 and earlier systems to the format used by the Accucadd.
- D.3 Management techniques
 - Index management
 - Managing Inserts in the library
 - Archiving and recovering drawings
 - Moving drawings between Accucadd sites
- D.4 Backups The need for backups and the techniques for making them and managing them.
- D.5 Function descriptions Complete descriptions of all the Accucadd Functions that work with the Library.

Appendix G (“System Information”) gives technical information on the file and directory names used to store libraries, and the techniques that can be used to protect libraries.

Warning: The Accucadd library system is complex and powerful. It uses a structured system of files and directories to hold drawings using less disk space than would be required if the drawings were stored as simple files, and to provide graphic Indexes for drawing selection.

Used correctly, it is a great aid to drawing and drawing management; with sufficient carelessness, it can destroy your drawings. Three points must be emphasized:

- Never try to copy or modify libraries using command prompts, drag-and-drop, Explorer, or file-management programs.

- Do not use more than one library for your main drawing work, unless you have no choice.

- Never create Indexes with the same numbers in different libraries.

D.1 Concepts This section describes the concepts and terms needed for a full understanding of the Accucadd library system. The functions that work on the library are described below.

New Data Accucadd stores a drawing as a list of Entities — lines, arcs, text lines, and so on. Each Entity is encoded as you add it to the drawing, with its

position, layer, line style, and so forth. The Entities in a drawing are collectively known as the New Data.

New Data can be easily edited (by most of the Edit functions). Previous versions (RoboCAD) limited it to 60Kb, but the Accucadd Family programs allow up to 2GB of New Data (see Accucadd: Introduction).

Drawings, Inserts A **drawing** consists of its New Data, and any other drawings which may have been inserted into it. The Insert function does not add the drawing which is Inserted to the new data. Rather, it creates an Entity in the New Data which gives the Index number and Index position of the drawing Inserted, and the position in the drawing at which it has been placed. This Entity is known as an **Insert Record**.

Insert Data An Insert is, of course, a drawing in its own right. When it is Inserted, a copy of the drawing is loaded into the computer's memory, so that it can be displayed in the current drawing. When a drawing is loaded because it is an Insert, it is known as **Insert Data**.

Inserts cannot be edited while they are being treated as Inserts. You can Load them as drawings and change them, or use Edit: Isolate or Edit: Explode.

Nesting As any drawing may be used as an Insert, an Insert may itself contain other Inserts. This situation is known as **Nesting**. Up to 16 levels of nesting are allowed.

Composite, Component A drawing with Inserts in it is known as a **Composite** drawing; the Inserts are its **Components**. As a component may have components itself (nested Inserts), the term 'components of a drawing' is taken to include the components of the drawing's immediate components, their components, and so on.

Accucadd and `20' format data All versions of RoboCAD and RoboDRAFT published before the introduction of Accucadd stored their data in `20' format, using 32-bit integer numbers. Accucadd (and v.21 programs) stores data using 64-bit floating-point numbers. Accucadd can read `20' format data, but not vice versa. However, the manner in which a drawing is constructed from New Data and Inserts hasn't been altered.

Filing a drawing

When you File a drawing, it is saved in Accucadd format. If any of its Inserts were in `20' format, they are saved in Accucadd format. Library: Import RDF causes some exceptions to this: see its entry in section D.5 below.

Over-filing

When you overfile a `20' format drawing with an Accucadd format drawing, the Accucadd format data is saved, and the `20' format data remains until it is purged from the library.

Filing Inserts

If any of a drawing's Inserts exist in the library in `20' format, they are Filed in Accucadd format. The `20' format versions remain in the library until they are purged.

Utility programs are available for converting entire libraries to Accucadd format, and for purging old `20' format data from libraries. These are described in section D.2, "Library Conversion", below. Unless you are concerned about disk drive space, there is little need to use them, however.

Warnings: *If you Load, alter and File a drawing with Accucadd, and then Load the same drawing with a `20' format system, the old, `20' format version of the drawing is loaded. This version does not contain the changes made with Accucadd; any changes you make with the `20' format system will not be reflected in the Accucadd version of the drawing.*

In the same way, if you alter a drawing that is used as a component of a `20' format drawing using Accucadd, the out-of-date `20' format version will remain in the library until it is purged, and this version will be used by the `20' format drawing.

