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HEAVY-DUTY VEHICLE CYCLE DEVELOPMENT

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FOREWORD

The Environmental Protection Agency (EPA) is developing new emission test procedures for heavy-duty vehicles. The major intent of this effort is to develop test procedures that are representative of truck operation in the urban environment.

In support of this development effort, Olson Laboratories, Inc. (OLI) was awarded a contract to generate representative transient engine and chassis cycles for heavy-duty vehicles. The contract began in 1974 and was concluded in May of 1978. The OLI Project Manager was Mr. Malcolm Smith who supervised all work performed under this contract. The Project Officers for this contract were Mr. Leroy Higdon and Mr. Chester J. France, both of the Emission Control Technology Division, Office of Mobile Source Pollution Control, Environmental Protection Agency, Ann Arbor, Michigan.

The contract work had three purposes:

1) To develop software to process the CAPE-21 truck and bus operational data base into a format suitable for generating engine and chassis dynamometer cycles.

2) To develop the software necessary to generate cycles representative of the CAPE-21 data base.

3) To generate representative candidate engine and chassis cycles from the CAPE-21 data base.

This report presents a summary and documentation of the heavy-duty chassis and engine cycle generation process. Additionally, several candidate cycles (engines and chassis) are illustrated.

ABSTRACT

This report presents a summary and documentation of the work performed under EPA Contract No. 68-03-0411, entitled "Heavy-Duty Vehicle Cycle Development." Program objectives were successfully met with the development of computer software to edit the CAPE-21 heavy-duty vehicle raw-data base, to process the data base into matrix formats suitable for the Monte Carlo generation of representative engine-dynamometer and chassis-dynamometer test cycles, and to generate and analyze cycles. At least 3 candidate cycles were selected for submission to EPA for each of 16 vehicle categories.

CONTENTS

Foreword. iii
Abstract. iv
Figures vi
Tables. vii
Definitions viii

1. SUMMARY 1
1.1 Program Overview. 1
1.2 Data Collection 1
1.3 Data Processing and Analysis. 3
1.3.1 Data Editing. 3
1.3.2 Power Tape Generation 5
1.3.3 Statistical Analyses. 7
1.4 Chassis Cycle Development 8
1.5 Statistical Filter. 10
1.6 Engine Cycle Development. 12

2 INTRODUCTION. 34
2.1 Background. 34
2.2 Objectives. 35
2.3 Scope 35

3 DATA PROCESSING 36

4 DATA ANALYSIS 52
4.1 Individual Vehicle Statistics 52
4.2 Category Analysis 53
4.3 Cold/Hot Analysis 55

5 MONTE CARLO CYCLE GENERATION. 62
5.1 Matrix Development. 62
5.1.1 Speed Matrix. 62
5.1.2 Engine Matrix 63
5.2 Cycle-Generation Process. 67
5.2.1 The Monte Carlo Technique 67
5.2.2 Development of Chassis-Dynamometer Cycles 70
5.2.3 Development of Engine-Dynamometer Cycles. 76
5.3 Statistical Filter. 78
5.4 Candidate-Cycle Selection 86

References. 89
Appendices

A. Chassis and Engine Cycles Plotted with 0.864-Second Interval
B. Engine Cycle Statistics and Schedules
C. Chassis Matrices and Chassis Cycle Statistics and Schedules
D. Statistics for Truck LA 45
E. Summary Statistics by Vehicle

FIGURES

Number		Page
1	Data Processing and Analysis Flow Diagram	4
2	Engine-Matrix Format.	13
3	Driving Cycle with Starting Random Number 1539135071.	14
4	Driving Cycle with Starting Random Number 2106204593.	15
5	Driving Cycle with Starting Random Number 2037082365.	16
6	Driving Cycle with Starting Random Number 2120127413.	17
7	LA Gas Freeway: Cycle 296644805	18
8	LA Gas Nonfreeway: Cycle 2038877989	19
9	LA DSL Freeway: Cycle 1599345415.	20
10	LA DSL Nonfreeway: Cycle 2110248101	21
11	NY Gas Freeway: Cycle 792043535	22
12	NY Gas Nonfreeway: Cycle 8410263.	23
13	NY DSL Freeway: Cycle 104099549	24
14	NY DSL Nonfreeway: Cycle 2114147447	25
15	Driving Cycle with Starting Random Number 2041393295.	26
16	Driving Cycle with Starting Random Number 2143765149.	29
17	LA Buses Freeway + Nonfreeway: Cycle 2049482045	32
18	NY Buses Freeway + Nonfreeway: Cycle 2109178847	33
19	Example of Monte Carlo Technique: Area Under One Branch of Sine Curve.	68
20	Monte Carlo Cycle Development	71
21	Chassis-Cycle Generation.	75
22	Engine-Cycle Generation	77

TABLES

Number		Page
1	Cape-21 Sample By Category.	2
2	Cape-21 Sample by Vehicle	37
3	Edit Input for LA Truck 17.	44
4	Edit Output for LA - Truck 17, Day 1.	45
5	Edit Output for LA - Truck 17, Day 2.	46
6	Edit Summary for LA Categories.	47
7	Edit Summary for NY Categories.	48
8	Summary Statistics for LA Truck 45: LA TT Diesel.	54
9	Aspin-Welch Test of Differences Between Means - LA TT Gas Versus LA TT Diesel	56
10	Aspin-Welch Test of Differences Between Means - LA 2A Gas Versus NY 2A Gas	57
11	Z Test of Differences Between Means - LA 2A Diesel Versus LA 2A Gas	58
12	Z Test of Differences Between Means - NY 3A Gas Versus NY TT Gas	59
13	Definition of Cold/Hot Matrices	61
14	Speed-Adjustment Statistics	64
15	Input Initial Speed Versus Delta Speed Matrix - LA Combined Gas and Diesel - Freeway.	65
16	Monte Carlo Computation of Area Under One Branch of a Sine Curve.	69
17	Transition Probability Matrix - LA Combined Gas and Diesel - Freeway	72
18	Development of K-S Distribution Function for Matrix	84

DEFINITIONS

E	Engine speed, rpm
E_I	Nominal rpm at idle
%E	Percent rpm
E_R	Manufacturer's rated rpm
E_U	E-upper: Upper limit of engine rpm idle range
E_L	E-lower: Lower limit of engine rpm idle range
L	Load factor: Manifold vacuum for gasoline engines, rack position for Detroit Diesel Allison (DDA) engines, fuel (rail) pressure for Cummins Engine Co. engines.
L_I	Nominal load factor at idle
%L	Percent load factor
L_{100}	Load factor at maximum power for each rpm
L_0	Load factor at zero power for each rpm
%R	Percent rack position (DDA engines)
%FP	Percent fuel pressure (Cummins engines)
L_{max}	Load factor at %R = 0 (maximum power)
L_{min}	Load factor at %R = 100 (other extreme of rack position)
P	Horsepower
%P	Percent horsepower
S	Vehicle speed, mph
%M	Percent time motoring
%I	Percent time idling
%C	Percent time cruising
%A	Percent time accelerating
%D	Percent time decelerating
E(X)	Expected value (mean) of X

COV(X,Y)	Covariance between X and Y
R(X,Y)	Product-moment correlation between X and Y
l.u.b.	Least upper bound
exp(x)	e^x
α	Type I error probability: The probability of rejecting a test hypothesis when the hypothesis is true
β	Type II error probability: The probability of accepting a test hypothesis when the hypothesis is false.
F	Freeway
NF	Nonfreeway
C	Combined road type (F + NF)

Section 1

SUMMARY

1.1 PROGRAM OVERVIEW

The "Heavy-Duty Vehicle Cycle Development" program, EPA Contract No. 68-03-0411, was awarded to Olson Laboratories, Inc. (OLI) in 1974 for the purpose of: 1) developing software to process the CAPE-21 data base into a format suitable for generating engine-dynamometer and chassis-dynamometer cycles, 2) developing software to generate cycles representative of the CAPE-21 data base, and 3) generating candidate cycles for trucks and buses from the CAPE-21 data base. It will be useful to discuss briefly the CAPE-21 program which preceded this program.

The CAPE-21 program, jointly sponsored by the Coordinating Research Council (CRC) and the Environmental Protection Agency (EPA), was a two-phase program to conduct a heavy-duty vehicle driving pattern and use survey. The purpose of Phase I, conducted by Wilbur Smith and Associates (WSA), was the development of sampling plans for the collection of heavy-duty vehicle operating data in New York City and the Los Angeles Basin.

Phase II of the CAPE-21 program consisted of instrumenting heavy-duty trucks and buses, selected in accordance with the sampling plans, to record operating data during performance of the normal vehicle function. The New York data sample was collected in 1973 and 1974 under the direction of WSA in association with Wyle Laboratories. The EPA directed the collection of the Los Angeles data sample in 1975 with the support of personnel from the EPA and OLI.

1.2 DATA COLLECTION

Fifty trucks and five buses were instrumented in each city. After rejection of some vehicles during the data-processing phase because of instrumentation and other problems, the CAPE-21 data base consisted of the operating data for 44 trucks and 4 buses in New York and 44 trucks and 3 buses in Los Angeles. The total data sample used in the generation of cycles included 290 truck-days and 21 bus-days of operation. The truck sample in each city included gasoline-fueled and diesel-fueled engines in each of three vehicle configurations: 2-axle single unit, 3-axle single unit, and tractor-trailer (TT). Each of the buses was equipped with a diesel engine. The composition of the sample and hours of engine-on operation after editing are shown in Table 1.

Table 1. CAPE-21 SAMPLE BY CATEGORY

CATEGORY	NUMBER OF VEHICLES	NUMBER OF DAYS	HOURS OF ENGINE-ON OPERATION
LA 2-AXLE GAS	19	71	213.46
LA 3-AXLE GAS	1	4	15.57
LA TT GAS	7	24	94.66
LA 2-AXLE DIESEL	1	2	8.48
LA 3-AXLE DIESEL	5	21	88.40
LA TT DIESEL	11	25	121.54
LA TRUCK TOTALS	44	147	542.11
NY 2-AXLE GAS	26	83	321.39
NY 3-AXLE GAS	1	2	9.16
NY TT GAS	3	9	44.08
NY 2-AXLE DIESEL	1	5	30.70
NY 3-AXLE DIESEL	5	16	85.12
NY TT DIESEL	8	28	130.69
NY TRUCK TOTALS	44	143	621.14
LA BUSES	3	8	71.08
NY BUSES	4	13	131.02
SAMPLE TOTALS	95	311	1365.35

Each 10-channel data record, recorded on magnetic tape in digital format at the rate of one record every 0.864 seconds, contained the following information:

Channel	Parameter
1	Vehicle ID and time (tens of hours)
2	Time (hours units and minutes)
3	Engine speed
4	Load factor
5	Vehicle speed (optical encoder)
6	Road type
7	Traffic density
8	Throttle position (open/closed)
9	Engine temperature
10	Vehicle speed (tach generator)

The load factor recorded in Channel 4 is a parameter which is a measure of engine power. It is manifold vacuum for gasoline engines, rack position for Detroit Diesel engines, and rail pressure (fuel pressure) for Cummins diesel engines. The data in Channels 3 through 10 were recorded in units of millivolts of signal level.

1.3 DATA PROCESSING AND ANALYSIS

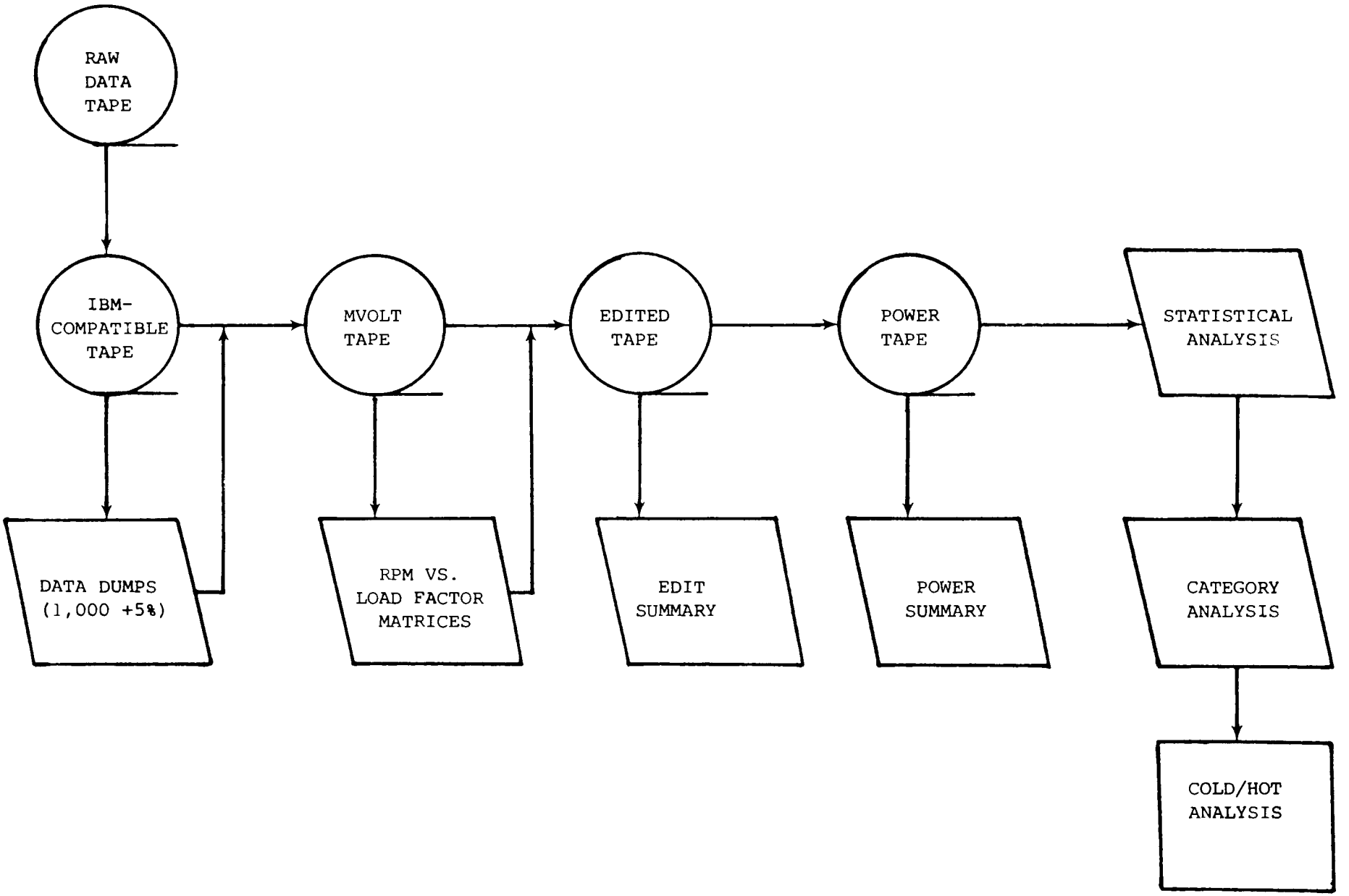
1.3.1 Data Editing

The raw-data tapes were recorded with Metrodata Loggers in a 4-track format at a density of 200 bpi and processed by Wyle Laboratories to produce 9-track, IBM-compatible tapes at a density of 800 bpi. Each tape file of the IBM-compatible and subsequent tapes consists of 1 vehicle-day of operation. The various steps taken to convert the raw-data tapes to the final set of tapes used to create the matrices for cycle generation are shown in Figure 1.

The first 1,000 records plus 5 percent of the remaining records in each file of the IBM-compatible tapes were first printed and analyzed to ensure that the instrumentation had worked properly and to determine a starting record for the file. The latter was necessary because the beginning of each tape is noisy due to start-up instability, resulting in zeroed records (a record consisting of all zeroes which is written when a parity error is encountered) and incomplete records. Software unscrambles the packed format in which the Wyle-delivered tapes are written, puts all of the time data in Channel 2, and converts the signal levels in Channels 6, 7, and 8 into 1-digit codes. This creates what are called the millivolted tapes.

A frequency matrix of rpm versus load factor, called the EVSL matrix, is then created for each vehicle. Those matrices provide an initial assessment of the vehicle engine operating pattern and will occasionally identify a data problem missed in the 5-percent audit. Another matrix of rpm versus load factor, called the ZIPEVSL matrix, is created for each truck for just those records when the vehicle speed is zero. That matrix is used to identify a submatrix called the "idle box" which defines the ranges of rpm and load factor within which the vehicle is said to be idling.

Figure 1. DATA PROCESSING AND ANALYSIS FLOW DIAGRAM



The EVSL matrices are also used to determine reasonable maximum and minimum values for rpm and load factor. Those values, together with transducer calibration functions and a model to determine the maximum permissible acceleration rate at each speed, are then input to a computer program which creates edited tapes. The editing procedures accomplish the following:

1. Convert millivolts of engine speed, load factor, vehicle speed, and engine temperature into the appropriate engineering units.

2. Replace a single zeroed record by a record of linearly-interpolated values.

3. Replace two or more consecutive zeroed records with a single zeroed record.

4. Delete engine-off records and replace with a single zeroed record.

5. Replace a single record with bad values by a record with the bad values replaced by linearly-interpolated values.

6. Replace two or more consecutive records with bad values in the same channel by a single zeroed record.

7. Insert a zeroed record before a record which contains a bad value for time of day. (No editing of the time channel was accomplished.)

8. Zero the Channel-5 speed when the Channel-10 speed is zero.

A summary of the number of changes of each type made was printed for each file of data to document what was done during editing.

1.3.2 Power Tape Generation

The final step in the tape-processing procedure was the creation of what are called the power tapes. The power tapes are the same as the edited tapes, except that engine speed is converted from units of rpm to percent rpm, %E, and load factor is converted from engineering units to percent power, %P.

The conversion to %E was made with respect to the manufacturer's rated rpm, E_R, for each engine and the idle-box rpm-range limits called E-upper, E_U, and E-lower, E_L. That is, any rpm in the range from E_L up to E_U is an idle rpm. If the value of rpm on the edited tape is denoted by E, and if $E < E_L$, then

$$\%E = \frac{E - E_L}{E_R - E_L} \times 100.$$

When $E > E_U$,

$$\%E = \frac{E - E_U}{E_R - E_U} \times 100.$$

In the case $E_L \leq E \leq E_U$, %E is set equal to zero. That is, %E = 0 when the vehicle is idling. (The vehicle is not considered to be idling, however, unless both the rpm and the load factor are within the idle box.) The normalization of rpm is accomplished so that data from different trucks with different idle conditions can be combined in a meaningful way.

The conversion of load factor to percent power, %P, was accomplished with EPA-supplied horsepower models. In the case of the gasoline engines, it was determined that percent power was essentially equal to percent load factor (manifold vacuum) at each value of rpm, when percent load factor, %L, was appropriately defined. Let $L_{100}(E)$ be the value of load factor at maximum (100 percent) horsepower at E rpm and let $L_0(E)$ be the value of load factor at zero power at the same rpm value E. Then, if L(E) denotes the value of load factor at E rpm,

$$\%P = \%L = \frac{L(E) - L_0(E)}{L_{100}(E) - L_0(E)} \times 100. \qquad (1\text{-}1)$$

It should be noted that the values $L_0(E)$ were measured on the Los Angeles gasoline trucks from idle rpm to about rated rpm in increments of 250 rpm. Linear interpolations were performed to determine $L_0(E)$ values between the measured values and to extrapolate values from idle rpm down to 300 rpm. The latter was selected to be the minimum reasonable rpm value.

It was not possible to measure the $L_0(E)$ values for the New York gasoline trucks because the trucks were no longer available at the time the gasoline horsepower model was defined. Therefore, the $L_0(E)$ data for the Los Angeles trucks were normalized with respect to the idle for each truck and the normalized data were averaged to obtain what is called the average L-Zero curve. That average L-Zero curve, suitably denormalized with respect to idle for each New York gasoline truck, was then utilized to compute %P for the NY gasoline-truck sample.

The horsepower model for the rack-position diesel engines was developed by the EPA from engine dynamometer data supplied by Detroit Diesel Allison (DDA) for an 8V-71N engine with N-65 injectors. The data for that engine were used because 14 of the 20 Detroit diesels in the CAPE-21 sample were 8V-7INs and all 13 engines in the Los Angeles sample had N-65 injectors. One of the seven DDA engines in New York was determined to have N-65 injectors, but it was not possible to ascertain injector type for the other engines.

DDA supplied 92 data points which were supplemented by an additional 36 points, obtained by interpolation and based on EPA analysis. Engine power was normalized to the maximum horsepower at each measured value of rpm and the load factor (rack position) was normalized to maximum rack travel and denoted by %R. A regression analysis was conducted and the horsepower model selected was:

$$\%P = a + b \log E + c \log E \, (\%R)^{1.56}, \qquad (1\text{-}2)$$

where a = 173.90
b = -22.507
c = -0.044802
log E = common logarithm of rpm.

The standard error of the estimate for the model is 3.62, in units of percent power, and the square of the multiple correlation coefficient, or coefficient of determination, is 0.987.

Two constraints are applied to the computation of %P with the model. These are:

1. When %P < 0, the power is identified as motoring and no magnitude is assigned.

2. When %P > 100, %P is set equal to 100.

The horsepower model developed for the Cummins diesel engines was based on engine-dynamometer data for 8 engine types, representing a total of 284 points, which were supplied to the EPA by the Cummins Engine Company. Those data were supplemented by no-load fuel pressures derived by the EPA. Engine horsepower was again normalized to the maximum power at each rpm value and the fuel (rail) pressure was normalized to the maximum fuel pressure at each rpm. It was determined in the regression analysis that percent power depended only on the normalized fuel pressure, %FP, and was independent of rpm. The horsepower model developed thus had the following simple form:

$$\%P = 37.475\ (\%FP)^{0.33} - 70.283. \qquad (1\text{-}3)$$

The standard error of the estimate for the model is 3.64, in units of percent power, and the coefficient of determination is 0.987.

1.3.3 Statistical Analyses

The set of power tapes is the CAPE-21 data base in its final processed form. A statistical analysis of those tapes was first conducted for each vehicle in the sample. The individual bus data were then combined within each city to yield a New York bus sample and a Los Angeles bus sample. The individual truck data were combined to create 12 categories: 2 fuel types x 3 vehicle configurations x 2 cities. Within each category the data were broken down by road type into freeway (F) data, nonfreeway (NF) data, and combined (C) road-type data. Therefore, statistics were obtained for 36 categories of truck data and 6 categories of bus data. A category analysis was then performed to determine which categories could be further combined, thus reducing the number of vehicle categories for which distinct cycles must be developed.

It was immediately clear that the freeway and nonfreeway statistics were distinctly different, as were those between cities and between fuel types. In general, however, the statistics by vehicle configuration were not too dissimilar. Therefore, based on a combination of the statistical analysis and the exercise of engineering judgement, the EPA selected the categories defined in

the following table as the basis for the generation of engine cycles (designated by EC) and chassis cycles (designated by CC):

	F	NF	C
LA Gasoline	EC	EC	
LA Diesel	EC	EC	
LA Gas & Dsl	CC	CC	
NY Gasoline	EC	EC	
NY Diesel	EC	EC	
NY Gas & Dsl	CC	CC	
LA Buses			EC, CC
NY Buses			EC, CC

The number of data categories for which cycles had to be developed was thus reduced considerably. A further reduction in the number of engine cycles was effected by the stipulation that for trucks there would be one gas cycle and one diesel cycle, each to consist of cycle segments selected from the above categories. Engine-cycle segments with nominal 5-minute durations were generated for each category. Similarly, chassis-cycle segments of the same duration were generated for trucks. Cycles generated for buses had nominal durations of 5, 10, 20, 30, and 60 minutes.

One remaining question with respect to the composite gas and diesel cycles concerned heavy-duty vehicle operation when cold. An analysis of cold/hot operation was conducted to determine if there were need for a unique cold-operation segment in each of the composite cycles to be configured by the EPA. The results of the analysis indicated that the difference between cold and hot heavy-duty vehicle operation was not very significant. It was found, however, that the initial idle following a cold start was longer than normal. It was thus concluded that a longer idle at the start of the cycle was the sole requirement for the cold-start portion of an emission test.

The 5-minute cycle segments were computer-generated with a Monte Carlo model, utilizing the CAPE-21 data base to ensure that the cycles would be representative of actual heavy-duty vehicle operation. The development of chassis cycles will be discussed first.

1.4 CHASSIS CYCLE DEVELOPMENT

All of the speed data for a given category can be compactly represented in an initial-speed-versus-delta-speed matrix, hereafter shortened to "speed matrix". The speed matrix for truck-cycle purposes is a 61 x 9 matrix, representing initial speeds ranging from 0 to 60 mph in 1-mph increments and delta speeds ranging from -4 mph/0.864 seconds to +4 mph/0.864 seconds in increments of 1 mph/0.864 seconds. (It will be recalled that the CAPE-21 data were recorded at the rate of one record every 0.864 seconds.)

The format of the speed matrix is shown below:

INITIAL SPEED	DELTA SPEED: -4	-3	-2	-1	0	1	2	3	4
0									
1									
2									
3									
.									
.									
.									
58									
59									
60									

The speed matrix is a frequency-of-occurence matrix generated on a record-by-record basis. That is, the speed value for any given record is defined to be an initial speed. The speed for the next record is defined to be a final speed. The delta speed is the final speed minus the initial speed. The speed matrix is incremented by adding one to the contents of the matrix cell corresponding to the row defined by the initial speed and the column defined by the delta speed. The final speed then becomes the initial speed for the computation of a new delta speed from the speed for the next record and the matrix is again incremented. The process continues until all of the speed data for each truck in a given category have been treated to yield the freeway and nonfreeway matrices for the category.

Now consider any row of the speed matrix. That row is defined by an initial speed and the entries in the nine cells of that row represent the number of times that the trucks in the category changed speed by each of the indicated delta speeds. Therefore, if the entries in the nine cells are summed, and if each entry is then divided by the row sum, then each cell entry is the empirical conditional transition probability of the indicated delta speed given the initial speed.

The speed matrix (SM) is transformed into an intermediate matrix (IM) by normalizing each row as described. Observing that each row is thus a density function, the intermediate matrix is transformed into what is called the transition-probability matrix (TPM) by converting the density function in each row into a distribution function. The process is illustrated with the following example of one row of each of the three matrices defined by some initial speed:

	DELTA SPEED: -4	-3	-2	-1	0	1	2	3	4	
Freq. Fcn. (SM)	1	2	4	18	40	23	10	2	0	(Σ = 100)
Dens. Fcn. (IM)	.01	.02	.04	.18	.40	.23	.10	.02	0.00	
Dist. Fcn. (TPM)	.01	.03	.07	.25	.65	.88	.98	1.00	1.00	

Chassis cycles are generated utilizing the transition-probability matrix in the following manner. Suppose, in the example above, the initial speed is 30 mph. Using a random-number generator which yields uniformly-distributed values on the unit interval, suppose a random number with the value 0.37 is generated. Since that value is greater than 0.25 in the above example and is less than 0.65, the selected delta speed is zero. In the cycle then, a speed of 30 mph is followed by a speed of 30 mph again. Now suppose the next random number has the value 0.92. Now the selected delta speed has the value 2, so that the next selected speed in the cycle is 32 mph. Another random number is generated and the distribution function for the row corresponding to 32 mph is then used to generate the next speed in the cycle.

Cycle speeds are thus selected in accordance with their frequencies of occurrence in the CAPE-21 data base. The process continues until a desired minimum cycle duration is reached. If the cycle speed is zero at that time, the process continues until a nonzero speed is generated, whereupon the cycle is ended at the last zero speed. Otherwise, a deceleration is forced until the cycle speed reaches zero. Generation of the cycle then continues until a nonzero speed is selected or until a maximum desired cycle duration is reached. Cycle generation is thus constrained to start and finish at zero speed. Since the cycle can be driven sequentially through all speeds, each cycle is closed.

1.5 STATISTICAL FILTER

Because the cycles are generated with a Monte Carlo model, any given cycle may be very unrepresentative of the input data. Therefore, statistics are computed for each cycle and tested with what is called the statistical filter. As each cycle is generated, a speed matrix is created for the cycle. The speed matrix for the cycle is then compared with the input speed matrix to determine if the cycle can be said to be representative. The statistical test used for the matrix comparison is the Kolmogorov-Smirnov (K-S) test.

The K-S one-sample test, a nonparametric or distribution-free test, is concerned with the degree of agreement between the distribution function for a set of sample values (observed values) and a specified theoretical distribution function. It determines whether the sample values can reasonably be considered to have come from a population with the specified distribution. The test consists of determining the absolute value of the maximum difference between the sample and theoretical distribution functions.

A distribution function created from the input speed matrix was specified to be the theoretical (or population) distribution. A distribution function created from each cycle matrix played the role of the sample distribution. The distribution function for a speed matrix was generated by first dividing each cell frequency in the matrix by the total matrix frequency and then getting a running sum of the normalized values from top to bottom (because the computer is more efficient that way) and then from left to right. This yields a vector (set) of 61 x 9 = 549 values ranging from zero to one. The input vector and the cycle vector are then compared, corresponding value by corresponding value, and the absolute value of the maximum difference is determined.

Distribution functions were obtained in this manner in four ways to yield four K-S tests. That is, K-S tests were made on the following:

1. The total speed matrix
2. The cruise submatrix (zero delta-speed column)
3. The acceleration submatrix (positive delta-speed columns)
4. The deceleration submatrix (negative delta-speed columns)

K-S tests were also performed for some cycles on the marginal distributions; i.e., on the speed and delta-speed distribution functions.

Acceptance or rejection of the null hypothesis (i.e., that the matrices are not significantly different) is referenced to a criterion level depending only on the sample size and the selected significance level. The criterion difference, D_c, for the K-S test is

$$D_c = \frac{z}{\sqrt{N}}$$

where z = a number depending on the selected significance level
N = the sample size.

If the significance level is 0.05, for example, then z = 1.36. To illustrate, suppose a chassis cycle has a 5-minute, or 300-second, duration. Then, the sample size (number of speeds in the cycle) would be approximately 300 divided by 0.864, or 347, since the matrix is based on the 0.864-second time between records. For a signifance level of 0.05, then, and a sample size of 347, the criterion difference is

$$D_c = \frac{1.36}{\sqrt{347}} = 0.073$$

Thus, if the maximum difference, in absolute value, between the input and cycle distribution functions were less than 0.073, the null hypothesis could not be rejected at the selected significance level.

It should be noted that the significance level here is the Type I error probability, or the probability of rejecting a cycle even though it is representative. What is important, however, is the Type II error probability, or the probability of accepting a cycle which is not representative. Unfortunately, there is no feasible way of computing Type II error probabilities for the K-S test. However, as the Type I error probability becomes larger, the Type II error probability becomes smaller. The most representative cycles, therefore, will tend to be those with the largest Type I error probabilities. That is, the Type II error probabilities will be small, yielding high confidence that the cycles are representative. It should be noted that this is different from the usual case where one desires a small Type I error probability.

In addition to the K-S tests, however, the chassis cycles were tested to ensure that other cycle statistics were close to those for the input data. These included: average speed, percent idle time, percent time at cruise, percent time at acceleration, and percent time at deceleration. A typical computer run would generate 10,000 chassis cycles of the desired duration, and each cycle would be tested for representativeness. The statistics for only

those cycles passing through the statistical filter were printed. A selection of at least three candidate cycles was made for each category and the cycles submitted to the EPA for further analysis.

1.6 ENGINE CYCLE DEVELOPMENT

The Monte Carlo generation of engine cycles is accomplished with a random-number generator operating on a transition-probability matrix with the same logic described above. The input matrix, of course, is based on the engine parameters. The engine matrix is a matrix of initial rpm and power versus final rpm and power. As discussed earlier, rpm and power are in units of percent on the power tape. Percent rpm, %E, ranged from -22 percent to 150 percent, in increments of 2 percent, for a total of 87 classes. Percent power, %P, ranged from motoring (any value less than zero) to 100 percent, in increments of 10 percent, for a total of 12 classes. Each rpm class is associated with 12 power classes, so that the engine matrix has 87 x 12 = 1,044 rows and the same number of columns. The number of cells in the matrix is thus 1,044 x 1,044 = 1,089,936.

The engine-matrix format is shown in Figure 2. Just as in the case of the simpler speed matrix, each row of the engine matrix is converted into a distribution function to yield a transition-probability matrix. Each cycle starts at %E = 0 and %P = 0; i.e., at the idle condition. A random number is generated which then selects the next combination of rpm and power. The process continues to a minimum cycle duration time. If %P = %E = 0 at that time, the process continues until a nonidle state is selected; the cycle then terminates at the last idle point. Otherwise, a "deceleration" is forced until both engine parameters have returned to zero. As the cycle is generated, a corresponding cycle matrix is created for comparison with the input engine matrix. Computed statistics include: K-S tests on the total matrix, on the diagonal ("cruise") submatrix, the submatrix above the diagonal, and the submatrix below the diagonal; average %E and %P; percent motoring; percent idle rpm; percent zero power; and percent cruise, acceleration, and deceleration for each of %E and %P. (The distribution functions for K-S testing were created on a row-by-row basis.)

The statistics are tested in the statistical filter and printed for those cycles passing through the filter. At least three candidate engine cycles of approximately a 5-minute duration were selected in each category for submission to the EPA for further engineering analysis. The EPA will create a composite engine cycle for gasoline trucks by selecting candidate-cycle segments from the city/road type categories and combining them into a single cycle. A composite diesel-engine cycle will be created in the same way.

Examples of chassis cycles for trucks are shown in Figures 3 through 6 for the categories indicated. Figures 7 through 14 show examples of engine cycles for trucks for the indicated categories. Examples of chassis and engine cycles for buses are shown in Figures 15 through 18. The cycles in those figures have been "smoothed"; i.e., the interval between points is 1 second instead of the original 0.864 seconds. (Motoring values of %P are plotted at -10 percent and no motoring magnitude is implied.) Appendix A shows the same cycles plotted with the 0.864-second interval for comparison. The statistics and schedules for each plotted engine cycle are given in Appendix B. The statistics and schedules for the plotted chassis cycles are given in Appendix C.

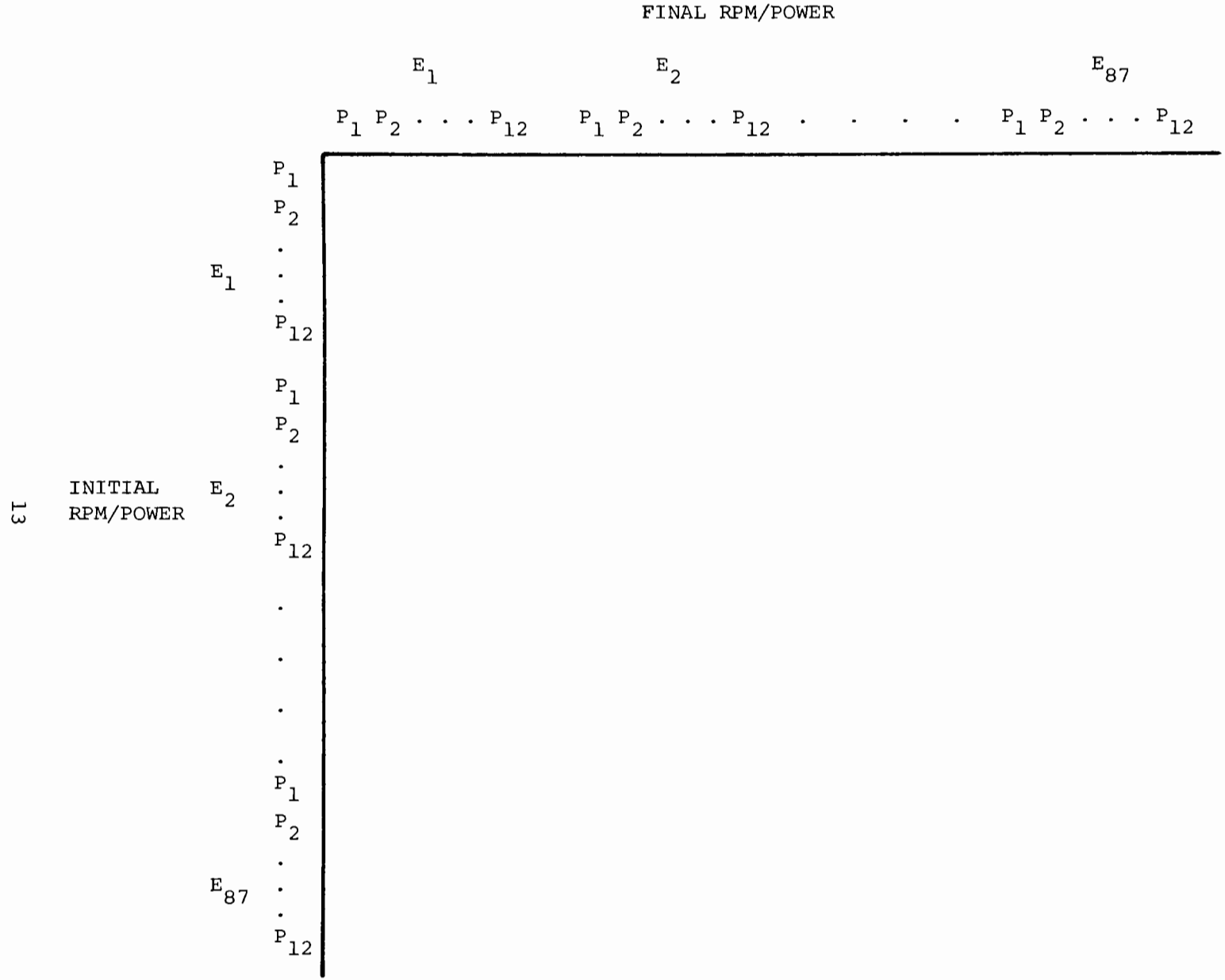


Figure 2. ENGINE-MATRIX FORMAT

FIGURE 3.

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 1539135071

DATA BASE: LA GAS + DIESEL
FREEWAY

AVERAGE SPEED = 44.79 MPH
DURATION = 4.46 MIN
DISTANCE = 3.33 MILES
INTERVAL = 1.00 SEC

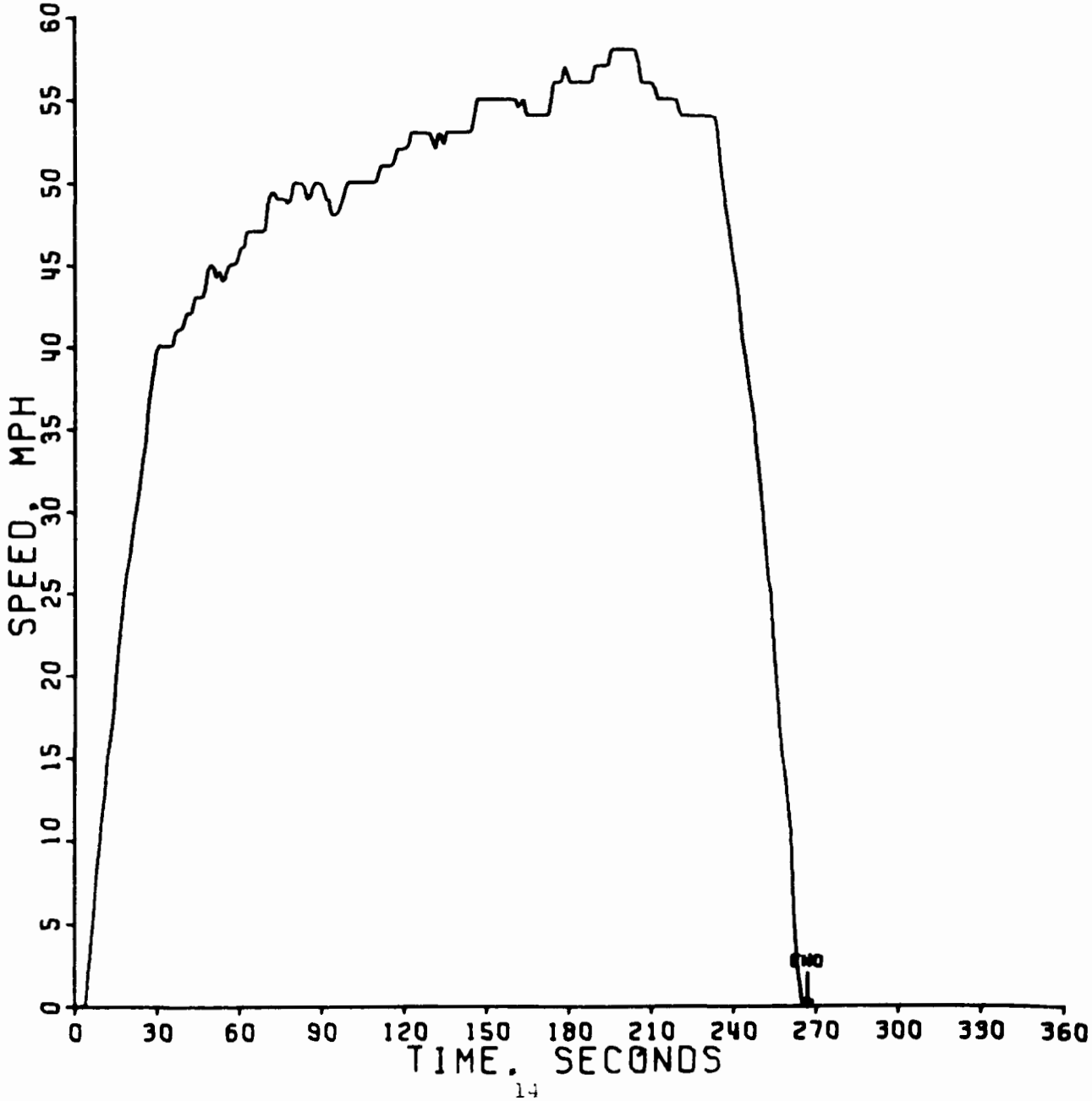


FIGURE 4.

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2106204593

DATA BASE: LA GAS + DIESEL
NONFREEWAY

AVERAGE SPEED = 14.55 MPH
DURATION = 4.75 MIN
DISTANCE = 1.15 MILES
INTERVAL = 1.00 SEC

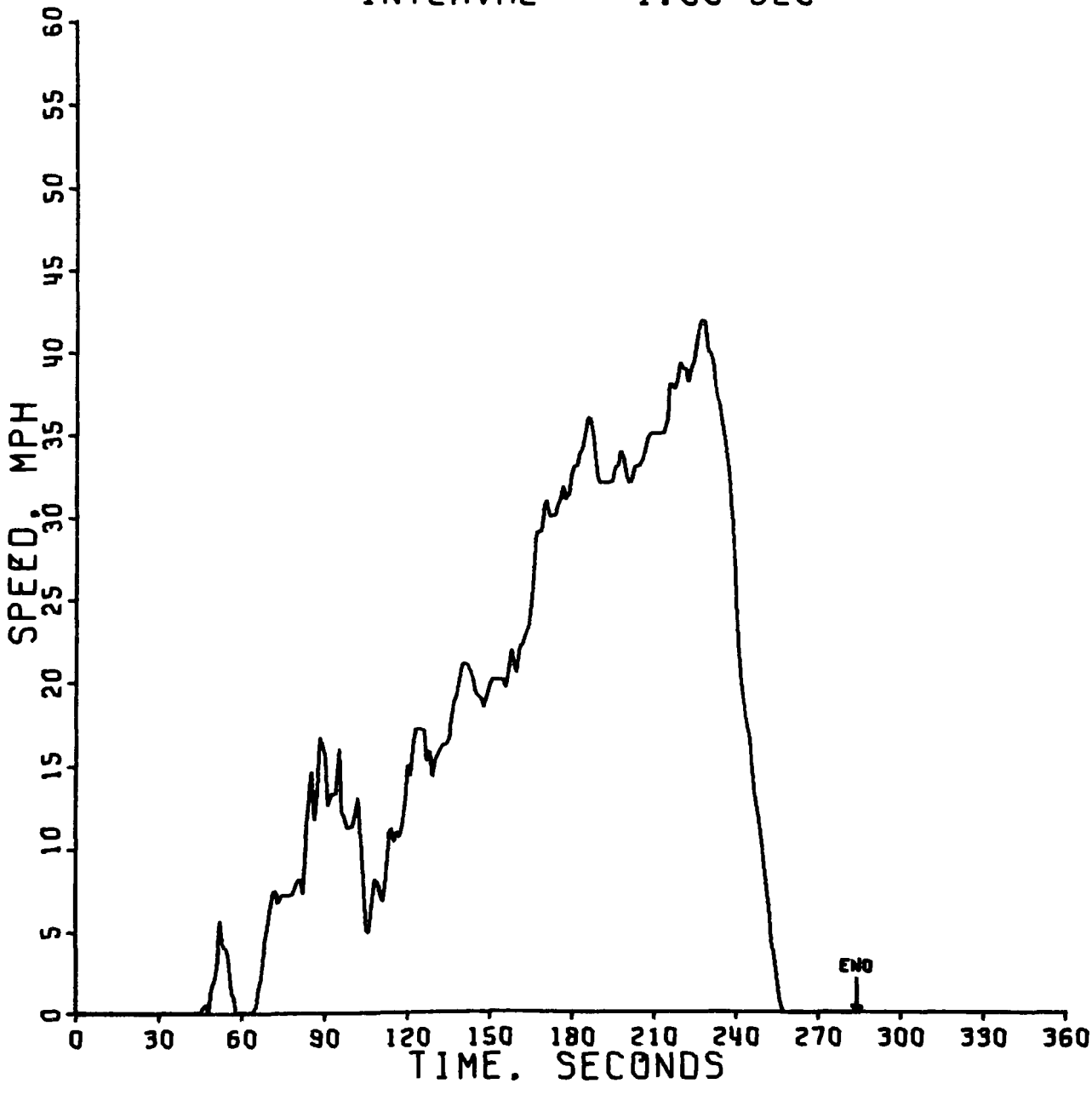


FIGURE 5.

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2037082365

DATA BASE: NY GAS + DIESEL
FREEWAY

AVERAGE SPEED = 26.91 MPH
DURATION = 4.67 MIN
DISTANCE = 2.09 MILES
INTERVAL = 1.00 SEC

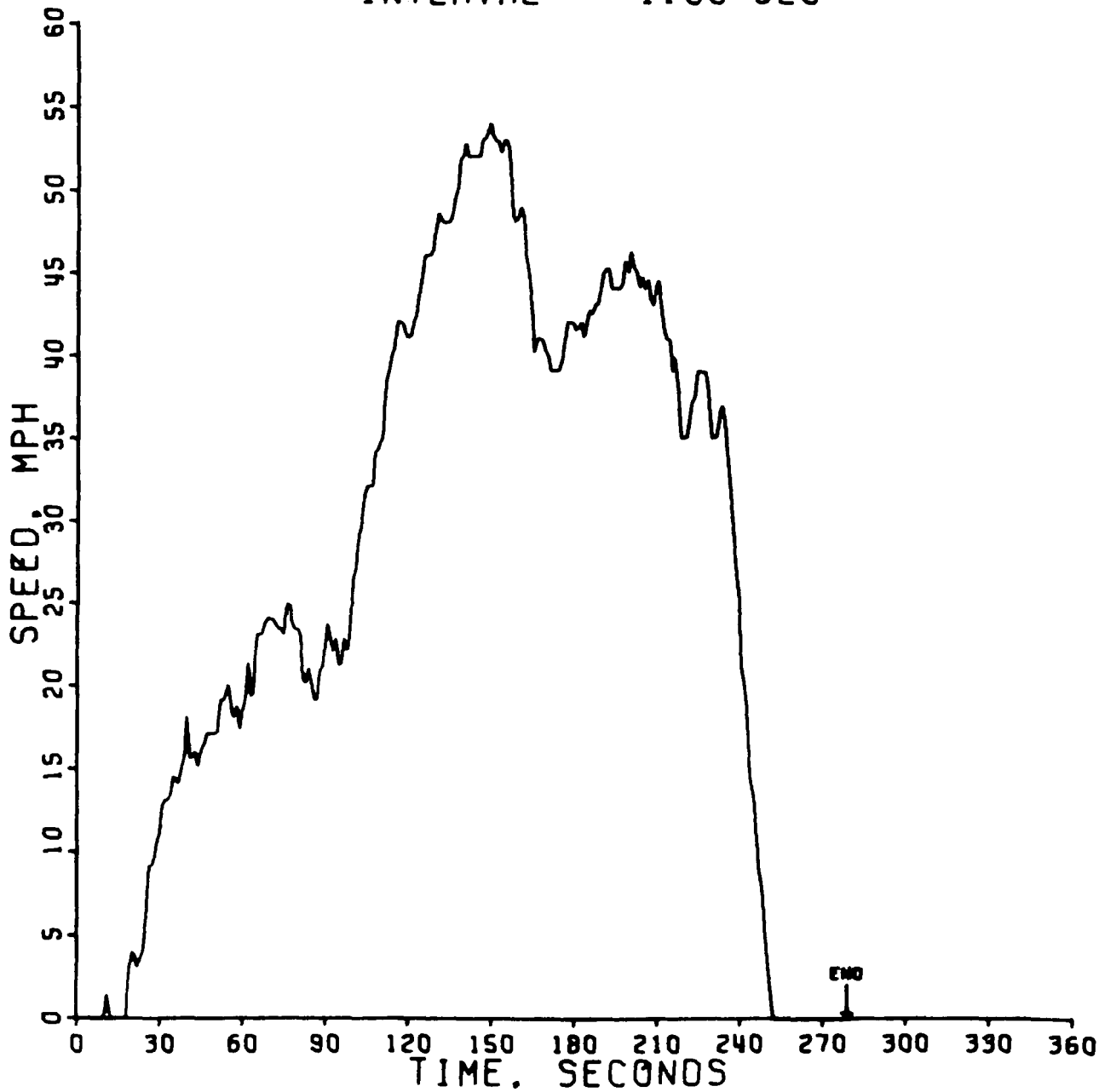


FIGURE 6.

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2120127413

DATA BASE: NY GAS + DIESEL
NONFREEWAY

AVERAGE SPEED = 7.57
DURATION = 4.23 MIN
DISTANCE = 0.53 MILES
INTERVAL = 1.00 SEC

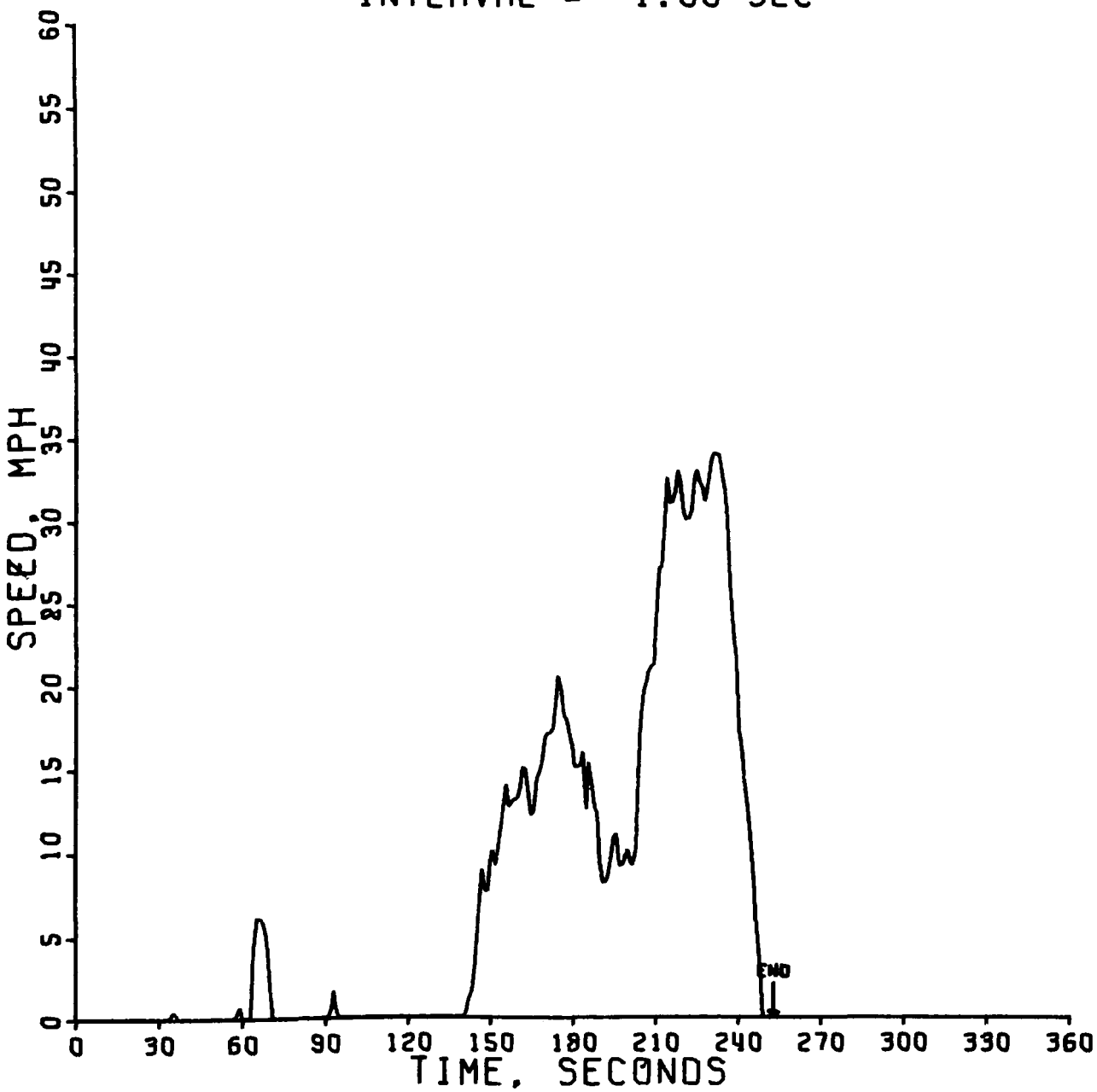
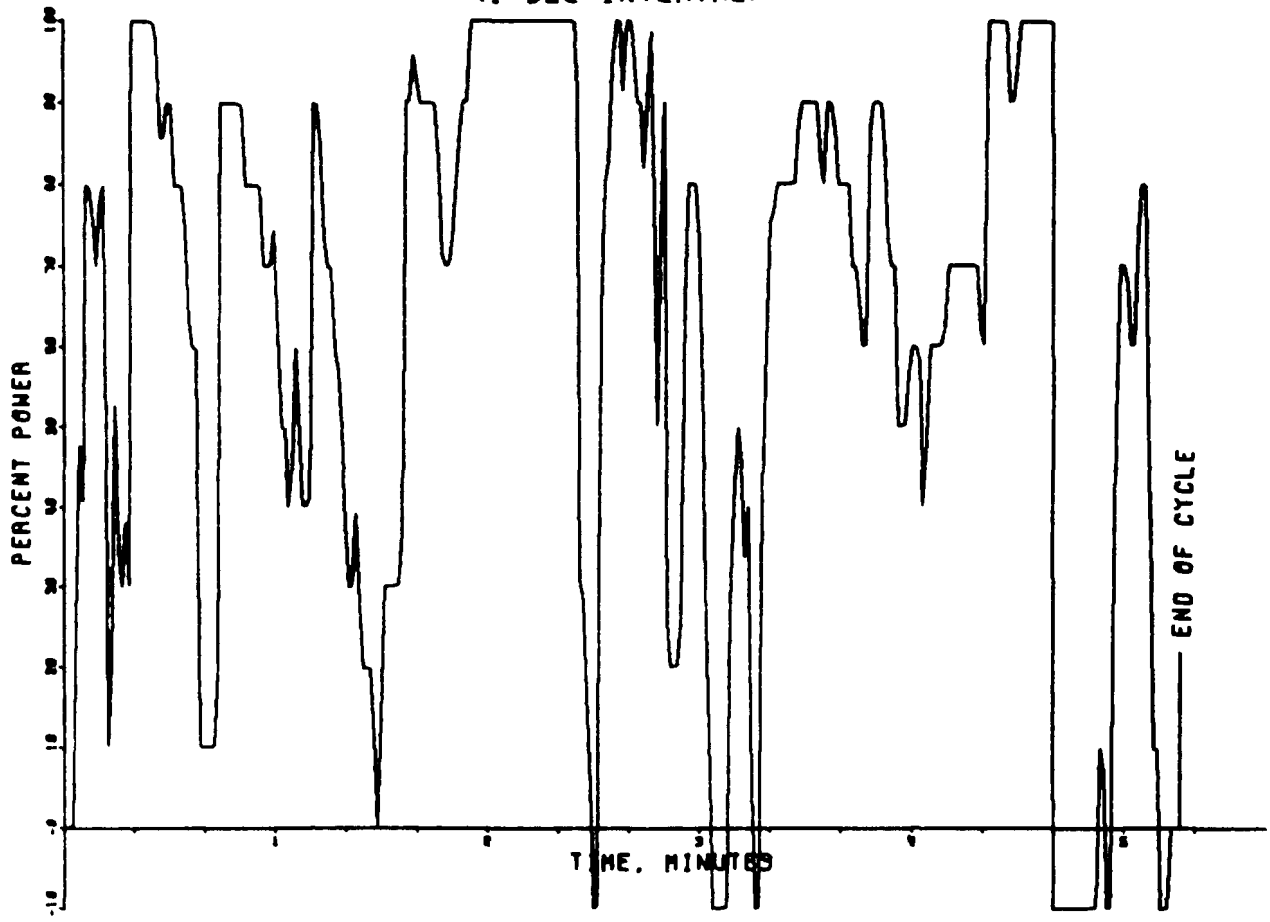


FIGURE 7. LA GAS FREEWAY: CYCLE 296644805
(1-SEC INTERVAL)



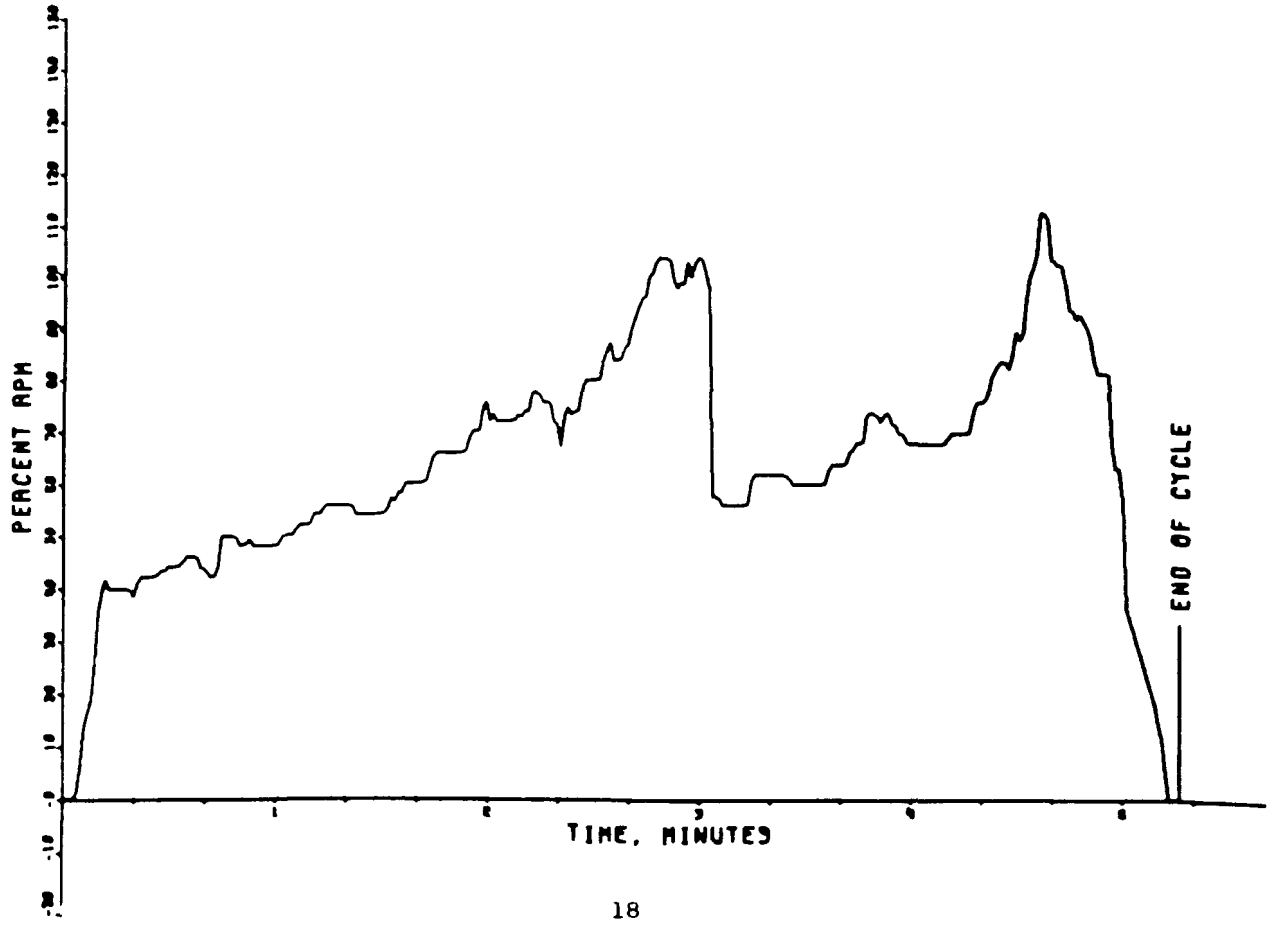
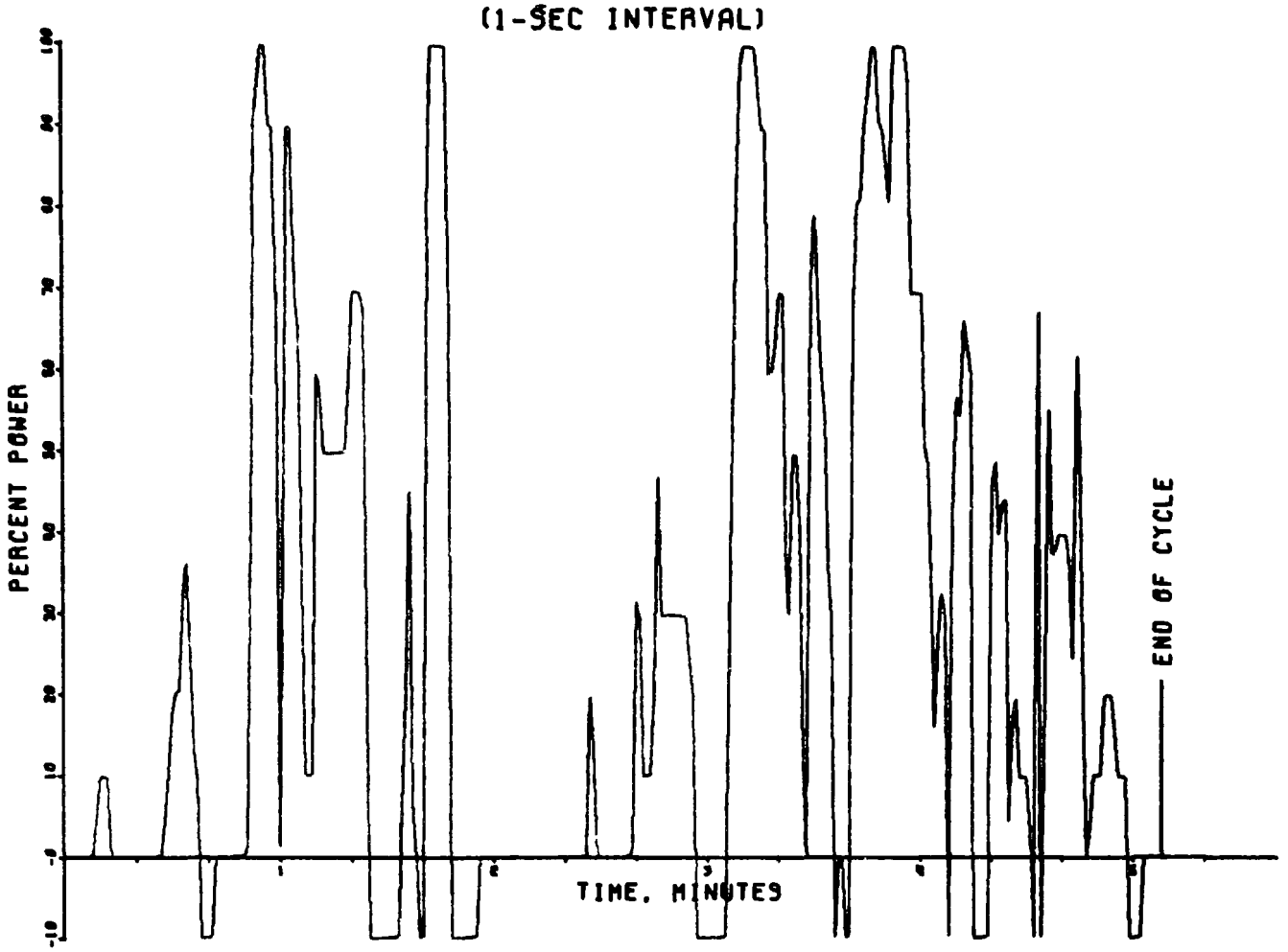


FIGURE 8. LA GAS NONFREEWAY: CYCLE 2038877989
(1-SEC INTERVAL)



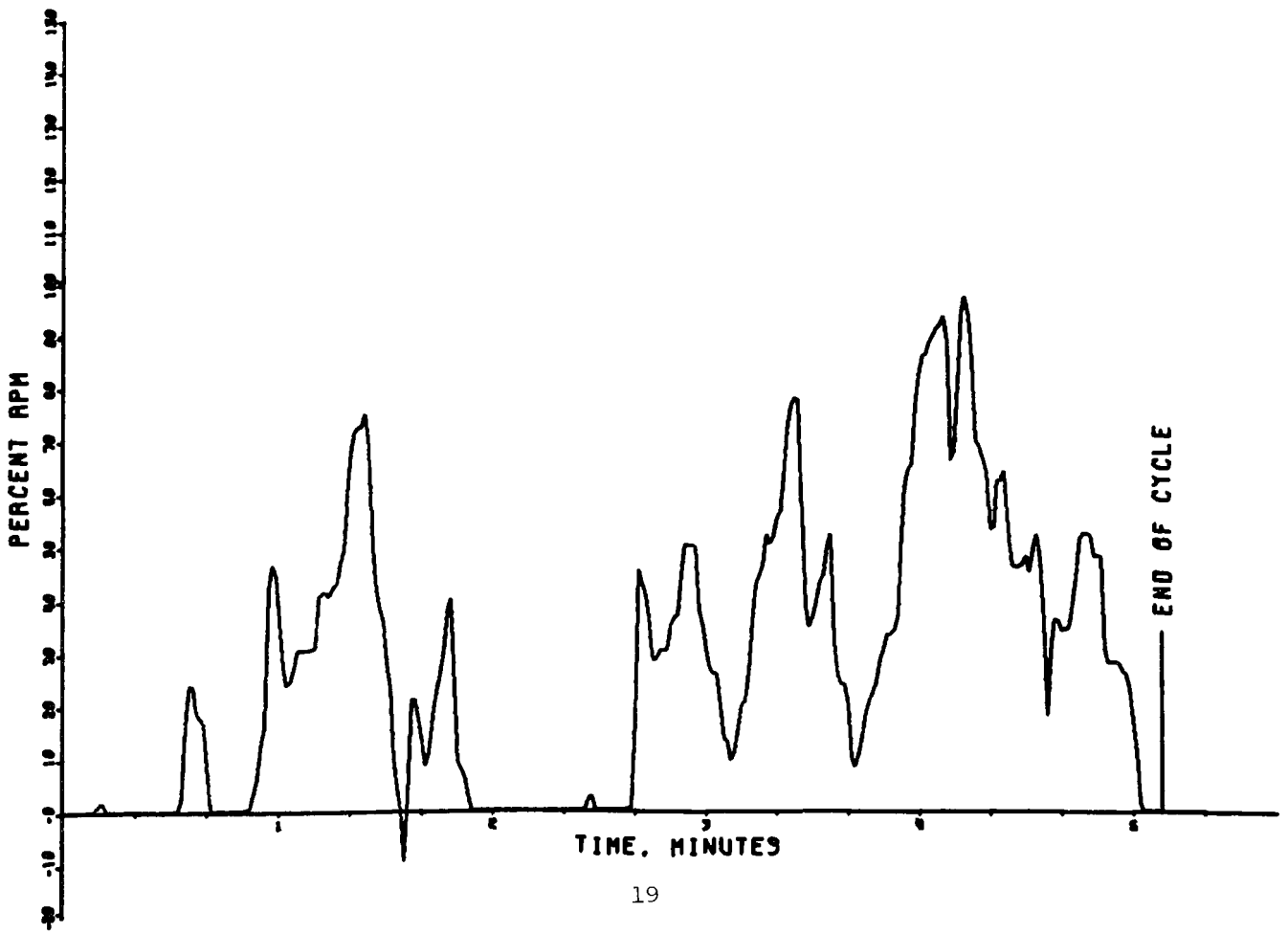
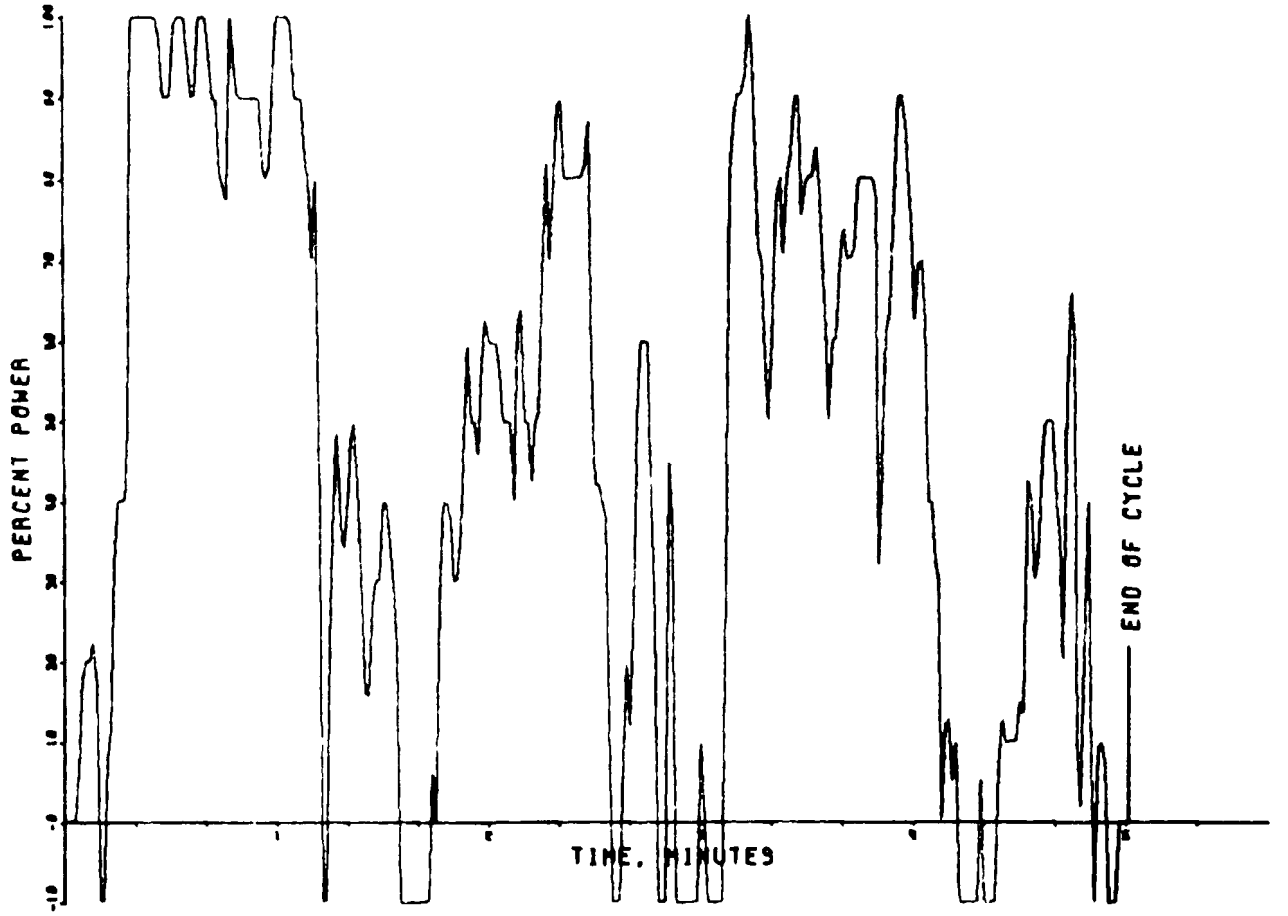


FIGURE 9. LA DSL FREEWAY: CYCLE 1599345415
(1-SEC INTERVAL)



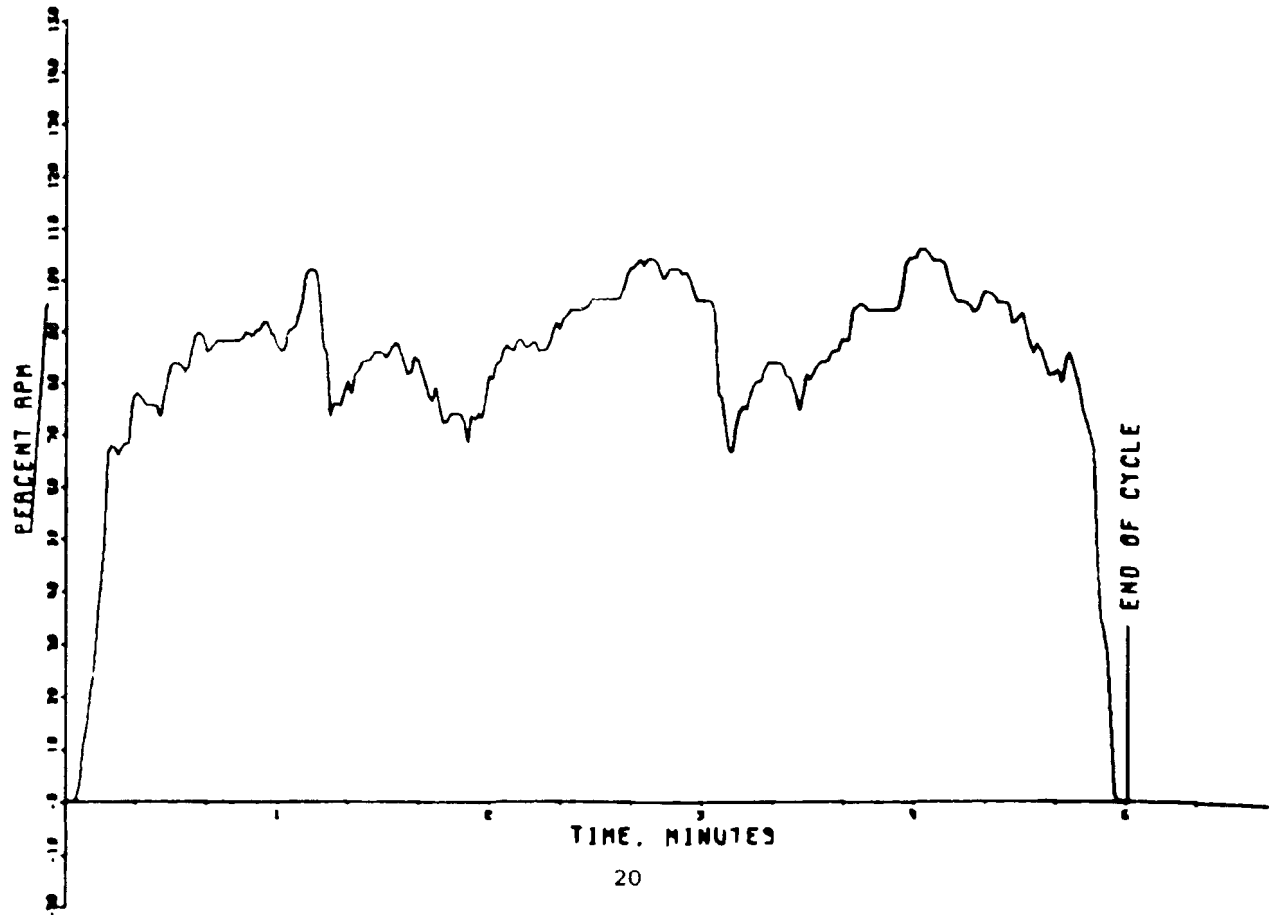
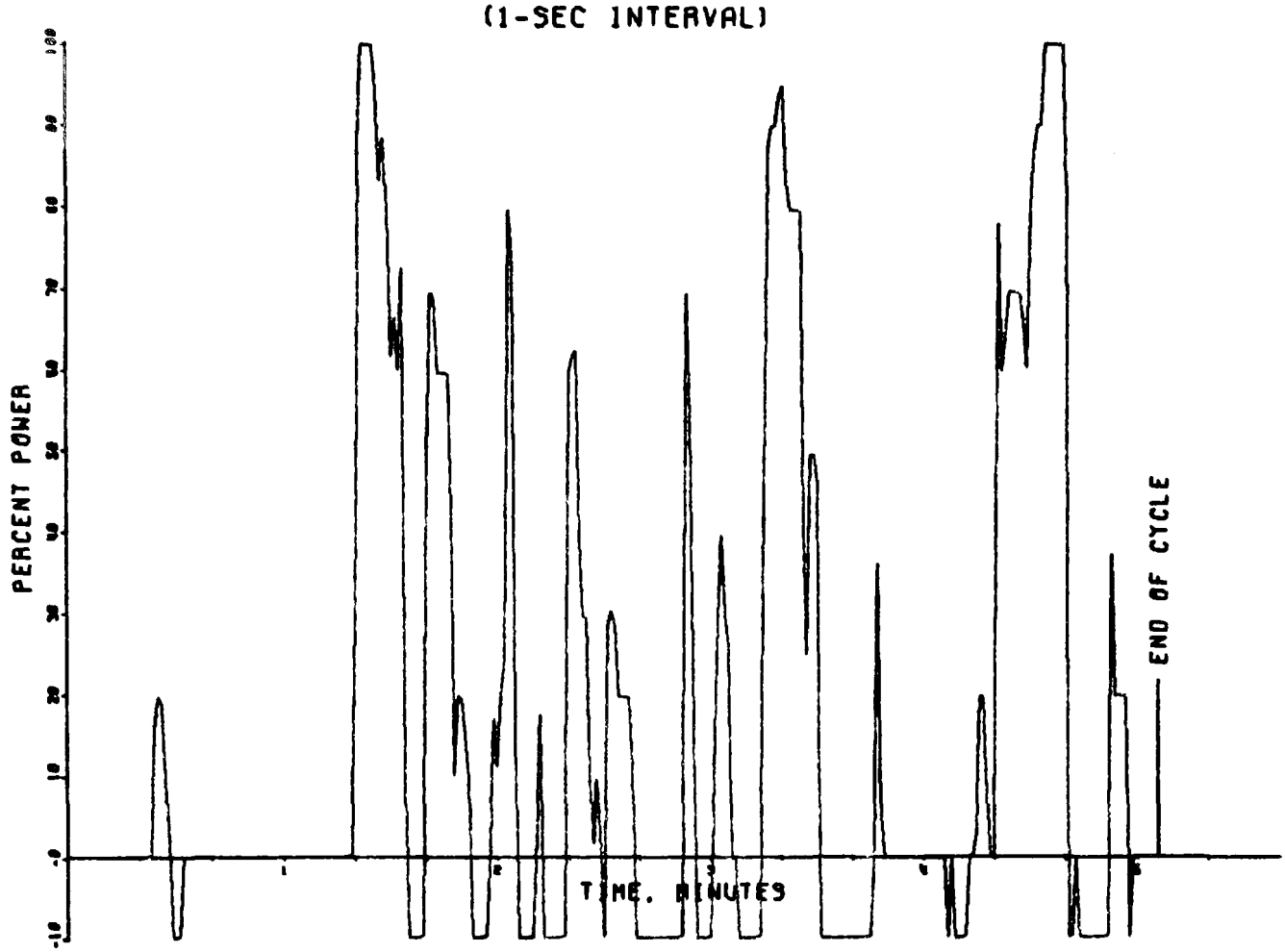


FIGURE 10. LA OSL NONFREEWAY: CYCLE 2110248101
(1-SEC INTERVAL)



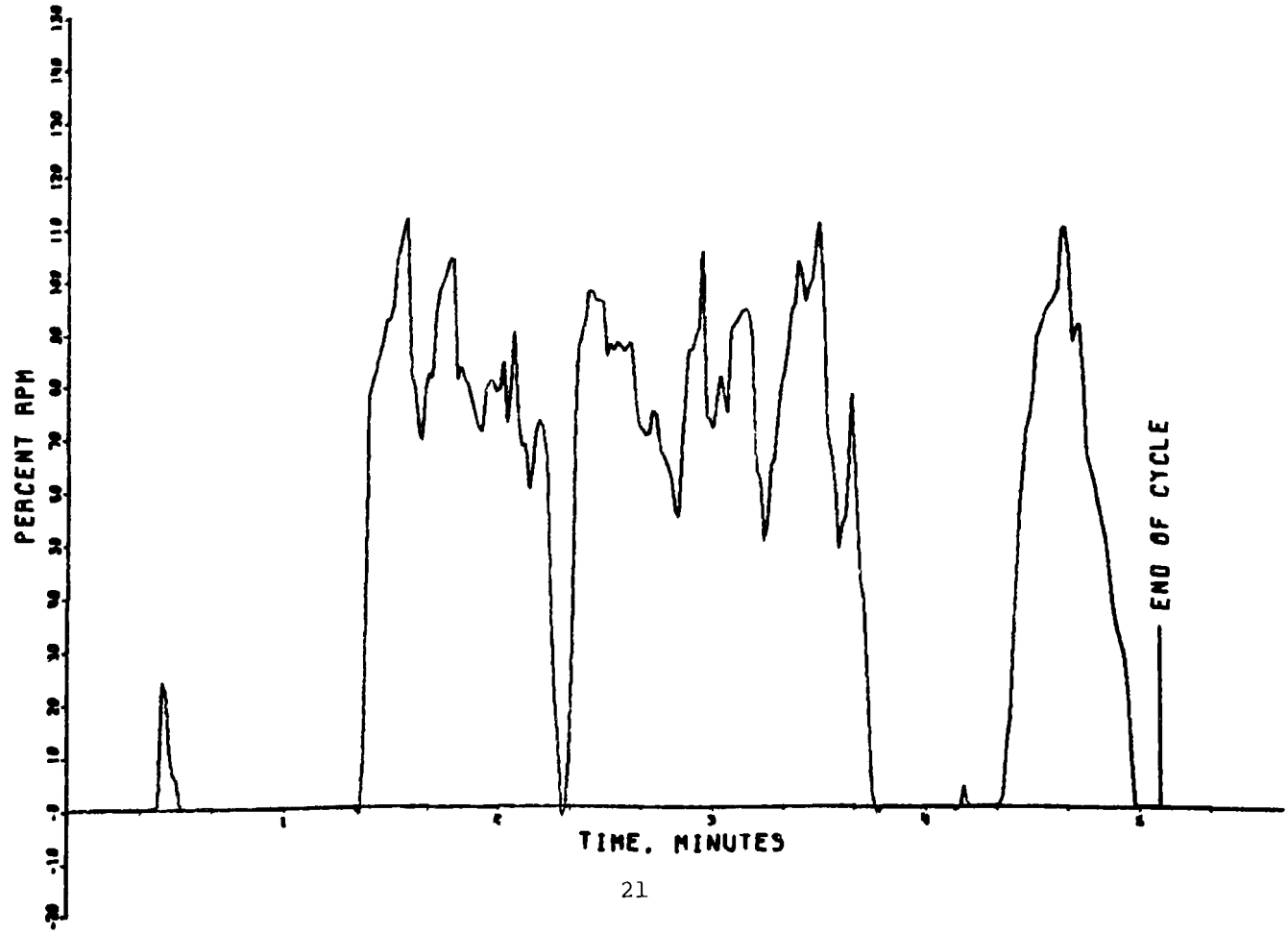
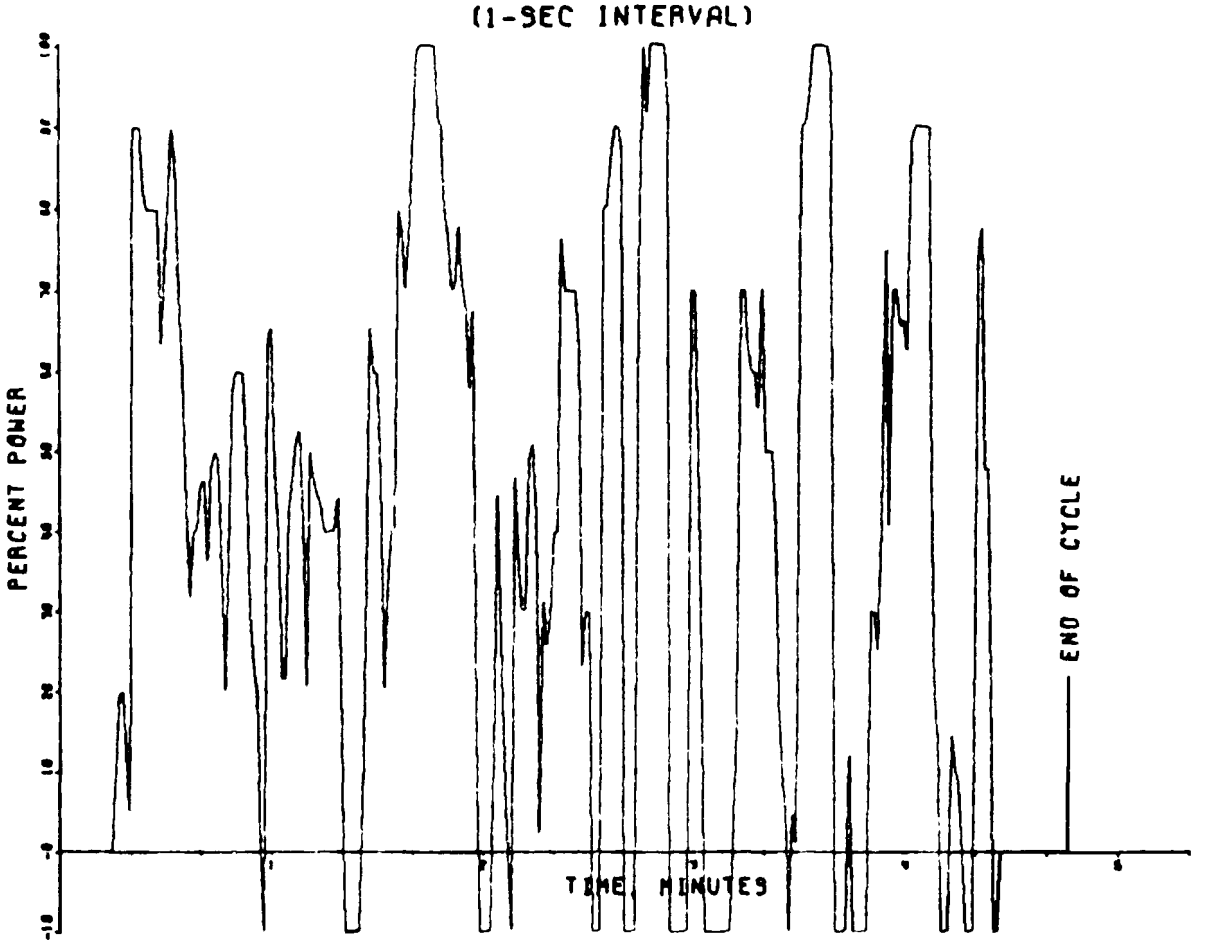


FIGURE 11. NY GAS FREEWAY: CYCLE 792043535
(1-SEC INTERVAL)



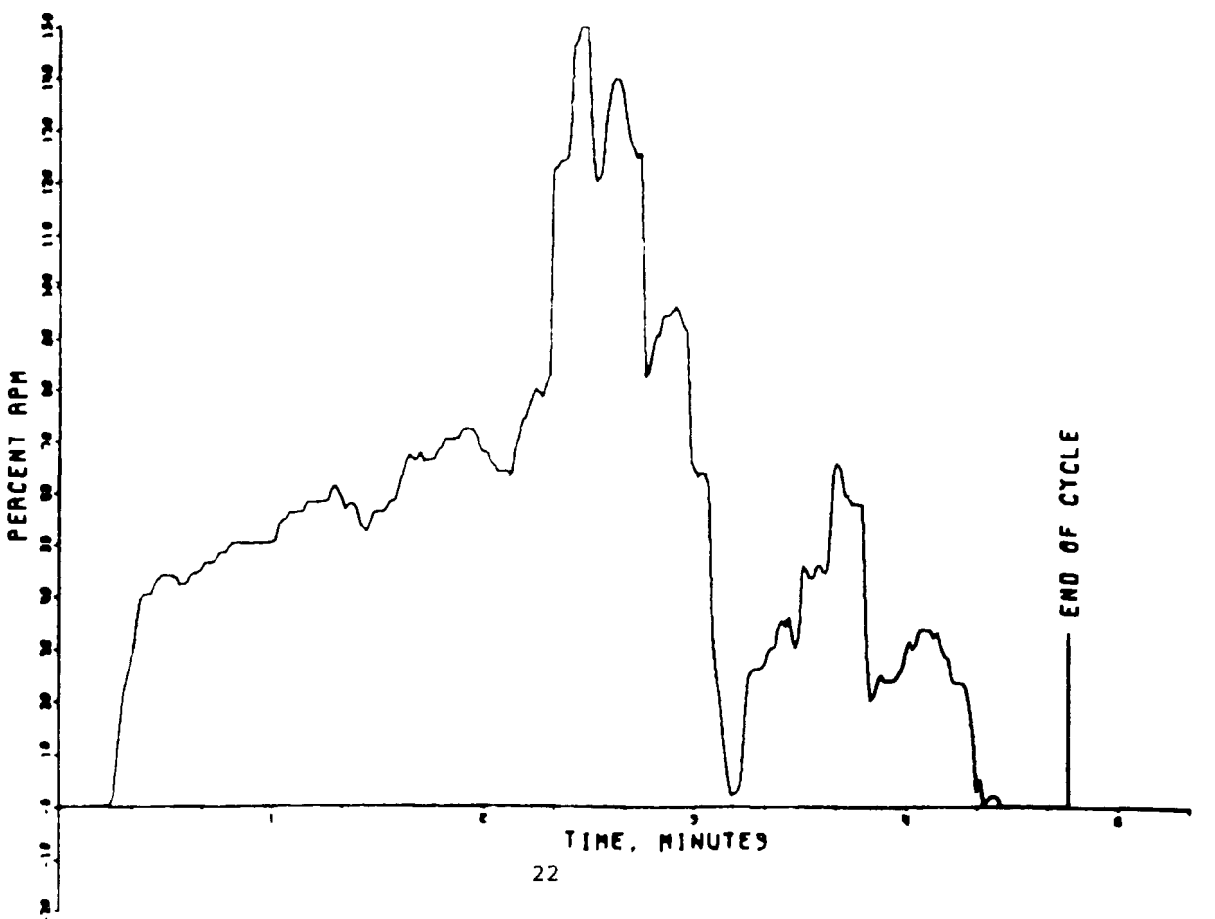
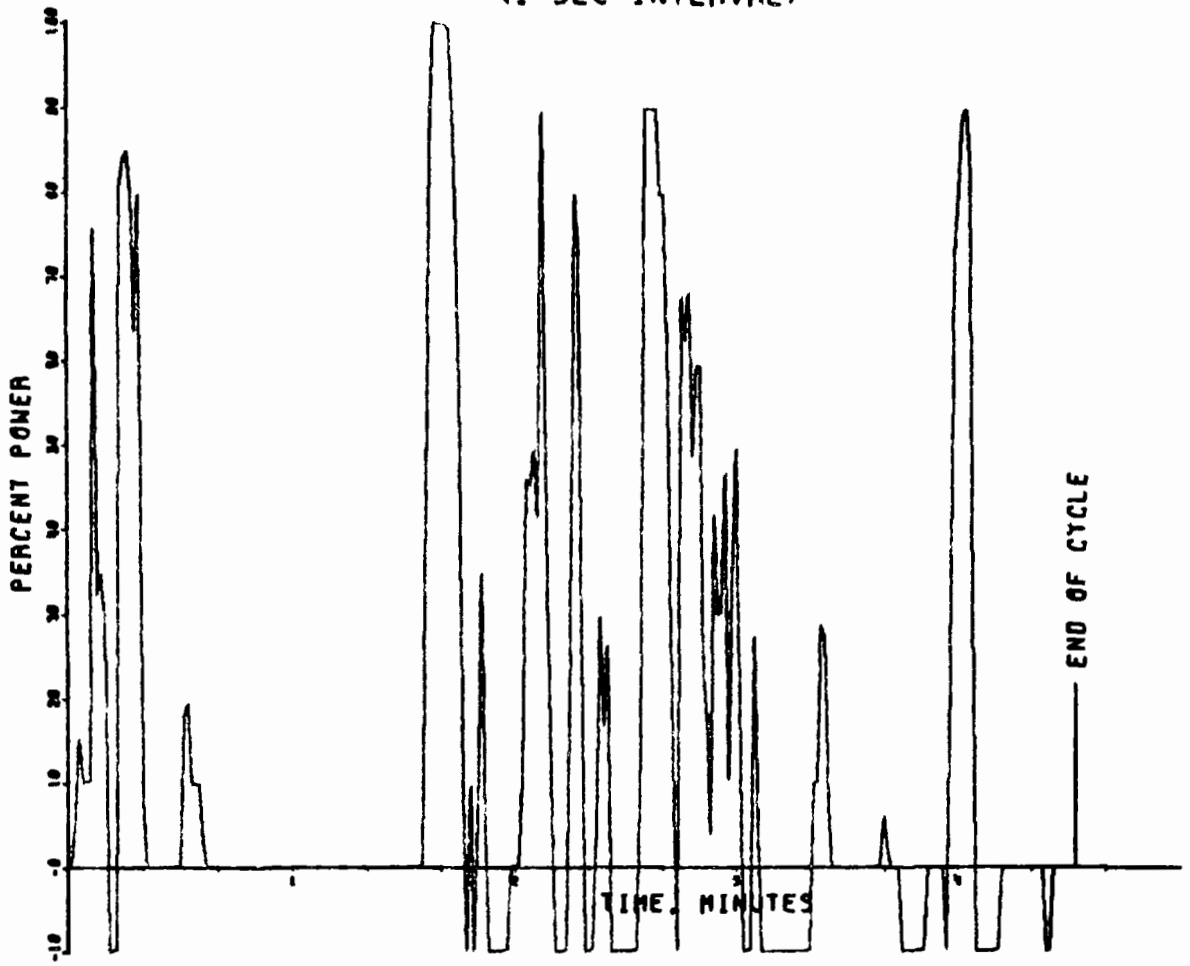


FIGURE 12. NY GAS NONFREEWAY: CYCLE 8410263
(1-SEC INTERVAL)



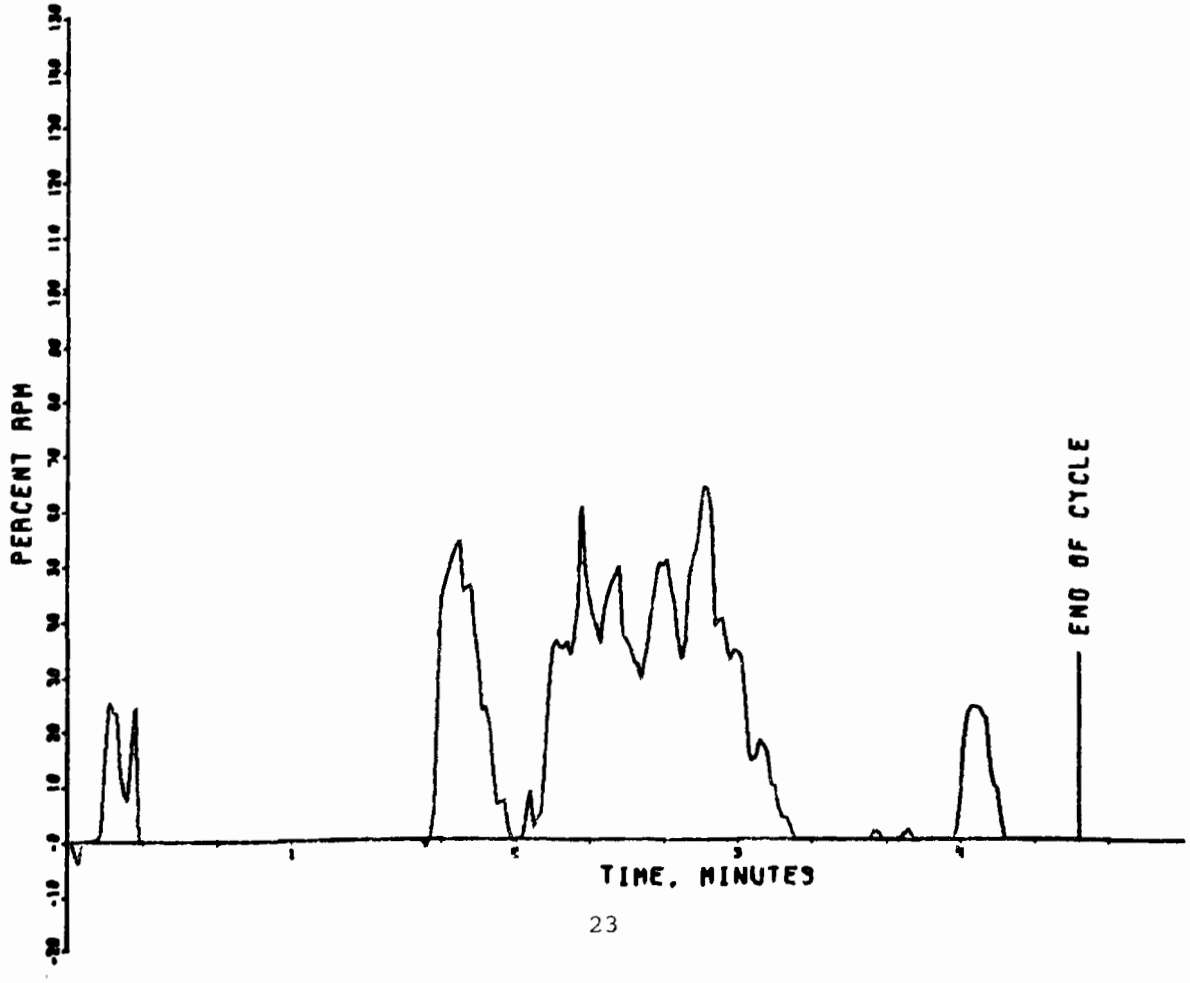
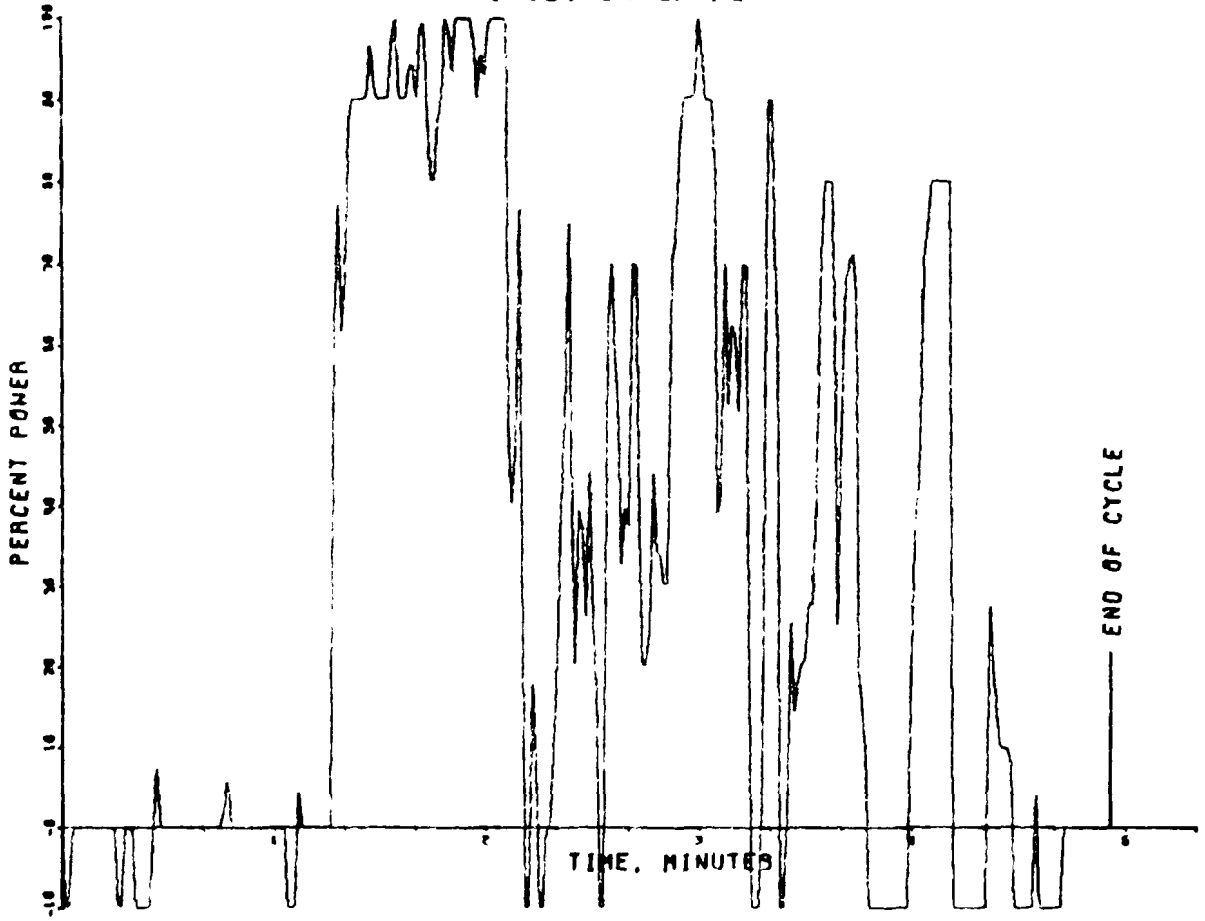


FIGURE 13. NY DSL FREEWAY: CYCLE 104099549
(1-SEC INTERVAL)



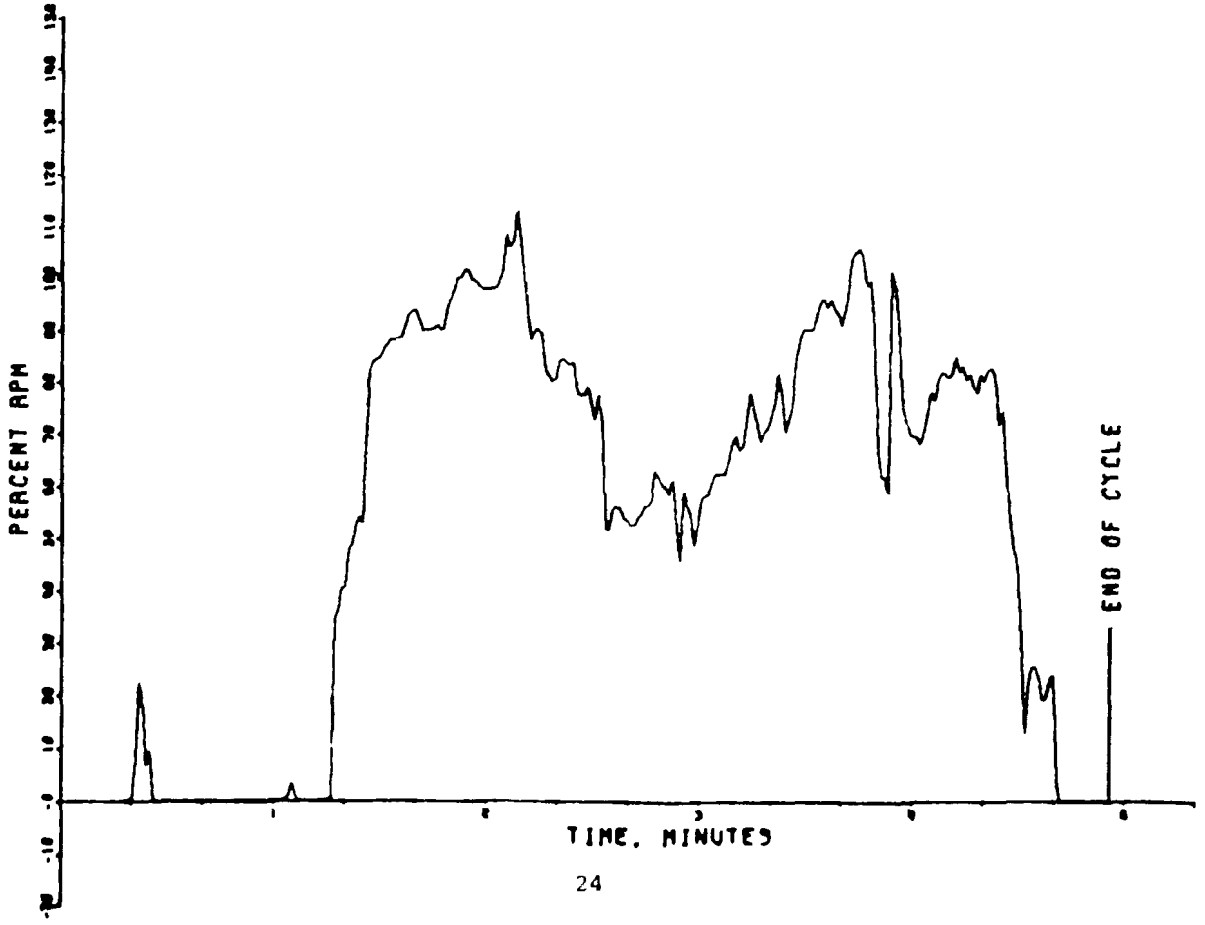
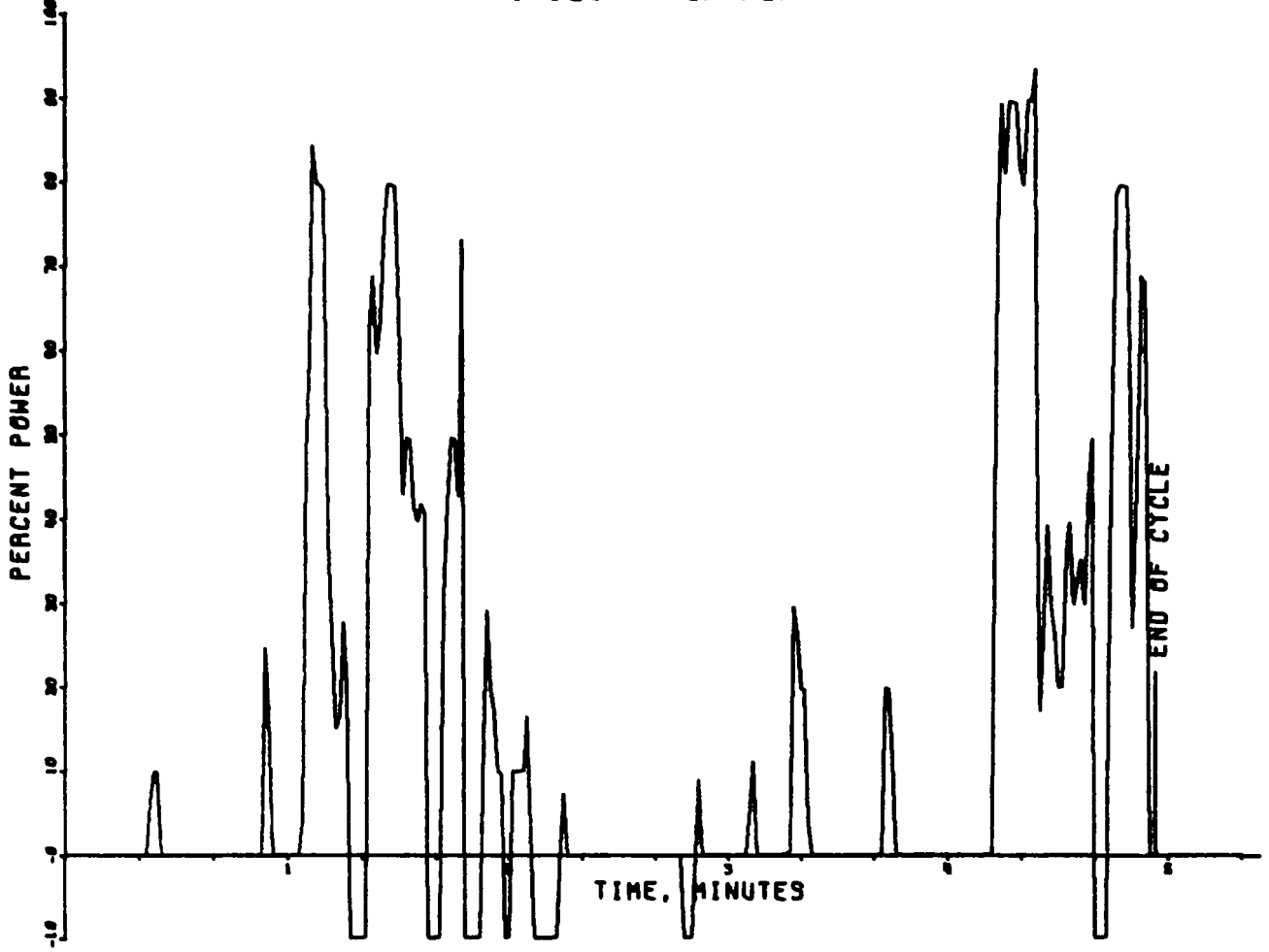


FIGURE 14. NY OSL NONFREEWAY: CYCLE 2114147447
(1-SEC INTERVAL)



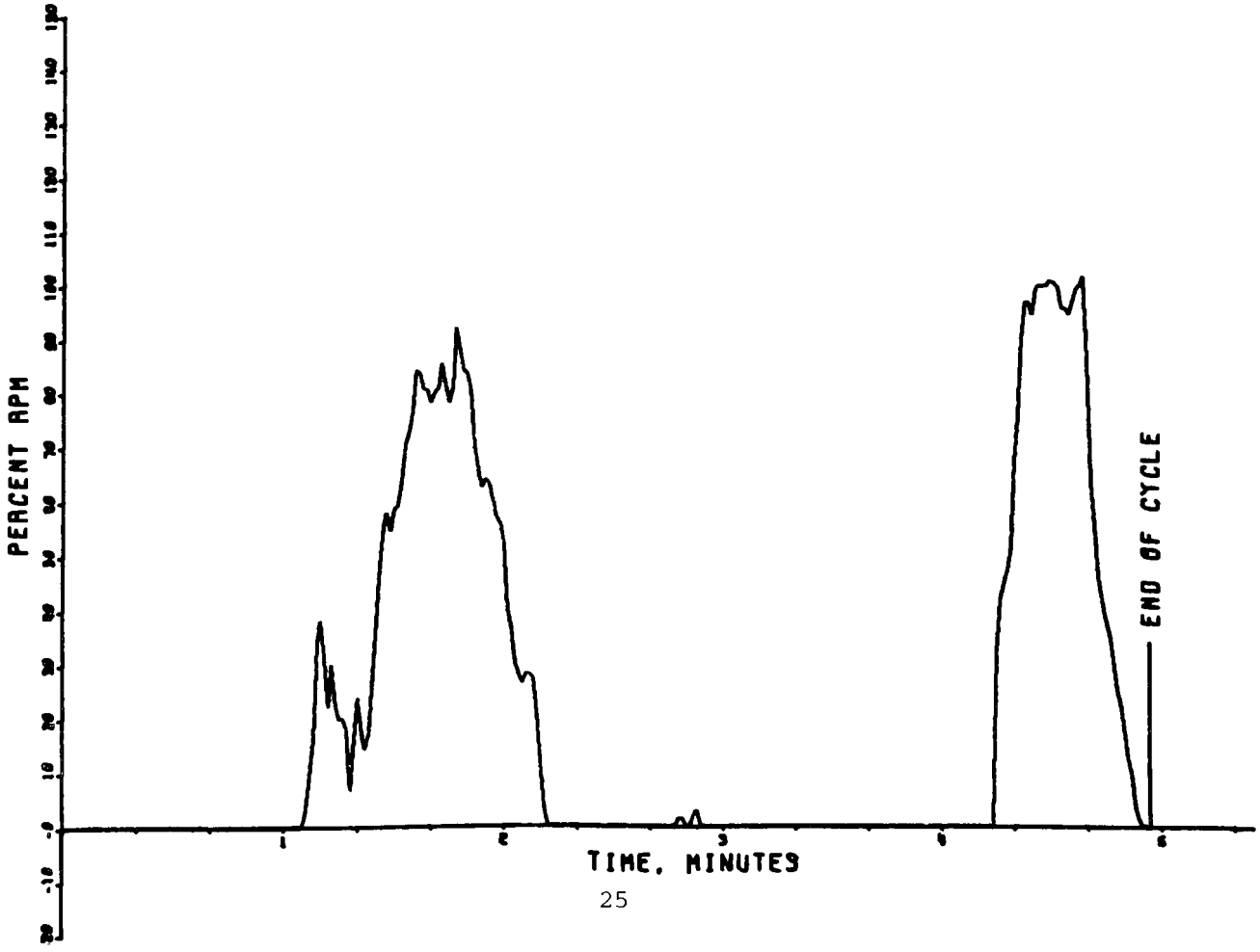


FIGURE 15.

