Contents

5. Output Options

RR2.0 provides several output types for applications, such as spreadsheets, least-cost-grade-mix programs, and flow simulation. The Configure Output Options window (Fig. 5a) allows you to name a file for your results, select output types to generate, and set up length and width ranges for summary reports. Select ***Output*** from the RR2.0 main window (Fig. 3a) to display the Configure Output Options window (Fig. 5a).

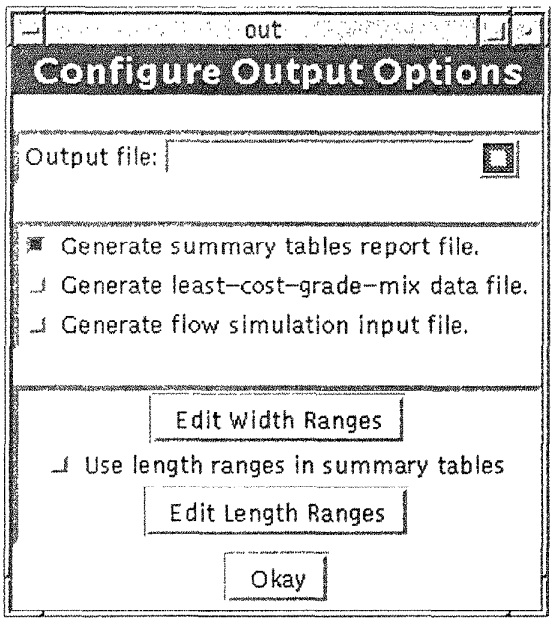


Figure 5a. Sample Configure Output Options window.

5.1. Selecting an Output File

The name of the file in which your output will be stored is listed at the top of screen in the ***Output file*** entry box. Figure 5a indicates that an output file has not yet been selected. To specify an output file, select the ☐ icon next to the entry box to bring up the the File Select window (Fig. 5b). Enter a name for your output file or click on the name of an existing one. Select ***Okay*** when you are finished. For our example we will enter SAMPLE as the output file name (Fig. 5c).

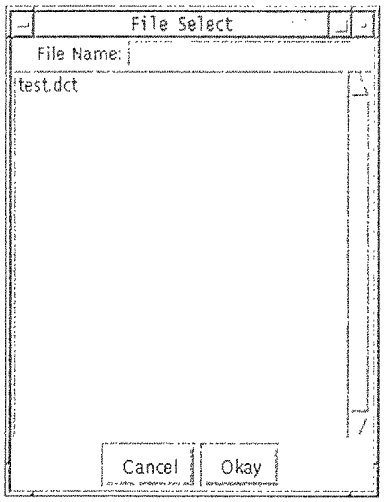


Figure 5b. File Select window for output file selection.

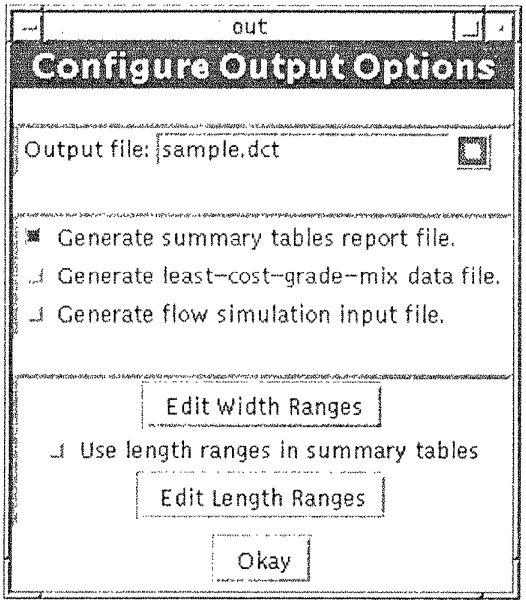


Figure 5c. Configure Output Options window showing selection of "sample" as output filename.

5.2. Summary Tables

Summary tables contain part counts, surface areas, and yields for primary and salvage in user-defined size (width and length) categories. These tables are especially useful when cutting to random sizes or when not processing a cutting bill (area-based yields). Selecting ***Generate summary tables report file*** turns on and off production of summary tables (Fig. 5a). This option is on by default. If you choose to use summary tables, you also must check the width and length range settings. These are discussed in detail in Section 5.5. Section 8.2 describes and provides examples of summary table output.

5.3. Least-Cost-Grade-Mix Output

When the least-cost-grade-mix option is turned on, RR2.0 produces output that is used by the ROMI-GRAM least-cost-grade-mix solver. The output file will have the same name as other output files with an .LP extension. The information contained in the file includes the number of parts required and obtained for each part size as well as the total amount of board feet processed and the number of crosscuts and rips. Note that this option is off by default and must be turned on for each run.

5.4. Flow Simulation Output

RR2.0 can generate step-by-step processing information for each board, including the number of strips, primary and salvage parts, primary crosscuts and rips, and salvage crosscuts (Stiess 1995). Such information can be used as an input for complete rough-mill flow simulation. Select ***Generate flow simulation input file*** (Fig. 5a) to turn on and off flow simulation file generation (it is off by default).

5.5. Length and Width Ranges

For purposes of data presentation, it is necessary to specify width ranges and, in the case of random length processing, length ranges, 15 width and 15 length ranges allow yield information to be grouped and subtotaled according to your interest. Do not use primary part widths or lengths to begin or end a range as this may cause inaccurate subtotals due to rounding within some computers. For example, to specify a range that includes the two widths 1.5 and 2.0 inches, specify a lower range value of 1.45 and an upper value of 2.05.

Length ranges allow you to group random-length results by length groupings. If length ranges are turned off, a subtotal in the summary tables is created for every different part length produced. For even medium-size runs, this can create **very large** tables. If there are too many lengths, the summary program cannot process them all. Because the example cutting bill has a random-length requirement, we will use length ranges. Turn on the ***Use length ranges in summary tables*** option for length ranges in your summary tables (Fig. 5c).

To modify width or length ranges, select ***Edit Width Ranges*** or ***Edit Length Ranges*** (Fig. 5c). The editing steps involved are the same for both range types. For our example we will use the default settings for length ranges and modify width ranges. When the Width Range Edit window is displayed, double-click on an upper or lower range value to modify it (Fig. 5d). For our cutting bill the maximum width is 4.5 inches. This also is the maximum allowable random-width part size that can be used in our panels. The default width ranges are acceptable for our cutting bill. Because we do not need the detailed breakdown that the default ranges offer, we will combine the third and fourth ranges together by deleting the fourth range and changing the upper value of the third range to 2.8.

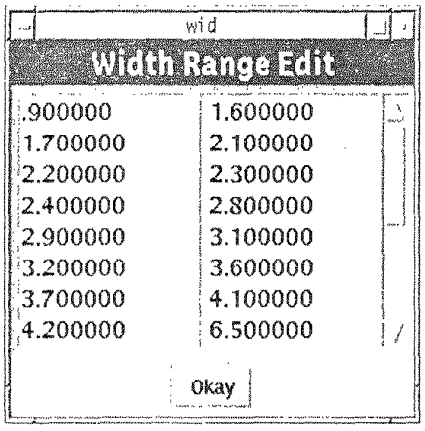


Figure 5d. Width range editor window.

First, select, by double-clicking, the upper value of the fourth range to bring up the Width Range Upper Bound Edit window (Fig. 5e). Next, modify the value to read 0.0 and select ***Okay*** (Fig. 5f). Repeat this step for the lower value of the fourth range. Then select the upper value of the third range, change the value to 2.800 and select ***Okay.*** The width range editor window should look like the example in Figure 5g.

