

Surface Transportation Board



The Railroad Cost Program

(Microsoft Excel Version)

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Chapter 1 – The Railroad Cost Program

Introduction

This manual describes the Microsoft Excel version of the *Railroad Cost Program*, part of the Surface Transportation Board’s Uniform Railroad Costing System (URCS). URCS is a complex set of procedures which transform railroad expenses and activity data into estimates of the cost of providing specific railroad services. The Surface Transportation Board (STB or Board) annually assembles the initial railroad database of expenses and activities information, monitors the development of the cause and effect relationships, and calculates the unit cost factors. The Railroad Cost Program spreadsheet applies those unit costs to user defined railroad shipments. This spreadsheet allows an analyst to develop variable costs and fully allocated costs for a shipment.

URCS uses an accounting based approach to costing, relying on annual operating expenses and traffic data reported by the railroads. This approach provides cost estimates on the average cost structure of individual railroads or regionalized groups of railroads. Average data on average railroad moves may not, in all cases, be appropriate for estimating a cost for a given railroad movement. If appropriate, user generated cost estimates may be substituted for the cost data developed by the Surface Transportation Board. This spreadsheet produces reasonable estimates of railroad variable cost when all the *Mandatory Parameters* are entered. The user can input alternative movement information, when available, to suit the user’s individual needs. The user is responsible for ensuring the accuracy and relevance of cost estimates used in each situation.

User Interface

This Excel spreadsheet has two modes of operation, an interactive movement cost option and a batch processing option. The interactive option is detailed in Chapter 5 – The “RailroadCostProgram” Worksheet. The batch option is detailed in Chapter 7 – The “BatchCostProgram” Worksheet.

The costing process uses nine *Mandatory Parameters* to define the characteristics of a railroad movement. These are input into the *RailroadCostProgram* worksheet. All these parameters must be defined in order for the program to calculate the variable costs. Those parameters are: the railroad(s), the distance(s), the segment type(s) (e.g. OT, OD, RD, RT), the freight car type, the number of freight cars, the freight car ownership, the tons per car or TCU¹, the commodity, and the shipment size (e.g. single-car, multi-car, unit train, or intermodal).

¹ TCU=Trailer/Container Unit

Detailed parameters can be changed to reflect the known specifics of a shipment. These are input into the *DetailedParameters* worksheet. The user is not required to enter any detailed parameters because the program automatically uses default values.

Basic Operating Instructions

Open the spreadsheet like any other Excel spreadsheet. The URCS Mandatory parameters can be entered into the *RailroadCostProgram* worksheet. There are drop-down menus for the user to select individual values. The spreadsheet automatically calculates the variable cost of the shipment. See Chapter 5 – The “*RailroadCostProgram*” Worksheet for more information.

The URCS Detailed Parameters can be entered into the *DetailedParameters* worksheet of the spreadsheet. See Chapter 6 – The “*DetailedParameters*” Worksheet for more information.

The spreadsheet also contains a batch processing mode. Those inputs are entered into the *BatchCostProgram* worksheet of the spreadsheet. See Chapter 7 – The “*BatchCostProgram*” Worksheet for more information.

Operating System Requirements

There are no specific operating system requirements for this Excel version of the *Railroad Cost Program*. The only requirement is that the user have Microsoft Excel.

Installing the Railroad Cost Program

There is no installation procedure for using the Microsoft Excel version of the *Railroad Cost Program*. The Excel spreadsheet can be downloaded from the STB’s website.

Updating Annual Unit Cost Files

There is no special process for updating the annual unit cost files. The Excel spreadsheet contains all the unit cost files that were previously provided in separate files, which were in an XML format. When the Board releases its annual URCS Phase II unit cost files, those unit costs will be added to the *RailroadUnitCostXML* worksheet by the STB and posted on the STB website. The user only needs to download the new version of the spreadsheet to use those new unit costs. The user selects the appropriate year for the unit costs in the *RailroadCostProgram* worksheet.

Chapter 2 – Railroad Costing Basics

Overview

Calculating the cost of railroad movements involves a series of steps comparing railroad operations with unit cost statistics to compute the total variable cost of rail service. The program's internal calculations and results are divided into major sections. Each section performs one set of related cost calculations. Internal calculations and the output are sequential in the sense that the values referenced in subsequent sections will use values computed in previous sections.

The first section in railroad costing computes *Train Mileage* statistics. These statistics are divided into *Through Train*, *Way Train* and/or *Unit Train* miles, as appropriate. After computing the basic train mile statistics, the program develops the variable costs for each segment of railroad operations: line haul, terminal, freight car, specialized services, loss & damage, and the jurisdictional add-on. Summing the individual sectional components develops total variable costs for the shipment. Finally, the constant cost mark-up ratio is applied to derive the fully allocated cost of service for the whole railroad move.

The specific calculations of the URCS Phase III methodology can be examined in various ways. First, the *Source* descriptions for each line number of the *RailroadCostProgram* worksheet describe the formulas used. Second, the Excel formulas in that same worksheet show the specific calculations used. All the calculations described in the following sections are based on the calculations in the *RailroadCostProgram* worksheet. This follows the same format as the URCS Output Report.

Train Mileage (L101-L111)

The initial step in the costing process is the calculation of the number of miles by type of train. These calculations are contained in output report lines 101 through 111. The short line miles provided by the user are first multiplied by a circuitry factor to estimate the number of operating miles. If the user knows the actual miles, those can be entered and the *circuitry factor* set to 1. See Chapter 6 – The “DetailedParameters” Worksheet. For Single or Multi-Car shipments, an average number of Way Train miles are assigned to the shipment, with the residual miles assumed to be in Through Train service. For Unit Train shipments, there will be no Way Train or Through Train miles calculated and all miles are considered actual operating miles in Unit Train service. For Intermodal shipments, there will be no Way Train miles calculated because all miles are considered operating in Through Train service. The total miles by train type are then multiplied by an empty return factor to include an allowance for the empty movement. These calculated miles by type of train are used by the succeeding steps in the costing process.

Calculation of Line Haul Costs

Having established the total miles by the type of train, the program begins the actual cost calculations. Line haul movement costs are computed first, including the expenses for train crews, train operations, locomotives, roadway maintenance and some clerical operations. The related unit costs are gathered into five groupings corresponding to the service units used in their calculation. In each of the five cases, the program follows the same basic methodology. The number of service units applicable to the shipment is determined, and the resulting total is multiplied by the set of related operating (OPR) unit costs, depreciation rents and leases (DRL) unit costs, and return on investment (ROI) unit costs.

Car-Mile Costs (Other Than Clerical) (L201-211)

In the case of a 1-car shipment, the number of car miles is equal to the sum of train miles in both way and through service. For multiple car shipments, car-miles are calculated by multiplying the total train miles by the number of freight cars involved. These calculations are contained in lines 201 through 211 of the output report. The service units used in this section are unit costs per car-mile for OPR, DRL, and ROI.

Gross Ton-Mile Costs (L212-L225)

The calculation of variable costs for shipment gross ton-miles is complicated by the need to develop gross ton-miles for the shipment and the train. The total train miles, both empty and loaded, in all train services are multiplied by the tare weight of the car(s), and the result is added to the product of the net tons of the shipment times the total loaded miles. The result of this calculation is the gross ton-mile statistic, which is applied to the gross ton-mile unit cost factors used to derive the variable cost. These calculations are contained in report lines 212 through 225.

For intermodal shipments, the same basic sequence of gross ton-mile costs is the same except that the number of trailers in the shipment and the tare weight of the trailers are used to develop gross ton-miles for the shipment and the train.

Locomotive Unit-Miles (L226-L248)

The number of locomotive unit-miles attributable to the shipment is computed separately for each type of train service and then summed. The total number of locomotive unit-miles for way trains is determined by multiplying the average number of locomotive units in a way train times the number of way train miles. This total is allocated to individual shipments based on the ratio of shipment tonnage (tare and lading) to the average gross trailing tons per way train. A similar calculation is made for through train service, and the sum of these miles represents the number of locomotive unit-miles for costing.

For unit trains, the total number of locomotive unit-miles for unit trains is determined by multiplying the average number of locomotive units in a unit train times the number of unit train miles. This total is allocated to shipment based on the ratio of shipment tonnage (tare and lading) to the average gross trailing tons per unit train.

The separate treatment of train services is necessary because of the substantial difference in both the average number of locomotives and gross trailing tons per train between way train, through train, and unit train service. These calculations are contained in output lines 226 through 248.

Carload and Clerical Costs (L250-L268)

Two carload-type service units are used in the calculation of unit costs. The first is Carloads Originated or Terminated (CLOT). One carload is given for origination and one for termination. The value of CLOT for each carrier depends on the type of shipment. A local, single carrier move would result in a value of two, while an overhead movement would generate no CLOT's. The second carload related service unit is Carloads Originated or Received (CLOR), or the carloads handled by each carrier. The value of CLOR is the same for every carrier in the routing and is equal to the number of cars in the shipment. These calculations are contained in output lines 250 through 268.

Train Mile Costs (L269-L290)

The train-mile costs are in two separate groups: crew wages (output lines 269 to 284) and other expenses (output lines 285 to 290). In both cases the train-miles by train type, computed earlier, are allocated to individual shipments using the same tonnage ratio employed for locomotive unit-mile costs. See output lines 269 to 272.

Calculation of Terminal Costs

The next major portion of the program computes the terminal costs associated with switching activities. All costs are calculated on a per switch engine minute (SEM) basis and include the operating, maintenance and ownership items related to yard and way switching activities. They do not include any portion of freight car or specialized service terminal costs.

Industry, Interchange and Intertrain and Intratrain Switching (L301-L320)

The calculations for this class of costs are contained on output lines 301 through 320. To determine the number of switch engine minutes attributable to a shipment, the program first determines the number of switching events for each class of switching event. Each origin or destination switch represents an industry switch. These switches multiplied by the spotted to pulled ratio creates a factor that includes switching the empty car into the industry at origin and out of the industry at destination. Interchange switching requirements can usually be inferred from the routing and represent a switch event for both railroads involved. Similarly, intertrain and intratrain (I&I) switching requirements are derived by a mileage factor, unless the user specifies a specific value. These counts of switching events are multiplied by the average number of switch engine minutes per event, and then the total cost is calculated for all classes of switching. This total becomes the basis for applying the unit costs for switching the shipment.

