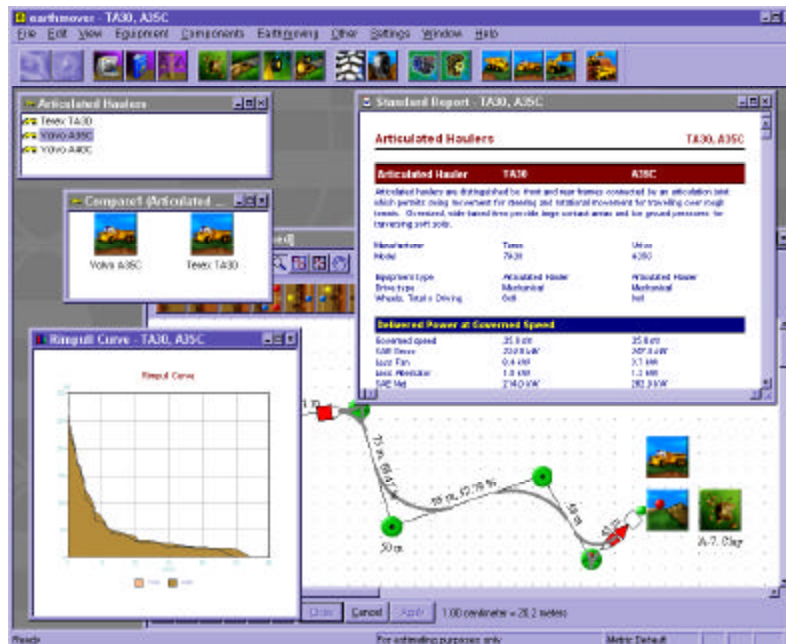




earthmover™ software
decision making at the cutting edge

Getting Started with Earthmover



February 22, 2003

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Earthmover Installation

1. Download the Earthmover setup.exe program from the Earthmover website (www.earthmover-software.com)
2. Locate the downloaded file on your computer and double click on it to run the installation program
3. When asked..... click Demo Mode.
4. You are ready to use Earthmover.

Getting Familiar with the Interface (buttons and menus)



The Buttons



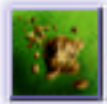
Standard Report- Generates a standard report for any object selected.



Full Report – Generates a detailed report for any object selected.



Compare – Creates a comparison window. Objects, such as two haulers, can be dropped in the comparison window to build a report comparing the two haulers.



Real Earth – Displays a listing of all materials (soils, dirt, and rocks) in the Earthmover database.



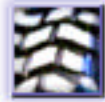
Real Roads – Displays a listing of all roads in the Earthmover database. Roads are made up of Real Earth materials.



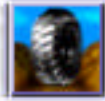
Tire Test Conditions – Displays a listing of test conditions which can be used to test tire performance.



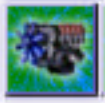
Tire Tests – Displays a list of tire tests for all production tires in the Earthmover database.



Tire Treads – Allows you to view the tread patterns for all tires in the Earthmover database.



Tires – Displays a listing of all tires in the database.



Engines – Displays a listing of all public engines in the database.



Transmissions – Displays a listing of all public transmissions in the database.



Rigid Haulers – Displays a listing of all Rigid Haulers in the Earthmover database.



Articulated Haulers – Displays a listing of all Articulated Haulers in the Earthmover database.



Wheel Loaders – Displays a listing of all Wheel Loaders in the Earthmover database.



Project Sites (Simulation) – Displays a listing of all Project Sites created or shared with you.

Each button displays a listing of objects. This listing is displayed in a tree like structure as shown here.



The Menu Options

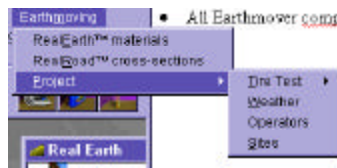
Just above each of the buttons are the menu options File, Edit, View, Equipment, Components, Earthmoving, Other, Settings, Window, and Help.

Some of these menus access the same listings as their appropriate buttons. In addition, you will find:

All Earthmover components on the Components menu.



Detailed project options on the Earthmover menu.