Once you have started `real' work with on a library with Accucadd, as opposed to trials, there is realistically no way back to RoboCAD 20. This is quite normal when a software package is radically changed, but you should be aware of it.

Updating Inserting a drawing only makes a record of which drawing has been Inserted, rather than what the drawing contains. When you change the Inserted drawing, the changes will be visible in the composite drawing when it is next loaded or printed. This is a **Global Update**; providing easy updates was the main objective of the Accucadd library system.

Overfile The component could be altered by loading it, editing its new data and Filing it back in the same Index position, or by Filing some other drawing in the same library position — an **overfile** operation.

Isolate and Local Update Edit: Isolate allows you to short-cut the updating process by selecting an Insert from the drawing, rather than loading it from the library. If you overfile the Insert, Isolate will do a Global Update; if you File it elsewhere, Isolate can do a Local Update, explained under Edit: Isolate.

Working with Global Updates There are two important effects of this manipulation of components:

You can change standard components in all the drawings stored in a library in one operation.

You **must not** overfile components of drawings unless you want to cause an Update.

For example, consider the case of a library containing circuit diagrams. It is easy to create the standard electronics symbols as drawings in their own right, and to INSERT them wherever they are required in the circuit diagrams. If the symbol for a component type changes, it is only necessary to overfile a drawing of the new symbol onto the old one, for all of the drawings using this symbol to be automatically updated.

All the drawings containing the revised symbol will be updated; you cannot choose to update only some of them. Symbols to be used widely should be selected with some care.

Updates with Accucadd format data

You can perform updates of `20` format drawings with Accucadd format data. The `20` format drawings remain in the library until they are purged (see below). As the `20` format versions are still present in the library, any existing `20` format drawings that use them as components can still be used with a `20` format program, such as RoboCAD 20.

However, the `20` format versions may be out of date — see the warnings above.

External components

There is a special type of Insert, an **External Component**. This is simply an Insert that comes from a different Index to the drawing it is Inserted into. It is special because it will be preserved in the Common Index (see below), if its own Index is deleted with the Delete Index function. This allows you to delete Indexes without losing data if any of them include components of drawings that have not been deleted.

Common Index

Drawings in the **Common Index** are placed there when the Index they belong to does not exist in the library. The Common Index is Index 00000; it cannot be used directly. Its purpose is to hold components of other drawings. These are all External Components, of course.

The Common Index exists to allow Accucadd to preserve your data when it would otherwise be lost due to incorrect organization of the library. *None of its uses or effects are desirable in a properly organized library.*

There are several ways of creating drawings in the Common Index:

Deleting an Index with Library: Maintenance: Delete Index.

Drawings in the Index that are External Components of other drawings in the library will be placed in the Common Index.

Filing a drawing from another library. All the Inserts of the drawing which belong to Indexes which don't exist in the library (which should be all of them) will be placed in the Common Index.

Copying an Index from another library with Library: Maintenance: Copy Index. Inserts of the drawings on the Index which

belong to Indexes which don't exist in the target library (which should be all of them) will be placed in the Common Index.

Drawings in the Common Index have file names that specify the Index that they came from, and their position on it. In general, whenever the program looks for a drawing, it tries the Index indicated by the Insert name first, and then tries the Common Index.

Drawings in the Common Index that are components of drawings on only one Index will be deleted when that Index is deleted.

Phantoms reside in an Index, but are not displayed on the graphic Index page. They are confusing and undesirable, and should be rigorously avoided. They are created when:

An Index is deleted, and then re-created. Drawings that were placed in the Common Index are returned to the Index, but are not shown on its graphic Index display.

A drawing from another library, that has Inserts is Filed. If there are Indexes with the same numbers in both libraries, the Inserts from them are stored in the Indexes with the same numbers in the current library.

Although Phantoms are not displayed, they do occupy a position on the Index. They are only usually noticed when an "Overwrite?" warning is issued for no apparent reason when you use File.

False Images A **False Image** is a special class of Phantom, and even more undesirable. It is created when a Phantom would be created at an Index position that has a drawing there already. This can only happen through you Filing a drawing from a different library. It makes the Index image misleading, and should be avoided. False Images will not occur if the guidelines given under D.3, "Management techniques", below, are followed.

