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Reliability and Performance of Friction Measuring Tires and Friction Equipment Correlation

Thomas H. Morrow, C.E., P.E.

Office of Airport Safety
and Standards
Federal Aviation Administration
Washington, D. C. 20591

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16. Abstract

This report contains the description and results of a test program conducted by the Federal Aviation Administration (FAA) at the National Aeronautics and Space Administration (NASA) Wallops Flight Facility (WFF) located at Wallops Island, Virginia. The field tests were conducted in August 1989.

The purpose of the test program was twofold: (1) to establish the reliability, performance and consistency of friction measuring tires used by qualified friction devices; and (2) select th best performing tire(s) for friction equipment correlation for maintenance purposes.

Four friction devices were used with their self wetting systems on five types of pavement surfaces. Tests were conducted at speeds of 40 and 60 mph (65 and 95 km/h). A total of 1,643 test runs were conducted, which resulted in 2,725 data points. 156 regression analyses were performed for the tire performance evaluation and 31 regression analyses for friction equipment correlation.

The results showed that the McCreary tire performed best on the Saab Friction Tester (SFT), Runway Friction Tester (RFT) and Skiddometer (SKD). The Dico Tire performed the best on the Mu Meter (MUM).

The tire composition given in ASTM E 524 for the McCreary tire will be included in a new ASTM specifications that will have the same tire dimensions given in ASTM E 630. The DICO tire will be included in the ASTM E 670 specification.

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PREFACE

The author wishes to acknowledge the support of the Federal Aviation Administration (FAA) Technical Center personnel in their exemplary performance in supporting a very complex field test program at the National Aeronautics and Space Administrations (NASA) Wallops Flight Facility located at Wallops Island, Virginia. The project manager for the FAA Technical Center was Rick Marinelli. The assistance of Dr. Satish Agrawal, manager of the Airport Technology Branch, was greatly appreciated. The support personnel from the FAA Technical Center, including students hired for the summer, operated and maintained the vehicles in an outstanding manner to meet the very difficult daily schedule.

The author is especially grateful to Ms. Gladys Clayton of the Airport Systems and Technology Branch at FAA Washington Headquarters, who contributed many long hours compiling data and conducting statistical analyses. Her technical support in data management was critical to the success of the program.

The test tires for the program were provided by Louis Barota of the McCreary Tire and Rubber Company and Eric Erickson of the Dico Tire, Inc. The Dunlop Tires were purchased from Bill Sisson of Saab Scania of America.

The cooperation and assistance by Brooks Shaw, NASA Wallops Flight Center, was greatly appreciated. His support in providing all the necessary clearances to work on the runway, especially over a weekend, assured the continuity and success of the program.

Also, special thanks to Tom Yager, Senior Project Engineer at NASA Langley Research Center located at Hampton, Virginia, for his technical support and assistance throughout the program. Mr. Yager is the Chairman of the ASTM E 17.21 Subcommittee, which requested the Tire Performance study.

The FAA owned all but one of the friction measuring devices, the Runway Friction Tester. K. J. Law Engineers, Inc., donated the use of their Runway Friction Tester, personnel and time to provide support to the program. Their participation assured that data from all qualified friction measuring equipment would be obtained for the tire performance evaluation. Their personnel operated and maintained the vehicle in a highly professional manner. Messrs. Francis Schwartz, Daniel Hamel and Wade Jensen provided the author with technical support during the program.

The author greatly appreciates the support and encouragement of Interlog, especially Daniel Ho, who assisted in the preparation of the manuscript into Desktop Publishing format.

EXECUTIVE SUMMARY

The FAA conducted a tire performance evaluation and friction equipment correlation study in August 1989 at NASA Wallops Flight Facility located at Wallops Island, Virginia. The study was performed in response to a request by the American Society for Testing and Materials (ASTM) to evaluate the performance of tires manufactured according to ASTM specifications ASTM E 524 and ASTM E 670.

Some 1,650 tests were conducted on five types of surfaces using three different brands of tires and four different types of friction measuring devices. Friction tests were conducted at speeds of 40 and 60 mph (65 and 95 km/h), using the devices self water system on dry test surfaces. The water was applied at a depth of 0.04 inches (1 mm). The analyses conducted involved 156 reliability and performance studies and 31 correlation comparisons.

Limits of acceptability were established for the data evaluation. The McCreary tire performed best on the Runway Friction Tester (RFT), Saab Friction Tester (SFT), and the Skiddometer (SKD). The Dico tire performed best on the Mu Meter (MUM).

The tire formulation given in ASTM E 524 specification for lock-wheel trailers will be put into a new ASTM standard to describe the characteristics of the McCreary tire. The present E 670 specification will contain the specifications for the Dunlop and Dico tires.

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1. INTRODUCTION

1.1 BACKGROUND

On September 29, 1978, the Federal Aviation Administration (FAA) contracted a consulting engineering firm to conduct a two year study called the National Runway Friction Measurement Program (NRFMP). This program consisted of conducting runway friction measurements and evaluation of pavement surface conditions on 491 runways and 268 airports within the contiguous United States. The specific objectives of the program were to: (1) update, expand and disseminate improved guidance material contained in Advisory Circular AC 150/5320-12, Methods for the Design, Construction and Maintenance of Skid Resistant Airport Pavement Surfaces; (2) provide airport managers with timely input from the friction and pavement condition surveys to budget their fiscal programs for whatever improvements necessary as determined from the findings in those surveys; (3) increase the effectiveness of the 1982 Airport and Airway Improvement Program (AAIP) by identifying the airport construction methods that are most cost effective in providing excellent drainage and friction properties; and (4) enhance safety at airports by reducing the hydroplaning potential and improving runway pavement surface friction characteristics by developing recommendations for improved maintenance and maintenance monitoring practices.

One of the major findings in the study concerned friction measuring tires. Occasionally, they varied by as much as 10 mu numbers between batches. This was attributed to poor quality control by the manufacturer of the tires. From time to time, reports have been given to FAA concerning differences between tires of different batches when tested on pavements under similar conditions. Additionally, the price of tires has increased dramatically over the years. The immediate availability of replacement tires from the manufacturer has also been a problem, according to reports from airport operators that own friction equipment.

1.2 PURPOSE OF THE TEST PROGRAM

The purpose of the test program was twofold: (1) to establish the reliability, performance and consistency of tires used on friction measuring devices; and (2) to select the best performing tire(s) for use on friction equipment by which correlation criteria for maintenance purposes are determined.

1.3 ASTM REQUEST FOR TIRE PERFORMANCE STUDY

During a June 1988 ASTM E 17.21 subcommittee meeting on Field Methods for Measuring Tire Pavement Friction, the subject of friction measuring tire costs and quality control was discussed. A proposal was made by the ASTM committee to seek a tire manufacturer that would be interested in constructing a tire with the exact same dimensions as the Dunlop RL2 tire. The tire would be constructed according to the formulation given in ASTM E 501 and ASTM E 524 specifications. A letter was sent from the ASTM E 17.21 subcommittee chairman to FAA Headquarters requesting FAA support in providing test vehicles and personnel to participate in the evaluation of a new test tire at NASA Wallops Flight Facility. Reference letter in Appendix A.

1.4 TIRE MANUFACTURERS' COMMITMENT

A representative from McCreary Tire and Rubber Co. of Indiana, Pennsylvania, which currently produces the ASTM E 501 and ASTM E 524 test tires used on the ASTM E 274 Skid Trailer, indicated that the tire company could make test tires to RL2 tire dimensions for evaluation as early as Fall 1988.

During the interim, a second tire manufacturer, Dico Tire Inc. of Clinton, Tennessee, stated that they could produce a tire formulated to ASTM E 670 specifications. This formulation would vary somewhat from the rubber formulation used in ASTM E 501 and ASTM E 524 specifications.

1.5 PRELIMINARY NASA TIRE TESTS

Preliminary tests performed by NASA Langley using the Instrumented Tire Test Vehicle have indicated similar friction performance between the two test tires and the Dunlop RL2 tire. More extensive and statistically complete tests are required with the currently approved FAA runway friction measuring vehicles, to determine the reliability, performance and correlation of these new tires accurately. This report presents the results of the tire performance evaluation.

1.6 CERTIFICATION OF NEW TIRES

The manufacturer of the McCreary tires certified by letter that the tires met the Compounding of Oil-Extended Styrene-Butadiene Blend Rubber (SBR) Tread and the Physical Requirements of Tread Compound, as contained in ASTM E 501 and ASTM E 524 specifications and the tire dimensions given in ASTM E 670 specification for the Mu Meter Tire.

The manufacturer of the Dico tire certified by letter that the tires met the compounding, physical requirements and tire dimensions, as contained in ASTM E 670 specification.

The Certification letters are attached in Appendix B.

1.7 TIRE ALLOTMENTS

NASA Langley was shipped the following allotment of tires from the U.S. tire manufacturers:

McCreary	Ten (10) tires from batch number 1
	Ten (10) tires from batch number 2
Dico	Ten (10) tires from batch number 1
	Ten (10) tires from batch number 2

NASA Langley personnel brought the tires to Wallops Flight Facility for the test program.

The FAA Technical Center provided the following RL2 tires at Wallops Flight Facility for the test program:

Dunlop	Ten (10) tires from batch number 1, (100/B4C4338)
Dunlop	Ten (10) tires from batch number 2, (100/E4C4338)

1.8 TIRE FOOTPRINT AREA

NASA Langley measured tire footprints and conducted laboratory tests using vertical loads ranging from 50 to 800 lbs (20 to 360 kg), for all three different test tires at inflation pressures of 10 and 30 psi (70 and 200 KPa). The results of these tests are presented in the charts located in Appendix C.

NASA Langley loaned the FAA four Pressure Dial Gages, capable of measuring pressures ranging from 0 to 60 psi (0 to 400. KPa), which were recalibrated in July 1989. Each vehicle operator was responsible for the tire gages and for checking the tire pressures according to the manufacturer's Instruction Manual.

1.9 METRIC UNITS

The values given in parenthesis are SI units and are not exact equivalents, therefore, each system must be used independently of the other, without combining values in any way.

2. DISCUSSION

2.1 TEST LOCATION

The test program was conducted at the National Aeronautics and Space Administration (NASA) Wallops Flight Facility (WFF), Wallops Island, Virginia. The site was selected by the Federal Aviation Administration (FAA) because the facility offered several types of pavements, constructed with various textural and drainage characteristics, including saw-cut grooves. The pavement segments chosen for the program include a wide range of friction characteristics. The facility offers an excellent location for performing friction tests. It has very limited aircraft operations, resulting in only minor interruptions to the test program. Prior to starting the test program, the procedures for air traffic control were coordinated with the tower for the FAA test personnel to evacuate the runway when aircraft approached the airport for landing. Two-way radio communications between the tower and FAA personnel were used to assure that the maximum safety margin was maintained at the facility at all times.

2.2 PROGRAM PLAN

Five test segments were selected at the NASA Wallops Flight Facility that were known to give a wide range of friction values. To meet the objective of the program, a significant number of test runs had to be conducted at each test site location to acquire a sufficient amount of data to conduct the statistical analyses necessary to generate the relationships as defined in paragraph 1.2. The number of tests required to apply these mathematical techniques was determined by previous tests conducted at the Wallops Flight Facility.

2.3 TEST SITE LOCATIONS AT NASA WFF

Three test site locations were selected for the tests. One was located on runway 4-22 and the other two on the taxiway adjacent to runway 4-22. The segments selected on runway 4-22 were D, B, and A. The segments selected on the taxiway were K and P. Figure 1 shows the test site locations at the NASA Wallops Flight Facility.

2.4 TEST PROCEDURES

2.4.1 Cataloging Tires. Since there were three tire manufacturers involved in the test program, and some 60 tires, it was essential that all tires be properly cataloged for identification, with the codes as presented in Appendix D.

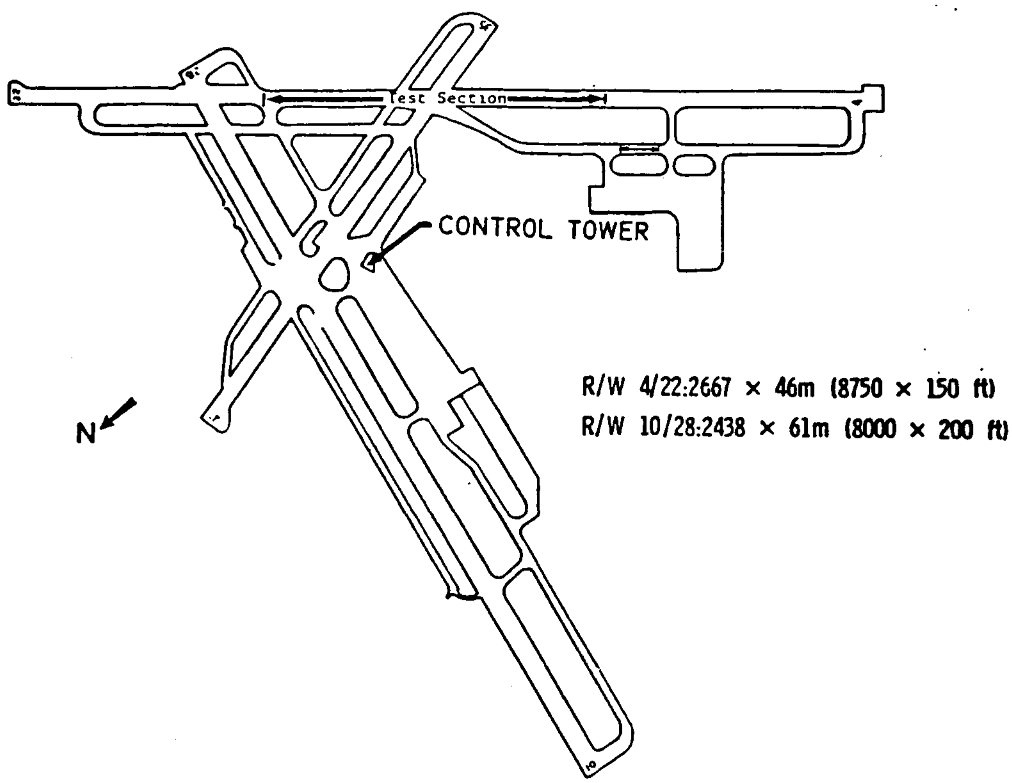


FIGURE 1. RUNWAY SCHEMATIC FOR NASA WALLOPS FLIGHT FACILITY SHOWING LOCATIONS OF TEST SECTIONS

A total of 10 tires were used for each day's tests, which represented one batch and two series within that batch. Tire pressures were measured by a calibrated tire pressure gage. The useful life for each manufacturers tire will be determined in another test program.

2.4.2 Equipment Calibration. All friction equipment in the program was calibrated according to the manufacturers instructions prior to conduct of each day's test program. Whenever tire changes were required, the friction device was recalibrated.

2.4.3 Equipment Maintenance. Test personnel were responsible for equipment maintenance. This was emphasized during the entire test program to assure that the equipment was working properly.

2.4.4 Texture Depth Measurements. Texture depth measurements were made on pavement segments D, B, A, K and P. The average was based on three measurements taken in each segment. The measurements were taken by NASA Langley personnel, using the NASA Grease-Smear Method. Appendix E shows the results of these measurements.

2.4.5 Program Schedule. The schedule for the test program is given in Appendix F. The daily schedule was dependent upon good weather, which, fortunately, occurred for the duration of the test period.

2.4.6 Test Run Sequence Schedule. Three primary test sites were used at NASA Wallops Flight Facility. The program required six days to complete. Four test teams composed of two personnel each, were assigned to complete 72 runs per day. 288 runs per day or a total of 1,728 runs were planned for the test program. However, as in many major programs, there were extenuating circumstances that prevented completion of all the planned runs. Maintenance problems occurring with several of the friction devices, time constraints, exhaustion of test personnel, were but just some of the reasons that a few of the test runs were not completed. Even so, 95 percent of the program, or 1,643 runs were completed. Appendix G gives the order of the test run sequences. Modifications in the order were made due to mitigating circumstances and events that occurred at the test site locations.

2.4.7 Test Run Sequence Records. All test runs were recorded on the Field Data Log sheets and the data accrued is presented in Appendices H through J. The test personnel were instructed on the importance of recording accurately the mu averages from the friction trace to the Field Data Log sheet. Each team was assigned to operate a particular friction measuring device and were furnished a set of instructions for the days work. A filing system was set up to manage the data accrued at the test site.

2.4.8 Field Data Entry Information. The test teams were instructed to furnish the information listed in Appendix K into the computer for each test run conducted in the program. The purpose of this request was to assure that all data accrued would be correctly labeled and identified so that the various statistical analyses could be performed with confidence.

2.4.9 Manpower Requirements for the Program. The following manpower was used to conduct the program in an efficient manner:

Field Test Program Coordinator (Field Program Manager)	1 person.
Assistant Test Program Coordinators (Test Site Supervisors)	3 personnel.
Friction Equipment Operators:	
	4 experienced friction equipment personnel. 4 drivers for the vehicles.
Data Analysis personnel	2 personnel

2.4.10 Briefing of Test Personnel. Before starting the test program, a briefing of all test personnel was given to inform them of the test procedures and expected daily assignments. This was very important to the successful completion of the program and resulted in its smooth operation without any major delays or misunderstandings.

2.4.11 Data Acquisition. A total of sixty tires were tested in the program. Three tire manufacturers provided two batches of tires, each batch containing ten tires. Each batch was divided into two series, each series containing 5 tires. Four friction measuring devices were used in the program. Three required one tire and the fourth required two tires, which accounted for the five tires used in a series. The friction devices were driven at two test speeds of 40 and 60 mph (65 and 95 km/h) over five different types of surfaces. These surfaces were selected to provide the widest possible range of friction values at the Wallops Flight Facility. A total of 288 test runs were conducted for six days, or a total of 1,643 runs for the entire program. This resulted in a total of 2,725 data points accrued in the test program.

2.4.12 Data Reduction. Since the pavement segments were less than the standard 500 ft (150 m) length, they ranged from 200 to 350 ft (60 to 100 m), the average mu values were obtained by visual interpretation from the segments friction trace. The center 100 ft (30 m) section of the segment friction trace was selected as the distance where the mu averages would be taken. This was done partly because the test segments were shorter than the normal standard 500 ft (150 m) length and because the reaction time of the recording instruments require a distance of about 50 ft (15 m) before the mu value would stabilize. Therefore, the central 100 ft (30 m) of the test segment was always used to record the visually interpreted mu values in the test program.

2.4.13 Data Analysis. After completion of each day's scheduled testing, the data was compiled and statistical analyses were conducted. The statistical analyses were performed on an AST PC computer and graphs were plotted using a Hewlett-Packard 7550A Graphics Plotter. The data obtained for the test runs were printed on a Panasonic KX-P1191 Multi-Mode Printer.

2.4.14 Tire Performance Criteria. To show excellent consistency by repeating friction averages throughout the friction range obtained over each of the various pavement segments, the friction averages must be within a confidence level of 95.5 %, or two standard deviations of $\pm$ 6 mu numbers.

2.5 STATISTICAL ANALYSIS

2.5.1 Tire Performance. 156 regression analyses were performed to determine the reliability and performance of the tires manufactured by Dunlop, McCreary and Dico. The complete listing of the results of the regression analyses is given in Appendices L through N.

2.5.2 Friction Equipment Correlation. 31 regression analyses were performed to determine correlation between the four friction measurement devices. Based on the results of the tire performance evaluation study, the combination of the McCreary tire on three of the devices and the Dico tire on the Mu Meter proved the most reliable. Further tests were conducted to study the effects of tire performance on friction equipment correlation. Tests were conducted using the McCreary and Dunlop tires on all four friction devices and the combination of Dico on the Mu Meter with the three other devices using the McCreary tire. Based on the results of these tests, correlation tables were prepared for the friction devices. They are given in the Recommendation Section of this report and will be included in the next revision of AC 150/5320-12. A complete listing of the regression analyses results is given in Appendices S through U.

2.6 DESCRIPTION OF THE TEST SITES

Test site DBA includes the three pavement segments D, B and A, located on runway 4-22, starting from the 4 end at station 41+50 and continuing down the runway to station 27+50. Figure 2 shows the layout of the segments on runway 4-22. A complete description of the pavement segments is given in Table 1 on page 10. Figures 3A, 3B, through 6, on pages 11 through 15, show the surface characteristics of the pavement segments.

Test sites K and P include the two segments located on the taxiway parallel to runway 4-22. Segment K is constructed with a coal-tar emulsion (Jennite) to mask all texture of the asphalt taxiway completely. The purpose of using the Jennite material was to obtain a smooth, low friction surface when water was applied. The other segment P was constructed of aluminum sheets to obtain near zero mu values, simulating ice-like conditions. NASA Langley personnel installed the aluminum plates on test surface P prior to conducting the test program. They were removed upon completion of the study. Traffic cones were placed at the beginning and end of each test segment.

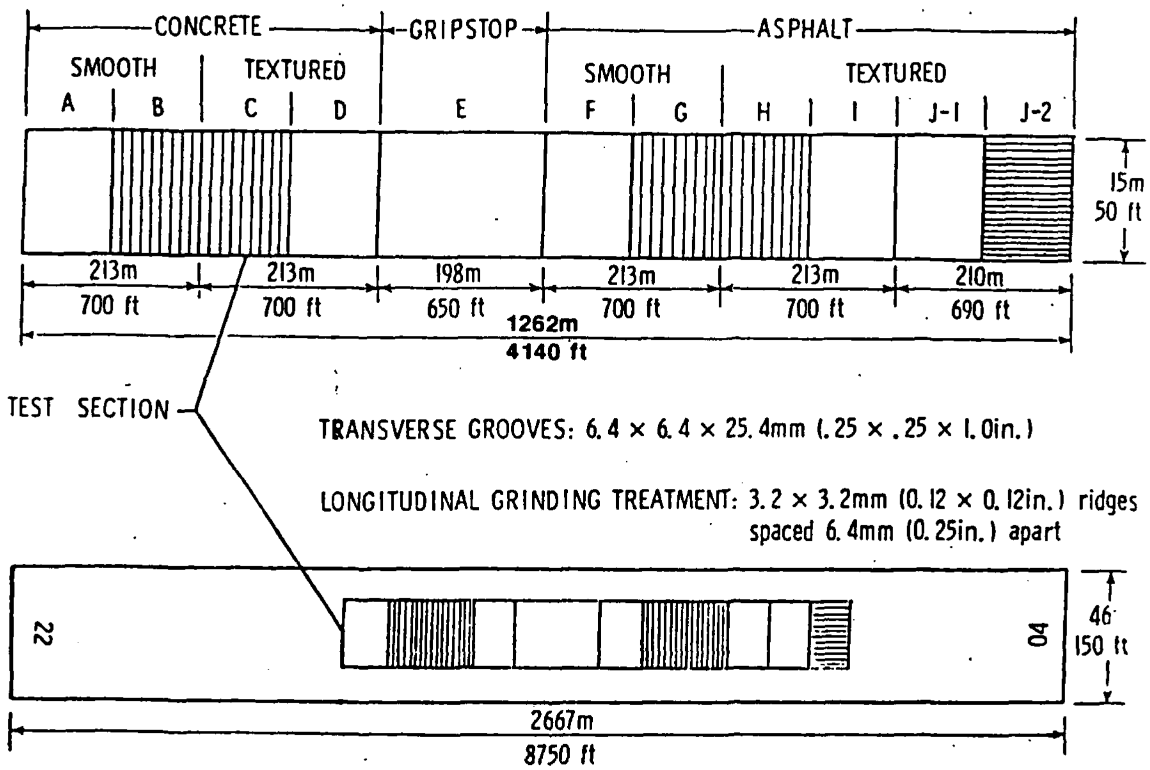


FIGURE 2. SCHEMATIC OF RUNWAY 4-22 TEST SURFACES AT NASA WALLOPS FLIGHT FACILITY

TABLE 1. DESCRIPTION OF PAVEMENT SEGMENTS

SURFACE	MATERIAL	DESCRIPTION
A Fig 3A	Ungrooved Concrete	Surfaces A and B were subjected to a canvas belt drag treatment. The goal was to obtain as smooth a surface texture as possible. Later, 1 x 1/4 x 1/4 inch (25 x 6 x 6 mm) transverse grooves were cut in surface B by diamond saws.
B Fig 3B	Grooved Concrete	
D Fig 4	Ungrooved Concrete	Surface D was subjected to a longitudinal burlap drag treatment. The goal was to obtain a typical currently used runway surface texture.
K Fig 5	Ungrooved Asphalt	The skid pad was covered with liquid Jennite, which is a coal-tar emulsion. The usual sand and aggregate content normally used in highway application was omitted in the treatment of the skid pad to obtain as smooth and slippery surface as possible.
P Fig 6	Aluminum Plates	Aluminum plates were constructed on the taxiway to obtain near zero mu values with the friction measuring devices.

2.7 GENERAL DESCRIPTION OF FRICTION EQUIPMENT

2.7.1 Friction Equipment Used in the Program. The friction equipment used to test the tires in this program were qualified from a previous test program. They were the Mu Meter (MUM), Saab Friction Tester (SFT), Runway Friction Tester (RFT) and the Skiddometer (SKD). All were equipped with self water systems and water storage tanks. A computer keyboard was available on all devices except the BV-11 Skiddometer. The operator used the keyboard to enter all test run information and pavement surface conditions. Table 2 shows the four friction measuring devices' test-tire conditions.

2.7.1.1 Mu Meter Trailer. The Mark 4 Mu Meter is a side force friction measuring device, pulled by a tow vehicle. The trailer weighs approximately 540 lbs (240 kg) and uses a vertical load of 171 lbs (78 kg) over each of the two friction measuring tires. The friction measuring wheels were positioned at 7.5 degrees in the test mode and produced an apparent wheel slip ratio of 13.5 percent. This test mode resulted in an included yaw angle of 15 degrees with respect to the direction of the test run. Figure 7 shows a closeup view of the Mark 4 Mu Meter Trailer.

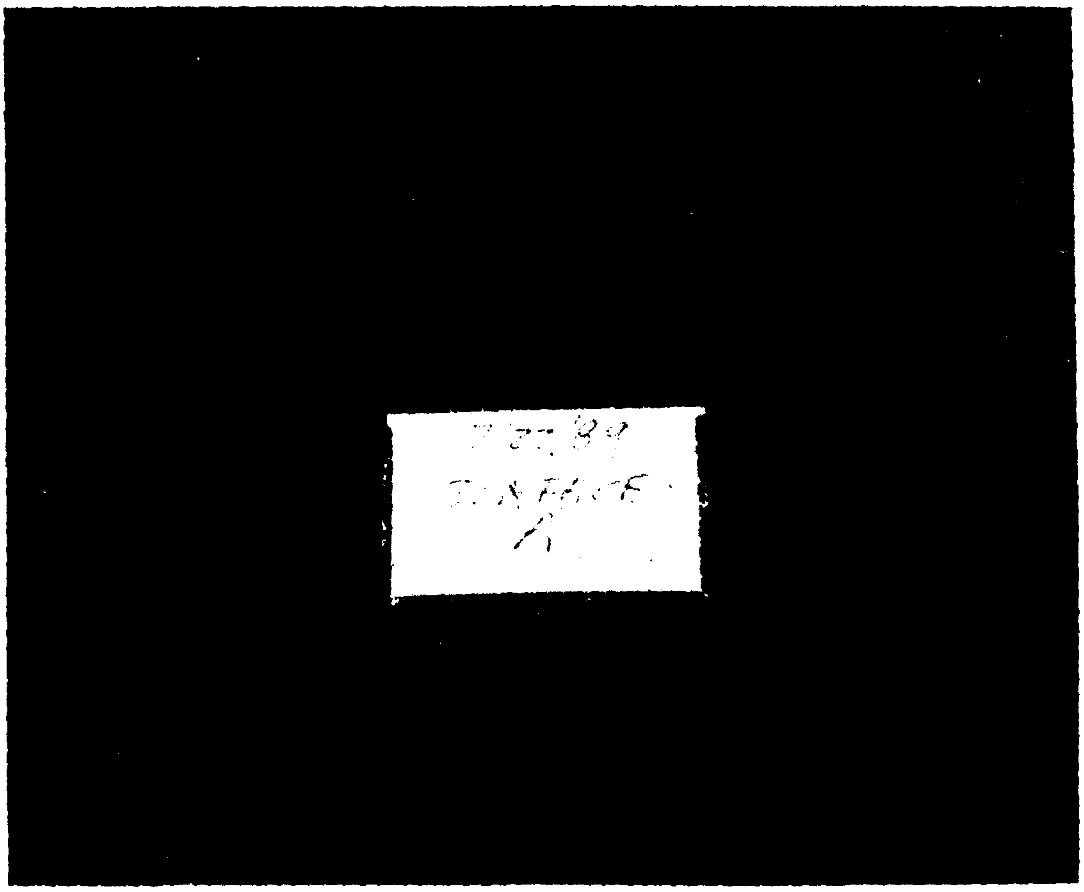


FIGURE 3A. SURFACE A: UNGROOVED CONCRETE WITH CANVAS BELT DRAG TREATMENT

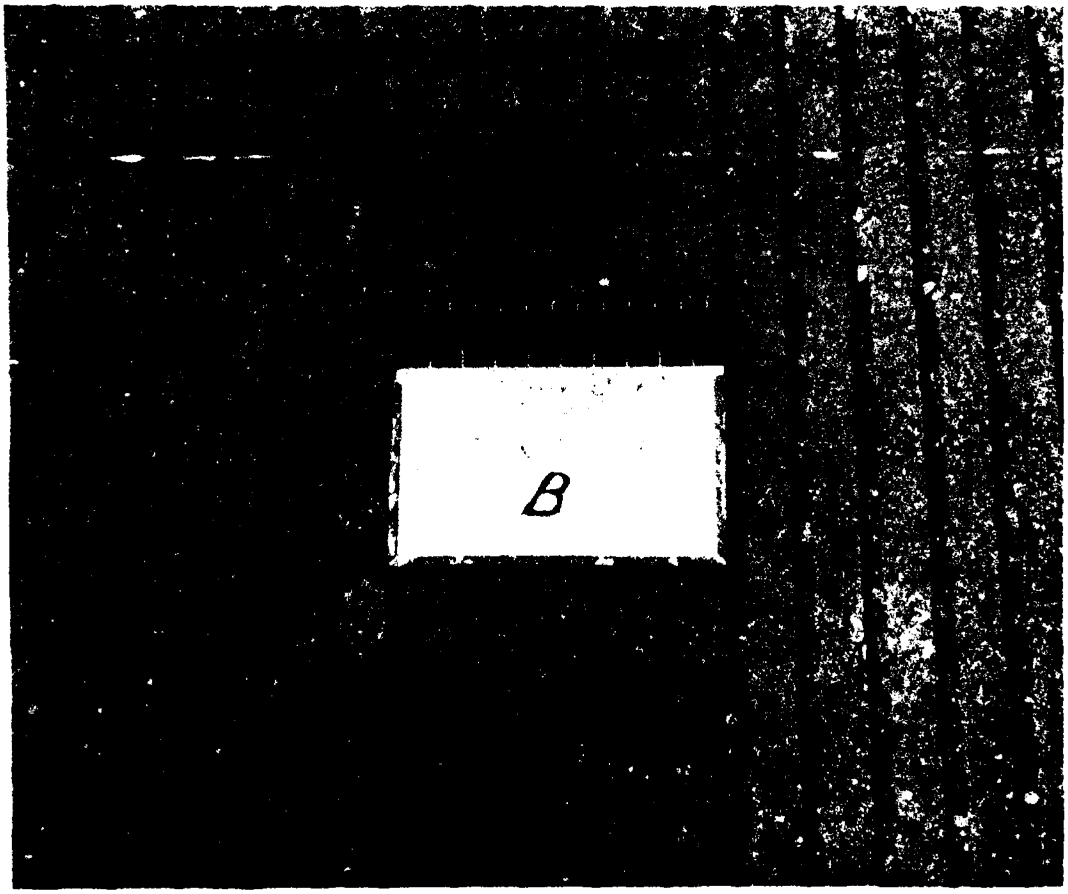


FIGURE 3B. SURFACE B: GROOVED CONCRETE WITH CANVAS BELT DRAG TREATMENT

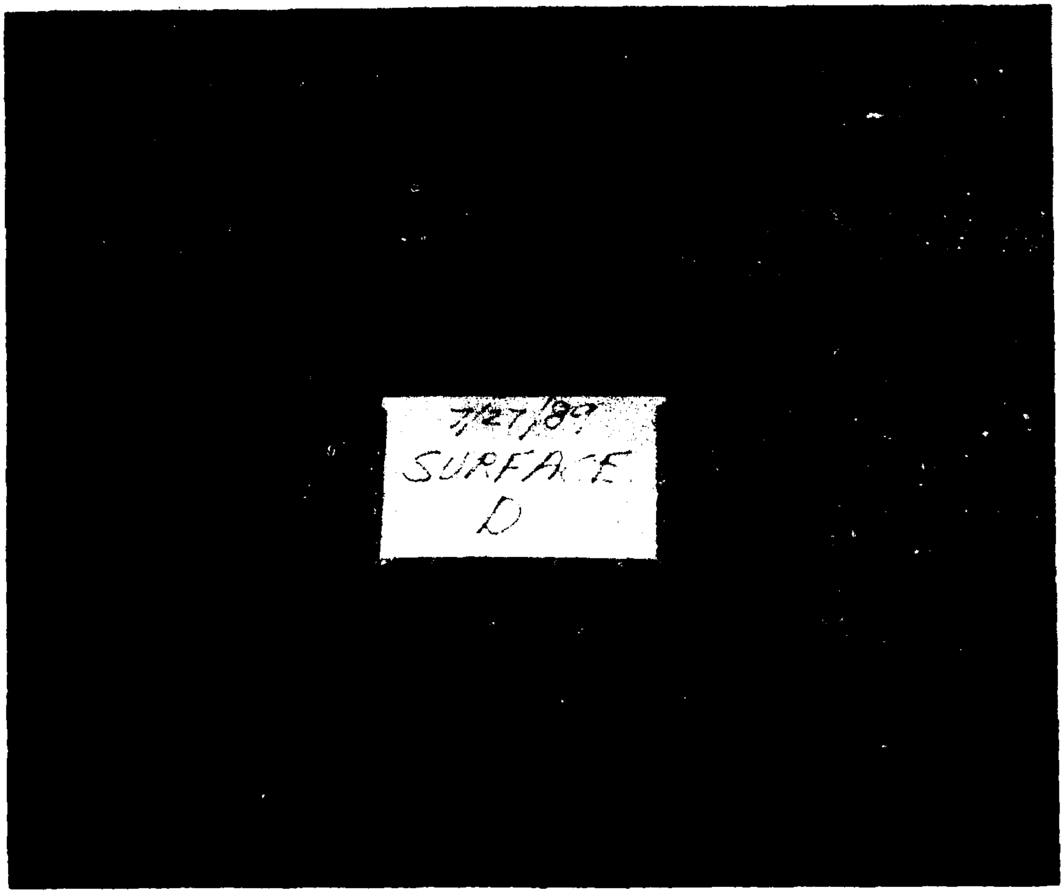


FIGURE 4. SURFACE D: UNGROOVED CONCRETE WITH LONGITUDINAL BURLAP DRAG TREATMENT

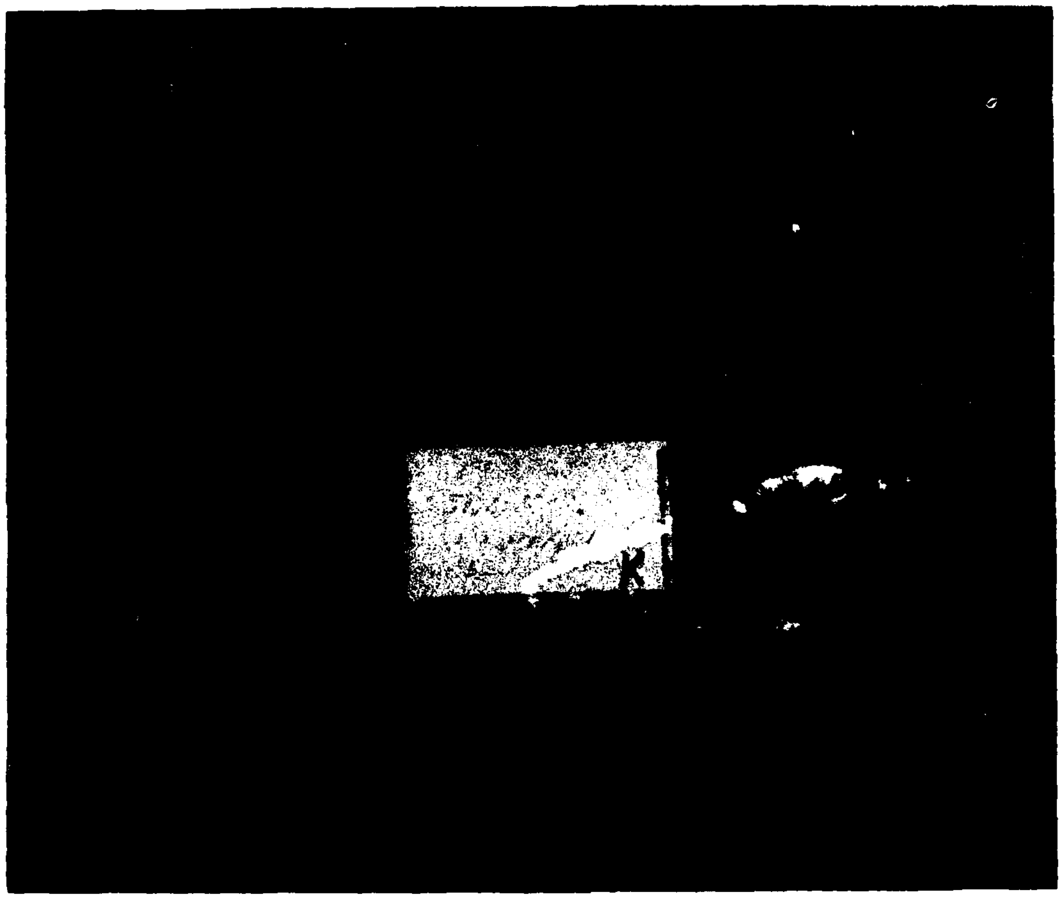


FIGURE 5. SURFACE K: UNGROOVED ASPHALT WITH LIQUID ASPHALT TREATMENT

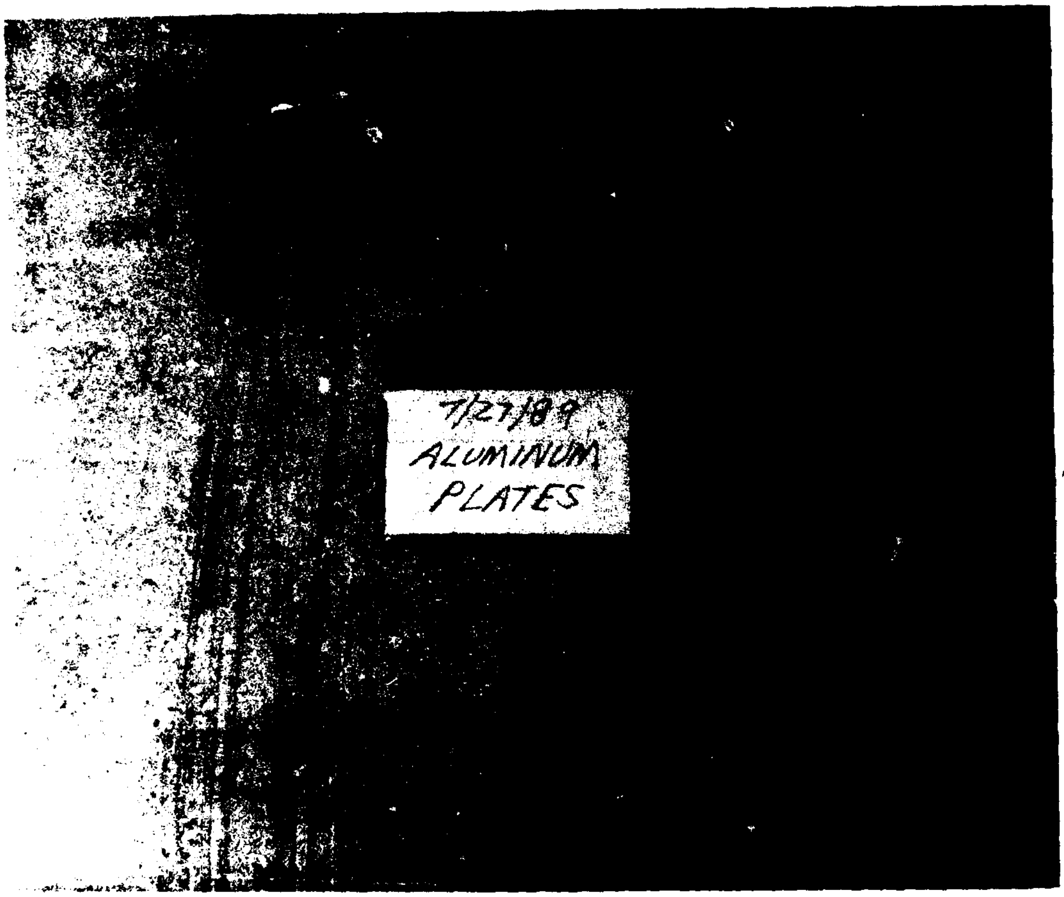


FIGURE 6. SURFACE P: ALUMINUM PLATES MOUNTED ON ASPHALT CONCRETE

TABLE 2. FRICTION MEASURING EQUIPMENT TEST-TIRE CONDITIONS

FRICTION MEASURING DEVICE	TEST-TIRE MODE	TIRE TYPE	TREAD DESIGN	INFLATION PRESSURE PSI	VERTICAL LOAD LB
MARK 2 SAAB FRICTION TESTER	FIXED SLIP, 10 TO 12%	RL2 AERO	SMOOTH 3-GROOVE	30 100	310
M 6800 RUNWAY FRICTION TESTER	FIXED SLIP, 13%	RL2	SMOOTH	30	300
BV-11 SKIDDOMETER	FIXED SLIP, 15 TO 17%	RL2 AERO	SMOOTH 3-GROOVE	30 100	220
MARK 4 MU METER	7.5 YAWED ROLLING APPARENT SLIP, 13.5%	RL2	SMOOTH	10	171

The rear wheel measures the distance traveled and provides trailer stability. The two friction measuring wheels were smooth tread tires, size 16 x 4. The rear wheel was similar in size but had conventional tire tread design. The friction measuring tires are used for maintenance and operational purposes. They were maintained at 10 psi (70 KPa) inflation pressure and the rear wheel was maintained at 30 psi (200 KPa). Further details on the instrumentation of the trailer can be found in the manufacturer's Instruction Manual.

