MainBoss Basic 2.9
User's Guide

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Introduction
Welcome to MainBoss CMMS

Thank you for licensing MainBoss CMMS version 2.9. We think you'll find it provides all the features you need for managing your organization's maintenance work.

Documentation conventions

This guide uses the following documentation conventions:

☐ Menus and menu items are shown in bold face:
> Select **Buildings** from the **Tables** menu.

References to menu entries typically use arrows. For example, **Tables** → **Buildings** refers to the **Buildings** entry in the **Tables** menu.

☐ Data-entry fields are shown in bold face, enclosed in double quotes:
> See the "**Equip Type**" field...

☐ Buttons are shown in bold face and underlined:
> Click the **Done** button.

☐ Keyboard keys are shown in bold face enclosed in <angle brackets>:
> Press the **<Tab>** key.

Using the Mouse: Whenever this guide tells you to click on a button, a menu item, or some other object on the screen, click with the left button of the mouse.

Drop-Down Lists

Many of MainBoss's forms let you specify information using drop-down lists.

Example: In the window below, "**Personnel**" has two drop-down lists.
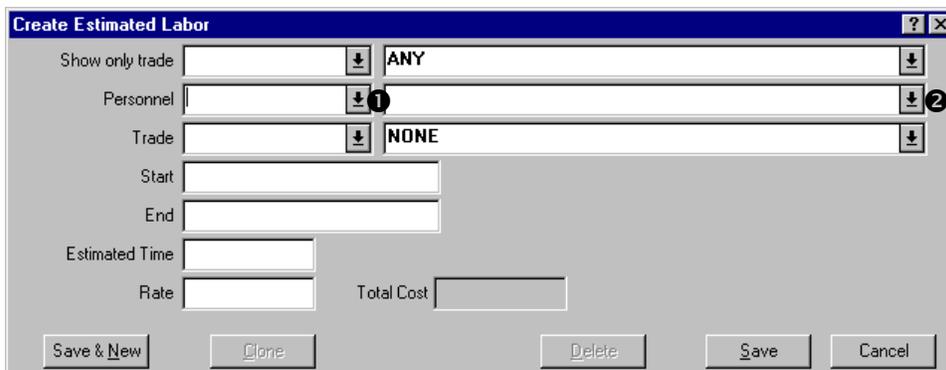
If you click arrow ❶, you see identifier codes for personnel.

If you click arrow ❷, you see full names.

You specify an entry in the list by clicking on it. MainBoss will fill in both "**Personnel**" fields with the person you chose:

If you want to clear the entry in a drop-down list field: Click on the field, press the key combination **<Ctrl+Del>**, then press **<Enter>**. As an alternative, right-click on the arrow of the drop-down list, then click **Clear Selection** in the resulting menu.

Online Help

While you are using MainBoss, you can obtain help in two ways:

1. In most MainBoss windows, you can click the **<?>** button in the upper right hand corner of the window. MainBoss will provide information about the window that is currently on display.

Click this button: ↘
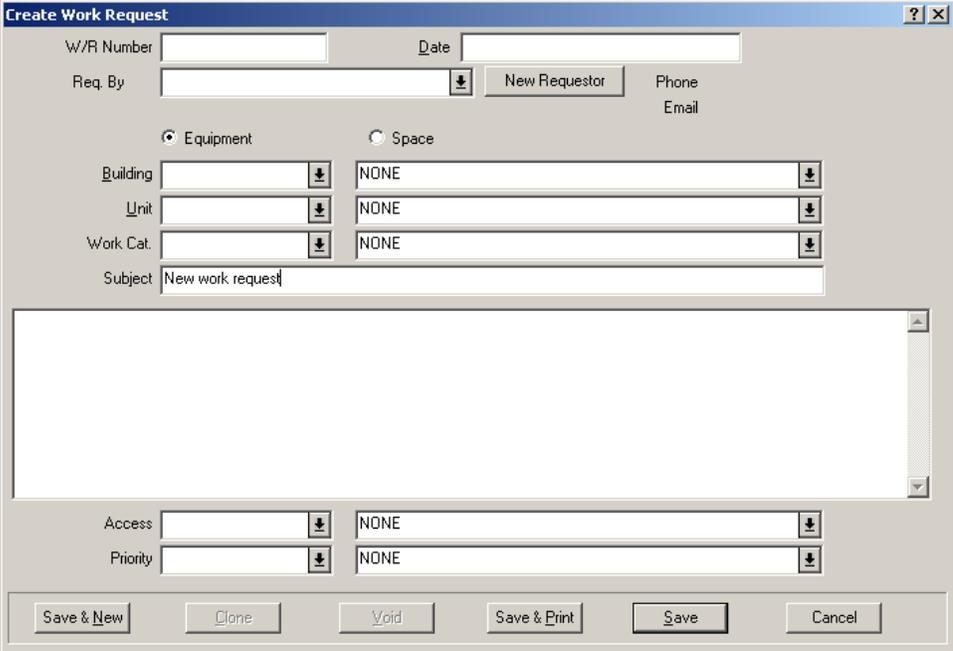
2. The MainBoss **Help** menu provides access to MainBoss's help files.

   ☐ **Help** → **Contents** gives you the table of contents for the help files.
   ☐ **Help** → **Help Index** gives you an index of important terms.

All online help is displayed using your web browser (most people have Microsoft Internet Explorer or Netscape Navigator). If you want a print-out of any online help page, just use the print facilities of your browser. This is usually a **Print** button near the top of the browser window.

Important: To access online help, you must have a web browser configured to open HTML files. Most users will already have their computers configured appropriately (probably using Microsoft Internet Explorer or Netscape Navigator). If you do not have an appropriate browser configured, open Windows Explorer and double-click on any HTML file (for example, any of the `.htm` files in the `manual` subdirectory of the directory where MainBoss is installed). Windows will ask you to specify a program with which to open the file; specify the browser on your system. If your system does not have a browser, you can obtain one free from Microsoft, Netscape, or several other software companies. Ask your computer dealer for more information.

MainBoss Concepts

This section explains a number of concepts that underlie MainBoss. It does not describe the fine details of using the software, but looks at how MainBoss is organized and how you can adapt that organization to the work you do.

Table:	**A table is a list of entries, each of which contains information about something.**
	For example, the **Buildings Table** is a list of the buildings where your organization does maintenance work. Each entry in the **Buildings Table** contains information about a particular building (for example, its name and/or address).
	Each entry in a table must be given an **identifier code**. No two entries in the same table should have the same code.
Equipment:	**Equipment is a general term for any device that might require maintenance.**
	It's up to you to decide what constitutes a separate piece of equipment. For example, you might consider a complete assembly line as a single piece of equipment, or you might choose to regard the line as a *system* made up of many separate pieces.
Space:	**A space is an area in a building.**
	This might be a single room, a set of adjoining rooms, or an entire floor in an office block.
	If you have to deal with large rooms, you might divide them into multiple spaces; a large factory floor might be divided into the spaces "Factory Floor Northeast", "Factory Floor Northwest", etc. so you can specify locations with more precision and make it easier for personnel to find the site of a problem.

Unit: **A maintenance unit (or simply a unit) is either a space or a piece of equipment.**

In general, MainBoss lets you perform similar operations on both. For example, you can schedule preventive maintenance for either a space or equipment. You can prepare work orders requesting work on either type of unit, and keep work histories of both types of unit.

Because spaces and equipment are so similar in MainBoss, you often have the freedom to choose which one you will use in a certain situation. For example, the heating/air conditioning facilities for a particular area could be regarded as equipment or they could be considered part of the space itself. It all depends on which approach fits better with the way your organization works.

General Principle: The main difference between equipment and spaces is that equipment can have capital costs and meters, while spaces can't.

Work request: A work request reports a problem.

Work requests are often based on complaints from people outside the maintenance department. They state preliminary information about the problem: the location, the name of the person reporting the problem, the date/time the report was received, and a brief description of the problem itself.

Work order: A work order is a detailed description of work to be done.

Work orders are usually printed and handed to the personnel who have been assigned to do the work.

Work orders are more detailed than work requests. For example, a work order may specify the amount of time the job is expected to take, the materials to be used, and so on. Such details are not present in a work request.

General Principle: Work requests are designed to be simple so they can be filled out by non-maintenance personnel. Work orders are more detailed, and usually filled out by maintenance management.

Report: **A report lists information extracted from MainBoss's files.**

MainBoss can print many different types of reports, including work histories, cost summaries, equipment lists, and so on.

Items: **Items are materials used in the course of your maintenance work.**

Items include spare parts, tools, chemicals, and so on. There are two types of item:

- *Inventoried items* are materials you want MainBoss to keep track of. For example, you will probably want MainBoss to keep track of consumable items used regularly for maintenance (filters, oil, etc.) and important spare parts for all your equipment. In this way, MainBoss can tell you when you are running low and need to order more parts to keep in your inventory.

- *Non-inventoried items* are materials that you don't want MainBoss to keep track of. These might include materials that you don't normally keep in inventory (parts that you only order when they're needed) or materials that you simply don't bother tracking (for example, basics like glue and tape that are used so often it would be too much work to keep detailed records about how much each job uses).

Unit of Measurement: A unit used in measuring materials in your inventory.

Examples include quarts, meters, pounds or kilograms. These are useful when specifying how much of a particular material is used in a job (e.g. three quarts of oil in an oil change).

Many materials (like light bulbs or fan belts) come in indivisible units. The MainBoss sample databases use the measurement EA (Each) for such materials.

Purchase Order: A purchase order requests or records the purchase of goods and/or services from an outside source.

MainBoss makes it easy to create a purchase order that can be sent directly to a supplier, telling what items you want to purchase. The same sort of purchase order can be sent to an outside contractor describing work that you'd like that contractor to do.

Even if your organization already has a system for creating purchase orders, MainBoss's facilities are still useful for internal record-keeping. In other words, it's useful to create a MainBoss purchase order saying, "We bought A, B, and C from Supplier X" even if the paperwork you send to your suppliers doesn't come from MainBoss itself. In this situation, you might think of MainBoss's purchase orders as requisitions for the "real" purchase orders used by your organization.

Database: A collection of files containing the information used by MainBoss.

Roughly speaking, there is a separate file for each type of data that MainBoss uses. For example, there is one file for work orders, another file for work requests, another file for equipment information, and so on.

MainBoss Sessions

A MainBoss *session* begins when you start the MainBoss program and ends when you quit the program. MainBoss sessions are controlled through the **Session** menu.

Logging In

When the MainBoss program starts, you may be asked to identify yourself. (Some organizations may prefer to turn off this requirement, in which case you can start using MainBoss immediately, without specifying your name and password.)

If you are required to log in, you will see a window like this:

Whoever is in charge of MainBoss at your site will assign you a user name and a password. Enter your user name in "**User Name**" ❶ and your password in "**Password**" ❷. Then click **Ok** ❸.

The MainBoss Window

Once MainBoss begins execution (and you have logged in if necessary), you see the MainBoss window:
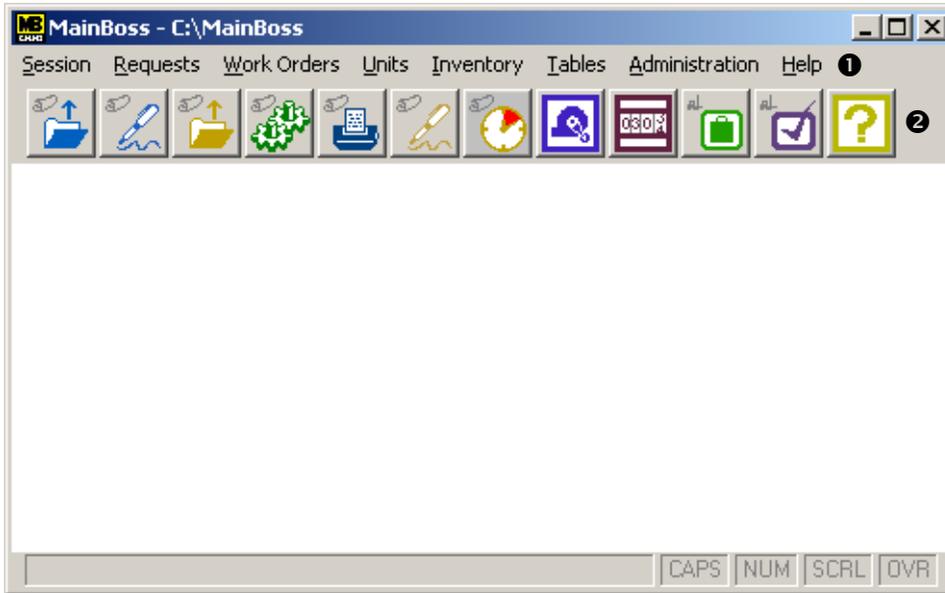
The menu line ❶ contains the menus you'll use to work with MainBoss. The line of buttons ❷ below the menus provides shortcuts to the most frequently used features of MainBoss.

Quitting MainBoss

To quit MainBoss and end your MainBoss session, select **Session** → **Exit** from the menu. The MainBoss program will exit immediately.

Setting Up Initial Tables

To get started using MainBoss, you usually have to set up some tables. For example, if you are going to use MainBoss to keep track of which workers are assigned to which jobs, you have to set up the **Personnel**. This table records the names of your personnel, plus any extra information that might be useful (for example, job class, contact information, hourly charge rates, and so on).

You only have to fill in the information that's relevant to your operations. For example, if your organization doesn't keep track of labor costs for each job, you wouldn't fill in the hourly charge rates for your workers.

Although different organizations will have different needs, the rest of this chapter describes the tables that most MainBoss users will want to set up. The sections are given in an order that make sense for most organizations.

> **Note:** You examine the contents of a table using a *browser*. You add new entries to a table (or modify existing entries) using an *editor*. For information on how to use browsers and editors, see *Browsers and Editors* on page 141.

The Buildings Table

Building: **Any place you perform maintenance, store items, or receive purchased goods.**

A building might be an industrial plant, a commercial or institutional building; it could even be a fleet of vehicles. Maintenance contractors might consider each customer a separate "building".

The **Buildings** table records information about all your buildings. Even if your organization only has one building, you must set up the **Buildings** table (with a single record for that one building).

> **Note:** If you intend to use MainBoss to print purchase orders, be sure to record full address information for any building where shipments may be received. MainBoss puts this address information on purchase orders, to let vendors know where shipments should be delivered.

To record information about buildings, select **Tables** → **Buildings** from the menu. This opens the Buildings browser:
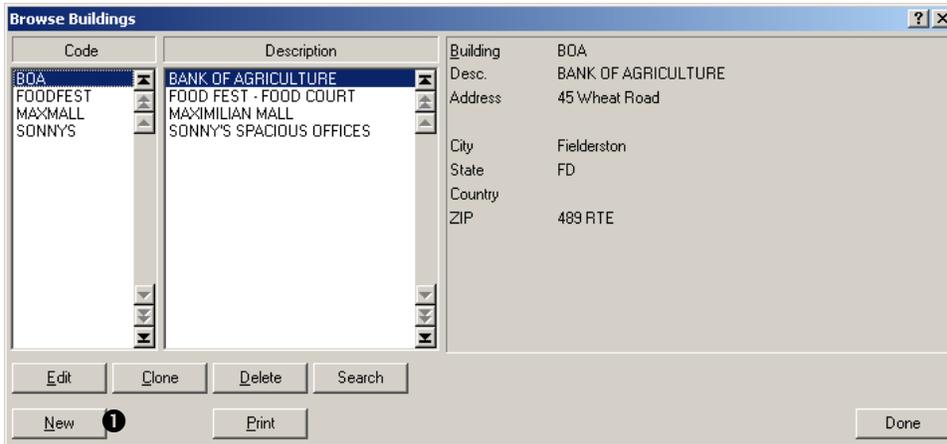
To create new entries in this table, click **New** ❶.

When you click **New**, MainBoss opens the Buildings Editor:
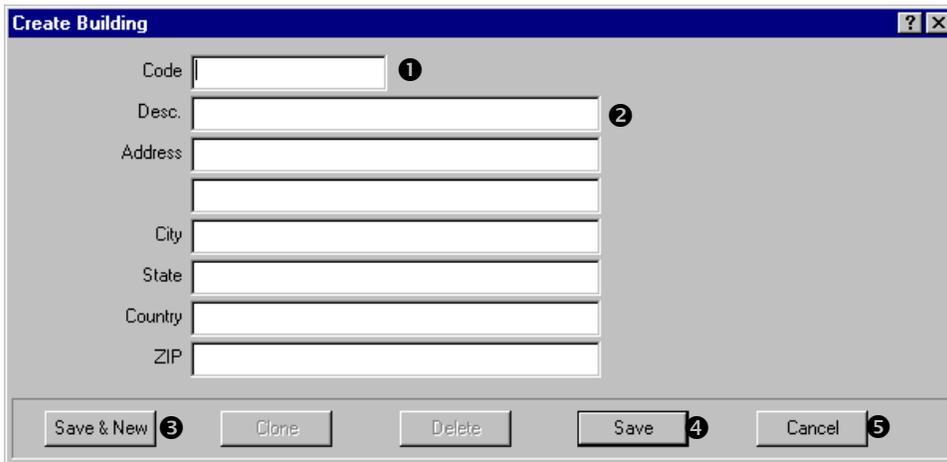
The only field you *must* fill in is "**Code**" ❶. However, you'll find it useful to fill in complete address information. You should also fill in "**Desc.**" ❷ with the name usually used to refer to the building.

If you want to create entries for more than one building, fill out the fields for the first building, then click **Save & New** ❸. MainBoss will save the information you've just entered; then it will clear all the fields so you can fill in information about another building.

When you've typed information for the last building, click **Save** ❹ to save that information, then click **Close** to close the editor window.

Note: Before you save the contents of the window, it has a button labeled **Cancel** as in ❺ above. Clicking this button closes the window without saving any information. After you **Save** the contents of the window, the **Cancel** button changes to **Close**, which means that nothing will be lost when you close the window. This is true of many MainBoss windows: **Cancel** changes to **Close** after a **Save** operation.

The Storeroom Table

Storeroom: **Anywhere you keep inventory materials**.

If you have more than one storeroom, it is obviously important to know which storeroom contains which items so that workers can quickly find the materials they need.

To record information about your storerooms, select **Inventory** → **Tables** → **Storerooms** from the menu. This opens the Storerooms browser:
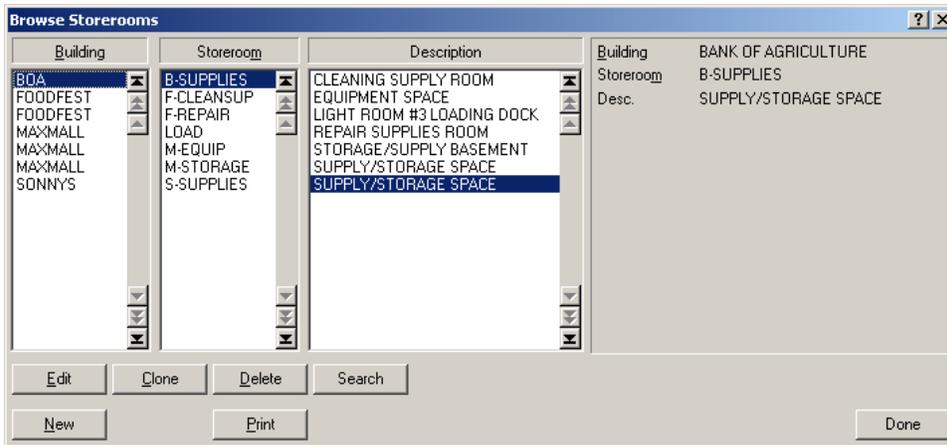
This lists which building contains which storeroom. Clicking **New** in the browser opens the Storerooms editor:
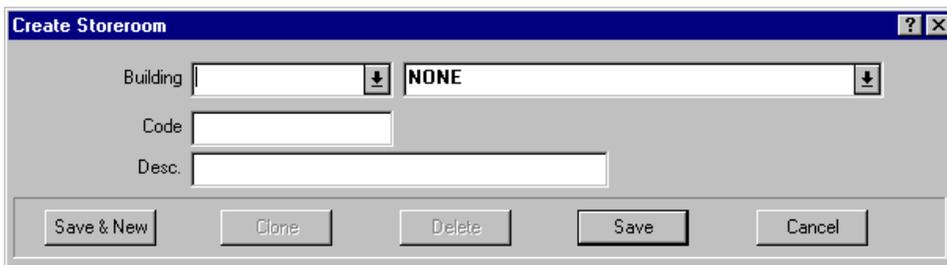
The Storerooms editor lets you record an identification code for each storeroom and which building contains the storeroom.

Note: If you don't specify which storeroom contains a particular item, the item is said to belong to **General Inventory**.

The Vendor Table

Vendor: **Anyone outside your organization who provides you with goods or services.**

Vendors include your suppliers and any outside contractors who are hired to do specialized work.

To record information about vendors, select **Tables** → **Vendors** from the menu. This opens the Vendors browser. Clicking **New** opens the Vendors editor:
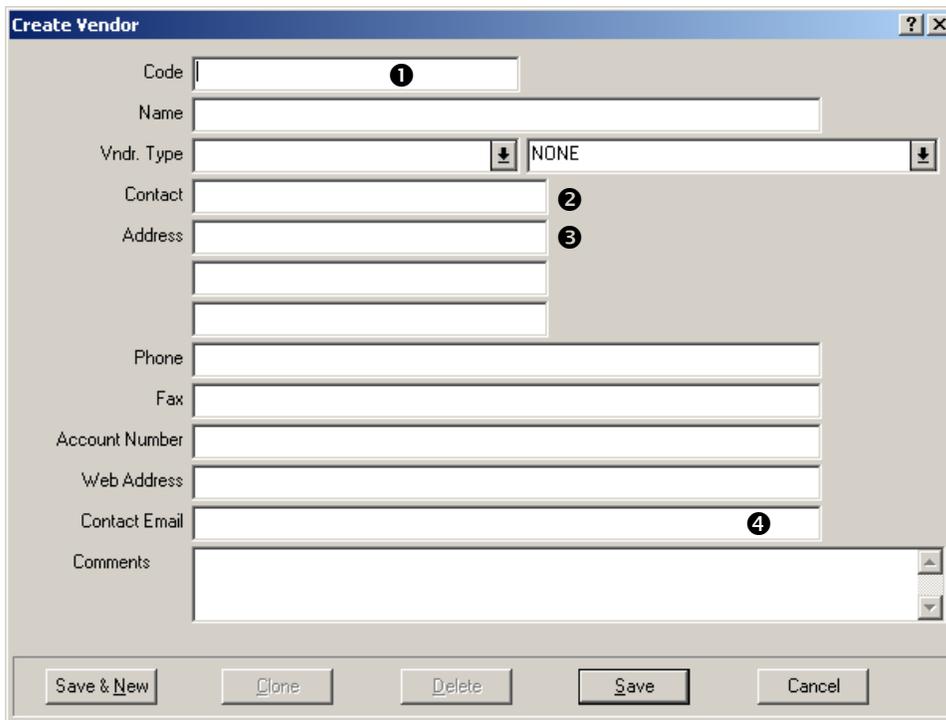
You must fill in "**Code**" ❶. Other fields can be filled in with contact information for the vendor. "**Contact**" ❷ and "**Address**" ❸ are particularly important if you intend to use MainBoss's purchase order facilities, since this information is printed on purchase orders to say where POs should be sent.

Once you enter an email address in "**Contact Email**" ❹, MainBoss lets you send email to this address. Just click on the address wherever it appears (in the **Vendors** table or other MainBoss windows) and MainBoss attempts to open your mail sending software so that you can send email to the given address. Similarly, if you click on a "**Web Address**", MainBoss attempts to open your web browser to display the given web page.

Related Tables: The Vendor Types table gives you a way to categorize vendors according to the services they provide. For example, you might group your suppliers according to the

type of materials they supply and group your outside contractors according to the services they provide.

Categorizing vendors in this way can speed the process of creating work orders and purchase orders. For example, suppose you're preparing a purchase order to restock your supply of electrical materials. If you've created an "Electrical Supplier" category, you can ask MainBoss to display only the vendors in that category when you want to choose a vendor to fill the order. Instead of having to choose from your full list of vendors, MainBoss will only show vendors in the correct category.

In this way, creating vendor types can simplify some of the things you do with MainBoss. However, you can use all the features of MainBoss even if you do not define any vendor types.

To see the Vendor Types table, select **Tables** → **Vendor Types** from the menu.

The Contact Table

Contact: **Anyone you may need to contact in connection with your maintenance work.**

In particular, anyone who submits a work request is considered a contact.

The **Contacts** table lets you record information about your contacts. To see or change the table, select **Tables** → **Contacts** from the menu. This opens the Contacts browser. Clicking **New** opens the Contacts editor so you can enter information about new contacts.

The Personnel Table

Personnel: Your organization's maintenance staff.

This does *not* include any outside contractors who may be hired for certain jobs. Outside contractors are considered vendors.

The **Personnel** table lists information about each person in your maintenance staff, including contact information and the rates charged per hour for each person's work.

To record information about your personnel, select **Work Orders** → **Tables** → **Personnel** from the menu. This opens the Personnel browser:
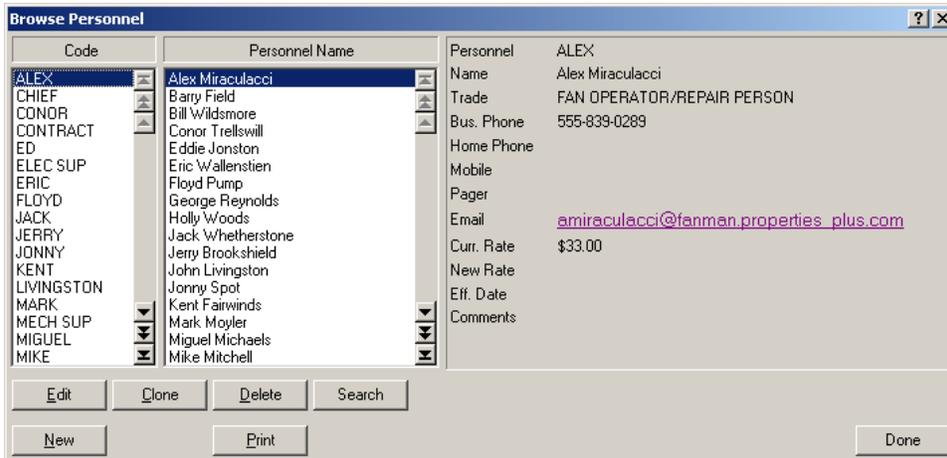
Clicking **New** in the browser opens the Personnel editor so you can enter information about your personnel:
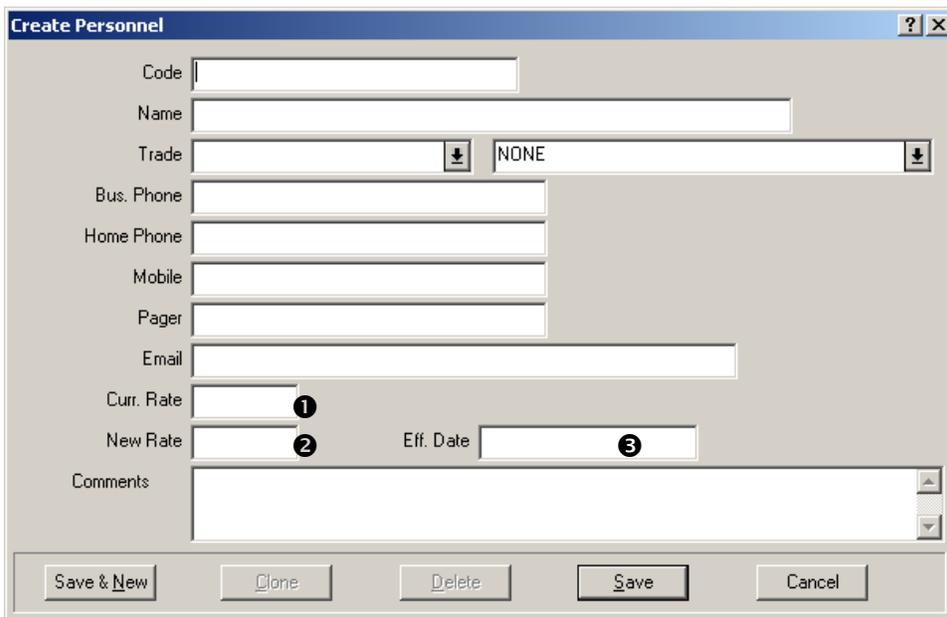
Most of the fields in a personnel record provide contact information such as phone numbers and email address. In addition, the record contains the following:

Curr. Rate ❶: The hourly rate which you currently pay the worker, or which you charge other people for the worker's labor.

New Rate ❷: If the labor costs for this worker are scheduled to change at some point in the future, you can record the new rate in this field. Starting on the "**Eff. Date**" (given below), MainBoss will charge labor costs at the new rate rather than the old. By recording a new rate ahead of time, you don't have to remember to change the rate exactly on the day the new rate takes effect.

Eff. Date ❸: The date on which labor costs should be charged at the "**New Rate**" rather than the "**Curr. Rate**". (See the explanation of "**New Rate**" above.)

Related Tables: The **Trades** table gives you a way to categorize workers according to job classifications. For example, you might group your personnel into mechanics, electricians, engineers, and so on.

Categorizing workers in this way can speed the process of creating work orders. For example, suppose you're creating a work order to fix a mechanical problem, and you're assigning personnel to deal with the problem. You can tell MainBoss to change the list of available personnel so that it only displays people in the `Mechanics` category. This makes it faster to pick the worker you want from the list.

In this way, creating trade categories can simplify some of the things you do with MainBoss. However, you can use all the features of MainBoss even if you do not define any trade categories.

To see the Trades table, select **Work Orders** → **Tables** → **Trades** from the menu.

Work Information Tables

MainBoss has a number of tables which contain information related to the work that you do.

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Priority: **A code indicating the urgency of a job.**

For example, you might create a set of priorities from "Urgent" to "Do whenever time allows." You can attach these priority codes to work orders so that your personnel can tell which jobs need to be done first.

To define priority codes, select **Work Orders** → **Tables** → **Priorities** from the menu.

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Access Code: A code indicating any restrictions on doing a job.

For example, you might have restrictions like "Only make repairs on this equipment after 5:00 pm" or "Always get permission from supervisor before shutting down machinery." Codes like this can be attached to work orders so that your personnel are informed about any special access conditions that might apply to jobs.

To define access codes, select **Work Orders** → **Tables** → **Access Codes** from the menu.

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Project: **A group of work orders related to a single goal.**

For example, suppose you are renovating an area in one of your buildings. You could define a `Renovation` project and mark all related work orders as belonging to that project. This makes it easy to distinguish which jobs are part of the renovation and which jobs are not.

By grouping jobs according to projects, you can get the "big picture" on what your maintenance department is doing. Otherwise, you may end up with a lot of individual work orders that make it hard to get an overview of what's going on.

To set up projects, select **Work Orders → Tables → Projects** from the menu.

Repair Closing Code:

A code used to summarize the nature of a repair.

Closing codes are a quick way to summarize the nature of the jobs you do. For example, you might set up closing codes to indicate problems that were due to electrical faults, equipment wear, accidental damage, vandalism, and so on.

By adding closing codes to work orders, you can use MainBoss to give you a picture on the overall nature of the jobs you do. For example, you can get a report on all jobs that arose because of electrical faults. This may help you notice patterns that indicate trends or underlying problems that need to be addressed.

To define Repair Closing Codes, select **Work Orders → Tables → Repair Closing Codes** from the menu.

Work Categories:

Codes used to classify the type of work done in a particular job.

For example, you might define categories like "electrical", "plumbing", "heating/air-conditioning", "vandalism repair", and so on. You might define additional categories for preventive maintenance jobs, such as "inspection", "routine maintenance", and "major overhaul".

Using work categories is another way to add extra information to your work orders. This information can later be analyzed through MainBoss reports; for example, by obtaining information about a "plumbing" category, you can determine the exact labor and material costs associated with plumbing problems in a particular building. This may help you make decisions about budget allocations—for example, you can prove to upper management the exact cost of plumbing problems, perhaps justifying major renovations where the troubles are worst.

To define Work Categories, select **Work Orders → Tables → Work Categories** from the menu.

The Life Cycle of a Corrective Work Order

This chapter outlines the usual sequence of events in dealing with a problem report received from outside the maintenance department.

> **Note:** The sections in this chapter describe typical ways in which organizations use MainBoss. However, almost everything here is optional; you can choose which MainBoss features fit best with your methods of operation. For example, a MainBoss work order lets you record advance estimates of the labor and materials for a job, plus the actual costs of labor and materials once the job is finished. However, you don't *have* to use these facilities; if your organization doesn't keep track of labor and/or materials on a per-job basis, you can simply omit this information from your work orders.

Here are the steps you typically follow to handle a problem that is reported to your maintenance department:

1. Create a work request (see *Creating a Work Request* on page 21). This is done by a person who wants to report a problem or by the maintenance department staffer who receives the problem report.

2. Create a work order based on the work request (see *Creating a Work Order* on page 23). This is usually done by someone in maintenance management.

3. Print off the work order and give it to the workers assigned to the task (see *Printing Work Orders* on page 45).

4. Close off the work order when the work is actually completed (see *Closing a Work Order* on page 49). This may be done by maintenance management or by the workers who actually did the job.

```
┌─────────────────┐
│   Create work   │
│     request     │
└─────────────────┘
         ⇩
┌─────────────────┐
│   Create work   │
│      order      │
└─────────────────┘
         ⇩
┌─────────────────┐
│   Print work    │
│      order      │
└─────────────────┘
         ⇩
┌─────────────────┐
│     Do the      │
│      work       │
└─────────────────┘
         ⇩
┌─────────────────┐
│   Close work    │
│      order      │
└─────────────────┘
```
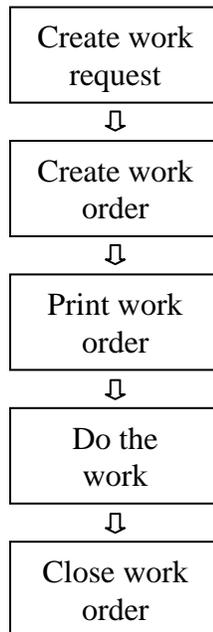
Typical Work Order Life Cycle

At any point in the process, you can edit the results of previous stages. For example, when you originally create a work order, you may not have enough information to estimate the expected labor and material costs. When you do get this information, you can go back and add it to the work order. You can even modify a work order after it's closed, if you get additional information or discover that you made a mistake.

Creating a Work Request

The first step in responding to a problem is to create a work request. The work request summarizes basic information about the problem: what the problem is, which piece of equipment or space is involved, who reported the problem, and so on.

MainBoss @Requests: MainBoss @Requests is an add-on package that lets people in your organization submit requests by e-mail. These e-mail messages are automatically converted into work requests, thereby saving you the time and trouble of creating requests by hand. For more information, e-mail `contact@mainboss.com`.

To create a new work request, select **Requests** → **Open Request** from the menu. This opens a window where you can enter information about the problem:

☐ **To fill out a new work request:**

1. Drop the arrow on "**Req. By**" ❶ to specify who reported the problem. The drop-down list displays your current Contacts table. For more on the Contacts table, see *The Contact Table* on page 15.

   If the work was requested by someone who isn't currently listed in your Contacts table, click the **New Requestor** button ❷. This opens a window where you can enter contact information for the new requestor.

2. If the problem involves a piece of equipment, click **Equipment** ❸. If the problem involves a space, click **Space** ❹.

3. Drop the arrow on "**Building**" ❺ to specify the building where the problem occurred.

4. Drop the arrow on "**Unit**" ❻ to specify the equipment or space that has the problem.

5. For "**Subject**" ❼ type a brief description of the problem.

6. In the space ❽ below "**Subject**" type a more complete description of the problem.

7. Use the other fields in the work request to enter other information. For example, you can enter a priority code in "**Priority**" if you want to specify the priority of the job. (For more on priorities, see *Work Information Tables* on page 17.)

8. Click **Save** ❾ to save the work request, then click **Close** ❿ to close the window.

Note: If you leave "**Date**" blank, MainBoss fills in the current date and time. You can fill in these fields manually if you want to backdate the request to some other date/time.

Once you have created a work request, you can print it using the **Save & Print** button. For more information, see the online help.

MainBoss @Requests

If your organization has licensed MainBoss @Requests as an add-on to the normal MainBoss package, users can submit requests by email.

The process is simple. People who are authorized to submit requests send email to a designated address inside your organization. The MainBoss @Requests software watches for any messages that arrive at that email address. When a message arrives, the @Requests software automatically creates a work request using information from the message. The work request is placed into your normal MainBoss database where it can then be processed into a work order.

Creating a Work Order

The next step in the life cycle of a work order is to create a preliminary work order. Usually, work orders are created by starting from from an existing work request. However, you can also create a work order "from scratch" without having a work request to start with.

A preliminary work order may contain any or all of the following information:

- priority of the job
- date/time the job should be done
- personnel assigned to do the job (possibly including labor costs based on the workers' wages)
- length of time the job is expected to take
- materials expected to be needed for the job
- a detailed description of the work to be performed

Associated Purchase Orders: A work order may involve labor done by an outside contractor. For example, you might have a job where some of the work can be done by your own personnel and some of the work must be done by a licensed electrician from outside your organization.

In this case, MainBoss makes it easy for you to create a purchase order covering the cost of the hired contractor. The purchase order can also include the cost of any materials supplied by the contractor. Associating a purchase order with a work order makes it easier to keep track of costs and to identify what the outside contractor actually did for you.

In addition to materials and labor costs, a purchase order may contain *extra charges* (usually just called *extras*). For example, a contractor might charge you a standard hourly

rate, plus a surcharge for working at night or on weekends. Contractors may also charge handling fees, service taxes, etc. Such extras may also be included in the purchase order.

Starting a New Work Order

There are two ways to begin creating a new work order: starting from an existing work request, or making the work order from scratch.

1. If you already have a work request:
Open the work request browser by selecting **Requests** → **Browse Requests** from the menu:
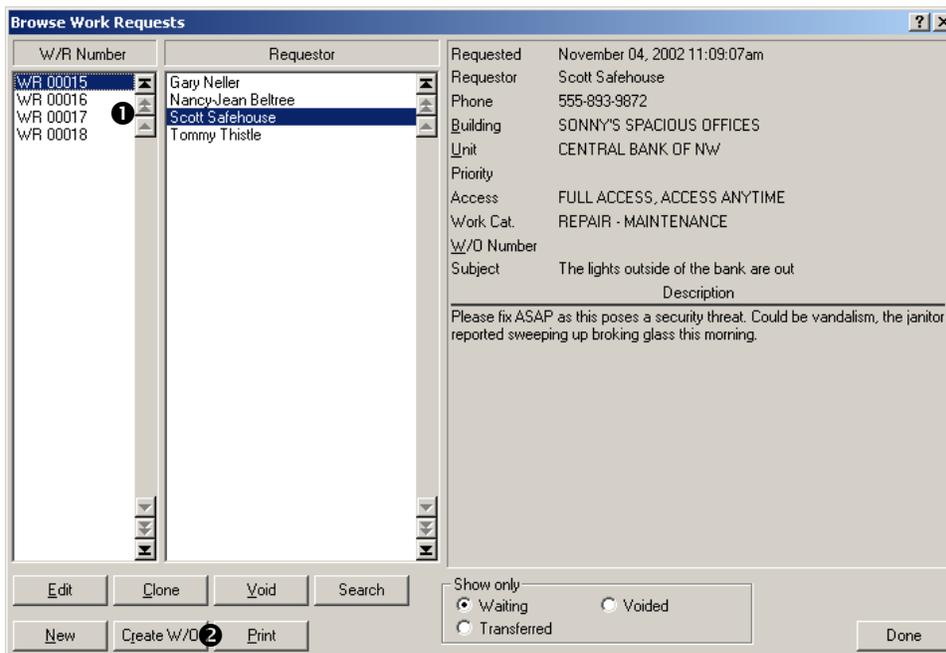
Click on the work request you want to use ❶, then click **Create W/O** ❷. MainBoss will open a new work order using information from the selected work request.

2. If you do not have a work request:
Select **Work Orders** → **Open Work Order** from the menu. This creates a completely blank work order.

Work Order Sections: Whether you start from a work request or make the work order from scratch, you fill out the work order by recording information in several sections.

☐ Some sections are used in preparing the initial work order (created before the work starts). For example, you use the **Unit** section to record which equipment or space needs to be repaired.

☐ Other sections record information after the job is done. For example, you use the **Close** section to record information like when the job was actually finished.

☐ Some sections are used both before and after the job. For example, you use the **Labor** section before the job to estimate how much time personnel will spend on the work. You use the same section after the job to record how much time the workers actually spent.

When creating a work order, you can fill out the sections in any order. However, you may find it helpful to use the following sequence:

☐ **To fill out an initial work order (before the job):**

1. Fill out the **Unit** section to specify which equipment or space needs to be repaired. (See *Specifying Units for a Work Order* on page 27).

2. Fill out the **Description** section to describe what should be done. (See *Specifying a Problem Description* on page 28.)

3. Fill out the **Properties** section to specify when the job should start and when you expect it to end, plus other relevant details. (See *Specifying Work Order Properties* on page 29.)

4. Fill out the **Labor** section to assign personnel to the job and to estimate how long each person will spend on the work. (See *Assigning Personnel to a Work Order* on page 30.)

5. Fill out the **Material** section to reserve any spare parts or other materials that you expect the job will need. (See *Reserving Materials for a Work Order* on page 34.)