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2041393295

DATA BASE: LA BUSES
FWY & NFWY COMPOSITE

AVERAGE SPEED = 20.65 MPH
DURATION = 17.71 MIN
DISTANCE = 6.10 MILES
INTERVAL = 1.00 SEC

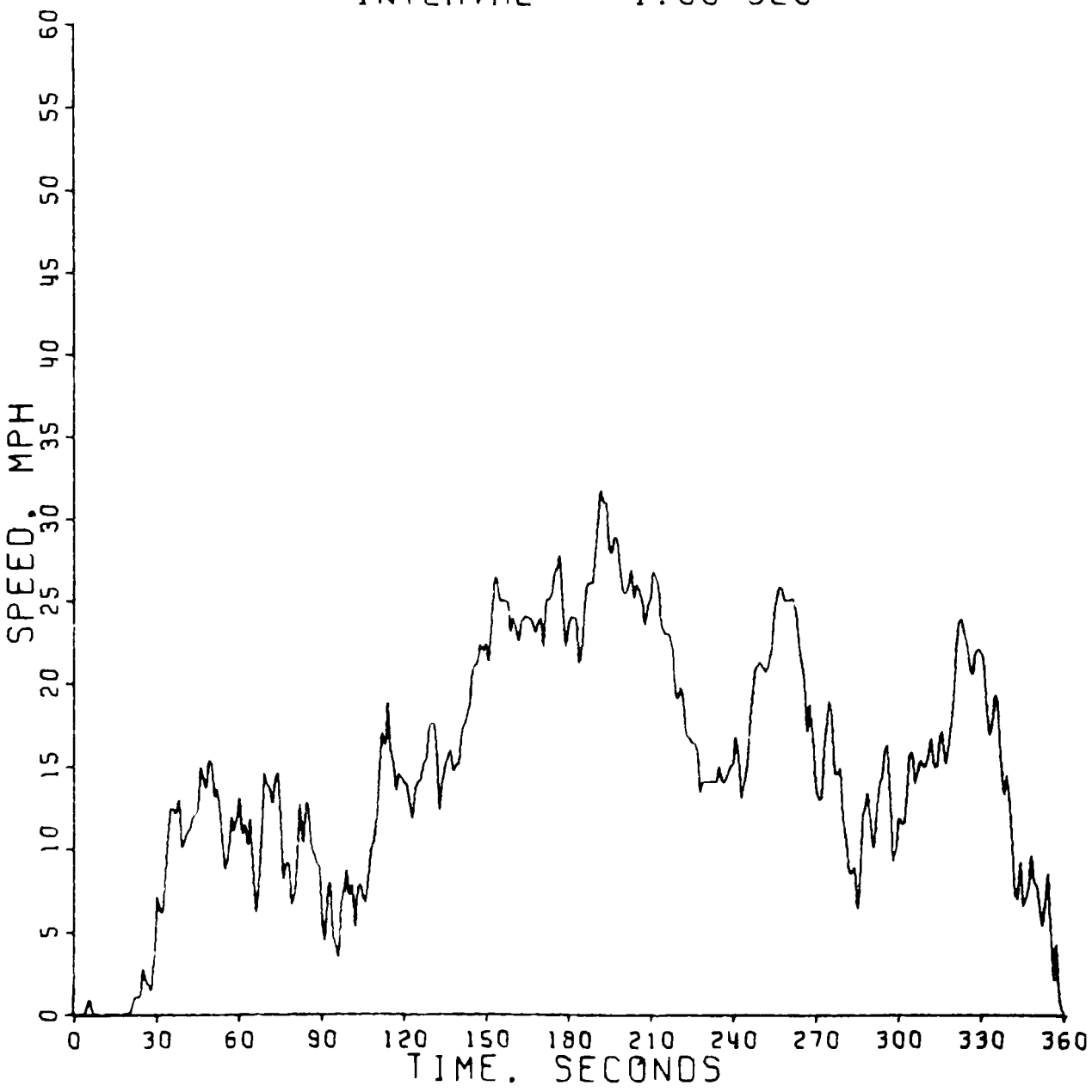


FIGURE 15. (CONTINUED)

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2041393295

DATA BASE: LA BUSES
FWY & NFWY COMPOSITE

AVERAGE SPEED = 20.65 MPH
DURATION = 17.71 MIN
DISTANCE = 6.10 MILES

INTERVAL = 1.00 SEC

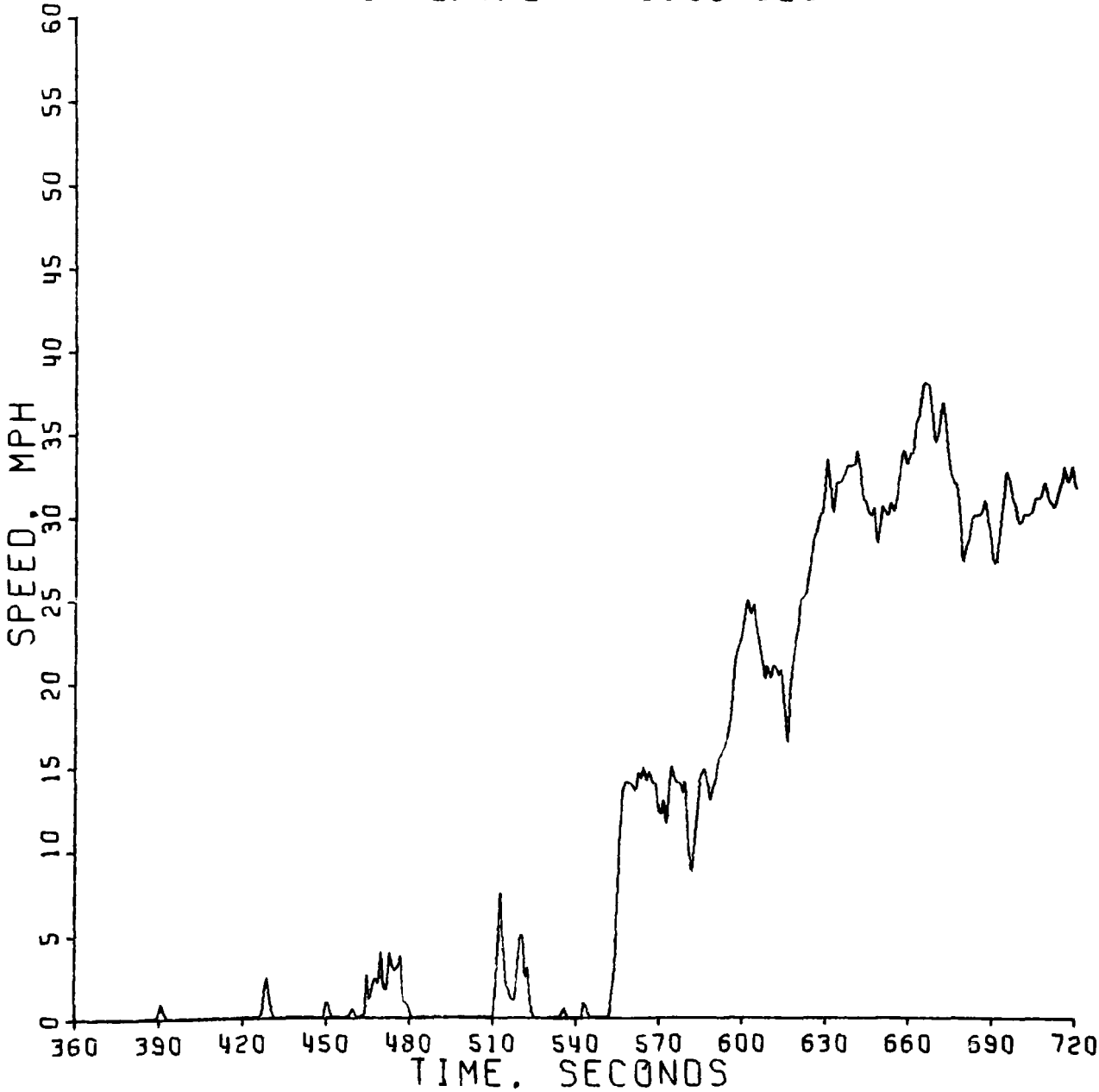


FIGURE 15. (CONTINUED)

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2041393295

DATA BASE: LA BUSES
FWY & NFWY COMPOSITE

AVERAGE SPEED = 20.65 MPH
DURATION = 17.71 MIN
DISTANCE = 6.10 MILES
INTERVAL = 1.00 SEC

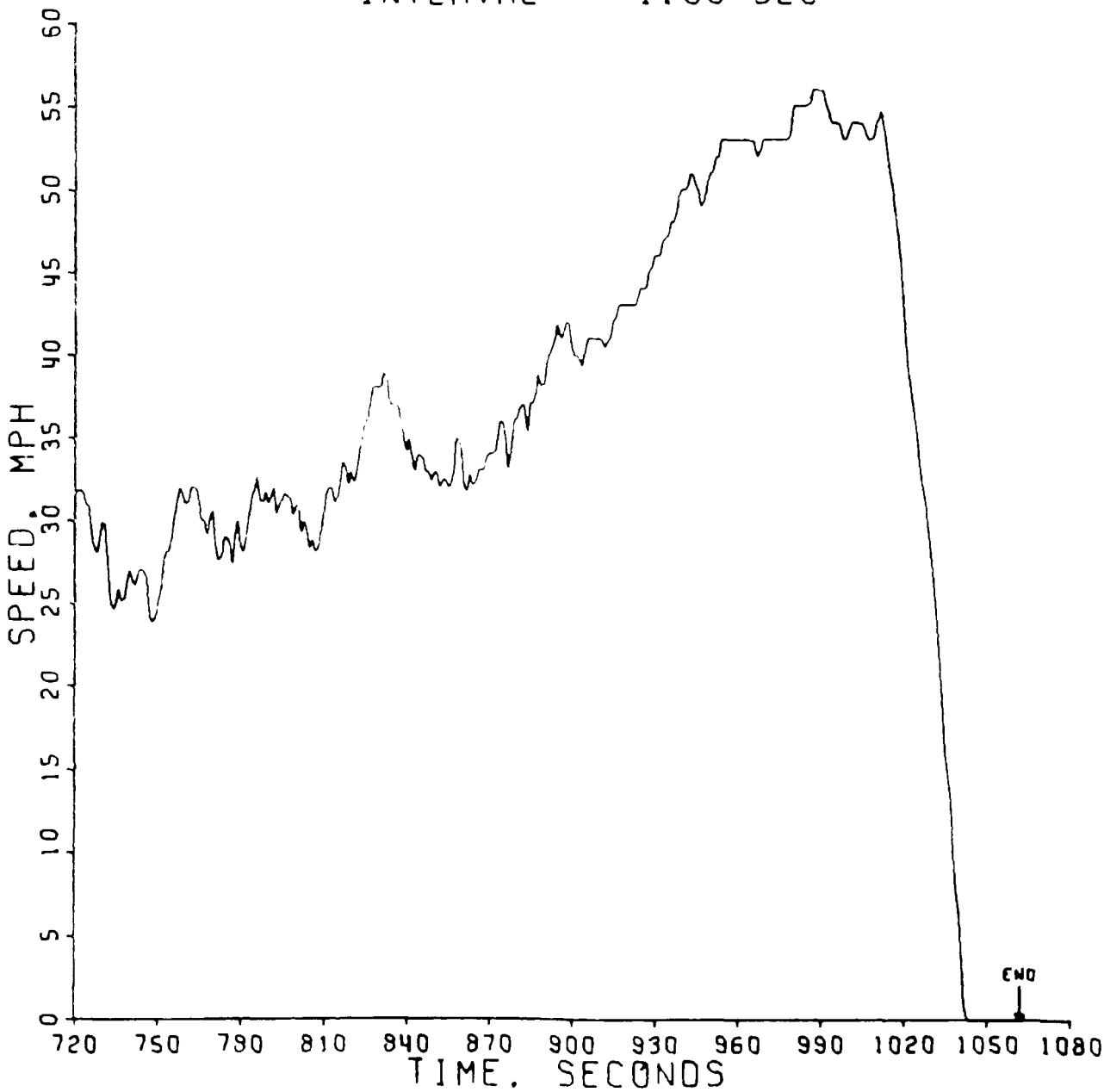


FIGURE 16.

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2143765149

DATA BASE: NY BUSES
FWY & NFWY COMPOSITE

AVERAGE SPEED = 8.77 MPH
DURATION = 17.15 MIN
DISTANCE = 2.51 MILES
INTERVAL = 1.00 SEC

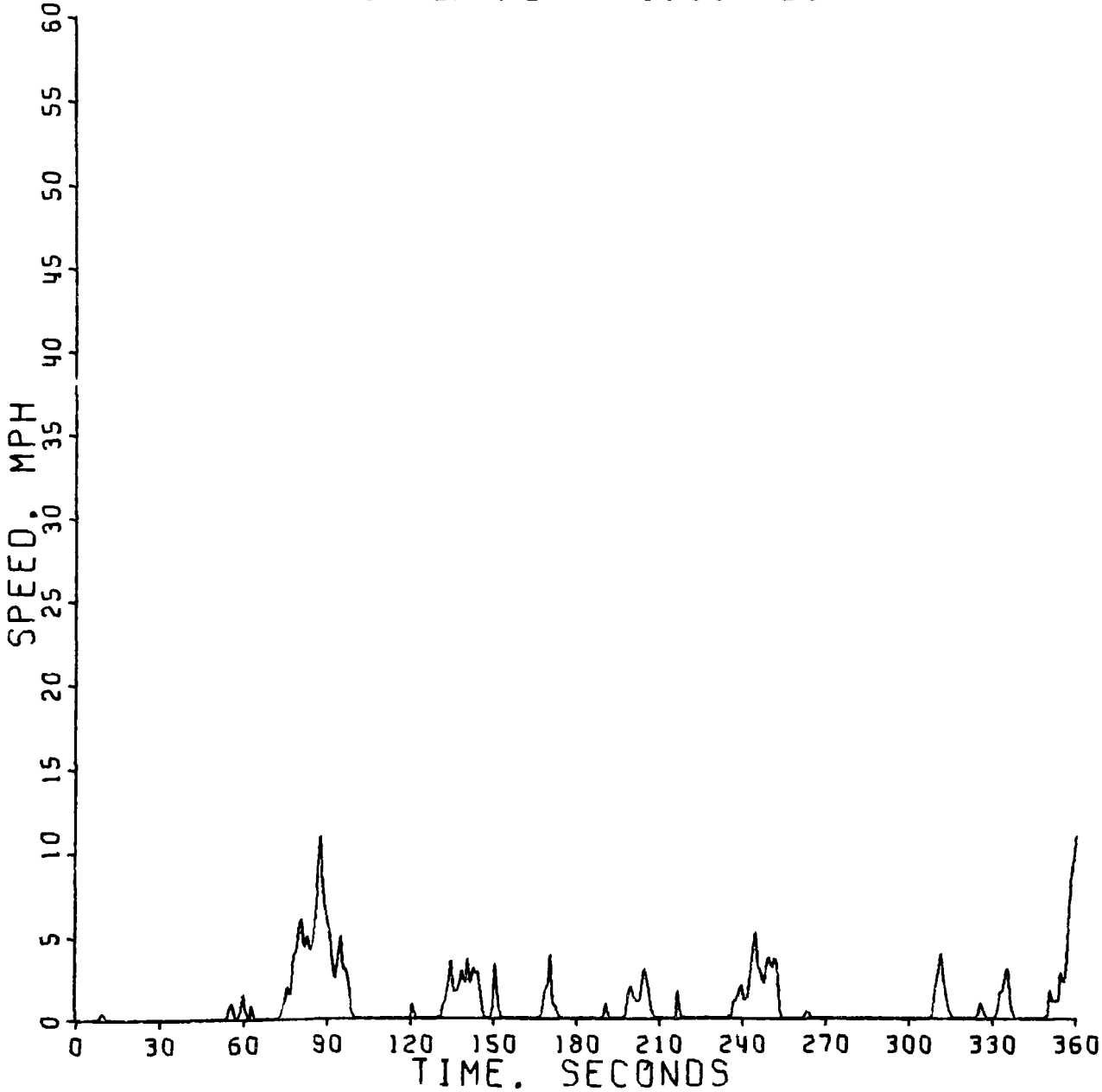


FIGURE 16. (CONTINUED)

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2143765149

DATA BASE: NY BUSES
FWY & NFWY COMPOSITE

AVERAGE SPEED = 8.77 MPH
DURATION = 17.15 MIN
DISTANCE = 2.51 MILES

INTERVAL = 1.00 SEC

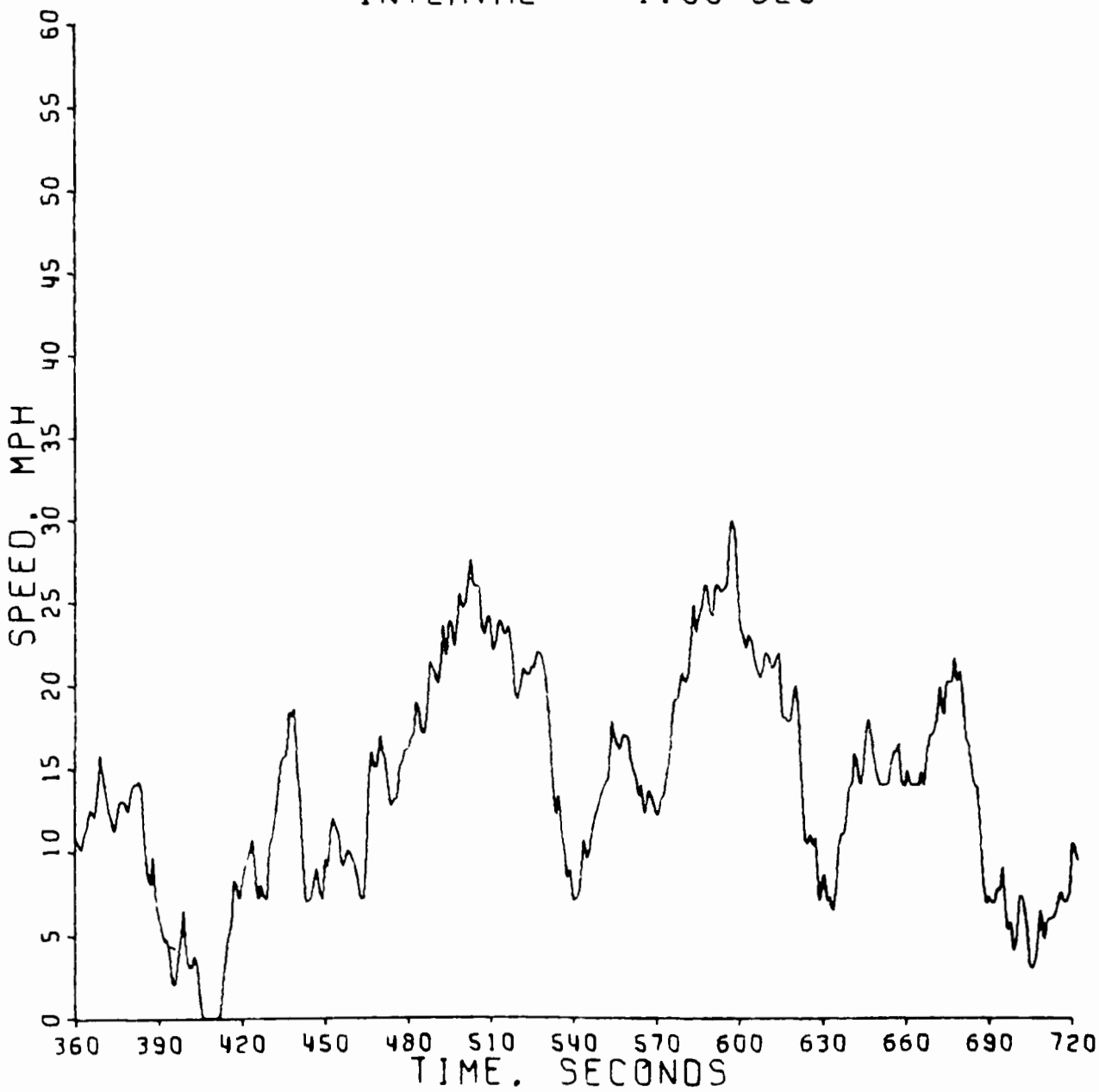


FIGURE 16. (CONTINUED)

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2143765149

DATA BASE: NY BUSES
FWY & NFWY COMPOSITE

AVERAGE SPEED = 8.77 MPH
DURATION = 17.15 MIN
DISTANCE = 2.51 MILES
INTERVAL = 1.00 SEC

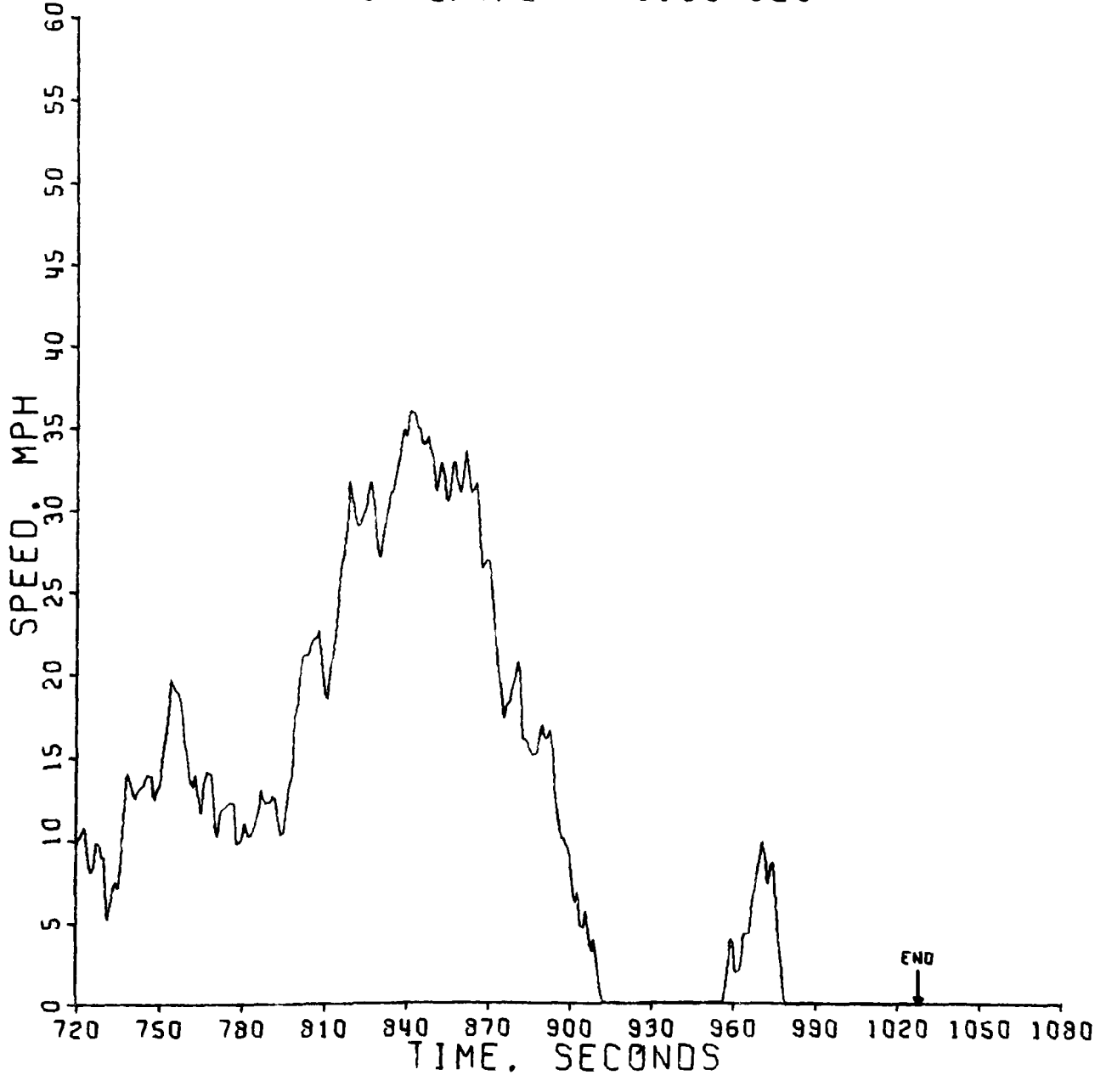
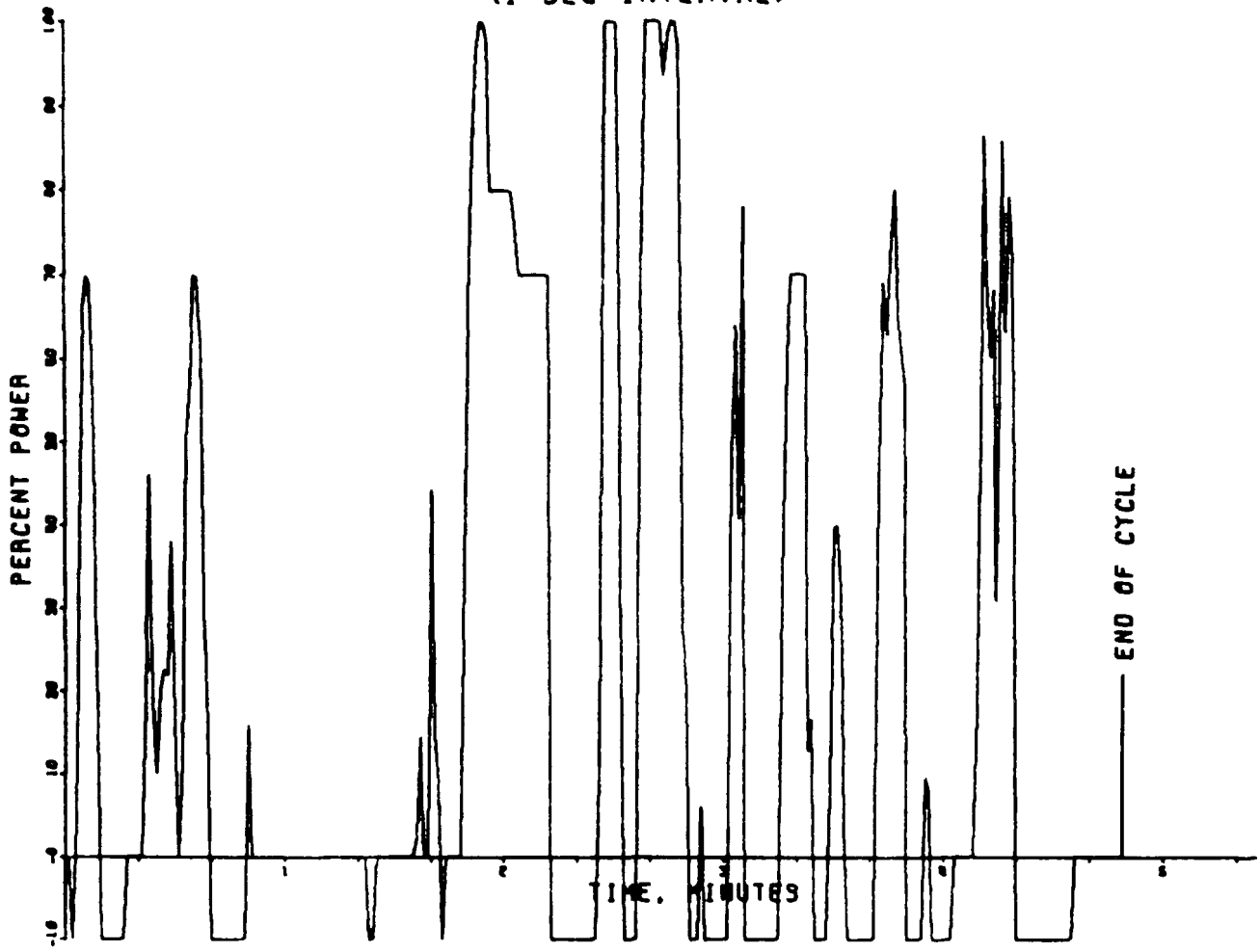


FIGURE 17. LA BUSES FWY + NFWY: CYCLE 2049482045
(1-SEC INTERVAL)



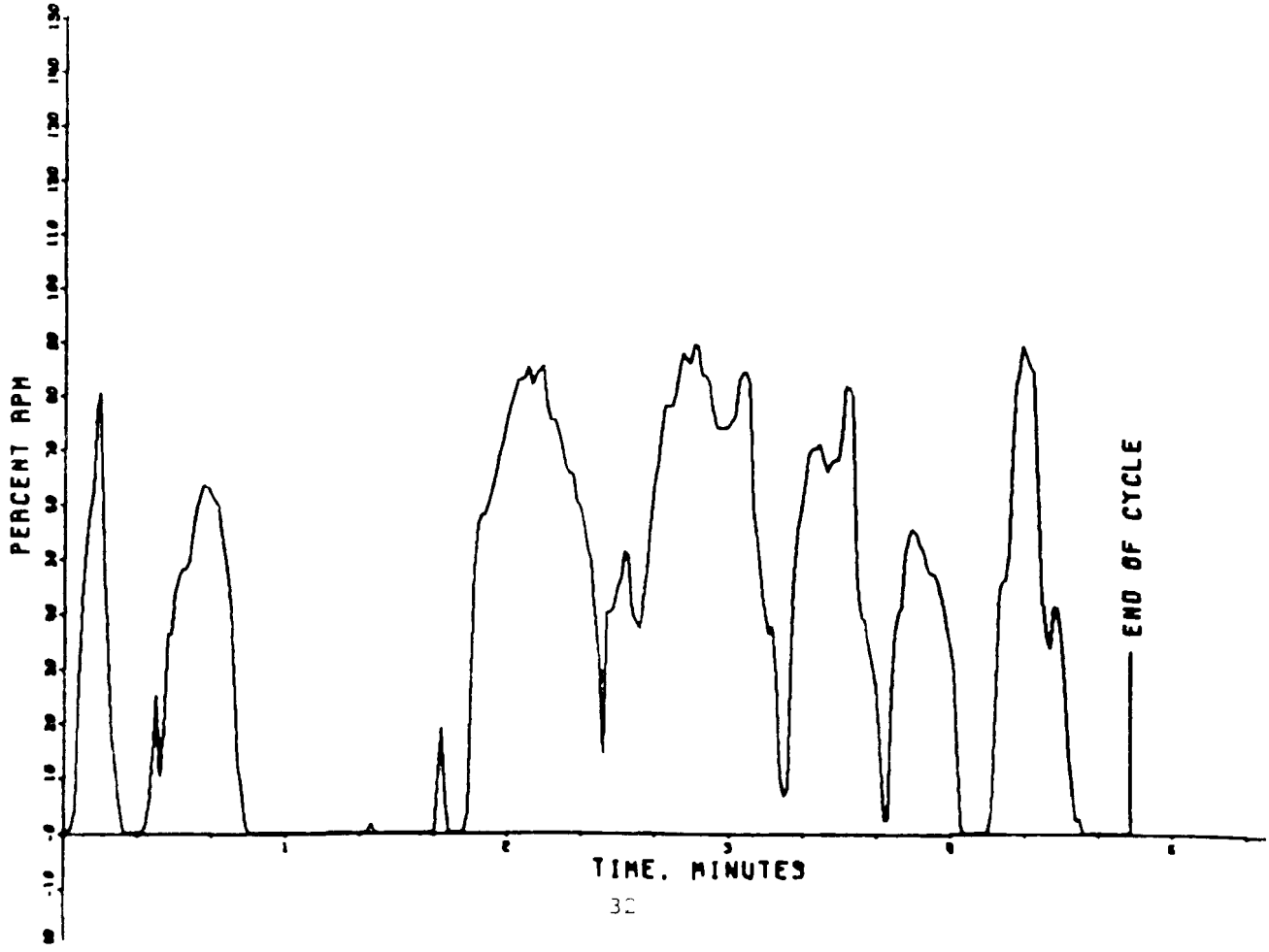
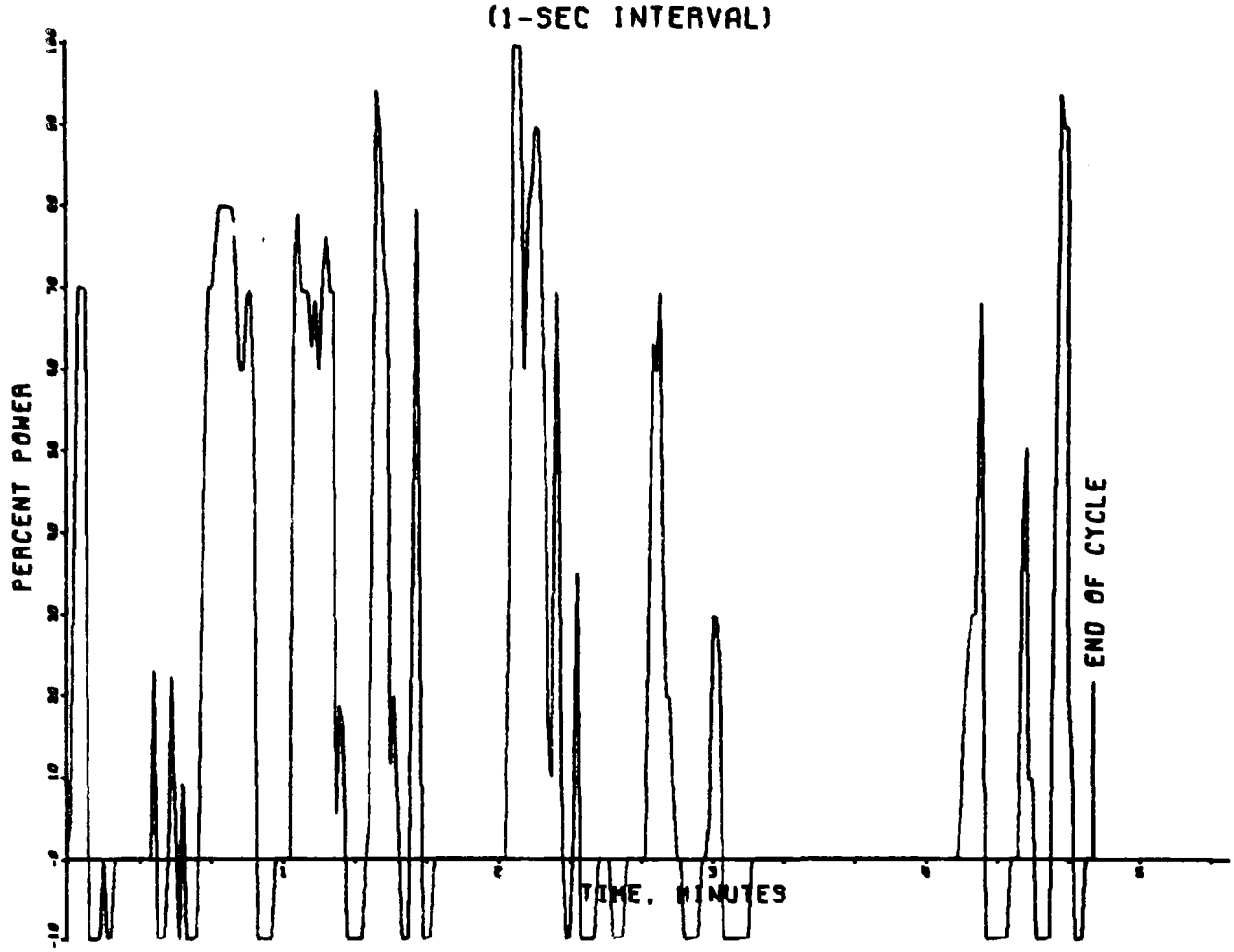
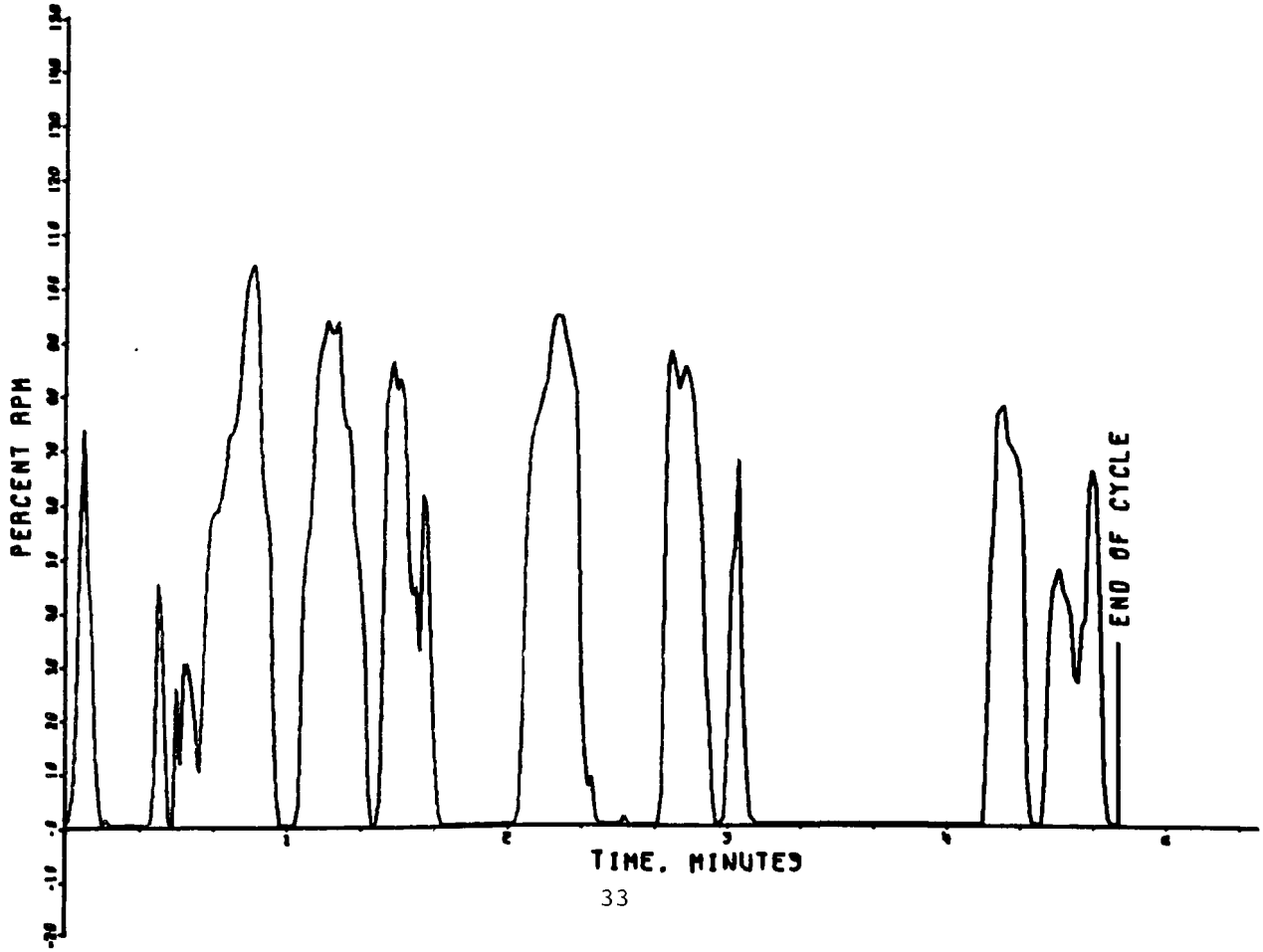


FIGURE 18. NY BUSES FWY + NFWY: CYCLE 2109178847
(1-SEC INTERVAL)





Section 2

INTRODUCTION

This section presents the background, objectives, and scope of EPA Contract No. 68-03-0411, "Heavy-Duty Vehicle Cycle Development".

2.1 BACKGROUND

The CAPE-21 program, a two-phase heavy-duty vehicle driving pattern and use survey, commenced in 1972 under the joint sponsorship of the Coordinating Research Council (CRC) and the Environmental Protection Agency (EPA). A Phase I study contract was awarded to Wilbur Smith and Associates (WSA) for the purpose of developing sampling plans for the collection of heavy-duty vehicle operating data in New York City and the Los Angeles Basin (References 1 and 2).

Phase II of the CAPE-21 program, collection of heavy-duty vehicle and engine data using instrumented trucks and buses selected in accordance with the Phase I sampling plans, started in New York City in 1973 under the direction of WSA in association with Wyle Laboratories. The Los Angeles data collection effort was accomplished in 1975 under EPA direction with support from personnel of both the EPA and Olson Laboratories.

The sampling plans were based on the requirement to instrument 50 trucks and 5 buses in each city. The truck sample in each city was stratified by engine type (gasoline-fueled and diesel-fueled), and vehicle type (2-axle single unit, 3-axle single unit, and tractor-trailer), as well as by the other parameters discussed in References 1 and 2. Each data record contained 10 channels of information as follows:

Channel	Parameter
1	Vehicle ID and time (tens of hours)
2	Time (hours units and minutes)
3	Engine speed
4	Load factor
5	Vehicle speed (optical encoder)
6	Road type
7	Traffic density
8	Throttle position (open/closed)
9	Engine temperature
10	Vehicle speed (tach generator)

The data were recorded sequentially at the rate of one data record each 0.864 seconds and the data in Channels 3 through 10 were recorded in units of millivolts of signal level.

The transducers were calibrated prior to installation on each truck for later conversion of the signal levels to engineering units. Each instrumented truck was then run on a chassis dynamometer at different levels of rpm and load factor (manifold vacuum for gasoline engines, rack position for Detroit Diesel Allison (DDA) engines, and rail pressure for Cummins Engine Company engines). Each instrumented truck was then used by the owner to perform its normal daily function. In accordance with the sampling plan, each truck was operated for 2 to 5 days. After collection of the required number of days of data, the instrumentation was removed and the truck returned to the owner.

The Phase II activities of the CAPE-21 program are documented in References 3 and 4.

2.2 OBJECTIVES

The objectives of the truck-cycle program were:

1. Develop a software package to process the CAPE-21 data into the required format for the development of engine-dynamometer and chassis-dynamometer cycles.

2. Develop the software necessary to generate engine-dynamometer and chassis-dynamometer cycles representative of the CAPE-21 data base.

3. Generate candidate engine-dynamometer and chassis-dynamometer cycles for trucks and buses from the CAPE-21 data base using the cycle-generation software.

2.3 SCOPE

The scope of the truck-cycle program discussed here encompassed the following major activities:

1. Support the EPA during the Los Angeles CAPE-21 data collection effort.

2. Process CAPE-21 raw-data tapes to edited tapes.

3. Process edited tapes to final tapes in which load factor is replaced by percent power and rpm is replaced by percent rpm.

4. Process the CAPE-21 data base into matrix formats by fuel/axle-type categories suitable for cycle development.

5. Generate candidate engine-dynamometer and chassis-dynamometer cycle segments for submission to the EPA.

6. Software documentation.

Section 3

DATA PROCESSING

The CAPE-21 data collection program consisted of instrumenting heavy-duty trucks and buses in New York City and the Los Angeles Basin and recording operating data during performance of each instrumented vehicle's normal job function. In accordance with the sampling plans developed in Phase I, 50 trucks and 5 buses were instrumented in each area. During the data processing phase of the present program, some vehicles were deleted from the vehicle sample because of instrumentation problems or the lack of reliable calibration or other necessary input information. The CAPE-21 data base then consisted of the operating data for 44 trucks and 4 buses in New York and 44 trucks and 3 buses in Los Angeles. The total CAPE-21 data sample used to generate chassis and engine cycles consisted of 290 truck-days and 21 bus-days of operation. The composition of the CAPE-21 sample is shown by vehicle in Table 2.

The raw data were recorded on magnetic tape cartridges with Metrodata Loggers in a 4-track format at a density of 200 bpi. Each data record, recorded at the rate of 1 record every 0.864 seconds, contained 10 channels of digital data as described above.

The sequence of data processing steps is shown in Figure 1 of the Summary. First, each tape cartridge, containing 1 vehicle-day of operating data, was processed by Wyle Laboratories to produce 9-track, IBM-compatible tape files at a density of 800 bpi for subsequent processing on the IBM 360/50 at the University of California, Riverside. During processing of the raw-data cartridges, whenever a parity error was encountered for a record, that record was replaced by one containing zero in each channel. If the number of those records, called zeroed records, exceeded 10 percent of the total number of records for a data file, the data for that day of operation were rejected. The raw-data tape processing was accomplished in a timely manner to permit replacement of a rejected day by operating the instrumented vehicle for an additional day.

Upon receipt of the IBM-compatible tapes, the first 1,000 records plus a random selection of 5 percent of the remaining records in each file were printed and reviewed. These data dumps were analyzed to ascertain that the recorded data appeared to be reasonable; i.e., that there were no obvious instrumentation problems and to determine the proper starting record for the file. The latter was necessary because the beginning of each tape file is noisy due to start-up instability, resulting in zeroed records and incomplete records.

The software which creates what are called the "millivolted" tapes thus skips the noisy portion of each file and writes to a new tape starting with the selected first record. That software unscrambles the packed format in which the raw-data tapes are written, puts all of the time data in Channel 2, and converts the signal levels in Channels 6, 7, and 8 into 1-digit codes, as

Table 2. CAPE-21 SAMPLE BY VEHICLE

CATEGORY	VEHICLE NUMBER	NUMBER OF DAYS	HOURS OF ENGINE-ON OPERATION
LA 2-AXLE GAS	5	4	7.03
	7	4	17.08
	10	4	13.97
	11	5	22.69
	13	4	15.37
	14	4	15.62
	17	2	6.54
	19	5	12.57
	21	3	12.50
	24	4	10.41
	25	4	15.99
	26	4	9.18
	28	6	8.41
	30	3	8.21
	32	4	6.02
	36	1	1.68
	40	3	9.45
	42	3	6.09
	47	4	14.65
LA 3-AXLE GAS	35	4	15.57
LA TT GAS	2	2	9.03
	3	3	10.46
	8	4	15.71
	12	4	19.96
	39	4	20.43
	43	3	7.79
	48	4	11.28
LA 2-AXLE DIESEL	23	2	8.48
LA 3-AXLE DIESEL	29	6	27.45
	31	3	14.87
	37	5	31.72
	38	2	2.26
	44	5	12.10
LA TT DIESEL	6	3	15.77
	15	2	11.50
	20	2	7.88
	22	2	9.62
	27	2	7.90
	33	1	3.16
	34	2	10.69
	41	2	6.56
	45	5	30.61
	46	2	7.64
	51	2	10.21

Table 2. CAPE-21 SAMPLE BY VEHICLE (Continued)

CATEGORY	VEHICLE NUMBER	NUMBER OF DAYS	HOURS OF ENGINE-ON OPERATION
NY 2-AXLE GAS	2	2	5.14
	3	2	7.05
	4	4	12.99
	5	3	12.97
	6	2	14.94
	8	3	11.76
	9	5	28.00
	11	3	12.45
	12	1	3.88
	13	5	15.94
	17	3	24.58
	20	4	25.60
	21	1	3.25
	25	3	13.40
	31	5	25.80
	32	3	7.98
	33	1	3.82
	35	4	14.83
	38	3	11.24
	44	4	3.47
	45	5	9.02
	48	4	4.42
	49	5	4.80
	50	5	34.53
	51	1	2.40
	61	2	7.13
NY 3-AXLE GAS	59	2	9.16
NY TT GAS	7	2	9.60
	28	4	28.21
	30	3	6.27
NY 2-AXLE DIESEL	62	5	30.70
NY 3-AXLE DIESEL	36	3	26.48
	37	1	4.69
	43	5	9.18
	54	4	23.47
	57	3	21.30
NY TT DIESEL	27	3	18.88
	34	4	13.58
	42	3	14.53
	53	5	11.46
	55	3	22.98
	56	5	26.43
	60	3	13.24
	65	2	9.59

Table 2. CAPE-21 SAMPLE BY VEHICLE (Continued)

CATEGORY	VEHICLE NUMBER	NUMBER OF DAYS	HOURS OF ENGINE-ON OPERATION
LA DIESEL BUSES	90	3	14.94
	91	2	24.33
	94	3	31.81
NY DIESEL BUSES	80	3	27.78
	81	5	53.02
	82	3	38.98
	83	2	11.24

shown below. Channels 1 and 2 then contain a 2-digit vehicle ID number and a 4-digit time (hours and minutes), respectively. The remaining channels contain transducer output signal levels in units of millivolts.

Channel	Code	Description
6 - Road Type	0	Unknown
	1	Freeway
	2	Arterial
	3	Local
7 - Traffic Density	0	Unknown
	1	Light
	2	Medium
	3	Heavy
8 - Throttle Position	0	Closed
	1	Open

The 5-percent data audit is then supplemented by the creation of a frequency matrix of rpm versus load factor (called the EVSL matrix) for each vehicle, where the load factor is manifold vacuum for gasoline engines, rack position for Detroit Diesel Allison (DDA) engines, and fuel pressure (rail pressure) for the diesel engines produced by the Cummins Engine Company. The EVSL matrix provides an initial assessment of the vehicle engine operating pattern and can reveal a data problem not observed in the 5-percent audit. Another EVSL matrix, called the ZIPEVSL matrix, is also created for each vehicle using just those records where the vehicle speed is zero. That matrix is used to identify a submatrix called the "idle box" which defines the rpm and load factor ranges within which the vehicle is said to be idling (Reference 5).

It should be noted here that the Channel-5 vehicle speed was measured initially with a tach generator. It was found, however, that the filter required to lower the noise level had an unacceptably-long time constant. The tach generator was replaced by an optical encoder which had no delay. The optical encoder, however, because of vibration when the vehicle was idling, sometimes recorded speeds as high as 15 mph when the vehicle speed was zero. That is, a vehicle might stop where the target was partly in view of the encoder window. As a result of vehicle vibration, the target would oscillate into and out of the window, generating an input signal to Channel 5. The tach generator was, therefore, put back in the system and its output fed to Channel 10. Thus, when the vehicle was moving, Channel 5 gave an accurate measure of vehicle speed. When the vehicle was stopped, the tach generator gave a reliable zero-speed signal in Channel 10. Therefore, whenever Channel 10 showed zero speed, Channel 5 was zeroed.

The major data-processing effort was devoted to editing the tapes. The editing procedures, discussed in detail below, accomplish the following:

1. Convert millivolts of engine speed, load factor, vehicle speed, and engine temperature into the appropriate engineering units.

2. Replace a single zeroed record by a record with linearly-interpolated values.

3. Replace two or more consecutive zeroed records with a single zeroed record.

4. Delete engine-off records and replace with a single zeroed record.

5. Replace a single record with bad or out-of-range values by a record with the bad values replaced by linearly-interpolated values.

6. Replace two or more consecutive records with bad values in the same channel by a single zeroed record.

7. Insert a zeroed record before a record which contains a bad value for time of day.

8. Zero the Channel-5 vehicle speed when the Channel-10 speed is zero.

9. Delete any record isolated by zeroed records immediately preceding and following.

10. Set load factor to the maximum value if load factor is no greater than the maximum plus 13 millivolts.

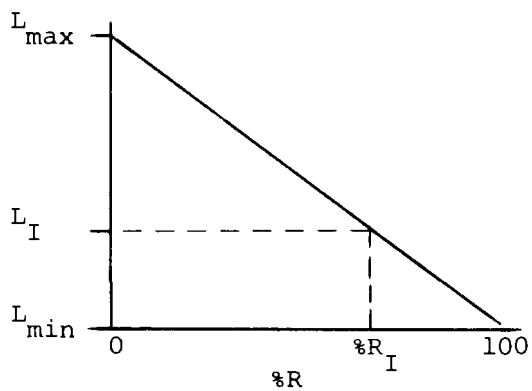
11. Set load factor to the minimum value if load factor is no less than the minimum minus 13 millivolts.

The tranducers used to measure engine speed, load factor, vehicle speed, and water temperature were calibrated prior to installation on each vehicle. Those calibration data provided the means for converting the signal level in millivolts to the desired engineering value. Since linear transducers were used, the conversions were linear. Engine speed for each truck was converted to units of rpm by simply multiplying millivolts by a constant, nominally with a value around 10. Millivolts of vehicle speed were converted to mph for each truck by multiplying by a constant with a value of about 0.10. The signal level for water temperature was converted to degrees on the Fahrenheit scale by multiplying by a slope (in the region of -0.3) and adding an intercept (usually around 220).

The load-factor conversions depended, of course, on the engine/fuel type. In the case of gasoline engines, a vacuum transducer was used to measure manifold vacuum. Therefore, the Channel-4 signal level was multiplied by a slope and added to an intercept to yield manifold vacuum in inches of mercury. Load factor for the DDA diesel engines was taken to be rack position. The Channel-4 signal level was thus proportional to the amount of rack travel. The signal level could first be multiplied by the calibration slope and then added to an intercept to give a rack position in units of inches of travel. However, in anticipation of the computation of horsepower at the next step in the process, the Channel-4 signal level was converted to percent rack travel, %R.

The procedure for computing %R is based on the observation that rack travel for all DDA engines is approximately 0.780 inches. What is required,

then, is the number of millivolts of transducer output when the rack is at each of the two extremes of travel. At one extreme the engine is at maximum power (at each rpm) and the (constant) signal level at that point was measured consistently. For reasons not completely understood, the signal level at the other travel extreme could not be established to give consistent, compatible results. Another technique was used, therefore, which did yield reasonable measures. Let the signal level at 100-percent power be denoted by L_{max} (millivolts) and adopt the convention that L_{max} corresponds to zero-percent rack travel; i.e., %R = 0. The horsepower model for DDA engines (to be discussed below) is a function of rpm and %R which yields percent power, %P, directly. The nominal idle rpm and %P = 0 are input to the model and percent rack at idle, $\%R_I$, is computed. Let the nominal idle load factor be denoted by L_I (millivolts) and let the load factor at %R = 100 be L_{min}. A straight line drawn between the points at L_{max} and L_I is then extrapolated to determine L_{min} (millivolts), as shown in the following diagram:



For the value of load factor, L, in a data record, the corresponding percent rack travel is computed from

$$\%R = \frac{L_{max} - L}{L_{max} - L_{min}} \times 100.$$

The load-factor parameter for the diesel engines produced by Cummins is fuel pressure (or rail pressure). The signal level in millivolts was converted to fuel pressure in psi by multiplying by the transducer calibration slope and adding the intercept.

In addition to the conversions to engineering units, it was necessary to eliminate bad data values, engine-off records (for efficiency in subsequent tape operations), and stretches of zeroed records. Because load factor can be a very rapidly changing variable, it was decided that interpolations should not be made over more than one record, or 0.864 seconds of time. Therefore, whenever a single zeroed record was encountered, the values in each channel of the proceeding and following records were averaged and written as a replacement record for the zeroed record. Two or more consecutive zeroed records, however, were replaced by a single zeroed record and no interpolating was performed.

Minimum and maximum permissible values of rpm and load factor were established by analysis of the EVSL matrices. If a value outside the prescribed range for either parameter was found in a single record, the bad value was replaced by the average of the preceding and following values. If two or more consecutive records had bad values in a single channel, those records were deleted and replaced by a single zeroed record. Each data file was stripped of its engine-off records, and a single zeroed record inserted, so that those records of no interest need not be read in all subsequent tape operations.

The change in vehicle speed from one record to the next was constrained by what is called the AMAX model developed by the EPA. That model established a maximum increase in speed (maximum acceleration), from one record to the next, as a function of the initial speed. (No constraint was put on a decrease in speed (deceleration) from one record to the next.) Whenever the speed on a given record was larger than that on the preceding record by an amount exceeding that permitted by the AMAX model, the speed was replaced by the average of the preceding and succeeding speeds and tested again with the AMAX model. If the interpolated speed failed the AMAX test, the record was replaced by a zeroed record.

Whenever the time-of-day value was bad (i.e., was greater than 1 minute later than the previous time or was less than the previous time), a zeroed record was inserted as a marker. No actual editing of the time channel was accomplished because the time data were not needed for subsequent processing, analysis, and cycle development. Any record which was isolated by zeroed records immediately preceding and following it was deleted because no deltas could be obtained, thus making the record of no value. Finally, because of the error inherent in the transducers and their calibrations, any load factor in the range of the maximum to the maximum plus 13 millivolts was set equal to the maximum. Any load factor in the range of the minimum to the minimum minus 13 millivolts was set equal to the minimum. An example of the inputs to the edit program is shown in Table 3. The outputs from the edit program for the 2 days of that same truck are shown in Tables 4 and 5. Edit summary data by category are given for Los Angeles and New York in Tables 6 and 7, respectively.

The final step in the tape-processing procedure was the conversion of rpm to percent rpm, %E, and the conversion of load factor to percent power, %P. The resulting set of tapes, called the power tapes, constitutes the CAPE-21 data base and provided the input to all subsequent analysis and cycle generation.

The conversion of rpm to %E was made with respect to the manufacturer's rated rpm, E_R, for each engine and the idle-bpx rpm-range limits called E-upper, E_U, and E-lower, E_L (Reference 5). Denoting the value of rpm for a given record by E, when $E < E_L$, then

$$\%E = \frac{E - E_L}{E_R - E_L} \times 100,$$

and when $E > E_U$, then

Table 3. EDIT INPUT FOR LA TRUCK 17

CARD INPUTS FOR LA TRUCK 17, DAYS 1, 2.

RPM CONVERSION SLOPE	= 10.000	AMAX INPUTS:	A = 5153.0	MAXIMUM LOAD FACTOR	= 914
LF CONVERSION SLOPE	= -0.034849		B = 8256.4	MINIMUM LOAD FACTOR	= 198
LF INTERCEPT	= 31.854		C = 11.0080	MAXIMUM RPM	= 3950
SPEED CONVERSION SLOPE	= 0.0833		X = 199.26		
TEMP CONVERSION SLOPE	= -0.32500	L-100 INPUTS:	SLOPE = -0.04345		
TEMP INTERCEPT	= 225.00		CONST = 955.70		

TACH GENERATOR INPUTS:

DAY	OVER-THE-TOP (1 = YES, 0 = NO)	TYPE (-1 = NEGATIVE, 0 = NOT USED, 1 = POSITIVE)	OFFSET
1	0	1	2
2	0	1	0

VALVE CLOSURE FLAG = 0 (1 = REVERSED, 0 = NOT-REVERSED) LOCATION FLAG = 1 (1 = LA, 0 = NY)

COMPUTED CONSTANTS:

CRITICAL GEAR REDUCTION = 27.38678

CRITICAL SPEED = 7.27577

MAXIMUM AMAX VALUE = 8.54635

MAX RPM AT MAX LF = 959

HEADER INFORMATION:

LA 17/01 2-AXLE GAS

TRANSDUCER CALIBRATIONS:

RPM SLOPE = 10.000

LOAD FACTOR: SLOPE = -0.034849

INTERCEPT = 31.854

SPEED SLOPE = 0.0833

TEMPERATURE: SLOPE = -0.32500

INTERCEPT = 225.00

*

Table 4. EDIT OUTPUT FOR LA - TRUCK 17, DAY 1

```
-----EDITING SUMMARY-----

TOTAL NUMBER OF RECORDS REQUIRING EDITING          =  1324
      NUMBER OF ZEROED RECORDS ON INPUT TAPE       =   243
      NUMBER OF ENGINE-OFF RECORDS                 =   881
      NUMBER OF RECORDS WITH OUT-OF-RANGE VALUES   =   200


NUMBER OF RECORDS WITH:
      RPM ABOVE RPM MAXIMUM(3950.)     =     0
      RPM BETWEEN 0 AND 300            =     7
      RPM BELOW 0                      =     0
      LF ABOVE L100+13                 =    71
      LF BETWEEN L100 AND L100+13      =    85
      LF BETWEEN LF C/O AND LF C/O-13  =     0
      LF BELOW LF C/O-13               =     0
      SPEED ABOVE 70                   =     0
      SPEED NEGATIVE WHILE MOVING      =     1
      DELTA-SPEED EXCEEDING AMAX       =    36
      SPEED TO BE ZEROED               =   316
      (NOT AN OUT-OF-RANGE VALUE)


TOTAL NUMBER OF INTERPOLATED RECORDS                =  166
      RPM ABOVE RPM MAXIMUM INTERPOLATIONS          =    0
      RPM BETWEEN 0 AND 300 INTERPOLATIONS          =    1
      RPM BELOW 0 INTERPOLATIONS                    =    0
      LF ABOVE L100+13 INTERPOLATIONS               =    0
      LF BELOW C/O-13 INTERPOLATIONS                =    0
      SPEED ABOVE 70 INTERPOLATIONS                 =    0
      NEGATIVE SPEED INTERPOLATIONS                 =    1
      SPEED INTERPOLATIONS DUE TO AMAX CRITERION    =   27
      ZEROED RECORD INTERPOLATIONS                  =  137


TOTAL NUMBER OF RECORDS ELIMINATED DURING EDIT =  1072
      RPM ABOVE RPM MAXIMUM                    =     0
      RPM BETWEEN 0 AND 300                    =     6
      RPM BELOW 0                              =     0
      LF ABOVE L100+13                         =    70
      LF BELOW C/O-13                          =     0
      SPEED ABOVE 70                           =     0
      NEGATIVE SPEED                           =     0
      AMAX CRITERION                           =     9
      CONSECUTIVE ZEROED RECORDS               =   106
      CONSECUTIVE ENGINE-OFF RECORDS           =   881


TOTAL NUMBER OF NON-ZEROED, ENGINE-ON RECORDS ELIMINATED  =    85
TOTAL NUMBER OF ZEROED RECORDS ON OUTPUT TAPE             =    69
      THOSE DUE TO TIME DISCREPANCIES                     =     1

TOTAL NUMBER OF RECORDS NOT REQUIRING EDITING             = 18356
TOTAL NUMBER OF GOOD RECORDS ELIMINATED                   =     5

TOTAL NUMBER OF RECORDS ON INPUT TAPE                     = 19680
TOTAL NUMBER OF RECORDS ON OUTPUT TAPE                    = 18672


-----END OF CONVERT AND EDIT FOR  LA TRUCK 17, DAY 1 -----
```

Table 5. EDIT OUTPUT FOR LA - TRUCK 17, DAY 2

```
-----EDITING SUMMARY-----

TOTAL NUMBER OF RECORDS REQUIRING EDITING          =     73
      NUMBER OF ZEROED RECORDS ON INPUT TAPE       =      8
      NUMBER OF ENGINE-OFF RECORDS                 =     58
      NUMBER OF RECORDS WITH OUT-OF-RANGE VALUES   =      7


NUMBER OF RECORDS WITH:
      RPM ABOVE RPM MAXIMUM(3950.)     =      0
      RPM BETWEEN 0 AND 300            =      1
      RPM BELOW 0                      =      0
      LF ABOVE L100+13                 =      0
      LF BETWEEN L100 AND L100+13      =      1
      LF BETWEEN LF C/O AND LF C/O-13  =      0
      LF BELOW LF C/O-13               =      0
      SPEED ABOVE 70                   =      0
      SPEED NEGATIVE WHILE MOVING      =      0
      DELTA-SPEED EXCEEDING AMAX       =      5
      SPEED TO BE ZEROED               =     91
      (NOT AN OUT-OF-RANGE VALUE)


TOTAL NUMBER OF INTERPOLATED RECORDS                =      5
      RPM ABOVE RPM MAXIMUM INTERPOLATIONS          =      0
      RPM BETWEEN 0 AND 300 INTERPOLATIONS          =      0
      RPM BELOW 0 INTERPOLATIONS                    =      0
      LF ABOVE L100+13 INTERPOLATIONS               =      0
      LF BELOW C/O-13 INTERPOLATIONS                =      0
      SPEED ABOVE 70 INTERPOLATIONS                 =      0
      NEGATIVE SPEED INTERPOLATIONS                 =      0
      SPEED INTERPOLATIONS DUE TO AMAX CRITERION    =      4
      ZEROED RECORD INTERPOLATIONS                  =      1


TOTAL NUMBER OF RECORDS ELIMINATED DURING EDIT =     67
      RPM ABOVE RPM MAXIMUM                    =      0
      RPM BETWEEN 0 AND 300                    =      1
      RPM BELOW 0                              =      0
      LF ABOVE L100+13                         =      0
      LF BELOW C/O-13                          =      0
      SPEED ABOVE 70                           =      0
      NEGATIVE SPEED                           =      0
      AMAX CRITERION                           =      1
      CONSECUTIVE ZEROED RECORDS               =      7
      CONSECUTIVE ENGINE-OFF RECORDS           =     58


TOTAL NUMBER OF NON-ZEROED, ENGINE-ON RECORDS ELIMINATED  =      2
TOTAL NUMBER OF ZEROED RECORDS ON OUTPUT TAPE             =      9
      THOSE DUE TO TIME DISCREPANCIES                     =      1

TOTAL NUMBER OF RECORDS NOT REQUIRING EDITING             =   8645
TOTAL NUMBER OF GOOD RECORDS ELIMINATED                   =      0

TOTAL NUMBER OF RECORDS ON INPUT TAPE                     =   8718
TOTAL NUMBER OF RECORDS ON OUTPUT TAPE                    =   8660


-----END OF CONVERT AND EDIT FOR LA TRUCK 17, DAY 2  .-----
```

Table 6. EDIT SUMMARY FOR LA CATEGORIES

CATEGORIES	2-AXLE GAS	3-AXLE GAS	TT GAS	2-AXLE DIESEL	3-AXLE DIESEL	TT DIESEL	BUSES
Out-of-Range Values:							
RPM	401	32	243	0	6,331	363	158
Load Factor	9,737	721	22,467	1,683	4,171	15,045	18,929
Speed	366	11	4	0	1	3	2
Delta Speed	3,308	412	1,194	1	420	159	730
Interpolations:							
RPM	62	16	47	0	93	94	19
Load Factor	39	49	790	0	593	1,770	162
Speed	7	9	4	0	1	1	1
Delta Speed	2,224	233	949	0	384	137	641
Zeroed Record	1,581	2,049	1,790	45	157	650	216
LF Set Equal to Maximum	9,587	649	21,456	11	345	208	0
LF Set Equal to Minimum	0	0	0	1,647	2,247	2,728	14,842
Records Eliminated:							
RPM	339	16	196	0	6,238	269	139
Load Factor	109	23	221	25	974	10,339	3,925
Speed	40	1	0	0	12	2	0
Delta Speed	1,084	179	245	1	36	22	89
Zeroed Records	4,108	2,287	2,291	709	3,785	3,248	620
Engine-off Records	143,362	718	72,024	718	13,509	46,746	14,894
Records on Input Tapes	1,043,089	68,275	469,497	36,810	392,925	567,186	315,932
Records on Output Tapes	896,398	65,869	395,529	35,421	368,822	509,341	297,020

Table 7. EDIT SUMMARY FOR NY CATEGORIES

CATEGORIES	2-AXLE GAS	3-AXLE GAS	TT GAS	2-AXLE DIESEL	3-AXLE DIESEL	TT DIESEL	BUSES
Out-of-Range Values:							
RPM	1,429	16	62	29	7,342	2,242	176
Load Factor	12,007	1,822	1,911	126	11,792	6,742	2,392
Speed	474	0	1,023	0	921	219	189
Delta Speed	4,942	619	261	47	535	2,252	857
Interpolations:							
RPM	341	0	10	1	236	1,005	5
Load Factor	659	272	250	27	1,050	654	394
Speed	32	0	41	0	28	8	3
Delta Speed	4,055	562	202	29	460	1,984	822
Zeroed Record	3,830	15	144	55	369	849	2,446
LF Set Equal to Maximum	8,076	1,318	1,608	21	564	595	1
LF Set Equal to Minimum	15	0	1	1	41	4,082	1,232
Records Eliminated:							
RPM	1,088	16	52	28	7,109	1,235	171
Load Factor	3,257	232	53	77	10,131	1,413	766
Speed	245	0	965	0	713	201	152
Delta Speed	886	57	59	18	75	268	35
Zeroed Records	33,796	37	1,585	6,914	12,016	6,018	6,407
Engine-off Records	1,164,999	18,423	85,016	17,462	96,583	277,500	74,855
Records on Input Tapes	2,544,450	56,966	271,419	152,419	481,498	831,474	628,642
Records on Output Tapes	1,344,428	38,334	183,904	127,995	356,408	546,484	547,132

$$\%E = \frac{E - E_U}{E_R - E_U} \times 100.$$

Finally, when $E_L \leq E \leq E_U$ (i.e., idle rpm), then %E is set equal to zero. By converting to %E so that %E = 0 at idle, the data from different trucks with different idle-rpm ranges can be combined into an idle category. In addition, of course, for a cycle to be applied to different engines with different rated-rpm values, the cycle-rpm values must be normalized. That is, when an engine is to be tested, its rated rpm and idle rpm are used to convert from each percent rpm value in the cycle to an rpm in engineering units by solving for E in the preceding equations with $E_U = E_L = E_I$, where E_I is the idle rpm for the engine.

In the initial stages of the program, chassis-dynamometer data giving horsepower for various values of rpm and load factor were used to develop horsepower models. Considerable effort was expended in regression analyses and the development of supplementary data at idle rpm to improve the models. Continuing analysis by the EPA, with assistance from industry, established that even an error-free rear-wheel-power model was not adequate. That is, the relationship between engine-shaft power (the desired measure) and rear-wheel power was both nonlinear and dependent on the selected gear. Since no gear-selection data were recorded on the CAPE-21 program, and since attempts to identify gear selection by computing ratios of rpm to speed were not successful, the EPA provided horsepower models based on engine-dynamometer data, some of which were provided by industry.

In the case of gasoline engines it was found that percent power was essentially equal to percent load factor when percent load factor was appropriately defined (Reference 5). Let $L_{100}(E)$ be the value of load factor when %P = 100 (maximum power) at rpm E, and let $L_0(E)$ be the value of load factor at zero power and the same rpm-value E. Then, if L(E) is the value of load factor for a data record with rpm E,

$$\%P = \frac{L(E) - L_0(E)}{L_{100}(E) - L_0(E)} \times 100. \qquad (3\text{-}1)$$

It should be noted that (3-1) is independent of the units used. Since load factor on the edited tapes was in units of inches of mercury of manifold vacuum, those units were used in the computation of %P.

The values for $L_{100}(E)$ were computed from the chassis-dynamometer data by fitting a straight line to the maximum-horsepower data. That is,

$$L_{100}(E) = m\,E + b,$$

where m and b are the slope and intercept of the line fitting the maximum-power data. The $L_0(E)$ values were measured on the Los Angeles trucks by putting the transmissions in neutral and measuring manifold vacuum for rpm values ranging from idle to about rated, in increments of 250 rpm. Linear

interpolation was employed to determine $L_0(E)$ values between measured points and to extrapolate from idle rpm down to 300 rpm. (The value of 300 rpm was selected as the minimum rpm value likely to be realistic.)

The $L_0(E)$ values for the New York gasoline trucks could not be measured because the trucks were no longer available by the time the new horsepower model had been defined. Therefore, the $L_0(E)$ data (manifold vacuum and rpm) for each Los Angeles gasoline truck were normalized with respect to idle. The normalized data were then averaged to yield what is called the average L-Zero curve. The average L-Zero curve, suitable denormalized with respect to idle for each New York gasoline truck, was then utilized to compute %P from (3-1).

The EPA received assistance from industry in the development of the horsepower models for the diesel trucks (Reference 6). The model for rack-position engines was developed from engine-dynamometer data, supplied by DDA, for the 8V-71N engine with N-65 injectors. That engine was the most commonly represented rack-position diesel in the CAPE-21 sample. The assumption was made that a horsepower model based on those engine data would be adequate for all DDA engines in the CAPE-21 sample.

A total of 92 data points, each consisting of power, rpm, and rack position, was supplemented by an additional 36 points obtained by interpolation after EPA analysis of the original set of points. Engine power was normalized to maximum power at each rpm and the rack position was normalized to the maximum rack travel and denoted by %R. A regression analysis was conducted and the selected horsepower model was:

$$\%P = a + b \log E + c \log E \ (\%R)^{1.56}, \qquad (3\text{-}2)$$

where $a = 173.90$
$b = -22.507$
$c = 0.044802$
$\log E$ = common logarithm of rpm.

The standard error of the estimate for the model is 3.62, in units of percent power. The square of the multiple correlation coefficient, or coefficient of determination, is 0.987. Two constraints are applied to the computations made with the model:

1. When $\%P < 0$, the power is identified as motoring and the magnitude is irrelevant.

2. When $\%P > 100$, %P is set equal to 100.

The Cummins Engine Company provided the EPA with engine-dynamometer data for eight engine types for a total of 284 points, each consisting of a power, an rpm, and a fuel pressure (Reference 6). In addition, the EPA conducted an analysis of no-load (zero-power) fuel pressures and developed a relationship between zero-power fuel pressure, $L_0(E)$, and rpm. That relationship,

$$L_0(E) = 0.1425 \times 10^{-6} E^{2.38} + 2.9419, \quad (3\text{-}3)$$

was used to supplement the Cummins data sample.

Each power value at a given rpm was normalized to maximum power for that rpm and each value of fuel pressure was normalized to the maximum, again at each rpm. Extensive regression analyses were conducted on the data for each engine type and on the combined-data sample. The significant finding was that %P was a function only of percent fuel pressure, %FP; i.e., %P is independent of rpm. The selected horsepower model, which is based on the combined-data sample and, hence, is assumed to be applicable to all Cummins engines, is

$$\%P = 37.475\ (\%FP)^{0.33} - 70.283. \quad (3\text{-}4)$$

The standard error of the estimate for the model is 3.64, in units of percent power, and the coefficient of determination is 0.987.

Section 4

DATA ANALYSIS

The CAPE-21 data base in its final form consists of 290 truck-days and 21 bus-days of heavy-duty vehicle operating data. The total number of records is approximately 5.7 million, where each record contains 10 channels of data. An assessment of the information contained in that huge data base was made by compiling a variety of statistics for each vehicle. Decisions concerning which vehicle categories could be combined to minimize the number of different cycles necessary for certification purposes were made on the basis of a category analysis. Questions with respect to the need for a cold-operation segment in certification cycles were answered with what was called a cold/hot analysis. Each of these topics is addressed below.

4.1 INDIVIDUAL VEHICLE STATISTICS

In recognition of the need for a variety of statistics from which could be chosen those to provide a basis for a category analysis, computer software was written to compile the data for each truck into statistical and matrix formats. The data output for each truck consisted of 29 pages of printout. The types of information computed for each truck, presented by freeway, non-freeway, and combined road type, included the following:

1. Frequency, density, and distribution functions for:
   a. Engine temperature (40 to 300°F, 5°F increments)
   b. Percent power, %P (motoring to 100, 10-percent increments)
   c. Percent rpm, %E (-22 to +150, 2-percent increments)
   d. Vehicle speed, S (0 to 70 mph, 2-mph increments)

2. Normalized frequency matrices of:
   a. Initial %E versus final %E (-20 to +150, 10-percent increments)
   b. Initial %P versus final %P (motoring to 100, 10-percent increments)
   c. Initial S (0 to 70 mph, 2-mph increments) versus delta S (-9 to +9, 1-mph/0.864-second increments)
   d. %E (-22 to +150, 2-percent increments) versus %P (motoring to 100, 10-percent increments)
   e. S (0 to 70 mph, 2-mph increments) versus %E (-20 to +150, 10-percent increments)
   f. S (0 to 70 mph, 2-mph increments) versus %P (motoring to 100, 10-percent increments)
   g. Traffic density (light, medium, heavy) versus road type (freeway, arterial, local)
   h. Throttle position (closed, open) versus power state (motoring, nonmotoring)

3. Statistics:
   a. Means
   b. Medians

c. Standard deviations
d. Covariances
e. Correlation coefficients

4. Percentage measures:
   a. %P: percent motoring (%M), percent cruise (%C), percent acceleration (%A), and percent deceleration (%D)
   b. %E: percent idle (%I), %C, %A, and %D
   c. S: percent zero (speed identically equal to zero), %I ($S \leq 0.5$ mph), %C, %A, and %D

5. A page of summary statistics

An example of the page of summary statistics is shown in Table 8. The symbol "E( )" in that table should be read as "Expected value (mean) of ( )". Thus E(EXP) is the mean value of the product of E and P, where E and P are in units of percent in this and all subsequent analyses. The symbol "R" denotes correlation coefficient, so that R(E,P) is the product-moment correlation between %E and %P. Finally, "COV" denotes the covariance between the indicated parameters. The total output for a single truck may be seen in Appendix D. The summary statistics for each vehicle in the CAPE-21 data base are given in Appendix E.

The next step in the process of data analysis was to combine the data for all trucks in a given fuel-type/axle-type category, e.g., Los Angeles 2-axle gas, as discussed below.

4.2 CATEGORY ANALYSIS

The primary objective of the cycle-development effort was the production of transient engine and chassis cycles representative of heavy-duty vehicle operating patterns in the urban environment. The cycles developed will be used to measure the emission levels and fuel economy for heavy-duty engines. That application will clearly be simplified if the number of cycles required for testing the spectrum of engine-vehicle combinations can be kept to a small number.

The total number of potential truck-cycle categories represented in the CAPE-21 data base is 24: 2 cities x 2 fuel types x 3 axle types x 2 road types and the number of potential bus-cycle categories is 4: 2 cities x 2 road types. If categories could not be combined, then 56 engine and chassis cycles would be required for testing purposes. Therefore, an analysis of the statistics for the various categories was conducted for the purpose of combining those categories where the operating patterns are similar.

The three parameters of interest were percent power, percent rpm, and vehicle speed; the statistics examined for each parameter were:

a. Mean
b. Median
c. Standard deviation
d. Percent zero speed
e. Percent idle (rpm and vehicle speed only)

Table 8.

SUMMARY STATISTICS FOR LA TRUCK 45: LA TT DIESEL

(RECORD COUNT = 127528, OPERATING TIME = 30.61 HRS)

RPM	FREEWAY	NON-FREEWAY	COMBINED
N	33902.	93626.	127528.
MEAN	95.01	40.45	54.96
MEDIAN	98.75	17.38	77.54
STD DEV	13.64	42.83	44.46
% ACCEL	7.86	13.76	12.18
% CRUISE	86.54	29.61	44.80
% DECEL	4.83	8.45	7.49
% IDLE	0.77	48.77	35.53

POWER	FREEWAY	NON-FREEWAY	COMBINED
* N	26426.	67457.	93883.
TOTAL N	33536.	92194.	125730.
MEAN	54.38	15.94	26.76
MEDIAN	57.76	8.79	8.07
STD DEV	24.84	26.83	31.46
% ACCEL	21.38	10.75	13.58
% CRUISE	36.07	53.23	48.65
% DECEL	24.67	14.03	16.87
% MOTOR	17.88	21.99	20.89

SPEED	FREEWAY	NON-FREEWAY	COMBINED
N	33536.	92194.	125730.
MEAN	40.33	8.73	17.16
MEDIAN	47.06	0.99	9.75
STD DEV	13.55	12.03	18.72
% ZERO	0.34	48.85	35.91
% ACCEL	12.52	12.04	12.17
% CRUISE	77.48	30.93	43.34
% DECEL	9.57	7.18	7.82
% IDLE	0.43	49.85	36.67

INTERACTION STATISTICS	FREEWAY	NON-FREEWAY	COMBINED
** N	26535.	67873.	94408.
E(EXP)	5233.23	1305.72	2409.62
E(E)XE(P)	5209.30	458.20	1272.75
COV(E,P)	23.92	847.52	1136.88
R(E,P)	0.076	0.760	0.771
** N	33902.	93626.	127528.
E(SXE)	3888.47	773.83	1601.83
E(S)XE(E)	3812.76	357.28	943.00
COV(S,E)	75.72	416.55	658.83
R(S,E)	0.408	0.808	0.795
** N	26535.	67873.	94408.
E(SXP)	2204.67	341.67	865.30
E(S)XE(P)	2201.64	115.08	443.49
COV(S,P)	3.03	226.59	421.81
R(S,P)	0.009	0.700	0.691

* FREQUENCY USED TO COMPLTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

f. Percent cruise
g. Percent acceleration
h. Percent deceleration
i. Percent motoring (power only)

The mean and standard deviation of each statistic were computed from the corresponding statistics for each truck in a given category on an unweighted basis.

For example, the average freeway speeds for the 19 trucks in the Los Angeles 2-axle gas category were summed and divided by 19 (equal weighting for each truck) to yield a mean freeway speed for that category. The standard deviation of those 19 average speeds was also computed. Similarly, the average freeway speeds for, say, the seven trucks in the Los Angeles TT gas category yielded a category mean and standard deviation. The category means can then be compared to determine if the difference is statistically significant.

Category means and standard deviations were computed in this way for each statistic listed above for each parameter. The mean for a given statistic and category was then compared with the corresponding mean for every other category. The difference in means for each category pair was tested with the Aspin-Welch t-test at the 95-percent and 99-percent confidence levels. When a category consisting of a single truck was a member of a category pair, then a z-test was used for testing. Examples of the output obtained are shown in Tables 9, 10, 11, and 12, where S indicates the difference in means to be significant at the indicated confidence level.

The total computer output was forwarded to the EPA where the results of the statistical analysis and the application of engineering judgment were the basis for the selection of the categories to be combined. That effort, together with the computer output, is documented in Reference 7. The categories selected for the development of chassis and engine cycles are shown below, where EC and CC denote engine cycle and chassis cycle, respectively:

	Freeway	Nonfreeway	Combined
LA Gasoline	EC	EC	
LA Diesel	EC	EC	
LA Gas & Dsl	CC	CC	
NY Gasoline	EC	EC	
NY Diesel	EC	EC	
NY Gas & Dsl	CC	CC	
LA Buses			EC, CC
NY Buses			EC, CC

4.3 COLD/HOT ANALYSIS

To determine if there were a need for a cold-start segment in the composite cycles to be developed for heavy-duty engine emission testing, an analysis of cold/hot operation was conducted on a representative cross-section of CAPE-21

Table 9.

ASPIN-WELCH TEST OF DIFFERENCES BETWEEN MEANS
LA TT GAS VS LA TT DIESEL

		FREEWAY		NON-FREEWAY		COMBINED	
		95%	99%	95%	99%	95%	99%
RPM:	MEAN	S	-	S	S	S	-
	MEDIAN	S	-	S	S	S	-
	STD DEV	-	-	S	-	-	-
	% ACCEL	-	-	-	-	-	-
	% CRUISE	-	-	-	-	-	-
	% DECEL	-	-	-	-	-	-
	% IDLE	-	-	-	-	-	-
POWER:	MEAN	S	S	-	-	S	-
	MEDIAN	S	S	-	-	-	-
	STD DEV	S	S	S	-	S	S
	% ACCEL	-	-	-	-	-	-
	% CRUISE	S	S	S	-	S	-
	% DECEL	-	-	-	-	-	-
	% MOTOR	S	S	S	S	S	S
SPEED:	MEAN	-	-	-	-	-	-
	MEDIAN	-	-	-	-	-	-
	STD DEV	S	-	-	-	-	-
	% ZERO	-	-	-	-	-	-
	% ACCEL	-	-	-	-	-	-
	% CRUISE	-	-	-	-	-	-
	% DECEL	-	-	-	-	-	-
	% IDLE	-	-	-	-	-	-
E(EXP):		-	-	-	-	-	-
E(EXS):		S	-	S	-	-	-
E(SXP):		S	S	-	-	-	-

Table 10.
ASPIN-WELCH TEST OF DIFFERENCES BETWEEN MEANS
LA 2A GAS VS NY 2A GAS

		FREEWAY		NON-FREEWAY		COMBINED	
		95%	99%	95%	99%	95%	99%
RPM:	MEAN	S	S	S	S	S	S
	MEDIAN	S	S	S	S	S	S
	STD DEV	–	–	–	–	–	–
	% ACCEL	S	S	S	–	–	–
	% CRUISE	S	S	S	S	S	S
	% DECEL	S	S	–	–	–	–
	% IDLE	S	S	S	S	S	S
POWER:	MEAN	–	–	S	S	S	S
	MEDIAN	–	–	S	S	S	S
	STD DEV	S	S	–	–	–	–
	% ACCEL	–	–	–	–	–	–
	% CRUISE	S	S	–	–	–	–
	% DECEL	–	–	S	S	–	–
	% MOTOR	S	S	S	–	S	S
SPEED:	MEAN	S	S	S	S	S	S
	MEDIAN	S	S	S	S	S	S
	STD DEV	–	–	S	S	S	S
	% ZERO	–	–	S	S	S	S
	% ACCEL	S	S	S	S	–	–
	% CRUISE	S	S	S	S	S	S
	% DECEL	S	S	S	–	–	–
	% IDLE	–	–	S	S	S	S
E(EXP):		S	–	S	S	S	S
E(EXS):		S	S	S	S	S	S
E(SXP):		S	S	S	S	S	S

Table 11.

Z TEST OF DIFFERENCES BETWEEN MEANS

LA 2A DIESEL VS LA 2A GAS

		FREEWAY		NON-FREEWAY		COMBINED	
		95%	99%	95%	99%	95%	99%
RPM:	MEAN	S	S	S	–	S	–
	MEDIAN	S	–	S	–	S	–
	STD DEV	–	–	S	S	S	S
	% ACCEL	S	S	S	–	S	–
	% CRUISE	–	–	S	–	–	–
	% DECEL	S	S	–	–	S	–
	% IDLE	–	–	–	–	–	–
POWER:	MEAN	–	–	–	–	–	–
	MEDIAN	–	–	–	–	–	–
	STD DEV	–	–	S	S	–	–
	% ACCEL	S	–	–	–	–	–
	% CRUISE	S	–	–	–	–	–
	% DECEL	S	–	–	–	–	–
	% MOTOR	–	–	S	–	–	–
SPEED:	MEAN	–	–	–	–	–	–
	MEDIAN	–	–	–	–	–	–
	STD DEV	–	–	–	–	–	–
	% ZERO	–	–	–	–	–	–
	% ACCEL	–	–	–	–	–	–
	% CRUISE	–	–	–	–	–	–
	% DECEL	–	–	–	–	–	–
	% IDLE	–	–	–	–	–	–
E(EXP):		–	–	–	–	–	–
E(EXS):		S	S	–	–	–	–
E(SXP):		–	–	–	–	–	–

Table 12.

Z TEST OF DIFFERENCES BETWEEN MEANS
NY 3A GAS VS NY TT GAS

		FREEWAY		NON-FREEWAY		COMBINED	
		95%	99%	95%	99%	95%	99%
RPM:	MEAN	-	-	-	-	-	-
	MEDIAN	-	-	-	-	-	-
	STD DEV	-	-	-	-	-	-
	% ACCEL	-	-	-	-	-	-
	% CRUISE	-	-	-	-	-	-
	% DECEL	-	-	-	-	-	-
	% IDLE	-	-	-	-	-	-
POWER:	MEAN	-	-	-	-	-	-
	MEDIAN	-	-	-	-	-	-
	STD DEV	-	-	-	-	-	-
	% ACCEL	-	-	-	-	-	-
	% CRUISE	-	-	-	-	-	-
	% DECEL	-	-	-	-	-	-
	% MOTOR	-	-	-	-	-	-
SPEED:	MEAN	-	-	-	-	-	-
	MEDIAN	-	-	-	-	-	-
	STD DEV	-	-	-	-	-	-
	% ZERO	-	-	-	-	-	-
	% ACCEL	S	-	-	-	-	-
	% CRUISE	-	-	-	-	-	-
	% DECEL	-	-	-	-	-	-
	% IDLE	-	-	-	-	-	-
E(EXP):		-	-	-	-	-	-
E(EXS):		-	-	-	-	-	-
E(SXP):		-	-	-	-	-	-

vehicles for which reliable temperature data were available. The cold/hot analysis was performed for each of the following truck categories:

1. LA gas
2. LA diesel
3. NY gas
4. NY diesel
5. All LA trucks
6. All NY trucks
7. All gas trucks
8. All diesel trucks
9. All trucks

Each truck start was identified as cold, warm, normal, or hot. That is, based on the temperature distribution for each truck, temperatures T_1, T_2, and T_3 were defined for each truck. If the temperature is T at start-up, then the type of start is defined as follows:

$T < T_1$	Cold start
$T_1 \leq T < T_2$	Warm start
$T_2 \leq T < T_3$	Normal start
$T \geq T_3$	Hot start

The operation of each vehicle in each category was characterized by matrices, broken down by road type, of delta percent rpm versus percent power and delta speed versus percent power, stratified by temperature range. The matrix data were supplemented by statistics for type of start, which included the number of idles following each type of start, the duration of each idle, and the average speed and distance traveled after each idle and prior to the next idle. Statistics by type of temperature matrix (M_1 to M_{10} in Table 13) were also computed to yield the duration, average speed, and distance traveled for the operation in each matrix. Density and distribution functions by type of matrix (M_1 to M_{10}) were then prepared for the duration, average speed, and distance traveled parameters. Finally, means and standard deviations were computed by matrix and various matrix combinations and t-testing was performed to determine the significance of the differences in the various means of interest.

The complete package of computer output was then forwarded to the EPA for additional analysis. That effort and tables of summary statistics are documented in Reference 8. It was concluded that there did not appear to be significant differences in cold-versus-hot truck operation from a practical engineering point of view. Further, cold operation constituted only 2.3 percent of total operation. On average, the initial idle following a cold start was longer than the idle following the other starts and appeared to impose the only requirement for a cold-start portion of an emission-test cycle.

Table 13. DEFINITION OF COLD/HOT MATRICES

TYPE OF START									
COLD START $T < T_1$				WARM START $T_1 \leq T < T_2$			NORMAL START $T_2 \leq T < T_3$		HOT START $T \geq T_3$
Type of Operation				Type of Operation			Type of Operation		Type Of Operation
Cold	Warm	Normal	Hot	Warm	Normal	Hot	Normal	Hot	Hot
$T < T_1$	$T_1 \leq T < T_2$	$T_2 \leq T < T_3$	$T \geq T_3$	$T_1 \leq T < T_2$	$T_2 \leq T < T_3$	$T \geq T_3$	$T_2 \leq T < T_3$	$T \geq T_3$	$T \geq T_3$
Matrix M_1	Matrix M_2	Matrix M_3	Matrix M_4	Matrix M_5	Matrix M_6	Matrix M_7	Matrix M_8	Matrix M_9	Matrix M_{10}

Section 5

MONTE CARLO CYCLE GENERATION

This section describes the development of the speed and engine matrices upon which cycle generation is based, the Monte Carlo cycle-generation process, the statistical filter which computer-selects cycles representative of the input data base, and the manual process whereby the final selection of candidate cycles is made.

5.1 MATRIX DEVELOPMENT

A method of compacting a large volume of data collected on magnetic tape with a fixed-record format is to process any parameter of interest into a matrix of initial value versus final value, where the initial value of the parameter is the value in any given record and the final value is the value in the next record. Each final value then becomes an initial value with respect to the value in the next succeeding record in the sequence. Two types of matrices were developed from the CAPE-21 data base, speed and engine matrices, as discussed below.

5.1.1 Speed Matrix

The speed matrix can be defined as a matrix of initial speed versus final speed. If the speed range is 0 to 60 mph in increments of 1 mph, as in the case of the matrices developed from the CAPE-21 data base, then the dimensions of the matrix will be 61 x 61 and it will consist of 3,721 cells. The speed matrix can be compacted further, however, if a limit is imposed on the maximum change in speed from one record to the next. The speed matrix can then be defined as a matrix of initial speed versus delta speed, where delta speed is the final speed minus the initial speed.

If the delta-speed range is assumed to be -4 to +4, in units of mph/0.864 seconds, and if an increment of 1 mph/0.864 seconds is selected, then the matrix dimensions will be 61 x 9. The number of cells has thus been reduced from 3,721 to 549. Generation of the speed matrices with a digital computer is simple and fast. The tape data files for the trucks or buses in a given category are the data base for the category matrix. Since the data records are sequential on tape, it is easy to pair records. Suppose the records were numbered 1, 2, 3, 4...; Records 1 and 2 constitute the first pair, Records 2 and 3 constitute the second pair, Records 3 and 4 constitute the third pair, etc.

The speed from the first record of a pair is identified as the initial speed and the speed from the second record of the pair minus the initial speed is the delta speed. The content of the speed-matrix cell identified by the initial speed (the row) and the delta speed (the column) is then incremented by 1. All pairs in the sequence are then processed in the same way. The

speed matrix is thus a frequency-of-occurrence type of matrix, as discussed below.

Actually, two speed matrices are developed for the data in each category: a freeway matrix and a nonfreeway matrix. Since the road type is identified in each record, the road-type code is used to increment the proper matrix. The adopted convention was to obtain the road-type code from the first record of each pair.

Finally, two additional procedures were instituted in the development of speed matrices. Since vehicle speeds up to 70 mph were permitted in the editing process, and since chassis dynamometers are usually limited to 60-mph operation, any speed greater then 60 mph was set equal to 60 mph. In addition, any delta speed less than -4.5 or greater than +4.5, in the usual units, was set equal to -4 or +4, respectively. The percentages of cases where speed and delta speed were adjusted are shown in Table 14. The freeway matrix for the combined Los Angeles gas and diesel vehicle-speed data is shown for illustration in Table 15. The total sample size represents approximately 1,015,316 x 0.864 = 877,233 seconds of operating time, or 243.68 hours.

5.1.2 Engine Matrix

The engine matrix is defined by an initial pair of percent rpm (%E) and percent power (%P) values versus a final pair of %E and %P values. Because the load factor can change so rapidly in a very short period of time, the power can change from motoring to 100 percent, or the converse, in the time between records. Therefore, any further compacting of the matrix by defining a limit on delta power was not feasible. Analysis of frequency functions of delta rpm indicated that some compaction could be realized, but after consulting with industry, the EPA concluded that there was not sufficient basis for establishing limits. The engine matrix was thus kept in an initial-versus-final format.

%P ranged from 0 percent to 100 percent in increments of 10 percent, plus a motoring class, for a total of 12 classes. %E ranged from -20 percent to +150 percent, in increments of 2 percent, for a total of 87 classes. The dimensions of the engine matrix are thus (87 x 12) x (87 x 12) = 1,044 x 1,044 and the matrix consists of 1,089,936 cells. It is thus not feasible to show an example of an engine matrix. The format of the matrix is shown, however, in Figure 2 of the Summary.

The development of the engine matrices is considerably more complicated than is the case for speed matrices. Because the matrices are too large for the core size of most computers (greater than 4.3 megabytes), it was necessary to store them on disk, keeping just one matrix row in core at any given time.

The values of %E and %P on tape are first indexed by converting them to index values of 1 to 87 and 1 to 12, respectively, and the indexed data set is written to disk. The records are then paired by appending Record 2 to Record 1, Record 3 to Record 2, etc., thus creating a paired data set of double-length records. The record pairs are first sorted with respect to the rpm index of the first record of the pair (the initial rpm value). Then, within each rpm class, the record pairs are sorted with respect to the power index (the initial power value) of the first record of the pair.

Table 14. SPEED-ADJUSTMENT STATISTICS

CATEGORY	$\Delta S < -4.5$ SET TO -4 (%)	$\Delta S > 4.5$ SET TO 4 (%)	$S > 60$ SET TO 60 (%)
LA 2-Axle Gas	0.512	0.150	1.529
LA 3-Axle Gas	0.638	0.157	0.146
LA TT Gas	0.381	0.165	1.285
LA 2-Axle Diesel	0.009	0.003	0.0
LA 3-Axle Diesel	0.078	0.021	0.334
LA TT Diesel	0.074	0.013	0.557
All LA Trucks	0.316	0.099	1.010
NY 2-Axle Gas	0.511	0.274	0.259
NY 3-Axle Gas	0.124	0.036	0.0
NY TT Gas	0.166	0.021	3.338
NY 2-Axle Diesel	0.075	0.034	0.0
NY 3-Axle Diesel	0.212	0.071	0.322
NY TT Diesel	0.169	0.035	0.657
All NY Trucks	0.346	0.162	0.554
All Trucks	0.332	0.133	0.767
LA Buses	0.249	0.071	0.803
NY Buses	0.286	0.042	0.0
CAPE-21 Sample	0.323	0.121	0.695

Table 15.
INPUT INITIAL SPEED VS DELTA SPEED MATRIX
LA COMBINED GAS & DIESEL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
0	0	0	0	0	23690	349	114	70	43	24266
1	0	0	0	464	813	285	129	54	27	1772
2	0	0	82	381	1003	342	144	52	26	2030
3	0	50	157	352	1010	407	149	48	31	2204
4	17	44	160	369	923	432	193	74	36	2248
5	21	77	170	361	743	428	190	61	29	2080
6	36	84	178	359	804	437	190	58	25	2171
7	28	79	183	365	958	452	157	56	33	2311
8	42	93	150	337	941	490	160	54	28	2295
9	69	102	174	321	954	539	148	81	29	2417
10	59	78	140	378	1029	558	172	62	29	2505
11	55	93	163	386	1098	587	156	57	29	2624
12	54	96	172	431	1212	618	185	70	30	2868
13	88	91	159	357	1237	619	176	62	30	2819
14	65	94	151	421	1203	680	173	46	26	2859
15	68	91	192	456	1905	684	186	60	26	3668
16	63	104	180	457	1306	685	179	60	28	3062
17	59	90	177	462	1284	721	222	70	28	3113
18	59	110	167	516	1419	844	231	66	21	3433
19	54	91	182	560	3011	830	196	44	27	4995
20	65	99	209	518	3059	814	185	47	32	5028
21	55	111	184	476	2047	901	193	55	36	4058
22	62	91	171	541	3973	1002	187	52	21	6100
23	47	101	228	594	4144	995	195	39	31	6374
24	67	83	173	623	1921	1026	166	43	21	4123
25	50	98	220	591	2297	1009	162	43	36	4506
26	57	85	195	633	3149	1132	166	40	22	5479
27	57	90	199	802	4312	1186	147	33	23	6849
28	27	80	199	793	3337	1178	126	45	23	5808
29	46	98	202	672	2720	1156	137	39	28	5098
30	44	80	176	710	3422	1195	162	45	23	5857
31	37	61	204	753	5030	1280	166	37	16	7584

Table 15.
INPUT INITIAL SPEED VS DELTA SPEED MATRIX (CONTINUED)
LA COMBINED GAS & DIESEL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
32	45	77	206	901	4334	1363	158	28	14	7126
33	47	85	204	920	4062	1520	144	34	21	7037
34	55	65	229	1125	5205	1718	213	43	11	8664
35	40	51	229	1301	5781	1928	191	40	15	9576
36	41	64	221	1293	7528	1815	151	39	7	11159
37	55	61	241	1268	7549	1732	175	42	7	11130
38	63	65	223	1216	7160	1888	196	45	2	10858
39	58	64	214	1368	9070	1994	182	42	4	12996
40	53	66	262	1565	10442	2124	149	32	6	14699
41	49	45	231	1583	12463	2116	124	35	4	16650
42	63	58	201	1659	13356	2208	143	39	3	17730
43	50	49	185	1741	12946	2511	176	30	1	17689
44	56	56	198	1887	13586	2682	151	38	0	18654
45	51	60	223	2059	16199	2642	160	33	0	21427
46	50	53	218	2069	18212	2880	173	41	0	23696
47	56	56	185	2180	21799	3220	185	28	0	27709
48	37	46	196	2523	26435	3757	206	27	1	33228
49	36	57	215	2911	31087	3835	224	28	0	38393
50	41	69	248	3209	34733	4569	284	47	0	43200
51	46	55	201	3696	39569	5794	412	31	0	49804
52	63	46	291	4397	46099	7038	460	29	1	58424
53	46	65	367	5025	53932	7020	356	45	0	66856
54	54	65	372	5040	63415	6653	341	18	0	75958
55	78	70	294	4638	66001	6947	319	13	0	78360
56	68	55	250	4591	61520	5741	229	3	0	72457
57	52	47	248	3414	42912	2954	143	2	0	49772
58	59	53	169	1624	24964	1497	108	0	0	28474
59	42	41	103	1066	14901	1318	0	0	0	17471
60	132	63	168	1078	22074	0	0	0	0	23515
TOTALS	3037	4251	11889	82786	783288	115325	11195	2555	990	1015316

The resulting sorted data set thus consists of record pairs which yield an initial combination of rpm and power from the first record of the pair and a final combination of rpm and power from the second record of the pair. The first row of the matrix is then defined by the indexed pair (E_1, P_1) and the columns are defined by the various pairs (E_i, P_j), i = 1,2,...,87 and j = 1,2,...,12. The purpose of the sorting can now be seen. All record pairs with the combination (E_1, P_1) in the first record of the pair appear first in the sequence of the sorted data set. The frequencies for each cell of the first row of the matrix are accumulated in core until the power index changes. That row is then written to disk on one track. The next matrix row, defined by the combination (E_1, P_2), is obtained in the same way from sequential pairs and written to a second track. (Writing each matrix row to a separate track greatly simplifies the computer programming.)

When the freeway and nonfreeway matrices have been developed from the data for the trucks in each axle category, they are then written to tape. The axle-category matrices are then combined into the desired vehicle-category matrices and written to tape. For example, the matrices by road type for Los Angeles 2-axle gas, Los Angeles 3-axle gas, and Los Angeles TT gas were combined by matrix addition to yield the freeway and nonfreeway engine matrices for the Los Angeles gas category.

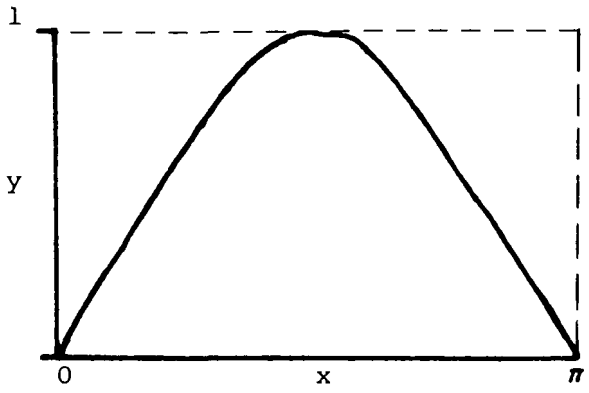
5.2 CYCLE-GENERATION PROCESS

The Monte Carlo model used to generate chassis and engine cycles is essentially the same for both types of cycles. That is, the model operates on any input matrix of frequencies of occurrence so that the size and composition of the matrix are essentially irrelevant. The Monte Carlo process will be discussed first, followed by some of the specifics of the development of chassis and engine cycles.

5.2.1 The Monte Carlo Technique

The Monte Carlo technique utilizes experimental mathematics and, hence, is mathematically inductive rather than deductive. Monte Carlo methods are concerned with experiments on random numbers and handle problems which can be either probabilistic or deterministic, depending on whether or not they are stochastic (or random) in nature. The solution of a deterministic problem can be illustrated by the determination of the area under one branch of the sine curve y = sin x. Figure 19 describes the problem and its solution with the Monte Carlo technique. If a point were randomly chosen in the square with a heighth of one and a width of π, the geometric probability that the point would fall on or below the curve y = sin x is the area under the sine curve divided by the total area π. Thus, if a sufficiently large number of points is randomly chosen, the product of π and the ratio of the number of points falling on or below the curve to the total number of points will converge to the area of interest.

If the area is computed directly by integration, the value will be found to be exactly 2. Table 16 shows the values of area obtained on the computer for the indicated values of N using the Monte Carlo solution. As N increases, the values obtained for the area are seen to be converging toward the true value. Note also that for an N as small as 320, the Monte Carlo value for the



1. Generate random r_1 and r_2, uniformly distributed on unit interval.
2. Set $x = r_1 \cdot \pi$
3. Compute $y = \sin x$
4. If $r_2 \leq y$, score a hit. Otherwise, score a miss.
5. H = Number of hits
   M = Number of misses
   N = H + M
6. $\Pr(\text{HIT}) \approx \frac{H}{N}$
7. But, $\Pr(\text{HIT}) = \text{AREA}/\pi$
8. $\therefore \text{AREA} \approx \pi \cdot \Pr(\text{HIT}) = \frac{\pi H}{N}$

Figure 19. EXAMPLE OF MONTE CARLO TECHNIQUE: AREA UNDER ONE BRANCH OF SINE CURVE

Table 16. MONTE CARLO COMPUTATION OF AREA UNDER ONE BRANCH OF A SINE CURVE

N	AREA	PI
10	1.256637	5.000000
20	2.513273	2.500000
40	2.120574	2.962963
80	2.042034	3.076922
160	1.904590	3.298968
320	1.992947	3.152709
640	2.002765	3.137255
1280	2.002765	3.137255
2560	2.005219	3.133414
5120	1.999083	3.143032
10240	2.003991	3.135333
20480	1.986197	3.163423
40960	2.004528	3.134494
81920	1.999274	3.142731
163840	2.002247	3.138065
327680	2.002218	3.138111
655360	1.997990	3.144752
1310720	2.001803	3.138761

area is quite accurate. Of course, if the area is set equal to 2, then the same procedure can be used to generate estimated values for π, as shown also in Table 16.

The development of heavy-duty test cycles is a probabilistic solution to the problem of obtaining cycles which are representative of the way heavy-duty vehicles are operated. As mentioned above, the cycle-generation technique is independent of the size and composition of the input matrix, requiring only that it be a matrix of frequencies of occurrence for initial versus final values of some parameter(s). To fix ideas, suppose the matrix gives frequencies of occurrence for the number of times a measured parameter P transitions from an initial value P_i to a final (or delta) value P_j. Further, consider just the initial value P_5 and suppose there are 10 values for the final P_j, as illustrated in Figure 20a.

The value P_5 transitions to P_1 never, it transitions to P_2 5 times, transitions to P_3 13 times, etc. The sum of all frequencies in that row is 100. If each entry in the row is divided by 100, the resultant set of entries shown in Figure 20b gives the probabilities that, given that the initial parameter value is P_5, the next value will be as indicated. For example, if the initial value of the parameter is P_5, the probability is 0.12 that the next value will be P_7. Finally, noting that Figure 20b defines a density function, develop the corresponding distribution function as shown in Figure 20c.

When a distribution function has been computed for each row of the input frequency matrix, the resulting transition-probability matrix is the basis for a Monte Carlo generation of a sequence of values of the parameter P. This is accomplished by generating random numbers which are uniformly distributed on the unit interval (i.e., any number from 0 to 1 is equally likely). Referring again to Figure 2oc, if a random number is generated with the value 0.46, the transition is from P_5 to P_5. The new initial value is thus the same as the previous one. Let the next random number generated have the value 0.92. Then the transition is from P_5 to P_8. The new initial value then becomes P_8, another random number is generated and compared with the distribution-function values in the row defined by P_8, and another final value is obtained. This process continues until the sequence has the desired length.

As already noted, the transition-probability matrix for an engine matrix is too large for display. Table 17, however, shows the transition probability matrix computed from Table 15, the frequency matrix for the combined Los Angeles gas and diesel freeway vehicle-speed data. Note that when the initial speed is zero, as when starting a cycle, the probability of remaining at zero speed is 0.9763. That is a very large probability, implying that in the Monte Carlo process the cycle will be expected to remain at zero speed for a considerable length of time. The problem thus entailed will be discussed below.

5.2.2 Development of Chassis-Dynamometer Cycles

The fundamental requirement on the desired chassis cycles is that they be closed; i.e., that the speeds at each second of time be connected so as to form a cycle which is driveable on the chassis dynamometer. Further, for practical considerations, the cycle should start and end with an idle; i.e., with the vehicle at zero speed. The requirement to start and end each cycle with an idle is easily accomplished, as discussed below. Finally, it is

a. FREQUENCY MATRIX

	P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9	P_{10}	
P_5	0	5	13	16	20	17	12	11	6	0	(Σ = 100)

b. INTERMEDIATE MATRIX

	P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9	P_{10}	
P_5	.00	.05	.13	.16	.20	.17	.12	.11	.06	.00	(Divide by Σ)

c. TRANSITION-PROBABILITY MATRIX

	P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9	P_{10}	
P_5	.00	.05	.18	.34	.54	.71	.83	.94	1.0	1.0	(Running Sum)

Figure 20. MONTE CARLO CYCLE DEVELOPMENT

Table 17.

TRANSITION PROBABILITY MATRIX
LA COMBINED GAS & DIESEL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	0.9763	0.9906	0.9953	0.9982	1.0000
1	0.0	0.0	0.0	0.2619	0.7207	0.8815	0.9543	0.9848	1.0000
2	0.0	0.0	0.0404	0.2281	0.7222	0.8906	0.9616	0.9872	1.0000
3	0.0	0.0227	0.0939	0.2536	0.7119	0.8966	0.9642	0.9859	1.0000
4	0.0076	0.0271	0.0983	0.2625	0.6730	0.8652	0.9511	0.9840	1.0000
5	0.0101	0.0471	0.1288	0.3024	0.6596	0.8654	0.9567	0.9861	1.0000
6	0.0166	0.0553	0.1373	0.3026	0.6730	0.8743	0.9618	0.9885	1.0000
7	0.0121	0.0463	0.1255	0.2834	0.6980	0.8936	0.9615	0.9857	1.0000
8	0.0183	0.0588	0.1242	0.2710	0.6810	0.8946	0.9643	0.9878	1.0000
9	0.0285	0.0707	0.1427	0.2755	0.6703	0.8933	0.9545	0.9880	1.0000
10	0.0236	0.0547	0.1106	0.2615	0.6723	0.8950	0.9637	0.9884	1.0000
11	0.0210	0.0564	0.1185	0.2656	0.6841	0.9078	0.9672	0.9889	1.0000
12	0.0188	0.0523	0.1123	0.2626	0.6851	0.9006	0.9651	0.9895	1.0000
13	0.0312	0.0635	0.1199	0.2465	0.6853	0.9049	0.9674	0.9894	1.0000
14	0.0227	0.0556	0.1084	0.2557	0.6765	0.9143	0.9748	0.9909	1.0000
15	0.0185	0.0433	0.0957	0.2200	0.7394	0.9258	0.9766	0.9929	1.0000
16	0.0206	0.0545	0.1133	0.2626	0.6891	0.9128	0.9713	0.9909	1.0000
17	0.0190	0.0479	0.1047	0.2531	0.6656	0.8972	0.9685	0.9910	1.0000
18	0.0172	0.0492	0.0979	0.2482	0.6615	0.9074	0.9747	0.9939	1.0000
19	0.0108	0.0290	0.0655	0.1776	0.7804	0.9465	0.9858	0.9946	1.0000
20	0.0129	0.0326	0.0742	0.1772	0.7856	0.9475	0.9843	0.9936	1.0000
21	0.0136	0.0409	0.0862	0.2035	0.7080	0.9300	0.9776	0.9911	1.0000
22	0.0102	0.0251	0.0531	0.1418	0.7931	0.9574	0.9880	0.9966	1.0000
23	0.0074	0.0232	0.0590	0.1522	0.8023	0.9584	0.9890	0.9951	1.0000
24	0.0163	0.0364	0.0783	0.2294	0.6954	0.9442	0.9845	0.9949	1.0000
25	0.0111	0.0328	0.0817	0.2128	0.7226	0.9465	0.9825	0.9920	1.0000
26	0.0104	0.0259	0.0615	0.1770	0.7518	0.9584	0.9887	0.9960	1.0000
27	0.0083	0.0215	0.0505	0.1676	0.7972	0.9704	0.9918	0.9966	1.0000
28	0.0046	0.0184	0.0527	0.1892	0.7638	0.9666	0.9883	0.9960	1.0000
29	0.0090	0.0282	0.0679	0.1997	0.7332	0.9600	0.9869	0.9945	1.0000
30	0.0075	0.0212	0.0512	0.1724	0.7567	0.9607	0.9884	0.9961	1.0000
31	0.0049	0.0129	0.0398	0.1391	0.8023	0.9711	0.9930	0.9979	1.0000

Table 17.
TRANSITION PROBABILITY MATRIX (CONTINUED)
LA COMBINED GAS & DIESEL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
32	0.0063	0.0171	0.0460	0.1725	0.7807	0.9719	0.9941	0.9980	1.0000
33	0.0067	0.0188	0.0477	0.1785	0.7557	0.9717	0.9922	0.9970	1.0000
34	0.0063	0.0139	0.0403	0.1701	0.7709	0.9692	0.9938	0.9987	1.0000
35	0.0042	0.0095	0.0334	0.1693	0.7730	0.9743	0.9943	0.9984	1.0000
36	0.0037	0.0094	0.0292	0.1451	0.8197	0.9823	0.9959	0.9994	1.0000
37	0.0049	0.0104	0.0321	0.1460	0.8243	0.9799	0.9956	0.9994	1.0000
38	0.0058	0.0118	0.0323	0.1443	0.8037	0.9776	0.9957	0.9998	1.0000
39	0.0045	0.0094	0.0259	0.1311	0.8290	0.9825	0.9965	0.9997	1.0000
40	0.0036	0.0081	0.0259	0.1324	0.8428	0.9873	0.9974	0.9996	1.0000
41	0.0029	0.0056	0.0195	0.1146	0.8631	0.9902	0.9977	0.9998	1.0000
42	0.0036	0.0068	0.0182	0.1117	0.8650	0.9896	0.9976	0.9998	1.0000
43	0.0028	0.0056	0.0161	0.1145	0.8463	0.9883	0.9982	0.9999	1.0000
44	0.0030	0.0060	0.0166	0.1178	0.8461	0.9899	0.9980	1.0000	1.0000
45	0.0024	0.0052	0.0156	0.1117	0.8677	0.9910	0.9985	1.0000	1.0000
46	0.0021	0.0043	0.0135	0.1009	0.8694	0.9910	0.9983	1.0000	1.0000
47	0.0020	0.0040	0.0107	0.0894	0.8761	0.9923	0.9990	1.0000	1.0000
48	0.0011	0.0025	0.0084	0.0843	0.8799	0.9930	0.9992	1.0000	1.0000
49	0.0009	0.0024	0.0080	0.0838	0.8935	0.9934	0.9993	1.0000	1.0000
50	0.0009	0.0025	0.0083	0.0826	0.8866	0.9923	0.9989	1.0000	1.0000
51	0.0009	0.0020	0.0061	0.0803	0.8748	0.9911	0.9994	1.0000	1.0000
52	0.0011	0.0019	0.0068	0.0821	0.8711	0.9916	0.9995	1.0000	1.0000
53	0.0007	0.0017	0.0071	0.0823	0.8890	0.9940	0.9993	1.0000	1.0000
54	0.0007	0.0016	0.0065	0.0728	0.9077	0.9953	0.9998	1.0000	1.0000
55	0.0010	0.0019	0.0056	0.0648	0.9071	0.9958	0.9998	1.0000	1.0000
56	0.0009	0.0017	0.0051	0.0685	0.9176	0.9968	1.0000	1.0000	1.0000
57	0.0010	0.0020	0.0070	0.0756	0.9377	0.9971	1.0000	1.0000	1.0000
58	0.0021	0.0039	0.0099	0.0669	0.9436	0.9962	1.0000	1.0000	1.0000
59	0.0024	0.0048	0.0106	0.0717	0.9246	1.0000	1.0000	1.0000	1.0000
60	0.0056	0.0083	0.0154	0.0613	1.0000	1.0000	1.0000	1.0000	1.0000

desirable that the cycle be representative of the speeds and rates of change of speed of trucks and buses while engaged in their usual activities.

The cycles can be made representative with the Monte Carlo technique if the input matrix is a large sample of the speeds and rates of change of speeds observed in actual heavy-duty vehicle operations. The CAPE-21 data base, of course, yields such input matrices. If the cycle can be shown to be representative of the input data, then it is representative of actual operations.

Figure 21 shows the general logical flow in the development of chassis cycles. The input frequency matrix is entered into the computer from punched cards. The input matrix is row-normalized to get the conditional transition probabilities and is also normalized for other purposes to be discussed in Paragraph 5.3. The transition-probability matrix is then created and a series of initializations accomplished, including the zeroing of core locations which will be used to store a frequency matrix corresponding to the speeds in the cycle to be generated. The initial speed of the cycle at zero time is set to zero. Then a random number is generated and, with reference to the transition-probability matrix, a delta speed is selected. The cycle matrix is then incremented by adding one to the contents of the cell defined by the initial speed of zero and the randomly-selected delta speed. That delta speed is added to the initial speed to create a new (possibly the same) initial speed.

The process continues until a specified minimum cycle duration is reached. That minimum time point is generally taken to be the nominal desired cycle duration minus 1/2 minute. For chassis cycles with a nominal 5-minute duration, the minimum time would be 4.5 minutes or 270 seconds. The EPA had planned initially to consider the interval between each speed in the cycle to be 1 second. The minimum time was reached, therefore, when 270 cycle speeds had been generated. It was subsequently decided to retain the time unit of resolution in the data; i.e., the interval was again taken to be 0.864 seconds. The minimum time for each cycle generated is thus $4.5 \times 0.864 = 3.88$ minutes. That is why the chassis cycle segments all have durations less than the nominal 5 minutes.

If the speed is nonzero at the minimum-time point, and if the speed is less than or equal to a criterion value (45 mph for nonfreeway cycles and 60 mph for freeway cycles), a deceleration to 0 mph is forced. The forced deceleration is accomplished with the Monte Carlo method using transition probabilities based on deceleration data only. When the cycle is at zero speed, the normal process is resumed until a nonzero speed is randomly selected or the maximum-time point is reached. (The maximum-time point is 5.5 minutes for the nominal 5-minute duration, but the interval considerations discussed above resulted in a value of 4.752 minutes, corresponding to 330 speeds in the cycle.)

Since 60 mph is the maximum possible cycle speed, every freeway cycle will be forced to 0 mph at the minimum-time point if it is not already at 0 mph. If a nonfreeway cycle is at a speed greater than 45 mph at the minimum-time point, the process continues until a speed of 45 mph or less is generated or the maximum-time point is reached. In the latter case, the cycle is abandoned and initialization is accomplished in preparation for generation of the next cycle. Otherwise, the deceleration to 0 mph is forced and the process

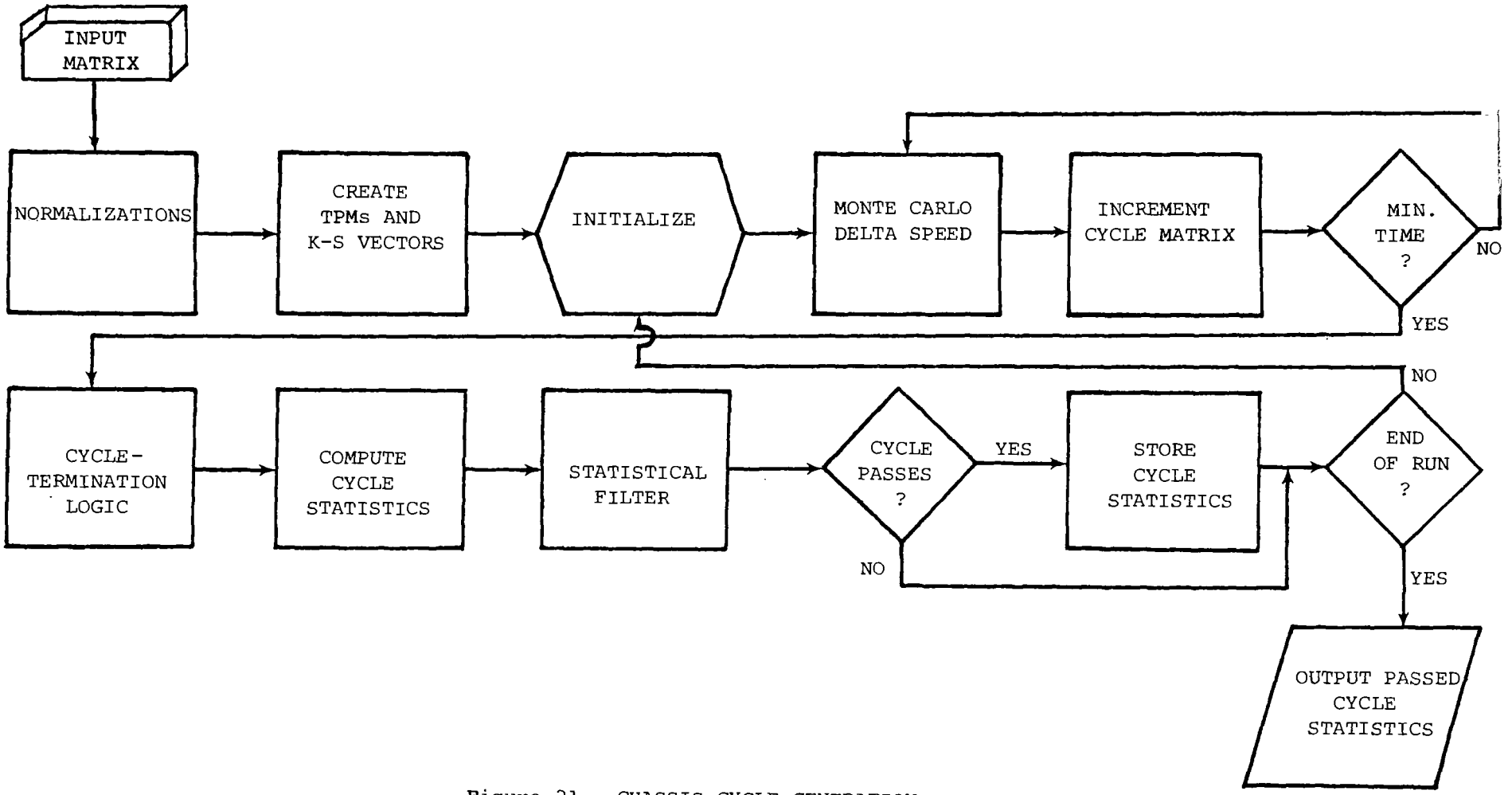


Figure 21. CHASSIS-CYCLE GENERATION

continues as described above. However, if the maximum-time point is reached before a return to zero speed, the cycle is abandoned.

