



**PC-MILER<sup>®</sup>**  
UNIX **30**

## User Guide

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AIX, Solaris, HP-UX  
and Linux



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10. Canada: DISCLOSURE FOR PRODUCTS CONTAINING CANADIAN POSTAL CODE AND/OR CANADIAN STREET-LEVEL DATA: Based on Computer File(s) licensed from Statistics Canada. © Copyright, HER MAJESTY THE QUEEN IN RIGHT OF CANADA, as represented by the Minister of Industry, Statistics Canada 2003-2016. ALK Technologies, Inc. is an Authorized User of selected Statistics Canada Computer File(s) and Distributor of derived Information Products under Licensing Agreement 6147. No confidential information about an individual, family, household, organisation or business has been obtained from Statistics Canada.

=====  
ALK TECHNOLOGIES, INC. | [www.alk.com](http://www.alk.com)  
=====

## 1.0 INTRODUCTION

Congratulations! By purchasing a PC\*MILER product, you have made a cost-effective investment in a high quality software package that is simple to learn and easy to use.

**DO NOT COPY THE CD/DVD OR THIS DOCUMENTATION. THE SOFTWARE LICENSE CONTAINED IN THIS MANUAL LIMITS THE NUMBER AND TYPE OF COMPUTER ON WHICH YOU CAN LEGALLY USE PC\*MILER. BY OPENING AND USING THE PC\*MILER DVD, YOU HAVE ACCEPTED THE TERMS AND CONDITIONS OF THE LICENSE AGREEMENT. ALK TECHNOLOGIES, INC. WILL TAKE PROPER LEGAL ACTION AGAINST ANY ILLEGAL USE OF THE PC\*MILER SOFTWARE. HOWEVER, YOU MAY MAKE ONE COPY OF THE CD/DVD FOR BACK-UP PURPOSES ONLY.**

### 1.1 What is PC\*MILER?

PC\*MILER is a point-to-point mileage generation and routing package for the calculation of highway miles and driver instructions over the United States, Canadian, and Mexican highway systems. PC\*MILER provides you with unlimited access to mileage and routes for a single personal computer or a network installation.

PC\*MILER calculates point-to-point mileage for an origin – destination pair with up to 29 intermediate stop-off points. It provides leg and cumulative mileage, time and cost estimates, a state-by-state mileage summary, and either Practical, Shortest, National Network, Toll Discouraged, or 53'/102" Trailer mileage over the entire North American system of truck-usable highways.

PC\*MILER for UNIX also includes the following major features:

- Optional Address Entry & Street Level Routing
- 29 Stop-off Points
- Detailed Driving Instructions
- Customizable Trip Settings
- Optimal Route Sequencing
- Hub Distance Generator
- Optional PC\*MILER®|HazMat Routing Module
- Custom Place Manager
- Latitude-Longitude Points Enabled
- PC\*MILER®|Connect, an optional Mileage & Routing Shared Library

- PC\*MILER®|BatchPro, an optional batch processing application for large numbers of origin-destination pairs
- PCMServe, an optional legacy server type application which permits the integration of PC\*MILER with other software

See the *ALK's Interface Modules Appendix* at the end of this manual or contact ALK or your sales agent for details about the optional products mentioned above.

**NOTE:** The PC\*MILER|Mapping graphics package is not available for UNIX systems.

## 1.2 What can PC\*MILER be used for?

Depending on which PC\*MILER system you have, you can use PC\*MILER for:

- Mileage calculations for Shortest, Practical, National Network, Toll Discouraged, 53'/102" Trailer, and Hazardous Materials routing
- Dispatching/Routing
- Driver pay
- Rate determination
- Instant customer quotes
- Fuel tax reporting
- Trip time and/or cost estimation
- Empty and loaded mile reporting
- Sequencing stop-offs in optimal order
- Frequent bill auditing
- IFTA and IRP auditing
- FHWA safety auditing



## 1.3 Recent Enhancements

- **ENHANCED!... Routing Improvements in North America.** Routing improvements are a major part of each PC\*MILER release and each annual version release confirms our commitment to maintaining the quality of PC\*MILER's truck-specific routing database. Over the past several years, ALK has added many routing enhancements that have improved PC\*MILER's truck-specific database, mileage calculations and driving directions.

Added in Version 25:

- **Geocode and Route to Mexican Postal Codes** – Mexican Postal Codes are now accessible in PC\*MILER. There are over 25,000 postal codes in the database that provide comprehensive coverage throughout Mexico. (The database includes unique codes as well as the alternate names accepted for each unique code.) See section 3.1.7.
- **User Control of Pick List Generation** – A new setting in the user.cfg file turns pick list generation on or off. See section 3.1.2.
- **Updated Dangerous Goods Restrictions/Designations in Canada** – Users of PC\*MILER|HazMat will see a significant improvement in routing results when generating routes for dangerous goods throughout Canada. Through an extensive research project and the use of feedback from our users, ALK focused on 30 major Canadian cities – selected based on population, the existence of major industrial centers, and the number of regional PC\*MILER customers – to update these restrictions and designations. See section 4.6. (*Hazardous Material Routing Requires Add-On Module*)
- **Updated Weight Restrictions** – Updated weight restriction, weight allowance, and commercial vehicle restriction information provided by state and local municipalities has resulted in significant routing improvements in 36 jurisdictions throughout the U.S. and Canada.
- **Improved Time Calculations For Routes With Updated Road Speeds** – When PC\*MILER calculates a route, the estimated travel time depends heavily on road speeds according to road. Prior to the release of Version 24 a thorough review of all road speeds in the U.S., Mexico and Canada was implemented. Data was gathered from State DOT's, State Police Departments, State Highway Patrol Departments, The Census Bureau, and State Highway Authorities. A number of road speed updates in the U.S. were incorporated into the PC\*MILER database for improved accuracy.

## 1.4 How does PC\*MILER generate mileage and routes?

Following is a description of the PC\*MILER database, and how the program calculates distances and routing.

### 1.4.1 The PC\*MILER Highway Database

All PC\*MILER products are based on ALK Technologies' proprietary computer representation of the North American highway system. The mileage contained in PC\*MILER are derived from official State highway maps, State DOT maps, county maps, local maps, and information received from thousands of industry contacts. All Interstate, Federal and all truck-usable State highways are included.

PC\*MILER Version 30 data features thousands of new and updated North American road miles and locations including: **bridges and tunnels, border crossings, highway exits, truck stops, state weigh stations, CAT Weigh Scale stations, all year-2016 five-digit US ZIP codes, all US Department of Defense military installations, commercial truck restrictions** in the United States, Canada, and Mexico, plus all **highway junctions** and hundreds of thousands of **cities, towns, and points of interest**.

With the purchase of separate add-on data modules, updated databases of **Canadian Postal Codes, SPLC, and comprehensive U.S. federal, state, and local hazardous material restrictions and designations** are available as well. In addition, ALK's **PC\*MILER|Streets add-on data module** can be purchased for address-to-address routing (see below).

### 1.4.2 PC\*MILER Local Street Address Data

ALK's PC\*MILER|Streets local street database, available as an add-on module for use with PC\*MILER, contains over **139 million street addresses** in the United States and **30 million** in Canada. Streets data enables you to generate door-to-door routes and mileage. (Note that Canadian street-level data is sold separately.)

### 1.4.3 Distance Calculation

Distances and routing directions are calculated by first determining which roads a vehicle will travel over to get between two points and then adding up the distances over each section of road to arrive at a total mileage, similar to the manual task that one might follow if using an atlas.

### 1.4.4 PC\*MILER Practical Routes

The PC\*MILER Practical Route represents distances and driving routes that a vehicle would normally take to minimize time and cost. Practical routes model the trade-off between taking the most direct path and staying on major, high quality highways. In this sense, interstate highways are given a higher priority than toll roads, which in turn are given a higher priority than secondary highways, and so on. Routing instructions and mileage can be used when actual travel distances and directions are needed.

PC\*MILER Practical routings consider distance, road quality, terrain, height and weight restrictions, urban/rural classifications, truck-restricted roads, and designated principal and secondary through routes.

PC\*MILER Practical Route mileage and state-by-state mileage breakdowns can be used to supplement your regular fuel tax reporting documents for many states. Several state audit departments have purchased licenses to incorporate PC\*MILER into their audit procedures.

**NOTE: A PC\*MILER user may still be assessed additional taxes even by those states using PC\*MILER in their audit procedures.** However, your chances of being assessed additional taxes greatly diminishes by utilizing a computerized mileage system in conjunction with your driver logs, trip sheets, invoices, and bills of lading.

In order to minimize your chances of significant tax assessments, you must verify that the PC\*MILER-generated route is the *same* as that reported on your driver logs and/or trip sheets. In addition, the carrier must add the appropriate vicinity miles to the PC\*MILER generated mileage so that the following equation is true:

**TOTAL ODOMETER MILES = PC\*MILER Miles + Vicinity Miles**

**NOTE:** PC\*MILER accounts for some vicinity miles if non-Keypoints (generally ZIP code locations and/or place names not associated with the downtown metropolitan area) are used as stop-off locations.

### 1.4.5 PC\*MILER Shortest Routes

PC\*MILER's Shortest Route represents distances and driving routes that a vehicle would take to minimize total distance traveled while still following a reasonable route. For instance, Shortest Route mileage and routes will also avoid truck-restricted roads and, in some cases, may favor a beltway rather than traveling directly through a city.

ALK continues to maintain that carriers and shippers alike would all be better served by using a mileage software package based on *actual miles traveled* (i.e. similar to those generated using the PC\*MILER Practical Route option), which would more accurately reflect true transportation costs.

### 1.4.6 PC\*MILER National Network Routes

PC\*MILER National Network routing represents distances and driving routes which are most reasonable and legal for the larger trucks authorized by the Surface Transportation Assistance Act of 1982.

The National Network routing option routes on the National Network **only to the extent possible**. Given that many areas are not directly served by the National Network, the origin and stop-offs of your route may not be on the National Network. In these cases PC\*MILER will take the shortest reasonable path from the origin and stop-offs to the Network. National Network mileage tend to be higher than Shortest or Practical routings.

The National Network is a government-designated system of highways originally established by the Surface Transportation Assistance Act of 1982. This routing option is based on the federally-designated National Network system updated in the April, 1992 Code of Federal Regulations, Part 658, Appendix A. The National Network includes the Interstate System (several minor segments are not included), and many selected US and state highways.

These designated highways permit, at a minimum, 102 inches wide, single 48 ft. trailers and 28 ft. double trailers. The Interstate system and most, **but not all**, remaining designated routes are open to 80,000 pound vehicles. Certain states, notably Arkansas and Mississippi, have designated certain National Network segments with less than an 80,000 pound capacity.

Highways continue to be added to the National Network by federal and state governments. Future releases of the PC\*MILER database will reflect the most current information available.

In addition to the National Network highways, *access routes* and *access policies* are components of routing STAA dimensioned trucks. The federal government has mandated that no state may prohibit travel from the National Network for a minimum of 1 road mile unless safety restrictions apply. Also, no state may deny reasonable access to terminals and facilities for food, fuel, repairs and rest.

Several states maintain more generous access policies and lists of specifically designated access routes to terminals and facilities. (See the Appendix for the current status of access policies. For detailed information about pre-approved access routes, contact the individual states). Should you need to travel beyond

the National Network and beyond the access roads, you must acquire the proper permit.

**NOTE:** These suggested National Network routings are based on official highway maps, the Code of Federal Regulations, and information provided by state governments. It is provided without a warranty of any kind. The user assumes full responsibility for any delay, expense, loss, or damage which may occur as a result of its use.

**NOTE Also:** There are no National Network road segments in Mexico and Canada.

### 1.4.7 PC\*MILER 53'/102" Trailer or Twins Routing

Because every mile equals money, PC\*MILER now offers enhanced routing specifically for 53'/102" trailers or 28' tandem trailers ("twins"). The calculations for these routes are based on National Network routing, with the addition of roads that permit 53' trailers or twins.

The regulations that govern the routing of trucks in North America are a function of weight, height, number of axles, distance between axles, number of trailers, and commodity. These regulations take two principal forms: restrictions and designations. In the case of designations, trucks may deviate from the designated road network, on any road that is not otherwise restricted, to access points of loading, unloading and services.

Under a 1991 U.S. federal law known as the STAA, the most important distinction in truck designations is between 96" wide, 48' long trailers on the one hand and 102" wide, 53' long trailers (and twin 28' long trailers) on the other hand. When the 53' Trailer and Twins routing option is used in PC\*MILER, PC\*MILER's routing algorithm switches to favoring roads designated by the states for "oversize" trucks (meaning over 96" wide or over 48' long).

In PC\*MILER, the routing designations for the following equipment types are included in the 53' Trailer or Twins (formerly named "53' Trailer") routing category:

- double trailers no more than 28' long and 102" wide;
- semi-trailers longer than 48' or wider than 96", but no longer than 53' and no wider than 102".

Detailed Route reports for PC\*MILER 53' Trailer and Twins routes warn that a road is "Not Designated" if that road is necessary to reach an origin, destination or stop-off outside of the maximum access distance for that state. If such a warning appears for a route, then a legal route for 53' equipment is either not

possible under current state designations or would be so circuitous that you should either consider assigning smaller equipment or petitioning the state to designate a more direct access route. Users should check the legal requirements on these roads because they vary; for example, delivery may be legal, but stopping for food or services may not be.

```

PC*MILER|HAZMAT|STREETS - NA, 53-foot, Open                               Version 24.0
-----
13220 Syracuse, NY, O... to 99732 Chicken, AK, So..., 1 Stop, 3993.5 Miles
+-----+
| State Route      Miles Interchange      Leg      Total |
+-----+-----+-----+-----+
| Warning * AK-5 * Not Designated 53 Foot |
| AK W AK-5        24.8 Restriction        3989.8  3989.8 |
| Warning * Taylor Hwy * Not Designated 53 Foot |
| AK N Taylor H    0.1 Restriction        3990.0  3990.0 |
| Warning * AK-5 * Not Designated 53 Foot |
| AK W AK-5        3.5 Chicken, AK 99732   3993.5  3993.5 |
| Arrive Loaded |
+-----+

```

**Three “Not Designated” Warnings in a Detailed Route Report**

### 1.4.8 PC\*MILER Toll Discouraged Routes

For the convenience of carriers who desire routings which avoid long stretches of toll roads, ALK provides a Toll Discouraged routing option. Based on PC\*MILER's Practical Route option, routes generated using this option will tend to avoid long stretches of toll roads, but will not take long, impractical detours to avoid toll bridges and tunnels. For example, a routing from Boston, MA to Albany, NY will avoid the Massachusetts Turnpike, but a routing from Camden, NJ to Philadelphia, PA will include a toll bridge.

## 1.5 Additional Options

PC\*MILER includes the additional features listed below. For complete descriptions, see the sections in this *User's Guide* referenced for each one.

For alternate keystrokes that emulation users can use in place of function keys, see section 2.8, *Alternate Keys for UNIX (AIX, Solaris, HP-UX or LINUX)*.

### • Individual stop and leg settings (<Alt-P>)

(See sections 4.4 and 4.5)

The stop-off time and cost for individual stops on a route may be set by the user. Typing <Alt-P> invokes a dialog with one line which may be edited for each stop on the stop list.

Also, each leg of the trip may be labeled “L” for loaded or “E” for empty to indicate either a loaded move or a back haul. A per-mile cost for loaded and empty legs may be set in the Parameter Menu (<Alt-F3>).

Loaded and empty mileage are included in the Detailed Route Report (see section 4.1). In addition, loaded and empty state mileage is summarized in the State Mileage Report (see section 3.12).

### • Parameter Menu (<Alt-F3>)

(See section 4.5)

A Parameter Menu allows you to define the following default values that are used in PC\*MILER calculations of time and cost estimates for each route:

- Miles per hour for various road types, by individual state.
- Default time and cost for all stops that are not edited individually using <Alt-P> as described above (the default is 0 if not manually edited).
- Cost-per-mile value for trip legs that have been designated as “Empty” or “Loaded” (the default is \$1.36 for both empty and loaded legs if not manually edited).

The Parameter Menu also includes an option that restores the previous set of values that was saved to disk.

### • Printer options (<Alt-O>)

(See section 4.12)

Users may set and save these printer options:

- **Select Printer Port** allows users attached to more than one printer to set and change their printer queues.

- **Printer Lines per Page** allows users to set the number of lines per printer page so that reports will be laid out properly on different printers.

- **Improved route saving and loading (<Alt-S>, <Alt-L>)**

*(See section 4.11)*

All parameters affecting the route are saved along with the route when <Alt-S> is used. This means that in addition to the stops, the following information is saved: route options, route parameters, individual stop and leg settings, and reports. When a route is saved to an existing file, the user will be prompted to append, overwrite or cancel. Appending is helpful for tallying total mileage at regular intervals. The maximum number of stops allowed on one route is 29.

When a route is loaded from disk, all the settings used to create it will be restored. If the route was run before being saved, it does not need to be rerun to see reports. The trip identifier field is displayed in the pick list of saved routes along with the file name.

- **Hub mode report**

*(See section 4.9)*

The state and route reports are available in Hub mode. Hub mode calculates the distance to each stop from the origin of a route (the origin is always the first stop on the stop list.)

- **Page ejecting (<Ctrl-F9>)**

Users can cause the printer to eject a page using <Ctrl-F9>. Use in conjunction with <Alt-F9> which appends multiple reports together without page breaks.

- **Reversing the order of stops (<Ctrl-F10>)**

*(See section 4.8)*

The order of the stops on the stop list can be reversed. This feature is especially useful when used in conjunction with route sequencing.

- **Route Optimization (<Alt-F10>)**

*(See section 4.7)*

The order of stops in a stop list can be resequenced into the most efficient driving order. In a resequenced trip, the Origin or first stop listed will not be changed. You can choose between resequencing using a 'Thru All' option (all stops plus the final destination are sorted) or a 'Destination Fixed' option (the origin and destination both remain fixed and all intermediate stops are reordered).



## 1.6 Getting Started with PC\*MILER

To get started with PC\*MILER, begin with the installation instructions provided in Chapter 2. **ALL users should review Chapter 2 before installing PC\*MILER.**

Chapter 3 details the basic operation of PC\*MILER to get you up and running.

Chapter 4 describes all the special additional features found in PC\*MILER.

Chapter 5 provides troubleshooting procedures and PC\*MILER service and support information.

Chapter 6 provides a general introduction to ALK Technologies, Inc.

**Please consult Chapter 5, “Troubleshooting”, before contacting ALK Technologies for technical support. You may find an answer to your question!**

## 2.0 INSTALLATION and STARTUP

This chapter will tell you how to install and start PC\*MILER on your UNIX server. It includes the following sections:

- 2.1 Notes and Warnings (PLEASE READ)**
- 2.2 Requirements**
- 2.3 The PC\*MILER Installation CD**  
(a description of what's on the PC\*MILER Multi-Platform Product Line Installation CD)
- 2.4 Installation Instructions**  
(concise instructions for System Administrators)
- 2.5 Running PC\*MILER Version 22 + Products**  
(special instructions for PC\*MILER Version 22 and higher products)
- 2.6 Installing To a Directory Other Than the Default**
- 2.7 Installing Additional User Licenses (all platforms)**
- 2.8 Alternate Keys for UNIX (AIX, Solaris, HP-UX or LINUX)**
- 2.9 Parameters and Options Defined**
- 2.10 Starting PC\*MILER**

### 2.1 Notes and Warnings (PLEASE READ)

**NOTE:** A Registration Code is needed from ALK Technologies before installation.

Before installing PC\*MILER, you will have to call ALK Technologies at **(609) 683-0220 ext. 2** to obtain a registration code. This code will give you access to the PC\*MILER products you have purchased. If in the future you purchase any additional products, you will be given another registration number that unlocks those new products. If you are adding a new product to your previously installed PC\*MILER, you do not have to reinstall the main PC\*MILER Interactive program. (This program is referred to as the "Basic Fileset" during installation.)

## GENERAL UPGRADE AND INSTALLATION NOTES

Upgrading your operating system is generally universally recommended, but there is the unlikely possibility that the update may conflict with other software that you run. You should consult your system administrator and/or any other program vendors before upgrading your OS. (See the Appendix *Operating System Upgrades, Math and Runtime Libraries* for more specific information.)

Generally it is safe to attempt to install PC\*MILER as long as there is enough available hard disk space. All files are installed to a **../pcm300** directory with the exception of up to two small scripts that can get created in **/usr/bin: pcmiler** and **pcmbatch**.

### **WARNING:**

**If PC\*MILER is critical to your business, do not remove your previous version of PC\*MILER until Version 30 is running on your system.**

### **Minimum Operating System Levels:**

#### **AIX:**

Version 5.3.8 or higher.