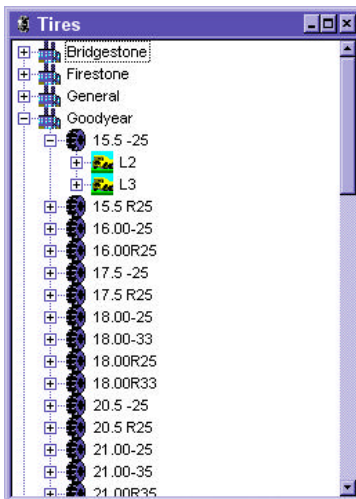
Various other listings in the Other menu.



Working with Display Trees

Display Trees are used to display objects in a category of items. To explain further, we will look at the Tires tree.

To view the Tires tree, click on the Tires button.



This will display the Tires tree.

This tree currently displays Manufacturers. By clicking on the + sign next to a manufacturer's name, you will see tire sizes.

This hierarchy of display can be modified. To do this, click on your right mouse button (right-click) anywhere in the Tree Display area, then choose Sort.

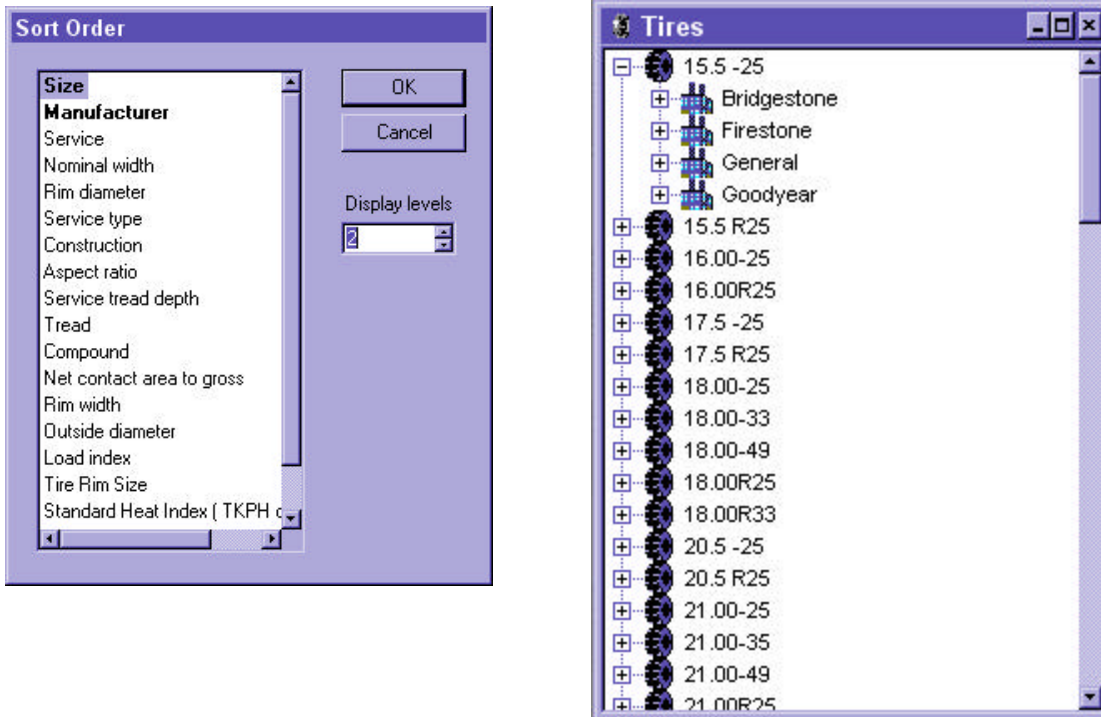
The Sort Order box allows you to specify which order you would like items to be displayed on the Tree.



- Items in bold are displayed on the tree.
- Increase or decrease the number of items displayed on the Tree by increasing or decreasing the Display level number.

- Drag items on the list into the order you desire.

Try dragging Size above Manufacturer, and decrease the Display level to 2. See how this effect the tire tree displayed.



Now that you see how to work with the Display Trees, lets move onto getting information about the objects in a tree.