2.7.1.2 Saab Friction Tester Automobile. The Mark 2 Saab Friction Tester was a Saab sedan vehicle equipped with front wheel drive and an hydraulically retractable friction measuring wheel installed behind the rear axle. The measuring wheel was positioned at zero degree yaw angle with respect to the orientation of the rear vehicle wheels. The friction measuring wheel arm consists of a chain drive connection with the vehicles rear axle and contains the torque gauge used to compute the braking friction values. The measuring wheel operates at a slower speed than the vehicle and depending on tire configuration, at a fixed slip ratio of 10 to 12 percent. A vertical load of 310 pounds (140 kg) was applied on the friction measuring wheel. The friction measuring tire was smooth tread, size 16 x 4. The inflation pressure for the friction measuring tire was 30 psi (200 KPa) it is used for maintenance purposes. The high pressure Aero tire operates at an inflation pressure of 100 psi (700 KPa), and is used for operational purposes on ice and snow covered pavement surfaces. The high pressure tire has a 3-groove tread pattern, size 16 x 4. Further information on the instrumentation of the SFT can be obtained from the manufacturer's Instruction Manual. Figure 8 shows an overview of the Mark 2 Saab Friction Tester Automobile.

2.7.1.3 Runway Friction Tester Minivan. The M 6800 RFT is a front wheel drive minivan with a friction measuring wheel connected to the rear axle by a gear drive producing a 13 percent fixed slip ratio. The measuring wheel was positioned at zero degree yaw angle with respect to the orientation of the rear vehicle wheels. The test tire instrumentation includes a two-axis force transducer, which measures both the vertical and drag loads on the friction measuring tire. The friction measuring tire had a vertical load of 300 lbs (136 kg). It uses a smooth tread tire, size 16 x 4, with an inflation pressure of 30 psi (200 KPa). The tire is used for maintenance and operational purposes. The Instruction Manual, available from the manufacturer, gives more specific information concerning the operation and maintenance of the friction tester. Figure 9 shows an overview of the M 6800 Runway Friction Tester Minivan.

2.7.1.4 Skiddometer Trailer. The BV-11 Skiddometer trailer was equipped with a friction measuring wheel designed to operate at a fixed slip ratio of 15 to 17 percent. The measuring wheel is positioned at zero degree yaw angle with respect to the orientation of the wheels mounted on the trailer. The trailer weighs about 795 lbs (360 kg) and consists of a welded steel frame supported by three in-line wheels, of which two operate independently of the friction measuring wheel. A vertical load of 220 lbs

(100 kg) was applied to the friction measuring wheel. It uses a smooth tread tire for maintenance, size 16 x 4, with an inflation pressure of 30 psi (200 KPa) for maintenance purposes, and 100 psi (700 KPa) Aero tire for operational use on snow and ice covered pavement surfaces. The high pressure tire has a 3-groove tread pattern, size 16 x 4. Additional information can be obtained from the manufacturer's Instruction Manual. Figure 10 shows an overview of the BV-11 Skiddometer Trailer.

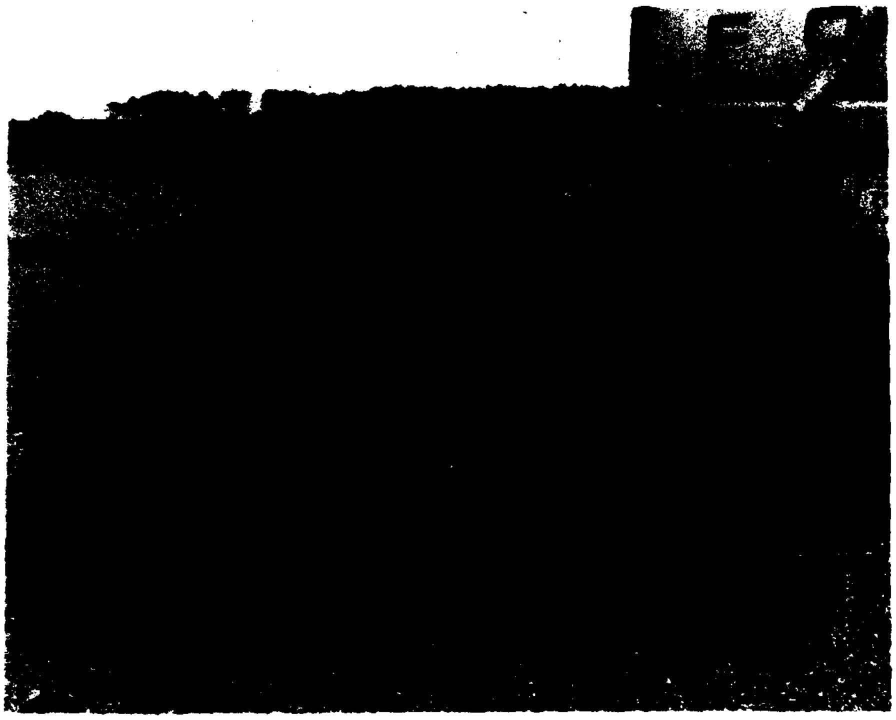


FIGURE 7. CLOSE-UP VIEW OF THE MARK 4 MU METER TRAILER

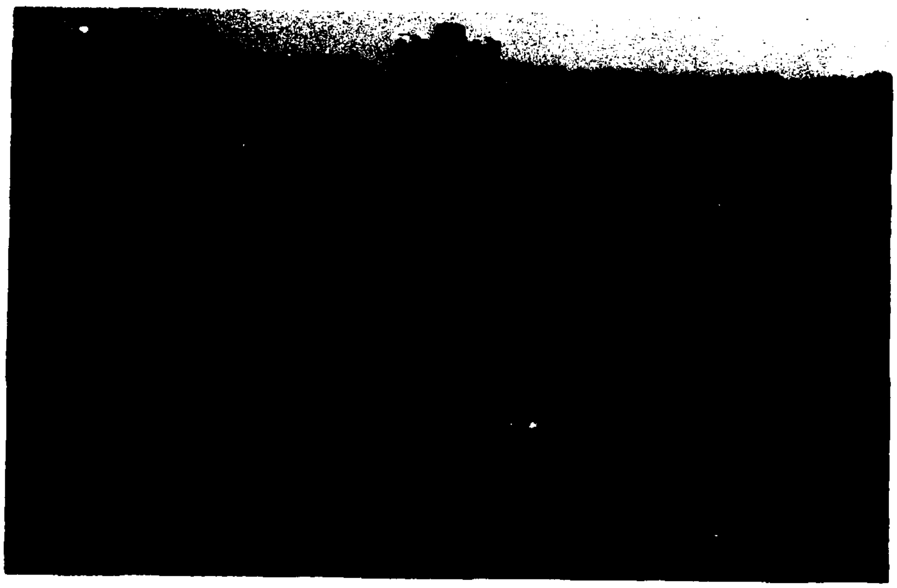


FIGURE 8. OVERVIEW OF THE MARK 2 SAAB FRICTION TESTER AUTOMOBILE

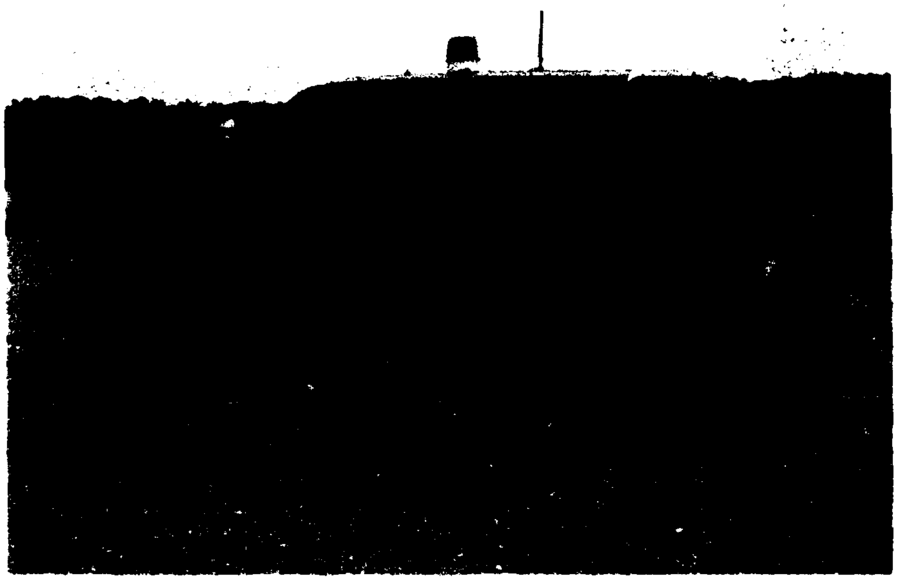


FIGURE 9. OVERVIEW OF THE M 6800 RUNWAY FRICTION TESTER MINIVAN

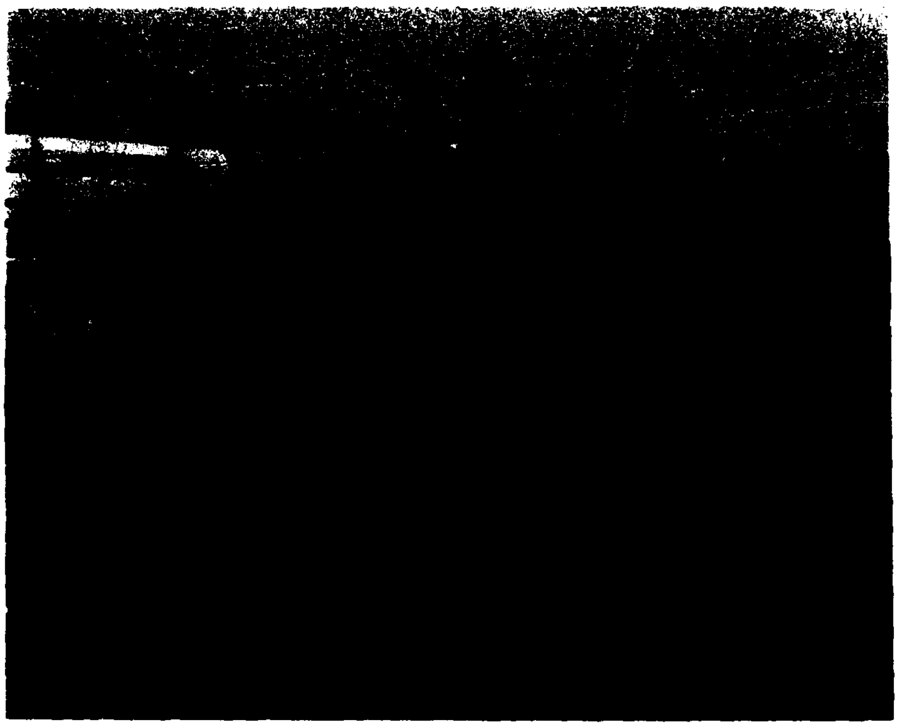


FIGURE 10. OVERVIEW OF THE BV-11 SKIDDOMETER TRAILER

3. EVALUATION OF TIRE PERFORMANCE

3.1 DESIGN OF AN EXPERIMENTAL TEST PLAN

3.1.1 Background. In response to the letter sent to FAA by ASTM Committee E 17.21 in June 1988, the FAA designed an experimental test plan that would evaluate new test tires and the present standard tire. The plan was developed so that all possible tire combinations would be evaluated. The number of tests required for statistical analysis was based on the experience gained on past test programs conducted at the NASA Wallops Flight Facility.

3.1.2 Number of Tires to be Tested. Three manufacturer's tires were to be evaluated: the McCreary, Dico, and Dunlop Tires. Two batches of ten tires each were provided by each manufacturer. Each batch was randomly subdivided into two series of five tires each. A total of sixty tires were selected for testing and labeled for identification according to the tire catalog (See Appendix D). Since the Mu Meter required two test tires, additional labeling of "left" and "right" was used to maintain correct identification.

3.1.3 Selecting Tire Combinations for Statistical Analyses. Seven combinations of tires were identified for statistical analyses. The explanation of the meaning of the tire code combinations is given in Table 3 below.

TABLE 3 - CODED TIRE COMBINATIONS FOR STATISTICAL ANALYSES

TIRE CODE	EXPLANATION OF CODED TIRE COMBINATIONS
1.2	Compares Batch 1 with Batch 2
11.12	Compares Batch 1 - Series 1 with Batch 1 - Series 2
21.22	Compares Batch 2 - Series 1 with Batch 2 - Series 2
11.21	Compares Batch 1 - Series 1 with Batch 2 - Series 1
12.22	Compares Batch 1 - Series 2 with Batch 2 - Series 2
11.22	Compares Batch 1 - Series 1 with Batch 2 - Series 2
12.21	Compares Batch 1 - Series 2 with Batch 2 - Series 1

The seven tire combinations listed in Table 3 were used in the linear regression analyses for all four friction devices, the three manufacturers tires, and the two test speeds used in the program. The procedure used for performing the linear regression analyses is given in Appendix O.

3.2 DEVELOPMENT OF THE LIMITS OF ACCEPTABILITY

3.2.1 Development of Procedure. To compare one tires performance with another's, parameters were set in the test program to establish boundary conditions which would satisfy all data needs. Certain parameters were identified as more critical than others.

One such parameter was the slope of the linear regression line. The perfect correlation line is when Y = X, and there is a one-to-one relationship between the two variables. The closer the linear regression line coincides with the perfect line of correlation, the better the correlation. For example, other correlations can be achieved, but at a much different slope than the perfect correlation line. These are not acceptable for determining tire performance and reliability. Tire performance and reliability must be judged on how close the regression line coincides with the perfect correlation line.

To obtain performance and reliability throughout the speed and friction range, slope parameters had to be set. Based on the author's experience in testing friction equipment at NASA Wallops Facility, the following parameters were identified:

3.2.2 Setting the Limits of Acceptability. There are three basic areas for consideration in setting the parameters for the Limits of Acceptability. The first and most critical, the slope of the linear regression line is discussed above. The second critical element concerns the Coefficients of Correlation and Determination, and the third is the Standard Error of Estimate. These sets are explained in the following paragraphs:

3.2.2.1 The Slope-Intercept Set. The parameters for this set is divided into three elements: Slope-Intercept at X = 0, Slope of Linear Regression Line, and Slope-Intercept at X = 100.

3.2.2.1.1 Slope-Intercept at X = 0. Since the Standard Error of Estimate was previously set in paragraph 2.4.14, then the parameter for this set is ± 3 mu numbers for one Standard Error of Estimate.

3.2.2.1.2 Slope of Regression Line. A perfect correlation line is established when the slope of the regression line equals 1.0000. The parameter for the allowable variance from this line was set at ± 0.0800, or the slope range from 0.9200 to 1.0800.

3.2.2.1.3 Slope-Intercept at X = 100. The parameter for allowable variance at this intercept was set at ± 5 mu numbers for one Standard Error of Estimate.

These parameters represent the minimum and maximum values that the calculated regression line can vary from the perfect line of correlation. The slope of the calculated regression line must lie within these limits.

3.2.2.2 The Coefficient Set. The parameters for this set were divided into two elements: the Coefficient of Correlation and the Coefficient of Determination.

3.2.2.2.1 The Coefficient of Correlation. The Coefficient of Correlation indicates the strength of the association between two variables. The minimum acceptable value for the Coefficient of Correlation was set at 0.9800.

3.2.2.2.2 The Coefficient of Determination. The Coefficient of Determination expresses the strength of the relationship between two variables. The minimum acceptable value for the Coefficient of Determination was set at 0.9604.

3.2.2.3 Standard Error of Estimate Set. Consists of only one element, the Standard Error of Estimate. The parameter for this set was ± 3 mu numbers for one Standard Error of Estimate.

Appendices P through R show the results of the linear regression analyses and how they compared with the parameters as set forth by the Limits of Acceptability.

3.3 RATIONALE FOR EVALUATION METHOD

3.3.1 Development of the Evaluation Method. An evaluation method was developed to determine how well each tire performed in the test program. The method emphasized the importance of the slope of the calculated linear regression line and how it compared to the perfect correlation line. The "Slope-Intercept Set" was weighted in the evaluation 50 percent; the "Coefficients Set" was weighted 20 percent, and the "Standard Error of Estimate Set" was weighted 30 percent, for a total of 100 percent. Point values were assigned to each set as detailed below:

Each element within a set must meet the parameter for that element; any data that falls outside the parameter for that element fails the entire set. If the set failed, it received no evaluation points.

3.3.2 Tire Combination Categories. There were two tire combination categories: Category A and Category B.

3.3.2.1 Category A. This category compared the performance of 10 tires in one batch with 10 tires of another batch. This was the only tire combination in this category.

This category received 50 percent of the total evaluation points.

3.3.2.2 Category B. This category compared the performance of various combinations of batch/series of five tires. There were six tire combinations in this category. The entire category received 50 percent of the evaluation points.

3.3.3 Evaluation Points Assigned to Each Category. The total evaluation points for all categories was 120. Since each category was 50 percent of the total evaluation points, each category was worth 60 points.

3.3.3.1 Evaluation Point Breakdown for Category A. The total evaluation points for this category was 60. The point distribution for the three sets within this category were: "Slope-Intercept Set" - 30 points; "Coefficient Set" - 12 points; and "Standard Error Set" - 18 points.

3.3.3.2 Evaluation Point Breakdown for Category B. The total evaluation points for this category was 60, distributed between six tire combinations. The total evaluation for any one tire combination was 10 points. The point distribution for the three sets within this category were: "Slope-Intercept Set" - 5 points; "Coefficient Set" - 2 points; and "Standard Error Set" - 3 points.

3.4 EVALUATION OF McCREARY TIRE PERFORMANCE

3.4.1 Linear Regression Analyses. The linear regression analyses were performed according to the procedures outlined in Appendix O. The data for the analyses were taken from the Field Data sheets in Appendix H for each of the friction devices used in the test program. Table 3 lists the various tire combinations used in the linear regression analyses. Appendix L shows the charts which were produced by the linear regression analyses. They render a graphic presentation of the performance and reliability of the McCreary tire. The Summary Tables given in Appendix P show the results of the Limits of Acceptability parameter comparisons. The results of the Evaluation Method are given in Tables 4 through 7. The summary of the overall performance for the McCreary tire is given in Table 16. The following paragraphs detail the results of the linear regression analyses and identify those parameters which exceed the Limits of Acceptability.

3.4.1.1 Evaluation of McCreary Tire Performance on the Runway Friction Tester.

3.4.1.1.1 Test Speed 40 MPH. (See Table P - 1)

CATEGORY A:

1.2 Meets all parameters.

CATEGORY B:

11.12	Meets all parameters.
21.22	Meets all parameters.
11.21	Meets all parameters.
12.22	Meets all parameters.
11.22	Meets all parameters.
12.21	Meets all parameters.

3.4.1.1.2 Test Speed 60 MPH. (See Table P - 2)

CATEGORY A:

1.2	Meets all parameters.

CATEGORY B:

11.12	Meets all parameters.		
21.22	Meets all parameters.		
11.21	Meets all parameters.		
12.22	Meets all parameters.		
11.22	S @ X = Y;	+0.9155 < +0.9200	
	SI @ X = 100;	-5.6779 > -5.0000....	-5 POINTS
12.21	Meets all parameters.		

3.4.1.2 Evaluation of McCreary Tire Performance on the Saab Friction Tester.

3.4.1.2.1 Test Speed 40 MPH. (See Table P - 3)

CATEGORY A:

1.2	Meets all parameters.

CATEGORY B:

11.12	SI @ X = 100;	-6.4493	>	-5.0000....	-5 POINTS
21.22	Meets all parameters.				
11.21	Meets all parameters.				
12.22	Meets all parameters.				
11.22	Meets all parameters.				
12.21	Meets all parameters.				

3.4.1.2.2 Test Speed 60 MPH. (See Table P - 4)

CATEGORY A:

1.2 Meets all parameters.

CATEGORY B:

11.12 Meets all parameters.

21.22 Meets all parameters.

11.21 Meets all parameters.

12.22 Meets all parameters.

11.22 Meets all parameters.

12.21 Meets all parameters.

3.4.1.3 Evaluation of McCreary Tire Performance on the Skiddometer.

3.4.1.3.1 Test Speed 40 MPH. (See Table P - 5)

CATEGORY A:

1.2 Meets all parameters.

CATEGORY B:

11.12	Meets all parameters.
21.22	Meets all parameters.
11.21	Meets all parameters.
12.22	Meets all parameters.
11.22	Meets all parameters.
12.21	Meets all parameters.

3.4.1.3.2 Test Speed 60 MPH. (See Table P - 6)

CATEGORY A:

1.2	Meets all parameters.

CATEGORY B:

11.12	Meets all parameters.	
21.22	Meets all parameters.	
11.21	Meets all parameters.	
12.22	Meets all parameters.	
11.22	Meets all parameters.	
12.21	SI @ X = 100;	+5.4144 > +5.0000.... -5 POINTS

3.4.1.4 Evaluation of McCreary Tire Performance on the Mu Meter.

3.4.1.4.1 Test Speed 40 MPH. (See Table P - 7)

CATEGORY A:

1.2	CC;	0.9679 <	0.9800
	CD;	0.9369 <	0.9604....-12 POINTS
	SEE;	5.1281 >	3.0000....-18 POINTS

CATEGORY B:

11.12	SI @ X = 0;	+3.9751	> +3.0000
	SI @ X = 100;	+11.5751	> +5.0000.... -5 POINTS
	SEE;	3.0094	> 3.0000.... -3 POINTS
21.22	SI @ X = 0;	-5.1060	> -3.0000.... -5 POINTS
11.21	S @ X = Y;	+1.0975	> +1.0800
	SI @ X = 100;	+11.7966	> +5.0000.... -5 POINTS
12.22	SI @ X = 0;	-5.3682	> -3.0000.... -5 POINTS
11.22	S @ X = Y;	+1.1333	> +1.0800
	SI @ X = 100;	+11.8644	> +5.0000.... -5 POINTS

12.21 Meets all parameters.

3.4.1.4.2 Test Speed 60 MPH. (See Table P - 8)

CATEGORY A:

1.2	SI @ X = 100;	+5.2791	> +5.0000....-30 POINTS
	SEE;	3.5169	> 3.0000....-18 POINTS

CATEGORY B:

11.12	SI @ X = 100;	+9.7262	> +5.0000.... -5 POINTS

21.22 Meets all parameters.

11.21	S @ X = Y;	+1.1271	> +1.0800
	SI @ X = 100;	+11.3748	> +5.0000.... -5 POINTS
	SEE;	3.5691	> 3.0000.... -3 POINTS

12.22 Meets all parameters.

11.22	S @ X = Y;	+1.1045	> +1.0800
	SI @ X = 100;	+11.2443	> +5.0000.... -5 POINTS
	SEE;	3.2529	> 3.0000.... -3 POINTS

12.21 Meets all parameters.

3.5 EVALUATION OF DICO TIRE PERFORMANCE

3.5.1 Linear Regression Analyses. The linear regression analyses were performed according to the procedures outlined in Appendix O. The data for the analyses were taken from the Field Data sheets in Appendix I for each of the friction devices used in the test program. Table 3 lists the various tire combinations used in the linear regression analyses. Appendix M shows the charts which were produced by the linear regression analyses. They render a graphic presentation of the performance and reliability of the Dico tire. The Summary Tables given in Appendix Q show the results of the Limits of Acceptability comparisons. The results of the Evaluation Method are given in Tables 8 through 11. The summary of the overall performance for the Dico tire is given in Table 16. The following paragraphs detail the results of the linear regression analyses and identify those parameters which exceed the Limits of Acceptability.

3.5.1.1 Evaluation of Dico Tire Performance on the Runway Friction Tester.

3.5.1.1.1 Test Speed 40 MPH. (See Table Q - 1)

CATEGORY A:

1.2	S @ X = Y;	+0.8766	<	+0.9200	
	SI @ X = 100;	-13.2287	>	+5.0000....	-30 POINTS
	CC;	0.9777	<	0.9800	
	CD;	0.9559	<	0.9604....	-12 POINTS
	SEE;	3.4400	>	3.0000....	-18 POINTS

CATEGORY B:

11.12	SI @ X = 100;	+5.1983	>	+5.0000....	-5 POINTS
21.22	SI @ X = 0;	+3.2390	>	+3.0000....	-5 POINTS
11.21	SI @ X = 0;	-3.2387	>	-3.0000	
	S @ X = Y;	+0.9055	<	+0.9200	
	SI @ X = 100;	-12.6887	>	-5.0000....	-5 POINTS
	SEE;	3.2822	>	3.0000....	-3 POINTS
12.22	S @ X = Y;	+0.8508	<	+0.9200	
	SI @ X = 100;	-13.5196	>	-5.0000....	-5 POINTS
11.22	S @ X = Y;	+0.9118	<	+0.9200	
	SI @ X = 100;	-9.0910	>	-5.0000....	-5 POINTS

12.21 S @ X = Y; +0.8459 < +0.9200
SI @ X = 100; -17.0511 > -5.0000.... -5 POINTS
SEE; 3.0674 > 3.0000.... -3 POINTS

3.5.1.1.2 Test Speed 60 MPH. (See Table Q - 2)

CATEGORY A:

1.2 S @ X = Y; +0.8722 < +0.9200
SI @ X = 100; -12.8547 > -5.0000....-30 POINTS

CATEGORY B:

11.12 SI @ X = 100; +5.3351 > +5.0000.... -5 POINTS

21.22 Meets all parameters

11.21 S @ X = Y; +0.9146 < +0.9200
SI @ X = 100; -9.6814 > -5.0000.... -5 POINTS

12.22 S @ X = Y; +0.8380 < +0.9200
SI @ X = 100; -14.7489 > -5.0000.... -5 POINTS

11.22 S @ X = Y; +0.9000 < +0.9200
SI @ X = 100; -10.3507 > -5.0000.... -5 POINTS

12.21 S @ X = Y; +0.8403 < +0.9200
SI @ X = 100; -15.3109 > -5.0000.... -5 POINTS

3.5.1.2 Evaluation of Dico Tire Performance on the Saab Friction Tester.

3.5.1.2.1 Test Speed 40 MPH. (See Table Q - 3)

CATEGORY A:

1.2 SI @ X = 0; -4.9893 > -3.0000....-30 POINTS
CC; 0.9795 < 0.9800
CD; 0.9593 < 0.9604....-12 POINTS
SEE; 5.1880 > 3.0000....-18 POINTS

CATEGORY B:

11.12 Meets all parameters.

21.22	SI @ X = 0;	-3.5310	>	-3.0000.... -5 POINTS
	SEE;	3.5204	>	3.0000.... -3 POINTS
11.21	SI @ X = 0;	-3.2921	>	-3.0000.... -5 POINTS
	SEE;	4.3671	>	3.0000.... -3 POINTS
12.22	SI @ X = 0;	-6.6638	>	-3.0000.... -5 POINTS
	CC;	0.9759	<	0.9800
	CD;	0.9525	<	0.9604.... -2 POINTS
	SEE;	5.7993	>	3.0000.... -3 POINTS
11.22	SI @ X = 0;	-6.8381	>	-3.0000.... -5 POINTS
	CC;	0.9751	<	0.9800
	CD;	0.9509	<	0.9604.... -2 POINTS
	SEE;	5.8936	>	3.0000.... -3 POINTS
12.21	SEE;	4.7112	>	3.0000.... -3 POINTS

3.5.1.2.2 <u>Test Speed 60 MPH.</u> (See Table Q - 4)

CATEGORY A:

1.2	SI @ X = 0;	-6.6984	>	-3.0000
	S @ X = Y;	+1.1314	>	+1.0800
	SI @ X = 100;	+6.4416	>	+5.0000....-30 POINTS
	CC;	0.9684	<	0.9800
	CD;	0.9379	<	0.9604....-12 POINTS
	SEE;	5.5747	>	3.0000....-18 POINTS

CATEGORY B:

11.12 Meets all parameters.

21.22	SI @ X = 0;	-3.9389	>	-3.0000
	SI @ X = 100;	-7.8389	>	-5.0000.... -5 POINTS
	SEE;	4.1862	>	3.0000.... -3 POINTS
11.21	SI @ X = 0;	-5.0055	>	-3.0000
	S @ X = Y;	+1.1368	>	+1.0800
	SI @ X = 100;	+8.6745	>	+5.0000.... -5 POINTS
	SEE;	3.8512	>	3.0000.... -3 POINTS

12.22	SI @ X = 0;	-8.2248	>	-3.0000
	S @ X = Y;	+1.1195	>	+1.0800.... -5 POINTS
	CC;	0.9569	<	0.9800
	CD;	0.9156	<	0.9604.... -2 POINTS
	SEE;	6.4966	>	3.0000.... -3 POINTS
11.22	SI @ X = 0;	-8.5756	>	-3.0000
	S @ X = Y;	+1.0862	>	+1.0800.... -5 POINTS
	CC;	0.9627	<	0.9800
	CD;	0.9268	<	0.9604.... -2 POINTS
	SEE;	6.0506	>	3.0000.... -3 POINTS
12.21	SI @ X = 0;	-4.8475	>	-3.0000
	S @ X = Y;	+1.1796	>	+1.0800
	SI @ X = 100;	+13.1125	>	+5.0000.... -5 POINTS
	SEE;	3.7632	>	3.0000.... -3 POINTS

3.5.1.3 Evaluation of Dico Tire Performance on the Skiddometer.

3.5.1.3.1 Test Speed 40 MPH. (See Table Q - 5)

CATEGORY A:

1.2	SI @ X = 0;	-3.5875	>	-3.0000
	S @ X = Y;	+0.9105	<	+0.9200
	SI @ X = 100;	-12.5375	>	-5.0000....-30 POINTS
	CC;	0.9738	<	0.9800
	CD;	0.9482	<	0.9604....-12 POINTS
	SEE;	5.2490	>	3.0000....-18 POINTS

CATEGORY B:

11.12	S @ X = Y;	+0.8868	<	0.9200
	SI @ X = 100;	-12.4322	>	-5.0000.... -5 POINTS
	SEE;	4.5914	>	3.0000.... -3 POINTS
21.22	SI @ X = 0;	-3.5186	>	-3.0000
	SI @ X = 100;	-7.3386	>	-5.0000.... -5 POINTS

11.21 S @ X = Y;	+0.8702 < +0.9200	
SI @ X = 100;	-14.1297 > -5.0000....	-5 POINTS
CC;	0.9599 < 0.9800	
CD;	0.9215 < 0.9604....	-2 POINTS
SEE;	6.6413 > 3.0000....	-3 POINTS
12.22 SI @ X = 0;	-5.2178 > -3.0000	
SI @ X = 100;	-8.9478 > -5.0000....	-5 POINTS
SEE;	3.1936 > 3.0000....	-3 POINTS
11.22 SI @ X = 0;	-5.8350 > -3.0000	
S @ X = Y;	+0.8429 < +0.9200	
SI @ X = 100;	-21.5450 > -5.0000....	-5 POINTS
CC;	0.9591 < 0.9800	
CD;	0.9199 < 0.9604....	-2 POINTS
SEE;	6.5003 > 3.0000....	-3 POINTS
12.21 SEE;	3.2028 > 3.0000....	-3 POINTS

3.5.1.3.2 Test Speed 60 MPH. (See Table Q - 6)

CATEGORY A:

1.2 SI @ X = 0;	-3.6261 > -3.0000	
SI @ X = 100;	-5.8261 > -5.0000....	-30 POINTS

CATEGORY B:

11.12 S @ X = Y;	+0.8679 < +0.9200	
SI @ X = 100;	-13.1823 > -5.0000....	-5 POINTS
21.22 Meets all parameters.		
11.21 SI @ X = 100;	-9.9215 > -5.0000....	-5 POINTS
12.22 SI @ X = 0;	-4.7775 > -3.0000....	-5 POINTS
11.22 SI @ X = 0;	-4.7625 > -3.0000	
S @ X = Y;	+0.9105 < +0.9200	
SI @ X = 100;	-13.7125 > -5.0000....	-5 POINTS
12.21 Meets all parameters.		

3.5.1.4 Evaluation of Dico Tire Performance on the Mu Meter.

3.5.1.4.1 Test Speed 40 MPH. (See Table Q - 7)

CATEGORY A:

1.2 Meets all parameters.

CATEGORY B:

11.12 Meets all parameters.

21.22 Meets all parameters.

11.21 SEE; 3.2224 > 3.0000.... -3 POINTS

12.22 Meets all parameters.

11.22 Meets all parameters.

12.21 SI @ X = 100; -5.3271 > -5.0000.... -5 POINTS

3.5.1.4.2 Test Speed 60 MPH. (See Table Q - 8)

CATEGORY A:

1.2 Meets all parameters.

CATEGORY B:

11.12 Meets all parameters.

21.22 Meets all parameters.

11.21 Meets all parameters.

12.22 Meets all parameters.

11.22 Meets all parameters.

12.21 Meets all parameters.

3.6 EVALUATION OF DUNLOP TIRE PERFORMANCE

3.6.1 Linear Regression Analyses. The linear regression analyses were performed according to the procedures outlined in Appendix O. The data for the analyses were taken from the Field Data sheets in Appendix J for each of the friction devices used in the test program. Table 3 lists the various tire combinations used in the linear regression analyses. Appendix N shows the charts which were produced by the linear regression analyses. They render a graphic presentation of the performance and reliability of the Dunlop Tire. The Summary Tables given in Appendix R show the results of the Limits of Acceptability comparisons. The results of the Evaluation Method are given in Tables 12 through 15. The summary of the overall performance for the Dunlop tire is given in Table 16. The following paragraphs detail the results of the linear regression analyses and identify those parameters which exceed the Limits of Acceptability.

3.6.1.1 Evaluation of Dunlop Tire Performance on the Runway Friction Tester.

3.6.1.1.1 Test Speed 40 MPH. (See Table R - 1)

NOTE: Runway Friction Tester completed only Batch 1 set of tire tests. *
Batch 2 was not completed due to accidental damage to vehicle.

CATEGORY A:

1.2 No analysis conducted. *

CATEGORY B:

11.12	SI @ X = 0;	+4.2630 > +3.0000
	S @ X = Y;	+0.9147 < +0.9200.... -5 POINTS

21.22 No analysis conducted. *

11.21 No analysis conducted. *

12.22 No analysis conducted. *

11.22 No analysis conducted. *

12.21 No analysis conducted. *

3.6.1.1.2 Test Speed 60 MPH. (See Table R - 2)

CATEGORY A:

1.2 No analysis conducted. *

CATEGORY B:

11.12 Meets all parameters.

21.22 No analysis conducted. *

11.21 No analysis conducted. *

12.22 No analysis conducted. *

11.22 No analysis conducted. *

12.21 No analysis conducted. *

3.6.1.2 Evaluation of Dunlop Tire Performance on the Saab Friction Tester.

3.6.1.2.1 Test Speed 40 MPH. (See Table R - 3)

CATEGORY A:

1.2	SI @ X = 100;	-9.6950	>	-5.0000....	-30 POINTS
	SEE;	4.7325	>	3.0000....	-18 POINTS

CATEGORY B:

11.12	SI @ X = 100;	-6.0930	>	-5.0000....	-5 POINTS
	SEE;	3.0543	>	3.0000....	-3 POINTS
21.22	SI @ X = 0;	+4.1199	>	+3.0000....	-5 POINTS
	SEE;	4.5275	>	3.0000....	-3 POINTS
11.21	SI @ X = 0;	-4.9106	>	-3.0000	
	SI @ X = 100;	-11.0306	>	-5.0000....	-5 POINTS
	SEE;	4.2653	>	3.0000....	-3 POINTS
12.22	SI @ X = 100;	-8.0659	>	-5.0000....	-5 POINTS
	SEE;	4.5679	>	3.0000....	-3 POINTS

11.22 S @ X = Y; +0.8795 < +0.9200
SI @ X = 100; -13.2046 > -5.0000.... -5 POINTS
SEE; 3.4820 > 3.0000.... -3 POINTS

12.21 SI @ X = 0; -4.4891 > -3.0000
SI @ X = 100; -5.2691 > -5.0000.... -5 POINTS
SEE; 4.3836 > 3.0000.... -3 POINTS

3.6.1.2.2 Test Speed 60 MPH. (See Table R - 4)

CATEGORY A:

1.2 S @ X = Y; +0.8940 < +0.9200
SI @ X = 100; -12.4519 > -5.0000....-30 POINTS

CATEGORY B:

11.12 Meets all parameters.

21.22 Meets all parameters.

11.21 S @ X = Y; +0.8782 < +0.9200
SI @ X = 100; -14.9655 > -5.0000.... -5 POINTS

12.22 S @ X = Y; +0.9157 < +0.9200
SI @ X = 100; -9.5271 > -5.0000.... -5 POINTS

11.22 S @ X = Y; +0.8839 < +0.9200
SI @ X = 100; -13.3382 > -5.0000.... -5 POINTS

12.21 S @ X = Y; +0.9099 < +0.9200
SI @ X = 100; -11.1703 > -5.0000.... -5 POINTS

3.6.1.3 Evaluation of Dunlop Tire Performance on the Skiddometer.

3.6.1.3.1 Test Speed 40 MPH. (See Table R - 5)

CATEGORY A:

1.2 SI @ X = 100; -8.1103 > -5.0000....-30 POINTS
SEE; 4.9533 > 3.0000....-18 POINTS

CATEGORY B:

11.12 SI @ X = 100; -6.1923 > -5.0000.... -5 POINTS

21.22 SI @ X = 100; +7.7445 > +5.0000.... -5 POINTS
SEE; 3.5780 > 3.0000.... -3 POINTS

11.21 S @ X = Y; +0.8650 < +0.9200
SI @ X = 100; -14.1586 > -5.0000.... -5 POINTS
SEE; 3.9737 > 3.0000.... -3 POINTS

12.22 Meets all parameters.

11.22 SI @ X = 100; -6.7766 > -5.0000.... -5 POINTS

12.21 SI @ X = 100; -8.3593 > -5.0000.... -5 POINTS

3.6.1.3.2 <u>Test Speed 60 MPH.</u> (See Table R - 6)

CATEGORY A:

1.2 SI @ X = 100; -5.0126 > -5.0000....-30 POINTS
SEE; 3.3078 > 3.0000....-18 POINTS

CATEGORY B:

11.12 Meets all parameters.

21.22 SI @ X = 100; +9.3256 > +5.0000.... -5 POINTS

11.21 SI @ X = 100; -8.7745 > -5.0000.... -5 POINTS

12.22 Meets all parameters.

11.22 Meets all parameters.

12.21 S @ X = Y; +0.9117 < +0.9200
SI @ X = 100; -10.0603 > -5.0000.... -5 POINTS

3.6.1.4 Evaluation of Dunlop Tire Performance on the Mu Meter.

3.6.1.4.1 Test Speed 40 MPH. (See Table R - 7)

CATEGORY A:

1.2	SI @ X = 0;	+3.7872	>	-3.0000....-30 POINTS
	CC;	0.9771	<	0.9800
	CD;	0.9548	<	0.9604....-12 POINTS
	SEE;	4.4304	>	3.0000....-18 POINTS

CATEGORY B:

11.12	SI @ X = 0;	+6.2365	>	+3.0000
	S @ X = Y;	+1.0962	>	+1.0800
	SI @ X = 100;	+15.8565	>	+5.0000.... -5 POINTS
	SEE;	3.9746	>	3.0000.... -3 POINTS
21.22	Meets all parameters.			
11.21	SI @ X = 0;	+4.1824	>	+3.0000
	SI @ X = 100;	+6.1624	>	+5.0000.... -5 POINTS
12.22	S @ X = Y;	+0.8793	<	+0.9200
	SI @ X = 100;	-10.1383	>	-5.0000.... -5 POINTS
	SEE;	3.1496	>	3.0000.... -3 POINTS
11.22	SI @ X = 0;	+5.8719	>	+3.0000
	SI @ X = 100;	+9.4019	>	+5.0000.... -5 POINTS
12.21	S @ X = Y;	+0.9073	<	+0.9200
	SI @ X = 100;	-9.9581	>	-5.0000.... -5 POINTS
	SEE;	3.4411	>	3.0000.... -3 POINTS

3.6.1.4.2 Test Speed 60 MPH. (See Table R - 8)

CATEGORY A:

1.2	SI @ X = 0;	+3.1151	>	+3.0000....-30 POINTS
	CC;	0.9593	<	0.9800
	CD;	0.9203	<	0.9604....-12 POINTS
	SEE;	5.4259	>	3.0000....-18 POINTS

CATEGORY B:

11.12	SI @ X = 0;	+6.9232	>	+3.0000	
	S @ X = Y;	+1.1642	>	+1.0800	
	SI @ X = 100;	+23.3432	>	+5.0000....	-5 POINTS
	CC;	0.9793	<	0.9800	
	CD;	0.9591	<	0.9604....	-2 POINTS
	SEE;	4.3367	>	3.0000....	-3 POINTS
21.22	Meets all parameters.				
11.21	SI @ X = 0;	+4.1472	>	+3.0000	
	S @ X = Y;	+1.0975	>	+1.0800	
	SI @ X = 100;	+13.8972	>	+5.0000....	-5 POINTS
12.22	S @ X = Y;	+0.8783	<	+0.9200	
	SI @ X = 100;	-11.8698	>	-5.0000....	-5 POINTS
11.22	SI @ X = 0;	+4.6868	>	+3.0000	
	S @ X = Y;	+1.1017	>	+1.0800	
	SI @ X = 100;	+14.8568	>	+5.0000....	-5 POINTS
	SEE;	3.2942	>	3.0000....	-3 POINTS
12.21	SI @ X = 100;	-9.5151	>	-5.0000....	-5 POINTS

3.7 TIRE PERFORMANCE SUMMARY PER FRICTION EQUIPMENT

3.7.1 Tire Performance Evaluation Tables. The following Tables summarize the results of the Tire Evaluation Method used in the analysis. The Tables reflect the results of the evaluation, showing the accrued point totals and percentages for each category for each tire tested on the four friction measuring devices for the two test speeds.