#### **Solaris:**

Solaris 10 (5.10)

**NOTE:** PC\*MILER v. 30 may run on earlier versions of Solaris, ALK was not able to verify backward compatibility.

#### **HP-UX:**

B.11.31 or higher

#### **Linux:**

Developed Under Fedora Core 4 (kernel version 2.6.11).

Note: For Ubuntu servers, only 32-bit is currently supported.

### **Disk Space Requirements**

You may install PC\*MILER Version 30 under any directory that you choose. It is strongly recommended that you first check for available free disk space. Filling the wrong area of a Unix Server's drive to near capacity can cause a server to become unstable. We strongly recommend that you install PC\*MILER to a directory below your **/usr** directory.

<i>Approximate Space Requirements for</i>	<i>Megabytes</i>
Base PC*MILER Interactive (with all options)	492 MB
PC*MILER Streets data add-on	1,350 MB
Total with PC*MILER Streets	1.842 GB

**NOTE:** PC\*MILER|BatchPro, PCMServe, and PC\*MILER|Connect share common components. Space requirements are lowered if they are installed together.

**NOTE:** PC\*MILER|Connect Shared Library is referred to as “PC\*Miler Server” in the installation script and in some PC\*MILER documentation.

### **IMPORTANT — Reinstallation and Add-On Installation**

Reinstalling the Version 30 PC\*MILER Interactive program (the “Basic Fileset”) will overwrite any changes to routing options that you have made to your PC\*MILER program. If in the future you install any additional PC\*MILER products, be careful to respond “n” when prompted to install the Basic Fileset by the installation script. See the Appendix *Maintaining Your PC\*MILER Installation* for more information on PC\*MILER options files.

Regardless where root installs PC\*MILER|Unix, the installation software will create a script file named “pcmiler” in /usr/bin (/usr/bin should be in your PATH). It contains three lines; the first line tells PCM where to find your libraries, the second line tells PCM where to find your data, and the third loads and executes PC\*MILER|Unix.

#### The First Line:

The name of this environment variable depends on your platform.

For Solaris and Linux: LD\_LIBRARY\_PATH

For HP-UX: SHLIB\_PATH

For AIX: LIBPATH

If root installed PCM30 at /usr/great\_software/ on an HP-UX server, the first line of the script /usr/bin/pcmiler would read:

```
SHLIB=/usr/great_software/pcm300/
```

#### The Second Line:

For all platforms, the name of this environment variable is the same:

```
PCM_DATA=/user/great_software/pcm300/
```

#### The Third Line:

This is the command which executes the program:

```
/usr/great_software/pcm300/pcmiler $*
```

So /usr/bin/pcmiler looks like this on HP-UX:

```
SHLIB_PATH=/usr/great_software/pcm300/
PCM_DATA=/usr/great_software/pcm300/
/usr/great_software/pcm300/pcmiler $*
```

### **IMPORTANT — If Parent Directory Is Not /usr/local**

The installation will insert the user-supplied path in the /usr/bin/pcmiler script.

## **FORMAT NOTES**

### **PC\*MILER city names:**

For Versions 15 - 30 of PC\*MILER, the character length of cities in the PC\*MILER database has increased from 22 characters to 95. City name returns are:

ZIP Code/Canadian Postal Code (if it exists) then city name, state abbreviation, county name.

### **Mexican city names:**

The format for entering a Mexican city name now includes the two-letter ISO code for the Estado, e.g. “Puerto Vallarta, JA”. Use the <F3> key to find Estado abbreviations.

### **Canadian Postal Code Entry (Optional Data Add-on):**

When typing in Canadian Postal Codes as stops in PC\*MILER Interactive or passing them to PC\*MILER|BatchPro, PCMServe, or PC\*MILER|Connect, the format is (where L =Letter, # =Number):

**L#L<space>#L#**

### **Standard Position Location Code (Optional Data Add-on):**

When entering SPLC as stops in PC\*MILER Interactive or passing them to PC\*MILER|BatchPro, PCMServe, or PC\*MILER|Connect, you must start each stop with “splc” followed by the 6 or 9-digit SPLC. For example, to enter the SPLC for Cleveland, Maine you would enter:

**Splc111001000**

**Street Level Data (Optional Data Add-on):**

When entering addresses as stops in PC\*MILER Interactive type in a semi-colon ';' and you will be presented with an address entry field. For passing addresses to PC\*MILER|BatchPro, PCMServe, or PC\*MILER|Connect, use a semi-colon as the address delimiter between the ZIP code or the state abbreviation.

For example, to enter the address for ALK Technologies you would enter:

**Princeton, NJ; 457 North Harrison Street**

**Duplicate City Delineation – Removal of FIPS Codes:**

In previous releases of PC\*MILER (Version 14 or less), three-digit FIPS county codes were appended to the ends of all duplicate U.S. Cities that were not routable by ZIP code. A duplicate city occurs when a state has two or more towns with the same name that do not have a unique ZIP code (for example, Springfield, Pennsylvania). All U.S. city names in the database now include county information.

## 2.2 System Requirements

Hardware and software requirements for PC\*MILER for UNIX/LINUX are:

**ENVIRONMENT:** Stand-alone or networked workstations.

**PLATFORMS:** **IBM AIX** – 5.3.8 or higher  
**Oracle Solaris** – Solaris 10 (5.10)  
**Linux** – Kernel 2.6.11 or higher (with glibc-2.3.5-10 or higher)  
**(NOTE: If running Red Hat Linux, v. 8.0 or higher is required)**  
**HP-UX** – B.11.31 or higher

**REQUIREMENTS:** 256 RAM minimum

Approximate hard disk space requirements are as follows:

Base PC\*MILER with all options: 492 MB  
PC\*MILER|Streets data add-on: 1,350 MB  
Total with PC\*MILER|Streets: 1.842 GB

**UNIX COMPILERS:** The following compilers are supported when using PC\*MILER|Connect:

**AIX:** IBM XL C/C++ Enterprise Edition for AIX, version 9.0 or higher

**HP-UX:** HP C/aC++ for Integrity Servers B3910B A.06.20 or higher

**Oracle Solaris:** gcc (GCC) 4.9.2

**LINUX COMPILERS:** The following compilers are supported when using PC\*MILER|Connect:

**Linux:** gcc version 4.0.2 20051125 (Red Hat 4.0.2-8) or higher

## 2.3 The PC\*MILER Installation CD/DVD\*

\* **NOTE:** PC\*MILER|UNIX is released on CDs. For HP, Solaris and AIX platforms, if PC\*MILER|Streets was purchased the installation will include an additional DVD for Streets data.

The PC\*MILER Installation CD contains the entire PC\*MILER Unix Platform product line for IBM-AIX, HP-UX, Sun-Solaris, and Linux. The Installation CD contains the following PC\*MILER Unix Platform Products:

- **PC\*MILER® Interactive** – Required for all installations, this installation provides the Highway Network Data used by all PC\*MILER Add-on Modules. PC\*MILER Interactive is referred to as the ‘Basic Fileset’ in the installation script.
- **Canadian Postal Code Optional Data Add-on** – Enables routing to Canadian Postal Codes. To use Canadian Postal Codes in conjunction with SPLC, you will have to contact ALK for installation assistance.
- **Standard Location Position Code (SPLC) Optional Data Add-on** – Enables routing to SPLC locations. To use SPLC in conjunction with Canadian Postal Codes, you will have to contact ALK for installation assistance.
- **PC\*MILER®|HazMat™ Routing Add-on** – Enables Hazardous Material routing options for the Continental United States.
- **Lan Disks** – Controls the number of simultaneous uses of the PC\*MILER highway networks. The default installation allows for 5 simultaneous uses.
- **PC\*MILER®|Batchpro™** – Command line mileage and routing batch processor.
- **PCMServe™** – Legacy named pipe mileage and routing client server application. Not available for Linux.

- **PC\*MILER®|Connect** – New mileage and routing shared library. PC\*MILER|Connect was formerly known as “PC\*MILER|Server”.

**TECHNICAL NOTE:** The production of the PC\*MILER multi-platform Installation CD necessitated the renaming of some included libraries.



## 2.4 Installation Instructions & Requirements

**IMPORTANT:** Please read section 2.1, *Notes and Warnings*, before proceeding!

- Step 1:** Obtain a Registration Code from ALK Technologies. To do this, call **(609) 683-0220 ext. 2**.
- Step 2:** You must log in as ROOT.
- Step 3:** Root user mounts the Installation CD.
- Step 4:** Determine the destination location for PC\*MILER.

The installation script will create a directory called **pcm300**. You will be prompted for the destination directory, which will become the parent directory for your new pcm300 directory. The parent directory you specify must already exist. Space requirements are:

<i>Approximate Space Requirements</i>	<i>Megabytes</i>
Base PC*MILER with all options	492 MB
PC*MILER Streets data add-on	1,350 MB
Total with PC*MILER Streets	1.842 GB

**NOTE:** PC\*MILER|BatchPro, PCMServe and PC\*MILER|Connect share some components, so combinations of these products will use somewhat less space.

**IMPORTANT:** If during installation you specified a parent directory other than **/usr/local** you will have to make use of the **PCM\_DATA** environment variable.

Set PCM\_DATA to the top level of your pcm300 directory as follows (assuming you installed to /usr/lib):

PCM\_DATA=/usr/lib/pcm300/ (⇐ The trailing slash is required.)

To have pcmiler start automatically for all users edit **/usr/bin/pcmiler** and insert PCM\_DATA=/usr/lib/pcm300/ at the beginning of line one.

- Step 5:** Launch the installation script.
- 5.1** Change directories to your mounted CD.
- 5.2** Launch the installation script and follow the on-screen instructions.

**Step 6:** Installing the Optional PC\*MILER|Streets Add-on.

**NOTE:** ALK produces two versions of the Street Level Data DVD. DVD's with a volume label of "strdata30i" are for Intel Based Systems (Linux). DVD's labeled "strdata30" are for AIX, HP-UX, and Solaris.

**NOTE Also:** For upgrades, you can determine the location of your PC\*MILER Version 30 installation by inspecting **usr/bin/pcmiler**.

**6.1** Mount the Street Level Data DVD.**6.2** Change to the parent directory of your PC\*MILER installation.

For example if you installed PC\*MILER 30 to **/usr/local/pcm300**, change to **/usr/local**

**Caution:** Failure to do this step will result in the placement of 570 megabytes of data in the wrong location.

**6.3** Extract the archive.

(The instructions below can also be found in the readme.txt included on the PC\*MILER|Streets 30 DVD.)

To install PC\*MILER|Streets 30, please follow the steps below.

First, you will need to extract the street-level data from the strdata30.tar file. You can do this in one of two ways. Here is the preferred method:

1. Run this command from the DVD mount directory:

```
tar -xvf strdata30.tar -C <install root directory>
```

where <install root directory> is the directory above your PC\*MILER|Unix installation directory. For example, if PC\*MILER|Unix is installed in **/usr/local/pcm300**, <install root directory> would be **/usr/local**.

If the above command doesn't work for any reason, you can extract using the two-step method:

1. (Copy the file) cp strdata30.tar into the directory above your PC\*MILER|Unix installation directory. For example, if PC\*MILER|Unix is installed in **/usr/local/pcm300**, copy strdata30.tar into **/usr/local**.

2. cd to that directory, then type the command:

```
tar -xvf strdata30.tar
```

To enable PC\*MILER|Streets 30, install the cd to your PC\*MILER|Unix installation directory (e.g. /usr/local/pcm300) and run ./strinst.sh (this script was extracted along with the Streets data).

After successfully extracting strdata30.tar, delete it to conserve disk space.

The PC\*MILER|Streets data is now ready to use with PC\*MILER|Unix!

#### 6.4 Run ../pcm300/strinst.sh

**IMPORTANT NOTE:** Renaming **pcm300** after installation will cause PC\*MILER to stop functioning.

## 2.5 Running PC\*MILER Version 30 Products

PC\*MILER Version 30 is built on Shared Library Technology. During installation, commands for PC\*MILER Interactive and PC\*MILER|BatchPro are written to **/usr/bin**. These commands set a library path variable to point to the top level of your PC\*MILER installation (pcm300) and then call the program's executable. To use the PC\*MILER|Connect routing and mileage shared library, you will have to first set the library path variable as follows (assuming installation to **/usr/local/pcm300**):

Linux and Solaris:

```
LD_LIBRARY_PATH=/usr/local/pcm300
```

HP-UX:

```
SHLIB_PATH=/usr/local/pcm300
```

IBM-AIX:

```
LIBPATH=/usr/local/pcm300
```

## 2.6 Installing To a Directory Other Than the Default

Previous releases of PC\*MILER were automatically installed into the `/usr/lib/pcmiler` directory. Version 30 is automatically installed to a directory called `pcm300`. During the installation process you will be prompted for the parent directory of your `pcm300` directory.

**Renaming your `pcm300` directory will disable your PC\*MILER installation.**

If you need to install PC\*MILER to a directory other than `pcm300`, you will have to create a symbolic link from your desired directory to a `pcm300` directory.

**Step 1:** Create the directory where you want to install PC\*MILER, if it does not already exist.

**Step 2:** Type `ln -s [your install directory name] /pcm300/usr/local/pcm300` <Enter> where [your install directory name] is the absolute path to the directory into which you want to install PC\*MILER.

**Step 3:** During installation of PC\*MILER, when you are prompted “Enter destination directory for the PC\*MILER install, or ‘q’ to quit:”, type in the full path to the parent directory of the `pcm300` directory that was the destination directory in Step 2.

PC\*MILER Version 30 installation will create a `pcm300` directory under any directory you choose. ALK recommends installing to `/usr/local/pcm300`.

## 2.7 Installing Additional User Licenses and Products (all platforms)

Additional user licenses and additional PC\*MILER products are available on your original installation CD. You will have to obtain a new registration code from ALK to unlock access for additional users. Launch the installation script. When asked for the destination directory, type in the absolute path to the parent directory of your existing PC\*MILER v. 30 installation, and be sure to answer ‘n’ to the question about installing the basic fileset.

**REMEMBER:** If you are installing the SPLC and Canadian Postal Code add-ons together, you need to contact ALK Technologies for assistance with the installation.

## 2.8 Alternate Keys For UNIX (AIX, Solaris, HP-UX or LINUX)

Different terminals have different keyboard layouts and respond differently. If a key is not present on your terminal or if pressing it does not work, try one of the alternate keystrokes listed below:

**Function Keys:** <CTRL-N> followed by the digit of the function key.

Example: To use the function key <F4>, press <CTRL> and <N> together and then let go (“F – “ should appear at the bottom of the screen above the function key display), then press the <4> key. (For <F10>, use the <0> (zero) key.)

<F10> Press the <[> (left bracket) key. Because <F10> is used so often and may not work on some keyboards, pressing <[> is a convenient shortcut for <F10>.

<Alt> <CTRL-A> duplicates the <Alt> key.  
Example: To use <Alt-F8>, press <CTRL> and <A> together, and press the <F8> key. If the <F8> key does not work, just the <8> key will work.

<CTRL> <CTRL-F> duplicates the <CTRL> key

<UP Arrow> <CTRL-W>

<DN Arrow> <CTRL-X>, <CTRL-J>, or <CTRL-M>

< CTRL-E > Moves to beginning of trip (Origin).

< CTRL-C > Moves to end of trip (stop #29) or Page Down if in the picklist.

## 2.9 Parameters and Options Defined

The terms “parameters” and “options” are used frequently in this manual. The following definitions may be helpful to readers:

Routing options include settings for route types (such as Practical or Shortest), borders (closed/open), hub mode, and the order of states on State Mileage Summary reports.

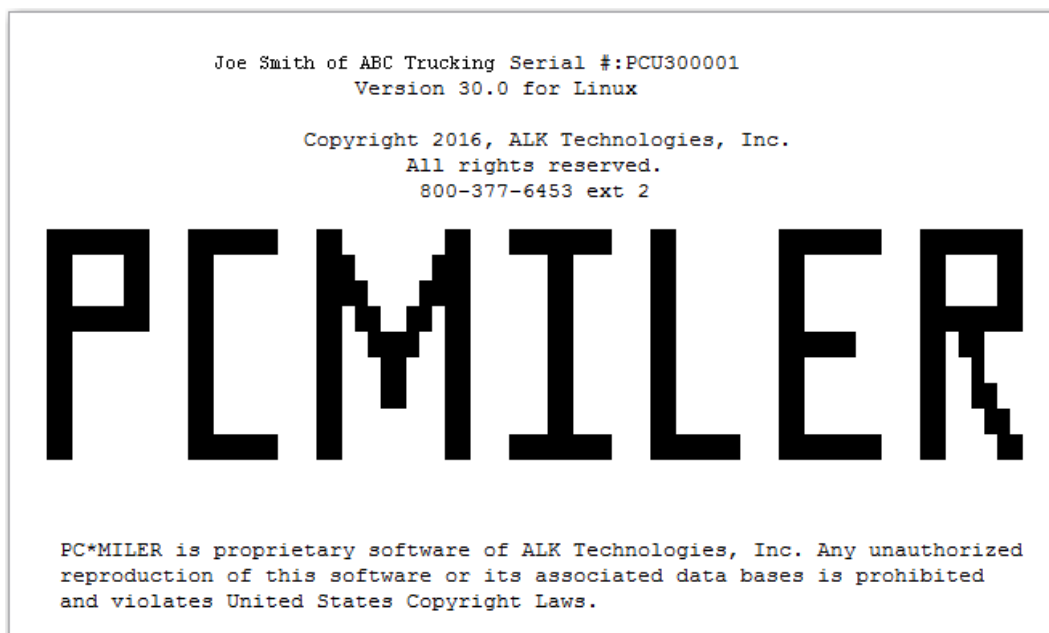
Route parameters include time and cost values used in calculating time and cost estimates for a route, and road speeds on various road types.

## 2.10 Starting PC\*MILER

The PC\*MILER installation automatically creates a directory containing the files and programs needed to operate PC\*MILER. At the shell prompt, type:

```
pcmiler <Enter>
```

### 3.0 BASIC FEATURES



When you first open PC\*MILER, a logo screen will appear which contains a serial number and copyright notices. Press the **<Enter>** key on your keyboard to continue.

The default route type for all mileage and route calculations is PC\*MILER Practical. You may optionally specify the parameter **<S>** (Shortest), **<N>** (National Network), or **<T>** (Toll Discouraged) on the command line when first invoking PC\*MILER. (See sections 1.4.4-1.4.8 for descriptions of the available route types.) This will cause the software to automatically initialize for the routing option you specify.

As an example, you can start the program from the shell prompt by typing:

```
# pcmiler <S> <Enter>
```

and the program will start up with Shortest Route mileage.

**NOTE:** The route type can be changed at any time as you work in PC\*MILER, just press the **F4** key and select your choice from the pick list.

After the proper files are loaded from your hard disk, the PC\*MILER main input screen for route entry will be displayed.

```

+-----+
| PC*MILER|HAZMAT - NA, Practical, Closed                               Version 30.0 |
+-----+
|      Zip      City      Status                                     |
| Org:> ████████████████████████████████████████████████████████████ |
| 1:                                                    |
| 2:                                                    |
| 3:                                                    |
| 4:                                                    |
| 5:                                                    |
| 6:                                                    |
| 7:                                                    |
| 8:                                                    |
| 9:                                                    |
| 10:                                                   |
| 11:                                                   |
| 12:                                                   |
| 13:                                                   |
| 14:                                                   |
| 15:                                                   |
|                                                    |
+-----+
| F1-Help   F2-Exit  F3-List State Abbrevs  F4-Chg Network  F5-List Route |
| F6-List State Rep  F7-Insert  F8-Delete  F9-Print  F10-Generate Route |
+-----+

```

### ***Main Input Screen for Route Entry***

Instructions are located at the bottom of the route entry screen. These instructions tell you which keys to use to perform many of the basic PC\*MILER functions.

In general, the <Esc> key may be used to cancel out of all PC\*MILER menus and reports.

**NOTE:** Not every function key is listed at the bottom of the route entry screen. For a complete listing of function keys, press the <F1> (HELP) key while in the route entry screen or refer to the list in section 3.17. Also see section 2.8, *Alternate Keys for UNIX*.

## **3.1 Entering City Names**

To generate distances and driving instructions, first specify the origin and destination(s). You can input up to 29 stops in the route entry screen using any of the following methods:

- Enter a city name followed by a state abbreviation
- Use the Spelling Helper
- Enter a 5-digit ZIP code
- Use the ZIP Code Helper
- Enter a 6-digit Canadian Postal Code (available as an add-on)
- Enter a SPLC (available as an add-on module)



### 3.1.1 City Name and State Abbreviation

Type in the full city name followed by the two-letter state/province abbreviation, then press <Enter> on your keyboard. A comma is required after the city name.