Intraterminal and Interterminal Switching (L321-L334)

Output lines 321 through 334 are intraterminal and interterminal switching services, which are generally omitted from an application of the movement cost, since they are not related to inter-city transportation. An intraterminal switch is a complete movement within a terminal area by one railroad. An interterminal switch is also contained within a single terminal area but requires an interchange between railroads. The cost of these switching services is calculated based on the switch engine minutes.

Calculation of Freight Car Costs

The next major portion of the program computes freight car costs. Freight car costs are a product of mileage-based charges and time-based charges, depending on whether the car is railroad owned or privately owned. Railroad owned cars receive an accessorial service cost.

Private Line Car Rentals (L401-L405)

For privately owned cars, freight car costs are based only on mileage. These shipment costs derive from multiplying the total number of car-miles, both empty and loaded, by the average car-mile rental rate for the specified car type. These calculations are contained in output lines 401 through 405.

Railroad Owned Cars – Mileage Costs (L406-L431)

The mileage costs for railroad owned cars are based on the car-miles running and the car-miles in switching services. Car-miles running include an allowance for circuitry and loaded to empty ratios. Car-miles in the yard are calculated as the summation of all car-miles for all classes of switching service applicable to the shipment. The program permits either the actual costs per mile, excluding switching car-miles, or the use of the railroad or regional average cost per mile, applicable to both the line haul and switching miles. These calculations are made on output lines 406 through 431.

Railroad Owned Cars – Time Costs (L432-L457)

Time costs are based on car-days running and car-days in switching service. The days in switching are based on the total car-days for all classes of switching service required by the shipment. The car-days running are calculated on the basis of the line haul mileage divided by the average miles a car travels in a day. If the user specifies car-day charges, no distinction is made between the unit cost of car-days in running service versus car-days in yard service. However, if average car-day costs are used, the program uses different car-day costs for yard and running. These calculations are made on output lines 432 through 457.

Railroad Owned Cars – Accessorial Services (L458-L481)

Accessorial services, contained in output lines 458 through 481, measure the cost of providing special equipment within a car. The costs are based on car-miles (running and yard), and car-days (running and yard).

Railroad Owned Cars – Intraterminal and Interterminal Switching (L482-L499D)

The calculations contained in output lines 482 through 499D are included for shipments given intraterminal and interterminal movements, using railroad-owned freight cars. The cost is based on car-miles and car-days in switching service.

Calculation of Other Costs

The next major portion of the program computes other costs. These other costs are for special services, loss & damage, intermodal special services, and jurisdictional add-ons.

Special Service Costs (L501-L534)

Special service costs are based on any special services a railroad provides. Special service costs are based on ton-miles or tons multiplied by the service cost. Output lines 501 through 507 include costs for Lake Transfer services, usually invoked by moving carloads on a ship across the Great Lakes. Coal Terminal service is contained in output lines 508 through 514, incurred when a shipment of coal moves through a marine terminal. Ore Terminal services are contained in output lines 515 through 521 and are based on the shipment tons of ore moving through a marine terminal. Other Marine Terminal costs are based on shipment tons, and are computed in lines 522 through 528.

Automobile and intermodal special service costs are included in this group. *Motor Vehicle Unit Loading and Unloading* costs represent the cost for loading and unloading automobiles or trucks onto a bi-level or tri-level vehicular flat car. The cost of service is based on the number of vehicles in the shipment. If the user does not specify the number of vehicles, the program estimates them by dividing the shipment weight by two tons. These calculations are contained in output lines 529 through 531.

Refrigerated Car Protective services are computed for refrigerated cars and are based on car-miles. The computed cost is intended to recover the net amount of service not paid for by special service revenues. When the total cost for protective service is required, it must be calculated from other sources available to the user, increased by the general overhead ratio and inserted as a user input. These calculations are contained in output lines 532 through 534.

Loss & Damage Claim Payments (L535-L537)

These calculations are calculated for the total shipment, regardless of the number of railroads in the movement. The loss and damage costs are computed by multiplying an average

cost per ton for the specified commodity by the net shipment weight and the ratio of the segment miles to total miles. These are allocated to the individual railroads in the shipment based on each railroad's miles as a percentage of the total miles. See output lines 535 through 537.

Intermodal Special Service Costs (L540-L572)

Trailer Container Unit TCU – Loading and Unloading (Tie and Untie) Service costs are calculated for each intermodal plan code, also known as the TOFC plan code. These costs are computed in output lines 540 through 547. *TCU Ownership and Protective Service* is calculated in output lines 548 through 566 and is included for some intermodal service plans. The ownership costs may apply to refrigerated or non-refrigerated TCU's. The protective service costs apply only to refrigerated trailers or containers. Both service costs are based on the days in line haul service plus the days in origination and termination yards. Finally, the *TCU Pickup and Delivery Costs* are only applied for some intermodal plans. These costs are based on the plan number (line 569) and are estimated based on whether the railroad picks up and/or delivers the trailer or container. The number of TCUs defined in the shipment determines the cost. The costs are computed in output lines 569 through 572.

Jurisdictional Add-Ons (L573-L587)

These unit costs are necessary when developing evidence for rate proceedings before the Surface Transportation Board. They are applied to shipments whose shipment size is defined as Single or Multi-Car shipments. The Single car movement add-ons are based on industry switching events and on station clerical costs, which is based on carloads originated and terminated. These costs are contained in output lines 573 through 587. The single and multiple car movement add-ons are based on carloads interchanged and freight car miles. These costs are contained in output lines 579 through 586. The total of these add-ons is contained in output line 587.

Summary of Shipment Costs

The last major portion of the program summarizes those variable cost elements that make up the total variable costs for the shipment.

Summary of Shipment Costs (L601-L703)

Output lines 601 through 703 contain the summary of all variable costs for the shipment. The total variable cost is the sum of output lines 601 through 695. Line 696 is the sum of lines 601 through 695, plus the jurisdictional add-on (line 587). The constant cost markup ratio (line 697) is applied to total variable cost to develop fully allocated cost (line 698). The total variable shipment cost (line 700) is the sum of the total variable cost, jurisdictional add-on, and loss & damage. The total fully allocated variable shipment cost (line 701) is the sum of the total variable cost and the jurisdictional add-on multiplied by the constant cost markup ratio (line 697), plus loss & damage. Output lines 702 and 703 develop the unit cost per hundredweight for variable costs and fully allocated costs.

Chapter 3 – Railroad Cost Program Overview

Summary of Worksheets

When the Excel workbook is opened, the user will see the following ten different worksheets:

1. *Instructions* – This worksheet provides an overview of the Excel spreadsheet, as well as, a list of the various worksheets and a description of their purpose and use.
2. *RailroadCostProgram* – This worksheet is used to input the mandatory parameters used by the URCS Phase III program, which are highlighted in yellow. A description of each field pops up when each field is selected. Some fields have drop-down lists that the user can select from. The variable costs of the shipment are calculated automatically.

This worksheet can be used to calculate the variable cost of a single segment by only entering values in the "ORR" column. If only costing one segment, enter the distance traveled by any other railroads in the "TRR Distance" field so that Loss & Damage can be allocated appropriately.

For multi-carrier shipments, the originating railroad should go in the "ORR" column, the terminating railroad should go in the "TRR" column, and any intermediate railroads should go in the "JRR" columns (i.e., junction railroads).

This worksheet can be printed out as the URCS Standard Output Report.

3. *DetailedParameters* – This worksheet can be used to override certain values in the RailroadCostProgram worksheet. The user should input any override values into the cells highlighted in yellow. The detailed parameters allow for "What If" scenarios to be evaluated.
4. *BatchCostProgram* – This worksheet is used to define the inputs needed for calculating the costs of many segments at one time. The user should input values into the columns

highlighted in yellow (columns A-N). To cost the records, press the “Run Batch Program” button. The results are stored in the BatchOutput worksheet.

Since the BatchCostProgram is designed to support evidence filed before the STB, only a limited number of detailed parameter options are available. Those are the circuitry and the TOFC Plan.

Any records whose inputs were invalid will have #N/A in one or more of columns P through AC. Use the AutoFilter feature to find those records.

5. *BatchOutput* – This worksheet contains the results of running the BatchCostProgram. Any records that were unable to be costed will have #N/A in column PN, which is the total variable cost (L700). Use the AutoFilter feature to find those records.
6. *URCSInputs* – This worksheet contains various URCS input values. It acts as a reference for various codes expected by the Phase III program.
7. *RailroadUnitCostXML* – This worksheet contains the unit costs for various years that were previously stored in the Railroad Unit Cost files, which were in an XML format.
8. *Railroads* – This worksheet contains the various URCS Class I railroad codes. It also contains a list of all railroads listed in previous waybill samples and the regions to which they are assigned.
9. *STCCs* – This worksheet contains the translation of 5-digit STCC codes into their URCS commodity group.
10. *ECodeTable* – This worksheet contains the translations of the URCS Phase II reference ID (e.g., E1L101C1=Gross Ton Mile (GTM) OPR Expense).