TABLE 4 - McCREARY TIRE PERFORMANCE ON RUNWAY FRICTION TESTER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	60	100.0000	60	100.0000	120	100.0000
B	60	100.0000	55	91.6667	115	95.8333
TOTAL	120	100.0000	115	95.8333	235	97.9167

TABLE 5 - McCREARY TIRE PERFORMANCE ON SAAB FRICTION TESTER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	60	100.0000	60	100.0000	120	100.0000
B	55	91.6667	60	100.0000	115	95.8333
TOTAL	115	95.8333	120	100.0000	235	97.9167

TABLE 6 - McCREARY TIRE PERFORMANCE ON SKIDDOMETER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	60	100.0000	60	100.0000	120	100.0000
B	60	100.0000	55	91.6667	115	95.8333
TOTAL	120	100.0000	115	95.8333	235	97.9167

TABLE 7 - McCREARY TIRE PERFORMANCE ON MU METER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	30	50.0000	12	20.0000	42	35.0000
B	32	53.3333	39	65.0000	71	59.1667
TOTAL	62	51.6667	51	42.5000	113	47.0833

TABLE 8 - DICO TIRE PERFORMANCE ON RUNWAY FRICTION TESTER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	0	0.0000	30	50.0000	30	25.0000
B	24	40.0000	35	58.3333	59	49.1667
TOTAL	24	20.0000	65	54.1667	89	37.0833

TABLE 9 - DICO TIRE PERFORMANCE ON SAAB FRICTION TESTER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	0	0.0000	0	0.0000	0	0.0000
B	21	35.0000	16	26.6667	37	30.8333
TOTAL	21	17.5000	16	13.3333	37	15.4167

TABLE 10 - DICO TIRE PERFORMANCE ON SKIDDOMETER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	0	0.0000	30	50.0000	30	25.0000
B	16	26.6667	40	66.6667	56	46.6667
TOTAL	16	13.3333	70	58.3333	86	35.8333

TABLE 11 - DICO TIRE PERFORMANCE ON MU METER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	60	100.0000	60	100.0000	120	100.0000
B	52	86.6667	60	100.0000	112	93.3333
TOTAL	112	93.3333	120	100.0000	232	96.6667

TABLE 12 - DUNLOP TIRE PERFORMANCE ON RUNWAY FRICTION TESTER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	NA *		NA *		NA *	
B	NA *		NA *		NA *	
TOTAL						

* Reference paragraph 3.6.1.1.1.

TABLE 13 - DUNLOP TIRE PERFORMANCE ON SAAB FRICTION TESTER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	12	20.0000	30	50.0000	42	35.0000
B	12	20.0000	40	66.6667	52	43.3333
TOTAL	24	20.0000	70	58.3333	94	39.1667

TABLE 14 - DUNLOP TIRE PERFORMANCE ON SKIDDOMETER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	12	20.0000	12	20.0000	24	20.0000
B	29	48.3333	45	75.0000	74	61.6667
TOTAL	41	34.1667	57	47.5000	98	40.8333

TABLE 15 - DUNLOP TIRE PERFORMANCE ON MU METER

TIRE CATEGORY	TIRE PERFORMANCE AT 40 MPH		TIRE PERFORMANCE AT 60 MPH		OVERALL TIRE PERFORMANCE	
	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE	ACCRUED POINTS	PERCENTAGE
A	0	0.0000	0	0.0000	0	0.0000
B	26	43.3333	27	45.0000	53	44.1667
TOTAL	26	21.6667	27	22.5000	53	22.0833

3.8 SUMMARY OF OVERALL TIRE PERFORMANCE

3.8.1 Final Results of Tire Performance. Table 16 shows the final results of the tire performance and reliability evaluation. It is interesting to note that the McCreary tire, which follows ASTM Specification E 524, performs best on the non-yawed friction devices, whereas the yawed-mode friction device, the Mu Meter, performs the best when using the Dico tire according to the ASTM Specification E 670. This test program verifies that the tires perform according to their respective ASTM specifications.

TABLE 16 - OVERALL SUMMARY OF TIRE PERFORMANCE ON FRICTION EQUIPMENT

FRICTION EQUIPMENT	TEST TIRE		
	McCREARY	DICO	DUNLOP
RUNWAY FRICTION TESTER	98%	37%	INCOMPLETE
SAAB FRICTION TESTER	98%	15%	39%
SKIDDOMETER	98%	36%	41%
MU METER	47%	97%	22%

4. CORRELATION OF FRICTION EQUIPMENT

4.1 DEVELOPMENT OF CORRELATION PARAMETERS

4.1.1 Background. The parameters used in this study for correlation between two friction devices that operate in different friction modes has been established during the authors many years of experience of testing friction equipment at the Wallops Flight Facility. The two most important parameters for correlation are the Coefficient of Correlation and the Standard Error of Estimate. However, the slope will no longer be the perfect line of correlation and the criteria developed in the tire evaluation will not apply for the correlation analysis. The slope of the calculated regression line showing correlation between the two friction devices will be shifted from the perfect line of correlation. This shift is attributed to the physical characteristics of each friction device. They are not designed to operate in the same friction mode and thus will record different mu numbers for the same pavement surface conditions in portions of the friction range. The precision of the correlation is determined by the data scatter pattern relative to the calculated regression line and how well the line is established throughout the friction range.

4.1.2 Accuracy of the Friction Equipment and Development of Test Procedures. The accuracy of the friction equipment is determined by the consistency of repetition of friction values for each test segment throughout the friction/speed range. Previous qualification trials have been conducted for the four friction devices used in this program. They have met the performance specification given in AC 150/5320-12A. Their performance in the tire evaluation study was excellent.

The test procedures used in this study are a result of many years of experience in testing friction devices. There are variables that cannot be controlled during a test and, because of this, the accuracy for each device can be affected. The tests were conducted on pavements that were supposed to be consistent, but which, in fact, have deteriorated over 20 years because of weathering, trafficking and settlement. Friction tests cannot be conducted over the same identical surface for each run. These variations effect the repeatability of the data. However, these variables effect all devices in the same way, so the accuracy is not truly jeopardized. The pavements have to be dry when conducting friction tests. Each friction device has its own self water system. When conducting a large number of tests, the data on the first couple of test runs are effected because of the dry pavement surface. After the pavement surface becomes damp, the data is repeatable But ideally, the best procedure is to wait between test runs and allow the surface to dry completely before conducting another test run. However, this is not practical approach, mainly because of the large number of tests required, number of equipment involved, and number of vehicle speeds required in the program. The self water procedure developed and used at Wallops over various pavement segments under continuous damp conditions, will nevertheless, provide data meaningful for correlation of friction devices. This background information explains why the Standard Error of Estimate had to be increased from ± 3 mu numbers to ± 3.5 mu numbers to allow for variations that cannot be controlled in the test program. This parameter was selected because it was considered reasonable and not so restrictive as to penalize the equipment for uncontrollable pavement surface conditions.

4.1.3 Setting the Evaluation Parameters. Correlation between two friction devices is acceptable when the Correlation Coefficient exceeds 0.9800, the Coefficient of Determination exceeds 0.9604 and the Standard Error of Estimate is less than ± 3.5 mu numbers. The slope of the regression line must be well established throughout the friction range.

4.1.4 Evaluation Method. This method is divided into two sets: the "Coefficient Set" and the "Standard Error of Estimate Set".

4.1.4.1 Point Breakdown for the Coefficient Set. The Coefficient Set includes the Coefficients of Correlation and Determination. The Set is worth 5 points, and if either of the parameters is not acceptable, the entire set fails and gets zero points.

4.1.4.2 Point Breakdown for the Standard Error of Estimate Set. The Standard Error of Estimate Set includes only the Standard Error of Estimate. The Set is worth 5 points.

4.2 TIRE PERFORMANCE EVALUATION

4.2.1 Correlation Between Friction Equipment and McCreary Tire. The regression analyses conducted for the various correlations are listed in Table 18. The following correlations are discussed in detail below, identifying the elements that exceed the parameters.

40MUMMAC.DUN	SEE;	4.1356	>	3.5000	- 5	POINTS
40MUM60.MAC	CC;	0.9772	<	0.9800		
	CD;	0.9549	<	0.9604		
	SEE;	4.0162	>	3.5000	- 10	POINTS
40MUMRFT.MAC	CC;	0.9752	<	0.9800		
	CD;	0.9510	<	0.9604		
	SEE;	3.6612	>	3.5000	- 10	POINTS
60MUMRFT.MAC	CC;	0.9762	<	0.9800		
	CD;	0.9529	<	0.9600	- 5	POINTS
40MUMSFT.MAC	CC;	0.9679	<	0.9800		

	CD;	0.9368	<	0.9604		
	SEE;	6.0374	>	3.5000	- 10	POINTS
60MUMSFT.MAC	CC;	0.9799	<	0.9800		
	CD;	0.9603	<	0.9604		
	SEE;	4.1933	>	3.5000	- 10	POINTS
40MUMSKD.MAC	CC;	0.9594	<	0.9800		
	CD;	0.9204	<	0.9604		
	SEE;	6.7166	>	3.5000	- 10	POINTS
60MUMSKD.MAC	CC;	0.9693	<	0.9800		
	CD;	0.9396	<	0.9604		
	SEE;	5.2838	>	3.5000	- 10	POINTS

4.2.2 <u>Correlation Between Friction Equipment and McCreary/Dico Tire.</u> The regression analyses conducted for the various correlations are listed in Table 19. The following correlations are discussed below, identifying the elements that exceed the parameters.

40DUNMUM.DIK	Meets all parameters					
40MUM60.DIK	Meets all parameters					
MUDKRFMC.40	Meets all parameters					
MUDKRFMC.60	Meets all parameters					
MUDKSFMC.40	SEE;	3.6674	>	3.5000	- 5	POINTS
MUDKSFMC.60	Meets all parameters					
MUDKSKMC.40	Meets all parameters					
MUDKSKMC.60	SEE;	3.9503	>	3.5000	- 5	POINTS

4.2.3 <u>Correlation Between Friction Equipment and Dunlop Tire.</u> The regression analyses conducted for the various correlations are listed in Table 20. The following correlations are discussed in detail below, identifying the elements that exceed the parameters.

40MUM60.DUN	Meets all parameters					
40MUMSFT.DUN	CC;	0.9468	<	0.9800		
	CD;	0.8964	<	0.9604		
	SEE;	9.3393	>	3.5000	- 10	POINTS
60MUMSFT.DUN	CC;	0.9463	<	0.9800		
	CD;	0.8955	<	0.9604		
	SEE;	8.0194	>	3.5000	- 10	POINTS
40MUMSKD.DUN	CC;	0.9575	<	0.9800		
	CD;	0.9168	<	0.9604		
	SEE;	7.9419	>	3.5000	- 10	POINTS
60MUMSKD.DUN	CC;	0.9590	<	0.9800		
	CD;	0.9197	<	0.9604		
	SEE;	6.7917	>	3.5000	- 10	POINTS

4.3 OVERALL SUMMARY OF TIRE PERFORMANCE

4.3.1 Tire Performance on Friction Equipment Correlation. Table 17 shows the overall tire performance on friction equipment correlation. The McCreary tire, mounted on all four friction devices was given a 13 % performance rating. The combination of McCreary tire mounted on the Runway Friction Tester, Saab Friction Tester and Skiddometer and the Dico tire mounted on the Mu Meter were given a performance rating of 88 %. The Dunlop tire mounted on all four devices was given a 20 % performance rating.

TABLE 17 - OVERALL SUMMARY OF TIRE PERFORMANCE ON FRICTION EQUIPMENT CORRELATION

OVERALL TIRE PERFORMANCE		
McCREARY TIRE	McCREARY/DICO TIRE	DUNLOP TIRE
13 %	88 %	20 %

4.4 SELECTION OF BEST PERFORMING TIRE(S) FOR CORRELATION

4.4.1 Correlation of Friction Equipment Using the McCreary/Dico Tires. The McCreary tire did not perform well on the Mu Meter and that is why the correlation between the Mu Meter and the other devices using the McCreary tire did not meet the performance criteria. The Dunlop tire had variations between series within the same batch as well as between batches and as a result did not meet the performance criteria as set forth in this report. The best performing tire combination was the McCreary tire mounted on the Runway Friction Tester, Saab Friction Tester and Skiddometer and the Dico tire mounted on the Mu Meter. The tire(s) mounted on the friction equipment shown in Tables 22 and 23 are the recommended correlation standard for vehicle speeds of 40 and 60 MPH and will be included in the next revision of Advisory Circular AC 150/5320-12.

4.5 DEVELOPMENT OF CORRELATION BETWEEN FRICTION EQUIPMENT

4.5.1 Correlation Procedures. Tests have been conducted at Wallops Flight Facility for the past eight years. The Mu Meter was the first friction device used in this country for many years before the other testers were introduced on the market. As a result, an extensive data base was established, and, when the other devices were available on the market, the Mu Meter was used as the base for correlation between the various friction devices. Tests conducted by NASA in the early 1970's, using a B-727 and a Mu Meter, established the criteria for determining a satisfactory level of friction for aircraft operations. The 50 mu which was adopted from the study has been used to the present time as the maintenance level for an acceptable pavement surface condition. The following paragraph explains the transition used to transfer this value from the Dunlop tire to the Dico and McCreary tires.

4.5.2 Correlation Between Friction Equipment.

4.5.2.1 Tire Translations. Since the maintenance criteria was developed on the Dunlop tire, this value had to be translated to the other tires in the test program. The following paragraphs detail how this translation was made and show the procedures employed for each of the tires used in the correlations.

4.5.2.1.1 Procedure Used to Translate from the Dunlop Tire to the Dico Tire on the Mu Meter at the Speed of 40 MPH. Reference chart FILENAME: 40DUNMUM.DIK in Appendix T and regression analyses results in Table 19.

The one Standard Error of Estimate regression equation is;

$$Y = + 2.2456 + 1.0095\ X \qquad (1)\ \text{Speed 40 MPH}$$

In equation (1) above, X represents the present standard mu values obtained when using the Dunlop tire mounted on the Mu Meter at the speed of 40 MPH. Y represents the mu values obtained when using the Dico tire on the Mu Meter at the speed of 40 MPH. Substituting X mu values of 40, 50 and 70 into equation (1) and solving for Y, gives mu values of 42, 52 and 72, respectively (See Table 21). The mu values obtained with the Mu Meter at the speed of 40 MPH using the Dunlop tire are compared to the mu values obtained with the Mu Meter at the speed of 40 MPH using the Dico tire.

4.5.2.1.2 Procedure Used to Translate from the Speed of 40 MPH to the Speed of 60 MPH Using Dico Tire on the Mu Meter. Reference chart FILENAME: 40MUM60.DIK in Appendix T and regression analyses results in Table 19.

The one Standard Error of Estimate regression equation is;

$$Y = + 4.4238 + 0.0878\,X + 0.0107\,X^2 \qquad (2)\ \text{Speed 60 MPH}$$

In equation (2) above, X represents the mu values obtained when using the Dico tire mounted on the Mu Meter at the speed of 40 MPH. Y represents the mu values obtained when using the Dico tire mounted on the Mu Meter at the speed of 60 mph. Substituting X mu values of 42, 52 and 72 into equation (2) and solving for Y, gives mu values of 26, 38 and 66, respectively (See Table 21). The mu values obtained with the Mu Meter at the speed of 40 MPH using the Dico tire are compared to the mu values obtained on the Mu Meter at the speed of 60 MPH using the Dico tire.

4.5.2.2 Correlation of Friction Equipment Using the McCreary/Dico Tire Combination

4.5.2.2.1 Correlation Between the Mu Meter and the Runway Friction Tester at the Speed of 40 MPH. Reference chart FILENAME: MUDKRFMC.40 in Appendix T and regression analyses results in Table 19.

The one Standard Error of Estimate regression equation is;

$$Y = + 7.6505 + 0.7721\,X \qquad (1)\ \text{Speed 40 MPH}$$

In equation (1) above, X represents the mu values obtained when using the Dico tire mounted on the Mu Meter at the speed of 40 MPH. Y represents the mu values obtained when using the McCreary tire on the Runway Friction Tester at the speed of 40 MPH. Substituting X mu values of 42, 52 and 72 into equation (1), solving for Y and multiplying each result by the 1.26 Calibration Adjustment Factor, yields mu values of 50, 60 and 80, respectively (See Table 21). The mu values obtained with the Mu Meter at the speed of 40 MPH using the Dico tire are compared to the mu values obtained with the Runway Friction Tester at the speed of 40 MPH using the McCreary tire.

4.5.2.2.2 Correlation Between the Mu Meter and the Runway Friction Tester at the Speed of 60 MPH. Reference chart FILENAME: MUDKRFMC.60 in Appendix T and regression analyses results in Table 19.

The one Standard Error of Estimate regression equation is;

$$Y = + 3.0573 + 1.3431 X - 0.0080 X^2 \qquad (2) \text{ Speed 60 MPH}$$

In equation (2) above, X represents the mu values obtained when using the Dico tire mounted on the Mu Meter at the speed of 60 MPH. Y represents the mu values obtained when using the McCreary tire on the Runway Friction Tester at the speed of 60 MPH. Substituting X mu values of 26, 38 and 66 into equation (2), solving for Y and multiplying each result by the 1.26 Calibratiom Adjustment Factor, yields mu values of 41, 54 and 72, respectively (See Table 21). The mu values obtained with the Mu Meter at the speed of 60 MPH using the Dico tire are compared to the mu values obtained with the Runway Friction Tester at the speed of 60 MPH using the McCreary tire.

4.5.2.2.3 Correlation Between the Mu Meter and the Saab Friction Tester at the Speed of 40 MPH. Reference chart FILENAME: MUDKSFMC.40 in Appendix T and regression analyses results in Table 19.

The one Standard Error of Estimate regression equation is;

$$Y = + 3.0565 + 1.1213 X \qquad (3) \text{ Speed 40 MPH}$$

In equation (3) above, X represents the mu values obtained when using the Dico tire mounted on the Mu Meter at the speed of 40 MPH. Y represents the mu values obtained when using the McCreary tire on the Saab Friction Tester at the speed of 40 MPH. Substituting X mu values of 42, 52 and 72 into equation (3) and solving for Y, gives mu values of 50, 61 and 84, respectively (See Table 21). The mu values obtained with the Mu Meter at the speed of 40 MPH using the Dico tire are compared to the mu values obtained with the Saab Friction Tester at the speed of 40 MPH using the McCreary tire.

4.5.2.2.4 Correlation Between the Mu Meter and the Saab Friction Tester at the Speed of 60 MPH. Reference chart FILENAME: MUDKSFMC.60 in Appendix T and regression analyses results in Table 19.

The one Standard Error of Estimate regression equation is;

$$Y = + 1.2586 + 1.2369 X - 0.0022 X^2 \qquad (4) \text{ Speed 60 MPH}$$

In equation (4) above, X represents the mu values obtained when using the Dico tire mounted on the Mu Meter at the speed of 60 MPH. Y represents the mu values obtained when using the McCreary tire on the Saab Friction Tester at the speed of 60 MPH. Substituting X mu values of 26, 38 and 66 into equation (4) and solving for Y, gives mu values of 32, 45 and 73, respectively (See Table 21). The mu values obtained with the Mu Meter at the speed of 60 MPH using the Dico tire are compared to the mu values obtained with the Saab Friction Tester at the speed of 60 MPH using the McCreary tire.

4.2.2.2.5 Correlation Between the Mu Meter and the Skiddometer at the Speed of 40 MPH. Reference chart FILENAME: MUDKSKMC.40 in Appendix T and regression analyses results in Table 19.

The one Standard Error of Estimate regression equation is;

$$Y = + 2.4427 + 1.1136\,X \qquad \text{(5) Speed 40 MPH}$$

In equation (5) above, X represents the mu values obtained when using the Dico tire mounted on the Mu Meter at the speed of 40 MPH. Y represents the mu values obtained when using the McCreary tire on the Skiddometer at the speed of 40 MPH. Substituting X mu values of 42, 52 and 72 into equation (5) and solving for Y, gives mu values of 49, 60 and 82, respectively (See Table 21). The mu values obtained with the Mu Meter at the speed of 40 MPH using the Dico tire are compared to the mu values obtained with the Skiddometer at the speed of 40 MPH using the McCreary tire.

4.5.2.2.6 Correlation Between the Mu Meter and the Skiddometer at the Speed of 60 MPH. Reference chart FILENAME: MUDKSKMC.60 in Appendix T and regression analyses results in Table 19.

The one Standard Error of Estimate regression equation is;

$$Y = + 3.0249 + 1.4294\,X - 0.0049\,X^2 \qquad \text{(6) Speed 60 MPH}$$

In equation (6) above, X represents the mu values obtained when using the Dico tire mounted on the Mu Meter at the speed of 60 MPH. Y represents the mu values obtained when using the McCreary tire on the Skiddometer at the speed of 60 MPH. Substituting X mu values of 26, 38 and 66 into equation (6) and solving for Y, gives mu values of 36, 50 and 76, respectively (See Table 21). The mu values obtained with the Mu Meter at the speed of 60 MPH using the Dico tire are compared to the mu values obtained with the Skiddometer at the speed of 60 MPH using the McCreary tire.

TABLE 18 - CORRELATION SUMMARY BETWEEN FRICTION EQUIPMENT USING McCREARY TIRE

FILENAME	TEST SPEED (MPH)	COEFFICIENTS						NUMBER OF DATA PAIRS IN ANALYSIS
		A	B	C	CC	CD	SEE	
40MUMMAC.DUN	40	+3.8726	+0.0779	+0.0131	0.9810	0.9623	4.1356	111
40MUM60.MAC	40/60	+4.3028	-0.1120	+0.0139	0.9772	0.9549	4.0162	120
40MUMRFT.MAC	40	-1.0198	+0.8186	-	0.9752	0.9510	3.6612	120
60MUMRFT.MAC	60	-0.0008	+0.9653	-0.0021	0.9762	0.9529	3.4449	120
40MUMSFT.MAC	40	-9.1162	+1.1797	-	0.9679	0.9368	6.0374	120
60MUMSFT.MAC	60	-2.6108	+0.8164	+0.0039	0.9799	0.9603	4.1933	120
40MUMSKD.MAC	40	-8.5669	+1.1586	-	0.9594	0.9204	6.7166	120
60MUMSKD.MAC	60	-1.3518	+0.9504	+0.0022	0.9693	0.9396	5.2838	120

TABLE 19 - CORRELATION SUMMARY BETWEEN FRICTION EQUIPMENT USING McCREARY/DICO TIRE

FILENAME	TEST SPEED (MPH)	COEFFICIENTS						NUMBER OF DATA PAIRS IN ANALYSIS
		A	B	C	CC	CD	SEE	
40DUNMUM.DIK	40	-0.6210	+1.0095	-	0.9908	0.9818	2.8666	51
40MUM60.DIK	40/60	+2.1717	+0.0878	+0.0107	0.9929	0.9859	2.2521	120
MUDKRFMC.40	40	+5.1043	+0.7721	-	0.9881	0.9763	2.5462	120
MUDKRFMC.60	60	+0.7518	+1.3431	-0.0080	0.9894	0.9789	2.3055	120
MUDKSFMC.40	40	-0.6109	+1.1213	-	0.9883	0.9767	3.6674	120
MUDKSFMC.60	60	-1.8676	+1.2369	-0.0022	0.9889	0.9779	3.1262	120
MUDKSKMC.40	40	-0.5894	+1.1136	-	0.9918	0.9837	3.0321	120
MUDKSKMC.60	60	-0.9254	+1.4294	-0.0049	0.9830	0.9662	3.9503	120

TABLE 20 - CORRELATION SUMMARY BETWEEN FRICTION EQUIPMENT USING DUNLOP TIRE

FILENAME	TEST SPEED (MPH)	COEFFICIENTS						NUMBER OF DATA PAIRS IN ANALYSIS
		A	B	C	CC	CD	SEE	
40MUM60.DUN	40/60	-0.2885	+0.4105	+0.0066	0.9916	0.9832	2.5355	108
40MUMSFT.DUN	40	+0.4883	+1.2891	-	0.9468	0.8964	9.3393	111
60MUMSFT.DUN	60	-1.1043	+1.5292	-0.0053	0.9463	0.8955	8.0194	108
40MUMSKD.DUN	40	+0.1000	+1.2373	-	0.9575	0.9168	7.9419	111
60MUMSKD.DUN	60	+0.5361	+1.2123	-0.0006	0.9590	0.9197	6.7917	108

4.6 CORRELATION TABLE

4.6.1 Correlation Table for Mu Values. Table 21 summarizes the mu values for each friction device for speeds of 40 and 60 mph. The regression equations that were used to develop the table are given in paragraphs 4.5.2.2.1 through 4.5.2.2.6.

TABLE 21 - CORRELATION OF MU VALUES FOR FRICTION MEASURING EQUIPMENT USING THE McCREARY/DICO TIRE AND SELF WATER SYSTEM

AT SPEED OF 40 MPH			
MU METER DICO	SAAB FRICTION TESTER McCREARY	RUNWAY FRICTION TESTER McCREARY *	SKIDDOMETER McCREARY
42	50	50	49
52	61	60	60
72	84	80	82
AT SPEED OF 60 MPH			
26	32	41	36
38	45	54	50
66	73	72	76

* All equations involving the Runway Friction Tester must be multiplied by a CALIBRATION ADJUSTMENT FACTOR of 1.26. Reference letter from K. J. Law Engineers explaining the reason for the multiplication factor in Appendix W.

4.7 EXAMPLE OF COMPUTER SET-UP FOR REGRESSION ANALYSIS

4.9.1 Example of Comparing the Mu Meter Operating at a Speed of 40 mph (65 km/h) to a Speed of 60 mph (95 km/h) Using the McCreary Tire. Appendix V shows the step by step procedure used in entering data to conduct regression analysis. This procedure was used throughout the analyses conducted in the program.

5. CONCLUSIONS

5.1 FRICTION EQUIPMENT PERFORMANCE

The four friction devices were maintained and used according to the manufacturers instruction manual. These devices had been previously qualified by the Federal Aviation Administration (FAA) under another test program conducted at the National Aeronautics and Space Administration (NASA) Wallops Flight Facility.

5.2 PERSONNEL PERFORMANCE

The FAA personnel and contractor who operated the friction equipment did so in a highly professional manner. The personnel were highly qualified professionals who were very experienced in doing the various demanding tasks required in this comprehensive research program.

The NASA managers and technicians were very helpful in making their facility available to the FAA test team, even on weekends when the facility was closed.

5.3 TIRE PERFORMANCE

5.3.1 Influences on Friction Equipment Performance. The McCreary tire performed within the performance criteria established in this report and is qualified for use on the Runway Friction Tester, Saab Friction Tester and the Skiddometer. The Dico tire is qualified for use on the Mu Meter alone. The Dunlop tire did not meet the performance criteria on any of the four friction measuring devices used in the program. Details are set forth in the analyses conducted in Section 3, "Evaluation of Tire Performance" and the overall summary of tire performance on friction equipment given in Table 16.

5.3.2 Influences on Friction Equipment Correlations. The same conclusions are reaffirmed as evidenced in the analyses conducted in Section 4, "Correlation of Friction Equipment" and the overall summary of tire performance on friction equipment correlation given in Table 17. The combination of the McCreary tire and Dico tire revealed the best overall performance of all the tires tested. The evaluation of tire performance in the friction equipment correlation confirms the findings of the tire performance evaluation.

5.4 FRICTION EQUIPMENT ACCESSORIES

5.4.1 Calibrated Pressure Dial Gage. The FAA test personnel were furnished with four calibrated pressure dial gages. These gages are not part of the manufacturer's accessories. Ordinary tire gages are normally used. There could be as much as 4 or 5 pounds pressure difference between the calibrated and ordinary gages. Therefore, it is concluded that gages should be supplied and/or furnished by the manufacturer when the equipment is sold to a client or recalled for improvements.

5.4.2 Tire Rims. The split-rim wheels should be the only type of rim used to mount the friction measuring wheel. Other rim types are much more difficult and time consuming to mount.

5.4.3 Tire Tubes. Several tire blowouts were experienced when using the straight valve stems. The tube crawls within the tire carcass, twisting the valve stem as it moves. When these stems were replaced with curved valve stems, the blowout problem no longer occurred.

6. RECOMMENDATIONS

6.1 GENERAL RECOMMENDATIONS

6.1.1 Friction Equipment Tires. The study showed that the best performance tire for the Runway Friction Tester, Saab Friction Tester and Skiddometer was the McCreary tire. The best performance tire for the Mu Meter was the Dico tire. It is therefore recommended that these tires be adopted as the standard replacing the existing guidance given in AC 150/5320-12. Revision of AC 150/5320-12 will incorporate the recommendations given in this report.

6.1.2 Tire Rims. The best performing rim for any of the tires is the split-rim. We recommend that this rim become the standard rim and that all other rims be discontinued from use.

6.1.3 Tire Tubes. We recommend that curved valve stems be used in lieu of the straight valve stems. Experience with the straight valve stems has not been too good. The tube tends to crawl within the tire carcass and thereby the valve stem tends to pinch the tube, subjecting the tire to an increased tendency to blowout. The curved valve stems seem to adjust more and reduce the potential for blowout.

6.1.4 Additional Tire Tests. Tests must still be conducted to establish tire life performance and rate of tire wear for maintenance purposes. For operational use on compacted snow and/or ice covered pavement surfaces, tests must be conducted to compare the performance of high pressure with low pressure tires.

6.2 RECOMMENDATIONS TO REVISION OF STANDARDS

6.2.1 Advisory Circular. It is recommended that Tables 22 and 23 be included in the next revision of AC 150/5320-12, Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces. The Coded Friction Parameters given in the tables determines the corresponding mu values for the friction device used at the airport. It is used in conjunction with the paragraphs concerned with Friction Survey Measurement Parameters, which provide the airport operator with guidelines for determining whether or not corrective action may be required to improve the surface friction characteristics of a wet runway.

TABLE 22 - CORRELATION OF MU VALUES FOR FRICTION MEASURING DEVICES USING THE SELF WATER SYSTEM AT THE SPEED OF 40 MILES PER HOUR

CODED FRICTION PARAMETER	MARK 4 MU METER WITH DICO TIRE	M 6800 RUNWAY FRICTION TESTER BV-11 SKIDDOMETER MARK 2 SAAB FRICTION TESTER WITH THE McCREARY TIRE
	CORRESPONDING MU VALUES	
A	42	50
B	52	60
C	72	82

TABLE 23 - CORRELATION OF MU VALUES FOR FRICTION MEASURING DEVICES USING THE SELF WATER SYSTEM AT THE SPEED OF 60 MILES PER HOUR

CODED FRICTION PARAMETER	MARK 4 MU METER WITH DICO TIRE	M 6800 RUNWAY FRICTION TESTER WITH McCREARY TIRE	MARK 2 SAAB FRICTION TESTER, BV-11 SKIDDOMETER WITH McCREARY TIRE
	CORRESPONDING MU VALUES		
A	26	41	34
B	38	54	47
C	66	72	74

6.2.2 ASTM Standards. It is recommended that the tire composition given in ASTM specification E 524 for the McCreary tire be developed into a new ASTM specification that has the same tire dimensions given in ASTM E 670 specification. The Dico tire specification will be included in the present ASTM E 670 specification.

6.3 RECOMMENDATIONS TO TIRE MANUFACTURERS

6.3.1 Assurance of Quality Control When Manufacturing Tires. We recommend that the manufacturers certify to their clients that they will maintain excellent quality control procedures and follow the requirements given in the ASTM Specifications discussed in Paragraph 6.2.2. It would also be helpful if the manufacturer would assure that it will continue to manufacture tires in large enough batches to maintain adequate supply levels, whether the tires are used on airports or highways.

6.3.2 Future Qualification of Tires. Qualification of new tires manufactured on the market will follow the requirements given by the appropriate ASTM specifications and to testing by FAA on the standard pavement surfaces located at NASA Wallops Flight Facility.

6.4 RECOMMENDATIONS TO FRICTION EQUIPMENT MANUFACTURERS

6.4.1 Friction Equipment Accessories. We recommend that manufacturers provide the airport or highway user with a calibrated pressure dial gage when they sell or maintain friction equipment.

7. REFERENCES

7.1 American Society For Testing And Materials, "Standard Test Method For Side Force Friction On Paved Surfaces Using The Mu Meter", ASTM E 670 - 87 (1987).

7.2 American Society For Testing And Materials, "Standard Specification For Standard Smooth Tire For Pavement Skid-Resistance Tests", ASTM E 524 - 88 (1988).

7.3 Federal Aviation Administration, "Measurement, Construction, And Maintenance Of Skid Resistant Airport Pavement Surfaces", Advisory Circular 150/5320-12A (11 July 1986).

7.4 Federal Aviation Administration, "Airport Pavement Design And Evaluation", Advisory Circular 150/5332-6C (7 December 1978).

7.5 MacLennan, J. R., Wenck, N. C., Josephson, P. D., and Erdmann, J. B., National Runway Friction Measurement Program, E. A. Hickok & Associates for Federal Aviation Administration, Final Report (December 1980).

7.6 Morrow, T. H., Mu Meter Variability Study, FAA Technical Center (December 1980), Unpublished.

7.7 Morrow, T. H., Correlation And Performance Reliability of Several Types Of Friction Measuring Devices, FAA Headquarters (August 1989), Unpublished.

7.8 National Aeronautics And Space Administration, "Effects Of Pavement Texture On Wet-Runway Braking Performance", NASA TND-4323 (January 1969).

7.9 National Aeronautics And Space Administration, "Evaluation of Two Transport Aircraft and Several Ground Test Vehicle Friction Measurements Obtained for Various Runway Surface Types and Conditions", NASA TP 2917 (February 1990).

APPENDIX A

ASTM REQUEST FOR TIRE PERFORMANCE EVALUATION PROGRAM

1916 Race Street, Philadelphia, PA 19103-1187 USA ■ Telephone: (215) 299-5400 ■ TWX: 710-670-1037 ■ FAX: 215-977-9679

APPENDIX A

Committee E-17 on PAVEMENT MANAGEMENT TECHNOLOGIES

Chairman: R. L. RIZENBERGS, Kentucky Dept. of Highways, State Office Bldg., Rm. 701, Clinton & High Streets, Frankfort, KY 40622 (502-564-2080)
Vice-Chairman, Administration: A. J. STOCKER, Texas Transportation Institute, Texas A & M University, P.O. Box 3928, Bryan, TX 77805 (409-845-6154)
Vice-Chairman, Skid Resistance: A. S. PARRISH, Maryland State Highway Admin., 2323 W. Joppa Rd., Brooklandville, MD 21022 (301-321-3565)
Vice-Chairman, Roughness: J. R. CROTEAU, New Jersey State Dept. of Transporation, Res. & Demonstration Div., CN600, 1035 Parkway Ave., Trenton, NJ 08625 (609-292-5776)
Vice-Chairman, Pavement Management: W. R. HUDSON, The University of Texas at Austin, Dept. of Civil Engineering, ECJ 6.10, Austin, TX 78712-1076 (512-471-7741)
Secretary: C. M. HAYDEN, Federal Highway Administration, Code HHS-12, 400 Seventh St., SW, Washington, DC 20590 (202-426-2131)
Membership Secretary: L. E. HART, Rainhart Co., P.O. Box 4533, Austin, TX 78765 (512-452-8848)
Staff Manager: MARTHA KIRKALDY (215-299-5531)

JUN 2 7 1988

Federal Aviation Administration
Attn: Mr. H. Tomita, AES 310
800 Independence Avenue, SW
Washington DC 20591

Subject: FAA Technical Center Participation in Evaluation of New ASTM Test Tire

At the recent ASTM E 17 Committee meeting at State College, PA June 5-7, 1988, a proposal to have the RL-2 blank test tire produced by a U.S. manufacturer to ASTM specifications met with favorable response. As you know, this test tire is the one used on the Mu-meter and several fixed slip devices such as the Saab friction tester, the runway friction tester, and the BV-11 skiddometer. A representative from McCreary Tire and Rubber Co. which currently produces the ASTM E 501 and E 524 test tires indicated at the meeting that new, ASTM specified, test tires constructed to RL-2 tire dimensions could be made available for tests this fall. The purpose of this letter is to request your approval and support in providing test equipment and personnel to participate in an evaluation program of this new test tire to be conducted on some of the same test surfaces at NASA Wallops Flight Facility that were used during the recently completed FAA/NASA Runway Friction Program. If these tests are successful, a much cheaper and more uniformly constructed test tire will be available for future tests using these ground friction measuring vehicles. Your favorable response to this request will be greatly appreciated and if you have any questions, please give me a call at FTS: 928-2796.

Tom

Thomas J. Yager
Chairman, E 17.21 Subcommittee

cc
Gene Godwin, NASA Wallops
Tom Morrow, FAA Headquarters

APPENDIX B

TIRE MANUFACTURER CERTIFICATION

Dyneer

Dico Tire, Inc.
A Subsidiary of Dyneer Corporation
520 J.D. Yarnell Industrial Parkway
Clinton, TN 37716
615/457-4930

APPENDIX B

February 7, 1989

Mr. Thomas Yager
NASA Program Manager
NASA
Langley Research Center
Hampton, VA 23665-5225

Dear Tom:

Confirming our discussion of 2/6/89, attached is the tread stock formula and physical properties for the DICO Mu Meter tires.

We have 20 tires on hand for your tests this spring. Our price for these tires is $31.30 each, which covers some of our manufacturing and hanlling costs. Our sale price will established at a later date.

Sincerely,

C. E. Erickson

C. E. Erickson
Technical Marketing Manager

/bjb

Attachment:

cc: D. Boomershine

MU METER TREAD STOCK PHYSICALS

CURE AT 298 DEGREES F

	CURE MINUTES			
	15	20	40	UNITS
Tensile	2300	2300	2300	PSI
300% Modulus	900-1300	1000-1300	1050-1350	PSI
Elongation @ Break	550- 600	550- 600	550- 600	%
Shore A Hardness	52- 58	52- 60	55- 62	--
Specific Gravity	1.13	----	----	--

C.Erickson

MU METER TREAD STOCK

SBR	40.0
NR	40.0
PBD	20.0
N330	39.9
N339	24.0
AROMATIC OIL	17.5
ZINC OXIDE	2.0
FATTY ACID	1.4
PETROLEUM WAX	3.2
SANTOFLEX 715	2.0
SANTOCURE N.S.	1.2
SULFUR	1.3

C Erickson

Eric Erickson

10/14/88

MCCREARY TIRE & RUBBER COMPANY
P.O. BOX 749, INDIANA, PENNSYLVANIA 15701-0749
Telephone: (412) 349-9010
TWX: 510-468-5140
FAX (412) 349-8192

March 7, 1989

Mr. Thomas J. Yeager, Aerospace Technologist
NASA
Langley Research Center
Mail Code: 497
Hampton, VA 23665

Dear Tom:

We have designed and purchased a new mold for the production of the 4.00-8 RL-2 test tire. We have designed the tire to meet the dimensions as specified in the Annex to ASTM E670-87 except that it is smooth (blank) which would require less break-in. Note that sections A1.5.2.2. and A1.9.1. of the Annex describes the tread pattern as having seven grooves of 0.04 inch depth which must be "worn away" before any "readings are taken". In addition, we have located four holes in the tread surface, one in each quadrant, to indicate amount of wear. These (holes) wear indicators are 0.125 inches in diameter and 0.200 inches deep on the new tire.

The tread portion of the RL-2 tire will be as specified for ASTM E501 and E524 Standard tires. The tread formulation is specified in Table 1 of each Spec. and they are identical. The process control of this tread rubber will be as we have done for all E501 and E524 tires produced since 1980.

We produced RL-2 test tires during the week of February 27, 1989. Twenty will be ready for shipment to you by March 14, 1989. The cost of these test tires will be the mutually agreed $31.30, plus tax, each. This cost does not relate to the later selling price, which, per discussions of the E-17 meetings, could be in the $135.00 range.

Tom, I am interested in the test results and any observations that you might have. In fact, if I know the testing schedule, I might be able to arrange my schedule to see part of it.

If you have any questions, don't hesitate to call me.

Sincerely,

Lou Barota

Louis E. Barota
Director
Technical Division

LEB/mds

McCREARY TIRE & RUBBER COMPANY
P.O. BOX 749, INDIANA, PENNSYLVANIA 15701-0749
Telephone: (412) 349-9010
TWX: 510-468-5140
FAX (412) 349-8192

April 6, 1989

Mr. Francis X. Schwartz
PO Box 55
Woodbridge, VA 22191

Dear Frank:

So there is no misunderstanding concerning how serious we take the manufacture of consistently high quality RL-2 tires, I feel I should explain some of our Q.C. and Process procedures and what has been accomplished to date.

After discussions in early 1988 with you, members of ASTM E-17 and others, we designed and purchased a mold for the RL-2 tire. The first check tires were produced in Sept. 1988. Tom Yeagers' testing of these tires in late 1988 indicated that we were narrow in tread width and small in circumference. The tire mold was revised and in Feb. 1989 we produced thirty tires. Twenty of these tires were sent to Tom Yeager, Langley Research Center in March. All tires were measured at 10 PSI on a 3" width rim immediately after inflation. We would expect a small amount of growth after 24 hours inflation, approximately 0.10 inches in diameter. The tire number and diameter we measured is marked on each of these 20 tires with silver ink pen at the tires serial number. We also have record of those measurements which range from 16.30 to 16.36 inches diameter, the tread radius is 8.0 inches, the tread width is 2.47 inches and the section width is 4.23 inches.