If the cycle has terminated with an idle prior to or at the maximum-time point, a number of statistics used to describe the cycle are computed and compared with the corresponding statistics for the input data. That procedure, referred to as the statistical filter, is a determination of whether the cycle can be said to be representative of the input data and is discussed fully in Paragraph 5.3. If the cycle passes through the filter (i.e., is a candidate representative cycle), the statistics for the cycle are printed. If not, the cycle and the statistics are abandoned. In either case, a test is made to determine if an input number of cycles (usually 10,000) has been generated. If so, the program returns to the initialization point; otherwise, the job terminates.

At this point it must be noted that the random numbers generated are really psuedo-random numbers. That is, for a given starting number, the random-number generator will always generate the same sequence of numbers because the mathematical operations are fixed. That is why, of course, they are called psuedo-random numbers. This attribute of the random-number generator is most advantageous, however. The starting random number (an integer of up to 10 digits which is later converted to a value on the unit interval) for each cycle passing through the statistical filter is printed along with the cycle statistics. The cycle is then regenerated with another computer program which outputs the complete cycle schedule. Cycle schedules thus need be generated only for selected candidate cycles.

Consider again the data of Table 17. As already noted, if the initial speed is zero, as at the start of the cycle, the probability of staying at that speed is very large. From Table 15, however, only 23,690 speeds out of the total frequency of 1,015,316 are at 0 mph. That is, only 2.33 percent of the total operation is at idle. Therefore, a representative cycle should have about that same percentage of zero speeds. Because of the large probability that the cycle will remain at zero speed for considerable periods of time, a cycle would very rarely have the desired percentage of idle operation. Thus, whenever an input matrix has a small idle percentage, there is a problem.

The solution is to constrain the initial idle time, force an initial acceleration, and constrain the final idle time. Since the nominal cycle duration is to be 5 minutes, or about 300/0.864 = 347 speeds in the schedule, the total number of idle speeds should be about 2.33 percent of 347 or 8. Therefore, the initial and final idles are constrained to four zero speeds each. After the initial idle, an acceleration is forced until the average speed for the input data or a specified (input) minimum time is reached, whichever occurs first. The forced acceleration is accomplished with the Monte Carlo method using a transition-probability matrix based just on the input acceleration data.

5.2.3 Development of Engine-Dynamometer Cycles

The Monte Carlo logic for generating engine cycles is essentially the same as that used for chassis cycles, as evidenced by the generalized flow diagram of Figure 22. The input matrix is read from tape to disk, not core, because of its large size (1,044 x 1,044). Various normalizations are performed

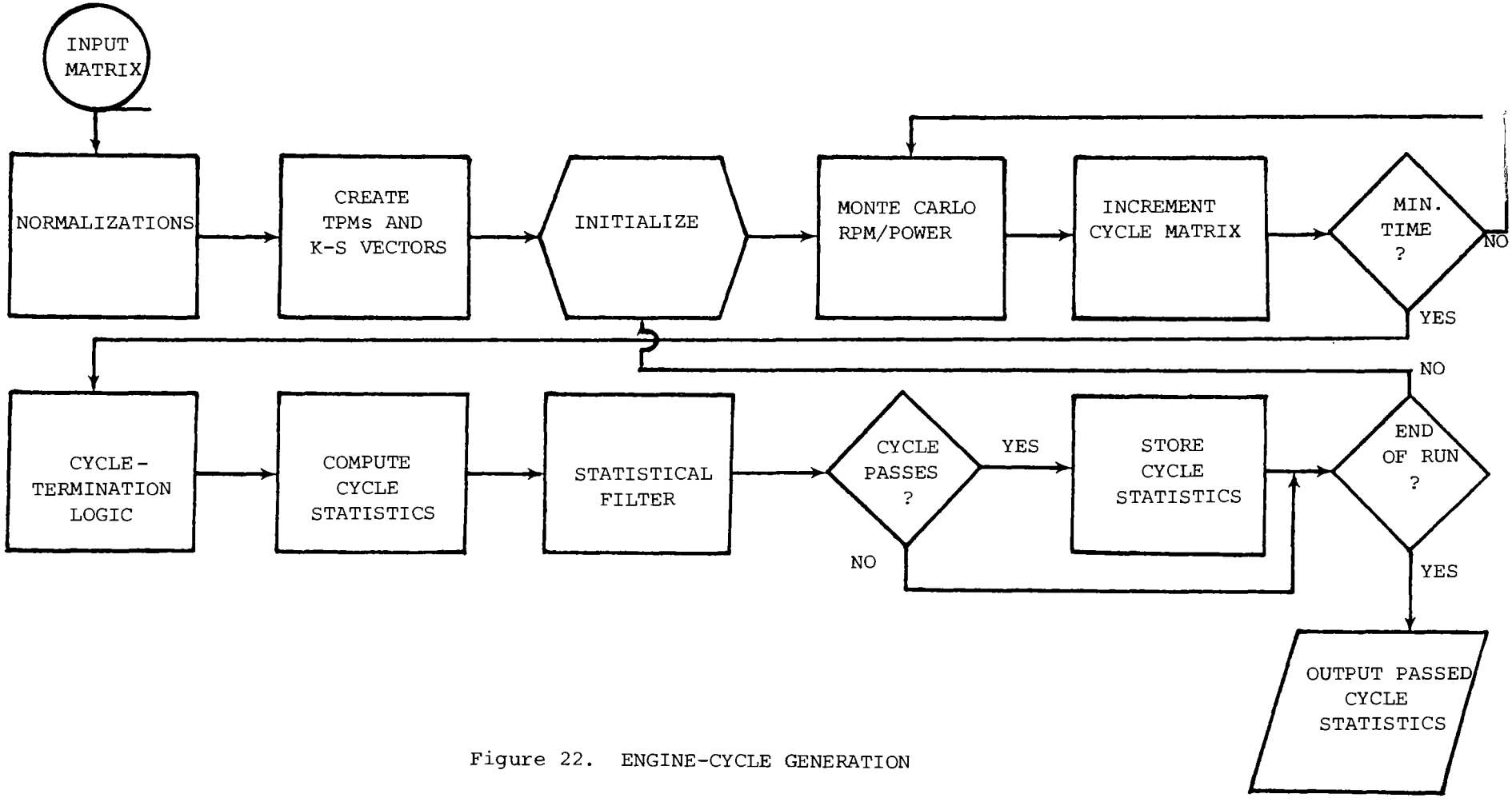


Figure 22. ENGINE-CYCLE GENERATION

which create 1) the transition-probability matrices for generating the cycle and forcing the initial "acceleration" (if required) and the final "deceleration" (or "acceleration" when %E is less then zero); and 2) the vectors required for the statistical filtering of the cycles, as discussed in Paragraph 5.3.

Initialization of the various cycle parameters is then accomplished, including zeroing the disk area where each cycle matrix is stored. Each cycle is started at the idle condition, where idle is defined as %E = %P = 0. If the idle percentage is not very large, as on the freeway, then the initial and final idle times are constrained in the same way as for chassis cycles. When the initial idle is constrained, an initial acceleration is forced for an input length of time (usually about 9 seconds), or until percent rpm is greater than or equal to the average percent rpm for the input matrix. Otherwise, the Monte Carlo process continues in the usual way from cycle start. The cycle matrix is incremented by one, of course, each time an rpm/power combination is randomly selected.

When a minimum cycle duration time is reached (4.5 minutes for 5-minute cycles), cycle-termination logic is initiated. If the cycle is in the idle state (%E = %P = 0) and the initial idle is not constrained, the process continues until a nonidle condition is reached. If the final idle is to be constrained (i.e., whenever the initial idle is constrained), the cycle matrix is incremented by the proper count and the process stops. If the cycle is not in the idle state at the minimum time, then a deceleration to idle is forced when $\%E > 0$ and an acceleration to idle is forced when $\%E < 0$. If the final idle is unconstrained, random selection continues until a nonidle state is reached. If the final idle is constrained, the cycle matrix is incremented with the desired count.

The various cycle statistics are then computed and tested in the statistical filter. If the cycle passes the tests, the statistics are stored for printing at the end of the job. The program then branches back to the point where initialization is accomplished in preparation for generating another cycle. The run ends when an input total number of cycles (usually 500) has been generated or when a sufficient number (usually 10) of cycles has passed the filter tests, whichever occurs first.

5.3 STATISTICAL FILTER

The Monte Carlo technique generates cycles in which each speed (chassis cycles) or rpm/power pair (engine cycles) is randomly selected in accordance with its proportional frequency of occurrence in the input data. Each cycle is thus a sample taken from a population of input data which, in turn, is a sample of the population of all truck (and bus) operating data. If the cycle had a very long duration, say several hundred hours, one would expect it to be a very representative sample of the input data. When the cycle is a small sample, however, most of the cycles generated cannot be expected to be representative.

It is thus necessary to define cycle representativeness in terms of statistics which can be computed and compared for what will henceforth be considered the population (input data) and the sample (cycle). Two kinds of statistics were used to test for representative cycles: engineering measures

such as average speed or percent idle and statistical significance testing. The use of the engineering measures assures us that the cycle has the attributes of the input data and the significance testing allows us to quantify our confidence that the cycle is representative.

As described above, the data for every chassis and engine cycle generated were put into the same matrix format as that for the input data. Determination of the degree to which a cycle can be said to be representative is thus made equivalent to the determination of how "similar", in some sense, the input and cycle matrices are. All of the statistics tested are, therefore, computed from the matrices.

The engineering type of statistics computed for chassis cycles were as follows:

1. Average speed
2. Percent time idling
3. Percent time cruising (does not include idle)
4. Percent time accelerating
5. Percent time decelerating

The corresponding statistics for engine cycles fall into three categories as follows:

Power Statistics

1. Average percent power
2. Percent time motoring
3. Percent time at %P = 0
4. Percent time cruising (does not include motoring and %P = 0)
5. Percent time accelerating
6. Percent time decelerating

RPM Statistics

1. Average percent rpm
2. Percent time at %E = 0
3. Percent time cruising (does not include %E = 0)
4. Percent time accelerating
5. Percent time decelerating

Matrix Statistics

1. Percent time idling (%E = %P = 0)
2. Percent time on matrix diagonal
3. Percent time in upper matrix (above diagonal)
4. Percent time in lower matrix (below diagonal)

The terms cruising, accelerating, and decelerating in the above lists refer to the change of state from an initial value on a given record to the final value on the very next record. Those percentages thus refer to short-term operating data. For example, if a speed sequence were 25, 26, 25, 26, 25, 26, then the vehicle is said to be accelerating and decelerating throughout the sequence, although, from a long-term point of view, it is cruising at 25.5 mph.

The primary test used to evaluate cycles is the K-S one-sample test. The K-S one-sample test is concerned with the extent of agreement between the distribution function for a set of sample values (observed values) and a specified theoretical distribution function. It assesses whether the sample values can reasonably be considered to have come from a population having the theoretical distribution of the parameter of interest. The test consists of determining the absolute value of the maximum difference between the sample and theoretical distribution functions. The K-S test is thus a nonparametric or distribution-free test.

Let X be a random variable with the continuous distribution function

$$F(x) = \text{Prob } (X \leq x),$$

and let $X_1 \leq X_2 \leq \ldots \leq X_n$ be a sample of size n for X. Define the empirical distribution function $F_n(x)$ by

$$F_n(x) = \begin{cases} 0 \text{ for } x < X_1 \\ \frac{j}{n} \text{ for } X_j \leq x < X_{j+1}, \; j = 1,2,\ldots,n-1 \\ 1 \text{ for } x \geq X_n. \end{cases}$$

In 1933 Kolmogorov introduced the statistic

$$D_n = \text{l.u.b.} \left| F(x) - F_n(x) \right|,$$

which measures the greatest absolute difference between F(x) and $F_n(x)$. D_n is thus a random variable whose distribution depends on n, but which is independent of the particular form of F(x), requiring only that F(x) be continuous.

The probability distribution of D_n derived by Kolmogorov is given by the relationship

$$\lim_{n \to \infty} \text{Prob } D_n \leq \frac{z}{\sqrt{n}} = L(z),$$

where

$$L(z) = 1 - 2 \sum_{j=1}^{\infty} (-1)^{j-1} \exp(-2j^2 z^2) \qquad (5\text{-}1)$$

$$= \sqrt{2\pi}\, z^{-1} \sum_{j=1}^{\infty} \exp\left[-(2j-1)^2 \pi^2 / 8z^2 \right]. \qquad (5\text{-}2)$$

A corresponding result for a two-sample test was shown by Smirnov in 1939. Suppose $F_m(x)$ and $G_n(x)$ are the empirical distribution functions for two samples, with sizes m and n, respectively, of mutually-independent random variables with a common continuous distribution function. Define the random variable $D_{m,n}$ by

$$D_{m,n} = \text{l.u.b.} \left| F_m(x) - G_n(x) \right| .$$

Set

$$N = \frac{m\,n}{m + n}$$

and suppose that $m \longrightarrow \infty$ and $n \longrightarrow \infty$ so that

$$\frac{m}{n} \longrightarrow k,$$

for k a constant. The probability distribution of $D_{m,n}$ is then given by

$$\lim_{n\to\infty} \text{Prob} \quad D_{m,n} \leq \frac{z}{n} = L(z), \tag{5-3}$$

where L(z) is the same function as in (5-1) and (5-2).

A unified treatment of these results was given by Feller in 1948 (Reference 9*). A table of values of L(z) will be found in Reference 10.

In the application of the K-S test to the determination of cycle representativeness, it was assumed that the distribution function for the input data was continuous and the one-sample test was used. Note, however, that if m is the cycle sample size, and if n is the input data size, then m is very much smaller than n. Thus, if m = 347 (a 5-minute cycle) and n = 1,015,316 (the sample size for Los Angeles gas and diesel freeway data), then

$$N = \frac{mn}{m+n} = \frac{(347)(1,015,316)}{347 + 1,015,316} = 346.88.$$

That is, the equivalent N for the two-sample case is here essentially equal to the sample size in the one-sample case. Thus there is negligible error in the approach used here versus the alternative two-sample approach.

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*The reference contains a misprint in Eq. (1.4): $-v^2\ z^2$ should be $-2v^2\ z^2$.

Before discussing the details of the application of the K-S test to cycle testing, a few more observations will be made. First, the K-S test is usually applied by determining if D_n is greater than a criterion value, D_c, given by

$$D_c = \frac{z}{\sqrt{n}},$$

where z is a number depending on the significance (probability) level selected, and n is the sample size. For example, if the significance level is 0.05, then z = 1.36. For a sample of size 347,

$$D_c = \frac{1.36}{\sqrt{347}} = 0.073.$$

The test is made on the null hypothesis, or the hypothesis that the sample has the specified theoretical distribution. In the example, if $D_n > 0.073$, then one concludes that the null hypothesis must be rejected at the 0.05 significance level. That is, if the sample has the specified distribution, then the probability that D_n would be larger than 0.073 is less than 0.05.

For the purpose of comparing candidate cycles, however, it is preferable to compute the desired probabilities directly. Fortunately, the two summations for L(z) given in (5-1) and (5-2) converge rapidly. Note first, however, that the probability of interest is

$$\text{Prob}\ (D_n > D_c) = \text{Prob}\left(D_n > \frac{z}{\sqrt{n}}\right) = 1 - L(z) \qquad (5\text{-}4)$$

for testing the null hypothesis. If the significance level is denoted by α, and if we set $z = D_n\sqrt{n}$, then α may be computed directly as follows:

1. $\underline{z \geq 2}$

   $\alpha = 2 \exp\ (-2z^2)$

2. $\underline{1.3 \leq z < 2}$

   $\alpha = 2\left[\exp\ (-2z^2) - \exp\ (-8z^2)\right]$

3. $\underline{z < 1.3}$

   Let max $j = \left[2z + 1\right]$, where the brackets indicate greatest integer. Then,

$$\alpha = 1 - 2\, z^{-1} \sum_{j=1}^{\max j} \exp - (2j-1)^2\, {}^2/8z^2$$

(Note that the maximum number of terms required is three.)

Cases 1 and 2 are based on (5-1) and Case 3 comes from (5-2), all cases demonstrating the rapid convergence of the summations.

The distribution functions required for the K-S test are computed from the input matrix and the cycle matrix. To illustrate the procedure, suppose the matrix is the small 5 x 5 matrix shown in Table 18a. The matrix is first normalized by dividing the frequency in each cell by the total matrix frequency, as shown in Table 18b. A running sum of these normalized values is then obtained, cell by cell, from top to bottom (simply because the computer is more efficient that way) and then from left to right in the case of speed matrices. The distribution functions in the case of the engine matrices are created row-by-row. The result is shown in Table 18c.

The problem of comparing the cycle matrix with the input matrix is thus transformed into the comparison of two distribution functions. The K-S test, of course, was designed for just that purpose. Further, the test of the null hypothesis (i.e., that the matrices are not significantly different) is based on the probability defined by (5-4).

Suppose the selected significance level is 0.05 and the computed probability is less than that value, say 0.04; then the null hypothesis would be rejected, even though there is a 4-percent chance that it is true. If the hypothesis is rejected when it is true, a Type I error is committed. In the present application, a Type I error is committed when a representative cycle is rejected. Occurrences of Type I errors are thus not serious, resulting only in some inefficiency in the cycle-generation process, since a greater number of cycles must be generated to obtain a given number of representative candidate cycles.

The Type II error, acceptance of the hypothesis when it is false, is here the acceptance of a cycle which is not representative. Type II errors must, therefore, be avoided. Unfortunately, there is no feasible way to compute Type II error probabilities for the K-S test. However, if the Type I error probability is allowed to become larger, then the Type II error probability, β, will become smaller. For example, if the two distribution functions are almost identical (D_n close to zero), the Type I error probability is close to 1 and the Type II error probability would be expected to be quite small. Therefore, the criterion K-S significance level (Type I error probability) is set at as large a value possible commensurate with a reasonable chance of getting candidate cycles through the statistical filter.

The cycles are actually tested with four K-S tests. Chassis cycles are tested against the input speed matrix with distribution functions computed for the complete matrix and for the submatrices consisting of cruises only (the zero-delta-speed column), accelerations only (the positive delta-speed columns), and decelerations only (the negative delta-speed columns). Similarly, engine cycles are tested with distribution functions for the complete matrix and the

Table 18. DEVELOPMENT OF K-S DISTRIBUTION FUNCTION FOR MATRIX

A. Frequency Matrix

0	5	2	1	2	
2	7	5	3	3	
2	5	1	6	4	(N = 100)
1	13	12	3	1	
5	10	5	2	0	

B. Normalized Matrix

0	.05	.02	.01	.02
.02	.07	.05	.03	.03
.02	.05	.01	.06	.04
.01	.13	.12	.03	.01
.05	.10	.05	.02	0

C. Distribution Function

0	.15	.52	.76	.92
.02	.22	.57	.79	.95
.04	.27	.58	.85	.99
.05	.40	.70	.88	1.00
.10	.50	.75	.90	1.00

submatrices consisting of the diagonal only, the upper matrix (the triangular matrix above the diagonal), and the lower matrix (the triangular matrix below the diagonal). The submatrix testing was performed for the purpose of providing additional assurance that the candidate cycles were representative.

The desired criterion significance level was α 0.05. Thus a cycle will pass through the statistical filter only when each of the four K-S tests satisfies the criterion. When dealing with freeway matrices, however, even when the initial and final idles are constrained, smaller values of α must sometimes be used to enable at least a few cycles to satisfy the criterion. It is conjectured that this problem may stem from the fact that the relative occurrence of zero delta speeds is higher on the freeway than on nonfreeway roads. Thus, when the cycle is constrained with an initial acceleration to approximately the average speed of the input freeway data (in order to satisfy the idle criterion), the cycle speeds tend to remain high because of the higher cruise percentages. The short 5-minute segment thus does not permit an adequate sampling of the data of the input matrix. A definitive explanation of the phenomenon must, however, await further study.

In addition to the four K-S tests, chassis cycles were tested in the statistical filter against average speed and percent idle. The desired criteria are: cycle average speed within 1 mph of the input and percent idle within 2 percent of the input percentage (i.e.; if the input percent idle is 10 percent, percent idle for the cycle must be in the range of 8 percent to 12 percent). The percent cruise, acceleration, and deceleration measures were not part of the computerized statistical filter, but they were utilized in the manual selection of the three candidate cycles submitted to the EPA, using the 2-percent criterion wherever possible.

Engine cycles were tested in the statistical filter with the four K-S tests described earlier. In addition, the mean values of %E and %P and the value of percent idle were required to be within a criterion value of the means for the input. The input criteria were variable, depending again on how difficult it was to get cycles through the filter for a given category. The desired criteria were as given for the chassis cycle: α 0.05 and $\pm$2 percent on the percentage measures. Difficulty with these criteria was encountered for engine cycles in the Los Angeles freeway gas and, to a lesser extent, New York freeway gas categories. Difficulty with chassis cycles was encountered with the freeway matrices in both cities, but the problem was most severe in the case of Los Angeles.

It must be clearly noted that the tests built into the statistical filter define what is meant by the term "representative". If a different set of tests were used, one would expect that some cycles passed by the present filter would not pass the new filter. For example, after the candidate chassis cycles were submitted to EPA, two new K-S tests were defined and used to filter. These tests were made on the speed distribution function (obtained from the speed matrix row sums) and the delta-speed distribution function (obtained from the column sums). An experiment was conducted which revealed that some cycles which had speed distributions very similar to the input tested poorly on the K-S test for the overall matrix, and conversely.

It should be noted that if the input speed matrix is normalized by dividing each cell frequency by the total matrix frequency, then the normalized matrix

is the joint probability function of speed and delta speed. The density function of speed is given by the row sums and the column sums yield the delta-speed density function. The speed and delta-speed density functions are thus the marginal densities. If speed and delta speed were statistically independent, then the matrix product of the speed density function (a column matrix) and the delta-speed density function (a row matrix) would yield their joint probability function (the normalized speed matrix). This is, let the speed density function be given by f_i, $i = 1,2,\ldots, 61$ and let the delta-speed density function be given by g_j, $j = 1,2,\ldots, 9$. If p_{ij} denotes the joint probability function, then $p_{ij} = f_i g_j$. It would thus be sufficient to perform K-S tests on the marginal distributions only. Speed and delta speed are not independent variables, of course, and that is why the four K-S tests on the matrix and submatrices are performed. Supplementing the four matrix K-S tests with K-S tests on the marginal distributions will, however, increase our confidence that cycles passing all six K-S tests are representative.

Work performed subsequent to submittal of the candidate chassis cycles shows that computation of the K-S significance levels by creating the distribution functions on a row-by-row basis for the total matrix yields values which correlate well with those for the speed distribution function. If the cycles are filtered, however, using the row-by-row approach, then the probability of getting a representative cycle is reduced from that of the column-by-column approach. The cycles which do get through the filter with the row-by-row approach will, however, have a high probability of satisfying the K-S criterion for the speed distribution function.

In the case of engine matrices, the marginal distributions for rpm and power are essentially the same whether developed from the matrix columns or the matrix rows. That is, the engine matrices are of the initial-versus-final type so that corresponding row sums and column sums are essentially the same, any differences being insignificant. That distributional symmetry is lost, of course, in the initial-versus-delta type of matrix used to generate chassis cycles.

Thus, if more and more tests are added, one could say with greater confidence that a cycle passing every one of them could be said to be representative. One could, therefore, test 20 characteristic statistics, say, to ensure that the cycles are representative. However, as more and more tests are added to the filter, the probability that a cycle can pass all of them becomes smaller and smaller. As a result, inordinately large numbers of cycles must be generated and tested in order to get even one cycle through the filter, and even that event would not be certain.

Efficient Monte Carlo cycle generation thus requires keeping the number of tests built into the statistical filter be kept relatively small or dropping the requirement that every test be passed. It is, therefore, necessary to characterize carefully those attributes of operational data which appear to reflect best what one means by representativeness in a cycle. Additional research is indicated here for the purpose of characterizing cycle representativeness in terms of relevant operational parameters and developing an optimized set of statistical filter tests. Nonetheless, it is considered that the statistical filter used to select candidate heavy-duty vehicle cycles for the present program does, in fact, select representative cycles, when the stipulated criteria are applied.

5.4 CANDIDATE-CYCLE SELECTION

The statistical filter performs the first step in the selection of candidate cycles by passing a small number of the thousands of cycles which are generated. It sometimes happens that no cycles are selected by the filter. In that event, either another run is made, the criteria for selection are relaxed, or some tests are deleted from the filter. The choice made is a function of schedule and remaining budget. In any case, some cycles passing through the filter are ultimately available for inspection and selection of three per category to be submitted to the EPA.

When more than three cycles for a data category passed through the filter, a manual selection procedure was required to pick the most representative three cycles. The selection was based on the tests built into the filter and the additional percentage measures which are computed and printed. The selection criteria for chassis cycles, listed in decreasing order of importance, are:

1. K-S tests
   a. Overall matrix
   b. Cruise submatrix
   c. Acceleration and deceleration submatrices
2. Average speed
3. Percent idle
4. Percent cruise, acceleration, and deceleration.

As a rule, chassis cycles which pass the K-S tests at the desired significance levels yield average speeds and percent idles which are within the desired values (±1 mph and ±2 percent, respectively). The correlation between the K-S significance levels and the corresponding percentage measures is not, however, always as good as might be expected. For example, a cycle can pass the K-S test for the acceleration submatrix at the 0.20 significance level (which is very good), and yet be 4 percent different from the input on the percent-acceleration statistic. In general, however, cycles are found which pass the K-S tests and also have percentage-measure values close to those for the input.

The primary criteria for candidate cycle selection are the K-S tests because they provide quantitative measures of significance. The K-S test on the overall matrix is considered to be the most important and would be the selected criterion if the statistical filter consisted of a single test. The K-S test for cruise is next in importance because of the relatively large data frequency for the cruise submatrix.

The assignment of the significance level at which each cycle is said to pass is quite conservative. For example, suppose a cycle passed at the 0.20 significance level for the overall matrix, the cruise submatrix, and the acceleration submatrix, but passed at the 0.03 level for the deceleration submatrix. The cycle would then be deemed to pass at the 0.03 significance level, or the lowest level for the set of four K-S tests.

To illustrate the selection of candidate chassis cycles, suppose three of the following eight cycles with the inidcated K-S significance levels must be selected.

	K-S OVERALL	K-S CRUISE	K-S ACCEL	K-S DECEL
Cycle 1	0.20	0.20	0.20	0.20
Cycle 2	0.20	0.10	0.05	0.15
Cycle 3	0.20	0.02	0.20	0.20
Cycle 4	0.20	0.15	0.02	0.10
Cycle 5	0.20	0.05	0.10	0.02
Cycle 6	0.20	0.05	0.05	0.05
Cycle 7	0.15	0.10	0.20	0.15
Cycle 8	0.05	0.10	0.20	0.20

It is immediately clear that Cycles 1, 2, 6, 7, and 8 are candidates for selection since each is at the 0.05 level or higher. Cycle 1 is obviously the best cycle since it is the only one to pass at the 0.20 significance level. No cycle passes at the 0.15 level, but Cycle 7 passes at the 0.10 level and is thus selected as the second candidate, even though Cycle 6 is at the 0.20 level for the overall matrix. The last cycle is to be selected from Cycles 2, 6, and 8. Since Cycles 2 and 6 are both at the 0.20 level for the overall matrix, the remaining tests provide the basis for selection of one of those two. Cycle 2 will thus be the choice for the third candidate cycle because the cruise and deceleration K-S values are better than those for Cycle 6. In the case where two cycles have both passed at exactly the same K-S test levels, then a choice between them would be based on which cycle had average speed and percent idle, cruise, acceleration, and deceleration values closest to the corresponding input data values.

The selection criteria for engine cycles, listed in decreasing order of importance, are:

1. K-S tests
   a. Overall matrix
   b. Diagonal submatrix
   c. Upper and lower submatrices
2. Average %E and %P
3. Percentage measures
   a. Matrix
   b. Power and rpm.

The percentage measures are those defined in the previous section and their correlation with the K-S tests is again not always as good as might be expected. For example, one engine cycle that passed the K-S test for the upper submatrix at just the 0.01 level had a percent frequency for the upper submatrix just 1 percent different from the input. In general, however, cycles with large K-S significance levels tended to have percentage measures resaonably close to those for the input matrix. The procedure for selecting the three candidate engine cycles per category is essentially as described for chassis cycles. The primary difference lies just in the much larger number of statistics computed for engine cycles than for chassis cycles.

The candidate cycles, selected on the basis of statistical analysis, were forwarded to the EPA where additional engineering analysis was performed. The procedures utilized by the EPA to create composite cycles from the submitted cycle segments are documented in References 11, 12, and 13.

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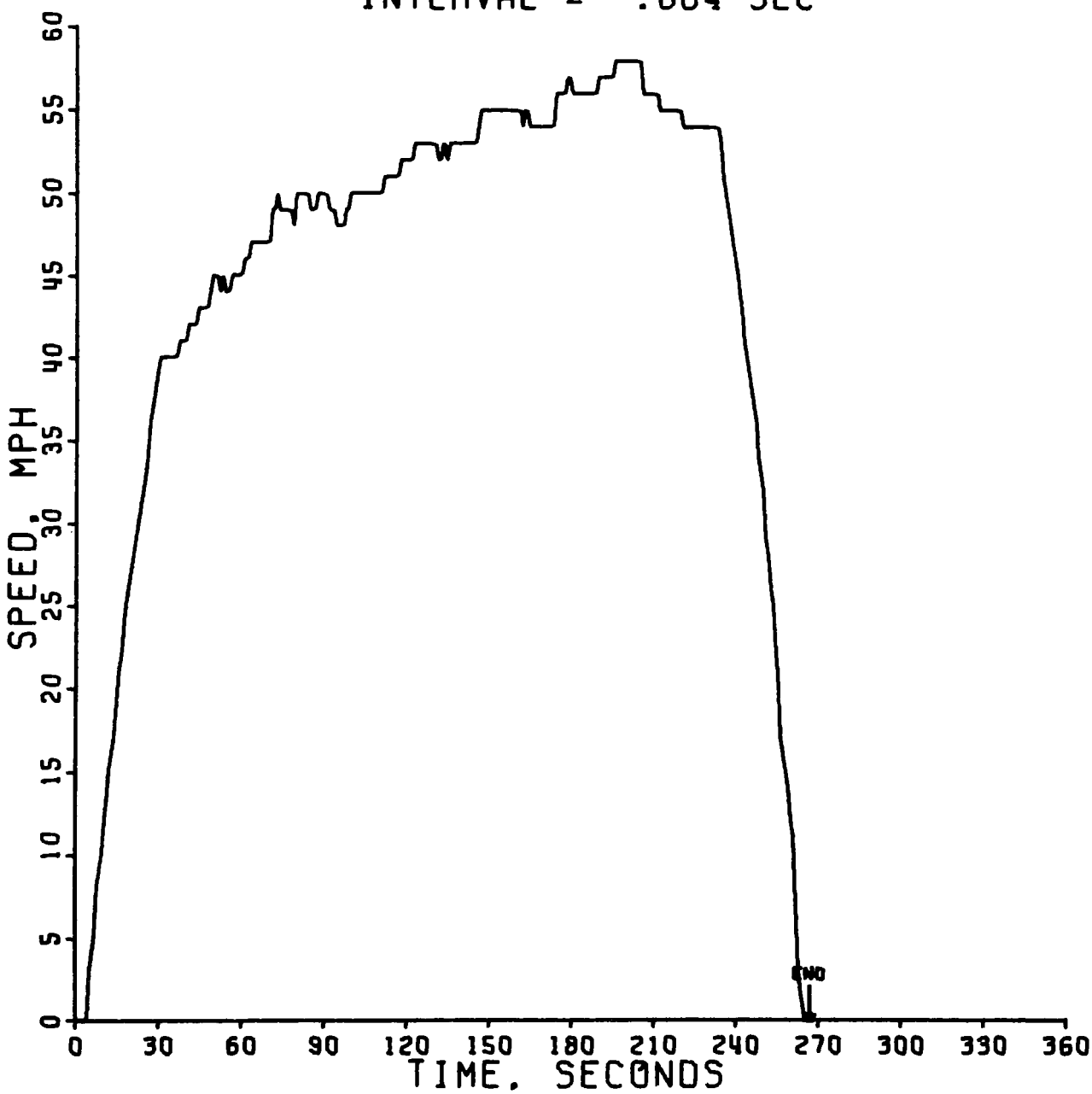
Appendix A

CHASSIS AND ENGINE CYCLES PLOTTED WITH 0.864-SECOND INTERVAL

DRIVING CYCLE WITH STARTING
RANDOM NUMBER 1539135071

DATA BASE: LA GAS + DIESEL
FREEWAY

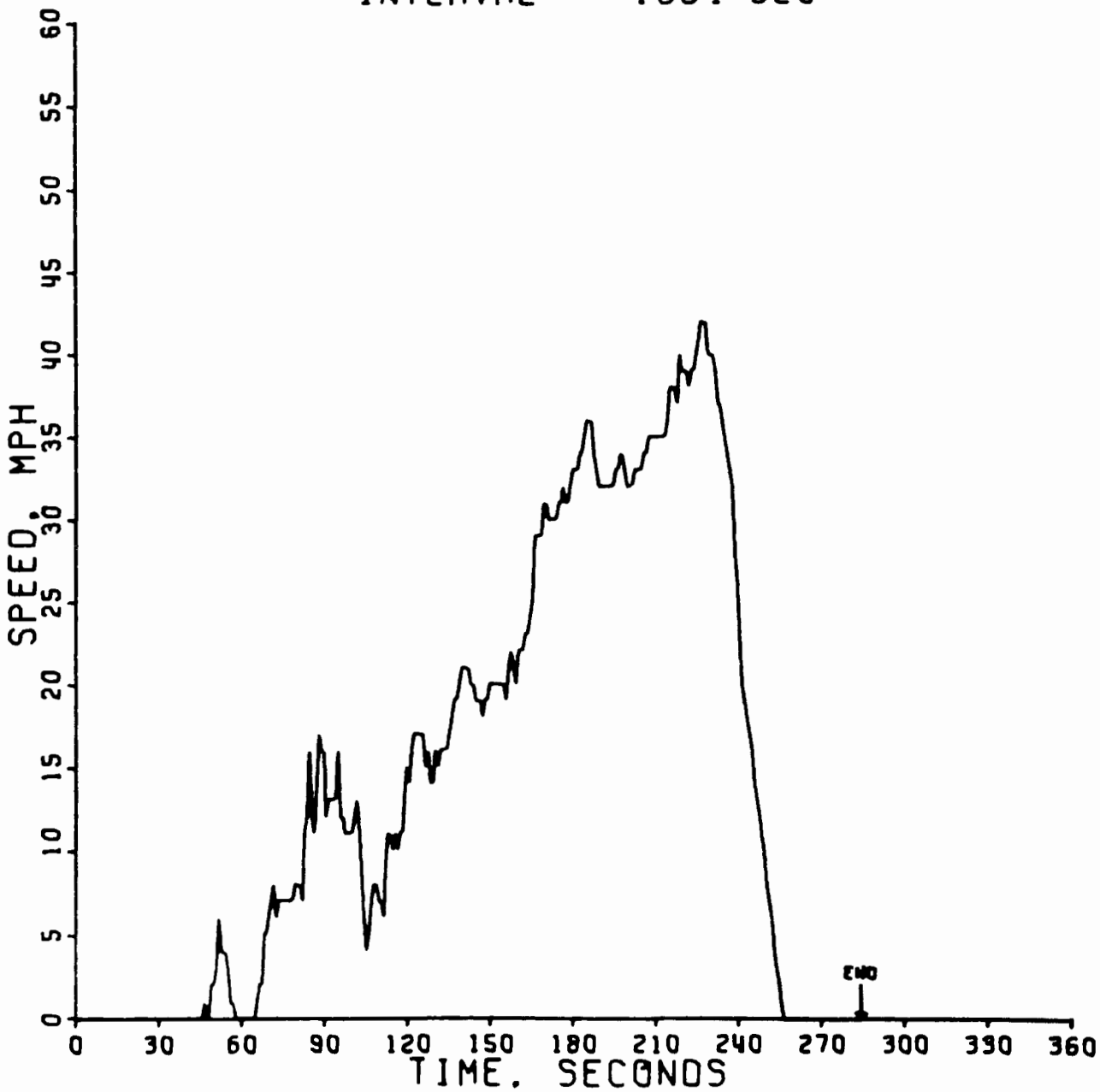
AVERAGE SPEED = 44.79 MPH
DURATION = 4.46 MIN
DISTANCE = 3.33 MILES
INTERVAL = .864 SEC



DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2106204593

DATA BASE: LA GAS + DIESEL
NONFREEWAY

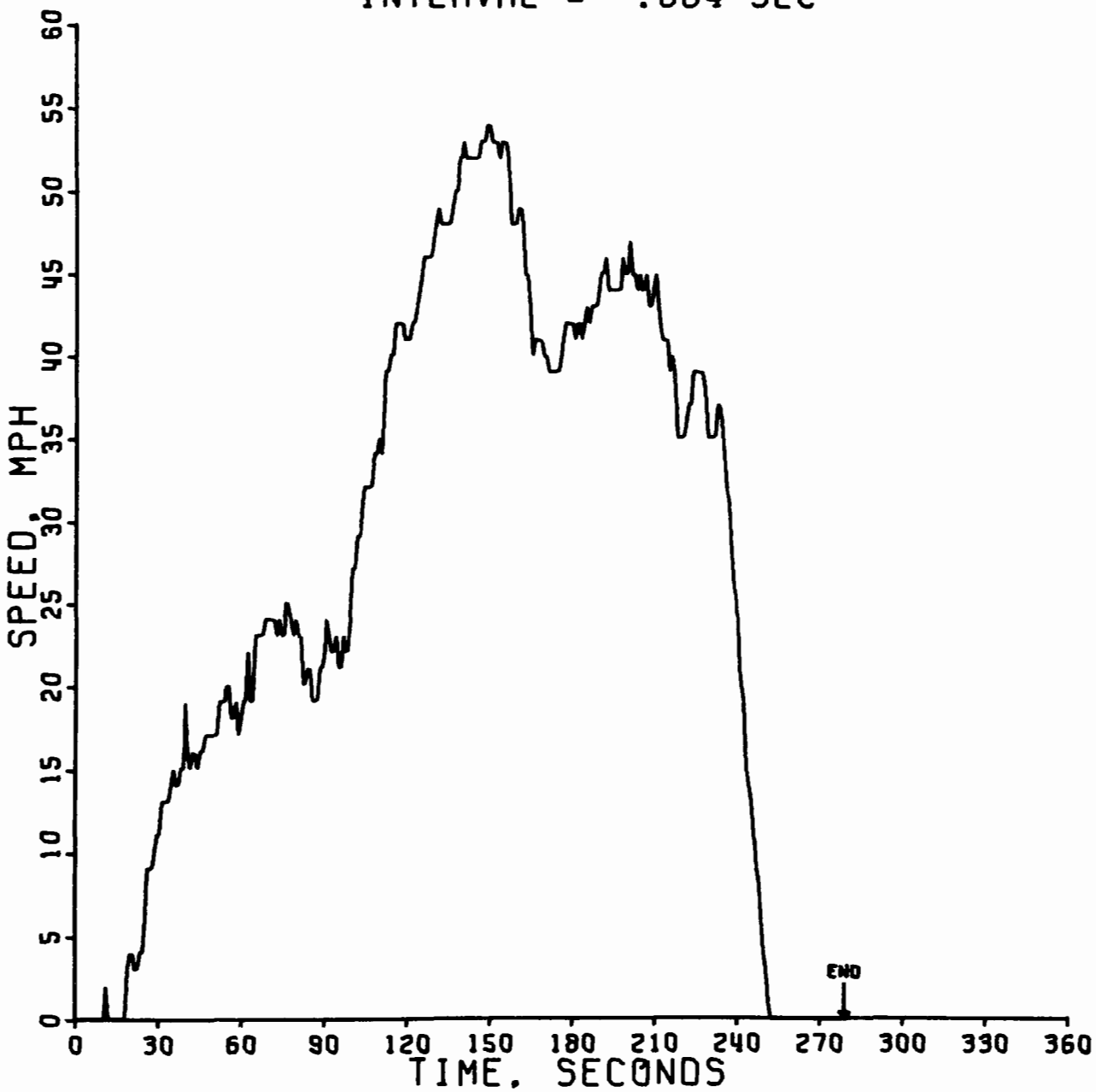
AVERAGE SPEED = 14.55 MPH
DURATION = 4.75 MIN
DISTANCE = 1.15 MILES
INTERVAL = .864 SEC



DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2037082365

DATA BASE: NY GAS + DIESEL
FREEWAY

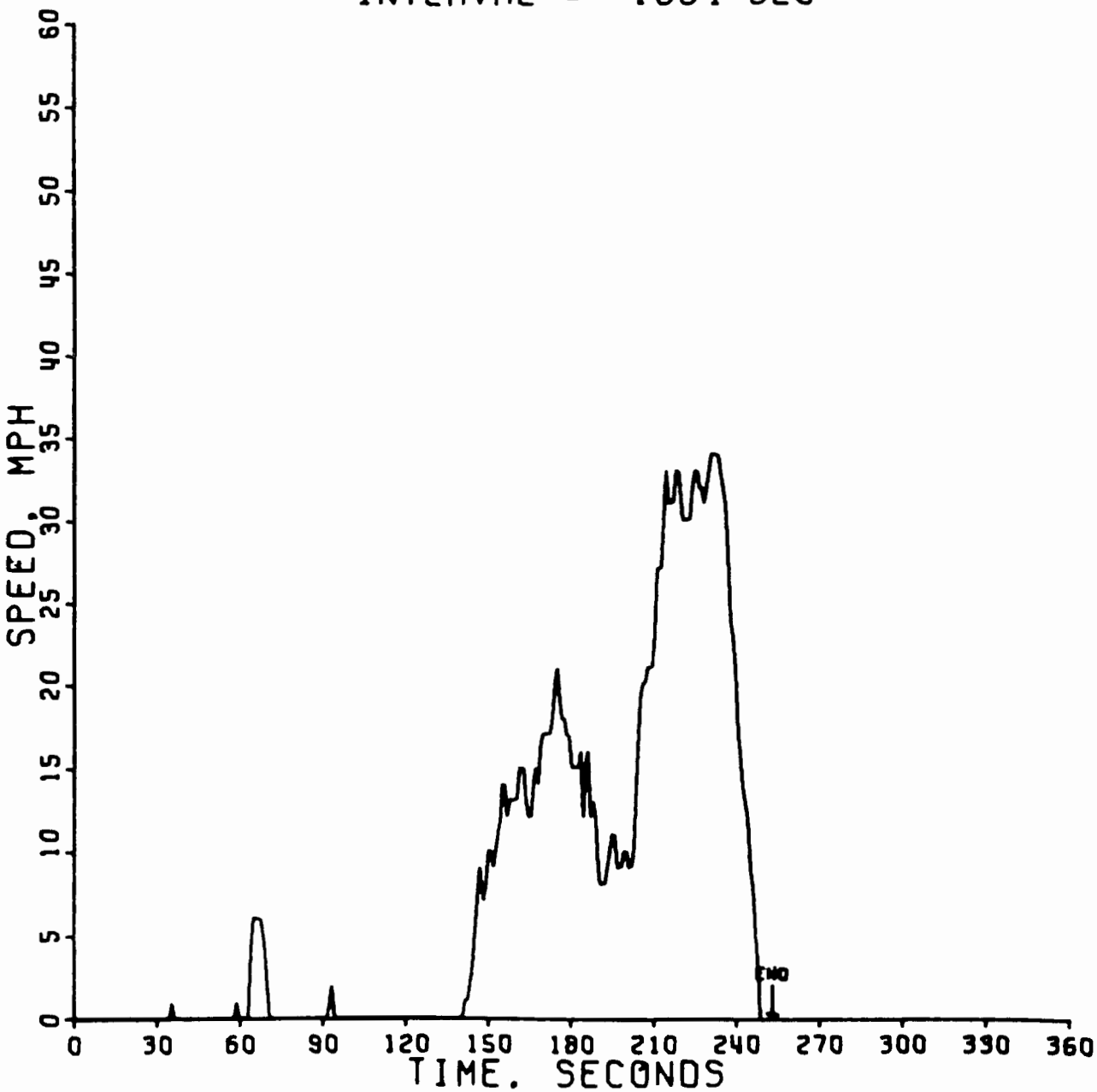
AVERAGE SPEED = 26.91 MPH
DURATION = 4.67 MIN
DISTANCE = 2.09 MILES
INTERVAL = .864 SEC



DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2120127413

DATA BASE: NY GAS + DIESEL
NONFREEWAY

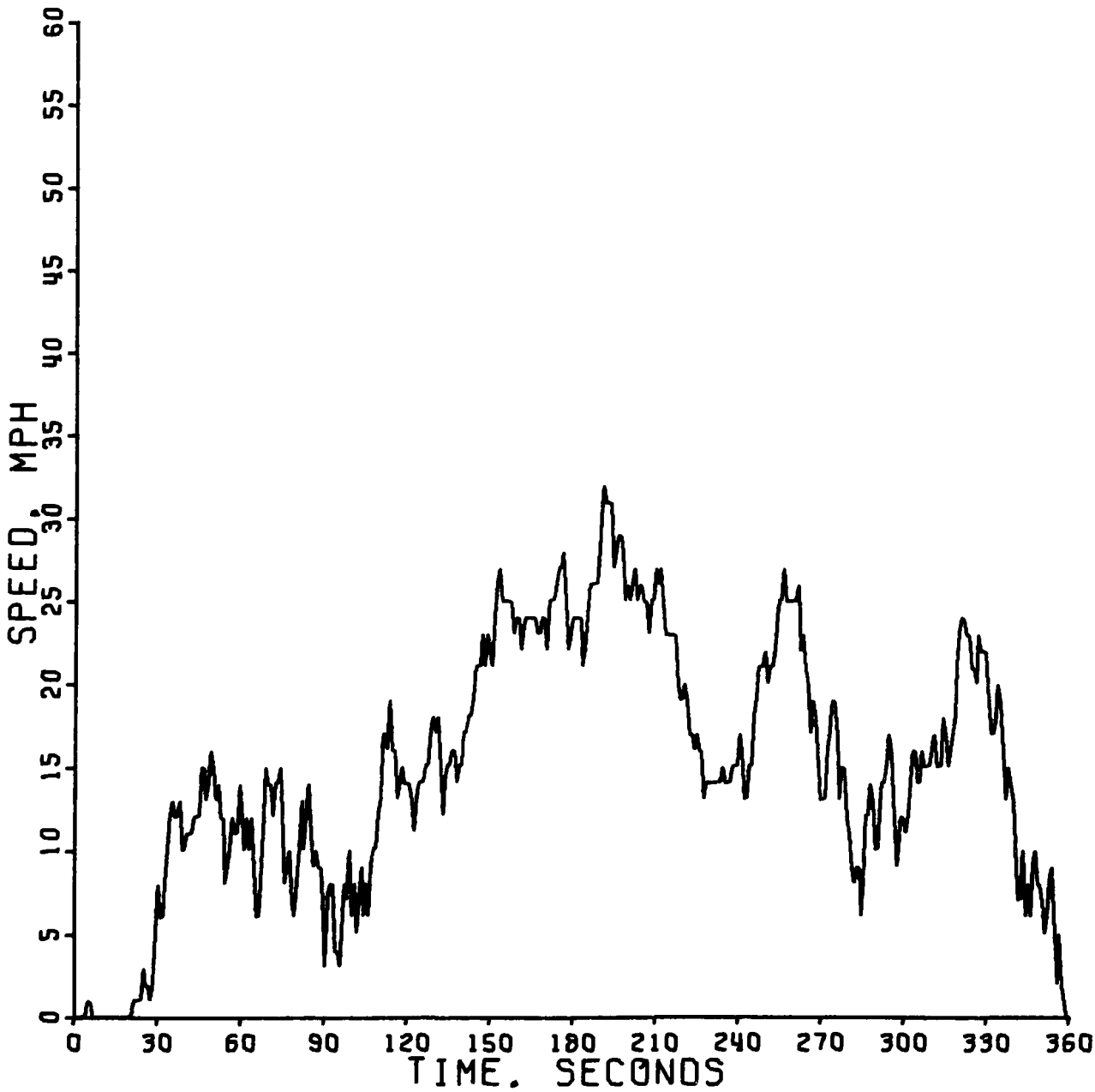
AVERAGE SPEED = 7.57
DURATION = 4.23 MIN
DISTANCE = 0.53 MILES
INTERVAL = .864 SEC



DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2041393295

DATA BASE: LA BUSES
FWY & NFWY COMPOSITE

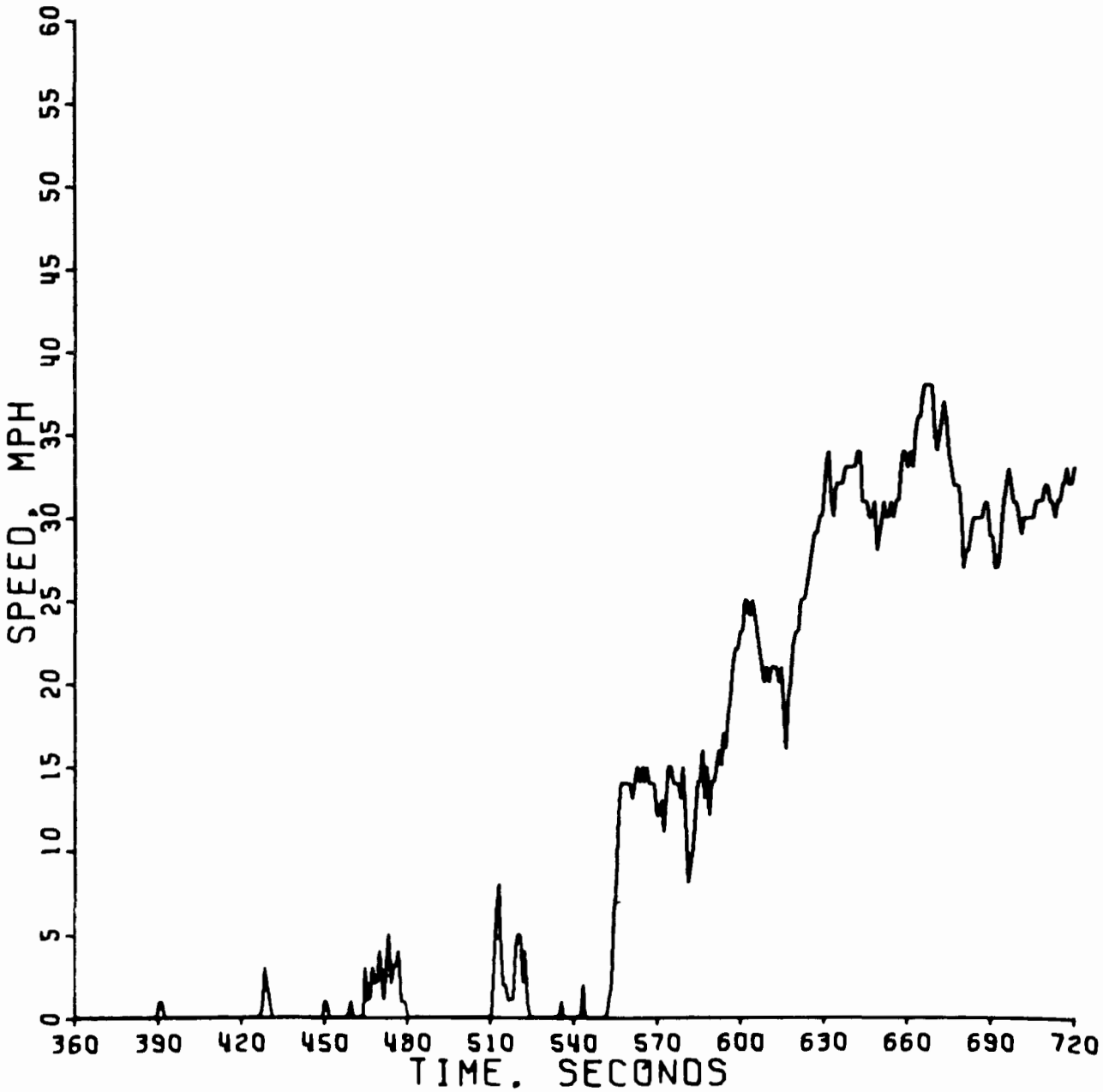
AVERAGE SPEED = 20.65 MPH
DURATION = 17.71 MIN
DISTANCE = 6.10 MILES
INTERVAL = .864 SEC



DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2041393295 (CON'D)

DATA BASE: LA BUSES
FWY & NFWY COMPOSITE

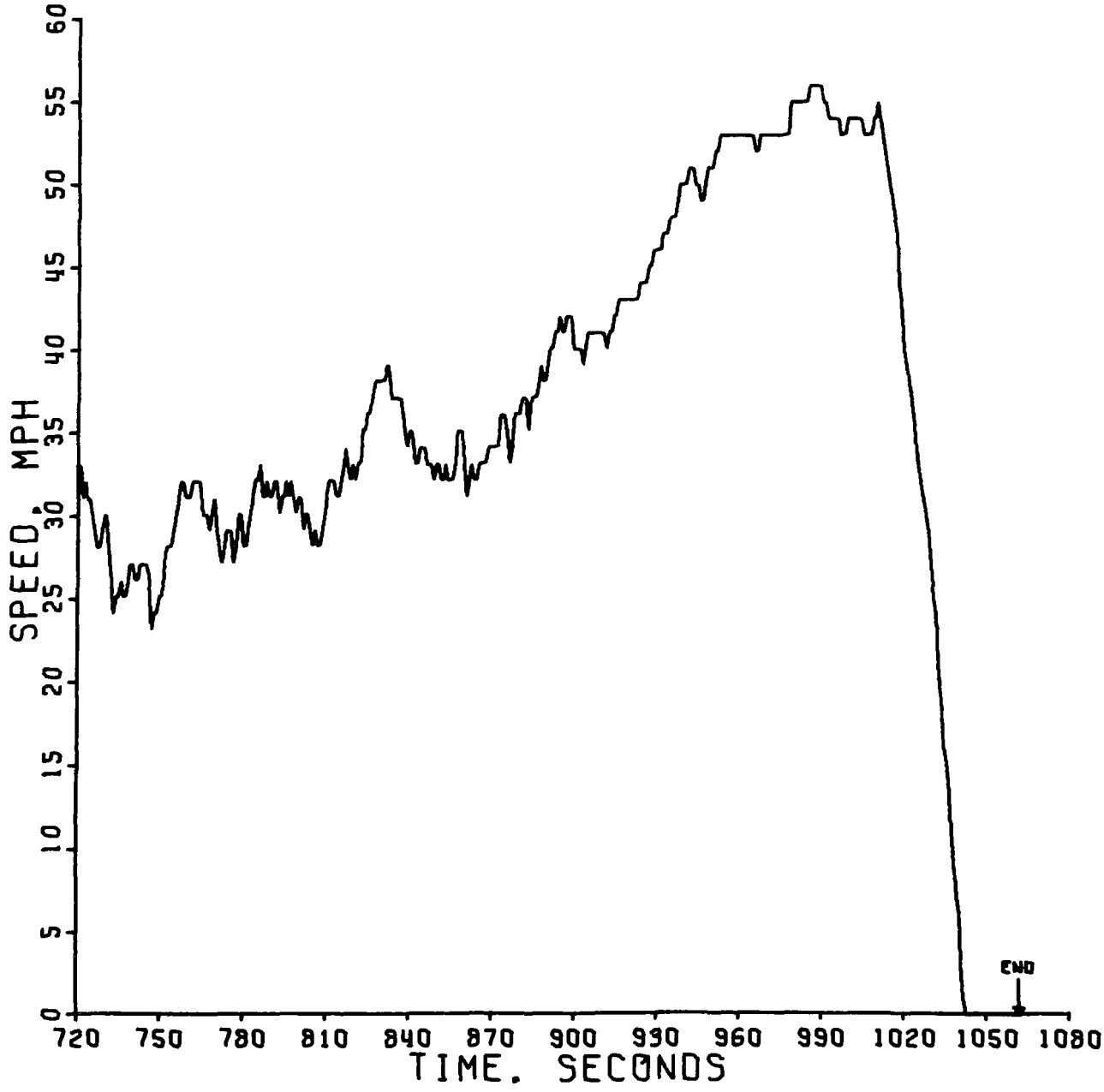
AVERAGE SPEED = 20.65 MPH
DURATION = 17.71 MIN
DISTANCE = 6.10 MILES
INTERVAL = .864 SEC



DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2041393295 (CON'D)

DATA BASE: LA BUSES
FWY & NFWY COMPOSITE

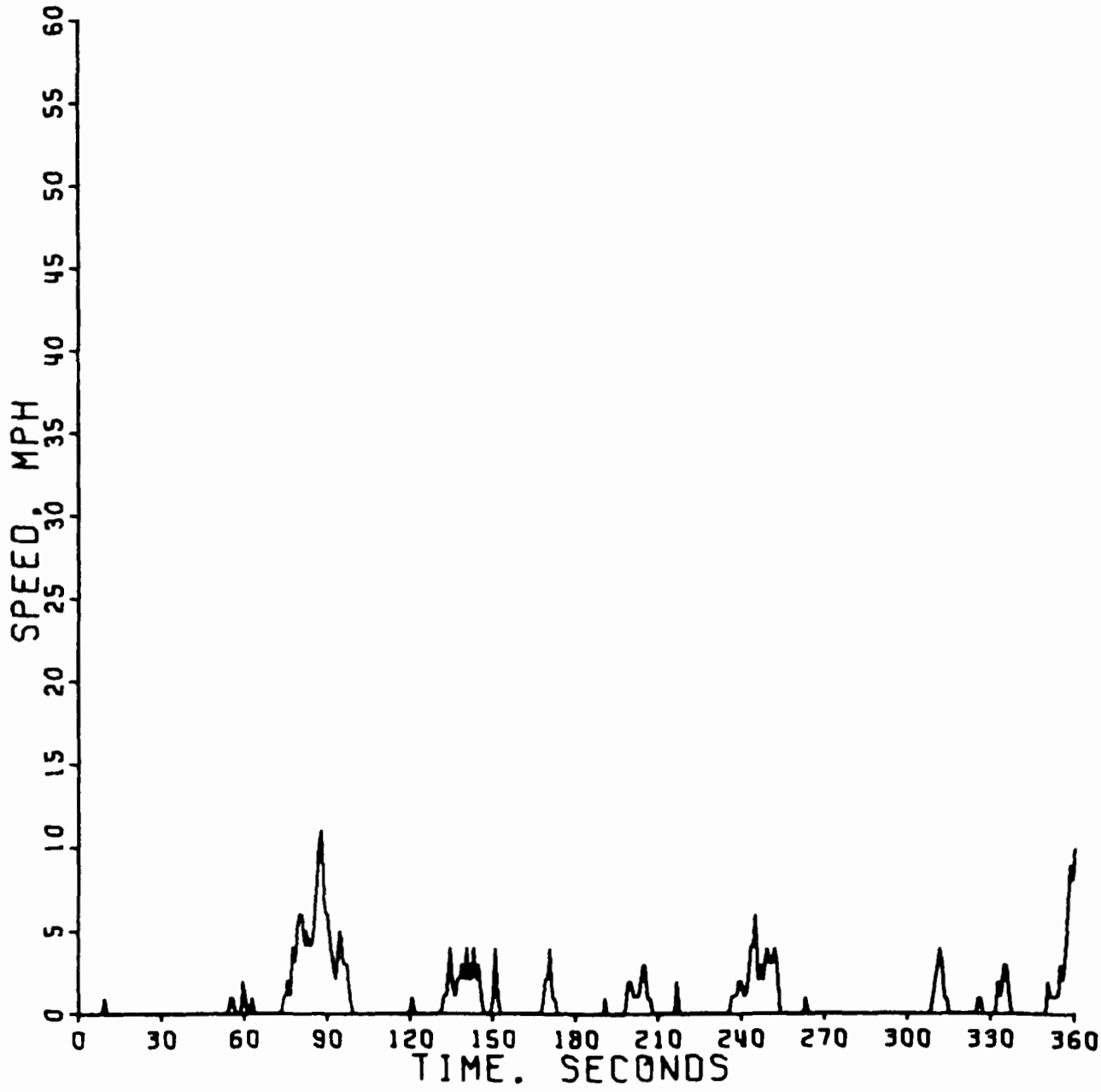
AVERAGE SPEED = 20.65 MPH
DURATION = 17.71 MIN
DISTANCE = 6.10 MILES
INTERVAL = .864 SEC



DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2143765149

DATA BASE: NY BUSES
FWY & NFWY COMPOSITE

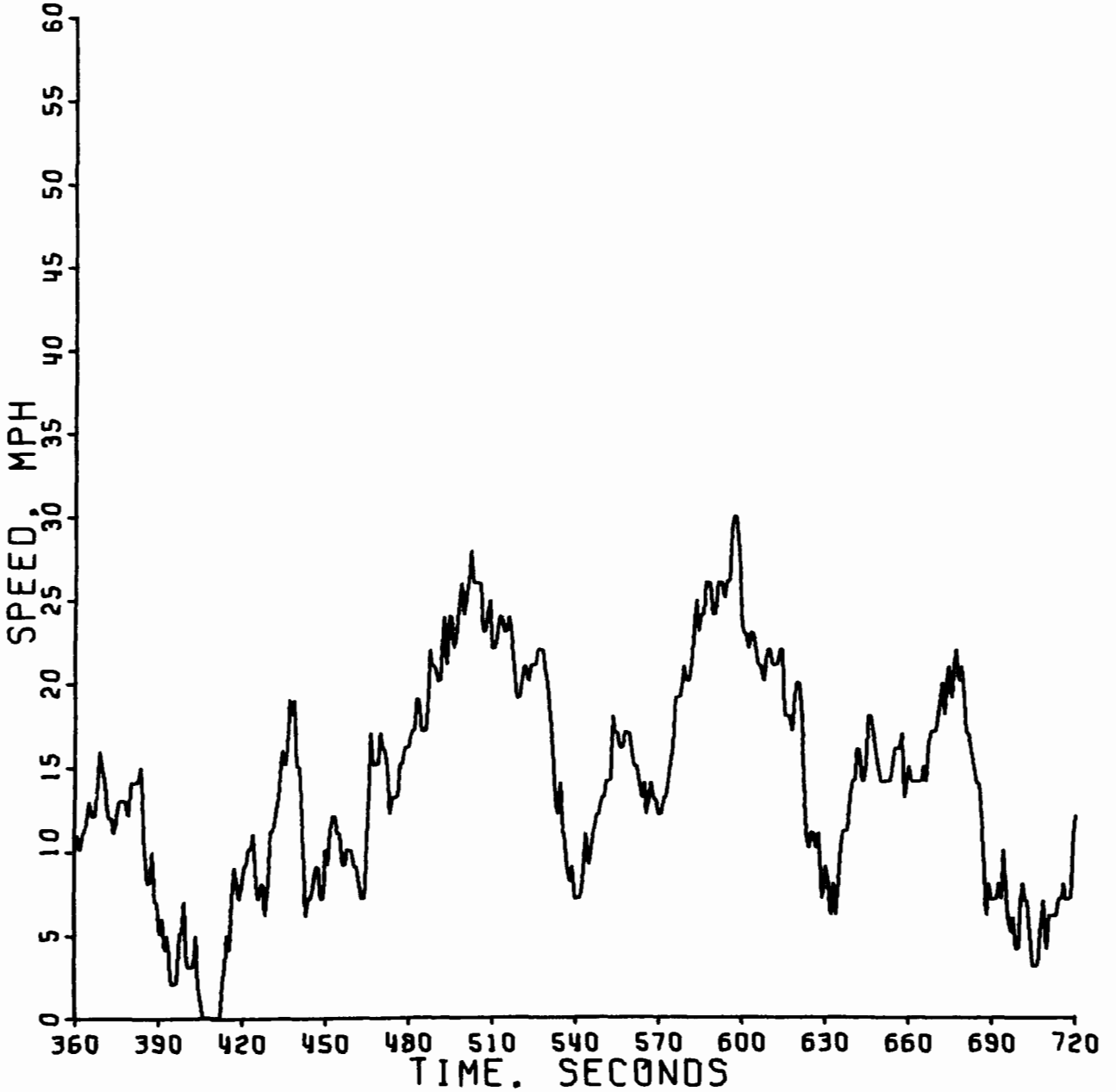
AVERAGE SPEED = 8.77 MPH
DURATION = 17.15 MIN
DISTANCE = 2.51 MILES
INTERVAL = .864 SEC



DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2143765149 (CON'D)

DATA BASE: NY BUSES
FWY & NFWY COMPOSITE

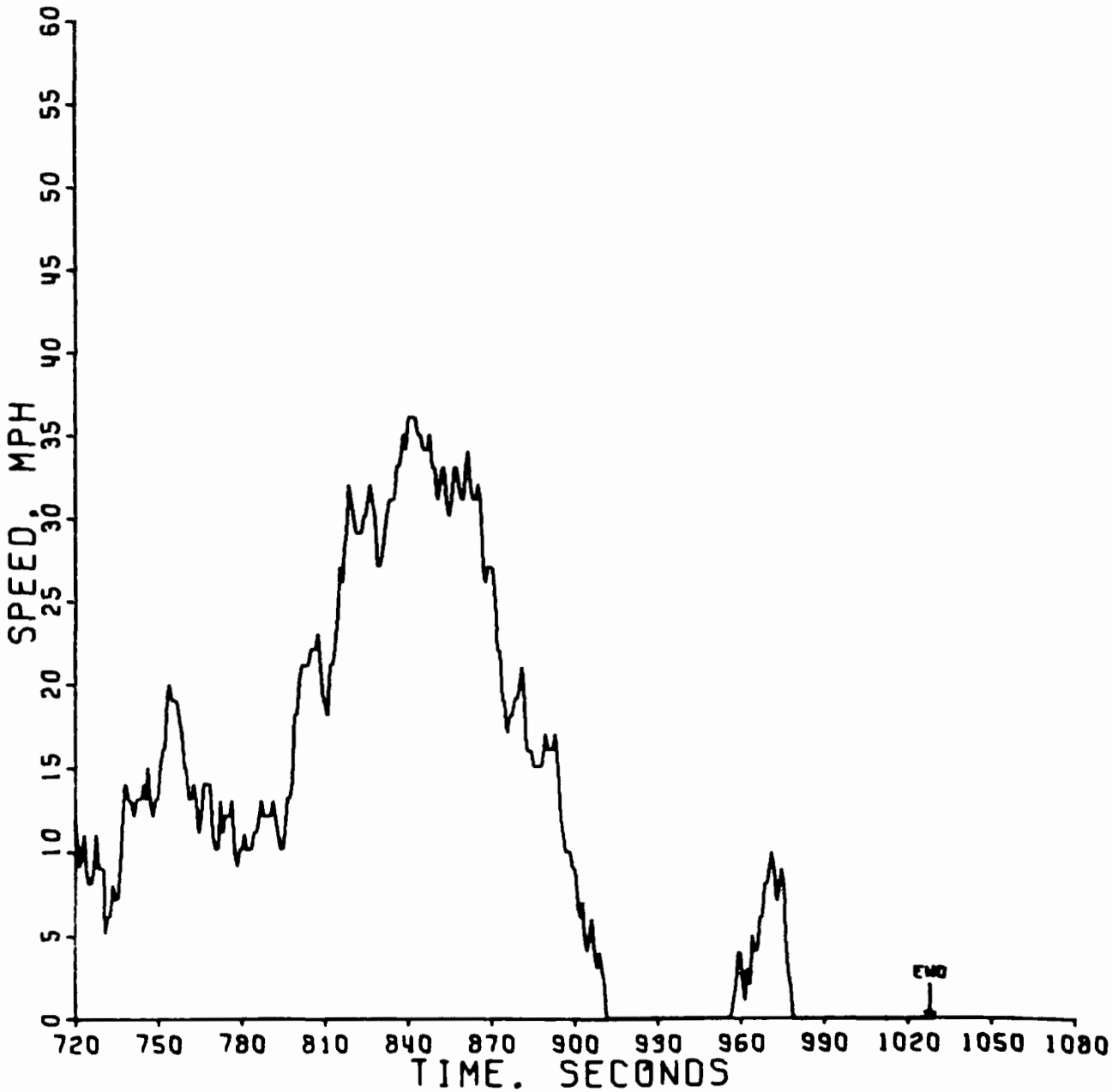
AVERAGE SPEED = 8.77 MPH
DURATION = 17.15 MIN
DISTANCE = 2.51 MILES
INTERVAL = .864 SEC

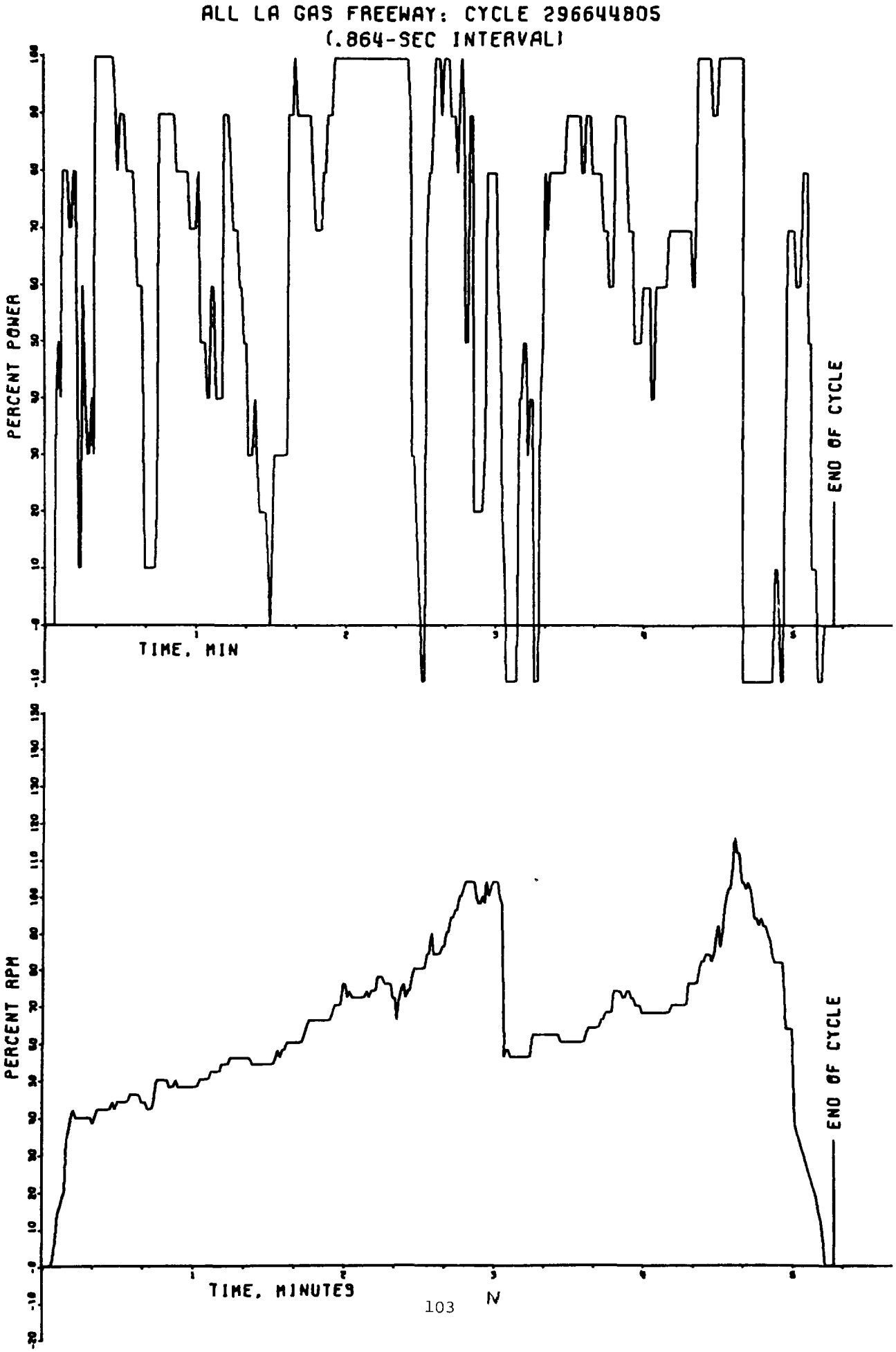


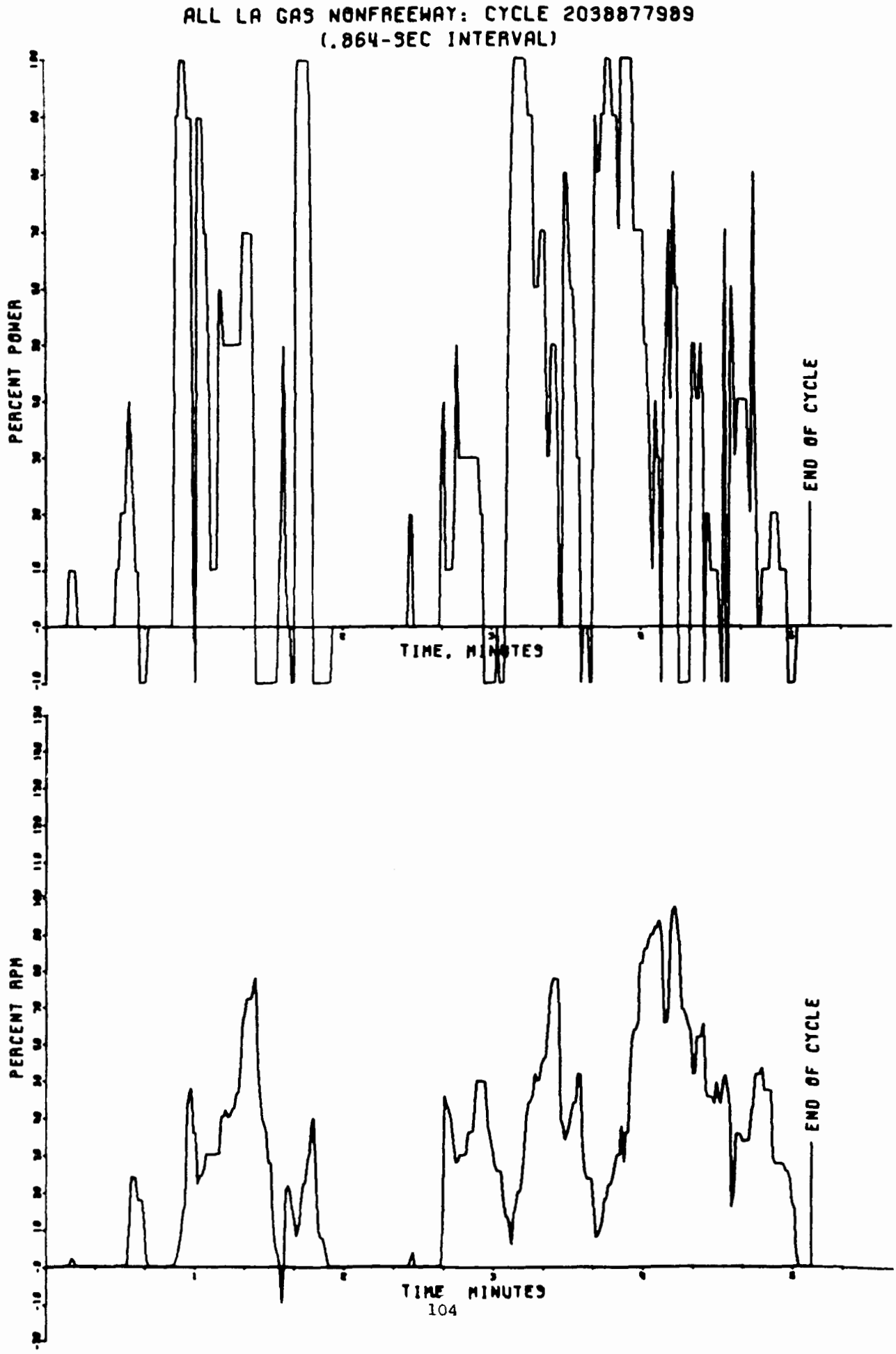
DRIVING CYCLE WITH STARTING
RANDOM NUMBER 2143765149 (CON'D)

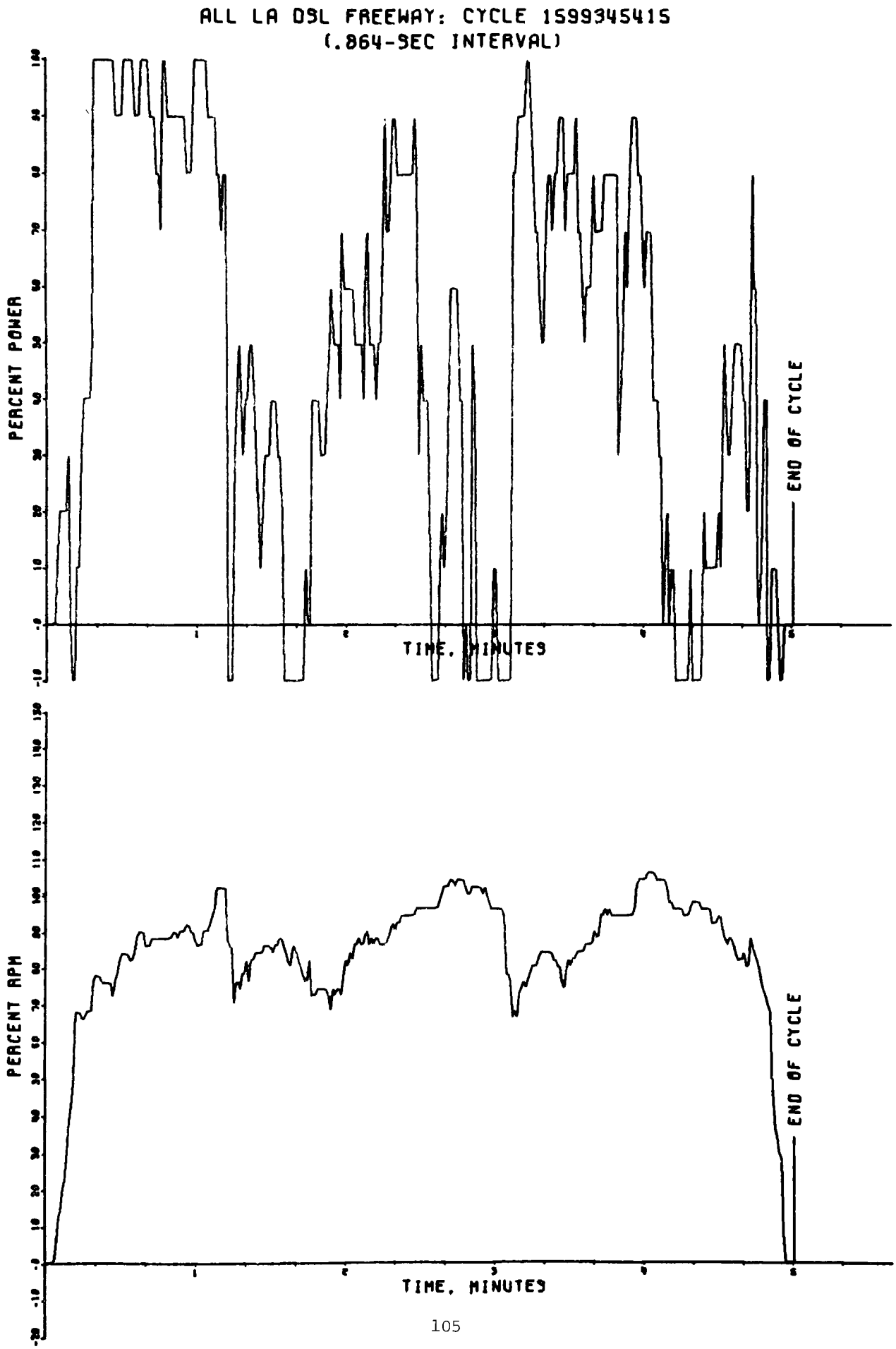
DATA BASE: NY BUSES
FWY & NFWY COMPOSITE

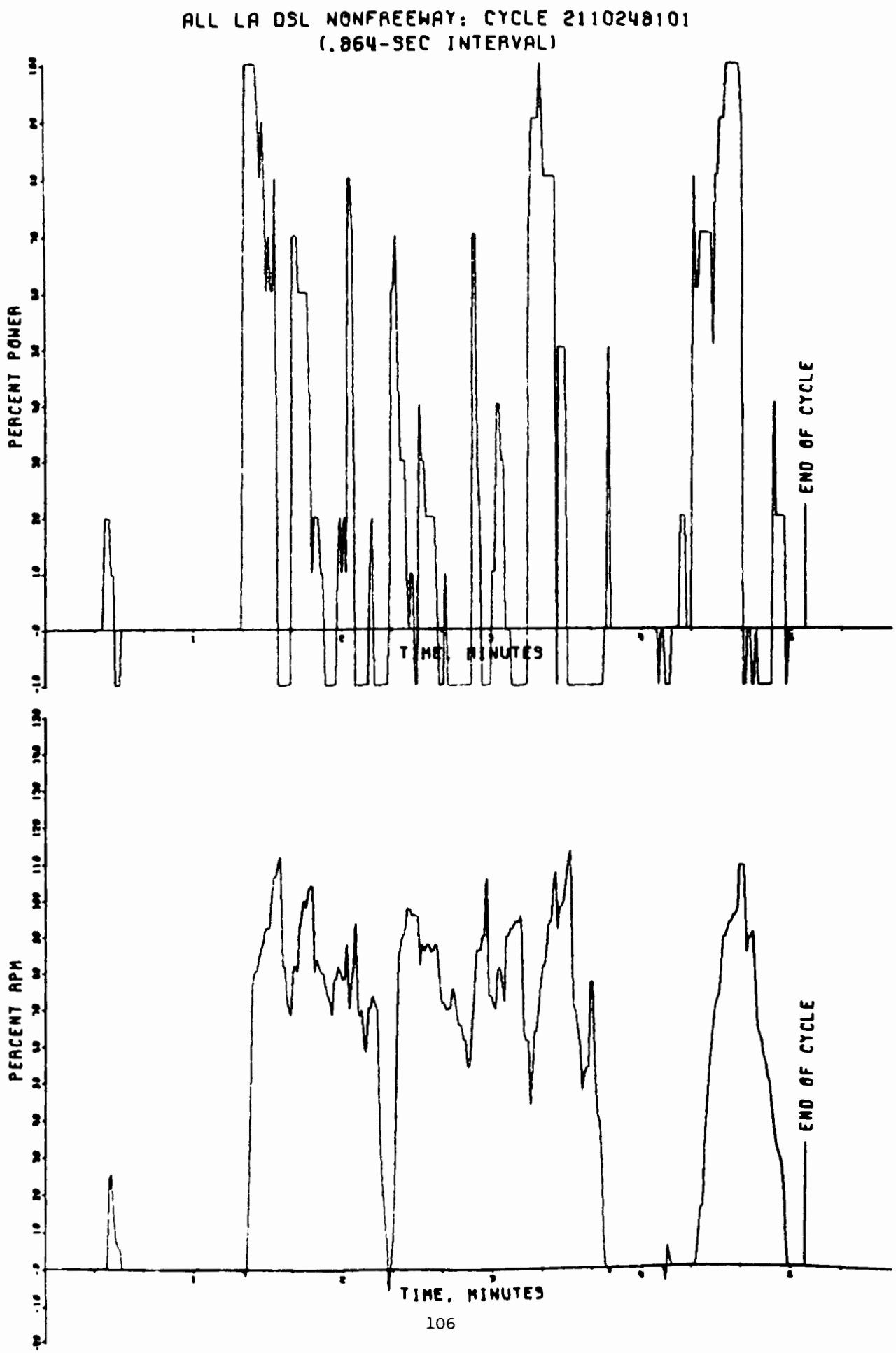
AVERAGE SPEED = 8.77 MPH
DURATION = 17.15 MIN
DISTANCE = 2.51 MILES
INTERVAL = .864 SEC

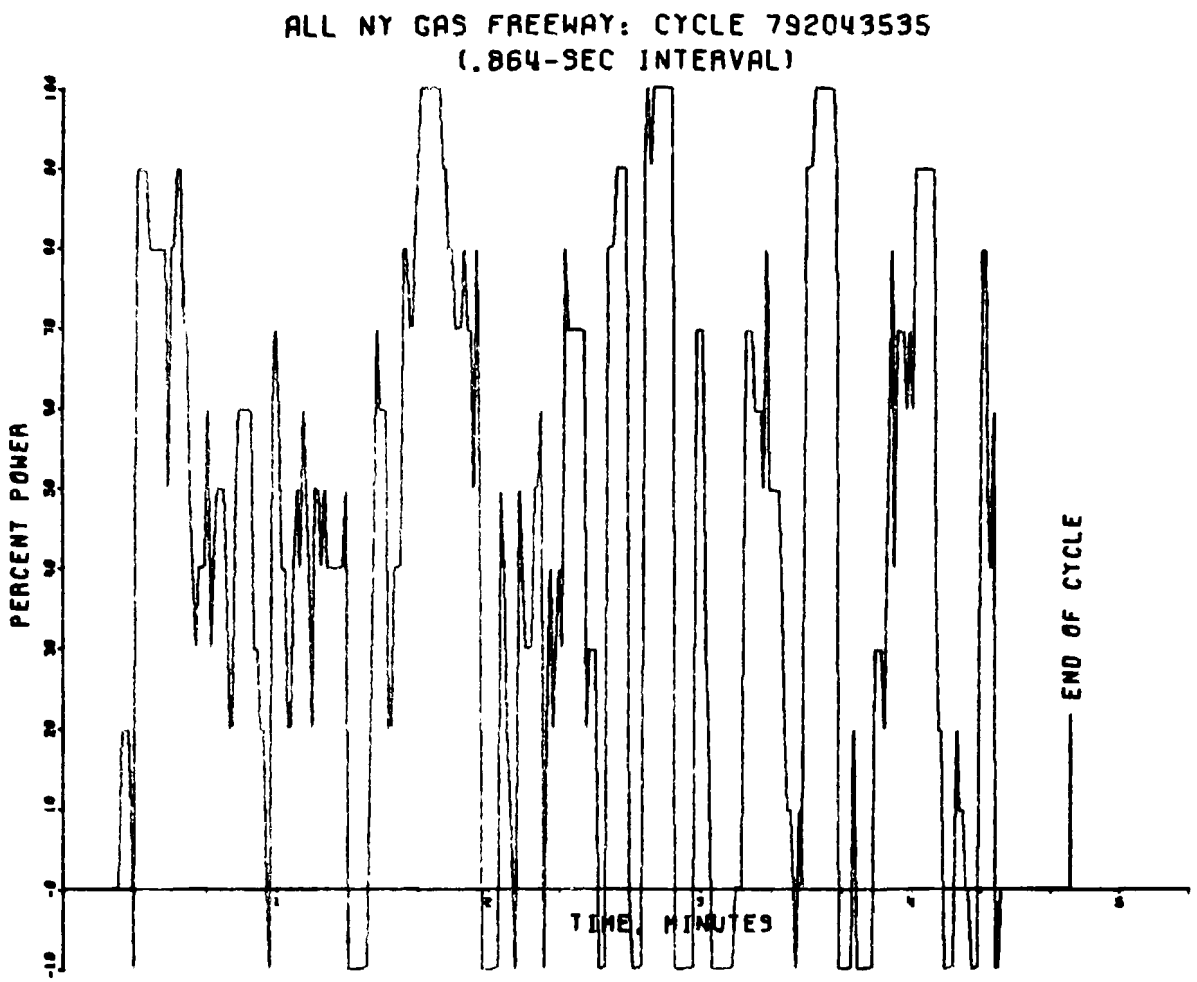


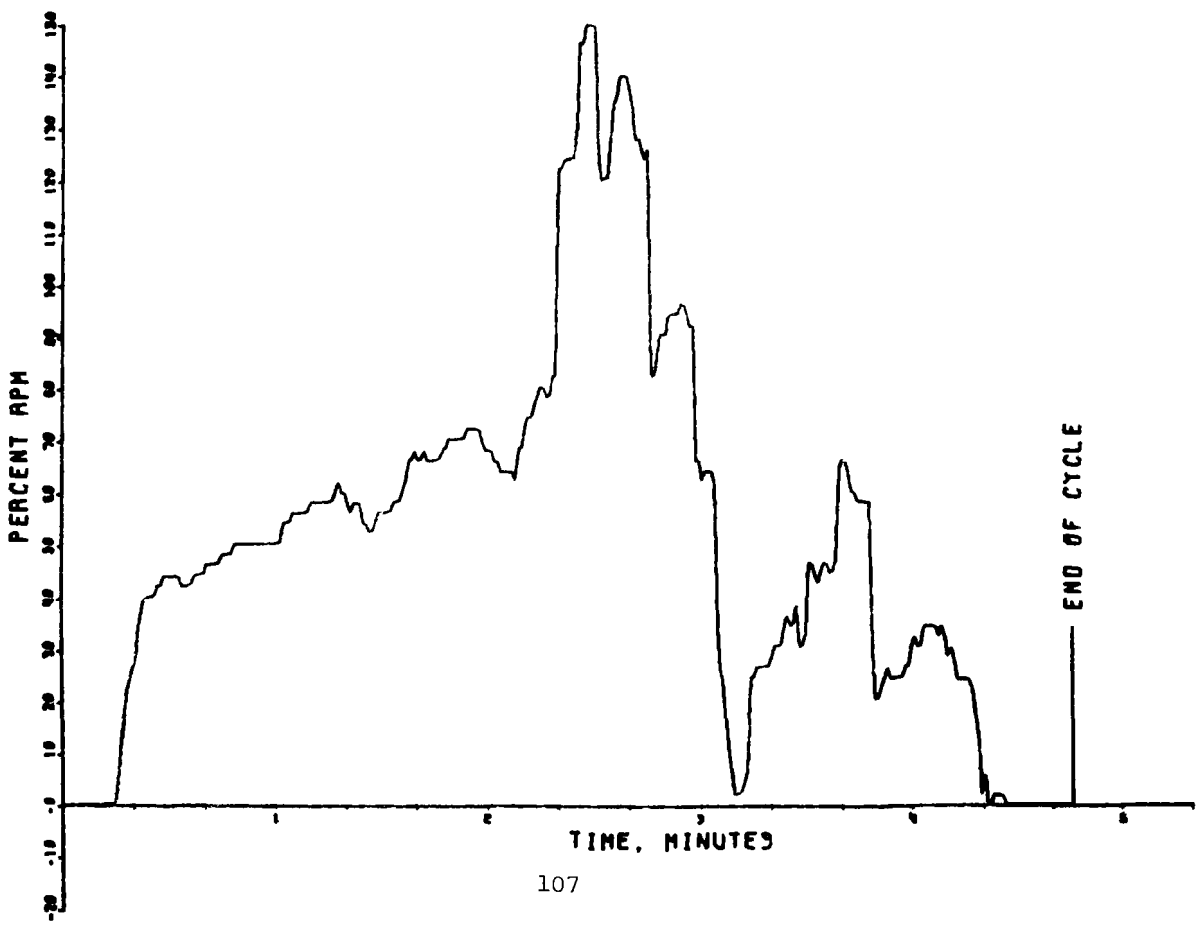

ALL LA GAS FREEWAY: CYCLE 296644805
(.864-SEC INTERVAL)
PERCENT POWER
TIME, MIN
END OF CYCLE
PERCENT RPM
TIME, MINUTES
END OF CYCLE

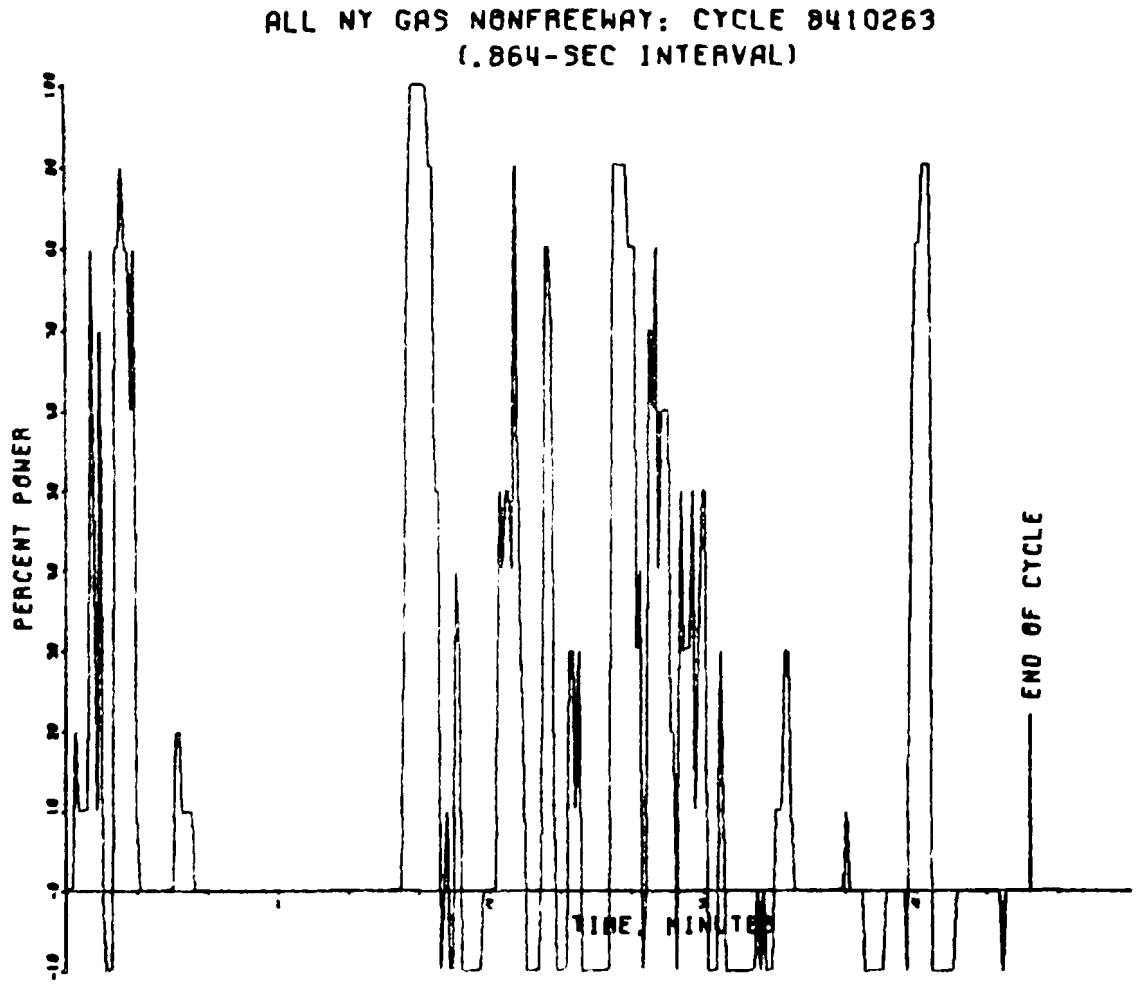

ALL LA GAS NONFREEWAY: CYCLE 2038877989
(.864-SEC INTERVAL)
PERCENT POWER
END OF CYCLE
TIME, MINUTES
PERCENT RPM
END OF CYCLE
TIME MINUTES

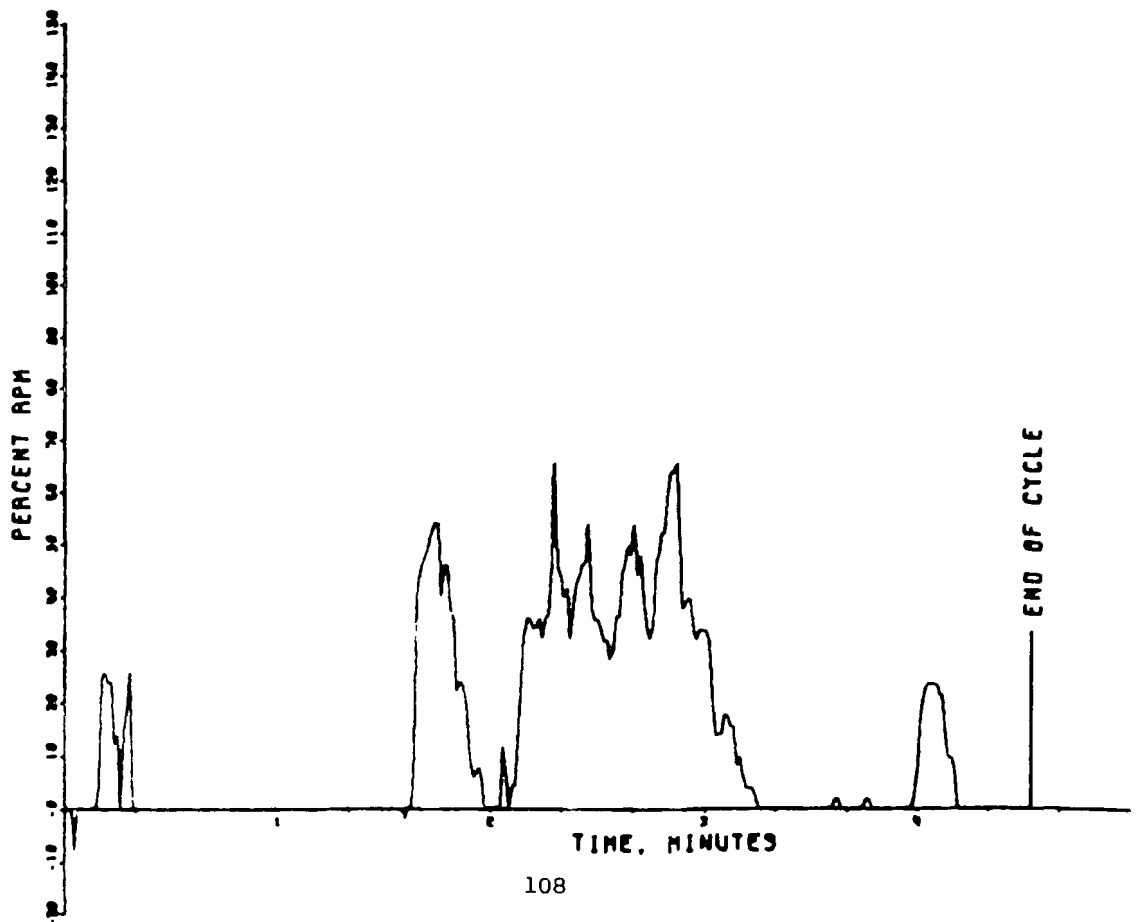

ALL LA DSL FREEWAY: CYCLE 1599345415
(.864-SEC INTERVAL)
PERCENT POWER
TIME, MINUTES
END OF CYCLE
PERCENT RPM
TIME, MINUTES
END OF CYCLE

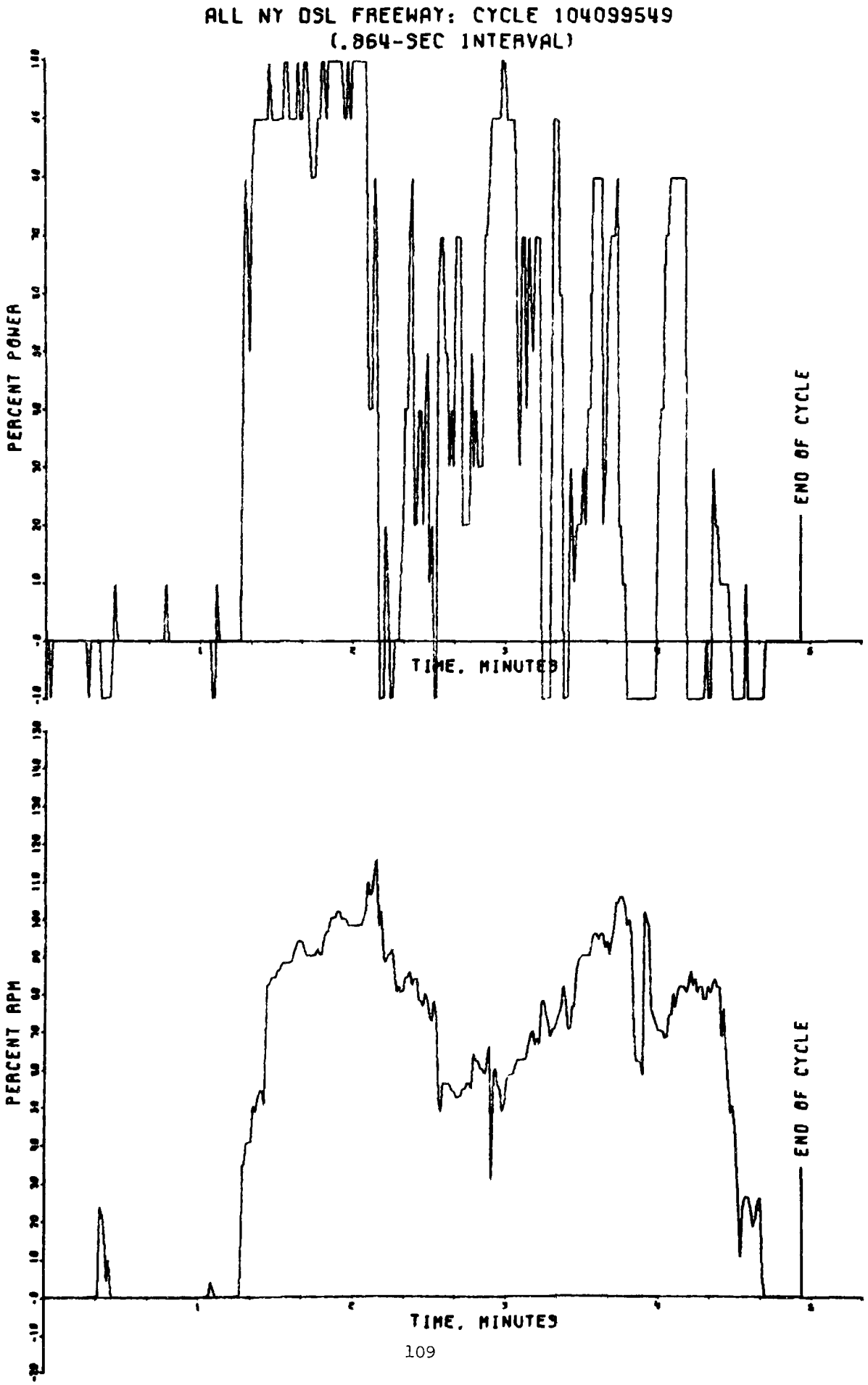

ALL LA DSL NONFREEWAY: CYCLE 2110248101
(.864-SEC INTERVAL)
PERCENT POWER
END OF CYCLE
TIME, MINUTES
PERCENT RPM
END OF CYCLE
TIME, MINUTES

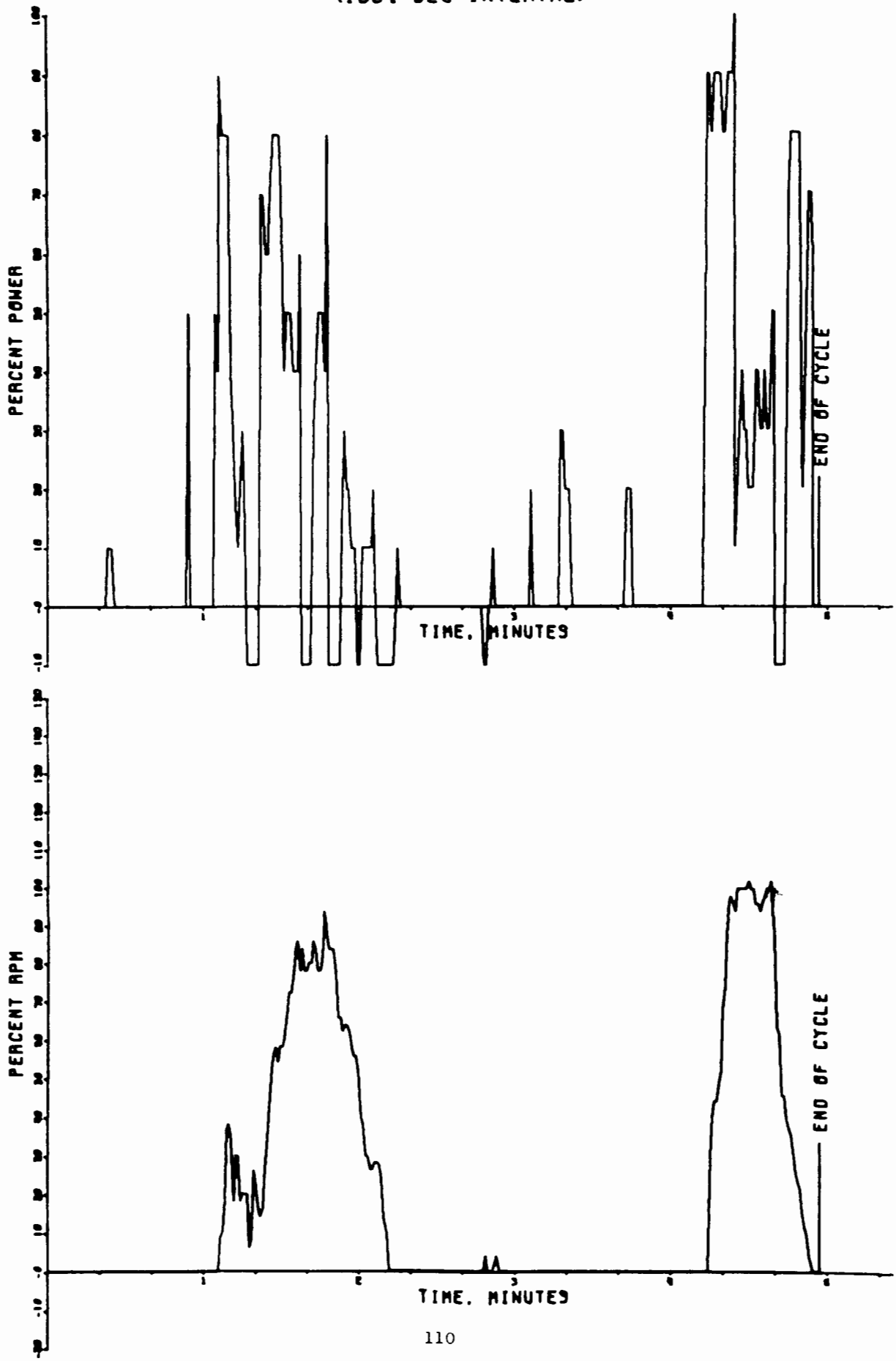

ALL NY GAS FREEWAY: CYCLE 792043535
(.864-SEC INTERVAL)
PERCENT POWER
TIME, MINUTES
END OF CYCLE

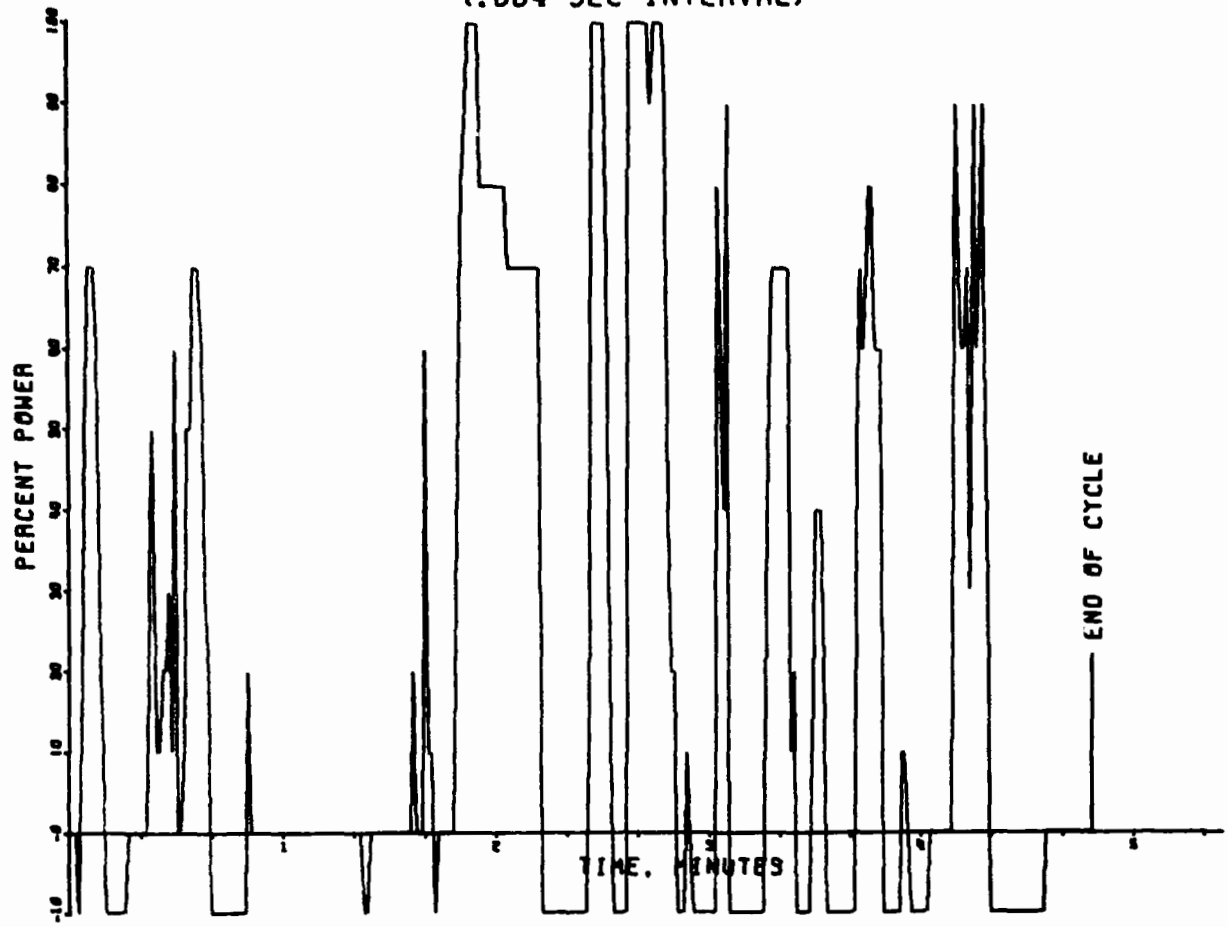

PERCENT RPM
TIME, MINUTES
END OF CYCLE

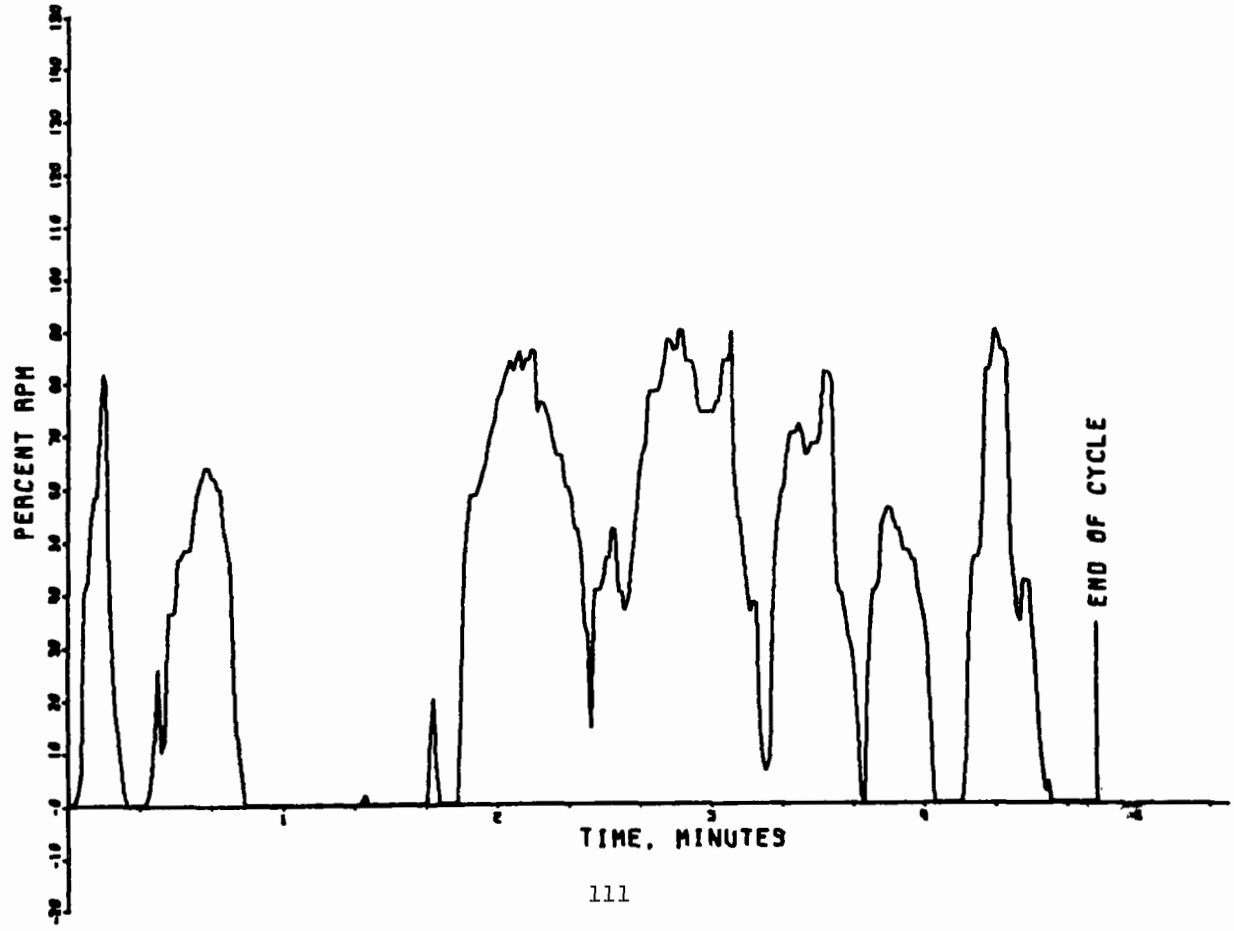

ALL NY GAS NONFREEWAY: CYCLE 8410263
(.864-SEC INTERVAL)
PERCENT POWER
END OF CYCLE
TIME, MINUTES

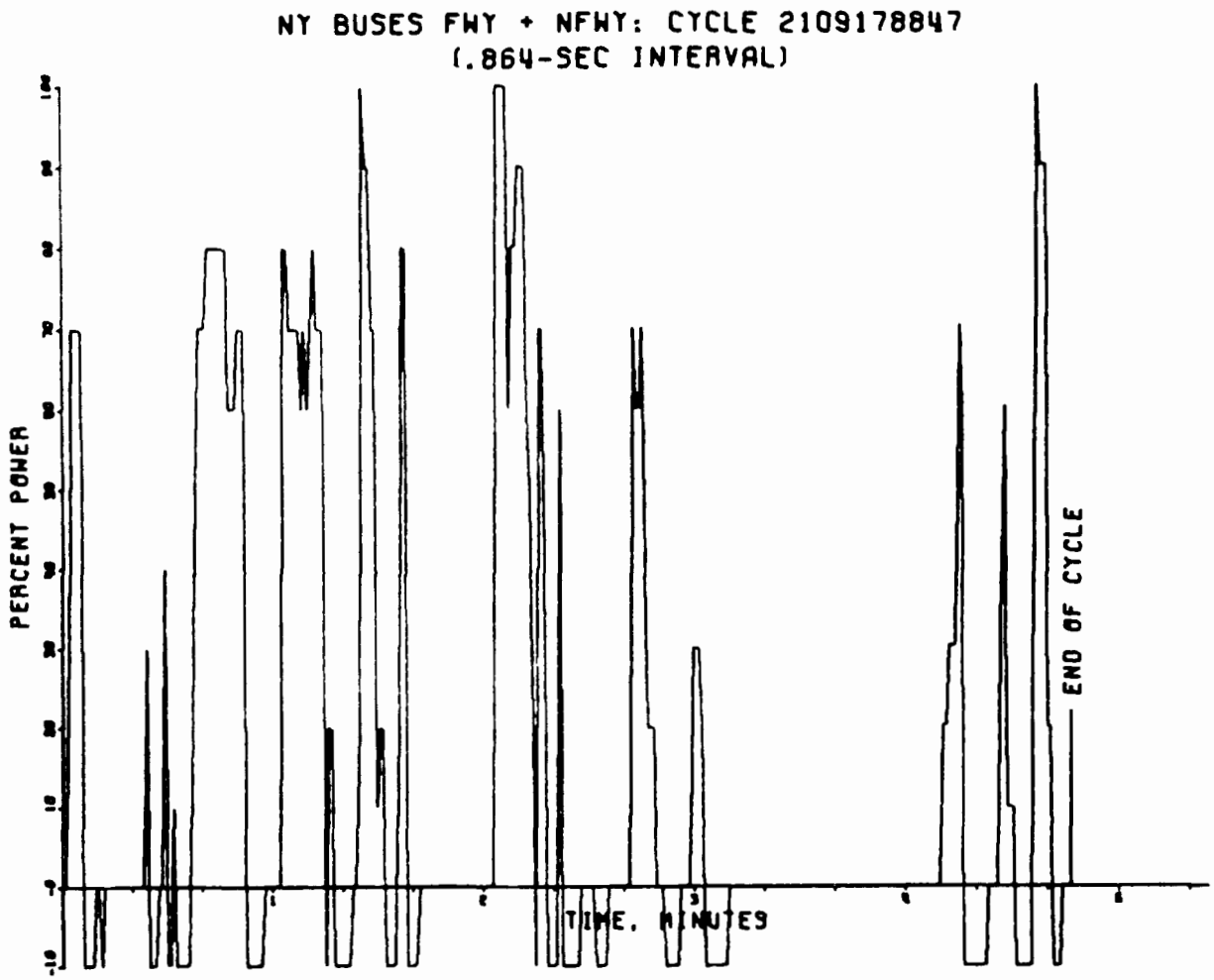

PERCENT RPM
END OF CYCLE
TIME, MINUTES

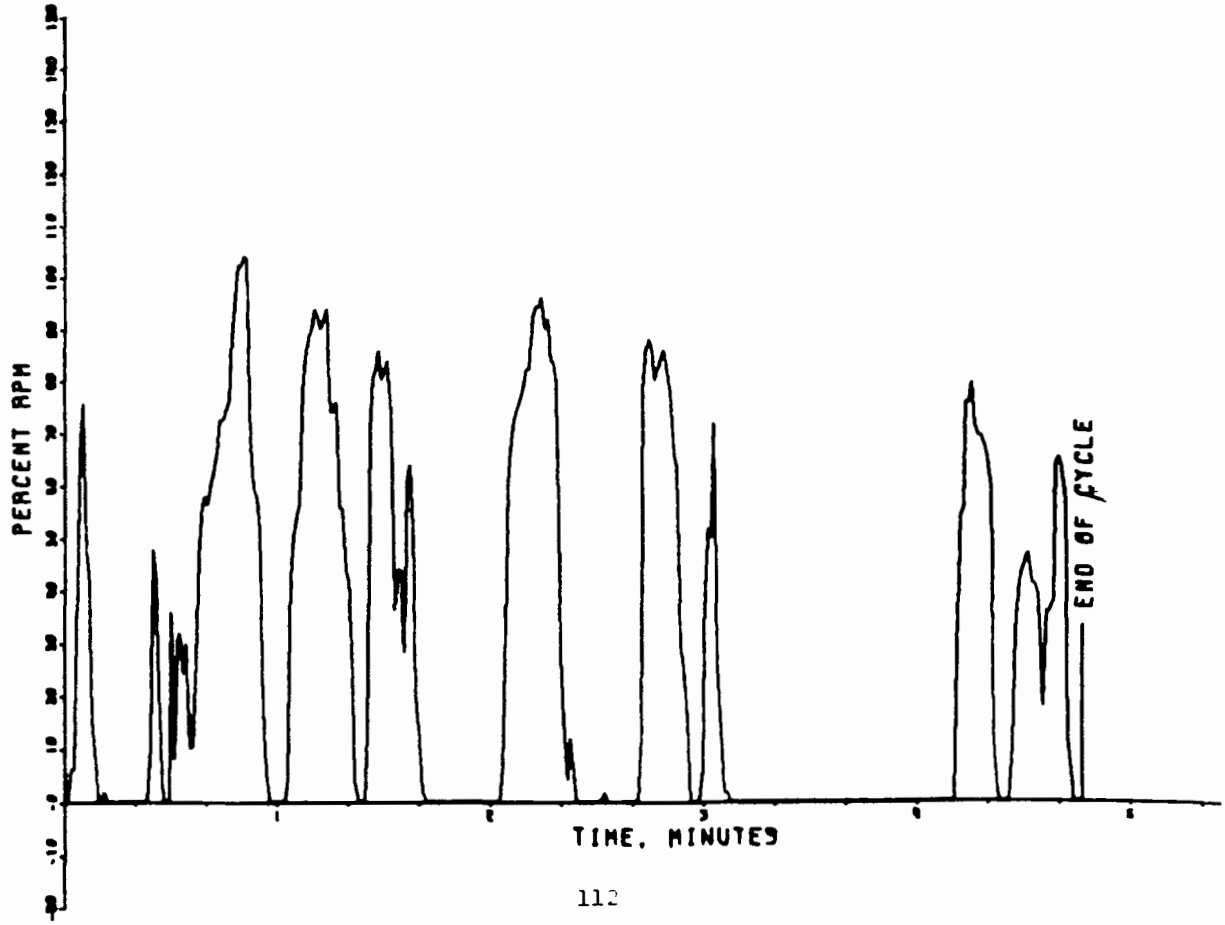

ALL NY OSL FREEWAY: CYCLE 104099549
(.864-SEC INTERVAL)
PERCENT POWER
TIME, MINUTES
END OF CYCLE
PERCENT RPM
TIME, MINUTES
END OF CYCLE