The 'Keep Image' facility of File allows you to create False Images in a controlled way. It assumes that you won't use it to hide drawings completely different from those shown on the Index image.

D.2 Library Conversion Converting a library is a multi-step process. It is important to take backup copies of your libraries; see D.4, "Backups", below, for details.

1. Take a backup copy of the entire library.
2. Convert the drawings, using Accucadd, as described above, and/or the utility program **RC_LCONV**.
3. Back up this version of the library, which contains both '20' and Accucadd format data. Use separate diskettes from the previous backup!

4. Purge the `20' format data from the library, using the utility program **RC_LPURG**.

5. Backup the transformed library, on a third set of diskettes.

Alternatively, **RC_LCONV** can create a new library, holding only Accucadd data, with a different pathname from the original `20' format library. You should backup the `20' format library before starting this process.

Please note that there is no way of converting Accucadd format data back to `20' format. Once you have converted and purged a library, you will have to recover any `20' format data you need from your backups.

Preparations Converting a library uses quite a lot of disk space. The Accucadd version of a library will take up about twice as much space as the `20' format version; if you take a `20' library and convert it, the amount of space needed is tripled until you purge the `20' format drawings.

Make sure you have plenty of space, and that you have made a backup of the library.

RC_LCONV techniques The library conversion program can operate in two ways:

Converting a library `in place'.

The Accucadd versions of drawings are created in the indexes of the existing library. The `20' format versions stay in place until they are purged. This has the same effect as using Accucadd to convert every drawing. However, it's much quicker.

If you have converted any drawings using Accucadd, **RC_LCONV** will preserve your Accucadd versions, and won't re-translate the `20' format versions of those drawings.

Making a new library

RC_LCONV creates a wholly new library, in a new directory.

This holds Accucadd versions of all the drawings in the old `20' format library, and no `20' format data at all. The `20' format library is left unaltered; any Accucadd drawings in it are copied to the new library. Purging the old library will only remove the drawings which have been automatically converted within the library by using Accucadd.

The first technique is more convenient, if you have enough disk space and don't want to change the library pathnames you use. The second technique is safer, if errors happen, and allows you to place the converted library on a different disk drive (e.g., a network's Public disk drive), which can be helpful if you're short of disk space.

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Running **RC_LCONV** **RC_LCONV** must be run from the command prompt. To run the program, exit from Accucadd, open a command window, and use this command:

RC_LCONV Enter

The program is stored in the System Directory; it starts up and prompts you to enter the pathname of the source library (the library to be converted), and then prompts you to press **Y** and **Enter** to confirm the pathname. Press **N** and **Enter** if you entered an incorrect pathname.

Next, **RC_LCONV** prompts for the pathname of the destination library. Press **Enter** to use the same pathname (converting the library in place), or enter a new pathname to create a new library. **RC_LCONV** won't allow you to overwrite another library with your new library: it produces an error message: "Library already exists". Once you have entered a pathname **RC_LCONV** can accept, it will ask you to confirm it — press **Y** and **Enter**, or **N** and **Enter** for an error. Finally, it will ask you to confirm that it should proceed — again, press **Y** and **Enter**.

Conversion process **RC_LCONV** reads through all the indexes in the library, checking which drawings have been converted already, and calculating the disk space required for the Accucadd versions of the unconverted drawings. Once this is complete, it checks that there is enough space available, and then proceeds to convert the `20' format drawings in the libraries. Each drawing becomes an individual file, with a name made up from its index number and position, and an extension of **RLF**.

If **RC_LCONV** encounters an error while reading a `20' format drawing, it will stop converting the index it's working on, and move on to the next index. If it hits an error while writing an Accucadd format drawing it will stop work.

Log file Once **RC_LCONV** has finished its work, it will prompt you to press a key, inform you that it has created a log file, with details of the conversion, and return to the command prompt. The log file is **RC_LCONV.LOG**. It holds copies of all the reports the program made during the conversion process, the meaning of which is obvious.

Using **RC_LPURG** This program has only one application; removing `20' format versions of drawings which have already been converted to Accucadd format from a library. This saves disk space, and prevents problems if RoboCAD 20 and Accucadd both have access to a library (e.g., a library on a diskette, a library on a computer with both programs installed, or a library accessed via a network).

