Chapter 6
Backup and Recovery

The author of this handbook is pleased to have errors pointed out and to receive suggestions for improvement and other comments.

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Introduction

As soon as you start accumulating data into your MapMate database, it's time to set about making it secure against computer failure and other disasters. That means that you should have a backup of your data.

MapMate has a built-in facility for backing up your data which is easy to operate, whether you're making the backup copy or restoring your MapMate system after loss or damage. It will deal with all the Records on your system and all the data associated with them. But there are some aspects of your set-up that it won't deal with. If you create maps and atlases, if you create custom filters for data, if you develop your own user queries (or import other people's), be aware that none of these are stored in the backup. Some of them may represent a considerable investment of time.

The alternative to running the MapMate backup is to save the entire contents of MapMate's data folders from your hard disk onto a removable storage medium. There are facilities in Windows to make this job relatively simple and efficient in use of storage space.

Which backup strategy should you use? I advocate that anyone who is extending their repertoire of MapMate features like custom queries and atlases, as well as entering data, should use both. There is an element of "belt and braces" in this, but the likelihood is that you will feel the need to back up your records more frequently than other facets of MapMate.

When should you back up? To answer this question, you have to ask yourself: "How much pain would it cause me if my computer's hard disk were to fail right now?" If I were to lose a dozen or so random records and have to enter them up again, I would probably defer making a backup until the next time I made an entry. Of course I would need to be sure that I could track down the source of entries I've just made again; and that I don't forget that I'm accumulating a backlog next time I come to consider a backup. If I'd just entered up the results of a day's survey work in the field, I would definitely feel a backup was worthwhile.

Whichever method of backup you use and however often you do it, remember that **a backup is not secure if you keep it on the same premises as your computer hard drive**. If disaster strikes only the hard drive, it's obviously good enough. If a rain of elephants were to fall on your bungalow, it's unlikely that they would fall on the computer and avoid the drawer where you put your CD; the same goes for more exotic risks such as fire and flood. So plan to put your data onto removable and portable media, and then arrange to move them off premises as soon as you can thereafter. CDs are fine, though their capacity may be a bit limited these days if you have big archives of data; DVDs offer extra capacity; plug-in hard disk drives are another alternative, but more cumbersome. I'm not very enthusiastic about memory sticks as a permanent backup medium; they are small and easy to lose, and they are more vulnerable to physical damage. As a means to **transfer** data onto a data store on another premises, however, they are excellent.
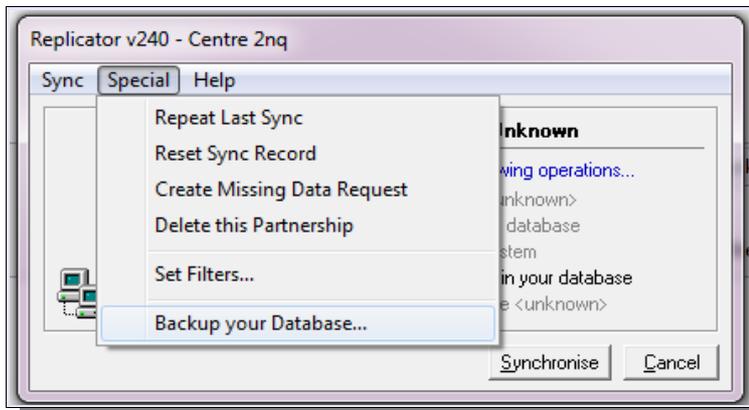
The MapMate Backup