Reports

1. Click on the Articulated Hauler button.



2. Now select the Volvo A35C



3. Next click on the Standard Report button.



4. You will now see an on-screen report for the Volvo A35C.

(see below)



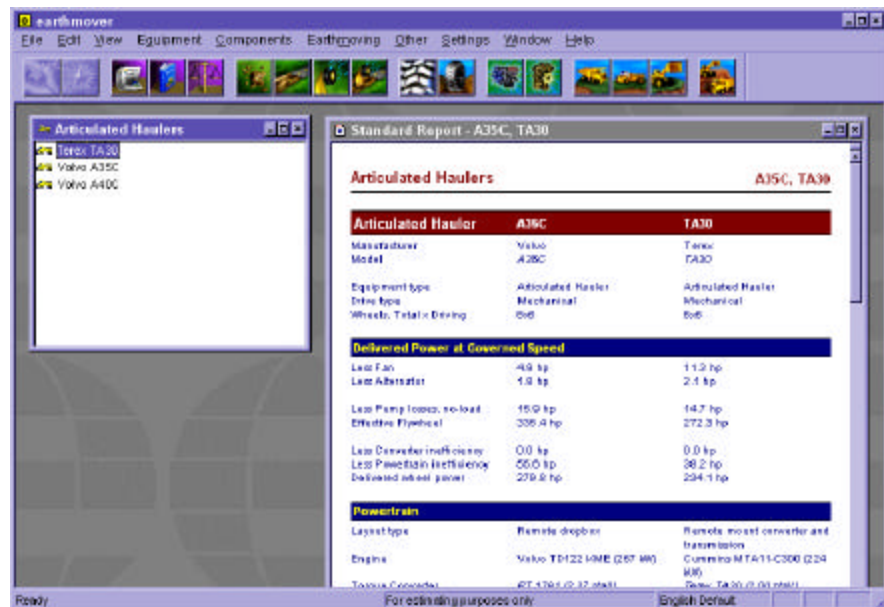
After building this single report, let's now build a report to compare multiple machines in the same easy-to-read Earthmover format.

Comparison Reports

Lets add the Terex TA30 Articulated Hauler to our report on the Volvo A35C.

Click once on the Terex loader displayed on the Articulated Haulers tree. Now, click and hold while you drag the Terex hauler onto the Standard Report of the Volvo hauler.

You will now see the report shown here, comparing the two haulers side-by-side.



Building a Project Site for Simulation

A Project site is where you will model a site for simulation. The project site consists of:

- Loading areas
- Dump areas
- Maneuvering areas
- Road segments
- Turns
- Hauling materials
- Wheel Loaders
- Haulers

Each of these items is placed on a project site by dragging their picture representations onto the project site.

To build a project site:



Press the Project Sites button on the button bar.

This will display the Project Site tree. You will see an example site already listed. Later, you can go back and examine the example provided.

Right click in the Project Sites tree and select New. You will then see the dialog box shown here on the left.

Fill in the Site Description with “My First Site”

Select “Warm and dry” as the Weather.

Now click on the tab that says “Default”.

On the “Default” page, select “Haul road cross-section” to be Construction, average haul road (shown on the right). Also, select a default operator. (We will explore operators more in the coming months.)

We have input the basic necessary information for a project site. Click OK. You may receive a message in a pop-up window advising you to provide more information. Later, in more advanced lessons, we will explore the other information we can input into the system, but for now we can move ahead.



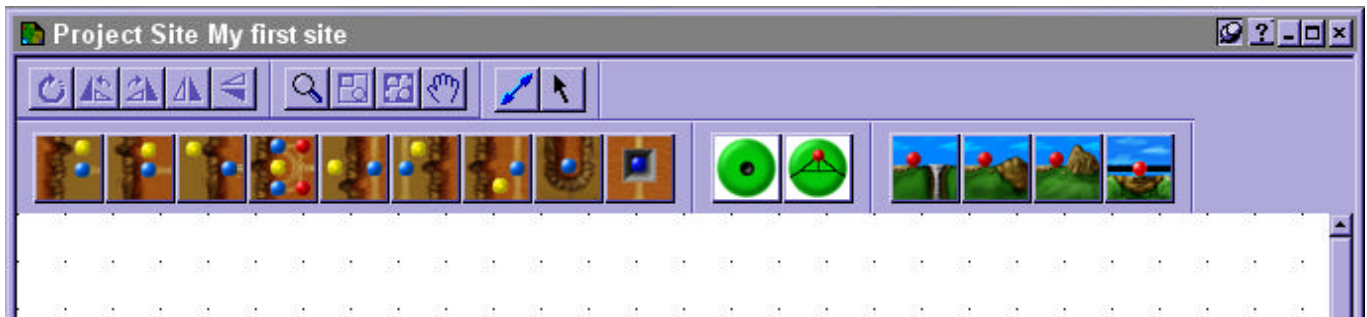
You will now see your new project site on the Project Sites tree.