ALL NY OSL NONFREEWAY: CYCLE 2114147447
(.864-SEC INTERVAL)
PERCENT POWER
END OF CYCLE
TIME, MINUTES
PERCENT RPM
END OF CYCLE
TIME, MINUTES


LA BUSES FWY + NFWY: CYCLE 2049482045
(.864-SEC INTERVAL)
PERCENT POWER
END OF CYCLE
TIME, MINUTES


PERCENT RPM
END OF CYCLE
TIME, MINUTES


NY BUSES FWY + NFWY: CYCLE 2109178847
(.864-SEC INTERVAL)
PERCENT POWER
TIME, MINUTES
END OF CYCLE


PERCENT RPM
TIME, MINUTES
END OF CYCLE

Appendix B

ENGINE CYCLE STATISTICS AND SCHEDULES

SUMMARY MEASURES FOR CYCLE 296644805

GENERATED FROM INPUT MATRIX: ALL LA GAS FREEWAY

CYCLE DURATION = 5.27 MINUTES

KOLMOGOROV-SMIRNOV TESTS:

	DIFFERENCE	SL
MATRIX	0.0493	0.200
UPPER	0.0707	0.200
DIAGONAL	0.0861	0.150
LOWER	0.0885	0.200

MATRIX PERCENTAGES:

	CYCLE	INPUT
UPPER	28.14	29.22
DIAGONAL	41.26	40.15
LOWER	28.42	28.67
*** IDLE	2.19	1.96

POWER MEASURES:

	CYCLE	INPUT
* MEAN, %	68.18	63.08
% ACCEL	13.66	17.18
% DECEL	18.03	18.02
% CRUISE	59.29	54.80
** % MOTORING	6.83	7.16
** % ZERO	2.19	2.83

RPM MEASURES:

	CYCLE	INPUT
MEAN, %	63.52	62.82
% ACCEL	21.58	19.06
% DECEL	16.39	18.14
% CRUISE	59.84	60.30
** % ZERO	2.19	2.50

* COMPUTED FROM NON-MOTORING POWERS ONLY

** THE ZERO AND MOTORING PERCENTAGES ARE HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

*** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE DIAGONAL PERCENTAGE

RPM AND POWER SCHEDULE FOR CYCLE 296644805
ALL LA GAS FREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	44	20	101	54	20	151	74	100
2	0	0	52	50	90	102	54	10	152	74	100
3	0	0	53	50	90	103	54	0	153	74	100
4	0	0	54	50	90	104	54	10	154	78	100
5	2	40	55	50	90	105	54	30	155	78	100
6	8	50	56	50	90	106	54	30	156	78	100
7	14	40	57	50	90	107	56	30	157	76	100
8	16	80	58	48	90	108	58	30	158	76	100
9	18	80	59	48	90	109	56	30	159	76	100
10	20	80	60	48	80	110	58	30	160	76	100
11	34	70	61	50	80	111	58	30	161	72	100
12	36	70	62	48	80	112	60	90	162	72	100
13	40	80	63	48	80	113	60	90	163	66	100
14	42	80	64	48	80	114	60	90	164	72	100
15	40	10	65	48	80	115	60	100	165	74	100
16	40	10	66	48	70	116	60	90	166	76	100
17	40	60	67	48	70	117	60	90	167	72	100
18	40	40	68	48	70	118	60	90	168	74	90
19	40	30	69	48	70	119	60	90	169	74	30
20	40	30	70	48	80	120	62	90	170	78	30
21	40	40	71	48	50	121	64	90	171	80	20
22	40	30	72	50	50	122	66	90	172	80	10
23	38	100	73	50	50	123	66	80	173	80	0
24	40	100	74	50	40	124	66	70	174	80	M
25	42	100	75	50	40	125	66	70	175	80	M
26	42	100	76	50	60	126	66	70	176	80	70
27	42	100	77	52	60	127	66	70	177	84	80
28	42	100	78	52	40	128	66	80	178	84	80
29	42	100	79	52	40	129	66	80	179	90	90
30	42	100	80	52	40	130	66	90	180	84	100
31	42	100	81	52	40	131	66	90	181	84	100
32	44	90	82	54	90	132	66	90	182	84	100
33	42	80	83	54	90	133	68	100	183	84	90
34	44	90	84	54	90	134	70	100	184	86	100
35	44	90	85	54	80	135	70	100	185	86	100
36	44	90	86	56	70	136	70	100	186	90	100
37	44	80	87	56	70	137	70	100	187	90	90
38	44	80	88	56	70	138	76	100	188	94	90
39	44	80	89	56	60	139	76	100	189	94	90
40	46	80	90	56	60	140	72	100	190	96	80
41	46	70	91	56	50	141	74	100	191	96	90
42	46	60	92	56	50	142	72	100	192	100	100
43	46	60	93	56	30	143	72	100	193	100	90
44	46	60	94	56	30	144	72	100	194	102	50
45	44	10	95	56	30	145	72	100	195	104	50
46	44	10	96	54	40	146	72	100	196	104	90
47	44	10	97	54	30	147	72	100	197	104	90
48	42	10	98	54	20	148	72	100	198	104	20
49	42	10	99	54	20	149	74	100	199	104	20
50	42	10	100	54	20	150	72	100	200	100	20

RPM AND POWER SCHEDULE FOR CYCLE 296644805 (CONTINUED)
ALL LA GAS FREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	98	20	243	60	90	285	68	60	327	104	M
202	98	20	244	60	90	286	68	60	328	102	M
203	100	30	245	60	90	287	68	60	329	98	M
204	98	80	246	60	90	288	68	60	330	94	M
205	104	80	247	60	90	289	68	70	331	94	M
206	100	80	248	60	80	290	68	70	332	92	M
207	102	80	249	60	80	291	70	70	333	94	M
208	104	80	250	60	90	292	70	70	334	92	M
209	104	60	251	62	90	293	70	70	335	92	M
210	104	50	252	64	90	294	70	70	336	90	M
211	100	20	253	64	80	295	70	70	337	88	M
212	98	10	254	64	80	296	70	70	338	84	M
213	56	M	255	64	80	297	70	70	339	82	10
214	58	M	256	64	80	298	70	70	340	82	10
215	58	M	257	64	80	299	76	70	341	82	0
216	56	M	258	66	70	300	76	60	342	82	M
217	56	M	259	66	70	301	76	60	343	82	M
218	56	M	260	68	70	302	76	100	344	64	70
219	56	40	261	68	60	303	76	100	345	64	70
220	56	40	262	68	60	304	80	100	346	64	70
221	56	50	263	68	60	305	82	100	347	64	70
222	56	50	264	74	90	306	82	100	348	38	60
223	56	30	265	74	90	307	84	100	349	36	60
224	56	40	266	74	90	308	84	100	350	34	60
225	56	40	267	74	90	309	84	90	351	32	80
226	62	M	268	72	90	310	82	90	352	30	80
227	62	M	269	72	80	311	84	90	353	28	80
228	62	M	270	74	70	312	88	100	354	26	50
229	62	40	271	74	70	313	92	100	355	24	50
230	62	50	272	72	70	314	86	100	356	22	10
231	62	80	273	72	50	315	90	100	357	20	10
232	62	70	274	70	50	316	96	100	358	18	10
233	62	80	275	70	50	317	100	100	359	14	M
234	62	60	276	70	50	318	102	100	360	12	M
235	62	80	277	68	60	319	102	100	361	6	M
236	62	80	278	68	60	320	108	100	362	0	0
237	62	80	279	68	60	321	116	100	363	0	0
238	62	80	280	68	60	322	112	100	364	0	0
239	60	80	281	68	40	323	112	100	365	0	0
240	60	80	282	68	40	324	104	M	366	0	0
241	60	90	283	68	60	325	104	M			
242	60	90	284	68	60	326	102	M			

RPM AND POWER SCHEDULE FOR CYCLE 296644805
ALL LA GAS FREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	48	90	101	60	90	151	80	M
2	0	0	52	48	80	102	60	90	152	80	64
3	0	0	53	49	80	103	60	90	153	84	80
4	1	25	54	48	80	104	63	90	154	85	82
5	7	48	55	48	80	105	65	90	155	88	94
6	14	41	56	48	80	106	66	83	156	84	100
7	16	80	57	48	70	107	66	72	157	84	100
8	19	80	58	48	70	108	66	70	158	84	91
9	26	76	59	48	70	109	66	70	159	86	100
10	35	70	60	48	74	110	66	73	160	87	100
11	39	77	61	48	62	111	66	80	161	90	97
12	42	80	62	50	50	112	66	86	162	92	90
13	40	10	63	50	50	113	66	90	163	94	90
14	40	20	64	50	40	114	66	90	164	96	82
15	40	53	65	50	45	115	68	100	165	96	90
16	40	35	66	51	60	116	70	100	166	100	99
17	40	30	67	52	49	117	70	100	167	101	79
18	40	38	68	52	40	118	70	100	168	103	50
19	40	30	69	52	40	119	74	100	169	104	74
20	38	100	70	52	41	120	76	100	170	104	90
21	41	100	71	54	90	121	72	100	171	104	26
22	42	100	72	54	90	122	74	100	172	104	20
23	42	100	73	54	85	123	72	100	173	100	20
24	42	100	74	55	74	124	72	100	174	98	20
25	42	100	75	56	70	125	72	100	175	99	25
26	42	100	76	56	70	126	72	100	176	99	65
27	43	97	77	56	60	127	72	100	177	103	80
28	43	86	78	56	57	128	72	100	178	100	80
29	43	86	79	56	50	129	73	100	179	102	80
30	44	90	80	56	38	130	73	100	180	104	73
31	44	90	81	56	30	131	74	100	181	104	55
32	44	80	82	56	30	132	74	100	182	101	31
33	44	80	83	54	39	133	78	100	183	98	12
34	45	80	84	54	28	134	78	100	184	58	M
35	46	75	85	54	20	135	77	100	185	58	M
36	46	63	86	54	20	136	76	100	186	57	M
37	46	60	87	54	20	137	76	100	187	56	M
38	46	60	88	54	11	138	76	100	188	56	M
39	44	10	89	54	0	139	72	100	189	56	28
40	44	10	90	54	13	140	72	100	190	56	40
41	43	10	91	54	30	141	67	100	191	56	50
42	42	10	92	55	30	142	73	100	192	56	46
43	42	10	93	57	30	143	75	100	193	56	34
44	44	19	94	56	30	144	73	100	194	56	40
45	50	90	95	58	30	145	74	92	195	60	5
46	50	90	96	58	37	146	74	31	196	62	M
47	50	90	97	60	90	147	78	29	197	62	M
48	50	90	98	60	90	148	80	17	198	62	42
49	50	90	99	60	96	149	80	5	199	62	60
50	48	90	100	60	93	150	80	M	200	62	75

RPM AND POWER SCHEDULE FOR CYCLE 296644805 (CONTINUED)
ALL LA GAS FREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	62	76	231	73	90	261	76	100	291	88	M
202	62	80	232	72	85	262	77	100	292	84	M
203	62	80	233	73	73	263	81	100	293	82	10
204	62	80	234	74	70	264	82	100	294	82	7
205	62	80	235	72	70	265	83	100	295	82	M
206	61	80	236	72	50	266	84	100	296	82	M
207	60	80	237	70	50	267	84	90	297	68	50
208	60	87	238	70	50	268	82	90	298	64	70
209	60	90	239	69	56	269	85	93	299	64	70
210	60	90	240	68	60	270	90	100	300	58	68
211	60	90	241	68	60	271	88	100	301	37	60
212	60	90	242	68	58	272	89	100	302	35	60
213	60	90	243	68	40	273	96	100	303	33	74
214	60	83	244	68	48	274	100	100	304	30	80
215	60	80	245	68	60	275	102	100	305	28	80
216	60	90	246	68	60	276	105	100	306	26	50
217	62	90	247	68	60	277	113	100	307	23	37
218	64	87	248	68	60	278	113	100	308	21	10
219	64	80	249	68	62	279	112	100	309	19	10
220	64	80	250	68	70	280	104	M	310	15	M
221	64	80	251	69	70	281	104	M	311	12	M
222	64	80	252	70	70	282	103	M	312	5	M
223	66	70	253	70	70	283	103	M	313	0	0
224	67	70	254	70	70	284	99	M	314	0	0
225	68	66	255	70	70	285	95	M	315	0	0
226	68	60	256	70	70	286	94	M	316	0	0
227	68	60	257	70	70	287	92	M			
228	73	87	258	74	70	288	93	M			
229	74	90	259	76	62	289	92	M			
230	74	90	260	76	60	290	91	M			

SUMMARY MEASURES FOR CYCLE 2038877989

GENERATED FROM INPUT MATRIX: ALL LA GAS NON-FREEWAY

CYCLE DURATION = 5.13 MINUTES

KOLMOGOROV-SMIRNOV TESTS:

	SIGNIFICANCE LEVEL
MATRIX	.1508E 00
UPPER	.9429E 00
DIAGONAL	.7422E 00
LOWER	.3217E 00

MATRIX PERCENTAGES:

		CYCLE	INPUT
	UPPER	30.90	30.68
***	DIAGONAL	14.33	15.91
	LOWER	29.21	28.34
	IDLE	25.56	25.08

POWER MEASURES:

		CYCLE	INPUT
*	MEAN, %	32.72	30.85
	% ACCEL	14.61	15.64
	% DECEL	18.26	17.99
**	% CRUISE	29.21	23.84
	% MOTORING	10.96	13.86
	% ZERO	26.97	28.66

RPM MEASURES:

		CYCLE	INPUT
	MEAN, %	27.04	26.20
	% ACCEL	26.97	25.08
	% DECEL	22.75	21.93
**	% CRUISE	21.63	24.26
	% ZERO	28.65	28.72

* COMPUTED FROM NON-MOTORING POWERS ONLY

** THE ZERO AND MOTORING PERCENTAGES ARE HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

*** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE DIAGONAL PERCENTAGE

RPM AND POWER SCHEDULE FOR CYCLE 2038877989
ALL LA GAS NONFREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	0	0	101	40	M	151	0	0
2	0	0	52	0	0	102	38	M	152	0	0
3	0	0	53	0	0	103	36	M	153	0	0
4	0	0	54	0	0	104	28	M	154	0	0
5	0	0	55	0	0	105	28	M	155	0	0
6	0	0	56	0	0	106	14	M	156	0	0
7	0	0	57	0	0	107	6	M	157	0	0
8	0	0	58	0	0	108	4	M	158	0	0
9	0	0	59	0	0	109	0	10	159	0	0
10	0	0	60	0	30	110	-10	20	160	0	0
11	0	10	61	2	90	111	0	50	161	0	0
12	2	10	62	4	90	112	20	10	162	0	0
13	2	10	63	8	100	113	22	0	163	0	0
14	0	10	64	14	100	114	20	0	164	0	0
15	0	0	65	16	100	115	16	M	165	0	0
16	0	0	66	42	90	116	12	M	166	0	0
17	0	0	67	46	90	117	8	90	167	0	0
18	0	0	68	48	90	118	10	100	168	0	0
19	0	0	69	36	10	119	16	100	169	0	0
20	0	0	70	36	M	120	22	100	170	2	20
21	0	0	71	22	90	121	22	100	171	4	20
22	0	0	72	24	90	122	28	100	172	0	0
23	0	0	73	24	90	123	30	100	173	0	0
24	0	0	74	26	70	124	38	60	174	0	0
25	0	0	75	30	70	125	40	M	175	0	0
26	0	0	76	30	50	126	26	M	176	0	0
27	0	0	77	30	10	127	10	M	177	0	0
28	0	0	78	30	10	128	8	M	178	0	0
29	0	0	79	30	10	129	8	M	179	0	0
30	0	0	80	30	10	130	6	M	180	0	0
31	0	0	81	30	60	131	2	M	181	0	0
32	0	0	82	40	60	132	0	M	182	0	0
33	0	10	83	40	50	133	0	M	183	0	0
34	0	10	84	42	50	134	0	0	184	0	0
35	0	20	85	40	50	135	0	0	185	10	30
36	0	20	86	40	50	136	0	0	186	46	40
37	0	20	87	42	50	137	0	0	187	44	10
38	0	30	88	42	50	138	0	0	188	42	10
39	12	40	89	46	50	139	0	0	189	40	10
40	24	30	90	46	50	140	0	0	190	34	10
41	24	20	91	54	50	141	0	0	191	28	20
42	24	10	92	66	70	142	0	0	192	28	50
43	18	10	93	68	70	143	0	0	193	30	30
44	18	M	94	72	70	144	0	0	194	30	30
45	18	M	95	72	70	145	0	0	195	30	30
46	12	M	96	72	70	146	0	0	196	30	30
47	2	M	97	74	40	147	0	0	197	36	30
48	0	0	98	78	M	148	0	0	198	36	30
49	0	0	99	54	M	149	0	0	199	36	30
50	0	0	100	46	M	150	0	0	200	42	30

RPM AND POWER SCHEDULE FOR CYCLE 2038877989 (CONTINUED)
ALL LA GAS NONFREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	50	30	241	38	0	281	88	40	321	36	30
202	50	30	242	34	80	282	90	20	322	36	40
203	50	20	243	36	80	283	90	10	323	36	40
204	50	20	244	38	70	284	92	40	324	34	40
205	50	M	245	42	60	285	92	30	325	34	40
206	38	M	246	44	60	286	94	30	326	34	40
207	36	M	247	44	50	287	90	M	327	34	30
208	32	M	248	52	30	288	66	40	328	42	20
209	28	M	249	52	30	289	66	50	329	44	80
210	26	M	250	32	M	290	70	70	330	52	40
211	26	0	251	26	0	291	90	40	331	52	20
212	26	M	252	24	0	292	96	80	332	52	0
213	20	M	253	24	0	293	98	60	333	54	0
214	14	M	254	24	M	294	94	60	334	48	10
215	14	10	255	18	M	295	88	M	335	48	10
216	12	40	256	8	90	296	70	M	336	48	10
217	6	70	257	8	80	297	70	M	337	48	10
218	14	90	258	10	80	298	68	M	338	30	20
219	16	100	259	12	90	299	66	M	339	28	20
220	20	100	260	18	90	300	64	M	340	28	20
221	20	100	261	18	100	301	52	50	341	28	20
222	24	100	262	22	100	302	52	50	342	28	10
223	32	100	263	22	100	303	62	40	343	28	10
224	40	100	264	24	90	304	62	40	344	26	10
225	44	90	265	28	90	305	62	50	345	26	10
226	44	90	266	30	90	306	66	40	346	24	M
227	46	90	267	30	70	307	48	M	347	18	M
228	52	60	268	38	100	308	46	20	348	16	M
229	50	60	269	28	100	309	46	20	349	4	M
230	50	60	270	36	100	310	46	10	350	0	0
231	54	70	271	36	100	311	44	10	351	0	0
232	56	70	272	52	100	312	50	10	352	0	0
233	56	70	273	60	100	313	46	10	353	0	0
234	64	30	274	64	70	314	44	0	354	0	0
235	72	30	275	64	70	315	50	M	355	0	0
236	76	50	276	66	70	316	52	70	356	0	0
237	78	50	277	82	70	317	48	M			
238	78	50	278	82	70	318	44	M			
239	78	30	279	86	50	319	16	60			
240	40	0	280	86	50	320	20	50			

RPM AND POWER SCHEDULE FOR CYCLE 2038877989
ALL LA GAS NONFREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	0	1	101	8	80	151	0	0
2	0	0	52	0	41	102	10	100	152	0	0
3	0	0	53	3	90	103	17	100	153	0	0
4	0	0	54	6	95	104	22	100	154	0	0
5	0	0	55	12	100	105	25	100	155	0	0
6	0	0	56	16	100	106	29	100	156	0	0
7	0	0	57	41	90	107	37	66	157	0	0
8	0	0	58	46	90	108	40	M	158	0	0
9	0	4	59	45	67	109	23	M	159	0	1
10	1	10	60	36	1	110	9	M	160	17	32
11	2	10	61	28	50	111	8	M	161	45	30
12	0	10	62	24	90	112	7	M	162	43	10
13	0	0	63	24	90	113	3	M	163	41	10
14	0	0	64	26	70	114	0	M	164	35	10
15	0	0	65	30	65	115	0	M	165	28	20
16	0	0	66	30	34	116	0	0	166	28	47
17	0	0	67	30	10	117	0	0	167	30	30
18	0	0	68	30	10	118	0	0	168	30	30
19	0	0	69	30	10	119	0	0	169	30	30
20	0	0	70	30	60	120	0	0	170	35	30
21	0	0	71	40	58	121	0	0	171	36	30
22	0	0	72	41	50	122	0	0	172	36	30
23	0	0	73	41	50	123	0	0	173	44	30
24	0	0	74	40	50	124	0	0	174	50	30
25	0	0	75	42	50	125	0	0	175	50	25
26	0	0	76	42	50	126	0	0	176	50	20
27	0	0	77	46	50	127	0	0	177	50	M
28	0	4	78	48	50	128	0	0	178	38	M
29	0	10	79	55	59	129	0	0	179	35	M
30	0	17	80	67	70	130	0	0	180	31	M
31	0	20	81	71	70	131	0	0	181	27	M
32	0	20	82	72	70	132	0	0	182	26	M
33	2	32	83	72	68	133	0	0	183	26	M
34	16	36	84	75	29	134	0	0	184	20	M
35	24	25	85	69	M	135	0	0	185	14	M
36	24	13	86	50	M	136	0	0	186	13	18
37	19	10	87	42	M	137	0	0	187	9	53
38	18	M	88	38	M	138	0	0	188	11	82
39	17	M	89	36	M	139	0	0	189	16	98
40	9	M	90	28	M	140	0	0	190	20	100
41	1	M	91	23	M	141	0	0	191	20	100
42	0	0	92	10	M	142	0	0	192	26	100
43	0	0	93	5	M	143	0	0	193	35	100
44	0	0	94	1	6	144	0	0	194	42	95
45	0	0	95	-9	20	145	0	0	195	44	90
46	0	0	96	2	46	146	0	0	196	46	90
47	0	0	97	21	7	147	2	20	197	52	60
48	0	0	98	21	0	148	3	14	198	50	60
49	0	0	99	18	M	149	0	0	199	51	63
50	0	0	100	13	M	150	0	0	200	55	70

RPM AND POWER SCHEDULE FOR CYCLE 2038877989 (CONTINUED)
ALL LA GAS NONFREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	56	70	229	28	90	257	69	M	285	51	46
202	62	38	230	30	86	258	67	M	286	52	20
203	72	30	231	33	81	259	64	M	287	52	0
204	76	50	232	33	100	260	53	46	288	52	3
205	78	50	233	33	100	261	53	49	289	48	10
206	78	41	234	36	100	262	62	40	290	48	10
207	56	12	235	52	100	263	62	44	291	48	10
208	39	0	236	61	96	264	64	44	292	31	20
209	34	72	237	64	70	265	53	4	293	28	20
210	36	79	238	65	70	266	46	16	294	28	20
211	39	68	239	76	70	267	46	20	295	28	16
212	43	60	240	82	70	268	46	10	296	28	10
213	44	55	241	86	51	269	46	10	297	26	10
214	49	36	242	86	49	270	48	10	298	26	10
215	52	30	243	89	35	271	45	3	299	24	M
216	32	M	244	90	16	272	49	M	300	18	M
217	26	0	245	91	27	273	52	68	301	11	M
218	24	0	246	92	33	274	47	M	302	2	M
219	24	M	247	94	30	275	36	10	303	0	0
220	20	M	248	89	M	276	18	56	304	0	0
221	10	69	249	66	42	277	30	38	305	0	0
222	8	81	250	67	57	278	36	38	306	0	0
223	10	81	251	80	55	279	36	40	307	0	0
224	14	90	252	94	67	280	34	40	308	0	0
225	18	94	253	98	64	281	34	40			
226	20	100	254	94	60	282	34	36			
227	22	100	255	85	M	283	38	25			
228	24	91	256	70	M	284	43	62			

SUMMARY MEASURES FOR CYCLE 1999345415

GENERATED FROM INPUT MATRIX: LA ALL DIESEL FREEWAY

CYCLE DURATION = 5.01 MINUTES

KOLMOGOROV-SMIRNOV TESTS:

	SIGNIFICANCE LEVEL	MATRIX P
MATRIX	.4297E 00	UPPER
UPPER	.7583E 00	*** DIAGONAL
DIAGONAL	.1746E 00	LOWER
LOWER	.5853E 00	IDLE

POWER MEASURES:

	CYCLE	INPUT
* MEAN, %	56.47	53.72
% ACCEL	22.13	21.59
% DECEL	22.70	21.72
** % CRUISE	40.80	38.29
% MOTORING	11.78	15.79
% ZERO	2.59	2.60

RPM MEASURES:

	CYCLE	INPUT
MEAN, %	82.69	83.07
% ACCEL	26.72	25.57
% DECEL	25.00	23.89
** % CRUISE	45.98	48.42
% ZERO	2.30	2.09

* COMPUTED FROM NON-MOTORING POWERS ONLY

** THE ZERO AND MOTORING PERCENTAGES ARE HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

*** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE DIAGONAL PERCENTAGE

RPM AND POWER SCHEDULE FOR CYCLE 1599345415
ALL LA DSL FREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	88	80	101	86	30	151	88	50
2	0	0	52	88	80	102	86	30	152	86	50
3	0	0	53	88	70	103	86	30	153	88	40
4	0	0	54	88	100	104	86	40	154	88	50
5	4	10	55	88	100	105	84	40	155	86	50
6	12	20	56	88	90	106	86	40	156	86	60
7	14	20	57	88	90	107	86	30	157	86	90
8	20	20	58	88	90	108	88	30	158	86	70
9	22	20	59	90	90	109	88	20	159	88	70
10	30	30	60	90	90	110	86	M	160	90	80
11	38	0	61	88	90	111	84	M	161	92	90
12	42	M	62	90	90	112	82	M	162	90	90
13	50	M	63	90	90	113	80	M	163	92	80
14	68	10	64	90	90	114	84	M	164	92	80
15	68	10	65	92	80	115	86	M	165	94	80
16	68	30	66	92	80	116	84	M	166	94	80
17	66	40	67	90	80	117	82	M	167	94	80
18	66	40	68	90	90	118	80	M	168	94	80
19	68	40	69	88	100	119	78	M	169	94	80
20	68	40	70	86	100	120	76	10	170	94	80
21	68	50	71	86	100	121	76	0	171	94	90
22	76	100	72	86	100	122	82	0	172	96	80
23	78	100	73	90	100	123	72	40	173	96	30
24	78	100	74	90	100	124	72	40	174	96	50
25	78	100	75	90	90	125	72	40	175	96	40
26	76	100	76	92	90	126	74	40	176	96	40
27	76	100	77	94	90	127	74	30	177	96	40
28	76	100	78	96	90	128	74	30	178	96	20
29	76	100	79	102	80	129	74	30	179	96	M
30	76	100	80	102	80	130	74	40	180	96	M
31	72	100	81	102	70	131	72	50	181	96	M
32	76	90	82	102	80	132	68	60	182	96	M
33	78	90	83	102	80	133	74	50	183	98	10
34	82	90	84	88	M	134	72	50	184	100	20
35	84	90	85	86	M	135	74	50	185	102	10
36	84	100	86	86	M	136	74	40	186	102	20
37	84	100	87	70	30	137	72	70	187	102	40
38	84	100	88	76	40	138	78	60	188	104	60
39	82	100	89	76	50	139	82	60	189	104	60
40	82	100	90	74	40	140	80	60	190	102	60
41	84	90	91	78	30	141	84	60	191	104	60
42	88	90	92	78	40	142	82	60	192	104	40
43	90	90	93	82	40	143	86	50	193	104	40
44	90	100	94	76	50	144	86	50	194	104	M
45	90	100	95	82	50	145	88	50	195	102	0
46	86	100	96	82	40	146	86	50	196	100	M
47	86	100	97	84	30	147	86	40	197	100	M
48	86	90	98	84	20	148	88	60	198	102	50
49	88	90	99	84	10	149	90	70	199	102	40
50	88	90	100	84	20	150	86	50	200	102	M

RPM AND POWER SCHEDULE FOR CYCLE 1599345415 (CONTINUED)
ALL LA DSL FREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	102	M	239	80	90	277	104	70	315	90	50
202	102	M	240	76	90	278	104	60	316	88	40
203	100	M	241	74	70	279	104	70	317	86	30
204	102	M	242	78	80	280	106	70	318	88	30
205	100	M	243	82	80	281	106	70	319	88	40
206	98	M	244	80	80	282	106	40	320	86	50
207	96	M	245	82	80	283	106	40	321	84	50
208	96	10	246	82	90	284	104	40	322	82	50
209	96	10	247	84	70	285	104	30	323	82	50
210	96	M	248	84	70	286	104	30	324	82	40
211	96	M	249	84	60	287	104	0	325	84	40
212	96	M	250	84	50	288	104	10	326	80	20
213	94	M	251	86	60	289	102	20	327	80	20
214	78	M	252	86	60	290	98	0	328	88	80
215	78	M	253	86	60	291	98	10	329	86	60
216	76	M	254	86	80	292	96	10	330	84	60
217	66	80	255	90	70	293	96	M	331	82	10
218	68	80	256	88	70	294	96	M	332	80	0
219	66	90	257	88	70	295	96	M	333	76	10
220	72	90	258	94	70	296	96	M	334	74	40
221	74	90	259	94	80	297	94	M	335	72	40
222	76	90	260	96	80	298	94	M	336	70	M
223	74	100	261	94	80	299	94	M	337	68	M
224	76	100	262	96	80	300	96	10	338	46	10
225	78	90	263	94	80	301	98	M	339	36	10
226	80	80	264	94	80	302	98	M	340	34	10
227	80	70	265	94	80	303	98	M	341	30	0
228	80	70	266	94	30	304	98	M	342	28	M
229	82	60	267	94	40	305	96	M	343	8	M
230	84	50	268	94	50	306	96	20	344	0	0
231	84	50	269	94	70	307	96	10	345	0	0
232	84	70	270	94	60	308	96	10	346	0	0
233	84	80	271	94	80	309	96	10	347	0	0
234	84	80	272	94	90	310	92	10	348	0	0
235	84	70	273	94	90	311	92	10			
236	82	80	274	96	90	312	92	10			
237	82	80	275	102	80	313	94	20			
238	80	90	276	104	80	314	94	10			

RPM AND POWER SCHEDULE FOR CYCLE 1599345415
ALL LA DSL FREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	90	90	101	82	M	151	96	42
2	0	0	52	90	90	102	80	M	152	96	40
3	0	0	53	89	90	103	78	M	153	96	38
4	3	6	54	90	90	104	76	6	154	96	13
5	10	18	55	90	90	105	79	0	155	96	M
6	14	20	56	92	82	106	75	27	156	96	M
7	20	20	57	92	80	107	72	40	157	96	M
8	24	23	58	90	81	108	72	40	158	98	7
9	33	17	59	89	93	109	74	38	159	100	20
10	40	M	60	87	100	110	74	30	160	102	12
11	48	M	61	86	100	111	74	30	161	102	27
12	66	8	62	86	100	112	74	36	162	103	50
13	68	11	63	90	100	113	72	48	163	104	60
14	68	32	64	90	99	114	68	59	164	102	60
15	66	40	65	90	90	115	74	50	165	104	60
16	67	40	66	93	90	116	73	50	166	104	40
17	68	40	67	95	90	117	74	46	167	104	26
18	68	48	68	100	83	118	73	57	168	103	M
19	76	100	69	102	80	119	76	63	169	101	M
20	78	100	70	102	70	120	82	60	170	100	M
21	78	100	71	102	80	121	80	60	171	102	45
22	77	100	72	97	50	122	84	60	172	102	36
23	76	100	73	87	M	123	83	56	173	102	M
24	76	100	74	86	M	124	86	50	174	102	M
25	76	100	75	73	22	125	87	50	175	101	M
26	76	100	76	76	40	126	86	50	176	101	M
27	73	97	77	76	49	127	86	40	177	100	M
28	77	90	78	75	37	128	88	61	178	98	M
29	80	90	79	78	34	129	89	64	179	96	M
30	83	90	80	80	40	130	87	50	180	96	10
31	84	99	81	77	48	131	87	50	181	96	0
32	84	100	82	81	50	132	88	42	182	96	M
33	84	100	83	82	39	133	88	49	183	96	M
34	82	100	84	84	28	134	86	51	184	94	M
35	83	95	85	84	16	135	86	68	185	78	M
36	87	90	86	84	15	136	86	82	186	77	M
37	90	90	87	85	27	137	87	70	187	72	29
38	90	100	88	86	30	138	89	77	188	67	80
39	89	100	89	86	30	139	92	89	189	66	88
40	86	100	90	86	40	140	90	90	190	71	90
41	86	95	91	85	40	141	92	80	191	74	90
42	87	90	92	86	35	142	93	80	192	76	92
43	88	90	93	87	30	143	94	80	193	75	100
44	88	81	94	88	22	144	94	80	194	77	95
45	88	79	95	86	M	145	94	80	195	79	83
46	88	77	96	84	M	146	94	80	196	80	71
47	88	100	97	81	M	147	94	81	197	80	70
48	88	94	98	82	M	148	95	87	198	82	58
49	88	90	99	85	M	149	96	57	199	84	50
50	88	90	100	85	M	150	96	42	200	84	60

RPM AND POWER SCHEDULE FOR CYCLE 1599345415 (CONTINUED)
ALL LA DSL FREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	84	76	227	95	80	253	96	M	279	82	50
202	84	80	228	94	80	254	96	M	280	82	40
203	84	70	229	94	78	255	96	M	281	83	35
204	82	80	230	94	32	256	95	M	282	80	20
205	81	83	231	94	44	257	94	M	283	84	53
206	80	90	232	94	60	258	94	M	284	87	66
207	78	90	233	94	63	259	96	5	285	84	60
208	75	75	234	94	77	260	98	M	286	82	10
209	78	79	235	94	90	261	98	M	287	79	2
210	82	80	236	94	90	262	98	M	288	75	20
211	80	80	237	98	87	263	97	M	289	73	40
212	82	84	238	103	80	264	96	7	290	71	8
213	83	79	239	104	74	265	96	13	291	68	M
214	84	70	240	104	62	266	96	10	292	47	9
215	84	62	241	104	69	267	96	10	293	36	10
216	84	50	242	106	70	268	92	10	294	33	7
217	86	60	243	106	62	269	92	10	295	29	M
218	86	60	244	106	40	270	93	15	296	16	M
219	86	69	245	105	40	271	94	13	297	2	M
220	89	74	246	104	33	272	91	43	298	0	0
221	88	70	247	104	30	273	88	40	299	0	0
222	88	70	248	104	0	274	86	30	300	0	0
223	94	71	249	104	12	275	88	33	301	0	0
224	95	80	250	101	13	276	87	44			
225	95	80	251	98	5	277	85	50			
226	95	80	252	97	10	278	82	50			

SUMMARY MEASURES FOR CYCLE 2110248101

GENERATED FROM INPUT MATRIX: LA ALL DIESEL NON-FREEWAY

CYCLE DURATION = 5.10 MINUTES

KOLMOGOROV-SMIRNOV TESTS:

	SIGNIFICANCE LEVEL
MATRIX	.7957E 00
UPPER	.5548E 00
DIAGONAL	.1000E 01
LOWER	.2281E 00

MATRIX PERCENTAGES:

		CYCLE	INPUT
	UPPER	28.25	30.02
***	DIAGONAL	9.60	9.80
	LOWER	28.53	25.53
	IDLE	33.62	34.65

POWER MEASURES:

		CYCLE	INPUT
*	MEAN, %	25.92	21.96
	% ACCEL	11.86	14.36
	% DECEL	14.12	14.99
**	% CRUISE	18.08	12.82
	% MOTORING	21.47	22.43
	% ZERO	34.46	35.40

RPM MEASURES:

		CYCLE	INPUT
	MEAN, %	43.41	42.88
	% ACCEL	25.71	26.26
	% DECEL	24.29	21.81
**	% CRUISE	13.28	14.36
	% ZERO	36.72	37.57

* COMPUTED FROM NON-MOTORING POWERS ONLY

** THE ZERO AND MOTORING PERCENTAGES ARE HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

*** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE DIAGONAL PERCENTAGE

RPM AND POWER SCHEDULE FOR CYCLE 2110248101
ALL LA DSL NONFREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	0	0	101	86	80	151	70	M
2	0	0	52	0	0	102	88	90	152	70	10
3	0	0	53	0	0	103	92	80	153	74	20
4	0	0	54	0	0	104	92	60	154	72	M
5	0	0	55	0	0	105	92	70	155	70	M
6	0	0	56	0	0	106	100	60	156	40	M
7	0	0	57	0	0	107	106	60	157	24	M
8	0	0	58	0	0	108	106	80	158	16	M
9	0	0	59	0	0	109	110	M	159	8	M
10	0	0	60	0	0	110	112	M	160	-6	M
11	0	0	61	0	0	111	82	M	161	0	0
12	0	0	62	0	0	112	82	M	162	8	60
13	0	0	63	0	0	113	72	M	163	24	60
14	0	0	64	0	0	114	70	M	164	58	70
15	0	0	65	0	0	115	68	M	165	84	50
16	0	0	66	0	0	116	82	70	166	88	30
17	0	0	67	0	0	117	82	70	167	90	30
18	0	0	68	0	0	118	80	70	168	92	30
19	0	0	69	0	0	119	92	60	169	98	10
20	0	0	70	0	0	120	96	60	170	98	0
21	0	0	71	0	0	121	100	60	171	96	10
22	0	0	72	0	0	122	98	60	172	96	10
23	0	0	73	0	0	123	102	60	173	96	M
24	0	0	74	0	0	124	104	40	174	96	M
25	0	0	75	0	0	125	104	10	175	82	40
26	0	0	76	0	0	126	80	20	176	88	30
27	0	0	77	0	0	127	84	20	177	86	30
28	0	20	78	0	0	128	82	20	178	88	20
29	0	20	79	0	0	129	80	10	179	88	20
30	24	20	80	0	0	130	80	10	180	86	20
31	26	10	81	0	0	131	76	M	181	86	20
32	14	10	82	0	0	132	74	M	182	88	20
33	8	M	83	0	0	133	72	M	183	88	10
34	6	M	84	0	0	134	68	M	184	78	M
35	6	M	85	0	0	135	78	M	185	72	M
36	0	0	86	0	0	136	78	M	186	72	M
37	0	0	87	0	0	137	82	10	187	70	10
38	0	0	88	0	0	138	80	20	188	70	M
39	0	0	89	0	0	139	78	10	189	70	M
40	0	0	90	0	0	140	78	20	190	76	M
41	0	0	91	0	0	141	88	10	191	74	M
42	0	0	92	0	0	142	70	80	192	68	M
43	0	0	93	0	50	143	76	80	193	66	M
44	0	0	94	-2	100	144	82	70	194	66	M
45	0	0	95	10	100	145	94	M	195	62	M
46	0	0	96	44	100	146	70	M	196	62	M
47	0	0	97	76	100	147	68	M	197	54	M
48	0	0	98	80	100	148	70	M	198	54	M
49	0	0	99	80	100	149	60	M	199	66	M
50	0	0	100	84	90	150	58	M	200	72	70

RPM AND POWER SCHEDULE FOR CYCLE 2110248101 (CONTINUED)
ALL LA DSL NONFREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	86	70	240	98	50	279	0	0	318	94	100
202	86	30	241	98	50	280	0	0	319	94	100
203	86	20	242	100	50	281	0	0	320	96	100
204	90	M	243	106	50	282	0	0	321	96	100
205	90	M	244	110	M	283	0	0	322	98	100
206	106	M	245	114	M	284	0	0	323	110	100
207	74	M	246	72	M	285	0	0	324	110	90
208	74	M	247	70	M	286	0	M	325	110	M
209	72	10	248	66	M	287	0	0	326	86	M
210	70	10	249	60	M	288	0	0	327	90	0
211	80	40	250	48	M	289	-4	M	328	90	0
212	82	40	251	52	M	290	6	M	329	92	M
213	78	30	252	54	M	291	2	M	330	80	M
214	72	30	253	54	M	292	0	0	331	66	0
215	90	0	254	78	M	293	0	0	332	64	M
216	90	0	255	78	M	294	0	0	333	62	M
217	92	0	256	52	M	295	0	0	334	58	M
218	92	M	257	42	M	296	0	20	335	56	M
219	94	M	258	40	M	297	0	20	336	52	M
220	94	M	259	28	M	298	0	20	337	50	M
221	94	M	260	6	M	299	0	0	338	44	M
222	96	M	261	0	0	300	0	0	339	38	40
223	64	M	262	0	0	301	0	0	340	34	20
224	62	M	263	-2	50	302	0	80	341	32	20
225	62	M	264	0	0	303	0	60	342	30	20
226	44	70	265	0	0	304	8	60	343	28	20
227	54	90	266	0	0	305	16	70	344	20	20
228	64	90	267	0	0	306	16	70	345	8	M
229	64	90	268	0	0	307	36	70	346	0	0
230	70	90	269	0	0	308	44	70	347	0	0
231	76	100	270	0	0	309	56	70	348	0	0
232	82	90	271	0	0	310	62	70	349	0	0
233	82	80	272	0	0	311	70	50	350	0	0
234	88	80	273	0	0	312	72	80	351	0	0
235	94	80	274	0	0	313	74	80	352	0	0
236	94	80	275	0	0	314	80	90	353	0	0
237	102	80	276	0	0	315	90	90	354	0	0
238	108	80	277	0	0	316	90	90			
239	92	M	278	0	0	317	92	100			

RPM AND POWER SCHEDULE FOR CYCLE 2110248101
ALL LA DSL NONFREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	0	0	101	82	70	151	85	28
2	0	0	52	0	0	102	81	69	152	88	31
3	0	0	53	0	0	103	93	60	153	86	29
4	0	0	54	0	0	104	97	60	154	8	20
5	0	0	55	0	0	105	99	60	155	87	20
6	0	0	56	0	0	106	101	60	156	86	20
7	0	0	57	0	0	107	104	43	157	87	20
8	0	0	58	0	0	108	104	10	158	88	11
9	0	0	59	0	0	109	81	20	159	78	M
10	0	0	60	0	0	110	83	20	160	72	M
11	0	0	61	0	0	111	81	15	161	71	M
12	0	0	62	0	0	112	80	10	162	70	M
13	0	0	63	0	0	113	77	M	163	70	M
14	0	0	64	0	0	114	74	M	164	75	M
15	0	0	65	0	0	115	72	M	165	74	M
16	0	0	66	0	0	116	71	M	166	68	M
17	0	0	67	0	0	117	78	M	167	66	M
18	0	0	68	0	0	118	80	1	168	64	M
19	0	0	69	0	0	119	81	17	169	62	M
20	0	0	70	0	0	120	78	11	170	56	M
21	0	0	71	0	0	121	78	20	171	54	M
22	0	0	72	0	0	122	84	24	172	66	M
23	0	0	73	0	0	123	72	80	173	75	70
24	0	16	74	0	0	124	79	75	174	86	54
25	0	20	75	0	0	125	90	16	175	86	25
26	24	19	76	0	0	126	74	M	176	89	M
27	23	10	77	0	0	127	68	M	177	90	M
28	12	2	78	0	0	128	69	M	178	105	M
29	7	M	79	0	0	129	59	M	179	74	M
30	6	M	80	0	30	130	64	M	180	73	M
31	1	M	81	-1	88	131	70	2	181	71	10
32	0	0	82	5	100	132	73	18	182	76	29
33	0	0	83	46	100	133	72	M	183	82	40
34	0	0	84	77	100	134	67	M	184	78	30
35	0	0	85	80	100	135	36	M	185	74	26
36	0	0	86	82	95	136	21	M	186	90	0
37	0	0	87	85	83	137	11	M	187	91	0
38	0	0	88	88	89	138	-1	M	188	92	M
39	0	0	89	92	80	139	0	M	189	94	M
40	0	0	90	92	62	140	9	60	190	94	M
41	0	0	91	95	67	141	31	62	191	94	M
42	0	0	92	103	60	142	67	63	192	89	M
43	0	0	93	106	73	143	86	40	193	63	M
44	0	0	94	109	8	144	89	30	194	62	M
45	0	0	95	112	M	145	92	30	195	49	46
46	0	0	96	82	M	146	98	10	196	53	87
47	0	0	97	79	M	147	98	1	197	64	90
48	0	0	98	71	M	148	96	10	198	65	90
49	0	0	99	69	M	149	96	1	199	72	93
50	0	0	100	78	49	150	96	M	200	79	95

RPM AND POWER SCHEDULE FOR CYCLE 2110248101 (CONTINUED)
ALL LA DSL NONFREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	82	84	228	C	6	255	0	3	282	88	M
202	87	80	229	0	0	256	0	20	283	90	0
203	94	80	230	C	0	257	0	20	284	91	M
204	95	80	231	0	0	258	0	8	285	82	M
205	104	80	232	C	0	259	0	0	286	66	M
206	101	42	233	C	0	260	0	0	287	64	M
207	96	25	234	C	0	261	0	78	288	61	M
208	98	50	235	C	0	262	2	60	289	57	M
209	100	50	236	C	0	263	11	64	290	53	M
210	106	47	237	C	0	264	16	70	291	50	M
211	111	M	238	C	0	265	30	70	292	44	M
212	98	M	239	C	0	266	43	70	293	38	38
213	71	M	240	0	0	267	56	70	294	33	20
214	67	M	241	C	0	268	63	66	295	31	20
215	61	M	242	C	0	269	71	60	296	29	20
216	48	M	243	C	0	270	73	80	297	22	20
217	52	M	244	C	0	271	78	87	298	9	M
218	54	M	245	C	0	272	88	90	299	0	0
219	65	M	246	C	0	273	90	90	300	0	0
220	78	M	247	C	M	274	92	100	301	0	0
221	58	M	248	C	0	275	94	100	302	0	0
222	43	M	249	0	M	276	95	100	303	0	0
223	39	M	250	C	M	277	96	100	304	0	0
224	22	M	251	4	M	278	98	100	305	0	0
225	3	M	252	1	M	279	109	100	306	0	0
226	0	0	253	C	0	280	110	83			
227	0	37	254	C	0	281	104	M			

SUMMARY MEASURES FOR CYCLE 792043535

GENERATED FROM INPUT MATRIX: NY ALL GAS FREEWAY

CYCLE DURATION = 4.77 MINUTES

KOLMOGOROV-SMIRNOV TESTS:

	SIGNIFICANCE LEVEL
MATRIX	.1320E 00
UPPER	.5655E 00
DIAGONAL	.7160E 00
LOWER	.4293E 00

MATRIX PERCENTAGES:

		CYCLE	INPUT
	UPPER	32.93	32.64
***	DIAGONAL	24.17	26.49
	LOWER	31.12	31.22
	IDLE	11.78	9.65

POWER MEASURES:

		CYCLE	INPUT
*	MEAN, %	47.56	49.87
	% ACCEL	18.43	18.90
	% DECEL	24.17	20.16
**	% CRUISE	30.82	31.89
	% MOTORING	13.29	18.28
	% ZERO	13.29	10.77

RPM MEASURES:

		CYCLE	INPUT
	MEAN, %	50.18	47.73
	% ACCEL	24.77	22.67
	% DECEL	17.22	20.96
**	% CRUISE	45.92	44.72
	% ZERO	12.08	11.65

* COMPUTED FROM NON-MOTORING POWERS ONLY

** THE ZERO AND MOTORING PERCENTAGES ARE HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

*** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE DIAGONAL PERCENTAGE

RPM AND POWER SCHEDULE FOR CYCLE 792043535
ALL NY GAS FREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	46	50	101	52	40	151	72	30
2	0	0	52	48	50	102	54	70	152	74	30
3	0	0	53	48	40	103	56	60	153	74	30
4	0	0	54	48	20	104	56	60	154	76	50
5	0	0	55	48	20	105	56	60	155	78	50
6	0	0	56	50	50	106	56	20	156	80	60
7	0	0	57	50	60	107	56	20	157	80	M
8	0	0	58	50	60	108	58	40	158	78	20
9	0	0	59	50	60	109	58	40	159	78	40
10	0	0	60	50	60	110	58	40	160	82	20
11	0	0	61	50	60	111	60	80	161	82	30
12	0	0	62	50	30	112	62	80	162	122	40
13	0	0	63	50	30	113	66	70	163	122	30
14	0	0	64	50	20	114	66	70	164	124	80
15	0	0	65	50	20	115	68	80	165	124	70
16	0	0	66	50	0	116	66	90	166	124	70
17	0	0	67	50	M	117	66	100	167	124	70
18	4	0	68	50	60	118	68	100	168	130	70
19	12	20	69	50	70	119	66	100	169	146	70
20	16	20	70	50	60	120	66	100	170	146	70
21	22	20	71	50	40	121	66	100	171	150	20
22	24	10	72	54	40	122	66	100	172	150	30
23	26	M	73	54	20	123	66	100	173	150	30
24	28	90	74	54	20	124	68	90	174	150	30
25	34	90	75	56	40	125	68	90	175	124	M
26	38	90	76	56	50	126	70	80	176	120	M
27	40	90	77	56	40	127	70	80	177	120	M
28	40	80	78	56	60	128	70	70	178	120	80
29	40	80	79	56	50	129	70	70	179	128	80
30	40	80	80	56	40	130	70	70	180	134	80
31	42	80	81	58	20	131	70	80	181	136	90
32	42	80	82	58	50	132	72	70	182	140	90
33	44	80	83	58	50	133	72	70	183	140	90
34	44	50	84	58	40	134	72	50	184	140	90
35	44	80	85	58	50	135	72	80	185	138	0
36	44	80	86	58	40	136	72	50	186	134	M
37	44	90	87	58	40	137	70	M	187	128	M
38	44	90	88	58	40	138	68	M	188	128	M
39	42	70	89	60	40	139	68	M	189	126	M
40	42	70	90	62	40	140	68	M	190	124	90
41	42	50	91	60	40	141	66	M	191	126	100
42	42	40	92	60	50	142	66	M	192	82	90
43	44	30	93	58	M	143	64	50	193	82	100
44	44	40	94	56	M	144	64	40	194	84	100
45	44	40	95	58	M	145	64	20	195	90	100
46	44	40	96	58	M	146	64	10	196	90	100
47	46	60	97	58	M	147	64	0	197	90	100
48	46	30	98	54	M	148	62	M	198	94	100
49	46	40	99	54	M	149	68	50	199	94	100
50	46	50	100	52	20	150	68	40	200	94	M

RPM AND POWER SCHEDULE FOR CYCLE 792043535 (CONTINUED)
ALL NY GAS FREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	94	M	234	30	50	267	20	30	300	12	M
202	96	M	235	30	40	268	22	30	301	2	80
203	96	M	236	34	20	269	24	20	302	6	80
204	94	M	237	36	10	270	26	50	303	0	50
205	92	M	238	34	10	271	24	80	304	0	40
206	92	M	239	34	0	272	24	40	305	2	60
207	66	70	240	38	M	273	24	70	306	2	M
208	66	70	241	30	10	274	24	70	307	2	M
209	62	70	242	30	0	275	24	70	308	2	0
210	64	30	243	32	90	276	26	60	309	0	0
211	64	20	244	46	90	277	26	70	310	0	0
212	64	M	245	46	90	278	30	60	311	0	0
213	62	M	246	44	100	279	32	90	312	0	0
214	34	M	247	42	100	280	30	90	313	0	0
215	26	M	248	44	100	281	30	90	314	0	0
216	24	M	249	46	100	282	34	90	315	0	0
217	16	M	250	46	100	283	34	90	316	0	0
218	10	M	251	44	100	284	34	90	317	0	0
219	6	M	252	44	100	285	34	90	318	0	0
220	2	0	253	46	90	286	34	40	319	0	0
221	2	0	254	64	M	287	32	20	320	0	0
222	2	0	255	66	M	288	34	20	321	0	0
223	4	70	256	66	M	289	32	M	322	0	0
224	6	70	257	64	M	290	28	M	323	0	0
225	24	70	258	60	M	291	30	M	324	0	0
226	24	60	259	60	20	292	28	M	325	0	0
227	26	60	260	58	M	293	24	20	326	0	0
228	26	60	261	58	M	294	24	10	327	0	0
229	26	50	262	58	M	295	24	10	328	0	0
230	26	80	263	58	M	296	24	0	329	0	0
231	26	50	264	58	M	297	24	0	330	0	0
232	28	50	265	30	M	298	22	M	331	0	0
233	30	50	266	20	30	299	18	M			

RPM AND POWER SCHEDULE FOR CYCLE 792043535
ALL NY GAS FREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	50	60	101	66	99	151	130	M
2	0	0	52	50	60	102	68	100	152	120	M
3	0	0	53	50	50	103	66	100	153	120	M
4	0	0	54	50	30	104	66	100	154	122	80
5	0	0	55	50	23	105	66	100	155	130	80
6	0	0	56	50	20	106	66	100	156	135	86
7	0	0	57	50	1	107	68	92	157	139	90
8	0	0	58	50	M	108	68	90	158	140	90
9	0	0	59	50	63	109	70	80	159	140	87
10	0	0	60	50	66	110	70	77	160	137	M
11	0	0	61	50	48	111	70	70	161	132	M
12	0	0	62	53	40	112	70	70	162	128	M
13	0	0	63	54	22	113	70	78	163	127	M
14	0	0	64	54	21	114	72	71	164	124	71
15	1	0	65	56	42	115	72	68	165	126	100
16	8	10	66	56	46	116	72	58	166	82	91
17	15	20	67	56	51	117	72	67	167	83	100
18	21	20	68	56	53	118	71	16	168	87	100
19	24	10	69	56	41	119	69	M	169	90	100
20	26	5	70	58	21	120	68	M	170	90	100
21	30	90	71	58	50	121	68	M	171	94	100
22	36	90	72	58	47	122	66	M	172	94	92
23	39	90	73	58	45	123	65	12	173	94	M
24	40	82	74	58	44	124	64	45	174	95	M
25	40	80	75	58	40	125	64	26	175	96	M
26	40	80	76	58	40	126	64	12	176	95	M
27	42	80	77	60	40	127	64	0	177	92	M
28	43	80	78	61	40	128	63	M	178	92	M
29	44	63	79	60	44	129	68	47	179	66	70
30	44	72	80	59	14	130	70	35	180	65	70
31	44	80	81	56	M	131	73	30	181	63	50
32	44	90	82	58	M	132	74	30	182	64	24
33	44	86	83	58	M	133	76	49	183	64	M
34	42	70	84	57	M	134	78	51	184	62	M
35	42	60	85	54	M	135	80	42	185	33	M
36	42	43	86	53	6	136	79	2	186	25	M
37	44	32	87	52	34	137	78	31	187	21	M
38	44	40	88	54	66	138	81	26	188	12	M
39	44	40	89	56	60	139	82	29	189	7	M
40	45	46	90	56	60	140	122	40	190	2	M
41	46	46	91	56	47	141	122	40	191	2	0
42	46	36	92	56	20	142	124	76	192	2	16
43	46	48	93	57	33	143	124	70	193	5	70
44	46	50	94	58	40	144	124	70	194	16	70
45	48	49	95	58	40	145	129	70	195	24	63
46	48	35	96	60	80	146	146	70	196	26	60
47	48	20	97	63	77	147	147	63	197	26	60
48	49	37	98	66	70	148	150	23	198	26	55
49	50	57	99	67	76	149	150	30	199	26	70
50	50	60	100	67	87	150	150	30	200	27	50

RPM AND POWER SCHEDULE FOR CYCLE 792043535 (CONTINUED)
ALL NY GAS FREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	29	50	223	60	M	245	34	90	267	0	0
202	30	50	224	59	12	246	34	90	268	0	0
203	30	40	225	58	M	247	34	46	269	0	0
204	34	19	226	58	M	248	32	20	270	0	0
205	35	10	227	58	M	249	34	14	271	0	0
206	34	6	228	58	M	250	31	M	272	0	0
207	36	M	229	30	M	251	29	M	273	0	0
208	32	5	230	20	30	252	29	M	274	0	0
209	30	1	231	21	30	253	25	15	275	0	0
210	33	90	232	23	25	254	24	10	276	0	0
211	46	90	233	25	40	255	24	9	277	0	0
212	45	94	234	24	75	256	24	0	278	0	0
213	43	100	235	24	40	257	23	M	279	0	0
214	43	100	236	24	70	258	20	M	280	0	0
215	46	100	237	24	70	259	13	M	281	0	0
216	46	100	238	25	65	260	3	73	282	0	0
217	44	100	239	26	66	261	5	77	283	0	0
218	45	97	240	29	62	262	0	48	284	0	0
219	55	43	241	32	88	263	1	48	285	0	0
220	65	M	242	30	90	264	2	21	286	0	0
221	66	M	243	31	90	265	2	M			
222	64	M	244	34	90	266	2	M			

SUMMARY MEASURES FOR CYCLE 8410263

GENERATED FROM INPUT MATRIX: NY ALL GAS NON-FREEWAY

CYCLE DURATION = 4.54 MINUTES

KOLMOGOROV-SMIRNOV TESTS:

	SIGNIFICANCE LEVEL
MATRIX	.4097E 00
UPPER	.34 8E 00
DIAGONAL	.7168E 00
LOWER	.6453E 00

MATRIX PERCENTAGES:

		CYCLE	INPUT
	UPPER	24.13	23.42
***	DIAGONAL	12.38	14.17
	LOWER	22.22	22.66
	IDLE	41.27	39.76

POWER MEASURES:

		CYCLE	INPUT
*	MEAN, %	20.41	19.17
	% ACCEL	13.65	13.57
	% DECEL	15.87	14.47
**	% CRUISE	11.75	13.70
	% MOTORING	16.51	16.41
	% ZERO	42.22	41.86

RPM MEASURES:

		CYCLE	INPUT
	MEAN, %	12.37	13.41
	% ACCEL	19.37	18.02
	% DECEL	16.51	17.20
**	% CRUISE	10.16	17.42
	% ZERO	53.97	47.36

* COMPUTED FROM NON-MOTORING POWERS ONLY

** THE ZERO AND MOTORING PERCENTAGES ARE HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

*** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE DIAGONAL PERCENTAGE

RPM AND POWER SCHEDULE FOR CYCLE 8410263
ALL NY GAS NONFREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	0	0	101	0	0	151	36	M
2	0	0	52	0	0	102	0	0	152	36	M
3	-8	20	53	0	0	103	0	0	153	34	M
4	0	10	54	0	0	104	0	0	154	34	M
5	0	10	55	0	0	105	0	0	155	36	M
6	0	10	56	0	0	106	0	0	156	32	10
7	0	10	57	0	0	107	0	0	157	36	80
8	0	80	58	0	0	108	0	0	158	36	80
9	0	40	59	0	0	109	0	0	159	46	70
10	0	10	60	0	0	110	0	0	160	66	10
11	4	70	61	0	0	111	-2	40	161	46	M
12	24	0	62	0	0	112	0	80	162	44	M
13	26	M	63	0	0	113	0	100	163	40	M
14	24	M	64	0	0	114	10	100	164	42	M
15	24	M	65	0	0	115	40	100	165	32	30
16	12	80	66	0	0	116	44	100	166	38	30
17	14	80	67	0	0	117	46	100	167	42	10
18	0	90	68	0	0	118	48	100	168	44	30
19	14	80	69	0	0	119	50	90	169	46	M
20	18	80	70	0	0	120	52	90	170	46	M
21	26	60	71	0	0	121	54	50	171	54	M
22	0	80	72	0	0	122	54	50	172	38	M
23	0	10	73	0	0	123	40	M	173	36	M
24	0	0	74	0	0	124	46	0	174	36	M
25	0	0	75	0	0	125	46	10	175	34	M
26	0	0	76	0	0	126	38	M	176	32	M
27	0	0	77	0	0	127	36	M	177	32	M
28	0	0	78	0	0	128	22	40	178	28	M
29	0	0	79	0	0	129	24	30	179	30	90
30	0	0	80	0	0	130	24	M	180	36	90
31	0	0	81	0	0	131	20	M	181	36	90
32	0	0	82	0	0	132	12	M	182	44	90
33	0	0	83	0	0	133	6	M	183	46	90
34	0	0	84	0	0	134	6	M	184	50	80
35	0	0	85	0	0	135	8	M	185	48	80
36	0	20	86	0	0	136	6	M	186	54	80
37	0	20	87	0	0	137	0	0	187	44	30
38	0	10	88	0	0	138	0	0	188	48	40
39	0	10	89	0	0	139	0	0	189	40	M
40	0	10	90	0	0	140	0	0	190	34	0
41	0	10	91	0	0	141	0	0	191	32	70
42	0	0	92	0	0	142	0	50	192	34	60
43	0	0	93	0	0	143	12	40	193	46	80
44	0	0	94	0	0	144	6	50	194	48	40
45	0	0	95	0	0	145	0	50	195	52	60
46	0	0	96	0	0	146	4	40	196	52	60
47	0	0	97	0	0	147	4	90	197	60	60
48	0	0	98	0	0	148	12	60	198	64	20
49	0	0	99	0	0	149	24	30	199	64	20
50	0	0	100	0	0	150	32	20	200	66	M

RPM AND POWER SCHEDULE FOR CYCLE 8410263 (CONTINUED)
ALL NY GAS NONFREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	38	50	230	C	M	259	0	0	288	10	M
202	38	30	231	C	M	260	0	0	289	10	M
203	40	30	232	0	10	261	2	M	290	8	M
204	40	30	233	C	10	262	2	M	291	0	0
205	34	50	234	C	10	263	0	M	292	0	0
206	32	10	235	C	30	264	0	M	293	0	0
207	34	30	236	0	30	265	0	M	294	0	0
208	34	50	237	C	10	266	0	M	295	0	0
209	34	50	238	0	0	267	0	M	296	0	0
210	32	M	239	0	0	268	0	0	297	0	0
211	22	M	240	C	0	269	0	0	298	0	0
212	14	M	241	C	0	270	C	0	299	0	0
213	14	M	242	C	0	271	0	0	300	0	0
214	14	30	243	C	0	272	0	0	301	0	0
215	18	10	244	C	0	273	0	0	302	0	0
216	18	M	245	C	0	274	0	0	303	0	0
217	16	M	246	C	0	275	0	M	304	0	0
218	16	M	247	0	0	276	0	60	305	0	0
219	8	M	248	C	0	277	2	80	306	0	M
220	10	M	249	C	0	278	8	80	307	0	0
221	6	M	250	0	0	279	18	90	308	0	0
222	4	M	251	2	0	280	22	90	309	0	0
223	4	M	252	2	0	281	24	90	310	0	0
224	4	M	253	C	0	282	24	60	311	0	0
225	2	M	254	0	0	283	24	M	312	0	0
226	0	0	255	0	10	284	24	M	313	0	0
227	0	M	256	0	0	285	22	M	314	0	0
228	0	0	257	0	0	286	22	M	315	0	0
229	0	M	258	C	0	287	14	M			

RPM AND POWER SCHEDULE FOR CYCLE 8410263
ALL NY GAS NONFREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	0	0	101	46	100	151	34	M
2	-2	6	52	0	0	102	48	99	152	32	M
3	-3	15	53	0	0	103	50	90	153	32	M
4	0	10	54	0	0	104	53	75	154	28	14
5	0	10	55	0	0	105	54	50	155	32	90
6	0	10	56	0	0	106	44	9	156	36	90
7	0	76	57	0	0	107	45	M	157	42	90
8	0	32	58	0	0	108	46	10	158	46	90
9	2	35	59	0	0	109	38	M	159	50	80
10	15	30	60	0	0	110	32	6	160	49	80
11	25	M	61	0	0	111	23	35	161	51	63
12	24	M	62	0	0	112	24	5	162	46	35
13	23	M	63	0	0	113	21	M	163	43	7
14	12	80	64	0	0	114	12	M	164	35	M
15	9	84	65	0	0	115	6	M	165	32	68
16	7	85	66	0	0	116	7	M	166	36	63
17	17	80	67	0	0	117	7	M	167	47	69
18	25	63	68	0	0	118	3	M	168	50	49
19	0	80	69	0	0	119	0	0	169	52	60
20	0	9	70	0	0	120	0	0	170	58	60
21	0	0	71	0	0	121	0	0	171	64	23
22	0	0	72	0	0	122	0	10	172	64	18
23	0	0	73	0	0	123	4	46	173	60	4
24	0	0	74	0	0	124	9	45	174	38	42
25	0	0	75	0	0	125	2	50	175	39	30
26	0	0	76	0	0	126	3	42	176	40	30
27	0	0	77	0	0	127	4	90	177	35	47
28	0	0	78	0	0	128	14	56	178	32	10
29	0	0	79	0	0	129	26	27	179	34	34
30	0	0	80	0	0	130	34	6	180	34	50
31	0	18	81	0	0	131	36	M	181	33	21
32	0	20	82	0	0	132	34	M	182	26	M
33	0	10	83	0	0	133	34	M	183	16	M
34	0	10	84	0	0	134	36	M	184	14	M
35	0	10	85	0	0	135	33	28	185	14	28
36	0	3	86	0	0	136	36	80	186	18	4
37	0	0	87	0	0	137	42	74	187	17	M
38	0	0	88	0	0	138	60	27	188	16	M
39	0	0	89	0	0	139	48	M	189	10	M
40	0	0	90	0	0	140	44	M	190	10	M
41	0	0	91	0	0	141	40	M	191	6	M
42	0	0	92	0	0	142	38	4	192	4	M
43	0	0	93	0	0	143	35	30	193	4	M
44	0	0	94	0	0	144	41	17	194	3	M
45	0	0	95	0	0	145	44	26	195	1	M
46	0	0	96	-1	44	146	46	M	196	0	M
47	0	0	97	0	85	147	47	M	197	0	M
48	0	0	98	4	100	148	49	M	198	0	M
49	0	0	99	28	100	149	37	M	199	0	M
50	0	0	100	43	100	150	36	M	200	0	M

RPM AND POWER SCHEDULE FOR CYCLE 8410263 (CONTINUED)
ALL NY GAS NONFREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	0	10	220	0	6	239	1	72	258	0	0
202	0	10	221	0	2	240	7	80	259	0	0
203	0	29	222	0	0	241	17	89	260	0	0
204	0	28	223	0	0	242	22	90	261	0	0
205	0	7	224	0	0	243	24	82	262	0	0
206	0	0	225	1	M	244	24	31	263	0	0
207	0	0	226	2	M	245	24	M	264	0	M
208	0	0	227	1	M	246	23	M	265	0	M
209	0	0	228	0	M	247	22	M	266	0	0
210	0	0	229	0	M	248	14	M	267	0	0
211	0	0	230	0	M	249	10	M	268	0	0
212	0	0	231	0	M	250	9	M	269	0	0
213	0	0	232	0	0	251	4	M	270	0	0
214	0	0	233	0	0	252	0	0	271	0	0
215	0	0	234	0	0	253	0	0	272	0	0
216	0	0	235	0	0	254	0	0			
217	2	0	236	0	0	255	0	0			
218	1	0	237	0	M	256	0	0			
219	0	0	238	0	22	257	0	0			

SUMMARY MEASURES FOR CYCLE 104099549

GENERATED FROM INPUT MATRIX: NY ALL DIESEL FREEWAY

CYCLE DURATION = 4.94 MINUTES

KOLMOGOROV-SMIRNOV TESTS:

	SIGNIFICANCE LEVEL
MATRIX	.3185E 00
UPPER	.3475E 00
DIAGONAL	.8843E-01
LOWER	.2231E 00

MATRIX PERCENTAGES:

		CYCLE	INPUT
	UPPER	31.78	32.31
***	DIAGONAL	12.24	16.54
	LOWER	30.90	32.12
	IDLE	25.07	19.03

POWER MEASURES:

	CYCLE	INPUT
* MEAN, %	40.86	41.87
% ACCEL	18.08	17.10
% DECEL	16.33	17.25
** % CRUISE	25.66	25.67
% MOTORING	14.29	19.54
% ZERO	25.66	20.43

RPM MEASURES:

	CYCLE	INPUT
MEAN, %	51.94	53.43
% ACCEL	25.95	25.45
% DECEL	23.32	25.34
** % CRUISE	22.74	25.36
% ZERO	27.99	23.85

* COMPUTED FROM NON-MOTORING POWERS ONLY

** THE ZERO AND MOTORING PERCENTAGES ARE HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

*** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE DIAGONAL PERCENTAGE

RPM AND POWER SCHEDULE FOR CYCLE 104099549
ALL NY DSL FREEWAY C.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	0	0	101	82	100	151	98	M
2	0	M	52	C	0	102	84	90	152	102	M
3	0	0	53	C	0	103	84	90	153	90	M
4	0	0	54	C	10	104	84	90	154	88	20
5	0	0	55	0	0	105	86	90	155	90	10
6	0	0	56	C	0	106	86	90	156	90	M
7	0	0	57	0	0	107	88	90	157	92	M
8	0	0	58	0	0	108	88	100	158	86	0
9	0	0	59	0	0	109	88	100	159	80	0
10	0	0	60	C	0	110	88	90	160	82	0
11	0	0	61	C	0	111	88	90	161	80	10
12	0	0	62	0	0	112	90	90	162	80	20
13	0	0	63	C	0	113	92	90	163	84	40
14	0	0	64	C	0	114	94	100	164	84	40
15	0	0	65	C	0	115	94	90	165	86	70
16	0	0	66	C	0	116	94	90	166	82	80
17	0	0	67	0	0	117	92	100	167	84	20
18	0	0	68	C	0	118	90	100	168	84	20
19	0	M	69	C	0	119	90	90	169	78	40
20	0	0	70	C	0	120	90	80	170	78	40
21	0	0	71	C	0	121	90	80	171	76	20
22	0	0	72	0	0	122	90	80	172	80	40
23	0	0	73	C	0	123	92	90	173	78	50
24	0	0	74	0	0	124	90	90	174	74	10
25	24	M	75	4	M	125	90	100	175	72	20
26	22	M	76	2	M	126	94	100	176	78	M
27	16	M	77	0	10	127	96	90	177	74	M
28	4	M	78	C	0	128	96	100	178	52	60
29	10	M	79	0	0	129	100	100	179	48	70
30	0	0	80	0	0	130	100	100	180	56	70
31	0	10	81	0	0	131	100	100	181	56	50
32	0	0	82	0	0	132	102	100	182	56	50
33	0	0	83	C	0	133	102	100	183	56	30
34	0	0	84	C	0	134	100	100	184	54	40
35	0	0	85	C	0	135	100	90	185	54	30
36	0	0	86	0	0	136	100	90	186	52	70
37	0	0	87	0	0	137	98	100	187	52	70
38	0	0	88	C	0	138	98	90	188	52	70
39	0	0	89	34	60	139	98	100	189	54	20
40	0	0	90	34	80	140	98	100	190	54	20
41	0	0	91	40	70	141	98	100	191	56	20
42	0	0	92	40	50	142	98	100	192	56	20
43	0	0	93	40	80	143	98	100	193	54	50
44	0	0	94	50	90	144	100	100	194	64	30
45	0	0	95	48	90	145	102	100	195	62	40
46	0	0	96	52	90	146	110	40	196	62	30
47	0	0	97	54	90	147	106	40	197	60	30
48	0	0	98	54	90	148	106	40	198	60	30
49	0	0	99	50	90	149	112	80	199	58	70
50	0	0	100	82	90	150	116	70	200	60	70

RPM AND POWER SCHEDULE FOR CYCLE 104099549 (CONTINUED)
ALL NY DSL FREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	66	80	237	70	M	273	100	M	309	64	10
202	30	90	238	70	30	274	98	M	310	56	10
203	58	90	239	76	20	275	76	M	311	48	0
204	60	90	240	76	10	276	74	M	312	50	M
205	56	90	241	86	20	277	72	M	313	42	M
206	54	90	242	88	20	278	70	30	314	26	M
207	48	100	243	90	20	279	70	40	315	10	M
208	50	100	244	90	30	280	70	40	316	22	M
209	56	90	245	90	20	281	68	70	317	26	M
210	58	90	246	90	40	282	68	70	318	26	10
211	58	90	247	90	40	283	74	80	319	26	M
212	58	90	248	94	80	284	74	80	320	22	M
213	60	80	249	96	80	285	80	80	321	18	M
214	62	40	250	96	80	286	76	80	322	20	M
215	62	30	251	94	80	287	80	80	323	24	M
216	62	70	252	96	80	288	82	80	324	26	M
217	62	70	253	96	20	289	82	80	325	6	M
218	62	40	254	92	30	290	82	80	326	0	M
219	66	70	255	94	60	291	80	M	327	0	0
220	68	60	256	90	70	292	82	M	328	0	0
221	70	50	257	94	70	293	86	M	329	0	0
222	66	70	258	98	70	294	82	M	330	0	0
223	68	70	259	104	80	295	84	M	331	0	0
224	66	70	260	104	20	296	80	M	332	0	0
225	78	M	261	106	20	297	82	M	333	0	0
226	78	M	262	106	10	298	82	M	334	0	0
227	74	M	263	104	10	299	78	M	335	0	0
228	72	M	264	98	M	300	78	0	336	0	0
229	68	M	265	100	M	301	82	M	337	0	0
230	70	90	266	96	M	302	80	M	338	0	0
231	70	90	267	70	M	303	82	30	339	0	0
232	72	90	268	62	M	304	84	20	340	0	0
233	74	60	269	62	M	305	82	20	341	0	0
234	76	60	270	62	M	306	82	10	342	0	0
235	82	M	271	58	M	307	68	10	343	0	0
236	78	M	272	102	M	308	76	10			

RPM AND POWER SCHEDULE FOR CYCLE 104099549
ALL NY DSL FREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	M	51	0	0	101	92	99	151	72	18
2	0	M	52	0	0	102	90	99	152	78	M
3	0	0	53	0	0	103	90	88	153	72	M
4	0	0	54	0	0	104	90	80	154	51	62
5	0	0	55	0	0	105	90	80	155	51	70
6	0	0	56	0	0	106	91	87	156	56	59
7	0	0	57	0	0	107	90	90	157	56	50
8	0	0	58	0	0	108	90	100	158	56	33
9	0	0	59	0	0	109	94	98	159	54	40
10	0	0	60	0	0	110	96	93	160	54	37
11	0	0	61	0	0	111	98	100	161	52	70
12	0	0	62	0	0	112	100	100	162	52	70
13	0	0	63	0	0	113	100	100	163	53	37
14	0	0	64	0	M	114	102	100	164	54	20
15	0	0	65	4	M	115	102	100	165	56	20
16	0	M	66	1	M	116	100	97	166	56	24
17	0	M	67	0	5	117	100	90	167	57	44
18	0	0	68	0	0	118	99	96	168	63	34
19	0	0	69	0	0	119	98	93	169	62	34
20	0	0	70	0	0	120	98	99	170	60	30
21	7	M	71	0	0	121	98	100	171	60	30
22	23	M	72	0	0	122	98	100	172	58	70
23	18	M	73	0	0	123	98	100	173	61	72
24	7	M	74	0	0	124	99	100	174	52	84
25	10	M	75	0	0	125	101	100	175	45	90
26	0	1	76	0	0	126	109	50	176	59	90
27	0	7	77	34	62	127	106	40	177	57	90
28	0	0	78	36	77	128	107	46	178	54	90
29	0	0	79	40	61	129	113	77	179	48	100
30	0	0	80	40	68	130	108	33	180	52	97
31	0	0	81	48	88	131	100	M	181	57	90
32	0	0	82	48	90	132	93	M	182	58	90
33	0	0	83	52	90	133	88	18	183	58	90
34	0	0	84	54	90	134	90	8	184	60	80
35	0	0	85	52	90	135	91	M	185	62	39
36	0	0	86	67	90	136	90	M	186	62	41
37	0	0	87	82	97	137	83	0	187	62	70
38	0	0	88	84	91	138	81	0	188	62	52
39	0	0	89	84	90	139	80	9	189	65	63
40	0	0	90	84	90	140	80	21	190	68	61
41	0	0	91	86	90	141	84	40	191	70	51
42	0	0	92	87	90	142	85	51	192	66	70
43	0	0	93	88	96	143	84	75	193	67	70
44	0	0	94	88	100	144	83	40	194	72	27
45	0	0	95	88	90	145	84	20	195	78	M
46	0	2	96	88	90	146	78	40	196	75	M
47	0	6	97	91	90	147	78	37	197	72	M
48	0	0	98	93	94	148	77	26	198	68	7
49	0	0	99	94	94	149	79	45	199	70	90
50	0	0	100	94	90	150	76	26	200	71	90

RPM AND POWER SCHEDULE FOR CYCLE 104099549 (CONTINUED)
ALL NY DSL FREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	73	71	226	106	14	251	81	34	276	24	M
202	76	60	227	105	10	252	81	M	277	20	M
203	82	M	228	99	M	253	85	M	278	20	M
204	77	M	229	100	M	254	82	M	279	24	M
205	70	1	230	91	M	255	83	M	280	25	M
206	73	26	231	67	M	256	81	M	281	5	M
207	76	14	232	62	M	257	82	M	282	0	M
208	83	17	233	62	M	258	80	M	283	0	0
209	88	20	234	59	M	259	78	M	284	0	0
210	90	21	235	102	M	260	82	M	285	0	0
211	90	28	236	100	M	261	80	M	286	0	0
212	90	27	237	91	M	262	82	28	287	0	0
213	90	40	238	75	M	263	83	20	288	0	0
214	93	67	239	73	M	264	82	14	289	0	0
215	96	80	240	70	21	265	72	10	290	0	0
216	96	80	241	70	39	266	75	10	291	0	0
217	94	80	242	70	43	267	64	10	292	0	0
218	96	61	243	68	70	268	55	8	293	0	0
219	94	25	244	70	74	269	49	M	294	0	0
220	93	49	245	74	80	270	46	M	295	0	0
221	91	68	246	78	80	271	31	M	296	0	0
222	94	70	247	76	80	272	13	M			
223	99	71	248	80	80	273	22	M			
224	104	64	249	82	80	274	26	M			
225	105	20	250	82	80	275	26	4			

SUMMARY MEASURES FOR CYCLE 2114147447

GENERATED FROM INPUT MATRIX: NY ALL DIESEL NON-FREEWAY

CYCLE DURATION = 4.95 MINUTES

KOLMOGOROV-SMIRNOV TESTS:

	SIGNIFICANCE LEVEL
MATRIX	.3513E 00
UPPER	.1314E 00
DIAGONAL	.9889E 00
LOWER	.4085E 00

MATRIX PERCENTAGES:

		CYCLE	INPUT
	UPPER	18.90	21.44
***	DIAGONAL	5.81	7.27
	LOWER	20.64	20.59
	IDLE	54.65	50.70

POWER MEASURES:

		CYCLE	INPUT
*	MEAN, %	16.39	16.49
	% ACCEL	11.63	12.84
	% DECEL	11.92	12.35
**	% CRUISE	13.66	12.11
	% MOTORING	7.85	11.36
	% ZERO	54.94	51.35

RPM MEASURES:

		CYCLE	INPUT
	MEAN, %	19.54	20.12
	% ACCEL	14.24	16.88
	% DECEL	15.41	16.17
**	% CRUISE	7.56	8.46
	% ZERO	62.79	58.49

* COMPUTED FROM NON-MOTORING POWERS ONLY

** THE ZERO AND MOTORING PERCENTAGES ARE HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

*** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE DIAGONAL PERCENTAGE

RPM AND POWER SCHEDULE FOR CYCLE 2114147447
ALL NY DSL NONFREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	0	0	101	56	80	151	10	M
2	0	0	52	0	0	102	58	80	152	0	M
3	0	0	53	0	0	103	54	80	153	0	M
4	0	0	54	0	0	104	58	70	154	0	M
5	0	0	55	0	0	105	58	40	155	0	0
6	0	0	56	0	0	106	60	50	156	0	10
7	0	0	57	0	0	107	66	50	157	0	0
8	0	0	58	0	0	108	72	50	158	0	0
9	0	0	59	0	0	109	72	40	159	0	0
10	0	0	60	0	0	110	76	40	160	0	0
11	0	0	61	0	0	111	84	40	161	0	0
12	0	0	62	0	0	112	86	60	162	0	0
13	0	0	63	0	50	113	78	M	163	0	0
14	0	0	64	0	0	114	84	M	164	0	0
15	0	0	65	0	0	115	78	M	165	0	0
16	0	0	66	0	0	116	78	M	166	0	0
17	0	0	67	0	0	117	80	M	167	0	0
18	0	0	68	0	0	118	80	30	168	0	0
19	0	0	69	0	0	119	86	40	169	0	0
20	0	0	70	0	0	120	84	50	170	0	0
21	0	0	71	0	0	121	78	50	171	0	0
22	0	0	72	0	0	122	78	50	172	0	0
23	0	0	73	0	0	123	82	40	173	0	0
24	0	0	74	0	0	124	94	80	174	0	0
25	0	0	75	0	50	125	88	M	175	0	0
26	0	0	76	0	40	126	84	M	176	0	0
27	0	10	77	8	90	127	84	M	177	0	0
28	0	10	78	10	80	128	84	M	178	0	0
29	0	10	79	18	80	129	78	M	179	0	0
30	0	0	80	36	80	130	66	M	180	0	0
31	0	0	81	38	80	131	66	20	181	0	0
32	0	0	82	34	40	132	62	30	182	0	0
33	0	0	83	18	30	133	64	20	183	0	0
34	0	0	84	30	20	134	64	20	184	0	0
35	0	0	85	30	10	135	62	10	185	0	0
36	0	0	86	18	20	136	58	10	186	0	0
37	0	0	87	20	30	137	56	10	187	0	0
38	0	0	88	20	20	138	56	M	188	0	0
39	0	0	89	20	M	139	52	M	189	0	0
40	0	0	90	6	M	140	40	10	190	0	0
41	0	0	91	8	M	141	38	10	191	0	0
42	0	0	92	26	M	142	30	10	192	0	0
43	0	0	93	22	M	143	30	10	193	0	0
44	0	0	94	16	M	144	26	10	194	0	0
45	0	0	95	14	70	145	26	20	195	4	M
46	0	0	96	16	70	146	28	0	196	0	M
47	0	0	97	26	60	147	28	M	197	0	0
48	0	0	98	34	60	148	28	M	198	0	0
49	0	0	99	42	70	149	24	M	199	2	10
50	0	0	100	52	80	150	14	M	200	4	0

RPM AND POWER SCHEDULE FOR CYCLE 2114147447 (CONTINUED)
ALL NY DSL NONFREEWAY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	0	0	238	0	0	275	0	0	312	100	20
202	0	0	239	0	0	276	0	0	313	102	20
203	0	0	240	0	0	277	0	0	314	100	20
204	0	0	241	0	0	278	0	0	315	100	40
205	0	0	242	0	0	279	0	0	316	96	40
206	0	0	243	0	0	280	0	0	317	96	30
207	0	0	244	0	0	281	0	0	318	94	30
208	0	0	245	0	0	282	0	0	319	96	40
209	0	0	246	0	0	283	0	0	320	98	30
210	0	0	247	0	0	284	0	0	321	100	30
211	0	0	248	0	0	285	0	0	322	100	50
212	0	0	249	0	0	286	0	0	323	102	50
213	0	0	250	0	0	287	0	0	324	88	M
214	0	0	251	0	0	288	0	0	325	64	M
215	0	0	252	0	0	289	0	0	326	62	M
216	0	20	253	0	0	290	0	0	327	46	M
217	0	0	254	0	0	291	0	0	328	46	M
218	0	0	255	0	0	292	0	0	329	40	70
219	0	0	256	0	0	293	0	90	330	38	80
220	0	0	257	0	0	294	0	90	331	36	80
221	0	0	258	0	20	295	30	80	332	32	80
222	0	0	259	0	20	296	40	90	333	26	80
223	0	0	260	0	20	297	44	90	334	24	80
224	0	0	261	0	0	298	44	90	335	22	40
225	0	0	262	0	0	299	48	90	336	16	20
226	0	0	263	0	0	300	52	80	337	12	50
227	0	0	264	0	0	301	68	80	338	10	70
228	0	0	265	0	0	302	74	90	339	4	70
229	0	30	266	0	0	303	88	90	340	2	60
230	0	30	267	0	0	304	96	90	341	0	0
231	0	20	268	0	0	305	98	100	342	0	0
232	0	20	269	0	0	306	96	10	343	0	0
233	0	20	270	0	0	307	94	20	344	0	0
234	0	0	271	0	0	308	100	30			
235	0	0	272	0	0	309	100	40			
236	0	0	273	0	0	310	100	30			
237	0	0	274	0	0	311	100	30			

RPM AND POWER SCHEDULE FOR CYCLE 2114147447
ALL NY DSL NONFREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	0	0	101	80	M	151	0	0
2	0	0	52	0	0	102	80	31	152	0	0
3	0	0	53	0	0	103	86	42	153	0	0
4	0	0	54	0	25	104	82	50	154	0	0
5	0	0	55	0	17	105	78	50	155	0	0
6	0	0	56	0	0	106	81	43	156	0	0
7	0	0	57	0	0	107	92	74	157	0	0
8	0	0	58	0	0	108	88	M	158	0	0
9	0	0	59	0	0	109	84	M	159	0	0
10	0	0	60	0	0	110	84	M	160	0	0
11	0	0	61	0	0	111	81	M	161	0	0
12	0	0	62	0	0	112	70	M	162	0	0
13	0	0	63	0	0	113	66	14	163	0	0
14	0	0	64	0	4	114	62	29	164	0	0
15	0	0	65	0	48	115	64	20	165	0	0
16	0	0	66	3	59	116	63	17	166	0	0
17	0	0	67	9	85	117	60	10	167	0	0
18	0	0	68	16	80	118	57	10	168	2	M
19	0	0	69	34	80	119	56	M	169	2	M
20	0	0	70	38	79	120	52	M	170	0	M
21	0	0	71	31	38	121	40	10	171	0	0
22	0	0	72	22	27	122	36	10	172	2	9
23	0	6	73	30	15	123	30	10	173	3	0
24	0	10	74	22	16	124	28	10	174	0	0
25	0	10	75	20	28	125	26	17	175	0	0
26	0	0	76	20	20	126	28	3	176	0	0
27	0	0	77	18	M	127	28	M	177	0	0
28	0	0	78	7	M	128	27	M	178	0	0
29	0	0	79	16	M	129	21	M	179	0	0
30	0	0	80	24	M	130	12	M	180	0	0
31	0	0	81	17	M	131	4	M	181	0	0
32	0	0	82	14	63	132	0	M	182	0	0
33	0	0	83	17	69	133	0	M	183	0	0
34	0	0	84	28	60	134	0	1	184	0	0
35	0	0	85	37	64	135	0	7	185	0	0
36	0	0	86	47	75	136	0	0	186	0	6
37	0	0	87	55	80	137	0	0	187	0	11
38	0	0	88	58	80	138	0	0	188	0	0
39	0	0	89	54	80	139	0	0	189	0	0
40	0	0	90	58	65	140	0	0	190	0	0
41	0	0	91	59	43	141	0	0	191	0	0
42	0	0	92	63	50	142	0	0	192	0	0
43	0	0	93	70	50	143	0	0	193	0	0
44	0	0	94	72	42	144	0	0	194	0	0
45	0	0	95	76	40	145	0	0	195	0	0
46	0	0	96	84	42	146	0	0	196	0	0
47	0	0	97	84	41	147	0	0	197	0	0
48	0	0	98	81	M	148	0	0	198	0	30
49	0	0	99	80	M	149	0	0	199	0	27
50	0	0	100	78	M	150	0	0	200	0	20

RPM AND POWER SCHEDULE FOR CYCLE 2114147447 (CONTINUED)
ALL NY DSL NONFREEWAY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	0	20	226	C	0	251	0	0	276	97	36
202	0	4	227	C	0	252	0	0	277	99	30
203	0	0	228	C	0	253	0	74	278	100	45
204	0	0	229	C	0	254	0	90	279	102	50
205	0	0	230	C	0	255	31	81	280	86	M
206	0	0	231	C	0	256	41	90	281	64	M
207	0	0	232	C	0	257	44	90	282	56	M
208	0	0	233	C	0	258	46	90	283	46	M
209	0	0	234	C	0	259	51	82	284	42	46
210	0	0	235	C	0	260	67	80	285	38	79
211	0	0	236	C	0	261	75	90	286	36	80
212	0	0	237	C	0	262	90	90	287	31	80
213	0	0	238	C	0	263	97	94	288	25	80
214	0	0	239	C	0	264	97	50	289	23	60
215	0	0	240	C	0	265	95	17	290	18	27
216	0	0	241	C	0	266	99	29	291	13	44
217	0	0	242	C	0	267	100	40	292	10	69
218	0	0	243	C	0	268	100	30	293	4	69
219	0	0	244	C	0	269	100	27	294	1	43
220	0	0	245	C	0	270	101	20	295	0	0
221	0	0	246	C	0	271	101	20	296	0	0
222	0	0	247	C	0	272	100	36	297	0	0
223	0	20	248	C	0	273	96	40			
224	0	20	249	C	0	274	96	30			
225	0	12	250	C	0	275	95	33			

SUMMARY MEASURES FOR CYCLE 2049482045

GENERATED FROM INPUT MATRIX: LA BUSES COMPOSITE

CYCLE DURATION = 4.81 MINUTES

KOLMOGOROV-SMIRNOV TESTS:

	SIGNIFICANCE LEVEL
MATRIX	.2551E 00
UPPER	.7860E 00
DIAGONAL	.4403E 00
LOWER	.4367E 00

MATRIX PERCENTAGES:

	CYCLE	INPUT
UPPER	33.23	34.22
*** DIAGONAL	9.88	14.76
LOWER	31.14	27.81
IDLE	25.75	23.21

POWER MEASURES:

	CYCLE	INPUT
* MEAN, %	34.35	39.44
% ACCEL	14.07	14.18
% DECEL	14.67	13.26
** % CRUISE	16.47	19.82
% MOTORING	28.74	29.27
% ZERO	26.05	23.47

RPM MEASURES:

	CYCLE	INPUT
MEAN, %	36.47	37.80
% ACCEL	28.14	29.96
% DECEL	25.75	23.35
** % CRUISE	17.66	20.25
% ZERO	28.44	26.44

* COMPUTED FROM NON-MOTORING POWERS ONLY

** THE ZERO AND MOTORING PERCENTAGES ARE HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

*** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE DIAGONAL PERCENTAGE

RPM AND POWER SCHEDULE FOR CYCLE 2049482045
LA BUSES FWY + NFWY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	50	M	101	0	0	151	86	70
2	0	0	52	46	M	102	0	0	152	74	70
3	2	M	53	34	M	103	0	0	153	76	70
4	6	20	54	14	M	104	0	0	154	76	M
5	40	50	55	12	M	105	0	0	155	74	M
6	42	70	56	6	M	106	0	0	156	72	M
7	52	70	57	0	M	107	0	0	157	68	M
8	58	70	58	0	20	108	0	0	158	66	M
9	58	60	59	0	0	109	0	0	159	66	M
10	74	20	60	0	0	110	0	0	160	66	M
11	82	10	61	0	0	111	0	0	161	60	M
12	80	M	62	0	0	112	0	20	162	60	M
13	42	M	63	0	0	113	0	0	163	58	M
14	32	M	64	0	0	114	0	0	164	52	M
15	18	M	65	0	0	115	0	0	165	52	M
16	14	M	66	0	0	116	0	60	166	48	M
17	8	M	67	0	0	117	12	10	167	34	M
18	2	M	68	0	0	118	20	10	168	32	M
19	0	0	69	0	0	119	8	M	169	14	10
20	0	0	70	0	0	120	0	0	170	40	100
21	0	0	71	0	0	121	0	0	171	40	100
22	0	0	72	0	0	122	0	0	172	40	100
23	0	0	73	0	0	123	0	0	173	42	100
24	0	0	74	0	0	124	0	0	174	46	100
25	0	0	75	0	0	125	0	0	175	46	70
26	2	40	76	0	0	126	0	30	176	52	20
27	6	50	77	0	0	127	22	60	177	52	M
28	16	10	78	0	0	128	44	80	178	40	M
29	26	10	79	0	0	129	52	90	179	40	M
30	10	20	80	0	0	130	58	100	180	36	M
31	12	20	81	0	0	131	58	100	181	38	M
32	36	30	82	0	0	132	58	100	182	44	100
33	36	10	83	0	0	133	60	100	183	48	100
34	36	60	84	0	0	134	62	80	184	56	100
35	46	0	85	0	0	135	64	80	185	62	100
36	46	0	86	0	0	136	68	80	186	66	100
37	48	10	87	0	0	137	70	80	187	68	100
38	48	50	88	0	0	138	72	80	188	78	100
39	48	50	89	0	0	139	76	80	189	78	90
40	52	70	90	0	0	140	78	80	190	78	100
41	58	70	91	0	0	141	80	80	191	78	100
42	60	70	92	0	0	142	82	80	192	80	100
43	62	60	93	0	0	143	84	70	193	84	100
44	64	30	94	0	0	144	82	70	194	88	90
45	64	20	95	0	0	145	84	70	195	88	40
46	62	M	96	2	M	146	86	70	196	86	20
47	62	M	97	0	M	147	82	70	197	86	20
48	60	M	98	0	0	148	84	70	198	90	M
49	60	M	99	0	0	149	84	70	199	90	M
50	52	M	100	0	0	150	86	70	200	84	M

RPM AND POWER SCHEDULE FOR CYCLE 2049482045 (CONTINUED)
LA BUSES FWY + NFWY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	84	10	235	70	10	269	52	M	303	86	M
202	84	0	236	70	20	270	52	M	304	86	M
203	82	M	237	72	M	271	48	M	305	84	M
204	76	M	238	70	M	272	48	10	306	48	M
205	74	M	239	66	M	273	48	10	307	42	M
206	74	M	240	66	M	274	46	0	308	36	M
207	74	M	241	68	M	275	46	M	309	34	M
208	74	M	242	68	10	276	40	M	310	42	M
209	74	M	243	68	40	277	38	M	311	42	M
210	76	M	244	70	40	278	34	M	312	42	M
211	76	80	245	82	40	279	30	M	313	32	M
212	84	60	246	82	20	280	14	M	314	26	M
213	84	40	247	82	M	281	0	0	315	12	M
214	84	90	248	80	M	282	0	0	316	8	M
215	90	M	249	42	M	283	0	0	317	2	M
216	64	M	250	40	M	284	0	0	318	4	M
217	54	M	251	40	M	285	0	0	319	0	0
218	54	M	252	36	M	286	0	0	320	0	0
219	46	M	253	32	M	287	0	0	321	0	0
220	40	M	254	30	M	288	0	0	322	0	0
221	36	M	255	26	M	289	0	90	323	0	0
222	38	M	256	14	M	290	0	80	324	0	0
223	38	M	257	2	50	291	8	60	325	0	0
224	14	M	258	0	70	292	30	60	326	0	0
225	8	M	259	22	60	293	44	70	327	0	0
226	6	M	260	34	70	294	46	30	328	0	0
227	8	40	261	40	80	295	46	90	329	0	0
228	34	60	262	40	80	296	48	60	330	0	0
229	46	70	263	42	60	297	58	70	331	0	0
230	54	70	264	52	60	298	82	90	332	0	0
231	58	70	265	54	60	299	82	60	333	0	0
232	60	70	266	56	M	300	86	30	334	0	0
233	66	70	267	56	M	301	90	M			
234	70	70	268	54	M	302	88	M			

RPM AND POWER SCHEDULE FOR CYCLE 2049482045
LA BUSES FWY + NFWY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	0	0	101	11	15	151	46	77
2	1	M	52	0	0	102	19	9	152	52	24
3	4	4	53	0	0	103	6	M	153	51	M
4	27	39	54	0	0	104	0	0	154	40	M
5	42	66	55	0	0	105	0	0	155	38	M
6	51	70	56	0	0	106	0	0	156	37	M
7	58	69	57	0	0	107	0	0	157	42	68
8	62	50	58	0	0	108	0	0	158	47	100
9	77	16	59	0	0	109	3	35	159	56	100
10	81	M	60	0	0	110	29	66	160	63	100
11	52	M	61	0	0	111	48	85	161	67	100
12	33	M	62	0	0	112	56	96	162	73	100
13	18	M	63	0	0	113	58	100	163	78	93
14	13	M	64	0	0	114	58	100	164	78	98
15	6	M	65	0	0	115	60	98	165	78	100
16	1	M	66	0	0	116	63	80	166	81	100
17	0	0	67	0	0	117	66	80	167	85	97
18	0	0	68	0	0	118	69	80	168	88	68
19	0	0	69	0	0	119	71	80	169	87	28
20	0	0	70	0	0	120	76	80	170	86	20
21	0	0	71	0	0	121	78	80	171	90	M
22	1	19	72	0	0	122	80	80	172	90	M
23	4	46	73	0	0	123	83	76	173	84	M
24	14	19	74	0	0	124	83	70	174	84	6
25	25	10	75	0	0	125	83	70	175	83	M
26	10	20	76	0	0	126	86	70	176	78	M
27	18	23	77	0	0	127	82	70	177	74	M
28	36	22	78	0	0	128	84	70	178	74	M
29	36	38	79	0	0	129	85	70	179	74	M
30	43	17	80	0	0	130	86	70	180	74	M
31	46	0	81	0	0	131	79	70	181	75	M
32	48	11	82	0	0	132	76	70	182	76	48
33	48	50	83	2	M	133	76	M	183	82	64
34	49	57	84	0	M	134	74	M	184	84	41
35	55	70	85	0	0	135	71	M	185	85	78
36	59	70	86	0	0	136	67	M	186	83	M
37	62	62	87	0	0	137	66	M	187	60	M
38	64	31	88	0	0	138	66	M	188	54	M
39	64	16	89	0	0	139	61	M	189	48	M
40	62	M	90	0	0	140	60	M	190	41	M
41	61	M	91	0	0	141	57	M	191	36	M
42	60	M	92	0	0	142	52	M	192	38	M
43	54	M	93	0	0	143	50	M	193	29	M
44	50	M	94	0	0	144	39	M	194	11	M
45	45	M	95	0	0	145	32	M	195	7	M
46	29	M	96	0	2	146	14	10	196	8	33
47	13	M	97	0	15	147	40	100	197	34	60
48	9	M	98	0	0	148	40	100	198	47	70
49	2	M	99	0	0	149	41	100	199	55	70
50	0	16	100	0	44	150	44	100	200	59	70

RPM AND POWER SCHEDULE FOR CYCLE 2049482045 (CONTINUED)
LA BUSES FWY + NFWY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	64	70	224	25	63	247	0	0	270	37	M
202	69	70	225	37	74	248	0	0	271	28	M
203	70	13	226	40	80	249	0	18	272	15	M
204	70	17	227	41	65	250	0	86	273	8	M
205	71	M	228	51	60	251	4	70	274	2	M
206	68	M	229	54	57	252	23	60	275	3	M
207	66	M	230	56	M	253	42	68	276	0	0
208	67	M	231	55	M	254	46	31	277	0	0
209	68	8	232	53	M	255	46	86	278	0	0
210	68	40	233	52	M	256	51	63	279	0	0
211	73	40	234	49	M	257	69	79	280	0	0
212	82	33	235	48	10	258	82	72	281	0	0
213	82	4	236	48	9	259	85	37	282	0	0
214	81	M	237	46	M	260	90	M	283	0	0
215	48	M	238	43	M	261	88	M	284	0	0
216	40	M	239	39	M	262	86	M	285	0	0
217	39	M	240	35	M	263	85	M	286	0	0
218	35	M	241	30	M	264	64	M	287	0	0
219	31	M	242	13	M	265	44	M	288	0	0
220	27	M	243	0	0	266	37	M	289	0	0
221	17	M	244	0	0	267	34	M			
222	3	47	245	0	0	268	42	M			
223	2	69	246	0	0	269	42	M			

SUMMARY MEASURES FOR CYCLE 2109178847

GENERATED FROM INPUT MATRIX: NY BUSES COMPOSITE

CYCLE DURATION = 4.78 MINUTES

KOLMOGOROV-SMIRNOV TESTS:

	SIGNIFICANCE LEVEL
MATRIX	.5395E 00
UPPER	.2820E 00
DIAGONAL	.8818E 00
LOWER	.4434E 00

MATRIX PERCENTAGES:

	CYCLE	INPUT
UPPER	29.82	27.81
*** DIAGONAL	4.82	6.68
LOWER	24.70	24.03
IDLE	40.66	41.48

POWER MEASURES:

	CYCLE	INPUT
* MEAN, %	23.27	20.75
% ACCEL	13.86	13.71
% DECEL	12.35	13.50
** % CRUISE	13.86	13.22
% MOTORING	18.67	17.65
% ZERO	41.27	41.93

RPM MEASURES:

	CYCLE	INPUT
MEAN, %	27.28	26.56
% ACCEL	26.81	24.29
% DECEL	23.80	21.06
** % CRUISE	4.82	7.81
% ZERO	44.58	46.84

* COMPUTED FROM NON-MOTORING POWERS ONLY

** THE ZERO AND MOTORING PERCENTAGES ARE HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

*** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE DIAGONAL PERCENTAGE

RPM AND POWER SCHEDULE FOR CYCLE 2109178847
NY BUSES FWY + NFWY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	0	0	51	72	80	101	80	90	151	82	90
2	6	30	52	72	80	102	82	70	152	82	90
3	6	70	53	74	80	103	86	70	153	92	60
4	40	70	54	76	80	104	80	10	154	94	50
5	66	70	55	88	60	105	82	20	155	94	20
6	76	70	56	96	60	106	84	20	156	96	M
7	48	M	57	102	60	107	74	M	157	90	70
8	42	M	58	102	70	108	36	M	158	92	70
9	16	M	59	104	70	109	44	M	159	84	30
10	8	M	60	104	70	110	44	M	160	84	M
11	0	0	61	68	M	111	28	20	161	80	M
12	0	0	62	60	M	112	60	80	162	28	M
13	2	M	63	58	M	113	64	80	163	16	M
14	0	0	64	52	M	114	52	M	164	4	60
15	0	0	65	18	M	115	20	M	165	12	M
16	0	0	66	6	M	116	12	M	166	6	M
17	0	0	67	0	0	117	2	M	167	0	M
18	0	0	68	0	0	118	0	0	168	0	M
19	0	0	69	0	0	119	0	0	169	0	M
20	0	0	70	0	0	120	0	0	170	0	M
21	0	0	71	0	0	121	0	0	171	0	0
22	0	0	72	0	0	122	0	0	172	0	0
23	0	0	73	4	80	123	0	0	173	0	0
24	0	0	74	42	80	124	0	0	174	0	0
25	0	0	75	50	70	125	0	0	175	0	0
26	0	0	76	54	70	126	0	0	176	2	M
27	0	0	77	56	70	127	0	0	177	0	M
28	10	30	78	78	70	128	0	0	178	0	M
29	48	M	79	84	60	129	0	0	179	0	M
30	42	M	80	88	70	130	0	0	180	0	0
31	22	M	81	90	60	131	0	0	181	0	0
32	0	0	82	94	70	132	0	0	182	0	0
33	0	0	83	92	80	133	0	0	183	0	0
34	0	40	84	90	70	134	0	0	184	0	0
35	36	M	85	92	70	135	0	0	185	0	0
36	8	M	86	94	70	136	0	0	186	0	0
37	30	10	87	74	M	137	0	0	187	0	0
38	32	M	88	74	20	138	0	0	188	12	70
39	24	M	89	76	20	139	0	0	189	78	60
40	30	M	90	56	M	140	0	0	190	86	60
41	10	M	91	56	M	141	0	0	191	88	70
42	10	M	92	44	M	142	0	0	192	86	40
43	26	20	93	42	M	143	6	100	193	80	20
44	46	50	94	30	M	144	32	100	194	82	20
45	56	70	95	4	M	145	60	100	195	84	20
46	58	70	96	0	0	146	68	100	196	86	0
47	56	70	97	0	0	147	72	60	197	82	0
48	60	80	98	0	20	148	74	80	198	78	0
49	62	80	99	12	100	149	76	80	199	66	M
50	66	80	100	70	90	150	78	90	200	64	M

RPM AND POWER SCHEDULE FOR CYCLE 2109178847 (CONTINUED)
NY BUSES FWY + NFWY 0.864-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	30	M	235	0	0	269	0	0	303	12	M
202	26	M	236	0	0	270	0	0	304	2	M
203	16	M	237	0	0	271	0	0	305	0	0
204	0	0	238	0	0	272	0	0	306	0	0
205	0	0	239	0	0	273	0	0	307	0	0
206	0	0	240	0	0	274	0	0	308	0	0
207	0	0	241	0	0	275	0	0	309	10	40
208	6	30	242	0	0	276	0	0	310	32	60
209	40	30	243	0	0	277	0	0	311	42	10
210	52	30	244	0	0	278	0	0	312	44	10
211	50	20	245	0	0	279	0	0	313	46	10
212	72	M	246	0	0	280	0	0	314	48	M
213	26	M	247	0	0	281	0	0	315	42	M
214	14	M	248	0	0	282	0	0	316	42	M
215	2	M	249	0	0	283	0	0	317	40	M
216	2	M	250	0	0	284	0	0	318	32	M
217	0	M	251	0	0	285	0	0	319	18	M
218	0	M	252	0	0	286	0	0	320	36	100
219	0	M	253	0	0	287	0	0	321	36	90
220	0	0	254	0	0	288	0	0	322	38	90
221	0	0	255	0	0	289	0	0	323	64	90
222	0	0	256	0	0	290	0	20	324	66	20
223	0	0	257	0	0	291	36	20	325	64	20
224	0	0	258	0	0	292	54	30	326	58	M
225	0	0	259	0	0	293	56	30	327	12	M
226	0	0	260	0	0	294	76	30	328	6	M
227	0	0	261	0	0	295	76	70	329	0	0
228	0	0	262	0	0	296	80	60	330	0	0
229	0	0	263	0	0	297	72	M	331	0	0
230	0	0	264	0	0	298	70	M	332	0	0
231	0	0	265	0	0	299	70	M			
232	0	0	266	0	0	300	68	M			
233	0	0	267	0	0	301	66	M			
234	0	0	268	0	0	302	60	M			

RPM AND POWER SCHEDULE FOR CYCLE 2109178847
NY BUSES FWY + NFWY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
0	0	0									
1	1	5	51	104	70	101	3	M	151	0	0
2	6	43	52	97	55	102	0	0	152	2	M
3	22	70	53	65	M	103	0	0	153	0	M
4	56	70	54	59	M	104	0	0	154	0	M
5	74	70	55	54	M	105	0	0	155	0	M
6	50	M	56	24	M	106	0	0	156	0	0
7	39	M	57	6	M	107	0	0	157	0	0
8	14	M	58	0	0	108	0	0	158	0	0
9	5	M	59	0	0	109	0	0	159	0	0
10	0	0	60	0	0	110	0	0	160	0	0
11	1	M	61	0	0	111	0	0	161	0	0
12	0	M	62	0	0	112	0	0	162	6	35
13	0	0	63	4	73	113	0	0	163	55	63
14	0	0	64	43	79	114	0	0	164	85	60
15	0	0	65	51	70	115	0	0	165	88	70
16	0	0	66	55	70	116	0	0	166	85	37
17	0	0	67	68	70	117	0	0	167	81	20
18	0	0	68	82	63	118	0	0	168	83	20
19	0	0	69	87	69	119	0	0	169	85	8
20	0	0	70	90	60	120	0	0	170	83	0
21	0	0	71	94	72	121	0	0	171	78	0
22	0	0	72	91	77	122	0	0	172	66	M
23	0	0	73	91	70	123	2	36	173	56	M
24	8	23	74	93	70	124	19	100	174	28	M
25	46	M	75	78	6	125	51	100	175	21	M
26	40	M	76	74	19	126	67	100	176	5	M
27	16	M	77	74	16	127	72	60	177	0	0
28	0	0	78	56	M	128	74	80	178	0	0
29	0	23	79	51	M	129	77	83	179	1	5
30	26	4	80	43	M	130	80	90	180	17	30
31	11	M	81	33	M	131	82	90	181	46	30
32	30	9	82	6	M	132	90	67	182	51	24
33	30	M	83	0	0	133	94	51	183	68	M
34	26	M	84	0	4	134	94	17	184	28	M
35	20	M	85	5	50	135	94	10	185	13	M
36	10	M	86	43	95	136	91	70	186	2	M
37	23	15	87	77	90	137	87	47	187	1	M
38	46	49	88	82	73	138	84	1	188	0	M
39	56	70	89	86	69	139	80	M	189	0	M
40	57	70	90	80	12	140	28	M	190	0	M
41	58	75	91	83	20	141	14	4	191	0	0
42	61	80	92	79	6	142	7	35	192	0	0
43	65	80	93	50	M	143	9	M	193	0	0
44	72	80	94	42	M	144	2	M	194	0	0
45	72	80	95	44	M	145	0	M	195	0	0
46	74	80	96	32	27	146	0	M	196	0	0
47	81	72	97	61	80	147	0	M	197	0	0
48	92	60	98	59	42	148	0	0	198	0	0
49	100	60	99	33	M	149	0	0	199	0	0
50	102	69	100	14	M	150	0	0	200	0	0

RPM AND POWER SCHEDULE FOR CYCLE 2109178847 (CONTINUED)
NY BUSES FWY + NFWY 1-SEC INTERVAL
(M INDICATES MOTORING)

RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR	RECORD	%RPM	%PWR
201	0	0	223	0	0	245	0	0	267	11	41
202	0	0	224	0	0	246	0	0	268	34	51
203	0	0	225	0	0	247	0	0	269	43	10
204	0	0	226	0	0	248	0	0	270	45	10
205	0	0	227	0	0	249	0	0	271	47	M
206	0	0	228	0	0	250	0	7	272	43	M
207	0	0	229	0	0	251	18	20	273	42	M
208	0	0	230	0	0	252	48	27	274	39	M
209	0	0	231	0	0	253	56	30	275	28	M
210	0	0	232	0	0	254	76	30	276	26	39
211	0	0	233	0	0	255	77	69	277	36	94
212	0	0	234	0	0	256	78	39	278	38	90
213	0	0	235	0	0	257	71	M	279	62	90
214	0	0	236	0	0	258	70	M	280	66	20
215	0	0	237	0	0	259	68	M	281	63	13
216	0	0	238	0	0	260	66	M	282	40	M
217	0	0	239	0	0	261	56	M	283	9	M
218	0	0	240	0	0	262	10	M	284	2	M
219	0	0	241	0	0	263	1	M	285	0	0
220	0	0	242	0	0	264	0	0	286	0	0
221	0	0	243	0	0	265	0	0	287	0	0
222	0	0	244	0	0	266	0	0			

