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GENERAL PLANNING CONSULTANT
TECHNICAL MEMORANDUM 3.1.3
ANALYSIS OF AND RECOMMENDATIONS
FOR EXOGENOUS VARIABLE FORECASTING TECHNIQUES

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1. INTRODUCTION

The primary purpose of this technical memorandum is to document the findings of a statistical analysis of currently available exogenous variable data and to recommend alternative forecasting techniques which may improve exogenous variable projections.

Exogenous variable data are key inputs to the mode choice models, and therefore, the validity of the forecasting techniques is important to the effectiveness of the mode choice model. In fact, the results of the current work on the Mode Choice Model Evaluation under Work Area 2 will further consider the implications of these forecasts.

The major part of this memorandum discusses the procedures used and final results of an intensive statistical analysis using the SPSSx Batch System--a comprehensive software tool for managing, analyzing, and displaying data.

The final part of this memorandum discusses problems with some of the currently used forecasting techniques and presents recommendations for improved techniques.

2. A GENERIC DESCRIPTION OF THE STATISTICAL ANALYSIS OF EXOGENOUS VARIABLES

2.1 DATA BASE

Exogenous variable data, as summarized in Table 2-1, consist of trip-end or zonal variables used in the regional mode choice models which include:

1.) Highway terminal time, which represents the auto users walk time from parking location to final destination,

2.) Parking and automobile operating costs, which reflect the private auto users out-of-pocket costs related to a particular trip,

3.) Multivariable market segmentation variables used in the CSI models.

The two-dimensional travel market classification, defined by auto ownership and walk accessibility is illustrated in Table 2-2.

All data items were collected from SCAG files and compiled into one SPSSx program compatible file used in this analysis, which includes both existing 1980 and projected year 2000 data.

2.2 TYPES OF STATISTICAL ANALYSES

Four basic types of tests were performed on the exogenous variable data: frequency counts and percentages; Pearson correlation; the t-test; and scatterplot diagrams.

2.2.1 Frequency Counts and Percentages

Frequencies, histograms and numerous statistics such as mean, median, standard deviations, etc., were produced for all variables within the SCAG region. A summary of these statistics for key variables is found in Appendix A.

2.2.2 Pearson Correlation and the t-Test

The correlation coefficient provides an indicator of the nature of the relationship between 1980 and year 2000 values. If forecast values for all zones for year 2000 are obtained by a simple factoring of 1980 values, applying the same factor to all zones, 1980 and year 2000 values will lie on a straight line, the slope of which defines the value of the factor. Thus, a correlation of 1.0, or very close to 1.0, is indicative of uniformity across all zones of a simple factoring. Conversely, a correlation of 0.0, or close to it, would indicate that forecasts to year 2000 by zone are completely unrelated to 1980 values.

Given that zones in the region exhibit a wide range of characteristics in 1980, and different potentials for growth or change to the year 2000, it would not be expected generally that a simple factoring of 1980 values would be an appropriate basis for forecasting. On the other hand, it would be expected that the year 2000 values in many zones would be related to 1980 values, particularly in zones that are extensively developed in 1980 and can be expected to retain fairly stable characteristics over the period. With some differences among

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individual variables, prior expectations would be to find significant correlations between 1980 and year 2000 values, but correlations that are generally significantly below 1.0.

While the correlation coefficient measures the uniformity or lack of uniformity between zonal values for 1980 and year 2000, it does not indicate differences in magnitude of changes between 1980 and year 2000. If year 2000 values are identical to 1980 (factor = 1.0), or are ten times the size (factor = 10.0),or are one-tenth the size (factor = 0.1), the correlation would be 1.0. To distinguish between these different situations, the second statistic used is a t-test between the mean zonal values for 1980 and the year 2000. In this test, the hypothesis is that the mean values for 1980 and the year 2000 are the same. If a value of the t statistic is obtained that is larger than ±1.96, we have 95% confidence or more that the means are truly different. The sign of the t statistic (if the test is performed consistently as the difference between year 2000 and 1980) indicates if the zonal mean has increased (positive t) or decreased (negative t).

In summary, four situations can be described that show the potential range of findings from these two tests:

1. Correlation = 1.0, and -2>t>2: Forecasts have been obtained by factoring 1980 zone values uniformly across the region, and the factor is significantly different from 1, i.e., the year 2000 values are significantly larger (if t is negative) or significatly smaller (if t is positive) than 1980 values.

2. Correlation = 1.0, and -2<t<2: There is no change between 1980 and year 2000 values across all zones.

3. Correlation = 0.0, and -2>t>2: Forecast zone values in year 2000 have been generated by applying markedly different factors to almost every zone, and year 2000 values are significantly different from 1980 values.

4. Correlation = 0.0, and -2<t<2: Forecast zone values in year 2000 are unrelated to 1980 values and have been generated in a totally random fashion. Magnitude and number of zone value increases matches magnitude and number of zone value decreases.

2.2.3 Scatterplot Diagrams

To illustrate further the comparison of variable values, SPSS was used to generate scatter plots for each of the key variables of 1980 zone values against year 2000 zone values. These plots further illustrate the implications of the Pearson correlation coefficient and the t-test on means. For example, a higher Pearson coefficient for a given variable translates to a tighter grouping of points on the scatterplot in a linear fashion, since a uniform factor was applied to 1980 values. On the other hand, a lower Pearson coefficient translates to a greater dispersion of points throughout the plot since no uniform factor was applied to 1980.

TABLE 2-1

EXOGENOUS VARIABLE DATA FILE FORMAT

Data Item Description	Units	SPSS Name
Zone Number		ZONE
Highway Terminal Time	Min*100	HWYTERTB
Parking Cost (Daily)	Cents	PRKSCTWB
CBD Indicator (0=No, 1=Yes)		CBDINDB
Percent Walk in Zone	%	PCTWALKB
County Code (1-5)		COUNTYB
Proportion of Person Trips, Market Segment 1		PROWK1B
Autos Owned Per Household, Segment 1		AUTOWK1B
Licensed Drivers Per Household, Segment 1		LDRVWK1B
Workers Per Household, Segment 1		WORKER1B
Income Per Household, Segment 1		INCMWK1B
Proportion of Person Trips, Segment 2		PROWK2B
Autos Owned Per Household, Segment 2		AUTOWK2B
Licensed Drivers Per Household, Segment 2		LDRVWK2B
Workers Per Household, Segment 2		WORKER2B
Income Per Household, Segment 2		INCMWK2B
Proportion of Person Trips, Segment 3		PROWK3B
Autos Owned Per Household, Segment 3		AUTOWK3B
Licensed Drivers Per Household, Segment 3		LDRVWK3B
Workers Per Household, Segment 3		WORKER3B
Income Per Household, Segment 3		INCMWK3B
Proportion of Person Trips, Segment 4		PROWK4B
Autos Owned Per Household, Segment 4		AUTOWK4B
Licensed Drivers Per Household, Segment 4		LDRVWK4B
Workers Per Household, Segment 4		WORKER4B
Income Per Household, Segment 4		INCMWK4B
Autos Owned Per Household, All Segments		AUTOTOTB
.Licensed Drivers Per Household, All Segments		LDRVTOTB
Workers Per Household, All Segments		WORKERTB
Income Per Household, All Segments		INCMTOTB

(Above items are for the Year 1980)

Highway Terminal Time	Min*100	HWYTERTF
Parking Cost (Daily)	Cents	PRKSCTWF
CBD Indicator (0=No, 1=Yes)		CBDINDF
Percent Walk in Zone	%	PCTWALKF
County Code (1-5)		COUNTYF
Proportion of Person Trips, Market Segment 1		PROWK1F
Autos Owned Per Household, Segment 1		AUTOWK1F
Licensed Drivers Per Household, Segment 1		LDRVWK1F
Workers Per Household, Segment 1		WORKER1F
Income Per Household, Segment 1		INCMWK1F
Proportion of Person Trips, Segment 2		PROWK2F
Autos Owned Per Household, Segment 2		AUTOWK2F

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Licensed Drivers Per Household, Segment 2	LDRVWK2F
Workers Per Household, Segment 2	WORKER2F
Income Per Household, Segment 2	INCMWK2F
Proportion of Person Trips, Segment 3	PROWK3F
Autos Owned Per Household, Segment 3	AUTOWK3F
Licensed Drivers Per Household, Segment 3	LDRVWK3F
Workers Per Household, Segment 3	WORKER3F
Income Per Household, Segment 3	INCMWK3F
Proportion of Person Trips, Segment 4	PROWK4F
Autos Owned Per Household, Segment 4	AUTOWK4F
Licensed Drivers Per Household, Segment 4	LDRVWK4F
Workers Per Household, Segment 4	WORKER4F
Income Per Household, Segment 4	INCMWK4F
Autos Owned Per Household, All Segments	AUTOTOTF
Licensed Drivers Per Household, All Segments	LDRVTOTF
Workers Per Household, All Segments	WORKERTF
Income Per Household, All Segments	INCMTOTF

(Above items are for the Year 2000)

Parking Cost (Hourly)	PRKSCTNB
Proportion of Person Trips, Segment 1	PRONWK1B
Persons Per Household, Segment 1	PPHHNW1B
Proportion of Person Trips, Segment 2	PRONWK2B
Persons Per Household, Segment 2	PPHHNW2B
Proportion of Person Trips, Segment 3	PRONWK3B
Persons Per Household, Segment 3	PPHHNW3B
Proportion of Person Trips, Segment 4	PRONWK4B
Persons Per Household, Segment 4	PPHHNW4B

(Above items are for the Year 1980)

Parking Cost (Hourly)	PRKSCTNF
Proportion of Person Trips, Segment 1	PRONWK1F
Persons Per Household, Segment 1	PPHHNW1F
Proportion of Person Trips, Segment 2	PRONWK2F
Persons Per Household, Segment 2	PPHHNW2F
Proportion of Person Trips, Segment 3	PRONWK3F
Persons Per Household, Segment 3	PPHHNW3F
Proportion of Person Trips, Segment 4	PRONWK4F
Persons Per Household, Segment 4	PPHHNW4F

(Above items are for the Year 2000)

Households in First Quartile (1980)	HHFIQB
Households in Second Quartile (1980)	HHSEQB
Households in Third Quartile (1980)	HHTHQB
Households in Fourth Quartile (1980)	HHFOQB
Total Households (1980)	HHTOTB
Households in First Quartile (2000)	HHFIQF
Households in Second Quartile (2000)	HHSEQF
Households in Third Quartile (2000)	HHTHQF
Households in Fourth Quartile (2000)	HHFOQF
Total Households (2000)	HHTOTF

Area of Zone (Acres)	ACRES
Employment (1980)	EMPLB
Employment (2000)	EMPLF
Population of Zone (1980)	POPB
Population of Zone (2000)	POPF

TABLE 2-2

DEFINITION OF MARKET SEGMENTATION OF HOUSEHOLDS

Market Segment	Autos Owned	Transit Accessibility
1	No	Yes
2	Yes	Yes
3	No	No
4	Yes	No

Since the t statistic indicates the difference in mean values, it detects the shift in values from 1980 to the year 2000. As a result, the location of points above, below, or adjacent to the equivalency line (where 1980 values = year 2000 values) can be defined. For instance, if the t statistic is -10.0, defining a considerable increase in a variable, most points on the scatterplot would be skewed toward the higher year 2000 values. If the t statistic is close to zero, the points would either be adjacent to or equally distributed above and below the equivalency line.

3. STATISTICAL ANALYSIS

The following chapter is a summary of the results of the statistical analysis for key exogenous variables. Four basic statistical tools are used throughout the analysis to evaluate the relationship between 1980 values and the year 2000 values.

1. Frequency counts and percentages (found in Appendix A);

2. Pearson correlation coefficients (found in Appendix B);

3. t-test (found in Appendix C); and,

4. SPSS-generated scatterplot diagrams for 1980 versus year 2000 (found in Appendix D).

All exogenous variables are referenced throughout the above-mentioned Appendices by their abbreviated variable names as outlined in Table 2-1.

A summary of the results of the Pearson correlation and t-test is found in Table 3-1. These indicators, in concert with the scatterplots of key exogenous variables, reveal trends in current forecasting techniques. Each key variable is discussed below in detail.

3.1 TOTAL HOUSEHOLDS, EMPLOYMENT, POPULATION

The following section provides some background information related to the changing demographics in the region for the purpose of subsequent discussions on highway terminal time, parking costs, and market segment variables.

3.1.1 Households
(HHTOTB (1980) and HHTOTF (2000))

The number of households within the SCAG region has increased from 1980 to the year 2000. The mean number of households per zone increased from 3685 in 1980 to 4167 in the year 2000. A Pearson correlation of 0.75 reveals that a uniform factor was probably applied to most zones to project year 2000 values from 1980 households, while a minority of zones were projected with a variety of other factors. The t statistic of -8.8 indicates that this factor increased 1980 values considerably overall.

The scatterplot diagram of households for 1980 versus 2000 illustrates the fluctuation in the number of households from zone to zone by the wide dispersion of points, be it increases or decreases. Therefore, while the zonal distribution of households is changing dramatically, there is still a net increase in the total number of regional households.

TABLE 3-1

COMPARISON OF EXOGENOUS VARIABLES: YEAR 1980 TO YEAR 2000

Variable	Value Type	Pearson Correlation		T-Test Student's "T"		Conclusion
		Value	Effect	Value	Effect	
HHTOT	Value	0.75	Large Difference	-8.8	Increase	Distribution changed, shift in values
EMPL	Value	0.90	Change	-17.4	Increase	Slight change in distribution, shift in values
POP	Value	0.82	Change	-17.4	Increase	Distribution changed, shift in values
HHSIZE	Rate	0.20	Change	1.96	Drop slightly	Distribution changed drastically, no overall shift in values
AUTPER	Rate	0.22	Change	8.04	Drop	Distribution changed drastically, drop in overall values
AUTOTOT	Rate	0.98	Same	≈0.7	Same	Base Values = Future values
LDRVTOT	Rate	0.94	Same	1.98	Drop	Distribution of rates changed slightly, values same
WORKERT	Rate	0.99	Same	-95.10	Big increase	Distribution same, large increase of values
INCMTOT	Rate	0.99	Same	-30.92	Increase	Distribution same, rates increased
HWYTERT	Value	1.00	Same	0	Same	Base Values = Future values
PRKSCTW	Value	0.96	Slight Change	≈10.7	Increase	Distribution same, shift in values
PRKSCTN	Value	0.98	Same	-6.6	Increase	Distribution same, shift in values

Note: All Pearson correlations are significant beyond 99.9%.

3.1.2 Employment
(EMPLB (1980) and EMPLF (2000))

Employment throughout the SCAG region has also increased in the year 2000. The mean number of employees per zone increased from 4117 in 1980 to 5568 in the year 2000. A Pearson correlation of 0.90 reveals that a generally uniform factor was applied to 1980 values to project year 2000 employment. A t statistic of -17.4 indicates this factor considerably increased employment for the year 2000.

The scattergram of 1980 versus the year 2000 employment illustrates that employment in most zones stayed approximately the same, as shown by the tight cluster of points adjacent to the equivalency line. The sprinkling of points below the equivalency line are the few zones which experienced a dramatic increase in employment. Hence, existing employment centers are projected to be growing, while some new employment centers are forecast to appear throughout the region.

3.1.3 Population
(POPB (1980) and POPF (2000))

Population within zones throughout the SCAG region increase considerably -- the mean population per zone in 1980 is 8432 whereas the mean population in the year 2000 is 10,590. A Pearson coefficient of 0.82 indicates that a uniform factor was applied to most zones throughout the region, and the t statistic of -17.4 indicates that many of these changes represent considerable increases.

As illustrated in the scatterplot in Appendix D, the distribution of points indicates the increase in population for many zones throughout the region. Most zones, however, increased only slightly, as indicated by the density of points adjacent to the equivalency line.

3.2 HOUSEHOLD SIZE AND AUTOS PER PERSON
(HHSIZEB (1980) and HHSIZEF (2000))

3.2.1 Household Size

The household size is defined by the number of persons per household. The mean household size decreased from 2.66 in 1980 to 2.46 in the year 2000. The Pearson correlation coefficient of 0.20 reveals that 1980 and year 2000 values are unrelated. A t statistic of 1.96 further indicates that the magnitude and number of increases of household size about matches the magnitude and number of decreases in household size. As illustrated by the wide dispersion of points on the scatterplot of 1980 versus the year 2000, many changes occurred within each zone and the overall regional household size decreased only slightly. Since household size experienced only a minimal decrease, it can be assumed that the supply of housing has been forecast to keep pace with the growth in population for the entire region.

3.2.2 Autos Per Person
(AUTPERB (1980) and AUTPERF (2000))

The number of autos per person per zone decreased considerably from 1980 to the year 2000 as the mean number of autos per person dropped from 1.28 in 1980 to

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0.79 in the year 2000. A Pearson coefficient of 0.22 indicates that 1980 values are unrelated to year 2000 projected values. The t statistic of 8.04 defines a considerable drop in the number of autos per person over the region.

3.3 MARKET SEGMENT VARIABLES

Four market segment variables are used in the CSI models which describe the socio-economic nature of an average household in each zone, segmented by auto ownership and walk accessibility to available transit (refer to Table 2-2). These variables include number of autos owned per household, number of licensed drivers per household, workers per household, and income per household.

3.3.1 Number of Autos Owned Per Household
    (AUTOTOTB (1980) and AUTOTOTF (2000))

The number of autos owned per household for each zone, for all market segments, stayed virtually the same from 1980 to the year 2000. The mean number of autos owned for 1980 is 1.959 and for the year 2000 it is 1.961. In addition, the Pearson coefficient of 0.98 and the t statistic of -0.7 indicate that the number of autos owned remained essentially constant among all zones.

The scatterplot of 1980 versus 2000 values clearly illustrates these unchanged values, since almost all points on the plot are tightly grouped around the equivalency line.

3.3.2 Number of Licensed Drivers Per Household
    (LDRVTOTB (1980) and LDRVTOTF (2000))

The number of licensed drivers per household, for all market segments, also remained constant from 1980 to the year 2000. The mean number of licensed drivers dropped only slightly from 1.91 in 1980 to 1.90 in the year 2000. Likewise, the Pearson coefficient of 0.94 and the t statistic of 1.98 indicate little, if any change between the two years.

The scatterplot for this variable also illustrates the consistency from 1980 to the year 2000 since almost all points fit tightly around the equivalency line.

3.3.3 Workers Per Household
    (WORKERTB (1980) and WORKERTF (2000))

The number of workers per household, for all market segments, increased dramatically from 1980 to the year 2000, as the mean increased from 1.36 in 1980 to 1.48 in the year 2000. This considerable increase is further substantiated by the t statistic of -95.10. However, since the Pearson coefficient is 0.99, all zones experienced the same increase. Hence, the number of workers per household increased by the same rate for all zones within the region.

The scatterplot clearly illustrates the consistency of increases for all zones since almost all points are tightly grouped. In addition, the actual increase is illustrated by the grouping of points which are noticeably shifted toward the higher year 2000 values or below the equivalency line.

3.3.4 Income Per Household
(INCMTOTB (1980) and INCMTOTF (2000))

The income per household, for all market segments, also increased from 1980 to the year 2000, as expected. The mean income increased from 17,162 in 1980 to 18,228 in the year 2000. This increase is also substantiated by a high t statistic of -30.92. Almost all zones experienced an increase, and at the same rate, as indicated by a Pearson coefficient of 0.99. Therefore, it appears almost all zones experienced a straight-line increase from 1980 to the year 2000.

The scattergram also substantiates these findings -- an overall increase in income among all zones is illustrated by the location of points shifted below the equivalency line toward the higher year 2000 values. Since all zones experience generally the same increase, the points on the diagram are tightly grouped in a linear fashion.

The inter-relationship of these four market segment variables is perhaps as important as the analysis of each variable. As discussed above, each household is expected to contain approximately the same number of autos and persons, but is expected to support a greater number of workers. Therefore, additional work trips must be accommodated by carpooling or transit. Further, this observation is also supported by the noted decrease in autos per person for each zone.

3.4 HIGHWAY TERMINAL TIME
(HWYTERTB (1980) and HWYTERTF (2000))

Auto highway terminal time, a variable associated with the attraction end of a trip, is the only out-of-vehicle component of auto travel time and includes auto parking, unparking and walk time to the final destination. It is not uncommon for mode choice models to be quite sensitive to auto terminal time.

• As employment densities increase, convenient parking facilities become less available and are therefore located farther from the employment location. As a result, the time to park, unpark, and walk to the final employment destination increases. Thus, it is expected that as employment densities increase over time, terminal times should increase as well. However, the year 2000 estimates of highway terminal are identical, zone by zone, to the 1980 estimates. The terminal times range from 0 to 5 minutes, and out of the 1325 zones, ninety-one percent are assigned a terminal time of 1 minute. The mean highway terminal time was calculated to be 1.038 minutes for both 1980 and 2000.

3.5 PARKING COSTS

Auto parking cost is one of two components of auto travel cost. The estimation procedure used by LARTS in developing these costs is based upon a "Hierarchial" relationship - or a ranking of parking costs -- as they relate to employment densities, according to historical data and subjective judgment. (All parking costs listed below are expressed in 1967 dollars.)

Parking costs are reflective of several factors -- employment density, congestion, supply, etc. It is assumed that these factors will increase over time, and thus it is expected that existing parking costs will at least remain the same if not increase considerably over time.

3.5.1 Parking Costs - Work, Daily
(PRKSCTWB (1980) and PRKSCTWF (2000))

Parking cost estimates for 1980 ranged from $0.00 to $4.40 per day, with approximately ninety-six percent of the zones having daily parking costs less than $1.00. By the year 2000, parking costs increased, ranging from $0.00 to $8.50, with approximately ninety percent of the zones having a daily parking less than $1.00. The mean parking cost was 11 cents in 1980 and 35 cents in the year 2000, per day.

As shown in Table 3-1 and the scattergram in Appendix D, 1980 parking costs were increased by generally the same factor, as mean parking costs from 1980 to year 2000 increased considerably; therefore, forecasts of parking cost increases were consistent among zones throughout the SCAG region.

3.5.2 Parking Costs - Non-Work, Hourly
(PRKSCTNB (1980) and PRKSCTNF (2000))

Non-work parking cost estimates for 1980 ranged from $0.00 to $2.63, with ninety-eight percent of the zones having a parking cost of less than $1.00. In the year 2000, non-work parking costs increase significantly ranging from $0.00 to $5.10, with approximately ninety-six percent of the zones having parking costs less than $1.00. The mean non-work parking cost was approximately 4 cents in 1980 and 11 cents in the year 2000.

The Pearson coefficient and t statistic also indicate a consistent increase among zones and the scattergram confirms that costs increased consistently in that all points lie below the equivalency line, toward higher year 2000 values.

3.6 VARIABLE INTER-RELATIONSHIPS

•The changes in individual variables which have been detected by this analysis can either validate or invalidate an existing forecasting technique used to project the variables; however, beyond the basic analysis of each variable, it is just as vital to analyze the inter-relationship between some of the exogenous variables. For example, it is not only important to document that parking costs have increased, rather it is just as important to determine if the increases were logically projected to coincide with employment growth. A discussion of this inter-relationship and others is included in the following text.

3.6.1 Inter-Relationship of Household Size , Auto Ownership and Labor Force Participation

As previously discussed, the number of autos per household and workers per household remain generally constant from 1980 to the year 2000 in the market segment data. However, the number of autos per person experienced a considerable drop from 1980 to the year 2000 and household size changed dramatically on an individual zonal level. Yet, if the number of autos and workers per household remain the same, it is expected that the number of autos

per person should also remain the same. This inconsistency in data, therefore, implies that forecasting the market segment variables is done independent of other basic demographic variables.

3.6.2 Inter-Relationship of Parking Costs to Employment and Population Densities
(EMPDENB (1980) and EMPDENF (2000))
(POPDENB (1980) and POPDENF (2000))

Parking costs were plotted against employment densities (employment/acre) and population densities (population/acre) to determine if a relationship between these variables had been properly projected. These scatterplots, for both 1980 and the year 2000, are provided in Appendix E.

As work and non-work parking costs are plotted against employment densities, parking costs do logically increase with higher employment densities, in a non-linear function, for both 1980 and the year 2000 projections. This relationship is reasonable since greater employment densities draw more workers, thereby creating increased demand for parking. The forecasting technique appears therefore to provide a logical relationship, although there currently are no data available to validate the magnitude of the actual parking costs themselves.

As parking costs are plotted against population densities, there appears to be no logical relationship for either work or non-work parking costs, as expected.

3.6.3 Inter-Relationship Between Highway Terminal Time and Employment and Population Densities

Highway terminal times were plotted against employment and population densities for both 1980 and the year 2000. Terminal times were found to be loosely related to employment density, similar to a step function. Clearly the higher terminal times are associated with higher employment densities since parking is scarce and competitive near more dense employment centers, and therefore parking facilities must be located farther from employment destinations. However, since ninety-seven percent of the highway terminal times are 1 or 2 minutes, there is no distinction between criteria used in determining terminal times of one and
•two minutes.

As previously noted, 1980 terminal times are identical, zone for zone, to the year 2000 terminal times, which represents an extremely conservative estimation.

4. RECOMMENDATIONS

4.1 PARKING COSTS

In evaluating trends in parking costs, two main issues are addressed -- the distribution of parking costs and the magnitude of parking costs. Although the forecasting technique now used to project parking costs appears to provide a logical relationship between parking costs and employment densities, there are no data currently available to validate the magnitude of the actual parking costs themselves. However, as a part of the FY 1986 Work Scope for Work Area 2, actual parking costs will be validated by field studies throughout the Los Angeles CBD and an additional activity center, yet to be named.

At the present time, SCAG is also in the process of preparing a more refined forecasting technique, based upon previously developed parking cost model data, interagency discussions about parking supply and demand, private sector parking cost survey data, and CalTrans' proposed factoring methodology. A preliminary regression analysis was performed to define parking costs as a function of employment and retail densities. Hence, it is recommended that this model be evaluated by using the validated parking cost data collected under Work Area 2 of the FY 1986 Work Scope.

4.2 HIGHWAY TERMINAL TIMES

As employment densities increase, convenient parking facilities become less available and are therefore located farther from the employment location. As a result, the time to park, unpark, and walk to the final employment destination increases. Thus, it is expected that as employment densities increase over time, terminal times increase as well. However, since this analysis has shown that terminal times have not increased with employment densities, there is apparently no forecasting technique used to project highway terminal times. It is recommended that SCRTD use the submodel developed for SCAG for use in their trip generation and distribution models, which relates terminal time values to employment densities.

•4.3 SOCIOECONOMIC VARIABLES

As this analysis has demonstrated, it is quite useful to understand the trends in the socioeconomic variables. Therefore, whenever a new set of demographic data is obtained, it may prove useful to repeat this statistical analysis on the new data. Selected recommendations for investigating existing forecasting techniques are discussed below.

4.3.1 Income Projections

As found in this statistical analysis, most zones experienced a straight-line increase in income per household from 1980 to the year 2000. Since the forecasting methodology is indiscriminate of zonal characteristics, this procedure may warrant additional investigation to determine a true relationship in income growth over time.

4.3.2 Market Segment Variables

Although the number of autos per household remains the same from 1980 to the year 2000 and the household size (persons per household) also remains relatively the same, an inconsistency in the data is drawn by a considerable drop in the number of autos per person. To the contrary, a constant household size and auto ownership should reflect little change in the number of autos per person. Therefore, it appears that the forecasting techniques used for these variables are done independently and warrant further investigation by SCAG.