To run the MapMate backup, select **Replication** from the MapMate main menu. Then, from the Replicator's menu, select **Special** and **Backup your Database...**
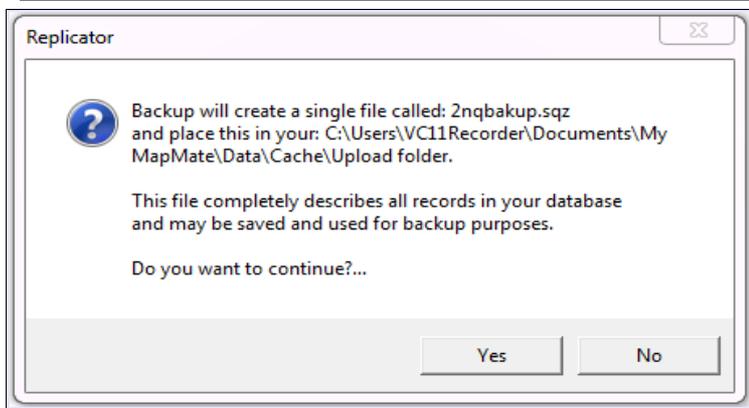
MapMate will tell you where it is going to put the file. Notice that the file name includes your CUK, to distinguish it from anyone else's backup. MapMate will not load a backup file that has patently been created for another user. If you click **Yes** to continue and there is an existing backup file in the folder, it will warn you before overwriting it.
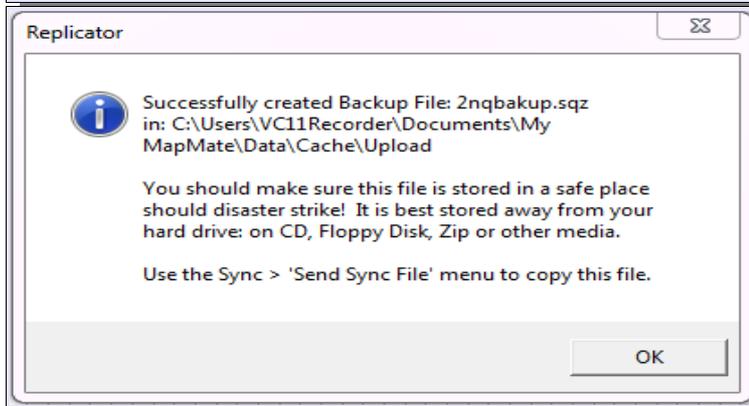
The process of generating the file may take a little while, depending on the size of your MapMate data archive. At the end of the process MapMate will display this screen, with another option for storing your data off-site. This is akin to sending sync files to partners via the Web, but in this case the MapMate Web site holds the file on store so that you can download it again.
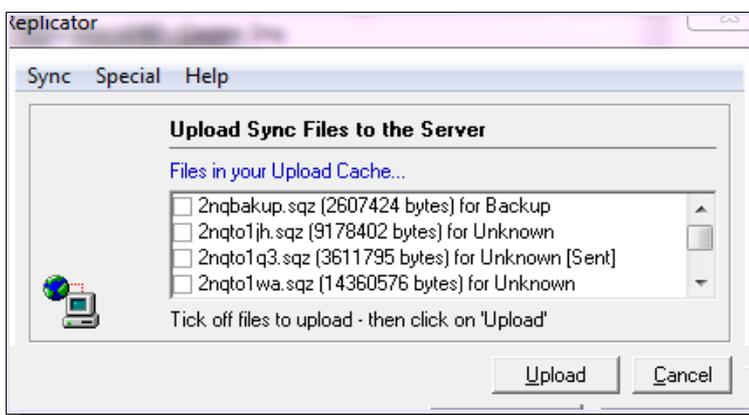
To do this, use the menu options suggested (**Sync / Send Sync File**) and you will see that your backup file is listed among any other sync files you have generated. You can then tick its box and click on **Upload**.

Is this a good option? Well, MapMate are a well-established company who take a professional attitude to securing the data they hold, but in the **very** long term you have to recognise that you don't have control over the fate of a limited company, and you may prefer to make arrangements with a friend, a colleague or your workplace. (You may say that you don't have much control over your friends, either, but you can probably apply more moral pressure to them than to a company that has ceased trading.) Another consideration is that MapMate will hold only the latest backup copy you have made. Conventional wisdom says that in case of failure of the storage medium, one should retain the last three generations of backup. An alternative is to use both MapMate's storage and your own arrangements for each backup you take.

If you choose not to use MapMate as your data repository, you will need to make your own copy of the backup file to removable media. From the Replicator menu select **Sync / Send Sync File / To Drive...** You will then be able to select the backup file from MapMate's cache folder, and a destination folder on your chosen device.

Finally, don't forget to send it away!

Restoring Data from a MapMate Backup

The first thing to consider is whether simply restoring data from a MapMate backup will work for you in your current situation. You will need to be sure that:

- you have not changed computers since the backup;

- you have not lost use of the hard disk where MapMate was installed;

- you have not lost any part of your MapMate program installation;

- you have not lost or damaged the MapMate data folders.

If you have any of these problems, then you still have the chance of recovery; but it will probably entail a more extensive procedure, which we shall detail later.