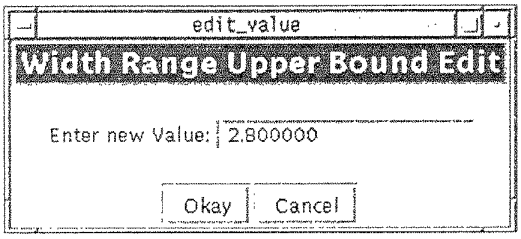


Figure 5e. Width range editor window showing default upper value of fourth range.

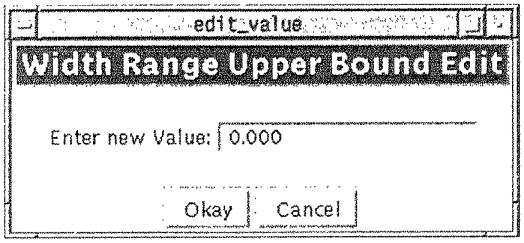


Figure 5f. Width range editor window showing edited upper value of fourth range.

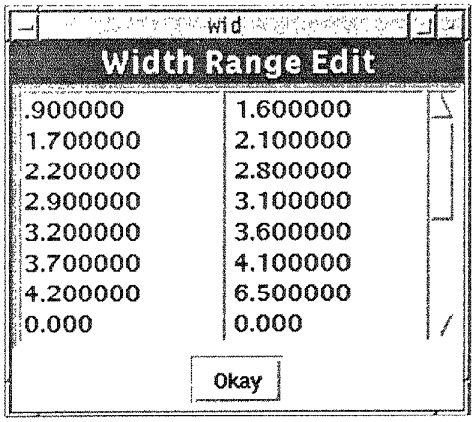


Figure 5g. Width range editor window showing edited summary ranges.

6. Datafile Selection

A datafile consists of one or more digitized boards. Recall that a digitized board is a real board whose dimensions and defects are expressed in x,y coordinates. To select a datafile or create your own custom datafiles, select ***Board Data*** from the RR2.0 main window (Fig. 3a) to bring up the Board Data Selection window (Fig. 6a).

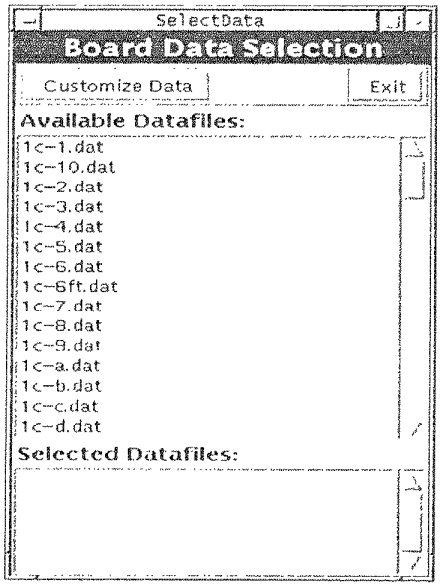


Figure 6a. Sample Board Data Selection window.

6.1. Creating Custom Grade Mix and Specified Files

The RR2.0 simulation package includes the MAKEFILE custom grade mix and specified lumber datafile generation program. The use of this program is described in the *1998 Databank for Kiln-Dried Red Oak Lumber*, which is included in the RR2.0 package. To run MAKEFILE, select the MAKEFILE icon that was created during the install process from the Windows 95 main window.

6.2. File Selection

The *Available Datafiles* area of Board Data Selection window shows all of the datafiles in the RR2.0 working directory (individual board files are described in Appendix II). To scroll through the list, click on the arrows at the right of the window (Fig. 6a). For our cutting bill we will process a 55 percent 1 Common and 45 percent 2A Common lumber sample created using MAKEFILE and the red oak lumber data bank. Double-click on the datafile to select it. Datafiles selected for processing are displayed in the *Selected Datafiles:* area at the bottom of the Board Data Selection window (Fig. 6.2). To unselect a datafile for processing, double-click on its name in the *Selected Datafiles:* area. Select *Exit* to return to the RR2.0 main window when you are finished.

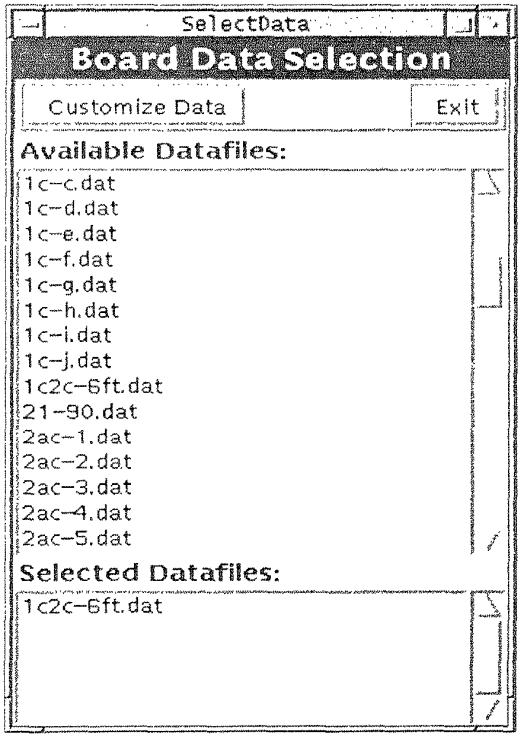


Figure 6.2. Board Data Selection window showing selection of 1c2c-6ft.dat board data file.

7. Starting the Analysis

All of the preceding work you have done has been in preparation for this step -- producing rough dimension parts from your lumber grade mix using the cutting bill and processing options. This step can take anywhere from a few minutes to hours to complete. In most cases the simulation analysis is done in less than an hour.

There are two ways to run the analysis: interactive or batch. Running the analysis interactively is the easiest, but ties the computer up for potentially long periods of time. Running the analysis in batch mode is slightly more difficult but allows you to run more than one analysis at a time. Batch mode also allows you to run the analysis at night or when you will be away from your computer for a period of time.

7.1. Interactive Mode

To start the analysis, Select ***Run*** and then ***Start ROMI-RIP analysis*** from the RR2.0 main menu (Fig. 3a) and the pulldown run menu (Fig. 7.1a). If you failed to select any board datafiles for processing or have any other errors, RR2.0 will inform you. A processing window will open and list board numbers and dimensions as they are processed. RR2.0 automatically stops processing when all cutting bill requirements have been met or all boards in the selected datafiles have been processed (Fig. 7.1b).

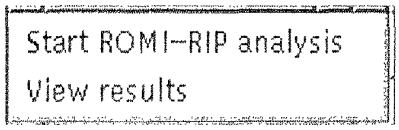


Figure 7.1a. RR2.0 Pulldown run window.

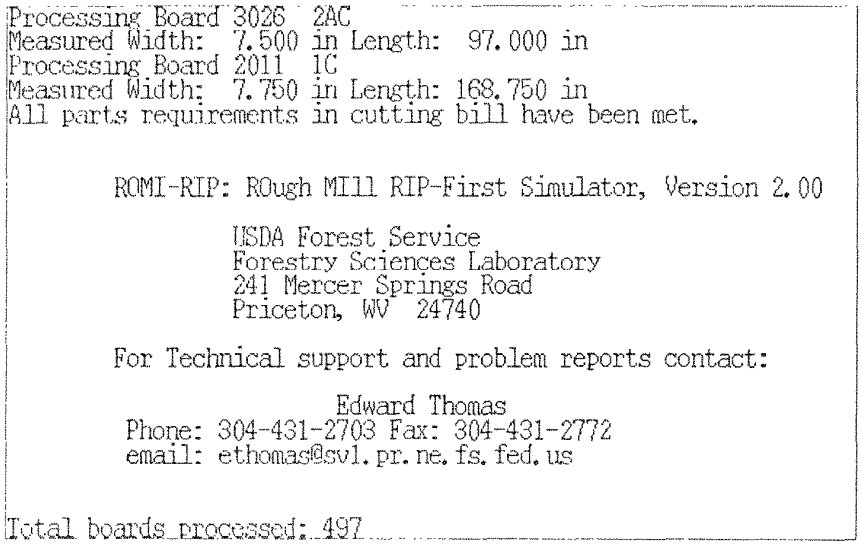


Figure 7.1b. Processing window showing end of ROMI-RIP simulation.