Running **RC_LPURG** **RC_LPURG** must be run from the command prompt. To run the program, exit from Accucadd, open a command prompt window, and use this command:

RC_LPURG

Enter

Like **RC_LCONV**, the program is stored in your System Directory. When it is run, it will prompt you to enter the pathname of the source library, to confirm this pathname, and to give confirmation that it should proceed, just like **RC_LCONV**.

Purging process

RC_LCONV reads through all the indexes in the library. In each index, if all the drawings on that index have been converted to Accucadd format, **RC_LCONV** will delete the files that hold the '20' format versions.

When its work is completed, the program will create a log file, **RC_LPURG.LOG**, similar to the log file created by **RC_LCONV**.

Networking/machine-sharing

If **RC_LPURG** or **RC_LCONV** is asked to work with libraries on a shared disk drive on the network, they will warn you that all use of networked Accucadd should stop while they are working on the library. Don't ignore this warning!

Continuing to work on a library, with any version of Accucadd or any other program, while conversion or purging is in progress will corrupt the library. For safety, make sure that no other users are on the network at all!

On a networked or machine-sharing system, **RC_LCONV** and **RC_LPURG** are stored in your Local directory, if you have one, or the GLOBAL directory.

If the programs find that they don't have permission to create or delete files or directories in a networked environment, they will issue a message and stop.

Error messages

The error messages produced by **RC_LCONV** and **RC_LPURG** are listed in Appendix H, under "Misc. Errors".

D.3 Management techniques

As described above, there are major pitfalls in using more than one library with Accucadd. It is reasonable to use private libraries for personal or experimental work, but all the work done as the drawing office's business should be done in one library. Use of a network makes this practical even in a large office.

Index Numbers

Proper planning and organization of your library is vital for effective use of Accucadd. Benefits of an organized system include:

- Drawings can be found easily
- Confusion is avoided
- Drawings retain their integrity
- Editing and updating is straightforward
- Archiving and recovery is straightforward

Disk space is used efficiently

The main factor in creating an organized library is a correct allocation of the Indexes in the library. Some ranges of Index numbers are reserved for special uses. Numbers 1-59999 are free for your use, while numbers 60000-65535 are reserved for Indexes provided through Robo. Of these, 60000-64999 can be Loaded or Inserted from, and Filed to, by you, while 65000-65535 cannot be Filed to.

On a networked or machine-sharing installation, the Accucadd drawing Booking system is helpful in keeping a library organized; it is explained under Library: Book & Log.

The suggested allocation of Indexes in the library is:

Scratch Indexes (00001 to 09999)

This is strictly for temporary work. It should be divided up to allocate private Indexes for each user (say, 100 Indexes). They should have Index names that show which user they belong to (for example, "Simon 1", "Sarah 1", "Sarah 2").

Drawing Indexes (10000 to 49999)

These Indexes are used for drawing development and final filing. Dividing them into Project Indexes (final Indexes) and Working Indexes (drawing development space) depends on your working habits. They should have names that specify the job stored on them.

Symbol Indexes (50000 to 59999)

These should be used for standard drawing symbols for your office.

If drawings must be moved from the Scratch area to the Drawing area, use Library: Export RDF to export them and Library: Import RDF with its Renumber option to File the drawing and all its Inserts on the Drawing Indexes.

As you complete drawing projects, you will wish to archive the drawings, and re-use the Indexes they occupied. This is discussed below, under "Archiving drawings".

Insert Management This section describes several topics in the management of individual Inserts.

Version changes It frequently happens that the symbol for a part changes; this might be due to a design change by the manufacturer, a change in standards or any number of other reasons. Obviously, a new symbol for the part must be drawn.

Updating the old Symbol

If you Over-File the new symbol on the old, you will be able to

continue Inserting from the position you are used to, and you will Update all the existing drawings that use the symbol.

Keeping the old Symbol

If you File the new symbol in a new position on the Symbol Index, you will not update any existing drawings and you will have to Insert from a new position on the Index (and change your Key Table, if you use one).

The choice between these depends on the nature of the change and the purpose of your drawings; if they are used for on-going production, you may well wish to update them all. If they are records of an existing object or building, you will probably not wish to change them.