Double click on your new project site named “My First Site”. This will display the project site Site Plan.

Project Site: The Button Bar

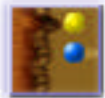
A diagram of your site is built on the Site Plan. We will now place items onto the diagram to build a demonstration site. To do this you need to familiarize your self with the button bar on the Project Site.

A Project Site button bar (shown here) is located at the top of the Project Site window.



The Buttons

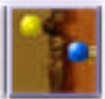
Each button is used to place a new object on the Site Plan. The buttons function as follows:



90 Excavate and Lift Node



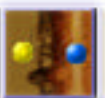
90 Loading Node



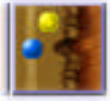
45 Excavate and Throw Node



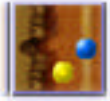
Dual Spot Loading Node



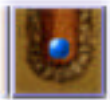
45 Excavate Place Node



180 Excavate Lift Node



180 Loading Node



Scrape Node



Hopper



Curve Node



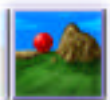
Maneuver Area



Spill



Hopper



Pile Node



Node Connector – Connect nodes (maneuvers, turns, loading areas...) “drawing” the road between the nodes.



Selector – Select objects on the screen using the selector tool.



Zoom-in / Zoom-out

Next we will build a Site Plan.

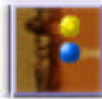
Project Site: The Button Bar

When building a Project Site we will be building a diagram showing the process of moving a material from point A to B. To accomplish this we will load a material using a loader in to an hauler at a loading area. This hauler will then drive over a road to a dump point.

To build a loading area:

1. Choose a method of loading.

We will choose a 90 loading configuration. Click and hold the 90 Loading Node button (seen on right) then place on the Project Site Grid.



90 Loading Node

The result should resemble the screen shown here.

2. Add a loader to the loading area.

On the main Earthmover button bar, click on the Loaders button. Click and drag the Volvo L180 loader from the Tree onto the Loading Node we placed on the Project Site.



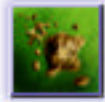
Loaders button

The result should resemble the screen shown here.

3. Add a material to be loaded and hauled.

On the main Earthmover button bar, click on the Real Earth button. Select from the display of materials under the Clay category.

Click and drag the Clay material onto the Loading Node we placed on the Project Site.



Real Earth button.

4. Add a Maneuver node to the Loading area.

On the Project site button bar, click and drag a Maneuver Node on to the Loading area.



Maneuver Node

5. Add a Dump node.

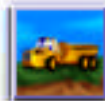
On the Project site button bar, click and drag a Spill Node on to a empty area on the Project site grid.



Spill Node (dump area)

6. Add a Hauler to the Dump Node

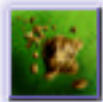
On the main Earthmover button bar, click on the Articulated Haulers button. Click and drag the Volvo A35C hauler from the Tree onto the Dump Node we placed on the Project Site.



Articulated Haulers button

7. Add the material to be dumped to the Dump Node.

Again, on the main Earthmover button bar, click on the Real Earth button. Select from



Real Earth button.

the display of materials under the Clay category.

Click and drag the Clay material onto the Loading Node we placed on the Project Site.

This confirms that the material that we are loading is all being dumped at this dump node. (In the future you will see examples of multiple materials being loaded and dumped on one project site.)

8. Add a Maneuver node to the Dump area.



Maneuver Node

On the Project site button bar, click and drag a Maneuver Node on to the Dump area.

9. Create the Haul Road

To create the Haul Road which connects the Loading and Dump areas, we will add a Simple Road Path Node.



Simple Road Path Node

Click and drag the Simple Road Path Node on the Project Site button bar onto the Project Site grid somewhere between the Load and Dump nodes.

10. Connect the Nodes



Node Connector

Now, click on the Node Connector tool on the Project Site button Bar. Next, click once on the Loading area maneuver node. Then, click on the Simple

Road Path Node. Finally, click on the Dump or maneuver node.

To de-activate the Node Connector tool, simple right click.

A road should now connect your Nodes.

Project Site: Getting Simulation Results

Now that your project site is complete you can perform some basic simulation. With the project site open, click upon the Standard or Engineering Report buttons.



You will then be presented with a tree of reports that are available for your project site. Select one or more reports on the tree and click on either the Standard or Engineering button to generate them. As Earthmover development progresses, more and more reports will become available.