What I am saying, Frank, is that we measure every ASTM tire manufactured and keep that record in addition to when, who and P.O. number that received the tires. We have these kinds of records for every ASTM E501 and E524 tire produced since our very first in 1980. We will follow this exact procedure with the RL-2.

The tread rubber is to that formula specified in ASTM standards E501 and E524. It is our intention to only manufacture the RL-2 at the same times we manufacture the E501 and E524 tires. The reason is that each time the tread rubber is formulated and mixed we do it in 6,000 - 10,000 lb. lots, blend it thoroughly and scrap any amount left over. We do extensive laboratory testing of this rubber to insure consistent characteristics. In addition, a Q.C. inspector certifies all processes. We know these are the right things to do because we make a batch of tires about each quarter, have been doing this for over eight years, have laboratory data to show consistency and I believe that all users of the E501 and E524 tires are satisfied.

If we formulated and mixed the tread rubber separately for the RL-2 tires the pounds required would be very small, blending would be inefficient, and our costs of testing, certifying, etc., would be very high. For these reasons, I can assure you that the RL-2 tire will have exactly the same tread rubber as the E501 and E524, that we will follow all procedures that were established over eight years ago and that records will be kept of every batch of tires.

Lastly, the thirty RL-2 tires produced in Feb. 1989 were manufactured in conjunction with a batch (196) of E501 tires. During the week of April 17, 1989, we will produce another batch of E501 tires, in addition, we will produce fifteen RL-2 tires, ten of which will be sent to Tom Yeager, Langley, to check batch to batch variation.

Frank, I didn't intend on writing a book, but, I wanted you to know how serious we are about consistently doing a good job.

Sincerely,

Lou

Louis E. Barota
Director
Technical Division

LEB/mds

cc: Thomas J. Yeager
NASA
Langley Research Center
Mail Code: 497
Hampton, VA 23665

APPENDIX C

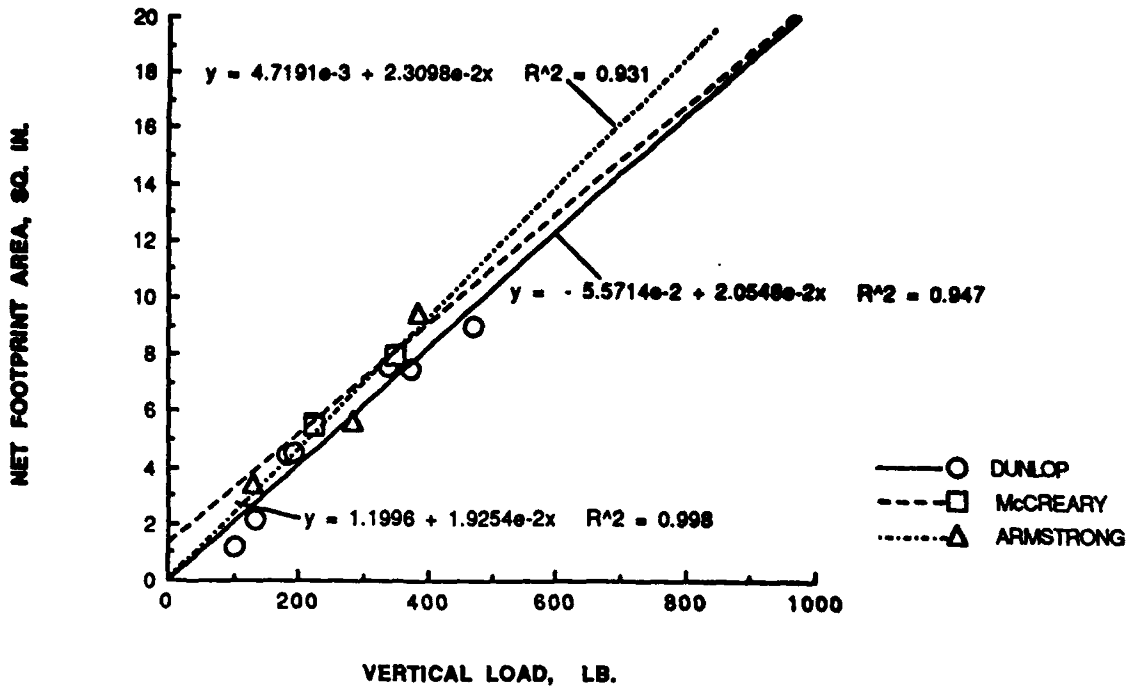
VERTICAL LOAD VERSUS NET FOOTPRINT AREA OF TIRES

USED ON THE FRICTION EQUIPMENT

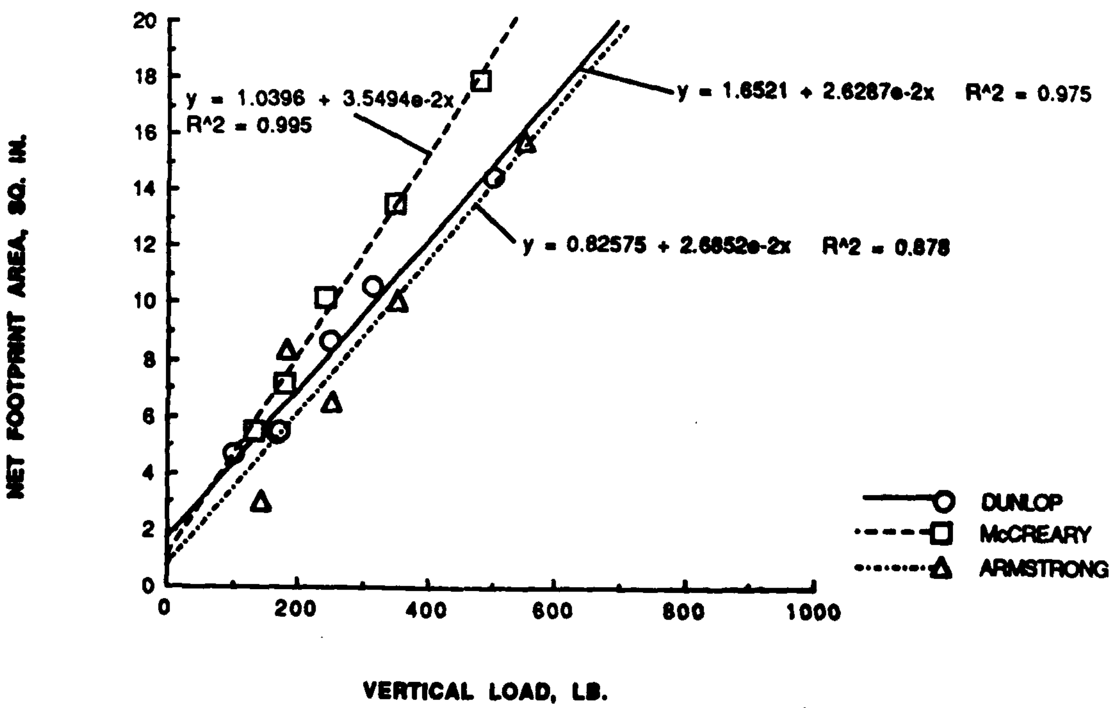
AT PRESSURES OF 10 AND 30 PSI

APPENDIX C

GROUND VEHICLE TIRES, 30 PSI



GROUND VEHICLE TIRES, 10 PSI



APPENDIX D

CATALOG SHOWING TEST TIRE IDENTIFICATION

APPENDIX D

TABLE D - 1 CATALOG SHOWING TEST TIRE IDENTIFICATION

BATCH	DUNLOP TIRESS	McCREARY TIRES	DICO TIRES
1	RFT/DUN/B1S1 SFT/DUN/B1S1 SKD/DUN/B1S1 MUM/DUN-L/B1S1 MUM/DUN-R/B1S1	RFT/MAC/B1S1 SFT/MAC/B1S1 SKD/MAC/B1S1 MUM/MAC-L/B1S1 MUM/MAC-R/B1S1	RFT/DIK/B1S1 SFT/DIK/B1S1 SKD/DIK/B1S1 MUM/DIK-L/B1S1 MUM/DIK-R/B1S1
	RFT/DUN/B1S2 SFT/DUN/B1S2 SKD/DUN/B1S2 MUM/DUN-L/B1S2 MUM/DUN-R/B1S2	RFT/MAC/B1S2 SFT/MAC/B1S2 SKD/MAC/B1S2 MUM/MAC-L/B1S2 MUM/MAC-R/B1S2	RFT/DIK/B1S2 SFT/DIK/B1S2 SKD/DIK/B1S2 MUM/DIK-L/B1S2 MUM/DIK-R/B1S2
2	RFT/DUN/B2S1 SFT/DUN/B2S1 SKD/DUN/B2S1 MUM/DUN-L/B2S1 MUM/DUN-R/B2S1	RFT/MAC/B2S1 SFT/MAC/B2S1 SKD/MAC/B2S1 MUM/MAC-L/B2S1 MUM/MAC-R/B2S1	RFT/DIK/B2S1 SFT/DIK/B2S1 SKD/DIK/B2S1 MUM/DIK-L/B2S1 MUM/DIK-R/B2S1
	RFT/DUN/B2S2 SFT/DUN/B2S2 SKD/DUN/B2S2 MUM/DUN-L/B2S2 MUM/DUN-R/B2S2	RFT/MAC/B2S2 SFT/MAC/B2S2 SKD/MAC/B2S2 MUM/MAC-L/B2S2 MUM/MAC-R/B2S2	RFT/DIK/B2S2 SFT/DIK/B2S2 SKD/DIK/B2S2 MUM/DIK-L/B2S2 MUM/DIK-R/B2S2

EXPLANATION OF CODES:

RFT/DUN/B2S1

Runway Friction Tester / Dunlop Tire / Batch 2, Series 1

BATCH NUMBERS FOR DUNLOP RL2 TIRE:

100/B4C4338
100/E4C4338

APPENDIX E

TEXTURE DEPTH MEASUREMENTS FOR TEST SURFACES AT NASA WALLOPS FLIGHT FACILITY

APPENDIX E

TABLE E - 1 TEXTURE DEPTH MEASUREMENTS FOR TEST SURFACES AT NASA WALLOPS FLIGHT FACILITY

LOCATION	TEST SURFACES	AVERAGE TEXTURE DEPTH	
		MM	IN
R/W 4/22	A	0.21	0.008
	B	1.75	0.069
	C	1.82	0.072
T/W 4/22	K	0.11	0.004
	P*	0.00	0.000

APPENDIX F

PROGRAM SCHEDULE

APPENDIX F

TABLE F - 1 PROGRAM SCHEDULE

DATE		ITINERARY
MONDAY	JULY 31, 1989	TRAVEL, EQUIPMENT SET-UP
TUESDAY	AUGUST 01, 1989	FIELD TESTING, MAC TIRE
WEDNESDAY	AUGUST 02, 1989	FIELD TESTING, MAC TIRE
THURSDAY	AUGUST 03, 1989	FIELD TESTING, DIC TIRE
FRIDAY	AUGUST 04, 1989	FIELD TESTING, DIC TIRE
SATURDAY	AUGUST 05, 1989	FIELD TESTING, DUN TIRE
SUNDAY	AUGUST 06, 1989	FIELD TESTING, DUN TIRE
MONDAY	AUGUST 07, 1989	PACK-UP, TRAVEL

APPENDIX G

DAILY TEST RUN SEQUENCE

APPENDIX G

FIRST DAY TEST PROGRAM.

TEST TIRE: McCREARY: Batch 1, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mounted @ Tech Center) @ Inflation pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.

TIME SCHEDULE	TEST SEQUENCE FOR SITE DBA
0800 - 0820 SFT/MAC/B1S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0840 TEST.
0820 - 0840 SKD/MAC/B1S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0900 TEST.
0840 - 0900 RFT/MAC/B1S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0920 TEST.
0900 - 0920 MUM/MAC-L/B1S1 MUM/MAC-R/B1S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0940 TEST.
0920 - 0940 SFT/MAC/B1S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1020 TEST.
0940 - 1000 SKD/MAC/B1S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 RFT/MAC/B1S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 RFT/MAC/B1S2	CHANGE TIRE ON RFT: (Mounted @ Tech Center) McCREARY; BATCH 1, SERIES 2. Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the RFT. TAKE VEHICLE TO TEST SITE KP FOR 1300 TEST.
1040 - 1100 MUM/MAC-L/B1S1 MUM/MAC-R/B1S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON MUM: (Mounted @ Tech Center)
	McCREARY; BATCH 1, SERIES 2.
MUM/MAC-L/B1S2	Re-Calibrate Self Water System for 40 MPH.
MUM/MAC-R/B1S2	Re-Calibrate the MUM.
	TAKE VEHICLE TO TEST SITE KP FOR 1320 TEST.
1200 - 1300	LUNCH BREAK

TEST TIRE: McCREARY; Batch 1, Series 2 (Mounted @ Tech Center).

1300 - 1320	Conduct 6 runs @ 40 MPH with SFT.
	Refill water tank after completion of tests.
SFT/MAC/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1340 TEST.
1320 - 1340	Conduct 6 runs @ 40 MPH with SKD.
	Refill water tank after completion of tests.
SKD/MAC/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with RFT.
	Refill water tank after completion of tests.
RFT/MAC/B1S2	Re-Calibrate Self Water System for 60 MPH.
	TAKE VEHICLE TO TEST SITE KP FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with MUM.
	Refill water tank after completion of tests.
MUM/MAC-L/B1S2	Re-Calibrate Self Water System for 60 MPH.
MUM/MAC-R/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with SFT.
	Refill water tank after completion of tests.
SFT/MAC/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1520 TEST.
1440 - 1500	Conduct 6 runs @ 60 MPH with SKD.
	Refill water tank after completion of tests.
SKD/MAC/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with RFT.
	VEHICLE COMPLETED FOR DAY.
RFT/MAC/B1S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON RFT: (Mount @ WFC)
	McCREARY; BATCH 2, SERIES 1,
RFT/MAC/B2S1	FOR SECOND DAY TEST.
1540 - 1600	Conduct 6 runs @ 60 MPH with MUM.
MUM/MAC-L/B1S2	VEHICLE COMPLETED FOR DAY.
MUM/MAC-R/B1S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700	CHANGE TIRE ON MUM: (Mount @ WFC)
	McCREARY; BATCH 2, SERIES 1,
MUM/MAC-L/B2S1	FOR SECOND DAY TEST.
MUM/MAC-R/B2S1	

FIRST DAY TEST PROGRAM.

TEST TIRE: McCREARY: Batch 1, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mounted @ Tech Center) Inflation pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.

TIME SCHEDULE	TEST SEQUENCE FOR SITES K & P
0800 - 0820 RFT/MAC/B1S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 0840 TEST.
0820 - 0840 MUM/MAC-L/B1S1 MUM/MAC-R/B1S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 0900 TEST.
0840 - 0900 SFT/MAC/B1S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 0920 TEST.
0900 - 0920 SKD/MAC/B1S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 0940 TEST.
0920 - 0940 RFT/MAC/B1S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1020 TEST.
0940 - 1000 MUM/MAC-L/B1S1 MUM/MAC-R/B1S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 SFT/MAC/B1S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 SFT/MAC/B1S2	CHANGE TIRE ON SFT: (Mounted @ Tech Center) McCREARY; BATCH 1, SERIES 2. Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the SFT. TAKE VEHICLE TO TEST SITE DBA FOR 1300 TEST.
1040 - 1100 SKD/MAC/B1S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200 SKD/MAC/B1S2	CHANGE TIRE ON SKD: (Mounted @ Tech Center) McCREARY; BATCH 1, SERIES 2. Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the SKD. TAKE VEHICLE TO TEST SITE DBA FOR 1320 TEST.
1200 -1300	LUNCH BREAK

TEST TIRE: McCREARY; Batch 1, Series 2 (Mounted @ Tech Center).

1300 - 1320 RFT/MAC/B1S2	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1340 TEST.
1320 - 1340 MUM/MAC-L/B1S2 MUM/MAC-R/B1S2	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1400 TEST.
1340 - 1400 SFT/MAC/B1S2	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 1420 TEST.
1400 - 1420 SKD/MAC/B1S2	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 1440 TEST.
1420 - 1440 RFT/MAC/B1S2	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1520 TEST.
1440 - 1500 MUM/MAC-L/B1S2 MUM/MAC-R/B1S2	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540 SFT/MAC/B1S2	Conduct 6 runs @ 60 MPH with SFT. VEHICLE COMPLETED FOR DAY. TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640 SFT/MAC/B2S1	CHANGE TIRE ON SFT: (Mount @ WFC) McCREARY; BATCH 2, SERIES 1, FOR SECOND DAY TEST.
1540 - 1600 SKD/MAC/B1S2	Conduct 6 runs @ 60 MPH with SKD. VEHICLE COMPLETED FOR DAY. TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700 SKD/MAC/B2S1	CHANGE TIRE ON SKD: (Mount @ WFC) McCREARY; BATCH 2, SERIES 1, FOR SECOND DAY TEST.

SECOND DAY TEST PROGRAM.

TEST TIRE: McCREARY; Batch 2, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mount @ WFC) @ Inflation pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.

TIME SCHEDULE	TEST SEQUENCE FOR SITE DBA
0800 - 0820 SFT/MAC/B2S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0840 TEST.
0820 - 0840 SKD/MAC/B2S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0900 TEST.
0840 - 0900 RFT/MAC/B2S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0920 TEST.
0900 - 0920 MUM/MAC-L/B2S1 MUM/MAC-R/B2S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0940 TEST.
0920 - 0940 SFT/MAC/B2S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1020 TEST.
0940 - 1000 SKD/MAC/B2S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 RFT/MAC/B2S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 RFT/MAC/B2S2	CHANGE TIRE ON RFT: (Mount @ WFC). McCREARY; BATCH 2, SERIES 2. Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the RFT. TAKE VEHICLE TO TEST SITE KP FOR 1300 TEST.
1040 - 1100 MUM/MAC-L/B2S1 MUM/MAC-R/B2S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON MUM: (Mount @ WFC).
	McCREARY; BATCH 2, SERIES 2.
MUM/MAC-L/B2S2	Re-Calibrate Self Water System for 40 MPH.
MUM/MAC-R/B2S2	Re-Calibrate the MUM.
	TAKE VEHICLE TO TEST SITE KP FOR 1320 TEST.
1200 - 1300	LUNCH BREAK

TEST TIRE: McCREARY; Batch 2, Series 2 (Mount @ WFC).

1300 - 1320	Conduct 6 runs @ 40 MPH with SFT.
	Refill water tank after completion of tests.
SFT/MAC/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1340 TEST.
1320 - 1340	Conduct 6 runs @ 40 MPH with SKD.
	Refill water tank after completion of tests.
SKD/MAC/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with RFT.
	Refill water tank after completion of tests.
RFT/MAC/B2S2	Re-Calibrate Self Water System for 60 MPH.
	TAKE VEHICLE TO TEST SITE KP FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with MUM.
	Refill water tank after completion of tests.
MUM/MAC-L/B2S2	Re-Calibrate Self Water System for 60 MPH.
MUM/MAC-R/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with SFT.
	Refill water tank after completion of tests.
SFT/MAC/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1520 TEST.
1440 - 1500	Conduct 6 runs @ 60 MPH with SKD.
	Refill water tank after completion of tests.
SKD/MAC/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with RFT.
	VEHICLE COMPLETED FOR DAY.
RFT/MAC/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON RFT: (Mount @ WFC).
	DIK; BATCH 1, SERIES 1,
RFT/DIK/B1S1	FOR THIRD DAY TEST.
1540 - 1600	Conduct 6 runs @ 60 MPH with MUM.
MUM/MAC-L/B2S2	VEHICLE COMPLETED FOR DAY.
MUM/MAC-R/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700	CHANGE TIRE ON MUM: (Mount @ WFC).
	DIK; BATCH 1, SERIES 1,
MUM/DIK-L/B1S1	FOR THIRD DAY TEST.
MUM/DIK-R/B1S1	

SECOND DAY TEST PROGRAM.

TEST TIRE: McCREARY: Batch 2, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mount @ WFC) @ Inflation Pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.

TIME SCHEDULE	TEST SEQUENCE FOR SITES K & P
0800 - 0820 RFT/MAC/B2S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 0840 TEST.
0820 - 0840 MUM/MAC-L/B2S1 MUM/MAC-R/B2S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 0900 TEST.
0840 - 0900 SFT/MAC/B2S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 0920 TEST.
0900 - 0920 SKD/MAC/B2S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 0940 TEST.
0920 - 0940 RFT/MAC/B2S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1020 TEST.
0940 - 1000 MUM/MAC-L/B2S1 MUM/MAC-R/B2S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 SFT/MAC/B2S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 SFT/MAC/B2S2	CHANGE TIRE ON SFT: (Mount @ WFC). McCREARY; BATCH 2, SERIES 2. Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the SFT. TAKE VEHICLE TO TEST SITE DBA FOR 1300 TEST.
1040 - 1100 SKD/MAC/B2S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON SKD: (Mount @ WFC). McCREARY; BATCH 2, SERIES 2.
SKD/MAC/B2S2	Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the SKD. TAKE VEHICLE TO TEST SITE DBA FOR 1320 TEST.
1200 - 1300	LUNCH BREAK

TEST TIRE: McCREARY; Batch 2, Series 2 (Mount @ WFC).

1300 - 1320	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests.
RFT/MAC/B2S2	TAKE VEHICLE TO TEST SITE DBA FOR 1340 TEST.
1320 - 1340	Conduct 6 runs @ 40 MPH with MUM.
MUM/MAC-L/B2S2	Refill water tank after completion of tests.
MUM/MAC-R/B2S2	TAKE VEHICLE TO TEST SITE DBA FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests.
SFT/MAC/B2S2	Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests.
SKD/MAC/B2S2	Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests.
RFT/MAC/B2S2	TAKE VEHICLE TO TEST SITE DBA FOR 1520 TEST.
1440 - 1500	Conduct 6 runs @ 60 MPH with MUM.
MUM/MAC-L/B2S2	Refill water tank after completion of tests.
MUM/MAC-R/B2S2	TAKE VEHICLE TO TEST SITE DBA FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with SFT. VEHICLE COMPLETED FOR DAY.
SFT/MAC/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON SFT: (Mount @ WFC) DIK; BATCH 1, SERIES 1,
SFT/DIK/B1S1	FOR THIRD DAY TEST.
1540 - 1600	Conduct 6 runs @ 60 MPH with SKD. VEHICLE COMPLETED FOR DAY.
SKD/MAC/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700	CHANGE TIRE ON SKD: (Mount @ WFC) DIK; BATCH 1, SERIES 1,
SKD/DIK/B1S1	FOR THIRD DAY TEST.

THIRD DAY TEST PROGRAM.

TEST TIRE: DICO: Batch 1, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mount @ WFC) @ Inflation pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.

TIME SCHEDULE	TEST SEQUENCE FOR SITE DBA
0800 - 0820 SFT/DIK/B1S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0840 TEST.
0820 - 0840 SKD/DIK/B1S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0900 TEST.
0840 - 0900 RFT/DIK/B1S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0920 TEST.
0900 - 0920 MUM/DIK-L/B1S1 MUM/DIK-R/B1S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0940 TEST.
0920 - 0940 SFT/DIK/B1S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1020 TEST.
0940 - 1000 SKD/DIK/B1S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 RFT/DIK/B1S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 RFT/DIK/B1S2	CHANGE TIRE ON RFT: (Mount @ WFC). DICO; BATCH 1, SERIES 2. Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the RFT. TAKE VEHICLE TO TEST SITE XP FOR 1300 TEST.
1040 - 1100 MUM/DIK-L/B1S1 MUM/DIK-R/B1S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON MUM: (Mount @ WFC)
	DICO; BATCH 1, SERIES 2.
MUM/DIK-L/B1S2	Re-Calibrate Self Water System for 40 MPH.
MUM/DIK-R/B1S2	Re-Calibrate the MUM.
	TAKE VEHICLE TO TEST SITE KP FOR 1320 TEST.
1200 - 1300	LUNCH BREAK
TEST TIRE: DICO;	Batch 1, Series 2 (Mount @ WFC).
1300 - 1320	Conduct 6 runs @ 40 MPH with SFT.
	Refill water tank after completion of tests.
SFT/DIK/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1340 TEST.
1320 - 1340	Conduct 6 runs @ 40 MPH with SKD.
	Refill water tank after completion of tests.
SKD/DIK/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with RFT.
	Refill water tank after completion of tests.
RFT/DIK/B1S2	Re-Calibrate Self Water System for 60 MPH.
	TAKE VEHICLE TO TEST SITE KP FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with MUM.
	Refill water tank after completion of tests.
MUM/DIK-L/B1S2	Re-Calibrate Self Water System for 60 MPH.
MUM/DIK-R/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with SFT.
	Refill water tank after completion of tests.
SFT/DIK/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1520 TEST.
1440 - 1500	Conduct 6 runs @ 60 MPH with SKD.
	Refill water tank after completion of tests.
SKD/DIK/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with RFT.
	VEHICLE COMPLETED FOR DAY.
RFT/DIK/B1S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON RFT: (Mount @ WFC)
	DICO; BATCH 2, SERIES 1,
RFT/DIK/B2S1	FOR FOURTH DAY TEST.
1540 - 1600	Conduct 6 runs @ 60 MPH with MUM.
MUM/DIK-L/B1S2	VEHICLE COMPLETED FOR DAY.
MUM/DIK-R/B1S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700	CHANGE TIRE ON MUM: (Mount @ WFC)
	DICO; BATCH 2, SERIES 1,
MUM/DIK-L/B2S1	FOR FOURTH DAY TEST.
MUM/DIK-R/B2S1	

THIRD DAY TEST PROGRAM.

TEST TIRE: DICO: Batch 1, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mount @ WFC) @ Inflation pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.

TIME SCHEDULE	TEST SEQUENCE FOR SITES K & P
0800 - 0820	Conduct 6 runs @ 40 MPH with RFT.
	Refill water tank after completion of tests.
RFT/DIK/B1S1	TAKE VEHICLE TO TEST SITE DBA FOR 0840 TEST.
0820 - 0840	Conduct 6 runs @ 40 MPH with MUM.
MUM/DIK-L/B1S1	Refill water tank after completion of tests.
MUM/DIK-R/B1S1	TAKE VEHICLE TO TEST SITE DBA FOR 0900 TEST.
0840 - 0900	Conduct 6 runs @ 40 MPH with SFT.
	Refill water tank after completion of tests.
SFT/DIK/B1S1	Re-Calibrate Self Water System for 60 MPH.
	TAKE VEHICLE TO TEST SITE DBA FOR 0920 TEST.
0900 - 0920	Conduct 6 runs @ 40 MPH with SKD.
	Refill water tank after completion of tests.
SKD/DIK/B1S1	Re-Calibrate Self Water System for 60 MPH.
	TAKE VEHICLE TO TEST SITE DBA FOR 0940 TEST.
0920 - 0940	Conduct 6 runs @ 60 MPH with RFT.
	Refill water tank after completion of tests.
RFT/DIK/B1S1	TAKE VEHICLE TO TEST SITE DBA FOR 1020 TEST.
0940 - 1000	Conduct 6 runs @ 60 MPH with MUM.
MUM/DIK-L/B1S1	Refill water tank after completion of tests.
MUM/DIK-R/B1S1	TAKE VEHICLE TO TEST SITE DBA FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040	Conduct 6 runs @ 60 MPH with SFT.
	Refill water tank after completion of tests.
SFT/DIK/B1S1	TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140	CHANGE TIRE ON SFT: (Mount @ WFC)
	DICO; BATCH 1, SERIES 2.
SFT/DIK/B1S2	Re-Calibrate Self Water System for 40 MPH.
	Re-Calibrate the SFT.
	TAKE VEHICLE TO TEST SITE DBA FOR 1300 TEST.
1040 - 1100	Conduct 6 runs @ 60 MPH with SKD.
	Refill water tank after completion of tests.
SKD/DIK/B1S1	TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON SKD: (Mount @ WFC).
	DICO; BATCH 1, SERIES 2.
SKD/DIK/B1S2	Re-Calibrate Self Water System for 40 MPH.
	Re-Calibrate the SKD.
	TAKE VEHICLE TO TEST SITE DBA FOR 1320 TEST.
1200 - 1300	LUNCH BREAK
TEST TIRE: DICO;	Batch 1, Series 2 (Mount @ WFC).
1300 - 1320	Conduct 6 runs @ 40 MPH with RFT.
	Refill water tank after completion of tests.
RFT/DIK/B1S2	TAKE VEHICLE TO TEST SITE DBA FOR 1340 TEST.
1320 - 1340	Conduct 6 runs @ 40 MPH with MUM.
MUM/DIK-L/B1S2	Refill water tank after completion of tests.
MUM/DIK-R/B1S2	TAKE VEHICLE TO TEST SITE DBA FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with SFT.
	Refill water tank after completion of tests.
SFT/DIK/B1S2	Re-Calibrate Self Water System for 60 MPH.
	TAKE VEHICLE TO TEST SITE DBA FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with SKD.
	Refill water tank after completion of tests.
SKD/DIK/B1S2	Re-Calibrate Self Water System for 60 MPH.
	TAKE VEHICLE TO TEST SITE DBA FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with RFT.
	Refill water tank after completion of tests.
RFT/DIK/B1S2	TAKE VEHICLE TO TEST SITE DBA FOR 1520 TEST.
1440 - 1500	Conduct 6 runs @ 60 MPH with MUM.
MUM/DIK-L/B1S2	Refill water tank after completion of tests.
MUM/DIK-R/B1S2	TAKE VEHICLE TO TEST SITE DBA FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with SFT.
	VEHICLE COMPLETED FOR DAY.
SFT/DIK/B1S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON SFT: (Mount @ WFC)
	DICO; BATCH 2, SERIES 1,
SFT/DIK/B2S1	FOR FOURTH DAY TEST.
1540 - 1600	Conduct 6 runs @ 60 MPH with SKD.
	VEHICLE COMPLETED FOR DAY.
SKD/DIK/B1S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700	CHANGE TIRE ON SKD: (Mount @ WFC)
	DICO; BATCH 2, SERIES 1,
SKD/DIK/B2S1	FOR FOURTH DAY TEST.

FOURTH DAY TEST PROGRAM.

TEST TIRE: DICO: Batch 2, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mount @ WFC) @ Inflation pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.

TIME SCHEDULE	TEST SEQUENCE FOR SITE DBA
0800 - 0820 SFT/DIK/B2S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0840 TEST.
0820 - 0840 SKD/DIK/B2S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0900 TEST.
0840 - 0900 RFT/DIK/B2S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0920 TEST.
0900 - 0920 MUM/DIK-L/B2S1 MUM/DIK-R/B2S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0940 TEST.
0920 - 0940 SFT/DIK/B2S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1020 TEST.
0940 - 1000 SKD/DIK/B2S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 RFT/DIK/B2S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 RFT/DIK/B2S2	CHANGE TIRE ON RFT: (Mount @ WFC). DICO; BATCH 2, SERIES 2. Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the RFT. TAKE VEHICLE TO TEST SITE KP FOR 1300 TEST.
1040 - 1100 MUM/DIK-L/B2S1 MUM/DIK-R/B2S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON MUM: (Mount @ WFC)
	DICO; BATCH 2, SERIES 2.
MUM/DIK-L/B2S2	Re-Calibrate Self Water System for 40 MPH.
MUM/DIK-R/B2S2	Re-Calibrate the MUM.
	TAKE VEHICLE TO TEST SITE KP FOR 1320 TEST.
1200 - 1300	LUNCH BREAK
TEST TIRE: DICO;	Batch 2, Series 2 (Mount @ WFC).
1300 - 1320	Conduct 6 runs @ 40 MPH with SFT.
	Refill water tank after completion of tests.
SFT/DIK/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1340 TEST.
1320 - 1340	Conduct 6 runs @ 40 MPH with SKD.
	Refill water tank after completion of tests.
SKD/DIK/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with RFT.
	Refill water tank after completion of tests.
RFT/DIK/B2S2	Re-Calibrate Self Water System for 60 MPH.
	TAKE VEHICLE TO TEST SITE KP FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with MUM.
	Refill water tank after completion of tests.
MUM/DIK-L/B2S2	Re-Calibrate Self Water System for 60 MPH.
MUM/DIK-R/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with SFT.
	Refill water tank after completion of tests.
SFT/DIK/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1520 TEST.
1440 - 1500	Conduct 6 runs @ 60 MPH with SKD.
	Refill water tank after completion of tests.
SKD/DIK/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with RFT.
	VEHICLE COMPLETED FOR DAY.
RFT/DIK/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON RFT: (Mount @ WFC)
	DUNLOP; BATCH 1, SERIES 1,
RFT/DUN/B1S1	FOR FIFTH DAY TEST.
1540 - 1600	Conduct 6 runs @ 60 MPH with MUM.
MUM/DIK-L/B2S2	VEHICLE COMPLETED FOR DAY.
MUM/DIK-R/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700	CHANGE TIRE ON MUM: (Mount @ WFC)
	DUNLOP; BATCH 1, SERIES 1,
MUM/DUN-L/B1S1	FOR FIFTH DAY TEST.
MUM/DUN-R/B1S1	

FOURTH DAY TEST PROGRAM.

TEST TIRE: DICO: Batch 2, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mount @ WFC) @ Inflation pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.

TIME SCHEDULE	TEST SEQUENCE FOR SITES K & P
0800 - 0820 RFT/DIK/B2S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 0840 TEST.
0820 - 0840 MUM/DIK-L/B2S1 MUM/DIK-R/B2S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 0900 TEST.
0840 - 0900 SFT/DIK/B2S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 0920 TEST.
0900 - 0920 SKD/DIK/B2S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 0940 TEST.
0920 - 0940 RFT/DIK/B2S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1020 TEST.
0940 - 1000 MUM/DIK-L/B2S1 MUM/DIK-R/B2S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 SFT/DIK/B2S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 SFT/DIK/B2S2	CHANGE TIRE ON SFT: (Mount @ WFC) DICO; BATCH 2, SERIES 2. Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the SFT. TAKE VEHICLE TO TEST SITE DBA FOR 1300 TEST.
1040 - 1100 SKD/DIK/B2S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON SKD: (Mount @ WFC). DICO; BATCH 2, SERIES 2.
SKD/DIK/B2S2	Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the SKD. TAKE VEHICLE TO TEST SITE DBA FOR 1320 TEST.
1200 - 1300	LUNCH BREAK
TEST TIRE: DICO;	Batch 2, Series 2 (Mount @ WFC).
1300 - 1320	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests.
RFT/DIK/B2S2	TAKE VEHICLE TO TEST SITE DBA FOR 1340 TEST.
1320 - 1340	Conduct 6 runs @ 40 MPH with MUM.
MUM/DIK-L/B2S2	Refill water tank after completion of tests.
MUM/DIK-R/B2S2	TAKE VEHICLE TO TEST SITE DBA FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests.
SFT/DIK/B2S2	Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests.
SKD/DIK/B2S2	Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests.
RFT/DIK/B2S2	TAKE VEHICLE TO TEST SITE DBA FOR 1520 TEST.
1440 - 1500	Conduct 6 runs @ 60 MPH with MUM.
MUM/DIK-L/B2S2	Refill water tank after completion of tests.
MUM/DIK-R/B2S2	TAKE VEHICLE TO TEST SITE DBA FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with SFT. VEHICLE COMPLETED FOR DAY.
SFT/DIK/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON SFT: (Mount @ WFC) DUNLOP; BATCH 1, SERIES 1,
SFT/DUN/B1S1	FOR FIFTH DAY TEST.
1540 - 1600	Conduct 6 runs @ 60 MPH with SKD. VEHICLE COMPLETED FOR DAY.
SKD/DIK/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700	CHANGE TIRE ON SKD: (Mount @ WFC) DUNLOP; BATCH 1, SERIES 1,
SKD/DUN/B1S1	FOR FIFTH DAY TEST.

FIFTH DAY TEST PROGRAM.

TEST TIRE: DUNLOP: # 100/E4C/4338	Batch 1, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mount @ WFC). @ Inflation pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.
TIME SCHEDULE	TEST SEQUENCE FOR SITE DBA
0800 - 0820 SFT/DUN/B1S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0840 TEST.
0820 - 0840 SKD/DUN/B1S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0900 TEST.
0840 - 0900 RFT/DUN/B1S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0920 TEST.
0900 - 0920 MUM/DUN-L/B1S1 MUM/DUN-R/B1S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0940 TEST.
0920 - 0940 SFT/DUN/B1S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1020 TEST.
0940 - 1000 SKD/DUN/B1S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 RFT/DUN/B1S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 RFT/DUN/B1S2	CHANGE TIRE ON RFT: (Mount @ WFC). DUNLOP; BATCH 1, SERIES 2. # 100/E4C/4338 Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the RFT. TAKE VEHICLE TO TEST SITE KP FOR 1300 TEST.
1040 - 1100 MUM/DUN-L/B1S1 MUM/DUN-R/B1S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON MUM: (Mount @ WFC). DUNLOP; BATCH 1, SERIES 2. # 100/E4C/4338
MUM/DUN-L/B1S2	Re-Calibrate Self Water System for 40 MPH.
MUM/DUN-R/B1S2	Re-Calibrate the MUM. TAKE VEHICLE TO TEST SITE KP FOR 1320 TEST.
1200 - 1300	LUNCH BREAK
TEST TIRE: DUNLOP;	Batch 1, Series 2 (Mount @ WFC).
1300 - 1320	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests.
SFT/DUN/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1340 TEST.
1320 - 1340	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests.
SKD/DUN/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests.
RFT/DUN/B1S2	Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests.
MUM/DUN-L/B1S2	Re-Calibrate Self Water System for 60 MPH.
MUM/DUN-R/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests.
SFT/DUN/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1520 TEST.
1440 - 1500	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests.
SKD/DUN/B1S2	TAKE VEHICLE TO TEST SITE KP FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with RFT. VEHICLE COMPLETED FOR DAY.
RFT/DUN/B1S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON RFT: (Mount @ WFC) DUNLOP; BATCH 2, SERIES 1, # 100/B4C/4338
RFT/DUN/B2S1	FOR SIXTH DAY TEST.
1540 - 1600	Conduct 6 runs @ 60 MPH with MUM.
MUM/DUN-L/B1S2	VEHICLE COMPLETED FOR DAY.
MUM/DUN-R/B1S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700	CHANGE TIRE ON MUM: (Mount @ WFC) DUNLOP; BATCH 2, SERIES 1, # 100/B4C/4338
MUM/DUN-L/B2S1	FOR SIXTH DAY TEST.
MUM/DUN-R/B2S1	

FIFTH DAY TEST PROGRAM.

TEST TIRE: DUNLOP: # 100/E4C/4338	Batch 1, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mount @ WFC). @ Inflation pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.
TIME SCHEDULE	TEST SEQUENCE FOR SITES K & P
0800 - 0820 RFT/DUN/B1S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 0840 TEST.
0820 - 0840 MUM/DUN-L/B1S1 MUM/DUN-R/B1S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 0900 TEST.
0840 - 0900 SFT/DUN/B1S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 0920 TEST.
0900 - 0920 SKD/DUN/B1S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 0940 TEST.
0920 - 0940 RFT/DUN/B1S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1020 TEST.
0940 - 1000 MUM/DUN-L/B1S1 MUM/DUN-R/B1S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 SFT/DUN/B1S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 SFT/DUN/B1S2	CHANGE TIRE ON SFT: (Mount @ WFC). DUNLOP; BATCH 1, SERIES 2. # 100/E4C/4338 Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the SFT. TAKE VEHICLE TO TEST SITE DBA FOR 1300 TEST.
1040 - 1100 SKD/DUN/B1S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON SKD: (Mount @ WFC).
	DUNLOP; BATCH 1, SERIES 2. # 100/E4C/4338
SKD/DUN/B1S2	Re-Calibrate Self Water System for 40 MPH.
	Re-Calibrate the SKD.
	TAKE VEHICLE TO TEST SITE DBA FOR 1320 TEST.
1200 - 1300	LUNCH BREAK
TEST TIRE: DUNLOP;	Batch 1, Series 2 (Mount @ WFC).
1300 - 1320	Conduct 6 runs @ 40 MPH with RFT.
	Refill water tank after completion of tests.
RFT/DUN/B1S2	TAKE VEHICLE TO TEST SITE DBA FOR 1340 TEST.
1320 - 1340	Conduct 6 runs @ 40 MPH with MUM.
MUM/DUN-L/B1S2	Refill water tank after completion of tests.
MUM/DUN-R/B1S2	TAKE VEHICLE TO TEST SITE DBA FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with SFT.
	Refill water tank after completion of tests.
SFT/DUN/B1S2	Re-Calibrate Self Water System for 60 MPH.
	TAKE VEHICLE TO TEST SITE DBA FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with SKD.
	Refill water tank after completion of tests.
SKD/DUN/B1S2	Re-Calibrate Self Water System for 60 MPH.
	TAKE VEHICLE TO TEST SITE DBA FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with RFT.
	Refill water tank after completion of tests.
RFT/DUN/B1S2	TAKE VEHICLE TO TEST SITE DBA FOR 1520 TEST.
1440 - 1500	Conduct 6 runs @ 60 MPH with MUM.
MUM/DUN-L/B1S2	Refill water tank after completion of tests.
MUM/DUN-R/B1S2	TAKE VEHICLE TO TEST SITE DBA FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with SFT.
	VEHICLE COMPLETED FOR DAY.
SFT/DUN/B1S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON SFT: (Mount @ WFC)
	DUNLOP; BATCH 2, SERIES 1, # 100/B4C/4338
SFT/DUN/B2S1	FOR SIXTH DAY TEST.
1540 - 1600	Conduct 6 runs @ 60 MPH with SKD.
	VEHICLE COMPLETED FOR DAY.
SKD/DUN/B1S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700	CHANGE TIRE ON SKD: (Mount @ WFC)
	DUNLOP; BATCH 2, SERIES 1, # 100/B4C/4338
SKD/DUN/B2S1	FOR SIXTH DAY TEST.