If you have a problem confined to lost, unintentionally destroyed or corrupted record data then this procedure should work for you.
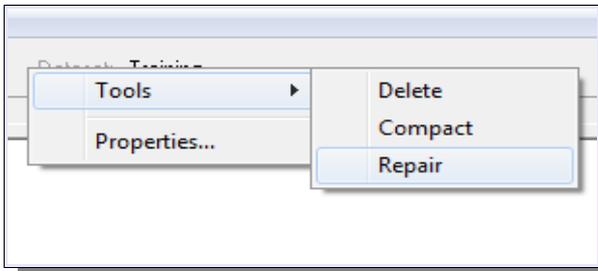
If MapMate is reporting that it can't open the database, or is failing to load data, the first thing to try is a repair job. Place your cursor over the caption **Dataset:** in MapMate's main toolbar and click. Then select **Tools / Compact**.

Make sure to heed the instruction that MapMate then displays on your screen, and don't close the program or close down Windows while it is running.

You may find that this fixes any problems, without further intervention. If it doesn't, you should proceed to **Repair**. Similarly, don't close that down prematurely. The process may take a little time on a large data set. If it solves the problem, this is all you need to do – except that it would be a good idea to take another backup immediately, in case the underlying problem was already latent in your last one.

It is possible that **Repair** won't actually solve your problem. In that case you can try a recovery from backup. But if database errors continue to recur after a successful **Repair**, I advise you to contact your computer supplier or support staff.

If **Repair** didn't do the job, you should now retrieve your backup from where you stored it. If you used MapMate's Web backup, open the Replicator and select **Sync / Get Sync File / From Web...** from its menu bar. If you have it on an available storage device, you can select **Sync / Get Sync File / From Drive...** and proceed from there.

Backing Up Under Windows

It's always possible to put the MapMate software back onto your computer if you have a major computer failure, provided you have your original installation CD. As we've seen, it's a relatively simple matter to get most if not all of your Record data and associated information back if you have a MapMate backup to hand. But if you want to cover all eventualities, you should take a full backup of all the MapMate data folders onto removable storage. (MapMate doesn't provide an option for storing this on its Web site.)

If you are using an up to date version of MapMate on a recent version of Windows, then the base folder for your MapMate data will be **My MapMate \ Data**.
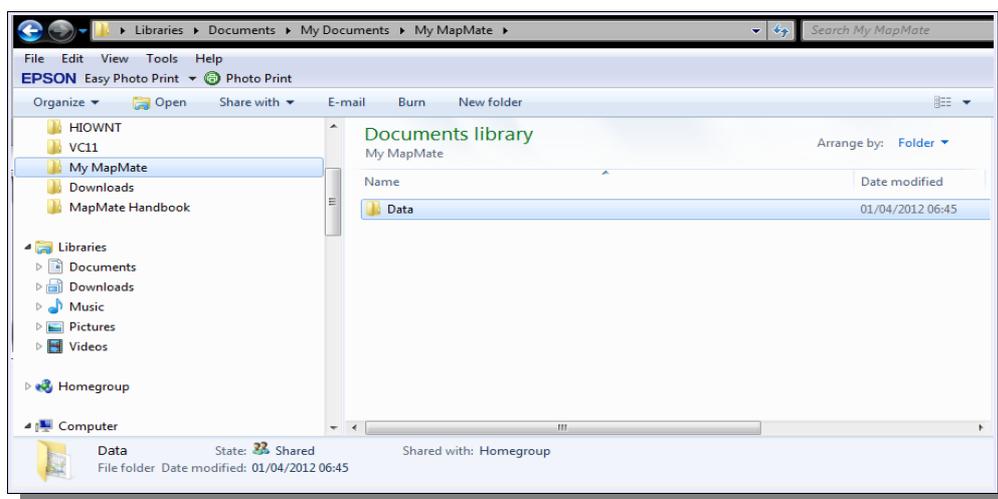
You can very easily take an ad hoc backup of this folder and all its subfolders onto removable media by selecting the folder from Windows Explorer (**Computer** from the Start Menu), as shown here, and copying it to the device you want to use. To save space, you can use a file compression program such as the commercial *WinZip* or the free *7Zip*, or simply by using Windows' built-in compression facilities (right-click on the folder and select **Send to / Compressed (zipped) folder** from the pop-up menu; then select a destination on the removable device).

If you are using MapMate on an older version of Windows, the folder to look for will be **C:\Program Files\MapMate\Data** but the principle is the same. However you may not have a built-in Windows option for compressing files.

If you are regularly putting updates into your MapMate archive, and especially if you are accumulating other documents and information on your computer, you should seriously consider using Windows' built-in backup facilities. This will relieve you of having to remember and work through the process each time, and if you set up a regular schedule you don't have to remember to initiate backups. Scheduled backups are best run at a time of day when you will not be using the computer, such as the middle of the night. This does of course mean that you will need to leave your computer powered up, with suitable removable media in place, during this time. If your computer is sufficiently modern to go into energy-efficient dormant mode after a while, this won't interfere with the backup process.