Appendix C

CHASSIS MATRICES AND CHASSIS CYCLE STATISTICS AND SCHEDULES

INPUT INITIAL SPEED VS DELTA SPEED MATRIX
LA COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
0	0	0	0	0	23690	349	114	70	43	24266
1	0	0	0	464	813	285	129	54	27	1772
2	0	0	82	381	1003	342	144	52	26	2030
3	0	50	157	352	1010	407	149	48	31	2204
4	17	44	160	369	923	432	193	74	36	2248
5	21	77	170	361	743	428	190	61	29	2080
6	36	84	178	359	804	437	190	58	25	2171
7	28	79	183	365	958	452	157	56	33	2311
8	42	93	150	337	941	490	160	54	28	2295
9	69	102	174	321	954	539	148	81	29	2417
10	59	78	140	378	1029	558	172	62	29	2505
11	55	93	163	386	1098	587	156	57	29	2624
12	54	96	172	431	1212	618	185	70	30	2868
13	88	91	159	357	1237	619	176	62	30	2819
14	65	94	151	421	1203	680	173	46	26	2859
15	68	91	192	456	1905	684	186	60	26	3668
16	63	104	180	457	1306	685	179	60	28	3062
17	59	90	177	462	1284	721	222	70	28	3113
18	59	110	167	516	1419	844	231	66	21	3433
19	54	91	182	560	3011	830	196	44	27	4995
20	65	99	209	518	3059	814	185	47	32	5028
21	55	111	184	476	2047	901	193	55	36	4058
22	62	91	171	541	3973	1002	187	52	21	6100
23	47	101	228	594	4144	995	195	39	31	6374
24	67	83	173	623	1921	1026	166	43	21	4123
25	50	98	220	591	2297	1009	162	43	36	4506
26	57	85	195	633	3149	1132	166	40	22	5479
27	57	90	199	802	4312	1186	147	33	23	6849
28	27	80	199	793	3337	1178	126	45	23	5808
29	46	98	202	672	2720	1156	137	39	28	5098
30	44	80	176	710	3422	1195	162	45	23	5857
31	37	61	204	753	5030	1280	166	37	16	7584

INPUT INITIAL SPEED VS DELTA SPEED MATRIX (CONTINUED)
LA COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
32	45	77	206	901	4334	1363	158	28	14	7126
33	47	85	204	920	4062	1520	144	34	21	7037
34	55	65	229	1125	5205	1718	213	43	11	8664
35	40	51	229	1301	5781	1928	191	40	15	9576
36	41	64	221	1293	7528	1815	151	39	7	11159
37	55	61	241	1268	7549	1732	175	42	7	11130
38	63	65	223	1216	7160	1888	196	45	2	10858
39	58	64	214	1368	9070	1994	182	42	4	12996
40	53	66	262	1565	10442	2124	149	32	6	14699
41	49	45	231	1583	12463	2116	124	35	4	16650
42	63	58	201	1659	13356	2208	143	39	3	17730
43	50	49	185	1741	12946	2511	176	30	1	17689
44	56	56	198	1887	13586	2682	151	38	0	18654
45	51	60	223	2059	16199	2642	160	33	0	21427
46	50	53	218	2069	18212	2880	173	41	0	23696
47	56	56	185	2180	21799	3220	185	28	0	27709
48	37	46	196	2523	26435	3757	206	27	1	33228
49	36	57	215	2911	31087	3835	224	28	0	38393
50	41	69	248	3209	34733	4569	284	47	0	43200
51	46	55	201	3696	39569	5794	412	31	0	49804
52	63	46	291	4397	46099	7038	460	29	1	58424
53	46	65	367	5025	53932	7020	356	45	0	66856
54	54	65	372	5040	63415	6653	341	18	0	75958
55	78	70	294	4638	66001	6947	319	13	0	78360
56	68	55	250	4591	61520	5741	229	3	0	72457
57	52	47	248	3414	42912	2954	143	2	0	49772
58	59	53	169	1624	24964	1497	108	0	0	28474
59	42	41	103	1066	14901	1318	0	0	0	17471
60	132	63	168	1078	22074	0	0	0	0	23515
TOTALS	3037	4251	11889	82786	783288	115325	11195	2555	990	1015316

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%)
LA COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	2.3333	0.0344	0.0112	0.0069	0.0042
1	0.0	0.0	0.0	0.0457	0.0801	0.0281	0.0127	0.0053	0.0027
2	0.0	0.0	0.0081	0.0375	0.0988	0.0337	0.0142	0.0051	0.0026
3	0.0	0.0049	0.0155	0.0347	0.0995	0.0401	0.0147	0.0047	0.0031
4	0.0017	0.0043	0.0158	0.0363	0.0909	0.0425	0.0190	0.0073	0.0035
5	0.0021	0.0076	0.0167	0.0356	0.0732	0.0422	0.0187	0.0060	0.0029
6	0.0035	0.0083	0.0175	0.0354	0.0792	0.0430	0.0187	0.0057	0.0025
7	0.0028	0.0078	0.0180	0.0359	0.0944	0.0445	0.0155	0.0055	0.0033
8	0.0041	0.0092	0.0148	0.0332	0.0927	0.0483	0.0158	0.0053	0.0028
9	0.0068	0.0100	0.0171	0.0316	0.0940	0.0531	0.0146	0.0080	0.0029
10	0.0058	0.0077	0.0138	0.0372	0.1013	0.0550	0.0169	0.0061	0.0029
11	0.0054	0.0092	0.0161	0.0380	0.1081	0.0578	0.0154	0.0056	0.0029
12	0.0053	0.0095	0.0169	0.0424	0.1194	0.0609	0.0182	0.0069	0.0030
13	0.0087	0.0090	0.0157	0.0352	0.1218	0.0610	0.0173	0.0061	0.0030
14	0.0064	0.0093	0.0149	0.0415	0.1185	0.0670	0.0170	0.0045	0.0026
15	0.0067	0.0090	0.0189	0.0449	0.1876	0.0674	0.0183	0.0059	0.0026
16	0.0062	0.0102	0.0177	0.0450	0.1286	0.0675	0.0176	0.0059	0.0028
17	0.0058	0.0089	0.0174	0.0455	0.1265	0.0710	0.0219	0.0069	0.0028
18	0.0058	0.0108	0.0164	0.0508	0.1398	0.0831	0.0228	0.0065	0.0021
19	0.0053	0.0090	0.0179	0.0552	0.2966	0.0817	0.0193	0.0043	0.0027
20	0.0064	0.0098	0.0206	0.0510	0.3013	0.0802	0.0182	0.0046	0.0032
21	0.0054	0.0109	0.0181	0.0469	0.2016	0.0887	0.0190	0.0054	0.0035
22	0.0061	0.0090	0.0168	0.0533	0.3913	0.0987	0.0184	0.0051	0.0021
23	0.0046	0.0099	0.0225	0.0585	0.4081	0.0980	0.0192	0.0038	0.0031
24	0.0066	0.0082	0.0170	0.0614	0.1892	0.1011	0.0163	0.0042	0.0021
25	0.0049	0.0097	0.0217	0.0582	0.2262	0.0994	0.0160	0.0042	0.0035
26	0.0056	0.0084	0.0192	0.0623	0.3101	0.1115	0.0163	0.0039	0.0022
27	0.0056	0.0089	0.0196	0.0790	0.4247	0.1168	0.0145	0.0033	0.0023
28	0.0027	0.0079	0.0196	0.0781	0.3287	0.1160	0.0124	0.0044	0.0023
29	0.0045	0.0097	0.0199	0.0662	0.2679	0.1139	0.0135	0.0038	0.0028
30	0.0043	0.0079	0.0173	0.0699	0.3370	0.1177	0.0160	0.0044	0.0023

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%) (CONTINUED)
LA COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
31	0.0036	0.0060	0.0201	0.0742	0.4954	0.1261	0.0163	0.0036	0.0016
32	0.0044	0.0076	0.0203	0.0887	0.4269	0.1342	0.0156	0.0028	0.0014
33	0.0046	0.0084	0.0201	0.0906	0.4001	0.1497	0.0142	0.0033	0.0021
34	0.0054	0.0064	0.0226	0.1108	0.5126	0.1692	0.0210	0.0042	0.0011
35	0.0039	0.0050	0.0226	0.1281	0.5694	0.1899	0.0188	0.0039	0.0015
36	0.0040	0.0063	0.0218	0.1273	0.7414	0.1788	0.0149	0.0038	0.0007
37	0.0054	0.0060	0.0237	0.1249	0.7435	0.1706	0.0172	0.0041	0.0007
38	0.0062	0.0064	0.0220	0.1198	0.7052	0.1860	0.0193	0.0044	0.0002
39	0.0057	0.0063	0.0211	0.1347	0.8933	0.1964	0.0179	0.0041	0.0004
40	0.0052	0.0065	0.0258	0.1541	1.0284	0.2092	0.0147	0.0032	0.0006
41	0.0048	0.0044	0.0228	0.1559	1.2275	0.2084	0.0122	0.0034	0.0004
42	0.0062	0.0057	0.0198	0.1634	1.3155	0.2175	0.0141	0.0038	0.0003
43	0.0049	0.0048	0.0182	0.1715	1.2751	0.2473	0.0173	0.0030	0.0001
44	0.0055	0.0055	0.0195	0.1859	1.3381	0.2642	0.0149	0.0037	0.0
45	0.0050	0.0059	0.0220	0.2028	1.5955	0.2602	0.0158	0.0033	0.0
46	0.0049	0.0052	0.0215	0.2038	1.7937	0.2837	0.0170	0.0040	0.0
47	0.0055	0.0055	0.0182	0.2147	2.1470	0.3171	0.0182	0.0028	0.0
48	0.0036	0.0045	0.0193	0.2485	2.6036	0.3700	0.0203	0.0027	0.0001
49	0.0035	0.0056	0.0212	0.2867	3.0618	0.3777	0.0221	0.0028	0.0
50	0.0040	0.0068	0.0244	0.3161	3.4209	0.4500	0.0280	0.0046	0.0
51	0.0045	0.0054	0.0198	0.3640	3.8972	0.5707	0.0406	0.0031	0.0
52	0.0062	0.0045	0.0287	0.4331	4.5404	0.6932	0.0453	0.0029	0.0001
53	0.0045	0.0064	0.0361	0.4949	5.3118	0.6914	0.0351	0.0044	0.0
54	0.0053	0.0064	0.0366	0.4964	6.2458	0.6553	0.0336	0.0018	0.0
55	0.0077	0.0069	0.0290	0.4568	6.5005	0.6842	0.0314	0.0013	0.0
56	0.0067	0.0054	0.0246	0.4522	6.0592	0.5654	0.0226	0.0003	0.0
57	0.0051	0.0046	0.0244	0.3362	4.2265	0.2909	0.0141	0.0002	0.0
58	0.0058	0.0052	0.0166	0.1600	2.4587	0.1474	0.0106	0.0	0.0
59	0.0041	0.0040	0.0101	0.1050	1.4676	0.1298	0.0	0.0	0.0
60	0.0130	0.0062	0.0165	0.1062	2.1741	0.0	0.0	0.0	0.0

TRANSITION-PROBABILITY MATRIX
LA COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	0.9763	0.9906	0.9953	0.9982	1.0000
1	0.0	0.0	0.0	0.2619	0.7207	0.8815	0.9543	0.9848	1.0000
2	0.0	0.0	0.0404	0.2281	0.7222	0.8906	0.9616	0.9872	1.0000
3	0.0	0.0227	0.0939	0.2536	0.7119	0.8966	0.9642	0.9859	1.0000
4	0.0076	0.0271	0.0983	0.2625	0.6730	0.8652	0.9511	0.9840	1.0000
5	0.0101	0.0471	0.1288	0.3024	0.6596	0.8654	0.9567	0.9861	1.0000
6	0.0166	0.0553	0.1373	0.3026	0.6730	0.8743	0.9618	0.9885	1.0000
7	0.0121	0.0463	0.1255	0.2834	0.6980	0.8936	0.9615	0.9857	1.0000
8	0.0183	0.0588	0.1242	0.2710	0.6810	0.8946	0.9643	0.9878	1.0000
9	0.0285	0.0707	0.1427	0.2755	0.6703	0.8933	0.9545	0.9880	1.0000
10	0.0236	0.0547	0.1106	0.2615	0.6723	0.8950	0.9637	0.9884	1.0000
11	0.0210	0.0564	0.1185	0.2656	0.6841	0.9078	0.9672	0.9889	1.0000
12	0.0188	0.0523	0.1123	0.2626	0.6851	0.9006	0.9651	0.9895	1.0000
13	0.0312	0.0635	0.1199	0.2465	0.6853	0.9049	0.9674	0.9894	1.0000
14	0.0227	0.0556	0.1084	0.2557	0.6765	0.9143	0.9748	0.9909	1.0000
15	0.0185	0.0433	0.0957	0.2200	0.7394	0.9258	0.9766	0.9929	1.0000
16	0.0206	0.0545	0.1133	0.2626	0.6891	0.9128	0.9713	0.9909	1.0000
17	0.0190	0.0479	0.1047	0.2531	0.6656	0.8972	0.9685	0.9910	1.0000
18	0.0172	0.0492	0.0979	0.2482	0.6615	0.9074	0.9747	0.9939	1.0000
19	0.0108	0.0290	0.0655	0.1776	0.7804	0.9465	0.9858	0.9946	1.0000
20	0.0129	0.0326	0.0742	0.1772	0.7856	0.9475	0.9843	0.9936	1.0000
21	0.0136	0.0409	0.0862	0.2035	0.7080	0.9300	0.9776	0.9911	1.0000
22	0.0102	0.0251	0.0531	0.1418	0.7931	0.9574	0.9880	0.9966	1.0000
23	0.0074	0.0232	0.0590	0.1522	0.8023	0.9584	0.9890	0.9951	1.0000
24	0.0163	0.0364	0.0783	0.2294	0.6954	0.9442	0.9845	0.9949	1.0000
25	0.0111	0.0328	0.0817	0.2128	0.7226	0.9465	0.9825	0.9920	1.0000
26	0.0104	0.0259	0.0615	0.1770	0.7518	0.9584	0.9887	0.9960	1.0000
27	0.0083	0.0215	0.0505	0.1676	0.7972	0.9704	0.9918	0.9966	1.0000
28	0.0046	0.0184	0.0527	0.1892	0.7638	0.9666	0.9883	0.9960	1.0000
29	0.0090	0.0282	0.0679	0.1997	0.7332	0.9600	0.9869	0.9945	1.0000
30	0.0075	0.0212	0.0512	0.1724	0.7567	0.9607	0.9884	0.9961	1.0000
31	0.0049	0.0129	0.0398	0.1391	0.8023	0.9711	0.9930	0.9979	1.0000

TRANSITION-PROBABILITY MATRIX (CONTINUED)
LA COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
32	0.0063	0.0171	0.0460	0.1725	0.7807	0.9719	0.9941	0.9980	1.0000
33	0.0067	0.0188	0.0477	0.1785	0.7557	0.9717	0.9922	0.9970	1.0000
34	0.0063	0.0139	0.0403	0.1701	0.7709	0.9692	0.9938	0.9987	1.0000
35	0.0042	0.0095	0.0334	0.1693	0.7730	0.9743	0.9943	0.9984	1.0000
36	0.0037	0.0094	0.0292	0.1451	0.8197	0.9823	0.9959	0.9994	1.0000
37	0.0049	0.0104	0.0321	0.1460	0.8243	0.9799	0.9956	0.9994	1.0000
38	0.0058	0.0118	0.0323	0.1443	0.8037	0.9776	0.9957	0.9998	1.0000
39	0.0045	0.0094	0.0259	0.1311	0.8290	0.9825	0.9965	0.9997	1.0000
40	0.0036	0.0081	0.0259	0.1324	0.8428	0.9873	0.9974	0.9996	1.0000
41	0.0029	0.0056	0.0195	0.1146	0.8631	0.9902	0.9977	0.9998	1.0000
42	0.0036	0.0068	0.0182	0.1117	0.8650	0.9896	0.9976	0.9998	1.0000
43	0.0028	0.0056	0.0161	0.1145	0.8463	0.9883	0.9982	0.9999	1.0000
44	0.0030	0.0060	0.0166	0.1178	0.8461	0.9899	0.9980	1.0000	1.0000
45	0.0024	0.0052	0.0156	0.1117	0.8677	0.9910	0.9985	1.0000	1.0000
46	0.0021	0.0043	0.0135	0.1009	0.8694	0.9910	0.9983	1.0000	1.0000
47	0.0020	0.0040	0.0107	0.0894	0.8761	0.9923	0.9990	1.0000	1.0000
48	0.0011	0.0025	0.0084	0.0843	0.8799	0.9930	0.9992	1.0000	1.0000
49	0.0009	0.0024	0.0080	0.0838	0.8935	0.9934	0.9993	1.0000	1.0000
50	0.0009	0.0025	0.0083	0.0826	0.8866	0.9923	0.9989	1.0000	1.0000
51	0.0009	0.0020	0.0061	0.0803	0.8748	0.9911	0.9994	1.0000	1.0000
52	0.0011	0.0019	0.0068	0.0821	0.8711	0.9916	0.9995	1.0000	1.0000
53	0.0007	0.0017	0.0071	0.0823	0.8890	0.9940	0.9993	1.0000	1.0000
54	0.0007	0.0016	0.0065	0.0728	0.9077	0.9953	0.9998	1.0000	1.0000
55	0.0010	0.0019	0.0056	0.0648	0.9071	0.9958	0.9998	1.0000	1.0000
56	0.0009	0.0017	0.0051	0.0685	0.9176	0.9968	1.0000	1.0000	1.0000
57	0.0010	0.0020	0.0070	0.0756	0.9377	0.9971	1.0000	1.0000	1.0000
58	0.0021	0.0039	0.0099	0.0669	0.9436	0.9962	1.0000	1.0000	1.0000
59	0.0024	0.0048	0.0106	0.0717	0.9246	1.0000	1.0000	1.0000	1.0000
60	0.0056	0.0083	0.0154	0.0613	1.0000	1.0000	1.0000	1.0000	1.0000

LA COMBINED GAS & DSL - FREEWAY

THE STATISTICS FOR CYCLE 1539135071 ARE AS FOLLOWS:

KOLMOGOROV-SMIRNOV DIFFERENCES:

	DIFFERENCE	SL
MATRIX:	0.0694	0.101
CRUISE:	0.1348	0.001
ACCEL:	0.1285	0.303
DECEL:	0.1626	0.135
SPEED:	0.0497	0.428
DEL SPD:	0.0641	0.157

SUMMARY PERCENTAGE MEASURES:

	INPUT	CYCLE
IDLE:	2.33	2.58
CRUISE:	74.81	62.58 *
ACCEL:	12.81	18.39
DECEL:	10.04	16.45

AVERAGE SPEED FOR INPUT MATRIX: 45.54 MPH

AVERAGE SPEED FOR CYCLE: 44.79 MPH

CYCLE DISTANCE: 3.33 MILES

CYCLE DURATION: 4.46 MINUTES

* THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE CRUISE PERCENTAGE.

DRIVING SCHEDULE FOR CYCLE 1539135071

LA GAS + DSL FREEWAY .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
0	0						
1	0	51	43	101	50	151	53
2	0	52	43	102	50	152	52
3	0	53	43	103	50	153	52
4	0	54	43	104	50	154	53
5	0	55	43	105	50	155	53
6	3	56	44	106	49	156	52
7	4	57	45	107	49	157	53
8	5	58	45	108	49	158	53
9	8	59	45	109	48	159	53
10	9	60	44	110	48	160	53
11	10	61	45	111	48	161	53
12	12	62	44	112	48	162	53
13	13	63	44	113	49	163	53
14	15	64	44	114	49	164	53
15	16	65	45	115	50	165	53
16	17	66	45	116	50	166	53
17	19	67	45	117	50	167	53
18	21	68	45	118	50	168	53
19	22	69	45	119	50	169	54
20	24	70	46	120	50	170	55
21	25	71	46	121	50	171	55
22	26	72	46	122	50	172	55
23	27	73	47	123	50	173	55
24	28	74	47	124	50	174	55
25	29	75	47	125	50	175	55
26	30	76	47	126	50	176	55
27	31	77	47	127	50	177	55
28	32	78	47	128	50	178	55
29	33	79	47	129	51	179	55
30	34	80	47	130	51	180	55
31	36	81	47	131	51	181	55
32	37	82	49	132	51	182	55
33	38	83	49	133	51	183	55
34	39	84	50	134	51	184	55
35	40	85	49	135	51	185	55
36	40	86	49	136	52	186	55
37	40	87	49	137	52	187	55
38	40	88	49	138	52	188	54
39	40	89	49	139	52	189	55
40	40	90	49	140	52	190	55
41	40	91	48	141	52	191	54
42	40	92	50	142	53	192	54
43	41	93	50	143	53	193	54
44	41	94	50	144	53	194	54
45	41	95	50	145	53	195	54
46	41	96	50	146	53	196	54
47	42	97	50	147	53	197	54
48	42	98	49	148	53	198	54
49	42	99	49	149	53	199	54
50	42	100	49	150	53	200	54

DRIVING SCHEDULE FOR CYCLE 1539135071

LA GAS + DSL FREEWAY .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
201	54	229	58	257	54	285	38
202	56	230	58	258	54	286	37
203	56	231	58	259	54	287	36
204	56	232	58	260	54	288	34
205	56	233	58	261	54	289	33
206	56	234	58	262	54	290	32
207	57	235	58	263	54	291	29
208	57	236	58	264	54	292	28
209	56	237	58	265	54	293	26
210	56	238	58	266	54	294	25
211	56	239	56	267	54	295	22
212	56	240	56	268	54	296	21
213	56	241	56	269	54	297	17
214	56	242	56	270	54	298	16
215	56	243	56	271	54	299	15
216	56	244	56	272	53	300	14
217	56	245	56	273	51	301	12
218	56	246	55	274	50	302	11
219	56	247	55	275	49	303	7
220	57	248	55	276	48	304	3
221	57	249	55	277	47	305	2
222	57	250	55	278	46	306	1
223	57	251	55	279	45	307	0
224	57	252	55	280	44	308	0
225	57	253	55	281	43	309	0
226	57	254	55	282	41	310	0
227	58	255	55	283	40		
228	58	256	54	284	39		

DRIVING SCHEDULE FOR
CYCLE 1539135071

LA GAS + DSL FREEWAY 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
0	0.0						
1	0.0	51	44.97	101	50.00	151	55.00
2	0.0	52	44.19	102	50.00	152	55.00
3	0.0	53	44.66	103	50.00	153	55.00
4	0.0	54	44.00	104	50.00	154	55.00
5	2.36	55	44.00	105	50.00	155	55.00
6	3.94	56	44.81	106	50.00	156	55.00
7	5.31	57	45.00	107	50.00	157	55.00
8	8.26	58	45.00	108	50.00	158	55.00
9	9.42	59	45.00	109	50.00	159	55.00
10	11.15	60	45.44	110	50.00	160	55.00
11	12.73	61	46.00	111	50.47	161	55.00
12	14.78	62	46.00	112	51.00	162	54.50
13	16.05	63	46.92	113	51.00	163	54.66
14	17.41	64	47.00	114	51.00	164	55.00
15	19.72	65	47.00	115	51.00	165	54.03
16	21.52	66	47.00	116	51.00	166	54.00
17	23.35	67	47.00	117	51.42	167	54.00
18	24.83	68	47.00	118	52.00	168	54.00
19	25.99	69	47.00	119	52.00	169	54.00
20	27.15	70	47.04	120	52.00	170	54.00
21	28.31	71	49.00	121	52.00	171	54.00
22	29.46	72	49.33	122	52.20	172	54.00
23	30.62	73	49.51	123	53.00	173	54.00
24	31.78	74	49.00	124	53.00	174	54.78
25	32.94	75	49.00	125	53.00	175	56.00
26	34.19	76	49.00	126	53.00	176	56.00
27	36.25	77	49.00	127	53.00	177	56.00
28	37.41	78	48.72	128	53.00	178	56.02
29	38.56	79	48.87	129	53.00	179	57.00
30	39.72	80	50.00	130	53.00	180	56.67
31	40.00	81	50.00	131	52.38	181	56.00
32	40.00	82	50.00	132	52.00	182	56.00
33	40.00	83	50.00	133	52.94	183	56.00
34	40.00	84	49.78	134	52.91	184	56.00
35	40.00	85	49.00	135	52.25	185	56.00
36	40.00	86	49.00	136	53.00	186	56.00
37	40.82	87	49.69	137	53.00	187	56.00
38	41.00	88	50.00	138	53.00	188	56.00
39	41.00	89	50.00	139	53.00	189	56.00
40	41.30	90	50.00	140	53.00	190	56.91
41	42.00	91	49.68	141	53.00	191	57.00
42	42.00	92	49.00	142	53.00	192	57.00
43	42.00	93	49.00	143	53.00	193	57.00
44	42.93	94	48.20	144	53.00	194	57.00
45	43.00	95	48.00	145	53.00	195	57.00
46	43.00	96	48.00	146	53.98	196	57.85
47	43.00	97	48.27	147	55.00	197	58.00
48	43.56	98	49.00	148	55.00	198	58.00
49	44.71	99	49.58	149	55.00	199	58.00
50	45.00	100	50.00	150	55.00	200	58.00

DRIVING SCHEDULE FOR
CYCLE 1539135071

LA GAS + DSL FREEWAY 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
201	58.00	218	55.00	235	53.01	252	28.33
202	58.00	219	55.00	236	50.85	253	26.35
203	58.00	220	55.00	237	49.69	254	25.02
204	58.00	221	54.21	238	48.54	255	21.86
205	58.00	222	54.00	239	47.38	256	19.81
206	57.15	223	54.00	240	46.22	257	16.55
207	56.00	224	54.00	241	45.06	258	15.39
208	56.00	225	54.00	242	43.91	259	14.23
209	56.00	226	54.00	243	42.50	260	12.15
210	56.00	227	54.00	244	40.59	261	10.67
211	56.00	228	54.00	245	39.44	262	6.04
212	55.63	229	54.00	246	38.28	263	2.60
213	55.00	230	54.00	247	37.12	264	1.44
214	55.00	231	54.00	248	35.93	265	0.29
215	55.00	232	54.00	249	33.81	266	0.0
216	55.00	233	54.00	250	32.65	267	0.0
217	55.00	234	54.00	251	30.47	268	0.0

INPUT INITIAL SPEED VS DELTA SPEED MATRIX
LA COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
0	0	0	0	0	371663	4739	1946	1338	529	380215
1	0	0	0	5769	10246	3492	1659	587	206	21959
2	0	0	1154	4321	9173	3697	1828	624	243	21040
3	0	890	1715	3586	9170	3933	1934	713	264	22205
4	212	600	1678	3516	9971	4207	2005	724	266	23179
5	212	670	1646	3392	9259	4444	2035	724	253	22635
6	292	840	1623	3312	9245	4343	1978	725	238	22596
7	348	868	1553	3131	8707	4206	1821	725	263	21622
8	433	869	1469	2905	7780	4284	1995	677	259	20671
9	552	867	1386	2869	7782	4641	2006	665	223	20991
10	552	787	1445	3020	7863	4587	2043	617	270	21184
11	510	775	1433	3048	6791	4506	1850	572	295	19780
12	551	985	1500	2722	6411	4646	1925	569	225	19534
13	607	821	1368	2520	5887	4500	2008	562	207	18480
14	546	796	1500	2554	5563	4513	1971	509	181	18133
15	534	855	1498	2542	5946	4497	1910	488	181	18451
16	557	870	1451	2517	5589	4441	1855	508	210	17998
17	508	843	1452	2591	5871	4605	1996	563	166	18595
18	542	802	1409	2664	6255	4921	1931	526	160	19210
19	468	764	1583	2901	6438	5085	1811	413	183	19646
20	435	750	1494	2868	6899	4990	1737	402	198	19773
21	465	772	1474	2880	7368	5053	1574	483	183	20252
22	433	690	1318	2929	8567	5139	1526	374	146	21122
23	405	657	1334	3045	9267	5258	1303	337	122	21728
24	367	609	1350	3147	8873	5261	1178	313	139	21237
25	400	609	1238	3036	9286	5192	1048	314	134	21257
26	390	500	1101	3108	9716	5203	972	282	85	21357
27	293	459	1159	3380	10140	5163	932	240	81	21847
28	222	413	1036	3479	10681	5022	725	176	76	21830
29	271	407	1017	3152	10659	4745	687	171	65	21174
30	221	320	815	3132	10821	4691	709	167	76	20952
31	190	252	779	3169	11225	4591	567	144	40	20957

INPUT INITIAL SPEED VS DELTA SPEED MATRIX (CONTINUED)
LA COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
32	165	232	708	3125	11830	4148	435	97	57	20797
33	160	234	605	2864	11767	3719	396	144	47	19936
34	156	201	502	2620	12146	3521	416	130	38	19730
35	172	151	439	2608	10936	3376	353	81	23	18139
36	137	142	447	2257	9820	2885	281	84	13	16066
37	124	133	407	1938	9488	2519	248	59	12	14928
38	161	91	285	1685	8795	2191	235	68	9	13520
39	118	81	242	1518	7075	1956	223	54	5	11272
40	91	69	237	1375	6141	1642	149	30	1	9735
41	76	63	206	1087	5427	1246	116	32	0	8253
42	70	77	148	808	4489	1063	109	37	0	6801
43	54	48	104	701	3883	981	106	30	0	5907
44	58	38	99	620	2800	783	63	25	0	4486
45	39	27	101	487	2486	598	65	22	0	3825
46	36	34	87	344	2524	530	59	12	0	3626
47	59	17	44	340	2201	518	60	10	0	3249
48	43	22	59	281	1937	444	68	12	0	2866
49	24	13	62	282	1992	402	38	6	0	2819
50	34	15	38	281	2251	380	43	6	0	3048
51	33	12	29	250	2040	378	34	7	0	2783
52	25	8	20	238	2085	374	46	5	0	2801
53	15	9	32	242	2555	333	32	4	0	3222
54	19	9	30	212	2688	308	37	1	0	3304
55	20	8	15	192	2868	288	21	3	0	3415
56	26	7	22	170	2691	210	23	1	0	3150
57	16	4	18	113	1447	143	12	1	0	1754
58	8	3	16	81	770	77	8	0	0	963
59	9	6	10	55	650	77	0	0	0	807
60	36	6	4	56	2253	0	0	0	0	2355
TOTALS	13500	22100	45994	124035	767147	183685	55141	17193	6372	1235167

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%)
LA COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	30.0901	0.3837	0.1575	0.1083	0.0428
1	0.0	0.0	0.0	0.4671	0.8295	0.2827	0.1343	0.0475	0.0167
2	0.0	0.0	0.0934	0.3498	0.7427	0.2993	0.1480	0.0505	0.0197
3	0.0	0.0721	0.1388	0.2903	0.7424	0.3184	0.1566	0.0577	0.0214
4	0.0172	0.0486	0.1359	0.2847	0.8073	0.3406	0.1623	0.0586	0.0215
5	0.0172	0.0542	0.1333	0.2746	0.7496	0.3598	0.1648	0.0586	0.0205
6	0.0236	0.0680	0.1314	0.2681	0.7485	0.3516	0.1601	0.0587	0.0193
7	0.0282	0.0703	0.1257	0.2535	0.7049	0.3405	0.1474	0.0587	0.0213
8	0.0351	0.0704	0.1189	0.2352	0.6299	0.3468	0.1615	0.0548	0.0210
9	0.0447	0.0702	0.1122	0.2323	0.6300	0.3757	0.1624	0.0538	0.0181
10	0.0447	0.0637	0.1170	0.2445	0.6366	0.3714	0.1654	0.0500	0.0219
11	0.0413	0.0627	0.1160	0.2468	0.5498	0.3648	0.1498	0.0463	0.0239
12	0.0446	0.0797	0.1214	0.2204	0.5190	0.3761	0.1558	0.0461	0.0182
13	0.0491	0.0665	0.1108	0.2040	0.4766	0.3643	0.1626	0.0455	0.0168
14	0.0442	0.0644	0.1214	0.2068	0.4504	0.3654	0.1596	0.0412	0.0147
15	0.0432	0.0692	0.1213	0.2058	0.4814	0.3641	0.1546	0.0395	0.0147
16	0.0451	0.0704	0.1175	0.2038	0.4525	0.3595	0.1502	0.0411	0.0170
17	0.0411	0.0632	0.1176	0.2098	0.4753	0.3728	0.1616	0.0456	0.0134
18	0.0439	0.0649	0.1141	0.2157	0.5064	0.3984	0.1563	0.0426	0.0130
19	0.0379	0.0619	0.1282	0.2349	0.5212	0.4117	0.1466	0.0334	0.0148
20	0.0352	0.0607	0.1210	0.2322	0.5585	0.4040	0.1406	0.0325	0.0160
21	0.0376	0.0625	0.1193	0.2332	0.5965	0.4091	0.1274	0.0391	0.0148
22	0.0351	0.0559	0.1067	0.2371	0.6936	0.4161	0.1235	0.0303	0.0118
23	0.0328	0.0532	0.1080	0.2465	0.7503	0.4257	0.1055	0.0273	0.0099
24	0.0297	0.0493	0.1093	0.2548	0.7184	0.4259	0.0954	0.0253	0.0113
25	0.0324	0.0493	0.1002	0.2458	0.7518	0.4203	0.0848	0.0254	0.0108
26	0.0316	0.0405	0.0891	0.2516	0.7866	0.4212	0.0787	0.0228	0.0069
27	0.0237	0.0372	0.0938	0.2736	0.8209	0.4180	0.0755	0.0194	0.0066
28	0.0180	0.0334	0.0839	0.2817	0.8647	0.4066	0.0587	0.0142	0.0062
29	0.0219	0.0330	0.0823	0.2552	0.8630	0.3842	0.0556	0.0138	0.0053
30	0.0179	0.0259	0.0660	0.2536	0.8761	0.3798	0.0574	0.0135	0.0062

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%) (CONTINUED)
LA COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
31	0.0154	0.0204	0.0631	0.2566	0.9088	0.3717	0.0459	0.0117	0.0032
32	0.0134	0.0188	0.0573	0.2530	0.9578	0.3358	0.0352	0.0079	0.0046
33	0.0130	0.0189	0.0490	0.2319	0.9527	0.3011	0.0321	0.0117	0.0038
34	0.0126	0.0163	0.0406	0.2121	0.9833	0.2851	0.0337	0.0105	0.0031
35	0.0139	0.0122	0.0355	0.2111	0.8854	0.2733	0.0286	0.0066	0.0019
36	0.0111	0.0115	0.0362	0.1827	0.7950	0.2336	0.0227	0.0068	0.0011
37	0.0100	0.0108	0.0330	0.1569	0.7682	0.2039	0.0201	0.0048	0.0010
38	0.0130	0.0074	0.0231	0.1364	0.7120	0.1774	0.0190	0.0055	0.0007
39	0.0096	0.0066	0.0196	0.1229	0.5728	0.1584	0.0181	0.0044	0.0004
40	0.0074	0.0056	0.0192	0.1113	0.4972	0.1329	0.0121	0.0024	0.0001
41	0.0062	0.0051	0.0167	0.0880	0.4394	0.1009	0.0094	0.0026	0.0
42	0.0057	0.0062	0.0120	0.0654	0.3634	0.0861	0.0088	0.0030	0.0
43	0.0044	0.0039	0.0084	0.0568	0.3144	0.0794	0.0086	0.0024	0.0
44	0.0047	0.0031	0.0080	0.0502	0.2267	0.0634	0.0051	0.0020	0.0
45	0.0032	0.0022	0.0082	0.0394	0.2013	0.0484	0.0053	0.0018	0.0
46	0.0029	0.0028	0.0070	0.0279	0.2043	0.0429	0.0048	0.0010	0.0
47	0.0048	0.0014	0.0036	0.0275	0.1782	0.0419	0.0049	0.0008	0.0
48	0.0035	0.0018	0.0048	0.0227	0.1568	0.0359	0.0055	0.0010	0.0
49	0.0019	0.0011	0.0050	0.0228	0.1613	0.0325	0.0031	0.0005	0.0
50	0.0028	0.0012	0.0031	0.0227	0.1822	0.0308	0.0035	0.0005	0.0
51	0.0027	0.0010	0.0023	0.0202	0.1652	0.0306	0.0028	0.0006	0.0
52	0.0020	0.0006	0.0016	0.0193	0.1688	0.0303	0.0037	0.0004	0.0
53	0.0012	0.0007	0.0026	0.0196	0.2069	0.0270	0.0026	0.0003	0.0
54	0.0015	0.0007	0.0024	0.0172	0.2176	0.0249	0.0030	0.0001	0.0
55	0.0016	0.0006	0.0012	0.0155	0.2322	0.0233	0.0017	0.0002	0.0
56	0.0021	0.0006	0.0018	0.0138	0.2179	0.0170	0.0019	0.0001	0.0
57	0.0013	0.0003	0.0015	0.0091	0.1172	0.0116	0.0010	0.0001	0.0
58	0.0006	0.0002	0.0013	0.0066	0.0623	0.0062	0.0006	0.0	0.0
59	0.0007	0.0005	0.0008	0.0045	0.0526	0.0062	0.0	0.0	0.0
60	0.0029	0.0005	0.0003	0.0045	0.1824	0.0	0.0	0.0	0.0

TRANSITION-PROBABILITY MATRIX
LA COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	0.9775	0.9900	0.9951	0.9986	1.0000
1	0.0	0.0	0.0	0.2627	0.7293	0.8883	0.9639	0.9906	1.0000
2	0.0	0.0	0.0548	0.2602	0.6962	0.8719	0.9588	0.9885	1.0000
3	0.0	0.0401	0.1173	0.2788	0.6918	0.8689	0.9560	0.9881	1.0000
4	0.0091	0.0350	0.1074	0.2591	0.6893	0.8708	0.9573	0.9885	1.0000
5	0.0094	0.0390	0.1117	0.2615	0.6706	0.8669	0.9568	0.9888	1.0000
6	0.0129	0.0501	0.1219	0.2685	0.6776	0.8698	0.9574	0.9895	1.0000
7	0.0161	0.0562	0.1281	0.2729	0.6756	0.8701	0.9543	0.9878	1.0000
8	0.0209	0.0630	0.1341	0.2746	0.6510	0.8582	0.9547	0.9875	1.0000
9	0.0263	0.0676	0.1336	0.2703	0.6410	0.8621	0.9577	0.9894	1.0000
10	0.0261	0.0632	0.1314	0.2740	0.6452	0.8617	0.9581	0.9873	1.0000
11	0.0258	0.0650	0.1374	0.2915	0.6348	0.8626	0.9562	0.9851	1.0000
12	0.0282	0.0786	0.1554	0.2948	0.6230	0.8608	0.9594	0.9885	1.0000
13	0.0328	0.0773	0.1513	0.2877	0.6062	0.8497	0.9584	0.9888	1.0000
14	0.0301	0.0740	0.1567	0.2976	0.6044	0.8533	0.9619	0.9900	1.0000
15	0.0289	0.0753	0.1565	0.2942	0.6165	0.8602	0.9637	0.9902	1.0000
16	0.0309	0.0793	0.1599	0.2998	0.6103	0.8570	0.9601	0.9883	1.0000
17	0.0273	0.0727	0.1507	0.2901	0.6058	0.8535	0.9608	0.9911	1.0000
18	0.0282	0.0700	0.1433	0.2820	0.6076	0.8638	0.9643	0.9917	1.0000
19	0.0238	0.0627	0.1433	0.2909	0.6187	0.8775	0.9697	0.9907	1.0000
20	0.0220	0.0599	0.1355	0.2805	0.6294	0.8818	0.9697	0.9900	1.0000
21	0.0230	0.0611	0.1339	0.2761	0.6399	0.8894	0.9671	0.9910	1.0000
22	0.0205	0.0532	0.1156	0.2542	0.6598	0.9031	0.9754	0.9931	1.0000
23	0.0186	0.0489	0.1103	0.2504	0.6769	0.9189	0.9789	0.9944	1.0000
24	0.0173	0.0460	0.1095	0.2577	0.6755	0.9232	0.9787	0.9935	1.0000
25	0.0138	0.0475	0.1057	0.2485	0.6854	0.9296	0.9789	0.9937	1.0000
26	0.0183	0.0417	0.0932	0.2388	0.6937	0.9373	0.9828	0.9960	1.0000
27	0.0134	0.0344	0.0875	0.2422	0.7063	0.9426	0.9853	0.9963	1.0000
28	0.0102	0.0291	0.0765	0.2359	0.7252	0.9552	0.9885	0.9965	1.0000
29	0.0128	0.0320	0.0801	0.2289	0.7323	0.9564	0.9889	0.9969	1.0000
30	0.0105	0.0258	0.0647	0.2142	0.7307	0.9546	0.9884	0.9964	1.0000
31	0.0091	0.0211	0.0563	0.2095	0.7451	0.9642	0.9912	0.9981	1.0000

TRANSITION-PROBABILITY MATRIX (CONTINUED)
LA COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
32	0.0079	0.0191	0.0531	0.2034	0.7722	0.9717	0.9926	0.9973	1.0000
33	0.0080	0.0198	0.0501	0.1938	0.7840	0.9706	0.9904	0.9976	1.0000
34	0.0079	0.0181	0.0435	0.1763	0.7919	0.9704	0.9915	0.9981	1.0000
35	0.0095	0.0178	0.0420	0.1858	0.7887	0.9748	0.9943	0.9987	1.0000
36	0.0085	0.0174	0.0452	0.1857	0.7969	0.9765	0.9940	0.9992	1.0000
37	0.0083	0.0172	0.0445	0.1743	0.8099	0.9786	0.9952	0.9992	1.0000
38	0.0119	0.0186	0.0397	0.1643	0.8149	0.9769	0.9943	0.9993	1.0000
39	0.0105	0.0177	0.0391	0.1738	0.8015	0.9750	0.9948	0.9996	1.0000
40	0.0093	0.0164	0.0408	0.1820	0.8128	0.9815	0.9968	0.9999	1.0000
41	0.0092	0.0168	0.0418	0.1735	0.8311	0.9821	0.9961	1.0000	1.0000
42	0.0103	0.0216	0.0434	0.1622	0.8222	0.9785	0.9946	1.0000	1.0000
43	0.0091	0.0173	0.0349	0.1535	0.8109	0.9770	0.9949	1.0000	1.0000
44	0.0129	0.0214	0.0435	0.1817	0.8058	0.9804	0.9944	1.0000	1.0000
45	0.0102	0.0173	0.0437	0.1710	0.8209	0.9773	0.9942	1.0000	1.0000
46	0.0099	0.0193	0.0433	0.1382	0.8343	0.9804	0.9967	1.0000	1.0000
47	0.0182	0.0234	0.0369	0.1416	0.8190	0.9785	0.9969	1.0000	1.0000
48	0.0150	0.0227	0.0433	0.1413	0.8172	0.9721	0.9958	1.0000	1.0000
49	0.0085	0.0131	0.0351	0.1352	0.8418	0.9844	0.9979	1.0000	1.0000
50	0.0112	0.0161	0.0285	0.1207	0.8593	0.9839	0.9980	1.0000	1.0000
51	0.0119	0.0162	0.0266	0.1164	0.8494	0.9853	0.9975	1.0000	1.0000
52	0.0089	0.0118	0.0189	0.1039	0.8483	0.9818	0.9982	1.0000	1.0000
53	0.0047	0.0074	0.0174	0.0925	0.8855	0.9888	0.9988	1.0000	1.0000
54	0.0058	0.0085	0.0176	0.0817	0.8953	0.9885	0.9997	1.0000	1.0000
55	0.0059	0.0082	0.0126	0.0688	0.9086	0.9930	0.9991	1.0000	1.0000
56	0.0083	0.0105	0.0175	0.0714	0.9257	0.9924	0.9997	1.0000	1.0000
57	0.0091	0.0114	0.0217	0.0861	0.9111	0.9926	0.9994	1.0000	1.0000
58	0.0083	0.0114	0.0280	0.1121	0.9117	0.9917	1.0000	1.0000	1.0000
59	0.0112	0.0186	0.0310	0.0991	0.9046	1.0000	1.0000	1.0000	1.0000
60	0.0153	0.0178	0.0195	0.0433	1.0000	1.0000	1.0000	1.0000	1.0000

LA COMBINED GAS & DSL - NONFREEWAY

THE STATISTICS FOR CYCLE 2106204593 ARE AS FOLLOWS:

KOLMOGOROV-SMIRNOV DIFFERENCES:

	DIFFERENCE	SL
MATRIX:	0.0512	0.353
CRUISE:	0.0580	0.542
ACCEL:	0.0850	0.700
DECEL:	0.1119	0.344
SPEED:	0.0578	0.220
DEL SPD:	0.0456	0.498

SUMMARY PERCENTAGE MEASURES:

	INPUT	CYCLE
IDLE:	30.09	28.79
CRUISE:	32.02	29.09 *
ACCEL:	21.24	20.91
DECEL:	16.65	21.21

AVERAGE SPEED FOR INPUT MATRIX:	15.10 MPH
AVERAGE SPEED FOR CYCLE:	14.55 MPH
CYCLE DISTANCE:	1.15 MILES
CYCLE DURATION:	4.75 MINUTES

* THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE CRUISE PERCENTAGE.

DRIVING SCHEDULE FOR CYCLE 2106204593

LA GAS + DSL NON-FREEWAY .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
0	0						
1	0	51	0	101	14	151	16
2	0	52	0	102	17	152	15
3	0	53	0	103	16	153	16
4	0	54	1	104	16	154	16
5	0	55	0	105	12	155	16
6	0	56	0	106	13	156	16
7	0	57	2	107	13	157	17
8	0	58	2	108	13	158	18
9	0	59	3	109	13	159	19
10	0	60	6	110	16	160	19
11	0	61	4	111	12	161	20
12	0	62	4	112	12	162	21
13	0	63	4	113	11	163	21
14	0	64	3	114	11	164	21
15	0	65	1	115	11	165	21
16	0	66	1	116	11	166	20
17	0	67	0	117	12	167	20
18	0	68	0	118	13	168	19
19	0	69	0	119	11	169	19
20	0	70	0	120	8	170	19
21	0	71	0	121	6	171	18
22	0	72	0	122	4	172	19
23	0	73	0	123	5	173	19
24	0	74	0	124	7	174	20
25	0	75	0	125	8	175	20
26	0	76	1	126	8	176	20
27	0	77	2	127	7	177	20
28	0	78	2	128	7	178	20
29	0	79	5	129	6	179	20
30	0	80	5	130	9	180	20
31	0	81	6	131	11	181	19
32	0	82	7	132	11	182	21
33	0	83	8	133	10	183	22
34	0	84	6	134	11	184	21
35	0	85	7	135	10	185	20
36	0	86	7	136	11	186	22
37	0	87	7	137	11	187	22
38	0	88	7	138	13	188	22
39	0	89	7	139	15	189	23
40	0	90	7	140	14	190	23
41	0	91	7	141	16	191	24
42	0	92	8	142	17	192	25
43	0	93	8	143	17	193	29
44	0	94	8	144	17	194	29
45	0	95	7	145	17	195	29
46	0	96	11	146	17	196	29
47	0	97	12	147	15	197	31
48	0	98	16	148	16	198	31
49	0	99	12	149	14	199	30
50	0	100	11	150	14	200	30

DRIVING SCHEDULE FOR CYCLE 2106204593

LA GAS + DSL NCN-FREEWAY .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
201	30	234	32	267	40	300	0
202	30	235	33	268	40	301	0
203	31	236	33	269	39	302	0
204	31	237	33	270	37	303	0
205	32	238	33	271	37	304	0
206	31	239	34	272	36	305	0
207	31	240	34	273	35	306	0
208	32	241	35	274	34	307	0
209	33	242	35	275	33	308	0
210	33	243	35	276	32	309	0
211	33	244	35	277	28	310	0
212	34	245	35	278	26	311	0
213	34	246	35	279	22	312	0
214	35	247	35	280	20	313	0
215	36	248	35	281	19	314	0
216	36	249	36	282	18	315	0
217	36	250	38	283	17	316	0
218	34	251	38	284	16	317	0
219	33	252	38	285	14	318	0
220	32	253	37	286	13	319	0
221	32	254	40	287	12	320	0
222	32	255	39	288	11	321	0
223	32	256	39	289	10	322	0
224	32	257	39	290	8	323	0
225	32	258	38	291	7	324	0
226	32	259	39	292	6	325	0
227	33	260	39	293	4	326	0
228	33	261	40	294	3	327	0
229	34	262	41	295	2	328	0
230	34	263	42	296	1	329	0
231	33	264	42	297	0	330	0
232	32	265	42	298	0		
233	32	266	40	299	0		

DRIVING SCHEDULE FOR
CYCLE 2106204593

LA GAS + DSL NON-FREEWAY 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
0	0.0						
1	0.0	51	3.08	101	11.90	151	20.00
2	0.0	52	5.63	102	12.89	152	20.00
3	0.0	53	4.00	103	10.36	153	20.00
4	0.0	54	4.00	104	7.26	154	20.00
5	0.0	55	3.34	105	4.94	155	20.00
6	0.0	56	1.37	106	4.69	156	19.44
7	0.0	57	1.00	107	6.69	157	20.43
8	0.0	58	0.0	108	8.00	158	21.87
9	0.0	59	0.0	109	7.84	159	20.97
10	0.0	60	0.0	110	7.00	160	20.37
11	0.0	61	0.0	111	6.53	161	22.00
12	0.0	62	0.0	112	7.89	162	22.00
13	0.0	63	0.0	113	10.57	163	22.66
14	0.0	64	0.0	114	11.00	164	23.00
15	0.0	65	0.23	115	10.10	165	23.97
16	0.0	66	1.39	116	10.74	166	25.52
17	0.0	67	2.00	117	10.42	167	29.00
18	0.0	68	4.11	118	11.00	168	29.00
19	0.0	69	5.00	119	12.46	169	29.00
20	0.0	70	6.02	120	14.78	170	30.52
21	0.0	71	7.18	121	14.09	171	31.00
22	0.0	72	7.33	122	16.20	172	30.00
23	0.0	73	6.49	123	17.00	173	30.00
24	0.0	74	7.00	124	17.00	174	30.00
25	0.0	75	7.00	125	17.00	175	30.55
26	0.0	76	7.00	126	17.00	176	31.00
27	0.0	77	7.00	127	15.02	177	31.86
28	0.0	78	7.00	128	15.70	178	31.00
29	0.0	79	7.44	129	14.00	179	31.18
30	0.0	80	8.00	130	14.93	180	32.33
31	0.0	81	8.00	131	15.38	181	33.00
32	0.0	82	7.09	132	15.78	182	33.00
33	0.0	83	11.06	133	16.00	183	33.81
34	0.0	84	12.89	134	16.00	184	34.00
35	0.0	85	14.48	135	16.25	185	35.12
36	0.0	86	11.46	136	17.41	186	36.00
37	0.0	87	13.08	137	18.56	187	36.00
38	0.0	88	16.56	138	19.00	188	34.81
39	0.0	89	16.00	139	19.88	189	33.25
40	0.0	90	15.33	140	21.00	190	32.09
41	0.0	91	12.32	141	21.00	191	32.00
42	0.0	92	13.00	142	21.00	192	32.00
43	0.0	93	13.00	143	20.49	193	32.00
44	0.0	94	13.00	144	20.00	194	32.00
45	0.0	95	15.86	145	19.18	195	32.00
46	0.24	96	12.00	146	19.00	196	32.85
47	0.60	97	11.73	147	18.86	197	33.01
48	0.0	98	11.00	148	18.30	198	34.00
49	1.43	99	11.00	149	19.00	199	33.68
50	2.00	100	11.00	150	19.61	200	32.52

DRIVING SCHEDULE FOR
CYCLE 2106204593

LA GAS + DSL NON-FREEWAY 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
201	32.00	223	38.10	245	16.44	267	0.0
202	32.00	224	39.00	246	14.56	268	0.0
203	32.95	225	39.42	247	13.12	269	0.0
204	33.00	226	40.57	248	11.96	270	0.0
205	33.00	227	41.73	249	10.81	271	0.0
206	33.43	228	42.00	250	9.30	272	0.0
207	34.00	229	41.91	251	7.49	273	0.0
208	34.74	230	40.00	252	6.33	274	0.0
209	35.00	231	40.00	253	4.35	275	0.0
210	35.00	232	39.48	254	3.02	276	0.0
211	35.00	233	37.65	255	1.86	277	0.0
212	35.00	234	37.00	256	0.70	278	0.0
213	35.00	235	36.01	257	0.0	279	0.0
214	35.00	236	34.85	258	0.0	280	0.0
215	35.84	237	33.69	259	0.0	281	0.0
216	38.00	238	32.54	260	0.0	282	0.0
217	38.00	239	29.52	261	0.0	283	0.0
218	37.69	240	26.44	262	0.0	284	0.0
219	38.42	241	22.26	263	0.0	285	0.0
220	39.37	242	19.91	264	0.0		
221	39.00	243	18.75	265	0.0		
222	39.00	244	17.59	266	0.0		

INPUT INITIAL SPEED VS DELTA SPEED MATRIX
NY COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
0	0	0	0	0	55574	1058	318	217	63	57230
1	0	0	0	859	1355	843	258	90	25	3430
2	0	0	493	750	1302	673	306	64	24	3612
3	0	224	288	772	1797	729	250	74	39	4173
4	69	65	284	714	1925	720	249	77	44	4147
5	23	65	267	760	1875	786	266	69	38	4149
6	27	62	223	803	1765	785	254	62	50	4031
7	24	64	248	761	1682	777	184	49	42	3831
8	30	97	228	778	1721	735	184	60	35	3868
9	44	84	155	697	1802	765	251	92	38	3928
10	57	50	185	731	1884	855	223	66	35	4086
11	47	69	226	772	1805	845	195	46	31	4036
12	40	92	240	719	1775	804	203	74	40	3987
13	61	96	220	602	1857	726	219	117	31	3929
14	58	75	221	601	1909	744	199	71	32	3910
15	45	81	241	697	1785	777	187	44	38	3895
16	55	68	238	669	1810	710	167	62	55	3834
17	55	92	193	635	1688	703	215	79	59	3719
18	65	72	179	625	1643	725	232	97	61	3699
19	43	67	250	646	1379	762	224	86	55	3512
20	57	83	261	663	1356	723	221	83	68	3515
21	53	90	228	631	1503	786	264	106	70	3731
22	73	111	239	653	1489	754	235	100	84	3738
23	76	97	256	618	1568	838	282	127	50	3912
24	73	92	251	766	1628	967	314	108	57	4256
25	93	96	286	794	1936	912	274	115	38	4544
26	115	100	293	777	2434	970	331	115	44	5179
27	117	107	248	834	2282	1067	356	138	43	5192
28	108	124	283	978	2307	1129	325	165	34	5453
29	108	89	335	990	2479	1187	302	155	21	5666
30	101	99	359	963	2708	1126	326	150	18	5850
31	108	137	301	1010	2889	1353	418	123	12	6351

INPUT INITIAL SPEED VS DELTA SPEED MATRIX (CONTINUED)
NY COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
32	96	120	340	1196	3465	1422	369	97	10	7115
33	121	118	401	1287	3783	1399	324	91	4	7528
34	102	114	308	1172	3486	1367	318	84	7	6958
35	109	101	303	1120	3498	1438	385	96	1	7051
36	102	95	302	1281	3710	1401	358	76	8	7333
37	101	83	355	1189	3804	1346	350	51	2	7281
38	87	90	350	1196	4089	1292	282	57	0	7443
39	102	88	266	1155	3956	1340	317	43	0	7267
40	92	81	258	1190	4194	1334	330	50	1	7530
41	98	71	266	1109	3749	1306	345	38	1	6983
42	81	76	285	1115	3677	1249	309	21	0	6813
43	73	91	291	1126	3888	1190	247	9	0	6915
44	66	68	252	1023	3978	1377	312	12	0	7088
45	46	59	248	1161	3964	1598	415	14	0	7505
46	28	45	312	1305	3876	1436	303	11	0	7316
47	23	87	375	1297	3599	1336	209	15	0	6941
48	20	69	237	1093	3667	1535	217	10	0	6848
49	17	43	247	1149	3580	1414	254	17	0	6721
50	18	41	295	1102	3093	1224	178	17	0	5968
51	27	38	269	1012	2908	941	115	10	0	5320
52	23	36	171	793	2612	879	85	9	0	4608
53	22	31	120	658	2303	708	86	7	0	3935
54	14	34	129	566	1683	505	58	5	0	2994
55	13	27	112	422	1430	472	63	3	0	2542
56	14	34	74	370	1412	407	46	2	0	2359
57	15	28	69	341	1206	366	56	0	0	2081
58	17	22	55	313	1110	309	30	0	0	1856
59	12	13	62	234	957	312	0	0	0	1590
60	10	25	62	272	796	0	0	0	0	1165
TOTALS	3374	4476	14533	50515	200385	58237	14593	3926	1408	351447

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%)
NY COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	15.8129	0.3010	0.0905	0.0617	0.0179
1	0.0	0.0	0.0	0.2444	0.3855	0.2399	0.0734	0.0256	0.0071
2	0.0	0.0	0.1403	0.2134	0.3705	0.1915	0.0871	0.0182	0.0068
3	0.0	0.0637	0.0819	0.2197	0.5113	0.2074	0.0711	0.0211	0.0111
4	0.0196	0.0185	0.0808	0.2032	0.5477	0.2049	0.0708	0.0219	0.0125
5	0.0065	0.0185	0.0760	0.2162	0.5335	0.2236	0.0757	0.0196	0.0108
6	0.0077	0.0176	0.0635	0.2285	0.5022	0.2234	0.0723	0.0176	0.0142
7	0.0068	0.0182	0.0706	0.2165	0.4786	0.2211	0.0524	0.0139	0.0120
8	0.0085	0.0276	0.0649	0.2214	0.4897	0.2091	0.0524	0.0171	0.0100
9	0.0125	0.0239	0.0441	0.1983	0.5127	0.2177	0.0714	0.0262	0.0108
10	0.0162	0.0142	0.0526	0.2080	0.5361	0.2433	0.0635	0.0188	0.0100
11	0.0134	0.0196	0.0643	0.2197	0.5136	0.2404	0.0555	0.0131	0.0088
12	0.0114	0.0262	0.0683	0.2046	0.5051	0.2288	0.0578	0.0211	0.0114
13	0.0174	0.0273	0.0626	0.1713	0.5284	0.2066	0.0623	0.0333	0.0088
14	0.0165	0.0213	0.0629	0.1710	0.5432	0.2117	0.0566	0.0202	0.0091
15	0.0128	0.0230	0.0686	0.1983	0.5079	0.2211	0.0532	0.0125	0.0108
16	0.0156	0.0193	0.0677	0.1904	0.5150	0.2020	0.0475	0.0176	0.0156
17	0.0156	0.0262	0.0549	0.1807	0.4803	0.2000	0.0612	0.0225	0.0168
18	0.0185	0.0205	0.0509	0.1778	0.4675	0.2063	0.0660	0.0276	0.0174
19	0.0122	0.0191	0.0711	0.1838	0.3924	0.2168	0.0637	0.0245	0.0156
20	0.0162	0.0236	0.0743	0.1886	0.3858	0.2057	0.0629	0.0236	0.0193
21	0.0151	0.0256	0.0649	0.1795	0.4277	0.2236	0.0751	0.0302	0.0199
22	0.0208	0.0316	0.0680	0.1858	0.4237	0.2145	0.0669	0.0285	0.0239
23	0.0216	0.0276	0.0728	0.1758	0.4462	0.2384	0.0802	0.0361	0.0142
24	0.0208	0.0262	0.0714	0.2180	0.4632	0.2751	0.0893	0.0307	0.0162
25	0.0265	0.0273	0.0814	0.2259	0.5509	0.2595	0.0780	0.0327	0.0108
26	0.0327	0.0285	0.0834	0.2211	0.6926	0.2760	0.0942	0.0327	0.0125
27	0.0333	0.0304	0.0706	0.2373	0.6493	0.3036	0.1013	0.0393	0.0122
28	0.0307	0.0353	0.0805	0.2783	0.6564	0.3212	0.0925	0.0469	0.0097
29	0.0307	0.0253	0.0953	0.2817	0.7054	0.3377	0.0859	0.0441	0.0060
30	0.0287	0.0282	0.1021	0.2740	0.7705	0.3204	0.0928	0.0427	0.0051

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%) (CONTINUED)
NY COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
31	0.0307	0.0390	0.0856	0.2874	0.8220	0.3850	0.1189	0.0350	0.0034
32	0.0273	0.0341	0.0967	0.3403	0.9859	0.4046	0.1050	0.0276	0.0028
33	0.0344	0.0336	0.1141	0.3662	1.0764	0.3981	0.0922	0.0259	0.0011
34	0.0290	0.0324	0.0876	0.3335	0.9919	0.3890	0.0905	0.0239	0.0020
35	0.0310	0.0287	0.0862	0.3187	0.9953	0.4092	0.1095	0.0273	0.0003
36	0.0290	0.0270	0.0859	0.3645	1.0556	0.3986	0.1019	0.0216	0.0023
37	0.0287	0.0236	0.1010	0.3383	1.0824	0.3830	0.0996	0.0145	0.0006
38	0.0248	0.0256	0.0996	0.3403	1.1635	0.3676	0.0802	0.0162	0.0
39	0.0290	0.0250	0.0757	0.3286	1.1256	0.3813	0.0902	0.0122	0.0
40	0.0262	0.0230	0.0734	0.3386	1.1934	0.3796	0.0939	0.0142	0.0003
41	0.0279	0.0202	0.0757	0.3156	1.0667	0.3716	0.0982	0.0108	0.0003
42	0.0230	0.0216	0.0811	0.3173	1.0462	0.3554	0.0879	0.0060	0.0
43	0.0208	0.0259	0.0828	0.3204	1.1063	0.3386	0.0703	0.0026	0.0
44	0.0188	0.0193	0.0717	0.2911	1.1319	0.3918	0.0888	0.0034	0.0
45	0.0131	0.0168	0.0706	0.3303	1.1279	0.4547	0.1181	0.0040	0.0
46	0.0080	0.0128	0.0888	0.3713	1.1029	0.4086	0.0862	0.0031	0.0
47	0.0065	0.0248	0.1067	0.3690	1.0241	0.3801	0.0595	0.0043	0.0
48	0.0057	0.0196	0.0674	0.3110	1.0434	0.4368	0.0617	0.0028	0.0
49	0.0048	0.0122	0.0703	0.3269	1.0186	0.4023	0.0723	0.0048	0.0
50	0.0051	0.0117	0.0839	0.3136	0.8801	0.3483	0.0506	0.0048	0.0
51	0.0077	0.0108	0.0765	0.2880	0.8274	0.2678	0.0327	0.0028	0.0
52	0.0065	0.0102	0.0487	0.2256	0.7432	0.2501	0.0242	0.0026	0.0
53	0.0063	0.0088	0.0341	0.1872	0.6553	0.2015	0.0245	0.0020	0.0
54	0.0040	0.0097	0.0367	0.1610	0.4789	0.1437	0.0165	0.0014	0.0
55	0.0037	0.0077	0.0319	0.1201	0.4069	0.1343	0.0179	0.0009	0.0
56	0.0040	0.0097	0.0211	0.1053	0.4018	0.1158	0.0131	0.0006	0.0
57	0.0043	0.0080	0.0196	0.0970	0.3432	0.1041	0.0159	0.0	0.0
58	0.0048	0.0063	0.0156	0.0891	0.3158	0.0879	0.0085	0.0	0.0
59	0.0034	0.0037	0.0176	0.0666	0.2723	0.0888	0.0	0.0	0.0
60	0.0028	0.0071	0.0176	0.0774	0.2265	0.0	0.0	0.0	0.0

TRANSITION-PROBABILITY MATRIX
NY COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	0.9711	0.9896	0.9951	0.9989	1.0000
1	0.0	0.0	0.0	0.2504	0.6455	0.8913	0.9665	0.9927	1.0000
2	0.0	0.0	0.1365	0.3441	0.7046	0.8909	0.9756	0.9934	1.0000
3	0.0	0.0537	0.1227	0.3077	0.7383	0.9130	0.9729	0.9907	1.0000
4	0.0166	0.0323	0.1008	0.2730	0.7372	0.9108	0.9708	0.9894	1.0000
5	0.0055	0.0212	0.0856	0.2687	0.7207	0.9101	0.9742	0.9908	1.0000
6	0.0067	0.0221	0.0774	0.2766	0.7145	0.9092	0.9722	0.9876	1.0000
7	0.0063	0.0230	0.0877	0.2863	0.7254	0.9282	0.9762	0.9890	1.0000
8	0.0078	0.0328	0.0918	0.2929	0.7378	0.9279	0.9754	0.9910	1.0000
9	0.0112	0.0326	0.0720	0.2495	0.7082	0.9030	0.9669	0.9903	1.0000
10	0.0140	0.0262	0.0715	0.2504	0.7115	0.9207	0.9753	0.9914	1.0000
11	0.0116	0.0287	0.0847	0.2760	0.7232	0.9326	0.9809	0.9923	1.0000
12	0.0100	0.0331	0.0933	0.2736	0.7188	0.9205	0.9714	0.9900	1.0000
13	0.0155	0.0400	0.0960	0.2492	0.7218	0.9066	0.9623	0.9921	1.0000
14	0.0148	0.0340	0.0905	0.2442	0.7325	0.9228	0.9737	0.9918	1.0000
15	0.0116	0.0323	0.0942	0.2732	0.7315	0.9309	0.9789	0.9902	1.0000
16	0.0143	0.0321	0.0942	0.2686	0.7407	0.9259	0.9695	0.9857	1.0000
17	0.0148	0.0395	0.0914	0.2622	0.7161	0.9051	0.9629	0.9841	1.0000
18	0.0176	0.0370	0.0854	0.2544	0.6986	0.8946	0.9573	0.9835	1.0000
19	0.0122	0.0313	0.1025	0.2864	0.6791	0.8961	0.9599	0.9843	1.0000
20	0.0162	0.0398	0.1141	0.3027	0.6885	0.8942	0.9570	0.9807	1.0000
21	0.0142	0.0383	0.0994	0.2686	0.6714	0.8821	0.9528	0.9812	1.0000
22	0.0195	0.0492	0.1132	0.2879	0.6862	0.8879	0.9508	0.9775	1.0000
23	0.0194	0.0442	0.1057	0.2676	0.6685	0.8827	0.9548	0.9872	1.0000
24	0.0172	0.0388	0.0977	0.2777	0.6602	0.8875	0.9612	0.9866	1.0000
25	0.0205	0.0416	0.1045	0.2793	0.7053	0.9060	0.9663	0.9916	1.0000
26	0.0222	0.0415	0.0981	0.2481	0.7181	0.9054	0.9693	0.9915	1.0000
27	0.0225	0.0431	0.0909	0.2515	0.6911	0.8966	0.9651	0.9917	1.0000
28	0.0198	0.0425	0.0944	0.2738	0.6969	0.9039	0.9635	0.9938	1.0000
29	0.0191	0.0348	0.0939	0.2686	0.7061	0.9156	0.9689	0.9963	1.0000
30	0.0173	0.0342	0.0956	0.2602	0.7231	0.9156	0.9713	0.9969	1.0000
31	0.0170	0.0386	0.0860	0.2450	0.6999	0.9129	0.9787	0.9981	1.0000

TRANSITION-PROBABILITY MATRIX (CONTINUED)
NY COMBINED GAS & DSL - FREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
32	0.0135	0.0304	0.0781	0.2462	0.7332	0.9331	0.9850	0.9986	1.0000
33	0.0161	0.0317	0.0850	0.2560	0.7585	0.9443	0.9874	0.9995	1.0000
34	0.0147	0.0310	0.0753	0.2437	0.7448	0.9412	0.9869	0.9990	1.0000
35	0.0155	0.0298	0.0728	0.2316	0.7277	0.9316	0.9862	0.9999	1.0000
36	0.0139	0.0269	0.0680	0.2427	0.7487	0.9397	0.9885	0.9989	1.0000
37	0.0139	0.0253	0.0740	0.2373	0.7598	0.9447	0.9927	0.9997	1.0000
38	0.0117	0.0238	0.0708	0.2315	0.7809	0.9545	0.9923	1.0000	1.0000
39	0.0140	0.0261	0.0627	0.2217	0.7661	0.9505	0.9941	1.0000	1.0000
40	0.0122	0.0230	0.0572	0.2153	0.7722	0.9494	0.9932	0.9999	1.0000
41	0.0140	0.0242	0.0623	0.2211	0.7580	0.9450	0.9944	0.9999	1.0000
42	0.0119	0.0230	0.0649	0.2285	0.7682	0.9516	0.9969	1.0000	1.0000
43	0.0106	0.0237	0.0658	0.2286	0.7909	0.9630	0.9987	1.0000	1.0000
44	0.0093	0.0189	0.0545	0.1988	0.7600	0.9543	0.9983	1.0000	1.0000
45	0.0061	0.0140	0.0470	0.2017	0.7299	0.9428	0.9981	1.0000	1.0000
46	0.0038	0.0100	0.0526	0.2310	0.7608	0.9571	0.9985	1.0000	1.0000
47	0.0033	0.0158	0.0699	0.2567	0.7752	0.9677	0.9978	1.0000	1.0000
48	0.0029	0.0130	0.0476	0.2072	0.7427	0.9669	0.9985	1.0000	1.0000
49	0.0025	0.0089	0.0457	0.2166	0.7493	0.9597	0.9975	1.0000	1.0000
50	0.0030	0.0099	0.0593	0.2440	0.7622	0.9673	0.9972	1.0000	1.0000
51	0.0051	0.0122	0.0628	0.2530	0.7996	0.9765	0.9981	1.0000	1.0000
52	0.0050	0.0128	0.0499	0.2220	0.7888	0.9796	0.9980	1.0000	1.0000
53	0.0056	0.0135	0.0440	0.2112	0.7964	0.9764	0.9982	1.0000	1.0000
54	0.0047	0.0160	0.0591	0.2482	0.8103	0.9790	0.9983	1.0000	1.0000
55	0.0051	0.0157	0.0598	0.2258	0.7884	0.9740	0.9988	1.0000	1.0000
56	0.0059	0.0203	0.0517	0.2086	0.8071	0.9797	0.9992	1.0000	1.0000
57	0.0072	0.0207	0.0538	0.2177	0.7972	0.9731	1.0000	1.0000	1.0000
58	0.0092	0.0210	0.0506	0.2193	0.8173	0.9838	1.0000	1.0000	1.0000
59	0.0075	0.0157	0.0547	0.2019	0.8038	1.0000	1.0000	1.0000	1.0000
60	0.0086	0.0300	0.0833	0.3167	1.0000	1.0000	1.0000	1.0000	1.0000

NY COMBINED GAS & DSL - FREEWAY

THE STATISTICS FOR CYCLE 2037082365 ARE AS FOLLOWS:

KOLMOGOROV-SMIRNOV DIFFERENCES:

	DIFFERENCE	SL
MATRIX:	0.0619	0.167
CRUISE:	0.0630	0.510
ACCEL:	0.1807	0.009
DECEL:	0.1357	0.141
SPEED:	0.0754	0.050
DEL SPD:	0.0307	0.921

SUMMARY PERCENTAGE MEASURES:

	INPUT	CYCLE
IDLE:	15.81	15.74
CRUISE:	41.20	36.73 *
ACCEL:	22.24	25.31
DECEL:	20.74	22.22

AVERAGE SPEED FOR INPUT MATRIX:	26.39 MPH
AVERAGE SPEED FOR CYCLE:	26.91 MPH
CYCLE DISTANCE:	2.09 MILES
CYCLE DURATION:	4.67 MINUTES

* THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE CRUISE PERCENTAGE.

DRIVING SCHEDULE FOR CYCLE 2037082365

NY GAS + DSL FREEWAY .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
0	0						
1	0	51	15	101	19	151	48
2	0	52	16	102	21	152	49
3	0	53	16	103	21	153	48
4	0	54	17	104	22	154	48
5	0	55	17	105	24	155	48
6	0	56	17	106	23	156	48
7	0	57	17	107	22	157	48
8	0	58	17	108	22	158	49
9	0	59	17	109	23	159	50
10	0	60	19	110	21	160	50
11	0	61	19	111	21	161	52
12	0	62	19	112	23	162	52
13	2	63	20	113	22	163	53
14	0	64	20	114	22	164	52
15	0	65	18	115	24	165	52
16	0	66	18	116	27	166	52
17	0	67	19	117	27	167	52
18	0	68	17	118	29	168	52
19	0	69	18	119	29	169	52
20	0	70	19	120	31	170	53
21	0	71	19	121	32	171	53
22	3	72	22	122	32	172	53
23	4	73	19	123	32	173	54
24	4	74	19	124	32	174	54
25	3	75	23	125	34	175	53
26	3	76	23	126	34	176	53
27	4	77	23	127	35	177	53
28	4	78	23	128	34	178	52
29	6	79	24	129	37	179	53
30	9	80	24	130	39	180	53
31	9	81	24	131	39	181	53
32	9	82	24	132	40	182	52
33	10	83	24	133	40	183	48
34	11	84	23	134	42	184	48
35	11	85	24	135	42	185	48
36	13	86	23	136	42	186	49
37	13	87	23	137	42	187	49
38	13	88	25	138	41	188	48
39	13	89	25	139	41	189	45
40	14	90	24	140	41	190	45
41	15	91	23	141	42	191	43
42	14	92	24	142	42	192	40
43	14	93	23	143	43	193	41
44	15	94	23	144	44	194	41
45	15	95	20	145	45	195	41
46	19	96	20	146	46	196	41
47	16	97	21	147	46	197	40
48	15	98	21	148	46	198	40
49	16	99	19	149	46	199	39
50	16	100	19	150	47	200	39

DRIVING SCHEDULE FOR CYCLE 2037082365

NY GAS + DSL FREEWAY .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
201	39	232	45	263	39	294	0
202	39	233	47	264	39	295	0
203	39	234	45	265	38	296	0
204	40	235	45	266	35	297	0
205	41	236	44	267	35	298	0
206	42	237	45	268	35	299	0
207	42	238	44	269	35	300	0
208	42	239	44	270	37	301	0
209	42	240	45	271	37	302	0
210	41	241	43	272	36	303	0
211	42	242	43	273	34	304	0
212	42	243	44	274	32	305	0
213	41	244	45	275	31	306	0
214	42	245	43	276	28	307	0
215	43	246	42	277	26	308	0
216	42	247	41	278	25	309	0
217	43	248	41	279	21	310	0
218	43	249	41	280	20	311	0
219	43	250	39	281	19	312	0
220	44	251	40	282	15	313	0
221	45	252	39	283	14	314	0
222	45	253	35	284	13	315	0
223	46	254	35	285	11	316	0
224	44	255	35	286	9	317	0
225	44	256	35	287	8	318	0
226	44	257	36	288	6	319	0
227	44	258	37	289	4	320	0
228	44	259	37	290	3	321	0
229	44	260	39	291	1	322	0
230	46	261	39	292	0	323	0
231	45	262	39	293	0	324	0

DRIVING SCHEDULE FOR
CYCLE 2037082365

NY GAS + DSL FREEWAY 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
0	0.0						
1	0.0	51	17.06	101	27.00	151	53.23
2	0.0	52	19.00	102	29.00	152	53.00
3	0.0	53	19.00	103	29.43	153	52.92
4	0.0	54	19.50	104	31.37	154	52.24
5	0.0	55	20.00	105	32.00	155	53.00
6	0.0	56	18.37	106	32.00	156	53.00
7	0.0	57	18.00	107	32.00	157	52.29
8	0.0	58	18.74	108	34.00	158	48.52
9	0.0	59	17.29	109	34.16	159	48.00
10	0.0	60	18.44	110	34.69	160	48.19
11	1.46	61	19.00	111	35.42	161	49.00
12	0.22	62	21.28	112	38.26	162	48.50
13	0.0	63	19.25	113	39.00	163	46.03
14	0.0	64	19.30	114	39.94	164	45.00
15	0.0	65	23.00	115	40.20	165	43.06
16	0.0	66	23.00	116	42.00	166	40.13
17	0.0	67	23.00	117	42.00	167	41.00
18	0.0	68	23.70	118	42.00	168	41.00
19	2.97	69	24.00	119	41.27	169	41.00
20	4.00	70	24.00	120	41.00	170	40.24
21	3.69	71	24.00	121	41.05	171	40.00
22	3.00	72	23.67	122	42.00	172	39.00
23	3.62	73	23.49	123	42.36	173	39.00
24	4.00	74	23.35	124	43.52	174	39.00
25	5.87	75	23.00	125	44.68	175	39.00
26	9.00	76	24.93	126	45.83	176	39.70
27	9.00	77	24.88	127	46.00	177	40.86
28	9.41	78	23.72	128	46.00	178	42.00
29	10.56	79	23.44	129	46.31	179	42.00
30	11.00	80	23.41	130	47.46	180	42.00
31	12.76	81	23.00	131	48.62	181	41.51
32	13.00	82	20.28	132	48.22	182	41.65
33	13.00	83	20.06	133	48.00	183	42.00
34	13.35	84	21.00	134	48.00	184	41.04
35	14.51	85	20.24	135	48.00	185	42.12
36	14.33	86	19.00	136	48.41	186	42.72
37	14.00	87	19.00	137	49.56	187	42.44
38	14.98	88	20.70	138	50.00	188	43.00
39	15.56	89	21.01	139	51.76	189	43.00
40	18.11	90	22.33	140	52.04	190	43.91
41	15.55	91	23.68	141	52.81	191	45.00
42	15.61	92	22.52	142	52.00	192	45.22
43	16.00	93	22.00	143	52.00	193	45.24
44	15.07	94	22.80	144	52.00	194	44.00
45	16.00	95	21.09	145	52.00	195	44.00
46	16.24	96	21.22	146	52.00	196	44.00
47	17.00	97	22.73	147	53.00	197	44.00
48	17.00	98	22.00	148	53.00	198	44.33
49	17.00	99	23.17	149	53.45	199	45.68
50	17.00	100	26.22	150	54.00	200	45.00

DRIVING SCHEDULE FOR
CYCLE 2037082365

NY GAS + DSL FREEWAY 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
201	46.28	221	35.00	241	21.26	261	0.0
202	45.41	222	35.94	242	19.91	262	0.0
203	45.00	223	37.00	243	18.00	263	0.0
204	44.11	224	37.52	244	14.59	264	0.0
205	44.73	225	39.00	245	13.44	265	0.0
206	44.00	226	39.00	246	11.56	266	0.0
207	44.58	227	39.00	247	9.24	267	0.0
208	43.52	228	39.00	248	7.93	268	0.0
209	43.00	229	37.86	249	5.61	269	0.0
210	44.06	230	35.00	250	3.65	270	0.0
211	44.57	231	35.00	251	1.98	271	0.0
212	42.63	232	35.00	252	0.33	272	0.0
213	41.47	233	36.35	253	0.0	273	0.0
214	41.00	234	37.00	254	0.0	274	0.0
215	41.00	235	36.01	255	0.0	275	0.0
216	39.00	236	33.70	256	0.0	276	0.0
217	39.84	237	31.69	257	0.0	277	0.0
218	37.74	238	29.61	258	0.0	278	0.0
219	35.00	239	26.76	259	0.0	279	0.0
220	35.00	240	25.22	260	0.0	280	0.0

INPUT INITIAL SPEED VS DELTA SPEED MATRIX
NY COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
0	0	0	0	0	1126052	14107	3754	1670	1170	1146753
1	0	0	0	11055	22244	11306	3479	980	498	49562
2	0	0	6128	8818	17418	6103	4111	954	450	43982
3	0	1575	3651	7393	17181	6511	3372	995	481	41159
4	625	749	3591	6946	21651	6907	3198	1072	457	45196
5	411	945	3076	7130	13870	7499	3376	998	404	37709
6	518	895	2994	7625	13086	7559	3240	820	447	37184
7	508	850	2967	7319	12745	7712	2791	769	451	36112
8	506	1023	2931	6941	14286	7872	2630	931	458	37578
9	483	1036	2494	6726	13156	8063	2863	904	394	36119
10	589	966	2545	6798	12993	8367	2704	743	417	36122
11	580	929	2670	6827	12944	8423	2493	639	473	35978
12	614	1062	2880	6300	13064	8268	2291	788	536	35803
13	612	1160	2422	5907	13279	7686	2621	936	426	35049
14	687	1005	2385	5839	13999	7952	2639	768	332	35606
15	711	934	2570	6211	14239	7935	2143	586	379	35708
16	666	1022	2610	5869	14509	7570	1808	625	450	35129
17	727	1073	2189	5403	13869	7316	1993	754	473	33797
18	694	900	1978	5162	13551	6841	2146	780	367	32419
19	647	837	2001	5221	12827	6579	1955	593	276	30936
20	600	899	2050	5006	12758	6125	1705	536	233	29912
21	641	896	1925	4564	12567	5491	1523	579	284	28470
22	625	780	1626	4137	12018	5069	1669	654	263	26841
23	572	626	1547	3927	10643	4978	1693	497	170	24653
24	486	653	1520	3982	9754	4649	1256	323	146	22769
25	416	658	1568	3704	9176	4102	1052	307	149	21132
26	452	650	1269	3098	8959	3705	1009	377	167	19686
27	348	448	996	2903	7968	3563	1071	397	118	17812
28	254	406	984	2931	6703	3321	938	275	106	15918
29	232	375	1069	2653	6188	2852	680	225	83	14357
30	229	464	919	2176	5932	2508	687	210	60	13185
31	231	332	665	1896	5196	2372	718	180	37	11627

INPUT INITIAL SPEED VS DELTA SPEED MATRIX (CONTINUED)
NY COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
32	205	275	649	1840	4976	2218	565	124	29	10881
33	197	228	626	1736	4684	1914	341	106	28	9860
34	177	205	556	1369	4527	1607	322	89	15	8867
35	154	165	359	1181	4327	1425	332	75	13	8031
36	150	104	314	1161	3665	1401	276	62	12	7145
37	109	109	305	1155	3806	1351	259	63	7	7164
38	104	95	280	1010	3526	1050	209	33	3	6310
39	79	99	257	836	3072	1008	222	29	1	5603
40	84	77	177	868	2506	1032	186	15	0	4945
41	54	57	179	837	2300	836	160	15	0	4438
42	52	48	183	677	2501	671	104	13	1	4250
43	34	58	135	555	2169	721	114	10	0	3796
44	27	36	99	561	1946	682	88	6	0	3445
45	27	31	92	510	1706	552	60	3	0	2981
46	23	18	85	399	1596	454	57	3	0	2635
47	24	21	83	331	1486	406	57	4	0	2412
48	18	13	50	305	1303	390	56	0	0	2135
49	12	13	63	294	1059	367	44	5	0	1857
50	13	8	53	283	986	355	46	1	0	1745
51	8	21	55	265	1018	312	22	1	0	1702
52	10	10	64	218	1053	280	23	1	0	1659
53	10	9	52	184	860	225	22	0	0	1362
54	8	11	35	187	650	226	24	1	0	1142
55	10	10	29	205	611	211	24	1	0	1101
56	5	3	22	188	523	156	25	0	0	922
57	7	9	31	143	586	127	9	0	0	912
58	8	9	29	127	431	86	7	0	0	697
59	6	5	22	87	386	71	0	0	0	577
60	30	4	17	71	3824	0	0	0	0	3946
TOTALS	16309	25899	73121	188050	1576908	229445	73262	22525	11264	2216783

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%)
NY COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	50.7967	0.6364	0.1693	0.0753	0.0528
1	0.0	0.0	0.0	0.4987	1.0034	0.5100	0.1569	0.0442	0.0225
2	0.0	0.0	0.2764	0.3978	0.7857	0.2753	0.1854	0.0430	0.0203
3	0.0	0.0710	0.1647	0.3335	0.7750	0.2937	0.1521	0.0449	0.0217
4	0.0282	0.0338	0.1620	0.3133	0.9767	0.3116	0.1443	0.0484	0.0206
5	0.0185	0.0426	0.1388	0.3216	0.6257	0.3383	0.1523	0.0450	0.0182
6	0.0234	0.0404	0.1351	0.3440	0.5903	0.3410	0.1462	0.0370	0.0202
7	0.0229	0.0383	0.1338	0.3302	0.5749	0.3479	0.1259	0.0347	0.0203
8	0.0228	0.0461	0.1322	0.3131	0.6444	0.3551	0.1186	0.0420	0.0207
9	0.0218	0.0467	0.1125	0.3034	0.5935	0.3637	0.1292	0.0408	0.0178
10	0.0266	0.0436	0.1148	0.3067	0.5861	0.3774	0.1220	0.0335	0.0188
11	0.0262	0.0419	0.1204	0.3080	0.5839	0.3800	0.1125	0.0288	0.0213
12	0.0277	0.0479	0.1299	0.2842	0.5893	0.3730	0.1033	0.0355	0.0242
13	0.0276	0.0523	0.1053	0.2665	0.5990	0.3467	0.1182	0.0422	0.0192
14	0.0310	0.0453	0.1076	0.2634	0.6315	0.3587	0.1190	0.0346	0.0150
15	0.0321	0.0421	0.1159	0.2802	0.6423	0.3580	0.0967	0.0264	0.0171
16	0.0300	0.0461	0.1177	0.2648	0.6545	0.3415	0.0816	0.0282	0.0203
17	0.0328	0.0484	0.0987	0.2437	0.6256	0.3300	0.0899	0.0340	0.0213
18	0.0313	0.0406	0.0892	0.2329	0.6113	0.3086	0.0968	0.0352	0.0166
19	0.0292	0.0378	0.0903	0.2355	0.5786	0.2968	0.0882	0.0268	0.0125
20	0.0271	0.0406	0.0925	0.2258	0.5755	0.2763	0.0769	0.0242	0.0105
21	0.0289	0.0404	0.0868	0.2059	0.5669	0.2477	0.0687	0.0261	0.0128
22	0.0282	0.0352	0.0733	0.1866	0.5421	0.2287	0.0753	0.0295	0.0119
23	0.0258	0.0282	0.0698	0.1771	0.4801	0.2246	0.0764	0.0224	0.0077
24	0.0219	0.0295	0.0686	0.1796	0.4400	0.2097	0.0567	0.0146	0.0066
25	0.0188	0.0297	0.0707	0.1671	0.4139	0.1850	0.0475	0.0138	0.0067
26	0.0204	0.0293	0.0572	0.1398	0.4041	0.1671	0.0455	0.0170	0.0075
27	0.0157	0.0202	0.0449	0.1310	0.3594	0.1607	0.0483	0.0179	0.0053
28	0.0115	0.0183	0.0444	0.1322	0.3024	0.1498	0.0423	0.0124	0.0048
29	0.0105	0.0169	0.0482	0.1197	0.2791	0.1287	0.0307	0.0101	0.0037
30	0.0103	0.0209	0.0415	0.0982	0.2676	0.1131	0.0310	0.0095	0.0027

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%) (CONTINUED)
NY COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
31	0.0104	0.0150	0.0300	0.0855	0.2344	0.1070	0.0324	0.0081	0.0017
32	0.0092	0.0124	0.0293	0.0830	0.2245	0.1001	0.0255	0.0056	0.0013
33	0.0089	0.0103	0.0282	0.0783	0.2113	0.0863	0.0154	0.0048	0.0013
34	0.0080	0.0092	0.0251	0.0618	0.2042	0.0725	0.0145	0.0040	0.0007
35	0.0069	0.0074	0.0162	0.0533	0.1952	0.0643	0.0150	0.0034	0.0006
36	0.0068	0.0047	0.0142	0.0524	0.1653	0.0632	0.0125	0.0028	0.0005
37	0.0049	0.0049	0.0138	0.0521	0.1717	0.0609	0.0117	0.0028	0.0003
38	0.0047	0.0043	0.0126	0.0456	0.1591	0.0474	0.0094	0.0015	0.0001
39	0.0036	0.0045	0.0116	0.0377	0.1386	0.0455	0.0100	0.0013	0.0000
40	0.0038	0.0035	0.0080	0.0392	0.1130	0.0466	0.0084	0.0007	0.0
41	0.0024	0.0026	0.0081	0.0378	0.1038	0.0377	0.0072	0.0007	0.0
42	0.0023	0.0022	0.0083	0.0305	0.1128	0.0303	0.0047	0.0006	0.0000
43	0.0015	0.0026	0.0061	0.0250	0.0978	0.0325	0.0051	0.0005	0.0
44	0.0012	0.0016	0.0045	0.0253	0.0878	0.0308	0.0040	0.0003	0.0
45	0.0012	0.0014	0.0042	0.0230	0.0770	0.0249	0.0027	0.0001	0.0
46	0.0010	0.0008	0.0038	0.0180	0.0720	0.0205	0.0026	0.0001	0.0
47	0.0011	0.0009	0.0037	0.0149	0.0670	0.0183	0.0026	0.0002	0.0
48	0.0008	0.0006	0.0023	0.0138	0.0588	0.0176	0.0025	0.0	0.0
49	0.0005	0.0006	0.0028	0.0133	0.0478	0.0166	0.0020	0.0002	0.0
50	0.0006	0.0004	0.0024	0.0128	0.0445	0.0160	0.0021	0.0000	0.0
51	0.0004	0.0009	0.0025	0.0120	0.0459	0.0141	0.0010	0.0000	0.0
52	0.0005	0.0005	0.0029	0.0098	0.0475	0.0126	0.0010	0.0000	0.0
53	0.0005	0.0004	0.0023	0.0083	0.0388	0.0101	0.0010	0.0	0.0
54	0.0004	0.0005	0.0016	0.0084	0.0293	0.0102	0.0011	0.0000	0.0
55	0.0005	0.0005	0.0013	0.0092	0.0276	0.0095	0.0011	0.0000	0.0
56	0.0002	0.0001	0.0010	0.0085	0.0236	0.0070	0.0011	0.0	0.0
57	0.0003	0.0004	0.0014	0.0065	0.0264	0.0057	0.0004	0.0	0.0
58	0.0004	0.0004	0.0013	0.0057	0.0194	0.0039	0.0003	0.0	0.0
59	0.0003	0.0002	0.0010	0.0039	0.0174	0.0032	0.0	0.0	0.0
60	0.0014	0.0002	0.0008	0.0032	0.1725	0.0	0.0	0.0	0.0

TRANSITION-PROBABILITY MATRIX
NY COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	0.9819	0.9942	0.9975	0.9990	1.0000
1	0.0	0.0	0.0	0.2231	0.6719	0.9000	0.9702	0.9900	1.0000
2	0.0	0.0	0.1393	0.3398	0.7358	0.8746	0.9681	0.9898	1.0000
3	0.0	0.0383	0.1270	0.3066	0.7240	0.8822	0.9641	0.9883	1.0000
4	0.0138	0.0304	0.1099	0.2635	0.7426	0.8954	0.9662	0.9899	1.0000
5	0.0109	0.0360	0.1175	0.3066	0.6744	0.8733	0.9628	0.9893	1.0000
6	0.0139	0.0380	0.1185	0.3236	0.6755	0.8788	0.9659	0.9880	1.0000
7	0.0141	0.0376	0.1198	0.3224	0.6754	0.8889	0.9662	0.9875	1.0000
8	0.0135	0.0407	0.1187	0.3034	0.6836	0.8930	0.9630	0.9878	1.0000
9	0.0134	0.0421	0.1111	0.2973	0.6616	0.8848	0.9641	0.9891	1.0000
10	0.0163	0.0430	0.1135	0.3017	0.6614	0.8930	0.9679	0.9885	1.0000
11	0.0161	0.0419	0.1162	0.3059	0.6657	0.8998	0.9691	0.9869	1.0000
12	0.0171	0.0468	0.1273	0.3032	0.6681	0.8990	0.9630	0.9850	1.0000
13	0.0175	0.0506	0.1197	0.2882	0.6671	0.8864	0.9611	0.9878	1.0000
14	0.0193	0.0475	0.1145	0.2785	0.6717	0.8950	0.9691	0.9907	1.0000
15	0.0199	0.0461	0.1180	0.2920	0.6907	0.9130	0.9730	0.9894	1.0000
16	0.0190	0.0481	0.1223	0.2894	0.7024	0.9179	0.9694	0.9872	1.0000
17	0.0215	0.0533	0.1180	0.2779	0.6883	0.9047	0.9637	0.9860	1.0000
18	0.0214	0.0492	0.1102	0.2694	0.6874	0.8984	0.9646	0.9887	1.0000
19	0.0209	0.0480	0.1127	0.2814	0.6960	0.9087	0.9719	0.9911	1.0000
20	0.0201	0.0501	0.1186	0.2860	0.7125	0.9173	0.9743	0.9922	1.0000
21	0.0225	0.0540	0.1216	0.2819	0.7233	0.9162	0.9697	0.9900	1.0000
22	0.0233	0.0523	0.1129	0.2671	0.7148	0.9037	0.9658	0.9902	1.0000
23	0.0232	0.0486	0.1113	0.2706	0.7023	0.9043	0.9729	0.9931	1.0000
24	0.0213	0.0500	0.1168	0.2917	0.7201	0.9242	0.9794	0.9936	1.0000
25	0.0197	0.0508	0.1250	0.3003	0.7345	0.9286	0.9784	0.9929	1.0000
26	0.0230	0.0560	0.1204	0.2778	0.7329	0.9211	0.9724	0.9915	1.0000
27	0.0195	0.0447	0.1006	0.2636	0.7109	0.9110	0.9711	0.9934	1.0000
28	0.0160	0.0415	0.1033	0.2874	0.7085	0.9171	0.9761	0.9933	1.0000
29	0.0162	0.0423	0.1167	0.3015	0.7325	0.9312	0.9785	0.9942	1.0000
30	0.0174	0.0526	0.1223	0.2873	0.7372	0.9274	0.9795	0.9954	1.0000
31	0.0199	0.0484	0.1056	0.2687	0.7156	0.9196	0.9813	0.9968	1.0000

TRANSITION-PROBABILITY MATRIX (CONTINUED)
NY COMBINED GAS & DSL - NONFREEWAY

MPH	-4	-3	-2	-1	0	1	2	3	4
32	0.0188	0.0441	0.1038	0.2729	0.7302	0.9340	0.9859	0.9973	1.0000
33	0.0200	0.0431	0.1066	0.2827	0.7577	0.9518	0.9864	0.9972	1.0000
34	0.0200	0.0431	0.1058	0.2602	0.7707	0.9520	0.9883	0.9983	1.0000
35	0.0192	0.0397	0.0844	0.2315	0.7703	0.9477	0.9890	0.9984	1.0000
36	0.0210	0.0355	0.0795	0.2420	0.7549	0.9510	0.9896	0.9983	1.0000
37	0.0152	0.0304	0.0730	0.2342	0.7655	0.9541	0.9902	0.9990	1.0000
38	0.0165	0.0315	0.0759	0.2360	0.7948	0.9612	0.9943	0.9995	1.0000
39	0.0141	0.0318	0.0776	0.2268	0.7751	0.9550	0.9946	0.9998	1.0000
40	0.0170	0.0326	0.0684	0.2439	0.7507	0.9594	0.9970	1.0000	1.0000
41	0.0122	0.0250	0.0653	0.2539	0.7722	0.9606	0.9966	1.0000	1.0000
42	0.0122	0.0235	0.0666	0.2259	0.8144	0.9722	0.9967	0.9998	1.0000
43	0.0090	0.0242	0.0598	0.2060	0.7774	0.9673	0.9974	1.0000	1.0000
44	0.0078	0.0183	0.0470	0.2099	0.7747	0.9727	0.9983	1.0000	1.0000
45	0.0091	0.0195	0.0503	0.2214	0.7937	0.9789	0.9990	1.0000	1.0000
46	0.0087	0.0156	0.0478	0.1992	0.8049	0.9772	0.9989	1.0000	1.0000
47	0.0100	0.0187	0.0531	0.1903	0.8064	0.9747	0.9983	1.0000	1.0000
48	0.0084	0.0145	0.0379	0.1808	0.7911	0.9738	1.0000	1.0000	1.0000
49	0.0065	0.0135	0.0474	0.2057	0.7760	0.9736	0.9973	1.0000	1.0000
50	0.0074	0.0120	0.0424	0.2046	0.7696	0.9731	0.9994	1.0000	1.0000
51	0.0047	0.0170	0.0494	0.2051	0.8032	0.9865	0.9994	1.0000	1.0000
52	0.0060	0.0121	0.0506	0.1820	0.8168	0.9855	0.9994	1.0000	1.0000
53	0.0073	0.0140	0.0521	0.1872	0.8186	0.9838	1.0000	1.0000	1.0000
54	0.0070	0.0166	0.0473	0.2110	0.7802	0.9781	0.9991	1.0000	1.0000
55	0.0091	0.0182	0.0445	0.2307	0.7856	0.9773	0.9991	1.0000	1.0000
56	0.0054	0.0087	0.0325	0.2364	0.8037	0.9729	1.0000	1.0000	1.0000
57	0.0077	0.0175	0.0515	0.2083	0.8509	0.9901	1.0000	1.0000	1.0000
58	0.0115	0.0244	0.0660	0.2482	0.8666	0.9900	1.0000	1.0000	1.0000
59	0.0104	0.0191	0.0572	0.2080	0.8769	1.0000	1.0000	1.0000	1.0000
60	0.0076	0.0086	0.0129	0.0309	1.0000	1.0000	1.0000	1.0000	1.0000

NY COMBINED GAS & DSL - NONFREEWAY

THE STATISTICS FOR CYCLE 2120127413 ARE AS FOLLOWS:

KOLMOGOROV-SMIRNOV DIFFERENCES:

	DIFFERENCE	SL
MATRIX:	0.0354	0.854
CRUISE:	0.0665	0.351
ACCEL:	0.1273	0.380
DECEL:	0.0999	0.736
SPEED:	0.0397	0.743
DEL SPD:	0.0231	0.998

SUMMARY PERCENTAGE MEASURES:

	INPUT	CYCLE
IDLE:	50.80	52.04
CRUISE:	20.34	14.63 *
ACCEL:	15.18	17.35
DECEL:	13.69	15.99

AVERAGE SPEED FOR INPUT MATRIX:	7.80 MPH
AVERAGE SPEED FOR CYCLE:	7.57 MPH
CYCLE DISTANCE:	0.53 MILES
CYCLE DURATION:	4.23 MINUTES

* THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE CRUISE PERCENTAGE.

DRIVING SCHEDULE FOR CYCLE 2120127413

NY GAS + DSL NON-FREEWAY .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
0	0						
1	0	51	0	101	0	151	0
2	0	52	0	102	0	152	0
3	0	53	0	103	0	153	0
4	0	54	0	104	0	154	0
5	0	55	0	105	0	155	0
6	0	56	0	106	0	156	0
7	0	57	0	107	1	157	0
8	0	58	0	108	2	158	0
9	0	59	0	109	0	159	0
10	0	60	0	110	0	160	0
11	0	61	0	111	0	161	0
12	0	62	0	112	0	162	0
13	0	63	0	113	0	163	0
14	0	64	0	114	0	164	1
15	0	65	0	115	0	165	1
16	0	66	0	116	0	166	2
17	0	67	0	117	0	167	3
18	0	68	1	118	0	168	5
19	0	69	0	119	0	169	7
20	0	70	0	120	0	170	9
21	0	71	0	121	0	171	8
22	0	72	0	122	0	172	7
23	0	73	0	123	0	173	8
24	0	74	4	124	0	174	10
25	0	75	6	125	0	175	10
26	0	76	6	126	0	176	9
27	0	77	6	127	0	177	10
28	0	78	6	128	0	178	11
29	0	79	5	129	0	179	12
30	0	80	4	130	0	180	14
31	0	81	2	131	0	181	14
32	0	82	0	132	0	182	12
33	0	83	0	133	0	183	13
34	0	84	0	134	0	184	13
35	0	85	0	135	0	185	13
36	0	86	0	136	0	186	13
37	0	87	0	137	0	187	15
38	0	88	0	138	0	188	15
39	0	89	0	139	0	189	15
40	0	90	0	140	0	190	13
41	1	91	0	141	0	191	12
42	0	92	0	142	0	192	12
43	0	93	0	143	0	193	14
44	0	94	0	144	0	194	15
45	0	95	0	145	0	195	14
46	0	96	0	146	0	196	16
47	0	97	0	147	0	197	17
48	0	98	0	148	0	198	17
49	0	99	0	149	0	199	17
50	0	100	0	150	0	200	17

DRIVING SCHEDULE FOR CYCLE 2120127413

NY GAS + DSL NON-FREEWAY .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
201	18	225	10	249	33	273	32
202	20	226	11	250	31	274	31
203	21	227	11	251	31	275	28
204	19	228	9	252	31	276	24
205	18	229	9	253	33	277	23
206	18	230	9	254	33	278	21
207	17	231	10	255	32	279	17
208	17	232	10	256	30	280	16
209	15	233	9	257	30	281	14
210	15	234	9	258	30	282	13
211	15	235	10	259	30	283	12
212	15	236	14	260	32	284	9
213	16	237	17	261	33	285	8
214	12	238	19	262	33	286	5
215	15	239	20	263	32	287	3
216	16	240	20	264	32	288	0
217	12	241	21	265	31	289	0
218	13	242	21	266	32	290	0
219	12	243	21	267	33	291	0
220	9	244	23	268	34	292	0
221	8	245	27	269	34	293	0
222	8	246	27	270	34	294	0
223	8	247	27	271	34		
224	9	248	30	272	33		

DRIVING SCHEDULE FOR
CYCLE 2120127413

NY GAS + DSL NON-FREEWAY 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
0	0.0						
1	0.0	51	0.0	101	0.0	151	10.00
2	0.0	52	0.0	102	0.0	152	9.07
3	0.0	53	0.0	103	0.0	153	10.08
4	0.0	54	0.0	104	0.0	154	11.24
5	0.0	55	0.0	105	0.0	155	12.80
6	0.0	56	0.0	106	0.0	156	14.00
7	0.0	57	0.0	107	0.0	157	12.57
8	0.0	58	0.13	108	0.0	158	12.87
9	0.0	59	0.71	109	0.0	159	13.00
10	0.0	60	0.0	110	0.0	160	13.00
11	0.0	61	0.0	111	0.0	161	13.69
12	0.0	62	0.0	112	0.0	162	15.00
13	0.0	63	0.0	113	0.0	163	15.00
14	0.0	64	4.15	114	0.0	164	13.37
15	0.0	65	6.00	115	0.0	165	12.03
16	0.0	66	6.00	116	0.0	166	12.26
17	0.0	67	6.00	117	0.0	167	14.29
18	0.0	68	5.30	118	0.0	168	14.56
19	0.0	69	4.14	119	0.0	169	15.20
20	0.0	70	1.96	120	0.0	170	16.76
21	0.0	71	0.0	121	0.0	171	17.00
22	0.0	72	0.0	122	0.0	172	17.00
23	0.0	73	0.0	123	0.0	173	17.23
24	0.0	74	0.0	124	0.0	174	18.78
25	0.0	75	0.0	125	0.0	175	20.55
26	0.0	76	0.0	126	0.0	176	19.59
27	0.0	77	0.0	127	0.0	177	18.14
28	0.0	78	0.0	128	0.0	178	17.98
29	0.0	79	0.0	129	0.0	179	17.00
30	0.0	80	0.0	130	0.0	180	16.33
31	0.0	81	0.0	131	0.0	181	15.00
32	0.0	82	0.0	132	0.0	182	15.00
33	0.0	83	0.0	133	0.0	183	15.00
34	0.0	84	0.0	134	0.0	184	15.96
35	0.51	85	0.0	135	0.0	185	12.36
36	0.33	86	0.0	136	0.0	186	15.28
37	0.0	87	0.0	137	0.0	187	14.26
38	0.0	88	0.0	138	0.0	188	12.59
39	0.0	89	0.0	139	0.0	189	12.25
40	0.0	90	0.0	140	0.0	190	9.28
41	0.0	91	0.0	141	0.19	191	8.00
42	0.0	92	0.48	142	1.00	192	8.00
43	0.0	93	1.64	143	1.51	193	8.38
44	0.0	94	0.41	144	2.67	194	9.54
45	0.0	95	0.0	145	4.65	195	10.69
46	0.0	96	0.0	146	6.96	196	11.00
47	0.0	97	0.0	147	8.86	197	9.00
48	0.0	98	0.0	148	7.70	198	9.00
49	0.0	99	0.0	149	7.45	199	9.32
50	0.0	100	0.0	150	9.22	200	10.00

DRIVING SCHEDULE FOR
CYCLE 2120127413

NY GAS + DSL NON-FREEWAY 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
201	9.36	215	32.53	229	31.05	243	13.75
202	9.00	216	31.00	230	32.20	244	12.59
203	9.95	217	31.00	231	33.36	245	10.31
204	14.33	218	31.63	232	34.00	246	8.28
205	17.54	219	33.00	233	34.00	247	5.36
206	19.43	220	32.37	234	34.00	248	2.89
207	20.00	221	30.43	235	33.01	249	0.0
208	20.74	222	30.00	236	31.85	250	0.0
209	21.00	223	30.00	237	30.08	251	0.0
210	21.11	224	30.52	238	26.15	252	0.0
211	23.85	225	32.42	239	23.38	253	0.0
212	27.00	226	33.00	240	21.44	254	0.0
213	27.00	227	32.27	241	17.26		
214	29.06	228	32.00	242	15.81		

INPUT INITIAL SPEED VS DELTA SPEED MATRIX
LA BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
0	0	0	0	0	51875	1966	800	261	80	54982
1	0	0	0	2068	2393	851	898	385	92	6687
2	0	0	523	1312	1007	629	755	417	134	4777
3	0	136	917	655	862	595	705	456	127	4453
4	41	391	719	454	855	556	732	545	115	4408
5	72	486	613	405	769	536	677	514	102	4174
6	152	565	522	410	649	570	723	516	101	4208
7	197	537	452	425	662	562	837	494	77	4243
8	291	469	493	492	727	628	823	440	81	4444
9	288	494	525	500	710	762	930	422	45	4676
10	262	480	481	532	1072	819	1019	322	33	5020
11	279	464	569	556	912	857	1119	280	32	5068
12	263	464	556	657	990	1006	1235	174	32	5377
13	273	493	557	714	1199	1355	971	142	23	5727
14	239	461	596	820	3087	1733	1003	101	30	8070
15	220	417	608	705	2073	1311	1131	174	33	6672
16	216	424	619	676	1142	1116	1089	152	31	5467
17	222	421	639	787	1508	1168	1111	144	32	6032
18	168	388	583	771	1105	1186	867	135	26	5229
19	124	347	549	825	1184	1293	897	121	21	5361
20	130	379	506	787	1368	1281	969	96	8	5524
21	123	310	500	833	1569	1382	858	59	2	5636
22	102	282	511	921	1471	1565	662	24	1	5539
23	69	281	471	924	1548	1819	484	14	1	5611
24	94	251	428	845	2784	1901	522	21	0	6846
25	95	216	428	807	2981	1815	431	13	0	6786
26	60	161	409	786	1520	1776	316	8	0	5036
27	39	189	407	805	1583	1684	355	10	0	5072
28	41	177	324	779	2024	1584	378	7	0	5314
29	60	125	319	810	2038	1563	390	9	0	5314
30	38	117	287	906	2081	1690	334	8	0	5461
31	20	109	296	1007	1896	1709	283	2	0	5322

INPUT INITIAL SPEED VS DELTA SPEED MATRIX (CONTINUED)
LA BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
32	28	97	281	1119	2102	1547	202	1	0	5377
33	28	99	225	988	2213	1378	178	4	0	5113
34	14	55	190	793	1839	1292	320	4	0	4507
35	7	60	212	765	1615	1169	345	0	0	4173
36	13	46	321	766	1390	973	173	0	0	3682
37	11	73	292	604	1486	823	144	0	0	3433
38	12	68	157	552	1767	735	119	0	0	3410
39	14	37	119	537	1669	720	113	0	0	3209
40	4	19	126	511	1925	672	32	0	0	3289
41	1	25	116	369	2226	466	15	0	0	3218
42	4	21	63	228	891	367	13	0	0	1587
43	4	11	45	215	788	386	15	0	0	1464
44	2	8	42	214	743	327	12	0	0	1348
45	3	9	34	193	697	286	1	0	0	1223
46	1	7	33	155	737	289	8	0	0	1230
47	1	4	24	175	788	302	13	0	0	1307
48	4	9	20	195	814	312	6	0	0	1360
49	4	6	14	184	1041	264	1	0	0	1514
50	3	2	15	179	1134	274	5	0	0	1612
51	3	2	7	171	1399	301	3	0	0	1886
52	2	1	10	207	1613	327	6	0	0	2166
53	1	1	5	224	1856	316	3	0	0	2406
54	0	4	7	226	1977	269	2	0	0	2485
55	1	2	4	164	2090	290	2	0	0	2553
56	1	2	5	178	1944	239	1	0	0	2370
57	2	1	4	148	1653	197	1	0	0	2006
58	0	1	5	112	1176	147	0	0	0	1441
59	0	0	2	84	732	98	0	0	0	916
60	3	3	1	63	2509	0	0	0	0	2579
TOTALS	4349	10707	17786	34295	140458	54034	26037	6475	1259	295400

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%)
LA BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	17.5609	0.6655	0.2708	0.0884	0.0271
1	0.0	0.0	0.0	0.7001	0.8101	0.2881	0.3040	0.1303	0.0311
2	0.0	0.0	0.1770	0.4441	0.3409	0.2129	0.2556	0.1412	0.0454
3	0.0	0.0460	0.3104	0.2217	0.2918	0.2014	0.2387	0.1544	0.0430
4	0.0139	0.1324	0.2434	0.1537	0.2894	0.1882	0.2478	0.1845	0.0389
5	0.0244	0.1645	0.2075	0.1371	0.2603	0.1814	0.2292	0.1740	0.0345
6	0.0515	0.1913	0.1767	0.1388	0.2197	0.1930	0.2448	0.1747	0.0342
7	0.0667	0.1818	0.1530	0.1439	0.2241	0.1903	0.2833	0.1672	0.0261
8	0.0985	0.1588	0.1669	0.1666	0.2461	0.2126	0.2786	0.1490	0.0274
9	0.0975	0.1672	0.1777	0.1693	0.2404	0.2580	0.3148	0.1429	0.0152
10	0.0887	0.1625	0.1628	0.1801	0.3629	0.2773	0.3450	0.1090	0.0112
11	0.0944	0.1571	0.1926	0.1882	0.3087	0.2901	0.3788	0.0948	0.0108
12	0.0890	0.1571	0.1882	0.2224	0.3351	0.3406	0.4181	0.0589	0.0108
13	0.0924	0.1669	0.1886	0.2417	0.4059	0.4587	0.3287	0.0481	0.0078
14	0.0809	0.1561	0.2018	0.2776	1.0450	0.5867	0.3395	0.0342	0.0102
15	0.0745	0.1412	0.2058	0.2387	0.7018	0.4438	0.3829	0.0589	0.0112
16	0.0731	0.1435	0.2095	0.2295	0.3866	0.3778	0.3687	0.0515	0.0105
17	0.0752	0.1425	0.2163	0.2664	0.5105	0.3954	0.3761	0.0487	0.0108
18	0.0569	0.1313	0.1974	0.2610	0.3741	0.4015	0.2935	0.0457	0.0088
19	0.0420	0.1175	0.1858	0.2793	0.4008	0.4377	0.3037	0.0410	0.0071
20	0.0440	0.1283	0.1713	0.2664	0.4631	0.4336	0.3280	0.0325	0.0027
21	0.0416	0.1049	0.1693	0.2820	0.5311	0.4678	0.2905	0.0200	0.0007
22	0.0345	0.0955	0.1730	0.3118	0.4980	0.5298	0.2241	0.0081	0.0003
23	0.0234	0.0951	0.1594	0.3128	0.5240	0.6158	0.1638	0.0047	0.0003
24	0.0318	0.0850	0.1449	0.2861	0.9425	0.6435	0.1767	0.0071	0.0
25	0.0322	0.0731	0.1449	0.2732	1.0091	0.6144	0.1459	0.0044	0.0
26	0.0203	0.0545	0.1385	0.2661	0.5146	0.6012	0.1070	0.0027	0.0
27	0.0132	0.0640	0.1378	0.2725	0.5359	0.5701	0.1202	0.0034	0.0
28	0.0139	0.0599	0.1097	0.2637	0.6852	0.5362	0.1280	0.0024	0.0
29	0.0203	0.0423	0.1080	0.2742	0.6899	0.5291	0.1320	0.0030	0.0
30	0.0129	0.0396	0.0972	0.3067	0.7045	0.5721	0.1131	0.0027	0.0

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%) (CONTINUED)
LA BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4
31	0.0068	0.0369	0.1002	0.3409	0.6418	0.5785	0.0958	0.0007	0.0
32	0.0095	0.0328	0.0951	0.3788	0.7116	0.5237	0.0684	0.0003	0.0
33	0.0095	0.0335	0.0762	0.3345	0.7492	0.4665	0.0603	0.0014	0.0
34	0.0047	0.0186	0.0643	0.2684	0.6225	0.4374	0.1083	0.0014	0.0
35	0.0024	0.0203	0.0718	0.2590	0.5467	0.3957	0.1168	0.0	0.0
36	0.0044	0.0156	0.1087	0.2593	0.4705	0.3294	0.0586	0.0	0.0
37	0.0037	0.0247	0.0988	0.2045	0.5030	0.2786	0.0487	0.0	0.0
38	0.0041	0.0230	0.0531	0.1869	0.5982	0.2488	0.0403	0.0	0.0
39	0.0047	0.0125	0.0403	0.1818	0.5650	0.2437	0.0383	0.0	0.0
40	0.0014	0.0064	0.0427	0.1730	0.6517	0.2275	0.0108	0.0	0.0
41	0.0003	0.0085	0.0393	0.1249	0.7536	0.1578	0.0051	0.0	0.0
42	0.0014	0.0071	0.0213	0.0772	0.3016	0.1242	0.0044	0.0	0.0
43	0.0014	0.0037	0.0152	0.0728	0.2668	0.1307	0.0051	0.0	0.0
44	0.0007	0.0027	0.0142	0.0724	0.2515	0.1107	0.0041	0.0	0.0
45	0.0010	0.0030	0.0115	0.0653	0.2360	0.0968	0.0003	0.0	0.0
46	0.0003	0.0024	0.0112	0.0525	0.2495	0.0978	0.0027	0.0	0.0
47	0.0003	0.0014	0.0081	0.0592	0.2668	0.1022	0.0044	0.0	0.0
48	0.0014	0.0030	0.0068	0.0660	0.2756	0.1056	0.0020	0.0	0.0
49	0.0014	0.0020	0.0047	0.0623	0.3524	0.0894	0.0003	0.0	0.0
50	0.0010	0.0007	0.0051	0.0606	0.3839	0.0928	0.0017	0.0	0.0
51	0.0010	0.0007	0.0024	0.0579	0.4736	0.1019	0.0010	0.0	0.0
52	0.0007	0.0003	0.0034	0.0701	0.5460	0.1107	0.0020	0.0	0.0
53	0.0003	0.0003	0.0017	0.0758	0.6283	0.1070	0.0010	0.0	0.0
54	0.0	0.0014	0.0024	0.0765	0.6693	0.0911	0.0007	0.0	0.0
55	0.0003	0.0007	0.0014	0.0555	0.7075	0.0982	0.0007	0.0	0.0
56	0.0003	0.0007	0.0017	0.0603	0.6581	0.0809	0.0003	0.0	0.0
57	0.0007	0.0003	0.0014	0.0501	0.5596	0.0667	0.0003	0.0	0.0
58	0.0	0.0003	0.0017	0.0379	0.3981	0.0498	0.0	0.0	0.0
59	0.0	0.0	0.0007	0.0284	0.2478	0.0332	0.0	0.0	0.0
60	0.0010	0.0010	0.0003	0.0213	0.8494	0.0	0.0	0.0	0.0

TRANSITION-PROBABILITY MATRIX
LA BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	0.9435	0.9792	0.9938	0.9985	1.0000
1	0.0	0.0	0.0	0.3093	0.6671	0.7944	0.9287	0.9862	1.0000
2	0.0	0.0	0.1095	0.3841	0.5949	0.7266	0.8847	0.9719	1.0000
3	0.0	0.0305	0.2365	0.3836	0.5771	0.7108	0.8691	0.9715	1.0000
4	0.0093	0.0980	0.2611	0.3641	0.5581	0.6842	0.8503	0.9739	1.0000
5	0.0172	0.1337	0.2805	0.3776	0.5618	0.6902	0.8524	0.9756	1.0000
6	0.0361	0.1704	0.2944	0.3919	0.5461	0.6816	0.8534	0.9760	1.0000
7	0.0464	0.1730	0.2795	0.3797	0.5357	0.6682	0.8654	0.9819	1.0000
8	0.0655	0.1710	0.2820	0.3927	0.5563	0.6976	0.8828	0.9818	1.0000
9	0.0616	0.1672	0.2795	0.3864	0.5383	0.7012	0.9001	0.9904	1.0000
10	0.0522	0.1478	0.2436	0.3496	0.5631	0.7263	0.9293	0.9934	1.0000
11	0.0551	0.1466	0.2589	0.3686	0.5485	0.7176	0.9384	0.9937	1.0000
12	0.0489	0.1352	0.2386	0.3608	0.5449	0.7320	0.9617	0.9940	1.0000
13	0.0477	0.1338	0.2310	0.3557	0.5650	0.8016	0.9712	0.9960	1.0000
14	0.0296	0.0867	0.1606	0.2622	0.6447	0.8595	0.9838	0.9963	1.0000
15	0.0330	0.0955	0.1866	0.2923	0.6030	0.7995	0.9690	0.9951	1.0000
16	0.0395	0.1171	0.2303	0.3543	0.5632	0.7673	0.9665	0.9943	1.0000
17	0.0368	0.1066	0.2125	0.3430	0.5930	0.7866	0.9708	0.9947	1.0000
18	0.0321	0.1063	0.2178	0.3653	0.5766	0.8034	0.9692	0.9950	1.0000
19	0.0231	0.0879	0.1903	0.3442	0.5650	0.8062	0.9735	0.9961	1.0000
20	0.0235	0.0921	0.1837	0.3262	0.5739	0.8058	0.9812	0.9986	1.0000
21	0.0218	0.0768	0.1655	0.3133	0.5917	0.8369	0.9892	0.9996	1.0000
22	0.0184	0.0693	0.1616	0.3279	0.5934	0.8760	0.9955	0.9998	1.0000
23	0.0123	0.0624	0.1463	0.3110	0.5869	0.9111	0.9973	0.9998	1.0000
24	0.0137	0.0504	0.1129	0.2363	0.6430	0.9207	0.9969	1.0000	1.0000
25	0.0140	0.0458	0.1089	0.2278	0.6671	0.9346	0.9981	1.0000	1.0000
26	0.0119	0.0439	0.1251	0.2812	0.5830	0.9357	0.9984	1.0000	1.0000
27	0.0077	0.0450	0.1252	0.2839	0.5960	0.9280	0.9980	1.0000	1.0000
28	0.0077	0.0410	0.1020	0.2486	0.6295	0.9275	0.9987	1.0000	1.0000
29	0.0113	0.0348	0.0948	0.2473	0.6308	0.9249	0.9983	1.0000	1.0000
30	0.0070	0.0284	0.0809	0.2468	0.6279	0.9374	0.9985	1.0000	1.0000
31	0.0038	0.0242	0.0799	0.2691	0.6253	0.9464	0.9996	1.0000	1.0000

TRANSITION-PROBABILITY MATRIX (CONTINUED)
LA BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4
32	0.0052	0.0232	0.0755	0.2836	0.6745	0.9622	0.9998	1.0000	1.0000
33	0.0055	0.0248	0.0688	0.2621	0.6949	0.9644	0.9992	1.0000	1.0000
34	0.0031	0.0153	0.0575	0.2334	0.6414	0.9281	0.9991	1.0000	1.0000
35	0.0017	0.0161	0.0669	0.2502	0.6372	0.9173	1.0000	1.0000	1.0000
36	0.0035	0.0160	0.1032	0.3112	0.6888	0.9530	1.0000	1.0000	1.0000
37	0.0032	0.0245	0.1055	0.2855	0.7183	0.9581	1.0000	1.0000	1.0000
38	0.0035	0.0235	0.0695	0.2314	0.7496	0.9651	1.0000	1.0000	1.0000
39	0.0044	0.0159	0.0530	0.2203	0.7404	0.9648	1.0000	1.0000	1.0000
40	0.0012	0.0070	0.0453	0.2007	0.7860	0.9903	1.0000	1.0000	1.0000
41	0.0003	0.0081	0.0441	0.1588	0.8505	0.9953	1.0000	1.0000	1.0000
42	0.0025	0.0158	0.0555	0.1991	0.7606	0.9918	1.0000	1.0000	1.0000
43	0.0027	0.0102	0.0410	0.1878	0.7261	0.9898	1.0000	1.0000	1.0000
44	0.0015	0.0074	0.0386	0.1973	0.7485	0.9911	1.0000	1.0000	1.0000
45	0.0025	0.0098	0.0376	0.1954	0.7653	0.9992	1.0000	1.0000	1.0000
46	0.0008	0.0065	0.0333	0.1593	0.7585	0.9935	1.0000	1.0000	1.0000
47	0.0008	0.0038	0.0222	0.1561	0.7590	0.9901	1.0000	1.0000	1.0000
48	0.0029	0.0096	0.0243	0.1676	0.7662	0.9956	1.0000	1.0000	1.0000
49	0.0026	0.0066	0.0159	0.1374	0.8250	0.9993	1.0000	1.0000	1.0000
50	0.0019	0.0031	0.0124	0.1234	0.8269	0.9969	1.0000	1.0000	1.0000
51	0.0016	0.0027	0.0064	0.0970	0.8388	0.9984	1.0000	1.0000	1.0000
52	0.0009	0.0014	0.0060	0.1016	0.8463	0.9972	1.0000	1.0000	1.0000
53	0.0004	0.0008	0.0029	0.0960	0.8674	0.9988	1.0000	1.0000	1.0000
54	0.0	0.0016	0.0044	0.0954	0.8909	0.9992	1.0000	1.0000	1.0000
55	0.0004	0.0012	0.0027	0.0670	0.8856	0.9992	1.0000	1.0000	1.0000
56	0.0004	0.0013	0.0034	0.0785	0.8987	0.9996	1.0000	1.0000	1.0000
57	0.0010	0.0015	0.0035	0.0773	0.9013	0.9995	1.0000	1.0000	1.0000
58	0.0	0.0007	0.0042	0.0819	0.8980	1.0000	1.0000	1.0000	1.0000
59	0.0	0.0	0.0022	0.0939	0.8930	1.0000	1.0000	1.0000	1.0000
60	0.0012	0.0023	0.0027	0.0271	1.0000	1.0000	1.0000	1.0000	1.0000

LA BUSES: FWY & NFWY COMPOSITE

THE STATISTICS FOR CYCLE 2041393295 ARE AS FOLLOWS:

KOLMOGOROV-SMIRNOV DIFFERENCES:

	DIFFERENCE	SL
MATRIX:	0.0341	0.114
CRUISE:	0.0485	0.129
ACCEL:	0.0484	0.382
DECEL:	0.0578	0.278
SPEED:	0.0537	0.002
DEL SPD:	0.0127	0.989

SUMMARY PERCENTAGE MEASURES:

	INPUT	CYCLE
IDLE:	17.56	17.48
CRUISE:	29.99	29.92 *
ACCEL:	29.72	28.62
DECEL:	22.73	23.98

AVERAGE SPEED FOR INPUT MATRIX: 20.00 MPH

AVERAGE SPEED FOR CYCLE: 20.65 MPH

CYCLE DISTANCE: 6.10 MILES

CYCLE DURATION: 17.71 MINUTES

* THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE CRUISE PERCENTAGE.