SIXTH DAY TEST PROGRAM.

TEST TIRE: DUNLOP;	Batch 2, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mount @ WFC)
# 100/B4C/4338	@ Inflation pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.

TIME SCHEDULE	TEST SEQUENCE FOR SITE DBA
0800 - 0820 SFT/DUN/B2S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0840 TEST.
0820 - 0840 SKD/DUN/B2S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 0900 TEST.
0840 - 0900 RFT/DUN/B2S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0920 TEST.
0900 - 0920 MUM/DUN-L/B2S1 MUM/DUN-R/B2S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 0940 TEST.
0920 - 0940 SFT/DUN/B2S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1020 TEST.
0940 - 1000 SKD/DUN/B2S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE KP FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 RFT/DUN/B2S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 RFT/DUN/B2S2	CHANGE TIRE ON RFT: (Mount @ WFC). DUNLOP; BATCH 2, SERIES 2. # 100/B4C/4338 Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the RFT. TAKE VEHICLE TO TEST SITE KP FOR 1300 TEST.
1040 - 1100 MUM/DUN-L/B2S1 MUM/DUN-R/B2S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON MUM: (Mount @ WFC). DUNLOP; BATCH 2, SERIES 2. # 100/B4C/4338
MUM/DUN-L/B2S2	Re-Calibrate Self Water System for 40 MPH.
MUM/DUN-L/B2S2	Re-Calibrate the MUM. TAKE VEHICLE TO TEST SITE KP FOR 1320 TEST.
1200 - 1300	LUNCH BREAK
TEST TIRE: DUNLOP;	Batch 2, Series 2 (Mount @ WFC).
1300 - 1320	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests.
SFT/DUN/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1340 TEST.
1320 - 1340	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests.
SKD/DUN/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests.
RFT/DUN/B2S2	Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE KP FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests.
MUM/DUN-L/B2S2	Re-Calibrate Self Water System for 60 MPH.
MUM/DUN-R/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests.
SFT/DUN/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1520 TEST.
1440 - 1500	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests.
SKD/DUN/B2S2	TAKE VEHICLE TO TEST SITE KP FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with RFT. VEHICLE COMPLETED FOR DAY.
RFT/DUN/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON RFT: (Mount @ WFC). AERO; HPT (100 PSI.), SIZE 16 X 4
AERO/RFT	FOR SEVENTH DAY TEST, IF SCHEDULED.
1540 - 1600	Conduct 6 runs @ 60 MPH with MUM. VEHICLE COMPLETED FOR TEST PROGRAM.
MUM/DUN-L/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
MUM/DUN-R/B2S2	NO FURTHER TESTS ARE PLANNED, UNLESS MAKE-UP TESTS ARE REQUIRED.

SIXTH DAY TEST PROGRAM.

TEST TIRE: DUNLOP:	Batch 2, Series 1. Smooth tread tire, size 16 x 4, 6 ply, (Mount @ WFC)
# 100/B4C/4338	@ Inflation Pressure 30 psi. for SFT, SKD & RFT; MUM tires, 10 psi.

TIME SCHEDULE	TEST SEQUENCE FOR SITES K & P
0800 - 0820 RFT/DUN/B2S1	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 0840 TEST.
0820 - 0840 MUM/DUN-L/B2S1 MUM/DUN-R/B2S1	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 0900 TEST.
0840 - 0900 SFT/DUN/B2S1	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 0920 TEST.
0900 - 0920 SFT/DUN/B2S1	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests. Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 0940 TEST.
0920 - 0940 RFT/DUN/B2S1	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1020 TEST.
0940 - 1000 MUM/DUN-L/B2S1 MUM/DUN-R/B2S1	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1040 TEST.
1000 - 1020	BREAK
1020 - 1040 SFT/DUN/B2S1	Conduct 6 runs @ 60 MPH with SFT. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.
1040 - 1140 SFT/DUN/B2S2	CHANGE TIRE ON SFT: (Mount @ WFC). DUNLOP; BATCH 2, SERIES 2. # 100/B4C/4338 Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the SFT. TAKE VEHICLE TO TEST SITE DBA FOR 1300 TEST.
1040 - 1100 SKD/DUN/B2S1	Conduct 6 runs @ 60 MPH with SKD. Refill water tank after completion of tests. TAKE VEHICLE TO HANGER TO CHANGE TIRE.

1100 - 1200	CHANGE TIRE ON SKD: (Mount @ WFC). DUNLOP; BATCH 2, SERIES 2. # 100/B4C/4338
SKD/DUN/B2S2	Re-Calibrate Self Water System for 40 MPH. Re-Calibrate the SKD. TAKE VEHICLE TO TEST SITE DBA FOR 1320 TEST.
1200 - 1300	LUNCH BREAK
TEST TIRE: DUNLOP;	Batch 2, Series 2 (Mount @ WFC).
1300 - 1320	Conduct 6 runs @ 40 MPH with RFT. Refill water tank after completion of tests.
RFT/DUN/B2S2	TAKE VEHICLE TO TEST SITE DBA FOR 1340 TEST.
1320 - 1340 MUM/DUN-L/B2S2 MUM/DUN-R/B2S2	Conduct 6 runs @ 40 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1400 TEST.
1340 - 1400	Conduct 6 runs @ 40 MPH with SFT. Refill water tank after completion of tests.
SFT/DUN/B2S2	Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 1420 TEST.
1400 - 1420	Conduct 6 runs @ 40 MPH with SKD. Refill water tank after completion of tests.
SKD/DUN/B2S2	Re-Calibrate Self Water System for 60 MPH. TAKE VEHICLE TO TEST SITE DBA FOR 1440 TEST.
1420 - 1440	Conduct 6 runs @ 60 MPH with RFT. Refill water tank after completion of tests.
RFT/DUN/B2S2	TAKE VEHICLE TO TEST SITE DBA FOR 1520 TEST.
1440 - 1500 MUM/DUN-L/B2S2 MUM/DUN-R/B2S2	Conduct 6 runs @ 60 MPH with MUM. Refill water tank after completion of tests. TAKE VEHICLE TO TEST SITE DBA FOR 1540 TEST.
1500 - 1520	BREAK
1520 - 1540	Conduct 6 runs @ 60 MPH with SFT. VEHICLE COMPLETED FOR DAY.
SFT/DUN/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1540 - 1640	CHANGE TIRE ON SFT: (Mount @ WFC) AERO; HPT (100 PSI.), SIZE 16 X 4
AERO/SFT	FOR SEVENTH DAY TEST, IF SCHEDULED.
1540 - 1600	Conduct 6 runs @ 60 MPH with SKD. VEHICLE COMPLETED FOR DAY.
SKD/DUN/B2S2	TAKE BACK TO HANGER, DUMP REMAINING WATER.
1600 - 1700	CHANGE TIRE ON SKD: (Mount @ WFC) AERO; HPT (100 PSI.), SIZE 16 X 4
AERO/SKD	FOR SEVENTH DAY TEST, IF SCHEDULED.

APPENDIX H

SUMMARY OF FIELD DATA LOG FOR McCREARY TIRE

FIELD DATA FOR RUNWAY FRICTION TESTER (RFT)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATRFTB1.MAC

TEST TIRE MODE	SEQUENCE	SEG D MPH 40	SEG D MPH 60	SEG B MPH 40	SEG B MPH 60	SEG A MPH 40	SEG A MPH 60	SEG K MPH 40	SEG K MPH 60	SEG P MPH 40	SEG P MPH 60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: RFT/MAC/B1S1									
SERIES 1	1	40	30	60	53	35	24	30	22	6	3
	2	42	30	59	52	35	23	30	21	7	3
	3	40	30	58	54	35	23	29	20	7	3
	4	40	30	58	55	34	24	30	20	7	3
	5	40	30	56	53	35	23	29	20	7	4
	6	40	29	57	54	34	24	30	20	7	3
BATCH 1		TEST TIRE CATALOG NUMBER: RFT/MAC/B1S2									
SERIES 2	1	38	30	55	55	35	23	28	25	7	3
	2	40	30	58	55	35	25	30	21	7	3
	3	40	30	57	52	35	25	28	20	7	3
	4	40	30	57	51	32	23	30	19	7	4
	5	40	30	55	54	32	23	30	20	7	4
	6	40	30	56	52	34	23	30	19	7	4

FIELD DATA FOR RUNWAY FRICTION TESTER (RFT)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATRFTB2.MAC

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: RFT/MAC/B2S1									
SERIES 1	1	42	32	59	52	38	26	33	22	6	4
	2	42	32	57	52	37	26	31	22	6	4
	3	42	31	58	52	36	25	30	22	6	4
	4	42	32	56	51	37	26	30	21	6	4
	5	42	32	58	51	35	25	30	21	6	4
	6	42	32	56	51	35	25	30	21	6	4
BATCH 2		TEST TIRE CATALOG NUMBER: RFT/MAC/B2S2									
SERIES 2	1	42	32	55	52	38	26	33	23	6	4
	2	42	32	55	50	38	32	30	20	6	4
	3	41	32	55	50	36	26	30	21	6	4
	4	41	31	55	50	36	25	30	21	6	4
	5	41	31	56	50	35	25	30	21	6	4
	6	41	31	55	50	35	25	29	20	6	4

FIELD DATA FOR SAAB FRICTION TESTER (SFT)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSFTB1.MAC

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: SFT/MAC/B1S1									
SERIES 1	1	53	29	80	65	48	18	39	26	2	0
	2	50	26	80	65	43	19	38	23	2	0
	3	50	28	78	65	43	24	37	20	1	0
	4	55	28	78	65	42	20	38	21	2	0
	5	52	28	77	63	40	25	36	21	1	0
	6	50	28	77	63	40	25	36	20	1	0
BATCH 1		TEST TIRE CATALOG NUMBER: SFT/MAC/B1S2									
SERIES 2	1	46	28	76	65	40	18	38	na	1	0
	2	47	28	75	65	40	18	36	20	1	0
	3	47	25	75	63	40	17	38	20	1	0
	4	46	23	74	63	38	18	38	18	1	0
	5	45	26	73	64	35	18	36	20	1	0
	6	45	27	73	63	36	18	36	20	1	0

FIELD DATA FOR SAAB FRICTION TESTER (SFT)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSFTB2.MAC

TEST TIRE MODE	SEQUENCE	SEG D MPH 40	SEG D MPH 60	SEG B MPH 40	SEG B MPH 60	SEG A MPH 40	SEG A MPH 60	SEG K MPH 40	SEG K MPH 60	SEG P MPH 40	SEG P MPH 60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: SFT/MAC/B2S1									
SERIES 1	1	50	30	75	65	44	21	40	28	2	1
	2	52	30	75	65	40	20	44	23	2	1
	3	52	28	75	64	50	20	38	25	2	1
	4	50	28	74	63	42	20	38	23	1	1
	5	51	28	72	62	42	22	38	23	2	1
	6	50	28	73	62	42	20	38	23	2	1
BATCH 2		TEST TIRE CATALOG NUMBER: SFT/MAC/B2S2									
SERIES 2	1	52	35	75	65	44	22	38	19	2	1
	2	50	32	74	65	42	22	38	18	2	0
	3	51	32	75	65	42	22	38	20	2	0
	4	50	31	74	64	42	22	38	20	1	0
	5	48	30	74	64	42	21	38	19	2	1
	6	48	30	74	64	40	21	36	21	2	1

FIELD DATA FOR SKIDDOMETER (SKD)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSKDB1.MAC

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: SKD/MAC/B1S1									
SERIES 1	1	52	32	78	68	42	27	45	20	3	3
	2	50	33	80	69	43	28	40	19	4	3
	3	48	33	77	68	43	28	32	21	4	3
	4	52	33	78	69	42	28	38	18	4	3
	5	50	33	78	67	42	26	32	18	4	3
	6	51	33	78	69	42	26	33	19	4	3
BATCH 1		TEST TIRE CATALOG NUMBER: SKD/MAC/B1S2									
SERIES 2	1	52	33	78	66	44	26	37	16	3	2
	2	50	33	75	65	43	28	31	16	3	2
	3	52	31	75	64	44	25	30	14	3	2
	4	50	32	75	65	42	28	30	17	3	2
	5	49	32	75	65	43	26	29	18	3	2
	6	49	30	76	65	42	28	28	19	3	2

FIELD DATA FOR SKIDDOMETER (SKD)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSKDB2.MAC

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: SKD/MAC/B2S1									
SERIES 1	1	50	40	72	68	41	32	37	22	3	3
	2	48	40	73	67	43	30	34	20	3	3
	3	50	38	72	68	42	32	30	18	3	3
	4	50	36	74	68	42	29	29	18	3	3
	5	50	38	76	69	43	32	28	18	3	3
	6	50	37	73	68	44	30	28	18	3	3
BATCH 2		TEST TIRE CATALOG NUMBER: SKD/MAC/B2S2									
SERIES 2	1	53	35	74	66	43	28	40	18	3	2
	2	50	35	73	66	42	28	35	18	3	2
	3	50	35	73	65	42	28	33	20	3	3
	4	50	35	74	65	42	28	32	19	3	2
	5	50	34	75	65	43	26	31	20	3	2
	6	51	34	74	66	43	28	32	20	3	2

FIELD DATA FOR MU METER (MUM)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATMUMB1.MAC

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: MUM/MAC-L/B1S1 MUM/MAC-R/B1S1									
SERIES 1	1	48	30	61	58	45	24	38	25	5	3
	2	48	30	61	55	42	24	38	25	5	4
	3	43	24	62	58	45	24	38	25	6	3
	4	42	24	62	56	40	25	38	24	8	4
	5	40	25	61	57	42	28	38	22	8	3
	6	40	23	62	58	42	29	38	30	9	5
BATCH 1		TEST TIRE CATALOG NUMBER: MUM/MAC-L/B1S2 MUM/MAC-R/B1S2									
SERIES 2	1	56	35	68	64	52	30	48	25	10	5
	2	54	32	70	64	51	30	43	28	11	5
	3	52	32	70	64	48	28	43	26	11	6
	4	55	30	70	65	49	28	43	36	11	6
	5	56	30	69	64	49	29	40	25	11	8
	6	52	31	71	65	48	30	40	25	12	9

FIELD DATA FOR MU METER (MUM) FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR FILE: DATMUME2.MAC											
TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: MUM/MAC-L/B2S1 MUM/MAC-R/B2S1									
SERIES 1	1	56	35	68	63	50	30	48	23	8	2
	2	52	32	69	61	48	32	45	28	8	2
	3	50	30	69	64	48	32	46	24	9	3
	4	50	30	70	64	47	24	45	28	9	3
	5	48	28	70	65	47	23	43	25	10	4
	6	49	28	69	66	46	25	42	25	10	4
BATCH 2		TEST TIRE CATALOG NUMBER: MUM/MAC-L/B2S2 MUM/MAC-R/B2S2									
SERIES 2	1	54	34	67	62	50	30	43	28	4	3
	2	54	36	68	62	46	30	42	26	7	2
	3	52	34	68	62	44	30	41	27	6	3
	4	52	34	68	64	41	30	40	27	6	3
	5	50	32	68	64	42	30	39	25	6	3
	6	50	31	68	64	42	30	40	25	7	4

APPENDIX I

SUMMARY OF FIELD DATA LOG FOR DICO TIRE

FIELD DATA LOG FOR RUNWAY FRICTION TESTER (RFT) FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR FILE: DATRFTB1.DIK											
TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: RFT/DIK/B1S1									
SERIES 1	1	40	32	56	52	34	27	25	20	4	3
	2	41	32	56	51	35	26	25	18	5	3
	3	40	32	56	51	35	26	23	18	4	3
	4	40	32	56	52	35	26	25	18	4	3
	5	41	31	56	51	35	26	24	17	4	3
	6	41	31	57	51	35	26	25	18	4	3
BATCH 1		TEST TIRE CATALOG NUMBER: RFT/DIK/B1S2									
SERIES 2	1	42	32	58	55	34	25	22	18	4	2
	2	41	33	58	54	34	25	24	16	3	2
	3	41	33	58	53	35	25	23	16	4	2
	4	42	32	58	54	36	25	22	14	3	2
	5	42	32	60	53	36	25	22	18	3	2
	6	43	32	60	52	36	25	25	16	3	2

FIELD DATA LOG FOR RUNWAY FRICTION TESTER (RFT)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATRFTB2.DIK

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: RFT/DIK/B2S1									
SERIES 1	1	25	27	50	45	20	20	18	16	3	2
	2	30	25	50	46	25	20	17	16	2	2
	3	30	25	51	47	25	21	18	16	3	2
	4	32	26	52	47	28	21	19	17	3	2
	5	32	27	52	47	29	21	18	16	3	2
	6	35	27	52	47	30	22	18	17	3	2
BATCH 2		TEST TIRE CATALOG NUMBER: RFT/DIK/B2S2									
SERIES 2	1	31	25	52	47	26	19	23	19	5	3
	2	31	28	54	50	27	20	25	16	5	3
	3	32	na	53	na	29	na	22	16	5	3
	4	35	na	56	na	30	na	23	18	5	3
	5	37	na	54	na	30	na	23	16	5	3
	6	36	na	57	na	31	na	22	15	5	2

FIELD DATA LOG FOR SAAB FRICTION TESTER (SFT)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSFTB1.DIK

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: SFT/DIK/B1S1									
SERIES 1	1	51	34	74	60	41	25	31	18	1	1
	2	51	33	74	60	41	24	33	22	1	1
	3	51	33	75	60	48	25	30	18	1	1
	4	51	32	77	60	45	24	30	21	1	1
	5	51	32	75	59	45	24	30	20	1	1
	6	51	33	75	59	46	23	32	22	1	1
BATCH 1		TEST TIRE CATALOG NUMBER: SFT/DIK/B1S2									
SERIES 2	1	56	32	74	58	46	26	30	18	1	1
	2	52	32	74	58	44	26	31	16	1	1
	3	51	32	74	57	43	24	29	17	1	1
	4	49	32	74	57	46	26	30	15	1	1
	5	50	31	75	55	42	26	30	16	1	1
	6	50	36	76	55	44	26	30	16	1	1

FIELD DATA LOG FOR SAAB FRICTION TESTER (SFT)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSFTB2.DIK

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: SFT/DIK/B2S1									
SERIES 1	1	45	33	73	70	33	28	28	14	2	0
	2	48	30	76	68	34	24	22	13	2	0
	3	44	30	77	62	36	20	23	13	2	0
	4	48	29	78	63	41	21	23	13	2	0
	5	47	30	80	65	40	21	25	13	2	1
	6	44	30	77	65	40	21	26	13	1	0
BATCH 2		TEST TIRE CATALOG NUMBER: SFT/DIK/B2S2									
SERIES 2	1	40	20	75	64	37	12	18	9	0	0
	2	48	20	75	62	30	13	15	8	0	0
	3	47	23	75	59	34	12	14	9	0	0
	4	44	22	75	59	37	12	20	10	0	0
	5	50	22	75	63	34	17	20	9	0	0
	6	47	30	77	64	37	12	18	.10	0	0

FIELD DATA FOR SKIDDOMETER (SKD)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSKDB1.DIK

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: SKD/DIK/B1S1									
SERIES 1	1	51	32	76	67	50	27	28	18	3	2
	2	48	32	78	67	50	25	27	18	3	2
	3	52	30	78	67	55	23	27	16	4	2
	4	50	30	82	68	50	25	25	16	4	1
	5	49	30	78	67	46	22	28	15	4	1
	6	49	29	82	67	50	23	28	15	5	2
BATCH 1		TEST TIRE CATALOG NUMBER: SKD/DIK/B1S2									
SERIES 2	1	40	27	75	60	37	21	27	18	4	2
	2	42	27	75	60	38	18	23	15	4	2
	3	42	27	73	58	35	19	23	17	4	2
	4	42	25	73	60	35	18	23	14	4	2
	5	42	24	72	58	37	21	26	15	4	2
	6	42	25	74	58	37	18	27	14	4	2

FIELD DATA FOR SKIDDOMETER (SKD)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSKDB2.DIK

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: SKD/DIK/B2S1									
SERIES 1	1	31	23	74	61	30	15	26	14	4	1
	2	34	22	72	60	30	16	25	13	4	1
	3	37	23	74	62	33	16	25	14	4	2
	4	38	23	74	62	34	17	24	13	4	1
	5	41	24	76	63	35	18	25	13	3	1
	6	40	22	74	62	33	18	24	13	4	2
BATCH 2		TEST TIRE CATALOG NUMBER: SKD/DIK/B2S2									
SERIES 2	1	33	21	69	59	28	14	16	10	2	0
	2	31	20	70	58	27	14	17	11	2	0
	3	30	20	67	59	26	13	17	10	2	0
	4	31	21	68	59	28	13	16	10	2	0
	5	33	22	68	58	30	15	18	9	3	0
	6	32	22	71	58	30	15	18	10	2	0

<table>
<tr><td colspan="12">FIELD DATA FOR MU METER (MUM)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATMUMB1.DIK</td></tr>
<tr><td rowspan="4">TEST
TIRE
MODE</td><td rowspan="4">SEQUENCE</td><td colspan="2">SEG D</td><td colspan="2">SEG B</td><td colspan="2">SEG A</td><td colspan="2">SEG K</td><td colspan="2">SEG P</td></tr>
<tr><td colspan="2">MPH</td><td colspan="2">MPH</td><td colspan="2">MPH</td><td colspan="2">MPH</td><td colspan="2">MPH</td></tr>
<tr><td>40</td><td>60</td><td>40</td><td>60</td><td>40</td><td>60</td><td>40</td><td>60</td><td>40</td><td>60</td></tr>
<tr><td colspan="10">FRICTION VALUES</td></tr>
<tr><td>BATCH 1</td><td></td><td colspan="10">TEST TIRE CATALOG NUMBER: MUM/DIK-L/B1S1
MUM/DIK-R/B1S1</td></tr>
<tr><td rowspan="6">SERIES 1</td><td>1</td><td>47</td><td>25</td><td>67</td><td>58</td><td>41</td><td>22</td><td>38</td><td>19</td><td>2</td><td>3</td></tr>
<tr><td>2</td><td>45</td><td>26</td><td>68</td><td>58</td><td>42</td><td>20</td><td>33</td><td>19</td><td>3</td><td>3</td></tr>
<tr><td>3</td><td>45</td><td>26</td><td>68</td><td>59</td><td>41</td><td>21</td><td>34</td><td>17</td><td>3</td><td>1</td></tr>
<tr><td>4</td><td>45</td><td>25</td><td>70</td><td>58</td><td>41</td><td>20</td><td>34</td><td>18</td><td>3</td><td>1</td></tr>
<tr><td>5</td><td>45</td><td>24</td><td>69</td><td>58</td><td>40</td><td>20</td><td>34</td><td>19</td><td>4</td><td>2</td></tr>
<tr><td>6</td><td>44</td><td>25</td><td>69</td><td>59</td><td>40</td><td>20</td><td>31</td><td>18</td><td>4</td><td>2</td></tr>
<tr><td>BATCH 1</td><td></td><td colspan="10">TEST TIRE CATALOG NUMBER: MUM/DIK-L/B1S2
MUM/DIK-R/B1S2</td></tr>
<tr><td rowspan="6">SERIES 2</td><td>1</td><td>45</td><td>30</td><td>69</td><td>60</td><td>40</td><td>23</td><td>33</td><td>20</td><td>3</td><td>2</td></tr>
<tr><td>2</td><td>45</td><td>28</td><td>70</td><td>60</td><td>39</td><td>21</td><td>35</td><td>20</td><td>2</td><td>2</td></tr>
<tr><td>3</td><td>47</td><td>28</td><td>70</td><td>61</td><td>38</td><td>20</td><td>34</td><td>18</td><td>2</td><td>2</td></tr>
<tr><td>4</td><td>44</td><td>25</td><td>70</td><td>60</td><td>40</td><td>20</td><td>35</td><td>18</td><td>3</td><td>2</td></tr>
<tr><td>5</td><td>42</td><td>23</td><td>70</td><td>60</td><td>40</td><td>20</td><td>32</td><td>18</td><td>3</td><td>2</td></tr>
<tr><td>6</td><td>42</td><td>23</td><td>70</td><td>61</td><td>38</td><td>20</td><td>30</td><td>18</td><td>3</td><td>2</td></tr>
</table>

FIELD DATA FOR MU METER (MUM)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATMUMB2.DIK

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: MUM/DIK-L/B2S1 MUM/DIK-R/B2S1									
SERIES 1	1	42	23	69	60	41	21	30	16	6	3
	2	40	23	69	60	37	21	30	18	6	3
	3	41	22	69	61	36	20	30	15	6	3
	4	43	24	69	60	34	20	30	13	7	3
	5	41	22	69	60	37	19	30	18	5	3
	6	40	20	69	60	35	20	28	16	5	3
BATCH 2		TEST TIRE CATALOG NUMBER: MUM/DIK-L/B2S2 MUM/DIK-R/B2S2									
SERIES 2	1	42	31	67	58	39	29	30	19	3	1
	2	43	26	67	58	38	21	30	19	3	2
	3	42	28	68	58	38	19	30	19	3	2
	4	44	23	67	58	40	20	30	18	3	2
	5	43	25	68	59	40	20	30	20	3	2
	6	41	22	68	58	39	20	29	18	3	3

APPENDIX J

SUMMARY OF FIELD DATA LOG FOR DUNLOP TIRE

FIELD DATA LOG FOR RUNWAY FRICTION TESTER (RFT)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATRFTB1.DUN

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: RFT/DUN/B1S1									
SERIES 1	1	46	32	62	55	42	29	28	22	4	3
	2	46	32	62	54	42	29	26	21	4	3
	3	47	32	62	53	41	29	26	20	4	2
	4	47	32	61	54	42	30	25	19	4	2
	5	46	32	62	53	42	29	26	19	na	2
	6	45	31	61	53	41	29	26	19	4	2
BATCH 1		TEST TIRE CATALOG NUMBER: RFT/DUN/B1S2									
SERIES 2	1	46	38	62	55	43	32	30	22	7	2
	2	47	36	61	55	43	32	29	25	7	3
	3	46	38	58	54	43	31	28	25	7	3
	4	46	36	60	54	42	32	30	21	6	3
	5	46	36	60	54	42	31	29	22	7	3
	6	47	36	60	53	42	31	32	21	7	3

FIELD DATA LOG FOR RUNWAY FRICTION TESTER (RFT) FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR FILE: DATRFTB2.DUN											
TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: RFT/DUN/B2S1									
SERIES 1	1										
	2										
	3										
	4										
	5										
	6										
BATCH 2		TEST TIRE CATALOG NUMBER: RFT/DUN/B2S2									
SERIES 2	1										
	2										
	3										
	4										
	5										
	6										

NOTE: DATA NOT OBTAINED DUE TO ACCIDENTAL DAMAGE TO VEHICLE.

FIELD DATA LOG FOR SAAB FRICTION TESTER (SFT)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSFTB1.DUN

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: SFT/DUN/B1S1									
SERIES 1	1	68	50	90	80	64	38	40	23	2	1
	2	68	48	87	78	60	35	38	22	1	1
	3	69	47	88	78	58	37	40	22	2	1
	4	70	47	90	78	60	34	40	22	1	1
	5	67	45	88	78	60	37	43	22	1	1
	6	67	45	88	77	58	35	38	20	1	1
BATCH 1		TEST TIRE CATALOG NUMBER: SFT/DUN/B1S2									
SERIES 2	1	62	44	82	75	55	38	39	19	1	0
	2	64	43	84	75	60	39	33	22	1	0
	3	68	44	85	75	60	34	30	21	1	0
	4	66	44	82	75	58	33	38	20	1	0
	5	63	44	82	74	57	35	36	21	1	0
	6	61	43	80	74	58	33	42	20	1	0

FIELD DATA LOG FOR SAAB FRICTION TESTER (SFT)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSFTB2.DUN

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: SFT/DUN/B2S1									
SERIES 1	1	57	38	82	68	50	28	30	15	0	0
	2	60	38	82	68	50	27	24	15	0	0
	3	57	38	83	68	52	27	24	15	0	0
	4	58	35	84	70	48	27	30	20	0	0
	5	58	35	84	67	48	27	27	17	0	0
	6	57	34	82	67	48	27	30	15	0	0
BATCH 2		TEST TIRE CATALOG NUMBER: SFT/DUN/B2S2									
SERIES 2	1	57	42	80	69	46	30	36	19	0	0
	2	57	40	82	68	47	29	36	19	0	0
	3	57	38	78	70	48	28	37	19	0	0
	4	57	38	80	70	48	27	40	18	0	0
	5	56	37	80	68	46	28	38	18	0	0
	6	57	38	79	67	48	26	36	18	0	0

FIELD DATA FOR SKIDDOMETER (SKD)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATSKDB1.DUN

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: SKD/DUN/B1S1									
SERIES 1	1	59	33	87	74	62	32	32	19	4	3
	2	62	37	86	75	60	33	32	19	4	3
	3	62	39	86	74	61	38	29	17	4	3
	4	64	39	87	74	61	36	28	18	4	3
	5	62	38	87	74	58	36	30	18	4	3
	6	62	38	87	74	58	35	34	18	5	4
BATCH 1		TEST TIRE CATALOG NUMBER: SKD/DUN/B1S2									
SERIES 2	1	56	41	85	73	52	30	34	16	3	1
	2	57	40	83	75	55	33	31	18	3	1
	3	58	38	82	75	53	32	31	16	3	1
	4	57	38	83	73	53	33	30	17	3	1
	5	57	40	82	75	53	35	31	17	3	1
	6	58	39	83	75	54	34	27	17	3	1

FIELD DATA FOR SKIDDOMETER (SKD) FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR FILE: DATSKDB2.DUN											
TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: SKD/DUN/B2S1									
SERIES 1	1	48	36	78	68	42	26	34	14	3	1
	2	50	34	78	67	45	28	31	14	3	1
	3	50	32	78	68	47	27	27	14	4	1
	4	52	34	78	70	48	26	27	14	4	2
	5	55	34	77	68	50	26	24	14	4	1
	6	52	34	80	66	46	27	26	14	3	1
BATCH 2		TEST TIRE CATALOG NUMBER: SKD/DUN/B2S2									
SERIES 2	1	58	38	84	75	51	32	26	16	4	2
	2	57	37	85	72	50	31	28	16	4	2
	3	58	40	84	73	54	30	27	17	4	2
	4	58	40	82	74	52	35	26	16	4	2
	5	56	40	82	74	54	34	26	17	4	2
	6	60	40	80	75	52	36	26	17	5	2

FIELD DATA FOR MU METER (MUM)
FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR

FILE: DATMUMB1.DUN

TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 1		TEST TIRE CATALOG NUMBER: MUM/DUN-L/B1S1 MUM/DUN-R/B1S1									
SERIES 1	1	37	21	64	53	32	16	20	13	3	0
	2	35	20	62	53	31	16	20	12	3	0
	3	35	19	63	53	32	16	20	11	2	0
	4	38	20	64	52	35	18	20	11	4	1
	5	38	21	64	52	33	18	20	11	3	1
	6	38	20	64	52	32	18	20	12	3	1
BATCH 1		TEST TIRE CATALOG NUMBER: MUM/DUN-L/B1S2 MUM/DUN-R/B1S2									
SERIES 2	1	45	40	72	65	50	32	33	25	4	1
	2	50	38	73	64	44	30	32	20	5	2
	3	49	35	73	66	46	30	31	21	5	2
	4	48	33	72	66	45	29	30	19	5	2
	5	49	32	72	65	44	30	30	20	5	2
	6	48	33	73	65	44	29	30	20	5	3

FIELD DATA FOR MU METER (MUM) FRICTION TESTS CONDUCTED AT 40/60 MILES PER HOUR FILE: DATMUMB2.DUN											
TEST TIRE MODE	SEQUENCE	SEG D		SEG B		SEG A		SEG K		SEG P	
		MPH		MPH		MPH		MPH		MPH	
		40	60	40	60	40	60	40	60	40	60
		FRICTION VALUES									
BATCH 2		TEST TIRE CATALOG NUMBER: MUM/DUN-L/B2S1 MUM/DUN-R/B2S1									
SERIES 1	1	43	30	68	61	39	27	27	18	8	1
	2	41	27	67	60	38	21	25	17	8	1
	3	41	28	70	60	36	21	28	17	7	2
	4	41	28	67	60	37	21	24	18	6	2
	5	42	31	71	60	36	31	26	15	5	2
	6	41	28	71	60	36	28	24	18	6	2
BATCH 2		TEST TIRE CATALOG NUMBER: MUM/DUN-L/B2S2 MUM/DUN-R/B2S2									
SERIES 2	1	49	29	70	60	41	29	28	18	7	2
	2	43	29	70	60	40	29	27	17	8	2
	3	42	na	67	na	39	na	27	18	7	3
	4	na	na	na	na	na	na	27	18	8	2
	5	na	na	na	na	na	na	27	20	8	3
	6	na	na	na	na	na	na	28	19	8	4

NOTE: DATA NOT OBTAINED DUE TO TIME CONSTRAINTS TO COMPLETE WORK FOR THE DAY.

APPENDIX K

EXAMPLE OF DATA ENTRY INFORMATION

APPENDIX K

FIELD DATA ENTRY INFORMATION
FOR EACH TEST RUN

LOCATION: Wallops Flight Facility; Wallops Island, Virginia

TEST DATE:

TIME:

TEST SITE: (DBA) (K) (P)

FRICTION DEVICE: (SFT) (SKD) (RFT) (MUM)

TEST SPEED: (40 MPH) (60MPH)

TIRE: (DUNLOP) (McCREARY) (DIKO) (AERO)

TIRE CATALOG NUMBER: (SFT/DUN/B1S1) (SKD/MAC/B2S1)
(RFT/DIK/B2S2) (MUM/DUN/B1S2)

BATCH: (1) (2)

SERIES: (1) (2)

TEST RUN NUMBER: 1 THROUGH 6

APPENDIX L

REGRESSION ANALYSIS CHARTS

SHOWING GRAPHIC PRESENTATION

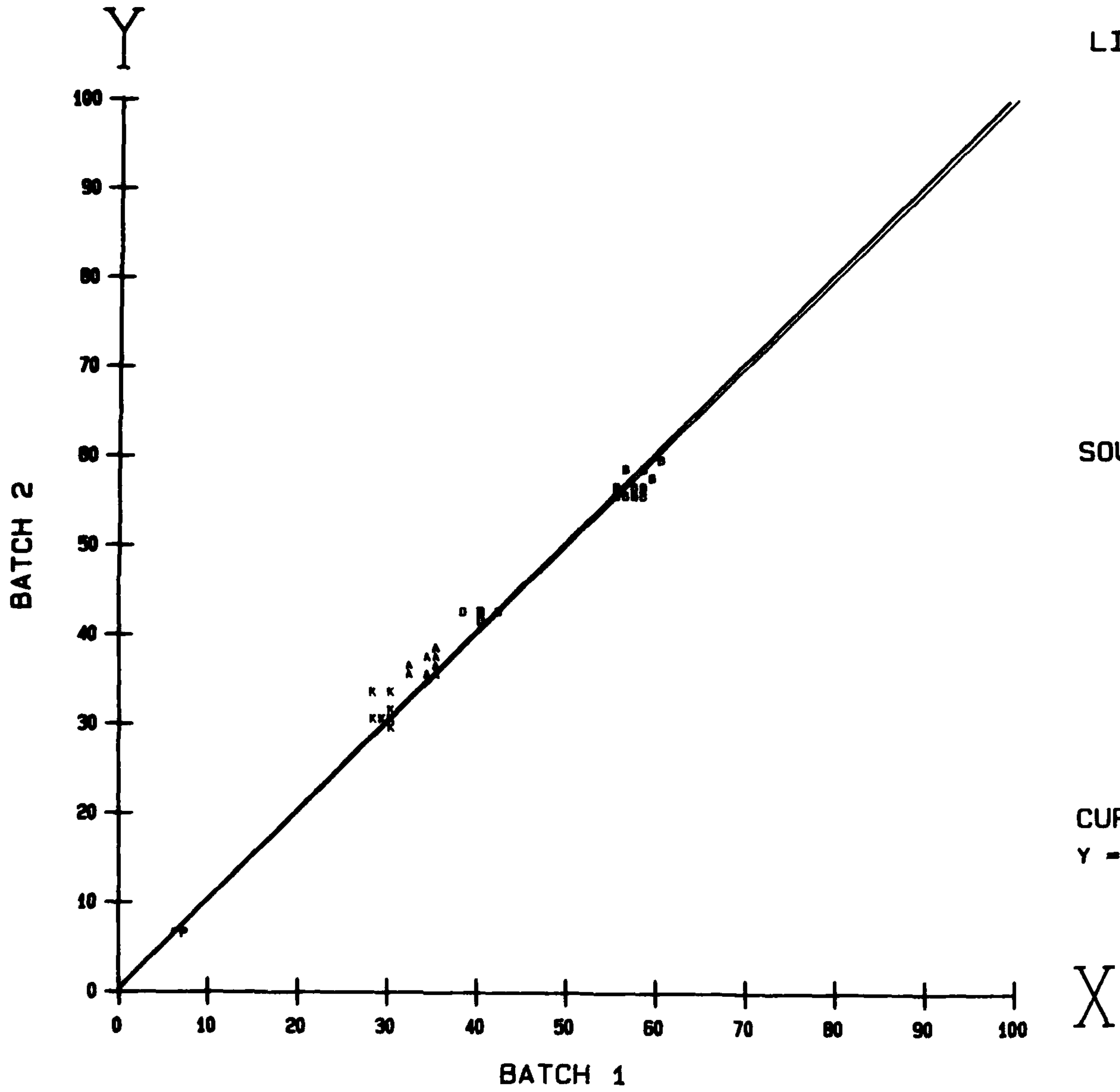
OF THE PERFORMANCE AND RELIABILITY OF THE McCREARY TIRE

MOUNTED ON FOUR FRICTION FRICTION DEVICES

USING SELF WATER SYSTEM

AT SPEEDS OF 40 AND 60 MPH

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.3916
COEFFICIENT B	=	1.0057
COEF. OF CORR.	=	0.9945
COEF. OF DET.	=	0.9891
STD. ERR. EST.	=	1.7522

REGRESSION LINE = ______

X - Y LINE = ______

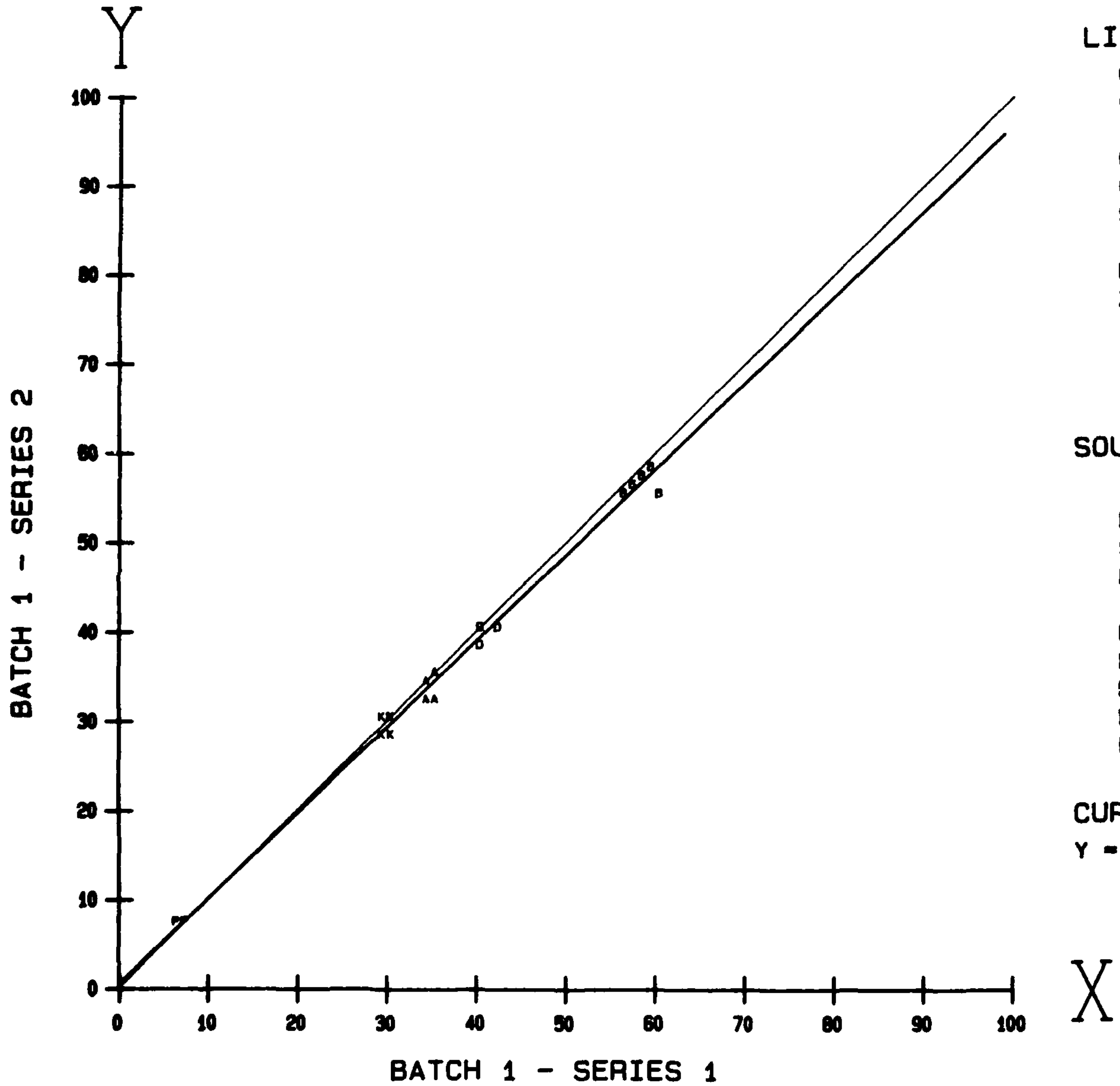
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40RFMC1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	6 TO 60
RANGE OF DATA	:	6 TO 59