Temporary Symbol sets It often happens that many Inserts from a Symbol Index are required in each of a large number of drawings. A shortcut procedure for Inserting them is:

1. Create a drawing with the required symbols Inserted into it. File it on a Scratch Index.
2. Insert this drawing into your main drawing and Explode it, so that it is reduced to a set of Inserts.
3. Use Move and Copy to position and duplicate the Inserts.

Archiving Projects The best way to archive a finished project is to export its drawings as RDF files with Library: Export RDF. If you need to recall it, you can use Library: Import RDF to put it back in the library. Note that it is important to use the Renumber option when importing an archive file, unless the allocation of Indexes to drawings hasn't been changed and no other drawings are now occupying the Indexes the archived drawings were originally placed on.

An alternative technique requires you to use Library: Maintenance: Copy Index to copy the Indexes holding the project to another library on a diskette. This may not as effective, though, as it is limited by the capacity of a diskette: however other media, such as Zip disks or CD-R(W), could help in this respect.

A large RDF file could be split over several diskettes using the Windows Backup (described in your Windows Help system).

Recycling Indexes 40,000 Indexes is more than you will ever need for projects — you will run out of disk space before Indexes. Given that you will not wish to keep all of your projects in the library forever — they are safer from accidental overwriting archived as RDF files — it will be necessary to remove or re-use Indexes.

Delete and Recreate Indexes

This technique is practical, if all the Working and Project Indexes related to a project are deleted before any of them are recre-

ated. This means that none of the drawings in them will end up in the Common Index, and so no Phantoms will be created.

Overfile on Indexes

Here, Indexes are re-used without being deleted and removed. Provided that old drawings are over-filed, they will not waste Index space. This technique is preferred, as it avoids any possibility of creating Phantoms.

In both cases, you must be sure that no drawings from the Indexes in question are used in other projects.

Blanking Indexes The simplest way to clean up an Index is to Over-File each drawing on it with a blank drawing. The library log file (see Library: Book & Log) will enable you to trace the over-files if necessary.

Transporting drawings When you have to move a drawing or a project from one Accucadd library organization to another, use Library: Export RDF to create a set of RDF files, and then use Library: Import RDF to place them in the new library structure. Points to note are:

Export the final drawings

There is no need to transport Inserts individually; Renumbering and the Import Map (below) will allow you to Export and Import the final drawings of the project without problems.

Use Renumbering in Import RDF

This will allow you to File each Insert and hence set up the project properly in the new library structure.

Use the Import Map in Import RDF

If your project has more than one final drawing, this will save having to Re-Import Inserts that are shared between the drawings.

Use Reassign Layers in Import RDF

Inspect the Layer Tables in both Accucadd systems before starting to use Export RDF and Import RDF; use Reassign Layers to convert drawings to the new table. Reassign Layers converts all the Inserts in a drawing as well as the New Data.

Details of using Library: Export RDF and Library: Import RDF are given in their respective sections in the Accucadd reference manual.

Multiple Libraries If it is necessary to use several libraries with Accucadd, it is vital to avoid creating Indexes with the same numbers in different libraries. For work in different fields, it may be permissible to have duplicate Indexes, but you should never do this if there is any chance that drawings from one field will be needed in another.

Please be warned that Accucadd users have often fallen into the temptation to move drawings between libraries that should never have been linked, and regretted it. This usually happens when new drawing office staff are not adequately briefed.

*Never have duplicate Index numbers, unless you are **SURE** you know what you are doing.*

Moving between libraries,
Changing Path

The simplest way to use several libraries is to change library pathname with a drawing Loaded and then File it. This is the least safe technique; the facilities provided to make it less dangerous are described below under "Function Descriptions".

If you need to move drawings between libraries, it is far safer to do it by exporting them from one library with Library: Export RDF and importing them into the other with Library: Import RDF. If you renumber the Inserts (see Library: Import RDF), you can give them new positions in the new library.

Using Multiple Libraries

The best way to make use of multiple libraries is to duplicate all your Symbol Indexes (see above) in all the libraries. You can duplicate them with Library: Maintenance: Copy Index; make sure that they have the same number in all libraries. On a network, you can keep them from being altered, by locking all the drawings on them using the drawing Booking system. This is explained under Library: Book & Log.