6. Save all the information you have recorded. (See *Saving an Initial Work Order* on page 43.)

```
┌─────────────────────────┐
│ Specify unit            │
│ (Unit section)          │
└─────────────────────────┘
             ⇩
┌─────────────────────────┐
│ Describe problem        │
│ (Description section)    │
└─────────────────────────┘
             ⇩
┌─────────────────────────┐
│ Set schedule            │
│ (Properties section)    │
└─────────────────────────┘
             ⇩
┌─────────────────────────┐
│ Assign personnel        │
│ (Labor section)         │
└─────────────────────────┘
             ⇩
┌─────────────────────────┐
│ Reserve materials       │
│ (Material section)      │
└─────────────────────────┘
             ⇩
┌─────────────────────────┐
│ Save information        │
│ (Save button)           │
└─────────────────────────┘
```
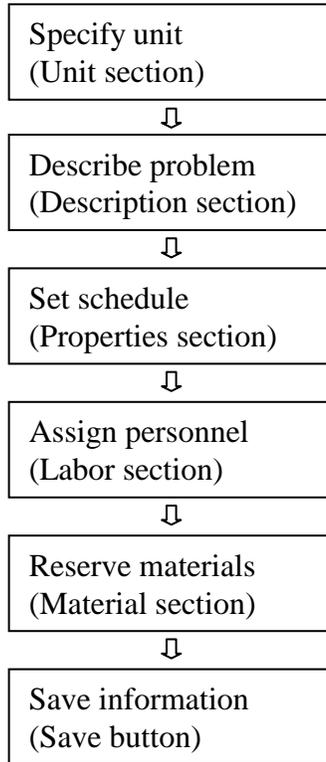
Typical Steps for Filling Out an Initial Work Order

Specifying Units for a Work Order

The **Unit** section of a work order specifies the equipment or space that needs to be repaired:

☐ **To fill out the** Unit **section of a work order:**

1. In "**Subject**" ❶, enter a brief description of the problem.

2. If you started with a work request, "**Req. By**" ❷ will be filled in with the requestor named in the work request. Otherwise, drop the arrow on the list. MainBoss displays your current Contacts table (as described in *The Contact Table* on page 15).

3. If the person who requested this work isn't currently in your Contacts table, click **New Requestor** ❸, and MainBoss will open a window where you can enter information about the new requestor.

4. If you started with a work request, other fields in this section should already be filled out with information from the request. Otherwise, fill out the other fields as you would for a work request. (For more information, see *Creating a Work Request* on page 21.)

Once you have specified the unit that needs to be repaired, MainBoss will display any service contracts ❹ that have been recorded for that unit. This can tell you whether repairs have to be done by your own people or if you can just call the service contractor.

Specifying a Problem Description

The **Description** section of a work order lets you describe the problem in as much detail as you wish. You can also specify step-by-step instructions for dealing with the problem.

☐ **To fill out the** Description **section of a work order:**

1. Enter the description ❶ using as many lines as necessary.

When entering the description, you can use the usual Windows text-editing features. For example, **\<Enter\>** starts a new line and **\<Backspace\>** erases characters.

Specifying Work Order Properties

The **Properties** section specifies information about the job including the date you want the job to start and how many days you expect the job to take.

☐ **To fill out the** Properties **section of a work order:**

1. In "**Work Start**" ❶ type the day the work should start. You can enter this date in almost any format. For example, you can type `July 3` or `3 Jul` or `2001/07/03`. For more about date formats, see the online help.

2. When you fill in "**Work Start**", MainBoss automatically fills in "**Work End**" ❷ with the same date. This saves you time if the job will take less than a day. If the job takes longer than a day, either fill in "**Work End**" with the date the job should finish, or fill in "**Work Duration**" ❸ with the number of days the job should take.

> **General Principle:** If you enter a date in "**Work End**", MainBoss automatically changes "**Work Duration**" to the appropriate number of days. Similarly, if you enter a number of days into "**Work Duration**", MainBoss automatically changes "**Work End**".

The **Properties** section has a number of other fields. For example, "**Priority**" lets you assign a priority to the job. (See *Work Information Tables* on page 17.) For more information on any of these fields, see the online documentation.

Assigning Personnel to a Work Order

The **Labor** section of work order lets you assign personnel to a job. It also lets you estimate work times (before the job starts) and record actual work times (after the job is finished):

There are two types of workers who might be assigned to a job:

☐   Your own personnel (internal workers)

☐   Outside contractors (outside workers)

You can combine both types of workers on a job, if necessary. However, the two types are handled differently, as described below.

☐ **To assign your own personnel to a job (internal workers):**

1. Click **Add Estimate** ❶. MainBoss opens a window where you can specify the person you want to assign:

2. Drop the arrow on "**Personnel**" ❷. MainBoss displays your **Personnel** table (as discussed in *The Personnel Table* on page 15). Select the person you want to assign.

3. Use "**Start**" ❸ and "**End**" ❹ to record the times you expect this worker to begin the job and end the job.

> **General Principle:** If you enter a time in "**End**", MainBoss automatically changes "**Estimated Time**" to the appropriate length of time. Similarly, if you enter a length of time in "**Estimated Time**", MainBoss automatically changes "**End**".

4. If you intend to assign other workers to this job, click **Save & New** ❺. MainBoss saves the information you've just entered, then clears all the fields so you can enter information about the next worker.

5. When you have assigned the final worker to the job, click **Save** ❻ to save the information, then click **Close** ❼ to close the window.

When you return to the work order window, you'll see that an estimate has been added to the list in the **Labor** section:

The E in the **Trade** column indicates that this is an estimate (as opposed to an actual time recorded after the job is finished).

Outside Contractors: To add labor costs for an outside contractor, you have to create a purchase order for that contractor. Therefore, the procedure is:

1. Create a purchase order that is addressed to the outside contractor and attached to the work order.

2. Add labor estimates to the purchase order.

☐ **To associate a purchase order with a work order.**

1. In the **Labor** section of a work order, click **New Purchase Order** to create a new purchase order or **Link P/O** to add the costs to an existing purchase order. (For more on creating purchase orders, see *Purchasing and Receiving* on page 117.)

Once you have created a new purchase order or linked to an existing one, it will appear in the **Labor** section window:

The **Personnel** column gives the identifier code of the vendor and the **Name** column gives the identification code for the purchase order.

□ **To add a labor estimate to the purchase order:**

1. Click the entry for the purchase order in the **Labor** section's list.

2. Click **Add Extra Estimate**. This opens a window where you can specify the estimate.

3. Enter a description of the contractor's job in "**Desc.**" ❶.

4. Enter the estimated cost of the work in "**Total Cost**" ❷.

5. Click **Save** to save the information, then click **Close** to close the window.

When you return to the work order window, you'll see there's a new line below the purchase order, showing the cost estimate you've entered.

Note: The labor cost will be added to the purchase order as an *extra*.

Reserving Materials for a Work Order

When you assign materials to a work order before the work is done, you estimate what materials you believe the work is likely to require. The materials you specify are then put *on reserve*. For example, if a job on a forklift truck will replace certain engine belts, you can put an appropriate number of belts on reserve when you make up the work order.

Note: In order to reserve materials for a work order, you must set up MainBoss's inventory table. This table records the materials you use in your work. For more information, see *Describing Inventory Items* on page 101.

For the purposes of reordering inventory, stock levels do not include any materials that have been put on reserve. For example, if you currently have six fan belts in a storeroom but two of those belts have been put on reserve, your stock level is reported to be four fan belts with two more on reserve. If the reorder point for this type of item is five belts, MainBoss will recommend that you should order more of the belts, even though you actually have six belts on the shelf—the belts put on reserve are not included in the stock level because they are already spoken for.

After a job is done, you should go back to the work order and enter the actual materials used. MainBoss adjusts inventory levels accordingly—items that were initially put on reserve are marked as used, or taken off reserve if it turns out the materials weren't needed after all. For more on recording the actual use of materials, see *Closing a Work Order* on page 49.

You record materials estimates in the **Material** section of a work order:

There are two types of materials that might be used on a job:

☐ Materials from your own inventory (or that you buy directly for the job), described later in this section.

☐ Materials supplied by outside contractors (for example, parts supplied by a plumber who is hired to do a plumbing job), described in *Dealing with Outside Labor and Materials* on page 38.

You can combine both types of materials on a job, if necessary.

☐ **To reserve materials from your own inventory:**

1. Click **Add Estimate** in the **Material** section of the work order. MainBoss opens a window where you can specify the materials you want to reserve:

Using this window can be divided into three steps:

1. Specifying the materials you want to reserve.

2. Specifying the storeroom(s) where workers should go for the materials when they actually do the job.

3. Specifying what quantity you want to reserve.

Specifying the Materials: One way to do this is simply to drop the arrow on "**Inv. Item**" ❶ and find the item you want to add. However, inventory lists can be very long and searching through them may take a lot of time, especially if you don't know the exact name of the item you want.

You can speed the search process by following the steps given below.

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☐ **To specify the item you want to reserve:**

1. If the item you want has been designated as a spare part for the unit being serviced, click **listed as SparePart** ❷.

2. If you have divided your inventory into categories, drop the arrow on "**Inv. Cat.**" ❸ and choose the category for the part you want.

3. Drop the arrow on "**Selected Items**" ❹. The list will show only those items that match the criteria you have specified (for example, items that belong to the selected "**Inv. Cat.**").

4. Find the item in the "**Selected Items**" list, then click **Pick This Item** ❺. "**Inv. Item**" will be set to the item in "**Selected Items**".

If you want to specify an item that currently isn't in your inventory, click **Pick New Item** ❻. MainBoss will open a window where you can enter a description of the new item. For more on describing inventory items, see *Describing Inventory Items* on page 101.

Item Location: Once you have selected the item that you want to reserve, you have to specify where your workers will get that item. This means that you have to find a storeroom that has a sufficient supply of the item available.

☐ **To specify the storeroom that contains the item:**

1. Use "**Building**" ❶ and "**Storeroom**" ❷ to specify a storeroom. "**Storeroom On Hand**" ❸ then tells you the quantity of the selected item that is currently available in the chosen storeroom.

2. Choose a different "**Building**" and/or "**Storeroom**" if the first storeroom you look at doesn't have enough of the item on hand.

Reserving the Item: Once you have determined a storeroom that contains an appropriate quantity of the item, enter the required quantity in "**Reserve Quantity**" ❹. This tells MainBoss to put that quantity of the item on reserve.

Finishing up: Once you have specified the quantity you want to reserve, click **Save** to save the information, then click **Close** to close the window. When you return to the work order, you'll see that the item has been added to the materials list.
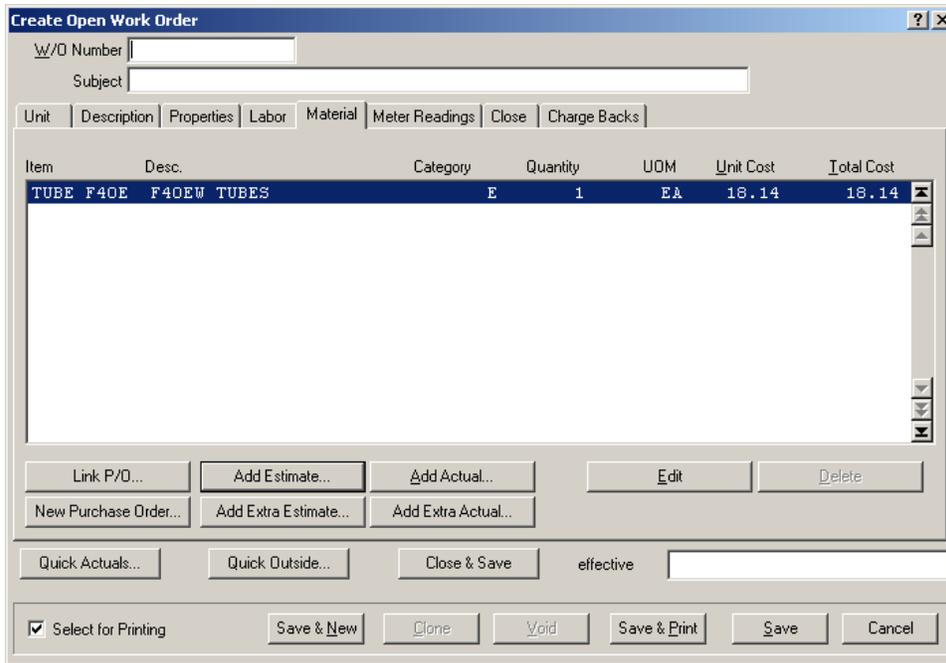
Under **Category** you'll see E, indicating that this is an estimate.

Dealing with Outside Labor and Materials

Some jobs require outside labor (e.g. plumbers, electricians, and other contractors). These outside workers may supply materials as part of the work they do; for example, a plumber may charge you for plumbing materials used in a job, as well as for the cost of labor.

To deal with this situation, you create a purchase order for the labor and/or materials. You then *link* this purchase order to the work order. Typically, labor costs and materials are considered *extras* on the purchase order. (For more about purchase orders, see *Purchasing and Receiving* on page 117.)

You can create a new purchase order directly from a work order.

☐ **To create a new purchase order from the work order:**

1. In the **Labor** section or the **Material** section of the work order, click **New Purchase Order** ❶.
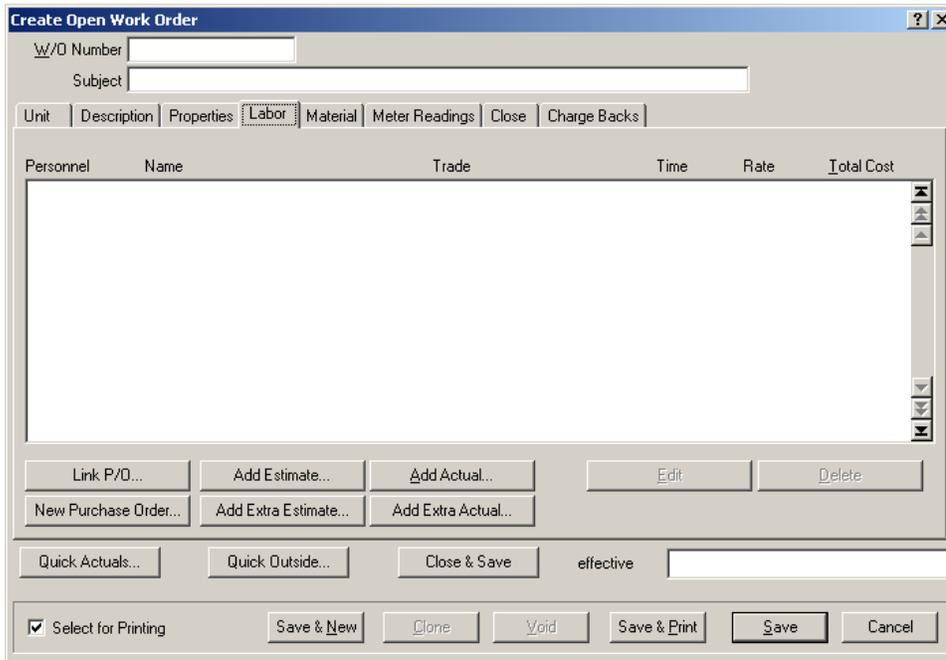
2. MainBoss opens a window where you can create the purchase order (as described in *Creating a New Purchase Order* on page 121.

3. When you have finished creating the purchase order, it will appear in the lists in the **Labor** section and the **Material** section of the work order.
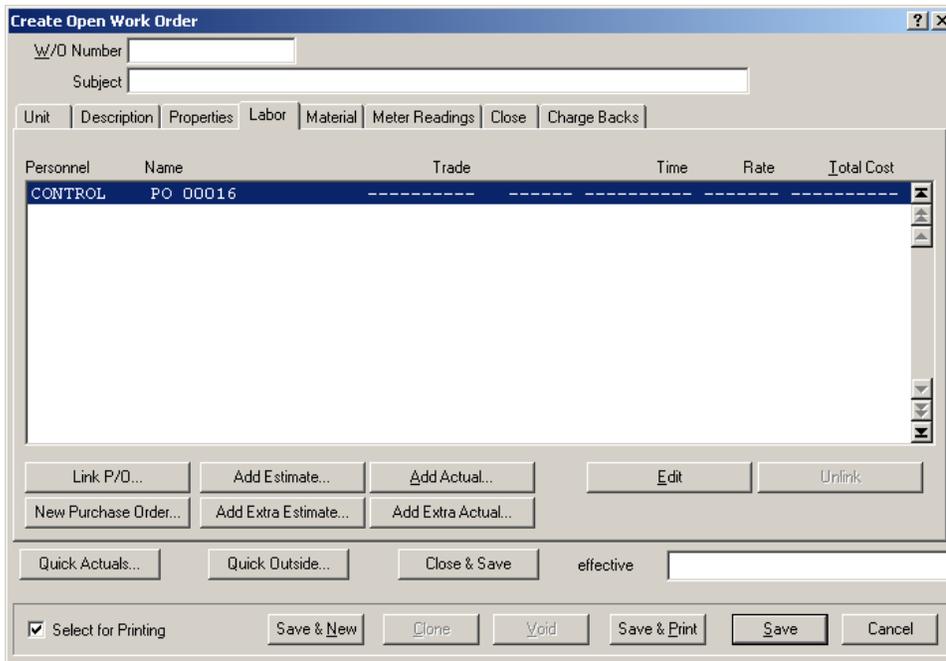
Instead of creating a new purchase order, you can link to an existing purchase order. For example, suppose you are bringing in an electrician to do several different jobs. You might create a purchase order for the first such job, then add more items to that purchase order for the other jobs. In this way, a single purchase order covers all the jobs.

☐ **To link a work order to an existing purchase order:**

1. In the **Labor** section or the **Material** section of the work order, click **Link P/O** ❶.
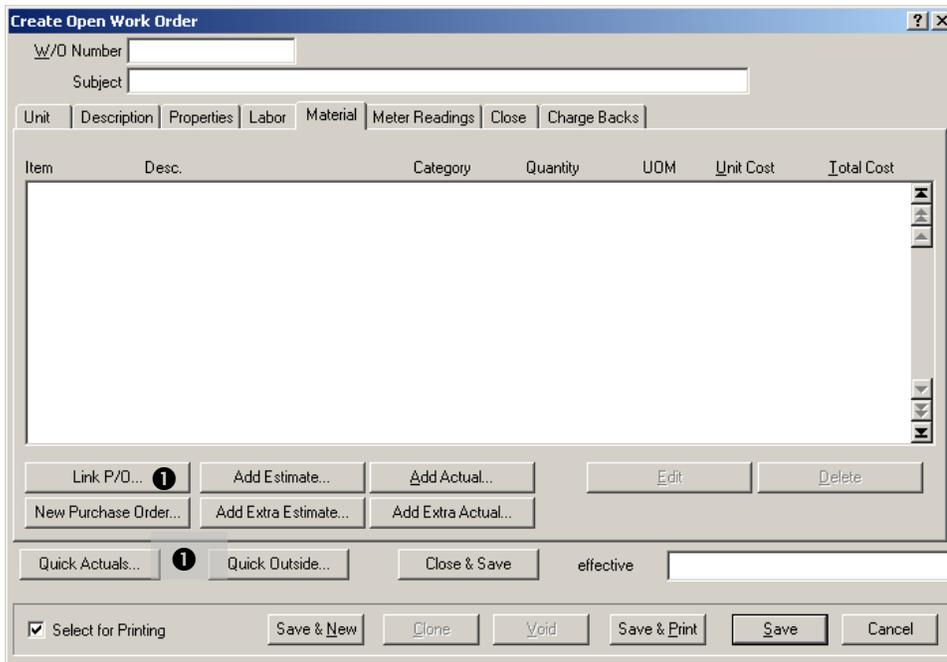
2. MainBoss opens up the Purchase Order browser, showing existing purchase orders. Select the purchase order in the list ❷ of purchase orders, then click **Ok** ❸.
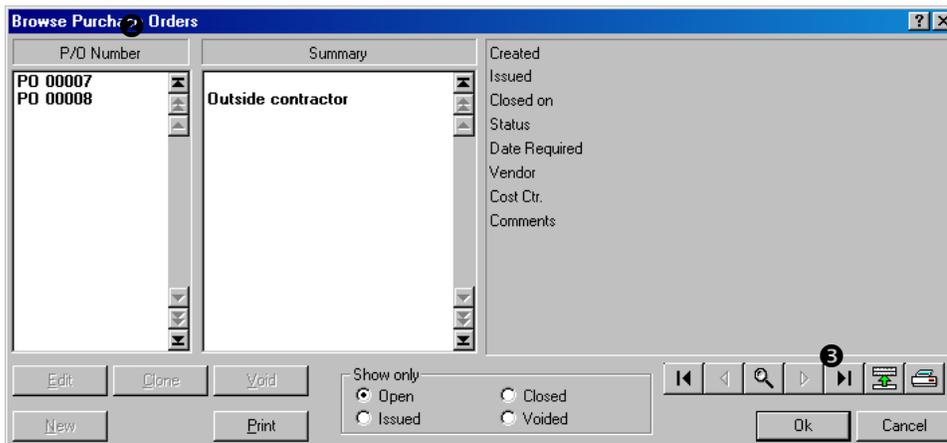
3. MainBoss will return to the work order window. You'll see the selected purchase order in the lists in the **Labor** section and the **Material** section of the work order.

Once you've specified the purchase order (either by creating a new one or linking to an existing one), you can add labor and material expenses to the purchase order. You can do this while you're still creating the work order.

☐ **To add labor and material expenses to a purchase order while you're editing the work order:**

1. In the **Labor** section or the **Material** section of the work order, select the purchase order ❶ to which you want to add the new expense.

2. To add an estimate to the purchase order, click **Add Extra Estimate** ❷. To add an actual expense, click **Add Extra Actual** ❸. In both cases, MainBoss opens a window where you can record information about the expense.

3. In "**Cat. No.**" ❹, enter any reference number assigned by the outside contractor (e.g. the contractor's identification number for a particular type of material).

4. In "**Desc.**" ❺, enter a description of the labor or materials.

5. In "**UOM**" ❻, enter a unit of measure. (This is only relevant for materials expenses, not labor.)

6. In "**Total Cost**" ❼, enter the total cost of the labor or materials.

7. Click **Save** to save the information you've just entered, then click **Close** to close the window.

8. When you return to the work order, you'll see that the expense has been recorded in the expense list.

Expenses entered in this way are recorded as "extras" in the purchase order. For an explanation of "extras", see the discussion of purchase orders in *Purchase Order Extras* on page 127.

You can also add items to the purchase order by editing the purchase order directly. To do this, double-click on the purchase order in the lists in the **Labor** section or the **Material** section of the work order. MainBoss will open a window that lets you edit the purchase order, using the facilities described in *Creating a New Purchase Order* on page 121.

Saving an Initial Work Order

Once you have recorded all the work order information you need, you must save that information in MainBoss's database.

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☐ **To save the initial work order:**

1. At the bottom of the work order window, click **Save** ❶ to save the information, then click **Close** ❷ to close the window.
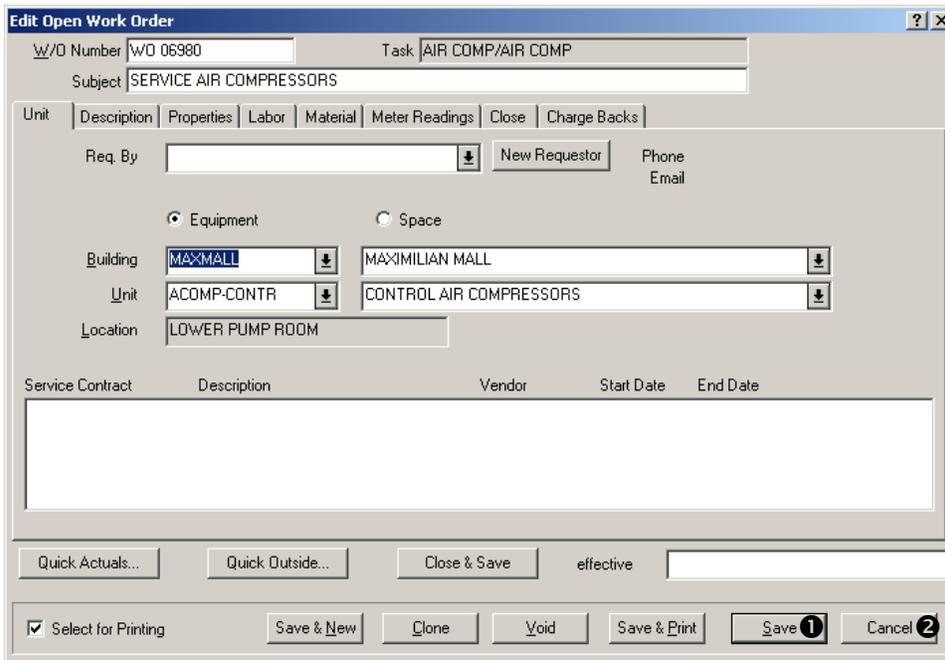
From this window, you'll return to the Work Order browser. You can close the browser by clicking the **Done** button.

Modifying Work Orders

After you have created a work order, you may need to make changes. For example, you may schedule the job for a particular day but something happens that forces you to reschedule.

Note: To modify a work order, you use the Work Order browser. For more information about browsers, see *Browsers and Editors* on page 141.

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☐ **To modify an existing work order:**

1. Select **Work Orders → Browse Work Orders** from the menu. This opens the Work Order browser:
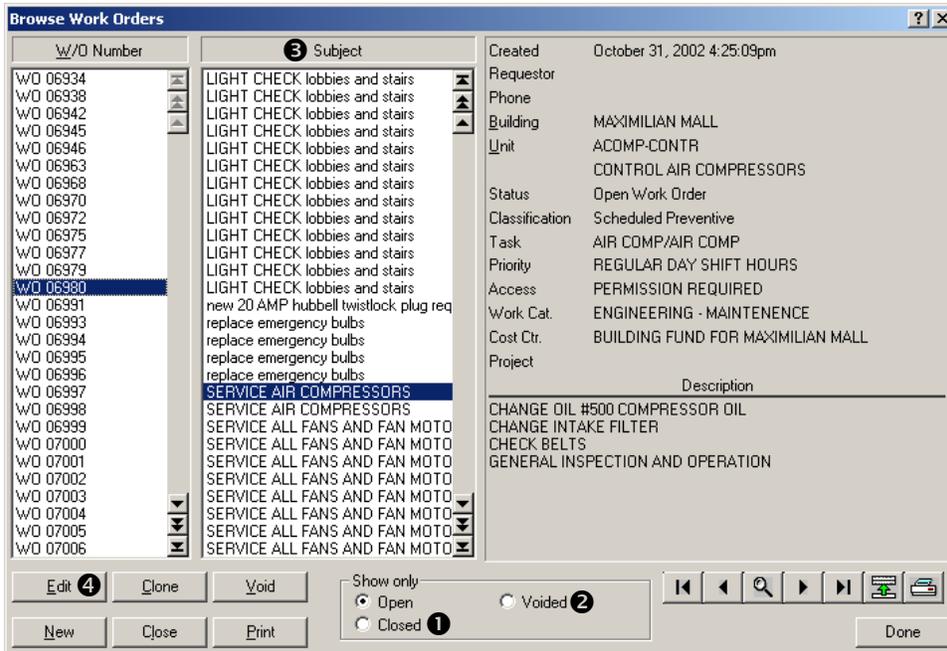
2. By default, the browser shows open work orders. If you want to modify a work order that you've already closed, click **Closed** ❶. If you want to modify a work order that you've voided (canceled), click **Voided** ❷. The browser will change to list either closed or voided work orders.

3. In the list of work orders ❸, find the work order you want to change. Click that work order to select it.

4. Either double-click the work order where it appears in the list, or click **Edit** ❹.

5. MainBoss will open a window showing all the information you have previously recorded about the work order. Make any changes you want, then click **Save**. This saves the new information, replacing the old information. After you have saved, click **Close** to close the work order window.

Cancelling Work Orders

You can cancel a work order at any time. To do so, select **Work Orders → Browse Work Orders** from the menu. This opens the work order browser.
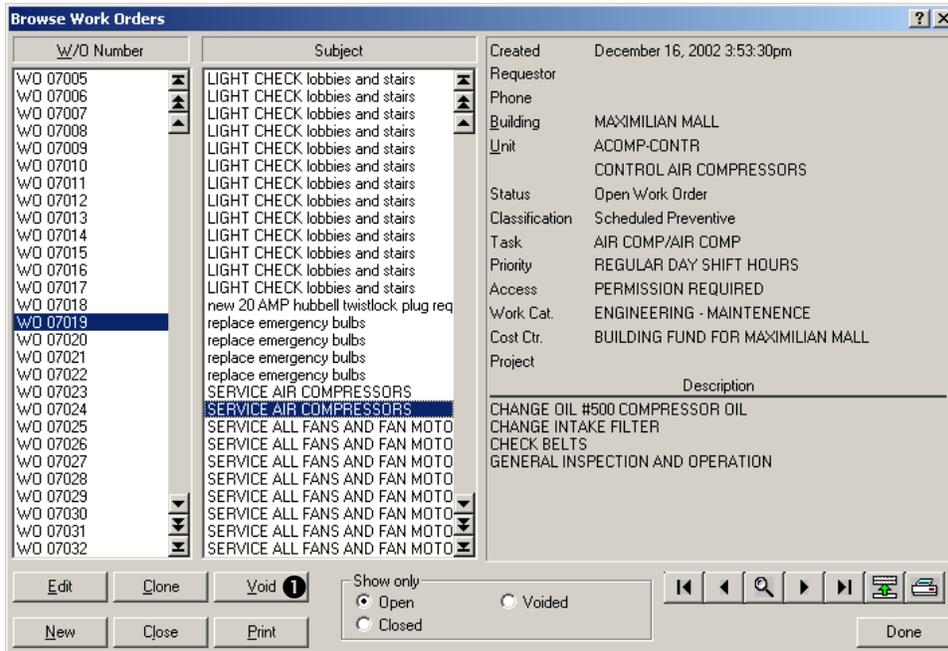
In the list of work orders, click the work order you want to cancel, then click **Void** ❶. When you void (cancel) a work order, the work order is moved to a list of voided work orders.

You might find that you want to reactivate a voided work order (for example, if you accidentally canceled the wrong work order). In this case, you can easily reactivate the work order.

□ **To reactivate a voided work order:**

1. In the Work Order browser, click **Voided**. The browser will show all voided work orders.

2. In the list of work orders, click the one you want to reactivate.

3. Click **Reopen**.

The work order you just reopened disappears from the list of voided work orders. When you ask the browser to display **Open** work orders, you will see the reactivated work order in the list.

Printing Work Orders

Once you have created a work order, you typically print it and give it to the people who will actually do the job.

You can print a single work order as soon as you create it. You can also print a batch of work orders at once; for example, you might create a number of work orders, then print them all off together.

□   **To print your current work order:**

1.   In the work order window, click **<u>Save & Print</u>** ❶:
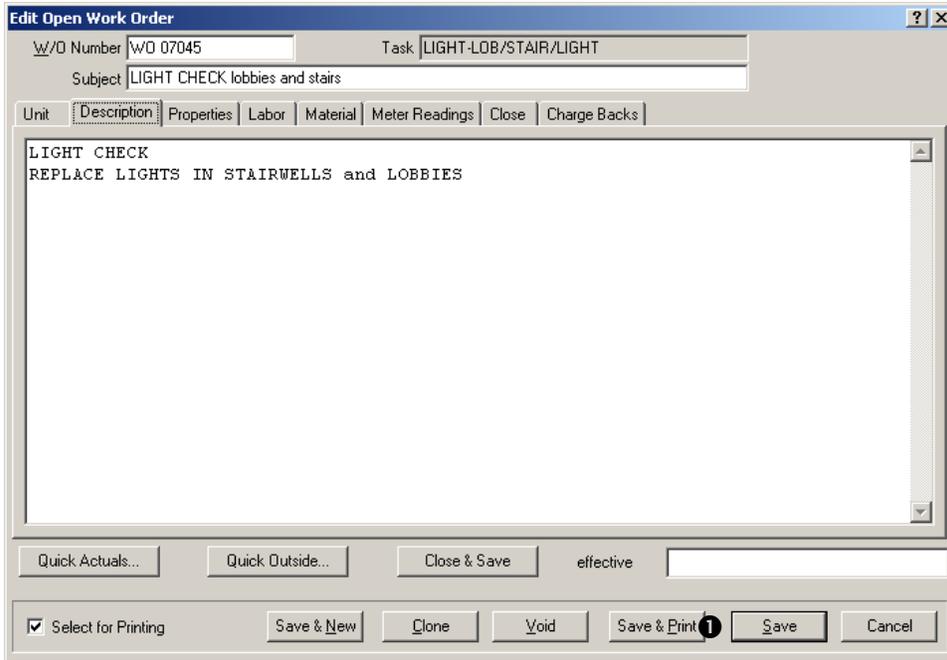
2.   MainBoss opens the following window for printing work orders:

3. To see the work order before it's printed, click **Preview** ❷.

4. To print the work order, click **Print** ❸.

5. To return to the work order window, click **Close** ❹.

☐ **To print more than one work order:**

1. Select **Work Orders** → **Print Work Orders** from the menu. This opens a window for printing work orders:

2. If you just click **Print** ❶ without changing any of the default settings in the window (or in the work order), MainBoss will print every open work order that hasn't been printed before.

The print window also lets you print work orders that you've printed previously. To print such work orders, you must remove the checkmark on **Select for Printing**. After that, you can specify which work orders you want to print.

The fields "**W/O Number**", "**Building**" and "**Unit**" can all specify ranges of values. For example, if you put 6000 in the "**From**" column of "**W/O Number**" and 6010 in the "**To**" column, MainBoss will print all work orders from 6000 to 6010 (inclusive).

As another example, if you set the "**From**" and "**To**" columns of "**Unit**" to refer to the same equipment or space, MainBoss will print work orders pertaining to that unit. (If **Open Work Orders** is selected, MainBoss will only look at open work orders; if **Closed Work Orders** is selected, MainBoss will only look at closed work orders.)

For more information on using this window, use the online help facilities: open the window, then click the ? button in the upper right corner.

Select for Printing

The bottom left hand corner of the work order window has a checkbox labeled **Select for Printing**. Checkmarking this box indicates that you intend to print this work order the next time you print a batch of work orders.

The window for printing work orders also has a checkbox labeled **Select for Printing**. Checkmarking this box indicates that you only want to print work orders that had **Select for Printing** checkmarked.

The window for printing work orders has another checkbox labeled **Turn off Select for Printing after printing**. If this is checkmarked, a work order's **Select for Printing** checkbox is turned off once the work order has been printed.

These three checkboxes work together in a simple way:

1. Whenever you create a new work order, its **Select for Printing** box is turned on by default.

2. When you print work orders with **Work Orders** → **Print Work Orders**, this window's **Select for Printing** and **Turn off Select for Printing after printing** are checkmarked by default. Therefore, if you just click **Print**, MainBoss will print all appropriate work orders that were marked for printing. After each work order is printed, MainBoss turns off their **Select for Printing** option.

Therefore if you use the defaults, MainBoss prints any work order that hasn't previously been printed.

Closing a Work Order

After a job is finished, you should close the associated work order. This means that you record final information about the job; for example, you record the actual labor and material costs (as opposed to any estimates you made when creating the original work order).

☐ **To close a work order:**

1. Using the Work Order browser, begin editing the work order. (This is described in *Modifying Work Orders* .)

2. In the **Properties** section of the work order, review the details to make sure the job started and ended on the dates originally scheduled.

3. Click **Quick Actuals** ❶ for a quick way to designate which of your original labor and materials estimates were correct. For more information, see *The Quick Actuals Facility on page 51*.

4. If some of your original labor or materials estimates were incorrect, put in the correct actual values. This means going to the **Labor** or **Material** section of the work order and clicking **Add Actual** ❷ to add information about internal expenses or **Add Extra Actual** ❸ to add information about outside contractor expenses to a purchase order. These buttons work similarly to the ones for adding estimates before the work starts; see *Assigning Personnel to a Work Order on page 30* and *Reserving Materials for a Work Order on page 34*.

5. In the **Close** section of the work order, specify a repair closing code in "**Repair Cd.**" ❹.

6. Also in the **Close** section, record any "**Closing Comments**" ❺ about the job.

7. Record the length of any downtime in "**Down Time**" ❻.

8. In the **Charge Backs** section of the work order, record any chargebacks. For more information, see *Recording Chargebacks* on page 53.

9. Click **Close & Save** ❼. This saves all the information you have entered and marks the work order as closed.

10. Click **Close** ❽. This closes the work order window.

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Once a work order has been closed, it disappears from the list of open work orders displayed by your Work Order browser.

The Quick Actuals Facility

The Quick Actuals facility displays the original labor and materials estimates on a work order and lets you specify which of those estimates were correct. MainBoss then uses the selected estimates to create "actual" cost records.

For example, suppose that you originally estimate that four workers will each spend an hour on a particular job. When the job is actually done, three of the four workers spent an hour as expected, but one worker spent two hours. In this case, you would use the Quick Actuals facility to specify that the first three workers spent the hour as expected. MainBoss copies information from the original labor estimates and creates "actual cost" records for those three workers.

Quick Actuals won't work for the fourth worker, since the original time estimate was incorrect; in this case, you would have to record the fourth worker's labor costs manually by clicking **Add Actual** in the **Labor** section of the work order.

You can use **Quick Actuals** more than once for the same work order. For example, suppose you have all the labor information for a particular job but don't yet have information about the materials used. In this case, you could use **Quick Actuals** to accept only the labor estimates. Later on, when you have the appropriate information about materials, you can use **Quick Actuals** for the materials too.

◻ **To use the Quick Actuals facility:**

1. In the work order window, click **Quick Actuals**. MainBoss opens a window where you can designate which of your original labor and materials estimates were correct:

2. In the **Material** section, click all the items for which you made correct estimates. (You can select all the items by clicking **Select All** ❶.)

3. For "**Issue Date**" ❷ enter the date that the selected items were used on the job. (If you leave this blank, MainBoss uses the work order's "**Work Start**" date.)

4. In the **Labor** section, click all the entries for which you made correct estimates:

5. For "**Work Start Date**" ❸ enter the date on which the job started.

6. When you have selected all the material and labor estimates that you want, click **Ok** ❹ to save the information and return to the work order itself.

The Quick Actuals facility has many other features for fine tuning the information that is placed on the work order. For full details, see the online help.

Recording Chargebacks

Chargebacks on a work order indicate that all or part of the costs should be charged to another party. For example, a rental management facility might charge tenants for all or part of the costs on some types of repairs.

One work order can include chargebacks to multiple parties. For example, if a job in a rental building affects several tenants, the work order could include a chargeback to each of the tenants involved.

☐ **To record a chargeback on a work order:**

1. Go to the **Charge Backs** section of the work order.

2. Click **Add Charge** ❶. This opens a window where you can specify the chargeback.

3. In "**Charge To**" ❷ enter the name of the person or organization being charged.

4. In "**Labor**" ❸ enter the labor costs being charged.

5. In "**Material**" ❹ enter the material costs being charged.

6. Click **Save** ❺ to save the information, then click **Close** ❻ to close the window.

Remember: Once you have filled out all the information about the job, click **Close & Save** in the main work order window to close the work order.

Units

In order to use MainBoss productively, you should record information about your equipment and spaces. For example, it is useful to record the location of each piece of equipment, plus identification information (make, model, serial number), and any warranties or service contracts that apply. Many organizations will also find it helpful to record the purchase price of equipment and to project replacement costs expected in future years.

All such work can be done through the MainBoss **Units** menu. This chapter looks at procedures for recording information about units. To begin with, here is some basic terminology.

Meter: **A device that is associated with a piece of equipment and that measures information relevant to maintenance work.**

Examples include mileage meters on vehicles or clocks indicating hours of use for pieces of equipment.

It is often helpful to take regular meter readings and record them in MainBoss. For example, this lets you schedule preventive maintenance according to meter readers (e.g. inspecting a piece of equipment every 500 hours of use).

The readings given by a meter are assumed to increase over time. This is not true in some cases (for example with meters that "roll over" at `999999`). To handle this situation, MainBoss uses *meter offsets* as described in *Meter Offsets* on page 70.

Specification: **Information that may be helpful in performing maintenance on a unit.**

With a vehicle, for example, it may be useful to record engine type, gas tank size, tools required for servicing, and so on.

Attachment: **An online document that contains useful information about a unit.**

For example, you might have schematic diagrams available on your computer, or documents recording information that isn't in your MainBoss database.

Any kind of file can be specified as an attachment. For example, a rental management company might have online legal documents describing lease agreements with tenants. These documents could be attached to MainBoss records if they would be useful to personnel who want to know what kind of maintenance has been contractually guaranteed.

System: **A collection of interrelated equipment and/or spaces.**

For example, the equipment making up a factory assembly line might be labeled a system, since problems with one piece of equipment can affect the performance of the whole line.

Grouping your units into systems can make it easier for you to identify large-scale trends or to create more fine-tuned reports. For example, if you specify which units belong to an assembly line, it becomes easy to provide management with a report listing all problems on the assembly line over a given period.

Obsolete Code: An indication of how and/or why a piece of equipment was taken out of service.

For example, you might have different codes indicating whether the equipment was broken, too expensive to maintain, superseded by a newer model, etc.

By keeping track of how equipment becomes obsolete, you may get a better picture of trends in your operations. It also helps make your records more complete, so you can tell exactly why a piece of equipment was discontinued.

Note: Even if you have recorded that a particular piece of equipment is obsolete, MainBoss makes it easy to bring that equipment back into service.

Equipment Type: A class of equipment.

You define equipment types in the **Equipment Types** table. For example, a rental manager facility might define types like "Air conditioners", "Heating equipment", "Pumps", "Fans", and so on.

Classifying equipment in this way lets you fine-tune various reports. For example, you could easily get a report that shows all maintenance work on air conditioners over the summer season. If you don't assign types to equipment, it's harder to focus on particular categories of work.

To create equipment types, select **Units → Tables → Equipment Types** from the menu. You create entries in the table in a similar way to the **Buildings** table (described in *The Buildings Table* on page 11).

Space Type: A class of spaces.

Space types serve the same purpose as equipment types. To create space types, select **Units → Tables → Space Types** from the menu.