What about the increase in HH => more persons

APPENDIX A

FREQUENCY COUNTS AND PERCENTAGES

PART 1:   1980 DATA

PART 2:   2000 DATA

APPENDIX A

PART 1

1980 DATA

POSITIONAL INDEX

VARIABLE	PAGE	VARIABLE	PAGE	VARIABLE	PAGE	VARIABLE	PAGE
HWYTERTB	2	AUTOWK3B	11	WORKERTB	22	PPHHNW1B	34
PRKSCTWB	2	AUTOWK4B	11	INCMWK1B	23	PRONWK2B	35
CBDINDB	3	AUTOTOTB	12	INCMWK2B	24	PPHHNW2B	36
PCTWALKB	4	LDRVWK1B	13	INCMWK3B	25	PRONWK3B	37
COUNTYB	4	LDRVWK2B	14	INCMWK4B	26	PPHHNW3B	38
HHFIQB	5	LDRVWK3B	15	INCMTOTB	27	PRONWK4B	39
HHSEQB	6	LDRVWK4B	16	PROWK1B	28	PPHIINW4B	40
HHTHQB	7	LDRVTOTB	17	PROWK2B	29	EMPLB	41
JIHFOQB	8	WORKER1B	18	PROWK3B	30	ACRES	42
HHTOTB	9	WORKER2B	19	PROWK4B	31		
AUTOWK1B	9	WORKER3B	20	PRKSCTNB	32		
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HWYTERTB

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES
40	.00	*
1205	1.00	**
74	2.00	**
4	3.00	
0	4.00	
2	5.00	

```
         I.........I.........I.........I.........I.........I
         0        300       600       900      1200      1500
                    HISTOGRAM FREQUENCY
```
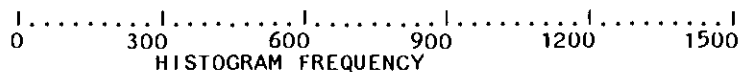
MEAN	1.038	STD ERR	.010	MEDIAN.	1.000
MODE	1.000	STD DEV	.348	VARIANCE	.121
KURTOSIS	31.343	S E KURT	.134	SKEWNESS	3.162
S E SKEW	.067	RANGE	5.000	MINIMUM	.000
MAXIMUM	5.000	SUM	1375.000		

VALID CASES   1325   MISSING CASES   0

- -

PRKSCTWB

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES
1216	1	**
0	23	
23	45	*
18	67	*
9	89	
13	111	
1	133	
3	155	
21	177	*
0	199	
0	221	
15	243	*
0	265	
0	287	
0	309	
1	331	
0	353	
0	375	
0	397	
3	419	
2	441	

```
         I....+....I....+....I....+....I....+....I....+....I
         0        300       600       900      1200      1500
                    HISTOGRAM FREQUENCY
```
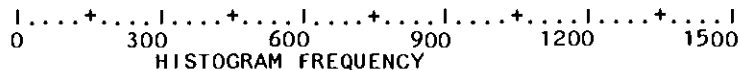
PRKSCTWB

MEAN	11.331	STD ERR	1.281	MEDIAN	.000
MODE	.000	STD DEV	46.619	VARIANCE	2173.327
KURTOSIS	31.814	S E KURT	.134	SKEWNESS	5.231
S E SKEW	.067	RANGE	442.000	MINIMUM	.000
MAXIMUM	442.000	SUM	15014.000		

VALID CASES   1325   MISSING CASES   0

- -

CBDINDB

```
      COUNT      VALUE     ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES

       1318        .00     *********************************************
          7       1.00
                          I.........I.........I.........I.........I.........I
                          0        300       600       900      1200      1500
                                   HISTOGRAM FREQUENCY
```
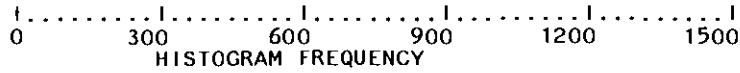
MEAN	.005	STD ERR	.002	MEDIAN	.000
MODE	.000	STD DEV	.073	VARIANCE	.005
KURTOSIS	184.993	S E KURT	.134	SKEWNESS	13.664
S E SKEW	.067	RANGE	1.000	MINIMUM	.000
MAXIMUM	1.000	SUM	7.000		

VALID CASES   1325   MISSING CASES   0

PCTWALKB

```
    COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 20.00 OCCURRENCES

      241       .00    *************
        6       .05
        6       .10
        5       .15
        6       .20
        9       .25
        5       .30
        2       .35
        5       .40
        2       .45
       17       .50    *
        4       .55
        8       .60
        9       .65
       13       .70    *
       10       .75    *
       17       .80    *
        9       .85
       18       .90    *
       56       .95    ***
      877      1.00    ***********************************************
                       I....+....I....+....I....+....I....+....I....+....I
                       0       200      400      600      800     1000
                            HISTOGRAM FREQUENCY
```
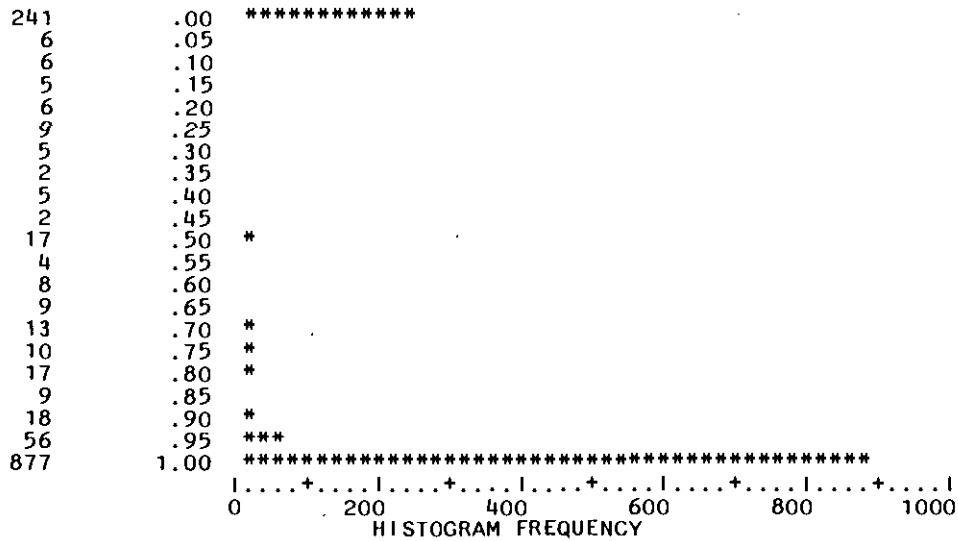
MEAN	.766	STD ERR	.011	MEDIAN	1.000
MODE	1.000	STO DEV	.396	VARIANCE	.157
KURTOSIS	-.201	S E KURT	.134	SKEWNESS	-1.288
S E SKEW	.067	RANGE	1.000	MINIMUM	.000
MAXIMUM	1.000	SUM	1015.430		

VALID CASES   1325   MISSING CASES   0

- -

COUNTYB

```
    COUNT    VALUE     ONE SYMBOL EQUALS APPROXIMATELY 16.00 OCCURRENCES

       40      .00    ***
      772     1.00    *************************************************
      193     2.00    *************
      106     3.00    *******
      125     4.00    ********
       89     5.00    ******
                      I.........I.........I.........I.........I.........I
                      0       160      320      480      640     800
                           HISTOGRAM FREQUENCY
```
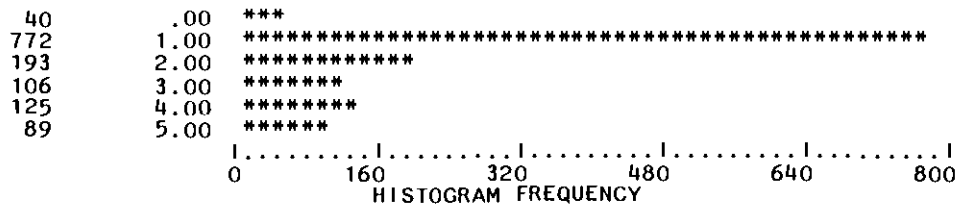
COUNTYB

MEAN	1.827	STD ERR	.036	MEDIAN	1.000
MODE	1.000	STD DEV	1.318	VARIANCE	1.737
KURTOSIS	.216	S E KURT	.134	SKEWNESS	1.195
S E SKEW	.067	RANGE	5.000	MINIMUM	.000
MAXIMUM	5.000	SUM	2421.000		

VALID CASES   1325   MISSING CASES   0

- -

HHFIQB

```
     COUNT    MIDPOINT    ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

      287        165    **************************************
      349        504    ***********************************************
      280        843    ***********************************
      147       1182    ******************
       92       1521    *************
       68       1860    *********
       35       2199    ****
       29       2538    ****
       10       2877    *
       10       3216    *
        8       3555    *
        2       3894
        4       4233    *
        1       4572
        0       4911
        1       5250
        0       5589
        0       5928
        1       6267
        0       6606
        1       6945
                        I....+....I....+....I....+....I....+....I....+....I
                        0        80       160       240       320       400
                              HISTOGRAM FREQUENCY
```
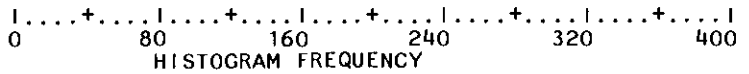
MEAN	888.224	STD ERR	21.134	MEDIAN	706.000
MODE	.000	STD DEV	769.276	VARIANCE	591786.251
KURTOSIS	7.797	S E KURT	.134	SKEWNESS	2.087
S E SKEW	.067	RANGE	7110.000	MINIMUM	.000
MAXIMUM	7110.000	SUM	1176897.00		

VALID CASES   1325   MISSING CASES   0

HHSEQB

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

       192        119    **************************
       201        361    *************************
       241        603    ******************************
       192        845    ************************
       167       1087    *********************
        89       1329    ***********
        75       1571    *********
        55       1813    *******
        35       2055    ****
        24       2297    ***
        19       2539    **
        11       2781    *
         3       3023
         8       3265    *
         3       3507
         1       3749
         3       3991
         2       4233
         0       4475
         2       4717
         2       4959
                         I....+....I....+....I....+....I....+....I....+....I
                         0        80       160      240      320      400
                                   HISTOGRAM FREQUENCY
```
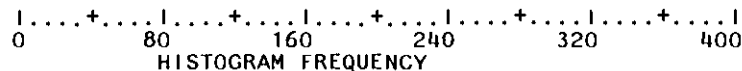
```
MEAN         911.346    STD ERR       19.877    MEDIAN        760.000
MODE            .000    STD DEV      723.542    VARIANCE  523512.915
KURTOSIS       4.153    S E KURT        .134    SKEWNESS        1.594
S E SKEW        .067    RANGE       5078.000    MINIMUM          .000
MAXIMUM     5078.000    SUM      1207533.00
```

VALID CASES   1325   MISSING CASES   0

HHTHQB

```
    COUNT     MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

       243        124     ******************************
       191        383     **************************
       217        642     ***************************
       184        901     ***********************
       143       1160     ******************
       115       1419     **************
        84       1678     ***********
        49       1937     ******
        33       2196     ****
        20       2455     ***
        16       2714     **
         5       2973     *
        11       3232     *
         2       3491
         2       3750
         5       4009     *
         1       4268
         1       4527
         0      ·4786
         2       5045
         1       5304
                         I....+....I....+....I....+....I....+....I....+....I....+....I
                         0        80       160       240       320       400
                              HISTOGRAM FREQUENCY
```
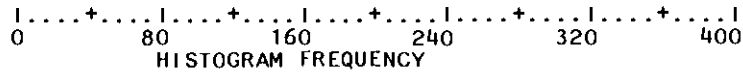
```
MEAN          932.601     STD ERR        20.764    MEDIAN          787.000
MODE             .000     STD DEV       755.814    VARIANCE 571255.263
KURTOSIS        3.673     S E KURT         .134    SKEWNESS          1.481
S E SKEW         .067     RANGE         5427.000   MINIMUM            .000
MAXIMUM       5427.000    SUM        1235696.00
```

VALID CASES   1325   MISSING CASES   0

HHFOQB

```
       COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

         294        128    ***********************************
         223        387    ****************************
         173        646    **********************
         148        905    ******************
         129       1164    ****************
          93       1423    ************
          73       1682    *********
          44       1941    ******
          36       2200    *****
          39       2459    *****
          22       2718    ***
          13       2977    **
          17       3236    **
           3       3495
           5       3754    *
           3       4013
           3       4272
           3       4531
           1       4790
           2       5049
           1       5308
                          I....+....I....+....I....+....I....+....I....+....I
                          0         80       160       240       320       400
                                         HISTOGRAM FREQUENCY
```
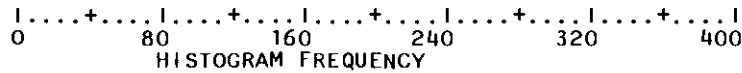
```
MEAN         953.315      STD ERR       23.834     MEDIAN       727.000
MOOE            .000      STD DEV      867.560     VARIANCE 752660.899
KURTOSIS       2.708      S E KURT        .134     SKEWNESS       1.475
S E SKEW        .067      RANGE       5436.000     MINIMUM         .000
MAXIMUM     5436.000      SUM      1263142.00
```

VALID CASES   1325   MISSING CASES   0

HHTOTB

```
    COUNT    MIOPOINT    ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

      163        461   *********************
      188       1394   ************************
      219       2327   ****************************
      202       3260   **************************
      159       4193   *******************
      132       5126   *****************
       99       6059   *************
       46       6992   ******
       40       7925   *****
       27       8858   ***
       16       9791   **
        8      10724   *
        8      11657   *
        4      12590   *
        4      13523   *
        4      14456   *
        1      15389
        2      16322
        0      17255
        2      18188
        1      19121
                      I....+....I....+....I....+....I....+....I....+....I....+....I
                      0        80       160      240      320      400
                               HISTOGRAM FREQUENCY
```
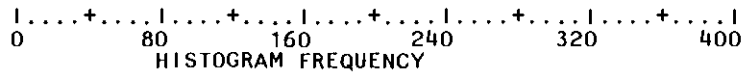
```
MEAN       3685.485     STO ERR      75.123    MEOIAN     3134.000
MOOE          .000     STO OEV    2734.509    VARIANCE 7477539.84
KURTOSIS     3.572     S E KURT       .134    SKEWNESS      1.439
S E SKEW      .067     RANGE     19581.000    MINIMUM       .000
MAXIMUM  19581.000     SUM      4883268.00
```

VALIO CASES   1325   MISSING CASES   0

- -

AUTOWK1B

```
    COUNT    MIOPOINT    ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES

     1325         0   ************************************************
                      I....+....I....+....I....+....I....+....I....+....I
                      0       300      600      900     1200     1500
                               HISTOGRAM FREQUENCY
```
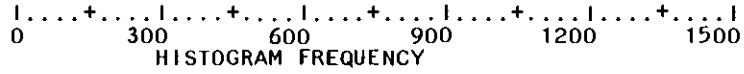
AUTOWK1B

MEAN	.000	STD ERR	.000	MEDIAN	.000
MODE	.000	STD DEV	.000	VARIANCE	.000
RANGE	.000	MINIMUM	.000	MAXIMUM	.000
SUM	.000				

VALID CASES   1325   MISSING CASES   0

- -

AUTOWK2B

```
      COUNT    MIDPOINT    ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

         41        .00    *****
          0        .15
          0        .30
          0        .45
          0        .60
          0        .75
          0        .90
          5       1.05    *
          5       1.20    *
         22       1.35    ***
         46       1.50    ******
         57       1.65    *******
        145       1.80    ******************
        216       1.95    ***************************
        256       2.10    ********************************
        272       2.25    **********************************
        187       2.40    ***********************
         42       2.55    *****
         21       2.70    ***
          8       2.85    *
          2       3.00
                          I....+....I....+....I....+....I....+....I....+....I
                          0        80       160      240      320      400
                                       HISTOGRAM FREQUENCY
```
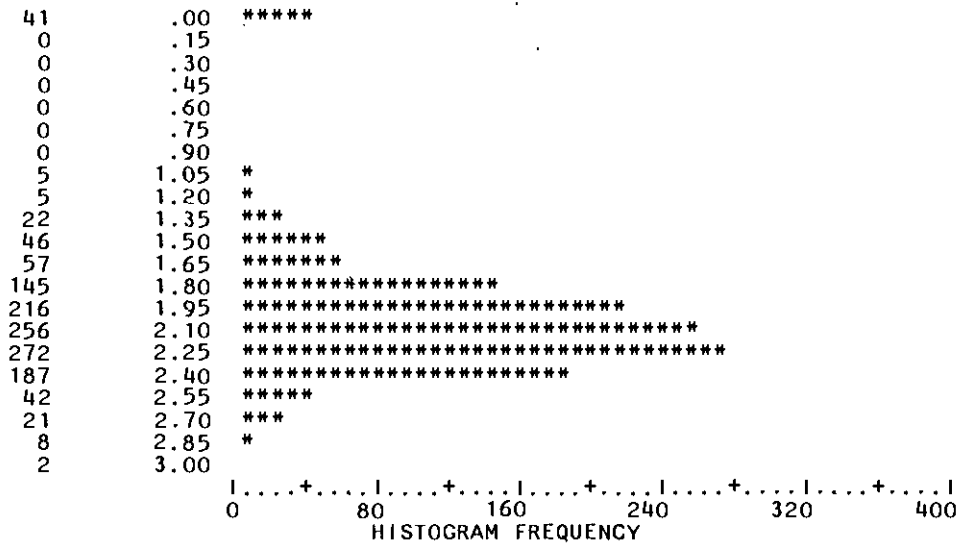
MEAN	2.018	STD ERR	.013	MEDIAN	2.106
MODE	2.338	STD DEV	.459	VARIANCE	.211
KURTOSIS	9.147	S E KURT	.134	SKEWNESS	-2.585
S E SKEW	.067	RANGE	2.981	MINIMUM	.000
MAXIMUM	2.981	SUM	2673.336		

VALID CASES   1325   MISSING CASES   0

AUTOWK3B

    COUNT   MIDPOINT   ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES
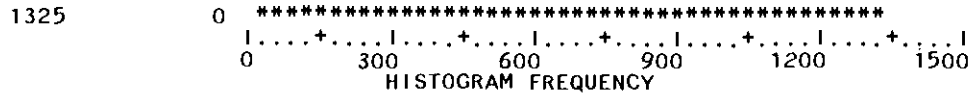
    1325   0   ***
                      I....+....I....+....I....+....I....+....I....+....I
                    0   300   600   900   1200   1500
                          HISTOGRAM FREQUENCY

MEAN	.000	STD ERR	.000	MEDIAN	.000
MODE	.000	STD DEV	.000	VARIANCE	.000
RANGE	.000	MINIMUM	.000	MAXIMUM	.000
SUM	.000				

VALID CASES   1325   MISSING CASES   0

- -

AUTOWK4B

    COUNT   MIDPOINT   ONE SYMBOL EQUALS APPROXIMATELY 8.00 OCCURRENCES

COUNT	MIDPOINT	
40	.00	*****
0	.15	
0	.30	
0	.45	
0	.60	
0	.75	
0	.90	
0	1.05	
0	1.20	
1	1.35	
1	1.50	
8	1.65	*
34	1.80	****
25	1.95	***
256	2.10	*********************************
271	2.25	**********************************
297	2.40	**************************************
104	2.55	*************
122	2.70	***************
143	2.85	******************
23	3.00	***

                      I....+....I....+....I....+....I....+....I....+....I
                    0   80   160   240   320   400
                        HISTOGRAM FREQUENCY
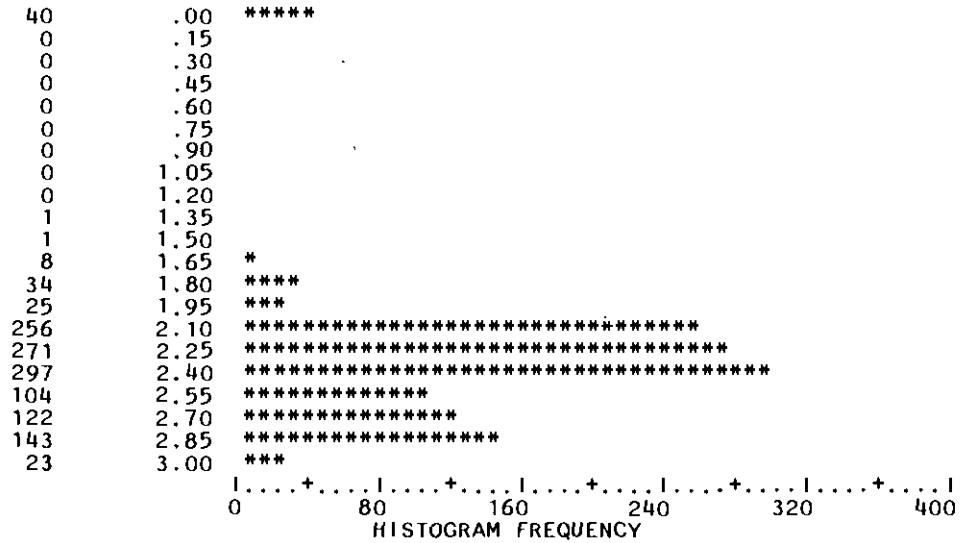
AUTOWK4B

MEAN	2.311	STD ERR	.014	MEDIAN	2.333
MODE	2.892	STD DEV	.500	VARIANCE	.250
KURTOSIS	11.181	S E KURT	.134	SKEWNESS	-2.794
S E SKEW	.067	RANGE	3.032	MINIMUM	.000
MAXIMUM	3.032	SUM	3061.837		

VALID CASES   1325   MISSING CASES   0

- -

AUTOTOTB

```
    COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

       56        .00   *******
        0        .15
        0        .30
        0        .45
        0        .60
        0        .75
        6        .90   *
        9       1.05   *
       15       1.20   **
       33       1.35   ****
       47       1.50   ******
       78       1.65   **********
      141       1.80   ******************
      208       1.95   **************************
      264       2.10   *********************************
      254       2.25   ********************************
      128       2.40   ****************
       51       2.55   ******
       23       2.70   ***
       10       2.85   *
        2       3.00
               I....+....I....+....I....+....I....+....I....+....I
               0        80       160      240      320      400
                        HISTOGRAM FREQUENCY
```
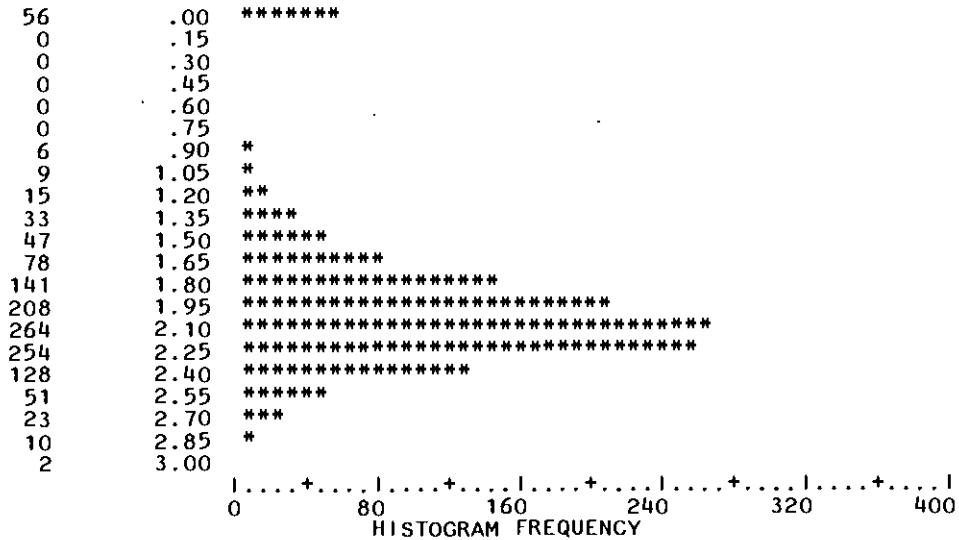
MEAN	1.959	STD ERR	.014	MEDIAN	2.067
MODE	.000	STD DEV	.522	VARIANCE	.273
KURTOSIS	5.957	S E KURT	.134	SKEWNESS	-2.179
S E SKEW	.067	RANGE	2.993	MINIMUM	.000
MAXIMUM	2.993	SUM	2595.322		

VALID CASES   1325   MISSING CASES   0

LDRVWK1B

```
    COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  4.00 OCCURRENCES

       41      .00     **********
        0      .03
        3      .06     *
       23      .09     ******
       77      .12     *******************
      119      .15     ******************************
      108      .18     ***************************
      123      .21     *******************************
      118      .24     ******************************
       95      .27     ************************
      169      .30     ******************************************
       79      .33     ********************
       65      .36     ****************
       62      .39     ****************
       75      .42     *******************
       51      .45     *************
       56      .48     ***************
       36      .51     *********
        5      .54     *
       18      .57     *****
        2      .60     *
                 I....+....I....+....I....+....I....+....I....+....I
                 0        40        80       120       160       200
                              HISTOGRAM FREQUENCY

MEAN         .277      STD ERR       .003     MEDIAN        .272
MODE         .314      STD DEV       .125     VARIANCE      .016
KURTOSIS    -.441      S E KURT      .134     SKEWNESS      .149
S E SKEW     .067      RANGE         .601     MINIMUM       .000
MAXIMUM      .601      SUM        367.679

VALID CASES  1325      MISSING CASES      D
```
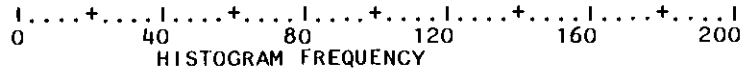
LDRVWK2B

```
    COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

       41        .0    ****
        0        .2
        0        .4
        0        .6
        1        .8
        2       1.0
        2       1.2
        7       1.4    *
       65       1.6    *******
      247       1.8    *************************
      460       2.0    **********************************************
      336       2.2    **********************************
      119       2.4    ************
       33       2.6    ***
        7       2.8    *
        3       3.0
        0       3.2
        0       3.4
        0       3.6
        1       3.8
        1       4.0
                      I....+....I....+....I....+....I....+....I....+....I
                      0        100       200       300       400       500
                               HISTOGRAM FREQUENCY
```
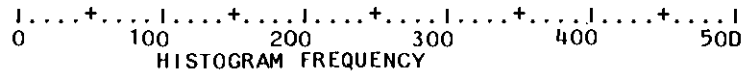
```
MEAN          1.982    STD ERR        .012    MEDIAN       2.017
MODE          1.920    STD DEV        .431    VARIANCE      .186
KURTOSIS     11.922    S E KURT       .134    SKEWNESS    -2.737
S E SKEW       .067    RANGE         3.924    MINIMUM       .000
MAXIMUM       3.924    SUM        2626.121


VALID CASES   1325    MISSING CASES     0
```

LDRVWK3B

```
    COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

        0     -.025
       40      .000    *****
        0      .025
        0      .050
        0      .075
        0      .100
        0      .125
        1      .150
        0      .175
        1      .200
      210      .225    *************************
      149      .250    *******************
      252      .275    ********************************
      369      .300    **********************************************
      127      .325    ****************
      119      .350    ***************
       27      .375    ***
       19      .400    **
        9      .425    *
        2      .450
        0      .475
                       I....+....I....+....I....+....I....+....I....+....I
                       0        80       160      240      320      400
                                    HISTOGRAM FREQUENCY
```
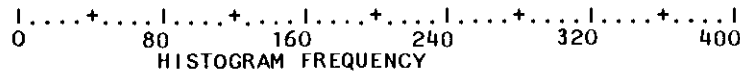
MEAN	.279	STD ERR	.002	MEDIAN	.289
MODE	.222	STD DEV	.065	VARIANCE	.004
KURTOSIS	8.000	S E KURT	.134	SKEWNESS	-2.075
S E SKEW	.067	RANGE	.449	MINIMUM	.000
MAXIMUM	.449	SUM	369.839		

VALID CASES   1325   MISSING CASES   0

LDRVWK4B

```
        COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 12.00 OCCURRENCES

            0       -.15
           40        .00    ***
            0        .15
            0        .30
            0        .45
            0        .60
            1        .75
            0        .90
            0       1.05
            3       1.20
            3       1.35
           13       1.50    *
           39       1.65    ***
          156       1.80    *************
          537       1.95    ********************************************
          188       2.10    ****************
          233       2.25    *******************
          101       2.40    ********
            4       2.55
            7       2.70    *
            0       2.85
                           I....+....I....+....I....+....I....+....I....+....I
                           0       120     240     360     480     600
                                     HISTOGRAM FREQUENCY
```
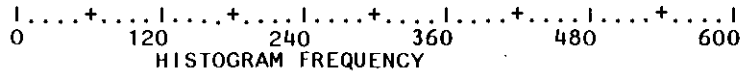
MEAN	1.972	STD ERR	.011	MEDIAN	1.987
MODE	1.987	STD DEV	.406	VARIANCE	.165
KURTOSIS	14.174	S E KURT	.134	SKEWNESS	-3.349
S E SKEW	.067	RANGE	2.720	MINIMUM	.000
MAXIMUM	2.720	SUM	2613.279		

VALID CASES   1325   MISSING CASES   0

LDRVTOTB

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

         0       -.1
        56        .1    ******
         0        .3
         0        .5
         1        .7
         3        .9
         4       1.1
         8       1.3    *
        41       1.5    ****
       189       1.7    *******************
       416       1.9    *******************************************
       354       2.1    ***************************************
       201       2.3    ********************
        45       2.5    *****
         5       2.7    *
         1       2.9
         0       3.1
         0       3.3
         0       3.5
         0       3.7
         1       3.9
                        I....+....I....+....I....+....I....+....I....+....I
                        0        100      200      300      400      500
                              HISTOGRAM FREQUENCY
```
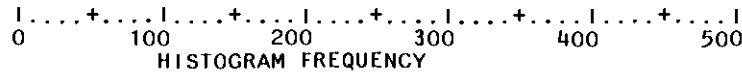
MEAN   1.912   STD ERR   .013   MEDIAN   1.973
MODE   .000   STD DEV   .47D   VARIANCE   .221
KURTOSIS   9.186   S E KURT   .134   SKEWNESS   -2.708
S E SKEW   .067   RANGE   3.819   MINIMUM   .000
MAXIMUM   3.819   SUM   2532.818

VALID CASES   1325   MISSING CASES   0

WORKER1B

COUNT   MIDPOINT   ONE SYMBOL EQUALS APPROXIMATELY 12.00 OCCURRENCES

```
   48       .00   ****
   21       .15   **
  563       .30   ***************************************************
  378       .45   *********************************
    9       .60   *
    0       .75
    9       .90   *
   13      1.05   *
   18      1.20   **
   63      1.35   *****
  134      1.50   ***********
   31      1.65   ***
   27      1.80   **
    5      1.95
    4      2.10
    1      2.25
    0      2.40
    0      2.55
    0      2.70
    0      2.85
    1      3.00
                  I....+....I....+....I....+....I....+....I....+....I....+....I
                  0        120       240       360       480       600
                          HISTOGRAM FREQUENCY
```
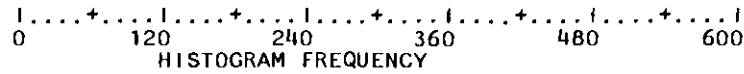
MEAN   .609   STD ERR   .014   MEDIAN   .390
MODE   1.500   STD DEV   .503   VARIANCE   .253
KURTOSIS   .460   S E KURT   .134   SKEWNESS   1.348
S E SKEW   .067   RANGE   2.960   MINIMUM   .D00
MAXIMUM   2.960   SUM   806.290