Basic Operating Instructions

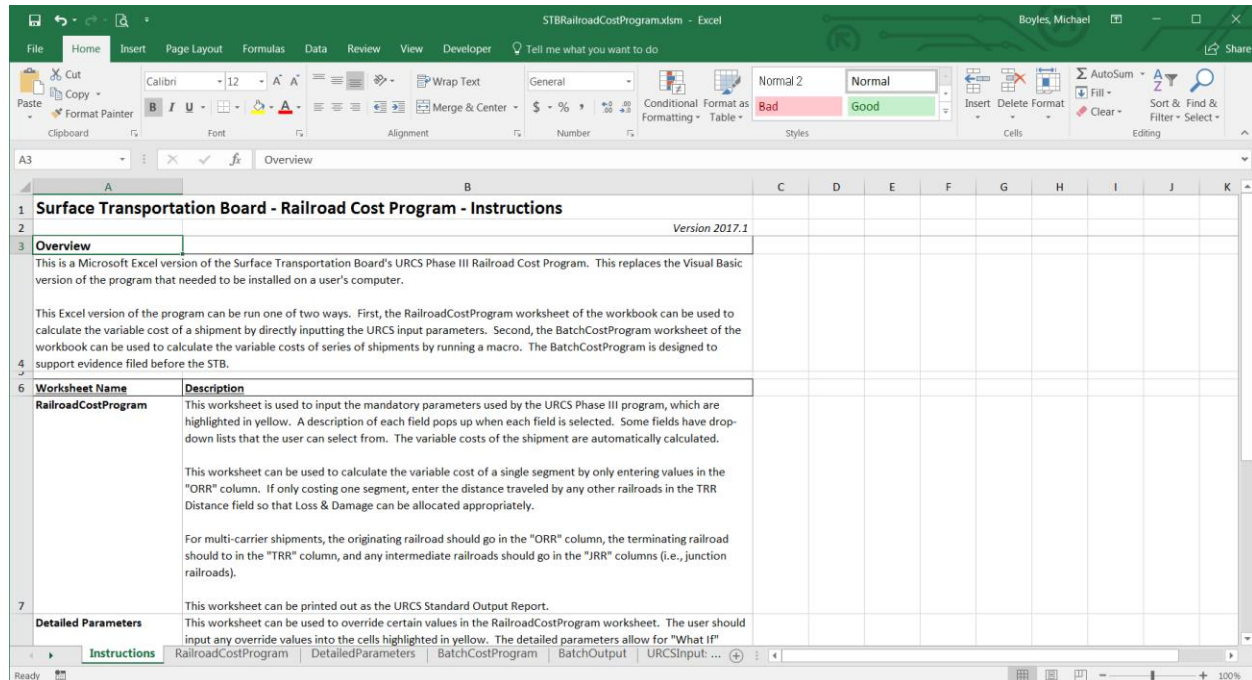
Open the spreadsheet like any other Excel spreadsheet. The URCS Mandatory parameters can be entered into the *RailroadCostProgram* worksheet of the spreadsheet. There are drop-down menus for the user to select particular values. The spreadsheet automatically calculates the variable cost of the shipment. See Chapter 5 – The “RailroadCostProgram” Worksheet for more information.

The URCS Detailed Parameters can be entered into the *DetailedParameters* worksheet of the spreadsheet. See Chapter 6 – The “DetailedParameters” Worksheet for more information.

The spreadsheet also contains a batch processing mode. Those inputs are entered into the *BatchCostProgram* worksheet of the spreadsheet. See Chapter 7 – The “BatchCostProgram” Worksheet for more information.

Chapter 4 – The “Instructions” Worksheet

The *Instructions* worksheet looks like the following:



This worksheet provides an overview of the Excel spreadsheet, as well as, a list of the various worksheets and a description of their purpose and use.

Chapter 5 – The “RailroadCostProgram” Worksheet

The *RailroadCostProgram* worksheet looks like the following:

The screenshot shows the 'RailroadCostProgram' worksheet in Excel. The interface includes the standard Excel ribbon (File, Home, Insert, etc.) and a title bar indicating the file name 'STBRailroadCostProgram.xlsm'. The worksheet is divided into several sections with yellow highlights for input fields. The first section, 'Surface Transportation Board - Railroad Cost Program', includes fields for '2013 Unit Cost Year', 'ORR' (Originating Railroad), 'JRR1', 'JRR2', 'JRR3' (Junction Railroads), and 'TRR' (Terminating Railroad). Below this is a 'VARIABLE COST SUMMARY' section with a table for 'Category' and 'Total'. The third section, 'Train Mileage', includes fields for 'Source', 'Short line miles', 'Circuitry factor', and 'Actual miles including circuitry'. The bottom of the worksheet shows a navigation bar with tabs for 'Instructions', 'RailroadCostProgram', 'DetailedParameters', 'BatchCostProgram', 'BatchOutput', and 'URCSInput...'. The status bar at the bottom indicates 'Ready' and '100%' zoom.

LINE	DESCRIPTION	SOURCE	ORR	JRR1	JRR2	JRR3	TRR	Total	Information
RR	Railroad	[User]	WEST						
DIS	Distance	[User]	1,000.0					1,000.0	
SG	Segment Type	[User]	OT						
FC	Freight Car Type	[User]	Covered Hopper						Car Type Index=
NC	Number of Cars	[User]	150						
OWN	Car Ownership	[User]	Railroad						
WT	Weight per Car (tons)	[User]	80						
COM	Commodity	[User]	0113 Grains						Commodity Index=
SZ	Shipment Size	[User]	Unit						
REV	Revenue	[User]							
VARIABLE COST SUMMARY									
Category			WEST					Total	
Variable Costs			\$241,492.53					\$241,492.53	
Loss & Damage			\$373.48					\$373.48	
Ex Parte Adjustment (i.e., Make Whole)			\$0.00					\$0.00	
Total Variable Costs			\$241,866.00					\$241,866.00	
HDR	Train Mileage	Source	WEST					Total	
101	Short line miles	[User]	1000					1000	
102	Circuitry factor	E2L106C5	1						E2L106C5=Local circuitry
103	Actual miles including circuitry	L101*L102	1000					1000	
104	Actual unit train miles including circuitry	[User]	1000					1000	

This worksheet is used to input the mandatory parameters used by the URCS Phase III program, which are highlighted in yellow. A description of each field pops up when each field is selected. Some fields have drop-down lists that the user can select from. The variable costs of the shipment are automatically calculated.

This worksheet can be used to calculate the variable cost of a single route segment by only entering values in the "ORR" column. If only costing one segment, enter the distance traveled by any other railroads in the "TRR Distance" field so that Loss & Damage can be allocated appropriately.

For multi-carrier shipments, the originating railroad should go in the "ORR" column, the terminating railroad should go in the "TRR" column, and any intermediate railroads should go in the "JRR" columns (i.e., junction railroads).

This worksheet can be printed out as the URCS Standard Output Report.

Mandatory Parameters

Year (cell D3): Select the year for the unit costs to be used. A drop-down list is available for the user to select the appropriate year for the unit costs to be used in calculating the variable costs.

ORR (cell D5): Select the originating railroad for the shipment. A drop-down list is available for the user to select the originating railroad of the shipment.

If only costing a single segment, enter the railroad for that segment in this "ORR" field. Enter the distance traveled by any other railroads in the "TRR Distance" field so that Loss & Damage can be allocated appropriately.

JRR1 (cell E5): Select the first junction railroad (if any) for the shipment. A drop-down list is available for the user to select the first junction railroad of the shipment.

If costing a 2-carrier shipment, leave this field blank and enter the terminating railroad in the "TRR" field.

JRR2 (cell F5): Select the second junction railroad (if any) for the shipment. A drop-down list is available for the user to select the second junction railroad of the shipment.

If costing a 3-carrier shipment, leave this field blank and enter the terminating railroad in the "TRR" field.

JRR3 (cell G5): Select the third junction railroad (if any) for the shipment. A drop-down list is available for the user to select the third junction railroad of the shipment.

If costing a 4-carrier shipment, leave this field blank and enter the terminating railroad in the "TRR" field.

TRR (cell H5): Select the terminating railroad (if any) for the shipment. A drop-down list is available for the user to select the terminating railroad of the shipment.

ORR Distance (cell D6): Enter the distance traveled by the originating railroad. This can be a decimal value.

JRR1 Distance (cell E6): Enter the distance traveled by the first junction railroad (if any). This can be a decimal value. If costing a 2-carrier shipment, leave this field blank and enter the terminating railroad distance in the "TRR Distance" field.

JRR2 Distance (cell F6): Enter the distance traveled by the second junction railroad (if any). This can be a decimal value. If costing a 3-carrier shipment, leave this field blank and enter the terminating railroad distance in the "TRR Distance" field.

JRR3 Distance (cell G6): Enter the distance traveled by the third junction railroad (if any). This can be a decimal value. If costing a 4-carrier shipment, leave this field blank and enter the terminating railroad distance in the "TRR Distance" field.

TRR Distance (cell H6): Enter the distance traveled by the terminating railroad (if any). If only costing one segment, enter the distance traveled by all other railroads so that Loss & Damage can be allocated appropriately.

ORR Segment Type (cell D7): Select the segment type (e.g., OT, OD, RT, RD) for the originating railroad. A drop-down list is available for the user to select the appropriate segment type.

TRR Segment Type (cell H7): Select the segment type (e.g., RT, IR) for the terminating railroad. A drop-down list is available for the user to select the appropriate segment type.²

Freight Car Type (cell D8): Select the URCS freight car type for this shipment. A drop-down list is available for the user to choose from.

Number of Cars/TCUs (cell D9): Enter the number of cars (or TCUs for intermodal) in this shipment. Select the URCS freight car type for this shipment.

Car Ownership (cell D10): Select the URCS car ownership of the cars for this shipment. A drop-down list is available for the user to choose from.

Tons per Cars/TCU (cell D11): Enter the tons per car of this shipment, or tons per TCU for intermodal.

Commodity (cell D12): Select the URCS commodity type for this shipment. A drop-down list is available for the user to choose from.

Shipment Size (cell D13): Select the URCS shipment size for this shipment (e.g., Single, Multi, or Unit), or “Intermodal” for intermodal shipments. A drop-down list is available for the user to choose from.

Revenue (Optional) (cell D14): Enter the total revenue (i.e., freight charge) of this shipment. If a value is entered, the RVC Ratio of the shipment will be calculated and shown in cell I16.

Messages may appear in cell C15 alerting the user to any conflicting values entered for the mandatory parameters. The spreadsheet automatically calculates the variable cost of the shipment as the mandatory parameters are entered.

Variable Cost Summary

A summary of the variable costs is displayed in lines 16 through 21 of the *RailroadCostProgram* worksheet. The RVC Ratio of the shipment will be shown in cell I16 if the revenue is entered into cell D14.