You can then move via File any drawings (whose Inserts are drawn *entirely* from the Symbol Indexes) between libraries quite safely. Given the difficulty of being sure that all the Inserts are from Symbol Indexes, we do not advise that you do this. The File facilities that relate to this are described under "Function Descriptions" below.

Do not move drawings between libraries via File if they have any Inserts from the Scratch or Drawing Indexes. Use Export RDF and Import RDF.

Advanced:

If you create Phantoms or False Images, you can turn them back into properly Filed drawings by Loading them and immediately Over-Filing them back in the same position. This process is very tedious, however, and it is better to avoid creating them in the first place.

D.4 Backups

This section explains techniques for taking backup copies of your drawings.

Why Backups?

No form of computer storage is perfectly reliable and indestructible, and it is therefore necessary to keep backup copies of your data. There are a number of ways of doing so, depending on your type of computer and the amount of data on your disks.

If you have used RoboCAD 20 or earlier systems, you should backup all your existing libraries before converting them to Accucadd format.

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File: Backup This function provides short-term backups during a drawing session. It provides a safety net against Accucadd crashing or network problems; it is not a substitute for taking proper backups.

Backup warnings: An Accucadd library should be backed up as a single unit. The only safe way to backup less than the whole library is to use Library: Export RDF to archive an individual drawing.

Do not try to backup parts of a library using commands such as COPY or XCOPY, or other file-management programs, as the relationship between the elements of a library is complex.

Backup and Restore are the only Windows commands that are safe to use.

Make sure that the time and date are set correctly on your computer before starting a backup.

You should periodically backup the contents of your System Directory so that your defaults and Style files are preserved.

Backup techniques An entire library on a diskette can be very simply backed up using the Diskcopy command . This copies the entire disk, and is described in your Windows Help system.

A fixed disk can be backed up onto diskettes, but the best technique is to back up the entire fixed disk, using a tape streamer system (also known as a streamer, streaming tape, or floppy-tape system). This is quick to use, and backs up everything on the disk, not just an Accucadd library. The tape drive and cartridges are not cheap, but are worthwhile.

Backup If you must backup your fixed disk library and System Directory to diskettes, use the Windows command Backup. This is described in your Windows Help system.

Backup planning It is necessary to have a regular plan for making backups, so that recovery can be made cleanly, and you know what you have recovered. Backups are best made daily; a gap longer than a week is almost certainly too long. You should plan in terms of the amount of lost work you are prepared to tolerate.

You should keep several sets of backups, in a rotating cycle. For example, you might have five sets of diskettes, for Monday, Tuesday, Wednesday, Thursday and Friday backups. As well as disaster recovery, this allows you to recover old versions of drawings after mistakes in library management or drawing.

You should also take a backup for archive storage weekly or monthly, to be kept for at least a year. Such a backup should be stored in a different building, and should be protected from fire and other causes of damage.

D.5 Function descriptions	This section describes all the Accucadd functions that work with the library in detail.
Draw: Drag Insert, Draw: Frame Insert	<p>These functions have identical effects; they create an Insert record holding the name of the selected drawing, and the transformations (rotation, squashing, etc) that were used when it was Inserted. This is used to find the Insert when the current drawing is Loaded again.</p> <p>All of the data that makes up the drawing that was Inserted will become Insert Data for the current drawing. That is, the composite drawing and all of its components are loaded into the computer, and treated as Insert Data.</p> <p>The drawing Inserted becomes a component of the current drawing and its components also become components of the current drawing.</p>
Limits:	<p>The total number of different drawings which may be components of a drawing is limited to 512. There is no limit to the number of times each drawing may be Inserted, with the proviso that there may not be more than 2500 Insert Handles accessible at any given level of the drawing.</p> <p>Each Index contains a list of all the drawing files from outside the Index that are components of drawing files within it.</p>
Draw: Copy	This function creates new instances of Inserts, with different positions and/or transformations.
Edit: Change, Edit: Move, Edit: Fit Insert	These functions simply alter Insert Records, changing the Insert's attributes, position or transformations, without altering the Insert's Index number or Index position.
Edit: Isolate	This function loads the New Data of the Insert selected for isolation into the Scratchpad, where it can be edited. If the isolated Insert is Filed, Accucadd will do an Update as described under Edit: Isolate. If a new drawing is Loaded, Accucadd can do an Exchange, as described under Edit: Isolate.
Edit: Explode	This function appends the New Data of the Insert exploded to the New Data of the current drawing, first transforming it to the current drawing's coordinate frame. Inserts nested within in the Insert that was exploded become Inserts in the current drawing.
Library: File	The function first checks if you are trying to overfile an existing drawing or Phantom. If you are, it tests that the overfile is valid. That is, that the positions (bottom left corners) of new and old boxes coincide. If this isn't so, the File is aborted and you may select a new Index position. If an overfile is valid, you are told of this, and given the chance to abort it or not. The number of Handles (<i>not</i> Insert Handles) in the drawing is also checked, as described under Library: File.