Cost Center: Information that might be used in accounting for work on an equipment or space.

For example, your cost center codes might be general ledger account numbers that should be used to record repair costs. Alternatively, the cost center code for a unit might indicate the department that covers all costs for that unit.

To create cost center codes, select **Tables → Cost Centers** from the menu. You create entries in the table in a similar way to the **Buildings** table.

The Equipment Table

The **Equipment** table records information about each piece of your organization's equipment. Each entry is intended to contain all the information you might need about a single piece of equipment, including identification information, technical specifications, cost and replacement value, meter readings, and much more.

☐ **To fill out an equipment record:**

1. Select **Units → Equipment** from the menu. This opens the Equipment browser:
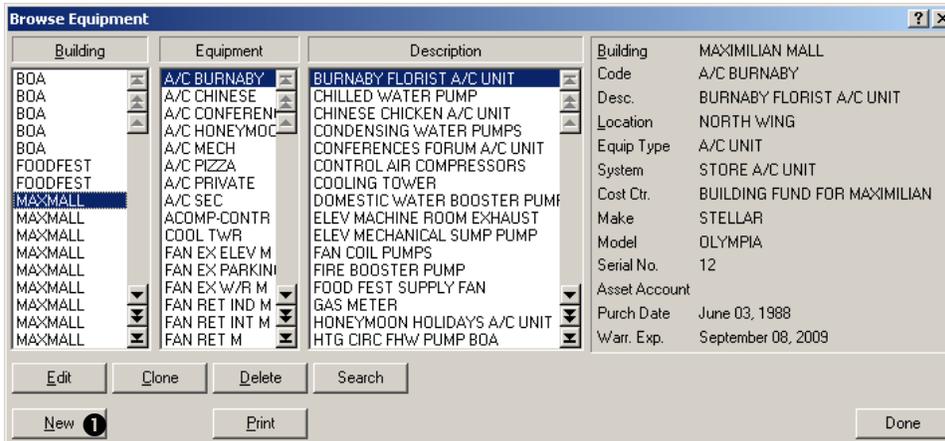
2. Click **New** ❶. This opens a blank equipment record:
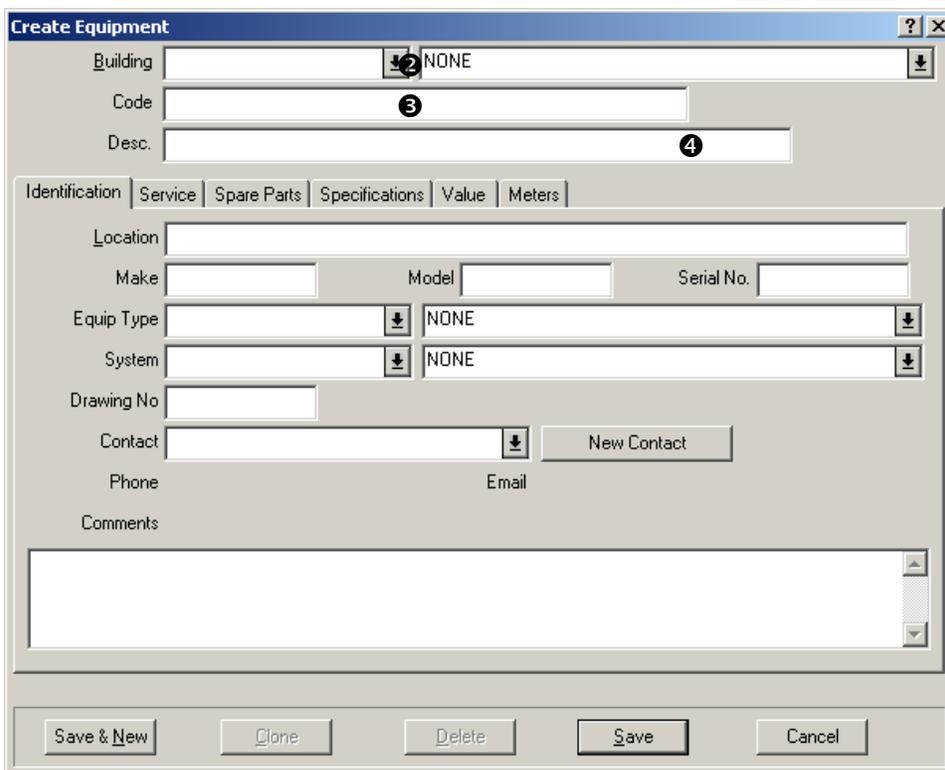
3. In "**Building**" ❷ specify the building that contains the equipment.

4. In "**Code**" ❸ specify an identification code for the equipment.

5. In "**Desc.**" ❹ enter a brief description of the equipment.

6. Fill out the various sections of the record (as described later in this chapter).

7. If you want to enter information about more equipment, click **Save & New** to save the record you've just created and to start a new record; otherwise, click **Save** to save the information you've just entered, then click **Close** to close the window.

Note: You can fill out the sections of the equipment form in any order, and you don't have to fill out every section. Just record whatever information is relevant to your operations and leave the rest blank.

Equipment Identification

The **Identification** section of an equipment record provides basic information about the equipment.

Most of the fields in this section are self-explanatory. However, here are some notes:

Location ❶: The location of the equipment within the specified building.

Drawing No ❷: An identifier that tells where workers can find a schematic drawing for the equipment, if applicable.

Note: If drawings and other materials are available on your computer, they can be attached to this equipment record using the **Specifications** section (as discussed in *Equipment Specifications* on page 62).

Contact ❸: The person that maintenance personnel should contact with any questions regarding the equipment.

Dropping the arrow on "**Contact**" displays your Contacts table (as described in *The*

Contact Table on page 15.) If the contact person for this equipment isn't currently in the Contacts list, click **New Contact** to add the person's name to the table.

For full information about all the fields in this section, see the online help.

Equipment Service

The **Service** section of an equipment record lists service contracts and warranty information about the equipment.

This section contains the following fields:

Warr. Exp. ❶: The date when the original warranty on this equipment expires.

Serv. Co. ❷: The company that provides a service contract on this equipment (if any). The drop-down list here is your Vendor table; therefore, you should make sure that all service contractors are included in the Vendor table. (For more about the Vendor table, see *The Vendor Table* on page 14.)

Access ❸: A default access code for this equipment, to be placed initially on all work orders pertaining to the equipment. For example, you might mark a particular piece of equipment "Access only after 5:00 pm" if most maintenance work on the equipment should be done after business hours.

Note that this is a *default* access code. Individual work orders may be edited to have

different access codes if necessary (for example, if a repair is too urgent to be delayed).

Cost Ctr. ❹: The cost center associated with this equipment.

Service contract list ❺: Any service contracts covering the equipment. This list will be blank if you are just creating a new equipment record. After you have created the record, you can specify that the space is covered by a new or existing service contract using **Units** → **Service Contracts**. For more information, see *Service Contracts* .

Equipment Spare Parts

The **Spare Parts** section of an equipment record lists service contracts and warranty information about the equipment.

The list specifies inventory items that are considered spare parts for this piece of equipment. The number in the **Quantity** column gives the number of the items that are used by the equipment; for example, if a piece of equipment uses two of the same kind of belts, the **Quantity** would be 2.

Note: Before you can specify the spare parts of a piece of equipment, each spare part has to be recorded in your inventory table. For example, if a particular piece of equipment uses a particular type of fan belt, you have to create an inventory record for the fan belt. *Then* you can record that the fan belt is a spare part for that piece of equipment. For information about recording inventory items, see *Describing Inventory Items* on page 101.

☐ **To specify a spare part for a piece of equipment:**

1. In **Spare Parts** section of the equipment record, click **Add Spare Part** ❶. This opens a window that lets you specify the spare part.
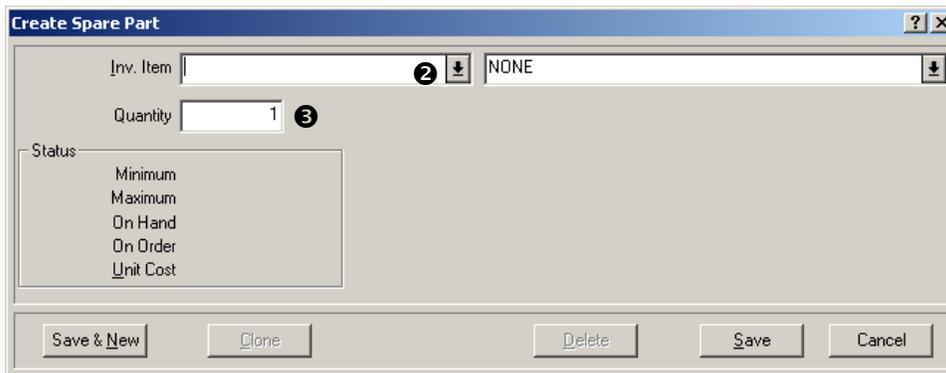
2. In "**Inv. Item**" ❷ specify the material that is a spare part.

3. In "**Quantity**" ❸ specify the quantity of the material that the equipment uses.

4. If you want to enter information about more spare parts, click **Save & New** to save the record you've just created and to start a new record. Otherwise, click **Save** to save the information you've just entered, then click **Close** to close the window.

When you return to the equipment record, the item(s) you've specified will appear in the list in the **Spare Parts** section.

Equipment Specifications

The **Specifications** section of an equipment record lets you add specifications or attachments to the record.

To add a new specification to the record, click **New Specification** ❶. For more information, see *Template Specifications* on page 72.

To add a new attachment to the record, click **New Attachment** ❷. For more information, see *Attachments* on page 157.

Any specifications or attachments you add will be listed in area ❸.

Equipment Value

The **Value** section of an equipment record lets you record the original cost of the equipment and information related to replacement costs.

Most of the fields in this section are self-explanatory. Here are some notes:

Purchase Date ❶: The date on which the equipment was purchased.

Original Cost ❷: The original cost of the equipment.

Note: If you don't know the original purchase date and cost, it's useful to fill in estimates. This gives MainBoss some basis for calculating future replacement costs.

Date Estimated ❸: The date you estimated the values in the **Future Value** area (replacement cost, scrap value, etc.) This tells you how recent your predictions are.

Replacement Cost ❹: The cost to replace this piece of equipment with a similar make and model, if the equipment were to break down on the date given by "**Date Estimated**". MainBoss also has facilities for projecting replacement costs forward, based on a specified rate of inflation; for more information, see *A List of MainBoss Reports* on page 153.

Obsolete ❺: Lets you specify an Obsolete Code when you take this equipment out of service.

Important: Specifying a value in "**Obsolete**" tells MainBoss you are declaring this equipment obsolete. Therefore, you should only specify a value in this field when you are actually taking the equipment out of service.

Equipment Meters

The **Meters** section of an equipment record lets you specify any meters associated with the equipment and record readings on those meters.

☐ **To specify that the equipment has a meter:**

1. In the **Meters** section of the equipment record, click **Add Meter** ❶. This opens a window where you can describe the meter:

2. In "**Code**" ❷ enter an identification code for this meter.

3. In "**Desc.**" ❸ enter a brief description of the meter.

4. In "**UOM**" ❹ enter the units of measurement for the meter.

5. Click **Save** to save information about this meter, then click **Close** to return to the previous window.

6. To record a reading for this meter, click **New Reading** ❺. This opens a window where you can record the reading.

7. Enter the reading value in "**Actual Reading**" ❻.

8. Enter the date/time the reading was taken in ❼.

9. Click **Save** to save the reading you've just entered, then click **Close** to close the window.

Note: Meters are shown in the equipment record, but meter readings are not. For information on viewing meter readings, see *More About Meters* on page 68.

Examining and Editing Equipment Records

From time to time, information about a piece of equipment may change. For example, the equipment might be moved to a different building or you might reassess its replacement cost. In this case, you should modify the equipment record to reflect the change.

Maintenance personnel might also wish to consult equipment records for information about the equipment. For example, you might want to see when the warranty runs out on a particular piece of equipment.

In both cases, you use the Equipment browser to look at the existing record. Open the browser with **Units → Equipment**, select the piece of equipment in the browser's list, then click **Edit**. MainBoss will open the equipment record so you can examine it. You can also make changes as appropriate.

When you have finished with the record, click **Save** to save any changes you've made, then click **Close** to close the record window.

The Spaces Table

The Space table lists the spaces where maintenance might be required. These could include offices in a commercial or industrial building, apartments in a residential building, classrooms in a school, patient rooms in a hospital, common areas, grounds, etc.

MainBoss handles spaces very much like equipment. For example, the record describing a space is like an equipment form without the **Value** or **Meters** sections.

To open the Space browser, select **Units → Spaces** from the menu. From this point onward, creating, examining or editing a space record is exactly like doing the same with an equipment record. See *The Equipment Table* on page 57 for more information.

More About Meters

Equipment Meters on page 65 showed how to specify that a piece of equipment had one or more associated meters. This section discusses additional information about meters.

Basic Principles about Meters

Meters can be used to schedule preventive maintenance. For example, you might specify that a car needs an oil change every 3000 miles as measured by the car's odometer.

In order for the scheduling process to work, you have to record meter readings on a regular basis. Suppose, for example, you record mileage readings for a car every week. After a few readings, MainBoss can figure out the average distance the car travels every day and can then predict when the next oil change should be scheduled. Obviously, this is just an approximation, but the more readings you record, the better predictions MainBoss can make.

When you generate preventive maintenance work orders, MainBoss checks its meter predictions to see if any meter-scheduled jobs are expected to come due in the given period. If so, MainBoss creates an appropriate work order for the required task. Depending on the options you set, MainBoss can also create preventive work orders if it finds that a meter reading has unexpectedly gone past the point when work was supposed to be scheduled (e.g. if you drive a car much farther than usual in a particular week so that you unexpectedly go past the mileage reading where an oil change is due).

"Defective Meter Readings": In order for MainBoss to predict future meter measurements, each meter reading must be higher than the previous one; in other words, the readings should always increase. This can lead to difficulties if a meter reaches its maximum and then "rolls over" back to zero. The way to handle this situation is described in *Meter Offsets* on page 70.

If you record a meter reading that is lower than the last reading, MainBoss issues a message saying that the reading is "defective." First, check to make sure that you typed the reading correctly. If you entered the correct value, either the meter is defective or you need to create a meter offset.

Recording Meter Readings

It is helpful to record meter readings on a regular basis, especially if you base preventive maintenance on those readings. For example, suppose a piece of equipment needs maintenance every 500 hours of use. Then you should record the hours of use regularly so MainBoss can tell you when 500 hours have passed since the last maintenance.

☐ **To record a meter reading:**

1. Select **Units → Browse Meters** from the menu. MainBoss opens a list of meters defined on your equipment.
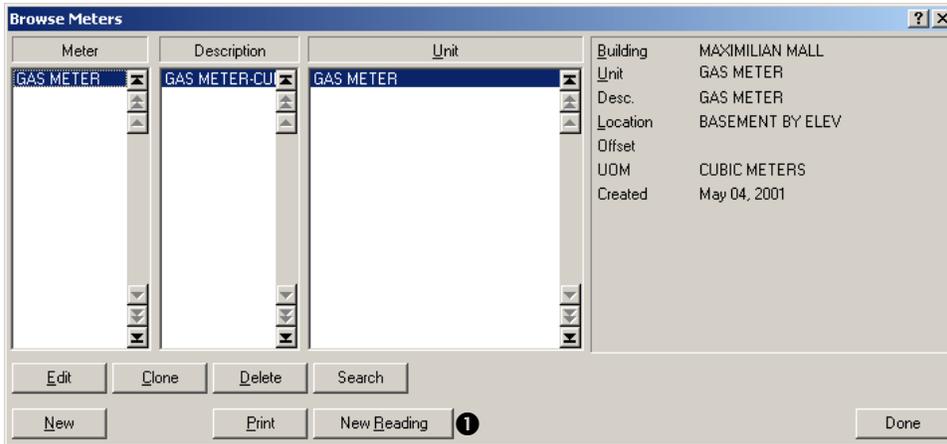
2. Find the desired meter in this list, then click **New Reading** ❶. MainBoss will open a window where you can enter the new reading:
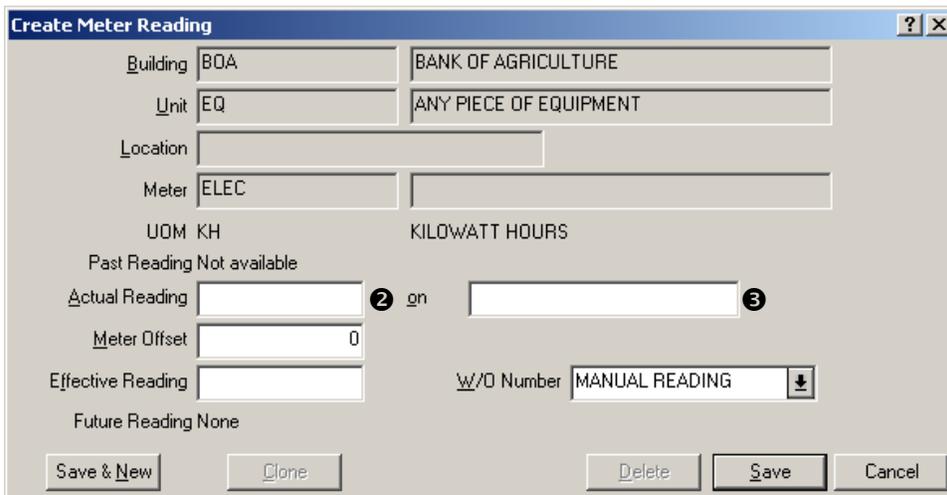
3. Enter the reading in "**Actual Reading**" ❷.

4. Enter the date and time the reading was taken in ❸.

5. Click **Save** to save the information you've entered, then click **Close** to close the window.

Meter Offsets

Many meters "wrap around" when they reach a particular point. For example, a meter with only five digits will wrap around from 99999 to 00000. In this case, 00000 really means 100000 but the meter doesn't have enough digits to show the true measurement.

For measurement accuracy—especially if you are scheduling preventive maintenance based on meter readings—it's important that MainBoss can interpret what a meter reading really means (e.g. that 00000 really means 100000). MainBoss solves this problem with *meter*

offsets. A meter offset is a number that MainBoss adds to the reading you see on the meter in order to come up with the "true" value for the meter.

In our example of the five-digit meter, the meter offset is zero until the first time the meter wraps around. Then you should set the meter offset to 100000; this means that when the meter reads (for example) 00123, the real value is actually 100123. If and when the meter wraps around again, you should set the meter offset to 200000, and so on. In this way, workers can simply record the readings they see on the meter, but MainBoss can still calculate the true value associated with the meter.

Meter offsets may also be used when an old meter breaks and a new meter must be installed. For example, if the old meter breaks at 12345 and you install a new meter that starts at zero, you should specify a meter offset of 12345. This tells MainBoss to add 12345 to all readings from the new meter in order to determine the true value of what is being measured.

> **Important:** You must change the meter offset every time a meter wraps around, every time you reset a meter to zero, and every time you replace an old meter with a new one. Otherwise, MainBoss will not be able to convert meter readings into true values and you will not be able to schedule preventive maintenance by meter readings.

☐ **To specify the meter offset for a meter:**

1. Select **Units → Browse Meters** from the menu. MainBoss opens a list of meters defined on your equipment.

2. Find the desired meter in this list, then click **New Reading** ❶. MainBoss will open a window where you can enter the new reading:

3. Enter the meter offset in "**Meter Offset**" ❷.

4. Click **Save** to save the information you've entered, then click **Close** to close the window.

Template Specifications

It is useful to include specific information about equipment in your MainBoss records. For example, for a forklift truck, it is useful to MainBoss to record facts like engine type, lifting capacity, height, width, and so on. For an exhaust fan, it is useful to record motor amperage, horsepower, RPM, etc. With all types of equipment, it is useful to record the make, the model number, the serial number, and so on; this lets you call up the information quickly from inside MainBoss, without needing to check outside records.

Although templates are most commonly used to record nameplate information about equipment, they can also be used to create forms for storing information about spaces. For example, you might record room dimensions, the type of bulbs used in light fixtures, the location of fuse boxes and so on.

To accommodate the variety of equipment in any facility and to group similar items together, MainBoss provides the ability to define templates or "electronic forms" for recording equipment specifications. For example, the following picture shows a template for an air compressor.

Templates are used by MainBoss when creating equipment records. The template produces a form where you can fill in specifications about a particular piece of equipment. The above template produces a form like this:

The picture above shows the window created from the original template. As you can see, information has been filled into various boxes to describe a particular air compressor.

Creating a Template Specification

Before you begin creating a template specification, you should decide what information should be contained in the template. Then you follow these steps:

☐ **To create a template specification:**

1. Select **Units** → **Tables** → **Templates** from the menu. MainBoss opens the Template browser.
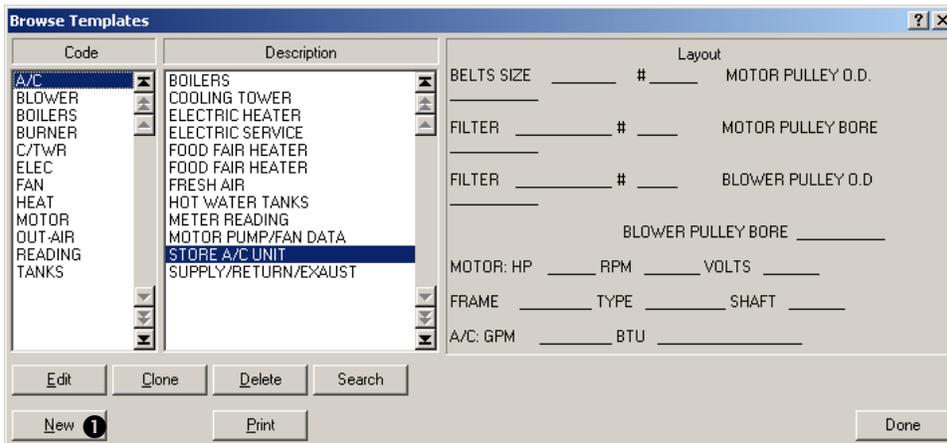
2. Click **New** ❶. MainBoss opens a window where you can enter the template.
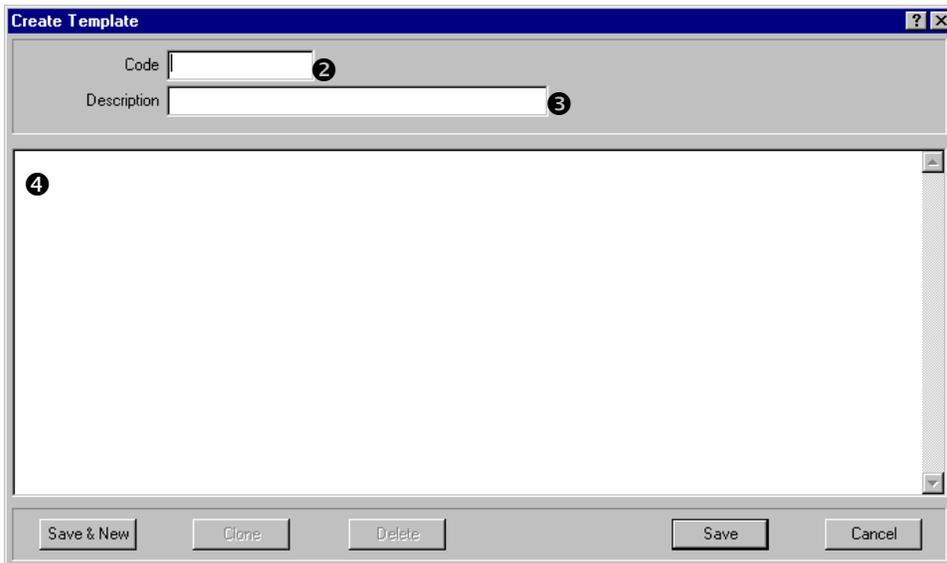
3. In "**Code**" ❷ enter an identification code for this template.

4. In "**Description**" ❸ enter a longer description of what template contains.

5. In ❹ enter the template as a number of lines of text. You type a series of underscore (_) characters everywhere that you want to create a field that you fill in later.

For example,

Serial #: _____

tells MainBoss that the template should contain a label "Serial #" followed by a field that can be filled in with a serial number. The size of the field (the number of characters that can be typed into it) is the same as the number of underscore characters that you type.

The maximum length of any line in the template is 80 characters. There is no limit on the number of lines. A line can contain multiple fields, as in

Field1: _____   Field2: _____   Field3: _____

> **Note:** It's a good idea to put one or more blank characters at the beginning and end of each string of underscore characters. This will make the template easier to use and read later on.

6. When you've typed the template, click **Save** to save what you've entered, then click **Close** to close the window.

Using a Template Specification in an Equipment Record

Once you have created a template specification, you can use it in equipment records. For example, if you create a template that can hold information about forklift trucks, you can then use that template in the equipment records for all your forklift trucks.

An equipment record can use more than one template specification. For example, you might make one template for all automotive vehicles and then separate templates for vehicles with special characteristics (like forklifts, delivery trucks, etc.). With this set-up, a forklift truck might have two templates: the generic automobile template, plus a template that recorded information that was unique to forklifts.

To associate a template with a particular piece of equipment, open that equipment's record in the **Equipment** table (as described in *Examining and Editing Equipment Records* on page 68). Then follow these steps:

☐ **To use a template in an equipment record:**

1. In the **Specifications** section of the equipment record, click **New Specification**. This opens a window listing all existing template specifications.
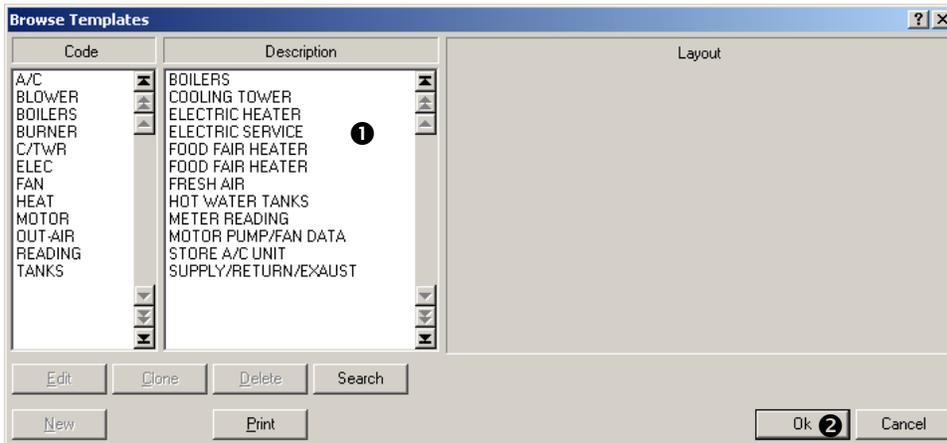
2. In the list of templates ❶, click the one that you want to use with this piece of equipment, then click **Ok** ❷. MainBoss opens a window that lets you fill in the template with information about the equipment.
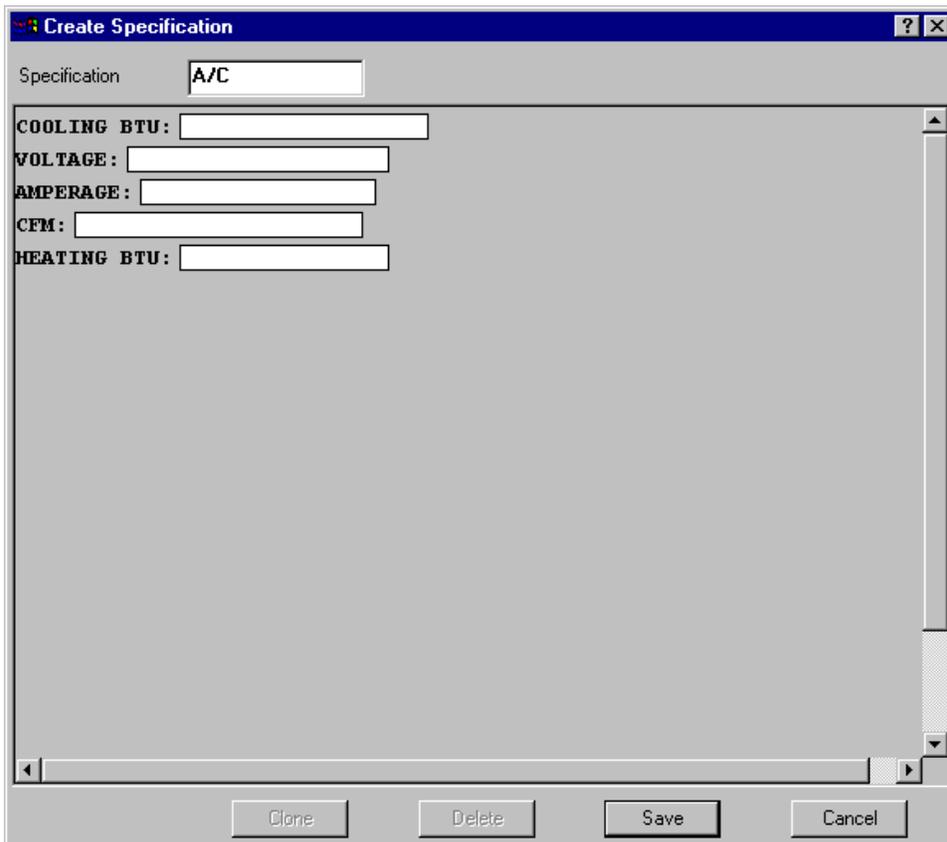
3. To fill in a blank, click on the field, then type a value.

4. Click **Save** to save the information you've entered, then click **Close** to close the window.

5. You'll return to the equipment record. The template specification will be noted in the record:

Note: You can examine or modify the values recorded in the template by clicking on the template in the **Specifications** list, then clicking the **Edit** button below the list.

Obsolete Equipment

When you assign an Obsolete code to a piece of equipment, the record for that equipment is removed from the normal Equipment table and placed in the Obsolete Equipment table. You can see this table by selecting **Units** → **Obsolete** from the menu.

Keeping obsolete equipment records in a special table serves several functions:

☐ The records are still available for the purpose of comparison. For example, you may find it useful to compare meter readings on an old piece of equipment to meter readings on a new one; this can tell you how the new equipment stacks up against the old.

☐ Obsolete equipment is not shown in "**Equipment**" drop-down lists. This makes the lists shorter and easier to scan through; it also avoids the possibility of confusing an obsolete piece of equipment with newer replacements.

⬜ If it happens that you want to bring an old piece of equipment back into service, MainBoss makes it easy to move the record from the Obsolete Equipment table back to the normal Equipment table.

> **Note:** When you make a piece of equipment obsolete, MainBoss does not automatically delete information about spare parts associated with that equipment. For example, the Spare Parts report will show the comment `MADE OBSOLETE` when a spare part is associated with obsolete equipment. If you want to remove such lines from the Spare Parts report, you must open the equipment record for the obsolete equipment and remove all the spare parts records associated with that equipment.

⬜ **To return obsolete equipment to service:**

1. Open the Obsolete Equipment browser with **Units → Obsolete**:
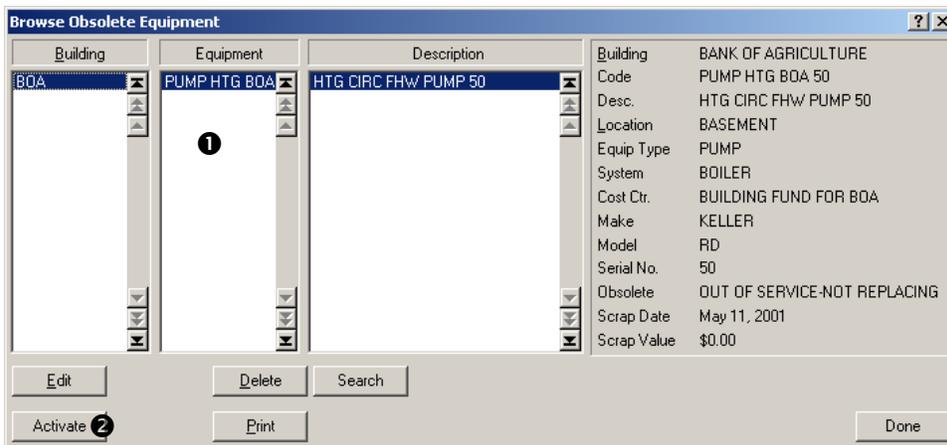
2. In the list of equipment ❶, click on the equipment you want to bring back into service.

3. Click **Activate** ❷. This clears the obsolete code that you previously attached to the equipment record and makes the record available in the normal Equipment table.

Service Contracts

MainBoss can record information about any service contracts on your equipment and spaces.

> **Note:** You should create appropriate records for the equipment and spaces before you record information about the service contracts that cover those units.

When you prepare a work order on a particular piece of equipment or space, the **Unit** section of the work order will list any existing service contracts on the unit.

☐ **To record information about a service contract:**

1. Select **Units** → **Service Contracts** from the menu. MainBoss opens the Service Contracts browser:
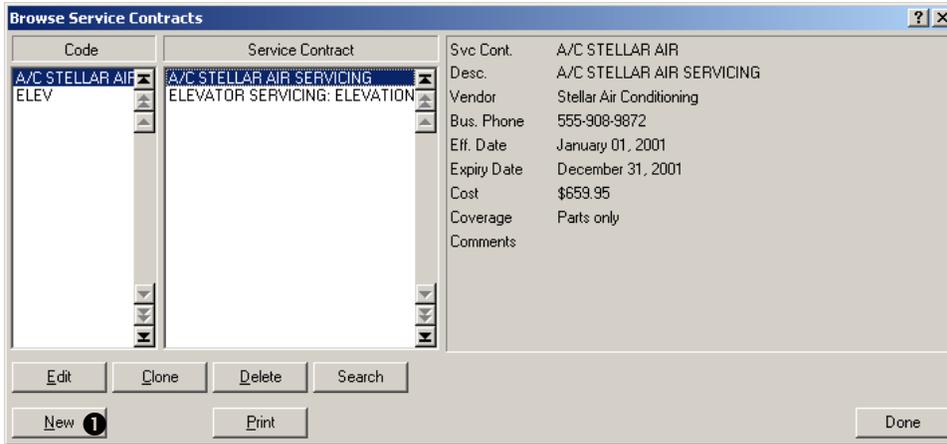
2. Click **New** ❶. MainBoss opens a window where you can enter information about the service contract:
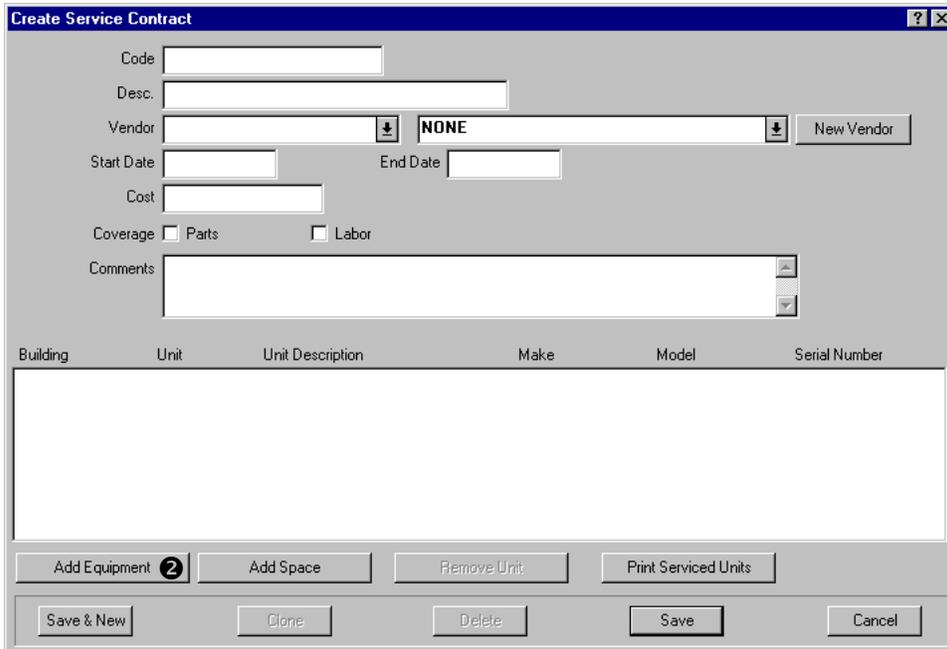
3. Specify general information about the service contract, including the name of the contractor (chosen from the Vendor table), the starting and ending dates, the cost of the contract, and what expenses the contract covers.

4. Next you specify which units are covered by the contract. To specify a piece of equipment, click **Add Equipment** ❷. MainBoss opens the Equipment browser so you can specify the equipment:
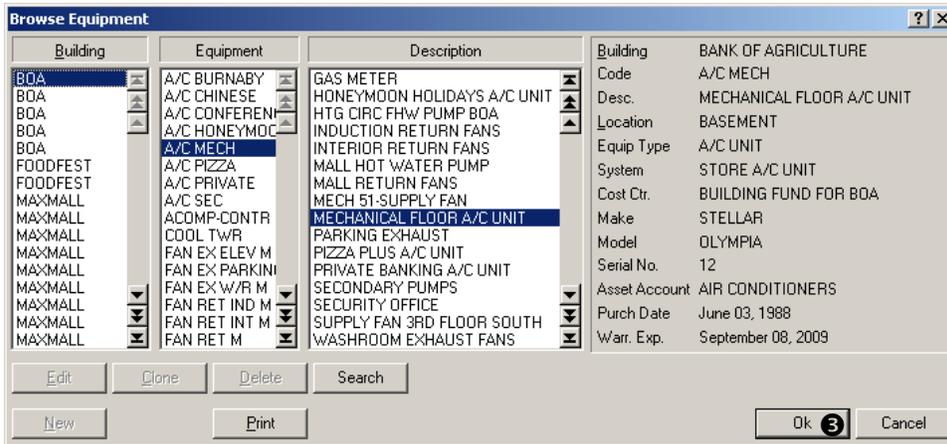
5. Find the equipment in the Browser list, then click **Ok** ❸.

6. MainBoss will return to the previous window, and you'll see the selected equipment in the list of units covered by the contract:
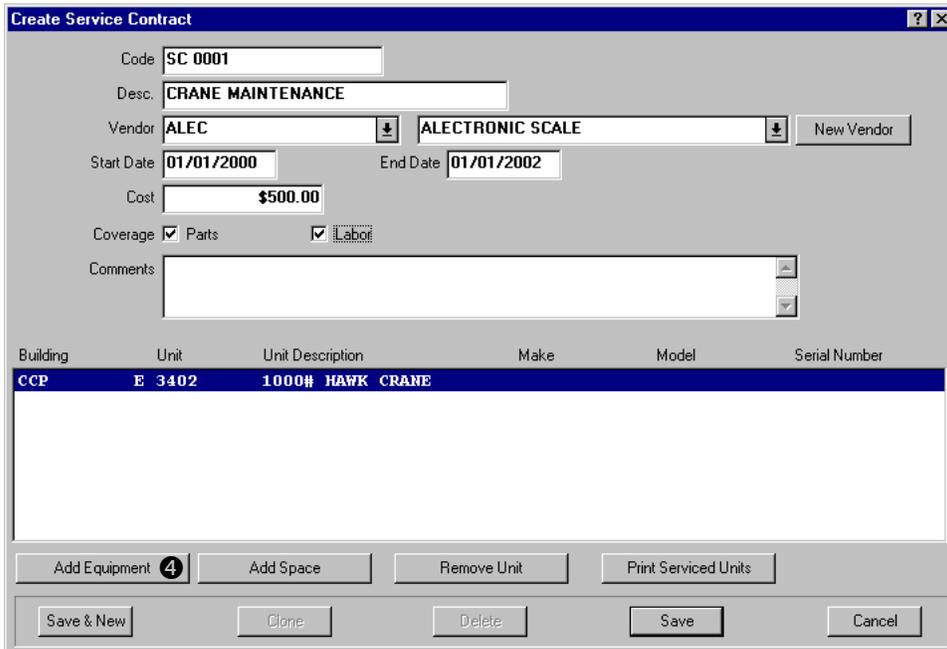
7. To add a space to the service contract, click **Add Space** ❹. The rest of the process is similar to adding a piece of equipment.

8. When you have finished recording which units are covered by the contract, click **Save** to save the information, then click **Close** to close the window.

Preventive Maintenance

This chapter introduces the basics of scheduling preventive maintenance (PM). Each PM job is represented by a work order, just as a repair job would be. However, PM work orders are created and scheduled by MainBoss itself; you do not make them up individually the way that you do with corrective jobs.

Here are some terms that MainBoss uses in connection with preventive maintenance:

Task: **A description of a particular preventive maintenance operation.**

For example, you might write up a task describing everything that should be done during an oil change on a forklift truck. This could include inspecting engine belts, checking the filters, etc. in addition to the oil change itself.

Task descriptions are typically written up as checklists or step-by-step instructions for workers to follow.

Assigned unit: A unit (equipment or space) to which a task has been assigned.

Once you have written up a task description, you must tell MainBoss which units require that type of maintenance. For example, if the task is an oil change on a forklift truck, you would assign that task to all your forklift trucks.

Schedule: **A specification of how often a particular PM task needs to be performed on a unit.**

For example, once you have assigned the "oil change" task to one or more forklift trucks, you must specify a schedule for how often each truck gets serviced.

Work can be scheduled by date (e.g. every three months) or by meter reading (e.g. every 3000 miles). MainBoss's scheduling facilities offer a good deal of flexibility; for example, you can set up schedules like "The first Tuesday of every month" or "Every 30 days during winter but not during the rest of the year."

Preventive work order: A work order created by MainBoss and based on a task.

> For example, suppose a forklift truck is scheduled for an oil change every three months. Then every three months, MainBoss can create a work order based on information from the task description. The work order specifies exactly what workers should do during the oil change.
>
> Since task descriptions are used to create work orders, a task description may contain similar information to a work order. For example, the description might say that every time you do an oil change, you need a given quantity of oil, a new filter, and so on. When MainBoss creates the work order, it takes this information from the task description and uses it to reserve materials for the job.