7.2. Batch Mode

RR2.0 has extensive batch-run capabilities. This is useful if you have several large simulations you would like to run overnight. For batch mode processing you need access to a plain text editor such as Notepad, which is supplied with Windows 95.

Before batch mode can be used, all cutting bills and options lists must be defined previously. Rather ran running RIP.EXE, run the simulation analysis program ROMI-RIP.EXE directly. The RIP.EXE program does nothing more than assemble your options and submit them to the ROMI-RIP.EXE program. In batch mode you do this yourself.

Immediately following ROMI-RIP on the command line is the name of the cutting bill to be processed followed by the part grade file name. As many as 10 input datafile names are specified. If you are using more than one datafile, it is important that the filenames be separated by commas (no spaces). Following the datafile name(s) is the output file name. As with non-batch operations, each output type has its own file and a different file extension. Option arguments follow the input and output file names. The options are proceded by a "+" to turn on the option on, or "-" to turn it off. Valid options for RR2.0 and their actions are:

G	Generate ROMI-GRAM .LP output file
S	Summary tables
F	Generate Flow Simulation report files

The default argument list is: +S -L -F. It makes no difference if the options are in upper or lower case.

RR2.0 does not create the summary tables directly. Rather, it produces a .SAS file that is processed by another program, ASASEXE, to generate the tables. ASAS must be run once for each output file. Running ASAS is easy: enter ASAS followed by the cutting bill name and then the output file name. The following examples show how to run RR2.0 and ASAS using the example-1 cutting bill and testmap part grade definition:

```
ROMI-RIP  example-1  testmap 1c-1 1c-test
ASAS example-1 1c-test
```

This example processes the 1C-1 data file and stores the output set under the name 1c-test. ASAS example-1 1c-test produces the summary table file 1c-test.SUM by processing the 1c-test.SAS file according to width and length ranges stored in the example-1 cutting bill. Note that in batch mode, RR2.0 does not check to see if a previous output file set exists under the specified output name. If there is a previous output file set with the same name, the old set will be deleted and replaced by a new file set with the same name.

```
ROMI-RIP  example-1 testmap 1C-1,2C-1 1C-2C
ASAS example-1 1C-2C
```

This example processes the 1C-1 and 2C-1 datafiles and stores the output file set under the name 1C-2C.

By default, RR2.0 generates summary table information, part reports, and comma-delimited report files. To turn off an option, precede its key letter with a minus sign. Similarly, to turn on an option, precede its key letter with a plus sign. For example:

```
ROMI-RIP  SQUIRE  GRADE  1C-6FT  1C-SAMPLE  -S
```

batch processes the 1C-6FT data file using the SQUIRE cutting bill and the GRADE part grade definition file. This run does not produce a summary table .SAS file, and stores the output in a file set named 1C-MIX. Since the SAS file was not generated, the ASAS program is not run.

Many analyses can be processed sequentially within each batch file. For example, you can process two cutting bills on two lumber grades. The batch file would look like this:

```
ROMI-RIP SQUIRE GRADE  2C-6FT 2CSQUIRE
ASAS SQUIRE  2CSQUIRE
ROMI-RIP SQUIRE GRADE 1C-6FT 1CSQUIRE
ASAS SQUIRE 1CSQUIRE
ROMI-RIP PIE2 GRADE 2C-6FT 2CFRAMES
ASAS PIE2 2CFRAMES
ROMI-RIP PIE2 GRADE 1C-6FT 1CFRAMES
ASAS PIE2 1CFRAMES
```

8. Simulation Results

RR2.0 provides the user with many result types for each simulation. These include summary tables, yields and processing requirements, cutting bill reports, board plots, and input data for least-cost grade mix and flow simulation analyses. The last two data types are intended to be used only by other applications. The other report types are intended to be printed out or examined using the VIEW report program.

To run VIEW, select the shortcut icon created for it during installation or select ***Run*** and then ***View results*** from the RR2.0 main window (Fig. 3a). Figure 8a shows VIEW program's main window. To see the output from any analyses, first select the name of an output file set. Select ***File*** then and ***View*** to bring up the File Select window (Fig. 8b). Select the file that contains the RR2.0 output you wish to view. For our example, the output is stored in the sample.dct file set. Once a file is selected, its name is listed in the status line at the bottom of the screen, and the output buttons at the top of the screen are activated. The status line also reports if the analysis used millimeter or inch processing units.

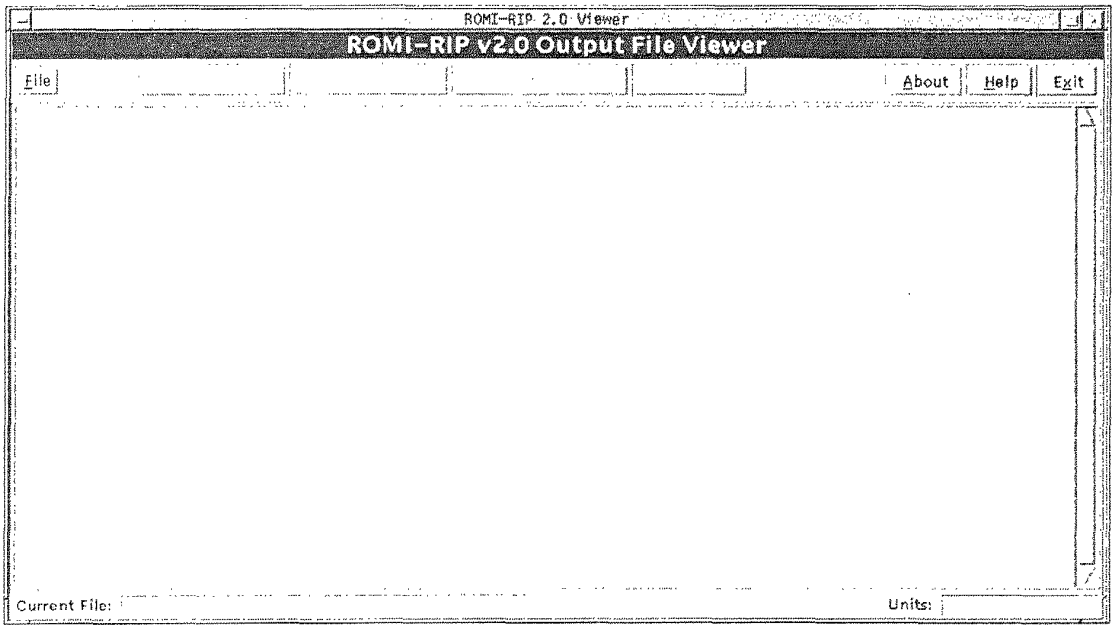


Figure 8a. Main window of ROMI-RIP 2.0 Output File Viewer program.

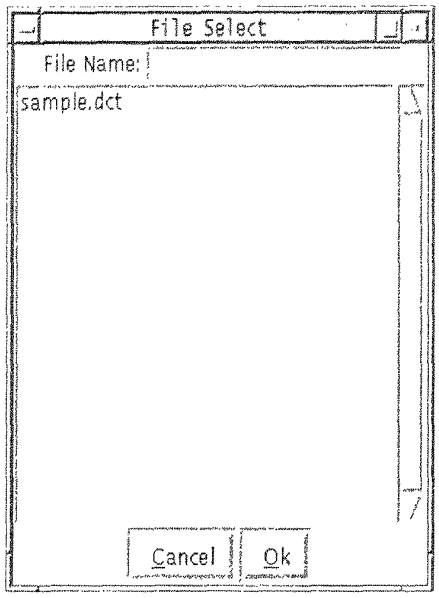


Figure 8b. Output file selection window.