VALID CASES   1325   MISSING CASES   0

WORKER2B

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY 16.00 OCCURRENCES
43	-.133	***
6	.200	
3	.533	
37	.867	**
254	1.200	***************
618	1.533	**
155	1.867	**********
8	2.200	*
31	2.533	**
40	2.867	***
93	3.200	******
34	3.533	**
1	3.867	
1	4.200	
0	4.533	
0	4.867	
0	5.200	
0	5.533	
0	5.867	
0	6.200	
1	6.533	

```
            I....+....I....+....I....+....I....+....I....+....I
            0        160       320       480       640       800
                        HISTOGRAM FREQUENCY
```
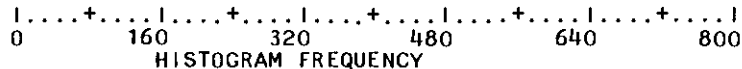
MEAN	1.670	STD ERR	.019	MEDIAN	1.540
MODE	3.080	STD DEV	.705	VARIANCE	.497
KURTOSIS	2.803	S E KURT	.134	SKEWNESS	1.003
S E SKEW	.067	RANGE	6.430	MINIMUM	.000
MAXIMUM	6.430	SUM	2212.300		

VALID CASES   1325   MISSING CASES   0

WORKER3B

```
   COUNT   MIOPOINT     ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

       0      -.30
       0      -.15
      43       .00   *****
      47       .15   ******
     209       .30   ****************************
      76       .45   **********
       8       .60   *
       0       .75
       0       .90
       5      1.05   *
     144      1.20   ******************
       5      1.35   *
     244      1.50   *******************************
     204      1.65   *************************
      92      1.80   ************
     149      1.95   *******************
      83      2.10   **********
      15      2.25   **
       1      2.40
       0      2.55
       0      2.70
                     I....+....I....+....I....+....I....+....I....+....I
                     0        80       160      240      320      400
                                   HISTOGRAM FREQUENCY
```
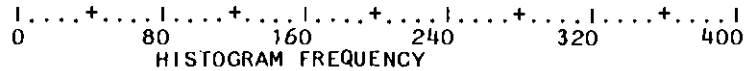
```
MEAN          1.249      STO ERR      .018      MEOIAN       1.550
MOOE          1.130      STO OEV      .671      VARIANCE      .450
KURTOSIS     -1.183      S E KURT     .134      SKEWNESS     -.533
S E SKEW       .067      RANGE       2.400      MINIMUM       .000
MAXIMUM       2.400      SUM      1655.450
```

VALIO CASES   1325   MISSING CASES   0

WORKER4B

COUNT	MIOPOINT	ONE SYMBOL EQUALS APPROXIMATELY 8.00 OCCURRENCES
41	.0	*****
2	.2	
2	.4	
6	.6	*
7	.8	*
52	1.0	*******
47	1.2	******
79	1.4	**********
96	1.6	************
81	1.8	**********
62	2.0	********
13	2.2	**
17	2.4	**
127	2.6	****************
107	2.8	*************
153	3.0	*******************
225	3.2	****************************
71	3.4	*********
128	3.6	****************
8	3.8	*
1	4.0	

```
            I....+....I....+....I....+....I....+....I....+....I
            0        80       160       240       320       400
                         HISTOGRAM FREQUENCY
```
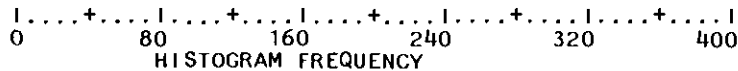
MEAN	2.459	STD ERR	.025	MEDIAN	2.760
MODE	3.190	STD DEV	.919	VARIANCE	.844
KURTOSIS	-.245	S E KURT	.134	SKEWNESS	-.800
S E SKEW	.067	RANGE	4.000	MINIMUM	.000
MAXIMUM	4.000	SUM	3258.120		

VALID CASES   1325   MISSING CASES   0

WORKERTB

COUNT   MIDPOINT   ONE SYMBOL EQUALS APPROXIMATELY 8.00 OCCURRENCES

```
       0      -.15
      60       .00    ********
       5       .15    *
       1       .30
       6       .45    *
       5       .60    *
      21       .75    ***
      49       .90    ******
      70      1.05    *********
     128      1.20    ****************
     256      1.35    ********************************
     327      1.50    ******************************************
     265      1.65    *********************************
     107      1.80    *************
      21      1.95    ***
       2      2.10
       0      2.25
       0      2.40
       1      2.55
       1      2.70
       0      2.85
              I....+....I....+....I....+....I....+....I....+....I
              0        80       160       240       320       400
                        HISTOGRAM FREQUENCY
```
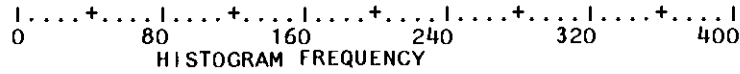
MEAN   1.364   STD ERR   .011   MEDIAN   1.457
MODE   .000   STD DEV   .400   VARIANCE   .160
KURTOSIS   4.188   S E KURT   .134   SKEWNESS   -1.841
S E SKEW   .067   RANGE   2.715   MINIMUM   .000
MAXIMUM   2.715   SUM   1806.677

VALID CASES   1325   MISSING CASES   0

INCMWK1B

```
    COUNT     MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

       46         231     ******
        4         704     *
        0        1177
        0        1650
        1        2123
       24        2596     ***
       50        3069     ******
       92        3542     ************
      150        4015     *******************
      155        4488     *******************
      211        4961     **************************
      152        5434     *******************
      108        5907     **************
       94        6380     ************
       73        6853     *********
       32        7326     ****
       34        7799     ****
       16        8272     **
        7        8745     *
        1        9218
       75        9691     *********
                          I....+....I....+....I....+....I....+....I....+....I
                          0        80       160      240      320      400
                                    HISTOGRAM FREQUENCY
```
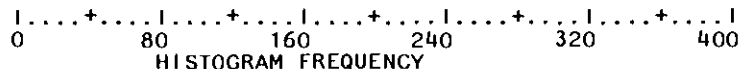
MEAN	5206.013	STD ERR	52.351	MEDIAN	5081.000
MODE	9708.000	STD DEV	1905.595	VARIANCE	3631293.33
KURTOSIS	1.285	S E KURT	.134	SKEWNESS	.067
S E SKEW	.067	RANGE	9922.000	MINIMUM	.000
MAXIMUM	9922.000	SUM	6897967.00		

VALID CASES   1325   MISSING CASES   0

INCMWK2B

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

        42       1476    *****
         1       4445
        40       7414    *****
       129      10383    *****************
       205      13352    **************************
       287      16321    ************************************word
       229      19290    *****************************
       140      22259    ******************
        81      25228    **********
        38      28197    *****
        31      31166    ****
        79      34135    **********
         8      37104    *
         3      40073
         3      43042
         4      46011    *
         1      48980
         0      51949
         1      54918
         0      57887
         3      60856
                         I....+....I....+....I....+....I....+....I....+....I
                         0        80       160      240      320      400
                                       HISTOGRAM FREQUENCY
```
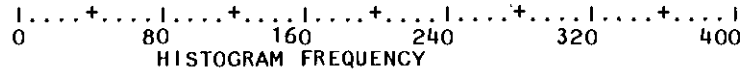
```
MEAN         18374.789     STD ERR       217.679     MEDIAN     17284.000
MODE         33531.000     STD DEV      7923.634     VARIANCE 62783978.3
KURTOSIS         2.824     S E KURT        .134     SKEWNESS        .833
S E SKEW          .067     RANGE       62331.000     MINIMUM         .000
MAXIMUM      62331.000     SUM        24346595.0


VALID CASES   1325     MISSING CASES      0
```

INCMWK3B

```
    COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

       41        217    *****
        1        669
        0       1121
        1       1573
        2       2025
        2       2477
       11       2929    *
       32       3381    ****
       50       3833    ******
      140       4285    ******************
       80       4737    **********
      136       5189    *****************
      291       5641    *************************************
       76       6093    **********
       60       6545    ********
      177       6997    **********************
      162       7449    ********************
       14       7901    **
       11       8353    *
       11       8805    *
       27       9257    ***
                        I....+....I....+....I....+....I....+....I....+....I
                        0        80       160       240       320       400
                                    HISTOGRAM FREQUENCY
```
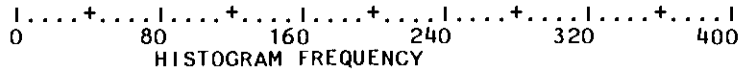
```
MEAN       5696.806    STD ERR        45.607    MEDIAN        5643.000
MODE       7548.000    STD DEV      1660.120     VARIANCE 2755998.14
KURTOSIS      2.470    S E KURT         .134    SKEWNESS        -.990
S E SKEW       .067    RANGE        9474.000    MINIMUM          .000
MAXIMUM    9474.000    SUM       7548268.00
```

```
VALID CASES    1325    MISSING CASES      0
```

INCMWK4B

```
   COUNT   MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

       0     -4791
      40     -1165    *****
       1      2461
       1      6087
      21      9713    ***
     169     13339    ***********************
     176     16965    ************************
     306     20591    *****************************************
      87     24217    ***********
     155     27843    *******************
      99     31469    *************
      62     35095    ********
      25     38721    ***
       9     42347    *
      14     45973    **
      17     49599    **
      18     53225    **
       0     56851
       5     60477    *
     120     64103    ****************
       0     67729
                     I....+....I....+....I....+....I....+....I....+....I
                     0        80       160       240       320       400
                               HISTOGRAM FREQUENCY
```
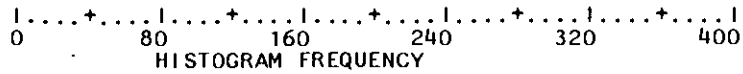
```
MEAN       26422.054    STD ERR      411.023    MEDIAN     21407.000
MODE       62866.000    STO OEV    14961.470    VARIANCE   223845575
KURTOSIS       1.036    S E KURT        .134    SKEWNESS       1.237
S E SKEW        .067    RANGE      62937.000    MINIMUM         .000
MAXIMUM    62937.000    SUM        35009221.0


VALID CASES    1325    MISSING CASES     0
```

INCMTOTB

```
      COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

         59        1487    *******
          5        4461    *
         52        7435    *******
        147       10409    ******************
        224       13383    ****************************
        282       16357    ************************************
        236       19331    ******************************
        135       22305    *****************
         71       25279    *********
         47       28253    ******
         27       31227    ***
         11       34201    *
         10       37175    *
          4       40149    *
          5       43123    *
          4       46097    *
          1       49071
          0       52045
          2       55019
          0       57993
          3       60967
                           I....+....I....+....I....+....I....+....I....+....I
                           0        80       160      240      320      400
                                       HISTOGRAM FREQUENCY
```
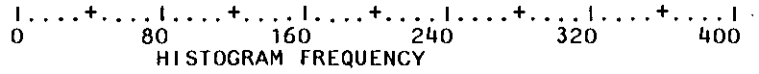
MEAN	17162.243	STD ERR	211.534	MEDIAN	16642.958
MODE	.000	STD DEV	7699.950	VARIANCE	59289224.7
KURTOSIS	4.368	S E KURT	.134	SKEWNESS	.947
S E SKEW	.067	RANGE	62453.897	MINIMUM	.000
MAXIMUM	62453.897	SUM	22739972.1		

VALID CASES   1325   MISSING CASES   0

PRQWK1B

```
        COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY 20.00 OCCURRENCES

            0      -.03
            0      -.01
          910       .01     ****************************************************
          207       .03     **********
          100       .05     *****
           38       .07     **
           32       .09     **
           14       .11     *
            7       .13
            3       .15
            6       .17
            0       .19
            1       .21
            2       .23
            0       .25
            2       .27
            1       .29
            1       .31
            1       .33
            0       .35
            0       .37
                          I....+....I....+....I....+....I....+....I....+....I
                          0        200      400      600      800     1000
                                    HISTOGRAM FREQUENCY
```

MEAN   .020   STD ERR   .001   MEDIAN   .008
MODE   .000   STD DEV   .033   VARIANCE   .001
KURTOSIS 23.067   S E KURT   .134   SKEWNESS   3.921
S E SKEW   .067   RANGE   .335   MINIMUM   .000
MAXIMUM   .335   SUM   26.836

VALID CASES   1325   MISSING CASES   0

PROWK2B

```
      COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY 12.00 OCCURRENCES

        249       .00    ********************
          7       .05    *
          4       .10
          6       .15    *
          8       .20    *
          8       .25    *
          5       .30
          2       .35
          4       .40
          7       .45    *
         12       .50    *
          5       .55
          8       .60    *
         10       .65    *
         16       .70    *
         12       .75    *
         18       .80    **
         26       .85    **
         74       .90    ******
        319       .95    ****************************
        525      1.00    *******************************************
                         I....+....I....+....I....+....I....+....I....+....I....+....I
                         0       120      240      360      480      600
                                        HISTOGRAM FREQUENCY
```

MEAN	.739	STD ERR	.011	MEDIAN		.960
MODE	.000	STD DEV	.390	VARIANCE		.152
KURTOSIS	-.320	S E KURT	.134	SKEWNESS	-1.234	
S E SKEW	.067	RANGE	1.000	MINIMUM		.000
MAXIMUM	1.000	SUM	979.701			

VALID CASES   1325   MISSING CASES   0

PROWK3B

```
    COUNT    MIDPOINT       ONE SYMBOL EQUALS APPROXIMATELY 24.00 OCCURRENCES

        0      -.003
     1112       .000    ***********************************************
       61       .003    ***
       29       .006    *
       19       .009    *
       27       .012    *
       30       .015    *
        9       .018
        7       .021
       12       .024    *
        3       .027
        8       .030
        2       .033
        1       .036
        0       .039
        0       .042
        2       .045
        0       .048
        2       .051
        1       .054
        0       .057
                     I....+....I....+....I....+....I....+....I....+....I
                     0        240      480      720      960     1200
                              HISTOGRAM FREQUENCY
```
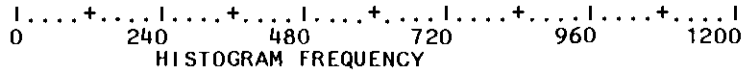
```
MEAN           .002      STD ERR        .000     MEDIAN         .000
MODE           .000      STD DEV        .006     VARIANCE       .000
KURTOSIS     22.320      S E KURT       .134     SKEWNESS      4.262
S E SKEW       .067      RANGE          .054     MINIMUM        .000
MAXIMUM        .054      SUM          2.594


VALID CASES    1325      MISSING CASES     0
```

PROWK4B

```
      COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY 20.00 OCCURRENCES

        926       .00     *******************************************************
         55       .05     ***
         18       .10     *
         10       .15     *
         16       .20     *
         10       .25     *
         13       .30     *
          9       .35
          8       .40
          4       .45
         15       .50     *
          4       .55
          4       .60
          3       .65
          5       .70
          9       .75
          6       .80
          6       .85
          5       .90
         26       .95     *
        173      1.00     *********
                          I....+....I....+....I....+....I....+....I....+....I
                          0        200      400      600      800      1000
                              HISTOGRAM FREQUENCY
```
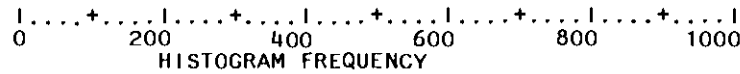
MEAN	.196	STD ERR	.010	MEDIAN	.000
MODE	.000	STD DEV	.365	VARIANCE	.134
KURTOSIS	.568	S E KURT	.134	SKEWNESS	1.544
S E SKEW	.067	RANGE	1.000	MINIMUM	.000
MAXIMUM	1.000	SUM	259.868		

VALID CASES   1325   MISSING CASES   0

PRKSCTNB

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES
1277	2	** `
0	15	
7	28	
1	41	
2	54	
7	67	
0	80	
1	93	
8	106	
5	119	
0	132	
0	145	
11	158	
0	171	
0	184	
0	197	
1	210	
0	223	
3	236	
0	249	
2	262	

```
         I....+....I....+....I....+....I....+....I....+....I
         0      300      600      900     1200     1500
                      HISTOGRAM FREQUENCY
```
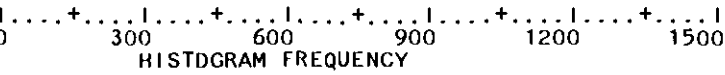
MEAN	4.263	STD ERR	.690	MEDIAN	.000
MODE	.000	STD DEV	25.108	VARIANCE	630.421
KURTOSIS	50.798	S E KURT	.134	SKEWNESS	6.834
S E SKEW	.067	RANGE	263.000	MINIMUM	.000
MAXIMUM	263.000	SUM	5649.000		

VALID CASES   1325   MISSING CASES   0

PRQNWK1B

```
      COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

          0      -.030
        485      -.005    *********************************************
        404       .020    *********************************************
        203       .045    *********************
        100       .070    **********
         48       .095    *****
         28       .120    ***
         25       .145    ***
          9       .170    *
          5       .195    *
          2       .220
          6       .245    *
          1       .270
          1       .295
          1       .320
          1       .345
          2       .370
          3       .395
          0       .420
          1       .445
          0       .470
                         I....+....I....+....I....+....I....+....I....+....I
                         0        100      200      300      400      500
                                    HISTOGRAM FREQUENCY
```
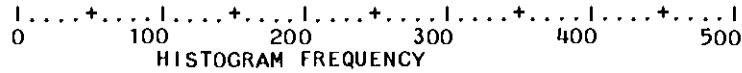
MEAN	.033	STD ERR	.001	MEDIAN	.017
MODE	.000	STD DEV	.049	VARIANCE	.002
KURTOSIS	18.160	S E KURT	.134	SKEWNESS	3.513
S E SKEW	.067	RANGE	.439	MINIMUM	.000
MAXIMUM	.439	SUM	43.122		

VALID CASES   1325   MISSING CASES   0

PPHHNW1B

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY 8.00 OCCURRENCES
41	.00	*****
0	.15	
0	.30	
0	.45	
4	.60	*
2	.75	
31	.90	****
67	1.05	********
144	1.20	******************
296	1.35	**************************************
316	1.50	**
180	1.65	************************
112	1.80	***************
49	1.95	******
50	2.10	******
18	2.25	**
9	2.40	*
3	2.55	
1	2.70	
0	2.85	
2	3.00	

```
           I....+....I....+....I....+....I....+....I....+....I
           0         80       160       240       320       400
                        HISTOGRAM FREQUENCY
```
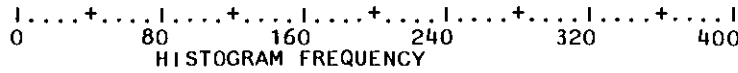
MEAN	1.457	STD ERR	.011	MEDIAN	1.472
MODE	1.500	STD DEV	.394	VARIANCE	.155
KURTOSIS	4.428	S E KURT	.134	SKEWNESS	-1.096
S E SKEW	.067	RANGE	2.968	MINIMUM	.000
MAXIMUM	2.968	SUM	1930.688		

VALID CASES   1325   MISSING CASES   0

PRONWK2B

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

       249        .00     ************************
         7        .05     *
         4        .10
         6        .15     *
         9        .20     *
         7        .25     *
         6        .30     *
         1        .35
         5        .40     *
         8        .45     *
        10        .50     *
         8        .55     *
        10        .60     *
        13        .65     *
        15        .70     **
        17        .75     **
        24        .80     **
        53        .85     *****
       116        .90     ************
       409        .95     **************************************
       348       1.00     ***********************************
                          I....+....I....+....I....+....I....+....I....+....I
                          0        100       200       300       400       500
                                        HISTOGRAM FREQUENCY
```
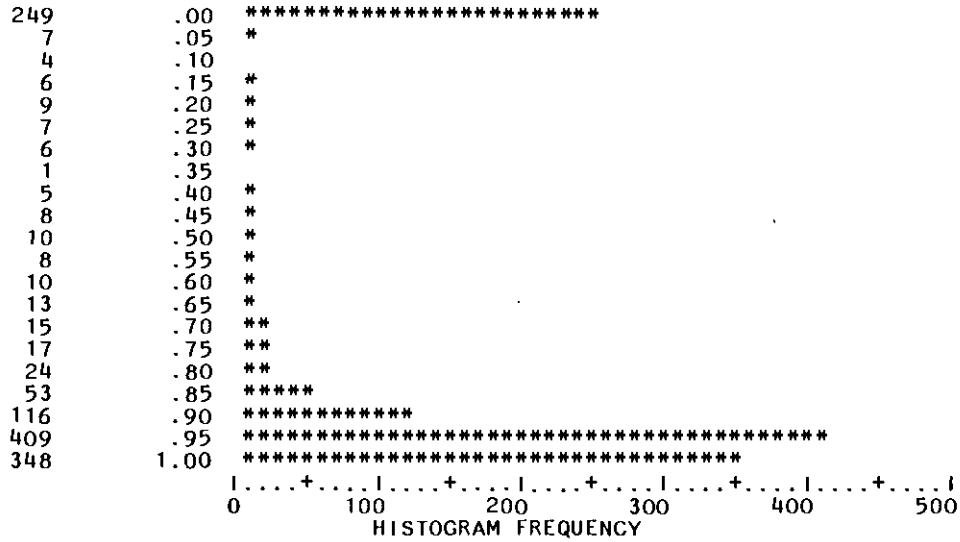
MEAN	.727	STD ERR	.011	MEDIAN	.942
MODE	.000	STD DEV	.384	VARIANCE	.148
KURTOSIS	-.346	S E KURT	.134	SKEWNESS	-1.215
S E SKEW	.067	RANGE	1.000	MINIMUM	.000
MAXIMUM	1.000	SUM	963.125		

VALID CASES   1325   MISSING CASES   0

PPHHNW2B

```
        COUNT   MIDPOINT    ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

           41    -.100    *****
            0     .233
            0     .567
            0     .900
           11    1.233    *
           18    1.567    **
           27    1.900    ***
           83    2.233    **********
          200    2.567    *************************
          301    2.900    **************************************
          333    3.233    ******************************************
          177    3.567    **********************
           69    3.900    *********
           36    4.233    *****
           24    4.567    ***
            3    4.900
            0    5.233
            0    5.567
            0    5.900
            0    6.233
            2    6.567
                          I....+....I....+....I....+....I....+....I....+....I
                          0        80       160      240      320      400
                                       HISTOGRAM FREQUENCY
```

MEAN	2.954	STD ERR	.022	MEDIAN	3.039
MODE	3.085	STD DEV	.788	VARIANCE	.621
KURTOSIS	4.859	S E KURT	.134	SKEWNESS	-1.316
S E SKEW	.067	RANGE	6.439	MINIMUM	.000
MAXIMUM	6.439	SUM	3913.776		

VALID CASES   1325   MISSING CASES   0

PRONWK3B

| COUNT | MIDPOINT | ONE SYMBOL EQUALS APPROXIMATELY 24.00 OCCURRENCES |

```
COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY 24.00 OCCURRENCES

    0     -.005
 1111      .000    **************************************************
   52      .005    **
   33      .010    *
   23      .015    *
   42      .020    **
   16      .025    *
   13      .030    *
    6      .035
    4      .040
    8      .045
    5      .050
    6      .055
    0      .060
    0      .065
    2      .070
    1      .075
    2      .080
    0      .085
    1      .090
    0      .095
                 I....+....I....+....I....+....I....+....I....+....I
                 0        240       480       720       960      1200
                        HISTOGRAM FREQUENCY
```
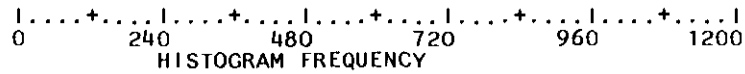
MEAN	.003	STD ERR	.000	MEDIAN	.000
MODE	.000	STD DEV	.010	VARIANCE	.000
KURTOSIS	21.276	S E KURT	.134	SKEWNESS	4.216
S E SKEW	.067	RANGE	.091	MINIMUM	.000
MAXIMUM	.091	SUM	4.412		

VALID CASES　　1325　　　MISSING CASES　　　0

PPHHNW3B

```
    COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

        0       -.25
        0       -.10
       40        .05    *****
        0        .20
        0        .35
        0        .50
        1        .65
        1        .80
        0        .95
      148       1.10    *******************
       20       1.25    ***
      101       1.40    *************
      291       1.55    ************************************
      283       1.70    ***********************************
      181       1.85    ***********************
      149       2.00    *******************
       86       2.15    ***********
       21       2.30    ***
        3       2.45
        0       2.60
        0       2.75
                        I....+....I....+....I....+....I....+....I....+....I
                        0        80       160      240      320      400
                                    HISTOGRAM FREQUENCY
```
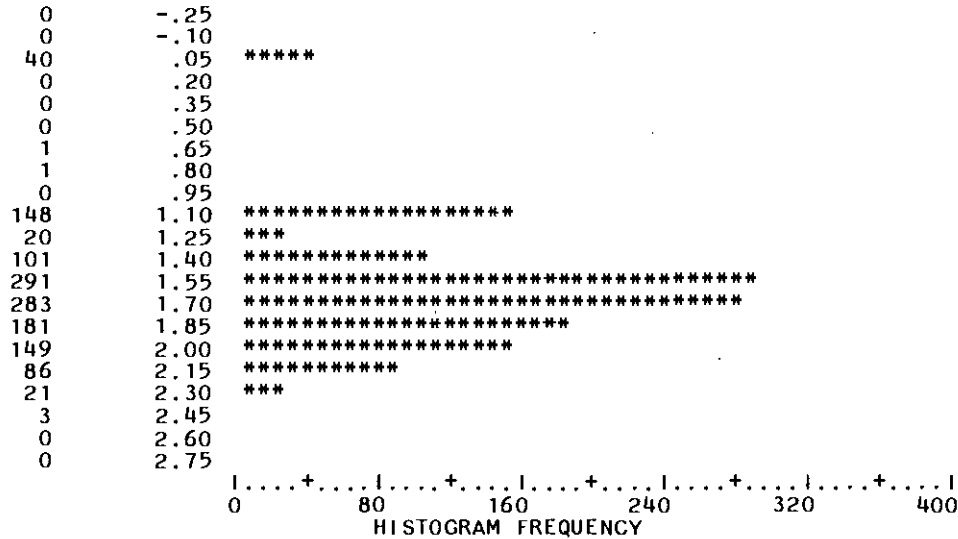
MEAN	1.614	STD ERR	.011	MEDIAN	1.631
MODE	1.132	STD DEV	.401	VARIANCE	.161
KURTOSIS	5.663	S E KURT	.134	SKEWNESS	-1.873
S E SKEW	.067	RANGE	2.458	MINIMUM	.000
MAXIMUM	2.458	SUM	2139.081		

VALID CASES   1325   MISSING CASES   0

PRONWK4B

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 20.00 OCCURRENCES

       926       .00   ************************************************
        55       .05   ***
        17       .10   *
        11       .15   *
        16       .20   *
        10       .25   *
        12       .30   *
        10       .35   *
         7       .40
         6       .45
        15       .50   *
         3       .55
         6       .60
         1       .65
         5       .70
         9       .75
         7       .80
         5       .85
         9       .90   **
        49       .95   **
       146      1.00   *******
                       I....+....I....+....I....+....I....+....I....+....I....+....I
                       0        200       400       600       800      1000
                              HISTOGRAM FREQUENCY
```

MEAN	.195	STD ERR	.010	MEDIAN	.000
MODE	.000	STD DEV	.363	VARIANCE	.132
KURTOSIS	.563	S E KURT	.134	SKEWNESS	1.542
S E SKEW	.067	RANGE	1.000	MINIMUM	.000
MAXIMUM	1.000	SUM	258.340		

VALID CASES   1325   MISSING CASES   0

PPHHNW4B

```
   COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

      40         .1    *****
       0         .3
       0         .5
       0         .7
       0         .9
       1        1.1
       1        1.3
       1        1.5
       1        1.7
      24        1.9    ***
       4        2.1    *
      26        2.3    ***
      70        2.5    *********
     230        2.7    ******************************
     146        2.9    ******************
     357        3.1    *********************************************
     192        3.3    ************************
     206        3.5    *************************
       6        3.7    *
      16        3.9    **
       4        4.1    *
                       I....+....I....+....I....+....I....+....I....+....I....+....I
                       0        80       160      240      320      400
                              HISTOGRAM FREQUENCY
```

MEAN	2.938	STD ERR	.018	MEDIAN	3.054
MODE	3.195	STD DEV	.641	VARIANCE	.411
KURTOSIS	10.856	S E KURT	.134	SKEWNESS	-2.884
S E SKEW	.067	RANGE	4.128	MINIMUM	.000
MAXIMUM	4.128	SUM	3893.067		

VALID CASES   1325   MISSING CASES   0

EMPLB

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY 16.00 OCCURRENCES
640	1190	**
329	3576	*********************
123	5962	********
94	8348	******
45	10734	***
31	13120	**
13	15506	*
20	17892	*
9	20278	*·
6	22664	
5	25050	
3	27436	
0	29822	
1	32208	
2	34594	
0	36980	
3	39366	
0	41752	
0	44138	
0	46524	
1	48910	