- Booking:** If you are Over-filing on a networked or machine-sharing system, the Booking information is checked. If the drawing is Booked to another user, the overfile is aborted and you can select another Index position. If it is not Booked, or it is Booked to you, the overfile can proceed. If it is Booked to you and Booking is active for the Index, you are asked if you wish to un-book the drawing.
- Successful File** Given that the File operation is proceeding, and that you have not changed the library path since starting or Loading the drawing, the drawing's New Data is then filed in the library, and the graphic image, library information, Booking information and library log updated. If you have changed the library path, even if you have changed it back to the home library of the drawing, the File is handled as described below, under "Changing Path".
- `20' and Accucadd data** If any of the Inserts of your drawing are in `20' format, Accucadd automatically saves Accucadd format versions of them in the library. The `20' format versions remain in the library until they are purged — see section D.2, "Library Conversion", above.
- Changing Path** File operates differently if you have changed the library path since starting or Loading the drawing. The change in pathname has made it possible for your drawing to have Inserts that are not from the library on which you are now Filing the drawing.
- Firstly, the program checks if drawings with the same Index numbers and positions as *any* of the components of the drawing (which are all currently in the computer's memory) exist in the library you are Filing onto, either in Indexes, or in the Common Index. If *none* of the names exist, then all of the components are Filed, in Accucadd format'. They will become Phantoms if their Indexes exist in the library, and are otherwise stored in the Common Index.
- If any drawings exist in the library with the same names as components of the drawing being Filed, the warning palette displays the message: "Referenced Inserts exist in this Library — Overwrite?". Select **OK** to overwrite the Inserts in this library, or **Exit** not to overwrite.
- Filing Inserts** When Filing the Inserts, one of the following situations will arise for each Insert in the drawing being Filed. Whichever happens, the drawing and inserts will be Filed in Accucadd format, and any existing `20' format versions will remain in place, until purged.

Drawing Exists

A drawing exists in the current library on the same Index and at the same position on the Index as an Insert in the drawing being Filed.

If an Overwrite is performed, it will be replaced by the version from the alien library. If the data in the two drawings is not identi-

cal, this will change all the drawings in this library that have the drawing as a component, by the normal Update mechanism. As the graphic Index isn't updated, a False Image is created. If the drawing being overwritten was Booked, the File is aborted. File again with no overwrite to save the drawing, or File it in a different library.

If an Overwrite isn't performed, no False Image is created and the drawing being Filed will use the Inserts that were present in the library before it was Filed. If they aren't identical to the ones it used from its old library, its appearance will change.

Index Exists

No drawing of the same name exists, but an Index of the same number as the Insert's home Index exists in the library. The Insert will become a Phantom in that Index, at the same position as it had in its home Index.

Index Nonexistent

The relevant Index does not exist in the new library. The Insert will be Filed in the Common Index. If the Index in question is ever created, this Insert will become a Phantom in it, as in the previous case.

Library: Load This function loads the drawing selected from the Index. The drawing that was New Data when the drawing was Filed is re-loaded as New Data, and all its components are loaded as Insert Data, as they were before the drawing was Filed.

If the drawing is Booked to another user, you are warned. If it isn't Booked and Booking is active for the Index, it is Booked out to you.