To view results, select one of the result buttons shown at the top of the window. For help or information about your version select ***Help*** or ***About***. When you are finished viewing and printing summaries and board plots, select ***Exit*** to leave the viewer program.

8.1. Yield Summary Results

To view yield summary results, select ***Yield Summary*** from the top of the Output File Viewer window (Fig. 8.1a). The first part of the yield report summarizes the processing options used in the analysis (Fig. 8.1a). Items such as arbor type, kerf sizes, and prioritization settings are listed. Yield summary tables (Fig. 8.1b) follow the processing options. These tables list for each grade processed and all grades combined the yield and processing requirements (numbers of strips, parts, rips, and crosscuts) for primary, salvage, excess primary, and excess salvage yield categories.

In Figure 8.1b we see that the amount of 1 Common processed was 1,632 board feet or about 55 percent of the total grade mix. To make up the remaining 45 percent of the grade mix, RR2.0 processed 1,332 board feet of 2A Common. Primary yield from 1 Common lumber was 9 percent better than that of 2A Common (69 versus 60 percent). These tables also can indicate the ease or difficulty with which parts are obtained from a specific grade. For example, 2,716 primary parts were obtained from 1 Common with 3,540 crosscuts. For 2A Common, 2,249 parts were obtained with 3281 crosscuts. Dividing the number of crosscuts by the number of parts gives us 1.3 and 1.46 crosscuts per part for 1 Common and 2A Common, respectively. This shows that 2A Common parts required two chops per part more often than 1 Common, indicating the increased difficulty of obtaining required parts from 2A Common.

The last yield summary table concerns strip yields (Fig. 8.1c). For each strip width, RR2.0 reports the number of strips and the area before and after defecting. For example, 303 2.5-inch-wide strips were produced with a total of 3,118 lineal feet before defecting and 2,446 lineal feet after defecting. This table's information is useful when producing random-length stock for flooring or mouldings.

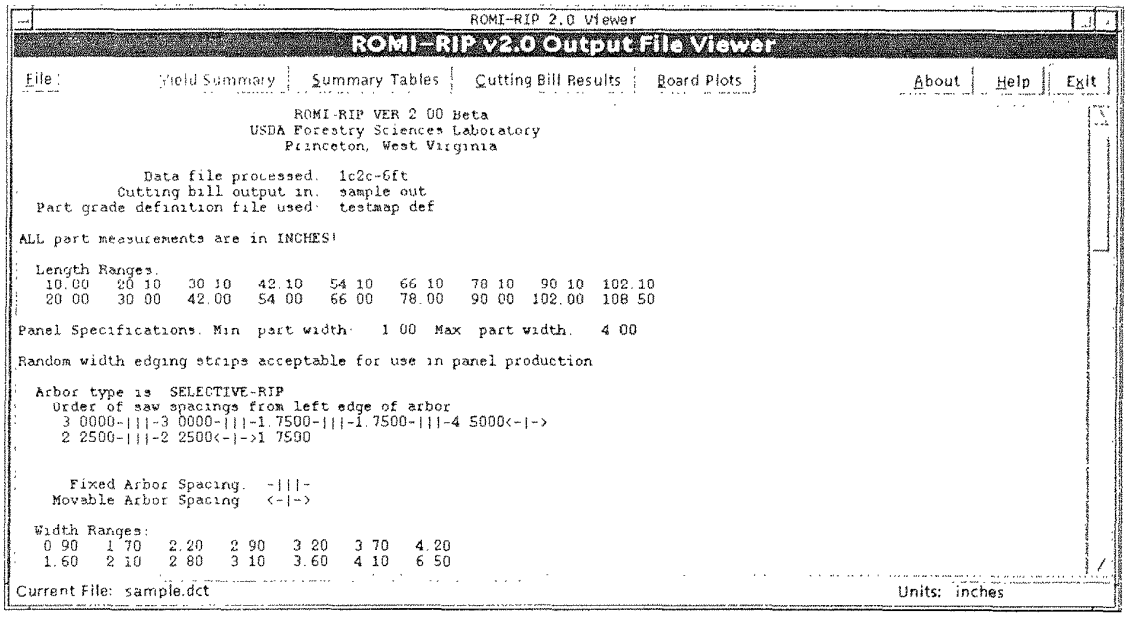


Figure 8.1a. Sample yield summary page showing processing options.

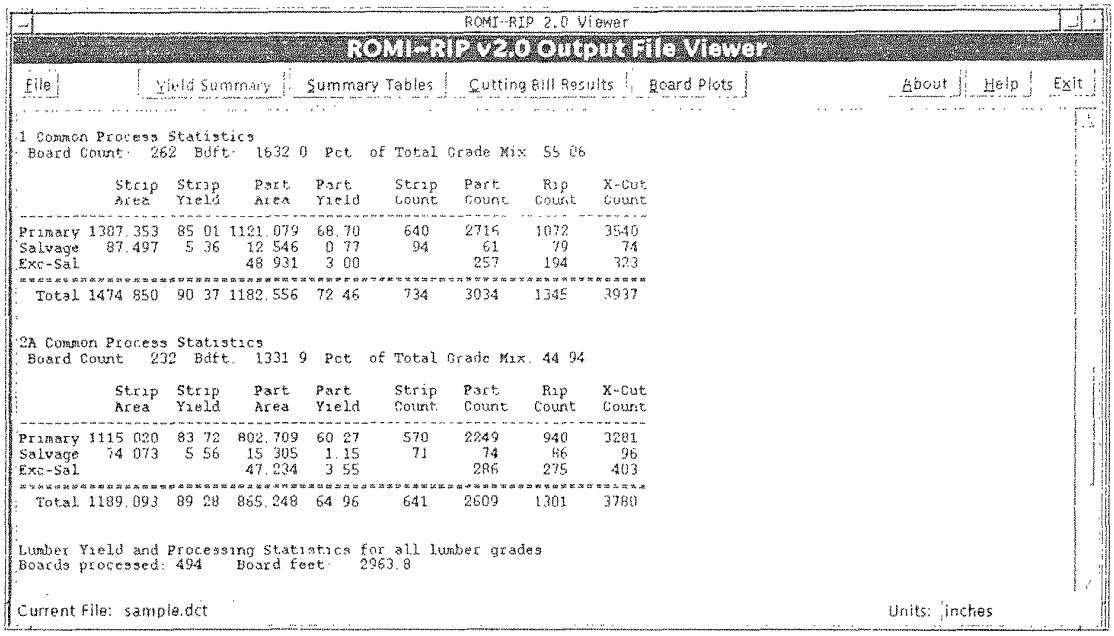


Figure 8.1b. Sample yield summary page showing part yields and processing requirements by grade.