Steps for Handling Preventive Maintenance:

The following list outlines the usual process for dealing with preventive maintenance work on a particular unit (equipment or space):

Setup Phase:

1. Specify the preventive maintenance *task* (see *Creating Tasks* on page 84).

2. Assign the task to the unit (see *Scheduling Units for Preventive Maintenance* on page 86).

3. Specify a schedule for the task on that unit (see *Specifying Task Schedules* on page 88).

Use Phase:

4. Tell MainBoss to create work orders for all tasks that should be scheduled in the near future (see *Generating Preventive Maintenance Work Orders* on page 94).

5. Adjust the generated work orders as necessary (see *Adjusting Preventive Maintenance Work Orders* on page 95).

6. Print preventive maintenance work orders (see *Printing Preventive Maintenance Work Orders* on page 97).

7. When a job is done, close the work order. This is done exactly like closing corrective work orders—for details, see *Closing a Work Order* on page 49.

```
                        ┌─────────────┐
                        │ Create PM   │
                        │ task        │
                        └─────────────┘
                              ⇩
Setup Phase             ┌─────────────┐
                        │ Assign task │
                        │ to unit     │
                        └─────────────┘
                              ⇩
                        ┌─────────────┐
                        │ Specify     │
                        │ schedule    │
                        └─────────────┘
─────────────────────────────⇩──────────────────────────
                        ┌─────────────┐
                        │ Generate PM │
                        │ work orders │
                        └─────────────┘
                              ⇩
Use Phase               ┌─────────────┐
                        │ Adjust PM   │
                        │ work orders │
                        └─────────────┘
                              ⇩
                        ┌─────────────┐
                        │ Print PM    │
                        │ work orders │
                        └─────────────┘
                              ⇩
                        ┌─────────────┐
                        │ Close PM    │
                        │ work orders │
                        └─────────────┘
```
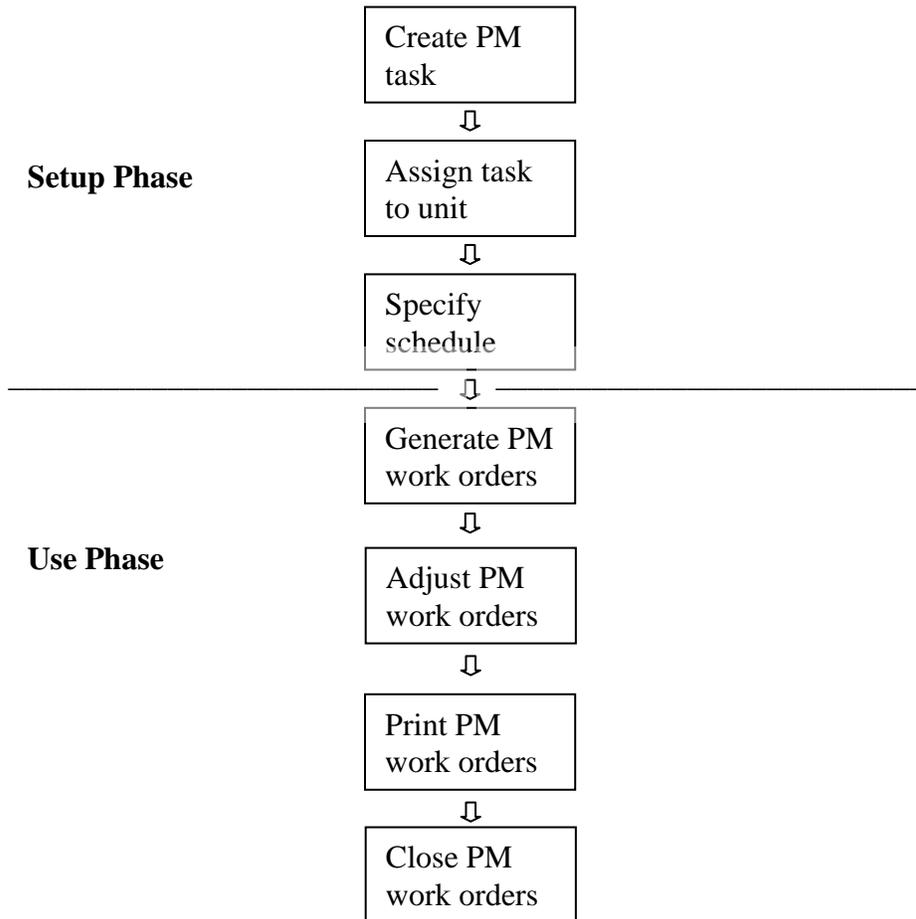
Typical Preventive Maintenance Cycle

Creating Tasks

Tasks have many features in common with work orders. For example, you can assign personnel and reserve materials for tasks. When MainBoss creates a preventive work order from a task, it uses information from the task description to fill out the various sections of the work order.

The task description can contain a lot of information or only a little. For example, if the same workers will always be assigned to a particular PM job, you can record the workers' names and time estimates in the task description. MainBoss will use this information to fill out the **Labor** section of any work order generated from the task.

On the other hand, if you intend to assign a job to whoever has free time on the day in question, you might leave the task's **Labor** section blank. In this case, you would fill in the work order's **Labor** section during the "Adjust Work Order" step (as described in *Adjusting Preventive Maintenance Work Orders* on page 95).

> **Note:** If you divide your workers into Trade classes, you might simply assign a Trade to a job rather than a specific person. For example, if you have a MECHANIC trade category with five people in it, you might specify that the person who does the job will belong to that trade, without specifying which person will actually be assigned.

During the "Adjust Work Order" step, you can also allow for differences between a particular work order and the original task. For example, suppose the task description says that Chris is assigned to a particular job, but Chris is sick or on vacation when the job has to be done. In this case, you can have MainBoss generate the work order from the task as usual, then change the work order to assign someone else to the job. This is another example of *adjusting* work orders after they've been generated.

> **General Principle:** Any information you record in the task description is used to fill out work orders generated from that task. After a work order is generated, you may adjust that work order to reflect any special considerations.

◻ **To create a preventive maintenance task:**

1. Select **Work Orders** → **Browse Tasks** from the menu. This opens the Task browser:
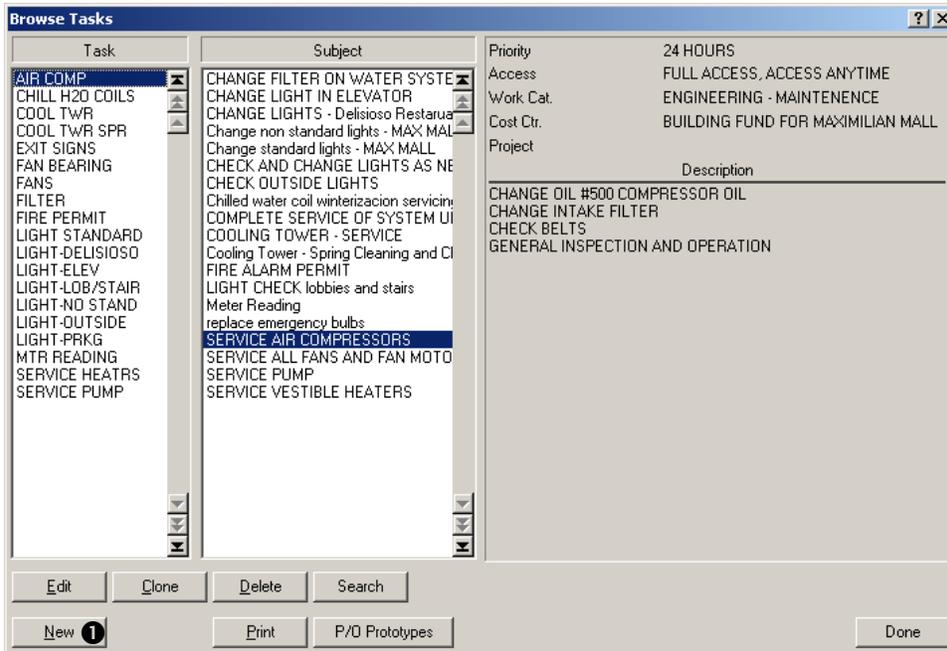
2. Click **New** ❶. This opens a window where you can specify the task.
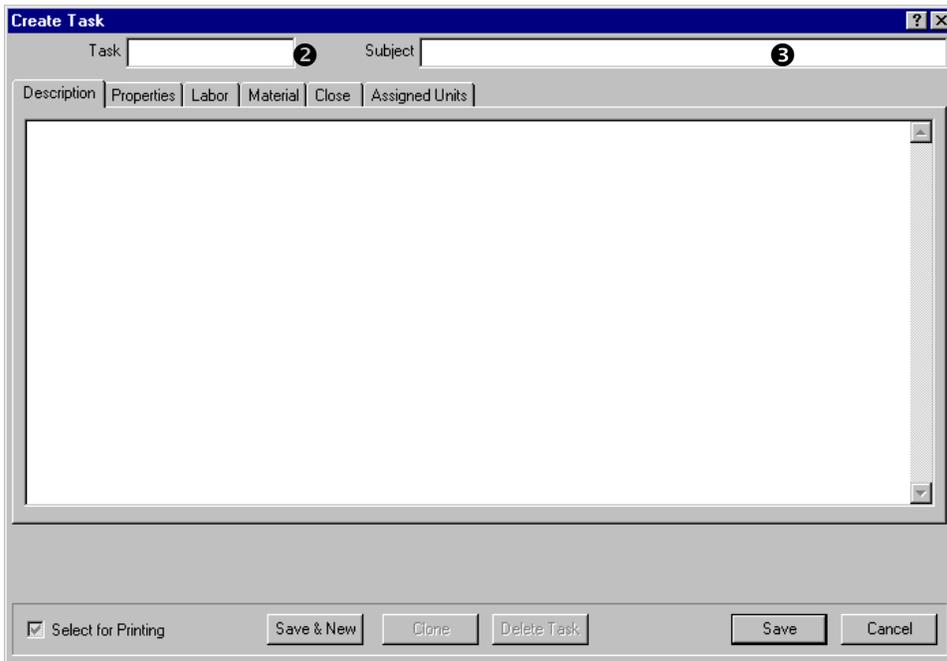
3. In "**Task**" ❷ specify an identification code for this task.

4. In "**Subject**" ❸ specify a brief description of the task.

5. Fill out the **Description**, **Properties**, **Labor**, **Material** and **Close** sections with information that you want to be copied into any work orders generated from this task. (For more about these sections, see *Creating a Work Order* on page 23.)

6. Fill out the **Assigned Units** section as described in *Scheduling Units for Preventive Maintenance* on page 86.

Prototype Purchase Orders: When a work order uses labor or materials from an outside contractor, you create a purchase order to handle the costs. When a *task* uses labor or materials from an outside contractor, you can create a *prototype purchase order* to handle the costs. In the same way that a task can be used to create work orders, a prototype purchase order can be used to create real purchase orders.

For more on prototype purchase orders, see *Prototype Purchase Orders* on page 139.

Note: You can print task descriptions using **Work Orders** → **Reports** → **Print Tasks**.

Scheduling Units for Preventive Maintenance

When you have filled out the other sections of a task description, you use the **Assigned Units** section to specify the units to which the task will apply. For example, if the task describes an inspection procedure for air-conditioning units, you would specify all the air-conditioners that need that kind of inspection.

When you assign a unit to a task, MainBoss gives you the chance to add extra information to any work orders created for that unit. For example, suppose that the inspection for a particular air-conditioner model requires a few more steps than the standard inspection process. Then the main task description can describe a "generic" inspection, while the unit assignment information can describe any extra steps needed by this specific air-conditioner unit.

As another example, suppose that changing the oil on a particular make of forklift truck requires a special tool that isn't required with other trucks. In this case, the unit assignment information for that truck can record that the special tool is required.

When MainBoss creates a preventive work order based on a task, it *adds* the assigned unit information to the information given in the task. Therefore, the resulting work order consists of information from the task, *plus* information from the assigned unit record.

(Some fields can only contain one piece of information. For example, the "**Access**" field can only contain a single access restriction code. In this case, the work order will have the setting from the assigned unit record *instead of* the one from the original task.)

☐   **To schedule a unit for preventive maintenance:**

1. Go to the **Assigned Units** section of the task description.
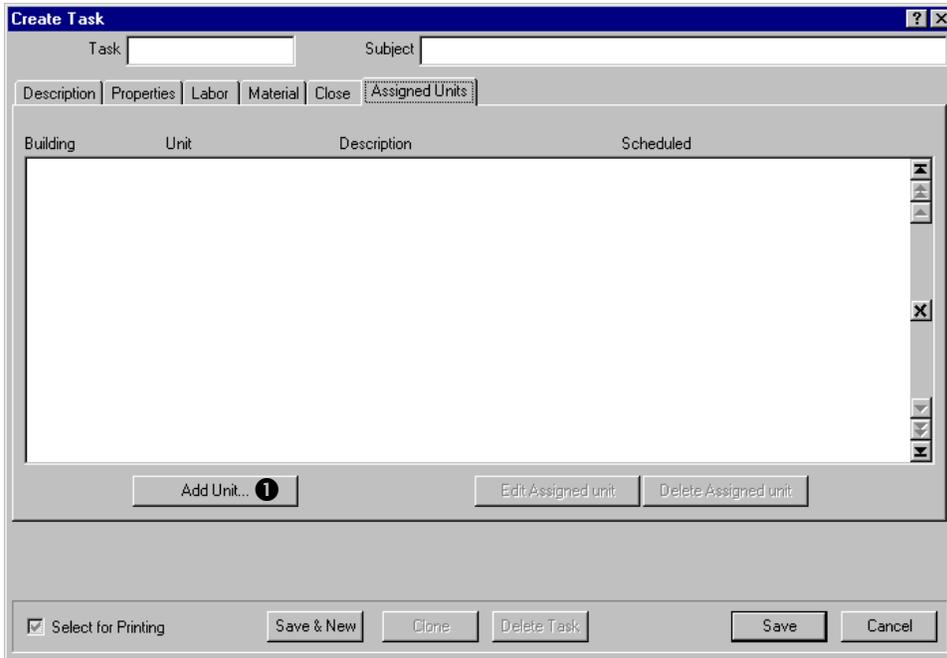
2. Click **Add Unit** ❶ to add an entry to the list of units assigned to this task. MainBoss opens a window where you can specify information about the unit.
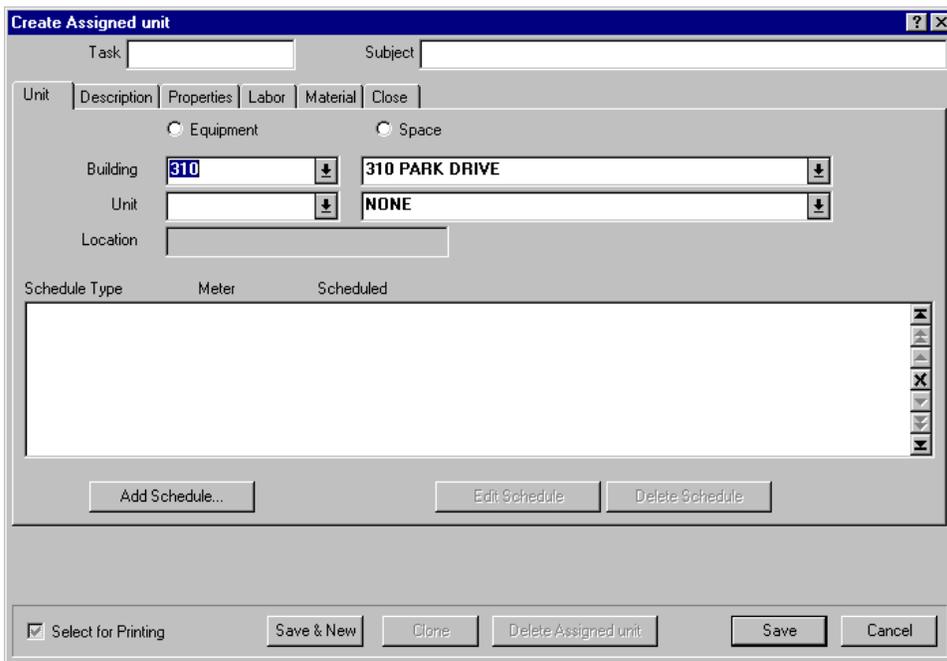
3. In the **Unit** section, specify the unit that will receive this type of preventive maintenance. You must specify whether the unit is **Equipment** or a **Space**, the "**Building**" that contains the unit, and the "**Unit**" itself.

4. Fill out the remaining sections of the unit assignment with information that you want added to any work orders generated for this unit. These are filled out in a way similar to filling out a work order; for more information, see *Creating a Work Order* on page 23.

Specifying Task Schedules

Each unit assigned to a task has an associated schedule for performing that task. Schedules may be set up by date, meter reading, or both. For example, a vehicle might be scheduled for an oil change every three months or 3000 miles, whichever comes first.

The scheduling facilities of MainBoss can set specific date assignments (for example, the first Tuesday of every month) or assignments that allow more leeway (for example, every three months, unless the date falls on a weekend, in which case the job is bumped to the following Monday).

You can also set up seasonal schedules. For example, a job like inspecting air-conditioners can be scheduled every 30 days during the summer but not during the winter.

Note: Examples at the end of this section show how to set up various types of schedules.

Multiple Schedules: You may set up multiple schedules for the same job. For example, if an oil change should be scheduled every three months or 3000 miles, you would set up two schedules: one for every three months and one for every 3000 miles. You would specify that both these schedules were relative to the last time you made an oil change; therefore, when either the date or the meter reading came up, MainBoss would schedule the oil change.

Similarly, if you want to have different schedules in different seasons, you would create a separate schedule for each season.

The Schedule Basis: The **Schedule Basis** is the date or meter reading when you want to "start the clock" for preventive maintenance. In the case of scheduling an oil change, this is usually the date or odometer reading when you did the last oil change.

When you first set up the schedule for a unit, you must specify the **Schedule Basis** by hand; for example, you must type in the date of the last oil change. After that, MainBoss automatically sets the **Schedule Basis** for you (since it knows the last time you did the preventive maintenance job).

MainBoss offers a number of options for setting the **Schedule Basis**. For example, suppose a particular job takes five days to complete. If the job has to be scheduled every three months, MainBoss lets you specify whether that means three months after the first day of the job or three months after the last day.

As another example, consider an oil change that should be scheduled every three months or 3000 miles. You do this by setting up one schedule that says "every three months" and

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another that says "every 3000 miles". But when an oil change happens, you want to "start the clock" again for both schedules—you don't want MainBoss to tell you it's time for an oil change after three months, then tell you it's time for another oil change a short time later when you reach 3000 miles. Therefore, you want to start the clock on both schedules when you do the actual oil change, whether you did the oil change by date or by meter.

Because of such considerations, MainBoss gives you several options for setting the **Schedule Basis** for the next job:

☐ The day or meter reading when the current job is scheduled to begin (even if the job doesn't actually start then) [**Next schedule**]

☐ The day or meter reading when work actually starts on the current job [**Work Start**]

☐ The day or meter reading when work actually ends on the current job [**Work End**]

☐ The day or meter reading when work actually starts on any preventive maintenance for the unit, based on this task (this deals with the "three months or 3000 miles" situation) [**Work Start on any Work Order for Task/Unit**]

☐ The day or meter reading when work actually ends on any preventive maintenance for the unit, based on this task [**Work End on any Work Order for Task/Unit**]

The default is to choose the day or meter reading the current job is scheduled to begin (**Next schedule**).

The scheduling facilities also let you specify what should happen if MainBoss finds that a job is overdue (i.e. it didn't begin on the scheduled date or at the scheduled meter reading). There are two choices:

☐ Simply skipping the task this time and scheduling it again the next time it comes due [**Skip task and reschedule**]

☐ Reschedule the job as soon as possible [**Defer work to Generate date** as explained below]

For example, suppose a particular job is scheduled for the first of every month. Also suppose that you generate PM work orders on April 2, and MainBoss notices that you haven't started the job that was scheduled for April 1.

☐ If you specified that the task should be skipped, MainBoss simply reschedules for May 1 when the job comes due again.

☐ If you specify that you should reschedule as soon as possible, then MainBoss reschedules the job for April 2. (This is called deferring the work until the "Generate Date" because the day MainBoss generates new PM work orders is the day MainBoss notices that the existing work order is overdue.)

Scheduling by Meter: When scheduling by meter reading, you must specify which meter should be used. This handles the situation where a piece of equipment might have more than one meter.

The "**Schedule Basis**" value should be the meter reading at which you last performed the preventive maintenance job. "**Schedule Interval**" should be the desired increment between jobs. If you fill in these two values, MainBoss automatically sets "**Next schedule**" to the meter reading where the next job should be scheduled. (You can also set "**Next schedule**" manually in situations where you want to specify a different value than normal.)

For example, suppose you want to schedule an oil change for a vehicle every 3000 miles. In "**Schedule Interval**" you set `3000` (indicating the job should be performed every 3000 miles). In "**Schedule Basis**" you set the odometer reading for the last time you did an oil change. MainBoss will automatically set "**Next schedule**" to the mileage measurement at which the next oil change should be performed.

When you generate preventive maintenance work orders, MainBoss forecasts future meter readings based on past averages. For example, suppose "**Next schedule**" for a particular job is 10,000. Whenever you generate PM work orders for a given period, MainBoss looks at past readings for the meter, calculates the average day-to-day increase in that meter, and determines whether the meter is expected to reach 10,000 during the period. If so, MainBoss generates an appropriate PM work order.

☐ **To specify a schedule for a unit:**

1. In the **Unit** section of an assigned unit record, click **Add Schedule** ❶.
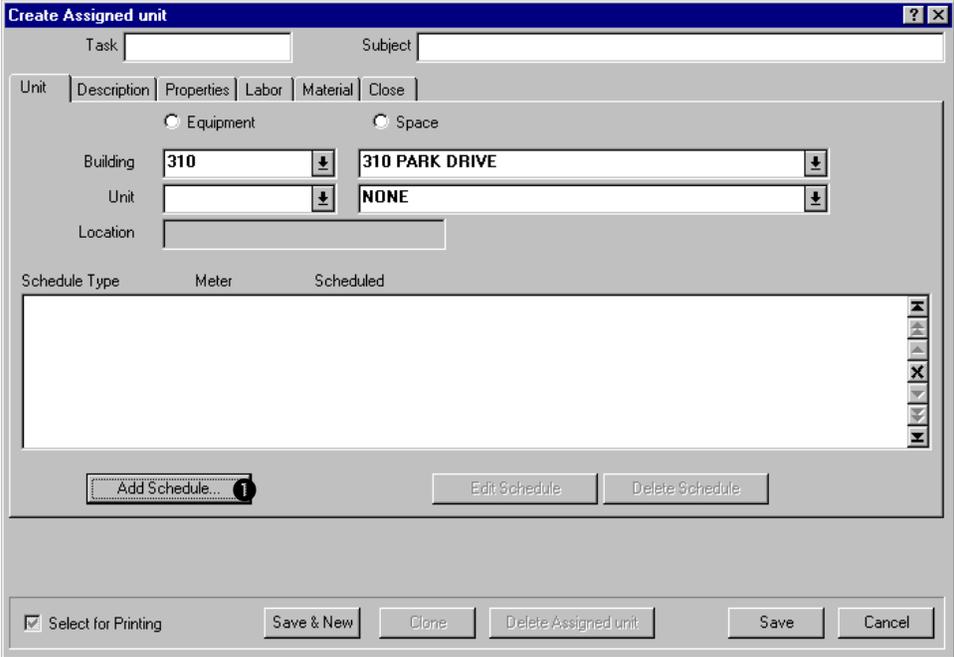
2. MainBoss opens a window where you can specify the schedule for this unit:

3. Specify whether the work will be scheduled **By Date** ❷ or **By Meter** ❸.

4. Set "**Schedule Basis**" ❹ (typically to the date or meter reading when this PM task was last performed on the unit). If you are scheduling by meter reading, you must also specify the meter involved.

5. Set "**Schedule Interval**" ❺ to the length of time or meter readings between one job and the next. (Time can be set in days, weeks, months, quarters, or years.)

6. For "**Set Schedule Basis to**" ❻ choose an option for controlling what will be the basis for scheduling the next time this task is done.

7. For "**If task is overdue**" ❼ choose an option for what happens if MainBoss is generating work orders and finds that a previously generated work order hasn't been started yet.

8. Go to the **Exceptions** section:

9. If you only want tasks scheduled during a portion of the year, fill in the start and end dates of that period in "**On Season Start**" and "**On Season End**" ❽.

10. If you want to make sure jobs are not scheduled on some days of the week (for example, weekends), remove the checkmarks from the days you want to eliminate ❾.

11. Click **Save** to save the schedule you have just created, then click **Close** to close the window.

Scheduling Examples

Oil change every 3 months or 3000 miles: You need two schedules for the same unit:

1. In the **Schedule** section, click **By Date**.

   Set "**Schedule Basis**" to the date of the last oil change.

   Set "**Schedule Interval**" to 3 months.

   Set "**Set Schedule Basis to**" to **Work Start on any Work Order for Task/Unit**.

2. In the **Schedule** section, click **By Meter**.

   Set "**Schedule Basis**" to the odometer reading at the last oil change.

   Set the meter associated with "**Schedule Basis**" to the appropriate odometer (mileage meter).

   Set "**Schedule Interval**" to 3000.

Set "**Set Schedule Basis to**" to **Work Start on any Work Order for Task/Unit**.

Scheduling a job for the first Tuesday of every month:

In the **Schedule** section:

Click **By Date**.

Set "**Schedule Basis**" to the most recent first Tuesday of the month.

Set "**Schedule Interval**" to 1 month.

In the **Exceptions** section:

Remove the checkmarks on every weekday but **Tuesday**.

A similar techinque can be used for dates like "the second Wednesday of the month", "the third Thursday" and so on.

Scheduling a job every month May - October, every three months otherwise: You need two schedules for the same unit.

1. In the **Schedule** section, click **By Date**.

    Set "**Schedule Basis**" to the last date the job was done.

    Set "**Schedule Interval**" to 1 month.

    Set "**Set Schedule Basis to**" to **Work Start on any Work Order for Task/Unit**.

    In the **Exceptions** section, set "**On Season Start**" to May 1.

    Set "**On Season End**" to October 31.

    Set "**If triggered in off season, then**" to **Defer until season starts**.

2. In the **Schedule** section, click **By Date**.

    Set "**Schedule Basis**" to the last date the job was done.

    Set "**Schedule Interval**" to 3 months.

    Set "**Set Schedule Basis to**" to **Work Start on any Work Order for Task/Unit**.

    In the **Exceptions** section, set "**On Season Start**" to November 1.

    Set "**On Season End**" to April 30.

    Set "**If triggered in off season, then**" to **Defer until season starts**.

Generating Preventive Maintenance Work Orders

In order to schedule preventive maintenance, you must explicitly tell MainBoss to generate appropriate work orders.

Important: PM work orders are not generated until you tell MainBoss to do so. You must explicitly tell MainBoss to generate the work orders.

PM work orders are always generated for a specific period. For example, every Friday you might generate work orders for the next week (up to and including the next Friday). MainBoss will then check all the PM schedules and see which jobs come due in the specified period. MainBoss will also check all the meter readings that have been recorded and will determine which jobs will come due based on those readings.

You specify a time period by giving the last day of the period. MainBoss will generate work orders for all jobs up to and including that day, and after the date you used the last time you generated work orders. For example, suppose that the last time, you generated all work orders up to March 30. The next time you generated work orders, you might tell MainBoss to generate work orders up to April 15; then MainBoss will generate work orders for all PM jobs that come due from March 31 to April 15 (inclusive).

By default, MainBoss is set up to generate PM work orders every week. You can change this default by setting your preferences (as described in *Preferences* on page 164) or by setting a different date when you actually generate the work orders.

☐ **To generate PM work orders:**

1. Select **Work Orders** → **Generate Work Orders** from the menu. This opens the following window:
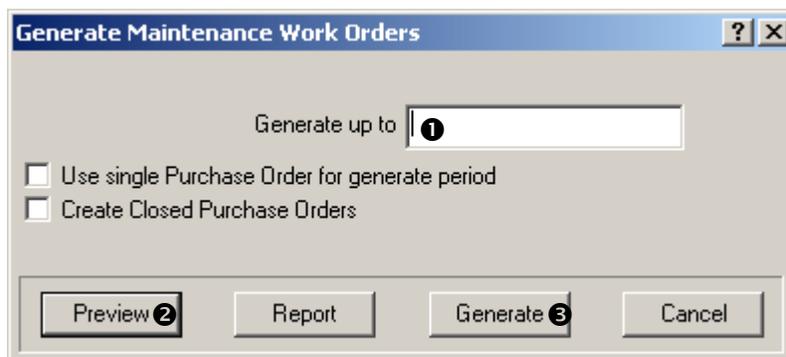
2. In "**Generate up to**" ❶ fill in a date. MainBoss will generate work orders up to and including that date.

3. If you like, click **Preview** ❷ to preview which work orders would be generated in the given period. MainBoss may take some time to determine what these work orders would be. When it has done so, it displays the work orders. (Each line in the display

has a "disposition" providing information about the generation process. For an explanation of these dispositions, see the online help.)

4. Click **Generate** ❸ to generate the actual work orders. (MainBoss may take some time to generate the work orders. When it's finished, MainBoss displays how many work orders were actually generated.)

5. Click **Close** to close the window.

Preview shows what work orders are due to be generated but does not actually create the work orders. To create the PM work orders, you must click **Generate**.

Adjusting Preventive Maintenance Work Orders

After MainBoss has generated a set of PM work orders, you may adjust any of those work orders to reflect special circumstances. For example, suppose that a PM task description assigns a job to a particular worker, but that worker is sick or on vacation. In this case, you should adjust the generated work order to assign the job to someone else.

As another example, suppose a vehicle is scheduled for a routine oil change but you've also received a complaint about a slow leak in one of the vehicle's tires. You may choose to modify the oil change work order to tell workers to deal with the slow leak too.

You can adjust a work order at any time, but many organizations find it convenient to review PM work orders immediately after the work orders have been generated. At this point, they'll be easy to find in the list of outstanding work orders—they'll be at the end because they've just been generated.

To adjust a PM work order, follow the instructions for modifying work orders given in *Modifying Work Orders* .

Work Order Schedules

After you have generated PM work orders, it's often a good idea to check upcoming schedules for your personnel. For example, if a particular worker has been scheduled to do several jobs on the same day, work orders might need to be adjusted to give part of the work to someone else.

MainBoss can display and/or print off a report on the work scheduled for any period. For example, if you have just generated PM work orders for the upcoming week, you'll probably find it useful to get a report on exactly who has been scheduled to do what during that week.

□ **To obtain a work order schedule for a particular period:**

1. Select **Work Orders** → **Reports** → **ManPower Schedule** from the menu. MainBoss opens a window where you can specify what you want to see in the report:

2. Use the "**From**" and "**To**" columns of "**Date**" ❶ to specify the period you want covered by the report.

3. You can get a schedule for a single worker by specifying that worker's name in both the "**From**" and "**To**" columns of "**Personnel Name**" ❷.

4. If you just want a summary of scheduled jobs, click **Summary** ❸. If you want more details about each job, click **Detail** ❹.

5. Click **Preview** ❺ for a preview of the schedule, or click **Print** ❻ to print the schedule.

After you have examined the schedule, you may want to adjust some of the work orders. For example, if a worker is scheduled for too much work on a particular day, you should reassign some of the work to somebody else, or reschedule some of the jobs to a different date.

Printing Preventive Maintenance Work Orders

After you have made any desired adjustments in the generated PM work orders, you're ready to print the work orders.

□ **To print generated PM work orders:**

1. Select **Work Orders** → **Print Work Orders** from the menu. MainBoss opens a window where you can specify which work orders to print:

2. Checkmark **Preventive** ❶ and clear the checkmark on **Corrective** ❷.

3. Click **Preview** ❸ to preview the work orders to be printed and/or click **Print** ❹ to print them.

Closing Preventive Maintenance Work Orders

You close a preventive maintenance work order the same way you close other work orders. However, it's important to make sure that you set the "**Work End**" date to the date when the job was actually finished.

General Inventory Control

This chapter outlines how MainBoss helps you keep track of your materials inventory. In particular, the chapter examines how to record information about what items you have in inventory and where those items are stored.

> **Note:** This chapter does *not* look at purchasing and receiving. That topic is covered in *Purchasing and Receiving* on page 117.

As inventory materials are used, MainBoss automatically adjusts its database according to the information recorded when you close a work order. For example, if a particular work order states that you put a new tire on a forklift truck, MainBoss automatically reduces the count of tires in your inventory (as of the date of issue as stated on the work order).

You may also make manual adjustments to inventory totals. This lets you account for breakage, transfers from one storeroom to another, and other factors that influence your inventory. (See *Other Inventory Operations* on page 112.)

MainBoss can print off a checklist stating what items a particular storeroom is expected to contain. Comparing this checklist to the actual storeroom contents lets you reconcile MainBoss's records with actual counts. For more information, see *Taking Physical Inventory* on page 109.

Inventoried vs. Non-Inventoried Items: Recall that MainBoss distinguishes between two types of materials:

☐ *Inventoried items* are materials whose use you monitor on a per-job basis.

☐ *Non-inventoried items* are materials whose use you do not monitor so precisely, either because they are used rarely and seldom kept on hand, or because they are too much trouble to monitor exactly (e.g. masking tape, glue, pencils, and other widely used items).

The most important difference between the two is that MainBoss doesn't try to tell you when to reorder non-inventoried items (because it doesn't keep track of how much you're using). However, you can still include non-inventoried items on purchase orders. For example, you probably don't want MainBoss to keep track of every dab of glue that gets used on a job, but you can still write up a purchase order to buy more glue.

Inventory Category: An inventory category is a name used to group inventory items.

> For example, you might create an inventory category named LIGHT BULBS under which you group all the various kinds of light bulbs used in your operations.

To create inventory categories, select **Inventory** → **Tables** → **Categories** from the menu.

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Creating a New Inventory Item

Here are the steps you typically follow to add a new item to your existing inventory.

1. Create a record for the new inventory item (see *Describing Inventory Items* on page 101).

2. Specify basic information about the item (see *Inventory Item Properties* on page 102).

3. Record your current inventory levels for the item (where the item is stored in your storerooms and how much you have on hand) as described in *Inventory Item Status* on page 103.

4. If the item is a spare part for one or more pieces of equipment, record which pieces of equipment use the part (as described in *Inventory Item Usage* on page 106).

```
┌─────────────┐
│ Create item │
│ record      │
└─────────────┘
       ⇩
┌─────────────┐
│ Specify basic│
│ info        │
└─────────────┘
       ⇩
┌─────────────┐
│ Record stock│
│ on hand     │
└─────────────┘
       ⇩
┌─────────────┐
│ Record spare│
│ part info   │
└─────────────┘
```
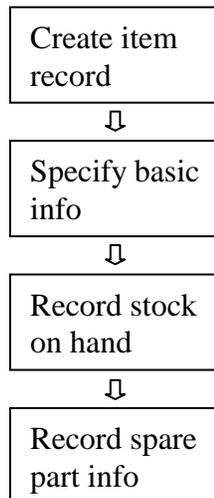
Creating a New Inventory Item

Describing Inventory Items

For each item you keep in inventory (spare parts, tools, and other materials used in your maintenance work), you may create an entry in the **Inventory Items Table** (see *Describing Inventory Items* on page 101). This entry specifies information about the item, including:

☐ The minimum quantity you want to keep on hand. If your stock goes below this quantity, MainBoss can notify you that it's time to reorder.

☐ The maximum quantity you want to keep on hand. When MainBoss reorders, it recommends that you buy the quantity required to get back up to this maximum.

☐ Where the item is stored. There may be more than one storage location if your stock of the item is divided amongst several different storerooms.

☐ Where the item is used. For example, if a particular spare part can be used in many different pieces of equipment, you can record all the equipment that uses the spare part. This kind of cross-reference can be useful in projecting future materials use.

☐ The quantity of the item currently on hand, and the cost of that quantity. You can specify cost by giving the cost per item, or the total cost of all such items in your inventory.

☐ **To begin recording information about an item:**

1. Select **Inventory** → **Browse Items** from the menu. MainBoss opens the Items browser, showing the items for which you have already recorded information:

2. Click **New** ❶. This opens a window where you can enter information about a new item:

3. In "**Code**" ❷ enter an identification code for the item.

4. In "**Desc.**" ❸ enter a description of the item.

5. Fill out the **Properties** section as described in *Inventory Item Properties* on page 102.

6. Fill out the **Status** section as described in *Inventory Item Status* on page 103.

7. Fill out the **Usage** section as described in *Inventory Item Usage* on page 106.

8. Click **Save** to save the information you have recorded, then click **Close** to close the window.

Inventory Item Properties

The **Properties** section of an inventory item record provides basic information about the item:

□ **To fill out the** Properties **section of an inventory item record:**

1. In "**Inv. Cat.**" ❶ specify an inventory category.

2. In "**UOM**" ❷ specify the units used to measure this type of item (for more about units of measure, see *MainBoss Concepts* on page 5).

3. If you are describing an inventoried item, click **Inventoried Item** ❸. In "**Minimum**" ❹ fill in the minimum quantity you want to keep on hand (as measured in the given units of measurement), and in "**Maximum**" ❺ fill in the maximum quantity you want to keep on hand.

4. If you are describing a non-inventoried item, click **Non-Inventoried Item** ❻.

5. In "**Comments**" ❼ enter any extra information you might want to record about this type of item.

When you have entered more information about the item, the list ❽ in this section will show all the storeroom locations where items of this kind are kept.

Inventory Item Status

The **Status** section of an inventory item record contains a list of all transactions involving items of the given kind. For example, it lists purchase orders where the item was purchased and received, work orders where the item was used, and price quotes from suppliers.

The **Type** column contains a two-letter code that tells you what the rest of the line means. Possible codes are:

WO Item was issued for use in a work order. **Quantity** tells you how much was used, **Value** tells you the value, and **Reference** tells you the work order number.

IS Item was issued manually. **Reference** gives the building and storeroom that contained the item(s) issued, the issue code stating the reason for the issue, and the information that was specified in the "**Issue to**" field when the item was issued.

PO Item was ordered on a purchase order. **Reference** gives the purchase order number and the vendor code.

RC Item was received in response to purchase order. **Reference** gives the building and storeroom where the received items went, the waybill number of the receipt, the associated purchase order number, and the vendor code.

PC Quantity was changed by a physical count (taking inventory). **Reference** gives the building and storeroom where the physical count was recorded, and the old count in that storeroom (before you recorded the new physical count).

TF Item was transferred out of a storeroom. **Reference** gives the building and storeroom that the item was transferred from.

TT Item was transferred to a storeroom. **Reference** gives the building and storeroom that the item was transferred to.

AJ Item record was adjusted for some non-standard reason. **Reference** gives the building and storeroom in which the adjustment was made, and the adjustment code specified.

PQ Price quote on the item (created by clicking **New Price Quote**). **Reference** gives the code of the vendor who offered the quote.

EV Estimated value (created by clicking **New Valuation**). **Reference** gives the old value (the one before you entered the new valuation).

RS Item was reserved for use in a work order. **Reference** gives the work order number.

RT Item was specified in a task description. **Reference** gives the task identifier.

DQ Database quantity: indicates the quantity of the item obtained during the process of converting from an older version of your MainBoss database. **Reference** gives the building and storeroom containing the item.

DV Database value: indicates the price of the item obtained during the process of converting from an older version of the database. **Reference** gives the building and storeroom containing the item.

When you are creating a new inventory item record, you usually use the **Status** section to record where the item is stored in your storerooms.

☐ **To record where an inventory item is stored:**

1. Click **New Physical Count**. MainBoss opens a window where you can record item locations:

2. In "**Building**" ❶ specify the building that contains a storeroom where the item is stored.

3. In "**Storeroom**" ❷ specify a storeroom where the item is stored.

4. In "**After**" ❸ specify the quantity of the item currently on hand in the specified storeroom.

5. In "**Unit Cost**" ❹ specify the per-unit cost of the items.

6. In "**Location**" ❺ specify the location of the items within the storeroom (for example, a shelf number).

7. If items of this kind are stored in other storerooms as well, click **Save & New** ❻. MainBoss will clear the fields in the window and let you record where else the item is stored.

8. When you have recorded the last location where the item is stored, click **Save** to save the most recent information, then click **Close** to close the window.

You record price quote estimates and customary suppliers by clicking **New Price Quote**. You record actual inventory values by clicking **New Valuation**. For more information, click either **New Price Quote** or **New Valuation** and then consult the online help.

Inventory Item Usage

The **Usage** section records where a particular item is used as a spare part.

> **Note:** *Equipment Spare Parts* on page 61 described how to record spare parts beginning with an equipment record. This section tells how to do the same thing beginning with an inventory item record.

The area in the middle lists all the equipment and spaces for which this item is considered a spare part.

□ **To specify that an item is a spare part for a unit:**

1. In the **Usage** section of the inventory item record, click **Add Spare Part** ❶. MainBoss opens a window where you can describe how this item is used as a spare part.
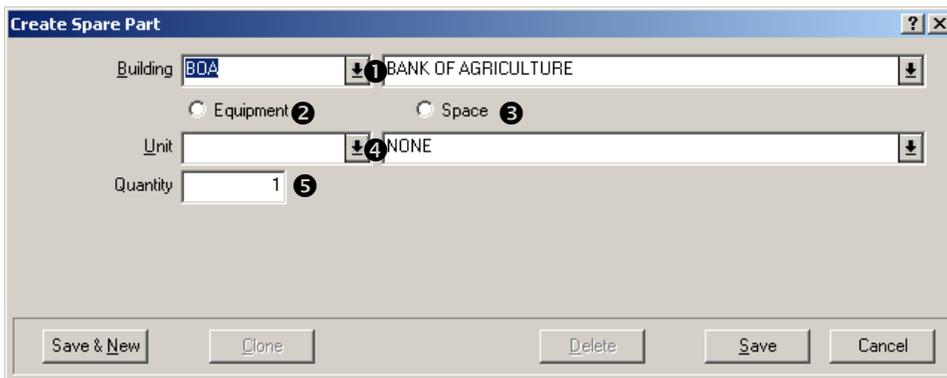
2. In "**Building**" ❶ specify the building that contains the equipment or space.