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On recent versions of Windows, the set-up facilities for scheduled backups can be found under **Maintenance / Backup and Restore** on the Start Menu, or from **Backup and Restore** on the Windows Control Panel.
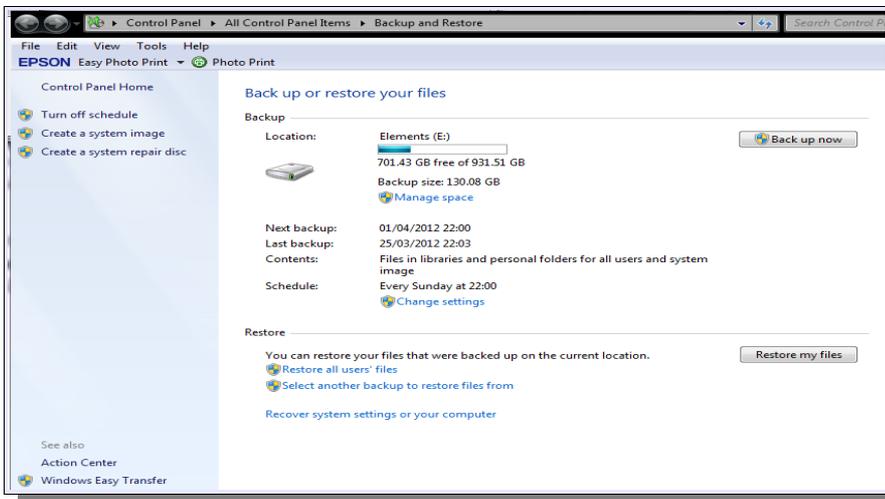
When you start the backup program, what's displayed depends on which version of Windows you are running and whether you have ever previously used the backup program. The illustration here is for Windows 7, and shows rather more than you will see if you are doing this for the first time, as I already have scheduled backups set up. For a first time backup you can expect to be taken straight into the configuration forms; otherwise you may need to click on the **Change Settings** option displayed.

You will be taken through a series of steps from this point to specify what device the backups will be made to, and what will be included in the backup. If you opt for making your own selection of the data to back up, I recommend that you include the option to create a "system image" as part of the backup. In the event of a complete hard disk failure, necessitating a replacement disk, this will enable you to get up and running, with Windows the way you expect it, as quickly as possible.
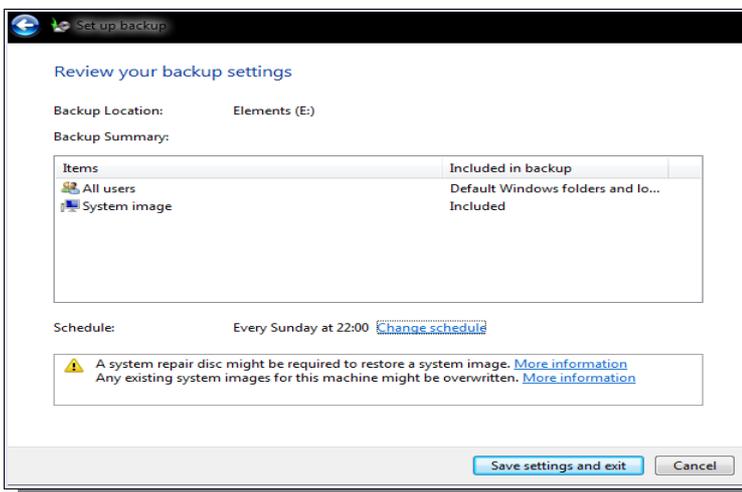
At the last stage you will see that there is an option to **Change schedule**. If you click on this, you will be able to stipulate how often, and when, automatic backups are run. You don't have to run a schedule; and even if you do, you can decide at any time to run an immediate backup if you have critical new additions to your data or documents (**Backup now** on the initial form). I run on a weekly scheduled backup, and then carry out ad hoc backups when I feel it necessary.

Windows economises on the storage space used for your backups by compressing file contents (the well-known 'zip' format). It also takes account of what has already been backed up on recent runs to create 'incremental' backups, where only additional and changed files go into the latest run. However, so that all your eggs don't end up in one basket, it organises your backed up data into 'backup sets' and 'backup files'. Each backup set starts with a complete copy of what you asked to be saved as its first backup file, and then follows on with a succession of incremental updates. Every so often the backup

program will make the decision that a new set should be started, but the previous one is preserved until you decide that it is too historical to be of value and is simply wasting space on your removable media.