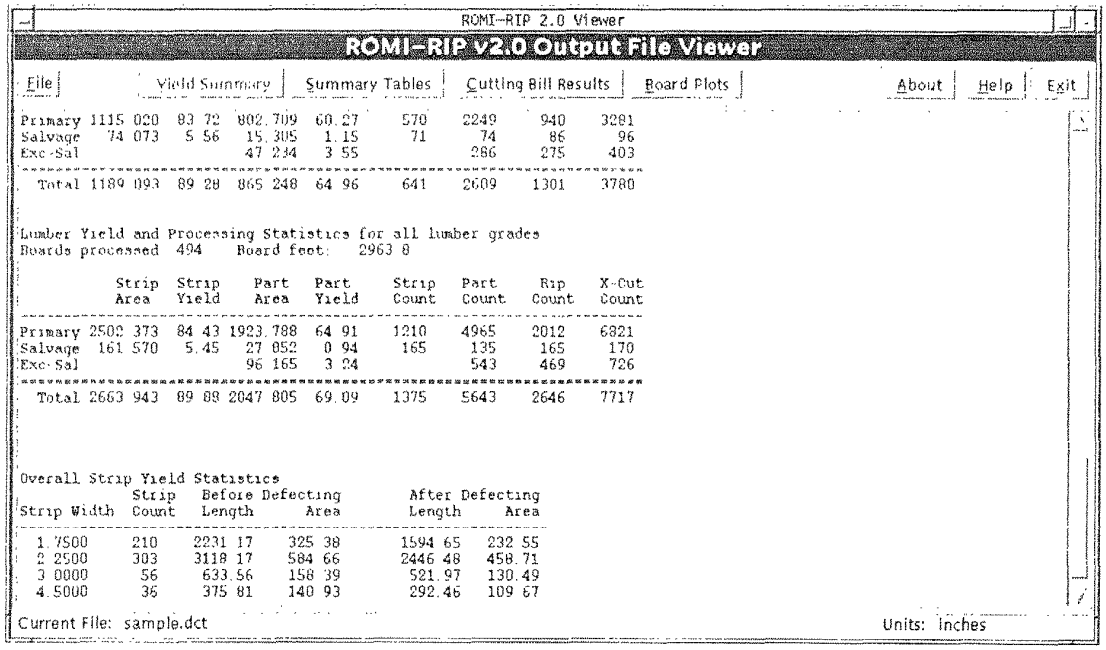


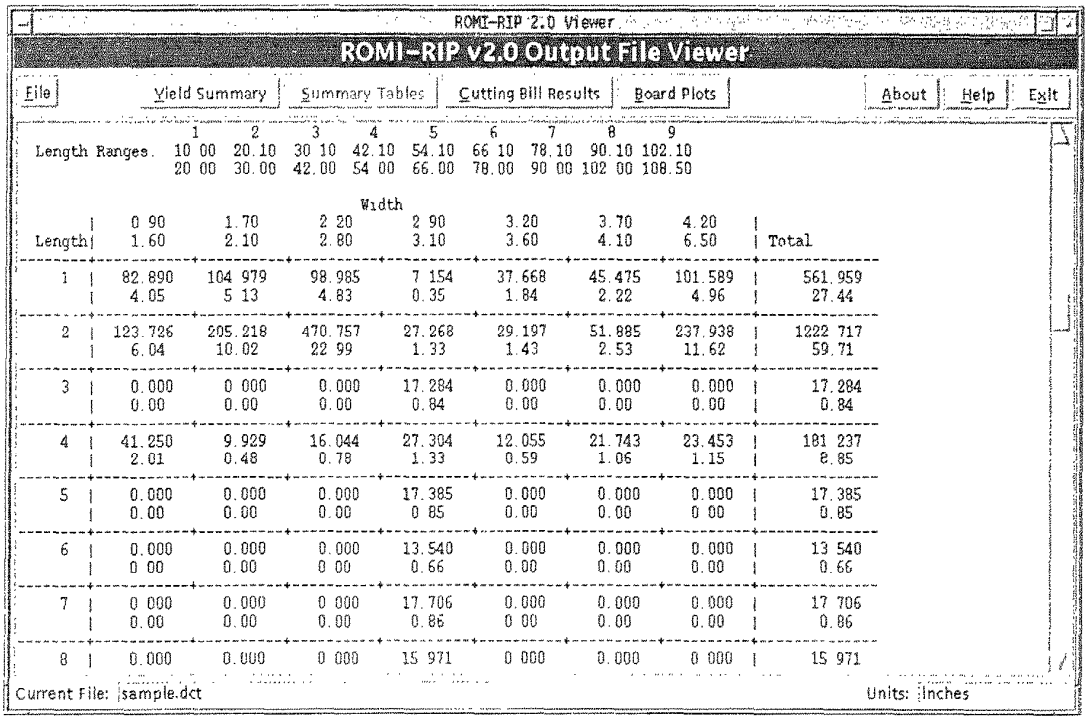
Figure 8.1c. Sample yield summary page showing strip yields.

8.2. Summary Table Results

Summary tables provide detailed information on parts and yield. They list the number of parts generated, surface area, and percentage of parts by user-defined width and length groupings. Select ***Summary Tables*** from the top of the Output File Viewer window (Fig. 8a). The first part of the summary table report lists the processing options and yield summaries discussed in Section 8.1.

Because summary tables can be large, you may want to print them for easier examination. Select ***File*** then ***Print*** from the Output File Viewer window to view summary table results (Fig. 8a). All summary tables for an input file are placed in a single output file with the extension .SUM.

There are six summary tables that describe yield distributions. The first three tables give the distributions based on surface area. A sample is shown in Figure 8.2. In each length-width cell, the upper number is the board feet of surface area and the lower number is the yield percentage. The percentages in all columns add to 100. The first table is the distribution of total yield. The second and third tables contain the surface-area distributions for the primary and salvage cuttings. The last three tables are based on the number of parts produced. These tables are organized in the same manner as the first three tables. In each length-width cell, the upper number is the part quantity and the lower number is the percentage of total part quantity.



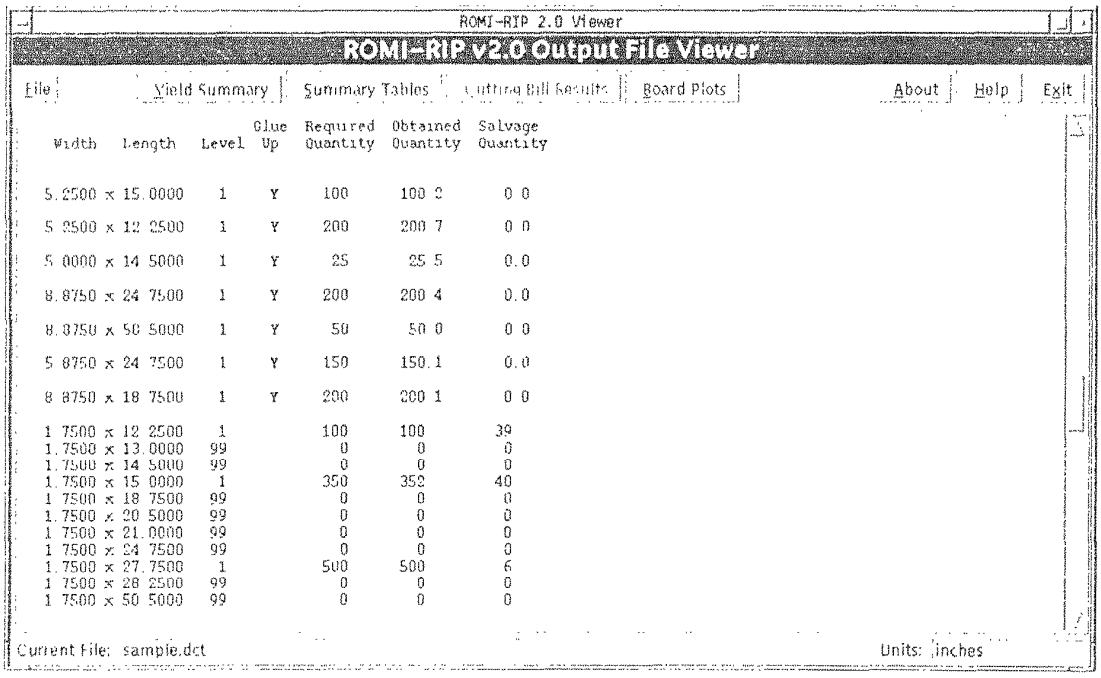
	1	2	3	4	5	6	7	8	9	
Length Ranges.	10 00	20.10	30 10	42.10	54.10	66 10	78.10	90.10	102.10	
	20 00	30.00	42.00	54 00	66.00	78.00	90 00	102 00	108.50	
					Width					
	0 90	1.70	2 20	2 90	3.20	3.70	4.20			
Length	1.60	2.10	2.80	3.10	3.60	4.10	6.50	Total		
1	82.890	104 979	98.985	7 154	37.668	45.475	101.589	561.959		
	4.05	5 13	4.83	0.35	1.84	2.22	4.96	27.44		
2	123.726	205.218	470.757	27.268	29.197	51.885	237.938	1222 717		
	6.04	10.02	22 99	1.33	1.43	2.53	11.62	59.71		
3	0.000	0 000	0.000	17.284	0.000	0.000	0.000	17.284		
	0.00	0.00	0.00	0.84	0.00	0.00	0.00	0.84		
4	41.250	9.929	16.044	27.304	12.055	21.743	23.453	181 237		
	2.01	0.48	0.78	1.33	0.59	1.06	1.15	8.85		
5	0.000	0.000	0.000	17.385	0.000	0.000	0.000	17.385		
	0.00	0.00	0.00	0 85	0.00	0.00	0 00	0.85		
6	0.000	0.000	0.000	13.540	0.000	0.000	0.000	13 540		
	0 00	0.00	0 00	0.66	0.00	0.00	0.00	0.66		
7	0 000	0.000	0 000	17.706	0.000	0.000	0.000	17 706		
	0.00	0.00	0.00	0.86	0 00	0.00	0.00	0.86		
8	0.000	0.000	0 000	15 971	0 000	0.000	0 000	15 971		