```
         I....+....I....+....I....+....I....+....I....+....I
         0      .160     320      480      640      800
                     HISTOGRAM FREQUENCY
```

MEAN	4117.869	STD ERR	142.341	MEDIAN	2525.000
MODE	.000	STD OEV	5181.306	VARIANCE	26845936.3
KURTOSIS	13.665	S E KURT	.134	SKEWNESS	3.024
S E SKEW	.067	RANGE	50100.000	MINIMUM	.000
MAXIMUM	50100.000	SUM	5456176.00		

VALID CASES   1325   MISSING CASES   0

ACRES

```
   COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES

    1284       14208    ***********************************************
      29       42633    *
       4       71058
       4       99483
       2      127908
       0      156333
       0      184758
       1      213183
       0      241608
       0      270033
       0      298458
       0      326883
       0      355308
       0      383733
       0      412158
       0      440583
       0      469008
       0      497433
       0      525858
       0      554283
       1      582708
                        I....+....I....+....I....+....I....+....I....+....I
                        0       300      600      900     1200     1500
                               HISTOGRAM FREQUENCY
```

```
MEAN        4705.396    STD ERR      556.053    MEDIAN      1131.000
MODE            .000    STD DEV    20240.619    VARIANCE   409682639
KURTOSIS     564.346    S E KURT        .134    SKEWNESS      20.591
S E SKEW        .067    RANGE     596915.000    MINIMUM         .000
MAXIMUM   596915.000    SUM      6234650.00
```

```
VALID CASES    1325    MISSING CASES      0
```

APPENDIX A

PART 2

2000 DATA

POSITIONAL INDEX

VARIABLE	PAGE	VARIABLE	PAGE	VARIABLE	PAGE	VARIABLE	PAGE
HWYTERTF	2	AUTOWK3F	11	WORKERTF	22	PPHHNW1F	34
PRKSCTWF	2	AUTOWK4F	11	INCMWK1F	23	PRONWK2F	35
CBDINDF	3	AUTOTOTF	12	INCMWK2F	24	PPHHNW2F	36
PCTWALKF	4	LDRVWK1F	13	INCMWK3F	25	PRONWK3F	37
COUNTYF	4	LDRVWK2F	14	INCMWK4F	26	PPHHNW3F	38
HHFIQF	5	LDRVWK3F	15	INCMTOTF	27	PRONWK4F	39
HHSEQF	6	LDRVWK4F	16	PROWK1F	28	PPHHNW4F	40
HHTHQF	7	LDRVTOTF	17	PROWK2F	29	EMPLF	41
HHFOQF	8	WORKER1F	18	PROWK3F	30	ACRES	42
HHTOTF	9	WORKER2F	19	PROWK4F	31		
AUTOWK1F	9	WORKER3F	20	PRKSCTNF	32		
AUTOWK2F	10	WORKER4F	21	PRONWK1F	33		

ALPHABETIC INDEX

VARIABLE	PAGE	VARIABLE	PAGE	VARIABLE	PAGE	VARIABLE	PAGE
ACRES	42	HHTHQF	7	LDRVWK4F	16	PROWK1F	28
AUTOTOTF	12	HHTOTF	9	PCTWALKF	4	PROWK2F	29
AUTOWK1F	9	HWYTERTF	2	PPHHNW1F	34	PROWK3F	30
AUTOWK2F	10	INCMTOTF	27	PPHHNW2F	36	PROWK4F	31
AUTOWK3F	11	INCMWK1F	23	PPHHNW3F	38	WORKERTF	22
AUTOWK4F	11	INCMWK2F	24	PPHHNW4F	40	WORKER1F	18
CBDINDF	3	INCMWK3F	25	PRKSCTNF	32	WORKER2F	19
COUNTYF	4	INCMWK4F	26	PRKSCTWF	2	WORKER3F	20
EMPLF	41	LDRVTOTF	17	PRONWK1F	33	WORKER4F	21
HHFIQF	5	LDRVWK1F	13	PRONWK2F	35		
HHFOQF	8	LDRVWK2F	14	PRONWK3F	37		
HHSEQF	6	LDRVWK3F	15	PRONWK4F	39		

HWYTERTF

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES
40	.00	*
1205	1.00	***
74	2.00	**
4	3.00	
0	4.00	
2	5.00	

```
        I.........I.........I.........I.........I.........I
        0       300       600       900      1200      1500
                    HISTOGRAM FREQUENCY
```
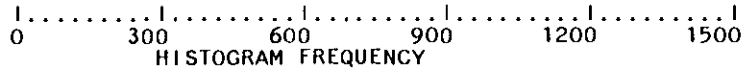
MEAN	1.038	STD ERR	.010	MEDIAN	1.000
MODE	1.000	STD DEV	.348	VARIANCE	.121
KURTOSIS	31.343	S E KURT	.134	SKEWNESS	3.162
S E SKEW	.067	RANGE	5.000	MINIMUM	.000
MAXIMUM	5.000	SUM	1375.000		

VALID CASES　　1325　　　MISSING CASES　　　0

- -

PRKSCTWF

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY 24.00 OCCURRENCES
1195	15	**
0	56	
0	97	
10	138	
21	179	*
28	220	*
11	261	
7	302	
0	343	
7	384	
1	425	
0	466	
3	507	
14	548	*
0	589	
20	630	*
0	671	
0	712	
2	753	
0	794	
6	835	

```
        I....+....I....+....I....+....I....+....I....+....I
        0      240       480       720       960      1200
                    HISTOGRAM FREQUENCY
```
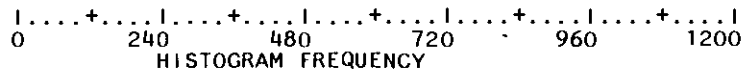
PRKSCTWF

MEAN	35.764	STD ERR	3.504	MEDIAN		.000
MODE	.000	STD DEV	127.531	VARIANCE	16264.125
KURTOSIS	17.588	S E KURT	.134	SKEWNESS		4.141
S E SKEW	.067	RANGE	850.000	MINIMUM		.000
MAXIMUM	850.000	SUM	47387.000			

VALID CASES   1325   MISSING CASES   D

- -

CBDINDF

COUNT   VALUE   ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES
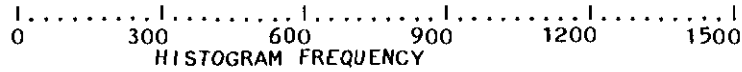
1318   .00 **
   7   1.00
                  I.........I.........I.........I.........I.........I
                  0   300   600   900   1200   1500
                       HISTOGRAM FREQUENCY

MEAN	.005	STD ERR	.002	MEDIAN	.000
MODE	.000	STD DEV	.073	VARIANCE	.005
KURTOSIS	184.993	S E KURT	.134	SKEWNESS	13.664
S E SKEW	.067	RANGE	1.000	MINIMUM	.000
MAXIMUM	1.000	SUM	7.000		

VALID CASES   1325   MISSING CASES   0

PCTWALKF

COUNT   MIDPOINT   ONE SYMBOL EQUALS APPROXIMATELY 20.00 OCCURRENCES

```
   241      .00    ************
     6      .05
     6      .10
     5      .15
     6      .20
     9      .25
     5      .30
     2      .35
     5      .40
     2      .45
    17      .50    *
     4      .55
     8      .60
     9      .65
    13      .70    *
    10      .75    *
    17      .80    *
     9      .85
    18      .90·   *
    56      .95    ***
   877     1.00    ******************************************
                   I....+....I....+....I....+....I....+....I....+....I
                   0       200      400      600      800     1000
                           HISTOGRAM FREQUENCY
```
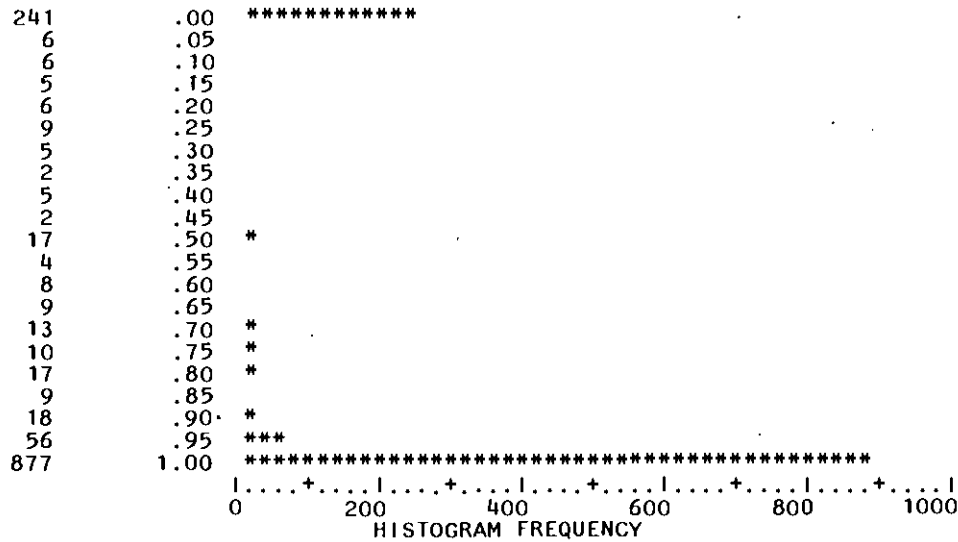
MEAN	.766	STD ERR	.011	MEDIAN	1.000
MODE	1.000	STD DEV	.396	VARIANCE	.157
KURTOSIS	-.201	S E KURT	.134	SKEWNESS	-1.288
S E SKEW	.067	RANGE	1.000	MINIMUM	.000
MAXIMUM	1.000	SUM	1015.430		

VALID CASES   1325   MISSING CASES   0

- -

COUNTYF

COUNT   VALUE   ONE SYMBOL EQUALS APPROXIMATELY 16.00 OCCURRENCES

```
    40      .00    ***
   772     1.00    ************************************************
   193     2.00    ************
   106     3.00    *******
   125     4.00    ********
    89     5.00    ******
                   I........I........I........I........I........I........I
                   0      160      320      480      640      800
                         HISTOGRAM FREQUENCY
```
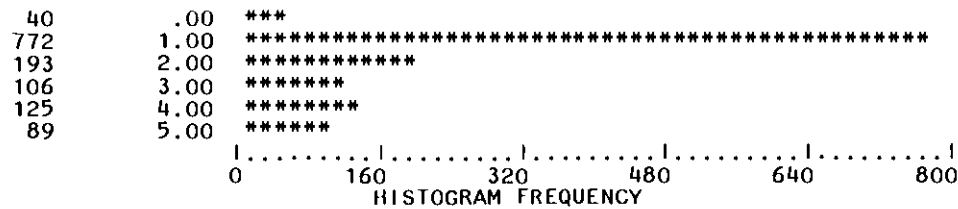
COUNTYF

MEAN	1.827	STD ERR	.036	MEDIAN	1.000
MODE	1.000	STD DEV	1.318	VARIANCE	1.737
KURTOSIS	.216	S E KURT	.134	SKEWNESS	1.195
S E SKEW	.067	RANGE	5.000	MINIMUM	.000
MAXIMUM	5.000	SUM	2421.000		

VALID CASES   1325   MISSING CASES   0

- -

HHFIQF

```
       COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

        432        211      ************************************************
        305        647      ********************************
        221       1083      **********************
        128       1519 ·   *************
         91       1955      *********
         45       2391      *****
         29       2827      ***
         17       3263      **
         18       3699      **
         10       4135      *
         11       4571      *
          6       5007      *
          1       5443
          3       5879
          3       6315
          2       6751
          0       7187
          1       7623
          0       8059
          1       8495
          1       8931
                        I....+....I....+....I....+....I....+....I....+....I
                        0        100      200      300      400      500
                               HISTOGRAM FREQUENCY
```

MEAN	1045.626	STD ERR	30.271	MEDIAN	735.000
MODE	.000	STD DEV	1101.888	VARIANCE	1214157.05
KURTOSIS	8.025	S E KURT	.134	SKEWNESS	2.334
S E SKEW	.067	RANGE	9142.000	MINIMUM	.000
MAXIMUM	9142.000	SUM	1385455.00		

VALID CASES   1325   MISSING CASES   0

HHSEQF

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

       258        160    *********************************
       201        494    **************************
       261        828    *********************************
       204       1162    **************************
       165       1496    *********************
        92       1830    ************
        59       2164    *******
        34       2498    ****
        24       2832    ***
        10       3166    *
         3       3500
         4       3834    *
         5       4168    *
         0       4502
         1       4836
         1       5170
         2       5504
         0       5838
         0       6172
         0       6506
         1       6840
                        I....+....I....+....I....+....I....+....I....+....I
                        0        80       160      240      320      400
                                      HISTOGRAM FREQUENCY
```
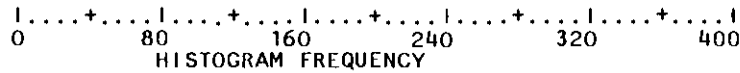
MEAN	1045.616	STD ERR	22.108	MEDIAN	924.000
MODE	.000	STD DEV	804.732	VARIANCE	647593.204
KURTOSIS	4.849	S E KURT	.134	SKEWNESS	1.507
S E SKEW	.067	RANGE	7000.000	MINIMUM	.000
MAXIMUM	7000.000	SUM	1385441.00		

VALID CASES   1325   MISSING CASES   0

HHTHQF

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

      370        228     *************************************************
      302        693     ***********************************************
      287       1158     ************************************
      177       1623     **********************
       87       2088     ***********       .
       47       2553     ******
       26       3018     ***
       19       3483     **
        2       3948
        2       4413
        1       4878
        3       5343
        0       5808
        0       6273
        0       6738
        0       7203
        0       7668
        0       8133
        0       8598
        0       9063
        2       9528
                        I....+....I....+....I....+....I....+....I....+....I
                        0        80       160       240       320       400
                               HISTOGRAM FREQUENCY
```
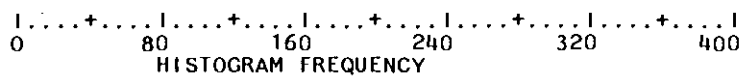
```
MEAN       1045.573    STD ERR      24.548    MEDIAN       912.000
MODE           .000    STD DEV     893.543    VARIANCE  798419.062
KURTOSIS     14.574    S E KURT       .134    SKEWNESS       2.348
S E SKEW       .067    RANGE       9756.000   MINIMUM        .000
MAXIMUM    9756.000    SUM      1385384.00
```

VALID CASES   1325   MISSING CASES   0

HHFOQF

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

      475         211    *****************************************************
      292         647    ********************************
      186        1083    *******************
      121        1519    *************
       77        1955    ********
       60        2391    ******
       34        2827    ***
       21        3263    **
       23        3699    **
       11        4135    *
        7        4571    *
        6        5007    *
        1        5443
        5        5879    *
        2        6315
        2        6751
        0        7187
        0        7623
        0        8059
        0        8495
        2        8931
                         I....+....I....+....I....+....I....+....I....+....I
                         0        100       200       300       400       500
                              HISTOGRAM FREQUENCY
```
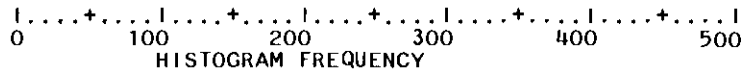
MEAN	1030.478	STD ERR	30.691	MEDIAN	696.000	
MODE	.000	STD DEV	1117.166	VARIANCE	1248058.88	
KURTOSIS	7.179	S E KURT	.134	SKEWNESS	2.191	
S E SKEW	.067	RANGE	9141.000	MINIMUM	.000	
MAXIMUM	9141.000	SUM	1365384.00			

VALID CASES   1325   MISSING CASES   0

HHTOTF

```
    COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

      181         518     ***********************
      122        1574     ***************
      222        2630     ****************************
      237        3686     ******************************
      195        4742     ************************
      120        5798     ***************
       86        6854     ***********
       67        7910     ********
       32        8966     ****
       22       10022     ***
       15       11078     **
        9       12134     *
        5       13190     *
        3       14246
        2       15302
        0       16358
        3       17414
        2       18470
        0       19526
        0      .20582
        2       21638
                          I....+....I....+....I....+....I....+....I....+....I....+....I
                          0        80       160       240       320       400
                                       HISTOGRAM FREQUENCY
```
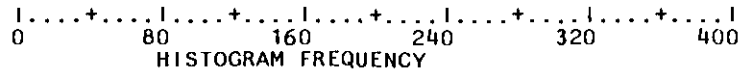
```
MEAN         4167.294      STD ERR        80.303      MEDIAN        3721.000
MODE             .000      STD DEV      2923.086      VARIANCE  8544431.05
KURTOSIS        3.549      S E KURT         .134      SKEWNESS         1.299
S E SKEW         .067      RANGE       22156.000      MINIMUM           .000
MAXIMUM     22156.000      SUM        .5521664.00
```

VALID CASES   1325   MISSING CASES   0

- -

AUTOWK1F

```
    COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES

     1325           0     *********************************************
                          I....+....I....+....I....+....I....+....I....+....I....+....I
                          0       300       600       900      1200      1500
                                       HISTOGRAM FREQUENCY
```

AUTOWK1F

MEAN	.000	STD ERR	.000	MEDIAN	.000
MODE	.000	STD DEV	.000	VARIANCE	.000
RANGE	.000	MINIMUM	.000	MAXIMUM	.000
SUM	.000				

VALID CASES   1325   MISSING CASES   0

- .

AUTOWK2F

```
      COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

         41       .05    *****
          0       .20
          0       .35
          0       .50
          0       .65
          0       .80
          6       .95    *
          4      1.10    *
          1      1.25
         25      1.40    ***
         48      1.55    ******
         65      1.70    ********
        164      1.85    ********************
        212      2.00    **************************
        308      2.15    ******************************************
        342      2.30    ************************************************
         84      2.45    ***********
         14      2.60    **
          7      2.75    *
          3      2.90
          1      3.05
                        I....+....I....+....I....+....I....+....I....+....I
                        0       80      160     240     320     400
                              HISTOGRAM FREQUENCY
```
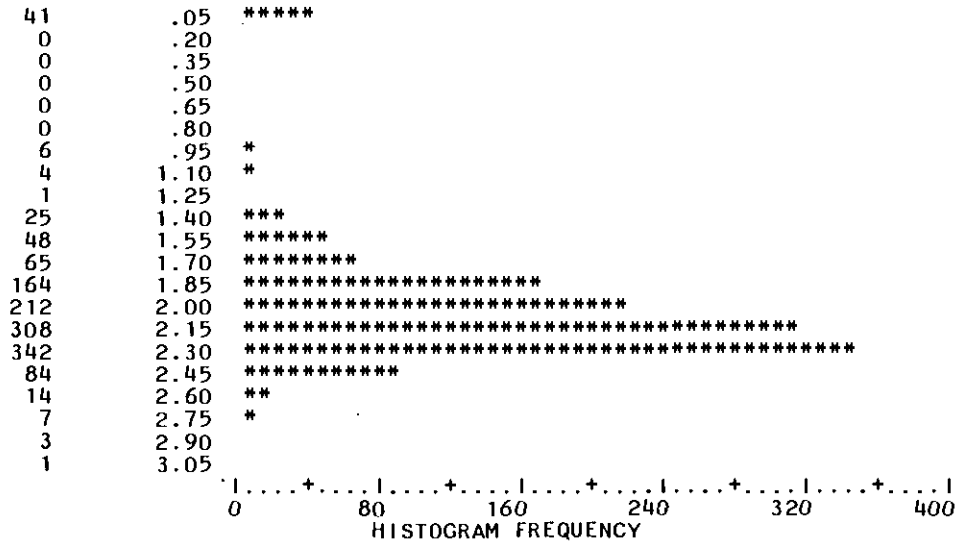
MEAN	2.021	STD ERR	.012	MEDIAN	2.124
MODE	2.291	STD DEV	.447	VARIANCE	.200
KURTOSIS	10.477	S E KURT	.134	SKEWNESS	-2.879
S E SKEW	.067	RANGE	3.122	MINIMUM	.000
MAXIMUM	3.122	SUM	2677.395		

VALID CASES   1325   MISSING CASES   0

AUTOWK3F

COUNT   MIDPOINT   ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES
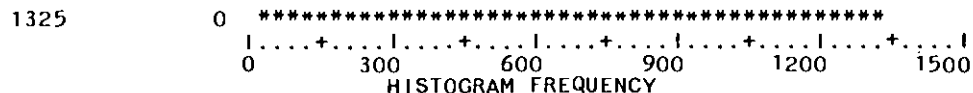
1325   0   ***
                I....+....I....+....I....+....I....+....I....+....I
                0   300   600   900   1200   1500
                         HISTOGRAM FREQUENCY

MEAN	.000	STD ERR	.000	MEDIAN	.000
MODE	.000	STD DEV	.000	VARIANCE	.000
RANGE	.000	MINIMUM	.000	MAXIMUM	.000
SUM	.000				

VALID CASES   1325   MISSING CASES   0

- - - - - - - - - - - - - - - - - ● - - - - - - - - - - - ● - - - -

AUTOWK4F

COUNT   MIDPOINT   ONE SYMBOL EQUALS APPROXIMATELY 8.00 OCCURRENCES

COUNT	MIDPOINT	
40	-.05	*****
0	.10	
0	.25	
0	.40	
0	.55	
0	.70	
0	.85	
0	1.00	
5	1.15	*
0	1.30	
0	1.45	
18	1.60	**
6	1.75	*
14	1.90	**
117	2.05	*****************
320	2.20	**
394	2.35	**
171	2.50	*********************
62	2.65	*********
58	2.80	*******
120	2.95	***************

                I....+....I....+....I....+....I....+....I....+....I
                0   80   160   240   320   400
                         HISTOGRAM FREQUENCY
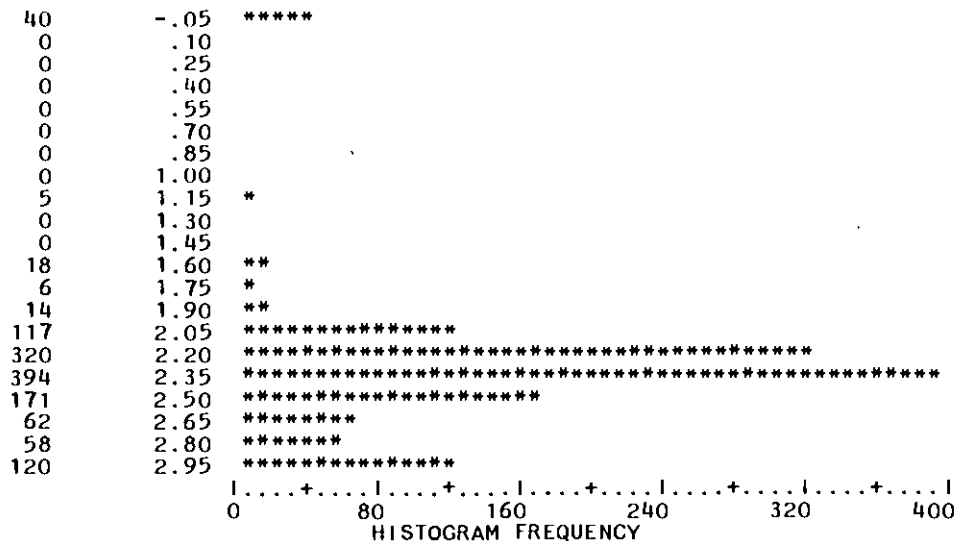
AUTOWK4F

MEAN	2.292	STD ERR	.013	MEDIAN	2.327
MODE	2.900	STD DEV	.487	VARIANCE	.237
KURTOSIS	12.386	S E KURT	.134	SKEWNESS	-3.022
S E SKEW	.067	RANGE	2.907	MINIMUM	.000
MAXIMUM	2.907	SUM	3036.627		

VALID CASES   1325   MISSING CASES   0

- -

AUTOTOTF

```
      COUNT   MIDPOINT   ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

         54      .00   *******
          0      .15
          0      .30
          0      .45
          0      .60
          0      .75
          5      .90   *
         11     1.05   *
         12     1.20   **
         29     1.35   ****
         48     1.50   ******
         74     1.65   *********
        126     1.80   ****************
        203     1.95   *************************
        287     2.10   *******************************************
        298     2.25   ***************************************
        133     2.40   *****************
         27     2.55   ***
         10     2.70   *
          7     2.85   *
          1     3.00
                       I....+....I....+....I....+....I....+....I....+....I
                       0       80      160      240      320      400
                            HISTOGRAM FREQUENCY
```
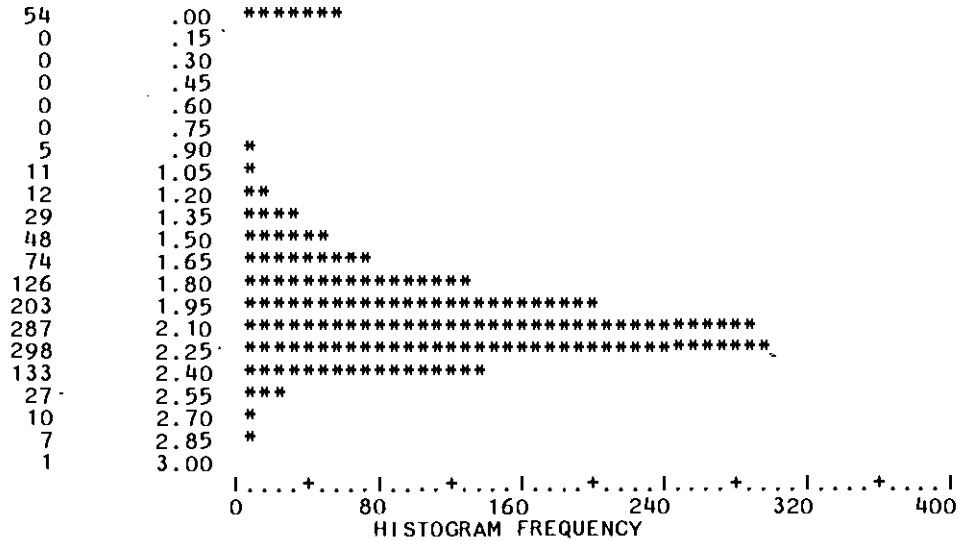
MEAN	1.961	STD ERR	.014	MEDIAN	2.085
MODE	.000	STD DEV	.504	VARIANCE	.254
KURTOSIS	6.856	S E KURT	.134	SKEWNESS	-2.396
S E SKEW	.067	RANGE	3.045	MINIMUM	.000
MAXIMUM	3.045	SUM	2597.718		

VALID CASES   1325   MISSING CASES   0

LDRVWK1F

```
    COUNT   MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  4.00 OCCURRENCES

       48     -.01     *************
        1      .02
        5      .05     *
        9      .08     **
       56      .11     ***************
      130      .14     ***********************************
      131      .17     ***********************************
      145      .20     *************************************
      144      .23     *************************************
      185      .26     **********************************************
       98      .29     *************************
       62      .32     ****************
       43      .35     ***********
       74      .38     *******************
       66      .41     *****************
       60      .44     ***************
       37      .47     *********
       26      .50     *******
        3      .53     *
        1      .56
        1      .59
                       I....+....I....+....I....+....I....+....I....+....I
                       0        40       80       120      160      200
                                      HISTOGRAM FREQUENCY
```
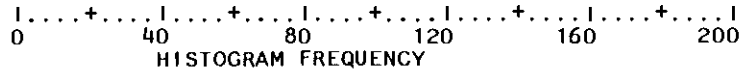
MEAN	.254	STD ERR	.003	MEOIAN	.244
MODE	.267	STD DEV	.114	VARIANCE	.013
KURTOSIS	-.266	S E KURT	.134	SKEWNESS	.189
S E SKEW	.067	RANGE	.578	MINIMUM	.000
MAXIMUM	.578	SUM	336.548		