If you had to organise this sort of regime by hand, simply copying selected files from one device to another, it would obviously be tedious and prone to slip-ups. However the automated process does rely on having a backup device of fairly high capacity, and on your setting up the space usage of that device to give the best results for you. If you click on the small blue question mark (**Get help** on the Backup form), you will find some useful guidance on all things relating to Backup and Restore.

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Recovery and Reinstallation

It is really quite difficult to offer generalised advice on recovery from disasters, as so much depends on the particular difficulties you find yourself in. However I will try to offer some guidelines for various eventualities, with the very strong proviso that if you are in any doubt about whether any of these is the right course for you, you should consult your system supplier or support personnel, or in some cases MapMate's technical support team.

Windows and MapMate still running; MapMate data files lost or damaged

In this case, you need only recover MapMate's data files from your backup.

- If the problem is only with the current **content** of your Records or associated Sites and other data, and you took a MapMate backup, you can try restoring data from a MapMate backup, as described in an earlier part of this chapter.

- If the MapMate data files are missing or damaged so that MapMate is unable to open them, then hopefully you used one of the more comprehensive forms of backup described in the previous section.

  If you backed up by copying or compressing the MapMate folder for yourself, you will now need to put the media for the latest backup into your backup device and select the folder or compressed file for the MapMate `Data` folder. The simplest option is to copy or extract the entire contents of this folder back to MapMate. Make sure that if you copy the `Data` folder itself, it should go to the overall MapMate folder (that is, **My Mapmate** on recent versions of Windows); but if you copy the subfolders within `Data` (`Cache, Maps` etc.) they should be transferred into your hard drive's `Data` folder (on recent Windows versions, **My MapMate** \ **Data**).

  If you used the Windows Backup program, you can re-run Windows Backup and Restore to carry out the restore process.

Windows running; MapMate (or one of its components) will no longer run

In this case, you will need to reinstall MapMate and then get yourself up to date.

- Reinstall MapMate from your distribution CD.

- Bring yourself up to date with any software updates that you have previously installed from the MapMate Web site since you obtained the CD. Remember that you can do this by opening **Replication** from the main menu, then selecting **Help** / **Smart Software Update** from the Replicator menu. Note that there is no point in installing patches at this point, as patches go into the database, and you will now have a new 'clean' database which you will first need to overwrite with your latest data, as follows.

- Now restore your own data from the last **comprehensive** backup you took, into

your MapMate Data folder, as described in the previous scenario.

- Finally, reinstall any patches you have previously acquired from the MapMate Web site.

Windows, hard drive or PC irrecoverable

First make the necessary arrangements with your systems supplier or support staff to repair or replace your system. The simplest situation is where you are then starting from a clean slate, at least as far as your hard disk(s) and Windows installation are concerned. In that case you can follow the steps in the previous scenario.

Complications can arise where your original hard disk and its MapMate data have survived, but the repair has entailed an upgrade to Windows from a pre-XP to a later version. Since MapMate stores information about where to find data in more than one place on your system, and since the usual location for the main database changed between Windows versions, some users have found themselves in a situation where after reinstallation, MapMate will not recognise where to go for its data. The best thing to do in this situation is likely to be to complete removal and reinstallation of MapMate and your data; but it will be worth speaking to MapMate technical support about your precise problems first.

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Preventive Maintenance: Compacting the MapMate Database

As you build a larger and more complex set of data, MapMate may also slow down to an unacceptable degree. If you are a hub, collecting millions of records, you may also start to push the limits of storage provided by MapMate's database engine.

In all these cases, the first line of defence is the set of database maintenance tools built in to MapMate. But the thing to do before you use them is to make sure your backup is up to date. Should you be unlucky enough to have a computer crash or a power failure while running them, you might just end up with an unusable database that will need to be restored.

To get to the tools, click on the caption **Dataset:** in the MapMate main toolbar.
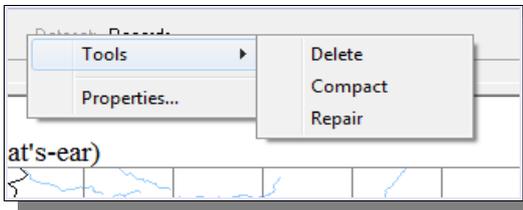
Avoid use of the **Delete** function, at least for your main **Records** data set. Just run **Compact**. Heed the message on the screen, and let it run to completion without closing the program or Windows.