DRIVING SCHEDULE FOR CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
0	0						
1	0	51	12	101	10	151	17
2	0	52	12	102	9	152	18
3	0	53	15	103	9	153	15
4	0	54	15	104	6	154	12
5	0	55	13	105	3	155	14
6	1	56	14	106	7	156	15
7	1	57	16	107	8	157	15
8	0	58	15	108	8	158	16
9	0	59	13	109	4	159	16
10	0	60	14	110	4	160	14
11	0	61	12	111	3	161	15
12	0	62	12	112	6	162	15
13	0	63	8	113	8	163	17
14	0	64	9	114	7	164	17
15	0	65	10	115	10	165	18
16	0	66	12	116	6	166	18
17	0	67	11	117	8	167	19
18	0	68	11	118	5	168	21
19	0	69	14	119	7	169	21
20	0	70	12	120	9	170	21
21	0	71	10	121	6	171	23
22	0	72	12	122	8	172	21
23	0	73	10	123	6	173	23
24	0	74	12	124	9	174	22
25	1	75	9	125	10	175	21
26	1	76	6	126	10	176	24
27	1	77	6	127	12	177	26
28	1	78	9	128	13	178	27
29	3	79	12	129	17	179	25
30	2	80	15	130	17	180	25
31	2	81	14	131	16	181	25
32	1	82	14	132	19	182	25
33	2	83	12	133	16	183	25
34	5	84	14	134	16	184	23
35	8	85	14	135	13	185	24
36	6	86	15	136	14	186	24
37	6	87	11	137	15	187	22
38	8	88	8	138	14	188	23
39	10	89	9	139	14	189	24
40	12	90	10	140	14	190	24
41	13	91	7	141	13	191	24
42	12	92	6	142	11	192	24
43	12	93	8	143	13	193	24
44	13	94	10	144	14	194	23
45	10	95	13	145	14	195	23
46	10	96	10	146	14	196	24
47	11	97	12	147	15	197	24
48	11	98	14	148	15	198	22
49	11	99	11	149	17	199	25
50	12	100	9	150	18	200	25

DRIVING SCHEDULE FOR CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
201	25	251	23	301	25	351	14
202	26	252	23	302	25	352	16
203	27	253	20	303	25	353	16
204	27	254	19	304	26	354	14
205	28	255	19	305	22	355	14
206	25	256	20	306	23	356	16
207	22	257	19	307	21	357	15
208	23	258	17	308	20	358	15
209	24	259	17	309	17	359	15
210	24	260	16	310	19	360	16
211	24	261	17	311	18	361	17
212	24	262	16	312	15	362	15
213	21	263	16	313	13	363	15
214	22	264	13	314	13	364	15
215	24	265	14	315	13	365	18
216	26	266	14	316	16	366	17
217	26	267	14	317	17	367	15
218	26	268	14	318	19	368	16
219	26	269	14	319	19	369	17
220	28	270	14	320	17	370	18
221	30	271	14	321	13	371	21
222	32	272	15	322	15	372	23
223	31	273	14	323	15	373	24
224	31	274	14	324	12	374	24
225	31	275	14	325	11	375	23
226	27	276	15	326	9	376	23
227	28	277	15	327	8	377	21
228	29	278	15	328	9	378	21
229	29	279	17	329	9	379	20
230	28	280	16	330	6	380	23
231	25	281	13	331	8	381	22
232	26	282	13	332	12	382	22
233	25	283	15	333	12	383	22
234	26	284	15	334	14	384	19
235	27	285	18	335	13	385	17
236	25	286	19	336	10	386	17
237	26	287	21	337	10	387	18
238	26	288	21	338	12	388	20
239	25	289	21	339	14	389	19
240	25	290	22	340	14	390	16
241	23	291	20	341	15	391	13
242	25	292	21	342	17	392	15
243	25	293	21	343	16	393	14
244	27	294	22	344	12	394	13
245	26	295	24	345	9	395	9
246	27	296	25	346	10	396	7
247	25	297	25	347	12	397	7
248	23	298	27	348	12	398	10
249	23	299	25	349	11	399	6
250	23	300	25	350	12	400	8

DRIVING SCHEDULE FOR CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
401	6	451	0	501	0	551	3
402	9	452	1	502	0	552	4
403	10	453	1	503	0	553	1
404	8	454	0	504	0	554	1
405	8	455	0	505	0	555	1
406	7	456	0	506	0	556	0
407	5	457	0	507	0	557	0
408	6	458	0	508	0	558	0
409	8	459	0	509	0	559	0
410	9	460	0	510	0	560	0
411	5	461	0	511	0	561	0
412	2	462	0	512	0	562	0
413	5	463	0	513	0	563	0
414	2	464	0	514	0	564	0
415	1	465	0	515	0	565	0
416	0	466	0	516	0	566	0
417	0	467	0	517	0	567	0
418	0	468	0	518	0	568	0
419	0	469	0	519	0	569	0
420	0	470	0	520	0	570	0
421	0	471	0	521	1	571	0
422	0	472	0	522	1	572	0
423	0	473	0	523	0	573	0
424	0	474	0	524	0	574	0
425	0	475	0	525	0	575	0
426	0	476	0	526	0	576	0
427	0	477	0	527	0	577	0
428	0	478	0	528	0	578	0
429	0	479	0	529	0	579	0
430	0	480	0	530	0	580	0
431	0	481	0	531	0	581	0
432	0	482	0	532	1	582	0
433	0	483	0	533	0	583	0
434	0	484	0	534	0	584	0
435	0	485	0	535	0	585	0
436	0	486	0	536	0	586	0
437	0	487	0	537	0	587	0
438	0	488	0	538	3	588	0
439	0	489	0	539	1	589	0
440	0	490	0	540	1	590	0
441	0	491	0	541	3	591	0
442	0	492	0	542	2	592	3
443	0	493	0	543	2	593	6
444	0	494	0	544	4	594	8
445	0	495	1	545	2	595	4
446	0	496	3	546	1	596	2
447	0	497	2	547	3	597	2
448	0	498	1	548	5	598	1
449	0	499	0	549	2	599	1
450	0	500	0	550	3	600	1

DRIVING SCHEDULE FOR CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
601	4	651	14	701	24	751	31
602	5	652	15	702	23	752	28
603	5	653	14	703	22	753	29
604	2	654	15	704	21	754	30
605	4	655	14	705	20	755	31
606	1	656	15	706	21	756	30
607	0	657	14	707	20	757	30
608	0	658	14	708	21	758	31
609	0	659	14	709	21	759	30
610	0	660	12	710	21	760	31
611	0	661	12	711	20	761	31
612	0	662	13	712	21	762	33
613	0	663	11	713	19	763	34
614	0	664	13	714	16	764	34
615	0	665	15	715	19	765	33
616	0	666	15	716	20	766	34
617	0	667	14	717	22	767	33
618	0	668	14	718	23	768	35
619	0	669	14	719	23	769	36
620	1	670	13	720	25	770	36
621	0	671	15	721	25	771	37
622	0	672	12	722	25	772	38
623	0	673	8	723	26	773	38
624	0	674	9	724	27	774	38
625	0	675	10	725	28	775	38
626	0	676	12	726	29	776	35
627	0	677	14	727	29	777	34
628	0	678	14	728	30	778	35
629	2	679	16	729	30	779	36
630	0	680	13	730	31	780	37
631	0	681	15	731	33	781	36
632	0	682	12	732	34	782	34
633	0	683	14	733	31	783	33
634	0	684	14	734	30	784	32
635	0	685	15	735	32	785	32
636	0	686	16	736	32	786	32
637	0	687	15	737	32	787	30
638	0	688	17	738	32	788	27
639	0	689	16	739	33	789	28
640	1	690	18	740	33	790	28
641	2	691	19	741	33	791	29
642	6	692	21	742	33	792	30
643	8	693	22	743	33	793	30
644	12	694	22	744	34	794	30
645	14	695	23	745	34	795	30
646	14	696	23	746	31	796	30
647	14	697	25	747	31	797	31
648	14	698	25	748	31	798	31
649	14	699	24	749	30	799	29
650	13	700	25	750	30	800	29

DRIVING SCHEDULE FOR CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
801	27	851	25	901	30	951	33
802	27	852	26	902	30	952	33
803	28	853	25	903	28	953	35
804	30	854	25	904	28	954	35
805	31	855	26	905	29	955	36
806	32	856	27	906	30	956	36
807	33	857	27	907	31	957	37
808	32	858	26	908	32	958	38
809	31	859	26	909	32	959	38
810	31	860	27	910	33	960	38
811	30	861	27	911	31	961	38
812	29	862	27	912	31	962	38
813	30	863	27	913	32	963	39
814	30	864	26	914	31	964	39
815	30	865	23	915	31	965	37
816	30	866	24	916	32	966	37
817	30	867	24	917	32	967	37
818	31	868	25	918	30	968	37
819	31	869	25	919	31	969	37
820	31	870	27	920	31	970	36
821	31	871	28	921	32	971	35
822	32	872	28	922	31	972	34
823	32	873	28	923	32	973	35
824	31	874	29	924	31	974	35
825	31	875	30	925	30	975	33
826	30	876	31	926	31	976	33
827	31	877	32	927	31	977	34
828	31	878	32	928	29	978	34
829	32	879	31	929	30	979	34
830	32	880	31	930	30	980	33
831	33	881	31	931	29	981	33
832	32	882	32	932	28	982	33
833	32	883	32	933	29	983	32
834	33	884	32	934	28	984	33
835	33	885	32	935	28	985	33
836	31	886	30	936	29	986	32
837	32	887	30	937	30	987	32
838	31	888	30	938	31	988	33
839	31	889	29	939	32	989	32
840	30	890	30	940	32	990	32
841	29	891	31	941	32	991	32
842	28	892	29	942	31	992	33
843	28	893	28	943	31	993	35
844	29	894	27	944	32	994	35
845	30	895	28	945	33	995	35
846	30	896	29	946	34	996	33
847	28	897	29	947	33	997	31
848	26	898	29	948	32	998	32
849	24	899	27	949	33	999	33
850	25	900	28	950	32	1000	32

DRIVING SCHEDULE FOR CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
1001	32	1051	41	1101	51	1151	54
1002	33	1052	41	1102	52	1152	54
1003	33	1053	41	1103	52	1153	54
1004	33	1054	41	1104	53	1154	54
1005	33	1055	41	1105	53	1155	53
1006	34	1056	40	1106	53	1156	53
1007	34	1057	41	1107	53	1157	53
1008	34	1058	41	1108	53	1158	54
1009	34	1059	42	1109	53	1159	54
1010	34	1060	42	1110	53	1160	54
1011	36	1061	43	1111	53	1161	54
1012	36	1062	43	1112	53	1162	54
1013	36	1063	43	1113	53	1163	54
1014	35	1064	43	1114	53	1164	54
1015	33	1065	43	1115	53	1165	53
1016	34	1066	43	1116	53	1166	53
1017	36	1067	43	1117	53	1167	53
1018	36	1068	43	1118	53	1168	53
1019	36	1069	43	1119	52	1169	54
1020	37	1070	44	1120	52	1170	54
1021	37	1071	44	1121	53	1171	55
1022	37	1072	44	1122	53	1172	54
1023	35	1073	44	1123	53	1173	53
1024	37	1074	45	1124	53	1174	52
1025	37	1075	45	1125	53	1175	51
1026	37	1076	46	1126	53	1176	50
1027	38	1077	46	1127	53	1177	49
1028	39	1078	46	1128	53	1178	48
1029	38	1079	46	1129	53	1179	47
1030	38	1080	47	1130	53	1180	44
1031	39	1081	47	1131	53	1181	43
1032	40	1082	47	1132	53	1182	40
1033	40	1083	48	1133	53	1183	39
1034	41	1084	48	1134	55	1184	38
1035	41	1085	48	1135	55	1185	37
1036	42	1086	49	1136	55	1186	36
1037	41	1087	50	1137	55	1187	34
1038	41	1088	50	1138	55	1188	33
1039	42	1089	50	1139	55	1189	32
1040	42	1090	50	1140	55	1190	31
1041	42	1091	51	1141	55	1191	30
1042	40	1092	51	1142	56	1192	29
1043	40	1093	51	1143	56	1193	27
1044	40	1094	50	1144	56	1194	25
1045	40	1095	50	1145	56	1195	24
1046	39	1096	49	1146	56	1196	21
1047	40	1097	49	1147	56	1197	19
1048	41	1098	50	1148	55	1198	16
1049	41	1099	51	1149	55	1199	15
1050	41	1100	51	1150	54	1200	14

DRIVING SCHEDULE FOR CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
1201	11	1209	0	1217	0	1225	0
1202	9	1210	0	1218	0	1226	0
1203	7	1211	0	1219	0	1227	0
1204	6	1212	0	1220	0	1228	0
1205	3	1213	0	1221	0	1229	0
1206	1	1214	0	1222	0	1230	0
1207	0	1215	0	1223	0		
1208	0	1216	0	1224	0		

DRIVING SCHEDULE FOR
CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
0	0.0						
1	0.0	51	13.03	101	7.80	151	21.23
2	0.0	52	13.63	102	5.11	152	23.78
3	0.0	53	12.00	103	7.43	153	26.08
4	0.0	54	10.00	104	7.89	154	26.52
5	0.79	55	8.66	105	7.06	155	25.00
6	1.00	56	9.81	106	6.63	156	25.00
7	0.0	57	11.94	107	8.53	157	25.00
8	0.0	58	11.00	108	10.00	158	25.00
9	0.0	59	11.86	109	10.31	159	23.03
10	0.0	60	13.11	110	12.31	160	24.00
11	0.0	61	10.80	111	14.89	161	23.31
12	0.0	62	11.52	112	17.00	162	22.50
13	0.0	63	10.17	113	16.21	163	23.66
14	0.0	64	11.78	114	18.83	164	24.00
15	0.0	65	8.31	115	16.00	165	24.00
16	0.0	66	6.00	116	15.22	166	24.00
17	0.0	67	7.64	117	13.42	167	23.71
18	0.0	68	11.11	118	14.57	168	23.00
19	0.0	69	14.58	119	14.27	169	23.60
20	0.0	70	14.00	120	14.00	170	24.00
21	0.31	71	13.65	121	13.95	171	22.17
22	1.00	72	12.67	122	12.59	172	25.00
23	1.00	73	14.00	123	11.72	173	25.00
24	1.00	74	14.65	124	13.52	174	25.39
25	2.87	75	11.78	125	14.00	175	26.55
26	2.00	76	8.11	126	14.00	176	27.00
27	1.75	77	9.12	127	14.99	177	27.86
28	1.41	78	9.17	128	15.30	178	24.94
29	3.69	79	6.56	129	17.31	179	22.18
30	7.17	80	7.19	130	17.54	180	23.33
31	6.24	81	9.50	131	17.62	181	24.00
32	6.07	82	12.72	132	15.67	182	24.00
33	8.39	83	10.13	133	12.19	183	24.00
34	10.70	84	12.44	134	14.09	184	21.11
35	12.51	85	12.86	135	15.00	185	22.24
36	12.33	86	9.93	136	15.41	186	24.56
37	12.00	87	9.69	137	16.00	187	26.00
38	12.98	88	9.15	138	14.56	188	26.00
39	10.00	89	8.97	139	14.88	189	26.00
40	10.30	90	5.50	140	15.07	190	27.81
41	11.00	91	4.30	141	17.00	191	30.13
42	11.00	92	7.48	142	17.35	192	31.78
43	11.77	93	8.00	143	18.00	193	31.00
44	12.00	94	4.81	144	18.67	194	31.00
45	12.25	95	4.00	145	20.65	195	28.22
46	15.00	96	3.33	146	21.00	196	27.85
47	14.20	97	6.54	147	21.28	197	29.00
48	13.56	98	7.57	148	22.41	198	28.83
49	15.43	99	8.75	149	21.91	199	27.03
50	15.13	100	7.04	150	22.39	200	25.48

DRIVING SCHEDULE FOR
CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
201	25.36	251	20.98	301	11.62	351	6.50
202	25.80	252	20.67	302	11.54	352	5.41
203	26.95	253	21.00	303	13.39	353	7.13
204	25.11	254	21.98	304	15.70	354	8.72
205	26.00	255	24.14	305	15.98	355	5.48
206	25.57	256	25.00	306	14.00	356	2.11
207	25.00	257	25.91	307	14.65	357	4.42
208	23.52	258	25.78	308	15.52	358	1.65
209	24.80	259	25.00	309	15.00	359	0.49
210	25.11	260	25.00	310	15.00	360	0.0
211	26.79	261	25.00	311	15.95	361	0.0
212	26.37	262	25.24	312	16.78	362	0.0
213	25.94	263	24.41	313	15.00	363	0.0
214	23.63	264	22.56	314	15.00	364	0.0
215	23.00	265	21.57	315	16.75	365	0.0
216	23.00	266	20.13	316	17.26	366	0.0
217	23.00	267	17.06	317	15.20	367	0.0
218	22.06	268	18.81	318	16.06	368	0.0
219	19.53	269	16.97	319	17.21	369	0.0
220	19.00	270	14.00	320	19.11	370	0.0
221	19.79	271	13.00	321	22.06	371	0.0
222	19.06	272	13.00	322	23.69	372	0.0
223	17.00	273	15.92	323	24.00	373	0.0
224	16.74	274	17.26	324	23.00	374	0.0
225	16.42	275	19.00	325	22.68	375	0.0
226	16.43	276	18.11	326	21.00	376	0.0
227	16.00	277	14.59	327	20.53	377	0.0
228	13.33	278	14.52	328	21.89	378	0.0
229	14.00	279	15.00	329	22.21	379	0.0
230	14.00	280	11.93	330	22.00	380	0.0
231	14.00	281	10.54	331	21.69	381	0.0
232	14.00	282	8.61	332	18.48	382	0.0
233	14.00	283	8.55	333	17.00	383	0.0
234	14.00	284	9.00	334	17.57	384	0.0
235	14.99	285	6.42	335	19.46	385	0.0
236	14.00	286	8.07	336	19.11	386	0.0
237	14.00	287	12.00	337	15.86	387	0.0
238	14.46	288	12.67	338	13.41	388	0.0
239	15.00	289	13.51	339	14.64	389	0.0
240	15.00	290	11.05	340	13.48	390	0.39
241	16.87	291	10.00	341	10.29	391	1.00
242	15.72	292	11.93	342	7.33	392	0.30
243	13.00	293	14.00	343	7.00	393	0.0
244	13.81	294	14.28	344	9.41	394	0.0
245	15.00	295	15.87	345	6.61	395	0.0
246	17.17	296	16.41	346	7.07	396	0.0
247	18.88	297	13.00	347	7.86	397	0.0
248	21.00	298	9.28	348	9.78	398	0.0
249	21.00	299	10.13	349	8.13	399	0.0
250	21.35	300	12.00	350	7.91	400	0.0

DRIVING SCHEDULE FOR
CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
401	0.0	451	1.00	501	0.0	551	0.0
402	0.0	452	0.0	502	0.0	552	0.0
403	0.0	453	0.0	503	0.0	553	1.05
404	0.0	454	0.0	504	0.0	554	2.82
405	0.0	455	0.0	505	0.0	555	6.72
406	0.0	456	0.0	506	0.0	556	10.08
407	0.0	457	0.0	507	0.0	557	13.35
408	0.0	458	0.0	508	0.0	558	14.00
409	0.0	459	0.25	509	0.0	559	14.00
410	0.0	460	0.59	510	0.0	560	14.00
411	0.0	461	0.0	511	1.31	561	13.69
412	0.0	462	0.0	512	4.78	562	13.46
413	0.0	463	0.0	513	7.50	563	14.62
414	0.0	464	0.11	514	4.37	564	14.22
415	0.0	465	2.61	515	2.00	565	14.94
416	0.0	466	1.00	516	1.78	566	14.09
417	0.0	467	2.02	517	1.00	567	14.75
418	0.0	468	2.33	518	1.00	568	14.00
419	0.0	469	2.00	519	3.08	569	14.00
420	0.0	470	3.96	520	4.85	570	12.55
421	0.0	471	1.86	521	4.97	571	12.00
422	0.0	472	1.59	522	2.33	572	12.93
423	0.0	473	3.91	523	3.03	573	11.39
424	0.0	474	3.17	524	0.52	574	13.70
425	0.0	475	2.77	525	0.0	575	15.00
426	0.0	476	3.00	526	0.0	576	14.33
427	0.21	477	3.75	527	0.0	577	14.00
428	1.74	478	1.00	528	0.0	578	14.00
429	2.47	479	1.00	529	0.0	579	13.28
430	1.31	480	0.44	530	0.0	580	14.11
431	0.16	481	0.0	531	0.0	581	10.18
432	0.0	482	0.0	532	0.0	582	8.61
433	0.0	483	0.0	533	0.0	583	9.77
434	0.0	484	0.0	534	0.0	584	11.85
435	0.0	485	0.0	535	0.21	585	14.00
436	0.0	486	0.0	536	0.63	586	14.48
437	0.0	487	0.0	537	0.0	587	14.80
438	0.0	488	0.0	538	0.0	588	14.11
439	0.0	489	0.0	539	0.0	589	12.86
440	0.0	490	0.0	540	0.0	590	13.74
441	0.0	491	0.0	541	0.0	591	14.03
442	0.0	492	0.0	542	0.0	592	15.19
443	0.0	493	0.0	543	0.95	593	15.66
444	0.0	494	0.0	544	0.74	594	16.00
445	0.0	495	0.0	545	0.0	595	16.34
446	0.0	496	0.0	546	0.0	596	17.63
447	0.0	497	0.0	547	0.0	597	18.97
448	0.0	498	0.0	548	0.0	598	21.13
449	0.0	499	0.0	549	0.0	599	22.00
450	0.83	500	0.0	550	0.0	600	22.44

DRIVING SCHEDULE FOR
CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
601	23.00	651	29.47	701	29.66	751	25.43
602	24.52	652	30.63	702	29.50	752	27.37
603	25.00	653	30.21	703	30.00	753	28.00
604	24.07	654	30.00	704	30.00	754	28.00
605	24.77	655	30.90	705	30.00	755	28.84
606	23.61	656	30.26	706	30.13	756	30.00
607	22.45	657	31.00	707	31.00	757	31.16
608	21.30	658	32.15	708	31.00	758	32.00
609	20.14	659	33.73	709	31.00	759	31.53
610	20.98	660	34.00	710	31.76	760	31.00
611	20.18	661	33.05	711	32.00	761	31.00
612	21.00	662	33.80	712	31.00	762	31.94
613	21.00	663	33.72	713	30.77	763	32.00
614	20.35	664	35.52	714	30.39	764	32.00
615	20.81	665	36.00	715	31.00	765	31.17
616	19.07	666	36.83	716	31.70	766	30.00
617	16.36	667	37.99	717	32.00	767	30.00
618	19.28	668	38.00	718	32.98	768	29.11
619	20.87	669	38.00	719	32.00	769	30.05
620	22.59	670	36.61	720	32.33	770	30.59
621	23.00	671	34.38	721	33.00	771	28.64
622	24.82	672	34.78	.22	31.70	772	27.48
623	25.00	673	35.94	723	31.81	773	27.68
624	25.22	674	36.91	724	31.04	774	28.83
625	26.38	675	35.50	725	30.88	775	29.00
626	27.54	676	33.59	726	29.72	776	28.70
627	28.69	677	32.43	727	28.56	777	27.31
628	29.00	678	32.00	728	28.00	778	28.93
629	30.00	679	32.00	729	28.75	779	30.00
630	30.17	680	29.89	730	29.91	780	28.44
631	31.65	681	27.19	731	29.87	781	28.00
632	33.48	682	28.00	732	27.56	782	29.09
633	32.08	683	28.51	733	25.24	783	30.25
634	30.20	684	29.67	734	24.54	784	31.41
635	31.91	685	30.00	735	25.00	785	32.00
636	32.00	686	30.00	736	25.85	786	32.72
637	32.00	687	30.00	737	25.00	787	31.24
638	32.43	688	30.30	738	25.17	788	31.04
639	33.00	689	31.00	739	26.32	789	31.81
640	33.00	690	29.78	740	27.00	790	31.00
641	33.00	691	29.00	741	26.36	791	31.51
642	33.06	692	27.15	742	26.00	792	32.00
643	34.00	693	27.08	743	26.95	793	30.35
644	32.89	694	28.48	744	27.00	794	30.98
645	31.00	695	30.40	745	27.00	795	31.14
646	31.00	696	31.56	746	26.57	796	31.70
647	30.16	697	32.71	747	24.25	797	31.45
648	30.00	698	32.13	748	23.74	798	31.39
649	30.53	699	31.00	749	24.00	799	30.23
650	28.32	700	30.81	750	25.00	800	30.93

DRIVING SCHEDULE FOR
CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
801	30.83	851	33.00	901	40.00	951	51.00
802	29.24	852	32.00	902	40.00	952	51.85
803	30.00	853	32.27	903	39.86	953	52.01
804	29.44	854	32.57	904	39.30	954	53.00
805	28.29	855	32.00	905	40.45	955	53.00
806	28.87	856	32.00	906	41.00	956	53.00
807	28.00	857	32.90	907	41.00	957	53.00
808	28.19	858	35.00	908	41.00	958	53.00
809	29.34	859	35.00	909	41.00	959	53.00
810	30.50	860	34.26	910	41.00	960	53.00
811	31.66	861	31.94	911	41.00	961	53.00
812	32.00	862	31.69	912	40.44	962	53.00
813	32.00	863	32.84	913	40.71	963	53.00
814	31.00	864	32.00	914	41.00	964	53.00
815	31.29	865	32.16	915	42.00	965	53.00
816	32.44	866	33.00	916	42.19	966	52.94
817	33.60	867	33.00	917	43.00	967	52.00
818	33.24	868	33.00	918	43.00	968	52.37
819	32.08	869	33.79	919	43.00	969	53.00
820	32.93	870	34.00	920	43.00	970	53.00
821	32.23	871	34.00	921	43.00	971	53.00
822	33.00	872	34.00	922	43.00	972	53.00
823	34.09	873	34.83	923	43.00	973	53.00
824	35.00	874	36.00	924	43.44	974	53.00
825	35.86	875	36.00	925	44.00	975	53.00
826	36.02	876	35.11	926	44.00	976	53.00
827	37.18	877	33.05	927	44.00	977	53.00
828	38.00	878	34.41	928	45.00	978	53.00
829	38.00	879	36.00	929	45.23	979	53.20
830	38.00	880	36.00	930	46.00	980	55.00
831	38.00	881	36.68	931	46.00	981	55.00
832	38.96	882	37.00	932	46.00	982	55.00
833	38.76	883	37.00	933	46.86	983	55.00
834	37.00	884	35.30	934	47.00	984	55.00
835	37.00	885	37.00	935	47.18	985	55.00
836	37.00	886	37.00	936	48.00	986	55.20
837	37.00	887	37.62	937	48.00	987	56.00
838	36.09	888	38.78	938	48.65	988	56.00
839	34.93	889	38.06	939	49.81	989	56.00
840	34.22	890	38.09	940	50.00	990	56.00
841	35.00	891	39.25	941	50.00	991	56.00
842	33.93	892	40.00	942	50.28	992	55.00
843	33.00	893	40.57	943	51.00	993	54.69
844	33.85	894	41.00	944	51.00	994	54.00
845	34.00	895	41.88	945	50.25	995	54.00
846	33.83	896	41.00	946	50.00	996	54.00
847	33.00	897	41.19	947	49.00	997	54.00
848	33.00	898	42.00	948	49.22	998	53.00
849	32.36	899	42.00	949	50.38	999	53.00
850	32.80	900	40.67	950	51.00	1000	53.41

DRIVING SCHEDULE FOR
CYCLE 2041393295

LA BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
1001	54.00	1017	48.92	1033	22.19	1049	0.0
1002	54.00	1018	47.76	1034	19.48	1050	0.0
1003	54.00	1019	45.80	1035	16.25	1051	0.0
1004	54.00	1020	43.44	1036	14.93	1052	0.0
1005	54.00	1021	40.86	1037	13.30	1053	0.0
1006	53.65	1022	39.13	1038	10.22	1054	0.0
1007	53.00	1023	37.97	1039	7.91	1055	0.0
1008	53.00	1024	36.81	1040	6.30	1056	0.0
1009	53.00	1025	35.31	1041	3.42	1057	0.0
1010	53.98	1026	33.50	1042	0.98	1058	0.0
1011	54.14	1027	32.34	1043	0.0	1059	0.0
1012	54.70	1028	31.18	1044	0.0	1060	0.0
1013	53.55	1029	30.03	1045	0.0	1061	0.0
1014	52.39	1030	28.74	1046	0.0	1062	0.0
1015	51.23	1031	26.43	1047	0.0	1063	0.0
1016	50.07	1032	24.56	1048	0.0		

INPUT INITIAL SPEED VS DELTA SPEED MATRIX
NY BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
0	0	0	0	0	180544	6991	1890	175	165	189765
1	0	0	0	7316	8406	4330	1810	553	139	22554
2	0	0	959	4866	4149	3431	2051	774	74	16304
3	0	45	2315	2871	3584	2705	2479	532	73	14604
4	0	542	1928	2535	3252	3070	2059	443	251	14080
5	53	795	1814	2538	2763	3401	1649	709	273	13995
6	221	798	1727	2085	3606	2902	2031	661	137	14168
7	262	919	1459	2269	3772	3126	1907	544	57	14315
8	367	800	1136	2986	3084	3391	1843	439	153	14199
9	438	564	1768	2366	3693	3413	1794	468	210	14714
10	320	581	1676	2322	3936	3828	1478	519	168	14828
11	262	877	1196	2915	4088	3346	1521	529	59	14793
12	369	621	1336	2573	4258	3254	1736	327	53	14527
13	376	441	1272	2775	4040	3649	1339	233	143	14268
14	286	504	1220	2706	4219	3424	1051	300	172	13882
15	201	583	1249	2029	4403	3037	1054	386	131	13073
16	260	494	816	2261	4351	2913	959	381	56	12491
17	294	375	823	2543	4044	2786	1182	271	23	12341
18	263	292	992	2219	3820	2804	996	160	36	11582
19	168	333	955	1938	3713	2725	772	170	92	10866
20	149	431	721	1671	3709	2345	688	283	88	10085
21	188	374	531	1689	3268	2066	765	362	36	9279
22	215	234	441	1838	2726	1860	844	238	5	8401
23	160	165	639	1602	2234	1740	721	82	0	7343
24	109	176	817	1222	2086	1634	496	68	0	6608
25	77	294	561	1023	1872	1473	373	128	0	5801
26	91	218	395	887	1688	1202	419	150	0	5050
27	101	139	275	960	1418	1077	484	113	0	4567
28	80	61	334	898	1322	963	402	38	0	4098
29	48	93	406	780	1155	861	210	40	0	3593
30	26	180	322	584	998	742	246	79	0	3177
31	25	97	152	597	787	573	263	23	0	2517

INPUT INITIAL SPEED VS DELTA SPEED MATRIX (CONTINUED)
NY BUSES: FNY & NFNY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4	TOTALS
32	28	37	187	482	600	473	154	8	0	1969
33	23	31	215	366	591	435	93	1	0	1755
34	10	79	103	235	516	359	86	2	0	1390
35	16	37	74	259	425	296	161	0	0	1268
36	12	18	58	229	397	269	122	0	0	1105
37	13	8	82	185	391	231	40	0	0	950
38	2	33	91	138	304	205	36	0	0	809
39	4	44	48	110	269	161	69	0	0	705
40	8	6	33	130	198	132	61	0	0	568
41	6	2	46	89	144	101	33	0	0	421
42	2	8	53	51	145	105	21	0	0	385
43	1	26	18	87	164	130	37	0	0	463
44	2	5	20	79	133	123	48	0	0	410
45	2	2	32	54	93	86	20	0	0	289
46	0	21	49	22	65	35	1	0	0	193
47	0	28	13	10	49	13	0	0	0	113
48	0	0	1	6	12	1	0	0	0	20
49	0	0	1	0	3	1	0	0	0	5
50	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0
59	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0
TOTALS	5538	12411	31359	70396	285487	88218	38494	10189	2594	544686

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%)
NY BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	33.1464	1.2835	0.3470	0.0321	0.0303
1	0.0	0.0	0.0	1.3432	1.5433	0.7950	0.3323	0.1015	0.0255
2	0.0	0.0	0.1761	0.8934	0.7617	0.6299	0.3765	0.1421	0.0136
3	0.0	0.0083	0.4250	0.5271	0.6580	0.4966	0.4551	0.0977	0.0134
4	0.0	0.0995	0.3540	0.4654	0.5970	0.5636	0.3780	0.0813	0.0461
5	0.0097	0.1460	0.3330	0.4660	0.5073	0.6244	0.3027	0.1302	0.0501
6	0.0406	0.1465	0.3171	0.3828	0.6620	0.5328	0.3729	0.1214	0.0252
7	0.0481	0.1687	0.2679	0.4166	0.6925	0.5739	0.3501	0.0999	0.0105
8	0.0674	0.1469	0.2086	0.5482	0.5662	0.6226	0.3384	0.0806	0.0281
9	0.0804	0.1035	0.3246	0.4344	0.6780	0.6266	0.3294	0.0859	0.0386
10	0.0587	0.1067	0.3077	0.4263	0.7226	0.7028	0.2713	0.0953	0.0308
11	0.0481	0.1610	0.2196	0.5352	0.7505	0.6143	0.2792	0.0971	0.0108
12	0.0677	0.1140	0.2453	0.4724	0.7817	0.5974	0.3187	0.0600	0.0097
13	0.0690	0.0810	0.2335	0.5095	0.7417	0.6699	0.2458	0.0428	0.0263
14	0.0525	0.0925	0.2240	0.4968	0.7746	0.6286	0.1930	0.0551	0.0316
15	0.0369	0.1070	0.2293	0.3725	0.8084	0.5576	0.1935	0.0709	0.0241
16	0.0477	0.0907	0.1498	0.4151	0.7988	0.5348	0.1761	0.0699	0.0103
17	0.0540	0.0688	0.1511	0.4669	0.7424	0.5115	0.2170	0.0498	0.0042
18	0.0483	0.0536	0.1821	0.4074	0.7013	0.5148	0.1829	0.0294	0.0066
19	0.0308	0.0611	0.1753	0.3558	0.6817	0.5003	0.1417	0.0312	0.0169
20	0.0274	0.0791	0.1324	0.3068	0.6809	0.4305	0.1263	0.0520	0.0162
21	0.0345	0.0687	0.0975	0.3101	0.6000	0.3793	0.1404	0.0665	0.0066
22	0.0395	0.0430	0.0810	0.3374	0.5005	0.3415	0.1550	0.0437	0.0009
23	0.0294	0.0303	0.1173	0.2941	0.4101	0.3195	0.1324	0.0151	0.0
24	0.0200	0.0323	0.1500	0.2243	0.3830	0.3000	0.0911	0.0125	0.0
25	0.0141	0.0540	0.1030	0.1878	0.3437	0.2704	0.0685	0.0235	0.0
26	0.0167	0.0400	0.0725	0.1628	0.3099	0.2207	0.0769	0.0275	0.0
27	0.0185	0.0255	0.0505	0.1762	0.2603	0.1977	0.0889	0.0207	0.0
28	0.0147	0.0112	0.0613	0.1649	0.2427	0.1768	0.0738	0.0070	0.0
29	0.0088	0.0171	0.0745	0.1432	0.2120	0.1581	0.0386	0.0073	0.0
30	0.0048	0.0330	0.0591	0.1072	0.1832	0.1362	0.0452	0.0145	0.0

NORMALIZED INPUT INITIAL SPEED VS DELTA SPEED MATRIX (%) (CONTINUED)
NY BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4
31	0.0046	0.0178	0.0279	0.1096	0.1445	0.1052	0.0483	0.0042	0.0
32	0.0051	0.0058	0.0343	0.0885	0.1102	0.0868	0.0283	0.0015	0.0
33	0.0042	0.0057	0.0395	0.0672	0.1085	0.0799	0.0171	0.0002	0.0
34	0.0018	0.0145	0.0189	0.0431	0.0947	0.0659	0.0158	0.0004	0.0
35	0.0029	0.0068	0.0136	0.0476	0.0780	0.0543	0.0296	0.0	0.0
36	0.0022	0.0033	0.0106	0.0420	0.0729	0.0494	0.0224	0.0	0.0
37	0.0024	0.0015	0.0151	0.0340	0.0718	0.0424	0.0073	0.0	0.0
38	0.0004	0.0061	0.0167	0.0253	0.0558	0.0376	0.0066	0.0	0.0
39	0.0007	0.0031	0.0088	0.0202	0.0494	0.0296	0.0127	0.0	0.0
40	0.0015	0.0011	0.0061	0.0239	0.0364	0.0242	0.0112	0.0	0.0
41	0.0011	0.0004	0.0084	0.0163	0.0264	0.0185	0.0061	0.0	0.0
42	0.0004	0.0015	0.0057	0.0094	0.0266	0.0193	0.0039	0.0	0.0
43	0.0002	0.0018	0.0033	0.0160	0.0301	0.0239	0.0068	0.0	0.0
44	0.0004	0.0009	0.0037	0.0145	0.0244	0.0226	0.0088	0.0	0.0
45	0.0004	0.0004	0.0059	0.0099	0.0171	0.0158	0.0037	0.0	0.0
46	0.0	0.0039	0.0090	0.0040	0.0119	0.0064	0.0002	0.0	0.0
47	0.0	0.0051	0.0024	0.0018	0.0090	0.0024	0.0	0.0	0.0
48	0.0	0.0	0.0002	0.0011	0.0022	0.0002	0.0	0.0	0.0
49	0.0	0.0	0.0002	0.0	0.0006	0.0002	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TRANSITION-PROBABILITY MATRIX
NY BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4
0	0.0	0.0	0.0	0.0	0.9514	0.9882	0.9982	0.9991	1.0000
1	0.0	0.0	0.0	0.3244	0.6971	0.8891	0.9693	0.9938	1.0000
2	0.0	0.0	0.0588	0.3573	0.6118	0.8222	0.9480	0.9955	1.0000
3	0.0	0.0031	0.1616	0.3582	0.6036	0.7888	0.9586	0.9950	1.0000
4	0.0	0.0335	0.1754	0.3555	0.5864	0.8045	0.9507	0.9822	1.0000
5	0.0038	0.0606	0.1902	0.3716	0.5690	0.8120	0.9298	0.9805	1.0000
6	0.0156	0.0719	0.1938	0.3410	0.5955	0.8003	0.9437	0.9903	1.0000
7	0.0183	0.0825	0.1844	0.3429	0.6064	0.8248	0.9580	0.9960	1.0000
8	0.0258	0.0822	0.1622	0.3725	0.5897	0.8285	0.9583	0.9892	1.0000
9	0.0298	0.0681	0.1883	0.3491	0.6000	0.8320	0.9539	0.9857	1.0000
10	0.0216	0.0638	0.1738	0.3304	0.5958	0.8540	0.9537	0.9887	1.0000
11	0.0177	0.0770	0.1578	0.3549	0.6312	0.8574	0.9603	0.9960	1.0000
12	0.0254	0.0681	0.1601	0.3372	0.6303	0.8543	0.9738	0.9964	1.0000
13	0.0264	0.0573	0.1464	0.3409	0.6241	0.8798	0.9736	0.9900	1.0000
14	0.0206	0.0569	0.1448	0.3397	0.6436	0.8903	0.9660	0.9876	1.0000
15	0.0154	0.0600	0.1555	0.3107	0.6475	0.8798	0.9605	0.9900	1.0000
16	0.0208	0.0604	0.1257	0.3067	0.6550	0.8882	0.9650	0.9955	1.0000
17	0.0238	0.0542	0.1209	0.3270	0.6546	0.8804	0.9762	0.9981	1.0000
18	0.0227	0.0479	0.1336	0.3252	0.6550	0.8971	0.9831	0.9969	1.0000
19	0.0155	0.0461	0.1340	0.3124	0.6541	0.9048	0.9759	0.9915	1.0000
20	0.0148	0.0575	0.1290	0.2947	0.6625	0.8950	0.9632	0.9913	1.0000
21	0.0203	0.0606	0.1178	0.2998	0.6520	0.8747	0.9571	0.9961	1.0000
22	0.0256	0.0534	0.1059	0.3247	0.6492	0.8706	0.9711	0.9994	1.0000
23	0.0218	0.0443	0.1313	0.3494	0.6537	0.8906	0.9888	1.0000	1.0000
24	0.0165	0.0431	0.1668	0.3517	0.6674	0.9146	0.9897	1.0000	1.0000
25	0.0133	0.0640	0.1607	0.3370	0.6597	0.9136	0.9779	1.0000	1.0000
26	0.0180	0.0612	0.1394	0.3150	0.6493	0.8873	0.9703	1.0000	1.0000
27	0.0221	0.0526	0.1128	0.3230	0.6335	0.8693	0.9753	1.0000	1.0000
28	0.0195	0.0344	0.1159	0.3350	0.6576	0.8926	0.9907	1.0000	1.0000
29	0.0134	0.0392	0.1522	0.3693	0.6908	0.9304	0.9889	1.0000	1.0000
30	0.0082	0.0548	0.1662	0.3500	0.6641	0.8977	0.9751	1.0000	1.0000
31	0.0099	0.0485	0.1089	0.3460	0.6587	0.8864	0.9909	1.0000	1.0000

TRANSITION-PROBABILITY MATRIX (CONTINUED)
NY BUSES: FWY & NFWY COMPOSITE

MPH	-4	-3	-2	-1	0	1	2	3	4
32	0.0142	0.0330	0.1280	0.3728	0.6775	0.9177	0.9959	1.0000	1.0000
33	0.0131	0.0308	0.1533	0.3618	0.6986	0.9464	0.9994	1.0000	1.0000
34	0.0072	0.0640	0.1381	0.3072	0.6784	0.9367	0.9986	1.0000	1.0000
35	0.0126	0.0418	0.1002	0.3044	0.6396	0.8730	1.0000	1.0000	1.0000
36	0.0109	0.0271	0.0796	0.2869	0.6462	0.8896	1.0000	1.0000	1.0000
37	0.0137	0.0221	0.1084	0.3032	0.7147	0.9579	1.0000	1.0000	1.0000
38	0.0025	0.0433	0.1557	0.3263	0.7021	0.9555	1.0000	1.0000	1.0000
39	0.0057	0.0681	0.1362	0.2922	0.6738	0.9021	1.0000	1.0000	1.0000
40	0.0141	0.0246	0.0827	0.3116	0.6602	0.8926	1.0000	1.0000	1.0000
41	0.0143	0.0190	0.1283	0.3397	0.6817	0.9216	1.0000	1.0000	1.0000
42	0.0052	0.0260	0.1636	0.2961	0.6727	0.9455	1.0000	1.0000	1.0000
43	0.0022	0.0583	0.0972	0.2851	0.6393	0.9201	1.0000	1.0000	1.0000
44	0.0049	0.0171	0.0659	0.2585	0.5829	0.8829	1.0000	1.0000	1.0000
45	0.0069	0.0138	0.1246	0.3114	0.6332	0.9308	1.0000	1.0000	1.0000
46	0.0	0.1088	0.3627	0.4767	0.8135	0.9948	1.0000	1.0000	1.0000
47	0.0	0.2478	0.3628	0.4513	0.8850	1.0000	1.0000	1.0000	1.0000
48	0.0	0.0	0.0500	0.3500	0.9500	1.0000	1.0000	1.0000	1.0000
49	0.0	0.0	0.2000	0.2000	0.8000	1.0000	1.0000	1.0000	1.0000
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

NY BUSES: FWY & NFWY COMPOSITE

THE STATISTICS FOR CYCLE 2143765149 ARE AS FOLLOWS:

KOLMOGOROV-SMIRNOV DIFFERENCES:

	DIFFERENCE	SL
MATRIX:	0.0125	0.993
CRUISE:	0.0241	0.861
ACCEL:	0.0377	0.793
DECEL:	0.0209	1.000
SPEED:	0.0195	0.757
DEL SPD:	0.0085	1.000

SUMMARY PERCENTAGE MEASURES:

	INPUT	CYCLE
IDLE:	33.15	33.08
CRUISE:	19.27	19.56 *
ACCEL:	25.61	24.94
DECEL:	21.98	22.42

AVERAGE SPEED FOR INPUT MATRIX:	8.65 MPH
AVERAGE SPEED FOR CYCLE:	8.77 MPH
CYCLE DISTANCE:	2.51 MILES
CYCLE DURATION:	17.15 MINUTES

* THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE CRUISE PERCENTAGE.

DRIVING SCHEDULE FOR CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
0	0						
1	0	51	0	101	10	151	0
2	0	52	0	102	11	152	0
3	0	53	0	103	7	153	1
4	0	54	0	104	6	154	1
5	0	55	0	105	6	155	2
6	0	56	0	106	4	156	4
7	0	57	0	107	3	157	2
8	0	58	0	108	2	158	1
9	0	59	0	109	4	159	2
10	0	60	0	110	5	160	2
11	1	61	0	111	3	161	3
12	0	62	0	112	3	162	2
13	0	63	0	113	3	163	4
14	0	64	1	114	1	164	2
15	0	65	1	115	0	165	2
16	0	66	0	116	0	166	4
17	0	67	0	117	0	167	2
18	0	68	0	118	0	168	3
19	0	69	2	119	0	169	1
20	0	70	1	120	0	170	0
21	0	71	0	121	0	171	0
22	0	72	0	122	0	172	0
23	0	73	1	123	0	173	0
24	0	74	0	124	0	174	1
25	0	75	0	125	0	175	4
26	0	76	0	126	0	176	1
27	0	77	0	127	0	177	0
28	0	78	0	128	0	178	0
29	0	79	0	129	0	179	0
30	0	80	0	130	0	180	0
31	0	81	0	131	0	181	0
32	0	82	0	132	0	182	0
33	0	83	0	133	0	183	0
34	0	84	0	134	0	184	0
35	0	85	0	135	0	185	0
36	0	86	1	136	0	186	0
37	0	87	1	137	0	187	0
38	0	88	2	138	0	188	0
39	0	89	1	139	0	189	0
40	0	90	4	140	1	190	0
41	0	91	3	141	0	191	0
42	0	92	5	142	0	192	0
43	0	93	6	143	0	193	0
44	0	94	6	144	0	194	0
45	0	95	4	145	0	195	1
46	0	96	5	146	0	196	2
47	0	97	4	147	0	197	2
48	0	98	4	148	0	198	4
49	0	99	5	149	0	199	1
50	0	100	8	150	0	200	1

DRIVING SCHEDULE FOR CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
201	0	251	2	301	0	351	0
202	0	252	0	302	0	352	0
203	0	253	0	303	0	353	0
204	0	254	0	304	0	354	0
205	0	255	0	305	1	355	0
206	0	256	0	306	0	356	0
207	0	257	0	307	0	357	0
208	0	258	0	308	0	358	1
209	0	259	0	309	0	359	2
210	0	260	0	310	0	360	3
211	0	261	0	311	0	361	4
212	0	262	0	312	0	362	3
213	0	263	0	313	0	363	1
214	0	264	0	314	0	364	1
215	0	265	0	315	0	365	0
216	0	266	0	316	0	366	0
217	0	267	0	317	0	367	0
218	0	268	0	318	0	368	0
219	0	269	0	319	0	369	0
220	0	270	0	320	0	370	0
221	1	271	0	321	0	371	0
222	0	272	0	322	0	372	0
223	0	273	0	323	0	373	0
224	0	274	1	324	0	374	0
225	0	275	1	325	0	375	0
226	0	276	1	326	0	376	0
227	0	277	2	327	0	377	1
228	0	278	2	328	0	378	1
229	0	279	1	329	0	379	0
230	1	280	1	330	0	380	0
231	2	281	2	331	0	381	0
232	2	282	4	332	0	382	0
233	1	283	4	333	0	383	0
234	1	284	6	334	0	384	0
235	1	285	2	335	0	385	2
236	2	286	3	336	0	386	1
237	3	287	2	337	0	387	2
238	3	288	3	338	0	388	3
239	1	289	4	339	0	389	3
240	1	290	3	340	0	390	1
241	0	291	3	341	0	391	0
242	0	292	4	342	0	392	0
243	0	293	3	343	0	393	0
244	0	294	0	344	0	394	0
245	0	295	0	345	0	395	0
246	0	296	0	346	0	396	0
247	0	297	0	347	0	397	0
248	0	298	0	348	0	398	0
249	0	299	0	349	0	399	0
250	0	300	0	350	0	400	0

DRIVING SCHEDULE FOR CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
401	0	451	7	501	13	551	13
402	0	452	5	502	15	552	15
403	0	453	6	503	16	553	15
404	0	454	4	504	15	554	16
405	0	455	5	505	16	555	16
406	2	456	4	506	19	556	16
407	1	457	2	507	18	557	17
408	1	458	2	508	19	558	17
409	1	459	2	509	15	559	19
410	1	460	5	510	15	560	19
411	3	461	5	511	12	561	17
412	2	462	7	512	9	562	17
413	3	463	4	513	6	563	17
414	5	464	3	514	7	564	19
415	9	465	3	515	7	565	22
416	8	466	3	516	8	566	21
417	10	467	5	517	9	567	21
418	11	468	2	518	9	568	20
419	10	469	1	519	7	569	20
420	11	470	0	520	7	570	23
421	11	471	0	521	10	571	24
422	12	472	0	522	9	572	21
423	13	473	0	523	11	573	24
424	12	474	0	524	12	574	24
425	12	475	0	525	12	575	22
426	14	476	0	526	11	576	23
427	16	477	0	527	11	577	25
428	15	478	2	528	9	578	26
429	14	479	3	529	9	579	24
430	13	480	5	530	10	580	25
431	12	481	4	531	10	581	26
432	12	482	7	532	10	582	28
433	11	483	9	533	9	583	26
434	12	484	8	534	9	584	26
435	13	485	7	535	8	585	26
436	13	486	8	536	7	586	26
437	13	487	9	537	7	587	23
438	13	488	9	538	9	588	23
439	12	489	10	539	13	589	24
440	14	490	10	540	17	590	25
441	14	491	11	541	15	591	22
442	14	492	8	542	15	592	22
443	14	493	7	543	15	593	23
444	15	494	8	544	17	594	24
445	12	495	8	545	16	595	24
446	10	496	6	546	16	596	23
447	8	497	8	547	15	597	23
448	8	498	11	548	12	598	24
449	10	499	11	549	13	599	23
450	7	500	12	550	13	600	21

DRIVING SCHEDULE FOR CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
601	19	651	15	701	22	751	16
602	19	652	14	702	21	752	15
603	20	653	13	703	21	753	14
604	21	654	14	704	20	754	14
605	21	655	12	705	21	755	14
606	20	656	13	706	22	756	14
607	21	657	14	707	22	757	14
608	21	658	13	708	21	758	15
609	21	659	13	709	21	759	16
610	22	660	12	710	21	760	16
611	22	661	12	711	22	761	16
612	22	662	13	712	22	762	17
613	21	663	13	713	18	763	13
614	20	664	14	714	18	764	14
615	18	665	15	715	18	765	15
616	16	666	16	716	17	766	14
617	13	667	19	717	19	767	14
618	12	668	19	718	20	768	14
619	14	669	19	719	20	769	14
620	11	670	20	720	18	770	14
621	11	671	21	721	14	771	15
622	9	672	20	722	11	772	14
623	8	673	20	723	10	773	16
624	9	674	21	724	11	774	17
625	7	675	23	725	11	775	17
626	7	676	25	726	10	776	17
627	7	677	23	727	11	777	18
628	8	678	24	728	7	778	19
629	10	679	24	729	8	779	20
630	11	680	26	730	9	780	18
631	9	681	26	731	8	781	20
632	10	682	26	732	6	782	21
633	11	683	24	733	8	783	19
634	12	684	24	734	6	784	21
635	12	685	26	735	8	785	22
636	13	686	26	736	10	786	20
637	13	687	26	737	11	787	21
638	14	688	25	738	11	788	20
639	14	689	26	739	11	789	17
640	14	690	26	740	13	790	17
641	18	691	29	741	14	791	16
642	17	692	30	742	14	792	15
643	17	693	30	743	16	793	14
644	16	694	28	744	16	794	14
645	16	695	24	745	14	795	12
646	17	696	23	746	14	796	10
647	17	697	23	747	15	797	6
648	17	698	22	748	18	798	8
649	16	699	23	749	18	799	7
650	15	700	23	750	17	800	7

DRIVING SCHEDULE FOR CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
801	7	851	7	901	9	951	29
802	8	852	9	902	10	952	29
803	7	853	12	903	10	953	29
804	10	854	14	904	11	954	30
805	8	855	14	905	10	955	30
806	6	856	13	906	10	956	31
807	5	857	13	907	10	957	32
808	6	858	12	908	11	958	31
809	4	859	13	909	11	959	30
810	4	860	13	910	12	960	27
811	7	861	13	911	13	961	27
812	8	862	14	912	12	962	28
813	7	863	13	913	12	963	29
814	7	864	15	914	12	964	30
815	5	865	13	915	12	965	31
816	3	866	12	916	13	966	31
817	3	867	13	917	12	967	31
818	3	868	13	918	11	968	33
819	5	869	15	919	10	969	33
820	6	870	16	920	10	970	34
821	7	871	16	921	11	971	35
822	4	872	19	922	13	972	34
823	6	873	20	923	13	973	36
824	6	874	19	924	14	974	36
825	6	875	19	925	18	975	36
826	6	876	19	926	18	976	36
827	7	877	18	927	20	977	35
828	7	878	17	928	21	978	35
829	8	879	15	929	21	979	34
830	7	880	15	930	21	980	34
831	7	881	13	931	21	981	34
832	7	882	13	932	22	982	35
833	10	883	14	933	22	983	33
834	12	884	13	934	22	984	33
835	9	885	11	935	23	985	31
836	10	886	12	936	21	986	32
837	11	887	14	937	19	987	33
838	9	888	14	938	19	988	33
839	8	889	14	939	18	989	31
840	8	890	14	940	21	990	30
841	9	891	11	941	21	991	31
842	11	892	10	942	22	992	33
843	9	893	10	943	24	993	33
844	9	894	13	944	27	994	32
845	9	895	11	945	26	995	31
846	5	896	12	946	28	996	31
847	6	897	12	947	29	997	33
848	6	898	12	948	32	998	34
849	8	899	13	949	31	999	32
850	7	900	10	950	30	1000	31

DRIVING SCHEDULE FOR CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE .864-SEC INTERVAL

RECORD	MPH	RECORD	MPH	RECORD	MPH	RECORD	MPH
1001	31	1049	6	1097	0	1145	0
1002	32	1050	4	1098	0	1146	0
1003	31	1051	3	1099	0	1147	0
1004	27	1052	4	1100	0	1148	0
1005	26	1053	3	1101	0	1149	0
1006	27	1054	2	1102	0	1150	0
1007	27	1055	0	1103	0	1151	0
1008	27	1056	0	1104	0	1152	0
1009	25	1057	0	1105	0	1153	0
1010	22	1058	0	1106	0	1154	0
1011	22	1059	0	1107	0	1155	0
1012	19	1060	0	1108	1	1156	0
1013	19	1061	0	1109	2	1157	0
1014	17	1062	0	1110	4	1158	0
1015	18	1063	0	1111	4	1159	0
1016	18	1064	0	1112	2	1160	0
1017	19	1065	0	1113	1	1161	0
1018	19	1066	0	1114	3	1162	0
1019	20	1067	0	1115	2	1163	0
1020	21	1068	0	1116	5	1164	0
1021	20	1069	0	1117	4	1165	0
1022	16	1070	0	1118	4	1166	0
1023	16	1071	0	1119	6	1167	0
1024	16	1072	0	1120	6	1168	0
1025	15	1073	0	1121	8	1169	0
1026	15	1074	0	1122	8	1170	0
1027	15	1075	0	1123	9	1171	0
1028	15	1076	0	1124	10	1172	0
1029	16	1077	0	1125	9	1173	0
1030	17	1078	0	1126	7	1174	0
1031	16	1079	0	1127	8	1175	0
1032	16	1080	0	1128	9	1176	0
1033	16	1081	0	1129	8	1177	0
1034	17	1082	0	1130	5	1178	0
1035	15	1083	0	1131	3	1179	0
1036	12	1084	0	1132	2	1180	0
1037	11	1085	0	1133	0	1181	0
1038	10	1086	0	1134	0	1182	0
1039	10	1087	0	1135	0	1183	0
1040	10	1088	0	1136	0	1184	0
1041	9	1089	0	1137	0	1185	0
1042	9	1090	0	1138	0	1186	0
1043	7	1091	0	1139	0	1187	0
1044	6	1092	0	1140	0	1188	0
1045	7	1093	0	1141	0	1189	0
1046	5	1094	0	1142	0	1190	0
1047	4	1095	0	1143	0	1191	0
1048	5	1096	0	1144	0		

DRIVING SCHEDULE FOR
CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
0	0.0						
1	0.0	51	0.0	101	0.0	151	3.31
2	0.0	52	0.0	102	0.0	152	1.22
3	0.0	53	0.0	103	0.0	153	0.0
4	0.0	54	0.0	104	0.0	154	0.0
5	0.0	55	0.66	105	0.0	155	0.0
6	0.0	56	1.00	106	0.0	156	0.0
7	0.0	57	0.03	107	0.0	157	0.0
8	0.0	58	0.0	108	0.0	158	0.0
9	0.42	59	0.57	109	0.0	159	0.0
10	0.43	60	1.56	110	0.0	160	0.0
11	0.0	61	0.40	111	0.0	161	0.0
12	0.0	62	0.0	112	0.0	162	0.0
13	0.0	63	0.92	113	0.0	163	0.0
14	0.0	64	0.0	114	0.0	164	0.0
15	0.0	65	0.0	115	0.0	165	0.0
16	0.0	66	0.0	116	0.0	166	0.0
17	0.0	67	0.0	117	0.0	167	0.0
18	0.0	68	0.0	118	0.0	168	0.44
19	0.0	69	0.0	119	0.0	169	1.60
20	0.0	70	0.0	120	0.0	170	2.00
21	0.0	71	0.0	121	0.95	171	3.83
22	0.0	72	0.0	122	0.0	172	1.00
23	0.0	73	0.0	123	0.0	173	0.77
24	0.0	74	0.65	124	0.0	174	0.0
25	0.0	75	1.00	125	0.0	175	0.0
26	0.0	76	1.96	126	0.0	176	0.0
27	0.0	77	1.36	127	0.0	177	0.0
28	0.0	78	3.72	128	0.0	178	0.0
29	0.0	79	3.87	129	0.0	179	0.0
30	0.0	80	5.59	130	0.0	180	0.0
31	0.0	81	6.00	131	0.0	181	0.0
32	0.0	82	4.19	132	0.78	182	0.0
33	0.0	83	4.94	133	1.00	183	0.0
34	0.0	84	4.00	134	2.19	184	0.0
35	0.0	85	4.38	135	3.50	185	0.0
36	0.0	86	6.61	136	1.59	186	0.0
37	0.0	87	9.39	137	1.56	187	0.0
38	0.0	88	10.85	138	2.00	188	0.0
39	0.0	89	6.99	139	2.88	189	0.0
40	0.0	90	6.00	140	2.07	190	0.0
41	0.0	91	5.35	141	3.61	191	0.94
42	0.0	92	3.52	142	2.00	192	0.0
43	0.0	93	2.36	143	3.02	193	0.0
44	0.0	94	3.59	144	2.67	194	0.0
45	0.0	95	4.95	145	2.82	195	0.0
46	0.0	96	3.00	146	1.04	196	0.0
47	0.0	97	3.00	147	0.0	197	0.0
48	0.0	98	2.15	148	0.0	198	0.17
49	0.0	99	0.42	149	0.0	199	1.32
50	0.0	100	0.0	150	0.61	200	2.00

DRIVING SCHEDULE FOR
CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
201	1.36	251	3.00	301	0.0	351	1.75
202	1.00	252	3.67	302	0.0	352	1.00
203	1.00	253	3.18	303	0.0	353	1.00
204	2.11	254	0.06	304	0.0	354	1.00
205	3.00	255	0.0	305	0.0	355	2.76
206	2.15	256	0.0	306	0.0	356	2.04
207	1.00	257	0.0	307	0.0	357	3.39
208	0.26	258	0.0	308	0.0	358	6.41
209	0.0	259	0.0	309	0.64	359	8.49
210	0.0	260	0.0	310	1.80	360	9.33
211	0.0	261	0.0	311	2.95	361	10.82
212	0.0	262	0.0	312	3.89	362	10.02
213	0.0	263	0.40	313	2.46	363	11.00
214	0.0	264	0.44	314	1.00	364	11.30
215	0.0	265	0.0	315	0.42	365	12.45
216	0.00	266	0.0	316	0.0	366	12.39
217	1.69	267	0.0	317	0.0	367	12.00
218	0.0	268	0.0	318	0.0	368	13.85
219	0.0	269	0.0	319	0.0	369	15.92
220	0.0	270	0.0	320	0.0	370	14.76
221	0.0	271	0.0	321	0.0	371	13.60
222	0.0	272	0.0	322	0.0	372	12.44
223	0.0	273	0.0	323	0.0	373	12.00
224	0.0	274	0.0	324	0.0	374	11.13
225	0.0	275	0.0	325	0.16	375	12.03
226	0.0	276	0.0	326	1.00	376	13.00
227	0.0	277	0.0	327	0.53	377	13.00
228	0.0	278	0.0	328	0.0	378	13.00
229	0.0	279	0.0	329	0.0	379	12.34
230	0.0	280	0.0	330	0.0	380	13.63
231	0.0	281	0.0	331	0.0	381	14.00
232	0.0	282	0.0	332	0.52	382	14.00
233	0.0	283	0.0	333	1.58	383	14.29
234	0.0	284	0.0	334	1.57	384	13.67
235	0.0	285	0.0	335	2.73	385	10.80
236	0.15	286	0.0	336	3.00	386	8.48
237	1.00	287	0.0	337	0.95	387	8.00
238	1.00	288	0.0	338	0.0	388	9.78
239	1.62	289	0.0	339	0.0	389	7.00
240	2.00	290	0.0	340	0.0	390	6.22
241	1.06	291	0.0	341	0.0	391	5.55
242	1.09	292	0.0	342	0.0	392	4.59
243	2.50	293	0.0	343	0.0	393	4.86
244	4.00	294	0.0	344	0.0	394	3.96
245	5.13	295	0.0	345	0.0	395	2.00
246	3.11	296	0.0	346	0.0	396	2.00
247	2.88	297	0.0	347	0.0	397	3.47
248	2.04	298	0.0	348	0.0	398	5.00
249	3.19	299	0.0	349	0.0	399	6.61
250	3.65	300	0.0	350	0.19	400	4.11

DRIVING SCHEDULE FOR
CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
401	3.00	451	9.01	501	24.86	551	13.73
402	3.00	452	11.15	502	26.04	552	14.00
403	3.87	453	12.00	503	27.65	553	14.19
404	3.22	454	11.54	504	26.00	554	17.80
405	1.25	455	11.00	505	26.00	555	17.00
406	0.09	456	9.44	506	26.00	556	16.48
407	0.0	457	9.00	507	23.58	557	16.00
408	0.0	458	10.00	508	23.00	558	16.83
409	0.0	459	10.00	509	24.12	559	17.00
410	0.0	460	9.59	510	24.17	560	16.85
411	0.0	461	9.00	511	22.00	561	15.69
412	0.0	462	8.28	512	22.59	562	15.00
413	2.01	463	7.12	513	23.75	563	14.38
414	3.33	464	7.07	514	24.00	564	13.22
415	4.68	465	9.78	515	23.00	565	13.94
416	5.45	466	14.41	516	23.22	566	12.09
417	8.28	467	15.98	517	23.62	567	13.25
418	8.20	468	15.00	518	21.93	568	13.59
419	7.05	469	15.00	519	19.61	569	13.00
420	8.11	470	16.96	520	19.00	570	12.28
421	9.00	471	16.00	521	20.01	571	12.00
422	9.43	472	15.70	522	21.00	572	13.00
423	10.00	473	13.64	523	20.68	573	13.19
424	10.74	474	12.61	524	20.48	574	14.35
425	8.30	475	13.00	525	21.00	575	15.51
426	7.06	476	13.00	526	21.00	576	18.00
427	8.00	477	15.00	527	21.95	577	19.00
428	7.26	478	15.24	528	22.00	578	19.00
429	7.06	479	16.00	529	21.73	579	20.14
430	10.06	480	16.00	530	20.57	580	20.70
431	11.00	481	16.71	531	18.83	581	20.00
432	12.00	482	17.00	532	16.52	582	20.61
433	13.32	483	19.00	533	13.30	583	22.54
434	15.32	484	18.63	534	12.11	584	24.85
435	15.53	485	17.00	535	13.36	585	23.08
436	15.63	486	17.00	536	11.00	586	24.00
437	18.36	487	18.32	537	9.94	587	24.80
438	18.06	488	21.45	538	8.31	588	26.00
439	18.59	489	21.03	539	8.84	589	26.00
440	15.00	490	20.87	540	7.00	590	24.26
441	13.75	491	20.00	541	7.00	591	24.06
442	10.28	492	21.33	542	7.32	592	26.00
443	6.80	493	23.60	543	8.95	593	26.00
444	6.89	494	21.72	544	10.63	594	25.50
445	7.05	495	23.75	545	9.43	595	25.66
446	8.20	496	23.85	546	9.94	596	26.00
447	9.00	497	22.23	547	11.10	597	28.92
448	7.96	498	23.78	548	12.00	598	30.00
449	7.00	499	25.55	549	12.42	599	29.43
450	9.50	500	24.59	550	13.00	600	26.22

DRIVING SCHEDULE FOR
CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
601	23.40	651	14.00	701	7.34	751	15.21
602	23.00	652	14.00	702	7.50	752	16.00
603	22.08	653	14.00	703	7.00	753	17.58
604	23.00	654	14.00	704	5.37	754	19.69
605	22.77	655	15.10	705	3.05	755	19.16
606	21.61	656	16.00	706	3.00	756	19.00
607	21.00	657	16.00	707	3.57	757	18.84
608	20.30	658	16.57	708	5.44	758	17.68
609	20.86	659	14.07	709	6.60	759	16.05
610	22.00	660	13.89	710	4.72	760	15.00
611	21.82	661	14.95	711	5.83	761	13.43
612	21.00	662	14.00	712	6.00	762	13.00
613	21.00	663	14.00	713	6.00	763	13.90
614	21.65	664	14.00	714	6.39	764	12.48
615	22.00	665	14.00	715	7.00	765	11.42
616	18.15	666	14.83	716	7.70	766	13.15
617	18.00	667	14.01	717	7.14	767	14.00
618	17.72	668	16.15	718	7.00	768	14.00
619	17.87	669	17.00	719	7.53	769	13.86
620	19.59	670	17.00	720	10.67	770	10.80
621	20.00	671	17.62	721	10.53	771	10.00
622	18.18	672	18.78	722	9.65	772	11.56
623	13.80	673	19.94	723	10.81	773	11.65
624	10.78	674	18.19	724	9.07	774	11.83
625	10.38	675	20.25	725	8.00	775	12.00
626	11.00	676	20.18	726	8.28	776	12.15
627	10.31	677	20.13	727	9.87	777	12.08
628	10.85	678	21.72	728	9.81	778	9.54
629	7.01	679	20.24	729	9.00	779	9.62
630	8.17	680	20.96	730	9.00	780	10.00
631	8.68	681	19.42	731	5.07	781	10.94
632	7.04	682	17.00	732	6.00	782	10.00
633	7.28	683	16.49	733	6.76	783	10.00
634	6.41	684	15.33	734	7.46	784	10.41
635	7.91	685	14.18	735	7.00	785	11.00
636	10.11	686	14.00	736	8.70	786	11.72
637	11.00	687	11.72	737	12.02	787	12.88
638	11.00	688	8.81	738	14.00	788	12.00
639	12.17	689	6.91	739	13.68	789	12.00
640	13.74	690	7.39	740	13.00	790	12.00
641	14.00	691	7.00	741	12.36	791	12.51
642	16.00	692	7.00	742	12.80	792	12.33
643	15.57	693	7.92	743	13.00	793	11.18
644	14.00	694	7.72	744	13.11	794	10.02
645	14.53	695	9.20	745	13.73	795	10.14
646	17.06	696	6.89	746	13.85	796	11.59
647	18.00	697	5.29	747	13.83	797	13.00
648	17.00	698	5.87	748	12.26	798	13.61
649	15.84	699	4.00	749	12.90	799	17.08
650	14.68	700	4.56	750	13.11	800	18.00

DRIVING SCHEDULE FOR
CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
801	20.08	851	31.09	901	7.35	951	0.0
802	21.00	852	32.11	902	6.02	952	0.0
803	21.00	853	33.00	903	6.72	953	0.0
804	21.00	854	32.15	904	4.70	954	0.0
805	21.71	855	30.42	905	4.45	955	0.0
806	22.00	856	30.74	906	5.61	956	0.0
807	22.03	857	32.80	907	4.46	957	0.64
808	22.63	858	32.94	908	3.07	958	1.80
809	20.31	859	31.79	909	3.92	959	3.91
810	19.00	860	31.00	910	2.76	960	3.78
811	18.34	861	32.06	911	1.20	961	1.73
812	20.45	862	33.69	912	0.0	962	1.85
813	21.00	863	32.31	913	0.0	963	2.42
814	22.26	864	31.00	914	0.0	964	4.22
815	24.86	865	31.16	915	0.0	965	4.10
816	26.56	866	31.68	916	0.0	966	4.11
817	27.20	867	29.11	917	0.0	967	6.00
818	28.76	868	26.37	918	0.0	968	6.74
819	31.75	869	26.79	919	0.0	969	8.00
820	30.93	870	27.00	920	0.0	970	8.69
821	29.77	871	26.80	921	0.0	971	9.84
822	29.00	872	24.22	922	0.0	972	9.00
823	29.00	873	22.00	923	0.0	973	7.16
824	29.70	874	20.28	924	0.0	974	8.32
825	30.00	875	19.00	925	0.0	975	8.53
826	31.02	876	17.22	926	0.0	976	6.11
827	31.82	877	18.00	927	0.0	977	3.43
828	30.67	878	18.20	928	0.0	978	2.06
829	28.53	879	19.00	929	0.0	979	0.0
830	27.00	880	19.52	930	0.0	980	0.0
831	27.81	881	20.68	931	0.0	981	0.0
832	28.96	882	20.17	932	0.0	982	0.0
833	30.12	883	16.04	933	0.0	983	0.0
834	31.00	884	16.00	934	0.0	984	0.0
835	31.00	885	15.69	935	0.0	985	0.0
836	32.19	886	15.00	936	0.0	986	0.0
837	33.00	887	15.00	937	0.0	987	0.0
838	33.91	888	15.00	938	0.0	988	0.0
839	34.93	889	15.94	939	0.0	989	0.0
840	34.44	890	16.91	940	0.0	990	0.0
841	36.00	891	16.00	941	0.0	991	0.0
842	36.00	892	16.00	942	0.0	992	0.0
843	36.00	893	16.57	943	0.0	993	0.0
844	35.15	894	15.55	944	0.0	994	0.0
845	34.99	895	12.36	945	0.0	995	0.0
846	34.00	896	10.96	946	0.0	996	0.0
847	34.00	897	10.00	947	0.0	997	0.0
848	34.48	898	10.00	948	0.0	998	0.0
849	33.72	899	9.49	949	0.0	999	0.0
850	33.00	900	9.00	950	0.0	1000	0.0

DRIVING SCHEDULE FOR
CYCLE 2143765149

NY BUSES FWY & NFWY COMPOSITE 1-SEC INTERVAL

SECOND	MPH	SECOND	MPH	SECOND	MPH	SECOND	MPH
1001	0.0	1009	0.0	1017	0.0	1025	0.0
1002	0.0	1010	0.0	1018	0.0	1026	0.0
1003	0.0	1011	0.0	1019	0.0	1027	0.0
1004	0.0	1012	0.0	1020	0.0	1028	0.0
1005	0.0	1013	0.0	1021	0.0	1029	0.0
1006	0.0	1014	0.0	1022	0.0		
1007	0.0	1015	0.0	1023	0.0		
1008	0.0	1016	0.0	1024	0.0		

Appendix D

STATISTICS FOR TRUCK LA 45

STATISTICAL ANALYSIS OF TRUCK LA 45 TT DIESEL

5 FILE(S) WERE PROCESSED

RECORD COUNT = 127528

OPERATING TIME = 30.61 HRS

TRUCK LA 45 TT DIESEL

TEMPERATURE DENSITY AND DISTRIBUTION FUNCTIONS

TEMP	FREEWAY FREQ.	FREEWAY DENS.	FREEWAY DIST.	NON-FREEWAY FREQ.	NON-FREEWAY DENS.	NON-FREEWAY DIST.	COMBINED FREQ.	COMBINED DENS.	COMBINED DIST.
40	0	0.0	0.0	372	0.40	0.40	372	0.29	0.29
45	0	0.0	0.0	196	0.21	0.61	196	0.15	0.45
50	0	0.0	0.0	315	0.34	0.95	315	0.25	0.70
55	0	0.0	0.0	226	0.24	1.19	226	0.18	0.87
60	0	0.0	0.0	279	0.30	1.49	279	0.22	1.09
65	0	0.0	0.0	204	0.22	1.71	204	0.16	1.25
70	0	0.0	0.0	162	0.17	1.88	162	0.13	1.38
75	0	0.0	0.0	146	0.16	2.04	146	0.11	1.50
80	0	0.0	0.0	142	0.15	2.19	142	0.11	1.61
85	0	0.0	0.0	127	0.14	2.33	127	0.10	1.71
90	0	0.0	0.0	138	0.15	2.48	138	0.11	1.82
95	0	0.0	0.0	106	0.11	2.59	106	0.08	1.90
100	0	0.0	0.0	82	0.09	2.68	82	0.06	1.96
105	0	0.0	0.0	74	0.08	2.76	74	0.06	2.02
110	0	0.0	0.0	65	0.07	2.83	65	0.05	2.07
115	0	0.0	0.0	72	0.08	2.91	72	0.06	2.13
120	0	0.0	0.0	59	0.06	2.97	59	0.05	2.18
125	0	0.0	0.0	73	0.08	3.05	73	0.06	2.23
130	0	0.0	0.0	83	0.09	3.14	83	0.07	2.30
135	0	0.0	0.0	102	0.11	3.25	102	0.08	2.38
140	0	0.0	0.0	105	0.11	3.36	105	0.08	2.46
145	0	0.0	0.0	158	0.17	3.53	158	0.12	2.59
150	14	0.04	0.04	73	0.08	3.61	87	0.07	2.65
155	516	1.52	1.56	108	0.12	3.72	624	0.49	3.15
160	200	0.59	2.15	272	0.29	4.01	472	0.37	3.52
165	1353	3.99	6.14	664	0.71	4.73	2017	1.59	5.11
170	2055	6.06	12.21	495	0.53	5.26	2550	2.01	7.11
175	4873	14.37	26.58	2461	2.64	7.90	7334	5.77	12.89
180	9246	27.27	53.85	10029	10.77	18.67	19275	15.17	28.06
185	8479	25.01	78.86	37632	40.40	59.07	46111	36.30	64.35
190	7166	21.14	100.00	35886	38.53	97.60	43052	33.89	98.24
195	0	0.0	100.00	2237	2.40	100.00	2237	1.76	100.00
200	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
205	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
210	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
215	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
220	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
225	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
230	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
235	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
240	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
245	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
250	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
255	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
260	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
265	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
270	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
275	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
280	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
285	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
290	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
295	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
300	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
N	= 33902			= 93143			= 127045		
AVGE	= 180.93			= 182.26			= 181.90		
STD DEV	= 7.58			= 21.31			= 18.67		

TRUCK LA 45 TT DIESEL — NORMALIZED INITIAL % RPM VS FINAL % RPM MATRIX
FREEWAY (N = 33536)

	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0	0.0	0.0	0.769	0.033	0.012	0.009	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.036	0.009	0.018	0.0	0.003	0.009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.018	0.018	0.033	0.012	0.024	0.012	0.009	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.006	0.018	0.027	0.033	0.021	0.024	0.066	0.072	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.024	0.045	0.057	0.060	0.060	0.081	0.051	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.015	0.060	0.128	0.116	0.081	0.042	0.018	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.012	0.024	0.122	0.215	0.215	0.122	0.033	0.009	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.033	0.018	0.149	0.686	0.641	0.113	0.024	0.0	0.0	0.0	0.0	0.0
80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.015	0.033	0.253	4.854	1.670	0.128	0.003	0.0	0.0	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.009	0.078	0.647	18.019	2.403	0.021	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.012	0.083	0.435	1.229	58.328	1.628	0.003	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.006	0.107	0.131	1.166	4.169	0.003	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.003	0.009	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	0.0	0.0	0.829	0.078	0.113	0.125	0.227	0.388	0.668	1.557	6.903	21.213	62.062	5.824	0.015	0.0	0.0	0.0

% ACCEL = 7.86 % CRUISE = 86.54 % DECEL = 4.83 % IDLE = 0.77

TRUCK LA 45 TT DIESEL
NON-FREEWAY

NORMALIZED INITIAL % RPM VS FINAL % RPM MATRIX
(N = 92194)

	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-10	0.0	0.0	0.015	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0	0.0	0.015	48.174	0.425	0.234	0.093	0.035	0.011	0.001	0.001	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.001	0.346	0.564	0.252	0.114	0.069	0.026	0.004	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.158	0.251	0.574	0.278	0.111	0.076	0.042	0.010	0.001	0.001	0.001	0.0	0.0	0.0	0.0	0.0
30	0.0	0.001	0.021	0.091	0.290	0.579	0.294	0.137	0.145	0.159	0.014	0.001	0.0	0.001	0.0	0.0	0.0	0.0
40	0.0	0.0	0.002	0.014	0.073	0.278	0.658	0.357	0.223	0.210	0.108	0.008	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.001	0.001	0.0	0.018	0.087	0.346	0.773	0.432	0.238	0.133	0.028	0.008	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.001	0.0	0.0	0.052	0.098	0.406	1.107	0.661	0.326	0.111	0.009	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.003	0.097	0.097	0.504	2.157	1.439	0.347	0.059	0.002	0.0	0.0	0.0	0.0
80	0.0	0.0	0.001	0.001	0.0	0.0	0.018	0.051	0.103	0.744	5.099	2.837	0.358	0.011	0.0	0.0	0.0	0.001
90	0.0	0.0	0.001	0.0	0.0	0.001	0.0	0.016	0.082	0.321	1.217	7.890	2.529	0.064	0.001	0.0	0.0	0.001
100	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.001	0.035	0.177	0.876	1.023	9.311	0.667	0.005	0.001	0.0	0.002
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.010	0.113	0.127	0.232	0.880	0.004	0.001	0.002	0.003
120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.005	0.005	0.003	0.002	0.005	0.002
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.001	0.004	0.002	0.0	0.003
140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.001	0.002	0.002	0.003	0.004	0.001	0.001
150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.003	0.002	0.001	0.009	0.015
TOTALS	0.0	0.018	48.721	1.348	1.442	1.485	1.726	1.950	2.680	4.689	9.330	12.375	12.516	1.637	0.024	0.012	0.017	0.029

% ACCEL = 13.76 % CRUISE = 29.61 % DECEL = 8.45 % IDLE = 48.17

TRUCK LA 45 TT DIESEL COMBINED

NORMALIZED INITIAL % RPM VS FINAL % RPM MATRIX
(N = 125730)

	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-10	0.0	0.0	0.011	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0	0.0	0.011	35.530	0.321	0.175	0.071	0.027	0.008	0.001	0.001	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.001	0.263	0.416	0.189	0.084	0.052	0.021	0.003	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.121	0.188	0.429	0.207	0.087	0.059	0.033	0.008	0.001	0.001	0.001	0.0	0.0	0.0	0.0	0.0
30	0.0	0.001	0.017	0.072	0.220	0.433	0.221	0.107	0.124	0.136	0.011	0.001	0.0	0.001	0.0	0.0	0.0	0.0
40	0.0	0.0	0.002	0.010	0.060	0.216	0.498	0.278	0.180	0.176	0.093	0.006	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.001	0.001	0.0	0.014	0.068	0.270	0.601	0.348	0.196	0.109	0.025	0.006	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.001	0.0	0.0	0.041	0.078	0.330	0.869	0.542	0.272	0.090	0.009	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.002	0.080	0.076	0.410	1.765	1.226	0.285	0.049	0.002	0.0	0.0	0.0	0.0
80	0.0	0.0	0.001	0.001	0.0	0.0	0.014	0.041	0.084	0.613	5.034	2.526	0.297	0.009	0.0	0.0	0.0	0.001
90	0.0	0.0	0.001	0.0	0.0	0.001	0.0	0.012	0.063	0.256	1.065	10.592	2.496	0.052	0.001	0.0	0.0	0.001
100	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.001	0.029	0.152	0.759	1.078	22.385	0.923	0.005	0.001	0.0	0.002
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.009	0.111	0.128	0.481	1.757	0.004	0.001	0.002	0.002
120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.005	0.005	0.005	0.002	0.004	0.002
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.001	0.003	0.002	0.0	0.002
140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.001	0.002	0.002	0.002	0.003	0.001	0.001
150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.002	0.002	0.001	0.006	0.011
TOTALS	0.0	0.014	35.947	1.009	1.087	1.122	1.326	1.533	2.143	3.853	8.683	14.732	25.731	2.754	0.021	0.009	0.013	0.021

% ACCEL = 12.18 % CRUISE = 44.80 % DECEL = 7.49 % IDLE = 35.53

TRUCK LA 45 TT DIESEL NORMALIZED INITIAL % POWER VS FINAL % POWER MATRIX
FREEWAY (N = 33536)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
MOTOR	17.879	0.784	0.754	0.423	0.283	0.236	0.152	0.149	0.185	0.161	0.146	0.048
0	0.793	1.005	0.513	0.253	0.078	0.078	0.024	0.009	0.018	0.012	0.009	0.012
10	0.889	0.552	1.282	0.859	0.265	0.119	0.042	0.027	0.033	0.015	0.021	0.006
20	0.573	0.245	0.981	1.545	1.056	0.391	0.158	0.066	0.015	0.021	0.024	0.006
30	0.247	0.104	0.352	1.252	1.908	1.360	0.385	0.128	0.048	0.030	0.024	0.003
40	0.242	0.060	0.170	0.492	1.640	3.304	1.709	0.477	0.122	0.063	0.015	0.015
50	0.194	0.015	0.018	0.119	0.486	2.057	4.333	2.221	0.432	0.092	0.015	0.012
60	0.191	0.024	0.024	0.051	0.104	0.605	2.666	5.642	2.144	0.298	0.083	0.009
70	0.116	0.012	0.018	0.030	0.030	0.152	0.471	2.776	6.900	2.129	0.221	0.018
80	0.039	0.003	0.0	0.0	0.018	0.039	0.051	0.295	2.758	5.346	1.518	0.042
90	0.030	0.003	0.0	0.006	0.006	0.006	0.012	0.024	0.212	1.935	4.345	0.319
100	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.018	0.468	0.456
TOTALS	21.195	2.806	4.112	5.030	5.874	8.346	10.001	11.814	12.867	10.120	6.888	0.945

% ACCEL = 21.38 % CRUISE = 36.07 % DECEL = 24.67 % MOTOR = 17.88

TRUCK LA 45 TT DIESEL NORMALIZED INITIAL % POWER VS FINAL % POWER MATRIX
NON-FREEWAY (N = 92194)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
MOTOR	21.991	1.354	0.853	0.484	0.393	0.347	0.317	0.318	0.335	0.244	0.156	0.041
0	1.183	45.543	0.553	0.238	0.229	0.161	0.105	0.080	0.068	0.040	0.022	0.010
10	1.020	0.635	1.360	0.406	0.143	0.097	0.062	0.056	0.059	0.042	0.035	0.009
20	0.585	0.257	0.588	0.766	0.267	0.134	0.076	0.060	0.059	0.036	0.041	0.011
30	0.459	0.108	0.282	0.472	0.589	0.272	0.123	0.081	0.062	0.041	0.024	0.010
40	0.534	0.053	0.123	0.248	0.479	0.535	0.298	0.132	0.085	0.071	0.033	0.005
50	0.487	0.035	0.060	0.112	0.249	0.613	0.678	0.305	0.133	0.047	0.022	0.010
60	0.401	0.017	0.052	0.060	0.084	0.302	0.715	0.843	0.331	0.088	0.036	0.007
70	0.298	0.017	0.031	0.039	0.049	0.108	0.299	0.864	1.107	0.260	0.069	0.009
80	0.090	0.003	0.010	0.020	0.021	0.017	0.059	0.180	0.809	0.941	0.194	0.010
90	0.041	0.002	0.003	0.009	0.005	0.004	0.007	0.013	0.100	0.545	0.761	0.055
100	0.003	0.001	0.0	0.001	0.001	0.004	0.001	0.004	0.002	0.008	0.151	0.104
TOTALS	27.092	48.026	3.915	2.853	2.509	2.595	2.739	2.937	3.150	2.362	1.543	0.280

% ACCEL = 10.75 % CRUISE = 53.23 % DECEL = 14.03 % MOTOR = 21.99

TRUCK LA 45 TT DIESEL COMBINED

NORMALIZED INITIAL % POWER VS FINAL % POWER MATRIX
(N = 125730)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
MOTOR	20.894	1.202	0.826	0.468	0.363	0.317	0.273	0.273	0.295	0.222	0.154	0.043
0	1.079	33.663	0.542	0.242	0.188	0.138	0.084	0.061	0.055	0.033	0.018	0.010
10	0.985	0.612	1.339	0.527	0.176	0.103	0.056	0.049	0.052	0.035	0.031	0.008
20	0.581	0.254	0.693	0.974	0.477	0.203	0.098	0.061	0.047	0.032	0.037	0.010
30	0.402	0.107	0.301	0.680	0.941	0.562	0.192	0.094	0.058	0.038	0.024	0.008
40	0.456	0.055	0.135	0.313	0.789	1.273	0.674	0.224	0.095	0.068	0.028	0.008
50	0.409	0.029	0.049	0.114	0.313	0.998	1.653	0.816	0.213	0.059	0.020	0.010
60	0.345	0.019	0.045	0.057	0.089	0.383	1.235	2.123	0.814	0.144	0.049	0.007
70	0.250	0.016	0.028	0.037	0.044	0.120	0.345	1.374	2.653	0.759	0.110	0.011
80	0.076	0.003	0.007	0.014	0.020	0.023	0.056	0.211	1.329	2.116	0.547	0.018
90	0.038	0.002	0.002	0.008	0.006	0.005	0.008	0.016	0.130	0.915	1.717	0.126
100	0.003	0.001	0.0	0.001	0.001	0.003	0.001	0.003	0.002	0.010	0.235	0.198
TOTALS	25.519	35.964	3.967	3.434	3.407	4.129	4.676	5.305	5.742	4.432	2.969	0.457

% ACCEL = 13.58 % CRUISE = 48.65 % DECEL = 16.87 % MOTOR = 20.89

TRUCK LA 45 TT DIESEL

POWER DENSITY AND DISTRIBUTION FUNCTIONS

	FREEWAY			NON-FREEWAY			COMBINED		
% PWR	FREQ.	DENS.	DIST.	FREQ.	DENS.	DIST.	FREQ.	DENS.	DIST.
MOTOR	7110	21.20	21.20	24737	26.83	26.83	31847	25.33	25.33
0	940	2.80	24.00	44467	48.23	75.06	45407	36.11	61.44
10	1378	4.11	28.11	3616	3.92	78.99	4994	3.97	65.42
20	1703	5.08	33.19	2654	2.88	81.86	4357	3.47	68.88
30	1959	5.84	39.03	2326	2.52	84.39	4285	3.41	72.29
40	2786	8.31	47.34	2393	2.60	86.98	5179	4.12	76.41
50	3352	10.00	57.34	2535	2.75	89.73	5887	4.68	81.09
60	3971	11.84	69.18	2705	2.93	92.67	6676	5.31	86.40
70	4317	12.87	82.05	2907	3.15	95.82	7224	5.75	92.15
80	3390	10.11	92.16	2170	2.35	98.17	5560	4.42	96.57
90	2313	6.90	99.05	1425	1.55	99.72	3738	2.97	99.54
100	317	0.95	100.00	259	0.28	100.00	576	0.46	100.00

* N	= 26426	* N	= 67457
MEAN	= 54.38	MEAN	= 15.94
MEDIAN	= 57.76	MEDIAN	= 3.79
STD DEV	= 24.84	STD DEV	= 26.83
** TOTAL N	= 33536	** TOTAL N	= 92194

* N	= 93883
MEAN	= 26.76
MEDIAN	= 8.07
STD DEV	= 31.46
** TOTAL N	= 125730

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** FREQUENCY USED TO COMPUTE DENSITY AND DISTRIBUTION FUNCTIONS

TRUCK LA 45 TT DIESEL
FREEWAY

INITIAL SPEED VS DELTA SPEED MATRIX - CHANNEL 5
(N = 33536)

	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.027	0.426	0.033	0.006	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.054	0.203	0.045	0.012	0.006	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.015	0.063	0.095	0.075	0.018	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.006	0.024	0.066	0.209	0.116	0.003	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.009	0.024	0.051	0.355	0.161	0.006	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.030	0.107	0.558	0.236	0.003	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.003	0.006	0.030	0.188	0.784	0.328	0.009	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.006	0.033	0.110	0.808	0.256	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.003	0.012	0.030	0.101	0.927	0.292	0.027	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.006	0.027	0.173	0.871	0.397	0.018	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.018	0.051	0.134	0.432	0.250	0.036	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.003	0.003	0.009	0.030	0.072	5.218	0.349	0.003	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.027	0.110	0.763	0.322	0.018	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.006	0.012	0.021	0.307	2.678	0.617	0.021	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.015	0.024	0.790	3.993	0.877	0.009	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.009	0.021	0.194	0.796	0.349	0.006	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.021	0.039	0.146	2.415	0.358	0.003	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.012	0.042	0.495	2.982	0.468	0.006	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.024	0.164	0.883	0.379	0.006	0.0	0.0	0.0	0.0	0.0
38	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.021	0.081	1.193	0.259	0.003	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.015	0.095	2.335	0.280	0.006	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.012	0.516	3.763	0.492	0.0	0.0	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.009	0.247	1.178	0.394	0.006	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.015	0.143	2.901	0.280	0.0	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.200	6.286	0.406	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.861	14.704	2.055	0.003	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.0	1.923	15.348	1.816	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.078	1.088	0.042	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.057	1.401	0.081	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.206	1.449	0.188	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.072	0.811	0.092	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.054	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	0.0	0.0	0.0	0.0	0.003	0.015	0.158	0.564	8.829	77.907	12.291	0.227	0.006	0.0	0.0	0.0	0.0

% ACCEL = 12.52 % CRUISE = 77.48 % DECEL = 9.57 % IDLE = 0.43

NUMBER OF TIMES DELTA SPEED < -9.5MPH/SEC = 0

NUMBER OF TIMES DELTA SPEED > 7.5MPH/SEC = 0

TRUCK LA 45 TT DIESEL — INITIAL SPEED VS DELTA SPEED MATRIX - CHANNEL 5
NON-FREEWAY (N = 92194)

	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.154	49.851	0.385	0.089	0.106	0.009	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.010	0.483	1.908	0.525	0.171	0.012	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.011	0.097	0.057	0.489	2.803	0.608	0.167	0.004	0.0	0.0	0.0	0.0
6	0.0	0.0	0.001	0.002	0.0	0.0	0.012	0.092	0.413	3.181	0.765	0.051	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.001	0.0	0.004	0.016	0.111	0.267	2.378	0.681	0.099	0.002	0.0	0.0	0.001	0.0
10	0.0	0.0	0.0	0.0	0.001	0.001	0.017	0.105	0.332	2.170	0.671	0.111	0.0	0.0	0.0	0.0	0.0
12	0.001	0.0	0.0	0.002	0.0	0.001	0.033	0.116	0.341	1.316	0.763	0.059	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.001	0.001	0.001	0.003	0.033	0.142	0.230	1.002	0.760	0.010	0.0	0.0	0.0	0.001	0.0
16	0.0	0.0	0.0	0.0	0.001	0.007	0.028	0.138	0.222	0.849	0.739	0.093	0.001	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.004	0.026	0.121	0.324	1.335	0.825	0.050	0.001	0.0	0.0	0.0	0.0
20	0.001	0.0	0.0	0.0	0.0	0.004	0.022	0.123	0.267	0.835	0.618	0.056	0.0	0.0	0.0	0.0	0.0
22	0.001	0.0	0.0	0.0	0.001	0.010	0.040	0.107	0.212	1.705	0.566	0.011	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.001	0.028	0.092	0.151	1.026	0.540	0.026	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.001	0.036	0.066	0.191	1.068	0.593	0.024	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.001	0.020	0.062	0.256	1.327	0.545	0.009	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.001	0.013	0.050	0.145	1.093	0.367	0.003	0.001	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.011	0.023	0.154	1.972	0.261	0.001	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.005	0.022	0.264	2.686	0.297	0.002	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.014	0.117	0.456	0.133	0.001	0.0	0.0	0.0	0.0	0.0
38	0.0	0.0	0.0	0.0	0.0	0.0	0.002	0.008	0.051	0.458	0.069	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.001	0.035	0.515	0.046	0.0	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.052	0.311	0.037	0.0	0.0	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.002	0.024	0.012	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.005	0.042	0.008	0.0	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.051	0.010	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.035	0.353	0.043	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.018	0.061	0.003	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	0.003	0.0	0.002	0.007	0.004	0.050	0.443	1.462	5.210	80.776	10.872	1.033	0.128	0.009	0.0	0.002	0.0

% ACCEL = 12.04 % CRUISE = 30.93 % DECEL = 7.18 % IDLE = 49.85

NUMBER OF TIMES DELTA SPEED < -9.5MPH/SEC = 1

NUMBER OF TIMES DELTA SPEED > 7.5MPH/SEC = 0

TRUCK LA 45 TT DIESEL — INITIAL SPEED VS DELTA SPEED MATRIX - CHANNEL 5
COMBINED (N = 125730)

	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.120	36.668	0.291	0.067	0.078	0.006	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.008	0.368	1.453	0.397	0.129	0.010	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.008	0.071	0.046	0.375	2.081	0.466	0.127	0.003	0.0	0.0	0.0	0.0
6	0.0	0.0	0.001	0.002	0.0	0.0	0.010	0.074	0.321	2.388	0.592	0.038	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.001	0.0	0.003	0.014	0.087	0.209	1.838	0.542	0.074	0.002	0.0	0.0	0.001	0.0
10	0.0	0.0	0.0	0.0	0.001	0.001	0.013	0.085	0.272	1.740	0.555	0.082	0.0	0.0	0.0	0.0	0.0
12	0.001	0.0	0.0	0.002	0.0	0.002	0.025	0.093	0.300	1.174	0.647	0.045	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.001	0.001	0.001	0.002	0.025	0.113	0.198	0.950	0.626	0.007	0.0	0.0	0.0	0.001	0.0
16	0.0	0.0	0.0	0.0	0.001	0.006	0.024	0.109	0.190	0.870	0.620	0.076	0.001	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.003	0.021	0.096	0.284	1.211	0.711	0.041	0.001	0.0	0.0	0.0	0.0
20	0.001	0.0	0.0	0.0	0.0	0.003	0.021	0.103	0.231	0.728	0.520	0.051	0.0	0.0	0.0	0.0	0.0
22	0.001	0.0	0.0	0.0	0.002	0.008	0.032	0.087	0.174	2.642	0.508	0.009	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.001	0.021	0.075	0.140	0.956	0.482	0.024	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.002	0.029	0.054	0.222	1.498	0.600	0.023	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.001	0.018	0.052	0.398	2.038	0.633	0.009	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.001	0.012	0.042	0.158	1.014	0.362	0.004	0.001	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.014	0.027	0.152	2.090	0.287	0.002	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.007	0.027	0.325	2.765	0.343	0.003	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.017	0.130	0.569	0.199	0.002	0.0	0.0	0.0	0.0	0.0
38	0.0	0.0	0.0	0.0	0.0	0.0	0.002	0.011	0.059	0.654	0.120	0.001	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.002	0.005	0.051	1.001	0.108	0.002	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.004	0.176	1.232	0.158	0.0	0.0	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.068	0.332	0.114	0.002	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.004	0.042	0.805	0.080	0.0	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.053	1.714	0.115	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.522	4.180	0.580	0.001	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.527	4.138	0.487	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.021	0.290	0.011	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.015	0.374	0.021	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.055	0.387	0.050	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.019	0.216	0.025	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.014	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	0.002	0.0	0.002	0.005	0.004	0.041	0.367	1.222	6.175	80.011	11.250	0.818	0.095	0.006	0.0	0.002	0.0

% ACCEL = 12.17 % CRUISE = 43.34 % DECEL = 7.82 % IDLE = 36.67

NUMBER OF TIMES DELTA SPEED < -9.5MPH/SEC = 1 NUMBER OF TIMES DELTA SPEED > 7.5MPH/SEC = 0

TRUCK LA 45 TT DIESEL SPEED DENSITY AND DISTRIBUTION FUNCTIONS - CHANNEL 5

SPEED	FREEWAY FREQ.	FREEWAY DENS.	FREEWAY DIST.	NON-FREEWAY FREQ.	NON-FREEWAY DENS.	NON-FREEWAY DIST.	COMBINED FREQ.	COMBINED DENS.	COMBINED DIST.
ZERO	113	0.34		45035	48.85		45148	35.91	
0	165	0.49	0.49	46645	50.59	50.59	46810	37.23	37.23
2	108	0.32	0.81	2866	3.11	53.70	2974	2.37	39.60
4	89	0.27	1.08	3906	4.24	57.94	3995	3.18	42.77
6	142	0.42	1.50	4165	4.52	62.46	4307	3.43	46.20
8	203	0.61	2.11	3282	3.56	66.02	3485	2.77	48.97
10	313	0.93	3.04	3143	3.41	69.43	3456	2.75	51.72
12	452	1.35	4.39	2425	2.63	72.06	2877	2.29	54.01
14	407	1.21	5.60	2014	2.18	74.24	2421	1.93	55.93
16	467	1.39	7.00	1916	2.08	76.32	2383	1.90	57.83
18	500	1.49	8.49	2478	2.69	79.01	2978	2.37	60.20
20	309	0.92	9.41	1776	1.93	80.93	2085	1.66	61.86
22	1907	5.69	15.09	2446	2.65	83.59	4353	3.46	65.32
24	417	1.24	16.34	1719	1.86	85.45	2136	1.70	67.02
26	1228	3.66	20.00	1825	1.98	87.43	3053	2.43	69.44
28	1914	5.71	25.71	2045	2.22	89.65	3959	3.15	72.59
30	461	1.37	27.08	1543	1.67	91.32	2004	1.59	74.19
32	1000	2.98	30.06	2233	2.42	93.74	3233	2.57	76.76
34	1343	4.00	34.07	3020	3.28	97.02	4363	3.47	80.23
36	489	1.46	35.53	668	0.72	97.74	1157	0.92	81.15
38	523	1.56	37.09	542	0.59	98.33	1065	0.85	82.00
40	917	2.73	39.82	551	0.60	98.93	1468	1.17	83.16
42	1605	4.79	44.61	370	0.40	99.33	1975	1.57	84.73
44	615	1.83	46.44	36	0.04	99.37	651	0.52	85.25
46	1120	3.34	49.78	51	0.06	99.43	1171	0.93	86.18
48	2311	6.89	56.67	56	0.06	99.49	2367	1.88	88.07
50	6245	18.62	75.29	397	0.43	99.92	6642	5.28	93.35
52	6402	19.09	94.38	76	0.08	100.00	6478	5.15	98.50
54	405	1.21	95.59	0	0.0	100.00	405	0.32	98.82
56	516	1.54	97.13	0	0.0	100.00	516	0.41	99.23
58	618	1.84	98.97	0	0.0	100.00	618	0.49	99.73
60	327	0.98	99.95	0	0.0	100.00	327	0.26	99.99
62	18	0.05	100.00	0	0.0	100.00	18	0.01	100.00
64	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
66	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
68	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
70	0	0.0	100.00	0	0.0	100.00	0	0.0	100.00
	N = 33536			N = 92194			N = 125730		
	MEAN = 40.33			MEAN = 8.73			MEAN = 17.16		
	MEDIAN = 47.06			MEDIAN = 0.99			MEDIAN = 9.75		
	STD DEV = 13.55			STD DEV = 12.03			STD DEV = 18.72		

TRUCK LA 45 TT DIESEL
FREEWAY

NORMALIZED % RPM VS % POWER MATRIX
(N = 33902)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0	0.027	0.637	0.029	0.012	0.009	0.024	0.0	0.009	0.006	0.003	0.0	0.0
2	0.018	0.024	0.003	0.0	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.009	0.0	0.003	0.003	0.0	0.003	0.0	0.0	0.0	0.0	0.0	0.0
6	0.012	0.0	0.003	0.0	0.0	0.0	0.0	0.0	0.003	0.0	0.0	0.0
8	0.009	0.0	0.0	0.0	0.0	0.003	0.003	0.0	0.003	0.0	0.0	0.0
10	0.012	0.0	0.0	0.0	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.009	0.0	0.006	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.009	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.015	0.0	0.003	0.003	0.0	0.0	0.0	0.003	0.0	0.0	0.0	0.0
20	0.029	0.0	0.0	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.021	0.0	0.006	0.003	0.0	0.0	0.0	0.003	0.0	0.0	0.0	0.0
24	0.009	0.006	0.003	0.006	0.0	0.0	0.0	0.0	0.003	0.0	0.0	0.0
26	0.047	0.0	0.006	0.006	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.024	0.0	0.0	0.006	0.006	0.003	0.0	0.0	0.003	0.0	0.0	0.0
30	0.038	0.0	0.003	0.003	0.003	0.003	0.003	0.003	0.0	0.0	0.0	0.0
32	0.035	0.0	0.009	0.0	0.003	0.0	0.003	0.0	0.0	0.0	0.0	0.0
34	0.024	0.003	0.003	0.015	0.006	0.0	0.0	0.0	0.003	0.003	0.0	0.0
36	0.059	0.003	0.003	0.003	0.003	0.0	0.003	0.006	0.003	0.0	0.0	0.0
38	0.041	0.003	0.003	0.003	0.0	0.006	0.006	0.006	0.006	0.003	0.0	0.0
40	0.029	0.006	0.006	0.003	0.003	0.003	0.0	0.006	0.003	0.0	0.0	0.0
42	0.053	0.0	0.003	0.003	0.003	0.006	0.003	0.0	0.0	0.0	0.0	0.0
44	0.059	0.003	0.003	0.006	0.003	0.003	0.0	0.009	0.0	0.0	0.0	0.0
46	0.038	0.006	0.006	0.009	0.009	0.003	0.003	0.0	0.0	0.0	0.0	0.0
48	0.059	0.0	0.003	0.006	0.0	0.003	0.003	0.0	0.0	0.0	0.0	0.0
50	0.065	0.0	0.003	0.021	0.0	0.0	0.003	0.0	0.0	0.0	0.0	0.0
52	0.062	0.003	0.003	0.003	0.0	0.003	0.003	0.006	0.0	0.0	0.0	0.0
54	0.103	0.003	0.018	0.006	0.003	0.0	0.003	0.003	0.0	0.0	0.0	0.0
56	0.091	0.0	0.003	0.003	0.012	0.003	0.003	0.0	0.006	0.0	0.0	0.0
58	0.097	0.0	0.009	0.006	0.003	0.003	0.0	0.003	0.003	0.0	0.0	0.0
60	0.127	0.006	0.009	0.003	0.009	0.006	0.0	0.0	0.0	0.006	0.003	0.0
62	0.127	0.006	0.006	0.003	0.009	0.012	0.015	0.0	0.0	0.0	0.0	0.0
64	0.121	0.006	0.006	0.006	0.0	0.009	0.006	0.006	0.009	0.0	0.0	0.0
66	0.215	0.0	0.003	0.009	0.012	0.012	0.006	0.0	0.012	0.003	0.003	0.0
68	0.165	0.006	0.006	0.012	0.006	0.015	0.009	0.003	0.012	0.006	0.0	0.0
70	0.198	0.003	0.009	0.006	0.012	0.012	0.003	0.012	0.006	0.006	0.0	0.0
72	0.265	0.003	0.012	0.015	0.018	0.012	0.009	0.006	0.029	0.012	0.009	0.0
74	0.286	0.021	0.009	0.021	0.015	0.029	0.015	0.012	0.029	0.018	0.029	0.0
76	0.322	0.009	0.047	0.024	0.027	0.032	0.029	0.053	0.038	0.047	0.032	0.0
78	0.460	0.024	0.018	0.024	0.029	0.044	0.029	0.059	0.050	0.071	0.086	0.015
80	0.572	0.041	0.038	0.062	0.071	0.080	0.086	0.130	0.130	0.186	0.209	0.097

TRUCK LA 45 TT DIESEL
FREEWAY

NORMALIZED % RPM VS % POWER MATRIX
(N = 33902)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
88	0.637	0.050	0.094	0.088	0.136	0.233	0.218	0.304	0.578	0.522	0.407	0.080
90	0.711	0.074	0.094	0.112	0.118	0.204	0.236	0.336	0.569	0.563	0.386	0.059
92	0.699	0.035	0.165	0.142	0.221	0.268	0.339	0.472	0.667	0.705	0.484	0.065
94	1.189	0.130	0.271	0.319	0.301	0.460	0.746	0.773	1.239	1.192	0.861	0.074
96	1.186	0.124	0.233	0.322	0.451	0.504	0.782	1.029	1.103	1.029	0.861	0.083
98	1.746	0.212	0.422	0.463	0.625	0.867	1.245	1.737	1.693	1.127	0.767	0.124
100	2.413	0.322	0.652	0.841	0.852	1.316	1.758	2.059	2.153	1.584	0.720	0.035
102	3.153	0.425	0.767	1.068	1.236	1.726	1.849	2.106	1.988	1.254	0.661	0.038
104	2.407	0.324	0.605	0.793	1.035	1.543	1.534	1.451	1.221	0.655	0.251	0.009
106	1.519	0.159	0.307	0.351	0.369	0.457	0.566	0.487	0.416	0.186	0.077	0.0
108	0.319	0.027	0.056	0.029	0.035	0.044	0.044	0.050	0.056	0.029	0.012	0.003
110	0.068	0.009	0.006	0.003	0.009	0.006	0.006	0.009	0.0	0.018	0.003	0.0
112	0.021	0.0	0.006	0.0	0.0	0.003	0.0	0.0	0.003	0.006	0.0	0.0
114	0.009	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116	0.009	0.0	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
134	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
136	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
138	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
144	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
146	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
148	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	21.730	2.790	4.103	5.044	5.843	8.271	9.940	11.728	12.763	10.029	6.823	0.935

* N	=	26535	MEAN(E X P)	=	5233.23
MEAN(E)	=	95.89	MEAN(E) X MEAN(P)	=	5209.30
MEAN(P)	=	54.33	COVARIANCE(E,P)	=	23.92
STD DEV(E)	=	12.63	CORR COEFF(E,P)	=	0.076
STD DEV(P)	=	24.85			

* EXCLUDES MOTORING COLUMN FREQUENCY

TRUCK LA 45 TT DIESEL
NON-FREEWAY

NORMALIZED % RPM VS % POWER MATRIX
(N = 93626)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-8	0.001	0.002	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-6	0.003	0.002	0.001	0.002	0.0	0.001	0.001	0.0	0.002	0.0	0.0	0.002
-4	0.005	0.0	0.004	0.002	0.003	0.003	0.005	0.001	0.003	0.0	0.0	0.001
-2	0.006	0.005	0.017	0.020	0.016	0.010	0.011	0.007	0.003	0.001	0.002	0.001
0	0.394	45.443	0.644	0.312	0.278	0.186	0.099	0.079	0.052	0.045	0.010	0.011
2	0.175	0.046	0.094	0.032	0.018	0.016	0.006	0.011	0.004	0.004	0.0	0.0
4	0.131	0.025	0.031	0.022	0.014	0.004	0.005	0.002	0.005	0.003	0.0	0.0
6	0.110	0.020	0.037	0.027	0.011	0.007	0.003	0.004	0.001	0.001	0.0	0.0
8	0.128	0.021	0.030	0.016	0.014	0.009	0.007	0.004	0.009	0.0	0.0	0.0
10	0.148	0.014	0.037	0.018	0.009	0.009	0.010	0.006	0.003	0.003	0.0	0.0
12	0.164	0.027	0.030	0.023	0.015	0.005	0.005	0.007	0.001	0.001	0.0	0.0
14	0.226	0.036	0.036	0.022	0.012	0.014	0.007	0.007	0.001	0.001	0.0	0.0
16	0.154	0.013	0.031	0.011	0.010	0.007	0.005	0.004	0.005	0.0	0.0	0.0
18	0.158	0.021	0.020	0.011	0.007	0.010	0.002	0.011	0.003	0.0	0.0	0.0
20	0.215	0.011	0.021	0.016	0.013	0.011	0.002	0.004	0.006	0.003	0.0	0.0
22	0.241	0.011	0.017	0.015	0.009	0.014	0.018	0.007	0.005	0.001	0.0	0.0
24	0.280	0.018	0.021	0.012	0.011	0.007	0.009	0.005	0.003	0.001	0.0	0.0
26	0.288	0.028	0.029	0.014	0.010	0.012	0.012	0.007	0.009	0.001	0.0	0.0
28	0.201	0.019	0.029	0.010	0.007	0.014	0.006	0.010	0.004	0.0	0.0	0.0
30	0.208	0.020	0.019	0.012	0.003	0.016	0.010	0.006	0.002	0.003	0.001	0.0
32	0.221	0.018	0.020	0.017	0.012	0.017	0.010	0.011	0.009	0.0	0.0	0.001
34	0.264	0.016	0.020	0.016	0.014	0.013	0.012	0.012	0.006	0.003	0.002	0.0
36	0.246	0.007	0.011	0.013	0.007	0.012	0.014	0.018	0.010	0.004	0.0	0.001
38	0.261	0.019	0.017	0.012	0.007	0.013	0.014	0.006	0.009	0.002	0.0	0.0
40	0.350	0.019	0.028	0.014	0.025	0.014	0.021	0.015	0.017	0.003	0.002	0.0
42	0.248	0.011	0.013	0.013	0.014	0.011	0.007	0.015	0.016	0.001	0.001	0.0
44	0.270	0.021	0.015	0.014	0.021	0.013	0.015	0.005	0.007	0.0	0.001	0.0
46	0.282	0.013	0.011	0.010	0.005	0.012	0.012	0.007	0.013	0.003	0.002	0.0
48	0.287	0.010	0.023	0.015	0.017	0.012	0.009	0.006	0.004	0.0	0.0	0.0
50	0.283	0.016	0.021	0.010	0.013	0.012	0.009	0.012	0.001	0.003	0.001	0.0
52	0.305	0.007	0.016	0.011	0.016	0.007	0.012	0.007	0.005	0.003	0.0	0.0
54	0.438	0.013	0.036	0.015	0.013	0.015	0.013	0.009	0.009	0.001	0.001	0.0
56	0.361	0.017	0.023	0.019	0.010	0.017	0.021	0.011	0.005	0.006	0.0	0.0
58	0.409	0.034	0.020	0.022	0.010	0.016	0.016	0.010	0.007	0.001	0.0	0.0
60	0.425	0.021	0.029	0.019	0.016	0.012	0.010	0.009	0.010	0.002	0.0	0.0
62	0.453	0.029	0.028	0.022	0.018	0.018	0.009	0.012	0.003	0.001	0.0	0.0
64	0.454	0.034	0.032	0.014	0.014	0.014	0.019	0.009	0.015	0.005	0.0	0.0
66	0.724	0.027	0.051	0.036	0.028	0.029	0.016	0.017	0.011	0.004	0.0	0.0
68	0.562	0.033	0.045	0.026	0.016	0.031	0.025	0.025	0.014	0.002	0.004	0.0
70	0.622	0.029	0.061	0.032	0.038	0.025	0.022	0.034	0.014	0.007	0.005	0.0
72	0.681	0.040	0.073	0.041	0.030	0.028	0.032	0.022	0.026	0.014	0.002	0.0
74	0.699	0.054	0.078	0.041	0.050	0.052	0.049	0.036	0.035	0.020	0.011	0.001
76	0.721	0.048	0.084	0.059	0.046	0.052	0.064	0.069	0.053	0.027	0.022	0.004
78	0.759	0.052	0.099	0.069	0.051	0.064	0.065	0.099	0.097	0.075	0.058	0.013