VALID CASES   1325   MISSING CASES   0

LDRVWK2F

```
    CDUNT   MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

       48       .00   *****
        0       .15
        0       .30
        1       .45
        0       .60
        0       .75
        3       .90
        0      1.05
        4      1.20
        5      1.35   *
       14      1.50   *
       44      1.65   ****
      155      1.80   ****************
      410      1.95   *******************************************
      333      2.10   ********************************
      188      2.25   *******************
       67      2.40   *******
       32      2.55   ***
       13      2.70   *
        4      2.85
        4      3.00
                      I....+....I....+....I....+....I....+....I....+....I
                      0        100      200      300      400      500
                             HISTDGRAM FREQUENCY

MEAN         1.973    STD ERR       .012    MEDIAN       2.015
MODE         2.005    STD DEV       .447    VARIANCE      .200
KURTDSIS    11.412    S E KURT      .134    SKEWNESS    -3.007
S E SKEW      .067    RANGE        3.049    MINIMUM       .000
MAXIMUM      3.049    SUM       2613.969


VALID CASES   1325    MISSING CASES     0
```
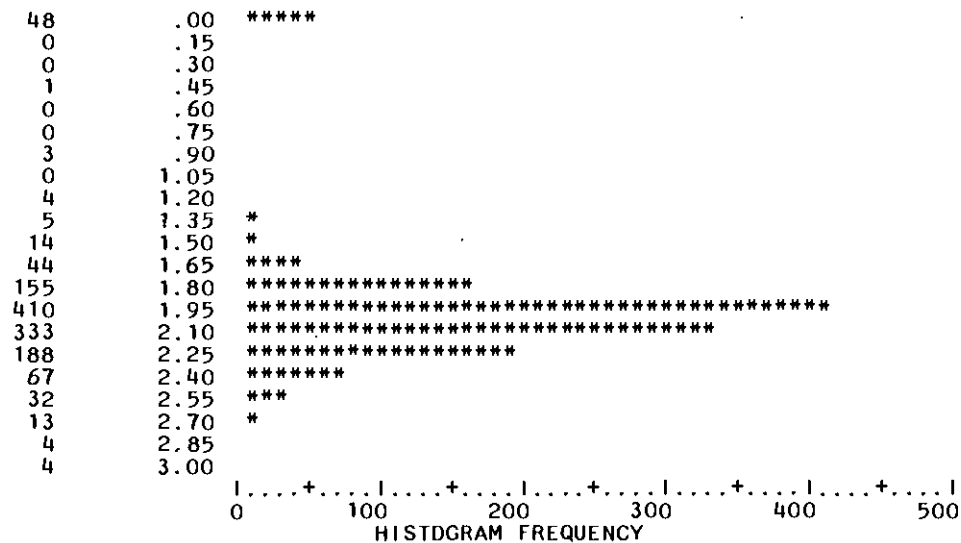
LDRVWK3F

```
        COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

            0     -.025
           57      .000    *******
            0      .025
            0      .050
            0      .075
            0      .100
            0      .125
            0      .150
            1      .175
            3      .200
            7      .225    *
          270      .250    **********************************
          274      .275    **********************************
          361      .300    ***********************************************
          187      .325    **********************
           68      .350    *********
           72      .375    *********
            7      .400    *
           16      .425    **
            2      .450
            0      .475
                           I....+....I....+....I....+....I....+....I....+....I
                           0        80       160      240      320      400
                                         HISTOGRAM FREQUENCY
```
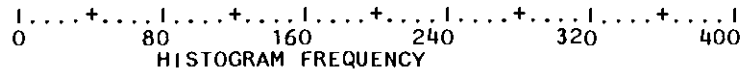
MEAN	.284	STO ERR	.002	MEDIAN	.292
MODE	.246	STD DEV	.072	VARIANCE	.005
KURTOSIS	8.275	S E KURT	.134	SKEWNESS	-2.429
S E SKEW	.067	RANGE	.447	MINIMUM	.000
MAXIMUM	.447	SUM	376.731		

VALIO CASES   1325   MISSING CASES   0

LDRVWK4F

```
      COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 12.00 OCCURRENCES

          0       -.25
          0       -.10
         57        .05    *****
          0        .20
          0        .35
          0        .50
          0        .65
          1        .80
          0        .95
          1       1.10
          4       1.25
          9       1.40    *
         22       1.55    **
         60       1.70    *****
        138       1.85    ************
        524       2.00    *********************************************
        283       2.15    ************************
        214       2.30    ******************
         12       2.45    *
          0       2.60
          0       2.75
                          I....+....I....+....I....+....I....+....I....+....I
                          0         120       240       360       480      600
                                         HISTOGRAM FREQUENCY
```
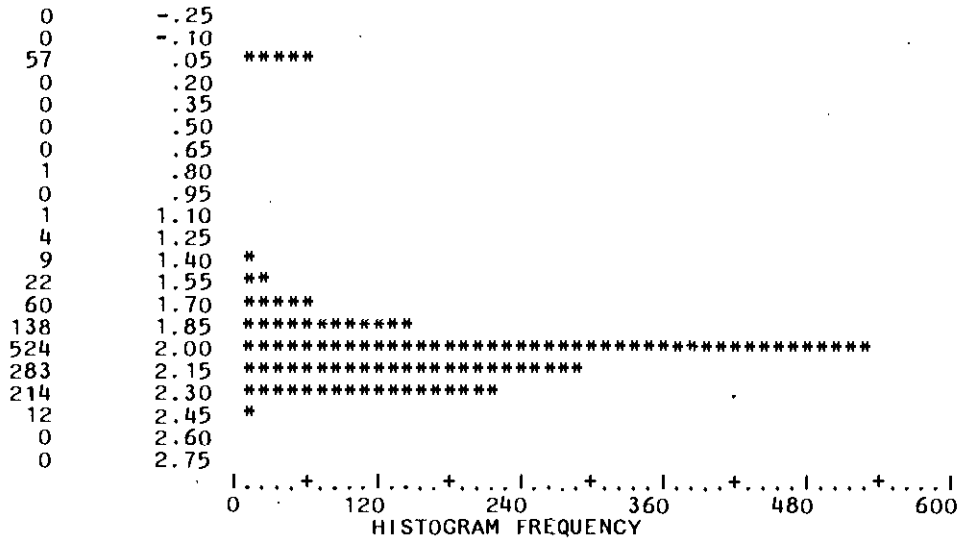
MEAN	1.955	STD ERR	.012	MEDIAN	2.050
MODE	2.071	STD DEV	.453	VARIANCE	.205
KURTOSIS	12.186	S E KURT	.134	SKEWNESS	-3.442
S E SKEW	.067	RANGE	2.488	MINIMUM	.000
MAXIMUM	2.488	SUM	2589.933		

VALID CASES   1325   MISSING CASES   0

LDRVTOTF

```
      COUNT   MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

         59      -.05    *******
          0       .10
          0       .25
          1       .40
          0       .55
          0       .70
          4       .85    *
          2      1.00
          6      1.15    *
          5      1.30    *
         16      1.45    **
         44      1.60    ******
        166      1.75    **********************
        336      1.90    *******************************************
        368      2.05    **********************************************
        199      2.20    *************************
         81      2.35    **********
         29      2.50    ****
          7      2.65    *
          1      2.80
          1      2.95
                         I....+....I....+....I....+....I....+....I....+....I
                         0        80       160      240      320      400
                                      HISTOGRAM FREQUENCY
```
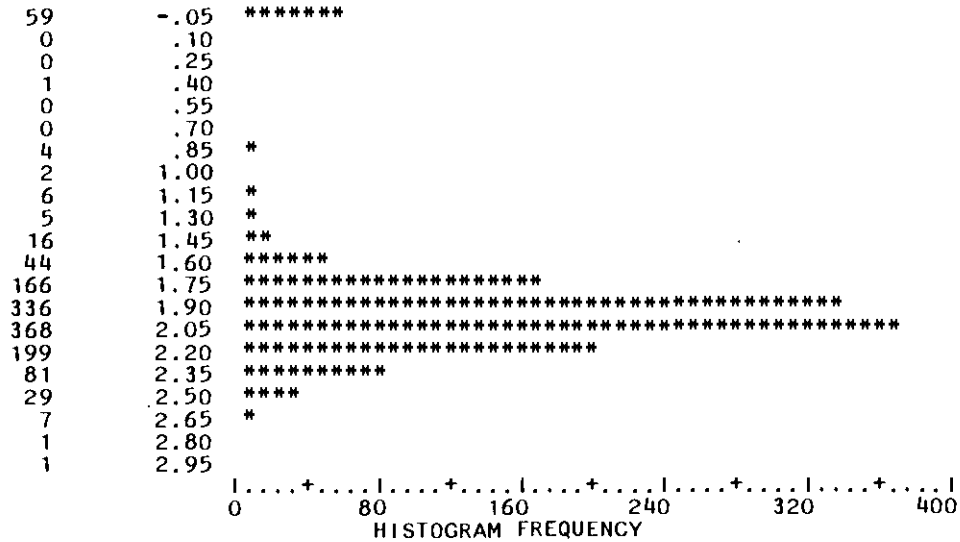
```
MEAN          1.903      STD ERR        .013      MEDIAN         1.990
MODE           .000      STD DEV        .471      VARIANCE        .222
KURTOSIS      9.294      S E KURT       .134      SKEWNESS      -2.880
S E SKEW       .067      RANGE         2.934      MINIMUM         .000
MAXIMUM       2.934      SUM        2520.881
```

```
VALID CASES   1325      MISSING CASES     0
```

WORKER1F

```
        COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

          49         .0    *****
           4         .1
          23         .2    **
         315         .3    ***********************************
         443         .4    *********************************************
         200         .5    ********************
          31         .6    ***
           2         .7
           2         .8
           0         .9
           7        1.0    *
           9        1.1    *
          25        1.2    ***
          26        1.3    ***
         113        1.4    ***********
          34        1.5    ***
          24        1.6    **
          12        1.7    *
           2        1.8
           2        1.9
           2        2.0
                           I....+....I....+....I....+....I....+....I....+....I
                           0        100      200      300      400      500
                                    HISTOGRAM FREQUENCY
```
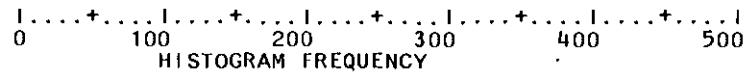
MEAN   .568   STD ERR   .012   MEDIAN   .400
MODE   1.380   STD DEV   .427   VARIANCE   .182
KURTOSIS   .713   S E KURT   .134   SKEWNESS   1.434
S E SKEW   .067   RANGE   2.030   MINIMUM   .000
MAXIMUM   2.030   SUM   752.020

VALID CASES   1325   MISSING CASES   0

WORKER2F

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

         0        -.25
        46         .00   *****
         5         .25   *
         0         .50
         7         .75   *
        32        1.00   ***
       132        1.25   *************
       362        1.50   **********************************
       411        1.75   *****************************************
       117        2.00   ************
        16        2.25   **
        28        2.50   ***
        13        2.75   *
       119        3.00   ************
        27        3.25   ***
         8        3.50   *
         0        3.75
         1        4.00
         0        4.25
         1        4.50
         0        4.75
                         I....+....I....+....I....+....I....+....I....+....I
                         0       100      200      300      400      500
                                      HISTOGRAM FREQUENCY
```
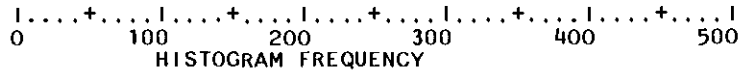
MEAN	1.744	STD ERR	.018	MEDIAN	1.660
MODE	2.940	STD DEV	.638	VARIANCE	.407
KURTOSIS	1.773	S E KURT	.134	SKEWNESS	.276
S E SKEW	.067	RANGE	4.550	MINIMUM	.000
MAXIMUM	4.550	SUM	2310.730		

VALID CASES   1325   MISSING CASES   0

WORKER3F

```
     COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

         0      -.40
         0      -.25
         0      -.10
        44       .05    ******
        69       .20    *********
       207       .35    ***************************
        87       .50    ************
         8       .65    *
         2       .80
         0       .95
         3      1.10
       156      1.25    ********************
        91      1.40    ***********
       343      1.55    *************************************************
       129      1.70    *****************
        80      1.85    **********
       105      2.00    *************
         1      2.15
         0      2.30
         0      2.45
         0      2.60
               I....+....I....+....I....+....I....+....I....+....I....+....I
               0        80       160      240      320      400
                              HISTOGRAM FREQUENCY
```
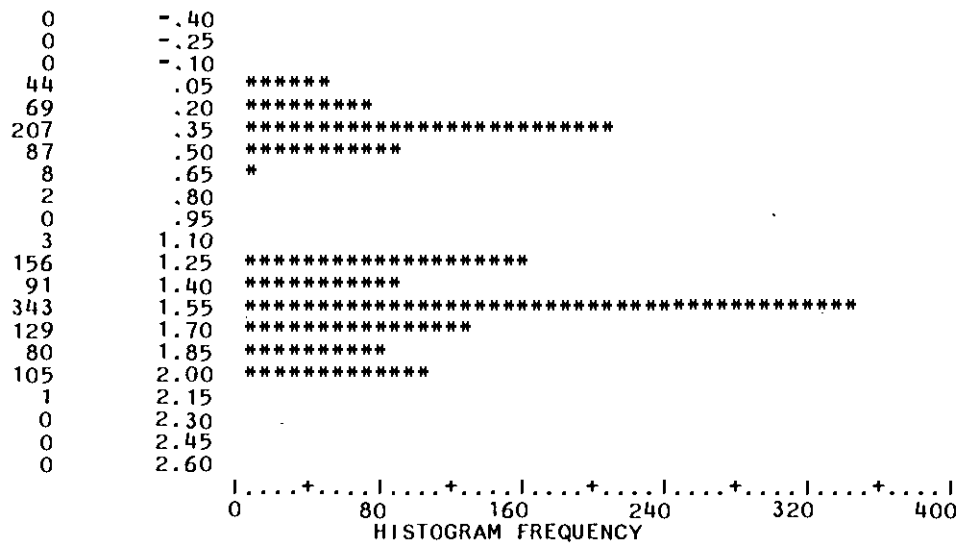
```
MEAN          1.180    STD ERR      .017     MEDIAN       1.450
MODE          1.200    STD DEV      .618     VARIANCE      .382
KURTOSIS     -1.198    S E KURT     .134     SKEWNESS     -.501
S E SKEW      .067     RANGE       2.190     MINIMUM       .000
MAXIMUM      2.190     SUM      1564.040

VALID CASES   1325     MISSING CASES    0
```

WORKER4F

```
   COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

       0       -.1
      42        .1     *****
       2        .3
       4        .5     *
       3        .7
      14        .9     **
      44       1.1     ******
      40       1.3     *****
      79       1.5     **********
      68       1.7     *********
      89       1.9     ***********
      80       2.1     **********
      44       2.3     ******
     119       2.5     ***************
     175       2.7     **********************
     176       2.9     **********************
     215       3.1     **************************
      43       3.3     *****
      67       3.5     ********
      21       3.7     ***
       0       3.9
                       I....+....I....+....I....+....I....+....I....+....I
                       0        80       160      240      320      400
                                   HISTOGRAM FREQUENCY
```
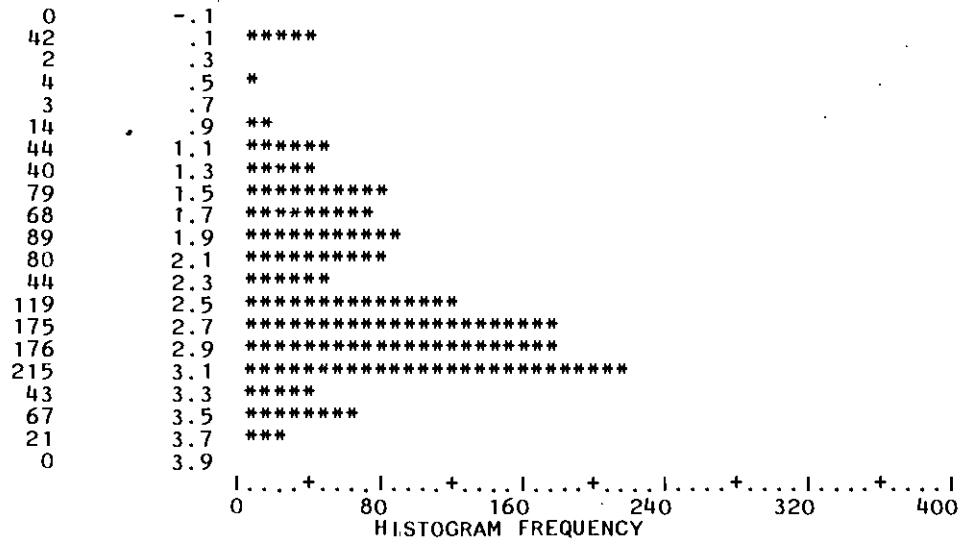
```
MEAN          2.408      STD ERR        .022     MEDIAN        2.670
MODE          3.140      STD DEV        .813     VARIANCE       .662
KURTOSIS       .618      S E KURT       .134     SKEWNESS      -.973
S E SKEW       .067      RANGE         3.780     MINIMUM        .000
MAXIMUM       3.780      SUM        3191.240
```
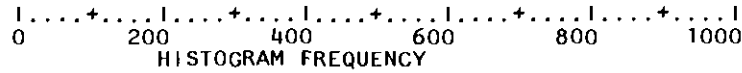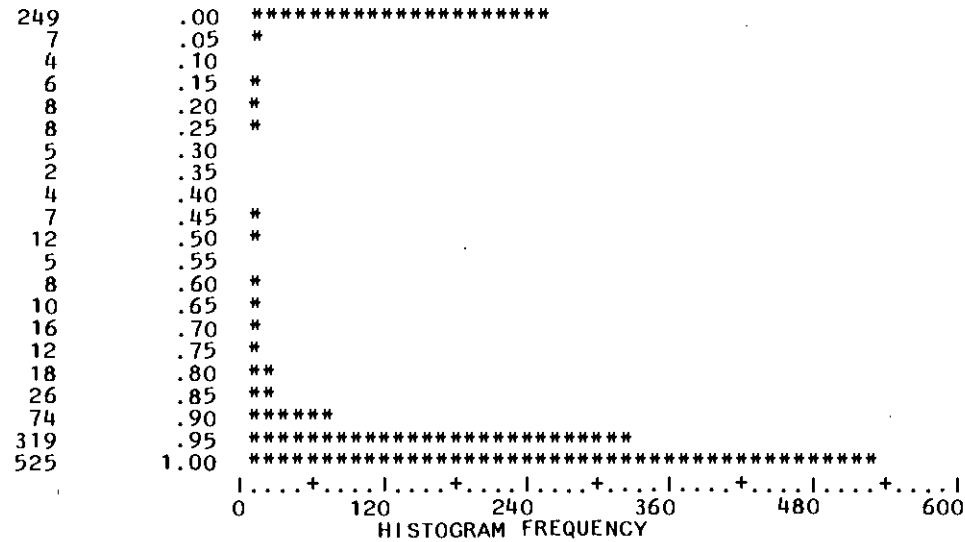
VALID CASES   1325   MISSING CASES   0

WORKERTF

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

        59      -.05     *******
         5       .10     *
         2       .25
         1       .40
         5       .55     *
         8       .70     *
        20       .85     ***
        54      1.00     *******
        65      1.15     ********
       124      1.30     ****************
       233      1.45     *****************************
       286      1.60     ************************************
       267      1.75     **********************************
       150      1.90     *******************
        35      2.05     ****
         7      2.20     *
         2      2.35
         1      2.50
         0      2.65
         0      2.80
         1      2.95
                         I....+....I....+....I....+....I....+....I....+....I
                         0        80       160       240       320       400
                                       HISTOGRAM FREQUENCY
```
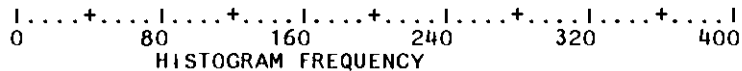
MEAN	1.482	STD ERR	.012	MEDIAN	1.576
MODE	.000	STD DEV	.436	VARIANCE	.190
KURTOSIS	4.088	S E KURT	.134	SKEWNESS	-1.826
S E SKEW	.067	RANGE	2.928	MINIMUM	.000
MAXIMUM	2.928	SUM	1963.452		

VALID CASES   1325   MISSING CASES   0

INCMWK1F

```
        COUNT     MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  4.00 OCCURRENCES

           45          228     ************
            6          702     **
            2         1176     *
            2         1650     *
            0         2124
           20         2598     *****
           38         3072     **********
           90         3546     ***********************
           89         4020     **********************
          153         4494     ******************************************
          175         4968     **************************************************
          167         5442     *********************************************
          128         5916     ********************************
           91         6390     ***********************
           81         6864     *********************
           59         7338     ****************
           41         7812     **********
           32         8286     *********
           22         8760     ******
            7         9234     **
           77         9708     *******************
                              I....+....I....+....I....+....I....+....I....+....I
                              0        40        80       120       160       200
                                      HISTOGRAM FREQUENCY
```
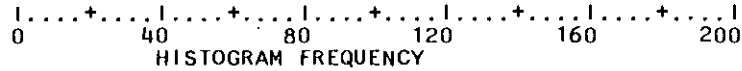
```
MEAN         5466.291    STD ERR        55.138    MEDIAN       5262.000
MODE         9757.000    STD DEV      2007.039    VARIANCE  4028204.41
KURTOSIS         .861    S E KURT         .134    SKEWNESS        -.097
S E SKEW         .067    RANGE        9935.000    MINIMUM          .000
MAXIMUM      9935.000    SUM       7242836.00
```

VALID CASES   1325   MISSING CASES   0

INCMWK2F

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY 8.00 OCCURRENCES
42	1567	*****
0	4705	
41	7843	*****
141	10981	******************
189	14119	************************
300	17257	***
207	20395	**************************
150	23533	*******************
81	26671	**********
43	29809	*****
28	32947	****
79	36085	**********
10	39223	*
3	42361	
2	45499	
4	48637	*
1	51775	
0	54913	
1	58051	
2	61189	
1	64327	

```
                  I....+....I....+....I....+....I....+....I....+....I
                  0        80       160      240      320      400
                               HISTOGRAM FREQUENCY
```
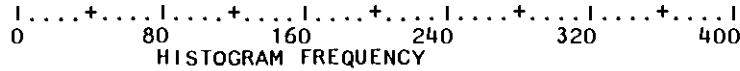
MEAN	19440.746	STD ERR	228.384	MEDIAN	18266.000
MODE	35099.000	STD DEV	8313.315	VARIANCE	69111202.4
KURTOSIS	2.388	S E KURT	.134	SKEWNESS	.742
S E SKEW	.067	RANGE	65893.000	MINIMUM	.000
MAXIMUM	65893.000	SUM	25758989.0		

VALID CASES   1325   MISSING CASES   0

INCMWK3F

```
   COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

      44      237     ******
       2      711
       1     1185
       0     1659
       1     2133
      10     2607     *
      10     3081     *
      24     3555     ***
      40     4029     *****
      81     4503     **********
     103     4977     **************
      93     5451     ************
     242     5925     ******************************
     184     6399     ***********************
      64     6873     ********
      40     7347     *****
      81     7821     **********
     234     8295     *****************************
      34     8769     ****
      11     9243     *
      26     9717     ***
               I....+....I....+....I....+....I....+....I....+....I....+....I
               0        80       160       240       320       400
                            HISTOGRAM FREQUENCY
```
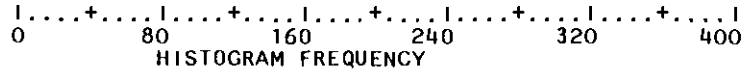
MEAN	6219.826	STD ERR	52.342	MEDIAN	6168.000
MODE	8254.000	STD DEV	1905.263	VARIANCE	3630027.71
KURTOSIS	1.929	S E KURT	.134	SKEWNESS	-.969
S E SKEW	.067	RANGE	9953.000	MINIMUM	.000
MAXIMUM	9953.000	SUM	8241269.00		

VALID CASES   1325   MISSING CASES   0

INCMWK4F

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

        40        1522     *****
         0        4576
         1        7630
        23       10684     ***
        65       13738     ********
       199       16792     **************************
       204       19846     **************************
       188       22900     ************************
        76       25954     **********
       139       29008     *****************
       100       32062     *************
        54       35116     *******
        16       38170     **
        26       41224     ***
        14       44278     **
         9       47332     *
        12       50386     **
        16       53440     **
         0       56494
        18       59548     **
       125       62602     ****************
                           I....+....I....+....I....+....I....+....I....+....I
                           0         80        160       240       320       400
                                          HISTOGRAM FREQUENCY
```
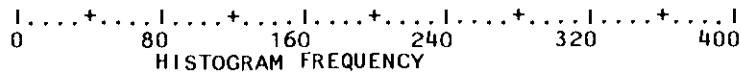
```
MEAN        27998.601     STD ERR       414.013     MEDIAN      22917.000
MODE        62818.000     STD DEV     15070.319     VARIANCE    227114501
KURTOSIS         .636     S E KURT         .134     SKEWNESS        1.063
S E SKEW         .067     RANGE       64124.000     MINIMUM          .000
MAXIMUM     64124.000     SUM        37098146.0
```

```
VALID CASES    1325     MISSING CASES      0
```

INCMTOTF

```
     COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

        55        1567    *******
         5        4705    *
        58        7843    *******
       145       10981    ******************
       219       14119    ****************************
       284       17257    ************************************
       220       20395    ****************************
       145       23533    ******************
        78       26671    **********
        46       29809    ******
        30       32947    ****
         9       36085    *
        13       39223    **
         3       42361
         5       45499    *
         3       48637
         2       51775
         0       54913
         2       58051
         1       61189
         2       64327
                          I....+....I....+....I....+....I....+....I....+....I
                          0        80      160      240      320      400
                                        HISTOGRAM FREQUENCY
```
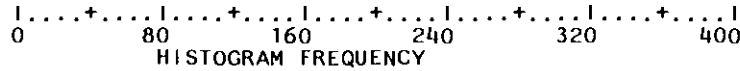
```
MEAN        18228.891     STD ERR      222.916     MEDIAN      17660.268
MODE             .000     STD DEV     8114.271     VARIANCE 65841394.4
KURTOSIS        3.997     S E KURT       .134      SKEWNESS        .910
S E SKEW         .067     RANGE      65893.000     MINIMUM         .000
MAXIMUM     65893.000     SUM        24153280.1
```

```
VALID CASES     1325     MISSING CASES       0
```

PRQWK1F

```
    COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

      387      -.005    ******************************************
      466       .010    ***************************************************
      197       .025    ********************
      116       .040    ************
       55       .055    ******
       33       .070    ***
       30       .085    ***
       15       .100    **
        6       .115    *
        3       .130
        6       .145    *
        3       .160
        0       .175
        2       .190
        1       .205
        0       .220
        0       .235
        2       .250
        2       .265
        0       .280
        1       .295
                        I....+....I....+....I....+....I....+....I....+....I
                        0       100      200      300      400      500
                                    HISTOGRAM FREQUENCY
```
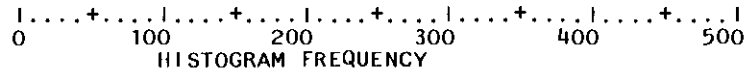
MEAN	.021	STD ERR	.001	MEDIAN	.010
MODE	.000	STD DEV	.031	VARIANCE	.001
KURTOSIS	17.850	S E KURT	.134	SKEWNESS	3.437
S E SKEW	.067	RANGE	.293	MINIMUM	.000
MAXIMUM	.293	SUM	27.276		

VALID CASES   1325   MISSING CASES   0

PROWK2F
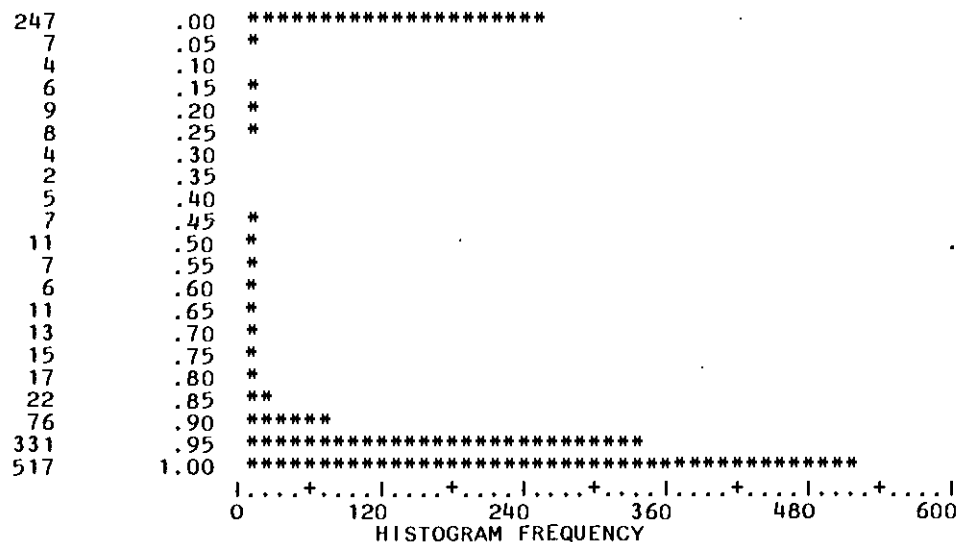
```
    COUNT   MIDPOINT    ONE SYMBOL EQUALS APPROXIMATELY 12.00 OCCURRENCES

      247       .00    ********************
        7       .05    *
        4       .10
        6       .15    *
        9       .20    *
        8       .25    *
        4       .30
        2       .35
        5       .40
        7       .45    *
       11       .50    *
        7       .55    *
        6       .60    *
       11       .65    *
       13       .70    *
       15       .75    *
       17       .80    *
       22       .85    **
       76       .90    ******
      331       .95    ****************************
      517      1.00    ************************************************
                       I....+....I....+....I....+....I....+....I....+....I....+....I
                       0        120       240       360       480       600
                            HISTOGRAM FREQUENCY

MEAN         .740    STD ERR      .011    MEDIAN       .961
MODE         .000    STD DEV      .389    VARIANCE     .151
KURTOSIS    -.299    S E KURT     .134    SKEWNESS   -1.243
S E SKEW     .067    RANGE       1.000    MINIMUM      .000
MAXIMUM     1.000    SUM       980.755

VALID CASES   1325    MISSING CASES      0
```
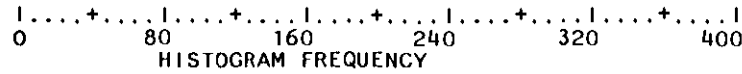
PROWK3F

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY 24.00 OCCURRENCES
1107	.001	**
46	.004	**
32	.007	*
19	.010	*
31	.013	*
28	.016	*
17	.019	*
8	.022	
10	.025	
13	.028	*
5	.031	
2	.034	
1	.037	
1	.040	
0	.043	
1	.046	
0	.049	
1	.052	
2	.055	
0	.058	
1	.061	