Examples:    **chicago,il**  
                   **Chicago, IL**  
                   **chicago, il**

The city and state do not need to be separated by a space. PC\*MILER assumes that the last two letters of the input line represent the state/province abbreviation. For a table of two-letter state/province/estado abbreviations in North America, press the <F3> (State Abbreviations) key. (Note that this is not a pick list, it's only a reference list; therefore you cannot make a selection from the list.) Press <Esc> to exit the list.

Zip	City	Status
Org: █		AG - Aguascalientes
1:		AL - Alabama
2:		AK - Alaska
3:		AB - Alberta
4:		AZ - Arizona
5:		AR - Arkansas
6:		BJ - Baja California Nor
7:		BS - Baja California Sur
8:		BC - British Columbia
9:		CP - Campeche
10:		CA - California
11:		CH - Chiapas
12:		CI - Chihuahua
13:		CU - Coahuila
14:		vCL - Colima
15:		

**State Abbreviation Pick List**

**NOTE:** If the city name contains two or three words, each portion of the city name must be separated by spaces.

Examples:    **los angeles ca**  
                   **los angeles,ca**  
                   **salt lake city,ut**

After you enter a city name and state abbreviation, PC\*MILER will return the corresponding ZIP code for the city or town, providing the locale has a ZIP code assigned to it. PC\*MILER will search through the database and select the first ZIP code that matches the city name. In the case of large cities with multiple ZIP

codes, the match will most often be the main post office. The corresponding county name will also be returned.

When the full city, state abbreviation and county name is returned and it is too long to be fully displayed on the stop list, it will appear to be cut off, followed by a set of ellipses (...). To see the complete location name, simply highlight it and the complete name will appear at the bottom of the stop list:

```

+-----+-----+-----+-----+
| PC*MILER|HAZMAT - NA, Practical, Closed | Version 30.0 |
+-----+-----+-----+-----+
| Zip      City              Status |
|Org: 12234 Albany, NY, Albany   Found |
| 1: 02904 Providence, RI, Provid... Found |
| 2: 08528 Kingston, NJ, Somerset Found |
| 3: 17013 Carlisle, PA, Cumberland Found |
| 4: 45202 Cincinnati, OH, Hamilton Found |
| 5: >5003 College Corner, OH, Bu... Found |
| 6: |
| 7: |
| 8: |
| 9: |
| 10: |
| 11: |
| 12: |
| 13: |
| 14: |
| 15: |
| 45003 College Corner, OH, Butler |
+-----+-----+-----+-----+
| F1-Help  F2-Exit  F3-List State Abbrevs  F4-Chg Network  F5-List Route |
| F6-List State Rep  F7-Insert  F8-Delete  F9-Print  F10-Generate Route |
+-----+-----+-----+-----+

```

### *Display of Complete Location Name*

**Mexican place names** can be entered using the Estado name, e.g. “Puerto Vallarta, JA”, or a postal code. See section 3.1.7 on using Mexican postal codes. Use <F3> to find Estado abbreviations – you will need to scroll down below the US/Canada list.

**Canadian postal codes** and **SPLC** can be entered **only using separate add-on data modules**, available through ALK Technologies. Canadian place names can otherwise only be entered as city name and province abbreviation.

## 3.1.2 Pick List Generation and Default Matches

By default, PC\*MILER generates a pick list when more than one possible match exists in the database for a location that is entered as a stop. For example, in the case of multiple postal codes for the same city.

It is possible to turn off pick list generation by editing the **user.cfg** file in your PC\*MILER installation. The user.cfg file is located in the **/usr/local/pcm300** directory. To open it for editing, use the “vi” command.

In the **[User Settings]** section, the “**UseDefaultMatch=**” parameter can be set to either “On” (pick list generation is turned off) or “Off” (a pick list is invoked when multiple matches exist). The default setting in user.cfg is “Off” (pick lists will be generated):

```
[User Settings]
UseDefaultMatch=Off
```

When pick list generation is turned off, in the case of cities with multiple postal codes or other database entries, the PC\*MILER default match will be returned according to the following selection process:

- If a city/state has one or more ZIP or postal codes, PC\*MILER will select the code that is the centroid location (closest to the city center based on the placement of the postal codes).
- If a city/state does not have a ZIP or postal code, the “city point” for that city will be returned. The city point is determined by three things (in this order): the GNIS (official government) placement of the point; the location where the metro center of the city is; and customer-driven editing requests (for example, when routing to the official city point is hindered because of one-way streets).

### 3.1.3 Using the Spelling Helper

If you are unsure of the spelling of a city, or if you received an error message when entering the full city and state name, try using the Spelling Helper: Type the first few letters (at least two) of the city name, an asterisk, a space, and the two-letter state abbreviation, then press **<Enter>**. The more characters specified, the faster PC\*MILER will return a list of possible selections

```
Examples:  ch* il <Enter>
           los ang* ca <Enter>
```

The Spelling Helper will search through the cities in the given state and find every name that starts with the specified characters. If only one city starts with the given characters, it will be returned immediately.

If multiple cities start with the same given characters, or if a city has multiple ZIP codes, all matches will be displayed on the screen. Use the up and down arrow keys on your keyboard to highlight the city or ZIP code that you wish to select. Pressing **<Enter>** will select the highlighted city. To exit with no choice, press

the <ESC> (Escape) key then use the up arrow on your keyboard to return to input mode.

**NOTE:** Be patient, it may take several seconds for the pick list to be generated (you will see the <Generating picklist> message at the bottom of the stop list).

```

+-----+
| PC*MILER|HAZMAT - NA, Practical, Closed                                     | Version 30.0 |
+-----+
| Zip      City +-----+
| Org: 84101 Salt L|> 60607 Chicago, IL, Cook
| 1: 90086  Los An| 60290 Chicago, IL, Cook
| 2:          ch* il| 60601 Chicago, IL, Cook
| 3:          | 60602 Chicago, IL, Cook
| 4:          | 60603 Chicago, IL, Cook
| 5:          | 60604 Chicago, IL, Cook
| 6:          | 60605 Chicago, IL, Cook
| 7:          | 60606 Chicago, IL, Cook
| 8:          | 60608 Chicago, IL, Cook
| 9:          | 60609 Chicago, IL, Cook
| 10:         | 60610 Chicago, IL, Cook
| 11:         | 60611 Chicago, IL, Cook
| 12:         | 60612 Chicago, IL, Cook
| 13:         | 60613 Chicago, IL, Cook
| 14:         |v 60614 Chicago, IL, Cook
| 15:         |
+-----+
| Move Cursor to Choice, Hit Enter To Select, <Esc> to Exit Without Selection |
| View using ^,v, PgUp, PgDn, Home, End Keys                               |
+-----+

```

### Spelling Helper

#### 3.1.4 Entering 5-digit ZIP Codes

Entering any valid 5-digit ZIP code will cause PC\*MILER to search for the corresponding city and state name and display it in the stop list along with the ZIP code. To enter a ZIP code, type it and then press <Enter>.

If you enter: **08540**

PC\*MILER will return: **08540 Princeton, NJ, Mercer**

#### 3.1.5 Using the ZIP Code Helper

If you are unsure of a particular ZIP code or if you receive an error message after typing a 5-digit ZIP code, type or retype at least the first two digits followed by an asterisk and then press <Enter>. The more digits specified, the faster PC\*MILER will return a list of possible selections.

Example: **08\*** <Enter>

If there is only one ZIP code matching the digits you entered, it is returned immediately. If there are multiple matching ZIP codes, they will be displayed on the screen. To select your choice, use the up and down arrow keys to highlight the desired ZIP code and press **<Enter>**. To exit without making a choice, press the **<ESC>** key, then use the up arrow on your keyboard to return to input mode.

**NOTE:** Be patient, it may take several seconds for the pick list to be generated (you will see the **<Generating picklist>** message at the bottom of the stop list).

```

+-----+
| PC*MILER|HAZMAT - NA, Practical, Closed                               Version 30.0 |
+-----+
|      Zip      City +-----+
|Org: 84101     Salt L|> 08001 Alloway, NJ, Salem
| 1: 90086     Los An| 08002 Cherry Hill, NJ, Camden
| 2: 60607     Chicag| 08003 Cherry Hill, NJ, Camden
| 3: 08*      | 08004 Atco, NJ, Camden
| 4:          | 08005 Barnegat, NJ, Ocean
| 5:          | 08006 Barnegat Light, NJ, Ocean
| 6:          | 08006 Barnegat Lgt, NJ, Ocean
| 7:          | 08007 Barrington, NJ, Camden
| 8:          | 08008 Beach Haven, NJ, Ocean
| 9:          | 08008 Harvey Cedars, NJ, Ocean
|10:          | 08008 Long Bch Twp, NJ, Ocean
|11:          | 08008 Long Beach, NJ, Ocean
|12:          | 08008 Long Beach Township, NJ, Ocean
|13:          | 08008 Ship Bottom, NJ, Ocean
|14:          |v 08008 Surf City, NJ, Ocean
|15:          |-----+
+-----+
| Move Cursor to Choice, Hit Enter To Select, <Esc> to Exit Without Selection
|                               View using ^,v, PgUp, PgDn, Home, End Keys
+-----+

```

**ZIP Code Helper Screen**

### 3.1.6 Canadian Postal Codes

A list of over 778,750 six-digit Canadian postal codes is available as an add-on data module for PC\*MILER.

These codes are always a combination of letters and numbers in the following format: **L#L<space> #L#**. Entering any valid Canadian postal code will cause PC\*MILER to search for the corresponding city and province name and display it in the stop list next to the postal code.

If you enter: **K7L<space> 4E7**  
 PC\*MILER will return: **K7L 4E7 Kingston, ON**

To get help with finding the correct Canadian code, type the first three or more characters of the postal code, then press **<Enter>**.

### 3.1.7 Mexican Postal Codes

Mexican Postal Codes are now accessible in PC\*MILER. There are over 25,000 postal codes in the database that provide comprehensive coverage throughout Mexico. The database includes unique codes as well as the alternate names accepted for each unique code.

Mexican and U.S. postal codes share the same format, and some Mexican and U.S. locations have the same postal code assigned to them. When entering Mexican postal codes, you should be aware of the setting in the **user.cfg** file that controls how PC\*MILER handles these duplicate postal codes when they occur.

The user.cfg file is located in the **/usr/local/pcm300** directory. To open it for editing, use the “vi” command. If you only want to view it, the “cat” command may be used.

Under the **[Geocoding]** heading in the user.cfg file there are the parameters “UseUSPostCodes=” and “UseMexPostCodes=”. These parameters can be assigned the value 1 (meaning “on”) or 0 (zero, meaning “off”). So if you want to always have the Mexican postal code used when a postal code is entered that exists in both Mexico and the U.S., you would edit and save these parameters in the user.cfg to look like this:

```
[Geocoding]
UseUSPostCodes=0
UseMexPostCodes=1
```

The following are possible combinations of these two settings, and their effect on location selection:

- Both parameters = 0 – Defaults to the U.S. ZIP with no routing to Mexican postal codes
- UseUSPostCodes= 1 and UseMexPostCodes= 0 – Same as above
- Both parameters = 1 – Defaults to the U.S. ZIP, must pass an Estados code to get Mexican location (e.g. “50510,EM”)
- UseUSPostCodes=0 and UseMexPostCodes=1 – Only Mexican postal codes are available, in the U.S. only city-state pairs will get U.S. location (e.g. “Chico, CA”)

### 3.1.8 SPLC Entry

A complete database of SPLCs (Standard Point Location Codes) in North America can be purchased as an add-on data module for PC\*MILER. A SPLC can be entered as a stop for any location in North America that has a SPLC assigned to it. This code is always either six or nine digits in length.

To enter a SPLC, type “**splc**”, then type the code and press <Enter>. As with a ZIP code, the full place name associated with the SPLC will be returned. SPLC Help is available – see section 3.1.9 below.

```

+-----+
| PC*MILER|HAZMAT - NA, Practical, Closed                               Version 30.0 |
+-----+
|      Zip      City      Status |
|Org:> splc456200 Error |
| 1: |
| 2: |
| 3: |
| 4: |
| 5: |
| 6: |
| 7: |
| 8: |
| 9: |
|10: |
|11: |
|12: |
|13: |
|14: |
|15: |
+-----+
| F1-Help   F2-Exit  F3-List State Abbrevs  F4-Chg Network  F5-List Route |
| F6-List State Rep  F7-Insert  F8-Delete  F9-Print  F10-Generate Route |
+-----+

```

```

+-----+
| PC*MILER|HAZMAT - NA, Practical, Closed                               Version 30.0 |
+-----+
|      Zip      City +-----+ |
|Org: splc45|> 451110000 Satolah, GA, Rabun |
| 1: | 451120000 Dillard, GA, Rabun |
| 2: | 451125000 Pine Mountain, GA, Rabun |
| 3: | 451130000 Rabun Gap, GA, Rabun |
| 4: | 451140000 Mountain City, GA, Rabun |
| 5: | 451150000 Clayton, GA, Rabun |
| 6: | 451155000 Blalock, GA, Rabun |
| 7: | 451160000 Tiger, GA, Rabun |
| 8: | 451161000 Tallulah Falls, GA, Rabun |
| 9: | 451170000 Wiley, GA, Rabun |
|10: | 451180000 Lakemont, GA, Rabun |
|11: | 451220000 Hiawassee, GA, Towns |
|12: | 451224000 Titus, GA, Towns |
|13: | 451250000 Presley, GA, Towns |
|14: |v 451280000 Young Harris, GA, Towns |
|15: | +-----+ |
+-----+
| Move Cursor to Choice, Hit Enter To Select, <Esc> to Exit Without Selection |
| View using ^,v, PgUp, PgDn, Home, End Keys |
+-----+

```

*Using the SPLC Helper*

### 3.1.9 Using the SPLC Helper

A SPLC Helper, similar to the ZIP Code Helper described in section 3.1.5, is available if you need help finding the correct SPLC for a particular location. To invoke the SPLC Helper, type “**splc**” and **the first two or three digits** of the SPLC plus an asterisk (e.g. “**splc45\***”), then press <Enter>.

**NOTE:** Be patient, it may take several seconds for the pick list to be generated (you will see the <Generating picklist> message at the bottom of the stop list).

### 3.1.10 Input Error Messages

If PC\*MILER does not recognize your entry, the word “**Error**” will appear in the Status column of the stop list. If you encounter this error message, then you should try using the Helper feature (enter the first two or three characters and press <Enter>) or, in the case of city names, use the exact ZIP code.

In all cases, the ZIP code takes precedence over the city and state name. As a result, certain suburbs or small towns may not have their actual name in the database, but rather the name of the larger nearby city. In these cases, the 5-digit ZIP code for the smaller community will have to be entered to achieve correct results.

**NOTE:** If you invoke a pick list and then press <Esc> to exit the list without making an entry, you will get an error message. Just press the up arrow key to get back to the stop list.

Remember that PC\*MILER assumes that the last two letters of the input line contain the state/province abbreviation, whether separated by a space or not. For a list of valid two-letter state/province abbreviations, press the <F3> key while in the route entry screen.

### 3.1.11 Duplicate City Names

Several states have cities or towns that share the same name. For example, in the state of Pennsylvania, there are two towns named Hamlin, one in Wayne County and one in Lebanon County.

The PC\*MILER database contains several thousand examples of such duplicates. For some towns, duplicates can be separately identified by means of their differing ZIP codes. Other towns do not have a ZIP code assigned by the Postal Service. However, PC\*MILER now uses long names for all places in the database, allowing you to identify the correct town by the name of its county.



To make your selection, use the Spelling Helper to select the correct city based on its county location found in the listing. If you simply type a place name that has duplicates into the stop list, by default the town with a ZIP code will be entered. In cases where all the duplicates lack a ZIP code, a pick list will be displayed unless pick list generation has been turned off (see section 3.1.2).

## 3.2 Address Entry

If you purchased ALK's PC\*MILER|Streets add-on data module, you can (optionally) specify a street-level address when you enter a stop. To do this, enter a city name and state abbreviation or ZIP code, then type a **semicolon ( ; )** immediately after your entry. You will be prompted to enter an address:

```

+-----+
| Place: new york ny |
| Address: 118 broadway |
+-----+

```

Use your down arrow key to move the cursor to the **Address** field and type an address, then press <F10> to enter. If a pick list of ZIP codes appears, select the desired ZIP and press <Enter>.

**HINT:** If you enter a ZIP code and PC\*MILER can't find an address you specify within that ZIP, try expanding your search by entering the city name.

The address you entered may not be visible on the stop list. When an address is entered as a stop, PC\*MILER will route from/to that address rather than a central post office or other central point of the entered location.

```

+-----+
| PC*MILER|HAZMAT|STREETS - NA, Practical, Closed | Version 30.0 |
+-----+
| Zip      City      Miles   Cum    Cost-$  Hours |
| Org: 08542  Princeton, NJ, Mercer;...  0.0   0.0   0.00   0.0 |
| 1: 10006   New York, NY, New York...  55.6  55.6  75.63  1.1 |
| 2: > [redacted] |
| 3: |
| 4: |
| 5: |
| 6: |
| 7: |
| 8: |
| 9: |
| 10: |
| 11: |
| 12: |
| 13: |
| 14: |
| 15: |
+-----+

```

**Addresses Entered**

### 3.3 Border Crossings

In PC\*MILER, it is possible to access state border crossings using the PC\*MILER border crossing naming convention. Border crossing names have the following syntax:

**!XXYY ZZZZ, XX**

where XX is the two-letter abbreviation of the state that is first in alphabetical order, YY is the abbreviation of the state that is second in alphabetical order, and ZZZZ is the route name of the route that crosses the border. In cases where the road name is different on either side of the border, the road name found in state XX is used.

For example, the border along Interstate 95 between Pennsylvania and New Jersey is called

**!njpa I95, nj**

To quickly locate all possible border crossings between two states, use the [\*] wildcard character. For example:

**!njpa\*, nj**

will bring up the pick list shown below.

Zip	City	
Org:	!njpa* >	<b>NJPA Calhoun Street Bridge, NJ</b>
1:		NJPA Delaware Road, NJ
2:		NJPA I276, NJ
3:		NJPA I676, NJ
4:		NJPA I76, NJ
5:		NJPA I78, NJ
6:		NJPA I80, NJ
7:		NJPA I95, NJ
8:		NJPA Lower Free Bridge, NJ
9:		NJPA NJ12, NJ
10:		NJPA NJ179, NJ
11:		NJPA NJ413, NJ
12:		NJPA NJ73, NJ
13:		NJPA NJ90, NJ
14:	v	NJPA North Main Street, NJ
15:		

**Pick List of State Border Crossings, NJ/PA**

This pick list, similar to the lists generated by the spelling and ZIP Code helpers, lists all Pennsylvania/New Jersey border crossings.

There are two exceptions to the usual format for border crossings:

1. International border crossings have the road name “US-INT” in PC\*MILER. Occasionally, there will be several international border crossings between the same state and province. This is true, for example, between North Dakota and Saskatchewan. If you type:

**!ndsk \*, nd**

the pick list shown below will appear:

```

+-----+
|> !NDSK ND28, nd |
|      !NDSK ND40, nd |
|      !NDSK ND42, nd |
|      !NDSK ND8, nd  |
|      !NDSK US52, nd |
|      !NDSK US85, nd |
+-----+

```

To determine the correct location, you can run routes using the various border crossings.

2. Occasionally, border points have city/state names assigned to them. This is true of a number of very small communities where the state border passes very near to the center of town. Delmar, Maryland, on the Delaware/Maryland border, is an example of such a place. To access these border crossings, use the city/state or ZIP code that is assigned to them.

### 3.4 Highway Exits

PC\*MILER now includes all Interstate-to-Interstate exit numbers. It also includes all Interstate exits leading to non-Interstate highways, with the exception of exits that have an A\B suffix (e.g. Exit 36A, Exit 14C).

```

City +-----+
^a, nj|> ^Alfred E. Driscoll Bridge N X127, NJ |
|      ^Alfred E. Driscoll Bridge S X127, NJ |
|      ^Atlantic City Expressway X12, NJ    |
|      ^Atlantic City Expressway X17, NJ    |
|      ^Atlantic City Expressway X28, NJ    |
|      ^Atlantic City Expressway X33, NJ    |
|      ^Atlantic City Expressway X38, NJ    |
|      ^Atlantic City Expressway X41, NJ    |
|      ^Atlantic City Expressway AC Airport, NJ |
|      ^Atlantic City Expressway E X1, NJ   |
|      ^Atlantic City Expressway E X12, NJ  |
|      ^Atlantic City Expressway E X14, NJ  |
|      ^Atlantic City Expressway E X17, NJ  |
|      ^Atlantic City Expressway E X2, NJ   |
|v      ^Atlantic City Expressway E X28, NJ |
+-----+

```

**Pick List of Exits on Highways Beginning With “A” in New Jersey**

To enter a highway exit as a stop in the route entry window, you can enter “^” (**Shift-6**) followed by a comma and state abbreviation to bring up a pick list. Or, “^” followed by a letter.