3. Click **Equipment** ❷ if the spare part is associated with a piece of equipment and **Space** ❸ if the spare part is associated with a space.

4. In "**Unit**" ❹ specify the piece of equipment or space that uses this item as a spare part.

5. In "**Quantity**" ❺ specify the quantity of this item that the specified unit uses.

6. Click **Save** to save the information you have just specified, then click **Close** to close the window.

When you return to the inventory item window, you will see the specified unit has been added to the list of units for which this item is a spare part.

Inventory Item Maintenance

The **Maintenance** section lists all preventive maintenance tasks that use the item. This list is simply for your reference. If you want to add this item to a PM task, use the normal facilities for reserving materials for tasks (see *Creating Tasks* on page 84).

Inventory Operations

The purpose of MainBoss inventory control is to let you keep track of what materials you have on hand. If a particular job needs an item, you can use MainBoss to determine the storeroom locations where that item is currently available.

In order for MainBoss to be effective, you must make sure that your records in the computer match what's actually in your storeroom. This means that you must keep track of actions that affect your inventory. In most cases, MainBoss does this automatically; for example, when a work order records that an item was used in a job, MainBoss automatically updates the records about that item.

However, there are a few situations where you must tell MainBoss directly that your inventory has changed. For example, if you move items from one storeroom to another, you must tell MainBoss about the transfer. Similarly, if items are removed or added for some unusual reason (for example, something gets broken), you should tell MainBoss so that inventory records remain accurate. Finally, if you take a physical count of your inventory, you should modify MainBoss's records whenever the actual count differs from what MainBoss expects.

The following sections describe some common situations related to inventory control and how you can handle them with MainBoss.

Finding Which Storeroom Contains a Particular Item

Scenario: You need a particular item. You want to know which storerooms contain that item and how much each storeroom contains.

☐   **To determine where an item can be found:**

1. Select **Inventory** → **Browse Items** from the menu. This opens the Items browser:
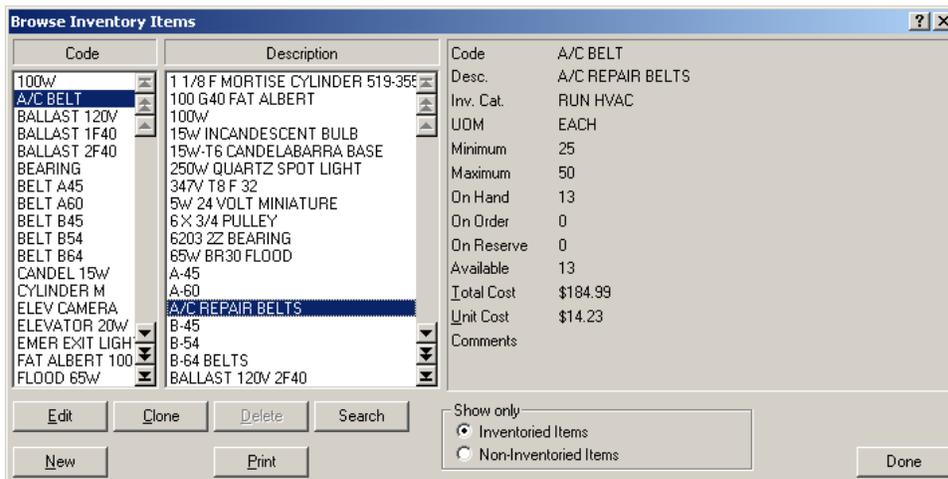
2. Find the item you want in the list of items. Click that item, then click **Edit**. (You can also just double-click the item's entry in the list.)

3. MainBoss opens the record for that item. The list ❶ at the bottom of the **Properties** section shows all the places the item is stored. (Remember that MainBoss uses the term **General Inventory** if you have not specified the location for some items.)

Taking Physical Inventory

Keeping an accurate inventory, even with a perpetual inventory such as the one in MainBoss, is notoriously difficult. For this reason, most organizations periodically take a physical count of their stock.

There are several common approaches to taking a physical count of your stock:

☐ Periodic inventory: Closing down all your maintenance operations for a time and doing a complete count in all your storerooms

☐ Perpetual inventory: Every time you issue or receive a particular item, you take a count of the quantity of that item in the same location

☐ Cycle audit: Periodically selecting a type of inventory item and counting your complete stock of that item

☐ Cyclical inventory: Progressively counting parts of your stock until you have counted everything; for example, you might take inventory in one storeroom a month until you have covered all your storerooms. Once you have finished, you start the cycle again at the beginning.

After taking inventory by any of the above methods, you should compare the numbers from the physical count to the numbers in MainBoss's records. If there is a disagreement, you should update MainBoss's records to reflect the actual numbers.

Before doing a physical count, you can get MainBoss to print out a physical count sheet: a list of all your inventory sorted according to building and storeroom, with boxes where you can enter the actual item count found.

☐ **To get a physical count sheet for taking inventory:**

1. Select **Inventory → Reports → Inventory Status** from the menu:

2. Checkmark **Physical Count Sheet** ❶. This tells MainBoss you want a report with boxes where you can enter the actual count of items found in a particular storeroom location.

3. If you want the print-out to contain the quantity of items expected, checkmark **Show On Hand** ❷.

4. Click **Print** to print the sheets, then click **Close** to close the window.

Note: Some organizations prefer that a count sheet does *not* show the expected quantity of each item. If the expected quantity is not printed, workers are forced to count what is actually there, rather than just accepting that the expected count is correct. If you do not want the expected quantity on the count sheet, leave **Show On Hand** blank.

After you have taken inventory, you should adjust MainBoss's records to reflect any differences between the real count and the expected quantities.

□ **To adjust MainBoss's records after taking inventory:**

1. Select **Inventory** → **Adjustments** → **Physical Count** from the menu. MainBoss opens a window where you can record physical counts.

2. In "**Inv. Cat.**" ❶ specify the category of the inventory item whose count you want to change.

3. Checkmark **Inventoried Items** ❷ if you want to specify the count of an inventoried item. Checkmark **Non-inventoried Items** ❸ if you want to specify the count of a non-inventoried item.

4. Drop the arrow on "**Selected Items**" ❹ and find the item you want.

5. Click **Pick This Item** ❺. You'll see your selected item appear in "**Inv. Item**".

6. Specify the "**Building**" ❻ and "**Storeroom**" ❼ where the inventory count was taken.

7. In "**After**" ❽ specify the quantity of the item that you found in the given storeroom location.

8. If you want to change the count on another item, click **Save & New**. MainBoss saves the information you have just entered, then clears fields so you can enter information about another item.

9. When you have recorded the last count, click **Save** to save the information you have just entered, then click **Close** to close the window.

The process described above changes the count of items in your inventory, but keeps the same value per unit for the items.

Other Inventory Operations

A number of other inventory control operations are available through **Inventory** → **Adjustments**:

> **Note:** For details about any of the operations listed below, see the online help.

Issue:
>   Deals with situations in which materials are issued from inventory, other than in connection with a work order. For example, a rental management company might issue a supply of light bulbs to tenants so that tenants can change their own bulbs rather than calling in maintenance personnel.
>
>   You use *issue codes* to specify reasons for issuing materials. You define your own issue codes using **Inventory** → **Tables** → **Issues**.

Transfer:
>   Lets you record when you move materials from one storeroom to another.

Value:
>   Lets you specify the value of items in your inventory.

Price Quote:
>   Lets you record any price quotes you have received from suppliers.

Other:
>   Is a catch-all operation that deals with any inventory adjustments not covered by other operations. For example, if you have to record losses due to breakage or theft, you would use this operation.
>
>   You use *adjustment codes* to specify reasons for making adjustments. You define your own codes using **Inventory** → **Tables** → **Adjustments**.

Inventory Details

This section discusses precise details of certain aspects of inventory control.

On Hand: When MainBoss tells you the quantity of an item that is currently *on hand*, that is the quantity that is expected to be present in all your storerooms. The related quantity, **Storeroom On Hand**, is the amount expected to be in a specific storeroom. The total on hand amount is the sum of all **Storeroom On Hand** values.

On Order: When you create purchase order, the quantity of items on the purchase order are said to be *on order*. More precisely, the items are put on order at the point that you **Save** the purchase order. Note that those items are on order, even if you haven't actually issued the purchase order yet.

When you record the receipt of a shipment, quantities on order are reduced appropriately. For example, suppose that you currently have 30 light bulbs on order and you receive a shipment containing 10 light bulbs. When you record the receipt, the quantity on order goes down to 20.

If you receive more of an item than you ordered, the *on order* quantity can go negative. For example, if you currently have 30 light bulbs on order, but you receive a shipment with 40 light bulbs, the *on order* quantity will become -10. This indicates that you now have more items than you ordered.

When you close a purchase order, MainBoss adjusts *on order* quantities to account for items ordered but not received. For example, suppose a purchase order called for 30 light bulbs but you only receive 10. This leaves 20 light bulbs still on order. If you close the purchase order at this point, MainBoss assumes that you have cancelled the outstanding quantity on order. Therefore, MainBoss adjusts its records to show that you no longer have the 20 light bulbs still on order.

The total quantity of an item on order is the sum of all *on order* quantities from *open* purchase orders. For example, if one purchase order calls for 10 light bulbs and another calls for 20, you have a total of 30 light bulbs on order.

On Reserve: When you create a work order, you can reserve inventory materials for use in the work order. These materials are said to be *on reserve*. You put materials on reserve when you use **Add Estimate** to add them to the **Material** section of an open work order. More precisely, the materials are put on reserve when you **Save** the work order where the estimates appear. If you have not yet saved the work order, the materials are not yet on reserve.

Materials can be removed from reserve in several ways:

☐ You can **Void** the work order. In this case, all materials that were on reserve become available for use again.

☐ You can use **Delete** in the **Material** section of the work order to delete material estimates from the materials list. Deleting an estimate makes reserved materials available once more. More precisely, the materials become available when you **Save** the changes you've made in the work order.

☐ You can use **Quick Actuals** or **Add Actual** to state that reserved materials have actually been used (issued). For example, suppose you use **Add Estimate** to reserve 10 quarts of oil for a job, then use **Add Actual** to say that the job actually used 8 quarts. MainBoss will update its records to say that you now have only 2 quarts on reserve, since you used 8 of the original 10 quarts. (MainBoss will also update its records to say that you have 8 quarts less on hand.)

Note that if you originally reserved 10 quarts of oil, but actually used 12, you have the unusual case of having -2 quarts of oil on reserve. This indicates that you used more than you reserved.

☐ When you close a work order, MainBoss removes all outstanding reservations for materials on that work order. For example, suppose you reserved 10 quarts of oil but only used 8 quarts. This leaves 2 quarts still on reserve. However, when you close the work order, MainBoss removes those 2 quarts from the reserve. Since the work order has been closed, the job is finished and the extra 2 quarts obviously weren't needed.

Similarly, if you originally used 10 quarts of oil but actually used 12, you would end up with -2 quarts on reserve. When you close the work order, MainBoss adjusts this to say that you no longer have any oil on reserve.

The total quantity of an item on reserve is the sum of all *on reserve* quantities from *open* work orders. For example, if one work order calls for 10 quarts of oil and another calls for 20, you have a total of 30 quarts on reserve.

Stock Available: When MainBoss tells you the total quantity of an item *available*, the quantity is calculated as

```
Stock Available = OnHand + OnOrder - OnReserve
```

Notice that items on order are considered available, even though they haven't been received yet. This means that receiving items in response to a purchase order doesn't change the amount available. For example, if you receive 10 light bulbs that you previously ordered, the amount on hand goes up by 10 but the amount on order goes down by 10. Therefore there's no net change in the stock available.

Similarly, the stock available doesn't change if you use materials in connection with a work order. For example, if you use 8 quarts of oil in a work order, the amount on hand goes down by 8 quarts, but the amount on reserve also goes down by 8 quarts, since you've used some of the oil you reserved. Therefore there's no net change in the stock available.

When MainBoss needs to determine whether stock should be reordered, it looks at the *available* quantity, not at the quantity on hand. This applies to the Reorder report and to the item selection facilities for a purchase order.

Closed and Voided Work Orders/Purchase Orders: After a work order has been closed or voided, the use of **Add Estimate** does *not* put materials on reserve. Since the job is already finished or cancelled, there is no point in putting materials on reserve. (The only reason you would use **Add Estimate** would be to correct your records after the fact.)

Similarly, after a purchase order has been closed or voided, adding items to the purchase order does *not* put those items on order.

Excluding the Current Record: Whenever MainBoss displays inventory numbers (on order, on hand, on reserve, or available), the quantities always *exclude* information in the current window.

For example, suppose you are using **Add Estimate** in the **Material** section of a work order to reserve materials for the work order. This window displays how much of the item is on hand, on order, on reserve, and available, *excluding* any materials reserved in the current window. If you change the amount in the "**Reserve Quantity**" field, the numbers shown in "**On Reserve**", "**Stock Available**", etc. will *not* change.

Furthermore, if you reserve some materials, save the record, close the window, then open the record again (using **Edit** in the **Material** section), the "**On Reserve**" quantity shown will *not* take into account the materials that you previously reserved in this record.

> **General Principle:** When MainBoss shows you inventory quantities in a window, the numbers are always given as if the record you are looking at does not exist.

To illustrate this, here is a concrete example. The example uses dates in order to make some things clearer.

1. June 1: The inventory count for light bulbs is zero on hand, zero on order, zero on reserve, zero available.

2. June 2: You take a physical count of one storeroom and find you actually have 10 light bulbs on hand. Using **Inventory → Adjustments → Physical Count**, you set the on hand number to 10.

3. June 3: You take a physical count of another storeroom and find another 15 light bulbs there. Once again, you use **Inventory → Adjustments → Physical Count**. When you first open the window, you will see 10 lights bulbs on hand (from the record you made the day before). You record another 15 light bulbs, bringing the total to 25.

4. June 4: You reserve one light bulb for use in a work order, using **Add Estimate** in the **Material** section of the work order. This opens a window where you can record how many light bulbs you want to reserve. Even though you reserve one bulb, the "**On Reserve**" count in the window does not change—the count ignores any materials issued via the current window (even after you save the record). The same goes for other inventory numbers shown in the window.

5. June 5: You decide to change the preceding work order to reserve two light bulbs instead of one. You use the **Edit** button in the **Material** section of the work order to open the record again. You'll see that the "**On Reserve**" count is still zero, since MainBoss ignores the current record. However, if you set the time on the current record record to June 5 *without saving the record*, MainBoss will change the "**On Reserve**" count from zero to 1. This is because the reserve count is 1 as of today, ignoring any changes you might make to the current record...because of the materials you reserved

yesterday. If you now **<u>Save</u>** the current record, the reserve count goes back to zero because MainBoss once again ignores the influence of the current record.

Remember that MainBoss ignores the effect of the current record while it's on the screen. However, if you go to the inventory item browser, you will see that MainBoss has reserved the quantity of the item that you specified.

Purchasing and Receiving

MainBoss has detailed facilities for reporting which inventory items need to be restocked, for creating purchase orders, and for tracking shipments received. This chapter outlines the usual sequence of events for purchasing and receiving. For more detailed information, see the online help.

Shipping Mode: A shipping mode specifies how a purchase should be shipped.

> For example, you might create modes that indicate "Ship by overnight courier", "Ship by cheapest rate", "Deliver during work hours", and so on.
>
> To define shipping modes, select **Inventory → Tables → Shipping Modes** from the menu.

Payment Terms: A payment terms code specifies how you wish to pay for a purchase.

> For example, you might create codes that indicate "Payment on receipt", "C.O.D.", "Net 30", and so on.
>
> To define payment terms codes, select **Inventory → Tables → Payment Terms** from the menu.

Waybill: **A waybill number identifies a shipment received in response to a purchase order.**

> Each shipment has a unique waybill number, chosen by you or generated automatically by MainBoss.

Completed Purchase Order: A completed purchase order is a preliminary draft of a purchase order.

> For example, if you need authorization before sending a purchase order to a supplier, you would usually create a completed purchase order and print it out, then submit that PO for management approval.
>
> You can edit a completed purchase order whenever necessary. For example, if management does not approve some of the requested items, you can delete those items before issuing the purchase order to the vendor.

Issued Purchase Order: You issue a purchase order when the PO is ready to be submitted to the supplier. From that point on, the PO is an issued purchase order.

A completed purchase order becomes an issued purchase order when you have obtained all the required authorizations and have marked the PO as ready to submit. After you issue a PO, you print it off and send it to the supplier.

Closed Purchase Order: You close a purchase order when you have received all the goods and services covered by the PO, or have canceled any goods and services that have not already been received.

In other words, you close a purchase order when it's been filled or when you've canceled any unreceived portion of the order.

The Purchasing/Receiving Process

The following shows the usual steps of the purchasing/receiving cycle.

1. Print a report of what materials need to be reordered (see *The Re-Order Report* on page 120).

2. Decide which materials will be purchased from which suppliers.

3. Create a purchase order for each supplier, listing the materials you want to purchase (see *Creating a New Purchase Order* on page 121).

4. Obtain any authorizations needed for the purchase.

5. Issue the purchase order and send it to the vendor (see *Issuing a New Purchase Order* on page 131).

6. Each time a shipment is received in response to the purchase order, assign the shipment a waybill number and record which items were received (see *Recording Receipts* on page 132).

7. When all the ordered items have been received, close the PO (see *Closing a Purchase Order* on page 138).

```
                    ┌──────────────────┐
                    │   Get Re-order   │
                    │      Report      │
                    └──────────────────┘
                             ⇩
                    ┌──────────────────┐
                    │     Choose       │
                    │    Suppliers     │
                    └──────────────────┘
                             ⇩
                    ┌──────────────────┐
                    │     Create       │
                    │       PO         │
                    └──────────────────┘
                             ⇩
                    ┌──────────────────┐
                    │      Get         │
                    │    Approvals     │
                    └──────────────────┘
                             ⇩
                    ┌──────────────────┐
                    │     Issue        │
                    │       PO         │
                    └──────────────────┘
                             ⇩
                    ┌──────────────────┐
                    │     Record       │
                    │    Receipts      │
                    └──────────────────┘
                             ⇩
                    ┌──────────────────┐
                    │     Close        │
                    │       PO         │
                    └──────────────────┘
```
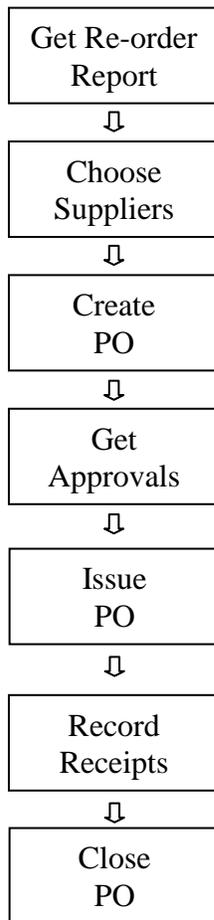
Typical Purchasing/Receiving Cycle

Note that the steps given above are only one approach to purchasing/ receiving. A common alternative is to depend on a small number of suppliers and to prepare regular purchase orders for each. For example, you might ask, "What do we need to buy from Supplier X this week?" In this case, you might prepare your purchase orders for your regular suppliers first, then print a re-order report to see if there was anything else you needed to order.

> **Note:** Purchase orders may be issued for services as well as for goods. For example, if you hire an outside contractor to do three weeks of work, you could issue a purchase order to cover the costs of that work. Labor costs would be regarded as "extras" on the purchase order.

The Re-Order Report

The Re-order Report lists all inventoried items that need to be re-ordered. To determine whether an item needs to be reordered, MainBoss looks at your current on-hand stock of that item, minus the quantity that has been put on reserve for work orders, plus the quantity that has already been put on order in open or issued purchase orders. In other words, MainBoss looks at the quantity

$$OnHand + OnOrder - OnReserve$$

If this is less than the minimum stock level for an item, MainBoss indicates that the item should be reordered. MainBoss suggests that you re-order a quantity that will put the above calculation up to the maximum stock level for the item.

□ **To print a Re-order Report:**

1. Select **Inventory** → **Reports** → **Re-Order** from the menu. MainBoss opens a window that lets you specify criteria for the report:
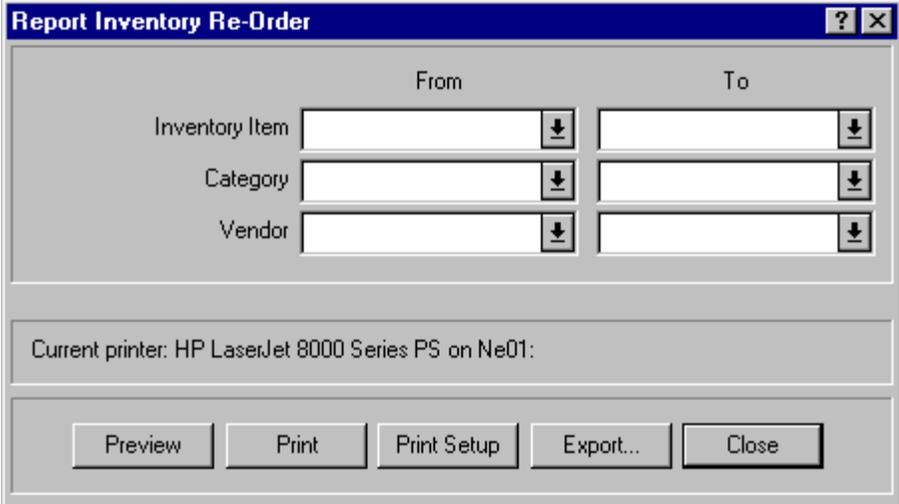
2. Click **Preview** to get the report displayed on the screen, or click **Print** to print the report.

Note that the fields of the above window let you restrict the report to a given range of items or inventory categories. However, most organizations will simply print a complete report of all items that need to be reordered.

Creating a New Purchase Order

In MainBoss, the purchase order window records information about the PO itself and the shipments received in response to the PO.

□ **To create a new purchase order:**

1. Select **Inventory** → **New Purchase Order** from the menu. MainBoss opens a purchase order form:

2. In "**Summary**" ❶ enter a brief description of this purchase order.

3. Fill out the **Order** section as described in *General Purchase Order Information* on page 122.

4. Fill out the **Items** section as described in *Purchase Order Items* on page 123.

5. Fill out the **Extras** section as described in *Purchase Order Extras* on page 127.

6. Click **Save** to save the information you have just entered, then click **Close** to close the window.

_____

Once you have clicked **Save**, the purchase order is considered a *completed purchase order*. You can print the purchase order by following the instructions in *Printing a Purchase Order* on page 130.

General Purchase Order Information

The **Order** section of a purchase order specifies general information about the order:

☐ **To fill out the** <u>Order</u> **section of a purchase order:**

1. In "**Required by**" ❶ specify the date by which you need this order to be filled.

2. In "**Vendor**" ❷ specify the vendor who will fill the order.

3. In "**Ship via**" ❸ specify a shipping mode for the order.

4. In "**Payment Terms**" ❹ specify payment terms for the order.

5. In "**Deliver to**" ❺ specify the building where the goods should be delivered.

6. In "**Comments to Vendor**" ❻ enter any comments to the vendor that you want to put on the purchase order.

Purchase Order Items

The **Items** section of a purchase order specifies the items you want to purchase. These can be either inventoried or non-inventoried items.

☐ **To fill out the** Items **section of a purchase order:**

1. Click **Add Item** ❶. This opens a window where you can specify one or more items to add to the purchase order.

2. If you already know which items you want to put on the purchase order, drop the arrow on "**Inv. Item**" ❷ and specify the first item. Otherwise, use the **Pick Item** section of the above form to specify an item; for more details, see *Picking Items* on page 125.

> **Note:** Once you have specified an item, MainBoss displays information about that item in the boxes at the top of the **Order** section. In particular, you'll see the quantities on hand, on order, on reserve, and so on.

3. Once you have specified the item, enter the quantity you want to purchase in "**Order Quantity**" ❸.

4. Enter the item's cost per unit in "**Unit Cost**" ❹ or the total cost of the quantity order in "**Total Cost**" ❺.

5. In "**Cat. No.**" ❻ enter the vendor's catalog number for the item.

6. Using "**Building**" ❼, "**Storeroom**" ❽, and "**Location**" ❾ specify where the ordered items should be stored when they are received.

7. If you want to specify more items for the purchase order, click **Save & New**. MainBoss will save the information you have just entered, then clear the fields in the window so you can specify another item to order.

8. Once you have specified the last item you want to purchase, click **Save** to save information about that item, then click **Close** to close the window.

When you return to the purchase order window, you will see the items you have specified listed in the window.

Multiple Storerooms: Suppose you are ordering 20 lights bulbs, and you want to split them between two storerooms (10 in one storeroom, 10 in the other). Treat this as two separate items: first, specify 10 bulbs and set "**Building**" and "**Storeroom**" to indicate the first storeroom; then, specify another 10 bulbs and set "**Building**" and "**Storeroom**" to indicate the second storeroom.

Picking Items

The **Pick Item** section of the item selection window is useful when you don't know exactly what you want to buy. For example, suppose you put in a weekly order to a particular supplier; the **Pick Item** section can tell which items that you buy from that supplier are below required stock levels and need to be re-ordered.

As an overview, here's how this window works:

☐ First, you specify a number of criteria for the sort of items you want to put on the purchase order. For example, you might state that you're only interested in items that are below their minimum stock levels and that you've purchased from this supplier before.

☐ Once you've specified your criteria, the "**Selected Items**" ❶ list shows all the items that meet your criteria. You click an item in this list and then click **Pick This Item** ❷. MainBoss puts that item into the "**Inv. Item**" ❸ field.

☐ Once you've chosen the inventory item in this way, you use the **Order** section of the window to specify the quantity that you want to order.

☐ **To use the** Pick Item **facility:**

1. If you want to be told items that are in need of re-ordering, click **below minimum** ❹. From this point on, the "**Selected Items**" ❶ list will only show items that are below their specified minimum stock level.

   As an alternative, you can click **below maximum**, in which case "**Selected Items**" will show items that are below their specified maximum stock levels.

   Finally, you can click **any amount**, in which case MainBoss ignores how much stock is currently on hand.

2. If you want to see items that were bought most recently from this supplier, click **Vendor was last supplier** ❺. In this case, "**Selected Items**" will only show items whose most recent purchase was from the supplier specified in "**Vendor**".

   As an alternative, you can click **Vendor has previously supplied**. In this case, "**Selected Items**" shows any items that have ever been purchased from this vendor (even if the most recent purchase was from some other supplier).

   Finally, you can click **regardless of vendor**. In this case, MainBoss ignores vendors when creating the "**Selected Items**" list.

3. Checkmark **Inventoried Items** ❻ if you want "**Selected Items**" to include inventoried items. Checkmark **Non-inventoried Items** ❼ if you want "**Selected Items**" to include non-inventoried items.

4. If you only want to look at items in a particular category, specify that category in "**Inv. Cat.**" ❽.

5. "**Selected Items**" now shows all items that fit your criteria. Click the item you want to add to the purchase order, then click **Pick This Item** ❷. MainBoss displays your chosen item in "**Inv. Item**" ❸.

Once you have chosen the item, MainBoss displays a price history of the item in the **Pricing History** section ❾.

Purchase Order Extras

The **Extras** section of a purchase order lets you specify any extra expenses that may be included in the final PO price. For example, you might record shipping charges, taxes, or surcharges for expedited delivery. You can also use this section to record costs for services (e.g. labor).

Sometimes you know the exact amount of the extra charges; at other times, you may only be able to make estimates. MainBoss lets you record both estimates and actual charges. If you start out by making estimates, you typically add actual charges later on. For example, if you initially estimate the shipping costs, you would record the actual shipping costs once you find out what they are.

☐   **To fill out the** Extras **section of a purchase order:**

1. To record an estimated expense, click **Add Estimate** ❶. MainBoss opens a window where you can enter the estimate:

2. If the vendor has assigned a catalog number to this extra, enter the number in "**Cat. No.**" ❷.

3. Enter a brief description of the extra in "**Desc.**" ❸.

4. Enter the estimated cost of the extra in "**Total Cost**" ❹.

5. Click **Save** to save the information you have just entered, then click **Close** to close the window.

6. Recording an actual expense is similar, except that you click **Add Actual** ❺ in the purchase order window.

Modifying a Purchase Order

You can modify a purchase order at any time. For example, you might fill out part of a purchase order, then find that you need more information before you can complete it. In that case, you **Save** the purchase order in the usual way, then come back to it later on.

☐ **To edit an existing purchase order:**

1. Select **Inventory** → **Browse Purchasing** from the menu. MainBoss opens the purchase order browser:
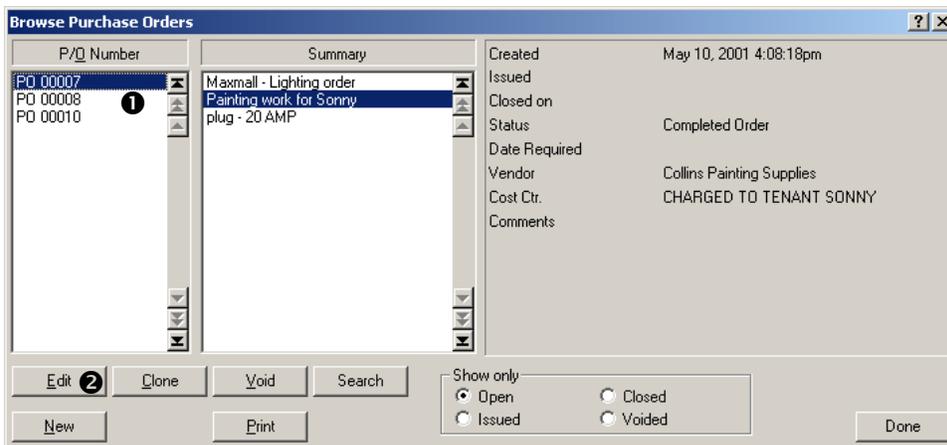
2. In the list of purchase orders ❶, find the purchase order you want to modify and click on that entry.

3. Click **Edit** ❷ to edit the purchase order. MainBoss will open a window where you can edit the purchase order.

Editing an existing purchase order is similar to creating a new purchase order. For more information, see *Creating a New Purchase Order* on page 121.

Printing a Purchase Order

You may print a purchase order at any time. For example, you might print the PO when you complete an initial draft and wish to get authorization from management; you will also print the PO when you are ready to send it to the supplier.

☐   **To print a purchase order:**

1. In the purchase order window, click **Save & Print** ❶:

2. MainBoss opens a window for printing purchase orders:

3. Click **Preview** to examine the purchase order on the screen. Click **Print** to print the purchase order.

Issuing a New Purchase Order

When you are ready to send a purchase order to the supplier, you *issue* the PO.

Every purchase order has an effective date of issue. This is usually the date/time that you actually issue the PO; however, you can set a different date/time if you wish.

□ **To issue a purchase order:**

1. If you want to make this PO effective as of a particular date/time, enter that date/time in "**effective**" ❶. Otherwise, leave this field blank and MainBoss will use the current date and time.

2. Click **Issue & Save** ❷.

3. If you want to print the purchase order at this time, click **Save & Print**. Otherwise, just click **Close** to close the window.

Recording Receipts

When you receive goods in response to a purchase order, you should record what you have received. Each shipment is assigned a *waybill number* to identify it.

Note: If a delivery contains goods from several different purchase orders, split the shipment according to which goods appeared on which PO. Give each part of the shipment its own waybill number.

To record a shipment, you use the **Receiving** section of the original purchase order.

☐ **To record goods received:**

1. If the supplier assigned this purchase order a different number from the one used by MainBoss, type the supplier's identification number in "**Vendor's Order Number**" ❶.

2. If the supplier has given you a projected date for the next shipment, enter this date in "**Next Shipment**" ❷.

3. Click **New Shipment** ❸. MainBoss opens a window where you can record information about this shipment.

![Create Shipment Received dialog box. Fields include: Waybill ❹, Date ❺, P/O Number "PO 00003", Vendor "LIGHT", Extra Cost. Columns: Item, Catalog Number, Quantity, Cost. Buttons: Add Item... ❼, Edit Item..., Delete Item, Quick Receive.. ❻. Item Count 0, Item Cost $0.00, Total Cost. Comments field. Bottom buttons: Save & New, Clone, Delete, Save, Cancel.]

4. Enter a waybill identification number in "**Waybill**" ❹.

5. Enter the date the shipment was received in "**Date**" ❺. (If you leave this blank, MainBoss will use the current date.)

6. If the shipment contains all or almost all of the goods specified on the original purchase order, click **Quick Receive** ❻ and use the Quick Receive facility (as described in *The Quick Receive Facility* on page 135). Otherwise, click **Add Item** ❼ and add items individually to the shipment (as described *Adding Individual Items to a Shipment Receipt* on page 136).

7. When you have finished recording what items were in the shipment, click **Save** to save the information, then click **Close** to close the shipment window.

8. You'll return to the main purchase order window. You can go to the **Summary** section to see a summary of what was in the original purchase order and how much has been received to date. When you're finished examining the purchase order, click **Save** to save all information in the purchase order, then click **Close** to close the window.

The Quick Receive Facility

Quick Receive is most useful when a shipment contains all or most of the items from the original purchase order, or for the "last" shipment associated with a purchase order (i.e. the shipment that delivers everything you haven't received already).

Quick Receive displays all the items that haven't already been received in full. You can then select all such items that were actually received in this shipment and immediately add them to the shipment receipt.

After you have added items to the shipment receipt, you can edit the information if necessary. For example, suppose a shipment contains everything from a particular purchase order, except that the count on a particular item is one unit short. You could use Quick Receive as if you had received everything that was ordered, then edit the record for that one item to indicate that the count was one unit lower than expected.

_____

□ **To use the Quick Receive facility:**

1. In the Shipment window, click **Quick Receive**. This opens a window where you can specify what was received:

2. In the list of items ❶, click on all those items that were received in this shipment. You can select the entire list by clicking **Select All**. (Note that clicking on an unhighlighted item highlights the item. Clicking a highlighted item removes the highlighting.)

3. If you want to specify where to store the selected items, set "**Building**", "**Storeroom**" and/or "**Location**" to the appropriate storage location.

4. When you have finished selecting the items received, click **Ok** to save the information, then **Close** to close the window. You'll return to the Shipment window and the items you selected will appear in the shipment list:

5. If you need to edit any of these entries (for example, if one of the ordered items wasn't received in full or if the price was different than expected), click the entry that needs to be edited and then click **Edit Item**. MainBoss will open a window where you can edit information about what was received.

Adding Individual Items to a Shipment Receipt

Although Quick Receive is useful when a shipment contains most of the items from the original purchase order, there are times when it is easier just to specify what was received one item at a time.

⬜ **To specify the items in a shipment, one item at a time:**

1. Click the **Add Item** button in the Shipment Receipt window. This opens a window where you can specify which items were received and the quantity of each item:

2. Make sure that **not fully received** ❶ is marked, then drop the arrow on "**Selected Items**" ❷. You will see items that were on the purchase order but have not yet been received in full.

3. In the "**Selected Items**" list, click an item included in the shipment, then click **Pick This Item** ❸. The name of the item will be filled into "**Inv. Item**" ❹.

4. In "**Received**" ❺ enter the quantity of this item that you received.

5. In "**Total Cost**" ❻ enter the total cost of the quantity received.

6. In "**Building**", "**Storeroom**" and "**Location**", enter where the received item(s) should be stored. (If you specified this location when you created the original purchase order, these fields will be filled in automatically from that information.)

7. Click **Save & New** ❼. MainBoss saves the information you have entered and clears various fields.

8. Repeat the above process for the next item received.

9. When you have recorded information about the last item, click **Save** to save the information, then click **Close** to close the window.

When you return to the Shipment Receipt window, you will see that the specified items have been recorded in the list of items received.

Closing a Purchase Order

You close a purchase order once you have received all the goods originally ordered (or when you have given up on receiving some of the goods and have cancelled any outstanding part of the order).

⬜ **To close a purchase order:**

1. In the purchase order window, enter the closing date in "**effective**" ❶. (If you leave this blank, MainBoss will use the current date.)

2. Click **Close & Save** ❷. MainBoss marks the purchase order as closed.

3. If you have any closing comments about the purchase order, enter them in "**Comments**" ❸.

4. Click **Save** to save the information you have just entered, then click **Close** to close the window.

Prototype Purchase Orders

Some preventive maintenance tasks may have associated costs for outside labor or for materials purchases. For example, you may hire a certified electrician to make an annual inspection of your electrical systems, or you may get a contractor to recharge your fire extinguishers on a regular basis. As another example, you may take company vehicles to an outside service center for regular maintenance like oil changes.

In such cases, you can add a *prototype purchase order* to the PM task description. This is not a real purchase order; however, it provides information that MainBoss can use to create real purchase orders when a work order is generated from the PM task.

For example, suppose your fire extinguishers need to be recharged every year. You can create a PM task description for recharging the fire extinguishers, and that task description can include a prototype purchase order for the company that does the recharging. When MainBoss generates a work order from the task description, it also generates a real purchase order from the prototype purchase order. You can then send this purchase order to the recharging company as a request for service.

All prototype purchase orders have an identification code. This is *different* from the identifier that will appear on any real purchase orders generated from the prototype.

☐   **To create a prototype purchase order:**

1. In the **Labor** or **Material** of a task description, click **New Purchase Order**. MainBoss opens a window where you can create the prototype purchase order:

2. In "**Summary**" ❶ enter a brief description of the purchase order.

3. In "**Code**" ❷ enter an identification code for the prototype purchase order.

4. In other fields of the prototype, enter any information that you want included in the purchase order (for example, the vendor's name, payment terms, etc.).

5. Click **Add Estimate** to specify an estimated cost for the purchase order. This may be either a labor or materials cost, but it is treated as an *extra* on any purchase orders generated from this prototype. See *Purchase Order Extras* on page 127 for information on specifying extra estimates.

6. Click **Save** to save the prototype information, then click **Close** to close the window.

Browsers and Editors

Much of your work with MainBoss is done using browsers and editors. Previous chapters have shown you how to use browsers and editors in simple ways. This chapter goes into more detail, so that you get the most out of MainBoss's facilities.

Browsers: A *browser* is a window that shows you a list of things. For example, the Purchase Order browser shows you a list of current purchase orders.

A browser window lets you add new entries to the list, and modify or delete existing entries. For example, the Purchase Order browser lets you create new purchase orders or edit existing ones. It also lets you void (cancel) purchase orders that you have previously created.

Browsers also let you search for items. For example, suppose you want to record some information about a piece of equipment. You would open the Equipment browser and use it to search through your equipment list until you found the appropriate piece of equipment; you could then use the browser to tell MainBoss that you wanted to edit the information on that piece of equipment.

Finally, browsers let you print information about items in the list. For example, if you want to print out one or more purchase orders, you open the Purchase Order browser, then click the **Print** button.

Editors: An *editor* is a window that shows you information about a single thing. For example, the Purchase Order editor shows information about a particular purchase order.

MainBoss will open an editor window when you want to create a new record or edit an old one. For example, when you want to create a new purchase order, MainBoss opens the Purchase Order editor window; all the information fields in this window will be blank until you enter some information. Later on, if you want to change some of the information in the same purchase order, MainBoss will open the Purchase Order editor again; this time, the editor will show you all the information that you entered when you originally created the purchase order.

> **Basic Principle:** A browser shows a list of records and an editor shows a single record.

Using Browsers

The picture below shows a typical MainBoss browser (the Equipment browser):
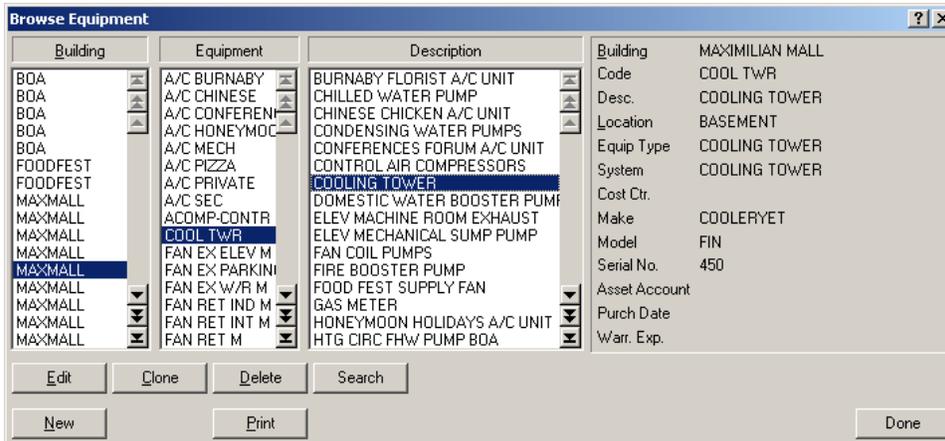
This window contains a lot of elements. The following list explains what those elements are and how you can use them:

Lists: A browser shows you a list of records. To make it easier for you to find a particular record, the records are sometimes listed in several different ways.

For example, the above window shows a list of equipment in a set of rental buildings. You will notice the window has three different lists: one showing buildings, one showing short equipment identification codes, and one showing longer descriptions. This can make it easier for you to find the record for a particular piece of equipment—for example, if you know that the equipment is in a particular building but don't know the exact identification code or description, you can go to the appropriate building in the building list, and then start going through equipment records until you find the piece you want.