CURVE TYPE : LINEAR

Y = 0.392 + 1.006X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 0.5692
COEFFICIENT B = 0.9635

COEF. OF CORR. = 0.9978
COEF. OF DET. = 0.9956
STD. ERR. EST. = 1.0970

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

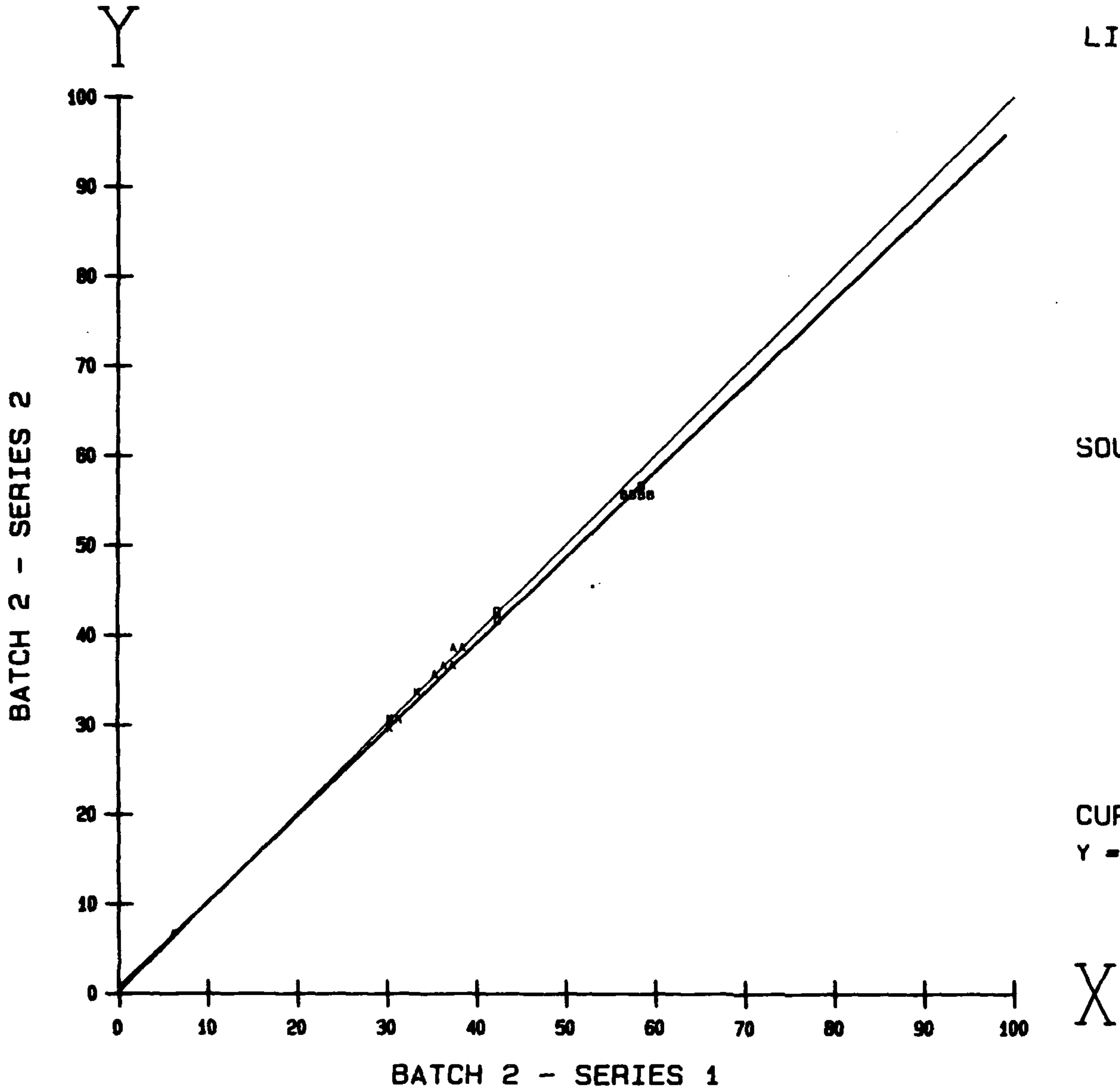
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40RFMC11.12

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 6 TO 60
RANGE OF DATA : 7 TO 58

CURVE TYPE : LINEAR

Y = 0.569 + 0.964X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.6939
COEFFICIENT B	=	0.9615
COEF. OF CORR.	=	0.9988
COEF. OF DET.	=	0.9977
STD. ERR. EST.	=	0.8108

REGRESSION LINE = ———
X - Y LINE = ———

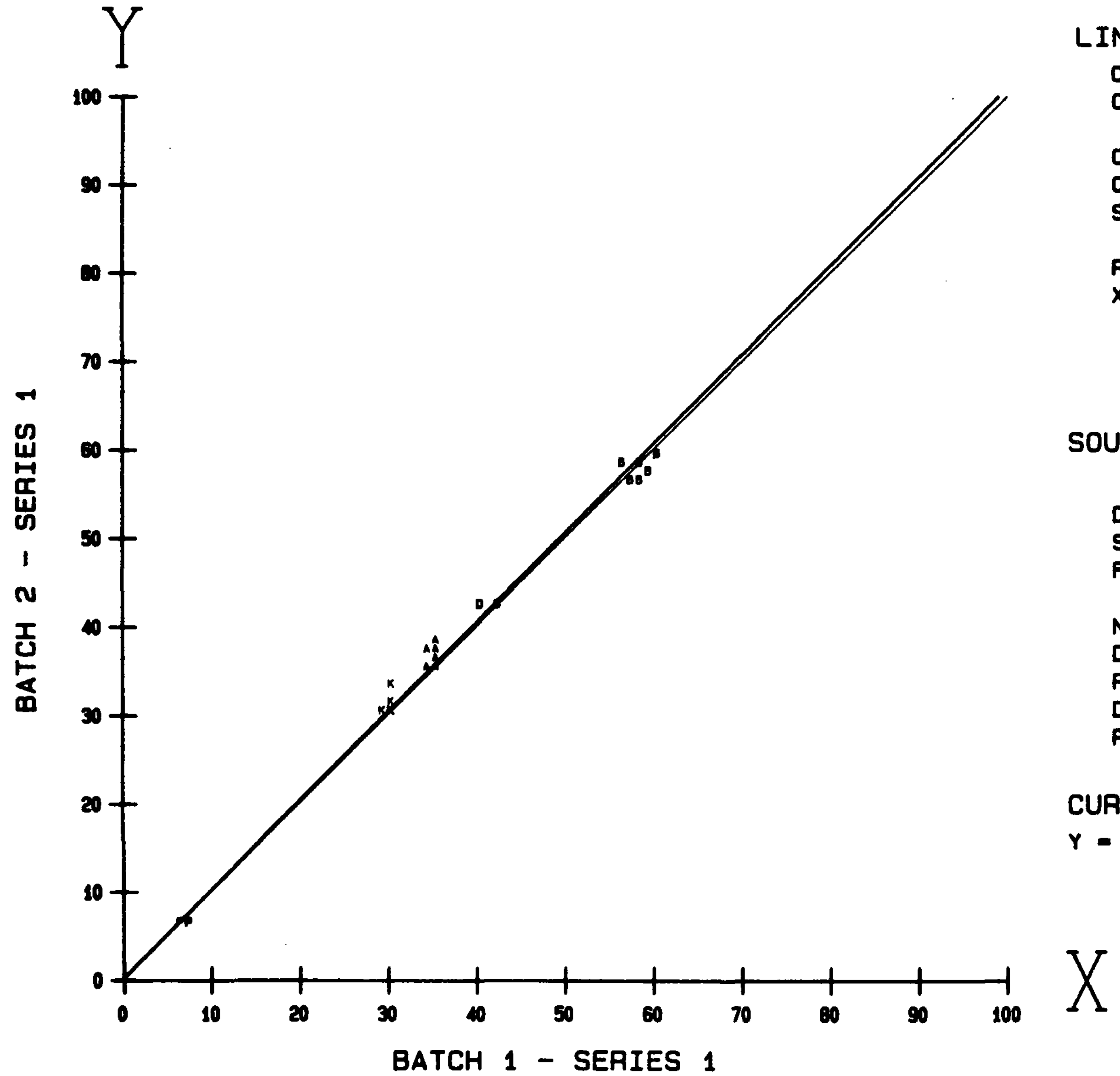
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40RFMC21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	6 TO 59
RANGE OF DATA	:	6 TO 56

CURVE TYPE : LINEAR

$Y = 0.694 + 0.961X$

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.2641
COEFFICIENT B	=	1.0089
COEF. OF CORR.	=	0.9962
COEF. OF DET.	=	0.9924
STD. ERR. EST.	=	1.5202
REGRESSION LINE	=	———
X - Y LINE	=	———

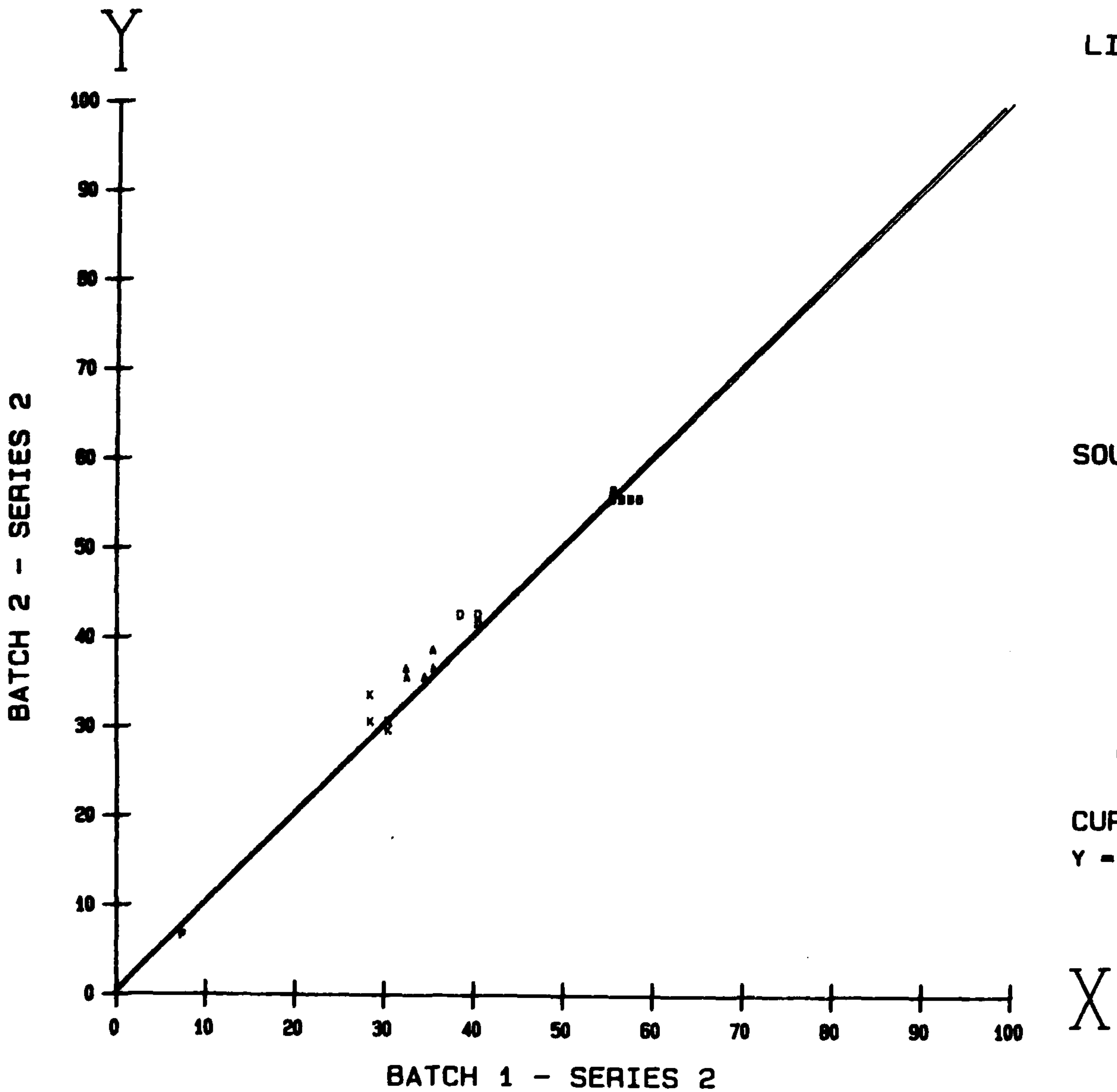
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40RFMC11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	.0 TO 100
DOMAIN OF DATA	:	6 TO 60
RANGE OF DATA	:	6 TO 59

CURVE TYPE : LINEAR

Y = 0.264 + 1.008X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.5232
COEFFICIENT B	=	1.0023
COEF. OF CORR.	=	0.9928
COEF. OF DET.	=	0.9856
STD. ERR. EST.	=	2.0103

REGRESSION LINE = ______

X - Y LINE = ______

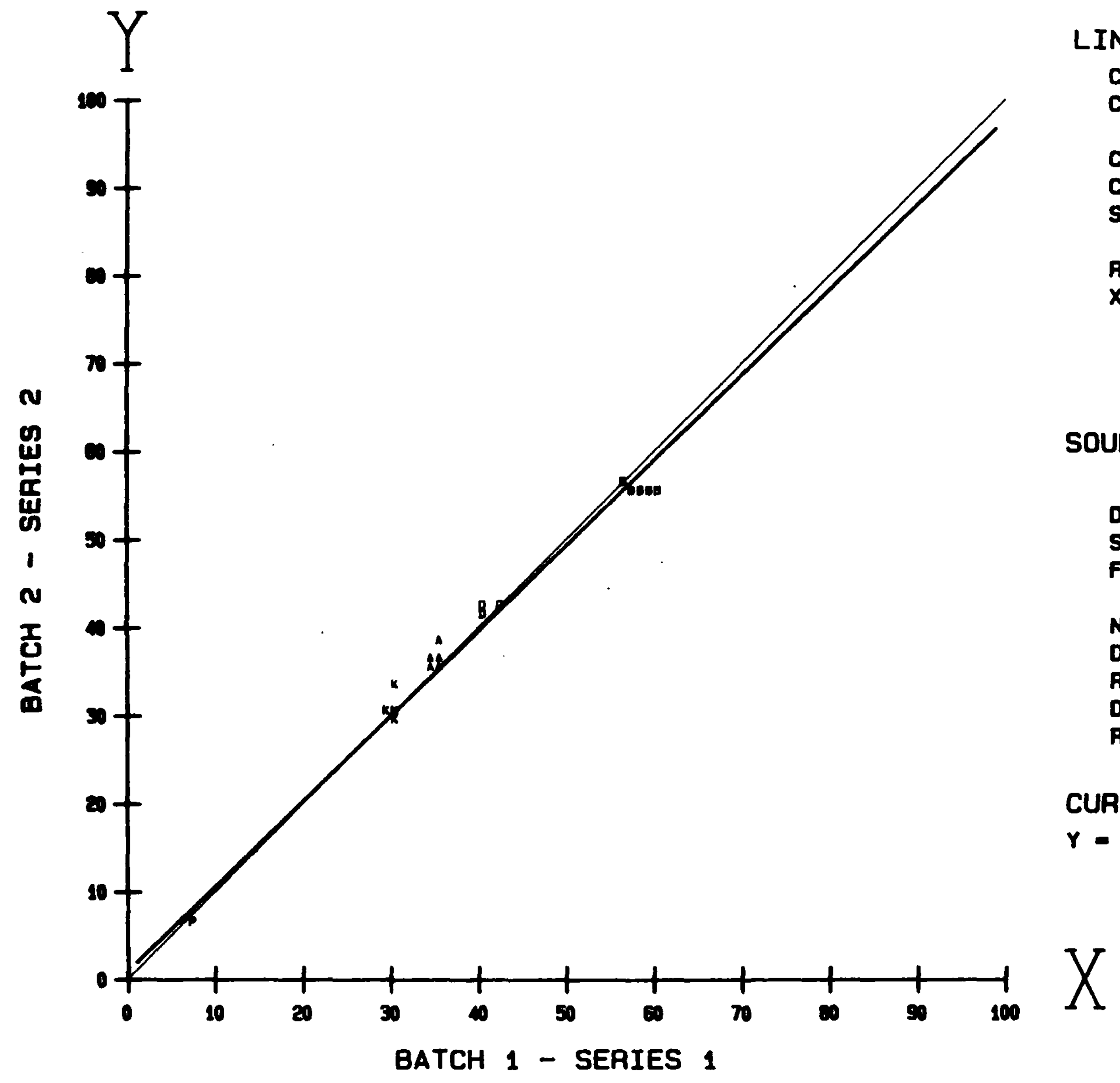
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40RFMC12.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	7 TO 58
RANGE OF DATA	:	6 TO 56

CURVE TYPE : LINEAR

Y = 0.523 + 1.002X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 1.0017
COEFFICIENT B = 0.9685

COEF. OF CORR. = 0.9934
COEF. OF DET. = 0.9868
STD. ERR. EST. = 1.9242

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

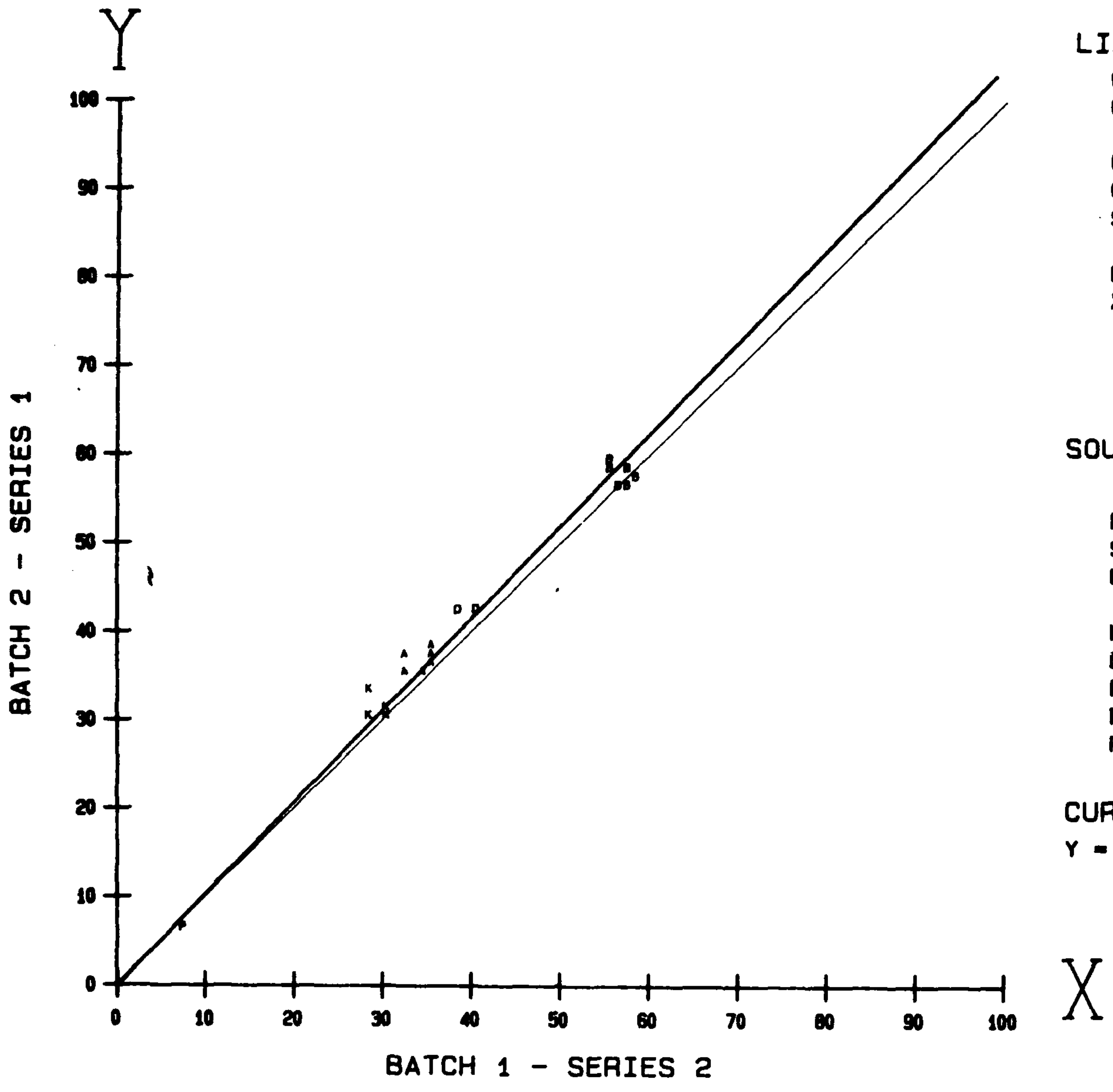
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40RFMC11.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 6 TO 60
RANGE OF DATA : 6 TO 56

CURVE TYPE : LINEAR

Y = 1.002 + 0.968X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.2056
COEFFICIENT B	=	1.0433
COEF. OF CORR.	=	0.9947
COEF. OF DET.	=	0.9895
STD. ERR. EST.	=	1.7822

REGRESSION LINE = ———
X - Y LINE = ———

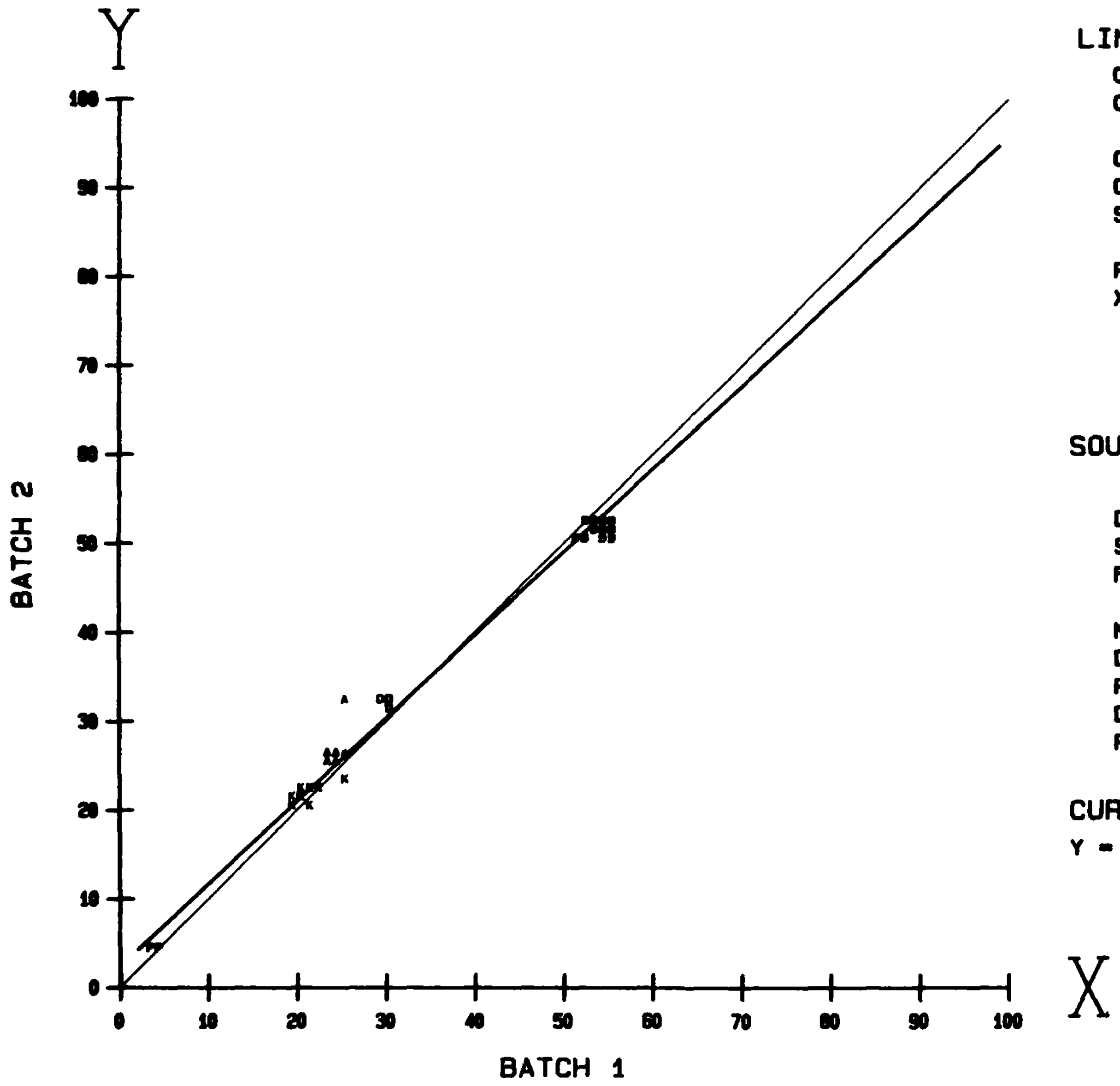
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40RFMC12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	7 TO 58
RANGE OF DATA	:	6 TO 59

CURVE TYPE : LINEAR

Y = - 0.206 + 1.043X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 2.3476
COEFFICIENT B = 0.9338

COEF. OF CORR. = 0.9940
COEF. OF DET. = 0.9880
STD. ERR. EST. = 1.6967

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

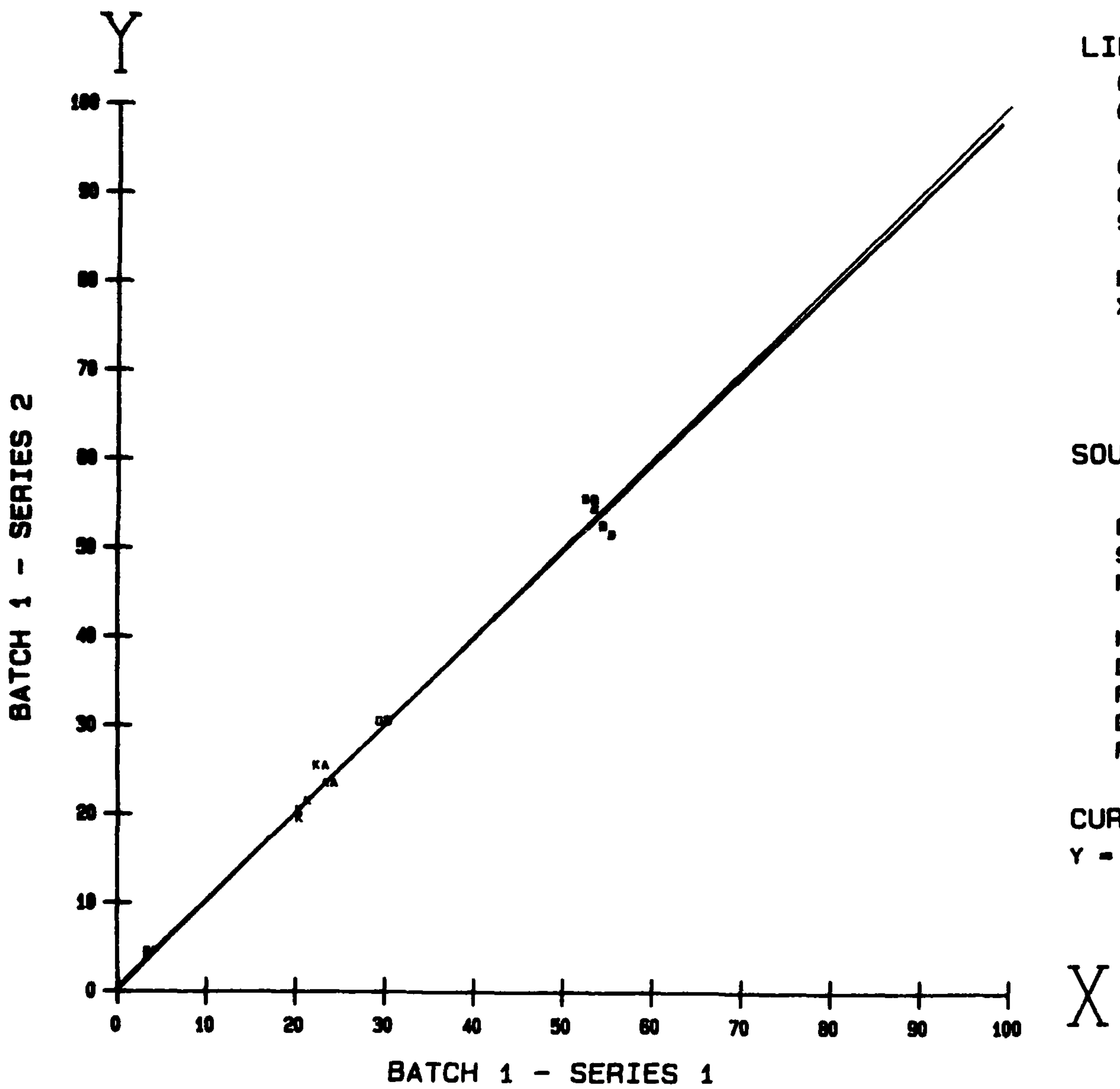
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60RFMC1.2

NUMBER OF POINTS : 60
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 55
RANGE OF DATA : 4 TO 52

CURVE TYPE : LINEAR

Y = 2.348 + 0.934X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 0.4867
COEFFICIENT B = 0.9852

COEF. OF CORR. = 0.9961
COEF. OF DET. = 0.9922
STD. ERR. EST. = 1.4754

REGRESSION LINE = ________
X - Y LINE = ________

SOURCE DATA FILE INFO

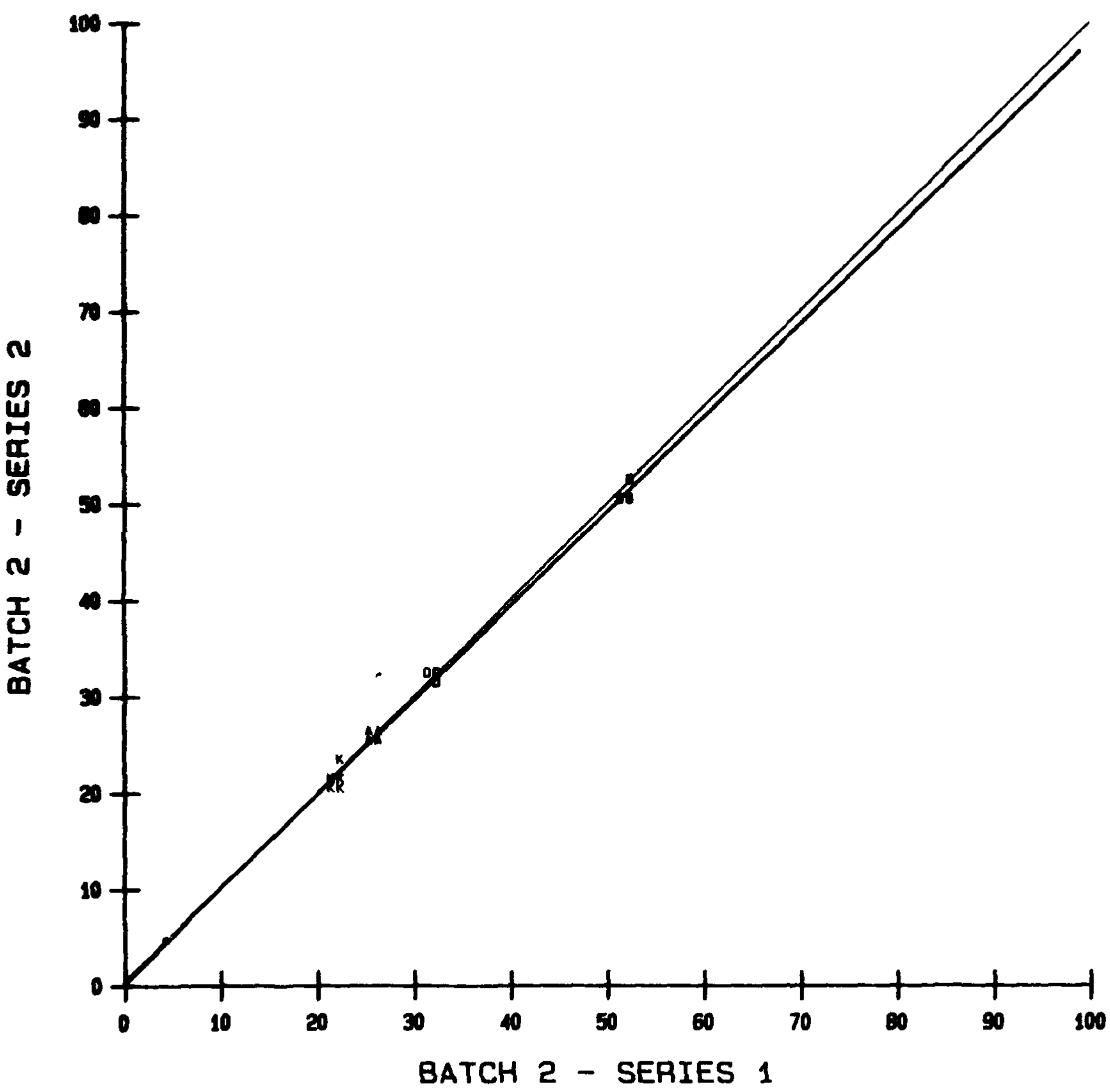
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60RFMC11.12

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 2 TO 55
RANGE OF DATA : 2 TO 55

CURVE TYPE : LINEAR

Y = 0.487 + 0.985X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 0.4600
COEFFICIENT B = 0.9754

COEF. OF CORR. = 0.9960
COEF. OF DET. = 0.9920
STD. ERR. EST. = 1.3952

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

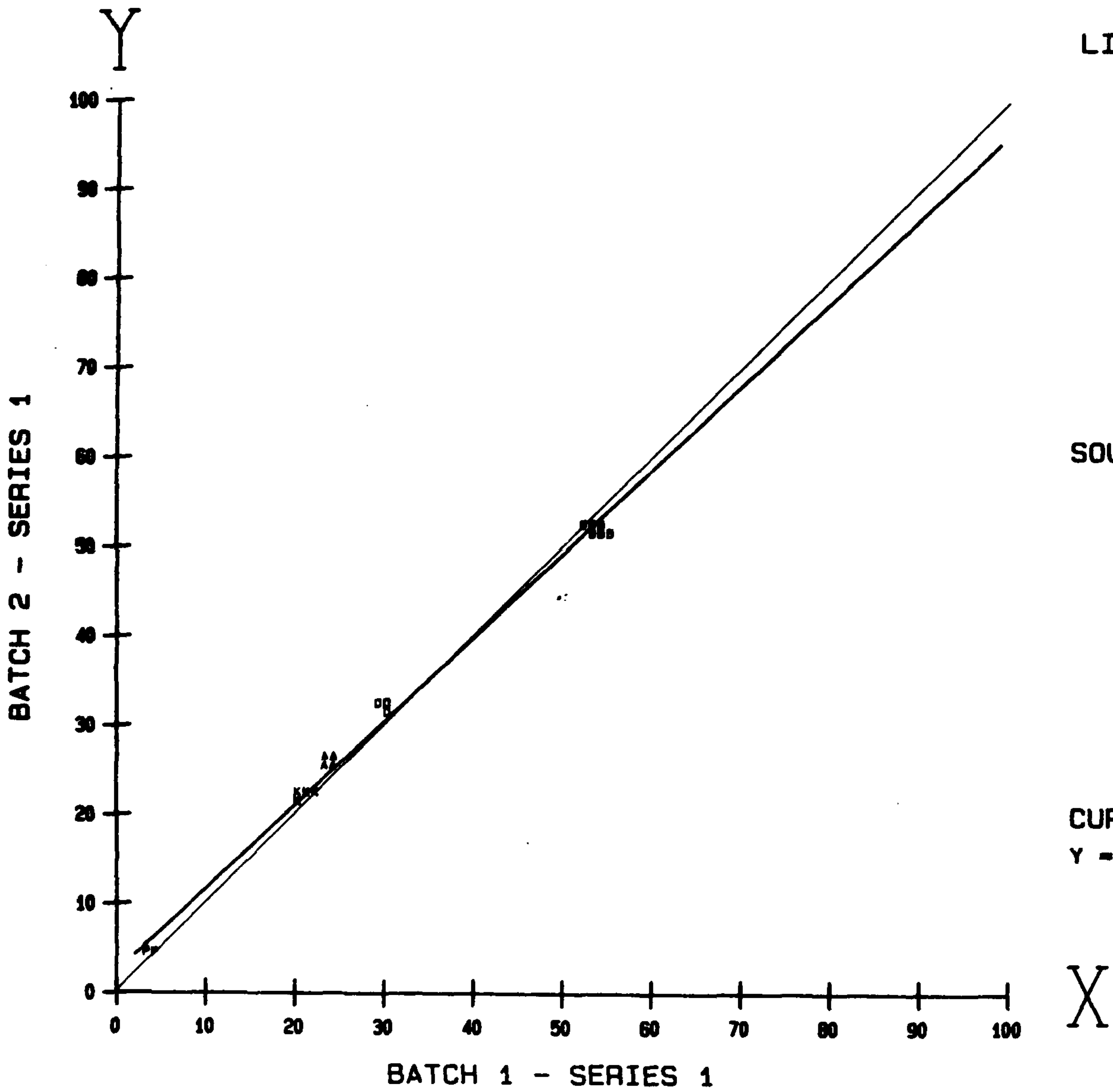
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60RFMC21.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 4 TO 55
RANGE OF DATA : 4 TO 52

CURVE TYPE : LINEAR

Y = 0.46 + 0.975X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.3203
COEFFICIENT B	=	0.9405
COEF. OF CORR.	=	0.9963
COEF. OF DET.	=	0.9925
STD. ERR. EST.	=	1.3768

REGRESSION LINE = ________

X - Y LINE = ________

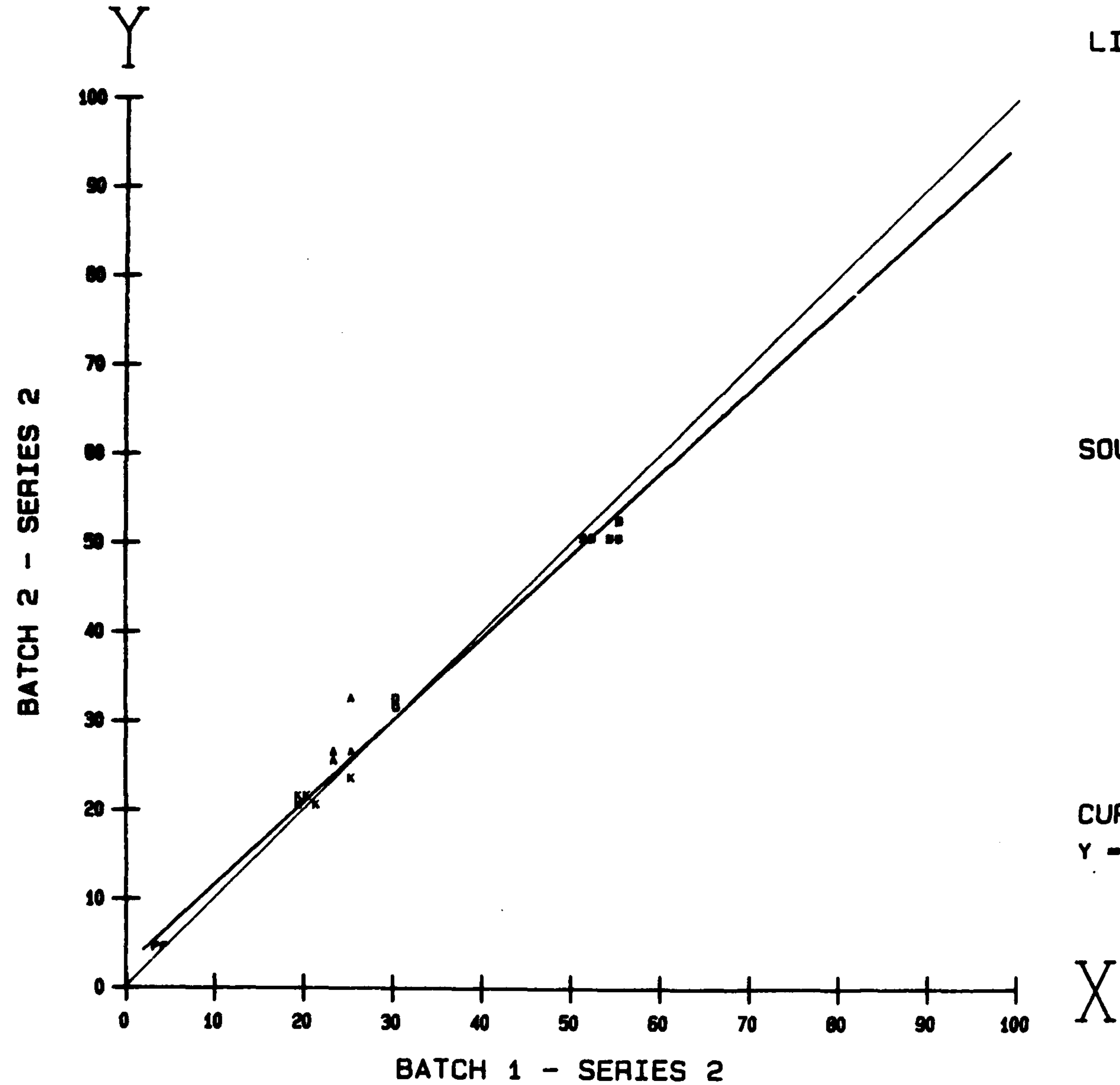
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60RFMC11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 55
RANGE OF DATA	:	4 TO 55

CURVE TYPE : LINEAR

Y = 2.32 + 0.94X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.3780
COEFFICIENT B	=	0.9270
COEF. OF CORR.	=	0.9918
COEF. OF DET.	=	0.9836
STD. ERR. EST.	=	1.9991