```
         I....+....I....+....I....+....I....+....I....+....I
         0       240      480      720      960      1200
                      HISTOGRAM FREQUENCY
```
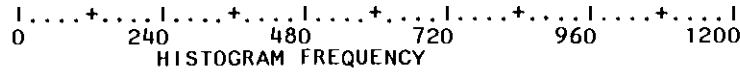
MEAN	.002	STD ERR	.000	MEDIAN	.000
MODE	.000	STD DEV	.007	VARIANCE	.000
KURTOSIS	18.139	S E KURT	.134	SKEWNESS	3.819
S E SKEW	.067	RANGE	.062	MINIMUM	.000
MAXIMUM	.062	SUM	3.224		

VALID CASES 1325   MISSING CASES 0

PROWK4F

```
        COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 20.00 OCCURRENCES

          926       .00     *****************************************************
           55       .05     ***
           17       .10     *
           11       .15     *
           15       .20     *
           11       .25     *
           13       .30     *
            9       .35
            6       .40
            6       .45
           15       .50     *
            4       .55
            4       .60
            3       .65
            5       .70
            9       .75
            6       .80
            6       .85
            5       .90
           33       .95     **
          166      1.00     ********
                            I....+....I....+....I....+....I....+....I....+....I
                            0       200      400      600      800     1000
                                      HISTOGRAM FREQUENCY
```
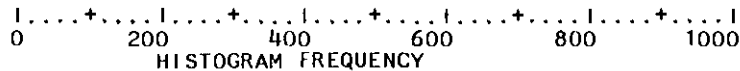
MEAN	.196	STD ERR	.010	MEDIAN	.000
MODE	.000	STD OEV	.365	VARIANCE	.133
KURTOSIS	.553	S E KURT	.134	SKEWNESS	1.539
S E SKEW	.067	RANGE	1.000	MINIMUM	.000
MAXIMUM	1.000	SUM	259.747		

VALID CASES   1325   MISSING CASES   0

PRKSCTNF

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY 30.00 OCCURRENCES
1277	5	***
0	30	
0	55	
0	80	
4	105	
3	130	
3	155	
3	180	
0	205	
3	230	
1	255	
0	280	
2	305	
8	330	
0	355	
13	380	
0	405	
0	430	
2	455	
0	480	
6	505	

```
        I....+....I....+....I....+....I....+....I....+....I
        0       300      600      900     1200     1500
                     HISTOGRAM FREQUENCY
```
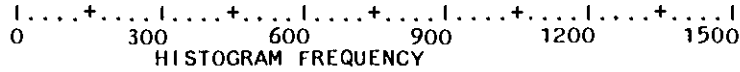
MEAN	11.266	STD ERR	1.730	MEDIAN	.000
MODE	.000	STD DEV	62.983	VARIANCE	3966.903
KURTOSIS	36.071	S E KURT	.134	SKEWNESS	5.972
S E SKEW	.067	RANGE	510.000	MINIMUM	.000
MAXIMUM	510.000	SUM	14928.000		

VALID CASES   1325   MISSING CASES   0

PRONWK1F

```
    COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

      464        .00     ******************************************************
      370        .02     **************************************
      215        .04     **********************
      105        .06     ***********
       54        .08     *****
       38        .10     ****
       25        .12     ***
       19        .14     **
       11        .16     *
        3        .18
        5        .20     *
        5        .22     *
        0        .24
        3        .26
        1        .28
        0        .30
        0        .32
        2        .34
        3        .36
        0        .38
        2        .40
                         I....+....I....+....I....+....I....+....I....+....I
                         0        100       200       300       400       500
                                     HISTOGRAM FREQUENCY
```
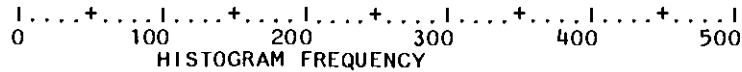
MEAN   .033   STD ERR   .001   MEDIAN   .019
MODE   .000   STD DEV   .046   VARIANCE   .002
KURTOSIS   15.786   S E KURT   .134   SKEWNESS   3.256
S E SKEW   .067   RANGE   .398   MINIMUM   .000
MAXIMUM   .398   SUM   44.156

VALID CASES   1325   MISSING CASES   0

PPHHNW1F

```
    COUNT   MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

        0     -.25
        0     -.10
       41      .05    *****
        1      .20
        0      .35
        0      .50
        4      .65    *
        9      .80    *
       39      .95    *****
      113     1.10    **************
      254     1.25    *******************************
      378     1.40    ***********************************************
      254     1.55    *******************************
      110     1.70    **************
       55     1.85    *******
       44     2.00    ******
       17     2.15    **
        4     2.30    *
        2     2.45
        0     2.60
        0     2.75
                      I....+....I....+....I....+....I....+....I....+....I
                      0        80       160       240       320       400
                               HISTOGRAM FREQUENCY
```
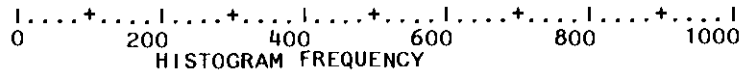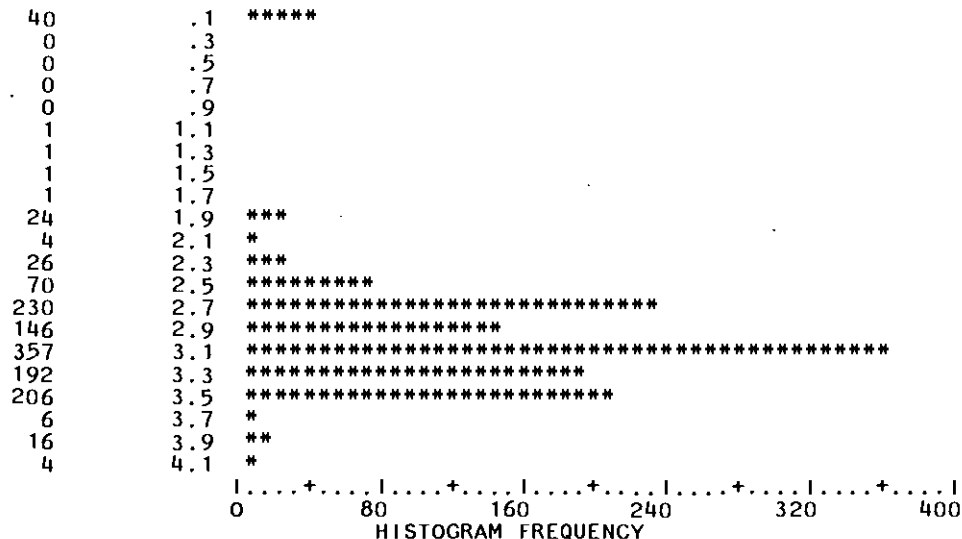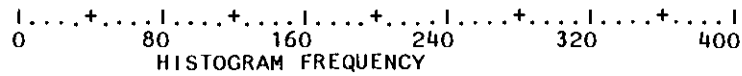
MEAN	1.389	STD ERR	.010	MEDIAN	1.389
MODE	1.389	STD DEV	.355	VARIANCE	.126
KURTOSIS	5.586	S E KURT	.134	SKEWNESS	-1.504
S E SKEW	.067	RANGE	2.511	MINIMUM	.000
MAXIMUM	2.511	SUM	1839.961		

VALID CASES   1325   MISSING CASES   0

PRONWK2F

```
      COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY 10.00 OCCURRENCES

        247        .00    ************************
          7        .05    *
          5        .10    *
          8        .15    *
          7        .20    *
          7        .25    *
          5        .30    *
          2        .35
          5        .40    *
          8        .45    *
          9        .50    *
         11        .55    *
          5        .60    *
         18        .65    **
         13        .70    *
         13        .75    *
         24        .80    **
         55        .85    ******
        124        .90    ************
        429        .95    ***********************************************
        323       1.00    ****************************
                          I....+....I....+....I....+....I....+....I....+....I
                          0        100      200      300      400      500
                                   HISTOGRAM FREQUENCY
```
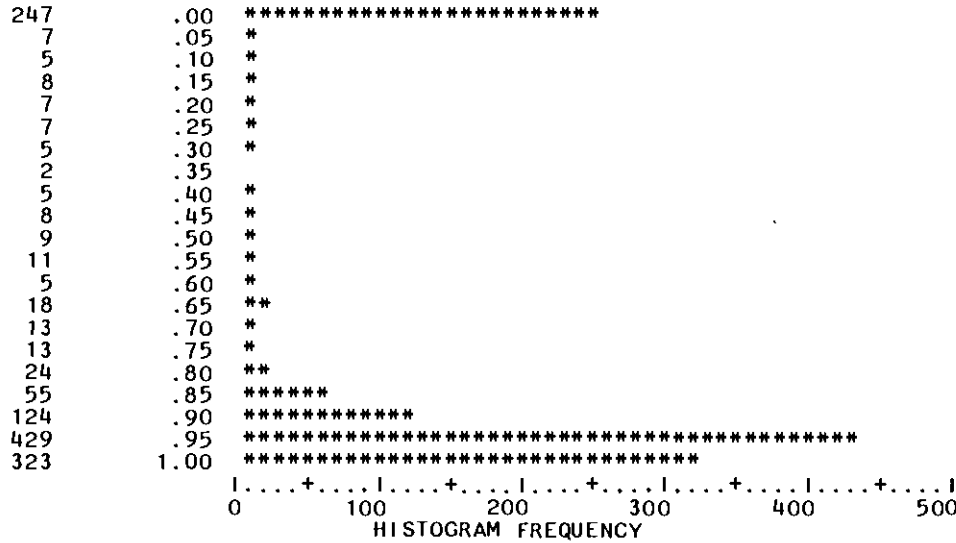
MEAN	.727	STD ERR	.011	MEDIAN	.943
MODE	.000	STD DEV	.383	VARIANCE	.147
KURTOSIS	-.324	S E KURT	.134	SKEWNESS	-1.225
S E SKEW	.067	RANGE	1.000	MINIMUM	.000
MAXIMUM	1.000	SUM	963.465		

VALID CASES   1325   MISSING CASES   0

PPHHNW2F

```
       COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

           0      -.20
          41       .05     *****
           1       .30
           0       .55
           0       .80
           2      1.05
          10      1.30     *
          11      1.55     *
          19      1.80     **
          37      2.05     *****
         116      2.30     ***************
         173      2.55     **********************
         240      2.80     ********************************
         339      3.05     ******************************************
         172      3.30     **********************
          69      3.55     *********
          49      3.80     ******
          23      4.05     ***
          16      4.30     **
           7      4.55     *
           0      4.80
                           I....+....I....+....I....+....I....+....I....+....I
                           0        80       160      240      320      400
                                      HISTOGRAM FREQUENCY
```
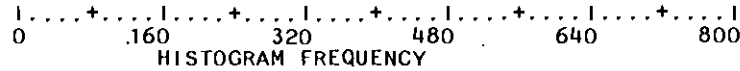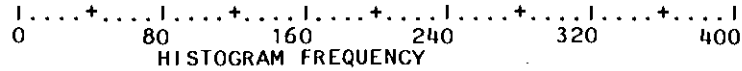
MEAN	2.824	STD ERR	.020	MEDIAN	2.940
MODE	2.940	STD DEV	.719	VARIANCE	.517
KURTOSIS	5.610	S E KURT	.134	SKEWNESS	-1.726
S E SKEW	.067	RANGE	4.560	MINIMUM	.000
MAXIMUM	4.560	SUM	3742.389		

VALID CASES   1325   MISSING CASES   0

PRONWK3 F

COUNT   MIDPOINT   ONE SYMBOL EQUALS APPROXIMATELY 24.00 OCCURRENCES

```
      0     -.0050
   1118      .0025    **************************************************
     57      .0100    **
     42      .0175    **
     41      .0250    **
     23      .0325    *
     18      .0400    *
     13      .0475    *
      4      .0550
      4      .0625
      0      .0700
      4      .0775
      0      .0850
      0      .0925
      0      .1000
      0      .1075
      0      .1150
      0      .1225
      0      .1300
      0      .1375
      1      .1450
                      I....+....I....+....I....+....I....+....I....+....I
                      0      240      480      720      960     1200
                               HISTOGRAM FREQUENCY
```
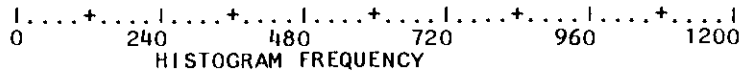
MEAN	.004	STD ERR	.000	MEDIAN	.000	
MODE	.000	STD OEV	.011	VARIANCE	.000	
KURTOSIS	25.656	S E KURT	.134	SKEWNESS	4.144	
S E SKEW	.067	RANGE	.143	MINIMUM	.000	
MAXIMUM	.143	SUM	5.549			

VALID CASES   1325   MISSING CASES   0

PPHHNW3F

```
        COUNT    MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

            0      -.35
            0      -.20
           40      -.05      *****
            0       .10
            0       .25
            0       .40
            0       .55
            2       .70
            1       .85
            2      1.00
          160      1.15      *********************
           93      1.30      ************
          205      1.45      ***************************
          386      1.60      ******************************************************
          175      1.75      **********************
          138      1.90      *****************
          118      2.05      ***************
            4      2.20      *
            1      2.35
            0      2.50
            0      2.65
                            I....+....I....+....I....+....I....+....I....+....I....+....I
                            0        80       160       240       320       400
                                       HISTOGRAM FREQUENCY

MEAN          1.545    STD ERR        .010    MEDIAN      1.555
MODE          1.202    STD DEV        .365    VARIANCE     .133
KURTOSIS      7.324    S E KURT       .134    SKEWNESS   -2.095
S E SKEW       .067    RANGE         2.294    MINIMUM      .000
MAXIMUM       2.294    SUM        2046.467


VALID CASES   1325    MISSING CASES     0
```
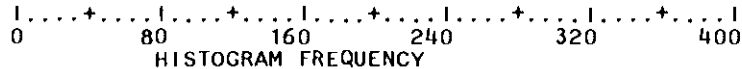
PRONWK4F

```
   COUNT     MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY 20.00 OCCURRENCES

     926        .00    ***************************************************
      54        .05    ***
      18        .10    *
      11        .15    *
      15        .20    *
      11        .25    *
      12        .30    *
      10        .35    *
       5        .40
       8        .45
      12        .50    *
       5        .55
       7        .60
       1        .65
       5        .70
       9        .75
       7        .80
       6        .85
       8        .90
      84        .95    ****
     111       1.00    ******
                       I....+....I....+....I....+....I....+....I....+....I
                       0        200      400      600      800     1000
                                 HISTOGRAM FREQUENCY
```
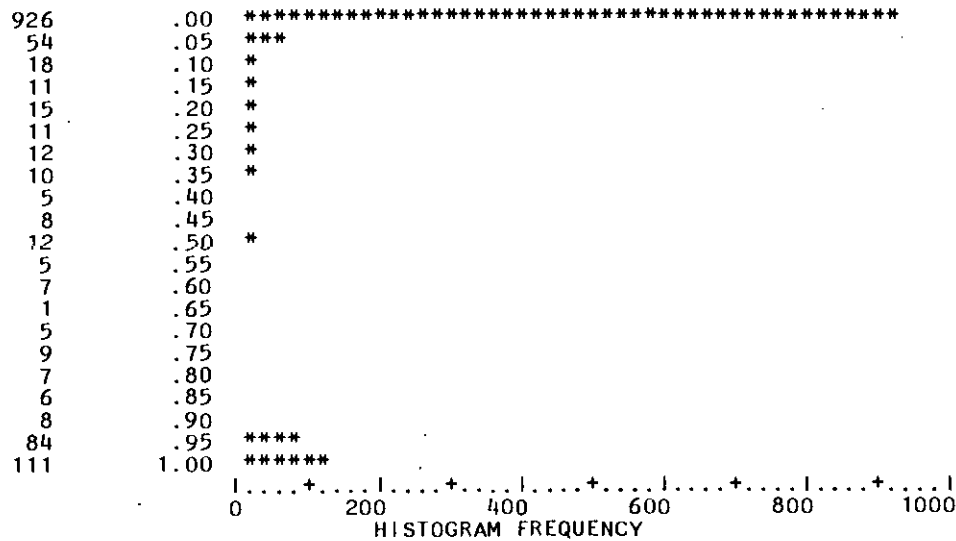
MEAN	.195	STD ERR	.010	MEDIAN	.000
MODE	.000	STD DEV	.361	VARIANCE	.131
KURTOSIS	.544	S E KURT	.134	SKEWNESS	1.536
S E SKEW	.067	RANGE	1.000	MINIMUM	.000
MAXIMUM	1.000	SUM	257.830		

VALID CASES   1325   MISSING CASES   0

PPHHNW4F

```
       COUNT   MIDPOINT      ONE SYMBOL EQUALS APPROXIMATELY  8.00 OCCURRENCES

          0      -.1
         40       .1     *****
          0       .3
          0       .5
          0       .7
          0       .9
          1      1.1
          4      1.3     *
          0      1.5
          4      1.7     *
          7      1.9     *
         47      2.1     ******
         47      2.3     ******
        178      2.5     ***********************
        233      2.7     *****************************
        267      2.9     **********************************
        298      3.1     ************************************
         84      3.3     ***********
         83      3.5     **********
         31      3.7     ****
          1      3.9
                         I....+....I....+....I....+....I....+....I....+....I
                         0        80       160      240      320      400
                                    HISTOGRAM FREQUENCY
```
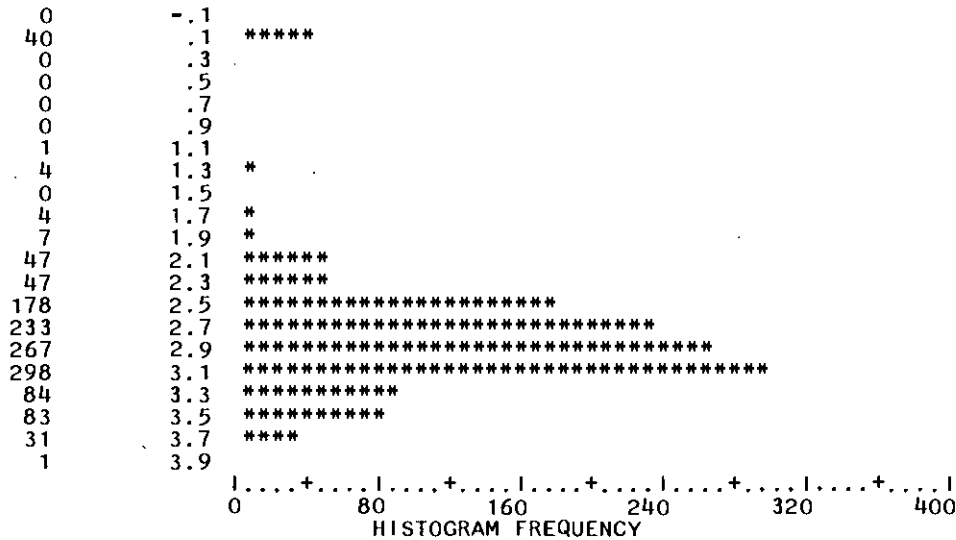
MEAN   2.792   STD ERR   .017   MEDIAN   2.896
MODE   3.145   STD DEV   .618   VARIANCE   .382
KURTOSIS   10.154   S E KURT   .134   SKEWNESS   -2.733
S E SKEW   .067   RANGE   3.895   MINIMUM   .000
MAXIMUM   3.895   SUM   3699.759

VALID CASES   1325   MISSING CASES   0

EMPLF

```
      COUNT    MIDPOINT     ONE SYMBOL EQUALS APPROXIMATELY 16.00 OCCURRENCES

        713        1910    ***************************************************
        317        5731    ********************
        138        9552    *********
         68       13373    ****
         25       17194    **
         22       21015    *
         17       24836    *
         10       28657    *
          4       32478
          2       36299
          2       40120
          3       43941
          1       47762
          1       51583
          0       55404
          1       59225
          0       63046
          0       66867
          0       70688
          0       74509
          1       78330
                           I....+....I....+....I....+....I....+....I....+....I
                           0       160      320      480      640      800
                                         HISTOGRAM FREQUENCY
```
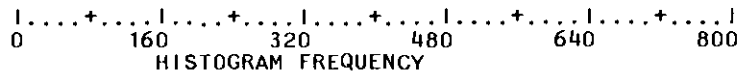
MEAN	5568.483	STD ERR	188.577	MEDIAN	3380.000	
MODE	.000	STD DEV	6864.313	VARIANCE	47118797.8	
KURTOSIS	20.455	S E KURT	.134	SKEWNESS	3.524	
S E SKEW	.067	RANGE	80240.000	MINIMUM	.000	
MAXIMUM	80240.000	SUM	7378240.00			

VALID CASES   1325   MISSING CASES   0

ACRES

```
     COUNT    MIDPOINT     ONE SYM8OL EQUALS APPROXIMATELY 30.00 OCCURRENCES

      1284       14208     *********************************************
        29       42633     *
         4       71058
         4       99483
         2      127908
         0      156333
         0      184758
         1      213183
         0      241608
         0      270033
         0      298458
         0      326883
         0      355308
         0      383733
         0      412158
         0      440583
         0      469008
         0      497433
         0      525858
         0      554283
         1      582708
                       I....+....I....+....I....+....I....+....I....+....I
                       0      300      600      900     1200     1500
                                  HISTOGRAM FREQUENCY
```