For example, entering “^**a, nj**” brings up a pick list of all exits in New Jersey on highways that have names beginning with the letter “a”. Make your selection in the pick list and click **OK**.

### 3.5 Highway Junctions

PC\*MILER allows you to access highway junctions between major road types in the United States and Canada. All interstate and US highway junctions are included. State and provincial highway junctions have been limited to those whose route numbers are 100 or less.

Highway junctions can be accessed in a manner similar to that used to access border crossings. The junction naming convention is as follows:

**+X XXX Y YYY, ZZ**

where the plus sign [+] designates a junction point, X XXX is the lower numbered route name, YYYYYY the higher numbered route name and ZZ the state the junction lies in.

Spaces must be used where a hyphen would normally appear. For example:

**+i 84 i 380, pa**

To access junctions where road types differ, the higher level road must be entered first, regardless of road number. For example:

**+i 95 i 476, pa**  
**+us 1 pa 23, pa**

As with other PC\*MILER features, a pick list can be generated which displays all the junctions for a particular highway. For example, typing

**+I <space> 76, pa**

will bring up a pick list of every major highway junction in the database that is in PA and involves Route I-76.

```

City +-----+
+i 76, |> +I76 I376, PA
      |      +I76 I476, PA
      |      +I76 I676, PA
      |      +I76 I79 E, PA
      |      +I76 I79 W, PA
      |      +I76 I83, PA
      |      +I76 I95, PA
      |      +I76 PA10, PA
      |      +I76 PA100, PA
      |      +I76 PA18, PA
      |      +I76 PA29, PA
      |      +I76 PA291, PA
      |      +I76 PA3 N, PA
      |      +I76 PA3 S, PA
      |v      +I76 PA320, PA
+-----+

```

### ***Pick List of Highway Junctions***

In cases where two junctions by the same highway pair occur within the same state, the junctions are designated by a location direction (N,S,E,W) relative to the location of the other junction. For example:

**+i 95 i 280W, nj** is located one mile west of **+i 95 i 280E, nj**

In multiple junction cases such as I-95 and US1 in Connecticut, the PC\*MILER database is limited to two junction listings.

To designate interstate highways, use the naming convention “**I**”. For US highways, use “**US**”. For state or provincial highways, use the standard two-letter abbreviation. For example: **i 380** ; **us 101** ; or **pa 100**.

## **3.6 Truck Stop Locations**

In cooperation with Comdata Corporation, the PC\*MILER database contains more than 4,000 truck stops used in Comdata’s GeoFUEL truck stop network. These truck stops can be accessed in the same way as other places in the PC\*MILER database, and can be used as stops on your PC\*MILER routings.

To enter a truck stop as a stop on a route, you may enter its name if you know it. The syntax for truck stops is comprised of the "at" symbol [**@**] marking the entry as a truck stop, the **truck stop name**, and the **state** in which the truck stop is located. An example is:

**@Route 46 Truck Stop, NJ**

To find all truck stops in a particular state, use the [**@**] symbol followed by a comma and the two-letter state abbreviation. For example, typing

**@p, nj**

will produce a pick list of all Comdata's listed truck stops in New Jersey beginning with the letter "P".

```

City +-----+
@p, nj |> @PENN-JERSEY TRUCK CENTER (PHILLIPSBURG),
      | @PENNSAUKEN COASTAL (PENNSAUKEN), NJ
      | @Petro #314 (Bordentown), NJ
      | @PETRO PLAZA (HAMPTON), NJ
      | @PETROLINE INC. (JERSEY CITY), NJ
      | @PHILLIPSBURG HESS (PHILLIPSBURG), NJ
      | @PILOT DEALER #880 (MONTAGUE), NJ
      | @Pilot Dealer #880 (Montague), NJ
      | @Pilot Dealer #891 (Roxbury), NJ
      | @Pilot Travel Center #190 (Hampton (Clinto
      | @Pilot Travel Center #210 (Mahwah), NJ
      | @Pilot Travel Center #253 (Carneys Point),
      | @Pilot Travel Center #280 (Bloomsbury), NJ
      | @PORTLAND PETROLEUM INC. (BAYONNE), NJ
      | @POWER OIL INC. (NEWARK), NJ
      |
      |v
+-----+

```

### **Truck Stops Pick List**

## **3.7 CAT Scale Weigh Stations**

CAT Scale weigh station locations may now be entered as stops on a route. Type its name (if you know it) preceded by a pound sign (#), for example:

**#Petro Stopping Center, NJ**

To bring up a pick list of all CAT weigh stations in a particular state, enter a pound sign followed by a comma and the state abbreviation. For example:

**#, nj**

```

City +-----+
#, nj |> #CAT Scale # 1226 Pilot Travel Center, NJ
      | #CAT Scale # 1379 Penn-Jersey Truck Stop,
      | #CAT Scale # 1478 Flying J Travel Plaza, N
      | #CAT Scale # 19 Pilot Travel Centers, NJ
      | #CAT Scale # 243 TA Columbia, NJ
      | #CAT Scale # 25 Love's Country Store, NJ
      | #CAT Scale # 250 Pilot Travel Center, NJ
      | #CAT Scale # 308 Tullo Truck Stop, NJ
      | #CAT Scale # 46 Pilot Travel Center, NJ
      | #CAT Scale # 490 Sunoco Truck Stop, NJ
      | #CAT Scale # 614 TA Bloomsbury, NJ
      | #CAT Scale # 778 TA Paulsboro, NJ
      | #CAT Scale # 835 Petro Stopping Center, NJ
      |
      |v
+-----+

```

### **CAT Scale Weigh Stations Pick List**

### 3.8 Latitude/Longitude Points

PC\*MILER enables you to enter latitude/longitude points as stops on a route. These points can be entered in *degrees minutes seconds direction* format (e.g. **0401750N,0742131W**) or *decimal degrees* (e.g. **40.123N,100.333W**).

#### Degrees-minutes-seconds format:

In degrees-minutes-seconds format the latitude and longitude are each 8 character strings in the following format:

Characters <b>1-3</b>	specify the degrees (be sure to include leading zero if required)
Characters <b>4-5</b>	specify the minutes
Characters <b>6-7</b>	specify the seconds
Character <b>8</b>	is either 'N', 'n', 'W', or 'w' with N's for latitude and W's for longitude

Latitude and longitude must be separated by a comma WITHOUT A SPACE. In general the format for a point is:

**dddmmssN,dddmmssW**

#### Decimal degrees format:

In decimal degrees format, latitude and longitude are strings of up to 10 characters representing a decimal number. No leading zeros are required. The decimal point counts as one of the characters.

Latitude and longitude must be separated by a comma WITHOUT A SPACE. In general the format for a point is:

**ddd.dddN,ddd.dddW**

#### Converting between formats:

To convert from degrees-minutes-seconds to decimal degrees use the following formula:

$$dddmmssN \rightarrow ddd + mm/60 + ss/3600$$

Here is an example of a lat/long near Kendall Park, NJ in both formats:

**0402515N,0743340W** or **40.421N,74.561W**

```

+-----+
| PC*MILER|HAZMAT - NA, Practical, Closed                               Version 30.0 |
+-----+
|      Zip      City      Status
|HUB:          40.420833N,74.561110W, NJ Found
|D 1:> [REDACTED]
|D 2:
|D 3:
|D 4:
|D 5:
|D 6:
|D 7:
|D 8:
|D 9:
|D10:
|D11:
|D12:
|D13:
|D14:
|D15:
+-----+
| F1-Help   F2-Exit   F3-List State Abbrevs   F4-Chg Network   F5-List Route
| F6-List State Rep   F7-Insert   F8-Delete   F9-Print   F10-Generate Route
+-----+

```

### Stop Entered Using a Lat/Long

## 3.9 Inserting and Deleting Stops

Stops can be inserted and deleted anywhere on the stop list by using the <F7> key to insert, the <F8> key to delete, and the up and down arrow keys to move from stop to stop. To delete all stops, press the <Alt> <F8> keys.

## 3.10 Generating a Route

Once the origin and at least one stop have been entered, press the <F10> (Run Route) key to generate a route.

When processing is finished, PC\*MILER will display leg and cumulative distances, and cost and time estimates, as shown below.

**NOTE:** The following conditions must be met before a route can be run:

- Each stop must be valid and have a “FOUND” message displayed to its right.
- No blank lines can exist between valid stops. Use the <F8> (Delete Stop) key to delete any blank lines.



```

+-----+
| PC*MILER|HAZMAT - NA, Practical, Closed                               Version 30.0 |
+-----+
|      Zip      City      Miles      Cost-$      Hours      |
|HUB:> 12234    Albany, NY, Albany    0.0      0.00      0.0      |
|D 1: 02904    Providence, RI, Provid... 161.1    179.69    2.7      |
|D 2: 08528    Kingston, NJ, Somerset  187.1    209.70    3.1      |
|D 3: 17013    Carlisle, PA, Cumberland 310.1    338.46    4.9      |
|D 4: 45202    Cincinnati, OH, Hamilton 746.2    812.77    11.8     |
|D 5: 45003    College Corner, OH, Bu... 759.2    827.78    12.0     |
|D 6:          |
|D 7:          |
|D 8:          |
|D 9:          |
|D10:         |
|D11:         |
|D12:         |
|D13:         |
|D14:         |
|D15:         |
+-----+

```

### Generated Route: Mileage, Cost and Time Estimates

## 3.11 State Mileage Summary Report

After the route is generated, press the <F6> key (State Report) to display a table summarizing mileage by state and country traveled. Toll/non-toll and empty/loaded mileage is listed. A combined grand total is displayed at the bottom, as shown on the next page.

```

+-----+
| PC*MILER|HAZMAT - NA, Practical, Closed                               Version 30.0 |
+-----+
|      Zip      City      +-----+
|Org: 12234    Albany, NY, |      Total      Toll      Free      Loaded      Empty      |
| 1: 02904    Providence, | CT      111      0      111      111      0      |
| 2: 08528    Kingston, N| MA      112      94      18      112      0      |
| 3: 17013    Carlisle, P| NJ      72      35      37      72      0      |
| 4: 45202    Cincinnati, | NY      55      19      37      55      0      |
| 5: 45003    College Cor| OH      270     0      270      270     0      |
| 6:          | PA      354     279     75      354     0      |
| 7:          | RI      55      0      55      55      0      |
| 8:          | WV      14      0      14      14      0      |
| 9:          |
| 10:         | US      1043    426     617     1043     0      |
| 11:         |
| 12:         |
| 13:         | TOTAL    1043    426     617     1043     0      |
| 14:         |
| 15:         |
+-----+

```

### State Mileage Summary Report

Use the up and down arrow keys, <PgUp> (move up one screen), <PgDn> (move down one screen), <Home> (move to the top of the report), and <End> (move to the end of the report) keys to scroll through the report. Press <F9> (Print) key to print the report. Press <Esc> to close the report.

### 3.11.1 Order of States in the State Mileage Summary

In the State Mileage Summary Report, the PC\*MILER default displays the states in alphabetical order. To display the states in the order in which the route travels through them, press <Alt><B> before generating the route. To change the order back to alphabetical order, press <Alt><B> again.

## 3.12 Changing Routing Types

The <F4> key brings up a pick list that lets you choose a different routing type. For example, to change to Toll Discouraged routing, press <F4>, scroll the list with the arrow keys and highlight “Toll Discouraged”, then press <Enter> to save your choice for the current route. See sections 1.4.4-1.4.8 for a description of the available PC\*MILER route types.

```

+-----+
| Practical |
| Shortest  |
| Toll-Discouraged |
| National Network |
| 53-foot Routing |
+-----+

```

## 3.13 Borders Open/Closed Routing Option

PC\*MILER gives you the option to effectively close the international borders in the PC\*MILER database. This will allow you to run routes which remain in one country or another.

For example, if all your stops are in the United States and you select the “Borders Closed” option, the resulting route will remain in the United States even though the most practical or shortest route would normally involve some Canadian mileage. (Note, however, that if you have stops which are in different countries, PC\*MILER will route to them whether the borders are open or closed.)

To close international borders, press the <Alt> <F4> keys from the route entry screen to bring up a prompt:

```

+-----+
| Borders Open |
| Borders Closed |
+-----+

```

Use the down arrow key on your keyboard to select “Borders Closed”, then press **<Enter>**.

The title bar of the route entry screen will display how this option is set:

```

+-----+
| PC*MILER|HAZMAT - NA, Practical, Closed                               Version 30.0 |
+-----+

```

### 3.14 Miles/Kilometers Conversion

To convert the reporting of distances from miles to kilometers, press the **<Alt><F5>** keys. Then press **<F10>** to generate the route in kilometers – you will see the change reflected in the header at the top of the distance column. To convert back to miles, press the **<Alt><F5>** keys again.

### 3.15 Editing the Cost Per Mile Value

**NOTE:** See Chapter 4, for more information on this topic.

The default cost per mile value that PC\*MILER uses in its calculations of cost estimates for a route is \$1.36. To change this value, press **<Alt-F3>**. A menu will appear, with “**Edit Loaded \$/Mile**” highlighted at the top. (If it is not highlighted, press the down arrow key on your keyboard.)

```

+-----+
| 1. Edit Loaded $/Mile |
| 2. Edit Empty $/Mile |
| 3. Default time/stop |
| 4. Default cost/stop |
| 5. Interstate         |
| 6. Divided           |
| 7. Primary Roads     |
| 8. Ferries           |
| 9. Secondary         |
| 10. Local            |
| 11. Urban Interstate |
| 12. Urban Divided    |
| 13. Urban Primary Roads |
| 14. Urban Secondary  |
| 15. Urban Local      |
| 16. Highway-Only Routing |
| 17. Restore saved values |
| 18. Exit             |
+-----+

```

Press **<Enter>**, then type a per-mile cost for loaded legs on a route. Press **<Enter>** again.

```

+-----+
| Loaded $/MI | 1.36 |
+-----+

```

Now use the down arrow on your keyboard to select “**Edit Empty \$/Mile**”, and enter a per-mile value for empty legs.

```

+-----+
| Empty $/MI  1.36 |
+-----+

```

Use the <Esc> key to get back to the main menu, or scroll down to “**Exit**” at the bottom of the menu. Type “**Y**” if you want to save the values you edited as default values, or “**N**” if you want to cancel the changes you made. For more on editing parameters, see Chapter 4.

```

+-----+
| Save Edit to Disk Y/N |
+-----+

```

### 3.16 PC\*MILER Shortcut Keys

**NOTE:** Alternate keystrokes for UNIX users are listed in section 2.8, *Alternate Keys for UNIX (AIX, Solaris, HP-UX or LINUX)*.

The following is a list of all the shortcut keys in PC\*MILER. This summary can also be found by pressing the <F1> (Help) key:

\* = Keys that are active only after a route has been generated.

#### Key(s) Function

<b>F1</b>	Displays Help Menu.
<b>Alt-F1</b>	Reverses the order of stops on a route.
<b>F2</b>	Exits the PC*MILER application.
<b>Alt-F2</b>	Invokes Custom Place options.
<b>F3</b>	Displays a list of state abbreviations.
<b>Alt-F3</b>	Invokes the Parameter Menu.
<b>F4</b>	Invokes a menu of available route types.
<b>Alt-F4</b>	Displays the borders open or borders closed menu.
<b>F5*</b>	Displays the Detailed Route Listing report.
<b>Alt-F5</b>	Toggles between Miles and Kilometers as measure of distance.
<b>F6*</b>	Displays the State Mileage Summary report.
<b>Alt-F6</b>	Toggles between Hub mode and Normal mode.
<b>F7</b>	Inserts a stop below the cursor.
<b>Alt-F7</b>	Invokes HazMat routing options ( <i>PC*MILER/HazMat required</i> ).

<b>F8</b>	Deletes the selected stop.
<b>Alt-F8</b>	Deletes all stops on the screen.
<b>F9*</b>	Prints the current route reports
<b>Alt-F9</b>	Appends multiple reports together without page breaks..
<b>Ctrl-F9</b>	Causes the printer to eject a page (used in conjunction with <b>Alt-F9</b> ).
<b>F10</b>	Generates routes and distances between stops.
<b>Alt-F10</b>	Resequences stops in an optimal route.
<b>Alt-B</b>	For the State Mileage Summary report, use this key to toggle between displaying states in the order the route travels through them, or in alphabetical order.
<b>Alt-D</b>	Displays a list of previously saved routes and allows the user to delete one or more.
<b>Alt-L</b>	Displays a list of previously saved routes and allows the user to select a route to load.
<b>Alt-O</b>	Invokes a printer options menu.
<b>Alt-P</b>	Set stop-off time and cost for individual stops.
<b>Alt-S</b>	Invokes Route Save to File feature.
<b>&lt;Esc&gt;</b>	Exit key, generally for pick lists and dialogs; returns to the previous screen.

### 3.17 Exiting PC\*MILER

To exit PC\*MILER, press the **<F2>** key. Answer the question “Exit PC\*MILER?” by pressing the **<Y>** key. This will return you to the shell prompt.

## 4.0 ADDITIONAL FEATURES and OPTIONS

The following additional features and options are available in PC\*MILER:

- Detailed Route Report
- Custom Time, Cost and Road Speed Values
- Route Parameters Editing
- Route Optimization
- Reversing the Stop Order
- Hub Distance Generator
- Custom Place Names
- Trip Saving and Retrieval

### 4.1 Detailed Route Report (Driving Instructions)

After generating a route, press the <F5> key (Route Report) to display detailed driving instructions. The Detailed Route Report lists routes, direction of travel, segment distances, interchange points, empty/loaded status for each leg, leg mileage, and cumulative mileage, as seen in the screen shown below:

```

+-----+
| PC*MILER|HAZMAT|STREETS - NA, Practical, Closed                               Version 30.0 |
+-----+
|12234 Albany, NY, Albany to 45003 College Corner, OH, 5 Stops, 1042.8 Miles|
+-----+
| | State Route      Miles Interchange          Leg   Total |
| | Origin: 12234 Albany, NY, Albany              0.0   |
| | |
| | NY   E US-20 -      0 + US-20 US-20                0     0 |
| | NY   E US-20 -      0 + US-20 Ramp                 1     1 |
| | NY   S Ramp         0 + Ramp US-20                 1     1 |
| | NY   E US-20        7 + US-20 Ramp                 8     8 |
| | NY   S Ramp         0 + Ramp I-90                  8     8 |
| | NY   E I-90         5 + I-90 Ramp                 13    13 |
| | NY $ S Ramp         0 + Ramp Ramp                 14    14 |
| | NY $ S Ramp         1 + Ramp I-90                 14    14 |
| | NY $ E I-90 - B     18 (to NY/MA State Line)        32    32 |
| | MA $ E I-90 - M     93 + I-90 Exit 10A             125   125 |
| | vMA $ E Exit 10A    1 + Exit 10A US-20 Connector    126   126 |
+-----+
|
| View using ^,v, PgUp, PgDn, Home, End Keys
| F9-Print report          <Esc> Return to Main Menu
|
+-----+

```

**Detailed Route Report Screen**

For convenience, the state-by-state mileage breakdown is listed at the bottom of the route report. Use the up and down arrow keys, <PgUp> (move up one screen), <PgDn> (move down one screen), <Home> (move to the top of the report), and <End> (move to the end of the report) keys to scroll through the report. Press the <F9> (Print) key to print the report.

Conventions used in the Route Report are:

\$ -- marks the segment as a toll road.

For Direction of Travel:	<b>N</b>	North	<b>E</b>	East
	<b>S</b>	South	<b>W</b>	West

Additionally, Detailed Route reports for PC\*MILER 53' Trailer and Twins routes may warn that a road is “Not Designated” if that road is necessary to reach an origin, destination or stop-off outside of the maximum access distance for that state. See section 1.4.7 for a full description and explanation of these warnings.

## 4.2 About Cost Estimation

PC\*MILER calculates a total cost for each route generated. This cost estimate is determined by multiplying a dollar amount per mile (\$/Mile) parameter by the number of miles; additionally, costs for stops can be entered by the user, and these will be added to the total cost estimate.

The cumulative cost appears, along with the total mileage and the time estimation, in the route entry screen after the route is generated. PC\*MILER’s default \$/Mile parameter value is \$1.36 per mile, and can be edited. Refer to sections 4.4 and 4.5 below to learn how to enter your own cost parameters.

## 4.3 About Time Estimation

PC\*MILER calculates a time estimation for each route generated. The time estimate is computed by summing up the estimated time traveled on each road segment for the route plus an added stop-off time, if entered, for each stop along the route.