² The segment type for any junction railroads will always be RD (Received and Delivered).

URCS Standard Output Report

The remainder of the *RailroadCostProgram* worksheet displays all the calculations used by URCS Phase III to develop the variable costs. The entire *RailroadCostProgram* worksheet includes all the information of the URCS Standard Output Report.

Printing

The standard Excel printing functionality can be used to print out the *RailroadCostProgram* worksheet. This is the URCS Standard Output Report. This report can be sent to a printer, to keep a hardcopy of the report, or printed out as a PDF document.

The “Clear Detailed Parameters” Button

Pressing this button will clear out all the detailed parameters that are entered in the *DetailedParameters* worksheet. Press this button to make sure no unwanted detailed parameters from a previously costed shipment are included in the current shipment’s costs.

The “Export Results” Button

Pressing this button will cause a new spreadsheet to be created that is a replica of the *RailroadCostProgram* worksheet.

Chapter 6 – The “DetailedParameters” Worksheet

The *DetailedParameters* worksheet looks like the following:

Boyles, Michael

STBRailroadCostProgram.xlsm - Excel

File Home Insert Page Layout Formulas Data Review View Developer Tell me what you want to do

Cut Copy Paste Format Painter Clipboard

Calibri 11 Font

Wrap Text Merge & Center Alignment

Number

Conditional Formatting Table Styles

Insert Delete Format Cells

AutoSum Fill Clear Sort & Filter Find & Select Editing

C4

=IF(ISBLANK(INDEX(RR,C53)),"",INDEX(RR,C53))

Surface Transportation Board - Railroad Cost Program - Detailed Parameters										Default Values of Detailed Parameters				
General					Intermodal					Switching				
Source	Line	WEST	Line	Intermodal ORR	Line	WEST	Line	WEST	Line	WEST	Line	WEST		
Circuity	E2L106C5	1	L102	n/a	L901	1.266664982	L102	1.393331528						
Empty/Loaded Ratio	E2L106C2		L105	n/a	L901	1.266664982	L902	1.393331528						
General Overhead Ratio	E2L219C1		L403/L408	1.063240647										
Tare Weight	E2L106C1		L212	31.10000038										

This worksheet can be used to override certain values in the RailroadCostProgram worksheet. The user should input any override values into the cells highlighted in yellow. The detailed parameters allow for "What If" scenarios to be evaluated. Default values will be used for any detailed parameters not explicitly entered into this worksheet.

General Parameters

These detailed parameters are related to general factors that impact the costing of shipments. These parameters are set for each railroad that participates in the movement.

Circuity (L102): The circuity factor is used to inflate the short line mileage, entered by the user in the *Mandatory Parameter* screen, to derive an estimate of the actual miles traveled. If the user entered the actual mileage, then a 1 should be entered for this parameter.

Empty/Loaded Ratio (L105): The Empty/Loaded Ratio represents the amount of empty car miles incurred for this car type before spotting for another shipment, which is based on the loaded shipment distance. The two ratio extremes for the empty/loaded ratio are: 1.0 that implies no empty return mileage and 2.0, which implies a 100 percent empty return of the freight car.

General Overhead Ratio (L403 and L408): The general overhead ratio allocates administrative and other indirect expenses to variable car-mile and car-day costs.

Tare Weight (L212): The tare weight is the weight of an empty freight car. This is only set once for the entire shipment, as the tare weight does not change as the shipment moves from origin to destination.

Intermodal Parameters

These detailed parameters are related to intermodal shipments. These parameters are set once for the entire shipment because they do not change as the shipment moves from origin to destination.

Intermodal ORR: Enter the ORR for a multi-carrier intermodal shipment so that the intermodal statistics (e.g., number of flatcars) are calculated consistently for the entire movement. If no value is entered here, the statistics for the railroad entered in the ORR field of the *RailroadCostProgram* worksheet will be used.

Number of TCUs (L203): The number of TCUs represents the number of trailer or container units involved in the shipment. Generally this is entered into the “Number of Cars/TCUs” field in the *RailroadCostProgram* worksheet. The program recognizes two types of trailer/container units: refrigerated and other. No differentiation is made for the varying lengths of trailers used in railroad intermodal service or between trailers and containers.

Number of TCUs per Flat Car (L202): The number of TCUs per flat car is the average number of trailers or containers on one flat car.

TOFC Plan Code (L569): The TOFC Plan Code reflects the responsibility of the railroad for pickup and delivery cost, trailer/container ownership, protective service operations and intermodal car ownership. A drop-down list is available for the user to select one of the eleven plans accepted by the program. The default code is 1. These services are provided by railroads under a wide range of commercial arrangements or plans.

Plan	Description
1.0	The railroad provides line haul service between intermodal terminals (ramp-to-ramp service). This shipper provides the TCUs, as well as, the pickup and delivery service costs.
2.0	The railroad provides full door-to-door service with railroad owned trailers, including the pickup and delivery service costs.
2.25	Similar to plan 2.0 except the railroad provides either pickup service at origin or delivery service at destination, but not both. All costs, except origin pickup or destination delivery, are included.
2.5	Similar to plan 2.0 except the railroad only performs ramp-to-ramp service with railroad trailers. Pickup and delivery service costs are not included.
3.0	The railroad provides ramp-to-ramp service with shipper owned or leased TCUs. Pickup and delivery service costs are not included.

Plan	Description
4.0	The railroad provides ramp-to-ramp service using RoadRailer equipment. Pickup and delivery costs are not included.
5.1	The railroad provides ramp-to-ramp service using railroad-owned TCUs under through billing. Pickup and delivery costs are not included.
5.2	Similar to Plan 5.1 except the railroad supplies delivery services only. Pickup service costs are not included.
5.3	The railroad provides ramp-to-ramp service using shipper-owned TCUs, as well as, pickup and delivery costs.
5.4	Similar to Plan 5.3 except the railroad only provides pickup services. Delivery services are not included.
5.5	Similar to Plan 5.3 except the railroad only provides delivery services. Pickup services are not included.

Tare Weight of TCU (L214): The tare weight of the TCU is the average empty weight of the TCU. The default value for this parameter is a non-refrigerated trailer.

E/L Ratio of TCU (L215): The Empty/Loaded Ratio is the ratio of total loaded plus empty trailer/container unit miles, divided by loaded trailer/container unit miles.

Line Haul Miles per TCU Day (L549): This parameter represents the average number of miles per day a trailer/container unit moves while in line haul service.

TCU Days per O/T Event (L550): This parameter represents the number of days per TCU spent at origin or destination.

Refrigerated TCU (L214): This parameter indicates whether the TCU is refrigerated or not, which dictates the weight of the TCU. The TCU tare weight will default to the weight for a non-refrigerated TCU.

Number of MVUs (L529): This parameter represents the number of motor vehicles contained in a multi-level flat car. The default value for this item is the total weight of the shipment divided by two tons.

Switching Parameters

These detailed parameters are related to switching that impact the costing of shipments. These parameters are set for each railroad that participates in the movement.

SEMs per Industry Switch (L301): This statistic is the average number of Switch Engine Minutes expended in industry switching service.

SEMs per Interchange Switch (L302): This statistic is the average number of Switch Engine Minutes expended in interchange switching service.

SEMs per I&I Switch (L303): This statistic is the average number of Switch Engine Minutes expended in intratrain and intertrain switching service.

Spotted-to-Pulled Ratio (L304): This is the ratio of empty and loaded cars to loaded cars. The ratio accounts for empty car switching at the origin and destination. Normally the ratio is 2.0 for all car types except for unequipped box cars (~1.8) and intermodal flat cars (~1.1). These car types are sometimes relocated at the destination without switching the empty car.

Cars Given Industry Switch (L305): The total number of cars given industry switching is based on the number of cars in the shipment multiplied by a factor, where that factor equals 2 if the railroad both originates and terminates the shipment, equals 1 if the railroad originates and delivers the shipment, equals 1 if the railroad receives and terminates the shipment, and equals zero if the railroad receives and delivers the shipment.

Cars Given Interchange Switch (L308): The total number of cars given industry switching is based on the number of cars in the shipment multiplied by a factor, where that factor equals zero if the railroad both originates and terminates the shipment, equals 1 if the railroad originates and delivers the shipment, equals 1 if the railroad receives and terminates the shipment, and equals 2 if the railroad receives and delivers the shipment.

Miles between I&I Switches (L309): The average distance between intratrain and intertrain switch is 200 miles. This mileage assignment is an industry average figure derived from an historical switching study.

Cars Given I&I Switch (L310): The number of cars given intertrain and intratrain switching is based on the number of car-miles in the shipment divided by L309.

Cars Given Intraterminal Switch (L321): The number of cars given intraterminal switching is normally entered into the “Number of Cars/TCUs” field in the *RailroadCostProgram* worksheet.

Cars Given Interterminal Switch (L322): The number of cars given interterminal switching is normally entered into the “Number of Cars/TCUs” field in the *RailroadCostProgram* worksheet.

SEMs per Intraterminal Switch (L325): This statistic is the average number of Switch Engine Minutes expended in intraterminal switching service.

SEMs per Interterminal Switch (L326): This statistic is the average number of Switch Engine Minutes expended in interterminal switching service.

Train Statistics Parameters

These detailed parameters are related to train statistics that impact the costing of shipments. These parameters are set for each railroad that participates in the movement.

Average Locomotives – Unit (L226): This is the average number of locomotives used in a unit train movement. It is only used if “Unit” was selected as the shipment size.

Average Locomotives – Way (L227): This the average number of locomotives used in way train service. It is only used if “Single” or “Multi” was selected as the shipment size.

Average Locomotives – Thru (L228): This the average number of locomotives used in Through train service. It is only used if “Single,” “Multi,” or “Intermodal” was selected as the shipment size.

Unit Train Weight (L232): This is the average trailing weight of all freight cars and contents of trains used in unit train service.

Way Train Weight (L233): This is the average trailing weight of all freight cars and contents of trains used in way train service.

Through Train Weight (L234): This is the average trailing weight of all freight cars and contents of trains used in through train service.

Shipment Share– Unit Train Miles (L269): This is this shipment’s share of the train miles used in unit train service.