TRUCK LA 45 TT DIESEL
NON-FREEWAY

NORMALIZED % RPM VS % POWER MATRIX
(N = 93626)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
88	0.899	0.056	0.104	0.074	0.067	0.088	0.120	0.154	0.206	0.166	0.134	0.012
90	0.971	0.064	0.098	0.106	0.097	0.128	0.155	0.199	0.193	0.207	0.111	0.014
92	1.031	0.076	0.141	0.095	0.126	0.125	0.138	0.176	0.238	0.163	0.089	0.006
94	1.437	0.110	0.174	0.192	0.162	0.158	0.186	0.256	0.289	0.203	0.125	0.030
96	1.162	0.104	0.158	0.168	0.121	0.139	0.187	0.171	0.214	0.122	0.078	0.010
98	1.163	0.128	0.170	0.167	0.125	0.174	0.214	0.193	0.167	0.123	0.052	0.013
100	1.140	0.114	0.205	0.168	0.210	0.210	0.229	0.199	0.205	0.109	0.054	0.006
102	0.979	0.132	0.199	0.184	0.179	0.184	0.194	0.204	0.136	0.072	0.036	0.002
104	0.738	0.085	0.155	0.141	0.082	0.091	0.113	0.112	0.079	0.044	0.023	0.0
106	0.556	0.073	0.105	0.085	0.065	0.068	0.065	0.070	0.072	0.030	0.018	0.0
108	0.161	0.020	0.032	0.012	0.009	0.010	0.019	0.025	0.015	0.011	0.003	0.0
110	0.037	0.002	0.004	0.004	0.003	0.009	0.003	0.002	0.003	0.001	0.0	0.0
112	0.012	0.0	0.0	0.001	0.001	0.0	0.001	0.001	0.0	0.0	0.0	0.0
114	0.002	0.0	0.0	0.001	0.001	0.001	0.0	0.001	0.001	0.0	0.0	0.0
116	0.004	0.001	0.0	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118	0.003	0.0	0.001	0.0	0.0	0.002	0.001	0.001	0.0	0.0	0.0	0.0
120	0.003	0.0	0.0	0.0	0.0	0.001	0.001	0.0	0.0	0.0	0.0	0.0
122	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0
124	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0
132	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
134	0.005	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
136	0.005	0.0	0.0	0.0	0.0	0.002	0.001	0.0	0.0	0.0	0.0	0.0
138	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0
142	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
144	0.001	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0
146	0.004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
148	0.001	0.0	0.0	0.0	0.001	0.001	0.0	0.001	0.0	0.0	0.0	0.0
150	0.018	0.0	0.0	0.0	0.0	0.003	0.0	0.0	0.001	0.0	0.0	0.0
TOTALS	27.506	47.590	3.920	2.882	2.527	2.618	2.750	2.943	3.134	2.329	1.524	0.277

* N = 67873
MEAN(E) = 28.59
MEAN(P) = 16.03
STD DEV(E) = 41.54
STD DEV(P) = 26.84

MEAN(E X P) = 1305.72
MEAN(E) X MEAN(P) = 458.20
COVARIANCE(E,P) = 847.52
CORR COEFF(E,P) = 0.760

* EXCLUDES MOTORING COLUMN FREQUENCY

TRUCK LA 45 TT DIESEL
COMBINED

NORMALIZED % RPM VS % POWER MATRIX
(N = 127528)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-8	0.001	0.002	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-6	0.002	0.002	0.001	0.002	0.0	0.001	0.001	0.0	0.002	0.0	0.0	0.002
-4	0.004	0.0	0.003	0.002	0.002	0.002	0.004	0.001	0.002	0.0	0.0	0.001
-2	0.005	0.004	0.013	0.015	0.012	0.007	0.008	0.005	0.002	0.001	0.002	0.001
0	0.296	33.531	0.481	0.232	0.206	0.143	0.073	0.060	0.040	0.034	0.007	0.008
2	0.133	0.040	0.070	0.024	0.014	0.012	0.005	0.008	0.003	0.003	0.0	0.0
4	0.099	0.018	0.024	0.017	0.010	0.004	0.004	0.002	0.004	0.002	0.0	0.0
6	0.084	0.015	0.028	0.020	0.008	0.005	0.002	0.003	0.002	0.001	0.0	0.0
8	0.096	0.016	0.022	0.012	0.010	0.007	0.006	0.003	0.007	0.0	0.0	0.0
10	0.112	0.010	0.027	0.013	0.007	0.006	0.007	0.005	0.002	0.002	0.0	0.0
12	0.123	0.020	0.024	0.018	0.011	0.004	0.004	0.005	0.001	0.001	0.0	0.0
14	0.168	0.027	0.027	0.016	0.009	0.010	0.005	0.005	0.001	0.001	0.0	0.0
16	0.115	0.010	0.023	0.008	0.007	0.005	0.004	0.003	0.004	0.0	0.0	0.0
18	0.120	0.016	0.016	0.009	0.005	0.007	0.002	0.009	0.002	0.0	0.0	0.0
20	0.165	0.008	0.016	0.013	0.009	0.008	0.002	0.003	0.005	0.002	0.0	0.0
22	0.183	0.008	0.014	0.012	0.006	0.010	0.013	0.006	0.004	0.001	0.0	0.0
24	0.208	0.015	0.016	0.010	0.008	0.005	0.006	0.004	0.003	0.001	0.0	0.0
26	0.224	0.020	0.023	0.012	0.009	0.009	0.009	0.005	0.006	0.001	0.0	0.0
28	0.154	0.014	0.021	0.009	0.007	0.011	0.005	0.007	0.004	0.0	0.0	0.0
30	0.163	0.015	0.015	0.009	0.003	0.013	0.008	0.005	0.002	0.002	0.001	0.0
32	0.172	0.013	0.017	0.013	0.009	0.013	0.008	0.008	0.006	0.0	0.0	0.001
34	0.200	0.013	0.016	0.016	0.012	0.009	0.009	0.009	0.005	0.003	0.002	0.0
36	0.196	0.006	0.009	0.010	0.006	0.009	0.011	0.015	0.008	0.003	0.0	0.001
38	0.202	0.015	0.013	0.009	0.005	0.011	0.012	0.006	0.008	0.002	0.0	0.0
40	0.265	0.016	0.022	0.011	0.019	0.011	0.016	0.013	0.013	0.002	0.002	0.0
42	0.196	0.008	0.010	0.010	0.011	0.009	0.006	0.011	0.012	0.001	0.001	0.0
44	0.214	0.016	0.012	0.012	0.016	0.010	0.011	0.006	0.005	0.0	0.001	0.0
46	0.217	0.011	0.009	0.009	0.006	0.009	0.009	0.005	0.009	0.002	0.002	0.0
48	0.227	0.007	0.018	0.013	0.013	0.009	0.007	0.005	0.003	0.0	0.0	0.0
50	0.225	0.012	0.016	0.013	0.009	0.009	0.007	0.009	0.001	0.002	0.001	0.0
52	0.241	0.006	0.013	0.009	0.012	0.006	0.009	0.007	0.004	0.002	0.0	0.0
54	0.349	0.010	0.031	0.013	0.010	0.011	0.010	0.007	0.006	0.001	0.001	0.0
56	0.289	0.013	0.018	0.015	0.010	0.013	0.016	0.008	0.005	0.005	0.0	0.0
58	0.326	0.025	0.017	0.018	0.008	0.013	0.012	0.008	0.006	0.001	0.0	0.0
60	0.346	0.017	0.024	0.015	0.014	0.010	0.007	0.006	0.007	0.003	0.001	0.0
62	0.366	0.023	0.022	0.017	0.016	0.016	0.010	0.009	0.002	0.001	0.0	0.0
64	0.365	0.027	0.025	0.012	0.010	0.013	0.016	0.008	0.013	0.004	0.0	0.0
66	0.589	0.020	0.038	0.029	0.024	0.024	0.013	0.013	0.011	0.004	0.001	0.0
68	0.456	0.026	0.035	0.022	0.013	0.027	0.020	0.019	0.013	0.003	0.003	0.0
70	0.509	0.022	0.047	0.025	0.031	0.021	0.017	0.028	0.012	0.007	0.004	0.0
72	0.571	0.030	0.056	0.034	0.027	0.024	0.026	0.018	0.027	0.013	0.004	0.0
74	0.589	0.045	0.060	0.035	0.041	0.046	0.040	0.030	0.034	0.020	0.016	0.001
76	0.615	0.038	0.074	0.049	0.041	0.047	0.055	0.065	0.049	0.032	0.025	0.003
78	0.680	0.045	0.078	0.057	0.045	0.059	0.056	0.089	0.085	0.074	0.065	0.013
80	0.957	0.070	0.107	0.096	0.096	0.096	0.104	0.123	0.162	0.187	0.183	0.054
82	0.735	0.049	0.067	0.070	0.056	0.072	0.093	0.118	0.176	0.202	0.209	0.067
84	0.765	0.050	0.075	0.075	0.069	0.083	0.097	0.158	0.205	0.223	0.208	0.044
86	0.781	0.046	0.061	0.067	0.082	0.116	0.124	0.165	0.265	0.251	0.207	0.037

TRUCK LA 45 TT DIESEL
COMBINED

NORMALIZED % RPM VS % POWER MATRIX
(N = 127528)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
88	0.830	0.054	0.101	0.078	0.085	0.126	0.146	0.194	0.305	0.260	0.206	0.030
90	0.902	0.067	0.097	0.107	0.103	0.148	0.176	0.235	0.293	0.302	0.184	0.026
92	0.943	0.065	0.147	0.107	0.151	0.163	0.191	0.255	0.352	0.307	0.194	0.022
94	1.371	0.115	0.200	0.226	0.199	0.238	0.335	0.394	0.542	0.466	0.321	0.042
96	1.168	0.109	0.178	0.209	0.209	0.236	0.345	0.399	0.450	0.363	0.286	0.029
98	1.318	0.151	0.237	0.245	0.258	0.358	0.488	0.604	0.572	0.390	0.242	0.042
100	1.478	0.169	0.324	0.347	0.381	0.504	0.635	0.693	0.723	0.501	0.231	0.014
102	1.557	0.210	0.350	0.419	0.460	0.594	0.634	0.710	0.628	0.386	0.202	0.012
104	1.182	0.149	0.274	0.314	0.336	0.477	0.491	0.468	0.383	0.206	0.084	0.002
106	0.812	0.096	0.158	0.156	0.146	0.172	0.198	0.181	0.163	0.071	0.034	0.0
108	0.203	0.022	0.038	0.016	0.016	0.019	0.026	0.031	0.026	0.016	0.005	0.001
110	0.045	0.004	0.005	0.004	0.005	0.008	0.004	0.004	0.002	0.005	0.001	0.0
112	0.014	0.0	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.0	0.0
114	0.004	0.002	0.0	0.001	0.001	0.001	0.0	0.001	0.001	0.0	0.0	0.0
116	0.005	0.001	0.002	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118	0.002	0.0	0.001	0.0	0.0	0.002	0.001	0.001	0.0	0.0	0.0	0.0
120	0.002	0.0	0.0	0.0	0.0	0.001	0.001	0.0	0.0	0.0	0.0	0.0
122	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0
124	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0
132	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
134	0.004	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
136	0.004	0.0	0.0	0.0	0.0	0.002	0.001	0.0	0.0	0.0	0.0	0.0
138	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0
142	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
144	0.001	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0
146	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
148	0.001	0.0	0.0	0.0	0.001	0.001	0.0	0.001	0.0	0.0	0.0	0.0
150	0.013	0.0	0.0	0.0	0.0	0.002	0.0	0.0	0.001	0.0	0.0	0.0
TOTALS	25.971	35.680	3.969	3.456	3.409	4.121	4.662	5.278	5.694	4.376	2.933	0.452

* N = 94408
MEAN(E) = 47.50
MEAN(P) = 26.79
STD DEV(E) = 46.91
STD DEV(P) = 31.43

MEAN(E X P) = 2409.62
MEAN(E) X MEAN(P) = 1272.75
COVARIANCE(E,P) = 1136.88
CORR COEFF(E,P) = 0.771

* EXCLUDES MOTORING COLUMN FREQUENCY

TRUCK LA 45 TT DIESEL

RPM DENSITY AND DISTRIBUTION FUNCTIONS

% RPM	FREEWAY FREQ.	FREEWAY DENS.	FREEWAY DIST.	NON-FREEWAY FREQ.	NON-FREEWAY DENS.	NON-FREEWAY DIST.	COMBINED FREQ.	COMBINED DENS.	COMBINED DIST.
-22	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
-20	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
-18	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
-16	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
-14	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
-12	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
-10	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
-8	0	0.0	0.0	5	0.01	0.01	5	0.00	0.00
-6	0	0.0	0.0	14	0.01	0.02	14	0.01	0.01
-4	0	0.0	0.0	27	0.03	0.05	27	0.02	0.04
-2	0	0.0	0.0	94	0.10	0.15	94	0.07	0.11
0	256	0.76	0.76	44521	47.55	47.70	44777	35.11	35.22
2	16	0.05	0.80	381	0.41	48.11	397	0.31	35.53
4	6	0.02	0.82	228	0.24	48.35	234	0.18	35.72
6	6	0.02	0.84	208	0.22	48.57	214	0.17	35.88
8	6	0.02	0.86	223	0.24	48.81	229	0.18	36.06
10	5	0.01	0.87	241	0.26	49.07	246	0.19	36.26
12	6	0.02	0.89	262	0.28	49.35	268	0.21	36.47
14	2	0.01	0.89	341	0.36	49.71	343	0.27	36.74
16	4	0.01	0.91	225	0.24	49.95	229	0.18	36.91
18	8	0.02	0.93	228	0.24	50.20	236	0.19	37.10
20	11	0.03	0.96	283	0.30	50.50	294	0.23	37.33
22	11	0.03	0.99	317	0.34	50.84	328	0.26	37.59
24	9	0.03	1.02	344	0.37	51.21	353	0.28	37.86
26	22	0.06	1.09	383	0.41	51.61	405	0.32	38.18
28	14	0.04	1.13	281	0.30	51.91	295	0.23	38.41
30	19	0.06	1.18	282	0.30	52.22	301	0.24	38.65
32	17	0.05	1.23	314	0.34	52.55	331	0.26	38.91
34	19	0.06	1.29	354	0.38	52.93	373	0.29	39.20
36	28	0.08	1.37	321	0.34	53.27	349	0.27	39.48
38	26	0.08	1.45	337	0.36	53.63	363	0.28	39.76
40	20	0.06	1.51	476	0.51	54.14	496	0.39	40.15
42	24	0.07	1.58	327	0.35	54.49	351	0.28	40.42
44	29	0.09	1.66	359	0.38	54.87	388	0.30	40.73
46	25	0.07	1.74	346	0.37	55.24	371	0.29	41.02
48	25	0.07	1.81	359	0.38	55.63	384	0.30	41.32
50	31	0.09	1.90	356	0.38	56.01	387	0.30	41.62
52	28	0.08	1.99	366	0.39	56.40	394	0.31	41.93
54	47	0.14	2.12	526	0.56	56.96	573	0.45	42.38
56	41	0.12	2.24	460	0.49	57.45	501	0.39	42.77
58	42	0.12	2.37	511	0.55	58.00	553	0.43	43.21
60	57	0.17	2.54	517	0.55	58.55	574	0.45	43.66
62	60	0.18	2.71	555	0.59	59.14	615	0.48	44.14
64	57	0.17	2.88	571	0.61	59.75	628	0.49	44.63
66	93	0.27	3.16	883	0.94	60.69	976	0.77	45.40
68	81	0.24	3.40	732	0.78	61.48	813	0.64	46.04
70	90	0.27	3.66	833	0.89	62.37	923	0.72	46.76
72	132	0.39	4.05	925	0.99	63.35	1057	0.83	47.59
74	164	0.48	4.53	1055	1.13	64.48	1219	0.96	48.54
76	224	0.66	5.19	1171	1.25	65.73	1395	1.09	49.64
78	308	0.91	6.10	1407	1.50	67.23	1715	1.34	50.98
80	577	1.70	7.80	2272	2.43	69.66	2849	2.23	53.22
82	546	1.61	9.42	1896	2.03	71.69	2442	1.91	55.13
84	708	2.09	11.50	1911	2.04	73.73	2619	2.05	57.19
86	857	2.53	14.03	1954	2.09	75.81	2811	2.20	59.39

TRUCK LA 45 TT DIESEL

RPM DENSITY AND DISTRIBUTION FUNCTIONS

	FREEWAY			NON-FREEWAY			COMBINED		
% RPM	FREQ.	DENS.	DIST.	FREQ.	DENS.	DIST.	FREQ.	DENS.	DIST.
88	1135	3.35	17.38	1945	2.08	77.89	3080	2.42	61.80
90	1174	3.46	20.84	2194	2.34	80.23	3368	2.64	64.45
92	1445	4.26	25.10	2251	2.40	82.64	3696	2.90	67.34
94	2561	7.55	32.66	3111	3.32	85.96	5672	4.45	71.79
96	2613	7.71	40.37	2464	2.63	88.59	5077	3.98	75.77
98	3739	11.03	51.40	2517	2.69	91.28	6256	4.91	80.68
100	4985	14.70	66.10	2668	2.85	94.13	7653	6.00	86.68
102	5516	16.27	82.37	2342	2.50	96.63	7858	6.16	92.84
104	4010	11.83	94.20	1558	1.66	98.30	5568	4.37	97.21
106	1659	4.89	99.09	1131	1.21	99.51	2790	2.19	99.39
108	239	0.70	99.80	296	0.32	99.82	535	0.42	99.81
110	46	0.14	99.93	65	0.07	99.89	111	0.09	99.90
112	13	0.04	99.97	15	0.02	99.91	28	0.02	99.92
114	5	0.01	99.99	7	0.01	99.91	12	0.01	99.93
116	5	0.01	100.00	7	0.01	99.92	12	0.01	99.94
118	0	0.0	100.00	8	0.01	99.93	8	0.01	99.95
120	0	0.0	100.00	5	0.01	99.94	5	0.00	99.95
122	0	0.0	100.00	2	0.00	99.94	2	0.00	99.95
124	0	0.0	100.00	2	0.00	99.94	2	0.00	99.96
126	0	0.0	100.00	1	0.00	99.94	1	0.00	99.96
128	0	0.0	100.00	2	0.00	99.94	2	0.00	99.96
130	0	0.0	100.00	1	0.00	99.94	1	0.00	99.96
132	0	0.0	100.00	1	0.00	99.94	1	0.00	99.96
134	0	0.0	100.00	6	0.01	99.95	6	0.00	99.96
136	0	0.0	100.00	8	0.01	99.96	8	0.01	99.97
138	0	0.0	100.00	2	0.00	99.96	2	0.00	99.97
140	0	0.0	100.00	3	0.00	99.97	3	0.00	99.97
142	0	0.0	100.00	1	0.00	99.97	1	0.00	99.98
144	0	0.0	100.00	2	0.00	99.97	2	0.00	99.98
146	0	0.0	100.00	4	0.00	99.97	4	0.00	99.98
148	0	0.0	100.00	4	0.00	99.98	4	0.00	99.98
150	0	0.0	100.00	21	0.02	100.00	21	0.02	100.00
	N = 33902			N = 93626			N = 127528		
	MEAN = 95.01			MEAN = 40.45			MEAN = 54.96		
	MEDIAN = 98.75			MEDIAN = 17.38			MEDIAN = 77.54		
	STD DEV = 13.64			STD DEV = 42.83			STD DEV = 44.46		

TRUCK LA 45 TT DIESEL
FREEWAY

NORMALIZED SPEED VS % RPM MATRIX - CHANNEL 5
(N = 33902)

	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
0	0.0	0.0	0.487	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.209	0.032	0.050	0.018	0.009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.047	0.018	0.027	0.035	0.041	0.044	0.029	0.015	0.009	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.015	0.006	0.006	0.027	0.059	0.035	0.062	0.071	0.062	0.041	0.038	0.006	0.0	0.0	0.0	0.0
8	0.0	0.0	0.015	0.0	0.006	0.015	0.027	0.100	0.112	0.056	0.097	0.088	0.088	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.006	0.0	0.003	0.009	0.021	0.041	0.056	0.215	0.289	0.097	0.088	0.103	0.009	0.0	0.0	0.0
12	0.0	0.0	0.003	0.009	0.003	0.003	0.024	0.032	0.065	0.147	0.280	0.289	0.422	0.065	0.003	0.0	0.0	0.0
14	0.0	0.0	0.003	0.006	0.006	0.0	0.003	0.012	0.018	0.147	0.118	0.369	0.513	0.027	0.0	0.0	0.0	0.0
16	0.0	0.0	0.006	0.0	0.006	0.003	0.024	0.009	0.062	0.062	0.295	0.369	0.434	0.133	0.0	0.0	0.0	0.0
18	0.0	0.0	0.003	0.0	0.009	0.044	0.027	0.029	0.044	0.201	0.212	0.180	0.732	0.068	0.0	0.0	0.0	0.0
20	0.0	0.0	0.006	0.0	0.003	0.021	0.041	0.012	0.044	0.044	0.251	0.372	0.059	0.139	0.0	0.0	0.0	0.0
22	0.0	0.0	0.009	0.003	0.0	0.003	0.012	0.006	0.003	0.059	0.215	0.265	5.029	0.053	0.0	0.0	0.0	0.0
24	0.0	0.0	0.009	0.0	0.003	0.003	0.015	0.009	0.024	0.018	0.322	0.366	0.339	0.147	0.0	0.0	0.0	0.0
26	0.0	0.0	0.003	0.0	0.0	0.006	0.009	0.015	0.006	0.080	0.050	1.212	2.257	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.012	0.012	0.015	0.038	0.513	0.106	4.419	0.575	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.006	0.021	0.041	0.038	0.333	0.850	0.059	0.041	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.006	0.0	0.035	0.015	0.165	0.018	1.168	1.528	0.029	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.003	0.044	0.018	0.035	0.091	0.088	0.316	0.018	3.153	0.268	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.003	0.032	0.027	0.012	0.071	0.047	0.779	0.227	0.029	0.322	0.0	0.0	0.0	0.0
38	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.0	0.0	0.050	0.029	1.457	0.006	0.003	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.050	0.024	0.767	1.876	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.009	0.507	0.091	3.982	0.204	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.006	1.136	0.324	0.088	0.280	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.047	3.274	0.012	0.003	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.003	0.003	5.200	1.699	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.018	0.012	0.239	18.256	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.024	0.215	0.021	15.978	2.752	0.003	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.575	0.044	0.021	0.566	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.260	1.274	0.006	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.003	1.838	0.0	0.003	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.608	0.372	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.056	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	0.0	0.0	0.820	0.074	0.127	0.268	0.375	0.460	0.758	1.652	6.970	21.155	61.539	5.787	0.015	0.0	0.0	0.0

N	= 33902	MEAN(S X E)	= 3888.47
MEAN(S)	= 40.29	MEAN(S) X MEAN(E)	= 3812.76
MEAN(E)	= 94.64	COVARIANCE(S,E)	= 75.72
STD DEV(S)	= 13.57	CORR COEFF(S,E)	= 0.408
STD DEV(E)	= 13.69		

TRUCK LA 45 TT DIESEL — NORMALIZED SPEED VS % RPM MATRIX - CHANNEL 5
NON-FREEWAY (N = 93626)

	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
0	0.0	0.017	46.381	0.679	0.742	0.519	0.301	0.189	0.151	0.364	0.402	0.200	0.010	0.0	0.0	0.0	0.0	0.0
2	0.0	0.002	1.548	0.499	0.442	0.313	0.172	0.078	0.012	0.003	0.0	0.001	0.0	0.001	0.0	0.0	0.0	0.0
4	0.0	0.001	0.220	0.113	0.140	0.283	0.533	0.672	0.775	0.691	0.383	0.357	0.094	0.003	0.0	0.0	0.001	0.0
6	0.0	0.0	0.079	0.023	0.067	0.217	0.253	0.126	0.234	0.603	1.178	1.190	0.551	0.040	0.0	0.0	0.001	0.0
8	0.0	0.0	0.041	0.011	0.032	0.059	0.184	0.371	0.426	0.330	0.652	1.074	0.357	0.026	0.003	0.001	0.0	0.0
10	0.0	0.0	0.018	0.006	0.025	0.079	0.161	0.171	0.302	0.669	0.738	0.485	0.728	0.131	0.002	0.001	0.002	0.001
12	0.0	0.0	0.015	0.009	0.003	0.023	0.083	0.103	0.156	0.342	0.658	0.674	0.563	0.029	0.0	0.0	0.001	0.003
14	0.0	0.0	0.011	0.003	0.007	0.010	0.023	0.123	0.113	0.328	0.359	0.608	0.582	0.014	0.001	0.001	0.002	0.002
16	0.0	0.0	0.004	0.003	0.004	0.015	0.023	0.036	0.191	0.154	0.687	0.593	0.317	0.065	0.002	0.0	0.0	0.0
18	0.0	0.0	0.005	0.010	0.022	0.125	0.113	0.066	0.110	0.496	0.581	0.371	0.903	0.085	0.002	0.001	0.001	0.006
20	0.0	0.0	0.002	0.002	0.0	0.030	0.061	0.047	0.064	0.105	0.549	0.951	0.065	0.200	0.002	0.0	0.0	0.004
22	0.0	0.0	0.001	0.0	0.002	0.004	0.010	0.049	0.057	0.131	0.381	0.539	1.437	0.031	0.002	0.003	0.003	0.004
24	0.0	0.0	0.001	0.001	0.0	0.003	0.012	0.006	0.119	0.059	0.758	0.638	0.137	0.117	0.005	0.004	0.0	0.003
26	0.0	0.0	0.001	0.0	0.0	0.001	0.001	0.019	0.006	0.261	0.048	0.970	0.673	0.004	0.0	0.0	0.002	0.002
28	0.0	0.0	0.0	0.0	0.0	0.0	0.002	0.010	0.029	0.063	0.864	0.096	0.908	0.230	0.001	0.0	0.003	0.004
30	0.0	0.0	0.002	0.0	0.0	0.0	0.002	0.004	0.026	0.011	0.533	1.071	0.007	0.018	0.003	0.0	0.0	0.0
32	0.0	0.0	0.002	0.001	0.0	0.0	0.0	0.004	0.0	0.056	0.002	1.386	0.969	0.015	0.001	0.0	0.0	0.0
34	0.0	0.0	0.0	0.001	0.003	0.028	0.004	0.011	0.013	0.049	0.152	0.004	2.774	0.248	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.001	0.014	0.004	0.001	0.007	0.009	0.268	0.090	0.023	0.336	0.0	0.0	0.0	0.0
38	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.001	0.003	0.003	0.586	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.004	0.0	0.241	0.351	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.023	0.001	0.355	0.022	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.026	0.010	0.003	0.001	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.058	0.0	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.042	0.019	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.428	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.081	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	0.0	0.020	48.331	1.362	1.492	1.724	1.944	2.086	2.792	4.729	9.246	12.235	12.335	1.617	0.026	0.012	0.017	0.031

N	= 93626	MEAN(S X E)	= 773.83
MEAN(S)	= 8.84	MEAN(S) X MEAN(E)	= 357.28
MEAN(E)	= 40.39	COVARIANCE(S,E)	= 416.55
STD DEV(S)	= 12.04	CORR COEFF(S,E)	= 0.808
STD DEV(E)	= 42.83		

TRUCK LA 45 TT DIESEL — NORMALIZED SPEED VS % RPM MATRIX - CHANNEL 5
COMBINED (N = 127528)

	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
0	0.0	0.013	34.181	0.499	0.545	0.381	0.221	0.139	0.111	0.267	0.295	0.147	0.007	0.0	0.0	0.0	0.0	0.0
2	0.0	0.002	1.192	0.375	0.338	0.234	0.129	0.057	0.009	0.002	0.0	0.001	0.0	0.001	0.0	0.0	0.0	0.0
4	0.0	0.001	0.174	0.088	0.110	0.217	0.402	0.505	0.577	0.511	0.284	0.262	0.069	0.002	0.0	0.0	0.001	0.0
6	0.0	0.0	0.062	0.019	0.051	0.166	0.202	0.102	0.188	0.462	0.881	0.885	0.415	0.031	0.0	0.0	0.001	0.0
8	0.0	0.0	0.034	0.008	0.025	0.047	0.142	0.299	0.343	0.257	0.504	0.812	0.285	0.019	0.002	0.001	0.0	0.0
10	0.0	0.0	0.015	0.005	0.019	0.060	0.124	0.136	0.237	0.548	0.619	0.382	0.558	0.124	0.004	0.001	0.002	0.001
12	0.0	0.0	0.012	0.009	0.003	0.018	0.067	0.084	0.132	0.290	0.558	0.572	0.525	0.038	0.001	0.0	0.001	0.002
14	0.0	0.0	0.009	0.004	0.007	0.007	0.018	0.093	0.088	0.280	0.295	0.544	0.564	0.017	0.001	0.001	0.002	0.002
16	0.0	0.0	0.005	0.002	0.005	0.012	0.024	0.029	0.157	0.129	0.583	0.533	0.348	0.083	0.002	0.0	0.0	0.0
18	0.0	0.0	0.005	0.007	0.019	0.104	0.090	0.056	0.093	0.417	0.483	0.320	0.857	0.081	0.002	0.001	0.001	0.005
20	0.0	0.0	0.003	0.002	0.001	0.027	0.056	0.038	0.059	0.089	0.470	0.797	0.064	0.183	0.002	0.0	0.0	0.003
22	0.0	0.0	0.003	0.001	0.002	0.004	0.010	0.038	0.042	0.112	0.337	0.467	2.392	0.037	0.002	0.002	0.002	0.003
24	0.0	0.0	0.003	0.001	0.001	0.003	0.013	0.007	0.093	0.048	0.642	0.565	0.191	0.125	0.004	0.003	0.0	0.002
26	0.0	0.0	0.002	0.0	0.0	0.002	0.003	0.018	0.006	0.213	0.049	1.034	1.094	0.003	0.0	0.0	0.002	0.002
28	0.0	0.0	0.0	0.0	0.0	0.0	0.005	0.010	0.025	0.056	0.771	0.099	1.841	0.321	0.001	0.0	0.002	0.003
30	0.0	0.0	0.002	0.0	0.0	0.0	0.003	0.009	0.030	0.018	0.480	1.012	0.021	0.024	0.002	0.0	0.0	0.0
32	0.0	0.0	0.002	0.001	0.0	0.002	0.0	0.013	0.004	0.085	0.006	1.328	1.117	0.019	0.001	0.0	0.0	0.0
34	0.0	0.0	0.0	0.001	0.003	0.032	0.008	0.017	0.034	0.060	0.195	0.008	2.875	0.253	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.002	0.019	0.010	0.004	0.024	0.019	0.404	0.126	0.025	0.332	0.0	0.0	0.0	0.0
38	0.0	0.0	0.0	0.0	0.0	0.001	0.001	0.0	0.001	0.016	0.010	0.818	0.002	0.001	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.016	0.006	0.381	0.757	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.002	0.152	0.025	1.319	0.071	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.002	0.321	0.093	0.026	0.075	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.013	0.913	0.003	0.001	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.001	1.413	0.466	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.005	0.003	0.064	5.167	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.006	0.057	0.005	4.307	0.732	0.001	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.153	0.012	0.005	0.151	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.069	0.339	0.002	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.489	0.0	0.001	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.162	0.099	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.015	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	0.0	0.015	35.701	1.019	1.129	1.337	1.527	1.654	2.251	3.911	8.641	14.606	25.416	2.726	0.023	0.009	0.013	0.023

N	= 127528	MEAN(S X E)	= 1601.83
MEAN(S)	= 17.20	MEAN(S) X MEAN(E)	= 943.00
MEAN(E)	= 54.82	COVARIANCE(S,E)	= 658.83
STD DEV(S)	= 18.66	CORR COEFF(S,E)	= 0.795
STD DEV(E)	= 44.40		

TRUCK LA 45 TT DIESEL — NORMALIZED SPEED VS % POWER MATRIX - CHANNEL 5
FREEWAY (N = 33902)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
0	0.0	0.440	0.0	0.009	0.009	0.024	0.0	0.006	0.0	0.0	0.0	0.0
2	0.071	0.159	0.032	0.018	0.006	0.006	0.003	0.009	0.012	0.003	0.0	0.0
4	0.147	0.024	0.009	0.027	0.032	0.009	0.009	0.003	0.006	0.0	0.0	0.0
6	0.263	0.029	0.041	0.027	0.024	0.029	0.009	0.003	0.003	0.0	0.0	0.0
8	0.348	0.029	0.035	0.056	0.038	0.035	0.029	0.015	0.018	0.0	0.0	0.0
10	0.537	0.050	0.094	0.027	0.035	0.071	0.047	0.041	0.035	0.0	0.0	0.0
12	0.605	0.071	0.124	0.133	0.100	0.118	0.074	0.041	0.044	0.032	0.003	0.0
14	0.445	0.029	0.035	0.068	0.059	0.118	0.168	0.145	0.124	0.029	0.0	0.0
16	0.498	0.018	0.050	0.050	0.088	0.162	0.198	0.150	0.136	0.032	0.015	0.003
18	0.537	0.015	0.062	0.156	0.177	0.171	0.127	0.100	0.100	0.068	0.027	0.009
20	0.366	0.021	0.065	0.038	0.056	0.077	0.053	0.109	0.112	0.074	0.021	0.0
22	0.546	0.038	0.062	0.086	0.204	0.540	0.858	1.106	1.283	0.652	0.260	0.024
24	0.422	0.018	0.035	0.038	0.053	0.077	0.106	0.150	0.088	0.127	0.121	0.018
26	0.333	0.021	0.047	0.065	0.124	0.345	0.882	0.909	0.451	0.274	0.186	0.0
28	0.572	0.024	0.065	0.198	0.360	0.608	0.805	1.109	1.180	0.537	0.218	0.015
30	0.531	0.024	0.021	0.044	0.038	0.056	0.062	0.088	0.130	0.204	0.153	0.038
32	0.448	0.027	0.050	0.088	0.103	0.133	0.168	0.295	0.616	0.584	0.401	0.050
34	0.749	0.047	0.121	0.136	0.245	0.354	0.481	0.652	0.693	0.351	0.186	0.021
36	0.422	0.015	0.024	0.038	0.029	0.053	0.050	0.112	0.145	0.224	0.295	0.142
38	0.369	0.015	0.038	0.032	0.018	0.021	0.035	0.100	0.257	0.292	0.307	0.065
40	0.410	0.027	0.029	0.053	0.047	0.077	0.156	0.301	0.552	0.540	0.413	0.112
42	0.832	0.071	0.112	0.127	0.206	0.342	0.501	0.752	0.678	0.584	0.519	0.068
44	0.537	0.044	0.038	0.047	0.068	0.083	0.136	0.165	0.162	0.212	0.271	0.071
46	0.501	0.059	0.106	0.097	0.130	0.209	0.192	0.289	0.628	0.525	0.501	0.097
48	0.965	0.136	0.286	0.295	0.357	0.419	0.475	0.714	1.059	1.174	0.950	0.077
50	3.767	0.522	1.109	1.262	1.289	1.540	1.790	2.088	2.100	1.882	1.109	0.065
52	5.395	0.732	1.192	1.534	1.596	2.139	1.903	1.560	1.401	1.029	0.484	0.029
54	0.490	0.027	0.038	0.035	0.027	0.041	0.091	0.112	0.097	0.100	0.124	0.024
56	0.206	0.009	0.050	0.065	0.074	0.127	0.171	0.221	0.268	0.218	0.127	0.003
58	0.257	0.032	0.071	0.112	0.139	0.189	0.215	0.257	0.268	0.201	0.097	0.006
60	0.136	0.021	0.053	0.083	0.106	0.091	0.136	0.124	0.115	0.080	0.035	0.0
62	0.027	0.0	0.006	0.0	0.006	0.009	0.009	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	21.730	2.790	4.103	5.044	5.843	8.271	9.940	11.728	12.763	10.029	6.823	0.935

* N = 26535
MEAN(S) = 40.53
MEAN(P) = 54.33
STD DEV(S) = 13.08
STD DEV(P) = 24.85

MEAN(S X P) = 2204.67
MEAN(S) X MEAN(P) = 2201.64
COVARIANCE(S,P) = 3.03
CORR COEFF(S,P) = 0.009

* EXCLUDES MOTORING COLUMN FREQUENCY

TRUCK LA 45 TT DIESEL NORMALIZED SPEED VS % POWER MATRIX - CHANNEL 5
NON-FREEWAY (N = 93626)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
0	2.995	44.688	1.022	0.423	0.308	0.199	0.121	0.085	0.059	0.036	0.010	0.010
2	1.020	1.063	0.244	0.178	0.148	0.134	0.103	0.090	0.054	0.028	0.004	0.005
4	3.008	0.338	0.249	0.151	0.124	0.141	0.107	0.065	0.066	0.016	0.002	0.001
6	3.158	0.266	0.356	0.244	0.187	0.139	0.095	0.079	0.032	0.003	0.003	0.001
8	2.405	0.139	0.230	0.166	0.164	0.138	0.111	0.093	0.087	0.030	0.003	0.0
10	2.355	0.101	0.194	0.129	0.117	0.138	0.152	0.145	0.132	0.047	0.009	0.0
12	1.699	0.085	0.112	0.088	0.109	0.127	0.134	0.136	0.114	0.043	0.015	0.0
14	1.134	0.047	0.078	0.064	0.075	0.138	0.155	0.172	0.174	0.104	0.043	0.004
16	0.909	0.056	0.075	0.074	0.081	0.111	0.152	0.187	0.187	0.155	0.101	0.009
18	1.313	0.080	0.103	0.119	0.139	0.141	0.235	0.241	0.251	0.179	0.090	0.007
20	0.807	0.028	0.075	0.069	0.074	0.106	0.104	0.177	0.214	0.229	0.163	0.036
22	1.161	0.061	0.056	0.101	0.099	0.124	0.150	0.197	0.254	0.200	0.172	0.041
24	0.654	0.017	0.060	0.066	0.049	0.052	0.087	0.121	0.181	0.251	0.270	0.057
26	0.697	0.037	0.082	0.077	0.066	0.085	0.117	0.170	0.269	0.222	0.148	0.016
28	0.802	0.047	0.098	0.093	0.083	0.121	0.139	0.187	0.235	0.202	0.158	0.045
30	0.508	0.034	0.043	0.063	0.073	0.092	0.108	0.173	0.213	0.202	0.146	0.023
32	0.844	0.089	0.182	0.173	0.175	0.175	0.187	0.206	0.228	0.135	0.042	0.002
34	1.267	0.282	0.383	0.307	0.232	0.232	0.217	0.181	0.115	0.048	0.019	0.004
36	0.288	0.041	0.058	0.032	0.015	0.023	0.042	0.038	0.083	0.070	0.052	0.011
38	0.145	0.022	0.042	0.032	0.036	0.041	0.050	0.062	0.077	0.049	0.037	0.001
40	0.161	0.035	0.060	0.092	0.038	0.031	0.052	0.045	0.034	0.029	0.019	0.0
42	0.064	0.018	0.035	0.094	0.056	0.042	0.031	0.020	0.019	0.017	0.003	0.002
44	0.009	0.0	0.0	0.004	0.0	0.0	0.0	0.0	0.001	0.012	0.013	0.001
46	0.021	0.0	0.002	0.0	0.0	0.004	0.002	0.003	0.011	0.015	0.0	0.0
48	0.009	0.0	0.004	0.006	0.003	0.010	0.007	0.005	0.010	0.006	0.0	0.0
50	0.056	0.011	0.027	0.029	0.061	0.066	0.091	0.052	0.034	0.002	0.0	0.0
52	0.016	0.005	0.012	0.009	0.014	0.010	0.004	0.012	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	27.506	47.590	3.920	2.882	2.527	2.618	2.750	2.943	3.134	2.329	1.524	0.277

* N = 67873
MEAN(S) = 7.18
MEAN(P) = 16.03
STD DEV(S) = 12.05
STD DEV(P) = 26.84

MEAN(S X P) = 341.67
MEAN(S) X MEAN(P) = 115.08
COVARIANCE(S,P) = 226.59
CORR COEFF(S,P) = 0.700

* EXCLUDES MOTORING COLUMN FREQUENCY

TRUCK LA 45 TT DIESEL NORMALIZED SPEED VS % POWER MATRIX - CHANNEL 5
COMBINED (N = 127528)

	MOTOR	0	10	20	30	40	50	60	70	80	90	100
0	2.199	32.925	0.750	0.313	0.228	0.152	0.089	0.064	0.043	0.027	0.007	0.007
2	0.768	0.823	0.187	0.136	0.111	0.100	0.076	0.068	0.043	0.021	0.003	0.004
4	2.247	0.254	0.185	0.118	0.100	0.106	0.081	0.049	0.050	0.012	0.002	0.001
6	2.388	0.203	0.272	0.186	0.143	0.110	0.072	0.059	0.024	0.002	0.002	0.001
8	1.858	0.110	0.178	0.136	0.131	0.111	0.089	0.072	0.068	0.022	0.002	0.0
10	1.872	0.088	0.168	0.102	0.096	0.120	0.124	0.118	0.107	0.035	0.006	0.0
12	1.408	0.082	0.115	0.100	0.107	0.125	0.118	0.111	0.096	0.040	0.012	0.0
14	0.951	0.042	0.067	0.065	0.071	0.133	0.158	0.165	0.161	0.084	0.031	0.003
16	0.800	0.045	0.068	0.067	0.083	0.125	0.164	0.177	0.173	0.122	0.078	0.007
18	1.106	0.063	0.092	0.129	0.149	0.149	0.206	0.204	0.211	0.150	0.073	0.008
20	0.690	0.026	0.072	0.061	0.069	0.098	0.090	0.159	0.187	0.187	0.125	0.027
22	0.997	0.055	0.087	0.097	0.127	0.234	0.338	0.438	0.528	0.320	0.195	0.036
24	0.592	0.017	0.053	0.059	0.050	0.059	0.092	0.129	0.156	0.218	0.231	0.046
26	0.601	0.033	0.073	0.074	0.082	0.154	0.321	0.366	0.318	0.236	0.158	0.012
28	0.741	0.041	0.089	0.121	0.157	0.250	0.316	0.432	0.486	0.291	0.174	0.037
30	0.514	0.031	0.037	0.058	0.064	0.082	0.096	0.151	0.191	0.202	0.148	0.027
32	0.739	0.072	0.147	0.151	0.156	0.164	0.182	0.230	0.331	0.254	0.137	0.015
34	1.129	0.220	0.314	0.261	0.235	0.264	0.287	0.306	0.269	0.129	0.064	0.009
36	0.324	0.034	0.049	0.034	0.019	0.031	0.044	0.058	0.100	0.111	0.117	0.045
38	0.205	0.020	0.041	0.032	0.031	0.035	0.046	0.072	0.125	0.114	0.109	0.018
40	0.227	0.033	0.052	0.082	0.041	0.043	0.080	0.113	0.172	0.165	0.124	0.030
42	0.268	0.032	0.056	0.103	0.096	0.122	0.156	0.215	0.194	0.168	0.140	0.020
44	0.149	0.012	0.010	0.016	0.018	0.022	0.036	0.044	0.044	0.065	0.082	0.020
46	0.149	0.016	0.030	0.026	0.035	0.059	0.053	0.079	0.175	0.151	0.133	0.026
48	0.263	0.036	0.079	0.083	0.097	0.118	0.132	0.194	0.289	0.317	0.252	0.020
50	1.042	0.147	0.314	0.357	0.387	0.458	0.543	0.594	0.583	0.502	0.295	0.017
52	1.446	0.198	0.325	0.414	0.434	0.576	0.509	0.423	0.372	0.274	0.129	0.008
54	0.130	0.007	0.010	0.009	0.007	0.011	0.024	0.030	0.026	0.027	0.033	0.006
56	0.055	0.002	0.013	0.017	0.020	0.034	0.045	0.059	0.071	0.058	0.034	0.001
58	0.068	0.009	0.019	0.030	0.037	0.050	0.057	0.068	0.071	0.053	0.026	0.002
60	0.036	0.005	0.014	0.022	0.028	0.024	0.036	0.033	0.031	0.021	0.009	0.0
62	0.007	0.0	0.002	0.0	0.002	0.002	0.002	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	25.971	35.681	3.969	3.456	3.409	4.121	4.662	5.278	5.694	4.376	2.933	0.452

* N = 94408
MEAN(S) = 16.55
MEAN(P) = 26.79
STD DEV(S) = 19.42
STD DEV(P) = 31.43

MEAN(S X P) = 865.30
MEAN(S) X MEAN(P) = 443.49
COVARIANCE(S,P) = 421.81
CORR COEFF(S,P) = 0.691

* EXCLUDES MOTORING COLUMN FREQUENCY

TRUCK LA 45 TT DIESEL

TRAFFIC DENSITY VS ROAD TYPE
(N = 127528)

	UNKNOWN	FREEWAY	ARTERIAL	LOCAL	TOTALS
UNKNOWN	0.0	0.0	0.0	0.0	0.0
LIGHT	0.0	9.62	12.94	31.98	54.54
MEDIUM	0.0	13.10	14.14	13.99	41.23
HEAVY	0.0	3.86	0.0	0.36	4.23
TOTALS	0.0	26.58	27.08	46.34	100.00

THROTTLE POSITION VS POWER STATE

	FREEWAY (N = 33902)		NON-FREEWAY (N = 93626)		COMBINED (N = 127528)	
	MOTORING	NON-MOTORING	MOTORING	NON-MOTORING	MOTORING	NON-MOTORING
CLOSED	1.25	8.04	3.78	47.31	3.11	36.88
OPEN	20.48	70.23	23.72	25.18	22.86	37.15

SUMMARY STATISTICS FOR TRUCK LA 45 TT DIESEL

(RECORD COUNT = 127528, OPERATING TIME = 30.61 HRS)

	RPM		
	FREEWAY	NON-FREEWAY	COMBINED
N	33902	93626	127528
MEAN	95.01	40.45	54.96
MEDIAN	98.75	17.38	77.54
STD DEV	13.64	42.83	44.46
% ACCEL	7.86	13.76	12.18
% CRUISE	86.54	29.61	44.80
% DECEL	4.83	8.45	7.49
** % IDLE	0.77	48.17	35.53

	POWER		
	FREEWAY	NON-FREEWAY	COMBINED
* N	26426	67457	93883
TOTAL N	33536	92194	125730
MEAN	54.38	15.94	26.76
MEDIAN	57.76	3.79	8.07
STD DEV	24.84	26.83	31.46
% ACCEL	21.38	10.75	13.58
% CRUISE	36.07	53.23	48.65
% DECEL	24.67	14.03	16.87
*** % MOTOR	17.88	21.99	20.89

	SPEED		
	FREEWAY	NONFREEWAY	COMBINED
N	33536	92194	125730
MEAN	40.33	8.73	17.16
MEDIAN	47.06	0.99	9.75
STD DEV	13.55	12.03	18.72
% ZERO	0.34	48.85	35.91
% ACCEL	12.52	12.04	12.17
% CRUISE	77.48	30.93	43.34
% DECEL	9.57	7.18	7.82
% IDLE	0.43	49.85	36.67

	INTERACTION STATISTICS		
	FREEWAY	NONFREEWAY	COMBINED
** N	26535	67873	94408
E(EXP)	5233.23	1305.72	2409.62
E(E)XE(P)	5209.30	458.20	1272.75
COV(E,P)	23.92	847.52	1136.88
R(E,P)	0.076	0.760	0.771
** N	33902	93626	127528
E(SXE)	3888.47	773.83	1601.83
E(S)XE(E)	3812.76	357.28	943.00
COV(S,E)	75.72	416.55	658.83
R(S,E)	0.408	0.808	0.795
** N	26535	67873	94408
E(SXP)	2204.67	341.67	865.30
E(S)XE(P)	2201.64	115.08	443.49
COV(S,P)	3.03	226.59	421.81
R(S,P)	0.009	0.700	0.691

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** THE IDLE PERCENTAGE IS HERE NOT INCLUDED IN THE CRUISE PERCENTAGE
*** THE MOTORING PERCENTAGE IS HERE NOT INCLUDED IN THE CRUISE PERCENTAGE

Appendix E

SUMMARY STATISTICS BY VEHICLE

SUMMARY STATISTICS FOR LA TRUCK 5: 2A GAS

(RECORD COUNT = 29280, OPERATING TIME = 7.03 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	3059.	26221.	29280.
MEAN	62.79	18.18	22.84
MEDIAN	67.41	16.85	19.81
STD DEV	15.66	16.07	21.05
% ACCEL	3.83	10.62	9.91
% CRUISE	90.94	53.02	56.99
% DECEL	4.02	9.57	8.99
% IDLE	1.21	26.78	24.11

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	2892.	22033.	24925.
TOTAL N	3056.	26128.	29184.
MEAN	61.72	32.12	35.55
MEDIAN	63.29	27.07	31.61
STD DEV	22.21	29.46	30.23
% ACCEL	12.89	17.39	16.92
% CRUISE	68.46	51.53	53.30
% DECEL	13.94	20.08	19.44
% MOTOR	4.71	11.00	10.34

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	3056.	26128.	29184.
MEAN	49.36	18.46	21.69
MEDIAN	52.75	18.24	21.36
STD DEV	10.85	14.00	16.65
% ZERO	0.59	12.83	11.55
% ACCEL	9.26	26.18	24.41
% CRUISE	81.45	39.68	44.05
% DECEL	8.70	20.80	19.53
% IDLE	0.59	13.34	12.01

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	2895.	22116.	25011.
E(EXP)	4065.01	821.85	1197.23
E(E)XE(P)	3949.49	593.66	843.83
COV(E,P)	115.56	228.20	353.41
R(E,P)	0.351	0.467	0.533
** N	3059.	26221.	29280.
E(SXE)	3258.90	511.22	798.28
E(S)XE(E)	3098.35	333.88	493.44
COV(S,E)	160.60	177.34	304.85
R(S,E)	0.930	0.779	0.863
** N	2895.	2216.	25011.
E(SXP)	3177.14	810.31	1084.27
E(S)XE(P)	3090.89	580.31	773.71
COV(S,P)	86.28	230.02	310.57
R(S,P)	0.374	0.536	0.589

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR L4 TRUCK 7: 24 GAS

(RECORD COUNT = 71165, OPERATING TIME = 17.08 HRS)

RPM	FREEWAY	NON-FREEWAY	COMBINED
N	3411.	67754.	71165.
MEAN	55.84	15.04	17.00
MEDIAN	65.15	0.91	0.98
STD DEV	27.73	20.19	22.38
% ACCEL	4.63	9.02	8.21
% CRUISE	74.63	29.62	31.78
% DECEL	4.96	8.08	7.93
% IDLE	15.78	53.27	51.47

POWER	FREEWAY	NON-FREEWAY	COMBINED
* N	2978.	53524.	56502.
TOTAL N	3410.	67700.	71110.
MEAN	33.37	14.74	15.72
MEDIAN	31.28	3.81	3.96
STD DEV	26.64	26.24	26.39
% ACCEL	14.75	11.19	11.36
% CRUISE	59.35	58.96	58.98
% DECEL	15.10	13.12	13.21
% MOTOR	10.79	16.73	16.45

SPEED	FREEWAY	NON-FREEWAY	COMBINED
N	3410.	67700.	71110.
MEAN	42.91	11.08	12.61
MEDIAN	51.79	0.99	2.98
STD DEV	20.83	14.22	16.11
% ZERO	14.66	48.25	46.64
% ACCEL	11.64	16.32	16.10
% CRUISE	62.61	19.54	21.61
% DECEL	11.03	14.87	14.69
% IDLE	14.72	49.26	47.61

INTERACTION STATISTICS	FREEWAY	NON-FREEWAY	COMBINED
** N	2979.	53568.	56547.
E(EXP)	2283.67	521.15	614.00
E(E)XE(P)	1887.15	181.02	227.72
COV(E,P)	396.65	340.14	384.29
R(E,P)	0.521	0.648	0.634
** N	3411.	67754.	71165.
E(SXE)	2952.93	408.49	530.93
E(S)XE(E)	2399.88	166.73	214.39
COV(S,E)	563.22	241.77	316.55
R(S,E)	0.970	0.837	0.875
** N	2979.	53568.	56547.
E(SXP)	1714.86	342.24	414.55
E(S)XE(P)	1440.84	131.23	168.34
COV(S,P)	274.11	211.02	246.21
R(S,P)	0.475	0.579	0.568

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 10: 2A GAS

(RECORD COUNT = 58227, OPERATING TIME = 13.97 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	22487.	35740.	58227.
MEAN	52.57	18.16	31.45
MEDIAN	57.49	10.82	31.08
STD DEV	18.23	21.04	26.09
% ACCEL	4.35	7.63	6.37
% CRUISE	86.99	41.66	59.05
% DECEL	4.08	5.98	5.25
% IDLE	4.58	44.74	29.33

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	18714.	28909.	47623.
TOTAL N	22149.	35580.	57729.
MEAN	45.63	22.94	31.86
MEDIAN	43.81	4.89	26.74
STD DEV	27.21	29.71	30.81
% ACCEL	16.49	13.90	14.90
% CRUISE	52.35	54.20	53.49
% DECEL	18.73	16.96	17.64
% MOTOR	12.42	14.94	13.97

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	22149.	35580.	57729.
MEAN	48.21	18.63	29.98
MEDIAN	52.55	16.06	33.47
STD DEV	14.49	17.78	21.96
% ZERO	1.71	30.55	19.48
% ACCEL	29.86	22.36	25.24
% CRUISE	38.41	25.78	30.63
% DECEL	29.93	20.78	24.29
% IDLE	1.80	31.07	19.84

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	19025.	29038.	48063.
E(EXP)	2556.63	788.51	1486.40
E(E)XE(P)	2464.37	375.19	998.10
COV(E,P)	92.27	413.34	490.30
R(E,P)	0.192	0.649	0.585
** N	22487.	35740.	58227.
E(SXE)	2752.87	641.22	1456.73
E(S)XE(E)	2533.06	339.06	945.61
COV(S,E)	219.82	302.16	511.13
R(S,E)	0.826	0.803	0.859
** N	19025.	29038.	48063.
E(SXP)	2355.32	722.39	1368.76
E(S)XE(P)	2252.33	376.17	940.16
COV(S,P)	103.00	346.22	428.61
R(S,P)	0.266	0.643	0.599

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

ARY STATISTICS FOR LA TRUCK 11: 2A GAS

(RECORD COUNT = 94551, OPERATING TIME = 22.69 HRS)

RPM	FREEWAY	NON-FREEWAY	COMBINED
N	58770.	35781.	94551.
MEAN	64.13	35.41	53.26
MEDIAN	68.63	37.57	64.67
STD DEV	15.40	25.40	24.20
% ACCEL	3.31	13.50	7.15
% CRUISE	91.63	58.22	79.03
% DECEL	3.48	12.36	6.83
% IDLE	1.58	15.93	6.99

POWER	FREEWAY	NON-FREEWAY	COMBINED
* N	57196.	34306.	91502.
TOTAL N	58574.	35459.	94033.
MEAN	66.05	43.59	57.63
MEDIAN	69.19	30.75	63.25
STD DEV	25.41	37.39	32.34
% ACCEL	16.06	18.56	17.00
% CRUISE	66.01	59.82	64.05
% DECEL	15.51	19.41	16.98
% MOTOR	1.82	2.21	1.97

SPEED	FREEWAY	NON-FREEWAY	COMBINED
N	58574.	35459.	94033.
MEAN	51.55	22.93	40.76
MEDIAN	56.30	25.29	51.29
STD DEV	13.67	17.25	20.52
% ZERO	1.84	17.97	7.92
% ACCEL	9.58	25.69	15.66
% CRUISE	81.14	35.20	63.81
% DECEL	7.35	20.21	12.20
% IDLE	1.93	18.89	8.33

INTERACTION STATISTICS	FREEWAY	NON-FREEWAY	COMBINED
** N	57383.	34619.	92002.
E(SXP)	4443.07	2126.12	3571.22
E(E)XE(P)	4264.35	1544.14	3067.61
COV(E,P)	178.72	582.00	503.62
R(E,P)	0.466	0.605	0.614
** N	58770.	35781.	94551.
E(SXE)	3487.84	1161.23	2607.38
E(S)XE(E)	3299.26	815.54	2167.78
COV(S,E)	188.58	345.70	439.60
R(S,E)	0.888	0.787	0.885
** N	57383.	34619.	92002.
E(SXP)	3567.17	1258.12	2698.31
E(S)XE(P)	3423.10	989.65	2354.59
COV(S,P)	144.07	268.48	343.72
R(S,P)	0.418	0.414	0.513

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 13: 2A GAS

(RECORD COUNT = 64021, OPERATING TIME = 15.37 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	722.	63299.	64021.
MEAN	58.80	12.53	13.02
MEDIAN	68.44	6.71	6.92
STD DEV	21.65	15.84	16.65
% ACCEL	4.43	5.64	5.62
% CRUISE	87.26	44.62	45.10
% DECEL	3.05	5.27	5.25
% IDLE	5.26	44.47	44.03

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	634.	58146.	58830.
TOTAL N	722.	63252.	63974.
MEAN	61.84	19.60	20.09
MEDIAN	65.00	3.96	4.00
STD DEV	22.14	30.77	31.01
% ACCEL	11.63	8.22	8.26
% CRUISE	71.61	74.36	74.33
% DECEL	12.19	11.48	11.49
% MOTOR	4.57	5.94	5.92

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	722.	63252.	63974.
MEAN	38.10	9.13	9.46
MEDIAN	43.43	0.92	0.93
STD DEV	12.16	12.11	12.49
% ZERO	5.12	53.38	52.83
% ACCEL	14.40	15.45	15.44
% CRUISE	73.27	19.68	20.29
% DECEL	7.20	11.40	11.36
% IDLE	5.12	53.46	52.92

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	684.	58189.	58873.
E(EXP)	3843.13	522.15	560.73
E(E)XE(P)	3692.62	231.53	248.50
COV(E,P)	150.72	290.63	314.24
R(E,P)	0.319	0.598	0.604
** N	722.	63299.	64021.
E(SXE)	2480.83	288.54	313.26
E(S)XE(E)	2224.93	116.64	125.68
COV(S,E)	256.25	171.90	187.58
R(S,E)	0.963	0.896	0.902
** N	684.	58189.	58873.
E(SXP)	2436.73	416.15	440.20
E(S)XE(P)	2378.75	163.95	175.08
COV(S,P)	108.13	252.20	265.13
R(S,P)	0.401	0.682	0.687

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 14: 2A GAS

(RECORD COUNT = 65078, OPERATING TIME = 15.62 HRS)

RPM	FREEWAY	NON-FREEWAY	COMBINED
N	33795.	31283.	65078.
MEAN	47.54	19.76	34.19
MEDIAN	50.49	18.42	40.93
STD DEV	13.34	18.64	21.26
% ACCEL	3.22	10.74	6.83
% CRUISE	90.62	47.16	69.74
% DECEL	3.16	9.39	6.15
% IDLE	3.00	32.71	17.27

POWER	FREEWAY	NON-FREEWAY	COMBINED
* N	33604.	29960.	63564.
TOTAL N	33768.	31209.	64977.
MEAN	75.36	42.52	59.36
MEDIAN	88.91	26.54	78.02
STD DEV	31.02	39.16	38.75
% ACCEL	15.54	16.20	15.86
% CRUISE	63.95	60.00	62.05
% DECEL	20.20	21.48	20.82
% MOTOR	0.31	2.32	1.27

SPEED	FREEWAY	NON-FREEWAY	COMBINED
N	33768.	31209.	64977.
MEAN	47.80	18.86	33.90
MEDIAN	50.75	20.24	38.56
STD DEV	10.61	14.76	19.29
% ZERO	0.84	21.89	10.95
% ACCEL	14.66	26.95	20.56
% CRUISE	73.19	29.27	52.10
% DECEL	11.26	21.34	16.10
% IDLE	0.89	22.44	11.24

INTERACTION STATISTICS	FREEWAY	NON-FREEWAY	COMBINED
** N	33631.	30026.	63657.
E(EXP)	3748.65	1263.45	2575.42
E(E)XE(P)	3597.78	874.33	2090.68
COV(E,P)	150.87	389.13	485.75
R(E,P)	0.375	0.535	0.601
** N	33795.	31283.	65078.
E(SXE)	2390.77	568.27	1514.69
E(S)XE(E)	2269.37	371.47	1156.36
COV(S,E)	121.40	196.81	358.33
R(S,E)	0.838	0.708	0.866
** N	33631.	30026.	63657.
E(SXP)	3721.27	1103.03	2486.29
E(S)XE(P)	3613.02	820.60	2062.37
COV(S,P)	108.26	282.44	424.92
R(S,P)	0.337	0.486	0.574

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 17: 2A CAS

(RECORD COUNT = 27254, OPERATING TIME = 6.54 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	9912.	17342.	27254.
MEAN	78.12	43.94	56.37
MEDIAN	81.90	48.36	66.44
STD DEV	17.15	34.94	33.98
% ACCEL	5.18	17.28	12.68
% CRUISE	86.96	44.46	60.65
% DECEL	5.00	14.51	11.05
% IDLE	0.87	23.75	15.42

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	9012.	12865.	21877.
TOTAL N	9889.	17287.	27176.
MEAN	84.69	53.66	66.45
MEDIAN	97.17	61.52	90.89
STD DEV	26.79	43.09	40.26
% ACCEL	11.50	16.06	14.40
% CRUISE	68.34	46.09	54.19
% DECEL	13.27	18.54	16.62
% MOTOR	6.90	19.31	14.79

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	9389.	17287.	27176.
MEAN	37.72	15.72	23.73
MEDIAN	41.28	14.83	25.52
STD DEV	9.73	12.48	15.67
% ZERO	0.07	16.72	10.66
% ACCEL	6.62	23.87	17.60
% CRUISE	85.64	39.49	56.28
% DECEL	7.63	19.78	15.36
% IDLE	0.10	16.85	10.76

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	9029.	12900.	21929.
E(EXP)	6929.55	3615.08	4979.76
E(E)XE(P)	6755.52	2419.72	3944.16
COV(E,P)	174.05	1195.45	1035.65
R(E,P)	0.420	0.751	0.745
** N	9912.	17342.	27254.
E(SXE)	3066.72	1025.79	1768.05
E(S)XE(E)	2947.12	689.80	1336.53
COV(S,E)	119.61	336.01	431.53
R(S,E)	0.705	0.769	0.756
** N	9029.	12900.	21929.
E(SXP)	3390.84	1189.68	2095.98
E(S)XE(P)	3276.30	816.02	1652.26
COV(S,P)	114.56	373.69	443.74
R(S,P)	0.472	0.671	0.676

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 19: 2A GAS

(RECORD COUNT = 52357, OPERATING TIME = 12.57 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	25337.	27020.	52357.
MEAN	51.51	33.89	42.42
MEDIAN	53.87	33.20	46.16
STD DEV	15.65	19.65	19.86
% ACCEL	4.04	12.12	8.21
% CRUISE	90.85	69.67	79.93
% DECEL	3.92	11.28	7.72
% IDLE	1.20	6.93	4.15

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	23188.	22575.	45763.
TOTAL N	25311.	26949.	52260.
MEAN	57.64	29.00	43.51
MEDIAN	60.79	17.12	39.76
STD DEV	32.28	29.18	33.96
% ACCEL	11.66	15.79	13.79
% CRUISE	68.95	53.82	61.15
% DECEL	12.68	17.75	15.29
% MOTOR	6.71	12.64	9.77

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	25311.	26949.	52260.
MEAN	27.38	10.55	18.70
MEDIAN	36.14	9.02	17.24
STD DEV	17.50	9.72	16.37
% ZERO	23.62	28.27	26.02
% ACCEL	4.67	17.27	11.17
% CRUISE	66.16	37.70	51.48
% DECEL	5.51	16.49	11.17
% IDLE	23.66	28.53	26.17

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	23211.	22639.	45850.
E(EXP)	3122.14	1163.68	2150.06
E(E)XE(P)	2966.07	956.76	1841.71
COV(E,P)	146.07	206.94	308.35
R(E,P)	0.288	0.362	0.455
** N	25337.	27020.	52357.
E(SXE)	1516.27	460.32	971.32
E(S)XE(E)	1410.17	356.83	792.41
COV(S,E)	106.11	103.50	178.91
R(S,E)	0.380	0.539	0.545
** N	23211.	22639.	45850.
E(SXP)	1698.90	414.95	1064.93
E(S)XE(P)	1588.65	301.95	830.57
COV(S,P)	110.25	113.00	234.36
R(S,P)	0.194	0.394	0.413

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 21: 2A GAS

(RECORD COUNT = 52075, OPERATING TIME = 12.50 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	17497.	34578.	52075.
MEAN	54.28	20.84	32.07
MEDIAN	59.54	17.08	33.26
STD DEV	16.91	21.17	25.36
% ACCEL	3.77	11.93	9.19
% CRUISE	88.93	43.20	58.58
% DECEL	3.72	10.57	8.27
% IDLE	3.59	34.29	23.96

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	16135.	28029.	44164.
TOTAL N	17492.	34508.	52000.
MEAN	60.13	32.65	42.69
MEDIAN	62.99	21.45	42.37
STD DEV	27.68	34.76	34.95
% ACCEL	23.51	17.55	19.55
% CRUISE	42.94	47.55	46.00
% DECEL	27.97	21.02	23.36
% MOTOR	5.57	13.88	11.08

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	17492.	34508.	52000.
MEAN	42.00	17.19	25.53
MEDIAN	45.97	16.96	26.26
STD DEV	11.08	13.55	17.34
% ZERO	0.59	17.70	11.95
% ACCEL	6.70	21.89	16.78
% CRUISE	85.85	39.40	55.02
% DECEL	6.70	19.27	15.04
% IDLE	0.75	19.44	13.16

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	16140.	28080.	44220.
E(EXP)	3468.03	1062.71	1940.63
E(E)XE(P)	3331.22	629.94	1385.75
COV(E,P)	136.82	432.79	554.89
R(E,P)	0.308	0.578	0.604
** N	17497.	34578.	52075.
E(SXE)	2427.76	572.56	1195.90
E(S)XE(E)	2269.47	357.67	816.09
COV(S,E)	158.31	214.90	379.82
R(S,E)	0.843	0.744	0.863
** N	16140.	28080.	44220.
E(SXP)	2673.74	811.95	1491.49
E(S)XE(P)	2569.18	522.94	1099.57
COV(S,P)	104.56	289.02	391.92
R(S,P)	0.359	0.592	0.616

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 24: 2A GAS

(RECORD COUNT = 43360, OPERATING TIME = 10.41 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	12063.	31297.	43360.
MEAN	49.11	31.28	36.24
MEDIAN	54.68	31.97	41.74
STD DEV	17.50	25.91	25.17
% ACCEL	4.63	13.77	11.22
% CRUISE	85.30	49.14	59.20
% DECEL	4.46	11.18	9.31
% IDLE	5.62	25.91	20.26

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	10964.	26599.	37563.
TOTAL N	12019.	31150.	43169.
MEAN	64.52	40.04	47.11
MEDIAN	71.62	37.16	49.28
STD DEV	28.46	34.74	34.82
% ACCEL	13.94	17.16	16.26
% CRUISE	63.77	53.30	56.22
% DECEL	15.40	18.53	17.66
% MOTOR	6.89	11.00	9.86

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	12019.	31150.	43169.
MEAN	43.99	20.16	26.79
MEDIAN	50.74	19.71	26.72
STD DEV	15.29	16.25	19.23
% ZERO	2.69	17.57	13.43
% ACCEL	12.05	28.68	24.05
% CRUISE	74.13	31.59	43.44
% DECEL	10.95	21.29	18.41
% IDLE	2.87	18.44	14.10

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	10998.	26687.	37685.
E(EXP)	3452.09	1782.64	2269.66
E(E)XE(P)	3215.48	1208.16	1694.51
COV(E,P)	236.68	574.50	575.36
R(E,P)	0.483	0.616	0.634
** N	12063.	31297.	43360.
E(SXE)	2393.90	948.64	1350.72
E(S)XE(E)	2172.96	630.33	972.74
COV(S,E)	220.96	318.32	377.99
R(S,E)	0.810	0.752	0.775
** N	10998.	26687.	37985.
E(SXP)	3081.69	1088.92	1670.49
E(S)XE(P)	2880.11	764.59	1253.05
COV(S,P)	201.59	324.34	417.45
R(S,P)	0.466	0.557	0.597

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 25: 2A GAS

(RECORD COUNT = 66639, OPERATING TIME = 15.99 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	36749.	29890.	66639.
MEAN	47.13	13.51	32.05
MEDIAN	53.25	13.33	31.58
STD DEV	15.92	12.59	22.15
% ACCEL	2.46	7.93	4.91
% CRUISE	91.68	50.99	73.44
% DECEL	2.41	6.86	4.40
% IDLE	3.46	34.22	17.25

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	34214.	25330.	59544.
TOTAL N	36749.	29849.	66598.
MEAN	50.01	29.95	41.48
MEDIAN	52.19	24.34	46.42
STD DEV	19.98	29.28	26.31
% ACCEL	12.53	15.44	13.83
% CRUISE	69.90	55.25	63.34
% DECEL	12.17	18.51	15.01
% MOTOR	5.40	10.80	7.82

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	36749.	29849.	66598.
MEAN	43.23	16.98	31.47
MEDIAN	47.62	18.36	32.85
STD DEV	11.58	12.28	17.66
% ZERO	0.53	15.48	7.23
% ACCEL	11.31	25.13	17.51
% CRUISE	79.65	37.97	60.97
% DECEL	8.53	21.67	14.42
% IDLE	0.51	15.22	7.11

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	34214.	25361.	59575.
E(EXP)	2499.70	623.75	1701.11
E(E)XE(P)	2427.75	399.44	1391.38
COV(E,P)	71.95	224.32	309.74
R(E,P)	0.242	0.586	0.525
** N	36749.	29890.	66639.
E(SXE)	2220.81	351.67	1382.43
E(S)XE(E)	2041.64	228.42	1008.99
COV(S,E)	179.17	123.25	373.45
R(S,E)	0.951	0.781	0.943
** N	34214.	25361.	59575.
E(SXP)	2265.87	677.65	1589.76
E(S)XE(P)	2206.84	489.49	1339.34
COV(S,P)	59.02	188.17	250.43
R(S,P)	0.268	0.506	0.526

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 26: 2A GAS

(RECORD COUNT = 38261, OPERATING TIME = 9.18 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	16033.	22228.	38261.
MEAN	41.92	26.33	32.86
MEDIAN	49.73	27.39	37.09
STD DEV	18.84	20.71	21.38
% ACCEL	5.45	11.91	9.20
% CRUISE	80.19	53.72	64.81
% DECEL	5.17	10.48	8.25
% IDLE	9.19	23.89	17.73

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	13852.	17239.	31091.
TOTAL N	15989.	22160.	38149.
MEAN	49.66	37.18	42.74
MEDIAN	53.07	27.88	41.69
STD DEV	29.55	35.13	33.35
% ACCEL	18.18	16.27	17.07
% CRUISE	48.55	43.62	45.63
% DECEL	22.31	22.15	22.22
% MOTOR	10.97	17.96	15.03

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	15989.	22160.	38149.
MEAN	39.52	18.86	27.52
MEDIAN	48.26	18.65	25.97
STD DEV	19.13	15.46	19.91
% ZERO	6.28	18.74	13.52
% ACCEL	24.42	31.44	28.50
% CRUISE	47.47	23.64	33.63
% DECEL	21.86	26.31	24.45
% IDLE	6.25	18.60	13.42

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	13893.	17287.	31180.
E(EXP)	2414.40	1361.18	1830.47
E(E)XE(P)	2164.53	961.82	1443.04
COV(E,P)	249.88	399.39	387.43
R(E,P)	0.454	0.521	0.522
** N	16033.	22228.	38261.
E(SXE)	1983.33	741.49	1260.62
E(S)XE(E)	1657.23	495.98	903.86
COV(S,E)	323.12	245.52	356.77
R(S,E)	0.882	0.760	0.830
** N	13893.	17287.	31180.
E(SXP)	2262.96	925.93	1521.67
E(S)XE(P)	2037.95	665.24	1205.43
COV(S,P)	225.03	260.71	316.25
R(S,P)	0.395	0.451	0.448

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 28: 2A GAS

(RECORD COUNT = 35034, OPERATING TIME = 8.41 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	8170.	26864.	35034.
MEAN	61.65	30.13	37.48
MEDIAN	66.03	33.25	38.59
STD DEV	14.96	20.64	23.59
% ACCEL	3.65	13.25	11.01
% CRUISE	92.26	58.71	66.55
% DECEL	3.45	10.15	8.58
% IDLE	0.64	17.89	13.86

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	7525.	22047.	29572.
TOTAL N	8156.	26772.	34928.
MEAN	51.29	40.27	43.07
MEDIAN	48.92	36.86	41.45
STD DEV	24.31	32.55	31.04
% ACCEL	11.78	14.97	14.23
% CRUISE	68.50	52.86	56.52
% DECEL	12.92	18.32	17.06
% MOTOR	6.79	13.84	12.20

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	8156.	26772.	34928.
MEAN	44.45	21.14	26.58
MEDIAN	48.18	23.69	28.41
STD DEV	10.51	13.07	15.94
% ZERO	0.22	10.70	8.25
% ACCEL	10.29	28.36	24.14
% CRUISE	82.50	40.14	50.03
% DECEL	6.96	20.25	17.15
% IDLE	0.25	11.25	8.68

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	7537.	22109.	29646.
E(EXP)	3300.90	1646.79	2067.31
E(E)XE(P)	3254.06	1251.32	1692.58
COV(E,P)	46.85	395.48	374.75
R(E,P)	0.146	0.571	0.501
** N	8170.	26864.	35034.
E(SXE)	2873.15	825.87	1303.30
E(S)XE(E)	2739.49	634.82	993.92
COV(S,E)	133.68	191.06	309.39
R(S,E)	0.838	0.703	0.818
** N	7537.	22109.	29646.
E(SXP)	2353.32	1012.23	1355.17
E(S)XE(P)	2330.36	840.64	1167.85
COV(S,P)	22.97	171.59	185.33
R(S,P)	0.096	0.385	0.358

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 30: 2A GAS

(RECORD COUNT = 34212, OPERATING TIME = 8.21 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	2147.	32065.	34212.
MEAN	45.57	20.94	22.49
MEDIAN	57.55	16.39	18.29
STD DEV	26.93	21.27	22.48
% ACCEL	6.57	12.57	12.19
% CRUISE	70.96	41.32	43.18
% DECEL	6.62	10.85	10.58
% IDLE	15.85	35.26	34.04

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	1609.	22604.	24213.
TOTAL N	2145.	31630.	34075.
MEAN	34.16	25.23	25.82
MEDIAN	30.86	12.15	13.67
STD DEV	26.55	30.39	30.23
% ACCEL	23.73	19.51	19.78
% CRUISE	27.69	35.67	35.16
% DECEL	28.36	21.96	22.39
% MOTOR	19.72	22.86	22.66

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	2145.	31930.	34075.
MEAN	34.97	14.28	15.59
MEDIAN	46.17	11.67	12.64
STD DEV	19.60	13.07	14.47
% ZERO	7.18	22.72	21.74
% ACCEL	18.93	23.40	23.12
% CRUISE	56.74	33.25	34.73
% DECEL	16.78	18.04	17.96
% IDLE	7.55	25.31	24.19

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	1611.	22703.	24314.
E(EXP)	1926.11	915.39	982.36
E(E)XE(P)	1614.29	488.47	547.08
COV(E,P)	312.01	426.94	434.69
R(E,P)	0.427	0.642	0.615
** N	2147.	32065.	34212.
E(SXF)	2083.59	505.57	604.60
E(S)XE(E)	1587.84	298.46	349.54
COV(S,E)	495.98	207.12	255.06
R(S,E)	0.938	0.738	0.778
** N	1611.	22703.	24314.
E(SXP)	1446.82	581.93	639.23
E(S)XE(P)	1234.42	328.08	375.38
COV(S,P)	212.52	253.86	263.86
R(S,P)	0.395	0.612	0.570

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 32: 2A GAS

(RECORD COUNT = 25097, OPERATING TIME = 6.02 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	13694.	11402.	25097.
MEAN	59.07	24.90	43.55
MEDIAN	68.87	26.04	45.89
STD DEV	24.46	20.84	28.52
% ACCEL	5.56	10.92	7.99
% CRUISE	82.21	51.18	68.12
% DECEL	5.31	9.98	7.43
% IDLE	6.93	27.92	16.46

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	11600.	8560.	20160.
TOTAL N	13681.	11378.	25059.
MEAN	43.36	33.19	39.04
MEDIAN	42.79	23.59	37.93
STD DEV	25.62	33.30	29.56
% ACCEL	21.10	18.74	20.03
% CRUISE	43.47	38.72	41.31
% DECEL	23.56	23.22	23.40
% MOTOR	11.87	19.33	15.26

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	13681.	11378.	25059.
MEAN	44.83	19.33	33.25
MEDIAN	52.94	18.38	36.11
STD DEV	18.02	15.31	21.09
% ZERO	3.98	18.43	10.54
% ACCEL	16.44	26.79	21.14
% CRUISE	65.94	31.25	50.19
% DECEL	13.61	23.30	18.01
% IDLE	4.01	18.66	10.66

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	11612.	8582.	20194.
E(EXP)	2826.15	1227.69	2146.92
E(E)XE(P)	2674.49	812.07	1790.04
COV(E,P)	151.67	415.86	356.90
R(E,P)	0.249	0.569	0.410
** N	13694.	11403.	25097.
E(SXE)	3057.80	740.02	2004.70
E(S)XE(E)	2645.15	481.30	1446.38
COV(S,E)	412.68	258.74	558.34
R(S,E)	0.930	0.801	0.923
** N	11612.	8582.	20194.
E(SXP)	2102.46	875.84	1581.17
E(S)XE(P)	2012.17	601.30	1341.91
COV(S,P)	90.30	274.58	239.27
R(S,P)	0.196	0.512	0.365

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 36: 2A GAS

(RECORD COUNT = 6995, OPERATING TIME = 1.68 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	794.	6201.	6995.
MEAN	47.53	23.48	26.21
MEDIAN	57.91	23.90	25.55
STD DEV	29.02	18.72	21.55
% ACCEL	11.49	13.33	13.12
% CRUISE	62.37	50.85	52.16
% DECEL	10.73	12.12	11.96
% IDLE	15.40	23.70	22.76

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	675.	5085.	5760.
TOTAL N	792.	6181.	6973.
MEAN	48.16	35.06	36.60
MEDIAN	48.37	28.38	31.02
STD DEV	34.67	34.29	34.59
% ACCEL	18.06	18.86	18.77
% CRUISE	52.27	47.42	47.97
% DECEL	18.69	21.86	21.50
% MOTOR	10.98	11.86	11.76

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	792.	6181.	6973.
MEAN	34.04	18.97	20.68
MEDIAN	40.00	19.19	20.37
STD DEV	21.63	13.63	15.51
% ZERO	11.99	15.55	15.14
% ACCEL	28.41	31.65	31.28
% CRUISE	41.79	29.40	30.80
% DECEL	17.93	23.67	23.02
% IDLE	11.87	15.29	14.90

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	676.	5100.	5776.
E(EXP)	2832.37	1138.22	1330.50
E(E)XE(P)	2310.25	800.32	942.94
COV(E,P)	522.89	337.96	393.63
R(E,P)	0.501	0.516	0.512
** N	794.	6201.	6995.
E(SXE)	2180.53	644.23	818.61
E(S)XE(E)	1604.94	444.62	540.37
COV(S,E)	576.32	199.64	278.26
R(S,E)	0.925	0.772	0.828
** N	676.	5100.	5776.
E(SXP)	1958.20	822.72	955.61
E(S)XE(P)	1634.12	625.38	721.61
COV(S,P)	324.55	197.38	234.04
R(S,P)	0.415	0.410	0.420

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 40: 2A GAS

(RECORD COUNT = 39369, OPERATING TIME = 9.45 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	20474.	18895.	39369.
MEAN	66.03	35.23	51.25
MEDIAN	70.02	38.46	59.88
STD DEV	12.52	24.69	24.72
% ACCEL	3.53	16.75	9.87
% CRUISE	92.21	49.32	71.65
% DECEL	3.32	15.80	9.30
% IDLE	0.94	18.13	9.18

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	18683.	13349.	32032.
TOTAL N	20429.	18809.	39238.
MEAN	64.10	39.55	53.87
MEDIAN	66.68	37.56	56.76
STD DEV	25.50	32.52	31.09
% ACCEL	21.35	23.33	22.30
% CRUISE	50.18	31.14	41.05
% DECEL	22.02	24.82	23.37
% MOTOR	6.45	20.70	13.28

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	20429.	18809.	39238.
MEAN	48.26	19.19	34.33
MEDIAN	51.94	20.01	37.50
STD DEV	10.04	13.21	18.63
% ZERO	0.50	12.49	6.25
% ACCEL	24.96	32.03	28.35
% CRUISE	55.26	30.84	43.56
% DECEL	19.19	23.73	21.37
% IDLE	0.58	13.40	6.72

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	18718.	13402.	32120.
E(EXP)	4301.11	1915.48	3340.68
E(E)XE(P)	4308.92	1429.97	2922.16
COV(E,P)	52.19	485.54	418.53
R(E,P)	0.181	0.572	0.553
** N	20474.	18895.	39369.
E(SXE)	3249.55	882.82	2113.64
E(S)XE(E)	3155.58	675.31	1746.18
COV(S,E)	93.98	207.52	367.47
R(S,E)	0.752	0.634	0.803
** N	18718.	13402.	32120.
E(SXP)	3182.81	972.24	2260.40
E(S)XE(P)	3143.58	740.98	1960.01
COV(S,P)	39.23	231.27	300.45
R(S,P)	0.164	0.506	0.511

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 42: 2A GAS

(RECORD COUNT = 25387, OPERATING TIME = 6.09 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	11236.	14151.	25387.
MEAN	56.45	19.48	35.84
MEDIAN	59.20	19.20	38.82
STD DEV	13.26	18.33	24.54
% ACCEL	2.74	9.87	6.72
% CRUISE	92.17	46.97	66.99
% DECEL	2.77	8.06	5.72
% IDLE	2.32	35.09	20.58

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	10451.	10862.	21313.
TOTAL N	11232.	14127.	25359.
MEAN	42.53	24.60	33.39
MEDIAN	43.80	17.13	34.75
STD DEV	19.69	26.14	24.87
% ACCEL	11.55	13.44	12.66
% CRUISE	70.41	53.05	60.74
% DECEL	12.37	15.30	14.00
% MOTOR	5.68	18.22	12.67

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	11232.	14127.	25359.
MEAN	46.47	15.55	29.25
MEDIAN	48.78	15.30	30.90
STD DEV	9.93	12.92	19.30
% ZERO	0.40	19.08	10.80
% ACCEL	9.41	27.82	19.67
% CRUISE	82.28	29.43	52.84
% DECEL	7.78	22.21	15.82
% IDLE	0.53	20.54	11.68

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	10454.	10877.	21331.
E(EXP)	2500.29	784.42	1625.33
E(E)XE(P)	2443.58	475.43	1259.13
COV(E,P)	56.72	309.01	356.21
R(E,P)	0.234	0.621	0.574
** N	11236.	14151.	25387.
E(SXE)	2753.02	487.40	1490.14
E(S)XE(E)	2628.39	302.83	1049.20
COV(S,E)	124.65	184.58	440.95
R(S,E)	0.924	0.775	0.925
** N	10454.	10877.	21331.
E(SXP)	2043.59	576.68	1295.59
E(S)XE(P)	2004.19	367.36	1025.29
COV(S,P)	39.41	209.34	270.31
R(S,P)	0.213	0.595	0.547

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 47: 2A GAS

(RECORD COUNT = 61046, OPERATING TIME = 14.65 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	32115.	28931.	61046.
MEAN	46.09	20.62	34.02
MEDIAN	49.94	20.31	40.20
STD DEV	11.54	17.26	19.31
% ACCEL	3.09	9.74	6.24
% CRUISE	92.21	53.88	74.04
% DECEL	3.04	8.58	5.67
% IDLE	1.65	27.80	14.04

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	29836.	23468.	53304.
TOTAL N	31998.	28830.	60828.
MEAN	73.76	40.24	59.00
MEDIAN	84.68	33.96	76.13
STD DEV	25.12	36.65	34.95
% ACCEL	14.81	16.54	15.63
% CRUISE	63.89	48.40	56.55
% DECEL	15.93	20.68	18.18
% MOTOR	5.37	14.38	9.64

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	31998.	28830.	60828.
MEAN	47.70	20.93	35.01
MEDIAN	51.73	22.29	38.39
STD DEV	10.65	15.08	18.61
% ZERO	0.23	15.52	7.48
% ACCEL	10.39	24.82	17.23
% CRUISE	82.22	40.00	62.21
% DECEL	7.11	18.19	12.36
% IDLE	0.28	17.00	8.20

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	29947.	23549.	53496.
E(EXP)	3568.06	1201.80	2526.43
E(E)XE(P)	3483.57	827.40	2093.90
COV(E,P)	84.50	374.42	432.54
R(E,P)	0.321	0.561	0.653
** N	32115.	28931.	61046.
E(SXE)	2299.29	629.92	1506.14
E(S)XE(E)	2192.63	431.73	1188.98
COV(S,E)	106.67	198.20	319.16
R(S,E)	0.842	0.754	0.881
** N	29947.	23549.	53496.
E(SXP)	3669.97	1135.10	2554.12
E(S)XE(P)	3581.31	817.14	2131.02
COV(S,P)	88.67	317.97	423.11
R(S,P)	0.351	0.539	0.632

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 2: 2A GAS

(RECORD COUNT = 21403, OPERATING TIME = 5.14 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	4080.	17323.	21403.
MEAN	40.16	11.32	16.81
MEDIAN	42.56	1.43	5.33
STD DEV	21.95	17.63	21.72
% ACCEL	8.22	10.75	10.27
% CRUISE	73.68	26.75	35.68
% DECEL	7.75	9.40	9.08
% IDLE	10.36	53.10	44.96

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	4064.	17202.	21266.
TOTAL N	4065.	17292.	21357.
MEAN	54.27	26.16	31.53
MEDIAN	59.51	7.43	10.32
STD DEV	41.40	36.68	39.21
% ACCEL	15.18	11.28	12.02
% CRUISE	67.53	73.72	72.54
% DECEL	17.29	14.71	15.20
% MOTOR	0.0	0.29	0.24

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	4065.	17292.	21357.
MEAN	37.22	10.92	15.93
MEDIAN	40.31	6.36	11.73
STD DEV	14.49	12.40	16.46
% ZERO	1.53	37.13	30.36
% ACCEL	18.77	18.79	18.79
% CRUISE	60.49	26.91	33.31
% DECEL	18.75	15.31	15.97
% IDLE	1.99	38.98	31.94

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	4079.	17225.	21304.
E(EXP)	2473.20	656.91	1004.66
E(E)XE(P)	2186.92	297.83	533.45
COV(E,P)	286.35	359.10	471.23
R(E,P)	0.315	0.555	0.553
** N	4080.	17323.	21403.
E(SXE)	1756.65	266.02	550.17
E(S)XE(E)	1490.79	121.92	265.64
COV(S,E)	265.92	144.10	284.55
R(S,E)	0.831	0.653	0.790
** N	4079.	17225.	21304.
E(SXP)	2142.41	510.24	822.75
E(S)XE(P)	2027.14	286.41	504.58
COV(S,P)	115.30	223.84	318.17
R(S,P)	0.192	0.492	0.492

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 3: 2A GAS

(RECORD COUNT = 29363, OPERATING TIME = 7.05 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	371.	28992.	29363.
MEAN	45.55	17.53	17.88
MEDIAN	51.05	12.69	13.16
STD DEV	15.15	18.77	18.99
% ACCEL	7.55	9.40	9.37
% CRUISE	81.94	42.94	43.43
% DECEL	6.74	8.69	8.67
% IDLE	3.77	38.97	38.52

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	271.	20806.	21077.
TOTAL N	371.	28927.	29298.
MEAN	55.50	27.20	27.56
MEDIAN	57.00	7.90	8.60
STD DEV	31.36	34.17	34.29
% ACCEL	17.25	15.65	15.67
% CRUISE	33.69	43.64	43.51
% DECEL	25.88	19.07	19.15
% MOTOR	23.18	21.65	21.67

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	371.	28927.	29298.
MEAN	34.05	11.45	11.74
MEDIAN	39.28	9.26	9.47
STD DEV	13.66	11.88	12.17
% ZERO	4.31	31.46	31.11
% ACCEL	26.42	18.41	18.51
% CRUISE	56.06	33.00	33.29
% DECEL	12.40	15.05	15.02
% IDLE	5.12	33.54	33.18

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	271.	20858.	21129.
	E(EXP)	2546.42	822.45	844.56
	E(E)XE(P)	2730.26	427.58	445.12
	COV(E,P)	-184.52	394.88	399.46
	R(E,P)	-0.521	0.600	0.597
**	N	371.	28992.	29363.
	E(SXE)	1715.42	376.05	392.97
	E(S)XE(E)	1539.31	200.02	209.12
	COV(S,E)	176.58	176.04	183.86
	R(S,E)	0.837	0.783	0.790
**	N	271.	20858.	21129.
	E(SXP)	1821.55	495.52	512.53
	E(S)XE(P)	2030.29	269.59	282.61
	COV(S,P)	-209.51	225.94	229.93
	R(S,P)	-0.588	0.539	0.531

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 4: 2A GAS

(RECORD COUNT = 54119, OPERATING TIME = 12.99 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	54119.	54119.
MEAN		7.68	7.68
MEDIAN		2.65	2.65
STD DEV		11.62	11.62
% ACCEL		8.36	8.36
% CRUISE		30.42	30.42
% DECEL		7.90	7.90
% IDLE		53.32	53.32

POWER

		FREEWAY	NON-FREEWAY	COMBINED
*	N	0.	25987.	25987.
	TOTAL N	0.	53574.	53574.
	MEAN		14.13	14.13
	MEDIAN		4.39	4.39
	STD DEV		22.39	22.39
	% ACCEL		12.59	12.59
	% CRUISE		28.11	28.11
	% DECEL		14.34	14.34
	% MOTOR		44.96	44.96

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	53574.	53574.
MEAN		3.76	3.76
MEDIAN		0.82	0.82
STD DEV		5.90	5.90
% ZERO		55.98	55.98
% ACCEL		9.78	9.78
% CRUISE		21.35	21.35
% DECEL		9.28	9.28
% IDLE		59.59	59.59

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	0.	26355.	26355.
	E(EXP)		261.08	261.08
	E(E)XE(P)		114.57	114.57
	COV(E,P)		146.52	146.52
	R(E,P)		0.497	0.497
**	N	0.	54119.	54119.
	E(SXE)		75.39	75.39
	E(S)XE(E)		29.68	29.68
	COV(S,E)		45.71	45.71
	R(S,E)		0.642	0.642
**	N	0.	26355.	26355.
	E(SXP)		143.12	143.12
	E(S)XE(P)		62.16	62.16
	COV(S,P)		80.96	80.96
	R(S,P)		0.573	0.573

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 5: 2A GAS

(RECORD COUNT = 54023, OPERATING TIME = 12.97 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	948.	53075.	54023.
MEAN	39.11	22.30	22.60
MEDIAN	36.77	17.57	18.21
STD DEV	19.64	23.68	23.72
% ACCEL	11.80	18.49	18.37
% CRUISE	71.89	29.97	30.70
% DECEL	11.91	17.70	17.60
% IDLE	4.40	33.84	33.33

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	582.	32585.	33167.
TOTAL N	932.	52360.	53292.
MEAN	76.27	41.49	42.10
MEDIAN	92.47	28.38	30.03
STD DEV	32.54	40.85	40.97
% ACCEL	19.85	22.05	22.01
% CRUISE	28.00	28.92	28.90
% DECEL	21.67	20.96	20.98
% MOTOR	30.47	28.07	28.11

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	932.	52360.	53292.
MEAN	32.50	11.36	11.73
MEDIAN	33.58	9.96	10.29
STD DEV	10.01	10.44	10.80
% ZERO	1.07	26.59	26.14
% ACCEL	39.16	30.53	30.68
% CRUISE	20.71	12.31	12.46
% DECEL	39.06	31.09	31.23
% IDLE	1.07	26.07	25.64

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	594.	33040.	33634.
E(EXP)	3320.64	1584.96	1615.01
E(E)XE(P)	3149.37	930.47	956.27
COV(E,P)	171.56	654.51	657.35
R(E,P)	0.258	0.642	0.642
** N	948.	53075.	54023.
E(SXE)	1367.41	417.26	433.93
E(S)XE(E)	1268.52	255.75	267.46
COV(S,E)	98.98	161.52	166.48
R(S,E)	0.500	0.647	0.644
** N	594.	33040.	33634.
E(SXP)	2550.24	673.06	706.21
E(S)XE(P)	2477.19	416.40	439.33
COV(S,P)	73.17	256.66	266.89
R(S,P)	0.223	0.596	0.595

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 6: 2A GAS

(RECORD COUNT = 62263, OPERATING TIME = 14.94 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	9945.	52318.	62263.
MEAN	37.02	9.56	13.95
MEDIAN	39.47	0.64	0.86
STD DEV	23.55	14.99	19.46
% ACCEL	4.33	5.35	5.18
% CRUISE	74.08	27.36	34.82
% DECEL	4.39	5.56	5.37
% IDLE	17.19	61.74	54.62

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	8403.	44124.	52527.
TOTAL N	9945.	52305.	62250.
MEAN	56.70	18.39	24.52
MEDIAN	70.63	3.55	4.00
STD DEV	37.05	32.46	36.08
% ACCEL	18.58	11.33	12.49
% CRUISE	50.65	65.45	63.08
% DECEL	18.71	11.38	12.55
% MOTOR	12.06	11.84	11.87

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	9945.	52305.	62250.
MEAN	27.50	6.70	10.02
MEDIAN	31.77	0.82	0.94
STD DEV	16.37	10.93	14.19
% ZERO	14.42	58.31	51.30
% ACCEL	16.91	11.44	12.31
% CRUISE	55.60	20.55	26.15
% DECEL	12.38	8.22	8.89
% IDLE	15.11	59.79	52.65

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	8403.	44136.	52539.
E(EXP)	2729.68	501.22	657.04
E(E)XE(P)	2144.87	147.01	312.97
COV(E,P)	584.87	354.21	344.07
R(E,P)	0.644	0.739	0.756
** N	9945.	52318.	62263.
E(SXE)	1375.74	198.86	386.84
E(S)XE(E)	1018.78	63.90	139.63
COV(S,F)	357.00	134.96	247.21
R(S,E)	0.917	0.818	0.890
** N	8403.	44136.	52539.
E(SXP)	1964.72	354.18	611.76
E(S)XE(P)	1566.53	104.16	224.98
COV(S,P)	398.23	250.03	386.79
R(S,P)	0.629	0.719	0.744

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 8: 2A GAS

(RECORD COUNT = 49009, OPERATING TIME = 11.76 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	9057.	39952.	49009.
MEAN	36.57	20.28	23.29
MEDIAN	36.11	11.43	15.63
STD DEV	28.50	24.04	25.71
% ACCEL	7.19	10.95	10.25
% CRUISE	63.29	38.21	42.85
% DECEL	7.07	10.60	9.95
% IDLE	22.46	40.24	36.95

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	7735.	32383.	40118.
TOTAL N	9040.	39884.	48924.
MEAN	41.91	29.86	32.18
MEDIAN	39.44	12.69	17.86
STD DEV	35.49	34.98	35.40
% ACCEL	21.47	19.60	19.95
% CRUISE	44.16	45.42	45.19
% DECEL	24.30	21.75	22.22
% MOTOR	10.07	13.22	12.64

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	9040.	39884.	48924.
MEAN	29.72	16.67	19.08
MEDIAN	31.77	13.79	15.90
STD DEV	21.35	16.38	18.13
% ZERO	14.73	24.68	22.84
% ACCEL	20.65	25.48	24.59
% CRUISE	45.81	27.22	30.66
% DECEL	18.35	21.49	20.91
% IDLE	15.19	25.81	23.85

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	7750.	32433.	40183.
	E(EXP)	2129.49	1007.06	1223.54
	E(E)XE(P)	1491.67	548.45	697.98
	COV(E,P)	637.90	458.62	525.57
	R(E,P)	0.611	0.543	0.568
**	N	9057.	39952.	49009.
	E(SXE)	1605.55	629.37	809.77
	E(S)XE(E)	1036.79	336.94	443.36
	COV(S,E)	518.82	292.44	366.42
	R(S,E)	0.851	0.738	0.782
**	N	7750.	32433.	40183.
	E(SXP)	1729.31	811.49	988.51
	E(S)XE(P)	1217.74	460.11	580.57
	COV(S,P)	511.64	351.39	407.95
	R(S,P)	0.655	0.598	0.616

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 9: 2A GAS

(RECORD COUNT = 116649, OPERATING TIME = 26.00 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	21773.	94876.	116649.
MEAN	82.96	24.75	35.62
MEDIAN	85.72	3.15	18.92
STD DEV	41.41	34.39	42.38
% ACCEL	13.01	11.57	11.84
% CRUISE	69.10	28.12	35.76
% DECEL	12.93	12.43	12.52
% IDLE	4.95	47.88	39.88

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	15820.	67989.	83809.
TOTAL N	21701.	94718.	116419.
MEAN	59.26	19.44	26.95
MEDIAN	63.24	10.05	12.71
STD DEV	31.38	25.98	31.25
% ACCEL	15.52	12.18	12.80
% CRUISE	43.45	50.86	49.48
% DECEL	18.44	13.03	14.04
% MOTOR	22.59	23.93	23.68

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	21701.	94718.	116419.
MEAN	34.26	6.12	11.37
MEDIAN	36.87	0.79	0.94
STD DEV	17.38	10.48	16.30
% ZERO	7.24	61.24	51.18
% ACCEL	29.51	15.24	17.90
% CRUISE	35.02	7.93	12.98
% DECEL	27.79	14.71	17.14
% IDLE	7.68	62.13	51.98

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	15884.	68110.	83994.
E(EXP)	5761.68	891.02	1812.11
E(E)XE(P)	5272.71	365.90	885.41
COV(E,P)	489.00	525.13	946.71
R(E,P)	0.377	0.592	0.673
** N	21773.	94876.	116649.
E(SXE)	3431.42	411.92	975.53
E(S)XE(E)	2846.66	151.46	405.23
COV(S,E)	584.79	260.46	570.25
R(S,E)	0.810	0.721	0.823
** N	15884.	68110.	83994.
E(SXP)	2428.42	275.77	682.85
E(S)XE(P)	2207.60	104.61	307.67
COV(S,P)	220.84	171.17	375.19
R(S,P)	0.426	0.625	0.696

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 11: 2A GAS

(RECORD COUNT = 51888, OPERATING TIME = 12.45 HRS)

RPM	FREEWAY	NON-FREEWAY	COMBINED
N	10131.	41757.	51888.
MEAN	37.67	25.12	27.57
MEDIAN	41.40	24.80	27.98
STD DEV	22.44	22.08	22.70
% ACCEL	7.92	11.27	10.62
% CRUISE	69.56	49.26	53.23
% DECEL	8.45	11.40	10.82
% IDLE	14.07	28.06	25.33

POWER	FREEWAY	NON-FREEWAY	COMBINED
* N	7250.	30131.	37381.
TOTAL N	10127.	41607.	51734.
MEAN	49.86	40.74	42.51
MEDIAN	50.09	27.03	32.32
STD DEV	37.37	40.57	40.22
% ACCEL	23.75	19.40	20.25
% CRUISE	31.58	40.43	38.70
% DECEL	24.14	19.44	20.36
% MOTOR	20.53	20.73	20.69

SPEED	FREEWAY	NON-FREEWAY	COMBINED
N	10127.	41607.	51734.
MEAN	33.52	20.54	23.08
MEDIAN	37.10	20.35	22.89
STD DEV	19.80	17.00	18.32
% ZERO	7.23	20.44	17.85
% ACCEL	18.57	23.68	22.68
% CRUISE	55.10	34.35	38.41
% DECEL	18.59	20.95	20.49
% IDLE	7.73	21.02	18.42

INTERACTION STATISTICS	FREEWAY	NON-FREEWAY	COMBINED
** N	7254.	30240.	37494.
E(EXP)	2351.36	1523.84	1683.93
E(E)XE(P)	1938.14	966.22	1132.77
COV(E,P)	413.28	557.64	551.17
R(E,P)	0.459	0.588	0.566
** N	10131.	41757.	51888.
E(SXE)	1643.72	801.26	965.75
E(S)XE(E)	1263.49	515.80	636.13
COV(S,E)	380.26	285.47	329.63
R(S,E)	0.848	0.757	0.788
** N	7254.	30240.	37494.
E(SXP)	2063.08	1155.04	1330.71
E(S)XE(P)	1720.46	776.62	937.35
COV(S,P)	342.66	378.42	393.37
R(S,P)	0.432	0.515	0.498

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 12: 2A GAS

(RECORD COUNT = 16155, OPERATING TIME = 3.88 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	978.	15177.	16155.
MEAN	51.27	19.13	21.08
MEDIAN	53.90	15.76	18.10
STD DEV	13.36	18.95	20.17
% ACCEL	1.23	7.33	6.96
% CRUISE	93.56	50.83	53.42
% DECEL	2.15	6.56	6.29
% IDLE	3.07	35.28	33.32

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	769.	12083.	12852.
TOTAL N	978.	15155.	16133.
MEAN	71.11	30.92	33.32
MEDIAN	86.85	14.79	17.63
STD DEV	32.54	35.51	36.60
% ACCEL	9.51	14.28	13.99
% CRUISE	60.84	52.93	53.41
% DECEL	9.61	16.85	16.41
% MOTOR	20.04	15.94	16.19

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	978.	15155.	16133.
MEAN	39.20	12.69	14.30
MEDIAN	40.49	9.90	11.19
STD DEV	8.67	12.59	13.91
% ZERO	1.02	25.84	24.34
% ACCEL	1.23	12.74	12.04
% CRUISE	92.43	48.18	50.86
% DECEL	4.19	11.08	10.66
% IDLE	2.15	28.00	26.44

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	769.	12103.	12872.
E(EXP)	3837.74	965.85	1137.45
E(E)XE(P)	3726.70	546.88	656.44
COV(E,P)	111.19	419.01	479.03
R(E,P)	0.271	0.606	0.628
** N	978.	15177.	16155.
E(SXE)	2115.95	446.36	547.44
E(S)XE(E)	2010.33	242.05	300.54
COV(S,E)	105.73	204.32	246.91
R(S,E)	0.901	0.851	0.875
** N	769.	12103.	12672.
E(SXP)	2882.34	616.54	791.90
E(S)XE(P)	2819.62	351.47	435.04
COV(S,P)	62.81	265.09	356.89
R(S,P)	0.222	0.579	0.603

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 13: 2A GAS

(RECORD COUNT = 66433, OPERATING TIME = 15.94 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	18896.	47537.	66433.
MEAN	35.91	8.00	15.94
MEDIAN	39.72	0.83	5.93
STD DEV	23.76	12.57	20.79
% ACCEL	7.20	9.25	8.67
% CRUISE	70.43	25.78	38.47
% DECEL	7.00	8.56	8.12
% IDLE	15.37	56.40	44.74

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	14010.	38903.	52913.
TOTAL N	18826.	47414.	66240.
MEAN	37.27	13.53	19.82
MEDIAN	30.10	4.08	5.00
STD DEV	31.82	22.95	27.66
% ACCEL	17.52	15.02	15.73
% CRUISE	41.31	54.65	50.86
% DECEL	20.06	17.59	18.29
% MOTOR	21.11	12.74	15.12

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	18826.	47414.	66240.
MEAN	27.64	7.12	12.95
MEDIAN	32.08	4.21	8.32
STD DEV	15.65	8.27	14.29
% ZERO	2.38	36.12	26.53
% ACCEL	17.30	17.30	17.30
% CRUISE	62.24	28.60	38.16
% DECEL	17.02	15.38	15.85
% IDLE	3.44	38.71	28.69

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	14062.	39002.	53064.
E(EXP)	1680.80	218.97	606.35
E(E)XE(P)	1374.22	85.57	285.81
COV(E,P)	306.61	133.40	320.53
R(E,P)	0.386	0.489	0.546
** N	18896.	47537.	66433.
E(SXE)	1321.80	119.70	461.62
E(S)XE(E)	994.33	56.71	206.41
COV(S,E)	327.48	63.00	255.22
R(S,E)	0.875	0.598	0.853
** N	14062.	39002.	53064.
E(SXP)	1268.96	185.96	472.95
E(S)XE(P)	1049.07	80.91	234.97
COV(S,P)	219.90	105.05	237.99
R(S,P)	0.423	0.577	0.590

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY.