Figure 8.2. Sample surface area yield table for all parts.

8.3. Cutting Bill Results

The information generated by RR2.0 when processing lumber to meet a cutting bill allows you to analyze the lumber volume, grade mix, and processing required to satisfy cutting bill requirements. Select ***Cutting Bill Results*** to view or print this type of information. Like summary tables, the first part of the cutting bill results contains processing and yield information. See Section 8.1 for a complete description of this output.

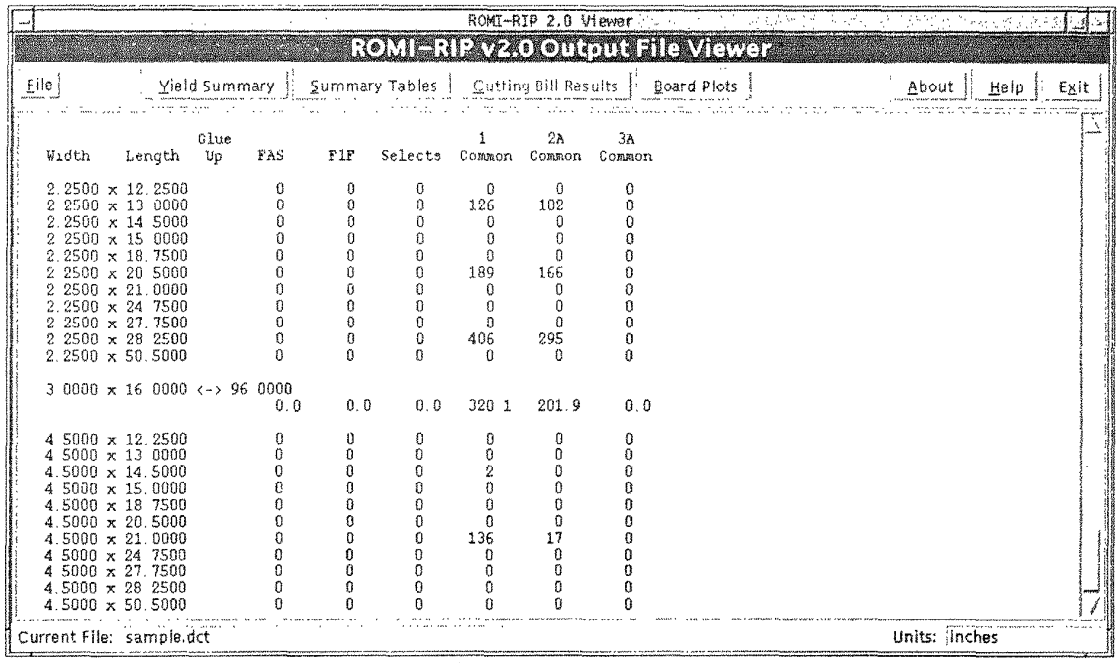
Figure 8.3a shows a portion of the Cutting Bill Overall Part Quantity Obtained Report. The width and length of each part is shown at left. For random-length parts, the minimum and maximum lengths acceptable are displayed to the right of the part's width on two lines. The Level column indicates the scheduling and replacement level number for that part. An entry is created for every solid-part length and width combination. For those parts not required by the cutting bill, their scheduling level is set to "99". This prevents the part size from being cut. A "Y" in the Glue Up column indicates that the part size is a glued-up panel. Required Quantity shows the total number of parts required for each part size. Obtained Quantity is the total number of parts produced, either primary or salvage, that meet the size requirement. Salvage Quantity counts the total number of parts obtained from salvage operations. If all of a part's required cuttings were not obtained, the message ***UNMET*** is displayed to the right of its part counts.



Width	Length	Level	Glue Up	Required Quantity	Obtained Quantity	Salvage Quantity
5.2500	15.0000	1	Y	100	100.2	0.0
5.2500	12.2500	1	Y	200	200.7	0.0
5.0000	14.5000	1	Y	25	25.5	0.0
8.8750	24.7500	1	Y	200	200.4	0.0
8.8750	50.5000	1	Y	50	50.0	0.0
5.8750	24.7500	1	Y	150	150.1	0.0
8.8750	18.7500	1	Y	200	200.1	0.0
1.7500	12.2500	1		100	100	39
1.7500	13.0000	99		0	0	0
1.7500	14.5000	99		0	0	0
1.7500	15.0000	1		350	352	40
1.7500	18.7500	99		0	0	0
1.7500	20.5000	99		0	0	0
1.7500	21.0000	99		0	0	0
1.7500	24.7500	99		0	0	0
1.7500	27.7500	1		500	500	6
1.7500	28.2500	99		0	0	0
1.7500	50.5000	99		0	0	0

Figure 8.3a. Cutting bill report showing part sizes and overall numbers of parts obtained

Following the overall quantity report is a table that lists for each part size the total number of parts obtained from each grade (Fig. 8.3b). This table allows users to determine which part sizes can be obtained efficiently from each lumber grade. For example, about half of all 2.25-inch-wide parts were obtained from 2A Common, indicating that more 2A could be processed to meet these requirements. Another grade mix, perhaps 60 percent 1 Common and 40 percent 2A Common, could be analyzed to verify this. In examining alternative grade mixes there are two questions that must be answered: (1) Is there enough better grade material to obtain the hard to get part sizes? and (2) Are the number of processing steps required to obtain the parts from the lower grades increasing enough to make processing the grade impractical? The yield summaries and cutting bill results provide information that answers these questions.



Width	Length	Glue Up	FAS	F1F	Selects	1 Common	2A Common	3A Common
2.2500 x	12.2500		0	0	0	0	0	0
2.2500 x	13.0000		0	0	0	126	102	0
2.2500 x	14.5000		0	0	0	0	0	0
2.2500 x	15.0000		0	0	0	0	0	0
2.2500 x	18.7500		0	0	0	0	0	0
2.2500 x	20.5000		0	0	0	189	166	0
2.2500 x	21.0000		0	0	0	0	0	0
2.2500 x	24.7500		0	0	0	0	0	0
2.2500 x	27.7500		0	0	0	0	0	0
2.2500 x	28.2500		0	0	0	406	295	0
2.2500 x	50.5000		0	0	0	0	0	0
3.0000 x	16.0000 <-> 96.0000		0.0	0.0	0.0	320.1	201.9	0.0
4.5000 x	12.2500		0	0	0	0	0	0
4.5000 x	13.0000		0	0	0	0	0	0
4.5000 x	14.5000		0	0	0	2	0	0
4.5000 x	15.0000		0	0	0	0	0	0
4.5000 x	18.7500		0	0	0	0	0	0
4.5000 x	20.5000		0	0	0	0	0	0
4.5000 x	21.0000		0	0	0	136	17	0
4.5000 x	24.7500		0	0	0	0	0	0
4.5000 x	27.7500		0	0	0	0	0	0
4.5000 x	28.2500		0	0	0	0	0	0
4.5000 x	50.5000		0	0	0	0	0	0

Figure 8.3b. Cutting bill report showing quantities obtained by lumber grade.