Shipment Share – Way Train Miles (L270): This is this shipment’s share of the train miles used in way train service.

Shipment Share – Thru Train Miles (L271): This is this shipment’s share of the train miles used in through train service.

Crew Wages – Unit (L273): This is the actual crew wages per mile for a unit train. The crew wages include additives and overheads such as payroll taxes and vacation allowances. If the value is not entered, the program uses an average crew wage per unit train mile.

Crew Wages – Way (L274): This is the actual crew wages for a way train mile. If the value is not entered, the program uses an average crew wage per way train mile.

Crew Wages – Thru (L275): This is the actual crew wages for a through train mile. If the value is not entered, the program uses an average crew wage per through train mile.

Freight Car Miles Parameters

These detailed parameters are related to freight car miles that impact the costing of shipments. These parameters are set for each railroad that participates in the movement.

Car-Miles per Industry Switch (L419): This is the number of miles a loaded car is moved within an industry switching terminal area during each switching event. This is only relevant for origin or destination switching events. The default values for these parameters are derived from historical switching studies.

Car-Miles per Interchange Switch (L420): This is the number of miles a loaded car is moved within an interchange switching area during each switching event. The default values for these parameters are derived from historical switching studies.

Car-Miles per I&I Switch (L421): This is the number of miles a loaded car is moved within an intertrain and intratrain area during each switching event. The default values for these parameters are derived from historical switching studies.

Actual Miles per Car Day (L435): This is the average number of miles accumulated for each 24-hour period a car is actually moving in trains. Yard time at origin, destination and intermediate points is excluded.

Car-Miles per Intraterminal Switch (L482): This is the number of miles a loaded car is moved within an intraterminal switching area.

Car-Miles per Interterminal Switch (L483): This is the number of miles a loaded car is moved through an interterminal switching area.

Freight Car Days Parameters

These detailed parameters are related to freight car days that impact the costing of shipments. These parameters are set for each railroad that participates in the movement.

Car-Days Running (L436): This is the number of days a shipment spends in line haul service. It is based on the car miles of all cars in the shipment, including the empty return movement, divided by the average car miles per car day.

Car-Days per Industry Switch (L443): This is the number of active car days required to complete an industry-switching event. It does not include car days related to car repairs or the storage of cars in freight yards.

For industry switching at the origin, the number of car days includes the time required to move the loaded car from the industry to the terminal yard or to the line haul train. At destination, it includes the time from the arrival of a loaded car at the terminal, or station, to the final placement at the industry siding.

Car-Days per Interchange Switch (L444): This is the number of active car days required to complete an interchange switching event. The number of days includes the time from the arrival of a car in a long haul train of the first carrier, until its departure in a line haul train of the second carrier.

Car-Days per I&I Switch (L445): This is the number of active car days required for an intratrain and intertrain switch. The number of car days is measured from the arrival in the yard until the departure from the yard.

Car-Days per Load & Unload (L&UL) (L449): This is the number of days per car, exclusive of demurrage, required for the shipper/consignee to load or unload the contents of the car. The car days are measured from placement of the car at the origin/destination industry location until the car's release back to the railroad. For intermodal flat cars, it measures the time spent within the intermodal terminal.

Car-Days in Yard (L451): This is the number of days a shipment spends in switching service. Its calculation is based on the origin or termination event, the number of interchanges or by intertrain or intratrain switching services.

Car-Days per Intraterminal Switch (L492): This is the number of days in intraterminal switching from the placement of the car at the origin industry location until its release back to the railroad at destination industry location.

Car-Days per Load & Unload (L&UL) – Intraterminal (L493): This is the number of days per car required for the shipper/consignee to load or unload the contents of the car in intraterminal switching.

Car-Days per Interterminal Switch (L494): This is the number of days in interterminal switching from placement of the car at the origin industrial terminal to its release at the destination industrial terminal.

Car-Days per Load & Unload (L&UL) – Interterminal (L495): This is the number of days per car required for the shipper/consignee to load or unload the contents of the car in interterminal switching.

Freight Car Rental Parameters

These detailed parameters are related to freight rentals that impact the costing of shipments. These parameters are set for each railroad that participates in the movement.

Car-Mile Rental – Private (L402): This is the average rental cost per mile for privately owned freight cars.

Charge per Car Mile (L407): This is the average car mile cost for railroad owned freight cars.

Charge per Car Day (L432): This is the average car day cost for railroad owned freight cars.

Accessorial Services Parameters

These detailed parameters are related to accessorial services charges that impact the costing of shipments. These parameters are set for each railroad that participates in the movement.

Lake Transfer Ton-Miles (L501): Use this parameter to enter the number of ton miles for any lake transfer service.

Coal Terminal Tons (L508): Use this parameter to enter the number of tons for any coal terminal services.

Ore Terminal Tons (L515): Use this parameter to enter the number of tons for any ore terminal services.

Other Marine Terminal Tons (L522): Use this parameter to enter the number of tons at any other marine terminal services.

Railroad Provides Accessorial Services (L458): Use this parameter to indicate whether the cost of accessorial services are included for railroad-owned freight cars.

Include Jurisdictional Add-Ons?

This parameter indicates whether the Jurisdictional Add-Ons (L587) should be included in the total variable costs. A drop-down list is available for the user to select whether or not the Jurisdictional Add-Ons are included.

If the costing process is part of a proceeding before the Surface Transportation Board, then Jurisdictional Add-Ons must be included in the variable costs. To do this, select the “Y” (Yes) option.

Include Efficiency Adjustments?

This parameter indicates whether efficiency adjustments (i.e., the EP 270 adjustments) should be applied to unit costs. A drop-down list is available for the user to select whether or not the efficiency adjustments are included.

If the costing process is part of a proceeding before the Surface Transportation Board, then efficiency adjustments must be included in the variable costs. To do this, select the “Y” (Yes) option.

The “Clear Detailed Parameters” Button

Pressing this button will clear out all the detailed parameters that are entered in the *DetailedParameters* worksheet. Press this button to make sure no unwanted detailed parameters from a previously costed shipment are included in the current shipment’s costs.

Chapter 7 – The “BatchCostProgram” Worksheet

The *BatchCostProgram* worksheet looks like the following:

ID	RR	DIS	SG	FC	NC	OWN	WT	COM	SZ	L102	L569	TDIS	ORR	ID
Sample 1-Coal-OT	WEST	1000	OT	42	1	R	100	11000	Single	1				
Sample 2-Grain-OD	WEST	800	OD	41	25	R	80	01130	Multi	1		1200		
Sample 2-Grain-RT	WEST	400	RT	41	25	R	80	01130	Multi	1		1200		
Sample 3-Intermodal-OT	WEST	1000	OT	11	1	P	15	46100	4	1		1000	WEST	
Sample 4-Intermodal-OD	WEST	1000	OD	46	1	P	15	46100	Intermodal	1	3	1800	WEST	
Sample 4-Intermodal-RT	EAST	800	RT	46	1	P	15	46100	Intermodal	1	3	1800	WEST	
Sample5-Grain-1 car	WEST	1000	OT	41	1	R	80	01130	Single	1				
Sample5-Grain-2 cars	WEST	1000	OT	41	2	R	80	01130	Single	1				
Sample5-Grain-3 cars	WEST	1000	OT	41	3	R	80	01130	Single	1				
Sample5-Grain-4 cars	WEST	1000	OT	41	4	R	80	01130	Single	1				
Sample5-Grain-5 cars	WEST	1000	OT	41	5	R	80	01130	Single	1				
Sample5-Grain-6 cars	WEST	1000	OT	41	6	R	80	01130	Multi	1				
Sample5-Grain-7 cars	WEST	1000	OT	41	7	R	80	01130	Multi	1				
Sample5-Grain-8 cars	WEST	1000	OT	41	8	R	80	01130	Multi	1				
Sample5-Grain-9 cars	WEST	1000	OT	41	9	R	80	01130	Multi	1				
Sample5-Grain-10 cars	WEST	1000	OT	41	10	R	80	01130	Multi	1				
Sample5-Grain-11 cars	WEST	1000	OT	41	11	R	80	01130	Multi	1				
Sample5-Grain-12 cars	WEST	1000	OT	41	12	R	80	01130	Multi	1				
Sample5-Grain-13 cars	WEST	1000	OT	41	13	R	80	01130	Multi	1				
Sample5-Grain-14 cars	WEST	1000	OT	41	14	R	80	01130	Multi	1				
Sample5-Grain-15 cars	WEST	1000	OT	41	15	R	80	01130	Multi	1				
Sample5-Grain-16 cars	WEST	1000	OT	41	16	R	80	01130	Multi	1				
Sample5-Grain-17 cars	WEST	1000	OT	41	17	R	80	01130	Multi	1				

This worksheet is used to define the inputs needed for calculating the costs of many route segments at one time. The user should input values into the columns highlighted in yellow (columns A-N). To cost the records, press the “Run Batch Program” button. The results are stored in the *BatchOutput* worksheet.

Since the *BatchCostProgram* is designed to support evidence filed before the STB, only a limited number of detailed parameter options are available. Those are the circuitry and the TOFC Plan.

Any records whose inputs were invalid will have #N/A in one or more of columns P through AC. Use the AutoFilter feature to find those records.

Unlike the *RailroadCostProgram* worksheet, the *BatchCostProgram* worksheet only costs individual route segments, which are not aggregated into a single total cost for multi-segment routes. The Loss & Damage expenses can be allocated properly to these individual route segments by using the TDIS parameter, described below.

Input Control Parameters

Enter information describing the details of each segment in columns A through N. Each column heading in row 4 has a comment describing what is expected in each column.

Do not leave blank rows between segments. A blank row will cause the “Run Batch Program” macro to stop processing rows.

ID (Column A): Enter a user-defined identifier to label each segment.

RR (Column B): Enter the railroad for each segment. This can be either an alphabetic or numeric railroad abbreviation.

DIS (Column C): Enter the distance for each segment. This can be a decimal value.

SG (Column D): Enter the segment type for each segment (e.g., OT, OD, RT, or RT).