Each road segment falls into one of eight road classes and each road class has a different average speed parameter assigned to it. Spreading the estimated average speed over the various road classes allows you to get a more accurate estimate of the “total time” traveled based on the quality of road used. The parameters can be changed to reflect your own estimates (see sections 4.4 and 4.5 below).

**NOTE:** If you are attempting to increase the “Real World” accuracy of the PC\*MILER time estimates, you should know that while PC\*MILER time estimates are an accurate reflection of time spent driving, PC\*MILER does not account for traffic congestion, stop lights, waiting time at toll booths and the like. For this reason, generally you will have to set speed limits lower than the default limits, using slower speeds for heavily developed states.

There are twelve road speed classes (six road types, with “urban” and “rural” classifications for each). Each class has an average road speed parameter assigned to it. Spreading the estimated average speed over the various road classes gets a more accurate estimate of the total time traveled based on the quality of the road used. See descriptions of road classes below.

### PC\*MILER ROAD CLASSIFICATIONS

<b>Interstate Highways</b>	<ul style="list-style-type: none"> <li>• The primary function of these roads is to move high volumes of vehicular traffic over medium to long distances at high speeds</li> <li>• Can be accessed only via access ramps</li> </ul>
<b>Major Highways</b>	<ul style="list-style-type: none"> <li>• Major arteries that move heavy volumes of traffic at moderate speeds</li> <li>• Can be limited access in some areas but may also offer access from local roads</li> <li>• Usually have a barrier or median that prevents movement between lanes of opposing traffic</li> <li>• Medians may have crossovers that are part of the normal traffic pattern</li> <li>• Left turns are often restricted, both off of the highway and onto the highway</li> <li>• Usually multi-lane</li> <li>• Many but not all US highways are in this class</li> </ul>
<b>Primary Highways</b>	<ul style="list-style-type: none"> <li>• Move significant volumes of traffic at moderate speeds</li> <li>• Most state roads fall into this class</li> </ul>
<b>Secondary Roads</b>	<ul style="list-style-type: none"> <li>• Move moderate volumes of traffic over short to moderate distances</li> <li>• Carry vehicles from local roads to higher class roads</li> </ul>
<b>Local Roads</b>	<ul style="list-style-type: none"> <li>• Function is to provide access to homes and properties</li> </ul>
<b>Ferries</b>	<ul style="list-style-type: none"> <li>• Ferry routes (boarding/exit time not included)</li> </ul>



## 4.4 User-Defined Stop-Off Time and Stop-Off Cost

With PC\*MILER, you can define a **stop-off time** estimate. This enables you to incorporate a time delay factor, associated with stopping at each point along the route, into the total time estimate.

For example, if you define the stop-off time estimate to be 1.0 hour, the total time estimate increases by 1 hour for each stop on a route. If there are nine stops along the route, the total time estimate (driving time plus delay time at each stop) would reflect a 9.0 hour increase (9 stop-offs x 1.0 hour/stop-off). The default stop-off time is 0 hours/stop. (To add a stop-off time, see section 4.5 below.)

PC\*MILER also lets you define a **stop-off cost** estimate. This enables you to incorporate a cost factor, associated with stopping at each point along the route, into the total cost estimate for the trip. The default stop-off cost is \$0/stop. (To add a stop-off cost, see section 4.5 below.)

Additionally, the stop-off time and cost can be set by the user **for individual stops**. Typing <Alt-P> invokes a screen containing one line for each stop on the stop list. Each line may be edited. Tab or space over the columns to the fields you wish to edit. You can use <Shift-Tab> to return to a previous edit field.

In this dialog, each leg of the trip is labeled “L” for loaded or “E” for empty to indicate either a loaded move or a backhaul. These designations may be edited. The price per mile for loaded and empty legs is set in the Parameter Menu (see section 4.5 below). The default value for both is **\$1.36**. Edited time and cost values will be reflected in screen reports when you generate a route.

```

+-----+-----+-----+-----+-----+-----+
| PC*MILER|HAZMAT|STREETS - NA, Practical, Closed                               Version 30.0 |
+-----+-----+-----+-----+-----+-----+-----+ Edit parameters of stops ---+
|      Zip      City      Mile|      Cost      Time      Loaded||
|Org: 12234    Albany, NY, Albany      0.|      0.00      0.00      -  ||
| 1: 02904    Providence, RI, Provid... 161.|      0.00      0.00      L  ||
| 2: 08528    Kingston, NJ, Somerset   226.|      0.00      0.00      L  ||
| 3: 17013    Carlisle, PA, Cumberland 158.|      0.00      0.00      L  ||
| 4: 45202    Cincinnati, OH, Hamilton 457.|      0.00      0.00      L  ||
| 5: 45003    College Corner, OH, Bu... 39.|      0.00      0.00      L  ||
| 6:                                     +-----+-----+
| 7:
| 8:
| 9:
|10:
|11:
|12:
|13:
|14:
|15:
+-----+-----+-----+-----+-----+-----+
|                                     Edit parameters of stops.
| Use Cursor Keys to move through the screen. Press ESC to end the session |
+-----+-----+-----+-----+-----+-----+

```

**Editing Stop Parameters**

## 4.5 Editing the Time and Cost Parameters

The time and cost parameters used to compute Total Cost and Total Time estimates are read in from a file and can be edited and saved using the Parameter Menu. To display this menu, press the <Alt><F3> keys.

Zip	City	Status	
Org: 12234	Albany, NY, Albany	Found	1. Edit Loaded \$/Mile
1: 02904	Providence, RI, Provid...	Found	2. Edit Empty \$/Mile
2: 08528	Kingston, NJ, Somerset	Found	3. Default time/stop
3: 17013	Carlisle, PA, Cumberland	Found	4. Default cost/stop
4: 45202	Cincinnati, OH, Hamilton	Found	5. Interstate
5: 45003	College Corner, OH, Bu...	Found	6. Divided
6:			7. Primary Roads
7:			8. Ferries
8:			9. Secondary
9:			10. Local
10:			11. Urban Interstate
11:			12. Urban Divided
12:			13. Urban Primary Roads
13:			14. Urban Secondary
14:			15. Urban Local
15:			16. Highway-Only Routing
			17. Restore saved values
			18. Exit

Select Parameter to Edit using

### **Routing Parameters Menu Screen**

Use the <Up> and <Down> arrow keys to scroll through the menu to the desired selection. Press <Enter> to edit the value of the selected parameter.

The options in the Parameter Menu are listed below. Average road speeds for each road category are set for individual states – see Step 2 below.

1. Cost per mile for Loaded legs (this cost will be applied against legs labeled “L” using <Alt-P>)
2. Cost per mile for Empty legs (this cost will be applied against legs labeled “E” using <Alt-P>)
3. Default hours per stop
4. Default cost per stop
5. Interstate highway speed (Freeways)
6. Divided highway speed
7. Primary highway speed
8. Ferries speed

9. Secondary highway speed
10. Local road speed
11. Urban Interstate highway speed
12. Urban Divided highway speed
13. Urban Primary Roads highway speed
14. Urban Secondary highway speed
15. Urban Local road speed
16. Highway-Only routing (for PC\*MILER|Streets users – PC\*MILER will route using an air distance from the center of the nearest highway road segment to the address or centroid, rather than routing on local streets.)
17. Restore saved values (Restores the most recently saved set of parameters from disk. Useful to return to “normal” mode after customizing parameters for a certain route.)
18. Exit

To edit a parameter, do the following:

**STEP 1:** Select the desired parameter.

Highlight the desired parameter and press <Enter>. A prompt will appear showing the current value of the parameter, for example:

```

+-----+
|Loaded $/MI  1.36|
+-----+

```

**STEP 2:** Type in the desired value.

To change the value of the parameter, simply type over the current value, using the decimal key if required. Note that **average road speeds are by state**, therefore a two-letter state abbreviation must be entered before entering the speed (type the abbreviation then press <Enter>). Use the <F3> key to bring up a list of valid state/province abbreviations.

There is a range of acceptable values for each type of parameter:

- \$/Mile value: maximum \$100.00
- Time value: greater than or equal to 0, less than 100
- Time Estimate/Stop value: maximum 99
- Cost Estimate/Stop Value: maximum \$10,000.00
- Speed: 1 to 100 miles per hour

**STEP 3:** Press <Enter>.

Once the desired value has been typed in, press <Enter> to return to the Parameter Menu.

**STEP 4:** Select “Exit” to save or cancel your edits.

After entering all desired changes to the parameters, arrow down and choose “Exit” or press <Esc> to return to the route entry screen. A prompt will ask if you want to save the current values. A reply of <Y> will **save** the edit parameters to disk as defaults. A reply of <N> will cancel the changes you made.

**NOTE:** It is recommended that the parameters be changed to reflect your own experience the first time you run PC\*MILER.

## 4.6 Hazardous Material Routing

If you purchased the separate PC\*MILER®|HazMat™ add-on data module, you can run Practical, Shortest, National Network and Toll Discouraged routes for various types of hazardous materials. To bring up the Hazardous Materials Routing options menu, press <Alt-F7>.

PC\*MILER calculates routes for hazardous materials based on over thirty different road categories. PC\*MILER route options for running a hazmat route include: **General, Explosives, Inhalants, Radioactives, Corrosives, and Flammables**. To calculate normal (non-hazmat) PC\*MILER routes, select **None** (this is the default setting).

To select a hazmat routing option after pressing <Alt-F7>, use the arrow keys to scroll down the list, highlight your choice, then press <Enter>.

```

+-----+
| PC*MILER|HAZMAT|STREETS - NA, Practical, Closed                               Version 30.0 |
+-----+
|      Zip      City      Status+-----+
|Org: 12234     Albany, NY, Albany Found| None
| 1: 02904     Providence, RI, Provid... Found| General
| 2: 08528     Kingston, NJ, Somerset Found| Explosives
| 3: 17013     Carlisle, PA, Cumberland Found| Inhalants
| 4: 45202     Cincinnati, OH, Hamilton Found| Radioactives
| 5: 45003     College Corner, OH, Bu... Found| Corrosives
| 6:                                     | Flammables
| 7:                                     +-----+
| 8:
| 9:
| 10:
| 11:
| 12:
| 13:
| 14:
| 15:
+-----+
| F1-Help   F2-Exit  F3-List State Abbrevs  F4-Chg Network  F5-List Route
| F6-List State Rep  F7-Insert  F8-Delete  F9-Print  F10-Generate Route
+-----+

```

**Hazardous Material Routing Options**

**Table 1** below shows U.S. DOT Hazmat classes and the corresponding PC\*MILER route type.

**Table 2** below shows how each PC\*MILER hazmat route type handles each Department of Transportation (U.S. and Canada) hazmat road category.

**NOTE:** The “General” option should be used for any hazardous material that presents a danger during transportation and is not corrosive, explosive, flammable, inhalant, or radioactive. Common examples include: oxidizers (such as compressed oxygen tanks), combustible liquids (such as diesel fuel), and poisons (such as pesticides).

**TABLE 1: U.S. DOT Hazmat Classes and Corresponding PC\*MILER Hazmat Route Types**

The table below shows how the wording used for PC\*MILER hazmat routing options, which is derived from industry-standard placarded descriptions of hazardous materials, corresponds to the U.S. Department of Transportation Hazmat classifications.

U.S. DOT Hazmat Classes (corresponding PC*MILER routing options are <b>bolded</b> ):
Class 1: Explosives – <b>Explosive</b>
Class 2: Compressed Gases 2.1: Flammable Gas – <b>Flammable</b> 2.2: Non-Flammable Compressed Gas – <b>General</b> 2.3: Poisonous Gas – <b>Inhalant</b>
Class 3: Flammable and Combustible Liquid – <b>Flammable</b>
Class 4: Flammable Solids 4.1: Flammable Solid – <b>Flammable</b> 4.2: Spontaneously Combustible Material – <b>Flammable</b> 4.3: Dangerous When Wet Material – <b>General</b>
Class 5: Oxidizers – <b>General</b>
Class 6: Poisons 6.1: (part) Inhalation Hazard – <b>Inhalant</b> 6.1: (balance) – <b>General</b> 6.2: Infectious Substance (Etiologic agent) [“Biohazard”] – <b>General</b>
Class 7: Radioactive Materials – <b>Radioactive</b>
Class 8: Corrosive Liquids – <b>Corrosive</b> (“ <b>Caustic</b> ” in PC*MILER 22 and earlier)
Class 9: Miscellaneous – <b>General</b>

**TABLE 2: PC\*MILER Hazardous Material Route Types and Road Categories**

- favor** = routing will prefer these segments
- no change** = routing will not be altered in any way
- avoid** = routing will go around these segments whenever possible
- discourage** = a lesser degree of avoidance, used when a state or road authority allows hazmat only at certain times of day, with prior notification, by permit, or in limited quantities, and for tunnels not otherwise classified

#	Hazmat Routing Category	General	Corrosive	Explosives	Flammable	Inhalants	Radioactive	Detailed Route Report	Hazmat Map Legend
1	Alternate	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
2	Preferred	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
3	Designated	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
4	Prohibited	avoid	avoid	avoid	avoid	avoid	avoid	Prohibited	Prohibited
5	Restricted	discourage	discourage	discourage	discourage	discourage	discourage	Restricted	Restricted
6	Harmful to Water Prohibited	no change	no change	no change	no change	no change	no change	Harmful to Water Prohib.	Some Cnds Prohib
7	Explosive Designated	no change	no change	favor	no change	no change	no change		Desig Expl
8	Inhalant Designated	no change	no change	no change	no change	favor	no change		Desig Inhal
9	Explosive & Inhalant Designated	no change	no change	favor	no change	favor	no change		Desig/Pref/Alt
10	Tunnel	discourage	discourage	discourage	discourage	discourage	discourage	Tunnel	Restricted
11	Tunnel & Alternate	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
12	Tunnel & Preferred	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
13	Tunnel & Designated	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
14	Tunnel & Prohibited	avoid	avoid	avoid	avoid	avoid	avoid	Prohibited Tunnel	Prohibited
15	Tunnel & Restricted	discourage	discourage	avoid	avoid	avoid	avoid	Restricted Tunnel	Restricted
16	Tunnel & Large Explosive, Inhalant, and Flammable Prohibited	no change	no change	no change	no change	no change	no change	Many Cnds Prohib.	Some Cnds Prohib
17	Tunnel & Large Explosive and Inhalant Prohibited	no change	no change	no change	no change	no change	no change	Expl. & Inhal. Prohib.	Some Cnds Prohib
18	Caustic, Explosive, Flammable & Radioactive Prohibited	no change	avoid	avoid	avoid	no change	avoid	Many Cnds Prohib.	Some Cnds Prohib
19	Explosive Restricted	no change	no change	discourage	no change	no change	no change	Explosive Restricted	Restricted
20	Tunnel & Very Large Explosive Prohibited	no change	no change	no change	no change	no change	no change	Explosive Restricted	Some Cnds Prohib
21	Explosive & Flammable Prohibited	no change	no change	avoid	avoid	no change	no change	Expl. & Flam. Prohib.	Some Cnds Prohib
22	Radioactive Preferred	no change	no change	no change	no change	no change	favor		Desig Rad

#	Hazmat Routing Category	General	Corrosive	Explosives	Flammable	Inhalants	Radioactive	Detailed Route Report	Hazmat Map Legend
23	Radioactive Designated	no change	no change	no change	no change	no change	favor		Desig Rad
24	Radioactive Prohibited, Explosive Restricted	no change	no change	discourage	no change	no change	avoid	Rad. Prohib., Expl. Restr.	Some Cmds Prohib
25	Radioactive Prohibited	no change	no change	no change	no change	no change	avoid	Radioactive Prohibited	Some Cmds Prohib
26	Escort Needed	no change	no change	no change	no change	no change	no change	Escort	None
27	Explosive and Flammable & Harmful to Water Prohibited	no change	no change	avoid	avoid	no change	no change	Many Cmds Prohib.	Some Cmds Prohib
28	Explosives, Inhalant & Radioactive Designated	no change	no change	favor	no change	favor	favor		Desig/Pref/Alt
29	Radioactive & Explosive Designated	no change	no change	favor	no change	no change	favor		Desig/Pref/Alt
30	Radioactive & Explosive Prohibited	no change	no change	avoid	no change	no change	avoid	Rad. & Expl. Prohib.	Some Cmds Prohib
31	Radioactive & Explosive	no change	no change	discourage	no change	no change	discourage	Rad. & Expl. Restr.	Restricted

**NOTE:** U.S. hazardous material routing restriction/designation information taken from *The National Hazardous Materials Route Registry* provided by the Federal Motor Carrier Safety Administration (FMCSA); and various other state and federal sources. Canadian hazmat data derived from government and municipal sources in each Province and Territory, and includes hazmat restrictions for major Canadian bridges and tunnels.

### 4.6.1 Routing Multiple Hazmat Classes

For routing a single shipment containing multiple hazmat classes, the following procedures are suggested:

1. First, determine the weight of each commodity and check the U.S. DOT (PHMSA) rule to see if that combination is permissible and if so, which placard(s) are to be used.
2. Then, for each placard, look up the PC\*MILER|Hazmat routing options in the table above.
  - a. If all the placards correspond to one routing option, use that option.
  - b. If the placards correspond to multiple routing options, then run the route for each option and:
    - i. If all the routes are the same, that common route is the route to be used.
    - ii. If the routes are different, then there may or may not exist a legal route for that combination of commodities for the specified origin/destination (this will occur only rarely).

### 4.7 Route Optimization

Route Optimization reorders up to a **maximum of 29 stops** to minimize the total distance (when using Shortest Route), the total time (when using Practical Route), total toll distance (when using Toll Discouraged Route), and distance off the National Network (when using the National Network).

**NOTE:** Changes made to trip parameters do not affect route optimization.

The system will allow you to review the sequenced route and make any necessary changes before generating distances and driving instructions. However, route optimization cannot be undone; that is, the original order of stops cannot be recovered. You may want to save the original order of the stops before optimizing (see section 4.11).

Two options are available when you optimize a route, both of which keep the origin location the same:

- **Destination Fixed:** Reorders stops, but keeps the same origin and the last stop as the destination.
- **Route Through All:** Keeping the same origin, allows PC\*MILER to reorder all other stops on the list.



The steps for route optimization are:

**STEP 1:** Enter an origin and up to a maximum of 29 stops.

**STEP 2:** Press the <Alt><F10> keys to initiate route sequencing.

**STEP 3:** Select an option: Use the arrow keys to highlight **Destination Fixed** or **Route Through All** then press <Enter>. Be patient, optimization may take a few seconds. Use the <ESC> key to exit the options menu without optimizing.

```

+-----+-----+-----+-----+
| PC*MILER|HAZMAT|STREETS - NA, Practical, Closed | Version 30.0 |
+-----+-----+-----+-----+
| Zip      | City      | Status+-----+
|Org: 08204| Cape May, NJ, Cape May | Found| 1. Destination fixed |
| 1: 19104 | Philadelphia, PA, Phil... | Found| 2. Route thru all |
| 2: 08650 | Trenton, NJ, Mercer | Found+-----+
| 3: 15233 | Pittsburgh, PA, Allegheny | Found
| 4: 08525 | Hopewell, NJ, Mercer | Found
| 5:
| 6:
| 7:
| 8:
| 9:
| 10:
| 11:
| 12:
| 13:
| 14:
| 15:

```

### Route Optimization Options

```

+-----+-----+-----+-----+-----+-----+
| PC*MILER|HAZMAT|STREETS - NA, Practical, Closed | Version 30.0 |
+-----+-----+-----+-----+-----+
| Zip      | City      | Miles  | Cum  | Cost-$ | Hours |
|Org:> 08204| Cape May, NJ, Cape May | 0.0    | 0.0  | 0.00   | 0.0   |
| 1: 08650 | Trenton, NJ, Mercer | 106.1  | 106.1 | 144.25 | 1.9   |
| 2: 08525 | Hopewell, NJ, Mercer | 16.2   | 122.3 | 166.32 | 2.3   |
| 3: 19104 | Philadelphia, PA, Phil... | 46.0   | 168.3 | 228.88 | 3.1   |
| 4: 15233 | Pittsburgh, PA, Allegheny | 301.2  | 469.5 | 638.52 | 7.9   |
| 5:
| 6:
| 7:
| 8:
| 9:
| 10:
| 11:
| 12:
| 13:
| 14:
| 15:

```

### Optimized Route Using "Route Through All"

## 4.8 Reversing the Order of Stops

Pressing <Alt-F1> will reverse the order of the stops that have been entered. This is especially useful when used in conjunction with route optimization (described in section 4.7 above).

## 4.9 Hub Distance Generator

With PC\*MILER, you can generate mileage from one origin, defined as the “Hub”, to up to 29 destinations as shown in the steps below.

**STEP 1:** Enter the Hub mileage mode by pressing the <Alt><F6> keys. Note that the first stop on the stop list is now identified as the “HUB” on your screen as a reminder that this is a hub route. If stops have already been added to the stop list, a Hub route will be generated immediately.