When you select an item in one list, MainBoss automatically highlights where that record appears in the other lists. For example, in the picture above, the user selected BOILER 1 in the "**Equipment**" column; MainBoss automatically highlights the corresponding entry in the "**Building**" column (320) and the corresponding entry in the "**Description**" column (HOT WATER HEATING BOILER). These all represent the *same* equipment record: a record describing a boiler named BOILER 1 in building 320.

Even though the list entries are for the same piece of equipment, the entries do not necessarily line up. The reason should be obvious from the example given: the name BOILER 1 is sorted among the B's in the "**Equipment**" column but its corresponding description, HOT WATER HEATING BOILER, is sorted among the H's. Therefore, it is not surprising that the two entries do not line up side by side, even though they refer to the same record.

Note: Double-clicking any entry in any browser list opens a window that lets you edit that entry. For more about editor windows, see *Using Editors* on page 145.

List controls: Each list has a scroll bar on the right, and each scroll bar contains a number of arrow buttons. These buttons let you move through the entries in the list. The arrows are:

	Go to the first entry in the list
	Scroll back one "page" (16 lines)
	Go up one line
	Go down one line
	Scroll forward one "page"
	Go to the last entry in the list

Using these buttons, you can move through any list to find entries you want. MainBoss also has a facility that lets you search through the list for a specific entry; this facility is described later in this section.

Note that the buttons may be disabled, depending on your current position in the list. For example, if you are already at the beginning of a particular list, the three buttons for moving backwards in the list are all disabled.

Buttons: Below the three lists are buttons labeled **Edit**, **New**, **Clone**, **Delete**, and **Print**. There may be different buttons in different browsers, but these five are the most common.

Edit: Lets you change the information in an existing record. Click the record you want to change (in any of the lists), then click the **Edit** button. MainBoss opens an editor window to let you change the information.

New: Lets you create a new record. Click the **New** button, and MainBoss will open an editor window to let you enter information for the new entry.

Clone: Creates a new record starting with information taken from an old one. For example, suppose your organization already has several forklift trucks and then obtains a new one. To create a record for the new truck, you can clone the information from one of the existing trucks; this saves you the effort of typing in a lot of identical information for the new truck.

To clone an existing record, click the entry you want to clone and then click **Clone**. MainBoss opens an editor window with most of the information fields filled in with information from the old record. You can then edit this information and fill in any blank fields to describe the new piece of equipment.

In some cases, MainBoss asks you to specify what information you want to clone. For example, when you clone an existing work order, MainBoss asks you

what types of information you want to copy from the old work order to the new one.

Delete: Deletes a record from the list. Click the record you want to delete, then click **Delete**. MainBoss asks if you really want to delete the record; if you say yes, the record is deleted.

Print: Opens a window that lets you print one or more records from the list. This print window lets you specify which records you want to print; it also lets you preview the output on your screen before actually creating a paper print-out.

Search: This button lets you tell MainBoss to search through the list of records for a particular record. For more information, see *Searching for a Particular Record* on page 144.

Information Area: On the right hand side of the browser window, MainBoss displays information from the currently selected record. If possible, MainBoss displays *all* the information in the record; for records that contain too much information to fit in the available space, MainBoss displays a subset of the information.

The **Done** button: In the bottom right hand corner of the browser window is the **Done** button. Clicking this closes the browser and returns to the previous window (usually the MainBoss menu window).

Searching for a Particular Record

When you click the **Search** button in a browser, MainBoss opens a window where you can specify the record you want to find. For example, here is the window used for searching work orders:
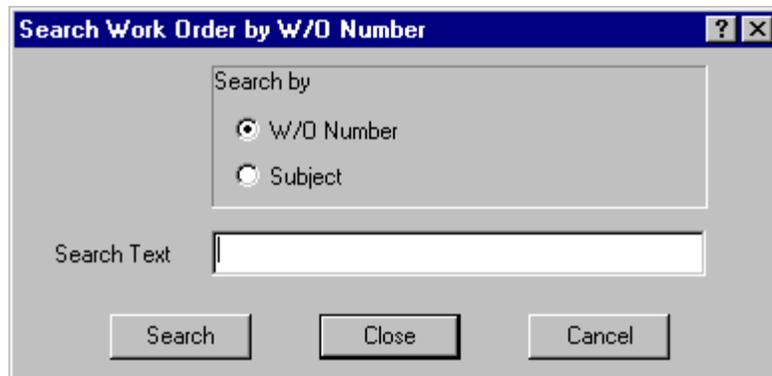
Under **Search by** is a list of items that MainBoss can search. In the above example, MainBoss can search either by work order number or by work order subject. Click either of these choices, then fill in "**Search Text**" with the text you want to look for. When you've done this, click **Search**.

MainBoss will search for the first record whose appropriate field begins with that string. For example, if you have specified you want to search by **Subject** and if you specify HOT as

your "**Search Text**", MainBoss will find the first work order whose "**Subject**" field starts with the string HOT.

You should be able to see the browser window behind the search window; therefore, if MainBoss finds a matching record, you will see the record that MainBoss found.

If MainBoss does not find a matching record, you will see a box informing you that the search was not successful. In this case, you might want to type in a different "**Search Text**" and then click **Search** again. This is useful if you aren't quite sure what you're looking for but can narrow it down to a few possibilities.

Important: MainBoss only looks at the *beginning* of the specified field. For example, if your "**Search Text**" is HOT, MainBoss will show you the first record where the field begins with HOT; it will *not* show you records where HOT appears later in the field. Therefore, it will show you a field like

                    HOT WATER TAP BROKEN

but will not show you

                    TOO HOT IN OFFICE

Using Editors

An editor window shows the contents of a single record. For example, here is the editor window for describing a single piece of equipment:

The window consists of a number of information fields. For example, the "**Building**" field at the top of the window lets you specify the building that contains the equipment.

In the editor window, you can move the cursor from one field to the next by pressing the **<Tab>** key. For example, if you have just filled in the "**Make**" field, pressing **<Tab>** moves the cursor to "**Model**". In this way, you can **<Tab>** from one field to the next without having to use the mouse. Of course, you can still use the mouse if you wish. (Note that **<Shift+Tab>** goes backwards to the previous field; this is useful if you type something, **<Tab>** out, then notice a typing mistake in the previous field.)

There are several types of information fields. The following explains the most common types of fields, using the Equipment editor window as an example.

Text fields: The simplest type of field is a text field. In the window above, "**Make**", "**Model**" and "**Serial No.**" are all text fields. To fill these in, just click on the field, then type appropriate values (in this case, the make, model, and serial number of a piece of equipment).

Text fields let you use the usual Windows editing features. For example, you can make corrections using **<Backspace>** or the **<Delete>** key. You can copy the current selection with **<Ctrl+C>**, cut the current selection with **<Ctrl+X>**, and paste in the contents of the clipboard using **<Ctrl+V>**. You can also use other standard editing features; for more information, see the documentation on your Windows system.

Date/time fields: A date/time field lets you record a calendar date and/or time of day. For example, when you writing up a work order, you can record information like the date you want the job to start, the date you expect it to end, the date you created the work order, and so on.

MainBoss gives you a great deal of freedom in how you enter dates and times. For example, here are a number of ways to enter the same date:

```
December 25, 2001
Dec 25, 2001
2001/12/25
12/25/2001
12/25/01
```

Times may also be included in the field, either at the beginning or the end, as in

```
Dec 25, 2001  3:00 pm
3:00 pm  Dec 25, 2001
12/25/2001 15:00
15:00 12/25/2001
```

The examples above show that you can use either a 12-hour or 24-hour clock.

Different parts of the world use different conventions for expressing numeric dates. For example, some use the MMDDYY convention (so that `01/02/03` would be interpreted as January 2, 2003). Other places use the YYMMDD convention (so

`01/02/03` would be interpreted as February 3, 2001). Still others use the DDMMYY convention (so `01/02/03` would be interpreted as February 1, 2003). The convention used by your organization can be set by your system administrator using preferences (as described in *Date and Time Format and Other Preferences* on page 164). When in doubt, you can always type in dates using a less ambiguous format. For example, if you type `Feb 1, 2003` your meaning will always be clear.

Date fields also recognize entries like `last year`, `next year`, `today`, and similar phrases.

Drop-down lists: The "**Building**" field in the Equipment editor is a drop-down list. When you click the accompanying drop-down button:

MainBoss displays a set of possible values for the information field. In the case of "**Building**", this is the set of buildings defined in your MainBoss **Buildings** table.

If a drop-down list contains a large number of entries, MainBoss displays a scroll bar on the edge of the list, as in:
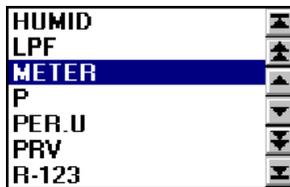
The arrow buttons in this scroll bar have the same meanings as the arrow buttons in a browser scroll bar. For an explanation of these buttons, see *Using Browsers* on page 141.

To find the desired entry in a long drop-down list, you can click the arrow buttons to move through the list. As an alternative, you can simply start typing the value you want inside the drop-down field. For example, if you type `MNO` in a drop-down field, MainBoss will drop the list and show you the first list entry that begins with `MNO`; if there is no such entry, MainBoss will show the first list entry that comes after the string you've typed. Typing a few letters is a quick way to jump down through a long list of possibilities.

Important: If a drop-down list currently contains a selected value and you want to clear (erase) that value, click on the area where the value is displayed, then type **<Ctrl+Delete>** (hold down the **<Ctrl>** key and press **<Delete>**). MainBoss will drop down the list. Click the mouse anywhere on the window *except* the drop-down list, and MainBoss will clear the field. You can also clear a drop-down list by right-clicking the list's arrow and clicking **Clear Selection** in the resulting menu.

Option buttons: There are two types of option buttons, both illustrated in the following window:

Round option buttons (like the ones with "**Open Work Orders**" and "**Closed Work Orders**" in the picture) are always arranged in groups. They are used for options that are mutually exclusive—if you select one of the options in the group, it automatically turns off all the other options in the group.

Square option buttons (like the ones under "**Printing Options**" in the picture) may or may not be arranged in groups. They are used for options that are independent of other options in the window. Checkmarking one of these options does not affect any other options.

In some cases, a square option button has three states: blank, checkmarked, and "not set" (in which case the box contains a grayed-out checkmark). Blank means the option is turned off, checkmarked means the option is turned on, and "not set" means the option follows whatever default is specified in your MainBoss preferences.

Information lists: Many windows display information lists. For example, the following window contains a list of personnel who have been assigned to a particular work order.
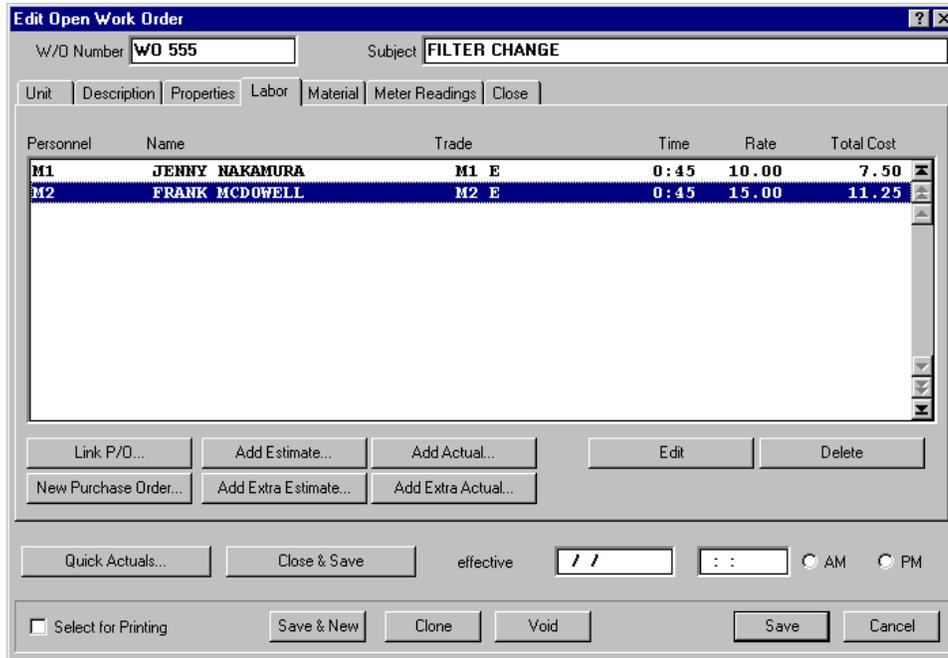
Buttons in this window (**Add Estimate**, **Add Actual**, etc.) let you add new names to the list. The **Delete** button lets you delete an entry from the list.

The **Edit** button lets you change an existing entry in the list (for example, changing the time estimate for how long the workers are expected to spend on the job). You can also edit an entry by double-clicking on it with the mouse. Either way, MainBoss will open a window that lets you change the information in the entry.

> **Note:** As a general rule, double-clicking on any list entry (in either a browser or an editor) lets you edit that entry.

Clone buttons: Many editor windows have **Clone** buttons. If you click this button, MainBoss opens a new window showing a new record. Some or all of the information fields in the new record contain information copied from the original record. This is a convenient way to create a new record if the new record will be similar to an existing record.

When you close the editor window for a cloned record, you typically return to the editor window for the original record.

Sometimes when you clone a record, MainBoss asks you what information you want cloned. For more information, see *Cloning Records* on page 149.

Cloning Records

Many editors and browsers contain **Clone** buttons that let you create duplicates of existing records. The process involves copying information from the existing record and creating a new record that contains the copied information.

In some cases, MainBoss will ask you what information you want to copy into the new record. For example, when you clone a work order, MainBoss opens a window that lets you specify which information should be copied from the original work order (including labor information, materials, chargeback information, and so on). Select the types of information that you want to copy from the old to the new, then click **Ok**.

Reports

MainBoss can produce a wide variety of reports on major Maintenance, Equipment and Inventory concerns. All reports can be printed or displayed on your screen. They can also be exported for use in external programs such as database, spreadsheet and word processing applications…or even faxed if you have a built-in fax/modem and faxing software that provides you with a faxing "printer." Some reports can be summarized to give management an overview of important trends.

> **Note:** All reports generated by MainBoss are designed to be printed on 8.5 by 11 paper or A4 paper, in portrait format.

Entering Report Specifications

In many reports, you can select ranges of values for the report to cover. For example, the Labor History report provides information on work done by your maintenance personnel; this may include hours worked, labor costs, the dates and times of specific jobs, and so on. When you want to produce a Labor History report, you can tell MainBoss that you want the report to cover a specific time period (for example, work done during the month of February), a specific set of workers (one worker in particular or several workers at once), work done in a particular building, and so on. MainBoss combines all these criteria to produce a report that only covers the material you want to see.

As an example of how this works, here's a screen from the window that lets you print the Labor History report:

As you can see, there are a number of fields arranged in "**From**" and "**To**" columns. For example, in "**Create Date**" (specifying the date when a particular work order was created), you can specify a date range by typing the starting date under "**From**" and the ending date under "**To**". The following rules apply:

☐ If you leave "**From**" and "**To**" blank, the report covers all available dates.

☐ If you leave the "**From**" field blank, the report covers all available dates up to and including the "**To**" date (going back to the earliest date in your database).

☐ If you leave the "**To**" field blank, the report will cover all records after the "**From**" date, up to the latest date in your database.

☐ If you want the report to cover a single day, set both "**From**" and "**To**" to the same value.

The same principles apply whenever you can specify a range of values. For example, a different section of the Labor History window has a "**Personnel**" field that lets you specify the personnel who should be included in the report. If you want the report to cover a single worker, you'd set the "**From**" and "**To**" values of "**Personnel**" to the name of that person. If you want a range of personnel (for example, workers whose names begin with any of the

letters in the range A through M), you could set the "**From**" value to the first name in the A's and the "**To**" value to the last name in the M's.

Previewing Reports

MainBoss lets you *preview* reports by displaying them on your computer screen. In this way, you can see everything that will be printed if and when you send the report to your printer.

To preview a report, click the **Preview** button in the window for printing the report. MainBoss displays a window that contains the following:

Preview area: The main part of the window shows the preview itself.

Page: The page number of the page you're currently previewing.

Goto Page: Lets you go to a different page of the preview. Type the desired page number into "**Page**", then click **Goto Page**. MainBoss will go to the specified page.

First Page: Goes to the first page of the report

Previous Page: Goes to the previous page of the report.

Next Page: Goes to the next page of the report.

Last Page: Goes to the last page of the report.

Full Size: Adjusts the displayed information so that it fills the preview area. This is the default. If the preview area is too small to show an entire page, the area will have scroll bars so that you can look at parts that don't fit on the screen.

Full Page: Adjusts the displayed information so that the preview area shows an entire page of the report.

Typically, **Full Page** shows more data than **Full Size**, but the printing is smaller and may be harder to read.

Print: Immediately prints the report you are previewing. In this way, you can print the report without having to close the preview window.

Close: Closes the preview window.

> **Note:** While previewing a report, you can also use the **<Page Up>** and **<Page Down>** keys to move backward and forward through the report.

A List of MainBoss Reports

This section provides a brief description of each report that MainBoss can produce. For information on any of these reports, see the online documentation.

Overdue Work Orders (**Work Orders** → **Reports** → **Overdue**)
    Lists work orders that are overdue. A work order is considered overdue if the work order has not yet been closed, but the "**Work End**" date has already passed.

Work Order History (**Work Orders** → **Reports** → **History**)
    Information about selected work orders.

Labor History (**Work Orders** → **Reports** → **Labor History**)
    Estimated and actual work done by selected workers.

Contracted Service History (**Work Orders** → **Reports** → **Contracted Service History**)
    Use and costs of service provided by outside contractors.

Manpower Schedule (**Work Orders** → **Reports** → **ManPower Schedule**)
    Projected schedules for personnel based on projected preventive work orders.

Work Order Statistics (**Work Orders** → **Reports** → **Statistics**)
    Summary of work order activity over a specified period.

Units Report (**Units** → **Reports** → **Units**)
    Information about selected equipment and/or spaces.

Maintenance Status (**Units** → **Reports** → **Maintenance Status**)
    Overview of preventive maintenance on selected units.

Replacement Schedule (**Units** → **Reports** → **Replacement Schedule**)
    Projected schedules and costs for replacing equipment.

Downtime Report (**Units** → **Reports** → **Downtime**)
    Information about equipment downtime, including Mean Time Before Failure rates.

Spare Parts (**Units** → **Reports** → **Spare Parts**)
    Which units use which spare parts.

Re-Order Report (**Inventory** → **Reports** → **Re-Order**)
    Which inventory materials need to be re-ordered (based on current stock on hand, stock on reserve and stock on order).

On Order Report (**Inventory** → **Reports** → **On-Order**)
    Which materials are currently on order.

Receiving Report (**Inventory** → **Reports** → **Receiving**)
    Information about inventory receipts over a given period.

Purchase History (**Inventory** → **Reports** → **Purchase History**)
    Purchases made over a given period.

Stock Activity (**Inventory** → **Reports** → **Stock Activity**)
    Information on all changes in stock including issues, transfers, purchases, etc.

Issues Report (**Inventory** → **Reports** → **Issues**)
   Information on all materials issued from inventory.

Inventory Status (**Inventory** → **Reports** → **Inventory Status**)
   All items in stock within one or more storerooms. The report can be written in
   "physical count" form to facilitate taking inventory.

Inventory Value (**Inventory** → **Reports** → **Inventory Value**)
   The value of materials currently on hand.

Inventory Where Used (**Inventory** → **Reports** → **Inventory Where Used**)
   Which preventive maintenance tasks use which inventory items.

> **Note:** To see the online help about any of these reports, use the menu selections listed
> above, then click the **<?>** button in the upper right hand corner of the resulting window.

Exporting Data

MainBoss can *export* data from a report in a format that lets you use the data with another
computer program. For example, you could export data for use with Microsoft Excel or
Microsoft Access; you could then use Excel or Access to create a customized report based
on that data.

MainBoss can export data in two formats:

☐ The dBase-format creates a `.DBF` file suitable for use with programs that accept FoxPro
   dBase data. (This includes Microsoft Excel and Access.)

☐ The text format creates a `.CSV` (text) file consisting of ASCII character data. Each line
   consists of a series of fields, separated by commas. You can choose whether the text
   file begins with a line giving the name of each field or just starts immediately with the
   data.

To export data in either format, you click the **Export** button in the window for printing a
report. MainBoss opens a standard Windows "Save as" dialog where you can specify the
name of the file that should hold the exported data. The **Save as type** field gives the
following choices:

`Database Files (*.DBF)`: MainBoss will save the data in dBase format.

`ASCII Comma Delimited (*.CSV)`: MainBoss will save the data in text format, with
   fields separated by commas.

`ASCII Comma Delimited with Field Names (*.CSV)`: MainBoss will save the data
   in text format, with fields separated by commas. The first line in the file will give
   names for each field.

As a simple example, here are a few lines of information from the Units report, exported
using the last format listed above. (The lines have been truncated to fit on the page.)

```
UNTYPE,UNCODE,UNDESC,...
S,320 RBC          ,RICHMOND BAKERIES 320 TOWER   ,...
S,330 3RD          ,RICHMOND BAKERIES             ,...
S,AA               ,ALGARD AUDITS                 ,...
```

The first line gives field names: UNTYPE (Unit type), UNCODE (Unit code), UNDESC (Unit description) and so on. Subsequent lines give information about various units. In the UNTYPE field, the value is either S for Space or E for Equipment. The UNCODE is the identifier code from the Space or Equipment Table, and the UNDESC is the description from the same table. Subsequent fields on the line provide more information about the unit.

When MainBoss exports data from a report pertaining to work orders, the data contains all the data from all the relevant work orders (even if data that would not be printed in the report itself). For example, many types of reports have "summary" formats that summarize information without giving details. However, when you export such a report, you get the full details that were used to calculate the summaries.

> **Note:** Upon request, MainBoss support will provide detailed information about database field names and storage formats.

Attachments

Many organizations have online information associated with equipment and/or spaces. For example, a manufacturing plant might have schematic diagrams showing how to make a certain kind of repair, while a rental management company might have an online document that states contractual agreements with a particular tenant.

In such cases, it is useful to attach drawings, documents, and other types of files to the records in MainBoss. This makes it easier for your management and workers to locate information that might be relevant to a particular task.

An Example: As an example of how this works, consider the case of a rental management company that provides maintenance services to a number of tenants in an office building. Whenever a tenant signs a lease, the company prepares a Microsoft Word document specifying any special contractual agreements between the tenant and the management company.

Obviously, there are times when it might be useful for the maintenance department to check the contractual agreements that have been made with a particular tenant. Therefore, in the MainBoss Space table entry for each tenant's office, the company specifies the name of the file that contains the relevant document. It is also necessary to tell MainBoss that this file should be opened with Microsoft Word.

Once this information has been set up, anyone looking at the Space table entry can open the document file directly from MainBoss. This means that MainBoss starts Microsoft Word to display the file; you can also use Word's usual facilities for printing the file, editing it, and so on.

The same principle applies for other types of files. For example, if you have a CAD-CAM file providing a schematic diagram for some piece of equipment, you can record the name of that file in the appropriate Equipment table entry.

Viewing programs: In order to display or print an attachment, MainBoss has to know what software to use. Often this is handled by the Windows operating system; for example, Windows may be set up so that files whose names end in `.doc` are opened in Microsoft Word. On the other hand, your Windows system may not have software automatically associated with other types of files.

If Windows does not automatically associate software with a particular type of file, you must tell MainBoss what software to use for displaying and/or printing that file. This means that you have to tell MainBoss about the *viewing program* needed for that file.

For example, suppose you are attaching a CAD-CAM file and Windows doesn't have an existing file association for that type of file. Then you need to tell MainBoss what program to use in order to look at the file.

MainBoss records viewing programs in the Viewing Programs table. For more information, select **Tables** → **Viewing Programs** from the menu and consult the online help.

> **Note:** You only have to set up a viewing program in the Viewing Programs table if Windows has no existing association for the given type of file. Windows typically has associations for all the types of files you frequently use.

Creating an Attachment

Files are attached to equipment or space records. If your Windows system does not have an existing file association for the file you intend to attach, you must make sure MainBoss's Viewing Programs table has an entry for an appropriate viewing program. For more about viewing programs, see the previous section.

☐ **To attach a file to an equipment or space record:**

1. Open the appropriate record, either through the Equipment browser or the Spaces browser. (For information on opening such records, see *Examining and Editing Equipment Records* on page 68.)

2. In the **Specifications** section of the record, click **New Attachment**. MainBoss opens a window where you can specify the attachment file.

3. In "**Attachment**" ❶ enter a brief code name for this attachment.

4. In "**Attachment File**" ❷ enter the name of the file containing the attachment. (If you click **Select** ❸, MainBoss opens a standard file specification window that you can use to search for the file.)

5. If Windows does not have a standard file association for this type of file, use "**Viewing Program**" ❹ to specify the appropriate viewing program.

6. Click **Save** to save this information, then click **Close** to close the window.

Quick Annotations

Sometimes you want to record notes about a unit. For example, one of your mechanics might want to jot down advice for anyone who works on a particular piece of equipment in future. You can use attachments to record such notes. In this case, you do *not* have to create a file in advance.

There are two types of files commonly used to hold notes:

☐ Text files: These typically have names ending in .txt (as in note.txt). The most commonly used viewing programs are NOTEPAD or WORDPAD, both supplied as part of Windows.

☐ Document files: These typically have names ending in .doc (as in note.doc). The viewing program would be your chosen word processing software (e.g. Microsoft Word or Corel WordPerfect).

Before making your note, you should make sure your Viewing Programs table contains the appropriate viewing program. For more information on viewing programs, see *Attachments on page 157*.

☐ **To record a quick note:**

1. Open the appropriate record, either through the Equipment browser or the Spaces browser. (For information on opening such records, see *Examining and Editing Equipment Records* on page 68.)

2. In the **Specifications** section of the record, click **New Attachment**. MainBoss opens a window where you can specify the attachment file.

3. In "**Attachment**" ❶ enter a brief code name for this attachment.

4. In "**Attachment File**" ❷ enter a name for the file that will contain the note. (If you click **Select** ❸, MainBoss opens a standard file specification window that you can use to name the file.)

5. In "**Viewing Program**" ❹ specify the viewing program you'll use to add notes to the file.

6. Click **New File**. MainBoss creates the file and opens it with the specified viewing program. You can then write up any notes you want to record. When you're finished, save the file and exit the viewing program.

7. Back in MainBoss, click **Save** to save MainBoss's record of the attachment, then click **Close** to close the window.

Using an Attachment

Once you have attached a file to an equipment or space record, MainBoss makes it easy to view or print the attachment.

☐ **To read or edit an attachment:**

1. Open the appropriate record, either through the Equipment browser or the Spaces browser. (For information on opening such records, see *Examining and Editing Equipment Records* on page 68.)
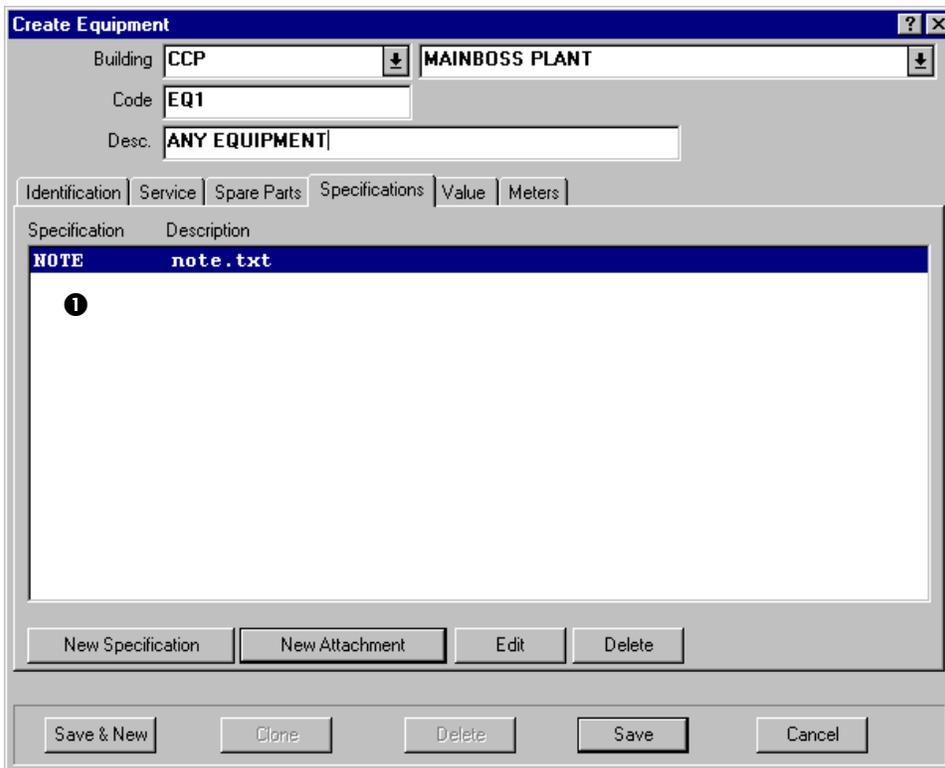
2. In the attachment list ❶, double-click the attachment you want to read or edit. MainBoss will open a window showing information about the attachment.
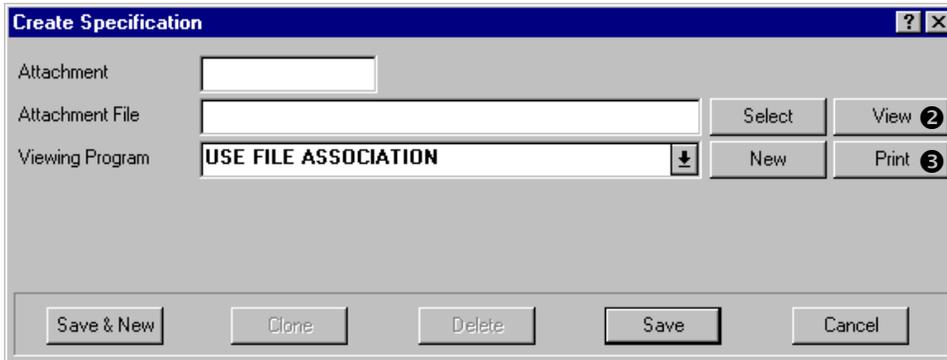
3. Click **View**. This opens the file with the specified viewing program. You can use all the features of the viewing program to read and/or edit the file. When you're finished, exit the viewing program.

4. If you want to print the attached file, click **Print**. MainBoss will open the file with the printing program specified in the Viewing Programs table. Depending on the viewing program, it may print the file directly or you may have to use the viewing program's printing features to print the file.

MainBoss Administration

The **Administration** menu lets an administrator control the behavior of MainBoss. The menu offers access to the following features:

☐ **Preferences**: Customizing various aspects of MainBoss to meet the needs of your organization.

☐ **Database Utilities**: Keeping your MainBoss database files in efficient working order, plus backing up and restoring the entire database.

☐ **Security**: Restricting the ways in which other users can use MainBoss. For example, you might want to prevent unauthorized users from creating new purchase orders; the security features of MainBoss make this possible.

☐ **Archiving**: The archiving process removes old records from your database files. For example, you can use this to remove work orders, work requests, and purchase orders that are more than a year old. Removing these records makes the files smaller; not only does this increase the speed of many MainBoss operations, it also makes it simpler for you to find more recent records since the tables aren't cluttered up with old entries. (Note that MainBoss's archiving facilities also let you examine old records that have been removed from your database files; therefore you can still obtain older information if necessary.)

☐ **License Keys**: Lets you enter and modify license keys for MainBoss software products.

Accessing Administration Functions

Administration operations are normally disabled. This means that when you try to select an operation from one of the **Administration** submenus, the items are all grayed out; clicking on them does nothing.

In order to enable administration operations, you must *login* as the MainBoss administrator. If you aren't already logged in as the administrator, you can do so by selecting **Session** → **Login** from the menu. MainBoss will display the usual login window. For "**User Name**" type ADMINISTRATOR, and for "**Password**" type the administration password.

Note: For more information about logging in, see *Logging In* on page 9.

When you first license MainBoss, you will be given the password to use as administrator. Later on, you may change to a different password, as described in *Changing Your Administration Password* on page 174.

Important: Anyone who knows your Administration password can control all the administrative functions of MainBoss, including security features. Therefore, you should only give the password to people who have the authority to control all other MainBoss users at your site.

A person who is logged in as ADMINISTRATOR may grant other users the ability to use the **Administration** menu. Therefore in some organizations, a person logs in as ADMINISTRATOR when MainBoss is first installed and grants administration privileges to various other users; from this point on, there is no need to log in as ADMINISTRATOR, since you can perform administrative operations under other user names. For more about granting permissions to other users, see *Authorizing New Users* on page 175.

If you have logged in as ADMINISTRATOR to do some administrative work, then want to go back to being a "normal" non-administrator user, select **Session** → **Login** from the menu, then log in with both "**User Name**" and "**Password**" blank (no characters). This puts you back to being an "anonymous" user.

Note: MainBoss will only let you log in as an anonymous user if you have security turned off. If you have security turned on, you must always log in as a "named" user. For more about turning security off and on, see *Logins and Security* on page 177.

Saving Settings

A number of windows let you save some of their settings. For example, the window for printing a work order can "remember" the number of **Additional labor lines** and **Additional material lines** from one MainBoss session to the next. This means that you don't have to fill in these fields each time you print work orders; MainBoss will automatically remember the settings you have saved.

Note: Settings may only be saved by the administrator. Therefore, to save settings you must log in as the administrator.

☐ **To save settings for a window:**

1. Move the mouse pointer to the *title bar* of the window (the bar at the top of the window where the window's title is displayed).

2. *Right-click* on the title (press the mouse's right-hand button). A small menu will appear.

3. If you can save settings for this particular window, the menu will have a **Save Settings** entry. Click this menu item.

Many windows do not let you save their settings. The ability to save settings is most commonly associated with windows for printing reports.

When you ask to save the settings for a window, MainBoss does not save *all* the settings; it only saves the settings that you are most likely to keep the same in future.

Preferences

The **Preferences** section of the **Administration** lets you specify default behaviors for MainBoss. For example, if most of your work orders are related to equipment, you can specify that new work orders should start with the "**Equipment**" box checked off. On the other hand, if most of your work orders are related to spaces, you can specify that new work orders should start with the "**Space**" box checked off. In this way, blank work orders are initially set up to match your most common situation. Of course, if a particular work order is different, you can always change that work order when you create it; however, setting up your preferences to reflect your most common situation can save you from having to type in the same information over and over again.

You can set preferences for work requests, work orders, unit records (equipment and spaces), and purchase orders. For more information, see the online help. You can also set preferences for the way that dates and times are displayed, as discussed in the next section.

Company Information

MainBoss lets you record various types of general information about your organization, for use in reports, purchase orders, and various other functions. For example, you can specify a bitmap containing your company logo, for use in printed purchase orders sent to vendors. (The bitmap will be scaled to a size of 2.4 x .9 inches on the final printout. If you have a 600 dpi printer, this corresponds to a bitmap of 1440 x 540 pixels.)

Date and Time Format and Other Preferences

MainBoss lets you specify preferences for a number of other types of information used by the program. In particular, you can specify the format you prefer for dates and times.

To specify such preferences, select **Administration** → **Preferences** → **Other** from the menu. MainBoss displays a window containing the following:

Date Format: This area lets you specify the format of dates and times used in MainBoss.

Settings in the **On Screen** group let you specify the format of dates and times when MainBoss displays information on your computer screen.

Settings in the **In Reports** group let you specify the format of dates and times when MainBoss prints information in reports.

Both groups have an accompanying "sample display" showing a date and time in the current format. When you change one of the settings, MainBoss changes the display to show you how dates and times will be displayed in the new format.

Note: These settings tell MainBoss how to *display* dates and times. When you are typing in dates and times you can use a much wider variety of formats. For more information, see *Using Editors* on page 145.

Time Format: Settings in this area specify how MainBoss displays times on your computer screen.

> **12 Hour Clock**: Times are measured on a 12-hour clock, often with an added **AM** or **PM** designation, as in `01:30 PM`.
>
> **24 Hour Clock**: Times are measured on a 24-hour clock, as in `13:30`.

Field Delimiter: Settings in this area specify how MainBoss will break up dates into separate parts.

> **No Date Delimiter**: Dates are not broken up into separate parts. For example, if you are using all numeric dates in MDY format, December 25, 2001 would be displayed as `122501`.
>
> **Slashes**: Dates are broken into parts separated by slash characters. For example, if you are using all numeric dates in MDY format, December 25, 2001 would be displayed as `12/25/01`.
>
> **Blank and Comma**: Dates are broken into parts separated by spaces; a comma may also be used to separate parts of the date. For example, if you are using all numeric dates in MDY format, December 25, 2001 would be displayed as `12 25, 2001`.

Field Order: Settings in this area specify the order of the parts of the date.

> **YMD Order**: Dates consist of the year followed by the month followed by the day.
>
> **MDY Order**: Dates consist of the month followed by the day followed by the year.
>
> **DMY Order**: Dates consist of the day followed by the month followed by the year.

Month Format: Settings in this area specify how months are represented.

> **Numeric Month**: Months are written as numbers from `01` to `12`.
>
> **Abbreviated Month**: Months are written with three-letter abbreviations (for example, `Nov` for November).
>
> **Full Month**: Months are written out with their full names (for example, `January`).

In Reports: Specifies a format for displaying dates in reports. The field can contain any of the following:

`mm`	The month as two digits.
`mmm`	The month as a three-digit abbreviation (e.g. `Nov`)
`mmmm`	The full name of the month (e.g. `January`)
`dd`	The day as two digits (e.g. `03` or `25`)
`d`	The day written as one or two digits (e.g. `3` or `25`)

`yyyy`	The day written as four digits (e.g. `2001`)
`yy`	The day written as two digits (e.g. `01`)

In addition, you can add other characters, such as spaces or punctuation characters between different parts of the date. For example, if you specify the format `mmm/dd/yyyy`, MainBoss would display dates as in `Dec/25/2001`.

Currency Format: The options in this area specify defaults for representing currencies throughout MainBoss (including in reports). Also in this area, MainBoss displays sample positive and negative currency values to show what such values look like. If you change one of the options, the display will also change to show the result.

Currency Symbol: One or more characters to be used to represent currency units. Examples are `$` for the dollar or `¥` for the yen.

Decimal Symbol: A single character to be used to separate the fractional part of a currency value from the rest of the value. For example, the dot `"."` is typically used as a decimal point in dollar values, as in `$23.99`.

Digit Grouping Symbol: A single character to be used to group digits in the non-fractional part of a currency value. For example, the comma `","` is typically used as a grouping symbol in dollar values, as in `$1,000,000.00`.

Digit Grouping: Lists possible ways in which digits may be grouped. You should pick your preferred grouping format from this list.

Positive Currency: Lists possible ways in which positive currency values may be displayed. For example, the currency symbol may appear at the beginning of the value (as in `$23.99`) or at the end (as in `23.99$`).

Negative Currency: Lists possible ways in which negative currency values may be displayed. For example, some organizations prefer to use a minus sign in front, as in `-$23.99`, while other organizations prefer to put such values in parentheses, as in `($23.99)`.

PM Generation: The options in this section specify defaults for generating preventive maintenance work orders. For further information on generating such work orders, see *Generating Preventive Maintenance Work Orders* on page 94.

PM Generate Frequency: Specifies the default number of days between generating new preventive maintenance work orders. For example, if you intend to generate new work orders every two weeks, you would set this field to `14`.

For more information about generating preventive maintenance work orders, see *Generating Preventive Maintenance Work Orders* on page 94.

Viewing Program: Specifies the default viewing program used with attachment files. For more information, see *Attachments* on page 157.

Telephone Prefix: Specifies a default string of digits that you want to put at the beginning of all new telephone numbers. For example, if most of your telephone

calls are made to your local area code, you would set "**Telephone Prefix**" to that area code. This saves you the time of typing the area code whenever you type in a new phone number. (For phone numbers not in that area code, you can simply delete the default prefix and start typing the number from the beginning.)

Custom Text Settings

The Custom Text feature of MainBoss has two basic uses:

☐ You can customize MainBoss's terminology to match the terminology used by your organization. For example, instead of "Cost Center" your organization may prefer to use the term "Department." This feature lets you tell MainBoss to use "Department" wherever it usually uses "Cost Center".

☐ You can change MainBoss to use some other language instead of English.

Note: MainBoss supplies custom settings for a limited set of non-English languages. If you want to work in some other language, you must create your own file of custom translations.

For more on custom text settings, see the online help.

Database Operations

The **Administration** → **Database** menu lets you clean up the MainBoss database and perform backup/restore operations.

Reindexing

Reindexing means cleaning up your MainBoss database and rebuilding its indexes. Usually, the only time you have to do this is when you install a new version of MainBoss. However, it may also be necessary if part of your database has been damaged (for example, by hardware problems or a power failure).

Important: MainBoss will not let you reindex the database if anyone else is currently using MainBoss. Therefore, you should make sure that all other users at your site quit MainBoss before you attempt to reindex.

☐ **To reindex your database:**

1. Select **Administration** → **Database** → **Re-Index** from the menu. MainBoss displays the following:
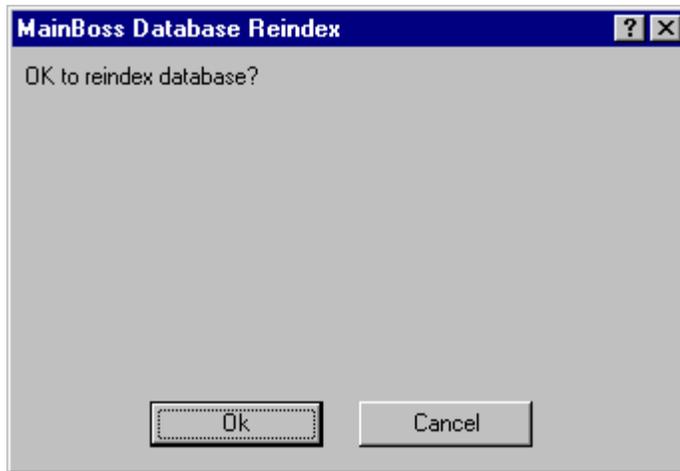
2. Click **Ok**. MainBoss will begin the reindexing process. As this process takes place, MainBoss reports which files are being reindexed.