Library: Import RDF This function requires you to File the drawing as soon as it has been loaded from an RDF file. Unless all the Inserts in the drawing are Exploded, IMPORT's filing functions are very similar to a File containing alien Inserts. Its exact behavior depends on the type of RDF file imported, with three alternatives possible:

`Accucadd' ('R') drawing, no Renumbering

The new data of the imported drawing is Filed as for a normal File, and its Inserts are Filed as if they were alien. They will either overwrite existing drawings, possibly creating False Images, become Phantoms or go into the Common Index, as described above under File. If an existing drawing that would be overwritten is Booked, Import is aborted.

This option is mostly useful in backing up an individual drawing before changes to its new data, or in moving one drawing between two libraries with the same Indexes of basic symbols.

Import Mapping selected

This can be applied to `Apple` ('A'), `Organized` ('O') drawings, or `Accucadd` ('R') drawings with Renumbering selected. In all of these cases, each Insert must be FILED individually when it is first imported, as if it were new data. When other drawings with the same Inserts are imported, the old versions are retained. This is far safer than the previous case and is the normal option when transporting drawings between different library organizations.

Note that this means that if `20` format drawings have been imported into a library, and Accucadd format drawings using the same Inserts are imported subsequently, the Inserts remain in `20` format until otherwise converted.

No Import Mapping

This applies to all `Disorganized` ('D') drawings and any of the previous case's drawing types without Import Mapping. Here, the Insert's Index numbers and Positions in the RDF file are never treated as meaningful, and each Insert must be Filed every time it is acquired through RDF. This is very safe, but can be tedious. It is usually only used when acquiring data from a library of completely unknown structure.

- | | |
|---------------------------------------|---|
| Library: Set Path | This function looks for the directory or folder indicated by the pathname you enter. If the directory does not exist, it warns you. If you select "Create" from the resulting window, the directory is created. If you are setting the library pathname, the library's information files are created. |
| Library: Add Index | This function asks for the name and number of the Index to be created, creates the Index and the information files to go in it, and notes it in the library's information files. On a networked or machine-sharing system, if you select auto-booking for the Index, it is applied. |
| Library: Export RDF | This function operates on the current drawing and does not affect the library. |
| Library: Maintenance:
Delete Index | This function scans through all the other Indexes in the library, looking for references to drawings in the Index selected for deletion (i.e. if any drawings in the Index are external components of other drawings). If any exist, the user is offered a chance to abort the deletion. If any of the drawings on the Index are Booked, the function is aborted. |

If Delete Index proceeds, the drawings referred to, and their components from within the Index are copied to the Common Index. The files within the Index directory and the directory itself are then deleted from the disk, and the library's information files are updated to show that the Index has been removed. Additionally, drawing files in the Common

Index that are components of drawings on the Index removed and of no other Index, are themselves removed.

Delete Index never loads drawings into memory, and hence will not update them to Accucadd format.

Library: Maintenance:
Copy Index

This function gives separate treatment to the drawings in the Index being copied, and their components from other Indexes of the source library (external components). All necessary questions are asked before any library data is changed, as described under Library: Maintenance: Copy Index.

Overwrite mode makes Phantoms of any drawings needed in the destination library but not present in the source library. Renumbering allows the selection of a new Index number, followed by checking for its existence again.

If the Index being copied has no external components, it can now be copied. Otherwise, further checks are required. The destination library is scanned for drawings with the same Index number and position as the source Index's external components. Several situations can now exist:

- a) None of the external components exist in the destination library. All are copied from the source library, becoming Phantoms, or going into the Common Index. This process cannot create False Images.
- b) All or some of the external components exist. A palette offers an "Abort" option, which will abort the whole Copy Index process.
- c) The "Overwrite" option is used. This will copy all the external components from source to destination. This will make False Images of the ones that existed already. Those that did not will become Phantoms, or be stored in the Common Index, as for (a) above.
- d) The "Keep" option is used. This will only copy external components that do not exist in the destination library, and cannot give rise to False Images. This should be used normally, as it will not destroy any data, and allows mistakes to be retrieved.

If any external components being copied with Overwrite or Keep would be placed in Indexes that have any drawings Booked, the Copy Index is aborted. Also, if the destination Index has any drawings Booked, the Copy Index is aborted. If the source Index is copied, none of the drawings on the copy will be Booked.

Copy Index never loads drawings into memory, and hence will not update them to Accucadd format.