**STEP 2:** Enter the Origin (Hub) and up to 29 destinations as though they were stop-offs.

**STEP 3:** Press the <F10> key to generate distances.

To disable hub routing, use <Alt><F6> again.

The Detailed Route Report and State Mileage Summary Report are available for Hub routes. (See sections 4.1 and 3.12 for how to generate these reports.)

```

+-----+
| PC*MILER|HAZMAT|STREETS - NA, Practical, Open                               Version 30.0 |
+-----+
|      Zip      City      Miles      Cost-$      Hours      |
|HUB:> 08204    Cape May, NJ, Cape May      0.0        0.00        0.0        |
|D 1: 08650    Trenton, NJ, Mercer      106.1       144.25       1.9        |
|D 2: 08525    Hopewell, NJ, Mercer      130.7       177.71       2.3        |
|D 3: 19104    Philadelphia, PA, Phil...      87.2       118.62       1.6        |
|D 4: 15233    Pittsburgh, PA, Allegheny      368.5       501.11       6.2        |
|D 5:          Montreal, QC, Montreal      514.5       699.74       8.5        |
|D 6:          |
|D 7:          |
|D 8:          |
|D 9:          |
|D10:         |
|D11:         |
|D12:         |
|D13:         |
|D14:         |
|D15:         |
+-----+

```

**Generated Hub Route**

## 4.10 Creating Custom Place Names

PC\*MILER gives you the capability to assign your own names to existing locations in the PC\*MILER database. When added to the stop list, a custom name will appear with an asterisk next to it. Custom Places can also be defined using latitude/longitude coordinates.

To view, add, or delete custom places, press the <Alt-F2> keys on your keyboard. To select an option in the options menu that appears, use the up and down arrow keys to highlight it and then press <Enter>.

### 1. View Custom Places

This option enables you to view a list of all custom places that have previously been created and saved in the database.

**NOTE:** If more than 15 custom places are listed, use the down arrow key to scroll the list. Place names may not be edited.

```

+-----+
| PC*MILER|HAZMAT|STREETS - NA, Practical, Open                               Version 30.0 |
+-----+
|      Zip      City      Status+-----+
| HUB:          | 1. View Custom Places |
| D 1:          | 2. Add Custom Place  |
| D 2:          | 3. Delete place     |
| D 3:          | 4. Exit              |
| D 4:          +-----+
| D 5:
| D 6:
| D 7:
| D 8:
| D 9:
| D10:
| D11:
| D12:
| D13:
| D14:
| D15:
+-----+
|
|                                     <Esc> - exit.
+-----+

```

**Custom Place Options Menu**

```

+-----+
| Home office   08540 Princeton, NJ; 1000 He..., NJ |
| Place1       10013 New York, NY; 118 West..., NY |
| Place2       08817 Edison, NJ, Middlesex |
+-----+

```

**List of Custom Places in the Database**

## 2. Add Custom Place

To add a new custom place name to the database, highlight “Add Custom Place” in the custom place options menu and press <Enter>.

```

+-----+
| 1. View Custom Places |
| 2. Add Custom Place  |
| 3. Delete place     |
| 4. Exit              |
+-----+

```

Type your custom name in the **Name** field that appears, then press <Enter> or the <TAB> key. In the **Place** field, type the actual name or ZIP code of the place:

```

+-----+
| Name: ACN Home Office |
| Place: plainsboro, nj |
+-----+

```

Then press <Enter>. The place name as it appears in the PC\*MILER database will then be returned:

```

+-----+
| Name: ACN Home Office |
| Place: 08536 Plainsboro, NJ, Middlesex |
+-----+

```

Press <F10> to add the new custom name and return to the custom place menu. Scroll down to “4. Exit” and press <Enter> when finished with the menu.

When you enter a custom name as a stop, it will appear on the stop list marked with an asterisk:

```

+-----+
| PC*MILER|HAZMAT|STREETS - NA, Practical, Open | Version 30.0 |
+-----+
| Zip      City      Status |
| HUB:    ACN Home Office*(0..., NJ | Found |
| D 1:> [REDACTED] |
| D 2: |
| D 3: |
| D 4: |
| D 5: |
| D 6: |
| D 7: |
| D 8: |
| D 9: |
| D10: |
| D11: |
| D12: |
| D13: |
| D14: |
| D15: |
+-----+
| F1-Help  F2-Exit  F3-List State Abbrevs  F4-Chg Network  F5-List Route |
| F6-List State Rep  F7-Insert  F8-Delete  F9-Print  F10-Generate Route |
+-----+

```

**Custom Place Entered As a Stop**

To determine the location of a custom place on the stop list without using the options menu, highlight the place. Its full name will appear at the bottom of your screen (above the program options), with location information in parentheses:

```
|D15:
+- ACN Home Office*(08536 Plainsboro, NJ, Middlesex) -+
| F1-Help      F2-Exit  F3-List State Abbrevs  F4-Chg Network  F5-List Route |
| F6-List State Rep  F7-Insert  F8-Delete  F9-Print    F10-Generate Route |
+-----+-----+
```

**NOTE:** A custom place can include an address if PC\*MILER\Streets data is installed. At the end of the city name or ZIP code, type a semicolon (;) then the address.

**Spelling help** is available for custom place entry. If you are not sure of the proper name, type the first few letters (at least two) followed by an asterisk, a comma, and the state abbreviation (example: **ki, nj**). This will invoke a pick list of all possible matches in the PC\*MILER database. In the pick list, use the up and down arrow keys to highlight a selection and press <Enter>.

**NOTE:** A word of caution on Custom Places and latitude/longitude points: The underlying PC\*MILER highway network is broken up into component road segments. The place where two or more road segments join together is called a *node*.

When you use latitude/longitude points as stops within PC\*MILER, coordinates you enter are translated to a point on the PC\*MILER highway network. PC\*MILER then connects this point via a straight “Air Distance” route to the nearest node, not to the nearest road segment. This routing is reported as “Local” on the Detailed Route Listing Report.

Thus you may define a custom place that is 1 mile south of the nearest PC\*MILER road segment, but this point is actually 10 miles from the nearest Node. When you route to this custom place your total mileage will be 9 miles higher than you might expect. You may need to adjust your latitude/longitude coordinates to move the location of a custom place so that when you route to it, PC\*MILER returns a mileage that matches the actual driving distance on your route.

Also, PC\*MILER allows for the use of latitude/longitude points on off-shore islands. It is possible to create custom places up to 150 miles off shore and 150 miles past the last truck-usable road in northern Canada.

When creating custom places using latitude/longitude points you should always test your new places in the following manner:

1. Create the custom place.
2. Run a route with the new custom place as the origin and a nearby PC\*MILER place as the destination.
3. Press the <F5> key to produce the detailed report, make sure that the 'Local' Distance in the first leg listed is reasonable.

If you would like a location permanently added to the PC\*MILER database, contact ALK at [pcmsupport@alk.com](mailto:pcmsupport@alk.com) or (609) 683-0220 ext. 2.

### 3. Delete Place

To delete a custom place name, highlight "Delete Place" in the Custom Place Options menu and press <Enter>. Use the up and down arrows to highlight the name to delete, then press <Enter>.

### 4. Exit

To exit the Custom Place dialog, highlight "Exit" in the Custom Place Options menu and press <Enter>, or use the <ESC> key.

## 4.11 Saving and Retrieving Trips

With PC\*MILER, you can save a list of points to a file for later retrieval. This is particularly useful for trips you run frequently.

To save a route either before or after processing, enter your route in the route entry screen and press <Alt><S>. You will then be prompted for a file name. Valid file names can be up to eight characters in length. Spaces, periods and other punctuation marks are not valid characters.

Once you have entered a file name, PC\*MILER will ask for a trip identifier. This optional memo field, which can be up to 20 characters in length, can be used to record a trip date, driver log number, driver name, or other reference. The notes you enter here will be displayed in the pick list of saved routes that you will use when you retrieve a route.

When the file name and trip ID fields are completed, press <F10> to save the file or <ESC> to abort. Files are saved to **../pcm300/na/options**. The following information is saved along with a route: route options, route parameters, individual stop and leg settings, and reports.

If the file name that you specified is an existing file, PC\*MILER will ask you if you want to append the route to the existing file or overwrite the file. Highlight your choice and press <Enter>. **Remember: the maximum number of stops allowed on a route is 29.**

```

+-----+
| PC*MILER|HAZMAT|STREETS - NA, Practical, Open                               Version 30.0 |
+-----+
|      Zip      City      Status |
|HUB: 08204    Cape May, NJ, Cape May    Found |
|D 1: 19104    Philadelphia, PA, Phil...  Found |
|D 2: 08650    Trenton, NJ, Mercer        Found |
|D 3: 15233    Pittsburgh, PA, Allegheny   Found |
|D 4: 08525    Hopewell, NJ, Mercer        Found |
|D 5: |
|D 6: |
|D 7: |
|D 8: | Route file: NJ15 |
|D 9: | Trip ID: ██████████ |
|D10: |
|D11: |
|D12: |
|D13: |
|D14: |
|D15: |
+-----+
|                                     Enter output file for writing stops |
| F10 - Write to file                                     <Esc> Abort |
+-----+

```

### Route Save Prompt

**Note that appended files do not retain mileage, cost and time information.** (The most common reason why users append files is in order to tally total mileage at some regular interval. This is done by retrieving one large file and running it using ALK's PC\*MILER®|BatchPro™ module in conjunction with PC\*MILER.)

To load a previously saved file, press <Alt><L>. This will bring up a pick list of all your saved trip files. The pick list will include any notes you entered in the memo field when you saved the route. Use the up and down arrow keys to scroll through the pick list and press <Enter> to load the file. Points will be loaded into the PC\*MILER route entry screen in the same order in which they were originally saved. All the settings used to create it will be restored. If the route was run before it was saved, you do not need to rerun it in order to see reports.

**NOTE:** To be successfully retrieved, a trip file cannot have more than 29 stops including the origin. A maximum of 1000 routes can be saved using RouteSave (<Alt><S>). However, the actual number of files you can save is also limited by the amount of disk space available on your computer.

To delete trip files that are no longer needed, press <Alt><D> to bring up a pick list of all your saved files. Scroll through the list and press <Enter> to delete a file, or <ESC> to abort.

## 4.12 Printer Options

When you press <Alt-O>, the following printer options will appear:

```
+-----+  
| 1. Select Printer Port |  
| 2. Printer Lines per Page |  
+-----+
```

### Select Printer Port:

Choosing “Select Printer Port” enables you to designate the printer queue to which PC\*MILER will send reports.

**NOTE:** An additional environment variable `PCM_PRINTER=<print spool name>` (all caps) can be set to ensure that all printouts will be directed to the selected device.

### Printer Lines per Page:

“Printer Lines per Page” allows you to adjust the page layout of reports to accommodate different printers. Enter the desired number of lines per page in the dialog that appears, then press <Enter>.

### Save current settings:

To save the settings you changed, choose “Save current settings” or press <ESC> and type “Y” at the prompt. To exit without saving changes, press <ESC> and type “Y”.



## 5.0 TROUBLESHOOTING and TECHNICAL SUPPORT

Some of the technical support questions received by ALK Technologies are addressed below. Please read this chapter first before contacting us. Also see section 3.1.10 for help with an “**Error**” message during route entry.

If your question is not answered below, here is the contact information you need:

**PC\*MILER Technical Support Staff**  
**Hours: M-F, 8:00 am-5:00 pm EST**  
Phone: (609) 683-0220, ext. 2  
E-mail: [pcmsupport@alk.com](mailto:pcmsupport@alk.com)

When calling, ask for “PC\*MILER Technical Support”. Please be sure to have your PC\*MILER Registration Code, version number, and hardware configuration information (manufacturer, speed, and monitor type) available before you call. If you are contacting us by e-mail, please include the above information in your message and type “PCM UNIX” in the subject line.

### 5.1 Commonly Encountered Problems

Below are some of the most common problems (P) encountered in PC\*MILER and the suggested solutions (S).

**P     Function keys don't work properly.**

- S**
- 1) Make sure that the terminal type set on your system and the terminal type set on your monitor are the same.
  - 2) Make sure that you have definitions for the function keys in your terminal information file. See the technical support information in the Appendix for more details.
  - 3) See section 2.8, *Alternate Keys for UNIX (AIX, Solaris, HP-UX or LINUX)*.

**P     “System File Missing. Execution Terminated “ message appears during execution.**

- S**     Make sure that the path for PC\*MILER data files is set up correctly.

**P** When I use PC\*MILER, parts of the screen are missing. What is wrong?

**S** Make sure that your terminal information mappings are set up correctly.

**P** When I try to print a report using the <F9> key, the screen locks up.

**S** Make sure that the printer name has been entered correctly. Then check to see whether the printer is off-line and/or if the plug or cable is incorrectly connected. Next, check that the printer is not out of paper. Finally, make sure that your printer is connected properly. You should look at the */tmp/pcmiler.info* file for errors.

**P** Sometimes when I am using PC\*MILER, I get strange mileage and/or cities and states are missing.

**S** It is possible that something happened to the files on your hard disk during installation or after general use. Please try reinstalling PC\*MILER. If the problem persists, please contact the ALK Technical Support Hotline.

**P** “Unable to Create Temporary Files. Please Set Your TEMP Environment Variable” message appears when trying to enter PC\*MILER.

**S** Make sure that the TEMP environment variable is set to a directory that can be written to. For instance, if you are using a machine without a hard disk, set it to a network drive instead of the default #.

To do this, place the line **TEMP=<a writeable disk and directory> export TEMP** in your system login script if there isn't one there already. If the TEMP variable already exists, make sure that the directory that is designated by this variable exists.

**P** How do I select a printer other than the default?

**S** You have two options:

- 1) An environment variable can be set as follows:  
*PCM\_PRINTER=<spool name or queue name>*
- 2) Start PC\*MILER. Press <Alt-A>. Choose **select printer port** (number 2) and enter the queue or spool name, then press <Enter>.

Now select startup settings (number **1**), press **<Enter>**, set **use local printer** to “yes”, press **<Enter>**, press **<ESC>** twice. Choose “yes” for **save current settings to disk**.

**P** **How can I use a command other than “LP”, and how do I supply additional command line arguments to the LP command?**

**S** The `PCM_LP_COMMAND` environment variable is included in `PC*MILER`. This environment variable can be used to override the default behavior when printing from `PC*MILER`. If the `PCM_LP_COMMAND` variable is set, `PC*MILER` will execute its contents instead of the `LP` command when printing is activated. It will be executed with a single parameter as the name of the temporary file to be printed. For example:

```
set PCM_LP_COMMAND=/usr/local/bin/my_print.sh
```

The contents of the `my_print.sh` file are:

```
#!/bin/sh  
lp -o nobanner -c $1
```

`PC*MILER` will remove the temporary file as soon as your command terminates. Thus the `-c` option in the `lp` command line in the example above (it forces the spooler to copy the file instead of just linking).

## 5.2 Warning Messages

Warning messages that you may encounter while using `PC*MILER` are listed alphabetically below. These messages will appear near the bottom of the route entry screen. Pressing the **<ESC>** key will reset `PC*MILER` and allow you to continue.

### **Bad Records Found in Input File**

- P** The file that you are trying to load contains an invalid stop.
- S** Make sure that all stops listed in your input file exist in the `PC*MILER` database.

### **City Name Not Found**

- P** `PC*MILER` can not locate the city name in the `PC*MILER` database.
- S** Check the spelling of the city name and reenter. If that does not work, type the first two letters of the city name and use the `[*]` (wild card character) to invoke the city helper. Scroll down the list until you find the city name. It is

possible that a correctly spelled city name is spelled differently in PC\*MILER's database of city points.

### ***Invalid Stop in List - No Route Generated***

- P** One of the stops in the sequence of stops does not have a "Found" label in the status column.
- S** All stops listed between the origin and the final stop must have a "Found" label next to them. Delete or correct the invalid stops. Delete those stops that are blank prior to regenerating the route.

### ***Invalid ZIP Code-ZIP Code Not Found***

- P** PC\*MILER cannot locate the entered ZIP code.
- S** Use the ZIP Code Helper by entering two or three digits and the [\*] character to get a listing of those matching ZIP codes.

### ***Longer Name/ZIP is Needed***

- P** Not enough characters or digits were entered.
- S** At least two digits must be entered when entering in ZIP codes. At least two city characters, the [\*] character, and two state characters must be used when entering city and state information. Re-enter the city and state information using more characters.

### ***No Matching Names Found***

- P** PC\*MILER cannot locate any city names matching the city name abbreviation that you have entered.
- S** Invoke the spelling helper using fewer characters.

### ***No Matching ZIPs Found***

- P** PC\*MILER could not locate any matching ZIP codes.
- S** Enter fewer digits for a larger listing of ZIP codes

### ***No Selection Made***

- P** No selection was made by the user after invoking the Spelling Helper or the ZIP Code Helper.
- S** Re-invoke the Spelling or ZIP Code Helper and press the <Enter> key or press the <ESC> key to continue.

***Not enough stops to sequence***

- P** The user does not have enough stops to sequence.
- S** There must be more than two stops entered to sequence.

***State Not Found***

- P** PC\*MILER cannot locate the state abbreviation.
- S** PC\*MILER assumes that the last two characters entered represent the state abbreviation. The state abbreviation entered is not a valid PC\*MILER state abbreviation. Check the list of state abbreviations for the correct entry using the <F3> key.

***Too many stops in input file***

- P** Using RouteSave, you have created a file that has more than 29 stops. This could occur if too many trips are appended to the same file.
- S** Delete this file and create a new one with no more than 29 stops.

***Two Characters are Required for City Helper***

- P** Only one character besides the [\*] character was entered for the city.
- S** Re-invoke the City Helper using at least two characters for the city name.

***Unable to determine optimal sequence***

- P** PC\*MILER's route sequencing algorithm is unable to determine the optimal sequence of stops. The stops entered cannot be solved within the current memory (RAM) allocation for PC\*MILER.
- S** Enter fewer stops and re-invoke Route Sequencing by pressing the <Alt><F10> keys.

***Unable to open Output File(s) needed***

- P** The user does not have the correct privileges on the network.
- S** Contact your System Administrator to have your privileges changed.

***Unable to print: Printer is not ready***

- P** The user is trying to print when there is a problem with the printer.
- S** Make sure the printer is connected properly and that it is on-line.

**Unable to write options file**

- P** The user does not have the correct privileges.
- S** Contact your System Administrator to have your privileges changed.

**Dynamic linker : ./pcmiler : could not open libxerces-c1\_3.so**

- P** The user cannot run the PC\*MILER interactive program from a command line.
- S** Do not directly run the PC\*MILER executable with a relative reference. During installation a Shell Script called “pcmiler” is written to /usr/bin. This script sets a library path variable to point to the top level of your PC\*MILER installation and then runs the PC\*MILER executable.

**PC\*MILER|Connect Tester will not Run**

- P** PCMSTEST will not run gives **dynamic linker : ./pcmstest : could not open libpcmsrv.so Killed** error.
- S** You must set your library path environment variable to point to the top level of your PC\*MILER installation before you can use PC\*MILER|Connect (see platform-specific examples on next page).

AIX:**LIBPATH=/usr/./pcm300**HP:**SHLIB\_PATH=/usr/./pcm300****No Route Found**

- P** The user has entered a truck-restricted place. Could be an attempt to route between North America and Greenland, Puerto Rico, Bermuda, or Hawaii.
- S** Try entering an alternate ZIP code.

### 5.3 Database Support

The ALK North American Highway Network, the primary database used by PC\*MILER products, undergoes constant revision. Revisions include (but are not limited to) addition of new roads; upgrades of improved sections of highway; and addition of new Key Cities.

ALK is dedicated to maintaining a highway network of the highest quality and welcomes user input and comments. If you encounter any problems related to mileage, routing or highway names, please print a copy of the route listing highlighting the problem (such as incorrect road name, mileage, city name, ZIP code) and send it to:

PC\*MILER PRODUCTS DIVISION  
ALK TECHNOLOGIES, INC.  
1 Independence Way, Suite 400  
Princeton, NJ 08540  
FAX: (609) 683-0290

### 5.4 PC\*MILER Updates

PC\*MILER for UNIX updates are offered on an annual basis. Updates include minor revisions to the PC\*MILER software, the addition of major new features, and updates to the North American Highway Network and Local Streets databases and various other databases used in route calculations. To order your update today, contact your PC\*MILER dealer or ALK Technologies directly.