FC (Column E): Enter the freight car type for each segment. This can be either the URCS car index (e.g., 1-17) or the STB Car Type (e.g., 36-54).

NC (Column F): Enter the number of cars for each segment, or the number of TCUs for intermodal shipments. This can be a decimal value.

OWN (Column G): Enter the car ownership for each segment (e.g., R for Railroad-Owned or P for Privately-Owned).

WT (Column H): Enter the weight per car (in tons) for each segment, or weight per TCU (in tons) for intermodal shipments. This can be a decimal value.

COM (Column I): Enter the 5-digit STCC code for each segment. Enter a single quote (‘) before the code so that this is a character string.

SZ (Column J): Enter the shipment size (e.g., Single, Multi or Unit) for each segment, or “Intermodal” for intermodal shipments. This will take either the word descriptors or the URCS numeric codes (e.g., 1=Single, 2=Multi, 3=Unit, or 4=Intermodal).

L102 (Column K): Enter the circuitry for each segment (e.g., 1) if something other than the default circuitry should be used. This replaces Code 1 used in the Visual Basic Batch Processing program.

L569 (Column L): Enter the TOFC Plan for each segment if it is an intermodal shipment. A default value of 1 (i.e., shipper supplied TCUs with no pickup or delivery services) will be used if nothing is entered here. This replaces Code 58 used in the Visual Basic Batch Processing program.

TDIS (Column M): Enter the total distance of the movement so that Loss & Damage can be allocated appropriately.

ORR (Column N): Enter the ORR for any multi-carrier intermodal shipment so that the intermodal statistics (e.g., the number of flatcars) are calculated consistently for the entire movement.

Formatted Input Control Parameters

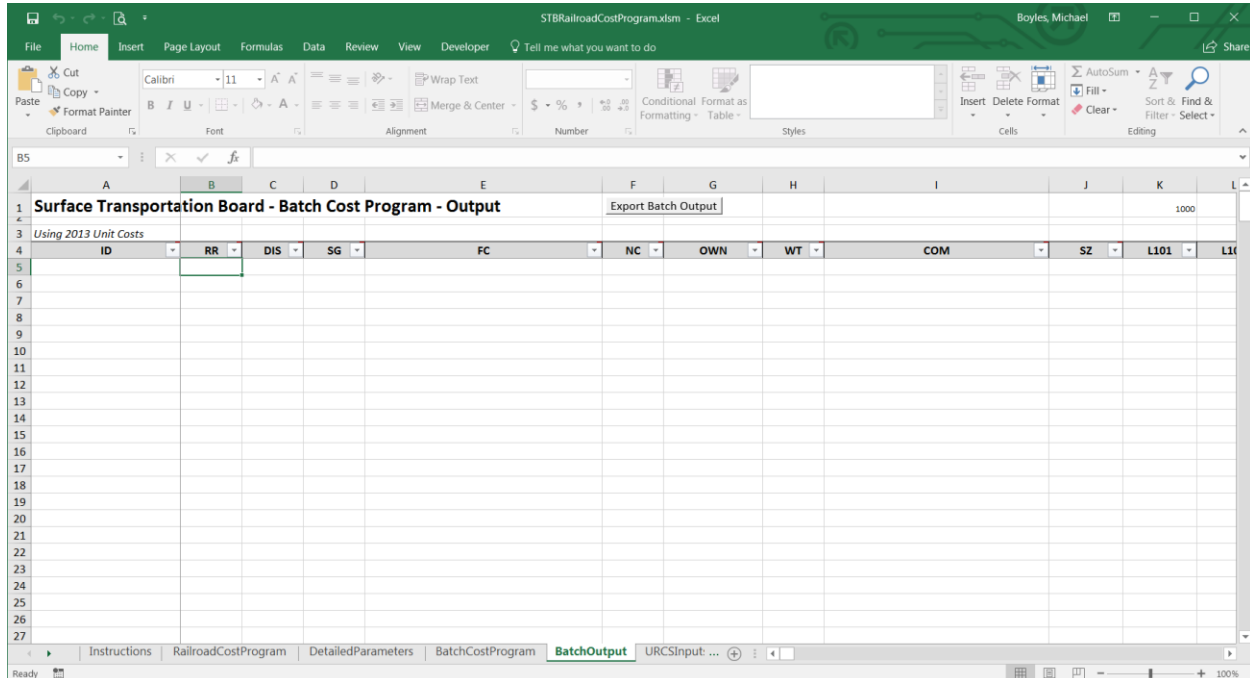
Columns P through AC of this worksheet convert the user entered values in columns B thru N into the format needed by the *RailroadCostProgram* worksheet. The conversion formulas are stored in Row 1. Use AutoFilter to check for #N/A in columns P through AC, which indicates an invalid value was entered.

The “Run Batch Program” Button

Pressing this button will cause a macro to run that costs all segments entered in the input fields (columns A through N). The macro will stop processing rows when it encounters a blank value in the RR parameter (Column B). The results are stored in the *BatchOutput* worksheet.

Chapter 8 – The “BatchOutput” Worksheet

The *BatchOutput* worksheet looks like the following:



This worksheet contains the results of running the BatchCostProgram. Any records that were unable to be costed will have #N/A in column PN, which is the total variable cost (L700). Use the AutoFilter feature to find those records.

The “Export Batch Output” Button

Pressing this button will cause a new spreadsheet to be created that is a replica of the *BatchOutput* worksheet.

Chapter 9 – The “URCSInputs” Worksheet

The *URCSInputs* worksheet looks like the following:

STBRailroadCostProgram.xlsm - ExcelBoyles, Michael

FileHomeInsertPage LayoutFormulasDataReviewViewDeveloperTell me what you want to do

CutCopyPasteFormat PainterClipboardFontAlignmentNumberConditional FormattingTableStylesCellsEditing

Calibri11Wrap TextBIBUFormat PainterMerge & Center\$%&Conditional FormattingTableStylesInsertDeleteFormatAutoSumFillClearSort & FilterFind & Select

C3fxBNSF

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	URCS Railroads			URCS Segment Types			URCS Car Types						URCS STCC Types			
2	Railroad Number	Railroad	Description	Segment Type	Description	L250	L307	Car Index	Sch 710 Line Number	Description	Car Index	STCC	Description			
3	777	BNSF	BNSF	OT	Originate and Terminate	2	0	1	36	Plain Box Cars 40'	1	01000	Farm Products			
4	103	CN	CN	OD	Originate and Deliver	1	1	2	37	Plain Box Cars 50' and Longer	2	0113	Grains			
5	105	CP	CP	RT	Receive and Terminate	1	1	3	38	Equipped Box Cars	3	01195	Potatoes; Other than Sweet			
6	712	CSXT	CSXT	RD	Receive and Deliver	0	2	4	39	Plain Gondola Cars	4	012	Fresh Fruits/Tree Nuts			
7	400	KCS	KCS	IA	Intra-Terminal	2	1	5	40	Equipped Gondola Cars	5	013	Fresh Vegetables			
8	555	NS	NS	IR	Inter-Terminal	1	1	6	41	Covered Hopper Cars	6	01	Other Farm Products			
9	802	UP	UP					7	42	Open Top Hopper Cars-General Service	7	10	Metallic Ores			
10	900004	EAST	EAST	RT	Receive and Terminate			8	43	Open Top Hopper Cars-Special Service	8	11	Coal			
11	900007	WEST	WEST	IR	Inter-Terminal			9	44	Refrigerator Cars-Mechanical	9	14	Non-Metallic Minerals			
12								10	45	Refrigerator Cars-Non-Mechanical	10	20000	Food & Kindred Products			
13								11	46	Flat Cars TOFC/COFC	11	2011	Fresh Meats			
14								12	47	Flat Cars-Multi-Level	12	202	Dairy Products			
15								13	48	Flat Cars-General Service	13	203	Canned Fruits/Vegetables			
16								14	49	Flat Cars-Other	14	204	Grain Mill Products			
17								15	50	Tank Cars-Under 22000 Gallons	15	2041	Flour			
18								16	51	Tank Cars-22000 Gallons and Over	16	2042	Prepared Feeds			
19								17	52	All Other Freight Cars	17	2043	Cereal Preparations			
20									54	All Other Freight Cars	17	2044	Milled Rice/Flour/M Meal			
21												2045	Prepared Flour			
22												2046	Corn Milling Products			
23												2062	Refined Sugar			
24												20821	Beer/Ale			
25												2084	Wines/Brands Spirits			

RailroadCostProgramDetailedParametersBatchCostProgramBatchOutputURCSInputsRailroadUr ...

Ready

This worksheet contains various URCS input values. It acts as a reference for various codes expected and accepted by the *RailroadCostProgram* worksheet.

This worksheet is included for reference only. Users are not able to change any of these values.