```
MEAN        4705.396    STD ERR       556.053    MEDIAN       1131.000
MODE            .000    STD DEV     20240.619    VARIANCE    409682639
KURTOSIS     564.346    S E KURT        .134     SKEWNESS       20.591
S E SKEW        .067    RANGE       596915.000   MINIMUM          .000
MAXIMUM   596915.000    SUM         6234650.00
```

VALID CASES   1325   MISSING CASES   0

APPENDIX B

PEARSON CORRELATION COEFFICIENTS

- - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

	HWYTERTF	PRKSCTWF	HHTOTF	AUTOTOTF	LDRVTOTF	WORKERTF	INCMTOTF	PRKSCTNF	EMPLF	POPF	HHSIZEF	AUTPERF
HWYTERTB	1.0000 (1325) P=.000	.7478 (1325) P=.000	.1824 (1325) P=.000	.1648 (1325) P=.000	.3547 (1325) P=.000	.2341 (1325) P=.000	.0850 (1325) P=.002	.6149 (1325) P=.000	.3673 (1325) P=.000	.1031 (1325) P=.000	.1707 (1325) P=.000	.2938 (1325) P=.000
PRKSCTWB	.7703 (1325) P=.000	.9647 (1325) P=.000	.0470 (1325) P=.087	-.2262 (1325) P=.000	.0036 (1325) P=.895	-.0858 (1325) P=.002	-.1495 (1325) P=.000	.8304 (1325) P=.000	.3392 (1325) P=.000	-.0350 (1325) P=.203	-.1579 (1325) P=.000	-.0075 (1325) P=.786
HHTOTB	.1505 (1325) P=.000	.0377 (1325) P=.171	.7509 (1325) P=.000	.2371 (1325) P=.000	.2268 (1325) P=.000	.3007 (1325) P=.000	.2253 (1325) P=.000	.0008 (1325) P=.978	.1500 (1325) P=.000	.7137 (1325) P=.000	.1629 (1325) P=.000	.2018 (1325) P=.000
AUTOTOTB	.1466 (1325) P=.000	-.2368 (1325) P=.000	.1960 (1325) P=.000	.9811 (1325) P=.000	.6906 (1325) P=.000	.7515 (1325) P=.000	.7415 (1325) P=.000	-.1963 (1325) P=.000	-.1196 (1325) P=.000	.2682 (1325) P=.000	.7354 (1325) P=.000	.6031 (1325) P=.000
LDRVTOTB	.3346 (1325) P=.000	-.0338 (1325) P=.219	.2453 (1325) P=.000	.7325 (1325) P=.000	.9380 (1325) P=.000	.8785 (1325) P=.000	.3890 (1325) P=.000	-.0647 (1325) P=.019	.0586 (1325) P=.033	.3396 (1325) P=.000	.8968 (1325) P=.000	.2900 (1325) P=.000
WORKERTB	.2451 (1325) P=.000	-.0742 (1325) P=.007	.3019 (1325) P=.000	.7251 (1325) P=.000	.8475 (1325) P=.000	.9978 (1325) P=.000	.5491 (1325) P=.000	-.1050 (1325) P=.000	.0645 (1325) P=.019	.3876 (1325) P=.000	.7797 (1325) P=.000	.2854 (1325) P=.000
INCMTOTB	.0855 (1325) P=.002	-.1449 (1325) P=.000	.1858 (1325) P=.000	.7143 (1325) P=.000	.3843 (1325) P=.000	.5672 (1325) P=.000	.9888 (1325) P=.000	-.1303 (1325) P=.000	-.0697 (1325) P=.011	.2200 (1325) P=.000	.4045 (1325) P=.000	.4815 (1325) P=.000
PRKSCTNB	.6217 (1325) P=.000	.7844 (1325) P=.000	.0517 (1325) P=.060	-.1878 (1325) P=.000	-.0352 (1325) P=.200	-.1104 (1325) P=.000	-.1285 (1325) P=.000	.9834 (1325) P=.000	.3492 (1325) P=.000	-.0252 (1325) P=.359	-.1658 (1325) P=.000	.0138 (1325) P=.615
EMPLB	.4256 (1325) P=.000	.4121 (1325) P=.000	.1933 (1325) P=.000	-.1300 (1325) P=.000	.0919 (1325) P=.001	.0609 (1325) P=.027	-.0977 (1325) P=.000	.3960 (1325) P=.000	.9097 (1325) P=.000	.1087 (1325) P=.000	-.0598 (1325) P=.030	.0395 (1325) P=.151
POPB	.1337 (1325) P=.000	.0071 (1325) P=.797	.8054 (1325) P=.000	.2291 (1325) P=.000	.3813 (1325) P=.000	.4382 (1325) P=.000	.1447 (1325) P=.000	-.0052 (1325) P=.850	.1355 (1325) P=.000	.8171 (1325) P=.000	.3437 (1325) P=.000	.0457 (1325) P=.096
HHSIZEB	.0442 (1325) P=.108	.0034 (1325) P=.901	.0733 (1325) P=.008	.0847 (1325) P=.002	.2054 (1325) P=.000	.1785 (1325) P=.000	.0241 (1325) P=.380	-.0040 (1325) P=.884	.2020 (1325) P=.000	.0962 (1325) P=.000	.1970 (1325) P=.000	-.0160 (1325) P=.560
AUTPERB	.0507 (1325) P=.065	.0055 (1325) P=.841	-.0979 (1325) P=.000	.1512 (1325) P=.000	.0162 (1325) P=.556	-.0090 (1325) P=.745	.1543 (1325) P=.000	.0271 (1325) P=.324	-.0190 (1325) P=.489	-.0939 (1325) P=.001	.0131 (1325) P=.634	.2231 (1325) P=.000

(COEFFICIENT / (CASES) / 2-TAILED SIG)   " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

APPENDIX C

T-TEST

- - ·- -T-TEST- -

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	*(DIFFERENCE) MEAN	STANDARD DEVIATION	STANDARD ERROR	* 2-TAIL * CORR. PROB. *	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
HWYTERTB		1.0377	0.348	0.010							
	1325				0.0	0.0	0.0	1.000 0.0	0.0	1324	1.000
HWYTERTF		1.0377	0.348	0.010							
PRKSCTWB		11.3313	46.619	1.281							
	1325				-24.4325	83.467	2.293	0.965 0.000	-10.66	1324	0.000
PRKSCTWF		35.7638	127.531	3.504							
HHTOTB		3685.4853	2734.509	75.123							
	1325				-481.8083	2004.488	55.068	0.751 0.000	-8.75	1324	0.000
HHTOTF		4167.2936	2923.086	80.303							
AUTOTOTB		1.9587	0.522	0.014							
	1325				-0.0018	0.101	0.003	0.981 0.000	-0.65	1324	0.516
AUTOTOTF		1.9605	0.504	0.014							
LDRVTOTB		1.9116	0.470	0.013							
	1325				0.0090	0.166	0.005	0.938 0.000	1.98	1324	0.048
LDRVTOTF		1.9026	0.471	0.013							
WORKERTB		1.3635	0.400	0.011							
	1325				-0.1183	0.045	0.001	0.998 0.000	-95.10	1324	0.000
WORKERTF		1.4819	0.436	0.012							
INCMTOTB		17162.2431	7699.950	211.534							
	1325				-1066.6475	1255.515	34.492	0.989 0.000	-30.92	1324	0.000
INCMTOTF		18228.8906	8114.271	222.916							

- T - T E S T -

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	* (DIFFERENCE) MEAN	STANDARD DEVIATION	STANDARD ERROR	* CORR.	2-TAIL PROB.	*	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
PRKSCTNB		4.2634	25.108	0.690									
	1325				-7.0030	38.560	1.059	0.983	0.000		-6.61	1324	0.000
PRKSCTNF		11.2664	62.983	1.730									
EMPLB		4117.8687	5181.306	142.341									
	1325				-1450.6143	3042.004	83.570	0.910	0.000		-17.36	1324	0.000
EMPLF		5568.4830	6864.313	188.577									
POPB		8432.5630	5706.835	156.779									
	1325				-2157.6928	4520.667	124.192	0.817	0.000		-17.37	1324	0.000
POPF		10590.2558	7762.778	213.260									
HHSIZEB		2.6564	3.690	0.101									
	1325				0.1946	3.618	0.099	0.197	0.000		1.96	1324	0.050
HHSIZEF		2.4618	0.707	0.019									
AUTPERB		1.2807	2.275	0.062									
	1325				0.4936	2.233	0.061	0.223	0.000		8.04	1324	0.000
AUTPERF		0.7871	0.241	0.007									

APPENDIX D

SCATTERPLOT DIAGRAMS

1980 VERSUS 2000

DOWN: HWYTERTB   ACROSS: HWYTERTF
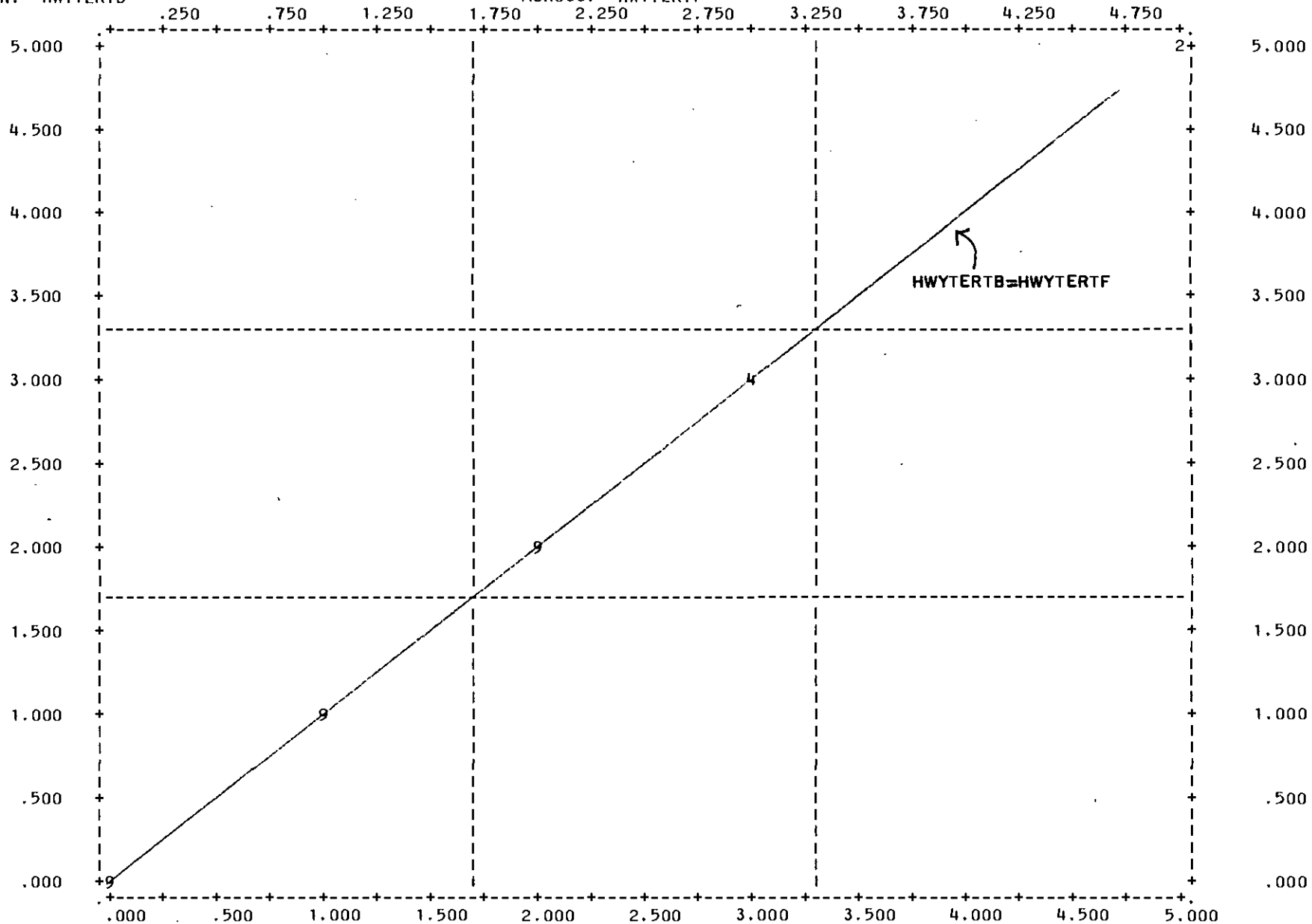
HWYTERTB=HWYTERTF

DOWN: PRKSCTWB   ACROSS: PRKSCTWF
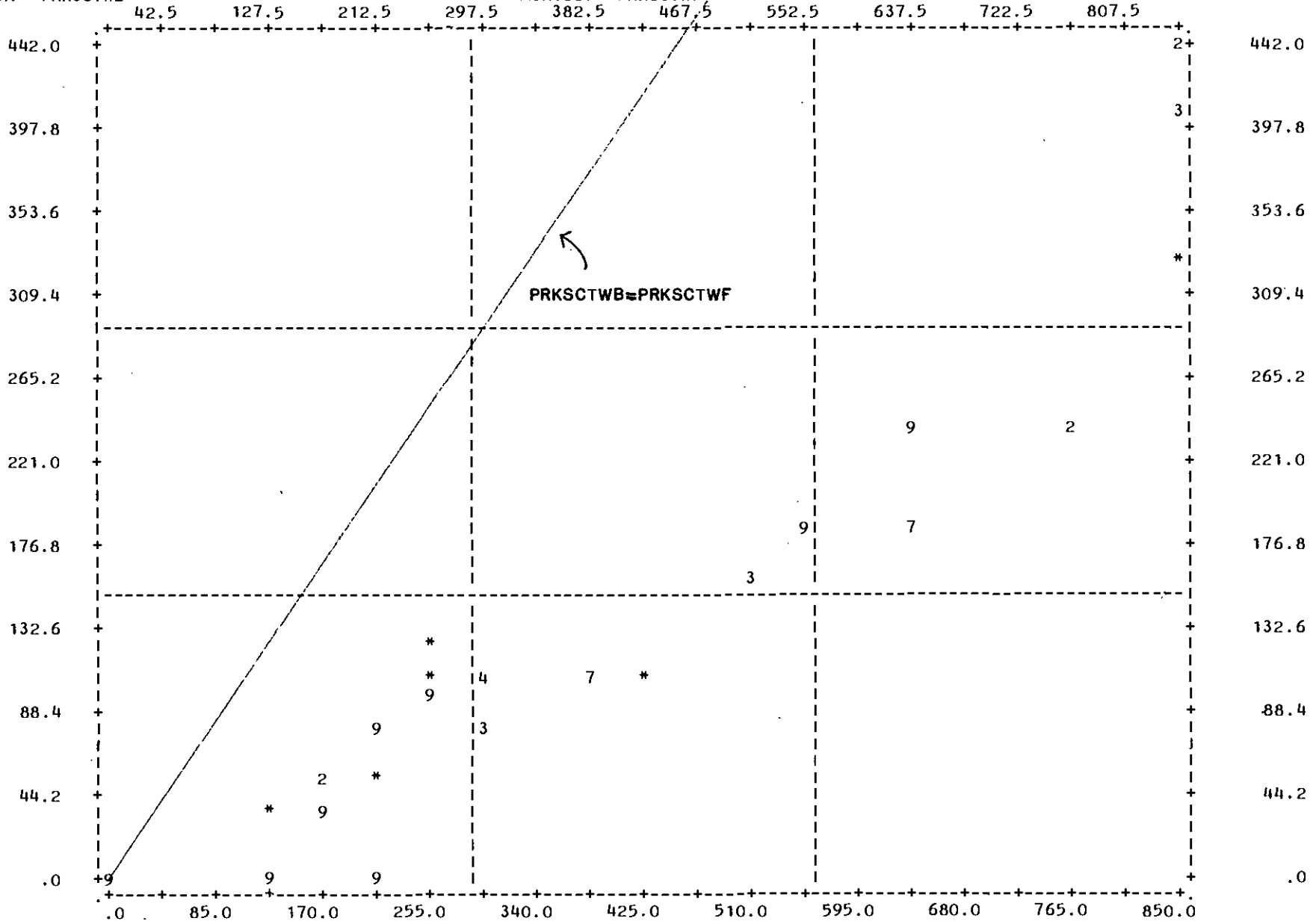
```
              42.5     127.5     212.5     297.5   382.5     467.5    552.5     637.5     722.5     807.5
          +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
   442.0  +                                   |                        |                                2+    442.0
          |                                   |                        |                                 |
          |                                   |                        |                                3|
   397.8  +                                   |                        |                                 +    397.8
          |                                   |                        |                                 |
          |                                   |                        |                                 |
   353.6  +                                   |                        |                                *|    353.6
          |                                   |                        |                                 |
          |                           ↖                                |                                 |
   309.4  +                            PRKSCTWB=PRKSCTWF               |                                 +    309.4
          |                                   |                        |                                 |
          +- - - - - - - - - - - - - - - - - -|- - - - - - - - - - - - -|- - - - - - - - - - - - - - - - - +
   265.2  +                                   |                        |                                 +    265.2
          |                                   |                        |    9            2               |
   221.0  +                                   |                        |                                 +    221.0
          |                                   |                        |                                 |
          |                                   |                     9|      7                            |
   176.8  +                                   |                        |                                 +    176.8
          |                                   |          3           |                                 |
          +- - - - - - - - - - - - - - - - - -|- - - - - - - - - - - - -|- - - - - - - - - - - - - - - - - +
   132.6  +                          *        |                        |                                 +    132.6
          |                          *       |4          7     *      |                                 |
          |                          9        |                        |                                 |
    88.4  +                       9           |3                       |                                 +    88.4
          |                                   |                        |                                 |
          |              2          *         |                        |                                 |
    44.2  +          *          9             |                        |                                 +    44.2
          |                                   |                        |                                 |
          |                                   |                        |                                 |
     .0   +9                9        9        |                        |                                 +     .0
          +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
              .0      85.0     170.0     255.0   340.0     425.0    510.0     595.0     680.0     765.0     850.0
```

DOWN: PRKSCTNB   ACROSS: PRKSCTNF
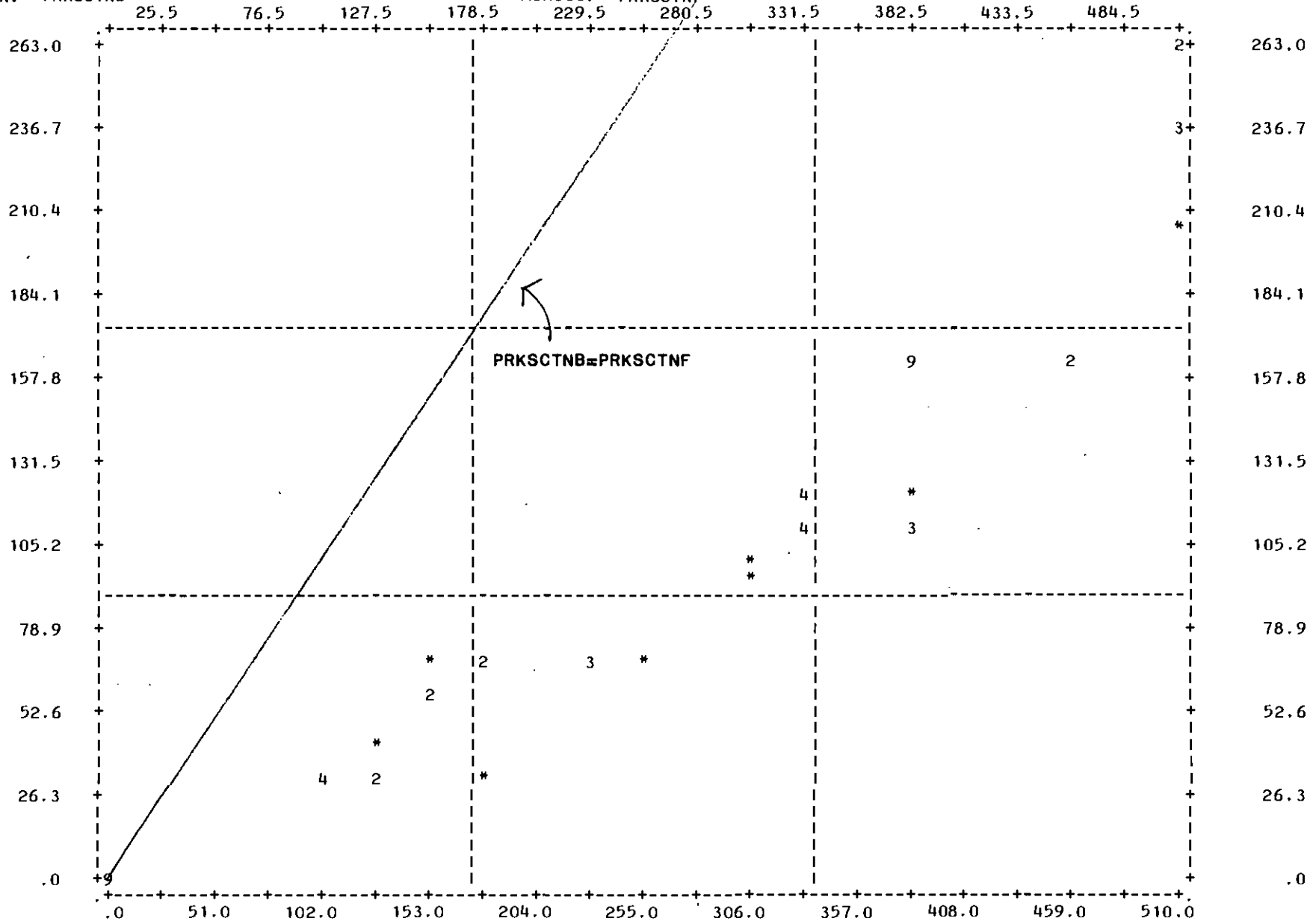
```
            25.5      76.5     127.5     178.5     229.5    280.5     331.5     382.5     433.5     484.5
         +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
  263.0  +                                     |                     |                                 2+   263.0
         |                                     |                     |                                  |
         |                                     |                     |                                  |
  236.7  +                                     |                     |                                 3+   236.7
         |                                     |                     |                                  |
         |                                     |                     |                                  |
  210.4  +                                     |                     |                                  +   210.4
         |                                     |                     |                                 *|
         |                                     |                     |                                  |
  184.1  +                                     |                     |                                  +   184.1
         |          - - - - - - - - - - - - - -|- - - - - - - - - - -|- - - - - - - - - - - - - - - - - |
         |                                     |                     |                                  |
  157.8  +                                     |                     |          9          2            +   157.8
         |                                     |                     |                                  |
         |                                     |                     |                                  |
  131.5  +                                     |                     |  4|       *                      +   131.5
         |                                     |                     |           3                      |
  105.2  +                                     |                     |  4|                               +   105.2
         |                                     |                 *   |                                  |
         |                                     |                 *   |                                  |
         |          - - - - - - - - - - - - - -|- - - - - - - - - - -|- - - - - - - - - - - - - - - - - |
   78.9  +                                     |                     |                                  +    78.9
         |                   *       |2        3       *   |                     |                      |
         |                       2   |                     |                     |                      |
   52.6  +                      *    |                     |                     |                      +    52.6
         |                4      2    |*                    |                     |                      |
   26.3  +                           |*                    |                     |                      +    26.3
         |                           |                     |                     |                      |
         |                           |                     |                     |                      |
    .0   +9                          |                     |                     |                      +     .0
         +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
         .0       51.0     102.0     153.0     204.0     255.0      306.0     357.0     408.0     459.0    510.0
```

PRKSCTNB=PRKSCTNF

OOWN: HHTOTB   ACROSS: HHTOTF
        1107.800   3323.400   5539.000   7754.600   9970.200 12185.800 14401.400 16617.000 18832.600 21048.200

HHTOTB=HHTOTF

19581.000
17622.900
15664.800
13706.700
11748.600
9790.500
7832.400
5874.300
3916.200
1958.100
.000

.000   2215.600   4431.200   6646.800   8862.400 11078.000 13293.600 15509.200 17724.800 19940.400 22156.000

DOWN: EMPLB   ACROSS: EMPLF

```
           4012.0   12036.0   20060.0   28084.0   36108.0   44132.0   52156.0   60180.0   68204.0   76228.0
         +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
 50100.0 +                                                           *                                       +    50100.0
         I                                                          /I                                       I
         I                                                         / I                                       I
 45090.0 +                                                        /  I                                       +    45090.0
         I                                    *                  /   I                                       I
         I                                                      /    I                                       I
 40080.0 +                                                     /     I              *                      *I+    40080.0
         I                                              *     ↰      I                                       I
         I                                               EMPLB=EMPLF I                                       I
 35070.0 +                                              *  *         I                                       +    35070.0
         I                                          *  /             I                                       I
         - - - - - - - - - - - - - - - - - - - - - /- - - - - - - - -I- - - - - - - - - - - - - - - - - - - -
         I                                        /*                 I                                       I
 30060.0 +                                       */                  I                                       +    30060.0
         I                                     */  *  *              I                                       I
         I                                    * 2                    I                                       I
 25050.0 +                                  2 I                      I                              *         +    25050.0
         I                                /*  *      *               I                                       I
         I                              /* *       *                 I                                       I
         I                            * * * **I                      I                                       I
 20040.0 +                          */ * **  * *                     I              *                        +    20040.0
         I                        * /*222    *I*                     I                                       I
         - - - - - - - - - - - - 2-* - - - - I- - - - - - - - - - - *- - - - - - - - - - - - - - - - - - - -
         I                      2 */  *        I**                   I                                       I
 15030.0 +                     **I42* *   *     I                     I                                       +    15030.0
         I                    /325** *  *    *  I                     I                                       I
         I                * /263                 I                     I                                       I
 10020.0 +                *3483*2  *              I         *          I                                       +    10020.0
         I              2293 ***                 I                     I                                       I
         I             79622    **               I                     I                                       I
         I            998*3* *   * * * **    *I   I                     I                                       I
         I          4984 2* * *  **             I                     I                                       I
         I          4979 ** *  2              I                     I                                       I
  5010.0 +        *9995254*** *             I                     I                                       +     5010.0
         I        299974* **                  I                     I                                       I
         I      *99999*3*2** * **  * *        I                     I                                       I
         I      999974322 * * *              I                     I                                       I
         I    9999362 *** * *    *  *        I*                     I                                       I
     .0  +9997*2* * *   *              I*                     I                                       +          .0
         +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
          .0      8024.0   16048.0   24072.0   32096.0   40120.0   48144.0   56168.0   64192.0   72216.0   80240.0
```

DOWN: POPB   ACROSS: POPF
            4700.0   14100.0   23500.0   32900.0   42300.0   51700.0   61100.0   70500.0   79900.0   89300.0

```
          +---+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+---+.
41386.0   +                                    |                       *          |                        +    41386.0
          |                                    |                                  |                        |
          |                                    |                                  |                        |
          |                                    |                                  |                        |
37247.4   +                                    |     *                            |                        +    37247.4
          |                               .    |   *                              |                        |
          |                                   /                                    |                        |
33108.8   +                                  /|                                   |                      *+    33108.8
          |                                 / |    *   *                           |                        |
          |                                /  |                                    |                        |
28970.2   +                               /   |                                   |                        +    28970.2
          |------------------------------/---*|-*------------------------------------------------------------|
          |                             /   **| *                                 |                        |
24831.6   +                           *   *   |                                   |                        +    24831.6
          |                         *  *  **   |                                   |                        |
          |                       * *          | *                                |                        |
          |                    *3   * *  *  *   |          *                       |                        |
20693.0   +                  *2** *            | *                                |                        +    20693.0
          |                  *2 *  *    *       |                                  |                        |
          |                *23322       *       |                                  |                        |
          |               *4232   *   3         |                                  |                        |
          |          *    2*43****               |                                 |                        |
16554.4   +              376**2 *  *             |                                 |                        +    16554.4
          |             669233   2 *             |                                 |                        |
          |           * *26434   3   *            |                                |                        |
          |-------------4994*****3-------------------------------------------------------------------|
          |            *399944*** *2*      *     |*                                |          *             |
12415.8   +            2299973*32 **3        *   | *               *               |                        +    12415.8
          |           * *999243 *  *   *   *   * |                                 |                        |
          |            69936         3    * *   *|*                                |                        |
          +           *99972 * **2 *  *  *       |                                 |                        |
          |           *99996 2* *  **            |                                 |                        |
8277.2    +           29994 *3 23* 2    **       |                                 |                        +    8277.2
          |           2999324 * ***2             |                                 |                        |
          |           299943* 3*2         *      |                                 |                        |
          |           999352*2*    ** *      *   |                                 |                        |
          |           99942*2   **      *        |                                 |                        |
4138.6    +           6976*3  4 *    2 *      *  |                                 |                        +    4138.6
          |           392322  2   * * *          |                                 |                        |
          |          *98*54*4* **        *       |*                                |                        |
          |          399434* ** *    ** *        |                                 |                        |
          |          994*3 * * *  *   *          |                                 |                        |
.0        +99                   *                |                                 |                        +    .0
          .---+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+---+.
          .0    9400.0   18800.0   28200.0   37600.0   47000.0   56400.0   65800.0   75200.0   84600.0   94000.0
```

POPB=POPF

DOWN:　HHSIZEB　　　　　　　　　　　　　　　ACROSS:　HHSIZEF
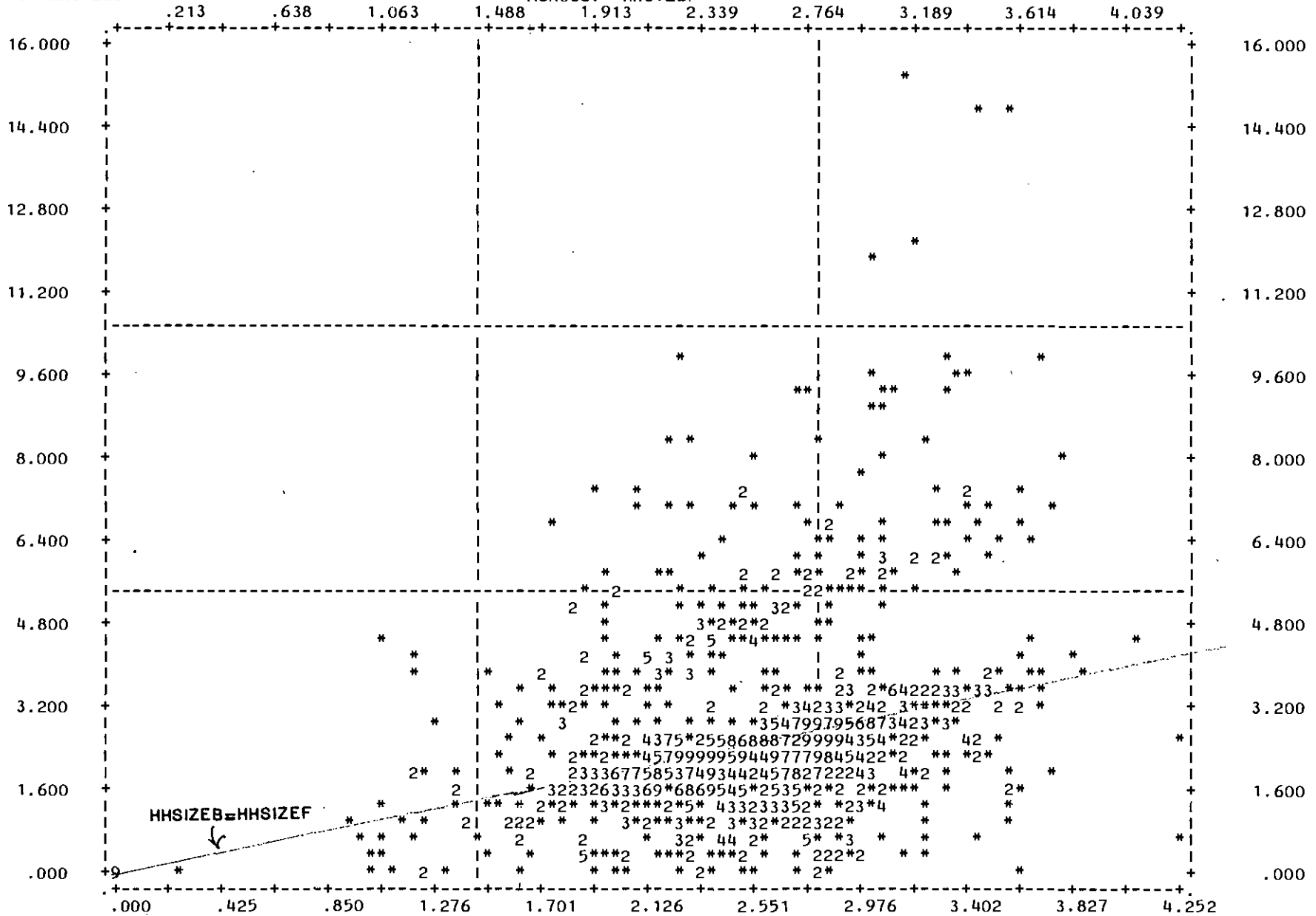
```
              .213      .638     1.063     1.488    1.913     2.339     2.764     3.189     3.614     4.039
         +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
 16.000  +                                 |                        |              *                           +  16.000
         |                                 |                        |                                         |
         |                                 |                        |             *     *                     |
 14.400  +                                 |                        |                                         +  14.400
         |                                 |                        |                                         |
 12.800  +                                 |                        |                                         +  12.800
         |                                 |                        |        *    *                            |
 11.200  +                                 |                        |                                         + . 11.200
         |- - - - - - - - - - - - - - - - - - - - - - - - - - - - - | - - - - - - - - - - - - - - - - - - - - -|
         |                                 |              *         |        *        *     *                  |
  9.600  +                                 |                        |    **    *  **   * **      `             +  9.600
         |                                 |                        |          * **                           |
         |                                 |                        |          **                             |
  8.000  +                                 |         *  *     *      |  *       *  *      *             *       +  8.000
         |                                 |                         |       *                                 |
         |                           *     |   *  *     *    2       | *      * 2    * *   *                    |
  6.400  +  .                              |  *        * *   *|2   *     **     * ** *   *                      +  6.400
         |                                 |          *    ** *   2  2  * * 3  2 2*   *.                        |
         |                                 |        *    **       2 2 *2* 2* 2*                                 |
         |- - - - - - - - - - - - - - - - - - - - - - -*--2------*--*--*-*-*--22****-*--*- - - - - - - - - - - -|
  4.800  +                                 |        2  *      * * * ** 32* |*      *                            +  4.800
         |                  *              |        *      3*2*2*2   **                                         |
         |              *                  |       * *2 5 **4**** *   *    **         *         *               |
         |              *              |*   2      ** * 3* 3 *    ** | 2 ** * * 2* **                           |
  3.200  +            *              |*  *  2***2 **   2  *2* ** 23 2*6422233*33.*** *                          +  3.200
         |                          **2* *   *      2 *34233*242 3****22  2 2 *                                 |
         |             *           |   3     * * *   * * *354799.7956873423*3*                                  |
         |                      2**2 4375*2558688872999994354*22*    42 *            *|                         |
         |              *  * 2**2***45799999594497779845422*2  ** *2*                                           |
         |        2*  * |   * 2  2333677585374934424578272224  4*2 *     *   *                                 |
  1.600  +          2  |  2.-32232633369*6869545*2535*2*2*2**  *  *        2*                                   +  1.600
  HHSIZEB=HHSIZEF .*- * 2*2* *3*2***2*5* 433233352* *23*4        *  *                                           |
         |  *   *  *    21  222* *  *  3*2**3**2 3*32*222322*         *                                         |
         |       *   *    | 2    2   * 32* 44 2*   5* *3 *    *    *                                           *|
   .000  +9            * *  2 *  |*  *  5***2 ***2 ***2 *  * 222*2  * *         *                               +  .000
         +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
       .000     .425      .850     1.276    1.701     2.126     2.551     2.976     3.402     3.827     4.252
```

DOWN: AUTPERB   ACROSS: AUTPERF

AUTPERB= AUTPERF
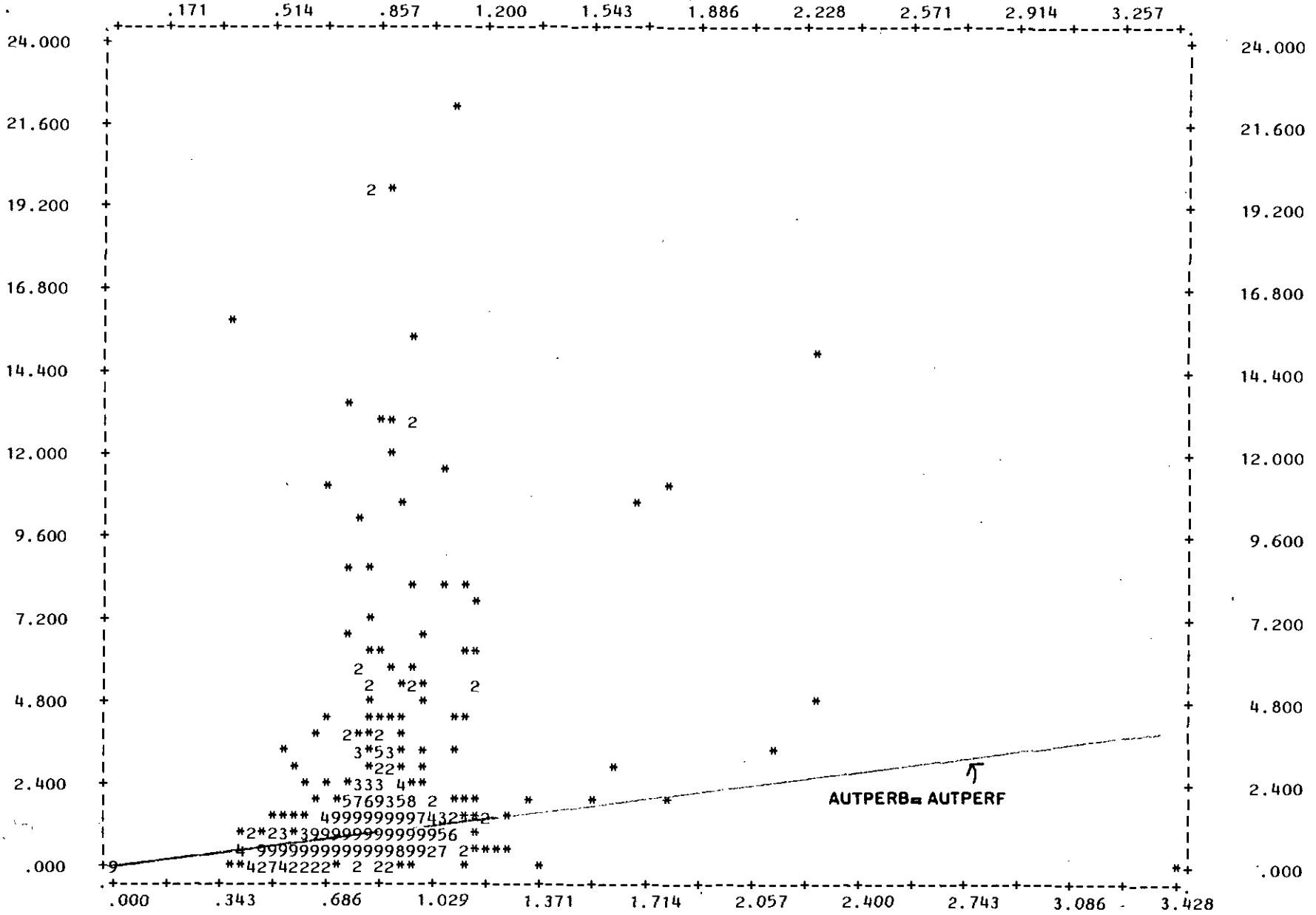
DOWN: AUTOTOTB   ACROSS: AUTOTOTF
```
             .152      .457      .761    1.066    1.370    1.675    1.979    2.284    2.589    2.893
         +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
  2.993  +                                   I                        I             *               +    2.993
         I                                   I                        I          * *  *             I
         I                                   I                        I       * ** *  *2            I
         I                                   I                      I*       * ** * *2  *            I
  2.693  +                                   I                      I      ***22 * *    *            +    2.693
         I                                   I                        I  ** 2* **                   I
         I                                   I                       **2**263                       I
         I                                   I                 *    ***2645 3* 2            *I       I
  2.394  +                                   I                  * *3583                              +    2.394
         I                                   I                *2889 33*                              I
         I                                   I                249999822*                             I
         I                                   I            2 *359999463                               I
         I                                   I        I4* 39999733*                                  I
         I                            *  * *  *259999899                                             I
  2.095  +                                   I      5649999654*                         .            +    2.095
         I                                   I   399999943                                          I
         I                    3              *59999834                                               I
         I                    2      579968****                                                      I
         I                      *  28996253              2                                           I
  1.796  +                    *  *59994  21    2*                                                    +    1.796
         I                      *39994  *                I                                           I
         I                      37982   *                                                            I
         I            *       * 35643  *                                                             I
         I                   I**    568*     2           I                                           I
  1.496  +              *     *476  *                                                                +    1.496
         I                    454                                                                    I
         I                  *346* *                                                                  I
         I                  **63 *                                                                   I
         I            *   *  3  * *                                                                  I
  1.197  +          *    ***                                                                         +    1.197
         I                *33* *                                                                     I
         I                 **                                                                        I
         I         2-------------------------------------                                            I
         I        33 I  *                                                                            I
   .898  +       *                                                                                   +    .898
         I       *                                                                                   I
         I                                                                                           I
         I                                                                                           I
   .599  +                                                                                           +    .599
         I           ↖                                                                               I
         I                                                                                           I
         I        AUTOTOTB=AUTOTOTF                                                                   I
   .299  +                                                                                           +    .299
         I                                                                                           I
         I                                                                                           I
         I                                                                                           I
   .000  +9                       *              *                                                   +    .000
         +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
            .000     .305     .609     .914    1.218    1.523    1.827    2.132    2.436    2.741    3.045
```

DOWN: LDRVTOTB   ACROSS: LDRVTOTF