8.4. Board Plots

RR2.0 allows you to view or print plots of individual boards along with their parts, defects, and kerfs. The information used to generate board plots is maintained in output files with the extension .PLT. You can view board plots for an entire run or for a selected board. To do this, select ***Board Plots*** from the top of the viewer program. This brings up the Board Plot Viewer window (Fig. 8.4a). By default, it shows the first board in the file -- also the first board processed. Select ***Search*** to choose a board for plotting by board number (Fig. 8.4b).

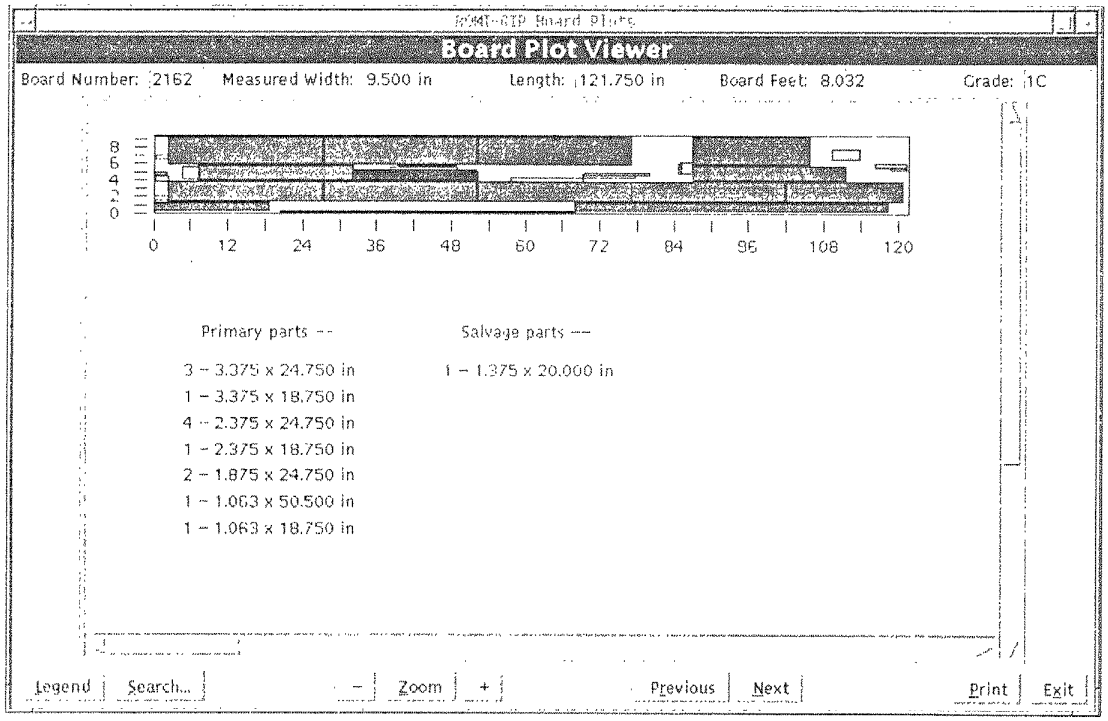


Figure 8.4a. Sample board plot viewer window.

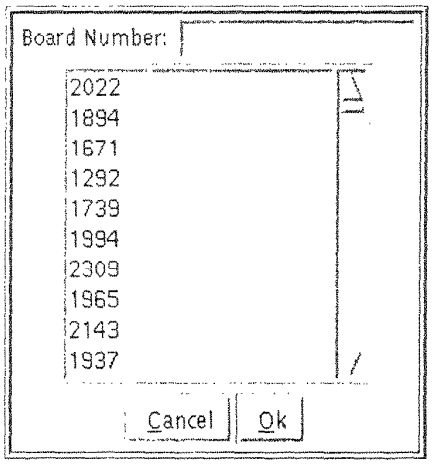


Figure 8.4b. Board selection window.

Boards are displayed as if they were transparent, with color-coded defects from both sides visible at once. Select ***Legend*** from the bottom of the screen for an explanation of the different defect colors (Fig. 8.4c). Use the - and + zoom buttons to reduce or increase the size of the board in the viewer. Figure 8.4d shows an enlarged view of a section of the board shown in Figure 8.4a. Select ***Next*** or ***Previous*** from the bottom of the screen to see the next or a previously viewed board. Select ***Print*** for a printout of the board. When you are finished, select ***Exit*** to return to the main Output Viewer window.

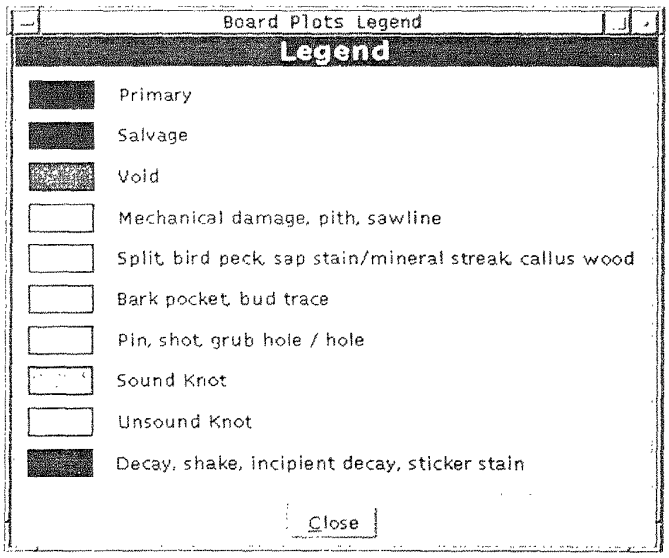


Figure 8.4c. Legend showing colors used for cuttings and various defect classes.