3. When MainBoss tells you the reindexing is finished, click **Ok** to close the window.

Backing Up Your MainBoss Database

The MainBoss backup process creates a compressed form of your MainBoss database: a single file containing all the information of your database, stored in a special format that takes up less disk space. Here are some situations when you should create a backup file:

☐ You should backup your database before any major change to MainBoss. This includes installing a new version of MainBoss or reindexing your database (as described in *Reindexing* on page 168).

☐ Regular backups make it possible to recover from disasters like fires, floods, or major hardware failures (such as a hard disk crashing). Make sure you copy backup files to a different disk on a different computer system from the one that normally contains your MainBoss database. Many organizations copy their backups to a high-capacity diskette (ZIP or JAZ) and store the diskette in a different building. (Of course, many organizations already have procedures in place for backing up all their computer data.)

☐ If you have a problem and contact MainBoss support, our support personnel may ask you to send us a copy of your database to help us correct the problem. In this case, you just use MainBoss's backup facilities to create a backup file; you can then send us the file (usually by e-mail).

□   **To create a backup file:**

1. Select **Administration** → **Database** → **Backup** from the menu. MainBoss will display a normal File Save window asking you to specify a name for the backup file. (Files are expected to have the file name extension .MZH.) Once you have entered a name, MainBoss will ask if it is all right to proceed with the backup. Click **Ok** to proceed.

Note: Before you begin a backup process, make sure that no one else is using the database. This means that everyone else should quit MainBoss before you start the backup; MainBoss will not perform the backup if anyone else is using the database.

After the backup process finishes, MainBoss displays a window indicating whether or not the process was successful. Click **Ok** to return to the MainBoss window.

Once you have created a backup file, you can treat it like any other file. For example, you can copy it to another location or delete the file when you no longer need it. You can also *restore* your database from the file, as described in *Restoring Your Database From Backup on page 170*.

Restoring Your Database From Backup

Ideally, you should never have to restore your database using a backup file. However, if your existing database files become damaged (for example, due to hardware failure), you may need to return to a previously saved backup.

When you restore a database, MainBoss asks you to specify a directory where MainBoss should store the various files associated with that database. This should *not* be the same directory as your existing database—even if you want the restored files to take the place of your existing database, restore to a different directory first.

□   **To restore your database from a backup file:**

1. Select **Administration** → **Database** → **Restore** from the menu. MainBoss will display the following:
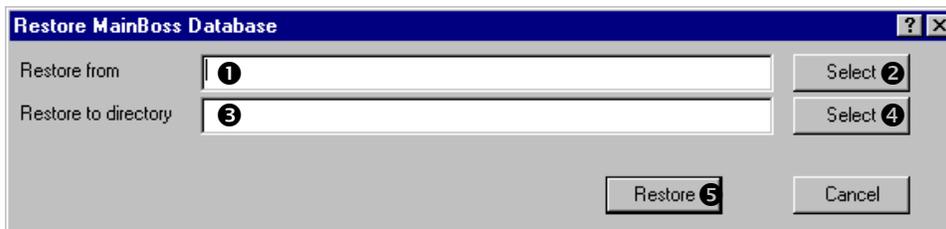
2. In "**Restore from**" ❶ specify the name of the file that contains the backed-up database. You can either type in the name, or click the associated **Select** ❷ to locate the file.

3. In "**Restore to directory**" ❸ specify the directory where MainBoss should store the backed-up database. You can either type in the name or click the associated **Select** ❹ to locate the directory.

4. Click **Restore** ❺ to restore the database.

Using a Restored Database: Once you have restored the database, there are two ways to use it:

☐ The safest way is to create a Windows shortcut that refers to the new database. To do this, use the right-hand mouse button to click the Windows desktop, then click **New**, then **Shortcut**. Windows will start a wizard to help you specify the new shortcut. For `Command Line`, click the **Browse** button and find the MainBoss program file (named `mboss.exe` under the directory where you installed the software). Assign any name you like to the shortcut.

Once you have created the shortcut, use the right-hand mouse button to click on the shortcut and then click **Properties**. Windows opens up a "property sheet" for the shortcut. In the **Shortcut** section, change the name in the "**Start in**" field to be the name of the directory where you restored the database files. Finally, click **Ok** to close the property sheet.

Double-clicking on this shortcut will start MainBoss; however, instead of using your standard database, this version of MainBoss will use the database restored from backup. You can perform any operations with this database that you can perform with your previous database.

Note that any operations you perform on the restored database will *not* affect your "standard" database.

☐ After you have spent some time examining the restored database to make sure it is working properly, you may decide to replace your "standard" database with the restored one. If so, copy all the files and subdirectories from the directory where you restored the database to the directory containing your "standard" database. This overwrites your standard database with the restored one.

From this point onward, you should get rid of the shortcut you created to the restored database and resume using your "standard" database.

Note: Make sure you keep track of which database you are using. If you are in doubt, look at the title line in the main MainBoss window—it tells you the directory containing your database files. Changes that you make in one database do not affect the other, so don't get confused about which database you are actually using. If you intend to replace your standard database with the restored one, restore the database, check the restored database to make sure the data looks all right, and then copy the restored data over the standard data.

Auditing

MainBoss's auditing facilities examine your database for errors and other unusual conditions. These conditions may arise from a variety of causes:

☐ Power failures or other system crashes while MainBoss was in the middle of an operation.

☐ Left-over problems from older versions of MainBoss.

☐ Deleting table entries that other tables depend on. For example, suppose you delete an entry from the Priority Code table, but one or more work orders still have that priority. The audit report will show you which work orders use the now non-existent priority.

☐ Typing errors and other kinds of mistakes. For example, the auditing facilities look at the labor records associated with a closed work order, then compares the dates of the labor records to the dates on the work order. If the labor records specify work done outside the period of the work order itself, this usually indicates a mistake in entering dates for the work order or the labor records.

Some of the conditions listed in the audit report may not be actual errors. For example, MainBoss reports any date earlier than 1980 in the database. Most of the time, such an old date is evidence of a mistake when typing information; however, some organizations may have old equipment with a purchase date before 1980. In this kind of situation, you can simply ignore what the audit report shows.

The auditing window lets you correct some kinds of errors. With many types of errors, however, you may need to correct the situation using other parts of MainBoss. For example, suppose you delete a Priority code from the Priority table and MainBoss discovers a number of work orders that use the now non-existent code. The auditing window lets you blank out the priority code on such work orders, so that they no longer use the old code.

However, you may prefer to assign different priority codes to some of the work orders; in this case, you must use the normal facilities to open each work order and assign a new code. Alternatively, you may decide to restore the code you deleted (which means creating a new priority code with the same identifier as the deleted one).

The above example shows that it may take work to resolve the problems listed in the audit report—you may have to edit existing records, create table entries, and so on. We recommend that audit report problems be handled by someone who is thoroughly knowledgeable with your organization's operations.

> **Note:** Before beginning an audit, we recommend that you reindex your database first (as described in *Reindexing* on page 168). For both reindexing and running the audit, make sure that nobody else is using the database at the same time.

To audit your database:

1. Select **Administration** → **Database** → **Audit** from the menu. MainBoss begins by opening a window that indicates an audit is taking place; this window shows the audit's progress by displaying the names of the files that MainBoss is reading. You can cancel the audit by clicking **Close** in this window.

2. After the files in your database have been examined, MainBoss displays a new window stating the results of the audit. For information about using this window, see the online help by clicking the **<?>** button in the upper right hand corner of the window.

Here are some of the problems that might be reported by an audit:

`Orphan record,AUDIT found a record who noone refers to`: An orphan record is one that should be referred to by some other record but is not. For example, when you type in the labor costs for a work order, MainBoss creates labor records; the record for the work order should contain links to all the associated labor costs. However, suppose you are entering a work order and the system crashes after you have typed in some labor records but before you save the actual work order. In this case, your database won't have a work order record that links to the labor records. Therefore, the labor records are orphans—they're just wasted space, because no work order is using them. Other types of orphan records can occur in similar ways.

The usual way to deal with orphan records is to delete them. Click on the line in the Problem list, then click the **Delete Record** button.

`Lost link,AUDIT found a reference to a record in another table that does not exist`: A lost link occurs when you delete a record in one table and other records in other tables refer to the deleted record. For example, if you delete a Priority code from the Priority table, any existing work orders that use that priority will now have a lost link.

The audit report lets you solve the problem of lost links by setting the field blank: click the line in the Problem list, then click **Set Blank**. This sets the corresponding field blank; in our previous example, it would clear out the priority code in the work order. In some cases, however, you might prefer to take a different action. For example, you might prefer to assign a new priority code rather than blanking out the old, or to reinstate the missing code.

`Bad character in text field`: A text field contains a character that MainBoss does not allow (usually a backslash \). The audit window lets you set this character to a blank instead.

`Bad Date`: A field contains a value that is not a valid date.

`Date is in the future`: A field contains a date that is in the future, even though such a date doesn't make sense. Note that MainBoss does *not* report this problem if

it makes sense for a date to be in the future; for example, the "**Scrap Date**" for a piece of equipment is typically in the future, so MainBoss does not consider this a problem. However, if the "**Purchase Date**" is in the future, MainBoss considers this an indication that the date might have been typed incorrectly.

`Date is before 1980`: This is considered suspicious for any date, even though there are situations where it might be correct.

`Work start date is past close date`: The closing date on a work order comes before the stated date that the work was started. This suggests that either the start date or close date is incorrect.

`Work end date is past close date`: The work order was closed before the job was actually finished. This suggests that either the work end date or the close date is incorrect.

`Labor time outside workorder interval`: A labor record specifies that work was done on a job before the work order's start date or after the work order's close date.

`Effective reading < previous reading`: A meter reading is lower than the previous reading on the same meter. This suggests that one of the readings was typed incorrectly. If this code appears, it may explain why meter-scheduled tasks fail to generate work orders.

`Reading date/time <= previous reading`: A meter reading was specified at a date/time that preceded a reading that was already recorded. This suggests that the readings were entered out of order, or that a date/time was typed incorrectly.

Security

MainBoss's security facilities help you control who can use MainBoss and what each person can do with the software.

Changing Your Administration Password

When you license MainBoss, you are given an administration password. There are several reasons why you might wish to change this password:

☐ You might want to change the password to something that is easier for you to remember.

☐ You should change the password if there is a chance that some unauthorized person has learned the old password. Some organizations like to change the password on a regular basis (for example, every month) just in case an unauthorized person has learned the old password.

You should change the password if someone who knew the old password leaves your organization for any reason.

If you do change your administration password, make sure you change it to something you can remember. Forgetting your password will make it impossible to perform standard administration functions like backups and archiving. (If you do forget your password, contact MainBoss support for instructions on how to get a new password.)

  To change your administration password:

1. Select **Administration** → **Security** → **Change Password** from the menu. MainBoss displays the following:

2. Enter your current password in "**Old Password**" ❶. No matter what you type, MainBoss will only display asterisk (*) characters. This maintains secrecy, even if someone is looking over your shoulder at the screen.

3. Enter a new password in "**New Password**" ❷. This can be any combination of numbers and/or letters.

4. Enter the same password in "**New Password again**" ❸. MainBoss asks you to type the string a second time just in case you made a typing mistake the first time. Your "**New Password**" and "**New Password again**" strings must be identical; if the new passwords are not the same, MainBoss will not change the password.

5. Click **Ok** to close the window.

Authorizing New Users

MainBoss lets you create a table of people who are authorized to use MainBoss in your organization. Each such user has a *user name* (names by which users identify themselves to MainBoss) and a password to establish identity.

Best Practice: If you are already using a network that makes users login, you should assign your personnel the same user names and passwords they use on the network.

When you authorize a user, you can specify which features of MainBoss that person is allowed to use. For example, you might authorize a person to create work requests but not work orders, or you might prevent anyone from creating purchase orders except management personnel.

Authorizations are granted according to MainBoss menus. For example, if you prevent a particular person from accessing **Inventory** → **New Purchase Order** and **Inventory** → **Browse Purchasing**, that person will not be able to create new purchase orders.

☐ **To give a new user permission to use MainBoss:**

1. Select **Administration** → **Security** → **Users** from the menu. MainBoss opens the Users browser:
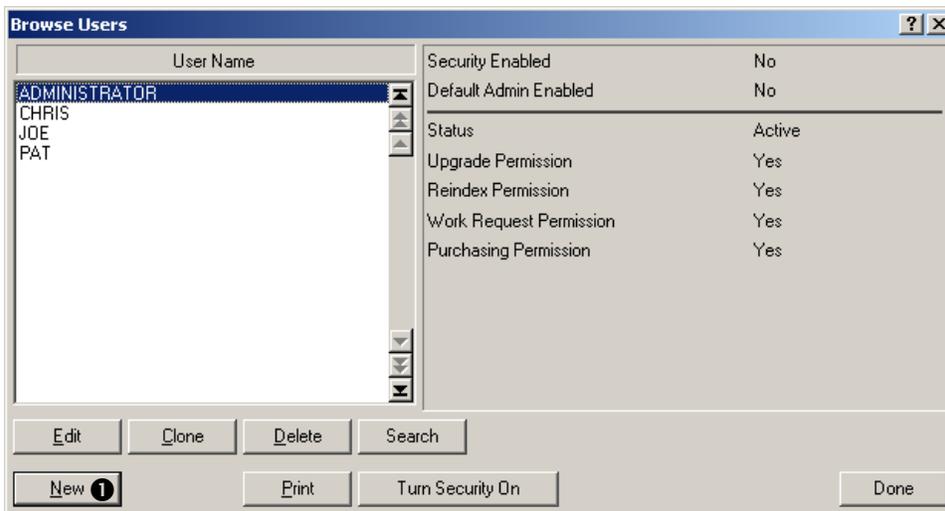
2. Click **New** ❶. MainBoss opens a window where you can enter information about the new user:
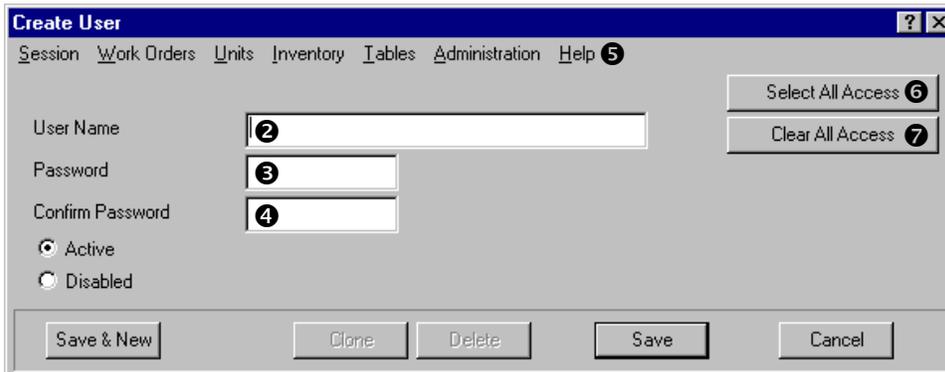
3. In "**User Name**" ❷ type a name for the new user.

4. In "**Password**" ❸ and "**Confirm Password**" ❹ type a password for this user. (You must type the same password in both fields.)

5. Use the window's menu bar ❺ to specify which MainBoss features this user will be permitted to use. If you checkmark a menu item, this user will be able to use the feature; if you remove the checkmark on an item, the user will not be able to use the feature. You can checkmark every menu item by clicking **Select All Access** ❻, and you can turn off all the checkmarks by clicking **Clear All Access** ❼.

6. Click **Save** when you have finished specifying these permissions, then click **Close** to close the window.

When creating a new user, you may find it useful to **Clone** an existing user from the Users browser. This creates a new user with the same access settings as the user that you cloned. For example, if you hire a new worker who'll have the same access permissions as one of your current workers, making a clone of the current worker's record will set up the same access settings. That way you don't have to set up the same permissions again for the new worker.

You may also find it useful to make up a few "request-only" users in advance. For example, you might create users named REQUEST1, REQUEST2, etc. with appropriate passwords and permissions set only to allow the creation of work requests. You can then hand out these user names and passwords to people who can be authorized to submit requests.

Logins and Security

MainBoss can run with its security features turned on or off.

☐ **If security is turned on:** Whenever someone starts the MainBoss program, MainBoss asks that person to enter a name and a password. After the user has logged in, the only features available are those that have been authorized for that user (as described in *Authorizing New Users* on page 175).

☐ **If security is turned off:** People are not asked to identify themselves when MainBoss begins. They can use any of MainBoss's normal features. However, they still have to log in as ADMINISTRATOR before they can use features from the **Administration** menu.

☐ **To turn security on or off:**

1. First, log in as ADMINISTRATOR (as described in *Logging In* on page 9).

2. Select **Administration** → **Security** → **Users** from the menu. MainBoss opens the Users browser:

Browse Users				? X
User Name		Security Enabled	No	
ADMINISTRATOR		Default Admin Enabled	No	
CHRIS		Status	Active	
JOE		Upgrade Permission	Yes	
PAT		Reindex Permission	Yes	
		Work Request Permission	Yes	
		Purchasing Permission	Yes	

Edit   Clone   Delete   Search

New   Print   Turn Security On   ❶   Done
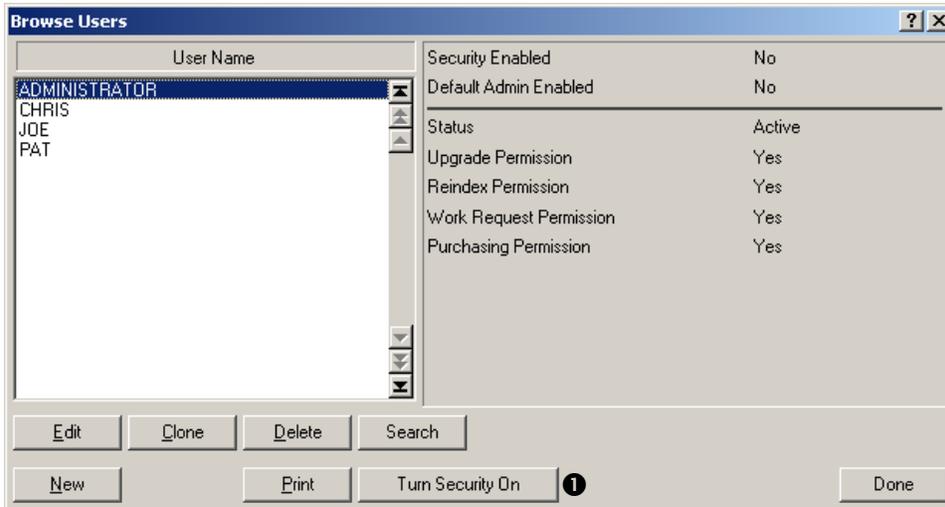
3. If security is currently turned off, clicking **Turn Security On** ❶ will turn on MainBoss security.

4. If security is currently turned on, click **Turn Security Off** will turn off security.

5. Click **Done** to close the window.

_____

Archiving

The MainBoss archiving facilities let you store records that no longer need to be kept in your main database. The facilities also let you recall records that have been removed from the database, so that you can examine old data and produce reports on that data (if necessary).

Archiving is *not* the same as backing up your data. A backup (as described in *Backing Up Your MainBoss Database* on page 169) saves all your database files as a safety precaution. Archiving removes outdated information from your database files, helping to prevent the files from getting too big and making it easier for you to find information while working with MainBoss. For example, if you archive all work orders that are more than a year old, those outdated work orders are removed from your work order lists, making the lists shorter and easier for you to search.

Warning: Archiving permanently removes records from the main database. The records *cannot* be put back into the database. However, you can still look at the records if that becomes necessary.

How Archiving Works

Archived information is stored on your hard drive in compressed format. This reduces the disk space required to store the records. Another benefit of archiving will be improved performance. Archiving removes work orders, purchase orders, and inventory history records from your everyday database, saving them in separate files. This means that your everyday database becomes smaller, which may speed up MainBoss operations significantly.

Each time you archive, a new set of compressed data is stored in a separate archiving directory. This is called an *archive set*. MainBoss lets you name each set of archived data so that any time you need to retrieve a specific set of historical work orders for reports and analysis they can be quickly restored from the compressed format. If you archived quarterly and you wanted to reconstruct an entire year of work history you would restore each quarter, one after the other. (Note that you can only create reports for each individual quarter, not for the entire year.)

You must deal with each archive set individually—you cannot merge them together. For example, suppose that each quarter you archive any records that are more than a year old. You cannot combine the archives of four quarters into information for a whole year. If you wanted reports on your archived information, you could produce quarterly reports, but could not combine the data to get a single yearly report. You also cannot change the contents of archive sets; once information has been archived, it cannot be edited.

When you restore an archive set, MainBoss creates a number of working files containing uncompressed data from the archive set. These working files are only necessary as long as you want to work with the old archived data. Since the working files take up extra disk space, you should *clear* them once you are finished looking at the old data; clearing the files frees up the disk space.

Clearing these working files does not affect the compressed archive sets. Therefore, if you ever want to look at old data again, you can just restore the same archive set. This creates new working files that can be examined as necessary.

Note: Before you begin any archiving operation, saving or restoring, we recommend that you back up your MainBoss database. This ensures that your data remains safe if MainBoss fails because of a power outage or some other system failure. For more about backing up your database, see *Backing Up Your MainBoss Database* on page 169.

Archiving Your Data

Most organizations choose to archive data on a regular basis (for example, every quarter or every six months). The archiving process removes old work order, purchase order, and inventory history records from your MainBoss database; these old records are stored in a specially compressed format that takes up less disk space.

> **Note:** The archiving process removes closed work orders and closed purchase orders from your main database. It does not remove open work orders or open purchase orders, no matter how old they are.

☐ **To archive data from your database:**

1. Make sure all other users have quit using MainBoss.

2. Make a backup of your database files, as described in *Backing Up Your MainBoss Database* on page 169.

3. Select **Administration** → **Archiving** → **Archive** from the menu. MainBoss displays the following:

```
Create Archive Set                                          ? X
        Code  ❶
     Created  [              ]
Archive Date  ❷
    Comments  ❸
  Restored on  [          ]      Archive File  [              ]
                                     [ Archive ❹ ]   [ Cancel ]
```
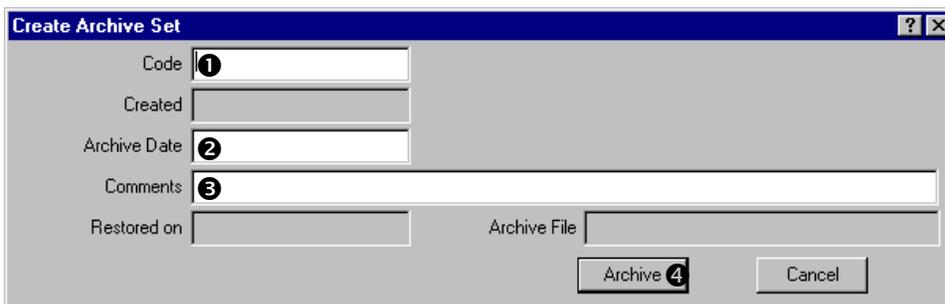
4. In "**Code**" ❶ enter an identification code for the archive you will create.

5. In "**Archive Date**" ❷ enter a date. MainBoss will archive all closed work order, purchase order, and inventory history records up to and including the given date. For example, if you enter `December 31, 2001`, MainBoss will archive all appropriate records up to and including that date.

6. In "**Comments**" ❸ enter any comments that will help you identify what this archive contains.

7. Click **Archive** ❹ to create the new archive. MainBoss displays a message to verify whether you really want to proceed with the archiving process. Click **Ok**.

Restoring and Using an Archive Set

Restoring data from an archive places all the records from the archive into *temporary working files* on your hard disk. Restoring is also called *dearchiving*.

Once you have restored archived data into working files, you may use MainBoss to work with the contents of these temporary files, in the same way you work with your everyday MainBoss databases.

Important: Restored data is *not* placed back into your everyday MainBoss database. It is only put into temporary files so you can examine old records.

You can restore more than one set of archived records. In this case, the records of all the archives you want to restore are placed in temporary files. The only limit on the amount of material you can restore is the amount of disk space you have available.

☐ **To restore an archive set:**

1. Select **Administration** → **Archiving** → **Restore** from the menu. MainBoss displays the Archive Set browser:
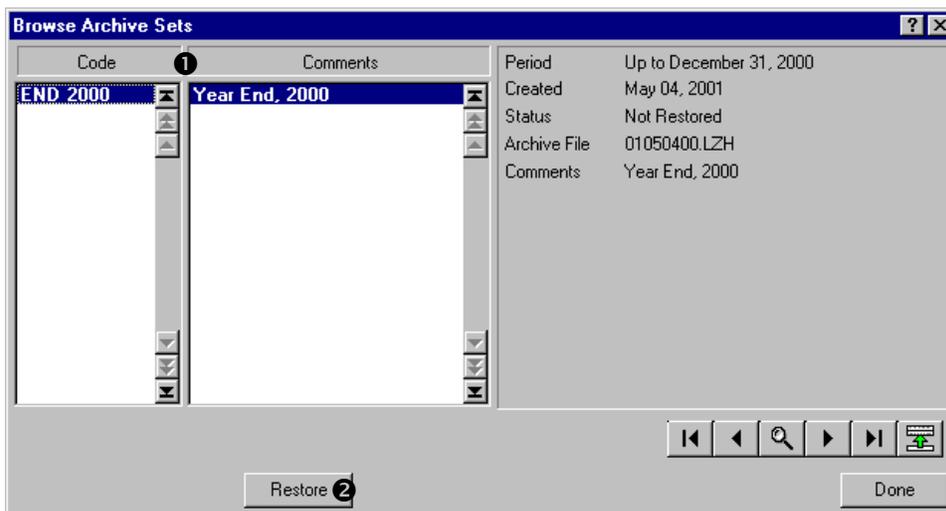
2. In the list of archive sets ❶ click on the set you want to restore.

3. Click **Restore** ❷.

4. MainBoss will ask if it's all right to proceed with the restoration. Click **Ok**.

5. MainBoss will tell you when the dearchiving process is complete. Click **Ok**, then click **Done** to close the archive set browser.

6. Select **Session** → **Select Archive** from the menu. MainBoss displays a browser showing what is currently dearchived:
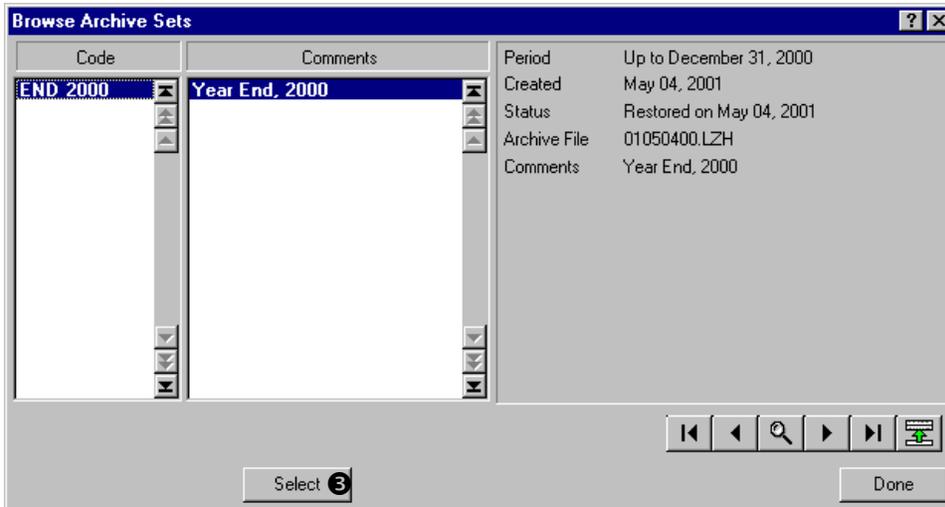
7. Click the archive you want to examine, then click **Select** ❸.

8. Click **Done** to close the browser.

You can now use MainBoss to examine the contents of the archive set. For example, when you select **Work Orders** → **Browse Work Orders** from the menu, MainBoss will show you work orders from the archive set, not from your regular database. When you create a report, information for that report is taken from the archived data, not from your regular database.

You can use all the normal facilities of MainBoss on the archive set—just remember that you're looking at the archived data, rather than your current data.

When you're finished examining the archived data, you can return to using your normal database.

☐ **To resume using your normal database:**

1. Select **Session** → **Select Main Database** from the menu.

From this point on, you will go back to using the main database.

> **Note:** If you're ever in doubt about whether you're looking at archived data or the main database, look at the title line of the main MainBoss window. The title tells which database you are currently using.

Cleaning Up Dearchived Data

When you are finished examining dearchived data, you should get rid of the temporary files that hold that data in uncompressed form. This clears up disk space. Since the compressed versions of the archive are still available, you can always dearchive the data again if you need it.

☐ **To clear away dearchived data when you don't need it anymore:**

1. Select **Administration** → **Archiving** → **Clear** from the menu. MainBoss displays the Archive Set browser:
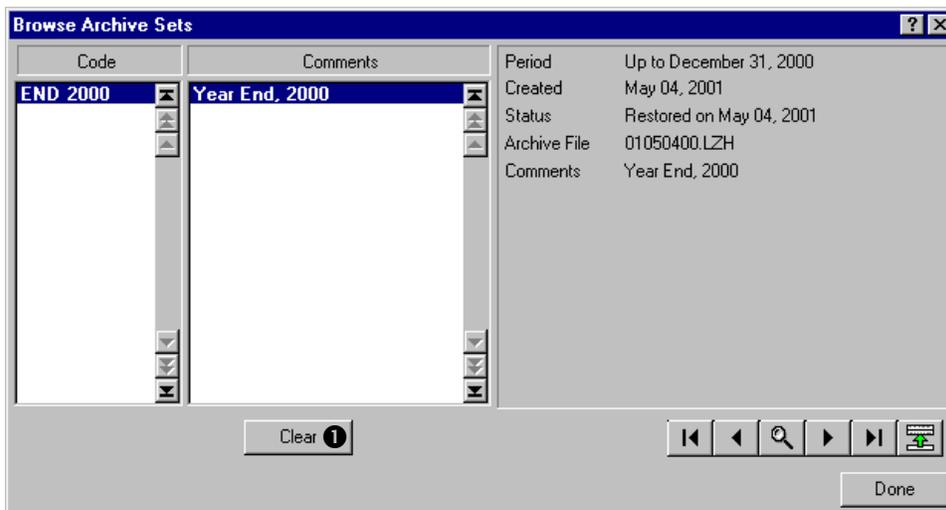
2. In the list of archive sets, click the set you want to clear away.

3. Click **Clear** ❶.

4. MainBoss asks if you really want to clear the data. Answer yes.

5. Click **Done** to close the window.

Work Request Notification

As an add-on to the MainBoss package, you can download software that will notify you whenever someone creates a new work request. For example, suppose department secretaries at a company are all authorized to submit work requests to report maintenance problems. The `WRNotifier` software can notify you when one of them creates a request. This is similar to the way that many E-mail packages notify you that you have received a new E-mail message.

For more information about this notification facility, see the MainBoss web site (`http://www.mainboss.com`).

The MainBoss Command Line

MainBoss can be invoked using a command line with various arguments. This makes it possible to invoke MainBoss from a command file (`.BAT` or `.CMD`) or from other software applications that invoke programs through command lines.

In particular, MainBoss command line options make it easy to backup your MainBoss database automatically, using software like the Windows 2000 Task Scheduler. In this way, you can schedule regular backups that take place automatically, without anyone having to start MainBoss by hand.

In a command prompt window, you would usually invoke MainBoss with a `CD` command to go to the directory that contains the program file, and then a command to invoke MainBoss itself. The lines below show a typical example:

```
cd "C:\program files\mainboss\2.9"
mboss Backup /mbd:C:\mainboss /mzh:D:\mbsaves
```

Note that the program is named `mboss`, not `MainBoss`.

The general format of the command line is

```
mboss subcommand option option option...
```

As a special case,

```
mboss /?
```

prints information about using MainBoss in command-line format, including a list of all subcommands and options.

As another special case,

```
mboss /MainBossDatabase:folder
```

starts a normal MainBoss session on the MainBoss database contained in the given folder. If you omit the `/MainBossDatabase` argument, the command just starts a normal MainBoss session using the current directory as the MainBoss database directory.

Abbreviations: Most keywords on the MainBoss command line may be abbreviated. In MainBoss documentation, the letters that *must* be included are shown in upper case; any or all other letters may be omitted. For example, the following are all valid abbreviations for the option `/MainBossDatabase`:

```
/mainbossdb
/mbdata
/mbdb
/mbd
```

Although the documentation shows some letters in upper case and some in lower, you can type letters in any case you want. For example, `/MBD` is exactly the same as `/mbd` or `/Mbd` on the MainBoss command line.

The Backup Subcommand

The `Backup` subcommand backs up your MainBoss database in the same way described in *Backing Up Your MainBoss Database* on page 169. The format of the command is

```
mboss Backup /MainBossDatabase:folder /MZH:filename
```

where

`/MainBossDatabase:folder`
> specifies the folder that contains your MainBoss database. If you omit this option, MainBoss assumes that the current directory contains your database.

`/MZH:filename`
> specifies the name of the `MZH` file that MainBoss should create to hold the backup data.

> Instead of a filename, you can specify a folder name. In this case, MainBoss creates a backup file in the given folder. The name of the file is `CCYYMMDD.MZH` (where `CCYYMMDD` is the current date).

The `Backup` subcommand also recognizes the `/Verbose` option. If this option is specified, MainBoss displays progress messages as it backs up the database; otherwise, MainBoss simply backs up the database without displaying any messages (provided no errors occur).

As a model for performing regular backups, suppose that your MainBoss database is stored in the folder `C:\MainBoss` and you want to write backups to another computer on your local network. Suppose that you address the backup computer as drive `H:` and you want to store backup files in the folder `H:\mbsaves`. In this case, you could use the Windows 2000 task scheduler to run

```
mboss Backup /MBD:C:\MainBoss /MZH:H:\mbsaves
```

Since the `/MZH` option specifies a folder rather than a file name, MainBoss creates a new file in the folder every time the database is backed up. (Note that all these backup files will use up disk space.)

The Restore Subcommand

The `Restore` subcommand restores your database from a backup file, in the same way described in *Restoring Your Database From Backup* on page 170. The format of the command is

```
mboss Restore /MainBossDatabase:folder /MZH:filename
```

where

```
/MainBossDatabase:folder
```
specifies the folder where you want to write the restored database. If the specified folder already contains MainBoss database files, you will be asked if you really want to overwrite those files.

```
/MZH:filename
```
specifies the name of the MZH file that contains the backup database you want to restore.

The Restore subcommand always displays at least one message, indicating whether or not the restoration was successful.

Setting a Language

Normally, MainBoss looks at the Regional Settings of your Windows system to determine which language to use (English, French, etc.). When you invoke MainBoss by command line, however, you can explicitly specify a language. In this case, MainBoss will ignore your Regional Settings and use whatever language you specify (provided that the language is supported on your system).

All languages on Windows system are represented by a code consisting of four hexadecimal digits. Popular languages include:

```
0007     German
0009     English
000a     Spanish
000c     French
0016     Portuguese
```

To specify a language when you invoke MainBoss, you use the following command line option:

```
/LANGID:xxxx
```
Sets the language to the one represented by code xxxx. For example, /LANGID:0007 sets the language to basic German.

For more on language settings, see *Custom Text Settings* on page 168.

Service Desk Mode

Usually, the mboss command operates as if you invoked the standard MainBoss CMMS program. However, you can also use it to start MainBoss Service Desk:

```
        mboss /ServiceDesk+
```

starts a Service Desk session. Note that you can specify other options (e.g. LANGID) with this form of the command.

For more about MainBoss Service Desk, see *MainBoss Service Desk* on page 199.

License Key Entry Only

It's possible to invoke MainBoss in such a way that it *only* lets you enter license keys:

```
mboss /LicenseKeys+ /MainBossDatabase:folder
```

This starts MainBoss in a manner that reduces entries in the menu bar to those needed for entering license keys. The buttons in the quick action bar are also reduced.

As soon as you start MainBoss with this option, you will be asked to enter the ADMINISTRATOR password. Once you have entered this password, you will go to the main screen with its reduced menu bar. From there, you can enter license keys as described in *Registering MainBoss* on page 197.

Appendix A: New Features In MainBoss 2.9

New in MainBoss 2.9 Update 5

The following list gives differences between MainBoss 2.9 Update 5 and earlier releases of MainBoss 2.9.

☐ **Administration** → **Database** → **Export XML** lets you export the entire contents of your database in XML format. This is primarily intended for facilitating users who wish to upgrade from MainBoss Basic to MainBoss Advanced. For more information, see *Error! Reference source not found.* on page **Error! Bookmark not defined.**.

☐ Auditing facilities have been improved in several ways. For example, when the auditor discovers a link to a missing record, you now have the option of creating an appropriate record to replace the missing one.

☐ The archiver now preserves "**Location**" information when inventory transactions are archived.

☐ The Work Order History report now lets you restrict the report to labor costs incurred within a given range of dates (specifically, for workers whose contribution to a job started in the specified range of dates).

☐ In many windows, the **Cancel** button now changes to **Close** once you have saved the data shown in the window. In other words, **Close** tells you that it's safe to close the window because the data has been saved. **Cancel** closes the window *without* saving any changes.

☐ When you are looking at transferred work requests with the work request browser, the browser now shows the work order numbers assigned to the transferred requests.

☐ The Unit report now has a **Suppress costs** option. If this is checkmarked, the report will not contain the costs of the equipment. This is useful if you intend to give the report to personnel who need equipment lists but who don't need (or shouldn't be told) cost information.

☐ In previous releases, the Downtime Report considered that the date of the downtime was the date that the associated work order was closed. Now, the date is the work order's "**Work Start**" date.

☐ All browsers now have a **Search** button instead of the old navigation bar. Clicking **Search** will let you search for a record whose description or code begins with a specified string.

☐ The default button for printing reports and generating preventive work orders has been changed to **Preview**. This means that if you just press **<Enter>**, you'll get a preview of the report or generated work orders. Previously, the default was **Close** for report windows and **Generate up to** for preventive work orders.

☐ The behavior has changed for "**From**" and "**To**" fields, plus all other fields where you specify a pair of values to indicate a range. If you type a value into the field that indicates the start of the range, MainBoss automatically puts the same value into the field that indicates the end of the range. This is useful if you want the range to be restricted to a single value. (To do this previously, you had to type the same value twice: once for the start of the range, and once for the end.)

If you type a value into the "end of range" field first, MainBoss does *not* type that value into the "beginning of range."

☐ The window for editing work requests now has a **Save & Print** button.

☐ The Work Order Statistics report now lets you select work orders based on status (open, closed, or voided).

☐ When grouped by building, the Work Order History report will now sort by unit location within buildings when you ask for a detailed report. (Previously, it sorted by work order number.) Also, when grouped by asset account, system, ownership, project, or cost center, information will be sorted by unit code within each group.

☐ The Work Order History report can now sort results by access code.

☐ The Work Request History report now starts a new page for each new grouping. For example, if you're grouping by building, the work requests for each new building will start on a separate page.

New in MainBoss 2.9 Update 4

The following list gives differences between MainBoss 2.9 Update 4 and earlier releases of MainBoss 2.9.

☐ A new **Include Cost Center** option is available when printing purchase orders. This option is useful if you use MainBoss's purchase order facilities to create purchase requests that you then send to your purchasing department. The Cost Center can then provide information to your purchasing department.

☐ The Work Order Labor History report now includes the Task ID for preventive maintenance jobs.

☐ The window for producing Manpower Schedule reports now has a number of default options set when the window is first opened. These options will produce a report showing what work orders are scheduled for your staff each day for the next week. This makes it quick and easy to produce the type of schedule that most customers use most often.

Specifically, the default options are **Total Daily** (breaking down the report day-by-day), **Inside** (inside workers as opposed to outside contractors), and **Detail** (giving complete details of each job). The "**From**" and "**To**" columns for "**Date**" are set for the forthcoming week (starting with today).

New in MainBoss 2.9 Update 3

The following list gives differences between MainBoss 2.9 Update 3 and earlier releases of MainBoss 2.9.

☐ If a user does not have permission to browse work orders, the user will not be given permission to close a work order from the work order record (i.e. the **Close & Save** button will be disabled).

☐ The Receiving Report (**Inventory** → **Reports** → **Receiving**) now includes the `Unit Cost` beside the quantity received. This is where the `Waybill` used to be. The `Waybill` number is now on a new detail line after the first line.

☐ The Overdue Work Order report listed work orders whose "**Work End**" date has already passed (i.e. due yesterday or before). In earlier releases of MainBoss 2.9, the report include work orders that were due on the current date (i.e. jobs that were scheduled to end "today").

☐ MainBoss places restrictions on the ability to delete records shown in browsers—you can only delete such items if you are logged in to ADMINISTRATOR or to a user who has permission to Reindex the database. However, Update 3 allows all users to delete records which have been created as part of creating other records. For example, if someone creates a Shipment Receipt record from the **Receiving** section of a Purchase Order window, the same person can delete that Shipment Receipt record using the same purchase order. However, the same person will not be able to delete Shipment Receipt using the Receipt browser unless the person has Reindex permission on the database.

This should make it easier for people to correct mistakes, while still maintaining the security of preventing unauthorized users from deleting information created by someone else.

☐ The Purchase History report now makes note of `Items received but not ordered.` For example, if you are recording the contents of a shipment and the shipment contains items that weren't included in any purchase order, the Purchase History report contains a bold-faced warning before any line-item that reports excess items received.

New in MainBoss 2.9

The following list gives differences between MainBoss 2.8 and 2.9.