REGRESSION LINE = ______
X - Y LINE = ______

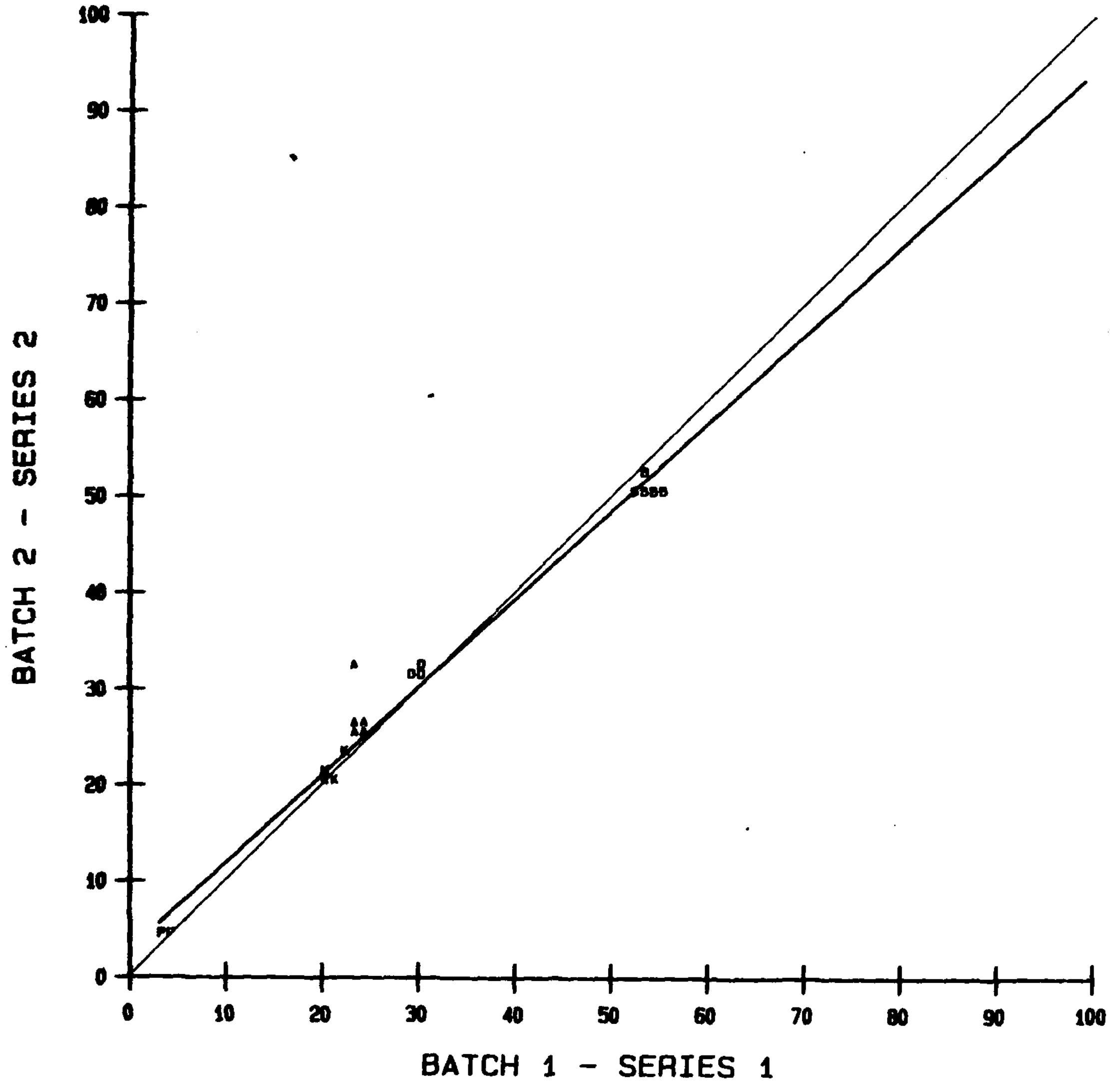
SOURCE DATA FILE INFO

DISK DRIVE	: A:
SUBDIRECTORY	: \
FILENAME	: 60RFMC12.22
NUMBER OF POINTS	: 30
DOMAIN OF PLOT	: 0 TO 100
RANGE OF PLOT	: 0 TO 100
DOMAIN OF DATA	: 3 TO 55
RANGE OF DATA	: 4 TO 52

CURVE TYPE : LINEAR

Y = 2.378 + 0.927X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.7721
COEFFICIENT B	=	0.9155
COEF. OF CORR.	=	0.9903
COEF. OF DET.	=	0.9806
STD. ERR. EST.	=	2.1742

REGRESSION LINE = ________
X - Y LINE = ________

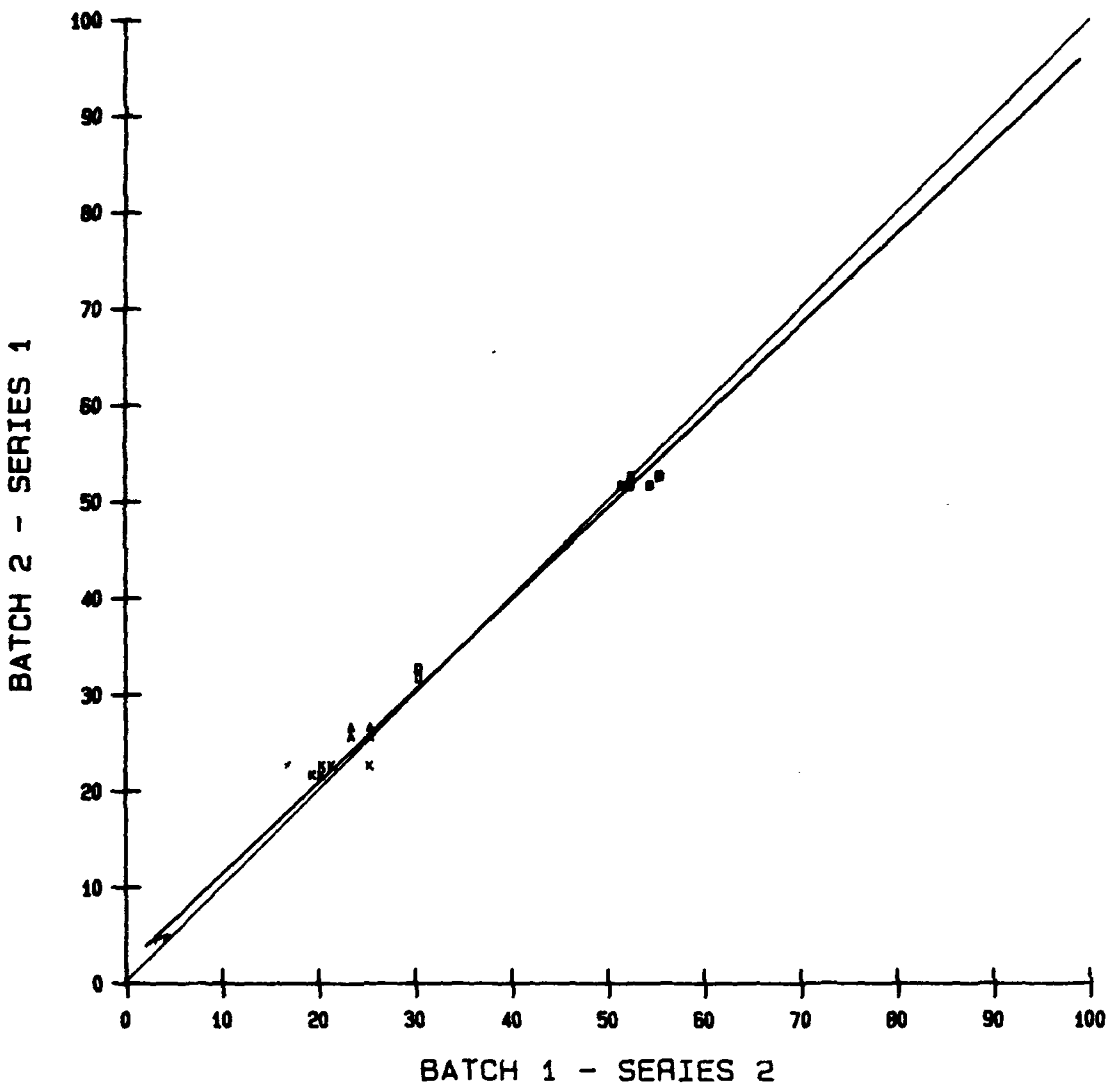
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60RFMC11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 55
RANGE OF DATA	:	4 TO 52

CURVE TYPE : LINEAR

Y = 2.772 + 0.916X

McCREARY TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	1.9816
COEFFICIENT B	=	0.9498
COEF. OF CORR.	=	0.9951
COEF. OF DET.	=	0.9903
STD. ERR. EST.	=	1.5697

REGRESSION LINE = ______
X - Y LINE = ______

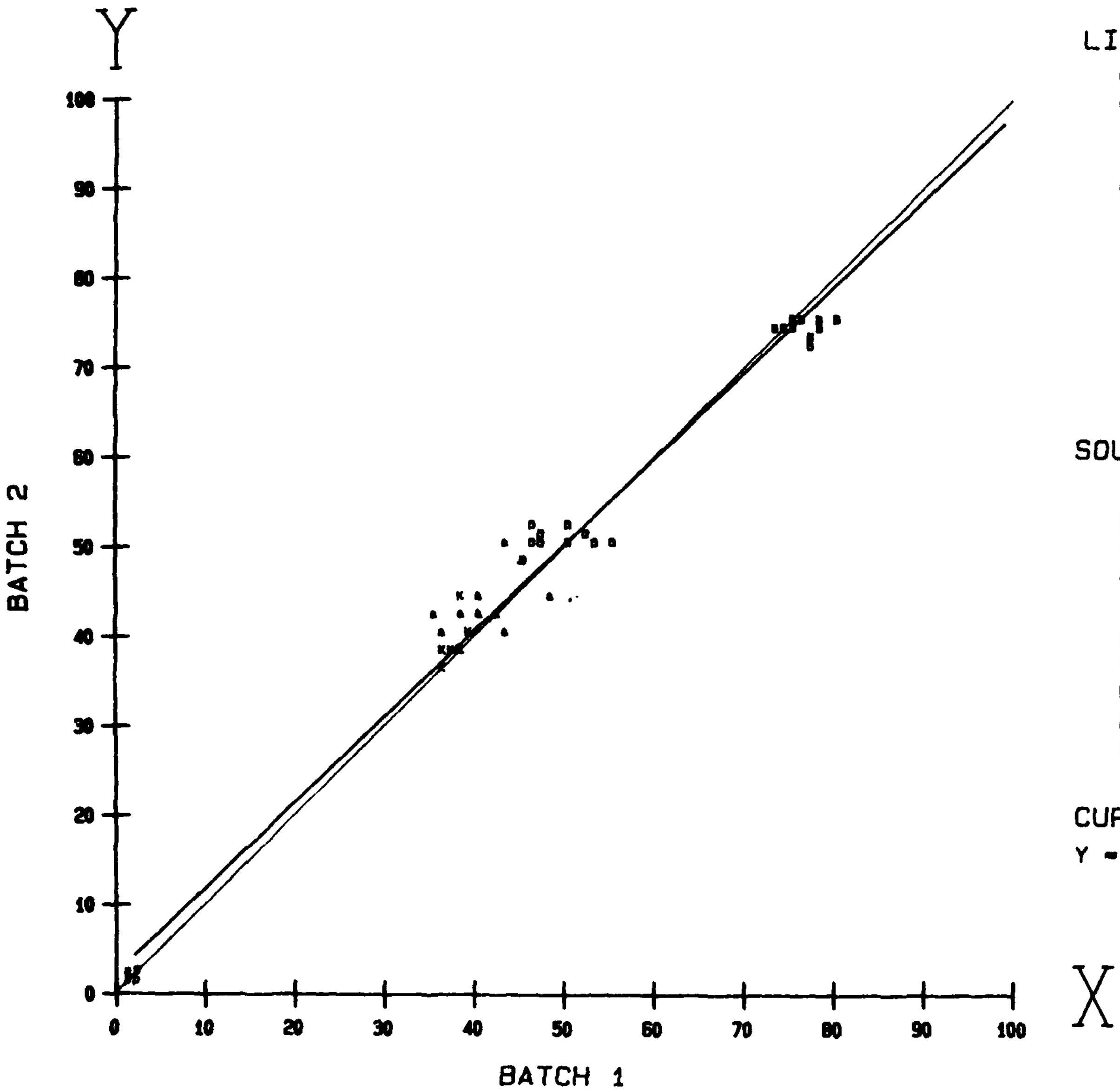
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60RFMC12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 55
RANGE OF DATA	:	4 TO 55

CURVE TYPE : LINEAR

$Y = 1.982 + 0.95X$

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.3066
COEFFICIENT B	=	0.9606
COEF. OF CORR.	=	0.9935
COEF. OF DET.	=	0.9871
STD. ERR. EST.	=	2.7039

REGRESSION LINE = ______

X - Y LINE = ______

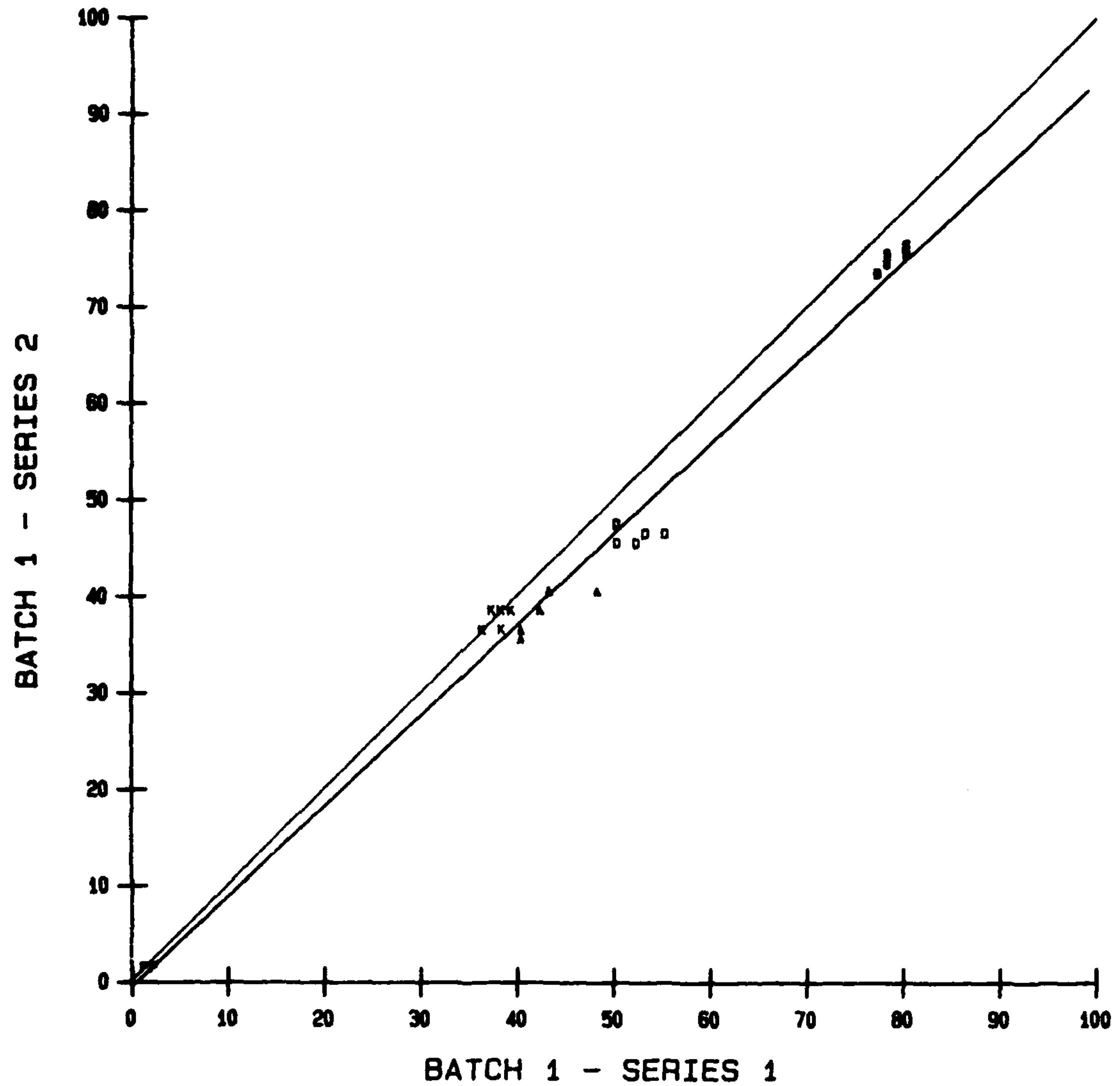
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFMC1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 80
RANGE OF DATA	:	1 TO 75

CURVE TYPE : LINEAR

Y = 2.307 + 0.961X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.4693
COEFFICIENT B	=	0.9402
COEF. OF CORR.	=	0.9960
COEF. OF DET.	=	0.9920
STD. ERR. EST.	=	2.1684

REGRESSION LINE = ______
X - Y LINE = ______

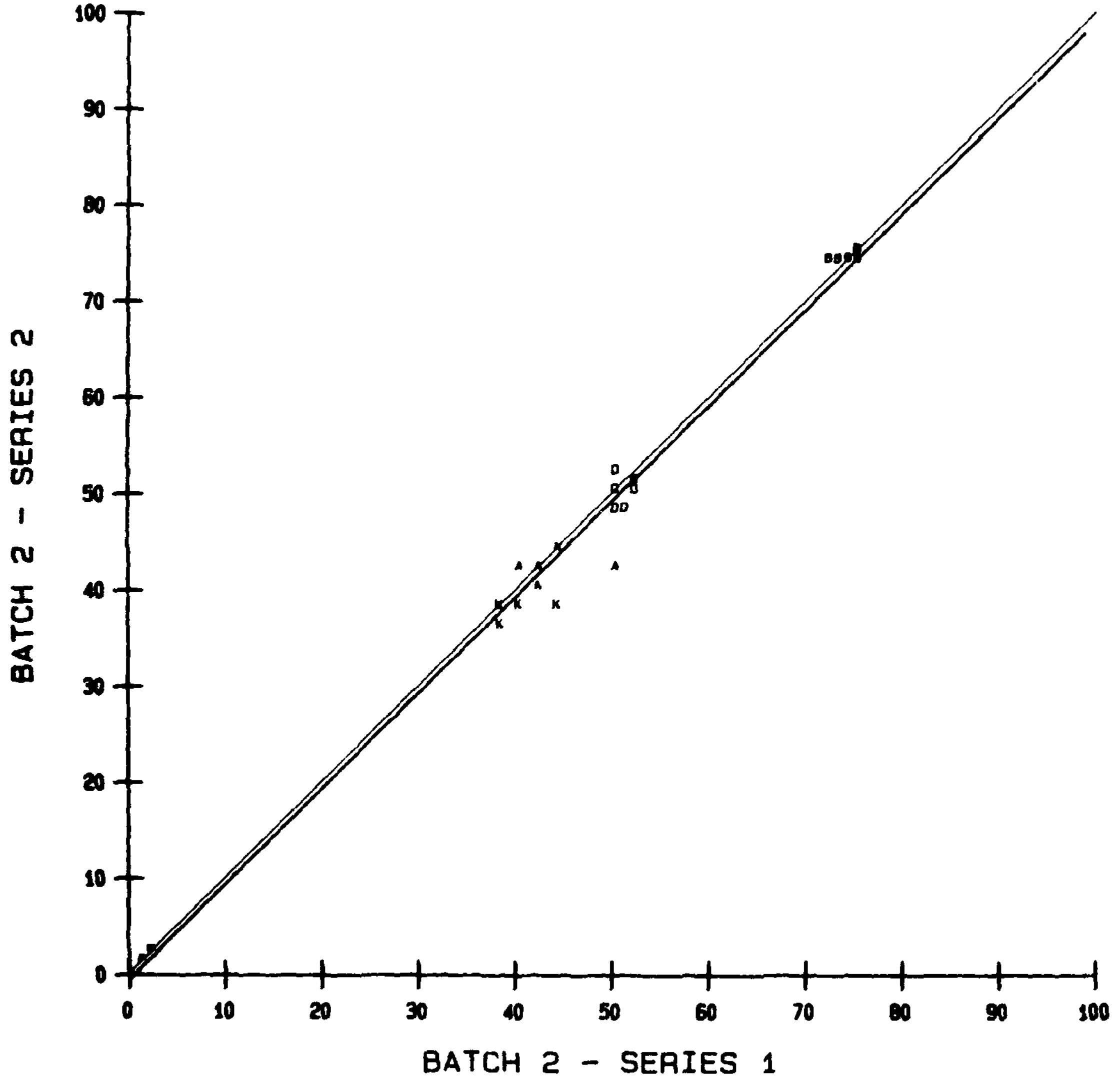
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFMC11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 80
RANGE OF DATA	:	1 TO 76

CURVE TYPE : LINEAR

Y = - 0.469 + 0.94X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -0.5553
COEFFICIENT B = 0.9957

COEF. OF CORR. = 0.9961
COEF. OF DET. = 0.9922
STD. ERR. EST. = 2.1345

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

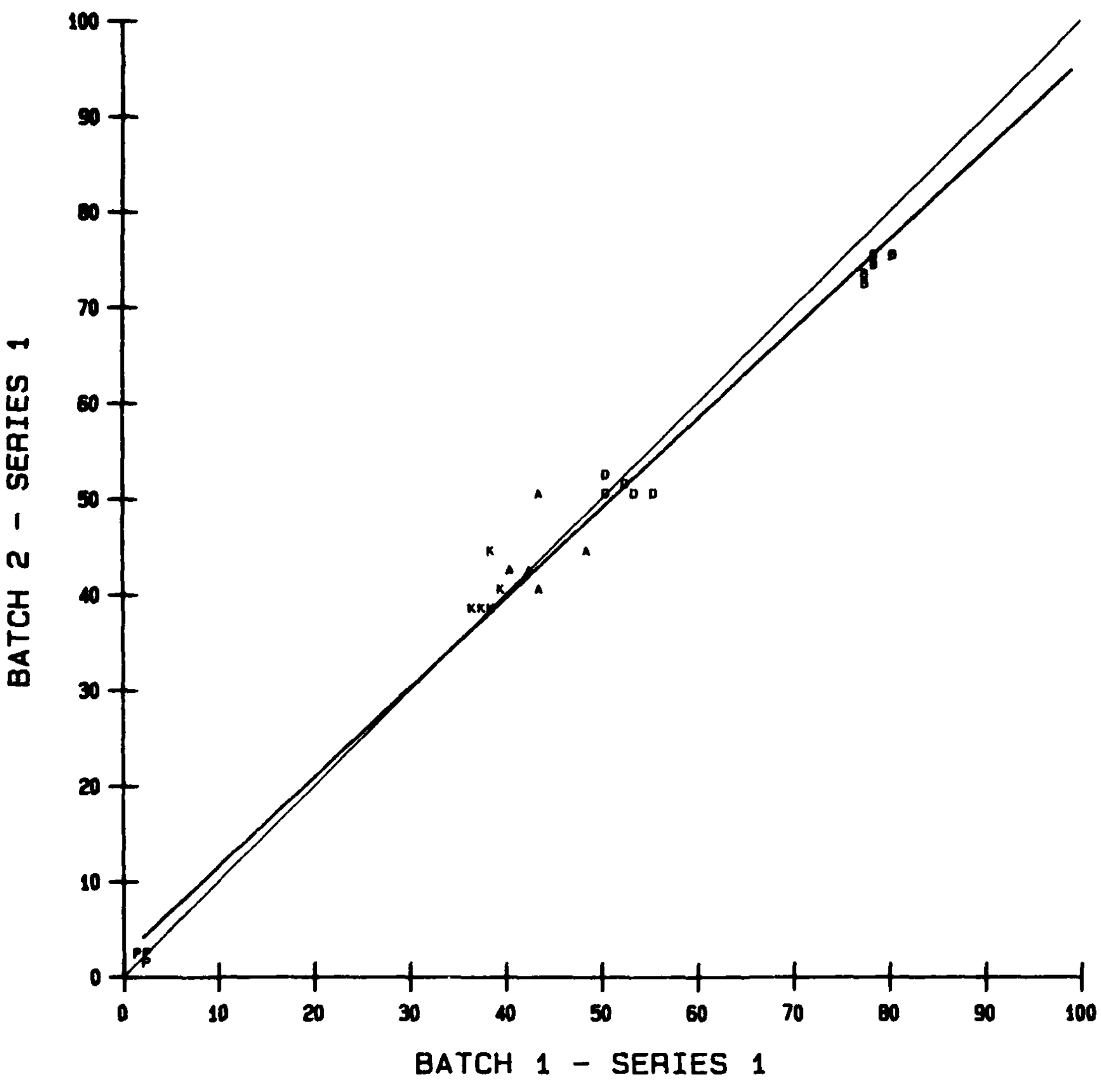
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40SFMC21.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 1 TO 75
RANGE OF DATA : 1 TO 75

CURVE TYPE : LINEAR

Y = - 0.555 + 0.996X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.2734
COEFFICIENT B	=	0.9360
COEF. OF CORR.	=	0.9936
COEF. OF DET.	=	0.9873
STD. ERR. EST.	=	2.7352

REGRESSION LINE = ———

X - Y LINE = ———

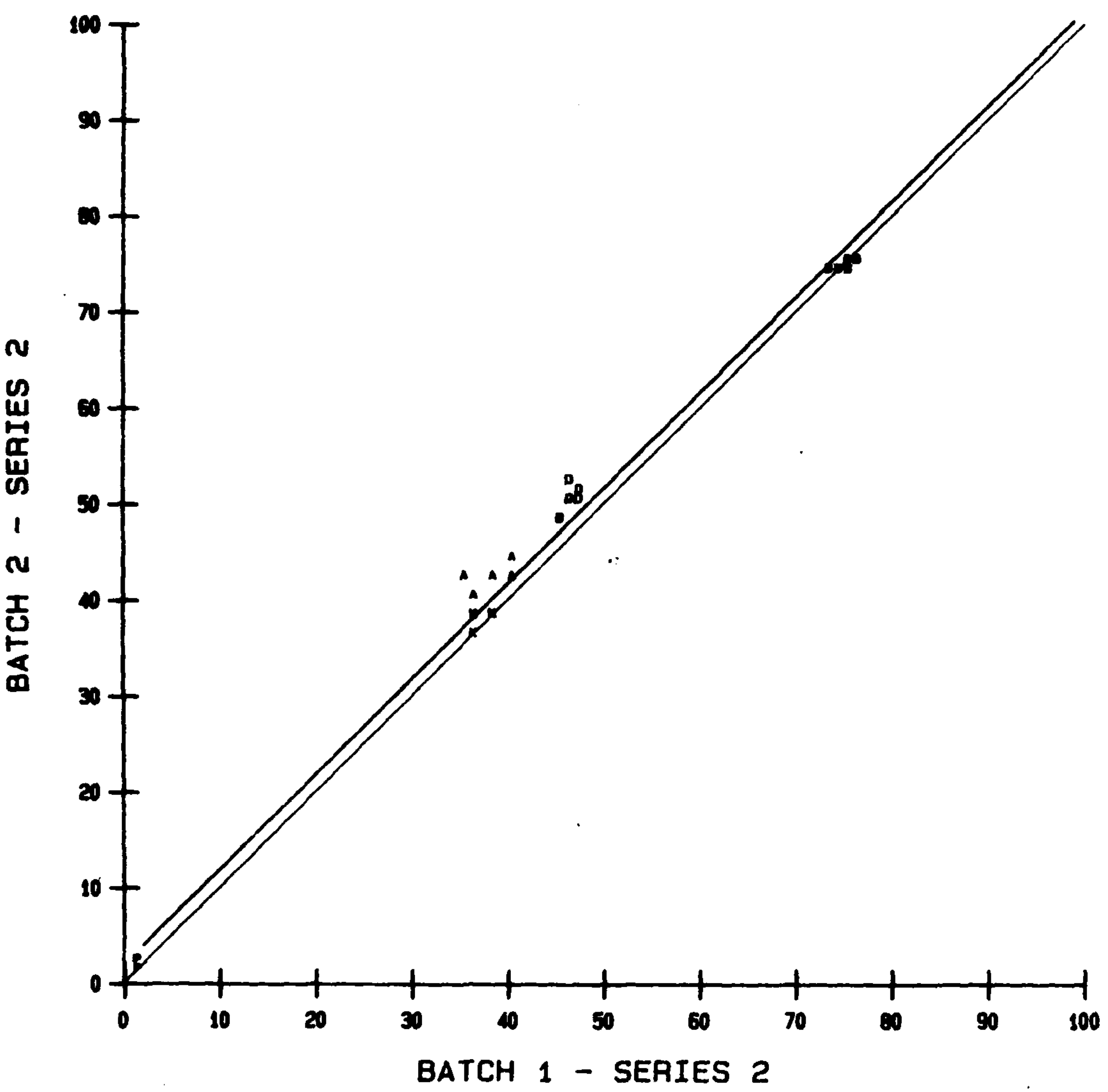
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFMC11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 80
RANGE OF DATA	:	1 TO 75

CURVE TYPE : LINEAR

Y = 2.273 + 0.936X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.0653
COEFFICIENT B	=	0.9941
COEF. OF CORR.	=	0.9965
COEF. OF DET.	=	0.9930
STD. ERR. EST.	=	2.0318

REGRESSION LINE = ______

X - Y LINE = ______

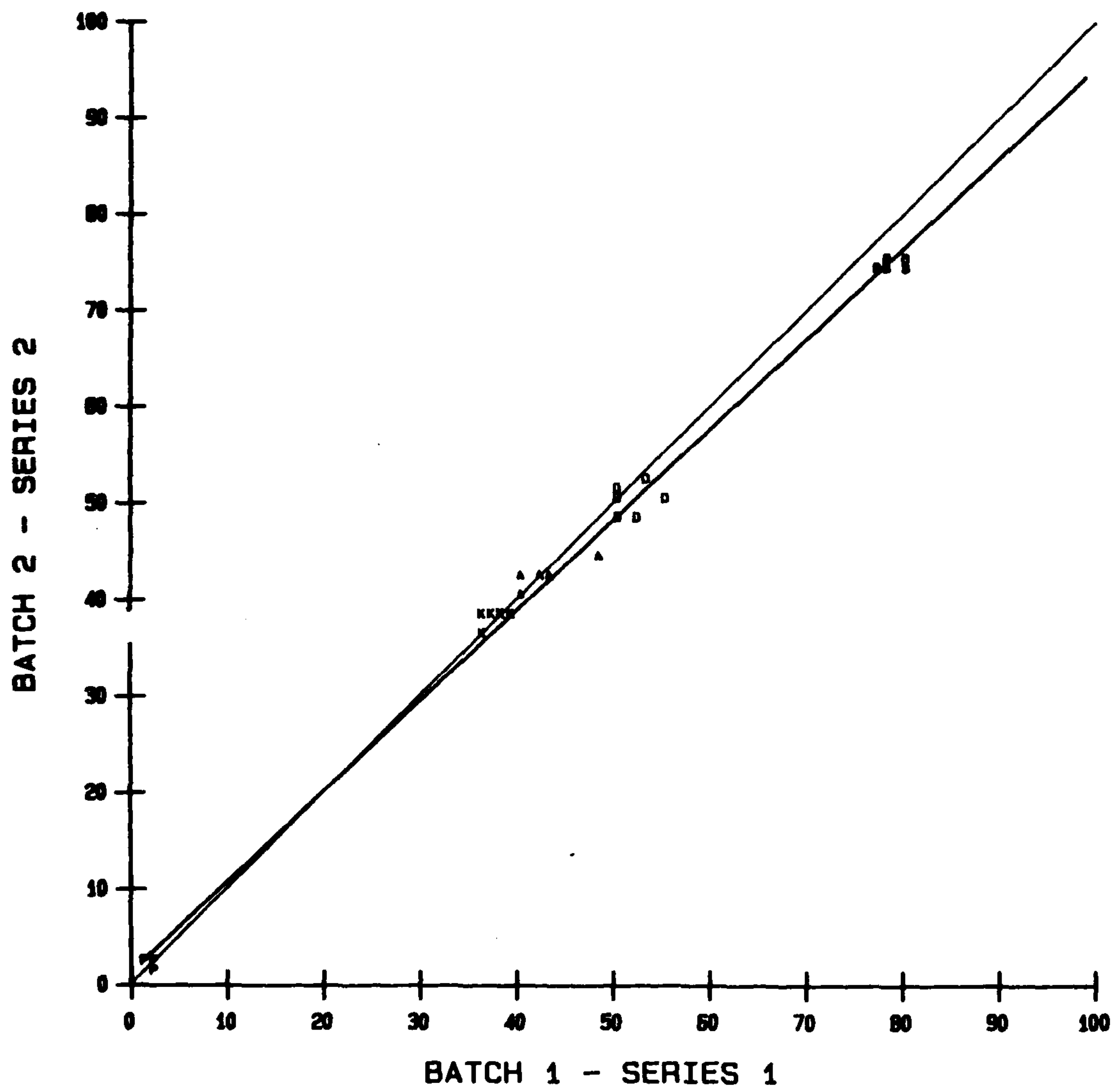
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFMC12.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 76
RANGE OF DATA	:	1 TO 75

CURVE TYPE : LINEAR

Y = 2.065 + 0.994X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 1.3903
COEFFICIENT B = 0.9396

COEF. OF CORR. = 0.9977
COEF. OF DET. = 0.9955
STD. ERR. EST. = 1.6304

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

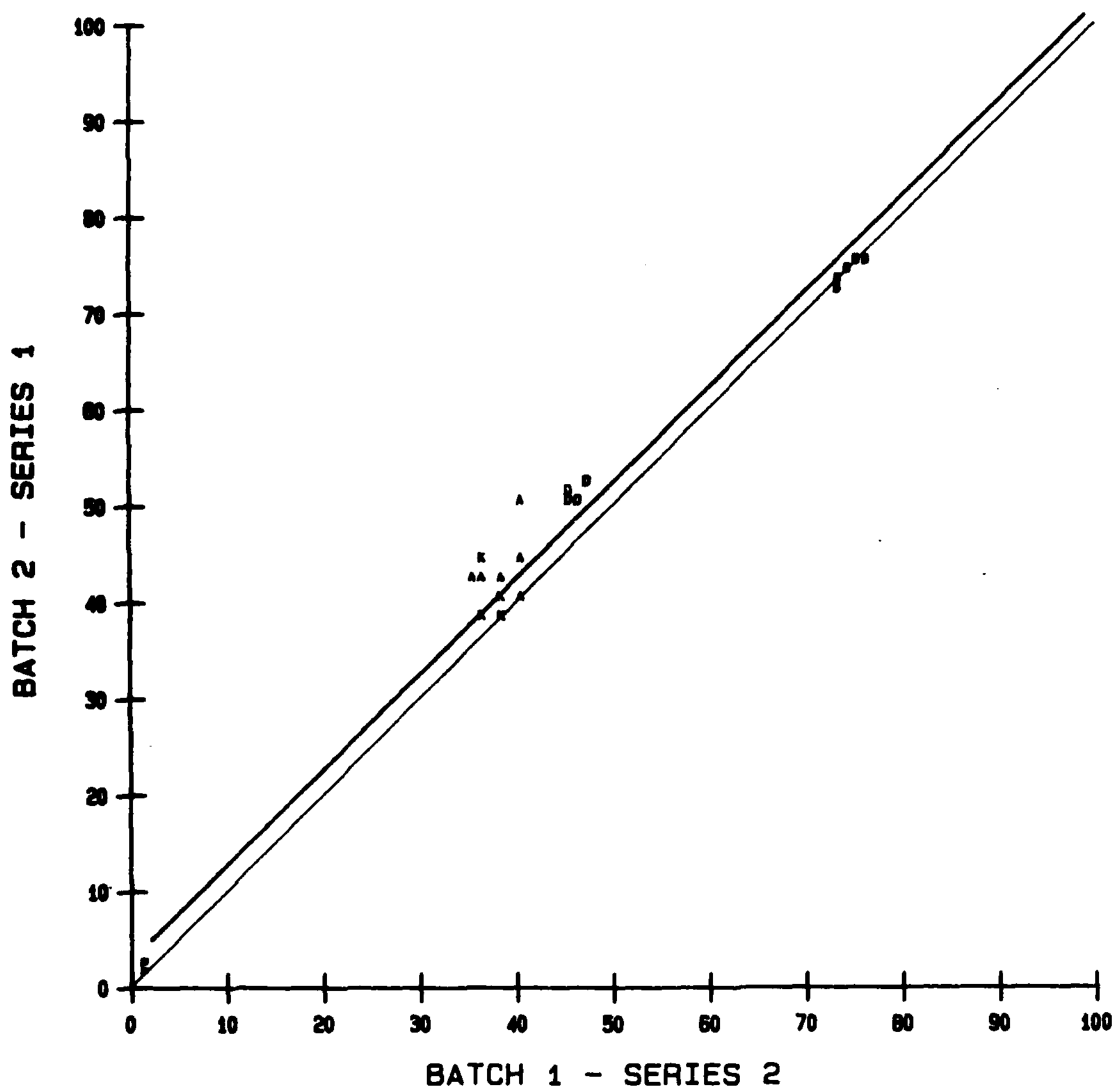
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40SFMC11.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 1 TO 80
RANGE OF DATA : 1 TO 75

CURVE TYPE : LINEAR

Y = 1.39 + 0.94X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.9381
COEFFICIENT B	=	0.9905
COEF. OF CORR.	=	0.9926
COEF. OF DET.	=	0.9852
STD. ERR. EST.	=	2.9513

REGRESSION LINE = ______

X - Y LINE = ______

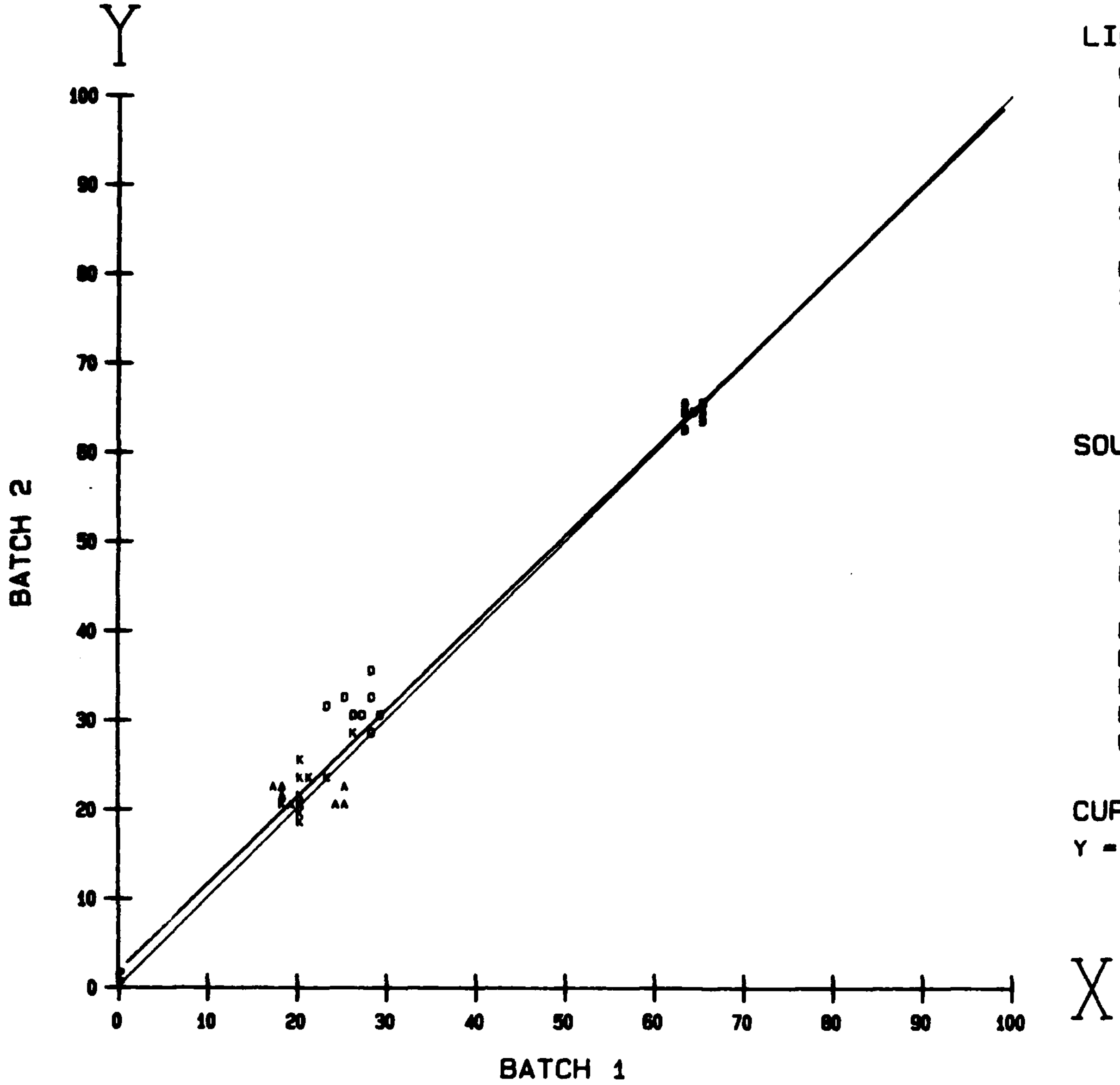
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFMC12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 76
RANGE OF DATA	:	1 TO 75

CURVE TYPE : LINEAR

Y = 2.938 + 0.991X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 1.8599
COEFFICIENT B = 0.9777