**ALK Technologies, Inc.**  
1 Independence Way, Suite 400  
Princeton, NJ 08540  
PC\*MILER SALES: 1-800-377-MILE  
[www.pcmiler.com](http://www.pcmiler.com)

## 6.0 ALK TECHNOLOGIES, INC.

ALK® Technologies, Inc., a Trimble® company headquartered in Princeton, NJ, was founded in 1979 as a transportation industry pioneer. ALK harnesses the power of information technology to enhance transportation and mobility, supporting competitive advantage and improved quality of life.

Today, ALK is a global leader in GeoLogistics® solutions and navigation software, focused on developing innovative solutions for transportation, logistics, mobile workforces and consumers. Product lines include award-winning CoPilot®, a leading source of GPS navigation software for fleets, mobile operators, hardware OEMs, systems integrators, professional drivers and consumers. ALK's PC\*MILER® is widely recognized as a transportation industry standard for routing, mileage and mapping. ALK® Maps is a development platform designed for the transportation industry and provides commercial routing, geocoding and mapping visualization for enterprise applications.

For detailed product information, visit us at  
[www.alk.com](http://www.alk.com) or [www.pcmiler.com](http://www.pcmiler.com).





## **APPENDICES:**

**Appendix A: Technical Notes**

**Appendix B: ALK's Interface Modules**

**Appendix C: Access Policies for the National Network**

**Appendix D: Detailed Instructions for Maintaining PC\*MILER**

**Appendix E: Valid Entries for Street Addresses**

**Appendix F: PC\*MILER Default Road Speeds – North America**

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## Appendix A: Technical Notes

### 1. File Permissions

All PC\*MILER data files reside in the **pcm300** directory. Your pcm300 directory will be created below a directory you specify at installation. Routes, trip/route options, and custom places are saved in the **../pcm300/na/options** directory. If the system administrator wishes to allow all or a group of users to be able to save routes, the above routes directory should be accessible to everybody or to a certain group. The majority of the data files should be writable only by root (or bin). However, certain files containing configurable settings must be writable by everybody or by a certain group of users who are allowed to change the PC\*MILER configuration.

The same goes for the *\*.cfg* files and *synonym.tab*. Set the permissions according to your needs. These files store run-time settings.

Users, especially non-root users, are discouraged from modifying *user.cfg*. Permissions as they are set out of the box allow only root to modify *user.cfg*.

The file *pcmiler.inf* **must** be writable by everybody or the program will not run.

### 2. Memory Allocation Strategy

PC\*MILER allocates memory dynamically as its memory requirements increase. It is perfectly normal for the PC\*MILER process to grow in size up to about 12 megabytes. Average memory consumption is about 4 megabytes per PC\*MILER process. PC\*MILER won't release the memory back to the operating system until it exits. That's why it is important to have adequate swap space (virtual memory, paging space) if you plan to have many users run PC\*MILER simultaneously.

If you must run PC\*MILER on a low-end machine with little RAM and swap space, you may have to limit the user memory quotas in order to prevent PC\*MILER from growing above a certain limit. Expect a decrease in performance if you choose this option. Consult your operating system manual for further instructions.

Memory is not shared between separate PC\*MILER processes. Each process maintains its own database cache in memory and might grow quite large.

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## Appendix B: ALK's Interface Modules

### PC\*MILER®|BatchPro™, PCMServe™, and PC\*MILER®|Connect

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#### PC\*MILER®|BatchPro™

PC\*MILER|BatchPro gives you the power and flexibility to handle tasks involving the processing of large volumes of Origin/Destination records. You do not need to enter them into PC\*MILER and run routes one by one. A large ASCII database of O/D records, created using an electronic spreadsheet program, text file editor, or any other program, can be processed automatically using PC\*MILER|BatchPro.

Once input and format files are created, PC\*MILER|BatchPro can operate. You can issue the “run” command from the shell prompt or, in situations where PC\*MILER is integrated with other software programs, the command can be issued by the host program. This results in the creation of a number of optional mileage files, offering the same variety of information that can be generated interactively with PC\*MILER. Where PC\*MILER is integrated with other software programs, the output files can be read, interpreted, and used by the host program to satisfy its internal mileage requirements.

PC\*MILER|BatchPro memory requirements are the same as for PC\*MILER plus an additional 500 K of storage space.

Platforms: LAN, RS/6000, Sun Sparc, HP-9000.

---

#### PCMServe™

*(Not available for Linux)* PCMServe is a legacy “client/server” application. The “server” program runs constantly, ready to answer a mileage question asked by the “client” application. Software that frequently asks for a single mileage rather than occasionally asking for a larger set of mileage will perform better with PCMServe than with PC\*MILER|BatchPro, because PCMServe avoids the overhead of repeatedly restarting PC\*MILER|BatchPro. PCMServe easily handles multiple clients, responding to each mileage request on a first-come, first-serve basis.

PCMServe memory requirements are the same as for PC\*MILER plus an additional 4 MB of storage space.

Platforms: LAN, RS/6000, Sun Sparc, HP-9000.

---

**NOTE:** PC\*MILER|BatchPro and PCMServe require PC\*MILER.

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## PC\*MILER®|Connect

PC\*MILER|Connect, ALK's Distance and Routing Shared Library, is the only integration tool which lets you interface the full range of PC\*MILER-UNIX routes, mileage and reports with your transportation and logistics management software. Use PC\*MILER|Connect in multi-threaded environments such as those supported by Solaris and AIX.

PCM|Connect memory requirements are the same as for PC\*MILER plus an additional 4 MB of storage space.

Platforms: LAN, RS/6000, Sun Sparc, HP-9000.

---

**NOTE:** PC\*MILER|Connect requires PC\*MILER.

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## Appendix C: National Network Access Policies to Terminals and Services

### Reasonable Access Defined

Reasonable access is the deviation allowed between the specified truck network and any allowable stops. A stop is typically defined as a place of loading or unloading, or facilities for food, fuel, repairs and rest. In all cases, local signs and warnings prohibiting truck access or providing an applicable restriction take precedence over reasonable access rules. In some states the deviation allowed from the National Network or 53 Foot Designated Truck Network may vary depending on the roads used to get to the stop. If this is the case, we have differentiated between reasonable access from the truck route and on a state highway versus local roads.

For detailed information about pre-approved routes, contact the individual states.

### PC\*MILER Designated Road Categories

In the PC\*MILER database, roads designated for 102” wide, 53’ long trailers or twin 28’ long trailers are coded in three ways:

- **National Network** – These are the original roads designated by the states and approved by FHWA circa 1990, or (rarely) changes submitted by the states to FHWA post-1990. FHWA requires that the states allow at least 1 mile access distance to/from these roads, but the states are free to specify a longer access distance if they wish. Many states (especially in the west) have size limits for their entire state that equal or exceed this size of equipment in both width and length. In PC\*MILER, these roads are considered to have “unlimited” access distance. Some states in the east restrict this equipment to designated roads, but allow unlimited access “by the shortest and/or most direct route” (or similar language), and roads in these states also have “unlimited” access distance.
- **State Oversize** – This category includes additional roads designated by the states since 1990, or which they have not submitted to FHWA for approval since 1990, to which the same access distance applies as to the National network in that state.
- **Oversize Access** – This category includes additional roads designated by the states to which a different (shorter, often zero) access distance applies. Usually these are county highways or local streets that lead all the way from the National Network and/or State Oversize network to the entrance to an industrial park, truck terminal, distribution center, factory, warehouse, etc.

Users will receive a “Not Designated” warning in the Detailed Route report if National Network and 53’ Trailers or Twins are checked in Route Options, and

- a. the route uses a road that is not designated National Network, State Oversize, or Oversize Access to go between roads that are designated National Network, State Oversize, or Oversize Access, OR
- b. the route uses a road that is not designated National Network, State Oversize, or Oversize Access to access an origin, destination, or stop further than the distances specified in the regulations.

## Allowable Distance by Jurisdiction

The table below shows the allowable distance (in miles) on truck access roads in North American jurisdictions, by PC\*MILER road category as described above. Columns in the table are:

- Column 1 - Jurisdiction abbreviation
- Column 2 - Jurisdiction FIPS code
- Column 3 - Access miles from National Network on US and State numbered highways
- Column 4 - Access miles from National Network on all other roads
- Column 5 - Access miles from State Oversize on US and State numbered highways
- Column 6 - Access miles from State Oversize on all other roads
- Column 7 - Access miles from Oversize Access

**NOTE:** “Unlimited access” in this table is as defined in the description of PC\*MILER designated road categories above.

Jurisdiction Abbrev.	FIPS	3 - From Nat'l Netw on US & State Highways	4 - From Nat'l Netw on other roads	5 - From State Oversize on US & State Highways	6 - From State Oversize on other roads	7 - From Oversize Access
AL	1	1	1	1	1	0
AK	2	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
AZ	4	1	1	1	1	0
AR	5	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CA	6	1	1	1	1	0
CO	8	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CT	9	1	1	1	1	0
DE	10	1	1	1	1	0
DC	11	1	1	1	1	0
FL	12	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
GA	13	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0

<b>Jurisdiction Abbrev.</b>	<b>FIPS</b>	<b>3 - From Nat'l Netw on US &amp; State Highways</b>	<b>4 - From Nat'l Netw on other roads</b>	<b>5 - From State Oversize on US &amp; State Highways</b>	<b>6 - From State Oversize on other roads</b>	<b>7 - From Oversize Access</b>
HI	15	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
ID	16	1	1	1	1	0
IL	17	5	1	5	1	0
IN	18	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
IA	19	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
KS	20	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
KY	21	5	1	5	1	0
LA	22	10	10	10	10	0
ME	23	1	1	1	1	0
MD	24	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MA	25	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MI	26	5	1	5	1	0
MN	27	1	1	1	1	0
MS	28	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MO	29	10	10	10	10	0
MT	30	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NE	31	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NV	32	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NH	33	1	1	1	1	0
NJ	34	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NM	35	20	20	20	20	0
NY	36	1	1	1	1	0
NC	37	3	3	3	3	0
ND	38	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
OH	39	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
OK	40	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
OR	41	1	1	1	1	0
PA	42	1	1	1	1	0
RI	44	1	1	1	1	0
SC	45	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SD	46	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TN	47	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TX	48	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
UT	49	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
VT	50	1	1	1	1	0
VA	51	1	1	1	1	0
WA	53	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
WV	54	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0

<b>Jurisdiction Abbrev.</b>	<b>FIPS</b>	<b>3 - From Nat'l Netw on US &amp; State Highways</b>	<b>4 - From Nat'l Netw on other roads</b>	<b>5 - From State Oversize on US &amp; State Highways</b>	<b>6 - From State Oversize on other roads</b>	<b>7 - From Oversize Access</b>
WI	55	15	15	15	15	0
WY	56	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
PR	72	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NU	80	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
YT	81	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NT	82	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
BC	83	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
AB	84	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SK	85	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MB	86	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
ON	87	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
QC	88	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NB	89	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
PE	90	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NS	91	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NL	92	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
EM	93	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
BD	130	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
GL	131	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
BH	132	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CS	133	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
ES	134	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
GT	135	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
HO	136	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NU	137	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
PM	138	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
AG	139	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
BJ	140	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
BS	141	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CP	142	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CH	143	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CI	144	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CU	145	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CL	146	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
DF	147	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
DG	148	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
GR	149	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
GJ	150	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0



<b>Jurisdiction Abbrev.</b>	<b>FIPS</b>	<b>3 - From Nat'l Netw on US &amp; State Highways</b>	<b>4 - From Nat'l Netw on other roads</b>	<b>5 - From State Oversize on US &amp; State Highways</b>	<b>6 - From State Oversize on other roads</b>	<b>7 - From Oversize Access</b>
HG	151	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
JA	152	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MH	154	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MR	155	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NA	156	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NX	157	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
OA	158	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
PU	159	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
QA	160	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
QR	161	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SI	162	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SL	163	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SO	164	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TA	165	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TM	166	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TL	167	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
VZ	168	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
YC	169	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
ZT	170	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
ACT	200	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NSW	201	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NT	202	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
QLD	203	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SA	204	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TAS	205	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
VIC	206	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
WA	207	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0

## Appendix D: Detailed Instructions for Maintaining PC\*MILER

PC\* MILER does not require much in the way of ongoing maintenance. There are a few files used by PC\*MILER to store your custom trip and custom place options that should be backed up. Custom trip options are saved in the **/usr/./pcm300/na/options** directory. Saved trips are also kept in this directory. Custom places are saved in the **../pcm300/na/options/user\_places/user** directory.

### Backing Up Custom Place and Saved Trip Files

To back up these files, you need to first determine the exact location of your PC\*MILER installation. You can do this by examining the **pcmiler** startup script located in **/usr/bin**. From a command prompt type:

```
cd <space>/usr/bin <Enter>
cat pcmiler <Enter>
```

A line something like this will be returned:

```
LD_LIBRARY_PATH=/usr/local/pcm300 /usr/local/pcm300/pcmiler $*
```

The location of your PC\*MILER installation is found after the = sign.

In the **../pcm300/na/options** directory you will see these critical files: **/usertrip.dat** and **/userstop.dat**. These files contain all of your trip options (e.g. routing type and road speeds).

Saved trips are kept in two, or at times, three files:

- \*.in files contain the stops
- \*.mil files contain the distance and route information
- \*.opt files contain options

Custom places are stored in the **../pcm300/na/options/user\_places/user** directory in the following files:

poi.ccp	poi.nms	poi.ylu
poi.clu	poi.plu	poi.ynm
poi.cnm	poi.pnm	version.dat
poi.gnf	poi.set	
poi.gnx	poi.slu	
poi.inf	poi.snm	
poi.loc	poi.typ2	

---

**NOTE:** Reinstalling PC\*MILER Version 30 will cause the loss of any saved custom route options.

---

Overwriting of custom trip options only occurs during reinstallations of the same PC\*MILER version. For instance, installing Version 30 to replace Version 29 will not affect custom settings. They will only be overwritten if you install Version 30 on top of a previous installation of Version 30.

If you need to reinstall PC\*MILER Version 30 and would like to save the changes you have made to your trip options, make a backup copy of **../pmw300/na/options/usertrip.dat** and **userstop.dat** as follows:

Assuming your PC\*MILER is installed in **/usr/local/pcm300**, from a command prompt type:

```
cd<space>/usr/ local/pcm300/na/options <Enter>
```

To save route options, type:

```
mv<space>usertrip.dat<space>usertrip.custom  
mv<space>/userstop.dat<space>userstop.custom
```

To save custom places:

```
cd<space>/usr/ local/pcm300/na/options/user_places/user<Enter>  
mv<space>Poi.ccp<space>Poi.ccp.custom  
mv<space>Poi.clu<space>Poi.clu.custom  
mv<space>Poi.cnm<space>Poi.cnm.custom  
mv<space>Poi.gnf<space>Poi.gnf.custom  
mv<space>Poi.gnx<space>Poi.gnx.custom  
mv<space>Poi.inf<space>Poi.inf.custom  
mv<space>Poi.loc<space>Poi.loc.custom  
mv<space>Poi.nms<space>Poi.nms.custom  
mv<space>Poi.plu<space>Poi.plu.custom  
mv<space>Poi.pnm<space>Poi.pnm.custom  
mv<space>Poi.set<space>Poi.set.custom  
mv<space>Poi.slu<space>Poi.slu.custom  
mv<space>Poi.snm<space>Poi.snm.custom  
mv<space>Poi.typ2<space>Poi.typ2.custom  
mv<space>Poi.ylu<space>Poi.ylu.custom  
mv<space>Poi.ynm<space>Poi.ynm.custom  
mv<space>version.dat<space>version.dat
```

To restore your saved copies, first rename your new files:

Assuming your PC\*MILER is installed in **/usr/local/pcm300**, from a command prompt type:

```
cd<space>/usr/ local/pcm300/na/options <Enter>  
mv<space>usertrip.dat<space>usertrip.old  
mv<space>userstop.dat<space>userstop.old
```

And for Custom Places:

```
cd<space>/usr/ local/pcm300/na/options/user_places/user <Enter>
mv<space>Poi.ccp<space>Poi.ccp.old
mv<space>Poi.clu<space>Poi.clu.old
mv<space>Poi.cnm<space>Poi.cnm.old
mv<space>Poi.gnf<space>Poi.gnf.old
mv<space>Poi.gnx<space>Poi.gnx.old
mv<space>Poi.inf<space>Poi.inf.old
mv<space>Poi.loc<space>Poi.loc.old
mv<space>Poi.nms<space>Poi.nms old
mv<space>Poi.plu<space>Poi.plu.old
mv<space>Poi.pnm<space>Poi.pnm.old
mv<space>Poi.set<space>Poi.set.old
mv<space>Poi.slu<space>Poi.slu.old
mv<space>Poi.snm<space>Poi.snm.old
mv<space>Poi.typ2<space>Poi.typ2.old
mv<space>Poi.ylu<space>Poi.ylu.old
mv<space>Poi.ynm<space>Poi.ynm.old
mv<space>version.dat<space>version.dat.old
```

Then restore your backups:

```
cd<space>/usr/ local/pcm300/na/options <Enter>
mv<space>usertrip.custom<space>usertrip.dat
mv<space>userstop.custom<space>userstop.dat

cd<space>/usr/ local/pcm300/na/options/user_places/user <Enter>
mv<space>Poi.ccp.custom<space>Poi.ccp.old
mv<space>Poi.clu.custom <space>Poi.clu.old
mv<space>Poi.cnm.custom <space>Poi.cnm.old
mv<space>Poi.gnf.custom <space>Poi.gnf.old
mv<space>Poi.gnx.custom <space>Poi.gnx.old
mv<space>Poi.inf.custom <space>Poi.inf.old
mv<space>Poi.loc.custom <space>Poi.loc.old
mv<space>Poi.nms.custom <space>Poi.nms old
mv<space>Poi.plu.custom <space>Poi.plu.old
mv<space>Poi.pnm.custom <space>Poi.pnm.old
mv<space>Poi.set.custom <space>Poi.set.old
mv<space>Poi.slu.custom <space>Poi.slu.old
mv<space>Poi.snm.custom <space>Poi.snm.old
mv<space>Poi.typ2.custom <space>Poi.typ2.old
mv<space>Poi.ylu.custom <space>Poi.ylu.old
mv<space>Poi.ynm.custom <space>Poi.ynm.old
mv<space>version.dat.custom <space>version.dat.old
```

## Appendix E: Valid Entries for Street Addresses

For PC\*MILER|Streets users, valid directional and street type abbreviations for street address entry are listed below. Spelling out the whole word is also acceptable. Capitalization is not necessary.

### Directional Synonyms for Address Entry – Prefix or Suffix

<u>Full Spelling</u>	<u>Valid in PC*MILER</u>
EAST	E
EAST	E.
NORTH	N
NORTH	N.
NORTH	NO
NORTH	NO.
NORTHEAST	N-E
NORTHEAST	N.E
NORTHEAST	N.E.
NORTHEAST	NE
NORTHEAST	NE.
NORTHEAST	NORTH-EAST
NORTHWEST	N-W
NORTHWEST	N.W
NORTHWEST.	N.W.
NORTHWEST	NORTH-WEST
NORTHWEST	NW
NORTHWEST	NW.
SOUTH	S
SOUTH	S.
SOUTH	SO
SOUTH	SO.
SOUTHEAST	S-E
SOUTHEAST	S.E
SOUTHEAST	S.E.
SOUTHEAST	SE
SOUTHEAST	SE.
SOUTHEAST	SOUTH-EAST
SOUTHWEST	S-W
SOUTHWEST	S.W
SOUTHWEST	S.W.
SOUTHWEST	SOUTH-WEST
SOUTHWEST	SW
SOUTHWEST	SW.
WEST	W
WEST	W.