```
                    .147     .440     .734    1.027   1.320   1.614   1.907   2.201   2.494   2.788
            +--+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+--+
     3.819  +                                  I                       I                              **+        3.819
            I                                  I                       I                               I
            I                                  I                       I                               I
     3.437  +                                  I                       I                              +          3.437
            I                                  I                       I                            / I
            I                                  I                       I                          /   I
     3.055  +                                  I                       I                        /    +           3.055
            I                                  I                       I              *      /        I
            I                                  I                       I            *      /          I
     2.673  +                                  I                       I           *    *3          +            2.673
            I                                  I                 *2----*----2*2**  /                  I
            I                                  I               * *42*2  *26*5   /                     I
     2.292  +*                                 I             *222655*4227336   /                     +           2.292
            I*                                 I            *2 22455264569952 /                 2      I
            I*                                 I           3*899769789963* /                          I
            I*                                 I          659599999996*3 /                            I
            I*                            *    I        * **67799999972/                              I
     1.910  +                            **    I        235999999962 /                               +          1.910
            I                            *     I      32*897999994  /                                 I
            I*                                 I     *3974899996   /                                  I
            I*              *      *     **   * I   549999921   /                                     I
            I          * 2 3*226999*         /                                                        I
            I        **3**487*          /                                                             I
     1.528  +      3 56234* *        /                                                               +          1.528
            I      ** 2          /                                                                    I
            I    2**         /                                                                        I
            I   *       /                                                                             I
            I   **    /                                                                               I
     1.146  +    ** /                                                                                +          1.146
            I   ** /                                                                                  I
            I  * /                                                                                    I
            I  */                                                                                     I
            I */                                                                                      I
      .764  +*/                                                                                      +           .764
            I/                                                                                        I
          / I                                                                                         I
      .382 +/                                                                                         +           .382
          / LDRVTOTB=LDRVTOTF                                                                          I
         / I                                                                                           I
      .000 +9        *                    *    I                       I                              +           .000
            +--+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+--+
           .000     .293     .587     .880    1.174   1.467   1.761   2.054   2.347   2.641   2.934
```

DOWN: WORKERTB   ACROSS: WORKERTF

WORKERTB=WORKERTF

DOWN: INCMTOTB   ACROSS: INCMTOTF
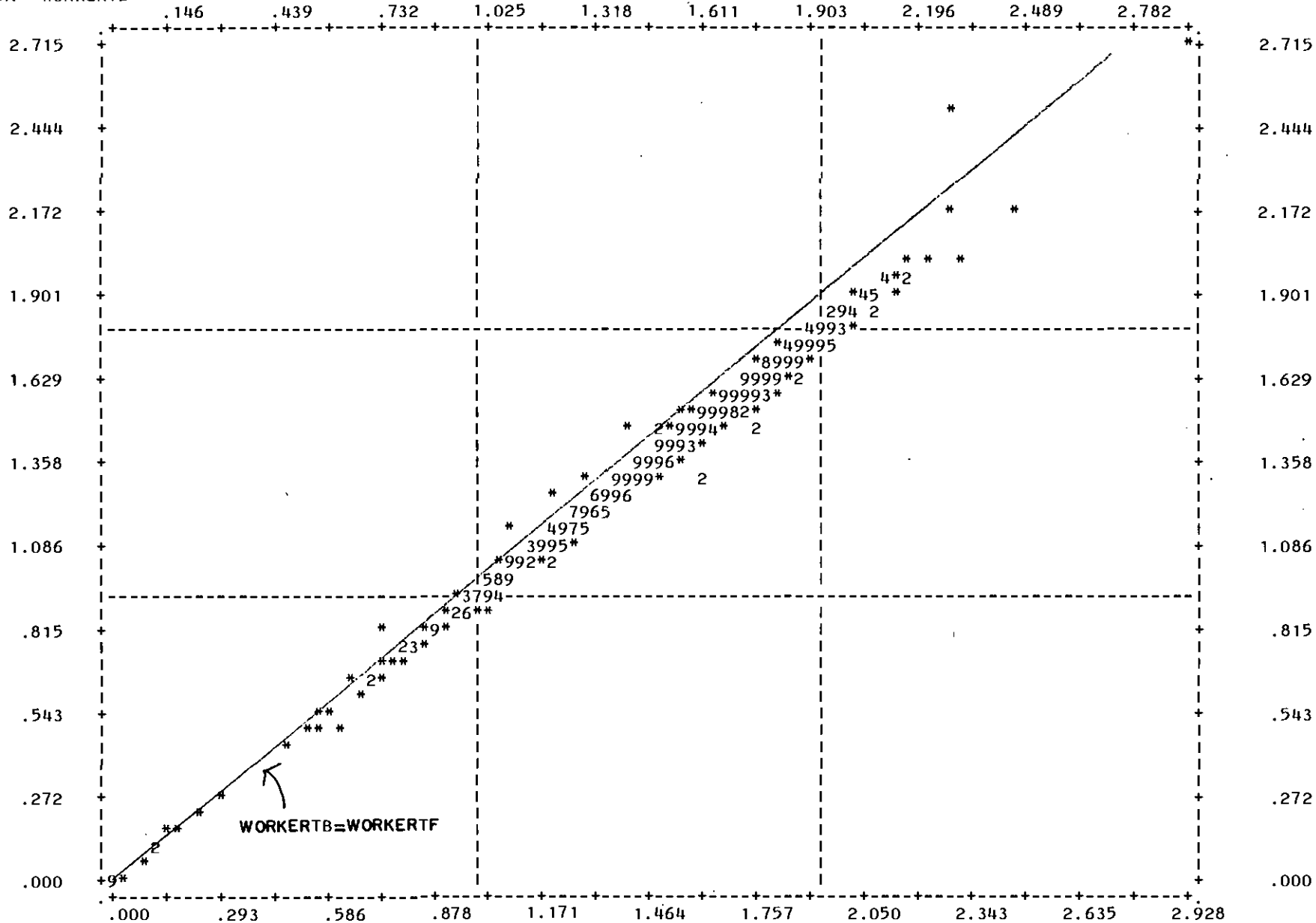
APPENDIX E

SCATTERPLOT DIAGRAMS

EMPLOYMENT AND POPULATION DENSITIES

```
DOWN:  EMPDENB                                    ACROSS:  PRKSCTWB
              22.1       66.3      110.5      154.7     198.9     243.1      287.3      331.5      375.7      419.9
           .+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
 394.488   +                             I                       I                       I                 *          +   394.488
           I                             I                       I                       I                            I
           I                             I                       I                       I                            I
 355.039   +                             I                       I                       I                            +   355.039
           I                             I                       I                       I                            I
           I                             I                       I                       I                            I
 315.591   +                             I              :        I                       I                            +   315.591
           I                             I                       I                       I                            I
           I                             I                       I                       I                            I
 276.142   +                             I                       I                       I              *             +   276.142
           I----------------------------+I-----------------------+I-----------------------+------------------------I
 236.693   +                             I                       I                       I                        *+I  236.693
           I                             I                       I                       I                            I
           I                             I                       I                       I                            I
 197.244   +                             I                       I                       I              *             +   197.244
           I                             I                       I                       I                            I
           I                             I                       I                       I                            I
 157.795   +                             I                       I                  *     I                            +   157.795
           I----------------------------+I-----------------------+I----------------------+-------------------------I
 118.346   +                             I                  *     I                       I                            +   118.346
           I                             I                       I                       I                            I
           I                             I                  *     I                       I                            I
  78.898   +                             I                  *     I                       I                            +    78.898
           I                             I                  *     I                       I                            I
           I*                            I  *       2       *     I                       I                            I
           I                      *      I  *               2     I                       I                            I
  39.449   +3                       *    I  2               *     I                       I                            +    39.449
           I6              *     *  *    I  6               2     I                       I                            I
           I9       8    *  2    3       I* 4               3     I                       I                            I
           I9       8 *   9  6   3       I  4               2     I                       I                          *I
   .000    +9       3 *          2       I* 2                     I                       I                            +     .000
           .+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
              .0       44.2       88.4     132.6     176.8     221.0     265.2      309.4     353.6      397.8      442.0
```

DOWN: EMPDENB   ACROSS: PRKSCTNB

Scatterplot of EMPDENB (down axis, range .000 to 394.488) versus PRKSCTNB (across axis, range .0 to 263.0).

Across-axis top labels: 13.1 39.4 65.7 92.0 118.3 144.6 170.9 197.2 223.5 249.8

Across-axis bottom labels: .0 26.3 52.6 78.9 105.2 131.5 157.8 184.1 210.4 236.7 263.0

Down-axis labels: 394.488 355.039 315.591 276.142 236.693 197.244 157.795 118.346 78.898 39.449 .000

DOWN: EMPDENB   ACROSS: HWYTERTB

```
                    .250    .750    1.250   1.750   2.250   2.750   3.250   3.750   4.250   4.750
            +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
 394.488  + |                            |                       |                              *+  394.488
            |                            |                       |                               |
            |                            |                       |                               |
 355.039  + |                            |                       |                               +  355.039
            |                            |                       |                               |
            |                            |                       |                               |
 315.591  + |                            |                       |                               +  315.591
            |                            |                       |                               |
            |                            |                       |                               |
 276.142  + |                            /                       |                             **+  276.142
            |                            |                       |                               |
            +----------------------------------------------------------------------------------------+
            |                            |                       |                               |
 236.693  + |                            |              *        |                               +  236.693
            |                            |                       |                               |
            |                            |                       |                               |
 197.244  + |                            |              *        |                               +  197.244
            |                            |                       |                               |
            |                            |                       |                               |
 157.795  + |                            |        *              |                               +  157.795
            |                            |                       |                               |
            +----------------------------------------------------------------------------------------+
 118.346  + |                            |              *        |                               +  118.346
            |                            |                       |                               |
            |                            |           *           |                               |
  78.898  + |                            |           *           |                               +   78.898
            |                            |           *           |                               |
            |                  *         |           3           |       *                       |
  39.449  + |                  4         |           3           |                               +   39.449
            |                  6         |           9           |                               |
            |                  9         |           9           |                               |
            |                  9         |           9           |                               |
   .000  +9 |                  9         |           3           |                               +    .000
            +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
               .000    .500   1.000   1.500   2.000   2.500   3.000   3.500   4.000   4.500   5.000
```

```
DOWN:   POPDENB                                 ACROSS:   PRKSCTWB
              22.1      66.3     110.5     154.7     198.9     243.1     287.3     331.5     375.7     419.9
            +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
  58.526   +                                        *                *                                        +    58.526
           I
           I                                        *                *
  52.674   +                                                         *                                        +    52.674
           I                                                         *
           I                                        *
  46.821   +*                                                                                                 +    46.821
           I
           I*                                       *
           I
  40.968   +                                                         *                                        +    40.968
           I                                        *                *
           I*                  *                     *
  35.116   +                                                                                                  +    35.116
           I2                       2               *
           I4                                       *
           I*                                       *
           I2                  *                     *              *
  29.263   +3                                       *              *                                          +    29.263
           I5                  *                     *                                    *
           I3                  *                     *
           I5             *                          *
           I9             *
  23.411   +9             *    *                      *                                                       +    23.411
           I9        2    *    *                     *
           I9             *                           *
           I9   *         *              *           *
           I9   *         *              *           *
  17.558   +9                  3                     *              *                                  +      17.558
           I9
           I9        *    *                                                                   *      *I
           I9   2                              2              3                                       I
           I9   *         2    *    3    *                                                     *     I
  11.705   +9   2         *    *    2                         2                                       +      11.705
           I9   2                                             *
           I9   2         2                     *
           I9   3         *              *
           I9   2         *         *
   5.853   +9   *    *    2         *                         *                                       +       5.853
           I9        *              *
           I9   *                               *
           I9             *                                                                          *I
           I9                                                                                         I
    .000   +9   2              *                                              *                       +        .000
            +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
              .0       44.2      88.4     132.6     176.8     221.0     265.2     309.4     353.6     397.8     442.0
```

DOWN: POPDENB
```
            13.1      39.4      65.7      92.0    118.3     144.6     170.9     197.2     223.5     249.8
          .+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
 58.526   +*                                                                                               +   58.526
          |*
          |
          |
          |
 52.674   +                                             *              *                                   +   52.674
          |                                                            *
          |
          |                                             *
          |
 46.821   +*                                                                                               +   46.821
          |
          |
          |*                                            *
          |
 40.968   +                                                            *                                   +   40.968
          |                                                            *
          |*
          |3
          |
 35.116   +                                                                                                +   35.116
          |3                           *
          |5
          |*                                            *
          |5
 29.263   +3                                        *                                                      +   29.263
          |6                                        *
          |4                                                                                *               
          |7
          |9
 23.411   +9        -                                                                                      +   23.411
          |9            *              *
          |9                                 *
          |9                    *       *      *
          |9                    2            *
 17.558   +9                                *                      *                                       +   17.558
          |9            *                                    2                                    *|
          |9                                                                              *
          |9       *    *       2                                                         *        
 11.705   +9                    *                                  2                                       +   11.705
          |9                                                       *
          |9           *                  *
          |9                                                       *
          |9                                        *
  5.853   +9                  *             *                                                              +   5.853
          |9                               *
          |9                                                                                          *|
          |9       *
  .000    +9       2                                      *                                              +   .000
          .+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
          .0 \    26.3      52.6      78.9     105.2     131.5     157.8     184.1     210.4     236.7     263.0
```

ACROSS: PRKSCTNB

```
DOWN:  POPDENB                              ACROSS:  HWYTERTB
               .250      .750     1.250     1.750     2.250     2.750     3.250     3.750     4.250     4.750
           +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
  58.526   +                                        *                                                          +   58.526
           |                                        *
           |
           |                                        *
  52.674   +                                        *                                                          +   52.674
           |                                        *
           |
           |                                        *
  46.821   +                  *                                                                                 +   46.821
           |
           |                  *                     *
  40.968   +                                        *                                                          +   40.968
           |                                        *
           |                                        *
           |                  2                     *
  35.116   +                                                                                                   +   35.116
           |                  2                     2
           |                  4                     *
           |                  *                     *
           |                  2                     2                             *
  29.263   +                  3                     *                                                          +   29.263
           |                  5                     2
           |                  3                     *                                                        * |
           |                  5                     2
           |                  9                     *
  23.411   +                  9                     *                                                          +   23.411
           |                  9                     5
           |                  9                     2
           |                  9                     *
           |                  9                     3
  17.558   +                  9                     5                                                          +   17.558
           |                  9                     *
           |                  9                     5
           |                  9                     2                                                        * |
           |                  9                     3                     *
  11.705   +                  9                     6                                                          +   11.705
           |                  9                     *                     *
           |                  9                     3
           |                  9                     *
           |                  9                     3
   5.853   +                  9                     3                                                          +   5.853
           |                  9                     *
           |                  9                     *
           |                  9
           |                  9                                          *
    .000   +9                 9                     3                                                          +    .000
           +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
               .000      .500     1.000     1.500     2.000     2.500     3.000     3.500     4.000     4.500     5.000
```

DOWN: EMPDENF   ACROSS: PRKSCTWF
           42.5   127.5   212.5   297.5   382.5   467.5   552.5   637.5   722.5   807.5
         .+---+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
608.889 + | | **+ 608.889
         I | | I
         I | | I
548.000 + | | + 548.000
         I | | I
         I | | I
487.111 + | | + 487.111
         I | | I
         I | | I
426.222 + | | .   + 426.222
         I -*I
         I | | I
365.333 + | | + 365.333
         I | | I
         I | | I
304.444 +   . | | *I 304.444
         I | | *I
         I | | *I
243.556 + | | + 243.556
         I | | *I
         I - I
182.667 +   .   . | | + 182.667
         I | | *I
         I | | *   I
121.778 + | | | *   + 121.778
         I | | | *   I
         I | | | *   I
 60.889 +* | | 3 | 4   +   60.889
         I3   *   *   * | *   *   4   I
         I5   **   2 |*   *   *   7 | 3   I
         I9   2   3   6   * |*   3   *   3 | 4   *   I
         I9   6   9   9   6   I4   2   *| 4   **   I
  .000   +9   *   5   5   **   I*   * | +   .000
         .+---+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
          .0   85.0   170.0   255.0   340.0   425.0   510.0   595.0   680.0   765.0   850.0

```
DOWN:  EMPDENF                            ACROSS:  PRKSCTNF
              25.5     76.5     127.5     178.5    229.5     280.5     331.5     382.5     433.5     484.5
           +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
 608.889   +                              .*+                                |                           *++   608.889
           I                               I                                 I                             I
           I                               I                                 I                             I
           I                               I                                 I                             I
 548.000   +                               I                                 I                             +   548.000
           I                               I                                 I                             I
           I                               I                                 I                             I
           I                               I                                 I                             I
 487.111   +                               I                                 I                             +   487.111
           I                               I                                 I                             I
           I                               I                                 I                             I
           I                               I                                 I                             I
 426.222   +                               I                                 I                             +   426.222
           I- - - - - - - - - - - - - - - -I- - - - - - - - - - - - - - - - -I- - - - - - - - - - - - - - *I
           I                               I                                 I                             I
 365.333   +                               I                                 I                             +   365.333
           I                               I                                 I                             I
           I                               I                                 I                             I
           I                               I                                 I                             I
 304.444   +                               I                                 I                            *I   304.444
           I                               I                                 I                             I
           I                               I                                 I                            *I
 243.556   +                               I                                 I                             +   243.556
           I                               I                                 I                            *I
           I- - - - - - - - - - - - - - - -I- - - - - - - - - - - - - - - - -I- - - - - - - - - - - - - - -I
 182.667   +                               I                                 I                             +   182.667
           I                               I                                 I                            *I
           I                               I                                 I                             I
 121.778   +                               I                                 I             *               +   121.778
           I                               I                                 I                             I
           I                               I                                 I             *               I
           I                               I                                 I             *               I
           I                               I                                 I             *               I
  60.889   +3                              I                     *         2I             2               +    60.889
           I7                              I          *          *         4I             2               I
           I9            *    *    *      I*          2          *         *I             4        *       I
           I9          3    2    *        I*                               *I             *        *       I
   .000    +9                             I*                               2I                       .      +     .000
           +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
            .0        51.0     102.0     153.0     204.0     255.0     306.0     357.0     408.0     459.0     510.0
```

OOWN:　EMPOENF　　　　　　　　　　　　　　　　　ACROSS:　HWYTERTF

```
                .250      .750     1.250     1.750     2.250     2.750     3.250     3.750     4.250     4.750
         .+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
 608.889 +                                                             *                                        +  608.889
         I                                   I                                 I                                I
         I                                   I                                 I                                I
         I                                   I                                 I                                I
 548.000 +                                   I                                 I                                +  548.000
         I                                   I                                 I                                I
         I                                   I                                 I                                I
         I                                   I                                 I                                I
 487.111 +                                   I                                 I                                +  487.111
         I                                   I                                 I                                I
         I                                   I                                 I                                I
         I                                   I                                 I                                I
 426.222 +                                   I                                 I                                +  426.222
         I-----------------------------------I---------------------------------I-------------------------------*I
         I                                   I                                 I                                I
 365.333 +                                   I                                 I                                +  365.333
         I                                   I                                 I                                I
         I                                   I                                 I                                I
 304.444 +                                   I                                 I                               *+  304.444
         I                                   I                                 I                               *I
         I                                   I            *                    I                                I
 243.556 +                                   I                                 I                                +  243.556
         I                                   I                          *      I                                I
         I-----------------------------------I---------------------------------I-------------------------------I
         I                                   I                                 I                                I
 182.667 +                                   I                                 I                                +  182.667
         I                                   I            *                    I                                I
         I                                   I                        *        I                                I
 121.778 +                                   I                                 I                                +  121.778
         I                                   I            *                    I                                I
         I                                   I            *                    I                                I
         I                                   I            *                    I                                I
  60.889 +                     *             I            3               *    I                                +   60.889
         I                     6             I            6                    I                                I
         I                     7             I            9                    I                                I
         I                     9             I            9                    I                                I
   .000  +9                    9             I            4                    I                                +    .000
         .+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
          .000      .500     1.000     1.500     2.000     2.500     3.000     3.500     4.000     4.500     5.000
```

DOWN: POPDENF   ACROSS: PRKSCTWF
          42.5   127.5   212.5   297.5   382.5   467.5   552.5   637.5   722.5   807.5

66.363   *   66.363

59.727   +*   *   59.727
                                                                    2
                                                                    2

53.091   +   *   53.091

46.454   +*   *   46.454
                                                              *

39.818   +*   *   *   *| 39.818
         13   *
         *   *   *
         *   *   *   *
33.182   +4   *   *   *   33.182
         13   *   *
         *   *
         14   *
         16   2   *
26.545   +9   *   *   26.545
         19   *   *   *
         19   *   *   *   *   *   *|
         19   2   *
         19   *
19.909   +9   *   *   *   *   3   *   19.909
         19   *   *   *   *   *|
         19   2   2   *   *   *|
         19   2   2
13.273   +9   *   *   *   *   *   *   13.273
         19   2   2   *
         19   *   5   2   *   *   *
         19   2   4   *
6.636   +9   4   *   *   *   6.636
         19   *   2
         19   *   2   *   *   *|
         19   2
         19   *   *|
.000   +9   2   *   *   +   .000

          .0   85.0   170.0   255.0   340.0   425.0   510.0   595.0   680.0   765.0   850.0

```
DOWN:   POPDENF                        ACROSS:  PRKSCTNF
   .        25.5      76.5     127.5     178.5     229.5     280.5     331.5     382.5     433.5     484.5
   .+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
 66.363 +*                                                                                              +   66.363
        I
        I
        I
 59.727 +2                                                                    *                         +   59.727
        I                                                                     *
        I                                                                     2
        I
 53.091 +                                                                     *                         +   53.091
        I
        I
        I
 46.454 +*                                                                    *                         +   46.454
        I*                                                          *                                   +   46.454
        I
        I                                                                                             * I
        I*                                                                                            * I
 39.818 +2                                                                    *                         +   39.818
        I3                                                                                               I
        I*                                                                                               I
        I*                        *                                *                                     I
        I3                                                         *                                     I
 33.182 +4                                                         *                                     +   33.182
        I5
        I2
        I5
        I8                              *
 26.545 +9                                                                                              +   26.545
        I9                                     *            *                           *           * I
        I9                 *                         *      *              *                           I
        I9
 19.909 +9             *                                          2                                      +   19.909
        I9               *              *                                                           * I
        I9                                                                                           * I
        I9          *                                             *                                   I
        I2                             *                                                               I
 13.273 +9                                            *                                                 +   13.273
        I9
        I9     *                                      *           *                                    I
        I9
        I9
  6.636 +9                              *                         *                                     +    6.636
        I9
        I9                                                        *                                   * I
        I9                                                                                             I
        I9     *                                                                                      * I
   .000 +9     2                                                                                        +    .000
   .+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
        .0       51.0      102.0     153.0     204.0     255.0     306.0     357.0     408.0     459.0    510.0
```

DOWN: POPDENF   ACROSS: HWYTERTF
                .250   .750   1.250   1.750   2.250   2.750   3.250   3.750   4.250   4.750
           +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+.
  66.363 +   *   +   66.363
          I
          I
          I   *
  59.727 +   *   2   +   59.727
          I   2
          I
          I   *
  53.091 +   +   53:091
          I
          I
          I   *
  46.454 +   *   *   .   +   46.454
          I   *
          I
          I   *   * I
  39.818 +   2   +   39.818 -
          I   3   *
          I   *   2
          I   *   2   *   I
  33.182 +   4   +   33.182
          I   3   3
          I   .   *   *
          I   4   *
          I   6   3
  26.545 +   9   *   +   26.545
          I   .9   3
          I   9   4   * I
          I   9   4 .
          I   9   *
  19.909 + .   .   9   *   +   19.909
          I   9   5
          I   9   4
          I   9   2   *   I
          I   9   3
  13.273 +   9   3   *   +   13.273
          I   9   3
          I   9   3
          I   9   3
          I   9   2
   6.636 +   9   2   +   6.636
          I   9
          I   9   2   *   I
          I   9
          I   9
    .000 +9   9   2   +   .000
           +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
            .000   .500   1.000   1.500   2.000   2.500   3.000   3.500   4.000   4.500   5.000