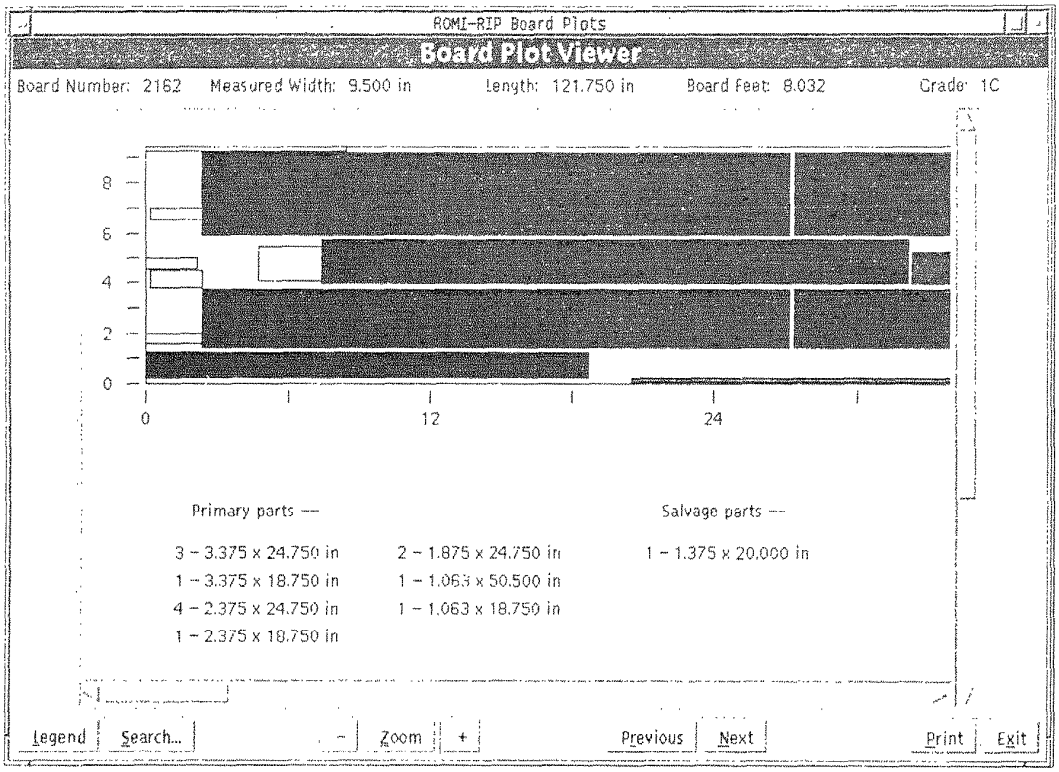


Figure 8.4d. Enlarged view of board number 2162.

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Appendix I. System Limitations

These are the current specifications and limitations of the RR2.0 simulator:

Board width:	48 inches (1.219 meters)
Board length:	Unlimited
Cutting bill maximum individual part quantity:	32000
Cutting bill maximum individual part value:	32000
Cutting bill maximum number of part sizes:	400
Input files processed at once:	10
Length ranges:	10
Width ranges:	15
Lengths,	
primary:	30 or Random Lengths
salvage:	15 or Random Width
Widths,	
primary:	20 or Random Widths
salvage:	15 or Random

Appendix II. Board Data Bank Description

This appendix describes the contents of the individual datafiles included with RR2.0. All datafiles have an eight-letter primary file name followed by a .DAT extension. All of the boards in each datafile are one of six grades. The grade of lumber in a particular datafile is determined by looking at the file name.

If the file name begins with	the grade is:
FAS,	FAS (Formerly Firsts and Seconds)
F1F,	FAS one Face
SEL,	Selects
1C,	No. 1 Common
2AC,	No. 2A Common
3AC,	No. 3A Common

The boards supplied with RR2.0 are found in the *1998 Data Bank for Kiln-Dried Red Oak Lumber* (Gatchell et al. 1998). Table 2 shows the total number of boards and board feet in each of the six grades. The boards in each grade are randomly sorted into subsets containing approximately 500 board feet. Datafiles ending with a letter contain boards that are mirror images of their corresponding files with number endings. For example, 1C-A contains boards that are mirror images of the boards in 1C-1, 2AC-C mirrors boards in 2AC-3, and so on. MIX files contain all boards, both normal and mirrored, for the grade:

Lumber grade	Number of boards	Board footage	Number of subsets
FAS	654	5,033	10
F1F	350	2,560	5
Selects	281	1,013	2
1 Common	1,038	5,730	11
2A Common	925	4,675	9
3A Common	239	1,010	2
Total	3,467	20,021	39

Appendix III. Definition of Terms

All-Blades-Movable Arbor: An arbor on which all blades are allowed to move to generate specified or random-width strips that best match the characteristics of the board and the demands of the cutting bill.

Best-Spacing-Sequence Arbor: The best fixed blade saw spacing arrangement is generated for each board starting one edge against the rip fence.

Cutting Bill: A specified list of part sizes and quantities. For RR2.0, the cutting bill may include scheduling order and part prioritization methods based on dollar values or other methods. See also Dynamic Prioritization Methods and Static Prioritization Methods.

Cutting Stage: A single ripping or crosscut operation. Ripping a board into strips is a single cutting stage. The production of primary parts requires two stages, ripping and crosscutting.

Dynamic Prioritization Method: A method of prioritizing parts required by a cutting bill so that the part priorities change as parts are produced. Dynamic methods generally require less board footage than static methods to meet a given cutting bill. See also Cutting Bill and Static Prioritization Methods.

Excess Part: See Orphan Part.

Excess Primary Part : Part produced in two cutting stages for which there is no requirement in the cutting bill.

Excess Salvage Part: Part produced in three or more cutting stages for which there is no requirement in the cutting bill. The first stage is always ripping.

Fixed Arbor: The saw spacing arrangement specified by the user and used for all boards. Each board is ripped with one edge against the left edge of the arbor.

Fixed-Blade-Best-Feed Arbor: The saw spacing arrangement specified by the user and used for all boards. Each board is positioned automatically with respect to the saw spacings such that the strips generated best match the characteristics of the board and the demands of the cutting bill.

Kerf: The amount of wood removed by a sawblade. Common kerf thickness simulated by RR2.0 are .125 and .1875 of an inch.

Minimum Primary Width: The minimum primary width that is specified when processing random-width part sizes.

Movable-Outer-Blade: An arbor on which the last blade can be moved out to the edge of the board. The blade is moved out if an edging strip less than the minimum primary width would be generated. This produces a single, wider random-width strip.

Orphan Part: A primary part that is cut but is no longer needed, an extra or excess part.

Panel: A panel is made up of two or more edge-glued pieces of specified length and width.

Primary: Parts produced by chopping strips to primary lengths.

Primary Part Widths: The widths that are required by parts in the cutting bill.

Primary Part Lengths: The lengths that are required by parts in the cutting bill.

Salvage: Parts that are obtained by at least three cutting operations. The first stage always is ripping. The additional work makes these parts more expensive to produce and, therefore, less desirable. Unlike excess salvage, salvage parts are required by the cutting bill.

Saw Space Sequence: The sequence or arrangement of widths on the arbor. It is important that this sequence be developed in consideration of the width distribution of the lumber and the surface area required for each part width. For more information see (Gatchell 1996).

Selective-Rip Arbor: The saw spacing arrangement is specifed by the user and is used for all boards. The user specifies which blades are fixed and which are movable. For movable blades the distance they are allowed to move also must be specified. Each board is positioned automatically with respect to the saw spacing sequence such that the strips generated best match the characteristics of the board and the demands of the cutting bill.

Static Prioritization Method: A method of prioritizing cutting bill parts. The priority assigned to a cutting bill part at the start of processing is the same priority used at the end of processing. Number or dollar values are good examples of a static prioritization strategy. Static prioritization generally is less efficient than dynamic strategies. See also Cutting Bill and Dynamic Prioritization Methods.

Strip: A narrow, board-length piece of wood produced by the gang ripsaw.

Appendix IV. How to Get Help With a Problem

If you encounter ANY problems with the ROMI-RIP programs, please try to answer the questions at the bottom of this form and contact:

Edward Thomas
USDA Forestry Sciences Laboratory
241 Mercer Springs Road
Princeton, WV 24740

Phone: (304) 431-2703
FAX: (304) 431-2772
EMAIL: ethomas/ne_pr@fs.fed.us

Include your phone number as you may be contacted for additional information. Thank you.

Name:_____
Company:_____
Address:_____
City:_____ State:_____ Zip:_____
Phone: ( ) _____ FAX: ( ) _____

Operating system (check all that apply): Windows, Which version: _____
Other, _____

Total random access memory (RAM) installed (e.g. 4 MB): _____

Processor type, check one: ( ) 80386 ( ) 80486 ( ) Pentium ( ) 686
( ) PowerPC ( ) Other _____

Are you using a math coprocessor? ( ) Yes ( ) No ( ) Don't know

Are you running ROMI-RIP on a Local Area Network (LAN)? ( ) Yes( ) No

On a separate sheet of paper describe the problem(s) you have encountered.