## Synonyms for Street Types

<u>Full Spelling</u>	<u>Valid in PC*MILER</u>		
ALLEY	AL	BRIDGE	BRG.
ALLEY	AL.	BROOK	BRK
ALLEY	ALL	BROOK	BRK.
ALLEY	ALL.	BROOKS	BRKS
ALLEY	ALY	BROOKS	BRKS.
ALLEY	ALY.	BUTTE	BRKS.
ARCADE	ARC	BUTTE	BUT
ARCADE	ARC.	BUTTE	BUT.
AVENUE	AV	BYPASS	BYP
AVENUE	AV.	BYPASS	BYP.
AVENUE	AVDA	CALE	CAL
AVENUE	AVDA.	CALE	CAL.
AVENUE	AVE	CAPE	CPE
AVENUE	AVE.	CAPE	CPE.
AVENUE	AVEN	CARREFOUR	CAR
AVENUE	AVEN.	CARREFOUR	CAR.
AVENUE	AVENIDA	CARRIERE	CARE
AVENUE	AVENIDA.	CARRIERE	CARE.
AVENUE DES	AV DES	CAUSEWAY	CAUSE
AVENUE DES	AV DES.	CAUSEWAY	CAUSE.
BASSIN	BAS	CAUSEWAY	CSWY
BASSIN	BAS.	CAUSEWAY	CSWY.
BASSINS	BAS	CAVEE	CAV
BASSINS	BAS.	CAVEE	CAV.
BEACH	BCH	CENTER	CNTR
BEACH	BCH.	CENTER	CNTR.
BEND	BND	CENTER	CTR
BEND	BND.	CENTER	CTR.
BERGE	BER	CHATEAU	CHA
BERGE	BER.	CHATEAU	CHA.
BLUFFS	BLFS	CHEMIN	CH
BLUFFS	BLFS.	CHEMIN	CH.
BOUCLE	BCLE	CHEMIN	CHE
BOUCLE	BCLE.	CHEMIN	CHE.
BOULEVARD	BD	CHEMINEMENT	CHEM
BOULEVARD	BD.	CHEMINEMENT	CHEM.
BOULEVARD	BL	CIRCLE	CIR
BOULEVARD	BL.	CIRCLE	CIR.
BOULEVARD	BLVD	CIRCLE	CIRC
BOULEVARD	BLVD.	CIRCLE	CIRC.
BOULEVARD	BOUL	CIRCLES	CIRS
BOULEVARD	BOUL.	CIRCLES	CIRS.
BRIDGE	BRDG	CLIFFS	CLFS
BRIDGE	BRDG.	CLIFFS	CLFS.
BRIDGE	BRG	CITE	CIT
		CITE	CIT.
		CLOS	CL
		CLOS	CL.
		COLONEL	COL
		COLONEL	COL.

COMMON	CMN	ESPLANADE	ESP
COMMON	CMN.	ESTATE	EST
COMMONS	CMN	ESTATE	EST.
COMMONS	CMN.	ESTATES	ESTS
COMMONS	CMNS	ESTATES	ESTS.
COMMONS	CMNS.	EXPRESSWAY	EXPR
CORNER	COR	EXPRESSWAY	EXPR.
CORNER	COR.	EXPRESSWAY	EXPY
CORNERS	CORS	EXPRESSWAY	EXPY.
CORNERS	CORS.	EXPRESSWAY	EXWY
CONTOUR	CTR	EXPRESSWAY	EXWY.
CORNICHE	CORN	EXTENSION	EXT
COTE	COT	EXTENSION	EXT.
COUR	C	EXTENSIONS	EXTS
COUR	CR	EXTENSIONS	EXTS.
COURS	CRS	FALLS	FLS
COURT	CRT	FALLS	FLS.
COURT	CRT.	FARM-TO-MARKET	F-M
COURT	CT	FARM-TO-MARKET	FM
COURT	CT.	FARM-TO-MARKET	FM.
COURTS	CTS	FAUBOURG	FAUB
COURTS	CTS.	FAUBOURG	FAUB.
COVE	CV	FIELD	FLD
COVE	CV.	FIELD	FLD.
COVES	CVS	FIELDS	FLDS
COVES	CVS.	FIELDS	FLDS.
CREEK	CRK	FLATS	FLTS
CREEK	CRK.	FLATS	FLTS.
CRESCENT	CRES	FORKS	FRKS
CRESCENT	CRES.	FORKS	FRKS.
CRESCENT	CRESC	FORUM	FORM
CRESCENT	CRESC.	FREEWAY	FRWY
CRESCENT	CRESC.	FREEWAY	FRWY.
CRESCENT	CRESNT	FREEWAY	FRWY.
CREST	CRST	GLEN	GLN
CREST	CRST.	GLEN	GLN.
CROSSING	CRSG	GRAND BOULEVARD	GBD
CROSSING	CRSG.	GRAND BOULEVARD	GBLVD
CROSSING	XING	GREEN	GRN
CROSSING	XING.	GREEN	GRN.
CROSSROADS	XRDS	GREENS	GRNS
CROSSROADS	XRDS.	GREENS	GRNS.
DESCENTE	DESC	GROVE	GRV
DRIVE	DR	GROVE	GRV.
DRIVE	DR.	GROVES	GRVS
DRIVE	DRV	GROVES	GRVS.
DRIVE	DRV.	GRANDE RUE	GR
DRIVES	DRS	GRIMPETTE	GRP
DRIVES	DRS.	GRIMPETTE	GRP.
ENCLAVE	ENC	HARBOR	HBR
ENCLOS	ENC		
SPACE	ESP		

HAVEN	HVN	LOOP	LP.
HAVEN	HVN.	LOTISSEMENT	LOT
HEIGHTS	HTS	LOTISSEMENT	LOT.
HIGHWAY	HWY	MALL	ML
HIGHWAY	HWY.	MALL	ML.
HIGHWAY	HY	MANOR	MNR
HIGHWAY	HY.	MANOR	MNR.
HIGHWAY	HIWAY	MANORS	MNRS
HIGHWAY	HIWAY.	MANORS	MNRS.
HILL	HL	MEADOW	MDW
HILLS	HLS	MEADOW	MDW.
HILLS	HLS.	MEADOWS	MDWS
HOLLOW	HOLW	MEADOWS	MDWS.
HOLLOW	HOLW.	MILLS	MLS
IMMEUBLE	IMM	MILLS	MLS.
IMMEUBLE	IMM.	MOTORWAY	MRWY
IMPASSE	IMP	MOTORWAY	MRWY.
IMPASSE	IMP.	MOTORWAY	MTRWY
ISLAND	IS	MOTORWAY	MTRWY.
ISLAND	IS.	MOTORWAY	MTWY
JARDIN	J	MOTORWAY	MTWY.
KEY	KY	MOUNT	MT
KEY	KY.	MOUNT	MT.
KEYS	KYS	OVERPASS	OPAS
KEYS	KYS.	OVERPASS	OPAS.
KNOLL	KNL	OVERPASS	OVER
KNOLL	KNL.	OVERPASS	OVER.
KNOLLS	KNLS	OVERPASS	OVPS
KNOLLS	KNLS.	OVERPASS	OVPS.
LAKES	LKS	OVERPASS	OVRPS
LAKES	LKS.	OVERPASS	OVRPS.
LAND	LAND	PARK	PK
LAND	LAND.	PARK	PK.
LANDING	LNDG	PARK	PRK
LANDING	LNDG.	PARK	PRK.
LANE	LA	PARKWAY	PKY
LANE	LA.	PARKWAY	PKY.
LANE	LN	PARKWAY	PKW
LANE	LN.	PARKWAY	PKW.
LEVEE	LEV	PARKWAY	PKWY
LIEU DIT	L-D	PARKWAY	PKWY.
LIEU DIT	LD	PARKWAY	PKWAY
LIEU DIT	LIEU	PARKWAY	PKWAY.
LIEU-DIT	L-D	PARKWAY	PRKWY
LIEU-DIT	LD	PARKWAY	PRKWY.
LIEU-DIT	LIEU	PARVIS	PAR
LIGHTS	LGTS	PASEO	PSO
LIGHTS	LGTS.	PASS	PS
LOCKS	LCKS	PASS	PS.
LOCKS	LCKS.	PASSAGE	PASS
LOOP	LP	PATH	PTH



PATH	PTH.	RIDGES	RDGS.
PETITE AVENUE	PTA	ROAD	RD
PETITE IMPASSE	PTI	ROAD	RD.
PETITE ROUTE	PRT	ROADS	RDS
PETITE RUE	PTR	ROADS	RDS.
PIKE	PKE	ROCADE	ROC
PIKE	PKE.	ROCADE	ROC.
PINE	PNE	ROND POINT	ROND
PINE	PNE.	ROND POINT	RP
PINES	PNES	ROND POINT	RP.
PINES	PNES.	ROND-POINT	ROND
PLACE	PL	ROND-POINT	RP
PLACE	PL.	ROND-POINT	RP.
PLACE	PLA	ROTONDE	ROT
PLACE	PLA.	ROTONDE	RTD
PLACE	PLAC	ROUTE	RTE
PLACE	PLAC.	RUE	R
PLACE	PLC	RUE	R.
PLACE	PLC.	RUE DE	RUE
PLAINS	PLNS	SENTIER	SENT
PLAINS	PLNS.	SENTIER	SENT.
PLAZA	PLZ	SHOALS	SHLS
PLAZA	PLZ.	SHOALS	SHLS.
POINT	PNT	SHORES	SHRS
POINT	PNT.	SHORES	SHRS.
POINT	PT	SKYWAY	SKWY
POINT	PT.	SKYWAY	SKWY.
POINTS	PTS	SPRINGS	SPGS
POINTS	PTS.	SPRINGS	SPGS.
PORTE	PTE	SQUARE	SQ
POURTOUR	POUR	SQUARE	SQ.
POURTOUR	POUR.	SQUARE	SQR
PRAIRIE	PR	SQUARE	SQR.
PRAIRIE	PR.	SQUARES	SQS
PROMENADE	PROM	SQUARES	SQS.
QUAI	Q	STRASSE	STR
QUAI	Q.	STRASSE	STR.
QUARTIER	QUA	STREET	ST
RACCOURCI	RAC	STREET	ST.
RACCOURCI	RAC.	STREET	STR
RAMP	RMP	STREET	STR.
RAMP	RMP.	STREETS	STS
RAMPE	RPE	STREETS	STS.
RAPIDS	RPDS	TERRACE	TER
RAPIDS	RPDS.	TERRACE	TER.
REMPART	REM	TERRACE	TERR
RESIDENCE	RES	TERRACE	TERR.
RESIDENCE	RES.	TERRACE	TRC
RIDGE	RDG	TERRACE	TRC.
RIDGE	RDG.	TERRASSE	TER
RIDGES	RDGS	TERTRE	TRT

THROUGHWAY	THRUWAY	WAY	WY
THROUGHWAY	THWY	WAY	WY.
THROUGHWAY	THWY.	WAYS	WAYS
TOUR	TR	WAYS	WAYS.
TOUR	TR.	WELLS	WLS
TRACK	TRAK	WELLS	WLS.
TRACK	TRAK.	ZONE ARTISANALE	ZA
TRAFFICWAY	TFCWY	ZONE D'ACTIVITE	Z.A.
TRAFFICWAY	TFCWY.	ZONE D'ACTIVITE	ZA.
TRAFFICWAY	TFWY	ZONE INDUSTRIELLE	Z.I
TRAFFICWAY	TFWY.	ZONE INDUSTRIELLE	Z.I.
TRAFFICWAY	TRFY	ZONE INDUSTRIELLE	ZI
TRAFFICWAY	TRFY.		
TRAFFICWAY	TRWY		
TRAFFICWAY	TRWY.		
TRAIL	TRL		
TRAIL	TRL.		
TRAILER	TRLR		
TRAILER	TRLR.		
TRAVERSE	TRA		
TUNNEL	TUN		
TUNNEL	TUN.		
TUNNEL	TUNL		
TUNNEL	TUNL.		
TUNNEL	TUNN		
TUNNEL	TUNN.		
TURNPIKE	TPK		
TURNPIKE	TPK.		
TURNPIKE	TPKE		
TURNPIKE	TPKE.		
UNDERPASS	UNP		
UNDERPASS	UNP.		
UNDERPASS	UNPS		
UNDERPASS	UNPS.		
UNDERPASS	UNRPS		
UNDERPASS	UNRPS.		
UNDERPASS	UPAS		
UNDERPASS	UPAS.		
VENELLE	VEN		
VIEILLE ROUTE	VRTE		
VIEUX CHEMIN	VCHE		
VIEW	VW		
VIEW	VW.		
VIEWS	VWS		
VIEWS	VWS.		
VILLAGE	VGE		
VILLAGE	VLG		
VILLAGE	VLG.		
VILLAGES	VLGS		
VILLAGES	VLGS.		
VOIE	V		

## Appendix F: PC\*MILER Default Average Road Speeds – North America

North America State	Abrev.	Interstate Highway		Divided Highway		Primary Highway		Secondary Highway		Local		Ferries	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Alberta	AB	62	62	62	43	56	37	43	37	31	25	21	21
Aguascalientes	AG	68	62	56	43	49	37	43	31	31	25	23	23
Alaska	AK	65	55	55	40	45	35	45	35	30	25	17	17
Alabama	AL	68	60	55	40	45	35	45	35	30	25	15	15
Arkansas	AR	65	55	55	40	45	35	45	35	35	25	15	15
Arizona	AZ	68	60	60	40	50	35	45	35	35	25	15	15
British Columbia	BC	68	62	62	37	56	37	43	37	31	25	21	21
Bermuda	BD	56	49	49	43	43	37	31	31	25	25	21	21
Belize	BH	62	56	56	43	49	37	37	31	31	25	21	21
Baja California	BJ	68	62	56	43	49	37	43	31	31	25	23	23
Baja California Sur	BS	68	62	56	43	49	37	43	31	31	25	23	23
California	CA	55	55	55	40	45	30	40	30	30	25	16	16
Chiapas	CH	68	62	56	43	49	37	43	31	31	25	23	23
Chihuahua	CI	68	62	56	43	49	37	43	31	31	25	23	23
Colima	CL	68	62	56	43	49	37	43	31	31	25	23	23
Colorado	CO	68	60	60	40	50	35	45	35	35	25	15	15
Campeche	CP	68	62	56	43	49	37	43	31	31	25	23	23
Costa Rica	CS	56	49	49	43	43	37	31	31	25	25	21	21
Connecticut	CT	65	55	55	40	45	30	35	30	25	25	13	13
Coahuila de Zaragoza	CU	68	62	56	43	49	37	43	31	31	25	23	23
Dist. of Columbia	DC	55	50	45	40	40	35	35	30	25	25	13	13
Delaware	DE	65	55	55	40	45	30	35	30	25	25	13	13
Distrito Federal	DF	62	62	43	43	37	37	31	31	25	25	23	23

North America State	Abrev.	Interstate Highway		Divided Highway		Primary Highway		Secondary Highway		Local		Ferries	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Durango	DG	68	62	56	43	49	37	43	31	31	25	23	23
Mexico (Estado)	EM	68	62	56	43	49	37	43	31	31	25	23	23
El Salvador	ES	62	56	56	43	49	37	37	31	31	25	21	21
Florida	FL	68	60	55	40	45	35	45	35	30	25	13	13
Georgia	GA	68	60	55	40	45	35	40	30	30	25	13	13
Guanajuato	GJ	68	62	56	43	49	37	43	31	31	25	23	23
Greenland	GL	45	45	45	35	35	35	35	25	25	20	13	13
Guerrero	GR	68	62	56	43	49	37	43	31	31	25	23	23
Guatemala	GT	62	56	56	43	49	37	37	31	31	25	21	21
Hidalgo	HG	68	62	56	43	49	37	43	31	31	25	23	23
Hawaii	HI	60	50	45	35	35	35	25	25	25	25	13	13
Honduras	HO	62	56	56	43	49	37	37	31	31	25	21	21
Iowa	IA	68	55	60	40	45	35	45	35	35	25	15	15
Idaho	ID	65	60	60	40	50	35	45	35	35	25	15	15
Illinois	IL	65	55	55	40	45	35	45	35	35	25	15	15
Indiana	IN	65	55	55	40	45	35	40	30	30	25	15	15
Jalisco	JA	68	62	56	43	49	37	43	31	31	25	23	23
Kansas	KS	68	60	60	40	50	35	45	35	35	25	15	15
Kentucky	KY	65	60	55	40	45	35	40	30	30	25	15	15
Louisiana	LA	68	60	55	40	45	35	45	35	35	25	15	15
Massachusetts	MA	65	60	55	40	45	30	35	30	25	25	13	13
Manitoba	MB	68	62	62	43	56	37	43	37	31	25	21	21
Maryland	MD	65	60	55	40	45	30	35	30	25	25	13	13
Maine	ME	65	60	60	40	45	35	45	35	30	25	13	13
Michoacan de Ocampo	MH	68	62	56	43	49	37	43	31	31	25	23	23
Michigan	MI	60	55	55	40	45	35	40	30	30	25	18	18

North America State	Abrev.	Interstate Highway		Divided Highway		Primary Highway		Secondary Highway		Local		Ferries	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Minnesota	MN	68	60	60	40	45	35	45	35	35	25	15	15
Missouri	MO	68	60	60	40	45	35	45	35	35	25	15	15
Morelos	MR	68	62	56	43	49	37	43	31	31	25	23	23
Mississippi	MS	68	60	55	40	45	35	45	35	30	25	15	15
Montana	MT	65	60	60	40	50	35	45	35	35	25	15	15
Nayarit	NA	68	62	56	43	49	37	43	31	31	25	23	23
New Brunswick	NB	62	62	56	43	56	37	43	31	31	25	21	21
North Carolina	NC	68	60	55	40	45	35	40	30	30	25	13	13
North Dakota	ND	68	60	60	40	50	35	45	35	35	25	15	15
Nebraska	NE	68	60	60	40	50	35	45	35	35	25	15	15
New Hampshire	NH	65	60	55	40	45	35	45	35	30	25	13	13
Nicaragua	NI	62	56	56	43	49	37	37	31	31	25	21	21
New Jersey	NJ	65	55	55	40	45	30	35	30	25	25	13	13
Newfoundland & Labrador	NL	62	62	62	43	56	37	43	31	31	25	21	21
New Mexico	NM	68	60	60	40	50	35	45	35	35	25	15	15
Nova Scotia	NS	62	62	62	43	56	37	43	31	31	25	21	21
Northwest Territory	NT	56	56	56	43	56	37	43	31	31	25	21	21
Nunavut	NU	56	56	56	43	43	37	43	31	31	25	21	21
Nevada	NV	68	60	60	40	50	35	45	35	35	25	15	15
Nuevo Leon	NX	68	62	56	43	49	37	43	31	31	25	23	23
New York	NY	65	60	55	40	45	30	35	30	25	25	13	13
Oaxaca	OA	68	62	56	43	49	37	43	31	31	25	23	23
Ohio	OH	65	60	55	40	45	35	40	30	30	25	15	15
Oklahoma	OK	68	60	60	40	50	35	45	35	35	25	15	15
Ontario	ON	62	62	62	43	49	37	43	31	31	25	21	21
Oregon	OR	55	55	50	40	45	35	40	30	30	25	16	16

North America State	Abrev.	Interstate Highway		Divided Highway		Primary Highway		Secondary Highway		Local		Ferries	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Pennsylvania	PA	65	55	55	40	45	30	35	30	25	25	13	13
Prince Edward Island	PE	62	62	56	43	56	37	49	37	31	25	21	21
Panama	PM	62	56	56	43	49	37	37	31	31	25	21	21
Puerto Rico	PR	65	55	45	40	45	30	30	30	30	25	15	15
Puebla	PU	68	62	56	43	49	37	43	31	31	25	23	23
Queretaro Arteaga	QA	68	62	56	43	49	37	43	31	31	25	23	23
Quebec	QC	62	62	56	37	56	37	49	37	31	25	21	21
Quintana Roo	QR	68	62	56	43	49	37	43	31	31	25	23	23
Rhode Island	RI	65	55	55	40	45	30	35	30	25	25	13	13
South Carolina	SC	68	60	55	40	45	35	40	30	30	25	13	13
South Dakota	SD	68	60	60	40	50	35	45	35	35	25	15	15
Sinaloa	SI	68	62	56	43	49	37	43	31	31	25	23	23
Saskatchewan	SK	62	62	62	43	56	37	43	37	31	25	21	21
San Luis Potosi	SL	68	62	56	43	49	37	43	31	31	25	23	23
Sonora	SO	68	62	56	43	49	37	43	31	31	25	23	23
Tabasco	TA	68	62	56	43	49	37	43	31	31	25	23	23
Tlaxcala	TL	68	62	56	43	49	37	43	31	31	25	23	23
Tamaulipas	TM	68	62	56	43	49	37	43	31	31	25	23	23
Tennessee	TN	68	60	55	40	45	35	40	30	30	25	15	15
Texas	TX	68	60	60	40	50	35	45	35	35	25	15	15
Utah	UT	68	60	60	40	50	35	45	35	35	25	15	15
Virginia	VA	65	60	55	40	45	30	40	30	30	25	13	13
Vermont	VT	65	55	55	40	45	35	45	35	30	25	15	15
Veracruz	VZ	68	62	56	43	49	37	43	31	31	25	23	23
Washington	WA	60	60	55	40	45	30	35	30	30	25	16	16
Wisconsin	WI	65	60	60	40	45	35	45	35	35	25	18	18

North America State	Abrev.	Interstate Highway		Divided Highway		Primary Highway		Secondary Highway		Local		Ferries	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
West Virginia	WV	68	55	55	40	45	35	35	30	30	25	15	15
Wyoming	WY	68	60	60	40	50	35	45	35	35	25	15	15
Yucatan	YC	68	62	56	43	49	37	43	31	31	25	23	23
Yukon Territory	YT	56	56	56	43	56	37	49	37	31	25	21	21
Zacatecas	ZT	68	62	56	43	49	37	43	31	31	25	23	23

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