Chapter 10 – The “RailroadUnitCostXML” Worksheet

The *RailroadUnitCostXML* worksheet looks like the following:

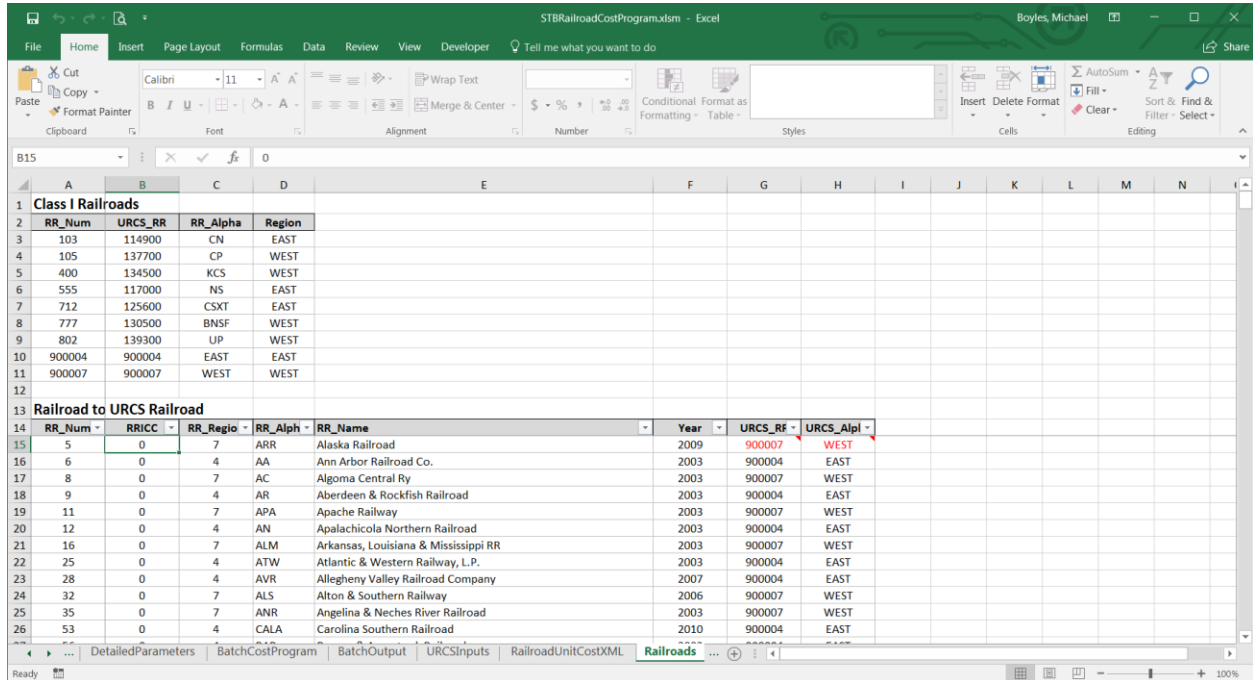
	A	B	C	D	E	F	G	H	I	J	K
1	VLOOKUP	Railroad	RR_id	eCode	eCode_id	eTitle_and_Desc	2006	2007	2008	2009	2010
2	BNSF-E1L101C1	BNSF	4	E1L101C1	1	Gross Ton Mile (GTM), OPR Expense	0.002008931	0.002304044	0.002932411	0.002116372	0.002393655
3	BNSF-E1L101C2	BNSF	4	E1L101C2	2	Gross Ton Mile (GTM), DRL Expense	0.000537205	0.000590639	0.00061291	0.00072779	0.000692725
4	BNSF-E1L101C3	BNSF	4	E1L101C3	3	Gross Ton Mile (GTM), ROI Expense	0.000950004	0.001160604	0.001245997	0.001253667	0.001297566
5	BNSF-E1L102C1	BNSF	4	E1L102C1	4	Car Mile (CM) - Other Than Clerical, OPR Expense	0	0	0	0	0
6	BNSF-E1L102C2	BNSF	4	E1L102C2	5	Car Mile (CM) - Other Than Clerical, DRL Expense	0	0	0	0	0
7	BNSF-E1L102C3	BNSF	4	E1L102C3	6	Car Mile (CM) - Other Than Clerical, ROI Expense	0	0	0	0	0
8	BNSF-E1L103C1	BNSF	4	E1L103C1	7	Train Mile (TM) - Other Than Crew, OPR Expense	0.254186183	0.275461733	0.273635626	0.309756011	0.307114959
9	BNSF-E1L103C2	BNSF	4	E1L103C2	8	Train Mile (TM) - Other Than Crew, DRL Expense	0.000818875	0.000716292	0.001678689	0.003649628	0.003777102
10	BNSF-E1L103C3	BNSF	4	E1L103C3	9	Train Mile (TM) - Other Than Crew, ROI Expense	0.000669638	0.012896708	0.007951234	0.005812574	0.003138583
11	BNSF-E1L104C1	BNSF	4	E1L104C1	10	Train Mile (TM) - Crew, OPR Expense	8.310571671	8.620588303	8.748178482	8.745932579	9.247765541
12	BNSF-E1L104C2	BNSF	4	E1L104C2	11	Train Mile (TM) - Crew, DRL Expense	0	0	0	0	0
13	BNSF-E1L104C3	BNSF	4	E1L104C3	12	Train Mile (TM) - Crew, ROI Expense	0	0	0	0	0
14	BNSF-E1L105C1	BNSF	4	E1L105C1	13	Locomotive Unit Mile (LUM), OPR Expense	3.939208269	4.881741047	6.450509071	4.291265488	5.108024597
15	BNSF-E1L105C2	BNSF	4	E1L105C2	14	Locomotive Unit Mile (LUM), DRL Expense	0.438420653	0.575688124	0.617552698	0.747524619	0.72361964
16	BNSF-E1L105C3	BNSF	4	E1L105C3	15	Locomotive Unit Mile (LUM), ROI Expense	0.24630104	0.34296155	0.383716673	0.424507558	0.508593559
17	BNSF-E1L106C1	BNSF	4	E1L106C1	16	CLOR (Carloads Handled) - Other, OPR Expense	1.150018215	1.140371561	1.211578131	1.577883959	1.97719276
18	BNSF-E1L106C2	BNSF	4	E1L106C2	17	CLOR (Carloads Handled) - Other, DRL Expense	0	0	0	0	0
19	BNSF-E1L106C3	BNSF	4	E1L106C3	18	CLOR (Carloads Handled) - Other, ROI Expense	0	0	0	0	0
20	BNSF-E1L107C1	BNSF	4	E1L107C1	19	CLOR (Carloads Handled) - Clerical, OPR Expense	0	0	0	0	0
21	BNSF-E1L107C2	BNSF	4	E1L107C2	20	CLOR (Carloads Handled) - Clerical, DRL Expense	0	0	0	0	0
22	BNSF-E1L107C3	BNSF	4	E1L107C3	21	CLOR (Carloads Handled) - Clerical, ROI Expense	0	0	0	0	0
23	BNSF-E1L108C1	BNSF	4	E1L108C1	22	CLOT (Carloads Orig Or Term) - Other, OPR Expense	0	0	0	0	0
24	BNSF-E1L108C2	BNSF	4	E1L108C2	23	CLOT (Carloads Orig Or Term) - Other, DRL Expense	0	0	0	0	0
25	BNSF-E1L108C3	BNSF	4	E1L108C3	24	CLOT (Carloads Orig Or Term) - Other, ROI Expense	0	0	0	0	0
26	BNSF-E1L109C1	BNSF	4	E1L109C1	25	CLOT (Carloads Orig Or Term) - Clerical, OPR Expense	7.490344048	7.370987892	8.223939896	8.050951958	8.444256783
27	BNSF-E1L109C2	BNSF	4	E1L109C2	26	CLOT (Carloads Orig Or Term) - Clerical, DRL Expense	0	0	0	0	0

This worksheet contains the unit costs for various years that previously were stored in in the Railroad Unit Cost files, which were in an XML format.

This worksheet is included for reference only. Users are not able to change any of these values.

Chapter 11 – The “Railroads” Worksheet

The *Railroads* worksheet looks like the following:



Class I Railroads			
RR_Num	URCS_RR	RR_Alpha	Region
103	114900	CN	EAST
105	137700	CP	WEST
400	134500	KCS	WEST
555	117000	NS	EAST
712	125600	CSXT	EAST
777	130500	BNSF	WEST
802	139300	UP	WEST
900004	900004	EAST	EAST
900007	900007	WEST	WEST

Railroad to URCS Railroad							
RR_Num	RRICC	RR_Regio	RR_Alph	RR_Name	Year	URCS_Rf	URCS_Alpl
5	0	7	ARR	Alaska Railroad	2009	900007	WEST
6	0	4	AA	Ann Arbor Railroad Co.	2003	900004	EAST
8	0	7	AC	Algoma Central Ry	2003	900007	WEST
9	0	4	AR	Aberdeen & Rockfish Railroad	2003	900004	EAST
11	0	7	APA	Apache Railway	2003	900007	WEST
12	0	4	AN	Apalachicola Northern Railroad	2003	900004	EAST
16	0	7	ALM	Arkansas, Louisiana & Mississippi RR	2003	900007	WEST
25	0	4	ATW	Atlantic & Western Railway, L.P.	2003	900004	EAST
28	0	4	AVR	Allegheny Valley Railroad Company	2007	900004	EAST
32	0	7	ALS	Alton & Southern Railway	2006	900007	WEST
35	0	7	ANR	Angelina & Neches River Railroad	2003	900007	WEST
53	0	4	CALA	Carolina Southern Railroad	2010	900004	EAST

This worksheet contains the various URCS Class I railroad codes. It also contains a list of all railroads listed in previous waybill samples and the regions to which they are assigned.

This worksheet is included for reference only. Users are not able to change any of these values.

Chapter 12 – The “STCCs” Worksheet

The *STCCs* worksheet looks like the following:

STCC	URCS	STCC-Description
01000	01000	01 All Farm Products
01001	01	01 Other Farm Products
01002	01	01 Other Farm Products
01003	01	01 Other Farm Products
01004	01	01 Other Farm Products
01005	01	01 Other Farm Products
01006	01	01 Other Farm Products
01007	01	01 Other Farm Products
01008	01	01 Other Farm Products
01009	01	01 Other Farm Products
01010	01	01 Other Farm Products
01011	01	01 Other Farm Products
01012	01	01 Other Farm Products
01013	01	01 Other Farm Products
01014	01	01 Other Farm Products
01015	01	01 Other Farm Products
01016	01	01 Other Farm Products
01017	01	01 Other Farm Products
01018	01	01 Other Farm Products
01019	01	01 Other Farm Products
01020	01	01 Other Farm Products
01021	01	01 Other Farm Products
01022	01	01 Other Farm Products

This worksheet contains the translation of 5-digit STCC codes into their URCS commodity group.

This worksheet is included for reference only. Users are not able to change any of these values.