☐ A new **Requests** menu has been introduced, containing operations related to work requests. This includes the menu items **Open Request**, **Browse Requests**, and **Print Requests**. All of these operations were previously obtained through the **Work Orders** menu. Note that the information produced by **Print Requests** was previously known as the Work Request History report.

☐ A new item has been added to **Work Orders** → **Reports**. The **Overdue** item produces a report on overdue work reports (work orders which are still open but whose "**Work End**" date has already passed).

☐ In earlier versions, a work request that had not yet been converted into a work order was classified as **Open**. Now it is classified as **Waiting**.

☐ A new item has been added to **Work Orders** → **Reports**. The **Print Tasks** item lets you print the contents of preventive maintenance tasks. (You can do the same thing by clicking the **Print** button in the tasks browser.)

☐ Many data fields have increased in size to allow for longer identification codes and descriptions. The table below lists the most visible changes. (Other less visible changes have also been made.)

Field	Length in 2.8	Length in 2.9
Building Code	10	15
Building Description	30	50
Vendor Code	10	15
Vendor Name	30	40
Contact Name	30	50
Personnel Code	10	15
Personnel Name	30	40
Equipment Code	15	30
Equipment Description	30	50
Equipment Location	20	40
Space Code	15	30
Space Description	30	50
Space Location	20	40
Item Code	20	30
Item Description	40	50
All phone number fields	32	42

☐ Because many data fields are now longer, various reports have been reformatted. Information that used to fit on one line may now require two lines or even more.

☐ Because of longer data fields, it is possible that some field values are too long to be displayed in the space available on the screen. If so, you can move the mouse cursor to point to the field; MainBoss will display a *tooltip* showing the full value of the field. (A tooltip is one of those little yellow labels that Windows can display where your cursor points.)

☐ To increase product security, we have introduced a new licensing system. Users will be given license keys for each of the products they license (MainBoss, @Requests, etc.). For more information, see *Registering MainBoss* on page 197.

☐ Because license keys have been introduced, the old registration process is obsolete. Therefore, **Administration** → **Registration** has disappeared. Information that used to

be specified in the Registration window is now specified with **Administration** →
Preferences → **Company Information**.

☐ The Work-Requests-Only (WRO) version of MainBoss is now a separate software
package. Previously, customers used the MainBoss software itself but were expected to
set permissions for WRO users so that they could only create work requests. This was
always a point of confusion; therefore, we've created a separate WRO software
package. The name of the new package is **MainBoss Service Desk**, described in
MainBoss Service Desk on page 199.

☐ The Manpower Schedule report now includes open corrective maintenance work orders
if they fall within the specified time period. Previously, the report only listed preventive
work orders.

☐ Inventory item records now have a "**Comments**" field where users can record any
information not covered by other fields.

☐ MainBoss 2.9 makes it possible to restrict a user's ability to delete information from
the database. For example, users may not be able to delete personnel records, vendor
information, equipment descriptions, and so on (even though they might be allowed to
create such records).

In order to delete such items, you must explicitly login to ADMINISTRATOR or to another
user name that has permission to Reindex the database. No other users will be allowed
to delete information. (However, it will be possible for other users to void work orders,
work requests, etc. if they have permission to access the relevant browsers. Voiding
does not actually delete the entry; it marks the entry as voided, but the information
remains in the database where it can be recovered if necessary. This is different from
deleting, which actually removes information from the database.)

☐ The "**Next schedule**" field appears in the window that you use for setting the schedule
for preventive maintenance on a unit. In previous versions of MainBoss, the value of
this field could not be changed—it was set automatically from other information
specified in the window. For example, if you had specified that a maintenance task
should be scheduled every 90 days, "**Next schedule**" was automatically set 90 days
after the last time you did the job.

In MainBoss 2.9, you can set "**Next schedule**" manually. This means that you can enter
a specific date or meter reading when the task should be scheduled, even if it's different
from the usual schedule. For example, you can enter a specific date that a job should be
done. MainBoss will then use the given date, no matter what other information is
specified in the scheduling window.

☐ The use of "**PM Generate Frequency**" has changed. In the past, the new "**Generate
up to**" value (used in generating preventice maintenance work orders) was calculated
by adding "**PM Generate Frequency**" to the previous value of "**Generate up to**". For
example, if "**PM Generate Frequency**" was 7 days, the new "**Generate up to**" was set
to the old "**Generate up to**" plus 7 days, every time you generated work orders.

Now, the new "**Generate up to**" value is set to the current date plus "**PM Generate Frequency**". For example, if "**PM Generate Frequency**" is 7 days, "**Generate up to**" is set to the current date plus 7 days. The previous "**Generate up to**" date has no effect on this process.

Note that you can always set "**Generate up to**" manually to specify any date you want. The new behavior only affects the default "**Generate up to**" value.

☐ More keyboard shortcuts have been added to allow mouse-free operation.

☐ New command line options have been added. `/ServiceDesk+` starts MainBoss Service Desk, and `/LicenseKeys+` starts MainBoss in a mode that only allows the entry of license keys.

Appendix B: Installing MainBoss 2.9

This appendix describes how to install MainBoss 2.9 on your system.

☐ **If you receive the package on CD-ROM**:

   ☐ Follow the instructions printed on the CD mailer to launch the installation program.
   ☐ Choose from the set of available languages, then install.

☐ **If you receive the package by downloading it from our web site:**

   ☐ Follow the instructions given on the web site for downloading and installing the software.

The MainBoss Setup Program

The MainBoss Setup program installs MainBoss on your system. During the process, you will be asked a number of questions including the following:

☐ Is this the first time you have installed MainBoss at your site, or do you already have an existing MainBoss database? If you have already installed MainBoss on at least one computer at your site, choose `Existing MainBoss Data Files`. Otherwise, choose `New MainBoss Data Files` (which tells the Setup program to create a new empty database).

☐ If you are installing a new database, where do you want to store the files? MainBoss typically needs 30-40 megabytes of storage (depending on how much data you store in the various tables and databases the software uses).

☐ What type of installation do you want? The choices are `Typical`, `Compact`, and `Custom`. If you choose `Custom`, Setup lets you choose what will and won't get installed; if you choose `Compact`, Setup gives you the minimum amount required to run MainBoss (which means, for example, that Setup will not install any sample databases); if you choose `Typical`, Setup gives you all available sample databases and the default online help.

☐ If you answered `Custom` to the previous question, the installation program asks you to specify what you want to install. The possibilities are:

   ☐ The program files: these contain the actual MainBoss software and *must* be installed.
   ☐ The sample files: these are sample databases showing how MainBoss can be used in a variety of contexts. The samples are:

Facility: A rental management facility, where the maintenance staff primarily deals with the needs of tenants.

Plant: A manufacturing plant, where the maintenance staff primarily deals with the plant's equipment.

Laundry: A large hospital laundry.

By default, the installation program installs all of the databases. However, you can select or unselect any of the samples by clicking on the entry.

☐ The help files: these contain online help information. There will always be a set of files called `Default`, providing help in English. You may also have the option of obtaining online help in other languages.

If you have already installed MainBoss 2.9 on your computer and then run the Setup program again, the program asks whether you are modifying your installation, repairing your set-up, or uninstalling.

☐ `Modify`: You would pick this answer if, for example, you wanted to install a sample database that you didn't install when you first installed MainBoss.

☐ `Repair`: You would pick this answer if you have previously installed MainBoss 2.9 on this machine but have to re-install (for example, if you are installing a new update or you accidentally deleted some of the files). In this case, Setup will re-install using exactly the same configuration you requested when you first installed MainBoss 2.9.

☐ `Remove`: You would pick this answer if you want to remove MainBoss from the machine. The process will delete the program files and sample databases, but will *not* delete your actual MainBoss database files. If you want to delete those files too, use normal Windows commands to delete the directory that contains the files.

Note: You must have Administrative permissions on your Windows system in order to run the MainBoss Setup program. If you do not have such permissions, you must use standard Windows procedures to log in to an account that *does* have the permissions.

Installing on a Local Network

When MainBoss is used on a local computer network, the database files are all stored on one computer in that network. The program files can then be installed on every computer in the network where people will be using MainBoss; however, those programs will all reference the database files on the original computer.

☐ **If you are installing MainBoss for the first time at your site:**

1. Decide which computer will hold the database files. You must install MainBoss on this computer before you install on any other computers.

2. Run the MainBoss installation program on the computer that will hold the database files.

3. During the installation process, you will be given an ADMINISTRATOR password. Write down this password; you will need it to login as the MainBoss administrator. (Once you login as the administrator, you can change the password to something you'll find easier to remember—for details on changing passwords, see *Changing Your Administration Password* on page 174.)

4. Once you have installed MainBoss on this first computer, you can run the installation program on any other computers you have licensed for running MainBoss. When the installation program asks you to specify the location of the data files, type in the name of the directory where you installed the data files on the first computer.

☐ **If you have previously installed any version of MainBoss at your site:**

1. **IMPORTANT:** Reindex your database *before* you install the new software. For a description of how to do this, see *Reindexing* on page 168.

2. **IMPORTANT:** For the sake of safety, back up your existing MainBoss data files. This protects your existing data in the event of a power failure or some other interruption during the installation process. For a description of how to copy your data files, see *Backing Up Your MainBoss Database* on page 169.

3. For every computer licensed to run MainBoss, run the installation program. When the installation program asks you to specify the location of the data files, type in or select the name of the directory that holds your existing data files.

Permissions: After installing MainBoss on a workstation, make sure that all users who have access to MainBoss on that workstation have the following rights to the files/directories:

☐ Rights to Create, Delete and Modify files in ALL MainBoss directory structures

☐ Rights to Read, Write (to), Modify and Delete any file in the ARC and ARCLH subdirectories

Note: Once you have installed a new version of MainBoss and are sure it is working properly, you can uninstall the older version. However, we recommend that you run the new version for at least two weeks before removing the old one.

Registering MainBoss

When you license any MainBoss software package, you are given a license key that should be used to *register* your software. Essentially, you enter the license key to validate your

MainBoss database use for a particular software package. Until you enter a valid license key, the database will only work with the software in demonstration mode.

Typically, you get a new license key whenever you license a new package. You also get new license keys if you upgrade a package or renew your Annual Support Plan subscription. When you get a new license key, you should enter the key as soon as possible.

☐ **To enter a new license key:**

1. Start the MainBoss program by clicking the **Start** button on your Windows desktop, then click **Programs**, then **MainBoss**, then **MainBoss 2.9**.

2. Before you can enter the new key, you must login as ADMINISTRATOR. Therefore, click **Login** on the **Session** menu. MainBoss opens the following window:

3. In "**User Name**" ❶, type ADMINISTRATOR.

4. In "**Password**" ❷, type the appropriate password. (This will be the password given to you when you installed the software, unless you have changed the password to something else.)

5. Click **Ok** ❸ to close the password window.

6. Click **License Keys** on the **Administration** menu. MainBoss displays the License Key browser, listing any existing license keys.

❹
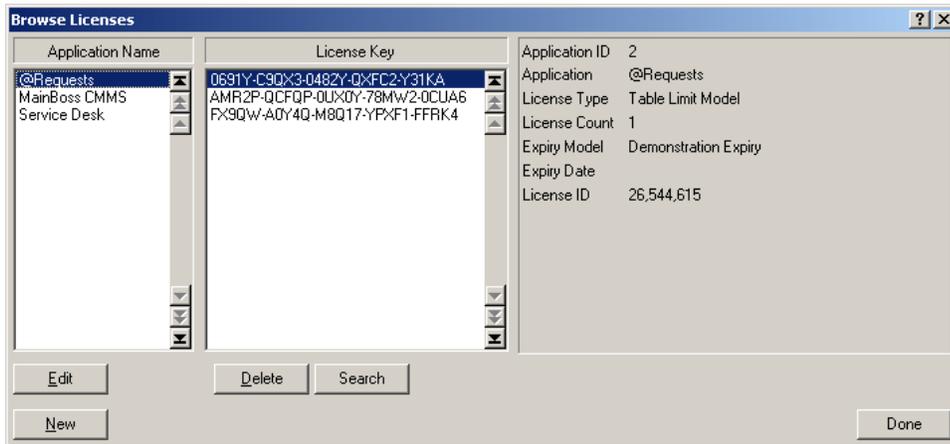
7. Click **New** ❹. MainBoss opens a window where you can enter the new key.
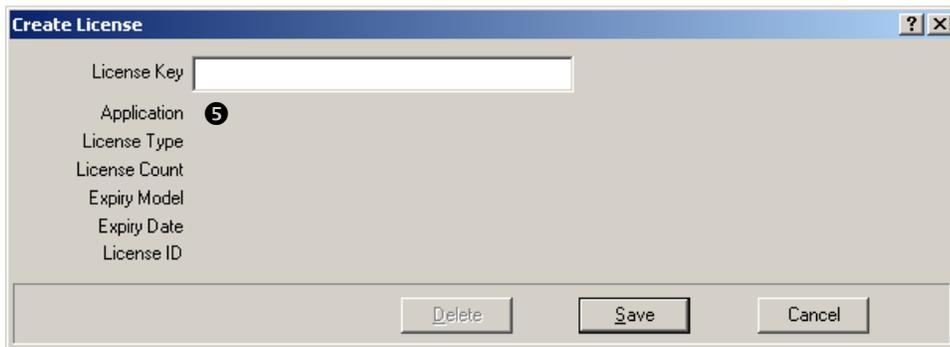
8. In "**License Key**" ❺ type the license key you have been given by MainBoss headquarters.

9. Click **Save** to save the license key, then click **Close** to close the window.

10. Click **Done** to close the License Key browser.

> **Note:** The new license key will replace any previous keys for the same package. For example, if you enter a new license key for @Requests, it will replace any previous keys for @Requests.

MainBoss Service Desk

The MainBoss Service Desk is an option for organizations that want to allow non-maintenance personnel to submit work requests. (MainBoss @Requests serves the same function and is typically easier to use. However, Service Desk is a good alternative for organizations that don't have email.)

When you install the regular MainBoss package, the installation procedure automatically installs both regular MainBoss and Service Desk. (These will appear in the **Programs**

menu that you see when you click on the Windows **Start** button.) This lets you start either MainBoss itself or Service Desk from any system where MainBoss has been installed.

Installing Service Desk: To install Service Desk on a system, simply run the usual MainBoss installation program as described in *Installing on a Local Network* on page 196.

Before you can run Service Desk, you must record an appropriate license key that authorizes the use of Service Desk. You will be given such a key when you license Service Desk. To enter the license key, follow the steps given in *Registering MainBoss* on page 197.

Once you have entered the license key, you can run Service Desk on any system where it has been installed. To do this, you just click on the Service Desk entry in the Windows **Programs** menu (obtained when you click the Windows **Start** button). When Service Desk starts, it displays a window similar to the starting window for MainBoss. However, the menu bar only contains the **Session** menu (for logging in under a user name and for exiting the program), the **Requests** menu for working with work requests, and the **Help** menu for obtaining online help. For information on using these menus, see the appropriate sections of this guide (particularly *Creating a Work Request* on page 21).

Note: Your license sets a limit on the number of Service Desk users just as it sets a limit on the number of MainBoss users. Once you reach the limit of people who are allowed to connect to the database using Service Desk, additional people will not be allowed to start up Service Desk.

Using the Sample Databases

To use MainBoss with any of the sample databases, just click the **Start** button on your Windows desktop, point to **Programs**, then **MainBoss**, then any of the **Sample** entries in the program group. This starts the usual MainBoss program, using the chosen sample as its database.

If you want to use the **Administration** menu on one of the sample databases, you will have to log in as the administrator, using **Session** → **Login**. When you log in, specify

> **User Name**: ADMINISTRATOR
> **Password**: mainboss

This applies to all the sample databases.

Appendix C: Frequently Asked Questions

This section addresses some of the most common questions that MainBoss users ask our support staff.

Requestor Lists

Q: How do I change entries in the Requestor pull-down menu?

A: Changes can be made with **Tables** → **Contacts**. This lists all your past Requestors. Duplicates can be deleted (for example, if Tom and Tommy refer to the same person), but please be aware that if you delete a requestor from the Contacts Table, any existing work requests that refer to that requestor will now have a blank "**Req. By**" field. You will have to go back and pick the correct Requestor from the pull-down menu if this information is important to you.

Unselecting in a Drop-Down List

Q: I previously selected an entry from a drop-down list. Now I want to clear the field so that nothing is selected. How do I do that?

A: Use the cursor to click on the field, then press **<Ctrl+Del>**. This clears the field.

Printing Reports

Q: When I try to print reports, nothing comes out. Why?

A: If you are using an unregistered version of MainBoss, the program will not print reports (although you can still **Preview** any report on your computer screen). To register MainBoss, you must have a valid registration number. Once you have received a registration number, you can register by following the instructions in *Registering MainBoss on page 197*.

Note that the sample databases *are* registered; therefore, you can print output using the sample databases.

MainBoss Version

Q: How do I know what version of MainBoss I am running?

A: Select **Help** → **About** in the MainBoss menu bar. MainBoss displays a screen which provides information about the software.

The version number is clearly stated in this screen. The screen also contains a line beginning with the words **Messages Version**. This indicates which custom message files are currently being used. In the example above, you see the numbers `(0409/0000/0000)`.

1. The first number shows your user language setting. This is taken from your Windows Regional Options setting or from the `/langid` option (if any) on the MainBoss command line.

2. The second number is the default language ID. This indicates what message file is actually being used. For example, if this number is `0000`, it indicates that you are using message file `msg0000.txt`.

3. The third number is the override file, if any. For example, if you are using override file `ovr0001.txt`, the third number shown will be `0001`.

For more information about custom text files, see *Custom Text Settings* on page 168.

If you forget your administrator password and call MainBoss support for help, you will be asked to give the database serial number that appears in the **Serial #** line.

Deleting Inventory Items

Q: When I try to delete an inventory item, MainBoss won't let me do it. Why?

A: MainBoss won't let you delete an inventory item if **MainBoss**'s records indicate you still have some of that item on hand. To delete the item, you first have to reduce the On Hand count to zero wherever the item is stored (you can check inventory using **Inventory** → **Browse Items**) You must also reduce the current total cost to zero. You can reduce the count and total cost to zero using **Inventory** → **Adjustments** → **Physical Count**. Reduce the count and total cost to zero, then try deleting the item again.

Scheduling Preventive Maintenance

Q: I've set up a preventive maintenance schedule for my equipment, but work orders don't appear on the days when a preventive maintenance task should be performed. What's going wrong?

A: MainBoss does not automatically generate work orders—you have to tell MainBoss to create the work orders. You do this with **Work Orders → Generate Work Orders**. MainBoss opens a window where you specify a range of dates for which you want work orders; for example, if you want to create work orders to the end of the month, specify the last day of the month in "**Generate up to**". When you click **Ok**, MainBoss will generate work orders for all preventive maintenance tasks that should be carried out in the time range specified.

By default, MainBoss sets up the Generate Work Orders dates so that you can generate work orders every week. To change this frequency (for example, generating the work orders once a month), use **Administration → Preferences → Other**; then set the "**PM Generate Frequency**" field to a number of days. For example, if you set "**PM Generate Frequency**" to 30, MainBoss assumes you intend to generate work orders once a month rather than every week.

Forgotten Passwords

Q: I've forgotten my administrator password, so I can't use MainBoss Administration. What do I do?

A: Phone or e-mail MainBoss Support for instructions. Please be ready to supply your MainBoss database serial number so that MainBoss Support can confirm you are a registered customer. (You can obtain your database serial number from **Help → About**.)

Recommended Tables

Q: Which tables do I have to set up before using MainBoss features?

A: You do not have to complete any tables before using MainBoss. However, to get meaningful results, we recommend that you at least complete the following tables before beginning to use MainBoss for your work:

- Buildings
- Access
- Priorities
- Work Categories
- Repair Closing Codes

One or both of the following pairs of tables are recommended for all MainBoss sites:

- ☐ Personnel
- ☐ Trades

Complete the Personnel table if you will be creating work orders using your own staff. Because Personnel records refer to the Trades table, there must be an entry in the Trades table before adding Personnel.

- ☐ Vendors
- ☐ Vendor Types

Complete the Vendor table if you will be creating work orders using outside contractors. Because Vendor records refer to the Vendor Types table, there must be an entry in the Vendor Types table before adding Vendors.

The following tables are recommended if you plan to issue work orders for Equipment:

- ☐ Equipment Type
- ☐ Equipment (accessed from the Units menu)

The following tables are recommended if you plan to issue work orders for building areas (called Spaces in MainBoss):

- ☐ Space Type
- ☐ Spaces

The following tables are recommended if you plan to keep track of your inventory of supplies and parts:

- ☐ Storerooms
- ☐ Categories
- ☐ Units of Measure
- ☐ Items

To use purchasing and receiving features, the following tables are recommended:

- ☐ Vendors
- ☐ Vendor types
- ☐ All Inventory tables
- ☐ Shipping Modes
- ☐ Payment Terms

You should also specify address information for buildings in the Buildings table where shipments may be received.

Other MainBoss tables can be used to provide useful supplementary information in various contexts; however, they are typically not as important as the tables listed above.

Emailing MainBoss Reports

Q: How do I e-mail MainBoss reports to other people?

A: The key is to create a printer definition that is associated with a file rather than an actual printer port. You do this in the usual way that you add a printer to your system (for example, through the Printers entry in Windows control panel).

Set up a printer definition for the type of printer that the E-mail recipient will be using. For example, if you want to send the report to someone who will run off the report on an HP LaserJet 4SI MX, set up a printer definition for such a machine but when you are asked to specify a printer port, choose FILE:.

> **Note:** If you do not know what kind of printer will be used, or if you want to create a type of report suitable for many different types of printer, set up a generic text printer (ASCII) associated with FILE:

Once you have set up an appropriate printer definition, you are ready to prepare MainBoss reports for e-mail. When you want to prepare such a report, start MainBoss and choose the report from the MainBoss Reports menu as always. Then, in the dialog box for printing the report, click the Setup button. This opens a dialog where you can choose a printer. Choose the FILE: printer definition that you created, then go through the usual steps to print the report.

When you ask MainBoss to print the report, Windows will prompt you for the name of a file where the report should be printed. Specify an appropriate file; this will be the file you send out by e-mail. Continue on as normal, and Windows will write the report to the specified file rather than printing it.

You can send out the resulting file directly by e-mail. However, you may prefer to shrink the report first by using a utility like WinZip. In this case, the recipient will have to unZIP the report before printing it.

To print a report that is stored in a file, you use the DOS COPY command with the /b option. For example, if you are printing to a printer on port LPT1, you might use

```
copy /b report.prn LPT1:
```

If you are printing to a network printer, you have to make sure that you are copying to a shared printer. A typical command line might look like

```
copy /b report.prn \\JOE\printer
```

where JOE is the name of a system on the network which has created a shared printer attachment for the printer you want to use.

> **Note:** If you decide that it's too complicated to set up shared printers, you may just decide to create the original report in generic text format (ASCII). This lets you read the print file into Windows NOTEPAD, Microsoft Word, or some other program for reading text files. You can then print the file using the program's normal facilities for printing text.

When you want to print reports on your own system, remember to use the Setup button to change back from the `FILE:` printer to one of the real printers available to your computer.

Packaging MainBoss Files

Q: How do I package up MainBoss files to send to MainBoss support?

A: Normally, you would use **Administration** → **Database** → **Backup** to create a backup file, then send us the file.

However, if your MainBoss database is very damaged (for example, because of a power failure at a critical moment), you may not be able to start the MainBoss program normally. If you try to start MainBoss in this situation, MainBoss will issue one or more messages indicating that the database files contain errors. MainBoss will then quit.

In such a situation, you can create a backup file by using MainBoss in its command line form.

☐ **To create a backup file from the MainBoss command line:**

1. Start a Windows **Command Prompt** application.

2. In the command window, `CD` to the directory that contains your MainBoss software, as in:

       cd "C:\Program Files\MainBoss\2.9"

3. Type the following command

       mboss backup /mbd:"DBDIR" /mzh:"FILENAME"

   where `DBDIR` is the name of the directory containing your MainBoss database and `FILENAME` is the name you want to give to the packaged files. For example, you might type

   mboss backup /mbd:"C:\MainBoss" /mzh:"package.mzh"

You can send the resulting file (e.g. `package.mzh`) to MainBoss support by E-mail or you can put it on a disk and mail it to us.

If the above process doesn't work, you can use WINZIP to create a ZIP file containing all the files in your database directory.

AutoCAD

Q: Do I have to have AutoCAD installed to view my attached drawings from MainBoss?

A: Having AutoCAD installed on your system lets you view and print drawings in the same manner that you can view and print documents which require MS Word or WordPerfect. However not every system accessing MainBoss is likely to be licensed for the full version of AutoCAD.

An inexpensive alternative for viewing and printing both documents and drawings is to install a viewer such as Autodesk's Volo View (U.S.$49). This will let you view, mark up, measure, compare, and print your CAD drawings, without risking changes to the original AutoCAD file. It also lets you view many different document types, including raster image and business formats. Volo View may also be used in conjunction with a browser like MS Internet Explorer for Internet & Intranet document and drawing viewing.

Complete information about Volo View is available at the Autodesk web site, `www.autodesk.com`.

Obsolete Equipment and Preventive Maintenance

Q: When I declare equipment obsolete, what do I do about preventive maintenance tasks related to that equipment?

A: Declaring equipment obsolete does *not* cancel any preventive maintenance tasks scheduled for the equipment. You have to cancel those by hand. We recommend the following approach:

1. *Before* you declare the equipment obsolete, find out what PM tasks are associated with that equipment. You can do this with **Work Orders → Reports → Print Tasks**. In the "**Unit**" field, specify the equipment you intend to declare obsolete.

2. For each task listed, open the task description using **Work Orders → Browse Tasks**. In the **Assigned Units** section of the task record, double-click the unit you want to declare obsolete. This opens the task assignment for this unit.

3. In the **Unit** section of the assigned unit record, double-click the first schedule entry. This opens the schedule record.

4. In the **Schedule** section of the schedule record, checkmark **Do not use this schedule**. This prevents the use of this schedule in future. Click **Save** to preserve your change, then click **Close** to close the schedule.

5. Repeat Steps 3 and 4 for every other schedule in the assigned unit record. When you're finished, click **Save** to save the changes you've made, then click **Close** to close the record.

6. You'll end up back in the task record. Click **Save** to save the changes you've made, then click **Close** to close the record.

7. Once you've canceled all future task schedules, you must cancel all outstanding work orders on the equipment. To do this, use **Work Orders → Browse Work Orders**, and click **Print**. This opens a window for printing work orders.

8. In the print window, clear the checkmark on **Select for Printing** and **Turn off Select for Printing after printing**. In both fields of "**Unit**", specify the unit you intend to declare obsolete. Checkmark **Open Work Orders**. Click **Print** to print the report.

9. Using the report, void all the open work orders for the unit.

10. Finally, you can declare the unit obsolete. Use **Units → Equipment** and double-click on the entry for the equipment. This opens the equipment record.

11. In the **Value** section of the equipment record, specify an obsolete code in the "**Obsolete**" field. Fill in any other relevant information (e.g. "**Scrap Date**" and "**Scrap Value**"). When you're done, click **Save** to save the changes, then click **Close**.

Note that you *do not* delete the schedule or the task description, even if the task description isn't used for other equipment. It is useful to preserve this information for historical purposes.

Upgrades to Hardware or Windows

Q: How do I handle upgrading my hardware or my version of Windows?

A: If you get new computing hardware or upgrade your version of Windows on the computer that holds your MainBoss database, you will want to migrate your MainBoss installation to the new system as painlessly as possible. We recommend the following steps.

1. Before you abandon the old system, make a backup of your MainBoss database using **Administration → Database → Backup**.

2. Copy the backup file to a safe location (e.g. burn it onto a CD or copy it to another computer in the network).

3. On the new system, install the MainBoss software. Specify that you want to create a *new* database under `C:\MainBoss`.

4. Start MainBoss on the new system and use **Administration → Database → Restore** to restore the database from the backup file. Restore it to the location `C:\NMainBoss`. (The letter `"N"` stands for "new".)

5. Exit MainBoss. Use Windows Explorer locate the folder called `C:\MainBoss`.

6. Rename the folder `C:\MainBoss` to `OMainBoss`. (The letter `"O"` stands for "old".)

7. Rename the folder `C:\NMainBoss` to `C:\MainBoss`.

8. Restart MainBoss. Now you'll be working with the restored database. Reindex the database with **Administration** → **Database** → **Re-Index**. You can then use MainBoss as normal.

9. Delete the `C:\OMainBoss` folder. This folder holds the empty "new" database created when you installed MainBoss in step 3 above. You don't need the empty database because you're now using your original data.

Editing MainBoss files using another program

Q: Can I edit MainBoss data files with other software?
A: The data files that contain MainBoss information can be opened with Microsoft Excel, Microsoft Access, Visual FoxPro and other such programs. Users who are familiar with these software packages sometimes ask if they can be used for editing the MainBoss data files. The answer is NO.

Let's look at a specific example. Suppose you're about to generate preventive maintenance work orders and you make a typing mistake: you accidentally generate all work orders up to October 1, 2005 rather than October 1, 2004. Oops. You suddenly have a lot of new work orders you want to get rid of...and Voiding each one individually will take a lot of time. Why can't you just use Excel to open the file that contains work orders, then delete all the extra work orders with a single Excel delete command?

The answer is that MainBoss tables are interlinked—they refer to each other in many different ways. For example, suppose some generated work order reserves spare parts for use in the job. In the file that contains inventory information, there's a record that says, "These spare parts are reserved for this work order"...and there's a link that points to the relevant work order. If you delete something from the work order file, that link in the inventory file is no longer good; it points to something that's disappeared. The bad link in the inventory file can lead to serious trouble later on.

On the other hand, if you use MainBoss itself to void work orders, MainBoss knows how all the data files are interlinked and makes sure no problems occur. When you delete a record in one file, MainBoss adjusts all other files appropriately so that nothing is left hanging.

The moral is simple: **Never make changes in any MainBoss file using a program other than MainBoss itself.**

Advanced users also ask us if they can open a MainBoss file in another program (Excel, Access, etc.) and just look at the data. Sometimes it's easier to view data in a spreadsheet format rather than printing a MainBoss report or browsing individual records. In principle, this is okay because it doesn't actually change MainBoss's data...but you still have to be careful. FoxPro, for example, can change your data even if you don't ask it to. A simple action like moving between records (i.e. changing the input focus to another record) can write out any changes you might have made to the previous record.

Viewing a table with Microsoft Access automatically creates a file with the same base name but with the suffix .INF. This file is created in the MainBoss database folder. .INF files can clutter up the folder and may cause confusion about which files are actually used by MainBoss.

Viewing a file in Excel marks the file as "busy" and prevents other users from changing it. If someone is using MainBoss at the same time that you're looking at the file in Excel, the MainBoss user can end up getting "file busy" error messages that cause MainBoss to exit.

In order to view a MainBoss table in any other program, in-depth knowledge of both MainBoss' underlying data structure and of the viewing program is required. Therefore, we don't recommend doing this. If you need to view a MainBoss file using another program, start by copying the MainBoss file from the MainBoss database folder to another directory. You can then read the copy and use it however you want...but don't copy it back when you're finished with it! Just delete the copy when you're done.

The bottom line is that it's best to use MainBoss the way it was intended: make any changes, additions or deletions right within the program. Other programs may seem like shortcuts, but they'll cause problems later.

Headings for Scheduled PM Tasks

Q: The Assigned Units section of the Edit Task window has various entries under the Scheduled heading. What do they mean?

A: The following entries may appear in the **Scheduled** column:

not scheduled: Used if the unit has no assigned schedule.

every reading xxx: Used if the unit only has a meter-based schedule. The value xxx indicates the value between scheduled maintenance tasks (e.g. 3000 if the unit is scheduled for maintenance every 3000 miles).

every xxx **Days** or **every** xxx **months**: Used if the unit only has a date-based schedule. The value xxx tells the number of days or months between scheduled maintenance tasks.

by both: Used if the unit has exactly one meter-based schedule and one date-based schedule.

advanced schedule: Used if the unit has more than one meter-based schedule or more than one date-based schedule.

Appendix D: Troubleshooting

MainBoss will issue an error message during operation that fails due to some unexpected condition. This section does not provide an exhaustive list of all possible error messages, but should help in diagnosing many common problems.

A MainBoss error will usually appear as a dialog box:

The amount of information displayed in the error dialog depends on the type of error.

The following list gives a number of common error messages and their causes. Note that the *database directory* is the directory that contains the MainBoss database files and the *program directory* is the directory that contains the MainBoss program files.

☐ **Directory is not a MainBoss database directory**

Actual Cause: MainBoss identifies the database directory by the presence of a file named SESSION.LOK. The above message occurs if MainBoss can't find SESSION.LOK.

Remedy:

 ☐ Make sure the shortcut that starts MainBoss is using the proper name for the directory that holds the MainBoss database files. (If you can't find such a directory, search your disk for SESSION.LOK.)

 ☐ Make sure the user has write permissions on the MainBoss database directory. As a quick test to see if the user has write permission in the directory, try to create a new file in the directory from that user's account on the user's system. If the user doesn't have write permission, Windows will display an error message indicating the file can't be created. (Note that the user may be able to create a new file, but still may not have write permissions on individual database files. To determine this, check the properties on each file.)

  If the user can't create a new file, check the network share permissions on the disk and the file system security on the directories involved.

 ☐ In rare cases, we have found that SESSION.LOK may get deleted by accident. If so, create a writable file named SESSION.LOK in the appropriate directory.

No MainBoss Database found

Actual Cause: MainBoss can't find the database files.

Remedy:

   Make sure the shortcut that starts MainBoss is using the proper name for the directory that holds the MainBoss database files.

   Make sure the user has write permissions on the MainBoss database directory. (See above for more information.)

   Make sure both a SESSION.LOK and an EXCLUDE.LOK file exist in the database directory. If they do not, create new writable files with those names.

 Unlicensed Database

Actual Cause: MainBoss tells you that your database is unlicensed, even though you have already entered a license key.

Remedy:

   This might happen if there was an interruption (e.g. power outage) while a new version of MainBoss is updating the database. To fix the problem, start MainBoss program in "License Key Only" mode and enter your current license keys. For information on "License Key Only" mode, see *License Key Entry Only* on page 188.

   The problem might also occur if you try to start a MainBoss package without having installed an appropriate license key. For example, you will get this message if you try to start MainBoss Service Desk but have not recorded a license key for the software. If you have been given a license key for a particular package but have not yet recorded the key in the MainBoss database, see *Registering MainBoss* on page 197 for an explanation of how to record keys.

 The system cannot find the file specified

Actual Cause: The file does not exist in the specified location.

Remedy:

   Make sure the file exists, and does not have the READONLY attribute set.

 session.lok: Access is denied

Actual Cause: The SESSION.LOK file exists, but cannot be opened for write permissions.

Remedy:

   Check that the SESSION.LOK file does not have the READONLY attribute on it.

   Make sure the user has write permissions on the MainBoss database directory. (See above for more information.)

☐ **Cannot lock the MainBoss database for exclusive use. Some user is most likely still using MainBoss.**

Actual Cause: The `SESSION.LOK` file exists, but cannot be opened for exclusive access. This usually occurs if you are trying to use **Administration** → **Database** → **Re-Index** to reindex the database, but some other user is still using MainBoss.

Remedy:

☐ Check that all users have exited all MainBoss programs, then retry the operation. (Also make sure that no one is running other programs that access the MainBoss database files.)

☐ If a large number of users are running WRNotifier simultaneously, it may be possible that the notifier programs keep the database tied up so it can't be reindexed, especially if notifier programs check the database frequently. Reduce the number of notifier programs that are active, or reduce the frequency with which they check for requests.

☐ **MainBoss database is locked for exclusive use. This usually means the database is being reindexed at this time.**

Actual Cause: The `SESSION.LOK` file exists, but cannot be opened for exclusive access.

Remedy:

☐ Check that this user has write permissions on the `SESSION.LOK` file. (See above for more information.)

☐ Check than someone else isn't using **Administration** → **Database** → **Re-Index** to reindex the database.

☐ **Opening File Status –60 90071 FILENAME**
  The system cannot find the path specified.

Actual Cause: The file does not exist, or the user has no permission to read or write the file.

Remedy:

☐ Check to see if the given file actually exists in the database directory.
☐ Make sure user has read permissions.

☐ **Writing to File Status –120 80050 TABLENAME**

Actual Cause: The file exists, but the user does not have permission to write to the file. `TABLENAME` refers to the MainBoss internal table name. In most cases this translates to `TABLENAME.DBF` in the MainBoss database directory.

Remedy:

☐ Check the associated database file has write permission, and doesn't have the READONLY attribute set.

Slow Performance and Network Errors

Slow performance may be due to difficulties with your internal computer network (your LAN). MainBoss is often the first program where network problems are noticed, since it can use your network more intensively than other software.

Network problems are often subtle. For example, if you have a faulty wire, it doesn't usually stop transmissions completely. Instead, you get "noise" on the line that interferes with sending or receiving data. The network may have to make several attempts before transmitting a "packet" of data cleanly. Obviously, this slows down performance because the network has to send the same data several times; but because the data eventually gets through, MainBoss (and other software) still operate correctly. The only symptom you'll see is an increased length of time before MainBoss gets the data it needs.

Network difficulties typically arise from faulty hardware. There are three general possibilities:

- Faulty or inadequate cables between a single computer and the network server. For example, we've seen many cases where all the computers at a company have been upgraded for faster network communications, but the wires connecting those computers (hidden in walls or ceilings) are many years old and unable to handle fast data transmission.

  Cable problems may affect a single computer (if that computer's connection has a fault) or the entire network (if all the cables in your network are old and slow).

- The network card in a single computer is faulty. In this case, the computer in question will have significant performance problems. Other computers may also slow down slightly too, since the one "bad" computer keeps creating network errors that the central server has to handle. Making more work for the central server slows down everybody.

- The network card in the server computer is faulty. In this case, all computers on the network may experience poor performance.

If you encounter poor performance, you can check your network by running diagnostic problems. Windows XP has built-in network diagnostic tools that can help; see

`http://www.microsoft.com/technet/prodtechnol/winxppro/maintain/netdiag.ms px`

for information.

Companies that manufacture network cards also provide diagnostic programs to check for problems. For example, if your network server uses an Intel network card, Intel supplies a diagnostic program that lets you check to see whether you're experiencing a lot of network errors. If you didn't get appropriate diagnostic software when you bought the network card,

you can download the software from Intel's web site. The same applies with other manufacturers.

You should run diagnostic programs both on the network server and on computers that talk to the server. In many cases, if a computer's network card is malfunctioning, the card can't detect its own problems—it doesn't notice that it's making mistakes. However, other computers that try to communicate with that card will be able to see that the card is "sick" because it generates a lot of errors.

A computer's event log may also reveal network errors. The event log only shows errors where the hardware gives up after making several attempts at data transmission. The log won't reveal how often transmissions failed on the first few attempts but eventually got through. Therefore, if network errors *do* show up on the event log, the odds are you have a significant problem.

Network problems may result in "information" or "warning" messages in the event log rather than actual "errors." Also, diagnostics arising from network problems often don't come out and say you have network problems. They give cryptic messages like the following:

- The browser service has failed to retrieve the backup list too many times on transport

- No Domain Controller is available for domain XXXXXX due to the following...

- The browser has forced an election on network \Device\XXXXX because a master browser was stopped.

It may be difficult to figure out that such problems were actually caused by network errors.

If your network errors are severe enough, the problem may eventually reach the point where it causes MainBoss error messages. For example, suppose MainBoss tries to write information over your network to the central MainBoss database. MainBoss waits for a considerable period of time, but if the write operation doesn't work because of repeated network errors, MainBoss will eventually give up and report an I/O error. Typically however, network problems first show up as slow performance; only later do you see MainBoss errors.

It should be noted that no network is perfect. An error rate of under 1% is normal and acceptable. Significantly higher rates are signs of trouble.

Correcting network difficulties may require buying new hardware, especially if the problems lie in a malfunctioning network card. Buying the cheapest available card may not be wise—in our experience, some network cards are better than others and you have to pay for good quality.

If your network problems result because you're trying to run transmissions faster than your wiring allows, you may be able to increase overall performance by slowing down transmission speed. If running a little slower lets you avoid transmission errors, you may

end up with better overall flowthrough because data gets through cleanly on the first try rather than requiring several attempts.

(Note that you might not have directly set the transmission speed of your network. Often, you just set network cards to run in "auto" mode. This means that when computers first connect with each other, they run tests to determine the fastest possible speed at which they can communicate. After that, they *always* try to run at that speed, even if problems arise that make such speed no longer feasible. In this case, you must explicitly set communication speed to something the network can actually support.)

MainBoss on a Non-Server Computer: With Windows XP and Windows 2000, you should make sure your MainBoss database is stored on the server computer as opposed to some other computer in the network. The reason is that Microsoft has deliberately designed Windows XP and Windows 2000 to slow down performance when more than two users attempt to access files on a non-server computer simultaneously. (This is Microsoft's way of encouraging you to buy more server licenses.) You can avoid this slowdown by putting your MainBoss database on your server.

Obtaining MainBoss Support

When you purchase MainBoss, you receive 30 days of free support, including toll-free phone calls and on-line support via the Internet. We also offer an Annual Support Plan that provides ongoing phone and on-line support. Support Plan Subscribers also receive free updates and one free upgrade per year containing enhancements and new features.

You can contact MainBoss Maintenance Software at:

Telephone:
  1-800-563-0894 (English)
  1-519-895-1860 (outside Canada and the U.S.)

Fax:
  1-519-895-1864

Address:
  MainBoss Maintenance Software
  85 McIntyre Drive
  Kitchener, ON N2R 1H6, Canada

E-mail:
  support@mainboss.com

World Wide Web:
  http://www.mainboss.com

Support through the web site is available on the Services page. This page offers software updates and the most up-to-date list of answers to frequently asked questions, plus a form where you can request online support.

If you have suggestions for improvements to MainBoss, please e-mail us at:
suggestions@mainboss.com

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