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 17: 2A GAS

(RECORD COUNT = 102397, OPERATING TIME = 24.58 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	102397.	102397.
MEAN		-1.82	-1.82
MEDIAN		-1.41	-1.41
STD DEV		15.40	15.40
% ACCEL		3.61	3.61
% CRUISE		37.16	37.16
% DECEL		3.14	3.14
% IDLE		56.09	56.09

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	0.	91000.	91000.
TOTAL N	0.	102291.	102291.
MEAN		13.37	13.37
MEDIAN		4.49	4.49
STD DEV		22.94	22.94
% ACCEL		8.50	8.50
% CRUISE		73.13	73.13
% DECEL		8.92	8.92
% MOTOR		9.45	9.45

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	102291.	102291.
MEAN		4.89	4.89
MEDIAN		0.65	0.65
STD DEV		10.68	10.68
% ZERO		75.64	75.64
% ACCEL		4.26	4.26
% CRUISE		15.36	15.36
% DECEL		4.13	4.13
% IDLE		76.25	76.25

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	0.	91090.	91090.
E(EXP)		124.75	124.75
E(E)XE(P)		-26.95	-26.95
COV(E,P)		151.70	151.70
R(E,P)		0.414	0.414
** N	0.	102397.	102397.
E(SXE)		105.85	105.85
E(S)XE(E)		-7.47	-7.47
COV(S,E)		113.32	113.32
R(S,E)		0.700	0.700
** N	0.	91090.	91090.
E(SXP)		235.28	235.28
E(S)XE(P)		61.91	61.91
COV(S,P)		173.37	173.37
R(S,P)		0.706	0.706

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 20: 2A GAS

(RECORD COUNT = 106652, OPERATING TIME = 25.60 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	1094.	105558.	106652.
MEAN	37.55	4.56	4.90
MEDIAN	40.96	0.31	0.32
STD DEV	15.98	9.74	10.37
% ACCEL	4.02	4.41	4.40
% CRUISE	84.73	13.41	14.15
% DECEL	4.48	5.04	5.04
% IDLE	6.76	77.14	76.41

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	850.	91563.	92413.
TOTAL N	1094.	104926.	106020.
MEAN	47.67	7.44	7.81
MEDIAN	46.92	2.96	2.99
STD DEV	27.81	20.53	20.96
% ACCEL	20.29	7.61	7.74
% CRUISE	37.20	74.25	73.86
% DECEL	23.86	9.02	9.18
% MOTOR	18.65	9.12	9.22

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	1094.	104926.	106020.
MEAN	31.66	2.53	2.84
MEDIAN	34.74	0.66	0.67
STD DEV	11.99	5.42	6.26
% ZERO	4.11	73.20	72.48
% ACCEL	16.64	7.62	7.71
% CRUISE	62.07	10.30	10.83
% DECEL	16.73	7.51	7.61
% IDLE	4.57	74.57	73.85

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	850.	92037.	92887.
E(EXP)	2015.11	152.18	169.23
E(E)XE(P)	1907.83	24.81	28.70
COV(E,P)	107.40	127.37	140.53
R(E,P)	0.246	0.714	0.708
** N	1094.	105558.	106652.
E(SXE)	1375.80	50.89	64.48
E(S)XE(E)	1191.22	11.79	14.13
COV(S,E)	184.74	39.10	50.36
R(S,E)	0.947	0.726	0.763
** N	850.	92037.	92887.
E(SXP)	1665.53	74.86	89.41
E(S)XE(P)	1579.63	13.35	16.29
COV(S,P)	86.00	61.51	73.12
R(S,P)	0.255	0.629	0.607

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 21: 2A GAS

(RECORD COUNT = 13534, OPERATING TIME = 3.25 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	13534.	13534.
MEAN		9.68	9.68
MEDIAN		-0.37	-0.37
STD DEV		15.73	15.73
% ACCEL		8.87	8.87
% CRUISE		18.43	18.43
% DECEL		10.49	10.49
% IDLE		62.20	62.20

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	0.	11369.	11369.
TOTAL N	0.	13483.	13483.
MEAN		17.65	17.65
MEDIAN		3.64	3.64
STD DEV		31.28	31.28
% ACCEL		15.21	15.21
% CRUISE		59.68	59.68
% DECEL		15.35	15.35
% MOTOR		9.75	9.75

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	13483.	13483.
MEAN		4.01	4.01
MEDIAN		0.83	0.83
STD DEV		6.62	6.62
% ZERO		56.99	56.99
% ACCEL		11.41	11.41
% CRUISE		18.94	18.94
% DECEL		11.04	11.04
% IDLE		58.60	58.60

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	0.	11418.	11418.
E(EXP)		469.99	469.99
E(E)XE(P)		144.07	144.07
COV(E,P)		325.95	325.95
R(E,P)		0.687	0.687
** N	0.	13534.	13534.
E(SXE)		109.16	109.16
E(S)XE(E)		38.79	38.79
COV(S,E)		70.38	70.38
R(S,E)		0.670	0.670
** N	0.	11418.	11418.
E(SXP)		173.28	173.28
E(S)XE(P)		55.19	55.19
COV(S,P)		118.10	118.10
R(S,P)		0.621	0.621

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 25: 2A GAS

(RECORD COUNT = 55817, OPERATING TIME = 13.40 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	14866.	40951.	55817.
MEAN	31.15	16.42	20.34
MEDIAN	31.33	1.70	10.62
STD DEV	25.37	21.73	23.67
% ACCEL	9.08	12.53	11.61
% CRUISE	59.66	27.90	36.36
% DECEL	8.50	11.33	10.58
% IDLE	22.76	48.24	41.46

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	11369.	32981.	44350.
TOTAL N	14839.	40897.	55736.
MEAN	42.97	24.85	29.50
MEDIAN	41.29	4.73	11.56
STD DEV	34.64	32.53	34.02
% ACCEL	23.53	20.47	21.29
% CRUISE	36.54	46.49	43.84
% DECEL	23.84	20.44	21.34
% MOTOR	16.10	12.60	13.53

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	14839.	40897.	55736.
MEAN	22.38	9.12	12.65
MEDIAN	23.70	5.56	9.33
STD DEV	15.11	9.81	12.88
% ZERO	6.96	31.62	25.05
% ACCEL	29.40	24.73	25.98
% CRUISE	34.42	16.82	21.50
% DECEL	28.59	24.40	25.51
% IDLE	7.59	34.05	27.00

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	11394.	33026.	44420.
E(EXP)	1736.31	780.56	1025.71
E(E)XE(P)	1318.82	343.56	535.38
COV(E,P)	417.52	437.01	490.35
R(E,P)	0.463	0.634	0.606
** N	14866.	40951.	55817.
E(SXE)	1006.96	318.71	502.01
E(S)XE(E)	697.63	149.67	257.40
COV(S,E)	309.35	169.05	244.62
R(S,E)	0.802	0.789	0.798
** N	11394.	33026.	44420.
E(SXP)	1280.85	401.28	626.89
E(S)XE(P)	977.38	189.77	339.51
COV(S,P)	303.49	211.51	287.39
R(S,P)	0.565	0.681	0.642

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 31: 2A GAS

(RECORD COUNT = 107484, OPERATING TIME = 25.80 HRS)

RPM	FREEWAY	NON-FREEWAY	COMBINED
N	19856.	87628.	107484.
MEAN	34.71	7.38	12.43
MEDIAN	42.01	0.35	0.54
STD DEV	23.93	15.15	20.13
% ACCEL	3.75	4.57	4.42
% CRUISE	66.53	16.78	25.79
% DECEL	3.86	4.02	3.99
% IDLE	25.86	74.63	65.80

POWER	FREEWAY	NON-FREEWAY	COMBINED
* N	16709.	78881.	95590.
TOTAL N	19335.	87418.	106753.
MEAN	41.14	10.74	16.05
MEDIAN	45.77	3.19	3.58
STD DEV	32.79	23.59	27.94
% ACCEL	21.84	10.51	12.56
% CRUISE	46.98	73.06	68.34
% DECEL	21.57	10.27	12.31
% MOTOR	9.61	6.17	6.79

SPEED	FREEWAY	NON-FREEWAY	COMBINED
N	19335.	87418.	106753.
MEAN	24.62	4.63	8.25
MEDIAN	27.07	0.71	0.81
STD DEV	17.42	8.92	13.39
% ZERO	21.76	64.53	56.79
% ACCEL	33.02	13.37	16.93
% CRUISE	12.61	4.31	5.81
% DECEL	30.97	13.26	16.46
% IDLE	23.40	69.07	60.80

INTERACTION STATISTICS	FREEWAY	NON-FREEWAY	COMBINED
** N	17156.	79063.	96219.
E(EXP)	1937.55	316.29	605.36
E(E)XE(P)	1408.24	64.83	178.74
COV(E,P)	529.33	251.46	426.62
R(E,P)	0.657	0.741	0.767
** N	19856.	87628.	107484.
E(SXE)	1242.22	151.30	352.83
E(S)XE(E)	857.14	34.38	103.90
COV(S,E)	385.10	116.92	248.93
R(S,E)	0.928	0.858	0.916
** N	17156.	79063.	96219.
E(SXP)	1368.81	188.91	399.29
E(S)XE(P)	1001.97	40.73	120.50
COV(S,P)	366.86	148.18	278.79
R(S,P)	0.630	0.738	0.747

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 32: 2A GAS

(RECORD COUNT = 33268, OPERATING TIME = 7.98 HRS)

RPM	FREEWAY	NON-FREEWAY	COMBINED
N	6344.	26924.	33268.
MEAN	42.98	33.12	35.00
MEDIAN	44.33	30.59	33.61
STD DEV	28.57	30.04	30.01
% ACCEL	8.82	11.62	11.08
% CRUISE	70.98	53.23	56.64
% DECEL	8.74	10.95	10.53
% IDLE	11.46	24.20	21.75

POWE	FREEWAY	NON-FREEWAY	COMBINED
* N	4462.	18600.	23062.
TOTAL N	6336.	26617.	32953.
MEAN	47.02	37.08	39.00
MEDIAN	43.10	27.16	30.06
STD DEV	35.16	34.90	35.17
% ACCEL	19.52	19.89	19.82
% CRUISE	34.80	34.16	34.28
% DECEL	21.70	23.03	22.77
% MOTOR	23.97	22.92	23.12

SPEED	FREEWAY	NON-FREEWAY	COMBINED
N	6336.	26617.	32953.
MEAN	12.81	8.87	9.63
MEDIAN	13.03	6.93	8.31
STD DEV	10.34	9.19	9.55
% ZERO	19.79	28.78	27.05
% ACCEL	8.41	12.27	11.53
% CRUISE	58.13	42.55	45.55
% DECEL	10.07	10.30	10.26
% IDLE	23.39	34.88	32.67

INTERACTION STATISTICS	FREEWAY	NON-FREEWAY	COMBINED
** N	4470.	18854.	23324.
E(EXP)	2452.26	1686.95	1833.61
E(E)XE(P)	2053.35	1202.80	1348.48
COV(E,P)	399.00	484.17	485.16
R(E,P)	0.381	0.461	0.455
** N	6344.	26924.	33268.
E(SXE)	724.31	479.66	526.32
E(S)XE(E)	551.00	291.90	335.22
COV(S,E)	173.34	187.77	191.10
R(S,E)	0.583	0.678	0.664
** N	4470.	18854.	23324.
E(SXP)	645.47	426.39	468.37
E(S)XE(P)	586.87	306.32	353.56
COV(S,P)	58.61	120.07	114.82
R(S,P)	0.158	0.383	0.345

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 33: 2A GAS

(RECORD COUNT = 15925, OPERATING TIME = 3.82 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	50.	15875.	15925.
MEAN	59.08	16.46	16.59
MEDIAN	59.54	0.98	0.99
STD DEV	2.07	20.22	20.33
% ACCEL	2.04	8.92	8.90
% CRUISE	95.92	31.06	31.26
% DECEL	2.04	8.82	8.80
% IDLE	0.0	51.21	51.05

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	47.	11576.	11623.
TOTAL N	49.	15835.	15884.
MEAN	47.23	16.18	16.31
MEDIAN	49.23	4.10	4.11
STD DEV	15.28	25.32	25.36
% ACCEL	8.16	13.13	13.11
% CRUISE	69.39	50.02	50.06
% DECEL	20.41	16.17	16.18
% MOTOR	2.04	20.69	20.63

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	49.	15835.	15884.
MEAN	44.69	10.34	10.45
MEDIAN	45.70	4.28	4.34
STD DEV	3.91	11.83	11.96
% ZERO	0.0	33.15	33.05
% ACCEL	36.73	25.87	25.91
% CRUISE	24.49	16.22	16.25
% DECEL	38.78	24.31	24.35
% IDLE	0.0	33.60	33.49

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	48.	11602.	11650.
E(EXP)	2794.58	551.77	561.01
E(E)XE(P)	2789.69	224.56	229.38
COV(E,P)	5.00	327.24	331.66
R(E,P)	0.172	0.646	0.648
** N	50.	15875.	15925.
E(SXE)	2652.00	359.05	366.25
E(S)XE(E)	2646.86	170.31	173.48
COV(S,E)	5.24	188.76	192.78
R(S,E)	0.549	0.785	0.788
** N	48.	11602.	11650.
E(SXP)	2144.58	303.17	310.76
E(S)XE(P)	2112.86	132.25	135.75
COV(S,P)	32.39	170.94	175.02
R(S,P)	0.573	0.593	0.594

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 35: 2A GAS

(RECORD COUNT = 61801, OPERATING TIME = 14.83 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	11293.	50508.	61801.
MEAN	34.75	17.23	20.43
MEDIAN	39.28	14.46	18.30
STD DEV	22.71	16.86	19.30
% ACCEL	4.91	10.35	9.35
% CRUISE	74.27	43.91	49.47
% DECEL	4.94	9.55	8.71
% IDLE	15.89	36.19	32.47

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	7265.	32793.	40058.
TOTAL N	11286.	50387.	61673.
MEAN	32.35	26.46	27.61
MEDIAN	27.49	1.65	12.34
STD DEV	28.95	33.14	32.51
% ACCEL	15.74	15.20	15.30
% CRUISE	35.15	37.67	37.21
% DECEL	18.05	18.40	18.34
% MOTOR	31.07	28.74	29.16

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	11286.	50387.	61673.
MEAN	26.88	11.35	14.19
MEDIAN	30.25	8.48	10.17
STD DEV	17.82	10.59	13.63
% ZERO	1.50	3.04	2.76
% ACCEL	31.97	29.55	29.99
% CRUISE	32.81	30.06	30.56
% DECEL	31.33	28.81	29.27
% IDLE	3.89	11.59	10.18

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	7272.	32898.	40170.
E(EXP)	1377.38	671.86	799.58
E(E)XE(P)	1144.31	370.85	490.97
COV(E,P)	233.10	301.02	308.61
R(E,P)	0.333	0.523	0.465
** N	11293.	50508.	61801.
E(SXE)	1319.74	322.53	504.75
E(S)XE(E)	934.92	195.04	289.44
COV(S,E)	384.86	127.50	215.31
R(S,E)	0.944	0.707	0.812
** N	7272.	32898.	40170.
E(SXP)	1059.40	382.86	505.33
E(S)XE(P)	897.49	253.04	352.72
COV(S,P)	161.93	129.83	152.62
R(S,P)	0.301	0.352	0.323

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 38: 2A GAS

(RECORD COUNT = 46825. OPERATING TIME = 11.24 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	4830.	41995.	46825.
MEAN	54.94	11.87	16.32
MEDIAN	57.71	0.78	0.99
STD DEV	17.69	17.73	22.04
% ACCEL	6.96	9.66	9.38
% CRUISE	84.62	25.12	31.27
% DECEL	6.88	9.09	8.86
% IDLE	1.53	56.13	50.49

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	4500.	35885.	40385.
TOTAL N	4825.	41842.	46667.
MEAN	62.25	20.00	24.71
MEDIAN	64.20	4.22	9.74
STD DEV	24.31	30.31	32.55
% ACCEL	14.03	12.65	12.79
% CRUISE	64.87	61.27	61.64
% DECEL	15.40	15.18	15.20
% MOTOR	5.70	10.91	10.37

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	4825.	41842.	46667.
MEAN	41.99	7.26	10.85
MEDIAN	44.05	2.92	4.49
STD DEV	9.37	9.07	13.95
% ZERO	0.12	41.10	36.96
% ACCEL	12.66	19.92	19.17
% CRUISE	79.03	21.36	27.32
% DECEL	8.25	17.68	16.70
% IDLE	0.06	41.04	36.81

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	4505.	36025.	40530.
E(EXP)	3422.18	516.03	839.05
E(E)XE(P)	3475.72	203.90	376.92
COV(E,P)	-53.55	312.14	462.14
R(E,P)	-0.131	0.602	0.637
** N	4830.	41995.	46825.
E(SXE)	2465.30	199.00	432.77
E(S)XE(E)	2306.38	85.95	176.63
COV(S,E)	156.96	113.05	256.14
R(S,E)	0.932	0.698	0.828
** N	4505.	36025.	40530.
E(SXP)	2628.39	283.89	544.48
E(S)XE(P)	2643.94	122.03	250.39
COV(S,P)	-15.55	161.86	294.10
R(S,P)	-0.073	0.603	0.625

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 44: 2A GAS

(RECORD COUNT = 14464, OPERATING TIME = 3.47 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	14464.	14464.
MEAN		12.14	12.14
MEDIAN		6.42	6.42
STD DEV		14.66	14.66
% ACCEL		9.29	9.29
% CRUISE		39.11	39.11
% DECEL		9.58	9.58
% IDLE		42.02	42.02

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	0.	5551.	5551.
TOTAL N	0.	14408.	14408.
MEAN		29.97	29.97
MEDIAN		16.04	16.04
STD DEV		33.75	33.75
% ACCEL		13.28	13.28
% CRUISE		18.88	18.88
% DECEL		13.42	13.42
% MOTOR		54.43	54.43

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	14408.	14408.
MEAN		6.14	6.14
MEDIAN		0.94	0.94
STD DEV		8.32	8.32
% ZERO		38.51	38.51
% ACCEL		17.45	17.45
% CRUISE		16.84	16.84
% DECEL		14.66	14.66
% IDLE		51.05	51.05

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	0.	5579.	5579.
E(EXP)		1032.97	1032.97
E(E)XE(P)		563.44	563.44
COV(E,P)		469.61	469.61
R(E,P)		0.786	0.786
** N	0.	14464.	14464.
E(SXE)		148.81	148.81
E(S)XE(E)		75.82	75.82
COV(S,E)		73.00	73.00
R(S,E)		0.595	0.595
** N	0.	5579.	5579.
E(SXP)		372.11	372.11
E(S)XE(P)		242.52	242.52
COV(S,P)		129.62	129.62
R(S,P)		0.457	0.457

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 45: 2A GAS

(RECORD COUNT = 37597, OPERATING TIME = 9.02 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	986.	36611.	37597.
MEAN	29.86	24.04	24.19
MEDIAN	32.21	16.40	17.01
STD DEV	24.67	26.93	26.89
% ACCEL	12.44	14.93	14.86
% CRUISE	48.32	33.52	33.91
% DECEL	11.72	14.24	14.17
% IDLE	27.52	37.31	37.05

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	760.	28509.	29269.
TOTAL N	981.	36446.	37427.
MEAN	55.58	28.30	29.01
MEDIAN	74.58	12.23	12.84
STD DEV	42.20	33.46	33.99
% ACCEL	20.18	19.25	19.27
% CRUISE	48.11	45.48	45.55
% DECEL	16.72	19.82	19.74
% MOTOR	14.98	15.45	15.44

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	981.	36446.	37427.
MEAN	11.59	7.87	7.97
MEDIAN	12.39	6.67	6.83
STD DEV	8.10	7.64	7.68
% ZERO	17.74	29.02	28.72
% ACCEL	26.40	24.29	24.34
% CRUISE	30.78	22.21	22.44
% DECEL	24.57	23.62	23.64
% IDLE	18.25	29.89	29.58

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	764.	28643.	29407.
E(EXP)	2411.15	1133.03	1166.23
E(E)XE(P)	1689.58	628.04	649.96
COV(E,P)	722.52	505.00	516.29
R(E,P)	0.689	0.560	0.564
** N	986.	36611.	37597.
E(SXE)	479.09	322.87	326.97
E(S)XE(E)	346.13	189.23	192.79
COV(S,E)	133.10	133.64	134.17
R(S,E)	0.666	0.646	0.647
** N	764.	28643.	29407.
E(SXP)	869.14	330.49	344.49
E(S)XE(P)	632.02	199.39	207.65
COV(S,P)	237.42	131.11	136.85
R(S,P)	0.693	0.518	0.529

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 48: 2A GAS

(RECORD COUNT = 18396, OPERATING TIME = 4.42 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	727.	17669.	18396.
MEAN	60.91	17.89	19.59
MEDIAN	64.52	11.60	13.59
STD DEV	12.77	19.23	20.78
% ACCEL	7.31	11.06	10.92
% CRUISE	83.40	37.02	38.83
% DECEL	9.28	11.89	11.79
% IDLE	0.0	40.02	38.46

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	332.	11343.	11675.
TOTAL N	711.	17537.	18248.
MEAN	41.69	18.37	19.03
MEDIAN	29.12	9.92	5.34
STD DEV	31.15	27.12	27.52
% ACCEL	22.93	16.22	16.48
% CRUISE	10.83	40.04	38.90
% DECEL	20.96	14.38	14.64
% MOTOR	45.29	29.37	29.99

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	711.	17537.	18248.
MEAN	44.22	10.94	12.23
MEDIAN	46.73	9.16	10.05
STD DEV	8.91	10.75	12.48
% ZERO	0.0	10.16	9.76
% ACCEL	12.10	23.69	23.24
% CRUISE	66.10	21.09	22.85
% DECEL	21.80	23.93	23.85
% IDLE	0.0	31.29	30.07

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	346.	11424.	11770.
E(EXP)	2777.11	683.64	745.18
E(E)XE(P)	2819.98	304.70	344.41
COV(E,P)	-43.00	378.98	400.81
R(E,P)	-0.145	0.709	0.686
** N	727.	17669.	18396.
E(SXE)	2778.93	365.70	461.07
E(S)XE(E)	2690.88	195.04	239.30
COV(S,E)	88.17	170.66	221.78
R(S,E)	0.758	0.814	0.844
** N	346.	11424.	11770.
E(SXP)	1867.40	308.12	355.95
E(S)XE(P)	1942.47	158.07	185.01
COV(S,P)	-75.29	150.06	168.96
R(S,P)	-0.273	0.528	0.504

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 49: 2A GAS

(RECORD COUNT = 20004, OPERATING TIME = 4.80 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	4125.	15879.	20004.
MEAN	44.55	17.32	22.94
MEDIAN	49.77	13.76	19.65
STD DEV	21.81	18.34	22.05
% ACCEL	7.65	8.91	8.65
% CRUISE	78.30	43.87	50.97
% DECEL	7.48	8.54	8.32
% IDLE	6.58	38.68	32.06

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	2623.	10203.	12826.
TOTAL N	4120.	15857.	19977.
MEAN	40.61	14.67	19.97
MEDIAN	25.46	9.45	6.25
STD DEV	36.60	25.03	29.69
% ACCEL	14.81	13.35	13.65
% CRUISE	36.29	42.18	40.96
% DECEL	17.28	14.87	15.37
% MOTOR	31.63	29.60	30.02

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	4120.	15857.	19977.
MEAN	26.02	7.99	11.71
MEDIAN	31.28	7.48	9.71
STD DEV	13.22	7.15	11.40
% ZERO	3.23	26.87	22.00
% ACCEL	19.85	16.71	17.36
% CRUISE	61.04	40.75	44.94
% DECEL	15.70	13.45	13.92
% IDLE	5.40	29.08	23.79

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	2627.	10219.	12846.
	E(EXP)	2189.55	385.72	754.60
	E(E)XE(P)	1924.94	202.99	413.53
	COV(E,P)	264.71	182.75	341.10
	R(E,P)	0.323	0.391	0.484
**	N	4125.	15879.	20004.
	E(SXE)	1400.14	235.21	475.42
	E(S)XE(E)	1155.31	138.27	268.03
	COV(S,E)	244.89	96.94	207.40
	R(S,E)	0.846	0.733	0.822
**	N	2627.	10219.	12846.
	E(SXP)	1272.37	178.99	402.59
	E(S)XE(P)	1119.94	92.01	212.35
	COV(S,P)	152.49	86.99	190.25
	R(S,P)	0.309	0.480	0.518

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 50: 2A GAS

(RECORD COUNT = 143884, OPERATING TIME = 34.53 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	8618.	135266.	143884.
MEAN	64.46	10.34	13.59
MEDIAN	71.44	0.47	0.57
STD DEV	27.31	18.34	22.93
% ACCEL	6.32	6.37	6.37
% CRUISE	80.14	19.44	23.05
% DECEL	6.62	5.81	5.86
% IDLE	6.92	68.38	64.72

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	6528.	109224.	115752.
TOTAL N	8539.	134965.	143504.
MEAN	52.79	15.67	17.76
MEDIAN	58.05	3.98	4.18
STD DEV	32.85	28.24	29.78
% ACCEL	17.91	15.41	15.55
% CRUISE	43.03	55.80	55.04
% DECEL	18.62	15.35	15.55
% MOTOR	20.45	13.44	13.85

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	8539.	134965.	143504.
MEAN	35.63	5.67	7.45
MEDIAN	39.89	0.88	0.93
STD DEV	14.13	8.90	11.69
% ZERO	2.67	35.09	33.16
% ACCEL	25.87	12.82	13.60
% CRUISE	44.12	21.48	22.83
% DECEL	26.41	11.09	12.00
% IDLE	3.61	54.61	51.58

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	6595.	109443.	116038.
E(EXP)	3648.63	533.49	710.54
E(E)XE(P)	3441.84	142.57	218.60
COV(E,P)	206.83	390.92	491.94
R(E,P)	0.227	0.782	0.732
** N	8618.	135266.	143884.
E(SXE)	2664.49	197.64	345.39
E(S)XE(E)	2300.35	59.49	102.49
COV(S,E)	364.18	138.15	242.90
R(S,E)	0.941	0.844	0.903
** N	6595.	109443.	116038.
E(SXP)	1980.71	238.43	337.45
E(S)XE(P)	1891.90	74.74	116.29
COV(S,P)	88.82	163.69	221.17
R(S,P)	0.185	0.683	0.646

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 51: 2A GAS

(RECORD COUNT = 9989, OPERATING TIME = 2.40 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	1383.	8606.	9989.
MEAN	30.64	16.08	18.09
MEDIAN	32.30	11.60	13.39
STD DEV	24.79	18.25	19.93
% ACCEL	10.57	11.22	11.13
% CRUISE	52.35	38.08	40.05
% DECEL	10.86	10.31	10.38
% IDLE	26.21	40.39	38.43

POWER

		FREEWAY	NON-FREEWAY	COMBINED
*	N	931.	6443.	7374.
	TOTAL N	1381.	8588.	9969.
	MEAN	41.61	28.66	30.29
	MEDIAN	31.17	5.26	7.48
	STD DEV	40.46	36.55	37.31
	% ACCEL	19.99	19.75	19.78
	% CRUISE	35.99	44.36	43.20
	% DECEL	19.41	17.78	18.01
	% MOTOR	24.62	18.11	19.01

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	1381.	8588.	9969.
MEAN	22.39	11.47	12.98
MEDIAN	19.95	9.02	10.24
STD DEV	17.93	11.69	13.28
% ZERO	16.58	28.97	27.25
% ACCEL	28.46	27.17	27.34
% CRUISE	29.83	20.53	21.82
% DECEL	25.71	23.74	24.01
% IDLE	16.00	28.56	26.82

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	933.	6460.	7393.
	E(EXP)	1835.28	837.66	963.56
	E(E)XE(P)	1194.35	396.68	476.19
	COV(E,P)	641.62	441.05	487.43
	R(E,P)	0.604	0.663	0.652
**	N	1383.	8606.	9989.
	E(SXE)	1080.68	346.42	446.08
	E(S)XE(E)	684.97	183.91	234.31
	COV(S,E)	395.99	162.53	213.78
	R(S,E)	0.888	0.754	0.801
**	N	933.	6460.	7393.
	E(SXP)	1225.47	538.51	625.20
	E(S)XE(P)	831.16	268.98	324.85
	COV(S,P)	394.73	269.57	300.39
	R(S,P)	0.518	0.654	0.621

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 61: 2A GAS

(RECORD COUNT = 29711, OPERATING TIME = 7.13 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	3492.	26219.	29711.
MEAN	41.16	19.75	22.26
MEDIAN	39.58	14.28	17.25
STD DEV	28.74	21.59	23.58
% ACCEL	8.07	9.49	9.32
% CRUISE	71.60	43.09	46.44
% DECEL	7.81	9.06	8.91
% IDLE	12.52	38.36	35.33

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	2558.	21416.	23974.
TOTAL N	3482.	26164.	29646.
MEAN	38.98	23.11	24.81
MEDIAN	28.31	11.95	13.76
STD DEV	33.27	27.93	28.96
% ACCEL	14.88	16.30	16.13
% CRUISE	42.48	50.35	49.43
% DECEL	19.16	19.16	19.16
% MOTOR	23.49	14.19	15.28

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	3482.	26164.	29646.
MEAN	17.36	8.98	9.97
MEDIAN	15.91	8.91	10.23
STD DEV	8.69	8.13	8.63
% ZERO	4.45	31.64	28.45
% ACCEL	8.76	10.43	10.23
% CRUISE	79.78	49.54	53.09
% DECEL	7.04	8.00	7.89
% IDLE	4.42	32.03	28.79

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	2567.	21468.	24035.
E(EXP)	2091.23	748.16	891.59
E(E)XE(P)	1563.93	413.70	502.93
COV(E,P)	527.50	334.47	388.68
R(E,P)	0.538	0.557	0.571
** N	3492.	26219.	29711.
E(SXE)	897.12	319.12	387.06
E(S)XE(E)	710.53	177.43	221.69
COV(S,E)	186.64	141.70	165.37
R(S,E)	0.745	0.804	0.810
** N	2567.	21468.	24035.
E(SXP)	772.40	310.89	360.18
E(S)XE(P)	643.92	184.85	220.99
COV(S,P)	128.52	126.04	139.20
R(S,P)	0.428	0.560	0.560

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 35: 3A GAS

(RECORD COUNT = 64888, OPERATING TIME = 15.57 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	19056.	45832.	64888.
MEAN	76.70	38.83	49.96
MEDIAN	80.50	38.18	68.54
STD DEV	12.99	36.22	35.69
% ACCEL	7.11	15.34	12.97
% CRUISE	84.69	32.24	47.38
% DECEL	7.25	15.63	13.21
% IDLE	0.95	36.79	26.44

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	16249.	33602.	49851.
TOTAL N	18445.	45462.	63907.
MEAN	54.33	23.62	33.63
MEDIAN	52.57	4.85	25.45
STD DEV	27.91	32.18	34.04
% ACCEL	29.46	16.13	19.98
% CRUISE	32.48	44.47	41.01
% DECEL	29.37	19.14	22.10
% MOTOR	8.69	20.25	16.92

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	18445.	45462.	63907.
MEAN	45.67	12.37	21.98
MEDIAN	49.41	7.98	18.33
STD DEV	11.91	13.50	19.96
% ZERO	0.61	34.68	24.85
% ACCEL	13.74	22.29	19.82
% CRUISE	75.06	22.16	37.43
% DECEL	10.59	20.13	17.38
% IDLE	0.61	35.42	25.37

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	16785.	33872.	50657.
E(EXP)	4337.00	1631.58	2528.02
E(E)XE(P)	4239.31	812.34	1650.93
COV(E,P)	97.70	819.26	877.10
R(E,P)	0.299	0.678	0.686
** N	19056.	45832.	64888.
E(SXE)	3584.18	898.56	1687.26
E(S)XE(E)	3501.39	483.72	1109.65
COV(S,E)	82.79	414.86	577.63
R(S,E)	0.531	0.845	0.808
** N	16785.	33872.	50657.
E(SXP)	2573.94	527.13	1205.33
E(S)XE(P)	2549.51	253.54	768.57
COV(S,P)	24.43	273.59	436.77
R(S,P)	0.079	0.618	0.599

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY.
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 59: 3A GAS

(RECORD COUNT = 38179, OPERATING TIME = 9.16 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	3901.	34278.	38179.
MEAN	49.14	17.03	20.31
MEDIAN	52.09	0.89	4.98
STD DEV	19.38	22.62	24.34
% ACCEL	4.93	6.88	6.69
% CRUISE	83.34	32.74	37.84
% DECEL	5.63	6.91	6.78
% IDLE	6.10	53.48	48.70

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	2899.	28158.	31057.
TOTAL N	3835.	34189.	38024.
MEAN	74.37	28.39	32.68
MEDIAN	86.77	4.35	4.75
STD DEV	30.81	38.30	39.97
% ACCEL	18.93	14.21	14.69
% CRUISE	44.20	60.89	59.20
% DECEL	17.26	12.71	13.17
% MOTOR	19.61	12.19	12.94

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	3835.	34189.	38024.
MEAN	36.60	10.41	13.05
MEDIAN	39.43	3.55	4.51
STD DEV	13.25	13.66	15.74
% ZERO	4.51	43.72	39.76
% ACCEL	34.47	17.26	19.00
% CRUISE	32.02	23.93	24.74
% DECEL	28.94	14.60	16.05
% IDLE	4.56	44.21	40.21

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	2964.	28239.	31203.
E(EXP)	3980.75	1115.05	1387.27
E(E)XE(P)	3735.27	452.11	628.37
COV(E,P)	245.56	662.97	758.92
R(E,P)	0.419	0.764	0.775
** N	3901.	34278.	38179.
E(SXE)	2015.04	422.47	585.19
E(S)XE(E)	1799.15	178.66	267.34
COV(S,E)	215.94	243.81	317.85
R(S,E)	0.836	0.782	0.823
** N	2964.	28239.	31203.
E(SXP)	2925.24	688.82	901.25
E(S)XE(P)	2767.60	280.23	408.40
COV(S,P)	157.69	408.60	492.87
R(S,P)	0.393	0.766	0.770

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 2: IT GAS

(RECORD COUNT = 37630, OPERATING TIME = 9.03 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	5395.	32235.	37630.
MEAN	52.06	30.74	33.79
MEDIAN	58.12	34.35	39.52
STD DEV	20.33	25.84	26.21
% ACCEL	4.39	13.49	12.19
% CRUISE	83.68	45.38	50.37
% DECEL	4.52	12.17	11.07
% IDLE	7.42	28.96	25.87

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	4807.	24694.	29501.
TOTAL N	5379.	32109.	37488.
MEAN	72.18	37.76	43.37
MEDIAN	85.39	25.20	37.36
STD DEV	31.84	37.75	36.99
% ACCEL	14.02	18.28	17.67
% CRUISE	62.47	44.42	47.01
% DECEL	14.91	19.71	19.02
% MOTOR	8.61	17.59	16.30

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	5379.	32109.	37488.
MEAN	39.38	15.04	18.53
MEDIAN	44.59	11.46	15.37
STD DEV	16.16	14.48	17.03
% ZERO	6.40	28.27	25.13
% ACCEL	15.45	26.20	24.66
% CRUISE	66.52	27.03	32.70
% DECEL	11.77	18.79	17.78
% IDLE	6.27	27.98	24.86

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	4820.	24783.	29603.
E(EXP)	4255.67	1888.27	2273.73
E(E)XE(P)	3843.90	1145.04	1476.93
COV(E,P)	411.86	743.26	796.83
R(E,P)	0.642	0.728	0.746
** N	5395.	32235.	37630.
E(SXE)	2339.05	756.49	983.38
E(S)XE(E)	2048.21	461.28	625.00
COV(S,E)	290.89	295.22	358.40
R(S,E)	0.879	0.784	0.799
** N	4820.	24783.	29603.
E(SXP)	3229.48	946.67	1313.36
E(S)XE(P)	2894.92	549.50	811.38
COV(S,P)	334.63	397.19	506.99
R(S,P)	0.646	0.699	0.725

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 3: TT GAS

(RECORD COUNT = 43567, OPERATING TIME = 10.46 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	14077.	29490.	43567.
MEAN	64.55	34.38	44.13
MEDIAN	67.47	37.67	52.27
STD DEV	14.06	26.54	27.20
% ACCEL	3.43	12.16	9.34
% CRUISE	92.18	51.32	64.53
% DECEL	3.36	10.70	8.33
% IDLE	1.03	25.81	17.80

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	12773.	22728.	35501.
TOTAL N	14063.	29440.	43503.
MEAN	45.08	35.11	45.89
MEDIAN	68.16	28.03	46.58
STD DEV	26.89	33.54	34.46
% ACCEL	19.95	18.46	18.94
% CRUISE	52.88	42.92	46.14
% DECEL	20.03	21.02	20.70
% MOTOR	7.13	17.60	14.21

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	14063.	29440.	43503.
MEAN	45.15	16.14	25.52
MEDIAN	49.00	15.22	23.88
STD DEV	11.60	13.62	18.79
% ZERO	0.36	20.76	14.17
% ACCEL	27.05	28.85	28.26
% CRUISE	50.45	26.73	34.40
% DECEL	22.16	23.96	23.38
% IDLE	0.34	20.46	13.96

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	12787.	22766.	35553.
E(EXP)	4373.67	1821.27	2739.26
E(E)XE(P)	4299.06	1193.49	2089.08
COV(E,P)	74.62	627.80	650.20
R(E,P)	0.220	0.669	0.669
** N	14077.	29490.	43567.
E(SXE)	3073.77	853.98	1571.22
E(S)XE(E)	2930.45	554.49	1126.40
COV(S,E)	143.33	299.51	442.83
R(S,E)	0.848	0.824	0.858
** N	12787.	22766.	35553.
E(SXP)	3066.94	816.97	1626.19
E(S)XE(P)	3008.33	552.73	1225.31
COV(S,P)	58.61	264.25	400.89
R(S,P)	0.203	0.542	0.589

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 8: TT GAS

(RECORD COUNT = 65439, OPERATING TIME = 15.71 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	25067.	40372.	65439.
MEAN	74.57	42.58	54.83
MEDIAN	81.46	43.96	71.87
STD DEV	28.39	38.11	38.04
% ACCEL	8.27	12.35	10.79
% CRUISE	76.31	45.23	57.14
% DECEL	8.17	10.96	9.89
% IDLE	7.25	31.46	22.18

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	20125.	31107.	51232.
TOTAL N	25019.	40277.	65296.
MEAN	62.70	20.76	37.23
MEDIAN	76.11	7.09	24.26
STD DEV	36.03	28.39	37.67
% ACCEL	24.13	17.69	20.16
% CRUISE	37.12	45.74	42.44
% DECEL	24.35	19.17	21.16
% MOTOR	14.39	17.39	16.24

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	25019.	40277.	65296.
MEAN	33.50	11.18	19.73
MEDIAN	39.66	7.64	14.93
STD DEV	16.99	12.42	17.99
% ZERO	4.48	28.07	19.03
% ACCEL	15.38	16.33	15.97
% CRUISE	67.07	42.37	51.83
% DECEL	12.81	13.04	12.95
% IDLE	4.74	28.26	19.25

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	20170.	31194.	51364.
E(EXP)	5413.09	1508.24	3041.63
E(E)XE(P)	4792.11	788.69	1970.51
COV(E,P)	621.00	719.57	1065.14
R(E,P)	0.599	0.641	0.701
** N	25067.	40372.	65439.
E(SXE)	2838.53	854.50	1614.50
E(S)XE(E)	2495.78	476.43	1081.90
COV(S,E)	342.77	378.07	532.61
R(S,E)	0.708	0.798	0.778
** N	20170.	31194.	51364.
E(SXP)	2605.05	469.61	1308.17
E(S)XE(P)	2229.58	208.30	746.70
COV(S,P)	375.49	261.31	561.48
R(S,P)	0.616	0.710	0.775

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 12: TT GAS

(RECORD COUNT = 83179, OPERATING TIME = 19.96 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	55862.	27317.	83179.
MEAN	78.32	30.36	62.57
MEDIAN	82.46	16.95	74.79
STD DEV	24.27	33.62	35.70
% ACCEL	13.29	16.03	14.18
% CRUISE	70.63	30.16	57.35
% DECEL	12.62	13.31	12.85
% IDLE	3.46	40.51	15.61

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	47860.	22407.	70267.
TOTAL N	55798.	27242.	83040.
MEAN	59.89	25.31	48.86
MEDIAN	67.00	10.61	47.62
STD DEV	33.42	31.65	36.61
% ACCEL	24.68	18.10	22.52
% CRUISE	40.18	51.68	43.95
% DECEL	24.19	16.66	21.72
% MOTOR	10.95	13.56	11.81

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	55798.	27242.	83040.
MEAN	47.75	13.17	36.40
MEDIAN	52.00	9.70	46.82
STD DEV	13.85	13.84	21.34
% ZERO	0.91	33.35	11.55
% ACCEL	12.03	22.18	15.36
% CRUISE	78.91	26.84	61.83
% DECEL	8.07	16.53	10.85
% IDLE	0.98	34.45	11.96

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	47904.	22471.	70375.
E(EXP)	5005.96	1393.15	3852.37
E(E)XE(P)	4752.62	682.09	3059.00
COV(E,P)	253.35	711.08	793.37
R(E,P)	0.323	0.668	0.594
** N	55862.	27317.	83179.
E(SXE)	3991.38	785.56	2938.55
E(S)XE(E)	3738.13	399.51	2275.98
COV(S,E)	253.25	386.07	662.58
R(S,E)	0.747	0.827	0.867
** N	47904.	22471.	70375.
E(SXP)	3023.81	546.76	2232.88
E(S)XE(P)	2897.98	281.37	1782.36
COV(S,P)	125.84	265.40	450.53
R(S,P)	0.278	0.618	0.558

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 39: TT GAS

(RECORD COUNT = 85133, OPERATING TIME = 20.43 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	55831.	29302.	85133.
MEAN	85.41	34.78	67.98
MEDIAN	88.06	28.83	82.36
STD DEV	16.05	34.47	34.01
% ACCEL	13.24	14.54	13.69
% CRUISE	72.85	39.95	61.53
% DECEL	12.97	12.75	12.89
% IDLE	0.94	32.77	11.90

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	50842.	23407.	74249.
TOTAL N	55727.	29253.	84980.
MEAN	75.91	35.13	63.06
MEDIAN	90.30	14.24	79.90
STD DEV	30.66	40.04	38.83
% ACCEL	13.77	15.11	14.23
% CRUISE	66.13	55.96	62.63
% DECEL	12.82	12.96	12.87
% MOTOR	7.28	15.98	10.27

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	55727.	29253.	84980.
MEAN	47.71	13.93	36.08
MEDIAN	50.65	9.87	45.18
STD DEV	9.95	14.63	19.90
% ZERO	0.27	35.43	12.37
% ACCEL	13.73	22.24	19.94
% CRUISE	66.86	22.62	51.63
% DECEL	14.13	18.91	15.77
% IDLE	0.29	36.23	12.66

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	50935.	23453.	74388.
E(EXP)	6575.82	2153.60	5181.58
E(F)XE(P)	6532.12	1164.66	4374.11
COV(E,P)	43.71	988.99	807.49
R(E,P)	0.095	0.704	0.615
** N	55831.	29302.	85133.
E(SXE)	4188.65	901.19	3057.14
E(S)XE(E)	4071.04	483.82	2450.59
COV(S,E)	117.61	417.38	606.55
R(S,E)	0.727	0.824	0.893
** N	50935.	23453.	74388.
E(SXP)	3616.29	851.87	2744.73
E(S)XE(P)	3632.90	459.55	2326.15
COV(S,P)	-16.61	392.34	418.58
R(S,P)	-0.056	0.655	0.543

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 43: TT GAS

(RECORD COUNT = 32461, OPERATING TIME = 7.79 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	21573.	10888.	32461.
MEAN	68.05	37.68	57.86
MEDIAN	70.26	34.32	68.03
STD DEV	16.43	38.22	29.58
% ACCEL	3.89	7.00	4.94
% CRUISE	89.94	51.15	76.83
% DECEL	3.46	6.03	4.33
% IDLE	2.70	35.82	13.90

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	18884.	9521.	28405.
TOTAL N	21226.	10838.	32064.
MEAN	67.10	35.13	56.38
MEDIAN	83.02	13.36	60.90
STD DEV	34.95	40.78	39.97
% ACCEL	11.38	9.36	10.70
% CRUISE	67.19	70.03	68.15
% DECEL	11.72	10.32	11.25
% MOTOR	9.71	10.29	9.90

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	21226.	10838.	32064.
MEAN	45.75	21.19	37.45
MEDIAN	50.22	10.37	47.56
STD DEV	12.47	23.81	20.73
% ZERO	2.22	37.37	14.10
% ACCEL	5.72	8.29	6.59
% CRUISE	88.26	47.90	74.62
% DECEL	3.75	6.31	4.61
% IDLE	2.28	37.51	14.18

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	19188.	9560.	28748.
E(EXP)	4811.02	2573.87	4067.06
E(E)XE(P)	4590.72	1297.55	3272.18
COV(E,P)	220.31	1276.45	794.91
R(E,P)	0.397	0.794	0.661
** N	21573.	10888.	32461.
E(SXE)	3235.58	1605.61	2688.86
E(S)XE(E)	3122.36	800.33	2176.69
COV(S,E)	113.23	805.35	512.19
R(S,E)	0.545	0.882	0.832
** N	19188.	9560.	28748.
E(SXP)	3100.41	1634.98	2613.09
E(S)XE(P)	3092.59	761.39	2144.19
COV(S,P)	7.82	873.69	468.92
R(S,P)	0.018	0.865	0.562

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 48: TT GAS

(RECORD COUNT = 46998, OPERATING TIME = 11.28 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	15288.	31710.	46998.
MEAN	59.61	24.61	36.00
MEDIAN	63.22	22.88	40.11
STD DEV	16.42	24.06	27.33
% ACCEL	4.58	12.27	9.77
% CRUISE	88.17	41.46	56.65
% DECEL	4.51	10.10	8.29
% IDLE	2.74	36.17	25.30

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	14096.	26650.	40746.
TOTAL N	15261.	31653.	46914.
MEAN	76.69	37.49	51.05
MEDIAN	88.43	23.18	53.58
STD DEV	27.95	39.28	40.34
% ACCEL	13.56	14.99	14.52
% CRUISE	64.91	56.54	59.26
% DECEL	15.53	17.02	16.53
% MOTOR	6.00	11.45	9.68

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	15261.	31653.	46914.
MEAN	45.91	16.65	26.17
MEDIAN	49.65	15.48	27.98
STD DEV	11.50	14.98	19.55
% ZERO	1.37	27.79	19.19
% ACCEL	10.77	22.72	18.83
% CRUISE	79.32	32.59	47.79
% DECEL	8.47	15.37	13.13
% IDLE	1.44	29.32	20.25

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	14123.	26698.	40821.
E(EXP)	4842.49	1538.17	2661.38
E(E)XE(P)	4671.46	908.54	1885.03
COV(E,P)	171.04	629.65	776.37
R(E,P)	0.398	0.647	0.703
** N	15288.	31710.	46998.
E(SXE)	2882.70	695.37	1406.89
E(S)XE(E)	2735.46	409.38	941.28
COV(S,E)	147.25	286.00	465.62
R(S,E)	0.767	0.788	0.867
** N	14123.	26698.	40821.
E(SXP)	3683.37	987.54	1920.23
E(S)XE(P)	3582.01	593.90	1353.87
COV(S,P)	101.36	393.66	566.36
R(S,P)	0.331	0.653	0.692

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 7: TT GAS

(RECORD COUNT = 39985, OPERATING TIME = 9.60 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	17829.	22156.	39985.
MEAN	74.18	49.94	60.75
MEDIAN	81.24	60.17	73.74
STD DEV	25.93	40.21	36.62
% ACCEL	9.36	16.52	13.33
% CRUISE	77.30	43.05	58.32
% DECEL	8.89	15.59	12.60
% IDLE	4.45	24.84	15.75

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	13631.	16650.	30281.
TOTAL N	17753.	22080.	39833.
MEAN	71.85	42.30	55.60
MEDIAN	87.26	33.01	67.64
STD DEV	33.32	39.22	39.52
% ACCEL	21.90	21.20	21.51
% CRUISE	38.53	39.49	39.06
% DECEL	21.63	21.83	21.74
% MOTOR	17.94	17.48	17.69

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	17753.	22080.	39833.
MEAN	45.56	21.80	32.39
MEDIAN	50.98	17.50	33.87
STD DEV	19.16	20.25	23.03
% ZERO	2.40	21.78	13.14
% ACCEL	23.87	26.43	25.29
% CRUISE	50.51	28.25	38.17
% DECEL	22.68	21.57	22.07
% IDLE	2.93	23.75	14.47

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	13705.	16721.	30426.
E(EXP)	5976.06	3206.70	4454.12
E(E)XE(P)	5534.28	2033.54	3398.61
COV(E,P)	441.81	1173.23	1055.55
R(E,P)	0.517	0.708	0.693
** N	17829.	22156.	39985.
E(SXE)	3726.71	1687.74	2596.91
E(S)XE(E)	3384.54	1088.47	1969.41
COV(S,E)	342.19	599.30	627.51
R(S,E)	0.685	0.733	0.741
** N	13705.	16721.	30426.
E(SXP)	3784.16	1480.24	2518.01
E(S)XE(P)	3419.66	896.19	1839.73
COV(S,P)	364.52	584.09	678.30
R(S,P)	0.566	0.696	0.705

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 28: TT GAS

(RECORD COUNT = 117535, OPERATING TIME = 28.21 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	2891.	114644.	117535.
MEAN	19.24	8.09	8.37
MEDIAN	0.95	0.43	0.44
STD DEV	23.76	15.70	16.04
% ACCEL	3.77	5.37	5.33
% CRUISE	38.35	17.40	17.92
% DECEL	4.15	5.47	5.43
% IDLE	53.72	71.76	71.32

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	2381.	97572.	99953.
TOTAL N	2889.	114602.	117491.
MEAN	31.80	11.19	11.66
MEDIAN	3.98	3.11	3.13
STD DEV	43.85	26.57	27.29
% ACCEL	5.95	8.72	8.65
% CRUISE	71.86	71.12	71.14
% DECEL	7.10	9.29	9.24
% MOTOR	15.09	10.87	10.97

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	2889.	114602.	117491.
MEAN	13.40	3.78	4.02
MEDIAN	0.95	0.68	0.68
STD DEV	15.77	7.76	8.19
% ZERO	51.85	72.42	71.91
% ACCEL	11.35	8.39	8.46
% CRUISE	25.30	10.78	11.14
% DECEL	11.28	7.97	8.05
% IDLE	52.06	72.86	72.35

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	2383.	97605.	99988.
E(EXP)	1457.68	364.34	390.40
E(E)XE(P)	537.86	65.58	71.53
COV(E,P)	920.21	298.76	318.87
R(E,P)	0.874	0.797	0.804
** N	2891.	114644.	117535.
E(SXE)	596.64	128.87	140.37
E(S)XE(E)	260.61	30.57	33.01
COV(S,E)	336.15	98.30	106.77
R(S,E)	0.883	0.801	0.807
** N	2383.	97605.	99988.
E(SXP)	942.43	163.98	187.41
E(S)XE(P)	352.66	29.46	33.11
COV(S,P)	590.02	139.52	154.30
R(S,P)	0.882	0.774	0.783

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 30: TT GAS

(RECORD COUNT = 26131, OPERATING TIME = 6.27 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	36.	26095.	26131.
MEAN	64.44	11.67	11.75
MEDIAN	69.40	0.68	0.69
STD DEV	15.79	18.00	18.11
% ACCEL	2.78	6.08	6.07
% CRUISE	83.33	26.98	27.05
% DECEL	11.11	6.26	6.27
% IDLE	2.78	60.69	60.61

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	24.	21935.	21959.
TOTAL N	36.	26038.	26074.
MEAN	50.42	12.26	12.30
MEDIAN	55.00	3.61	3.61
STD DEV	27.10	24.74	24.78
% ACCEL	25.00	10.78	10.80
% CRUISE	13.89	65.29	65.21
% DECEL	30.56	12.29	12.31
% MOTOR	30.56	11.64	11.67

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	36.	26036.	26074.
MEAN	39.50	6.08	6.12
MEDIAN	41.36	0.84	0.84
STD DEV	8.46	9.99	10.06
% ZERO	2.78	53.18	53.11
% ACCEL	19.44	10.10	10.11
% CRUISE	27.78	23.33	23.33
% DECEL	50.00	8.55	8.61
% IDLE	2.78	58.02	57.94

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	24.	21976.	22000.
E(EXP)	3745.00	418.96	422.59
E(E)XE(P)	3503.96	112.97	114.17
COV(E,P)	251.52	306.00	308.44
R(E,P)	0.583	0.744	0.744
** N	36.	26095.	26131.
E(SXE)	2676.67	223.20	226.58
E(S)XE(E)	2545.56	70.85	71.83
COV(S,E)	134.86	152.36	154.76
R(S,E)	0.968	0.842	0.844
** N	24.	21976.	22000.
E(SXP)	2228.33	217.61	219.81
E(S)XE(P)	2100.69	55.77	56.46
COV(S,P)	133.19	161.85	163.35
R(S,P)	0.535	0.729	0.728

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 23: 2A DIESEL

(RECORD COUNT = 35354, OPERATING TIME = 8.48 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	15972.	19382.	35354.
MEAN	81.05	43.78	60.62
MEDIAN	83.56	51.76	78.05
STD DEV	13.04	38.21	34.95
% ACCEL	11.10	17.93	14.84
% CRUISE	77.44	32.24	52.66
% DECEL	10.58	14.89	12.94
% IDLE	0.88	34.94	19.55

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	13903.	13012.	26915.
TOTAL N	15943.	19344.	35287.
MEAN	54.56	16.19	36.01
MEDIAN	57.67	4.71	34.39
STD DEV	26.03	21.47	30.67
% ACCEL	25.77	15.83	20.32
% CRUISE	34.91	40.23	37.83
% DECEL	29.20	17.97	23.04
% MOTOR	10.12	25.97	18.81

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	15943.	19344.	35287.
MEAN	47.45	12.73	28.42
MEDIAN	51.49	10.70	27.72
STD DEV	10.30	11.68	20.53
% ZERO	0.01	23.10	12.66
% ACCEL	16.38	22.25	19.60
% CRUISE	72.73	37.45	53.39
% DECEL	10.83	14.72	1 .97
% IDLE	0.06	25.58	14.05

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	13930.	13021.	26951.
E(EXP)	4567.73	1119.38	2901.69
E(E)XE(P)	4500.84	572.55	2151.40
COV(E,P)	66.90	546.87	750.32
R(E,P)	0.230	0.635	0.655
** N	15972.	19382.	35354.
E(SXE)	3924.33	929.67	2282.56
E(S)XE(E)	3844.52	556.29	1721.26
COV(S,E)	79.82	373.39	561.34
R(S,E)	0.575	0.835	0.780
** N	13930.	13021.	26951.
E(SXP)	2743.67	329.03	1577.07
E(S)XE(P)	2670.73	172.09	1096.36
COV(S,P)	72.95	156.95	480.73
R(S,P)	0.324	0.595	0.717

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 62: 2A DIESEL

(RECORD COUNT = 127915, OPERATING TIME = 30.70 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	1862.	126053.	127915.
MEAN	41.37	16.00	16.37
MEDIAN	40.92	0.65	0.66
STD DEV	34.10	24.62	24.97
% ACCEL	15.85	9.08	9.18
% CRUISE	41.75	20.30	20.61
% DECEL	16.34	9.36	9.46
% IDLE	26.06	61.27	60.75

POWER

		FREEWAY	NON-FREEWAY	COMBINED
*	N	1475.	110282.	111757.
	TOTAL N	1861.	125974.	127835.
	MEAN	40.73	18.63	18.92
	MEDIAN	35.54	3.74	3.76
	STD DEV	36.57	30.75	30.94
	% ACCEL	19.45	12.88	12.98
	% CRUISE	44.76	66.32	66.01
	% DECEL	19.77	11.84	11.96
	% MOTOR	16.01	8.95	9.05

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	1861.	125974.	127835.
MEAN	15.57	6.19	6.33
MEDIAN	12.74	0.88	0.88
STD DEV	13.91	8.79	8.96
% ZERO	24.66	55.44	55.00
% ACCEL	15.48	11.08	11.14
% CRUISE	43.79	23.63	23.92
% DECEL	14.35	9.15	9.22
% IDLE	26.38	56.15	55.71

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	1476.	110354.	111830.
	E(EXP)	2380.70	745.36	766.95
	E(E)XE(P)	1518.62	222.26	232.07
	COV(E,P)	862.67	523.11	534.88
	R(E,P)	0.679	0.770	0.768
**	N	1862.	126053.	127915.
	E(SXE)	1050.87	268.19	279.58
	E(S)XE(E)	645.53	98.82	103.35
	COV(S,E)	405.56	169.37	176.24
	R(S,E)	0.848	0.780	0.786
**	N	1476.	110354.	111830.
	E(SXP)	896.82	258.89	267.31
	E(S)XE(P)	581.98	89.66	93.43
	COV(S,P)	315.04	169.22	173.87
	R(S,P)	0.607	0.678	0.677

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 29: 3A DIESEL

(RECORD COUNT = 114357, OPERATING TIME = 27.45 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	64847.	49510.	114357.
MEAN	90.30	38.05	67.68
MEDIAN	93.55	35.07	86.58
STD DEV	14.26	36.44	36.88
% ACCEL	4.36	10.99	7.23
% CRUISE	90.46	40.30	68.76
% DECEL	3.95	10.22	6.67
% IDLE	1.23	38.49	17.35

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	52095.	31829.	83924.
TOTAL N	64779.	49394.	114173.
MEAN	50.88	20.42	39.33
MEDIAN	48.85	4.22	36.44
STD DEV	29.09	31.46	33.45
% ACCEL	25.35	11.84	19.51
% CRUISE	34.47	44.64	38.87
% DECEL	24.89	12.74	19.64
% MOTOR	15.29	30.77	21.99

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	64779.	49394.	114173.
MEAN	50.82	12.26	34.14
MEDIAN	53.96	6.74	45.26
STD DEV	9.51	13.91	22.36
% ZERO	1.07	31.46	14.22
% ACCEL	9.68	15.22	12.08
% CRUISE	83.41	41.48	65.27
% DECEL	5.84	10.56	7.88
% IDLE	1.07	32.73	14.77

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	52147.	31932.	84079.
E(EXP)	4691.42	1438.85	3456.12
E(E)XE(P)	4639.82	578.68	2646.34
COV(E,P)	51.60	860.20	809.79
R(E,P)	0.128	0.718	0.605
** N	64847.	49510.	114357.
E(SXE)	4686.19	879.81	3038.24
E(S)XE(E)	4585.89	465.51	2307.54
COV(S,E)	100.30	414.30	730.71
R(S,E)	0.720	0.816	0.683
** N	52147.	31932.	84079.
E(SXP)	2622.04	505.53	1618.22
E(S)XE(P)	2610.95	206.05	1401.61
COV(S,P)	11.09	299.48	416.61
R(S,P)	0.041	0.658	0.539

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 31: 3A DIESEL

(RECORD COUNT = 61954, OPERATING TIME = 14.87 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	14823.	47131.	61954.
MEAN	80.91	27.57	40.33
MEDIAN	86.50	0.64	23.56
STD DEV	21.29	38.48	41.86
% ACCEL	10.94	9.88	10.14
% CRUISE	74.15	20.83	33.56
% DECEL	10.57	8.84	9.26
% IDLE	4.33	60.44	47.05

POWER

		FREEWAY	NON-FREEWAY	COMBINED
*	N	13048.	42530.	55578.
	TOTAL N	14757.	47045.	61802.
	MEAN	53.85	17.32	25.90
	MEDIAN	54.71	3.83	4.86
	STD DEV	27.90	28.80	32.52
	% ACCEL	23.74	13.08	15.62
	% CRUISE	45.02	66.62	61.47
	% DECEL	21.90	14.02	15.91
	% MOTOR	9.34	6.27	7.00

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	14757.	47045.	61802.
MEAN	49.72	10.72	20.03
MEDIAN	54.33	0.90	11.78
STD DEV	13.33	14.36	21.82
% ZERO	3.90	54.31	42.28
% ACCEL	10.94	12.02	11.76
% CRUISE	74.70	23.14	35.45
% DECEL	10.44	9.95	10.07
% IDLE	3.92	54.89	42.72

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	13114.	42613.	55727.
	E(EXP)	4687.41	1215.42	2032.47
	E(E)XE(P)	4409.77	425.98	986.86
	COV(E,P)	277.66	789.46	1045.63
	R(E,P)	0.460	0.718	0.755
**	N	14823.	47131.	61954.
	E(SXE)	4243.06	804.40	1627.13
	E(S)XE(E)	4019.97	296.24	809.15
	COV(S,E)	223.10	508.17	817.99
	R(S,E)	0.782	0.918	0.895
**	N	13114.	42613.	55727.
	E(SXP)	2769.52	425.33	976.98
	E(S)XE(P)	2689.34	162.94	491.13
	COV(S,P)	80.18	262.39	485.86
	R(S,P)	0.209	0.653	0.676

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 37: 3A DIESEL

(RECORD COUNT = 132185, OPERATING TIME = 31.72 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	113213.	18972.	132185.
MEAN	79.75	50.51	75.56
MEDIAN	85.12	62.71	83.61
STD DEV	18.46	34.50	23.83
% ACCEL	6.01	12.96	7.01
% CRUISE	84.99	52.41	80.32
% DECEL	5.90	11.89	6.76
% IDLE	3.10	22.74	5.91

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	96552.	16558.	113110.
TOTAL N	113174.	18942.	132116.
MEAN	59.88	31.74	55.76
MEDIAN	61.53	24.26	57.41
STD DEV	29.27	31.05	31.17
% ACCEL	16.72	18.41	16.96
% CRUISE	53.34	52.34	53.20
% DECEL	16.81	20.03	17.28
% MOTOR	13.12	9.21	12.56

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	113174.	18942.	132116.
MEAN	42.65	21.96	39.69
MEDIAN	49.98	20.78	47.90
STD DEV	15.77	17.28	17.56
% ZERO	4.13	14.76	5.66
% ACCEL	5.02	17.57	6.82
% CRUISE	87.15	55.04	82.54
% DECEL	3.59	12.09	4.81
% IDLE	4.25	15.30	5.83

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	96590.	16587.	113177.
E(EXP)	5052.66	2268.70	4644.04
E(E)XE(P)	4785.48	1534.40	4197.83
COV(E,P)	267.19	734.34	446.77
R(E,P)	0.469	0.663	0.569
** N	113213.	18972.	132185.
E(SXE)	3574.27	1602.12	3291.21
E(S)XE(E)	3411.21	1109.23	3005.92
COV(S,E)	163.07	492.91	285.30
R(S,E)	0.553	0.822	0.675
** N	96590.	16587.	113177.
E(SXP)	2597.54	1013.74	2365.42
E(S)XE(P)	2552.30	674.27	2201.81
COV(S,P)	45.23	339.50	163.61
R(S,P)	0.095	0.614	0.290

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 38: 3A DIESEL

(RECORD COUNT = 9416, OPERATING TIME = 2.26 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	6073.	3343.	9416.
MEAN	75.71	58.21	69.50
MEDIAN	84.05	71.45	81.71
STD DEV	30.35	37.51	34.11
% ACCEL	9.76	18.27	12.78
% CRUISE	70.22	44.43	61.08
% DECEL	9.73	16.01	11.96
% IDLE	10.29	21.28	14.19

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	5359.	2487.	7846.
TOTAL N	6054.	3322.	9376.
MEAN	65.49	46.14	59.36
MEDIAN	80.87	47.04	72.03
STD DEV	34.13	38.15	36.58
% ACCEL	20.30	17.16	19.19
% CRUISE	50.93	45.67	49.06
% DECEL	20.25	16.38	18.88
% MOTOR	8.52	20.80	12.87

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	6054.	3322.	9376.
MEAN	35.60	14.80	28.23
MEDIAN	40.13	12.21	34.18
STD DEV	15.86	12.20	17.72
% ZERO	7.75	12.76	9.52
% ACCEL	18.85	25.68	21.27
% CRUISE	56.97	44.67	52.61
% DECEL	16.45	16.80	16.57
% IDLE	7.73	12.85	9.55

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	5378.	2506.	7884.
E(EXP)	5593.72	3707.78	4994.25
E(E)XE(P)	4993.34	2591.59	4145.65
COV(E,P)	600.49	1116.64	848.71
R(E,P)	0.572	0.713	0.651
** N	6073.	3343.	9416.
E(SXE)	3053.09	1123.45	2367.99
E(S)XE(E)	2690.31	860.34	1957.53
COV(S,E)	362.83	263.19	410.51
R(S,E)	0.753	0.573	0.678
** N	5378.	2506.	7884.
E(SXP)	2676.51	835.33	2091.27
E(S)XE(P)	2363.06	606.39	1708.61
COV(S,P)	313.51	229.03	382.71
R(S,P)	0.572	0.500	0.570

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 44: 3A DIESEL

(RECORD COUNT = 50402, OPERATING TIME = 12.10 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	18748.	31654.	50402.
MEAN	77.74	42.88	55.84
MEDIAN	87.58	39.83	73.45
STD DEV	28.01	40.71	40.21
% ACCEL	9.35	14.14	12.36
% CRUISE	74.28	34.81	49.50
% DECEL	9.00	13.03	11.53
% IDLE	7.36	38.02	26.61

POWER

		FREEWAY	NON-FREEWAY	COMBINED
*	N	16704.	26586.	43290.
	TOTAL N	18728.	31611.	50339.
	MEAN	43.00	20.32	29.07
	MEDIAN	40.63	5.31	21.73
	STD DEV	27.20	27.59	29.58
	% ACCEL	20.90	18.43	19.35
	% CRUISE	53.21	54.93	54.29
	% DECEL	17.67	14.87	15.91
	% MOTOR	8.22	11.77	10.45

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	18728.	31611.	50339.
MEAN	43.11	14.47	25.13
MEDIAN	50.36	11.45	24.34
STD DEV	16.24	13.69	20.18
% ZERO	4.23	29.57	20.14
% ACCEL	27.02	25.76	26.23
% CRUISE	45.74	21.95	30.80
% DECEL	22.98	23.06	23.03
% IDLE	4.26	29.23	19.94

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	16724.	26626.	43350.
	E(EXP)	3807.21	1526.41	2406.33
	E(E)XE(P)	3402.66	791.38	1589.84
	COV(E,P)	404.57	735.06	823.50
	R(E,P)	0.524	0.635	0.661
**	N	18748.	31654.	50402.
	E(SXE)	3701.09	1092.36	2062.73
	E(S)XE(E)	3344.83	620.22	1401.45
	COV(S,E)	356.27	472.15	661.30
	R(S,E)	0.780	0.846	0.814
**	N	16724.	26626.	43350.
	E(SXP)	2023.94	452.08	1058.49
	E(S)XE(P)	1882.92	260.66	720.00
	COV(S,P)	141.03	191.43	338.49
	R(S,P)	0.312	0.501	0.539

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 36: 3A DIESEL

(RECORD COUNT = 110340, OPERATING TIME = 26.48 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	4864.	105476.	110340.
MEAN	82.59	6.01	9.38
MEDIAN	86.40	0.13	0.18
STD DEV	24.61	19.66	25.37
% ACCEL	16.09	3.44	3.99
% CRUISE	65.79	4.68	7.34
% DECEL	16.17	3.42	3.97
% IDLE	1.95	88.45	84.69

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	3830.	101894.	105724.
TOTAL N	4780.	105219.	109999.
MEAN	57.76	4.84	6.76
MEDIAN	60.47	2.76	2.80
STD DEV	31.32	17.33	20.56
% ACCEL	22.05	3.99	4.78
% CRUISE	39.69	89.99	87.80
% DECEL	21.65	3.69	4.47
% MOTOR	16.61	2.33	2.95

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	4780.	105219.	109999.
MEAN	29.59	1.78	2.99
MEDIAN	31.14	0.58	0.61
STD DEV	6.96	5.34	7.84
% ZERO	0.82	84.33	80.70
% ACCEL	34.31	5.71	6.95
% CRUISE	34.02	4.19	5.48
% DECEL	30.79	5.24	6.35
% IDLE	0.88	84.86	81.21

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	3910.	102144.	106054.
E(EXP)	4867.62	274.44	443.78
E(E)XE(P)	4825.87	23.11	52.28
COV(E,P)	41.76	251.34	391.51
R(E,P)	0.055	0.611	0.809
** N	4864.	105476.	110340.
E(SXE)	2577.34	94.89	204.32
E(S)XE(E)	2446.52	10.85	28.46
COV(S,E)	130.84	84.04	175.87
R(S,E)	0.757	0.795	0.876
** N	3910.	102144.	106054.
E(SXP)	1773.93	70.32	133.12
E(S)XE(P)	1745.70	6.98	17.05
COV(S,P)	28.24	63.34	116.07
R(S,P)	0.127	0.755	0.765

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 37: 3A DIESEL

(RECORD COUNT = 19538, OPERATING TIME = 4.69 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	8836.	10702.	19538.
MEAN	53.39	27.89	39.42
MEDIAN	59.66	28.81	41.82
STD DEV	31.52	25.26	30.98
% ACCEL	9.05	12.33	10.84
% CRUISE	68.65	40.85	53.43
% DECEL	9.61	12.92	11.42
% IDLE	12.69	33.90	24.30

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	8490.	10578.	19068.
TOTAL N	8833.	10683.	19516.
MEAN	56.75	40.52	47.75
MEDIAN	65.43	41.18	53.23
STD DEV	33.69	35.80	35.79
% ACCEL	18.66	16.66	17.57
% CRUISE	55.20	61.42	58.61
% DECEL	23.45	21.50	22.38
% MOTOR	2.69	0.41	1.44

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	8833.	10683.	19516.
MEAN	25.49	11.23	17.66
MEDIAN	30.14	10.44	15.69
STD DEV	15.47	10.21	14.69
% ZERO	8.14	27.02	18.48
% ACCEL	11.55	20.25	16.31
% CRUISE	68.82	34.86	50.23
% DECEL	11.54	17.92	15.03
% IDLE	8.09	26.98	18.43

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	8493.	10597.	19090.
E(EXP)	3676.96	1809.99	2640.59
E(E)XE(P)	2982.21	1119.49	1846.15
COV(E,P)	694.83	690.57	792.48
R(E,P)	0.650	0.764	0.716
** N	8836.	10702.	19538.
E(SXE)	1814.04	516.78	1103.46
E(S)XE(E)	1355.74	312.08	694.40
COV(S,E)	458.36	204.71	409.08
R(S,E)	0.940	0.792	0.899
** N	8493.	10597.	19090.
E(SXP)	1720.26	632.66	1116.52
E(S)XE(P)	1421.32	448.04	824.87
COV(S,P)	298.97	184.64	291.67
R(S,P)	0.570	0.509	0.558

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 43: 3A DIESEL

(RECORD COUNT = 38243, OPERATING TIME = 9.18 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	13159.	25084.	38243.
MEAN	79.18	38.09	52.23
MEDIAN	87.78	12.57	64.02
STD DEV	30.55	42.26	43.28
% ACCEL	12.74	13.31	13.11
% CRUISE	68.45	26.19	40.63
% DECEL	12.52	13.15	12.93
% IDLE	6.29	47.36	33.32

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	9947.	20258.	30205.
TOTAL N	12883.	24820.	37703.
MEAN	56.07	19.34	31.43
MEDIAN	59.86	4.62	22.40
STD DEV	31.00	26.61	33.00
% ACCEL	25.17	21.35	22.66
% CRUISE	34.50	49.05	44.08
% DECEL	22.39	17.79	19.36
% MOTOR	17.95	11.80	13.90

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	12883.	24820.	37703.
MEAN	30.49	8.20	15.82
MEDIAN	33.18	3.71	11.93
STD DEV	14.94	9.88	15.88
% ZERO	3.49	40.14	27.62
% ACCEL	23.06	17.19	19.19
% CRUISE	50.45	24.09	33.10
% DECEL	22.76	16.59	18.70
% IDLE	3.73	42.13	29.01

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	10219.	20506.	30725.
E(EXP)	5141.21	1572.17	2759.22
E(E)XE(P)	4645.05	702.12	1632.04
COV(E,P)	496.21	870.09	1127.21
R(E,P)	0.522	0.735	0.744
** N	13159.	25084.	38243.
E(SXE)	2705.56	648.15	1356.08
E(S)XE(E)	2414.84	315.12	831.69
COV(S,E)	290.74	333.04	524.40
R(S,E)	0.638	0.797	0.763
** N	10219.	20506.	30725.
E(SXP)	2040.96	323.08	894.44
E(S)XE(P)	1799.90	148.66	499.85
COV(S,P)	241.08	174.44	394.60
R(S,P)	0.500	0.644	0.709

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 54: 3A DIESEL

(RECORD COUNT = 97812, OPERATING TIME = 23.47 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	38194.	59618.	97812.
MEAN	19.98	37.44	30.62
MEDIAN	0.51	24.97	0.91
STD DEV	33.63	39.56	38.32
% ACCEL	9.19	12.88	11.44
% CRUISE	14.80	29.82	23.95
% DECEL	10.12	14.18	12.59
% IDLE	65.89	43.11	52.02

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	29921.	41253.	71174.
TOTAL N	37987.	59125.	97112.
MEAN	9.35	22.91	17.21
MEDIAN	3.36	4.66	4.01
STD DEV	19.49	30.67	27.38
% ACCEL	15.39	19.40	17.84
% CRUISE	57.73	40.59	47.29
% DECEL	14.06	18.64	16.85
% MOTOR	12.81	21.37	18.02

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	37987.	59125.	97112.
MEAN	3.90	15.21	10.78
MEDIAN	0.74	7.08	0.97
STD DEV	7.15	18.36	15.99
% ZERO	55.00	32.06	41.03
% ACCEL	9.60	19.66	15.72
% CRUISE	15.09	22.07	19.34
% DECEL	8.97	18.31	14.66
% IDLE	66.35	39.96	50.28

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	30122.	41721.	71843.
E(EXP)	727.01	1845.63	1370.63
E(E)XE(P)	181.53	836.22	504.91
COV(E,P)	545.50	1009.43	871.73
R(E,P)	0.783	0.787	0.791
** N	38194.	59618.	97812.
E(SXE)	249.46	1121.33	780.86
E(S)XE(E)	78.00	572.32	331.96
COV(S,E)	171.47	549.03	448.92
R(S,E)	0.712	0.753	0.730
** N	30122.	41721.	71843.
E(SXP)	112.18	723.19	467.01
E(S)XE(P)	32.60	329.40	169.24
COV(S,P)	79.58	393.79	297.77
R(S,P)	0.580	0.679	0.676

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 57: 3A DIESEL

(RECORD COUNT = 88732, OPERATING TIME = 21.30 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	1245.	87487.	88732.
MEAN	41.87	27.14	27.35
MEDIAN	49.88	10.38	11.16
STD DEV	30.21	30.89	30.93
% ACCEL	9.05	11.98	11.94
% CRUISE	57.64	30.04	30.43
% DECEL	10.19	11.62	11.60
% IDLE	23.12	46.36	46.03

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	1109.	80465.	81574.
TOTAL N	1237.	87353.	88590.
MEAN	39.59	23.45	23.67
MEDIAN	36.72	4.95	4.98
STD DEV	33.40	30.46	30.56
% ACCEL	19.81	20.53	20.52
% CRUISE	54.00	57.46	57.41
% DECEL	18.59	17.27	17.29
% MOTOR	7.60	4.74	4.78

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	1237.	87353.	88590.
MEAN	28.83	10.59	10.84
MEDIAN	34.00	5.02	5.35
STD DEV	20.57	12.66	12.98
% ZERO	8.00	45.83	45.30
% ACCEL	24.01	20.47	20.52
% CRUISE	42.85	15.22	15.60
% DECEL	26.27	19.44	19.53
% IDLE	6.87	44.88	44.35

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	1117.	80588.	81705.
E(EXP)	2150.15	1091.69	1106.16
E(E)XE(P)	1550.84	553.90	564.14
COV(E,P)	599.85	537.80	542.03
R(E,P)	0.593	0.603	0.604
** N	1245.	87487.	88732.
E(SXE)	1723.21	608.16	623.80
E(S)XE(E)	1204.62	287.72	296.89
COV(S,E)	519.01	320.44	326.92
R(S,E)	0.834	0.817	0.812
** N	1117.	80588.	81705.
E(SXP)	1578.71	427.48	443.22
E(S)XE(P)	1117.03	223.68	231.82
COV(S,P)	462.09	203.80	211.40
R(S,P)	0.656	0.541	0.544

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 6: TT DIESEL

(RECORD COUNT = 65697, OPERATING TIME = 15.77 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	39576.	26121.	65697.
MEAN	90.97	46.95	73.47
MEDIAN	94.73	52.03	90.86
STD DEV	17.62	43.39	37.41
% ACCEL	4.37	11.07	7.03
% CRUISE	89.24	38.87	69.22
% DECEL	4.25	10.66	6.79
% IDLE	2.15	39.41	16.95

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	29007.	19003.	48010.
TOTAL N	39573.	26085.	65658.
MEAN	52.86	26.62	42.47
MEDIAN	53.93	4.63	40.97
STD DEV	30.68	34.65	34.76
% ACCEL	26.39	15.15	21.93
% CRUISE	26.84	48.13	35.30
% DECEL	25.10	14.64	20.34
% MOTOR	21.67	22.07	21.83

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	39573.	26085.	65658.
MEAN	49.67	19.48	37.67
MEDIAN	53.85	11.77	48.61
STD DEV	12.17	20.92	21.94
% ZERO	1.69	37.08	15.75
% ACCEL	6.83	15.13	10.13
% CRUISE	84.95	36.60	65.74
% DECEL	6.51	10.96	8.28
% IDLE	1.71	37.31	15.85

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	29008.	19030.	48038.
E(EXP)	4996.88	2306.65	3931.16
E(E)XE(P)	4841.45	1046.31	3009.74
COV(E,P)	155.44	1260.41	921.44
R(E,P)	0.276	0.806	0.650
** N	39576.	26121.	65697.
E(SXE)	4686.11	1706.41	3501.39
E(S)XE(E)	4526.22	913.74	2770.30
COV(S,E)	159.90	792.70	731.10
R(S,E)	0.735	0.871	0.886
** N	29008.	19030.	48038.
E(SXP)	2680.86	1048.97	2034.40
E(S)XE(P)	2645.26	465.96	1577.60
COV(S,P)	35.60	583.02	456.81
R(S,P)	0.098	0.768	0.572

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 15: TT DIESEL

(RECORD COUNT = 47922, OPERATING TIME = 11.50 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	30722.	17200.	47922.
MEAN	95.01	39.90	75.23
MEDIAN	96.99	13.00	94.90
STD DEV	9.77	42.89	37.69
% ACCEL	5.39	9.25	6.78
% CRUISE	89.20	35.79	70.06
% DECEL	4.99	7.05	5.73
% IDLE	0.41	47.91	17.44

POWER

		FREEWAY	NON-FREEWAY	COMBINED
*	N	20079.	12788.	32867.
	TOTAL N	30642.	17118.	47760.
	MEAN	39.42	20.57	32.08
	MEDIAN	36.38	15.38	25.08
	STD DEV	26.44	25.23	27.55
	% ACCEL	19.90	13.46	17.59
	% CRUISE	28.65	50.98	36.65
	% DECEL	22.43	15.88	20.09
	% MOTOR	29.02	19.68	25.67

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	30642.	17118.	47760.
MEAN	53.17	17.67	40.45
MEDIAN	54.96	3.74	53.58
STD DEV	6.49	21.77	22.06
% ZERO	0.06	39.46	14.18
% ACCEL	10.67	12.78	11.43
% CRUISE	83.67	40.96	68.36
% DECEL	5.59	6.40	5.88
% IDLE	0.07	39.85	14.33

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	20092.	12801.	32893.
	E(EXP)	3685.28	1293.26	2754.36
	E(E)XE(P)	3737.85	668.27	2263.85
	COV(E,P)	-52.57	625.04	490.52
	R(E,P)	-0.210	0.577	0.432
**	N	30722.	17200.	47922.
	E(SXE)	5119.96	1555.41	3840.59
	E(S)XE(E)	5069.84	707.43	3052.08
	COV(S,E)	50.12	848.02	788.53
	R(S,E)	0.758	0.904	0.942
**	N	20092.	12801.	32893.
	E(SXP)	2042.82	601.97	1482.08
	E(S)XE(P)	2081.67	318.65	1228.28
	COV(S,P)	-38.85	283.34	253.81
	R(S,P)	-0.227	0.510	0.394

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 20: TT DIESEL

(RECORD COUNT = 32831, OPERATING TIME = 7.88 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	24842.	7989.	32831.
MEAN	77.55	51.79	71.28
MEDIAN	78.37	60.29	77.07
STD DEV	13.86	36.96	24.49
% ACCEL	6.36	15.92	8.70
% CRUISE	86.41	46.78	76.73
% DECEL	6.27	15.62	8.55
% IDLE	0.96	21.68	6.02

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	21876.	5797.	27673.
TOTAL N	24588.	7952.	32540.
MEAN	52.97	31.45	48.06
MEDIAN	50.27	23.37	45.54
STD DEV	26.37	30.55	28.63
% ACCEL	21.93	20.88	21.67
% CRUISE	43.20	36.23	41.49
% DECEL	25.88	21.62	24.84
% MOTOR	8.99	21.28	11.99

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	24588.	7952.	32540.
MEAN	37.21	13.83	31.49
MEDIAN	37.99	13.94	35.72
STD DEV	7.45	9.79	12.89
% ZERO	0.49	11.87	3.27
% ACCEL	24.77	22.10	24.11
% CRUISE	54.34	44.71	51.98
% DECEL	20.33	18.51	19.89
% IDLE	0.57	14.69	4.02

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	22106.	5829.	27935.
E(EXP)	4256.96	2297.03	3847.99
E(E)XE(P)	4133.54	1603.42	3509.33
COV(E,P)	123.43	693.72	338.67
R(E,P)	0.355	0.571	0.486
** N	24842.	7989.	32831.
E(SXE)	2925.68	983.43	2453.06
E(S)XE(E)	2886.56	716.75	2247.71
COV(S,E)	39.12	266.72	205.35
R(S,E)	0.373	0.735	0.648
** N	22106.	5829.	27935.
E(SXP)	1985.27	564.13	1686.73
E(S)XE(P)	1978.06	417.09	1567.05
COV(S,P)	7.21	147.06	121.68
R(S,P)	0.038	0.458	0.336

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 22: TT DIESEL

(RECORD COUNT = 40072, OPERATING TIME = 9.62 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	23585.	16487.	40072.
MEAN	73.38	49.60	63.60
MEDIAN	82.66	62.44	79.55
STD DEV	25.18	37.21	32.86
% ACCEL	9.54	15.10	11.82
% CRUISE	76.41	47.04	64.36
% DECEL	7.36	9.64	8.29
% IDLE	6.69	28.22	15.52

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	17377.	10174.	27551.
TOTAL N	23399.	16273.	39672.
MEAN	54.16	29.16	44.93
MEDIAN	57.57	12.51	46.03
STD DEV	32.42	34.76	35.42
% ACCEL	23.54	16.97	20.84
% CRUISE	32.30	35.56	33.64
% DECEL	22.93	15.87	20.04
% MOTOR	21.23	31.60	25.48

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	23399.	16273.	39672.
MEAN	41.17	16.49	31.04
MEDIAN	50.53	11.25	32.81
STD DEV	18.35	16.76	21.48
% ZERO	5.33	23.47	12.77
% ACCEL	11.64	20.26	15.17
% CRUISE	77.08	46.85	64.68
% DECEL	5.76	8.20	6.76
% IDLE	5.53	24.69	13.39

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	17407.	10195.	27602.
E(EXP)	4566.49	2304.65	3731.05
E(E)XE(P)	4099.35	1248.61	2854.99
COV(E,P)	467.16	1056.14	876.09
R(E,P)	0.558	0.732	0.684
** N	23585.	16487.	40072.
E(SXE)	3393.01	1292.82	2528.92
E(S)XE(E)	3018.46	818.19	1970.88
COV(S,E)	374.57	474.66	558.05
R(S,E)	0.802	0.762	0.788
** N	17407.	10195.	27602.
E(SXP)	2742.01	907.61	2064.46
E(S)XE(P)	2426.92	470.28	1537.22
COV(S,P)	315.10	437.37	527.26
R(S,P)	0.564	0.682	0.662

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 27: TT DIESEL

(RECORD COUNT = 32916, OPERATING TIME = 7.90 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	7830.	25086.	32916.
MEAN	79.25	52.45	58.82
MEDIAN	80.07	64.30	75.10
STD DEV	10.97	41.41	38.29
% ACCEL	5.61	14.66	12.51
% CRUISE	83.99	42.92	53.89
% DECEL	5.11	12.91	11.05
% IDLE	0.28	29.50	22.55

POWER

		FREEWAY	NON-FREEWAY	COMBINED
*	N	5305.	15212.	20517.
	TOTAL N	7823.	25040.	32863.
	MEAN	39.58	27.80	30.85
	MEDIAN	31.01	5.31	18.15
	STD DEV	30.15	35.59	34.65
	% ACCEL	20.20	13.26	14.91
	% CRUISE	34.25	40.72	39.18
	% DECEL	17.82	11.76	13.20
	% MOTOR	27.74	34.26	32.71

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	7823.	25040.	32863.
MEAN	51.26	15.36	23.91
MEDIAN	53.34	12.92	20.34
STD DEV	6.99	14.19	19.97
% ZERO	0.09	25.60	19.52
% ACCEL	30.40	27.92	28.51
% CRUISE	44.01	21.17	26.61
% DECEL	25.50	25.30	25.34
% IDLE	0.09	25.62	19.54

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	5311.	15238.	20549.
	E(EXP)	3268.86	2436.58	2651.07
	E(E)XE(P)	3187.03	1210.04	1637.41
	COV(E,P)	81.84	1226.62	1014.31
	R(E,P)	0.275	0.752	0.681
**	N	7830.	25086.	32916.
	E(SXE)	4069.30	1226.81	1902.96
	E(S)XE(E)	4046.40	805.01	1403.63
	COV(S,E)	22.90	421.82	499.36
	R(S,E)	0.293	0.716	0.652
**	N	5311.	15238.	20549.
	E(SXP)	1975.21	652.36	994.23
	E(S)XE(P)	2039.08	341.60	691.62
	COV(S,P)	-63.88	310.78	302.60
	R(S,P)	-0.318	0.604	0.407

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 33: TT DIESEL

(RECORD COUNT = 13187, OPERATING TIME = 3.16 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	3639.	9548.	13187.
MEAN	85.50	53.27	62.16
MEDIAN	86.84	64.80	78.98
STD DEV	12.83	37.25	35.47
% ACCEL	7.39	16.73	14.15
% CRUISE	83.95	45.00	55.76
% DECEL	7.61	14.20	12.38
% IDLE	1.04	24.06	17.71

POWER

		FREEWAY	NON-FREEWAY	COMBINED
*	N	3129.	6450.	9579.
	TOTAL N	3639.	9537.	13176.
	MEAN	49.72	37.32	41.37
	MEDIAN	47.29	28.27	41.14
	STD DEV	22.98	36.58	33.27
	% ACCEL	19.68	17.44	18.06
	% CRUISE	48.34	39.84	42.19
	% DECEL	20.03	15.53	16.77
	% MOTOR	11.95	27.19	22.98

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	3639.	9537.	13176.
MEAN	51.67	19.62	28.47
MEDIAN	53.87	18.18	26.83
STD DEV	7.76	16.11	20.25
% ZERO	0.66	16.87	12.39
% ACCEL	10.96	24.92	21.07
% CRUISE	79.94	39.76	50.86
% DECEL	8.44	18.39	15.64
% IDLE	0.66	16.92	12.43

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	3129.	6453.	9582.
	E(EXP)	4395.62	2930.09	3408.62
	E(E)XE(P)	4317.64	1869.03	2568.37
	COV(E,P)	78.01	1061.22	840.34
	R(E,P)	0.313	0.698	0.652
**	N	3639.	9548.	13187.
	E(SXE)	4512.52	1513.85	2341.34
	E(S)XE(E)	4446.37	1045.83	1774.58
	COV(S,E)	66.17	468.07	566.80
	R(S,E)	0.641	0.777	0.784
**	N	3129.	6453.	9582.
	E(SXP)	2605.27	1046.85	1555.75
	E(S)XE(P)	2600.65	699.51	1228.78
	COV(S,P)	4.62	347.39	327.00
	R(S,P)	0.028	0.537	0.451

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 34: TT DIESEL

(RECORD COUNT = 44546, OPERATING TIME = 10.69 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	39501.	5045.	44546.
MEAN	79.75	56.59	77.12
MEDIAN	80.21	65.52	79.59
STD DEV	7.68	28.91	14.17
% ACCEL	12.36	22.25	13.51
% CRUISE	75.20	43.22	71.59
% DECEL	12.23	21.21	13.24
% IDLE	0.21	13.05	1.66

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	36451.	3637.	40088.
TOTAL N	39495.	5035.	44530.
MEAN	63.36	32.24	60.53
MEDIAN	67.75	28.73	65.15
STD DEV	25.05	26.69	26.74
% ACCEL	23.21	24.35	23.34
% CRUISE	50.15	33.07	48.22
% DECEL	20.97	22.78	21.17
% MOTOR	5.67	19.80	7.27

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	39495.	5035.	44530.
MEAN	52.59	18.88	48.77
MEDIAN	54.16	18.59	53.82
STD DEV	6.63	11.64	12.97
% ZERO	0.05	8.50	1.00
% ACCEL	16.47	34.04	18.45
% CRUISE	71.06	26.22	65.99
% DECEL	12.43	31.10	14.54
% IDLE	0.05	8.64	1.02

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	36456.	3645.	40101.
E(EXP)	5103.90	2188.82	4838.93
E(E)XE(P)	5076.02	1791.00	4714.34
COV(E,P)	27.88	397.92	124.59
R(E,P)	0.154	0.463	0.337
** N	39501.	5045.	44546.
E(SXE)	4218.56	1328.11	3891.21
E(S)XE(E)	4192.54	1067.88	3760.43
COV(S,E)	26.02	260.28	130.79
R(S,E)	0.484	0.768	0.699
** N	36456.	3645.	40101.
E(SXP)	3354.79	721.31	3115.42
E(S)XE(P)	3354.78	595.23	3015.23
COV(S,P)	0.01	126.11	100.19
R(S,P)	0.0	0.374	0.311

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 41: TT DIESEL

(RECORD COUNT = 27314, OPERATING TIME = 6.56 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	7654.	19660.	27314.
MEAN	90.67	45.68	58.29
MEDIAN	93.96	53.79	70.41
STD DEV	13.23	37.15	38.09
% ACCEL	9.04	14.28	12.81
% CRUISE	81.67	41.36	52.63
% DECEL	8.89	12.52	11.50
% IDLE	0.41	31.85	23.05

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	5507.	13229.	18736.
TOTAL N	7614.	19598.	27212.
MEAN	32.46	25.25	27.37
MEDIAN	29.35	13.16	20.62
STD DEV	21.64	29.63	27.72
% ACCEL	26.99	16.39	19.36
% CRUISE	25.56	40.50	36.32
% DECEL	26.08	16.29	19.03
% MOTOR	21.37	26.81	25.29

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	7614.	19598.	27212.
MEAN	50.32	20.20	28.62
MEDIAN	52.00	21.44	31.06
STD DEV	6.64	16.80	19.96
% ZERO	0.0	25.50	18.37
% ACCEL	10.80	22.17	18.99
% CRUISE	81.59	35.99	48.75
% DECEL	7.62	15.50	13.29
% IDLE	0.0	26.34	18.97

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	5533.	13280.	18813.
E(EXP)	2926.98	1744.14	2092.00
E(E)XE(P)	2947.63	979.42	1480.47
COV(E,P)	-20.65	764.79	611.56
R(E,P)	-0.074	0.645	0.528
** N	7654.	19660.	27314.
E(SXE)	4630.70	1434.99	2330.50
E(S)XE(E)	4561.71	921.52	1668.08
COV(S,E)	69.00	513.50	662.45
R(S,E)	0.761	0.821	0.869
** N	5533.	13280.	18813.
E(SXP)	1596.64	650.11	928.49
E(S)XE(P)	1633.02	418.02	724.88
COV(S,P)	-36.39	232.11	203.62
R(S,P)	-0.259	0.448	0.341

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 45: TT DIESEL

(RECORD COUNT = 127528, OPERATING TIME = 30.61 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	33902.	93626.	127528.
MEAN	95.01	40.45	54.96
MEDIAN	98.75	17.38	77.54
STD DEV	13.64	42.83	44.46
% ACCEL	7.86	13.76	12.18
% CRUISE	86.54	29.61	44.80
% DECEL	4.83	8.45	7.49
% IDLE	0.77	48.77	35.53

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	26426.	67457.	93883.
TOTAL N	33536.	92194.	125730.
MEAN	54.38	15.94	26.76
MEDIAN	57.76	8.79	8.07
STD DEV	24.84	26.83	31.46
% ACCEL	21.38	10.75	13.58
% CRUISE	36.07	53.23	48.65
% DECEL	24.67	14.03	16.87
% MOTOR	17.88	21.99	20.89

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	33536.	92194.	125730.
MEAN	40.33	8.73	17.16
MEDIAN	47.06	0.99	9.75
STD DEV	13.55	12.03	18.72
% ZERO	0.34	48.85	35.91
% ACCEL	12.52	12.04	12.17
% CRUISE	77.48	30.93	43.34
% DECEL	9.57	7.18	7.82
% IDLE	0.43	49.85	36.67

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	26535.	67873.	94408.
E(EXP)	5233.23	1305.72	2409.62
E(E)XE(P)	5209.30	458.20	1272.75
COV(E,P)	23.92	847.52	1136.88
R(E,P)	0.076	0.760	0.771
** N	33902.	93626.	127528.
E(SXE)	3888.47	773.83	1601.83
E(S)XE(E)	3812.76	357.28	943.00
COV(S,E)	75.72	416.55	658.83
R(S,E)	0.408	0.808	0.795
**N	26535.	67873.	94408.
E(SXP)	2204.67	341.67	865.30
E(S)XE(P)	2201.64	115.08	443.49
COV(S,P)	3.03	226.59	421.81
R(S,P)	0.009	0.700	0.691

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 46: TT DIESEL

(RECORD COUNT = 31820, OPERATING TIME = 7.64 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	14760.	17060.	31820.
MEAN	85.65	48.62	65.80
MEDIAN	87.01	59.90	80.07
STD DEV	13.29	38.76	35.05
% ACCEL	9.20	18.50	14.19
% CRUISE	80.88	33.50	55.45
% DECEL	9.76	18.71	14.56
% IDLE	0.16	29.29	15.80

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	12362.	12234.	24596.
TOTAL N	14699.	17031.	31730.
MEAN	62.41	31.71	47.14
MEDIAN	67.91	19.05	50.48
STD DEV	26.09	34.41	34.15
% ACCEL	29.57	22.54	25.80
% CRUISE	30.55	36.62	33.81
% DECEL	29.02	20.44	24.42
% MOTOR	10.86	20.40	15.98

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	14699.	17031.	31730.
MEAN	47.14	14.40	29.57
MEDIAN	50.75	14.27	28.84
STD DEV	10.20	12.09	19.83
% ZERO	0.02	23.76	12.76
% ACCEL	9.97	23.12	17.03
% CRUISE	82.81	37.47	58.47
% DECEL	7.20	15.14	11.46
% IDLE	0.02	24.27	13.03

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	12421.	12260.	24681.
E(EXP)	5536.68	2395.70	3976.43
E(E)XE(P)	5471.68	1389.75	3107.51
COV(E,P)	65.01	1006.03	868.96
R(E,P)	0.227	0.706	0.682
** N	14760.	17060.	31820.
E(SXE)	4112.02	1074.54	2483.51
E(S)XE(E)	4041.45	699.64	1947.33
COV(S,E)	70.57	374.92	536.19
R(S,E)	0.508	0.798	0.769
** N	12421.	12260.	24681.
E(SXP)	3037.69	635.05	1844.20
E(S)XE(P)	3039.21	399.60	1450.69
COV(S,P)	-1.52	235.47	393.52
R(S,P)	-0.007	0.539	0.547

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 51: TT DIESEL

(RECORD COUNT = 42524, OPERATING TIME = 10.21 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	18396.	24128.	42524.
MEAN	74.18	52.33	61.78
MEDIAN	76.19	64.19	72.30
STD DEV	19.39	37.76	33.00
% ACCEL	8.56	16.84	13.26
% CRUISE	80.77	43.73	59.76
% DECEL	8.31	14.11	11.71
% IDLE	2.36	25.12	15.27

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	10889.	12969.	23858.
TOTAL N	18394.	24108.	42502.
MEAN	26.57	19.01	22.46
MEDIAN	21.51	4.90	15.03
STD DEV	22.01	25.59	24.32
% ACCEL	12.37	12.10	12.43
% CRUISE	36.33	34.49	35.29
% DECEL	13.85	12.34	12.99
% MOTOR	36.95	41.08	39.29

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	18394.	24108.	42502.
MEAN	46.94	19.19	31.20
MEDIAN	51.97	17.74	32.63
STD DEV	13.15	16.48	20.45
% ZERO	0.64	16.87	9.85
% ACCEL	25.38	28.07	26.90
% CRUISE	51.82	29.65	39.25
% DECEL	21.96	23.03	22.57
% IDLE	0.83	19.26	11.28

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	10890.	12976.	23866.
E(EXP)	2031.18	1426.27	1702.26
E(E)XE(P)	1976.35	768.23	1253.74
COV(E,P)	54.84	658.09	446.50
R(E,P)	0.126	0.612	0.487
** N	18396.	24128.	42524.
E(SXE)	3627.22	1438.57	2305.39
E(S)XE(E)	3482.91	1002.80	1926.44
COV(S,E)	144.32	435.78	458.96
R(S,E)	0.560	0.699	0.678
** N	10890.	12976.	23866.
E(SXP)	1278.80	473.48	840.94
E(S)XE(P)	1273.12	287.87	675.91
COV(S,P)	5.68	185.63	165.04
R(S,P)	0.020	0.428	0.304

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 27: TT DIESEL

(RECORD COUNT = 78660, OPERATING TIME = 18.88 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	8177.	70483.	78660.
MEAN	69.67	15.81	21.41
MEDIAN	74.44	0.34	0.49
STD DEV	25.78	30.53	34.27
% ACCEL	15.91	7.21	8.10
% CRUISE	63.06	11.59	16.85
% DECEL	16.03	7.39	8.27
% IDLE	5.00	73.82	66.79

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	6980.	66508.	73488.
TOTAL N	7984.	70193.	78177.
MEAN	65.32	11.19	16.33
MEDIAN	83.78	3.19	3.48
STD DEV	34.36	25.48	30.85
% ACCEL	22.08	8.93	10.27
% CRUISE	47.73	78.82	75.65
% DECEL	20.99	8.88	10.12
% MOTOR	9.19	3.37	3.96

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	7984.	70193.	78177.
MEAN	32.95	3.93	6.89
MEDIAN	32.88	0.70	0.78
STD DEV	15.34	7.30	12.21
% ZERO	2.13	70.21	63.26
% ACCEL	36.12	11.39	13.92
% CRUISE	29.32	8.21	10.37
% DECEL	32.40	10.48	12.72
% IDLE	2.15	69.91	62.99

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	7164.	66772.	73936.
E(EXP)	4954.57	704.00	1115.85
E(E)XE(P)	4580.05	147.72	307.55
COV(E,P)	374.57	556.28	808.32
R(E,P)	0.409	0.759	0.788
** N	8177.	70483.	78660.
E(SXE)	2529.18	255.49	491.85
E(S)XE(E)	2307.42	62.63	149.71
COV(S,E)	221.78	192.86	342.15
R(S,E)	0.556	0.862	0.809
** N	7164.	66772.	73936.
E(SXP)	2323.07	152.49	362.80
E(S)XE(P)	2192.53	37.19	102.90
COV(S,P)	130.56	115.30	259.91
R(S,P)	0.242	0.665	0.696

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 34: TT DIESEL

(RECORD COUNT = 56583, OPERATING TIME = 13.58 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	5390.	51193.	56583.
MEAN	36.38	12.20	14.50
MEDIAN	39.77	0.87	1.28
STD DEV	21.01	17.17	18.96
% ACCEL	6.16	6.61	6.57
% CRUISE	72.95	31.16	35.15
% DECEL	6.70	6.66	6.66
% IDLE	14.18	55.56	51.62

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	4301.	43040.	47341.
TOTAL N	5387.	51151.	56538.
MEAN	57.42	24.06	27.09
MEDIAN	67.04	15.68	16.99
STD DEV	33.48	27.65	29.82
% ACCEL	24.11	21.85	22.07
% CRUISE	37.74	45.89	45.11
% DECEL	22.72	20.89	21.07
% MOTOR	15.43	11.37	11.75

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	5387.	51151.	56538.
MEAN	25.31	7.17	8.90
MEDIAN	28.08	2.27	2.82
STD DEV	13.74	9.52	11.33
% ZERO	8.78	43.52	40.21
% ACCEL	19.55	18.64	18.72
% CRUISE	55.08	25.70	28.50
% DECEL	16.61	13.35	13.66
% IDLE	8.76	42.31	39.12

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	4303.	43075.	47378.
E(EXP)	2626.82	579.89	765.79
E(E)XE(P)	2146.64	256.93	354.99
COV(E,P)	480.29	322.97	410.82
R(E,P)	0.654	0.696	0.728
** N	5390.	51193.	56583.
E(SXE)	1159.29	213.37	308.00
E(S)XE(E)	918.35	86.93	128.36
COV(S,E)	240.99	131.44	179.64
R(S,E)	0.823	0.800	0.832
** N	4303.	43075.	47378.
E(SXP)	1728.00	312.84	441.37
E(S)XE(P)	1467.32	149.35	215.75
COV(S,P)	260.75	163.50	225.62
R(S,P)	0.538	0.635	0.667

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 42: TT DIESEL

(RECORD COUNT = 60539, OPERATING TIME = 14.53 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	23055.	37484.	60539.
MEAN	57.28	32.56	41.98
MEDIAN	69.20	3.42	42.80
STD DEV	38.99	38.14	40.30
% ACCEL	23.70	16.74	19.40
% CRUISE	29.59	17.84	22.34
% DECEL	23.57	16.58	19.26
% IDLE	23.14	48.83	39.01

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	10448.	20295.	30743.
TOTAL N	22964.	37103.	60067.
MEAN	5.08	4.16	4.47
MEDIAN	3.73	3.21	3.37
STD DEV	10.77	11.43	11.22
% ACCEL	10.07	9.82	9.91
% CRUISE	30.35	39.68	36.11
% DECEL	10.40	10.46	10.44
% MOTOR	49.18	40.04	43.53

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	22964.	37103.	60067.
MEAN	23.28	9.03	14.48
MEDIAN	25.01	4.13	10.32
STD DEV	17.47	10.69	15.33
% ZERO	17.03	40.31	31.41
% ACCEL	14.23	14.63	14.48
% CRUISE	54.92	30.59	39.89
% DECEL	13.77	12.78	13.16
% IDLE	17.09	42.00	32.47

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	10519.	20632.	31151.
E(EXP)	302.58	70.99	149.20
E(E)XE(P)	228.39	58.79	109.80
COV(E,P)	74.19	12.21	39.31
R(E,P)	0.163	0.035	0.093
** N	23055.	37484.	60539.
E(SXE)	1855.92	622.54	1092.25
E(S)XE(E)	1331.12	291.96	604.49
COV(S,E)	524.82	330.59	487.77
R(S,E)	0.767	0.810	0.788
** N	10519.	20632.	31151.
E(SXP)	131.73	24.50	60.71
E(S)XE(P)	95.48	17.32	40.78
COV(S,P)	36.25	7.19	19.93
R(S,P)	0.177	0.071	0.119

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS , CR NY TRUCK 53: TT DIESEL

(RECORD COUNT = 47740, OPERATING TIME = 11.45 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	7198.	40542.	47740.
MEAN	64.55	25.56	31.44
MEDIAN	70.44	0.75	2.14
STD DEV	27.17	34.21	36.06
% ACCEL	14.87	10.55	11.20
% CRUISE	62.93	21.81	27.97
% DECEL	15.58	10.27	11.07
% IDLE	6.62	57.37	49.76

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	4719.	33857.	38576.
TOTAL N	7129.	40435.	47564.
MEAN	59.07	16.87	22.03
MEDIAN	70.21	3.75	4.17
STD DEV	34.07	28.90	32.06
% ACCEL	14.01	11.71	12.05
% CRUISE	42.28	64.51	61.18
% DECEL	13.80	11.24	11.62
% MOTOR	29.91	12.55	15.15

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	7129.	40435.	47564.
MEAN	31.69	8.95	12.36
MEDIAN	32.38	0.91	4.52
STD DEV	14.90	11.73	14.70
% ZERO	3.83	54.66	47.04
% ACCEL	31.20	17.08	19.19
% CRUISE	38.31	13.93	17.58
% DECEL	26.74	14.53	16.36
% IDLE	3.76	54.46	46.86

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	4771.	33932.	38703.
E(EXP)	4464.00	1087.49	1503.71
E(E)XE(P)	3850.82	341.21	568.78
COV(E,P)	613.30	746.30	934.93
R(E,P)	0.627	0.787	0.805
** N	7198.	40542.	47740.
E(SXE)	2333.85	584.63	848.37
E(S)XE(E)	2051.15	229.09	389.85
COV(S,E)	282.74	355.55	458.53
R(S,E)	0.695	0.884	0.862
** N	4771.	33932.	38703.
E(SXP)	2079.93	346.04	559.77
E(S)XE(P)	1839.31	113.59	215.00
COV(S,P)	240.68	232.45	344.78
R(S,P)	0.458	0.745	0.754

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 55: TT DIESEL

(RECORD COUNT = 95754, OPERATING TIME = 22.98 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	26774.	68980.	95754.
MEAN	56.88	26.19	34.77
MEDIAN	71.23	0.68	4.25
STD DEV	36.81	35.83	38.64
% ACCEL	13.73	9.00	10.32
% CRUISE	48.33	22.17	29.48
% DECEL	14.15	9.29	10.65
% IDLE	23.80	59.54	49.55

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	16086.	48946.	65032.
TOTAL N	26677.	68779.	95456.
MEAN	36.12	10.10	16.54
MEDIAN	28.38	3.17	3.63
STD DEV	34.66	23.41	28.90
% ACCEL	11.93	7.83	8.97
% CRUISE	40.22	59.73	54.28
% DECEL	13.57	7.47	9.18
% MOTOR	34.28	24.97	27.57

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	26677.	68779.	95456.
MEAN	31.64	10.00	16.05
MEDIAN	36.65	0.94	4.89
STD DEV	21.95	14.55	19.53
% ZERO	19.34	52.58	43.29
% ACCEL	24.01	13.99	16.79
% CRUISE	32.54	20.01	23.51
% DECEL	24.79	14.50	17.37
% IDLE	18.66	51.50	42.33

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	16145.	49065.	65210.
E(EXP)	2962.37	708.51	1266.52
E(E)XE(P)	1830.70	133.32	371.92
COV(E,P)	1131.74	575.20	894.62
R(E,P)	0.775	0.825	0.836
** N	26774.	68980.	95754.
E(SXE)	2523.10	697.92	1208.27
E(S)XE(E)	1804.35	262.68	559.59
COV(S,E)	718.78	435.25	648.69
R(S,E)	0.887	0.834	0.858
** N	16145.	49065.	65210.
E(SXP)	1666.63	280.95	624.02
E(S)XE(P)	1038.22	56.48	187.44
COV(S,P)	628.45	224.48	436.59
R(S,P)	0.738	0.765	0.787

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 56: TT DIESEL

(RECORD COUNT = 110117, OPERATING TIME = 26.43 HRS)

---------- FPM ----------

	FREEWAY	NON-FREEWAY	COMBINED
N	4940.	105177.	110117.
MEAN	47.38	14.52	15.99
MEDIAN	50.34	0.67	0.74
STD DEV	19.00	19.65	20.76
% ACCEL	4.14	6.30	6.20
% CRUISE	86.57	28.44	31.06
% DECEL	3.79	5.76	5.67
% IDLE	5.50	59.50	57.07

---------- POWER ----------

	FREEWAY	NON-FREEWAY	COMBINED
* N	4140.	88562.	92702.
TOTAL N	4930.	104775.	109705.
MEAN	57.53	20.42	22.08
MEDIAN	61.40	4.05	4.22
STD DEV	31.86	31.02	31.99
% ACCEL	11.44	9.27	9.37
% CRUISE	62.62	67.36	67.15
% DECEL	12.39	10.60	10.68
% MOTOR	13.55	12.76	12.80

---------- SPEED ----------

	FREEWAY	NON-FREEWAY	COMBINED
N	4930.	104775.	109705.
MEAN	36.99	12.15	13.27
MEDIAN	37.70	3.11	4.11
STD DEV	15.39	14.75	15.65
% ZERO	1.26	43.24	41.36
% ACCEL	14.02	18.33	18.13
% CRUISE	72.47	23.54	25.73
% DECEL	12.27	14.37	14.27
% IDLE	1.24	43.77	41.86

----- INTERACTION STATISTICS -----

	FREEWAY	NON-FREEWAY	COMBINED
** N	4147.	88873.	93020.
E(EXP)	2931.68	752.58	849.75
E(E)XE(P)	2781.04	273.17	329.69
COV(E,P)	150.67	479.41	520.04
R(E,P)	0.251	0.781	0.773
** N	4940.	105177.	110117.
E(SXE)	1908.67	413.49	480.57
E(S)XE(E)	1754.36	176.08	211.83
COV(S,E)	154.34	237.41	268.74
R(S,E)	0.533	0.816	0.824
** N	4147.	88873.	93020.
E(SXP)	2405.04	493.01	578.25
E(S)XE(P)	2192.74	201.93	246.05
COV(S,P)	212.35	291.08	332.20
R(S,P)	0.448	0.660	0.675

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 60: TT DIESEL

(RECORD COUNT = 55157, OPERATING TIME = 13.24 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	12052.	43105.	55157.
MEAN	41.50	18.07	23.19
MEDIAN	46.83	0.77	6.26
STD DEV	24.38	25.02	26.70
% ACCEL	9.74	7.34	7.87
% CRUISE	63.41	27.31	35.21
% DECEL	10.45	7.90	8.46
% IDLE	16.40	57.45	48.47

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	9647.	39021.	48668.
TOTAL N	12051.	43046.	55097.
MEAN	34.89	14.52	18.56
MEDIAN	29.81	4.89	8.02
STD DEV	29.82	21.40	24.68
% ACCEL	20.76	17.11	17.91
% CRUISE	41.90	58.45	54.83
% DECEL	21.77	18.13	18.93
% MOTOR	15.57	6.31	8.34

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	12051.	43046.	55097.
MEAN	25.88	8.92	12.63
MEDIAN	25.33	5.57	6.60
STD DEV	16.67	10.21	13.83
% ZERO	4.20	17.71	14.76
% ACCEL	25.13	20.12	21.21
% CRUISE	47.27	43.71	44.49
% DECEL	21.87	16.76	17.88
% IDLE	5.73	19.41	16.42

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	9648.	39080.	48728.
E(EXP)	1900.98	567.78	831.74
E(E)XE(P)	1411.95	225.73	379.99
COV(E,P)	489.09	342.07	451.76
R(E,P)	0.629	0.657	0.688
** N	12052.	43105.	55157.
E(SXE)	1387.90	369.45	591.98
E(S)XE(E)	1073.43	161.14	292.66
COV(S,E)	314.50	208.32	299.33
R(S,E)	0.770	0.811	0.807
** N	9648.	39080.	48728.
E(SXP)	1144.40	235.80	415.69
E(S)XE(P)	892.59	117.09	214.00
COV(S,P)	251.83	118.70	201.70
R(S,P)	0.481	0.557	0.594

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 65: TT DIESEL

(RECORD COUNT = 39947, OPERATING TIME = 9.59 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	29639.	10308.	39947.
MEAN	78.39	39.08	68.24
MEDIAN	89.24	37.59	82.56
STD DEV	29.77	35.38	35.72
% ACCEL	4.29	13.56	6.68
% CRUISE	83.66	42.13	72.94
% DECEL	4.28	12.79	6.48
% IDLE	7.77	31.52	13.90

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	28359.	9290.	37649.
TOTAL N	29609.	10297.	39906.
MEAN	70.68	29.59	60.54
MEDIAN	85.87	21.67	72.50
STD DEV	31.51	31.04	36.05
% ACCEL	21.94	24.20	22.52
% CRUISE	52.82	46.65	51.23
% DECEL	22.78	24.95	23.34
% MOTOR	2.47	4.20	2.91

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	29609.	10297.	39906.
MEAN	37.80	11.63	31.05
MEDIAN	43.72	10.27	36.90
STD DEV	14.94	10.15	17.98
% ZERO	6.56	26.73	11.76
% ACCEL	29.14	25.19	28.12
% CRUISE	39.70	27.46	36.55
% DECEL	24.96	22.02	24.20
% IDLE	6.20	25.33	11.13

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	28386.	9301.	37687.
	E(EXP)	6266.02	1727.12	5145.83
	E(E)XE(P)	5562.07	1068.21	4127.67
	COV(E,P)	703.97	658.99	1018.18
	R(E,P)	0.743	0.601	0.775
**	N	29639.	10308.	39947.
	E(SXE)	3364.78	730.61	2685.05
	E(S)XE(E)	2963.59	454.23	2119.02
	COV(S,E)	401.20	276.40	566.04
	R(S,E)	0.899	0.767	0.873
**	N	28386.	9301.	37687.
	E(SXP)	3034.22	499.49	2408.66
	E(S)XE(P)	2690.77	326.82	1900.93
	COV(S,P)	343.46	172.70	507.74
	R(S,P)	0.726	0.544	0.774

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 90: BUSES

(RECORD COUNT = 62267, OPERATING TIME = 14.94 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	4064.	58203.	62267.
MEAN	62.44	35.30	37.07
MEDIAN	64.81	42.00	44.01
STD DEV	19.74	27.44	27.82
% ACCEL	8.93	13.00	12.74
% CRUISE	78.93	49.22	51.16
% DECEL	7.41	9.15	9.04
% IDLE	4.73	28.63	27.07

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	3207.	38729.	41936.
TOTAL N	4020.	57595.	61615.
MEAN	72.32	39.16	41.70
MEDIAN	88.44	24.08	30.28
STD DEV	33.53	41.27	41.67
% ACCEL	18.93	14.65	14.92
% CRUISE	45.97	42.14	42.39
% DECEL	19.85	15.60	15.87
% MOTOR	15.25	27.62	26.82

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	4020.	57595.	61615.
MEAN	47.29	20.09	21.87
MEDIAN	51.63	21.67	23.17
STD DEV	13.74	13.82	15.36
% ZERO	2.64	16.21	15.33
% ACCEL	27.11	34.21	33.75
% CRUISE	52.56	25.37	27.14
% DECEL	17.81	24.37	23.94
% IDLE	2.51	16.05	15.17

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	3215.	38810.	42025.
E(EXP)	4830.46	2118.25	2325.73
E(E)XE(P)	4539.98	1221.97	1401.84
COV(E,P)	290.57	896.30	923.91
R(E,P)	0.425	0.740	0.740
** N	4064.	58203.	62267.
E(SXE)	3178.57	1019.08	1160.02
E(S)XE(E)	2956.56	713.35	814.79
COV(S,E)	222.07	305.73	345.24
R(S,E)	0.812	0.802	0.804
** N	3215.	38810.	42025.
E(SXP)	3540.47	931.85	1131.41
E(S)XE(P)	3398.39	644.58	783.73
COV(S,P)	142.13	287.27	347.68
R(S,P)	0.298	0.499	0.516

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 91: BUSES

(RECORD COUNT = 101382, OPERATING TIME = 24.33 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	101382.	101382.
MEAN		31.10	31.10
MEDIAN		28.14	28.14
STD DEV		30.06	30.06
% ACCEL		14.66	14.66
% CRUISE		34.97	34.97
% DECEL		13.25	13.25
% IDLE		37.12	37.12

POWER

		FREEWAY	NON-FREEWAY	COMBINED
*	N	0.	69823.	69823.
	TOTAL N	0.	101328.	101328.
	MEAN		29.73	29.73
	MEDIAN		11.26	11.26
	STD DEV		32.60	32.60
	% ACCEL		14.11	14.11
	% CRUISE		49.27	49.27
	% DECEL		9.17	9.17
	% MOTOR		27.45	27.45

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	101328.	101328.
MEAN		13.55	13.55
MEDIAN		13.00	13.00
STD DEV		12.00	12.00
% ZERO		23.11	23.11
% ACCEL		31.42	31.42
% CRUISE		18.35	18.35
% DECEL		25.08	25.08
% IDLE		25.14	25.14

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	0.	69861.	69861.
	E(EXP)		1815.68	1815.68
	E(E)XE(P)		902.82	902.82
	COV(E,P)		912.88	912.88
	R(E,P)		0.868	0.868
**	N	0.	101382.	101382.
	E(SXE)		699.27	699.27
	E(S)XE(E)		420.57	420.57
	COV(S,E)		278.71	278.71
	R(S,E)		0.771	0.771
**	N	0.	69861.	69861.
	E(SXP)		571.06	571.06
	E(S)XE(P)		304.15	304.15
	COV(S,P)		266.92	266.92
	R(S,P)		0.704	0.704

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR LA TRUCK 94: BUSES

(RECORD COUNT = 132561, OPERATING TIME = 31.81 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	37547.	95014.	132561.
MEAN	57.26	37.85	43.35
MEDIAN	60.15	39.44	48.69
STD DEV	21.51	32.22	30.85
% ACCEL	7.00	19.66	16.07
% CRUISE	81.45	34.82	48.04
% DECEL	6.58	17.07	14.10
% IDLE	4.97	28.45	21.79

POWER

		FREEWAY	NON-FREEWAY	COMBINED
*	N	24513.	58263.	82776.
	TOTAL N	37535.	94922.	132457.
	MEAN	65.49	38.50	46.49
	MEDIAN	74.80	20.07	43.36
	STD DEV	35.34	41.64	41.74
	% ACCEL	13.02	14.24	13.89
	% CRUISE	40.19	38.73	39.14
	% DECEL	16.76	14.53	15.16
	% MOTOR	30.03	32.50	31.80

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	37535.	94922.	132457.
MEAN	43.85	16.28	24.09
MEDIAN	48.77	14.28	21.71
STD DEV	15.27	13.69	18.83
% ZERO	1.80	17.39	12.97
% ACCEL	18.70	29.95	26.79
% CRUISE	64.78	28.38	38.70
% DECEL	14.45	22.93	20.52
% IDLE	2.07	18.71	13.99

INTERACTION STATISTICS

		FREEWAY	NON-FREEWAY	COMBINED
**	N	24523.	58318.	82841.
	E(EXP)	3999.25	2001.40	2592.82
	E(E)XE(P)	3793.91	1121.38	1750.49
	COV(E,P)	205.35	880.03	842.33
	R(E,P)	0.258	0.656	0.622
**	N	37547.	95014.	132561.
	E(SXE)	2722.00	931.35	1438.54
	E(S)XE(E)	2512.02	615.84	1044.02
	COV(S,E)	209.99	315.52	394.52
	R(S,E)	0.632	0.714	0.676
**	N	24523.	58318.	82841.
	E(SXP)	3013.56	847.54	1488.74
	E(S)XE(P)	2873.31	496.24	1025.61
	COV(S,P)	140.25	351.31	463.14
	R(S,P)	0.244	0.592	0.541

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 80: BUSES

(RECORD COUNT = 115753, OPERATING TIME = 27.78 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	115753.	115753.
MEAN		29.06	29.06
MEDIAN		-0.09	-0.09
STD DEV		36.48	36.48
% ACCEL		15.79	15.79
% CRUISE		18.06	18.06
% DECEL		14.77	14.77
% IDLE		51.38	51.38

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	0.	85553.	85553.
TOTAL N	0.	115236.	115236.
MEAN		18.85	18.85
MEDIAN		4.05	4.05
STD DEV		27.33	27.33
% ACCEL		13.27	13.27
% CRUISE		53.16	53.16
% DECEL		14.78	14.78
% MOTOR		18.80	18.80

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	115236.	115236.
MEAN		5.03	5.03
MEDIAN		3.30	3.30
STD DEV		5.44	5.44
% ZERO		34.95	34.95
% ACCEL		23.27	23.27
% CRUISE		18.40	18.40
% DECEL		20.10	20.10
% IDLE		38.23	38.23

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	0.	85795.	85795.
E(EXP)		1319.19	1319.19
E(E)XE(P)		513.75	513.75
COV(E,P)		805.44	805.44
R(E,P)		0.766	0.766
** N	0.	115753.	115753.
E(SXE)		265.11	265.11
E(S)XE(E)		146.26	146.26
COV(S,E)		118.86	118.86
R(S,E)		0.596	0.596
** N	0.	85795.	85795.
E(SXP)		125.12	125.12
E(S)XE(P)		69.42	69.42
COV(S,P)		55.70	55.70
R(S,P)		0.414	0.414

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 81: BUSES

(RECORD COUNT = 220924, OPERATING TIME = 53.02 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	43.	220881.	220924.
MEAN	44.60	28.95	28.95
MEDIAN	55.00	6.73	6.74
STD DEV	37.55	32.59	32.59
% ACCEL	20.93	13.13	13.13
% CRUISE	37.21	26.50	26.50
% DECEL	11.63	13.58	13.58
% IDLE	30.23	46.79	46.79

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	34.	170486.	170520.
TOTAL N	43.	220776.	220819.
MEAN	65.88	30.26	30.26
MEDIAN	89.55	4.38	4.38
STD DEV	42.93	39.72	39.73
% ACCEL	18.60	16.46	16.46
% CRUISE	60.47	52.07	52.08
% DECEL	11.63	16.52	16.52
% MOTOR	9.30	14.94	14.94

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	43.	220776.	220819.
MEAN	12.70	10.34	10.34
MEDIAN	14.75	9.19	9.19
STD DEV	8.90	9.81	9.81
% ZERO	18.60	28.17	28.17
% ACCEL	37.21	26.01	26.01
% CRUISE	34.88	23.45	23.45
% DECEL	9.30	21.47	21.46
% IDLE	18.60	29.07	29.07

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	34.	170522.	170556.
E(EXP)	4851.76	1974.56	1975.14
E(E)XE(P)	3441.38	820.76	821.10
COV(E,P)	1453.12	1153.81	1154.05
R(E,P)	0.902	0.840	0.840
** N	43.	220881.	220924.
E(SXE)	733.49	505.48	505.52
E(S)XE(E)	564.01	297.60	297.65
COV(S,E)	173.51	207.88	207.88
R(S,E)	0.523	0.651	0.651
** N	34.	170522.	170556.
E(SXP)	1006.47	431.94	432.06
E(S)XE(P)	802.21	245.77	245.85
COV(S,P)	210.45	186.17	186.20
R(S,P)	0.526	0.513	0.513

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 82: BUSES

(RECORD COUNT = 162415, OPERATING TIME = 38.98 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	3315.	159100.	162415.
MEAN	62.32	23.66	24.45
MEDIAN	70.80	0.93	0.96
STD DEV	31.53	29.75	30.29
% ACCEL	7.56	12.70	12.59
% CRUISE	70.90	22.09	23.08
% DECEL	8.87	14.71	14.59
% IDLE	12.68	50.50	49.73

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	1888.	118470.	120358.
TOTAL N	3282.	158574.	161656.
MEAN	19.15	7.34	7.52
MEDIAN	18.91	3.64	3.68
STD DEV	16.95	11.95	12.13
% ACCEL	12.07	10.29	10.33
% CRUISE	37.45	60.66	60.19
% DECEL	11.55	9.00	9.05
% MOTOR	38.94	20.04	20.43

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	3282.	158574.	161856.
MEAN	30.19	9.04	9.47
MEDIAN	33.96	4.38	4.74
STD DEV	13.34	10.72	11.18
% ZERO	1.37	33.35	32.71
% ACCEL	37.51	26.63	26.85
% CRUISE	30.26	12.89	13.24
% DECEL	29.56	23.36	23.48
% IDLE	2.68	37.12	36.42

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	1906.	118684.	120590.
E(EXP)	1356.37	421.96	436.73
E(E)XE(P)	1065.78	142.27	150.20
COV(E,P)	290.75	279.69	286.53
R(E,P)	0.514	0.769	0.766
** N	3315.	159100.	162415.
E(SXE)	2252.72	443.56	480.49
E(S)XE(E)	1884.04	214.86	232.58
COV(S,E)	368.78	228.71	247.91
R(S,E)	0.877	0.715	0.729
** N	1906.	118684.	120590.
E(SXP)	632.39	100.92	109.32
E(S)XE(P)	512.20	45.32	48.91
COV(S,P)	120.26	55.60	60.41
R(S,P)	0.494	0.506	0.516

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY
** EXCLUDES MOTORING COLUMN FREQUENCY

SUMMARY STATISTICS FOR NY TRUCK 83: BUSES

(RECORD COUNT = 46836, OPERATING TIME = 11.24 HRS)

RPM

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	46836.	46836.
MEAN		16.91	16.91
MEDIAN		-0.30	-0.30
STD DEV		24.19	24.19
% ACCEL		13.13	13.13
% CRUISE		17.92	17.92
% DECEL		11.98	11.98
% IDLE		56.96	56.96

POWER

	FREEWAY	NON-FREEWAY	COMBINED
* N	0.	35603.	35603.
TOTAL N	0.	46815.	46815.
MEAN		24.54	24.54
MEDIAN		3.97	3.97
STD DEV		34.24	34.24
% ACCEL		13.46	13.46
% CRUISE		57.07	57.07
% DECEL		11.50	11.50
% MOTOR		17.97	17.97

SPEED

	FREEWAY	NON-FREEWAY	COMBINED
N	0.	46815.	46815.
MEAN		6.71	6.71
MEDIAN		2.94	2.94
STD DEV		8.16	8.16
% ZERO		40.82	40.82
% ACCEL		25.18	25.18
% CRUISE		12.44	12.44
% DECEL		23.80	23.80
% IDLE		38.58	38.58

INTERACTION STATISTICS

	FREEWAY	NON-FREEWAY	COMBINED
** N	0.	35615.	35615.
E(EXP)		1179.74	1179.74
E(E)XE(P)		421.53	421.53
COV(E,P)		758.22	758.22
R(E,P)		0.859	0.859
** N	0.	46836.	46836.
E(SXE)		220.44	220.44
E(S)XE(E)		113.17	113.17
COV(S,E)		107.27	107.27
R(S,E)		0.542	0.542
** N	0.	35615.	35615.
E(SXP)		271.52	271.52
E(S)XE(P)		115.10	115.10
COV(S,P)		156.43	156.43
R(S,P)		0.634	0.634

* FREQUENCY USED TO COMPUTE POWER MEAN, MEDIAN, AND STD DEV; EXCLUDES MOTORING FREQUENCY

** EXCLUDES MOTORING COLUMN FREQUENCY

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(Please read Instructions on the reverse before completing)

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15. SUPPLEMENTARY NOTES

16. ABSTRACT

This report presents a summary and documentation of the work performed under EPA Contract No. 68-03-0411, entitled "Heavy-Duty Vehicle Cycle Development." Program objectives were successfully met with the development of computer software to edit the CAPE-21 heavy-duty vehicle raw-data base, to process the data base into matrix formats suitable for the Monte Carlo generation of representative engine-dynamometer and chassis-dynamometer test cycles, and to generate and analyze cycles. At least 3 candidate cycles were selected for submission to EPA for each of 16 vehicle categories.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group

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