Chapter 13 – The “ECodeTable” Worksheet

The *ECodeTable* worksheet looks like the following:

eCode	eTitle_and_Desc
1 E1L101C1	Gross Ton Mile (GTM), OPR Expense
2 E1L101C2	Gross Ton Mile (GTM), DRL Expense
3 E1L101C3	Gross Ton Mile (GTM), ROI Expense
4 E1L102C1	Car Mile (CM) - Other Than Clerical, OPR Expense
5 E1L102C2	Car Mile (CM) - Other Than Clerical, DRL Expense
6 E1L102C3	Car Mile (CM) - Other Than Clerical, ROI Expense
7 E1L103C1	Train Mile (TM) - Other Than Crew, OPR Expense
8 E1L103C2	Train Mile (TM) - Other Than Crew, DRL Expense
9 E1L103C3	Train Mile (TM) - Other Than Crew, ROI Expense
10 E1L104C1	Train Mile (TM) - Crew, OPR Expense
11 E1L104C2	Train Mile (TM) - Crew, DRL Expense
12 E1L104C3	Train Mile (TM) - Crew, ROI Expense
13 E1L105C1	Locomotive Unit Mile (LUM), OPR Expense
14 E1L105C2	Locomotive Unit Mile (LUM), DRL Expense
15 E1L105C3	Locomotive Unit Mile (LUM), ROI Expense
16 E1L106C1	CLOR (Carloads Handled) - Other, OPR Expense
17 E1L106C2	CLOR (Carloads Handled) - Other, DRL Expense
18 E1L106C3	CLOR (Carloads Handled) - Other, ROI Expense
19 E1L107C1	CLOR (Carloads Handled) - Clerical, OPR Expense
20 E1L107C2	CLOR (Carloads Handled) - Clerical, DRL Expense
21 E1L107C3	CLOR (Carloads Handled) - Clerical, ROI Expense
22 E1L108C1	CLOT (Carloads Orig Or Term) - Other, OPR Expense
23 E1L108C2	CLOT (Carloads Orig Or Term) - Other, DRL Expense
24 E1L108C3	CLOT (Carloads Orig Or Term) - Other, ROI Expense
25 E1L109C1	CLOT (Carloads Orig Or Term) - Clerical, OPR Expense
26 E1L109C2	CLOT (Carloads Orig Or Term) - Clerical, DRL Expense
27 E1L109C3	CLOT (Carloads Orig Or Term) - Clerical, ROI Expense

This worksheet contains the translations of the URCS Phase II reference ID. For example, the E1L101C1 reference ID is the Gross Ton Mile (GTM) OPR Expense.

This worksheet is included for reference only. Users are not able to change any of these values.

Appendix 1 – URCS Commodity Groups

The following table provides the descriptions of the URCS Commodity Groups and the Standard Transportation Commodity Codes (STCCs) that make up those groups. These definitions are also listed in the *URCSInputs* worksheet.

An asterisk (*) in the below STCC values denotes any numerical value, which will cause the program to select the “Other” commodity loss and damage value. For example, entering “014” or “015” would select the loss and damage for the “Other Farm products” commodity group, even though “014” represents Livestock and “015” represents Poultry, because those commodities are not otherwise included in a separate group.

Index	STCC	URCS Commodity Group Description
1	01	All Farm Products
2	0113	Grains
3	01195	Potatoes, Other than Sweet
4	012	Fresh Fruits/Tree Nuts
5	013	Fresh Vegetables
6	01*	Other Farm products
7	10	Metallic Ores
8	11	Coal
9	14	Non-Metallic Minerals
10	20	All Food & Kindred Products
11	2011	Fresh Meats
12	202	Dairy Products
13	203	Canned Fruits/Vegetables
14	204	Grain Mill Products
15	2041	Flour
16	2042	Prepared Feeds
17	2043	Cereal Preparations
18	2044	Milled Rice/Flour/M Meal
19	2045	Prepared Flour
20	2046	Corn Milling Products
21	2062	Refined Sugar
22	20821	Beer/Ale
23	2084	Wines /Brandy Spirits
24	20851	Whiskey /Blended Liquors
25	209	Miscellaneous Food Preparations
26	20*	Other Food & Kindred Products
27	21	Tobacco Products
28	24	All Lumber & Wood Products
29	2421	Lumber/Dimension Stock
30	2432	Plywood or Veneer
31	24*	Other Lumber & Wood Products
32	25	Furniture & Fixtures

Index	STCC	URCS Commodity Group Description
33	26	All Pulp & Paper Products
34	26211	Newsprint
35	26213	Printing Paper
36	263	Paperboard/Fibreboard
37	264	Conv Paper/Paperboard
38	26471	Sanitary Tissues
39	26*	Other Paper Products
40	28	All Chemicals
41	281	Industrial Chemicals
42	2812	Potassium or Sodium
43	282	Synthetic Fibers/Resins/Rubber
44	289	Miscellaneous Chemical Products
45	28*	Other Chemicals
46	29	Petroleum or Coal Products
47	30	All Rubber & Miscellaneous Plastics
48	301	Rubber Tires/Innertubes
49	30*	Other Rubber Products
50	32	All Stone, Clay, Glass
51	321	Flat Glass
52	3295	Non-metallic Minerals/Earth
53	32*	Other Stone Products
54	33	All Primary Metal Products
55	3312	Iron/Steel Products
56	3352	Aluminum Shapes
57	33*	Other Primary Metal Products
58	34	All Fabricated Metal Products
59	344	Fabricated Structural Metal
60	34*	Other Fabricated Metal Products
61	35	All Non-Electrical Machinery
62	351	Engines/Turbines
63	352	Farm Machinery
64	353	Construction/Mining/Hand Machinery
65	35*	Other Non-Electrical Machinery
66	36	All Electrical Machinery
67	361	Electrical Transport Distribution Equipment
68	363	Household Appliances
69	365	Radio or TV sets
70	36*	Other Electrical Machinery
71	37	All Transportation Equipment
72	37111	Automobiles
73	37112	Trucks
74	3714	Motor Vehicle Parts
75	37*	Other Transportation Equipment
76	44	Freight Forwarder Traffic

Index	STCC	URCS Commodity Group Description
77	45	Shipper Association Traffic
78	46	All Miscellaneous Mixed Shipments
79	461	Miscellaneous Mixed Shipments not TOFC
80	46*	Other Miscellaneous Mixed Shipments
81	48	Hazardous Materials
82	*	Other Commodities

Appendix 2 – Glossary

The following table provides abbreviations and terms used within URCS, and their definitions.

Abbreviation or Term	Definition
Board	Surface Transportation Board
CD	Car-Days
CD(R)	Car-Days Running
CD(Y)	Car-Days Yard
CLOR	Carloads Originated or Received
CLOT	Carloads Originated or Terminated
CM	Car-Miles
CM-CLR	Car-Miles Clerical
CM-Other	Car-Miles Other than Clerical
CM(R)	Car-Miles Running
CM(Y)	Car-Miles Yard
DRL	Depreciation, Rents and Leases expense
E/L Ratio	Empty/Loaded Ratio. The E/L Ratio converts the loaded miles of a shipment into the total miles traveled (loaded and empty). It is a figure computed by URCS in Phase II based on data supplied by the Class I carriers.
GTM	Gross Ton-Miles
I&I Switching	Intratrain and Intertrain (I&I) Switching. I&I switching is switching that occurs at intermediate points within a train or between trains on a rail carrier's own lines.
IA	Intraterminal segment type
Industry Switching	Industry switching is switching that occurs at origin or destination points.
Interchange Switching	Interchange switching is switching that occurs at intermediate yards between different carriers.
Interterminal Switching	Interterminal switching is a complete movement within a single terminal area, but requires an interchange between railroads.
Intraterminal Switching	Intraterminal switching is a complete movement within a single terminal area by one railroad.
IR	Interterminal segment type
JRR1	First junction railroad
JRR2	Second junction railroad
JRR3	Third junction railroad
Jurisdictional Add-Ons	The Jurisdictional Add-Ons are costs added onto smaller shipments from the efficiencies realized by larger shipments. These are calculated as the Residual – calculated during the Make-Whole Adjustment – multiplied by the number of units.
L&E	Loaded & Empty
L&UL	Loading & Unloading

Abbreviation or Term	Definition
LUM	Locomotive Unit-Mile
Make-Whole Adjustment	The Make-Whole Adjustment is the methodology by which efficiencies applied to larger shipments are redistributed onto smaller shipments, so that the total costs reported by the railroads are “made whole.”
MVU	Motor Vehicle Unit (i.e., a car or a truck)
NR TCU	Non-Refrigerated Trailer/Container Unit
OD	Originated and Delivered segment type. Also referred to as Forwarded.
OPR	Operating Expense
ORR	Originating railroad
OT	Originated and Terminated segment type. Also referred to as Local.
P&D	Pickup & Delivery
Phase II	The calculations in URCS that take financial information and traffic statistics reported by the railroads and calculates the unit cost (UC) of performing various activities.
Phase III	The calculations in URCS that applies the Phase II unit costs to a shipment to determine the variable cost (VC) of service.
REF TCU	Refrigerated Trailer/Container Unit
Residual or Residual Factor	A Residual (or Residual Factor) is a unit cost created during the Make-Whole Adjustment used redistribute efficiencies realized from larger shipments onto smaller shipments.
ROI	Return on Investment expense
RD	Received and Delivered segment type. Also referred to as Overhead.
RT	Received and Terminated segment type. Also referred to as Received.
RVC Ratio	Revenue-to-Variable Cost Ratio. A ratio, expressed as a percentage, calculated by dividing the total freight revenue by the URCS Phase III variable cost.
SEM	Switch Engine Minute
STB	Surface Transportation Board
TCU	Trailer/Container Unit
TCU-NR	Trailer/Container Unit – Non-Refrigerated
TCU-REF	Trailer/Container Unit – Refrigerated
Through Train	Through Trains (or Thru Trains) are those trains operated between two or more major concentration or distribution points.
TM	Train-Mile
TM-Crew	Train-Mile Crew
TM-Other	Train-Mile Other than Crew
TRR	Terminating railroad
UC	Unit Cost

Abbreviation or Term	Definition
Unit Train	Unit Train service is a specialized scheduled shuttle type service in equipment (railroad or privately owned) dedicated to such service, moving between origin and destination.
URCS	Uniform Railroad Costing System
VC	Variable Cost
Way Train	Way Trains are defined as trains operated primarily to gather and distribute cars in road service and move them between way stations (or way points) and concentration/distribution points.