COEF. OF CORR. = 0.9933
COEF. OF DET. = 0.9867
STD. ERR. EST. = 2.4443

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

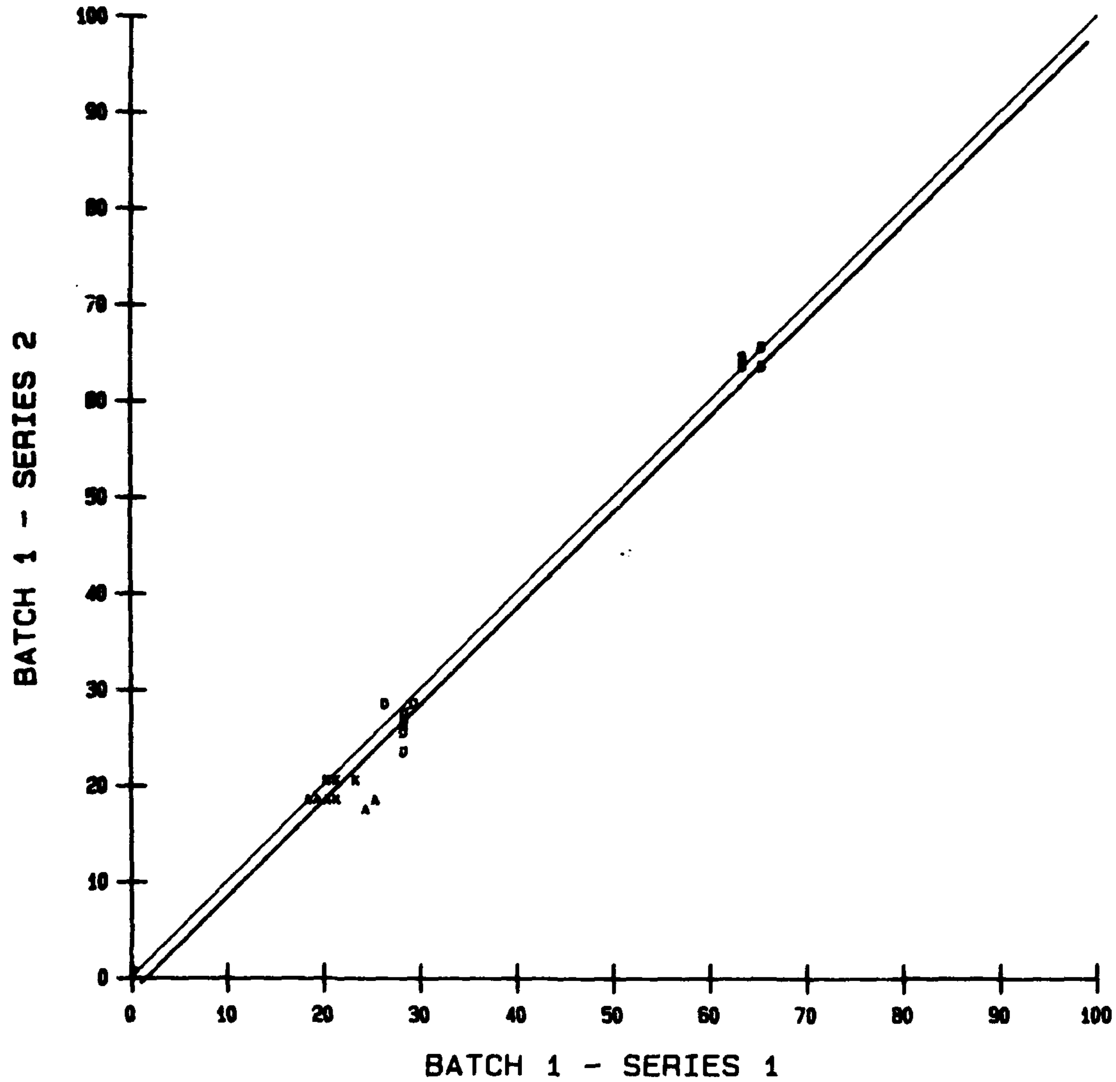
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60SFMC1.2

NUMBER OF POINTS : 59
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 0 TO 65
RANGE OF DATA : 0 TO 65

CURVE TYPE : LINEAR

$Y = 1.86 + 0.978X$

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.4864
COEFFICIENT B	=	0.9989
COEF. OF CORR.	=	0.9941
COEF. OF DET.	=	0.9882
STD. ERR. EST.	=	2.4131

REGRESSION LINE = ______

X - Y LINE = ______

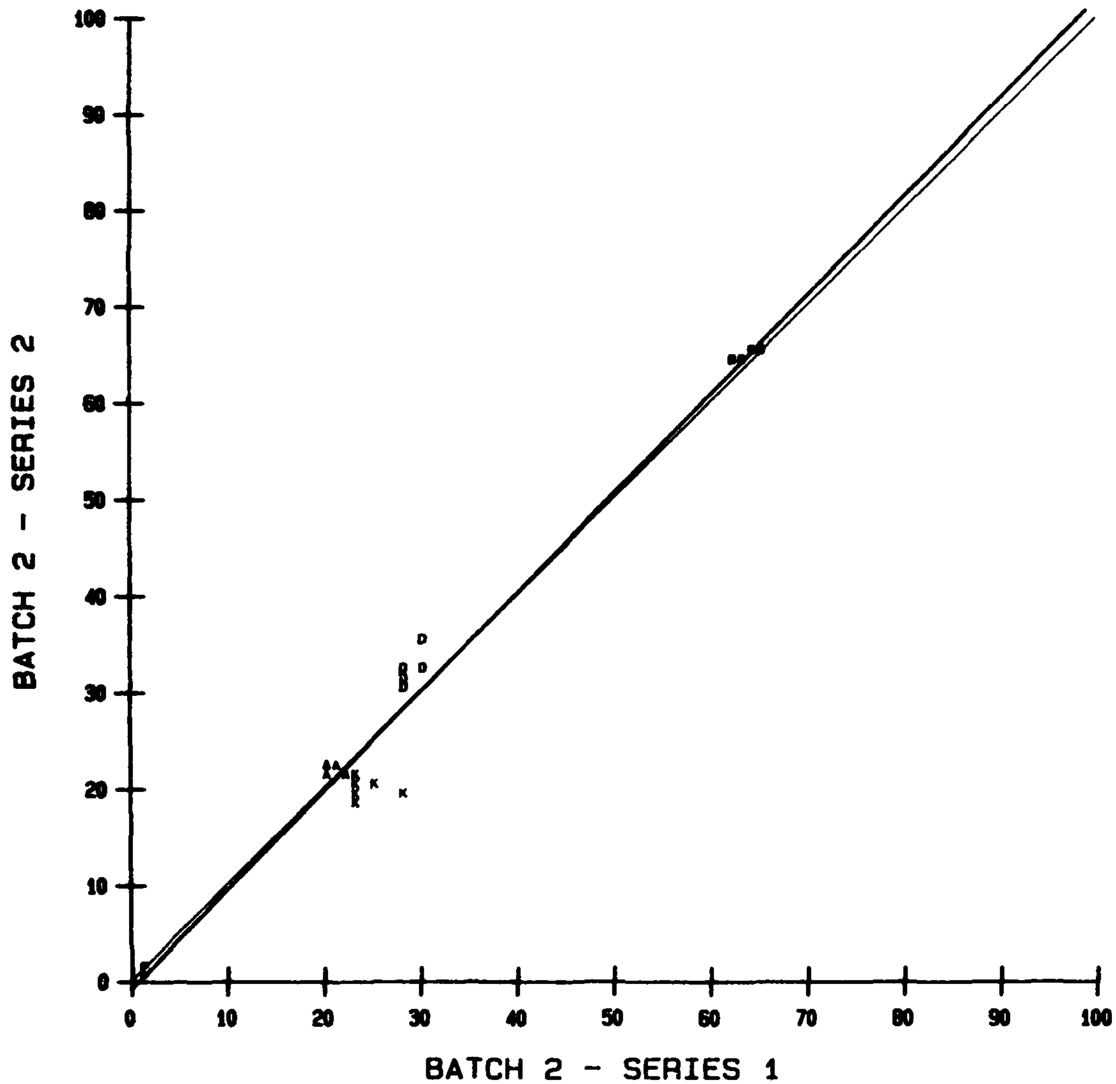
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SFMC11.12
NUMBER OF POINTS	:	29
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 65
RANGE OF DATA	:	0 TO 65

CURVE TYPE : LINEAR

Y = - 1.486 + 0.999X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.7338
COEFFICIENT B	=	1.0266
COEF. OF CORR.	=	0.9909
COEF. OF DET.	=	0.9819
STD. ERR. EST.	=	2.9351

REGRESSION LINE = ______

X - Y LINE = ______

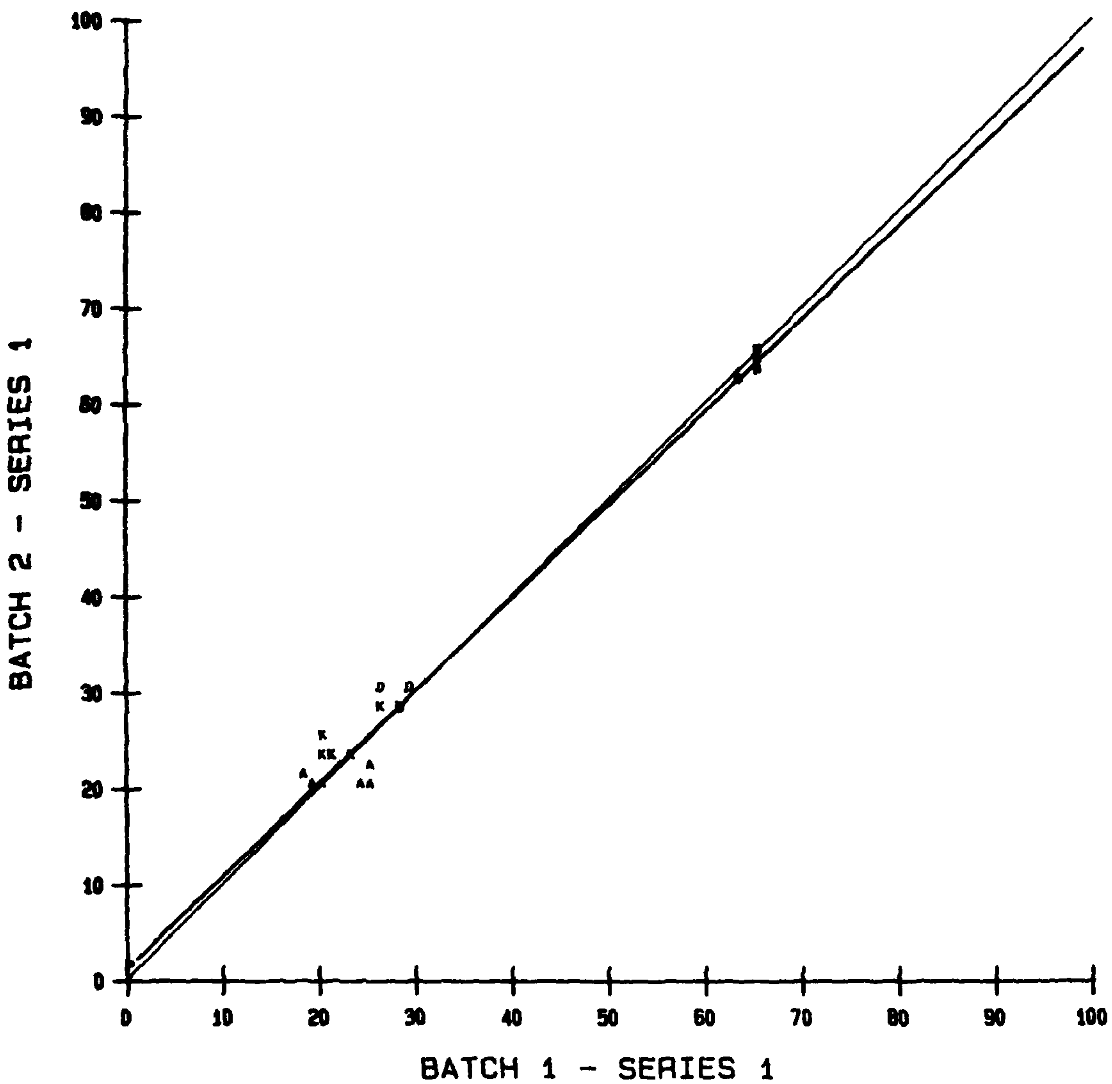
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SFMC21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 65
RANGE OF DATA	:	0 TO 65

CURVE TYPE : LINEAR

Y = - 0.734 + 1.027X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	1.3112
COEFFICIENT B	=	0.9665
COEF. OF CORR.	=	0.9953
COEF. OF DET.	=	0.9906
STD. ERR. EST.	=	2.0390

REGRESSION LINE = ————

X - Y LINE = ————

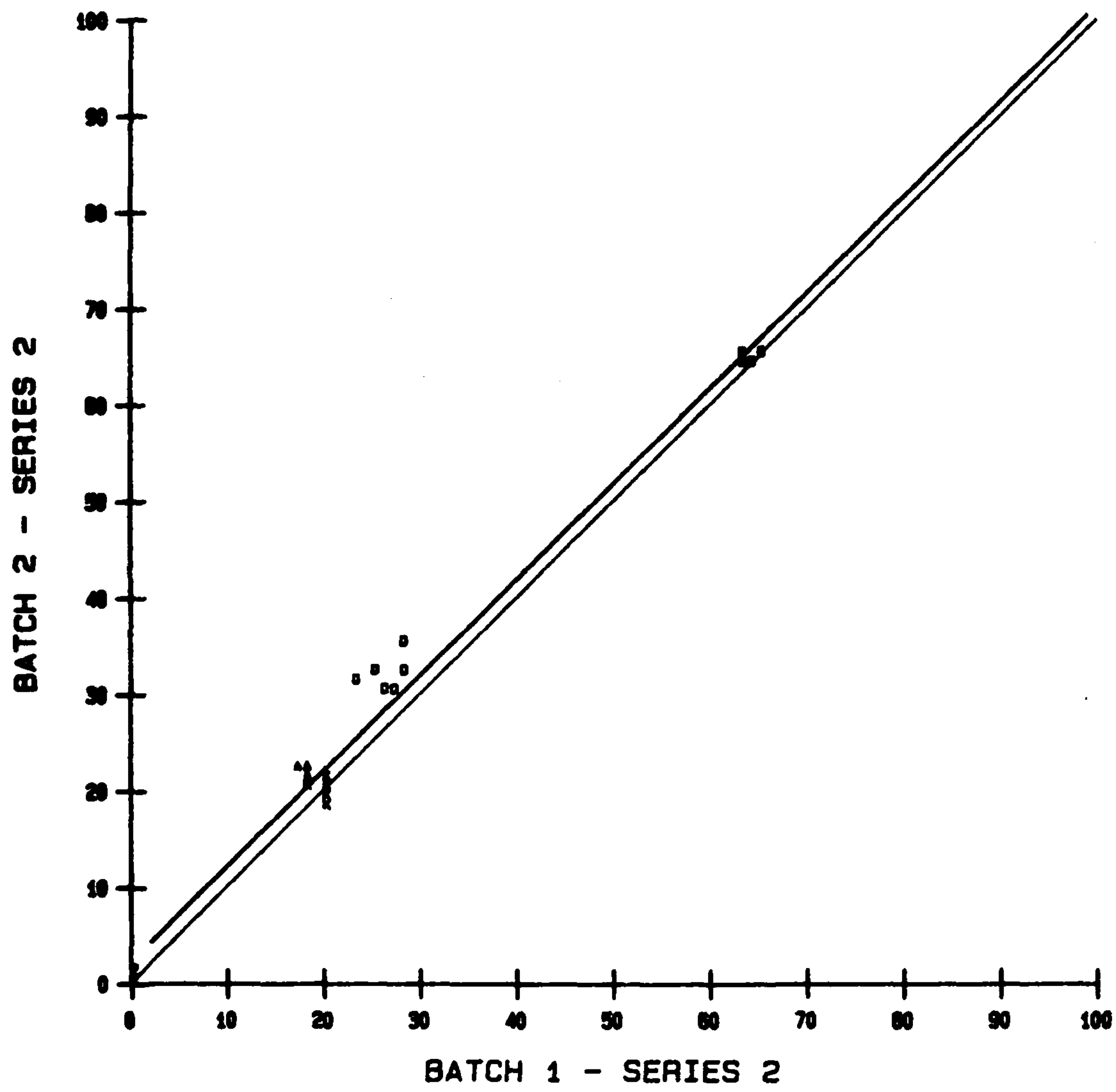
SOURCE DATA FILE INFO

DISK DRIVE	: A:
SUBDIRECTORY	: \
FILENAME	: 60SFMC11.21
NUMBER OF POINTS	: 30
DOMAIN OF PLOT	: 0 TO 100
RANGE OF PLOT	: 0 TO 100
DOMAIN OF DATA	: 0 TO 65
RANGE OF DATA	: 1 TO 65

CURVE TYPE : LINEAR

Y = 1.311 + 0.966X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.3842
COEFFICIENT B	=	0.9918
COEF. OF CORR.	=	0.9934
COEF. OF DET.	=	0.9868
STD. ERR. EST.	=	2.5476

REGRESSION LINE = ————

X - Y LINE = ————

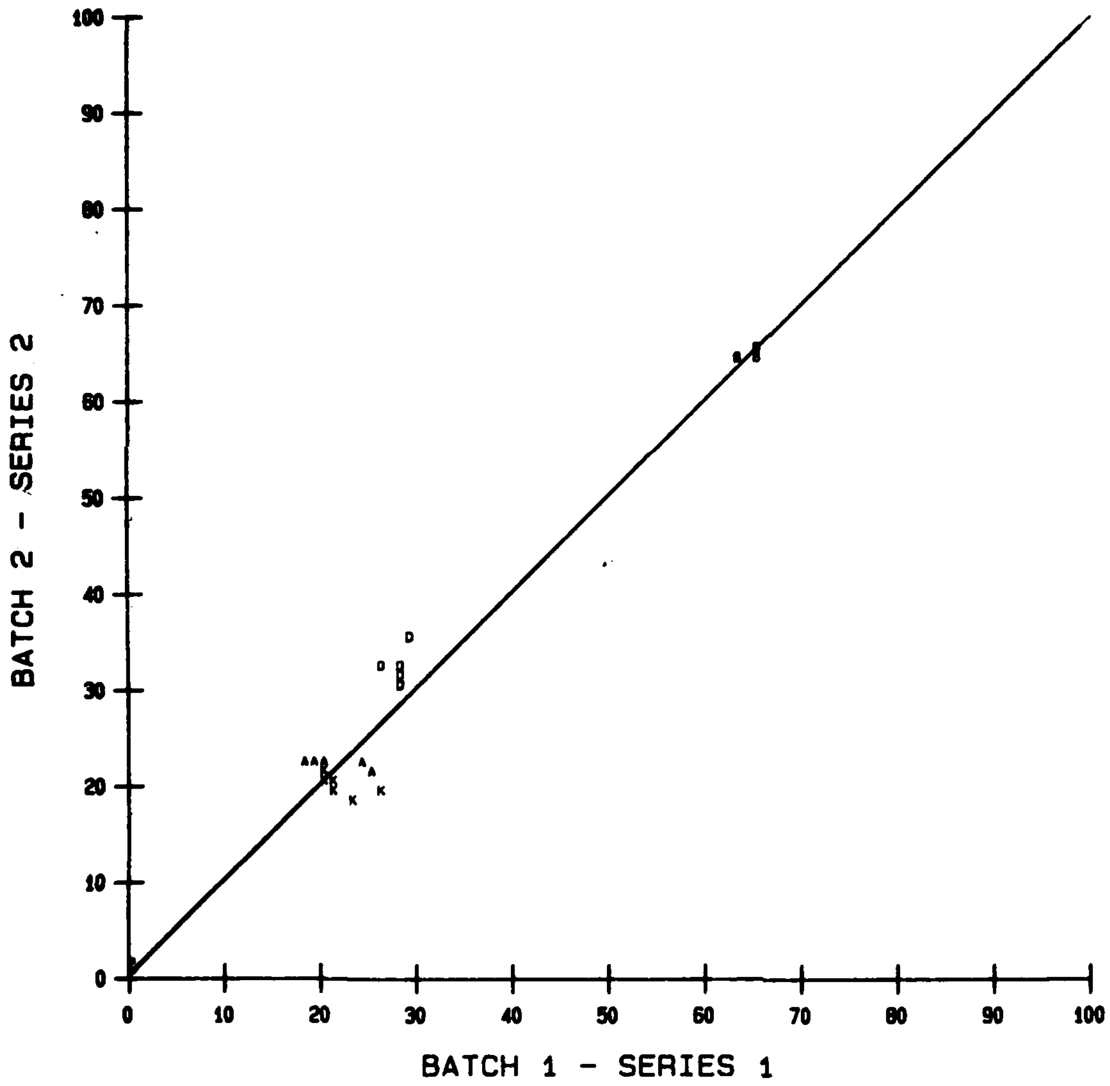
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SFMC12.22
NUMBER OF POINTS	:	29
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 65
RANGE OF DATA	:	0 TO 65

CURVE TYPE : LINEAR

Y = 2.384 + 0.992X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.4950
COEFFICIENT B	=	0.9965
COEF. OF CORR.	=	0.9905
COEF. OF DET.	=	0.9811
STD. ERR. EST.	=	2.9943
REGRESSION LINE	=	______
X - Y LINE	=	______

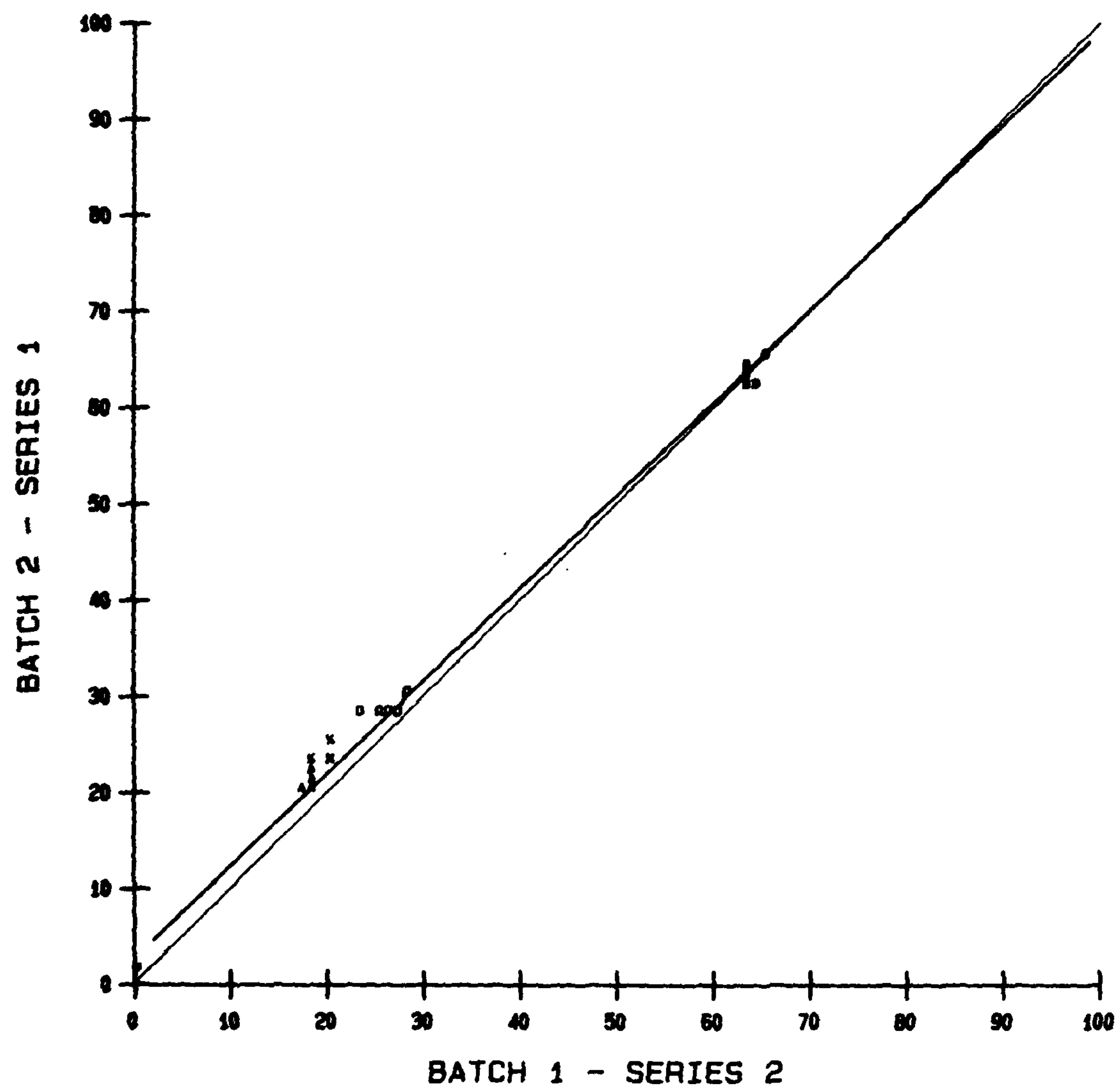
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SFMC11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 65
RANGE OF DATA	:	0 TO 65

CURVE TYPE : LINEAR

Y = 0.495 + 0.997X

McCREARY TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 2.7895
COEFFICIENT B = 0.9639

COEF. OF CORR. = 0.9974
COEF. OF DET. = 0.9948
STD. ERR. EST. = 1.5414

REGRESSION LINE = ______
X - Y LINE = ______

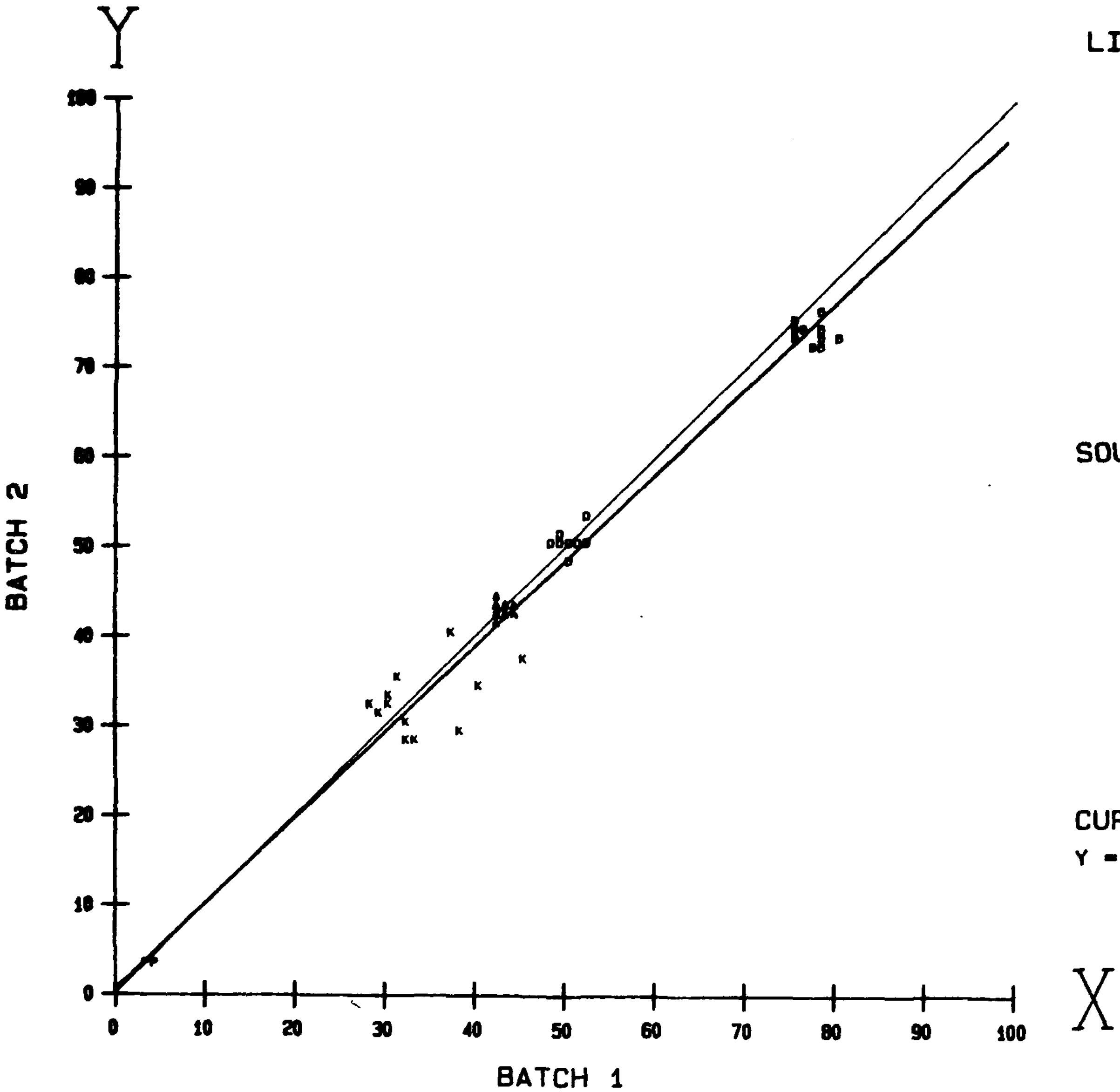
SOURCE DATA FILE INFO

DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60SFMC12.21

NUMBER OF POINTS : 29
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 0 TO 65
RANGE OF DATA : 1 TO 65

CURVE TYPE : LINEAR
Y = 2.79 + 0.964X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 0.5806
COEFFICIENT B = 0.9594

COEF. OF CORR. = 0.9940
COEF. OF DET. = 0.9880
STD. ERR. EST. = 2.5752

REGRESSION LINE = ______
X - Y LINE = ______

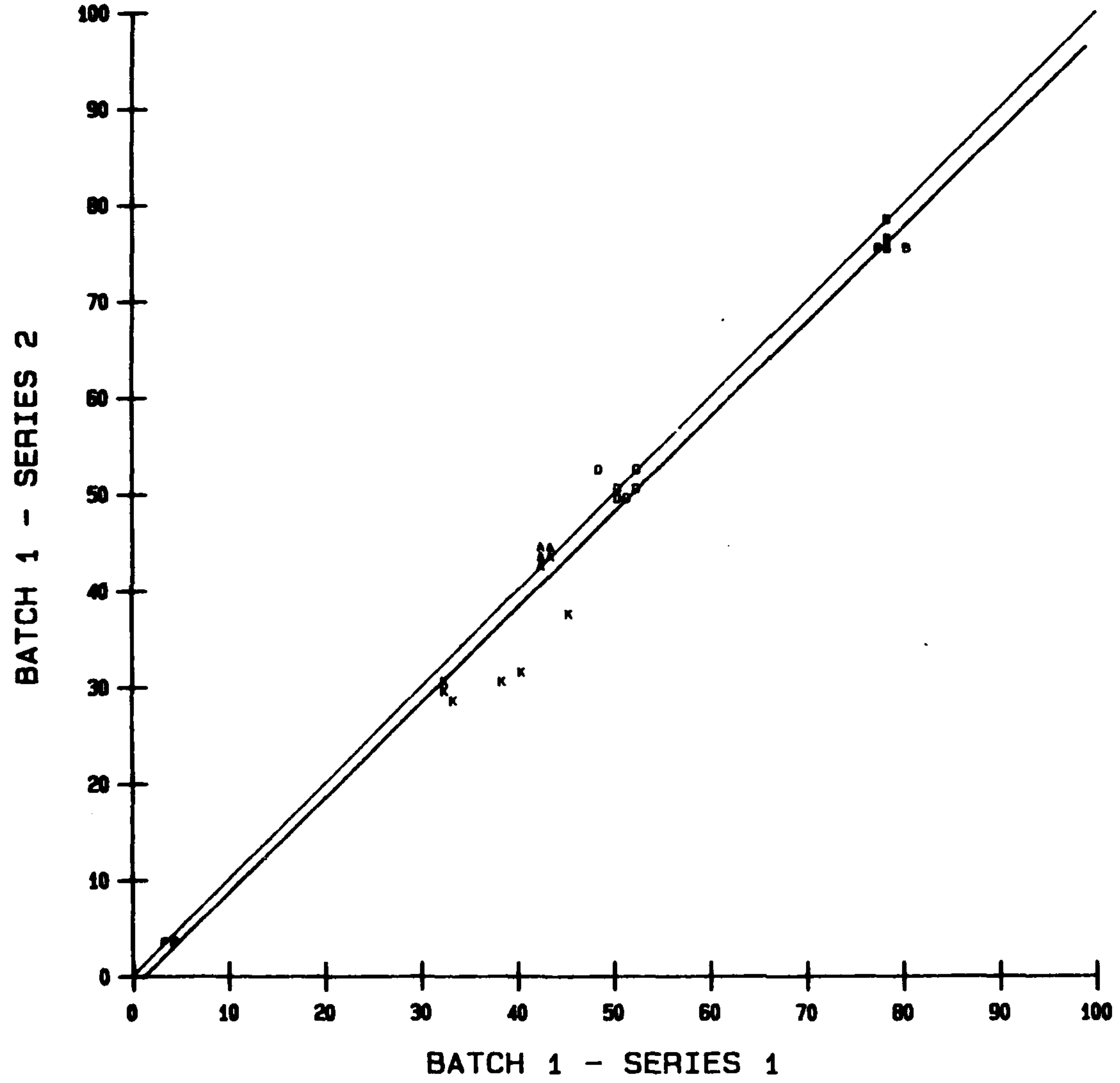
SOURCE DATA FILE INFO

DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40SKMC1.2

NUMBER OF POINTS : 60
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 80
RANGE OF DATA : 3 TO 76

CURVE TYPE : LINEAR
Y = 0.581 + 0.959X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.1423
COEFFICIENT B	=	0.9860
COEF. OF CORR.	=	0.9929
COEF. OF DET.	=	0.9859
STD. ERR. EST.	=	2.9306

REGRESSION LINE = ______

X - Y LINE = ______

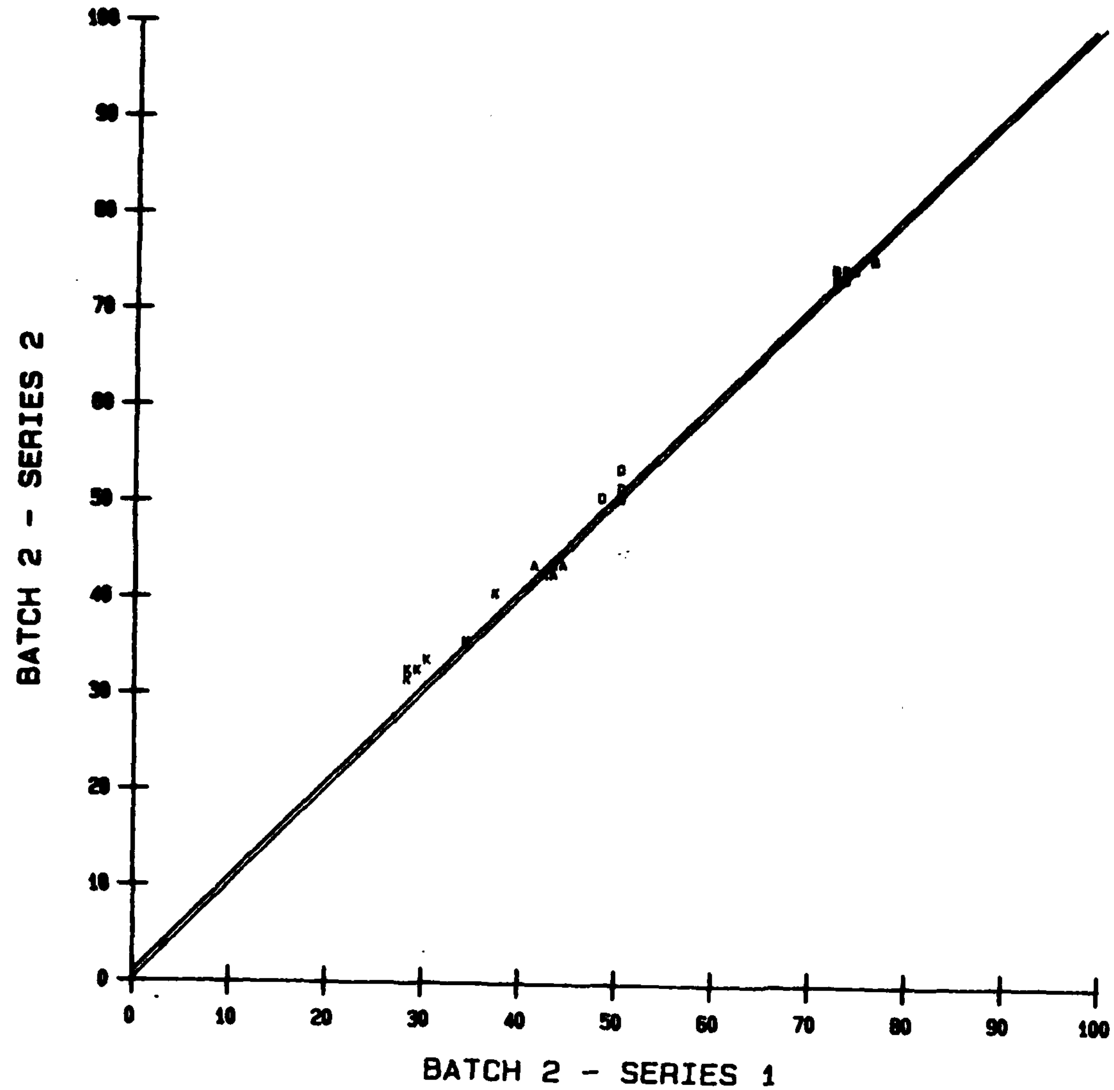
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SKMC11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 80
RANGE OF DATA	:	3 TO 78

CURVE TYPE : LINEAR

Y = - 1.142 + 0.986X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.9049
COEFFICIENT B	=	0.9990
COEF. OF CORR.	=	0.9982
COEF. OF DET.	=	0.9964
STD. ERR. EST.	=	1.4324

REGRESSION LINE = ______
X - Y LINE = ______

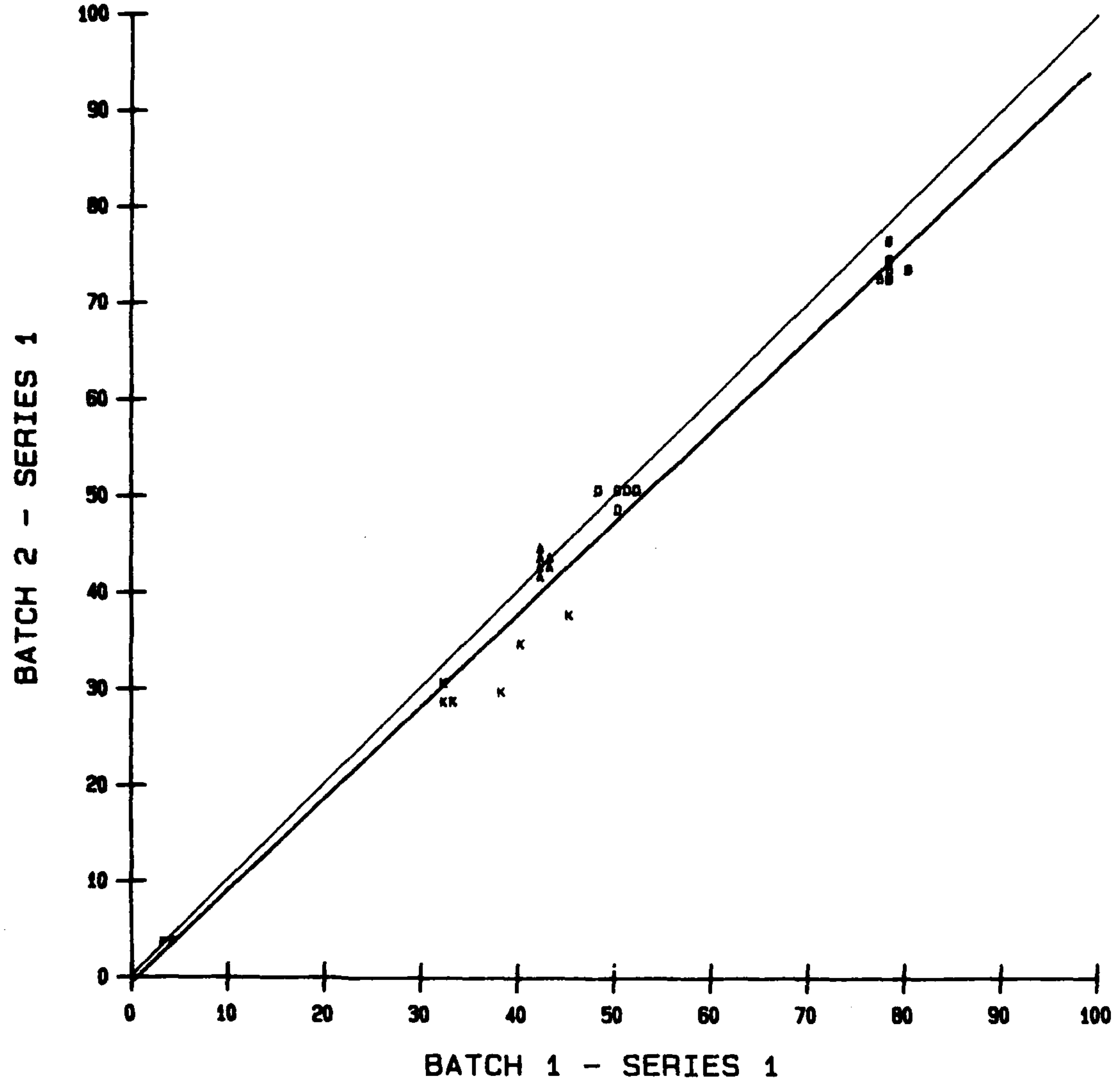
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SKMC21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 76
RANGE OF DATA	:	3 TO 75

CURVE TYPE : LINEAR

Y = 0.905 + 0.999X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -0.5313
COEFFICIENT B = 0.9558

COEF. OF CORR. = 0.9936
COEF. OF DET. = 0.9873
STD. ERR. EST. = 2.6949

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

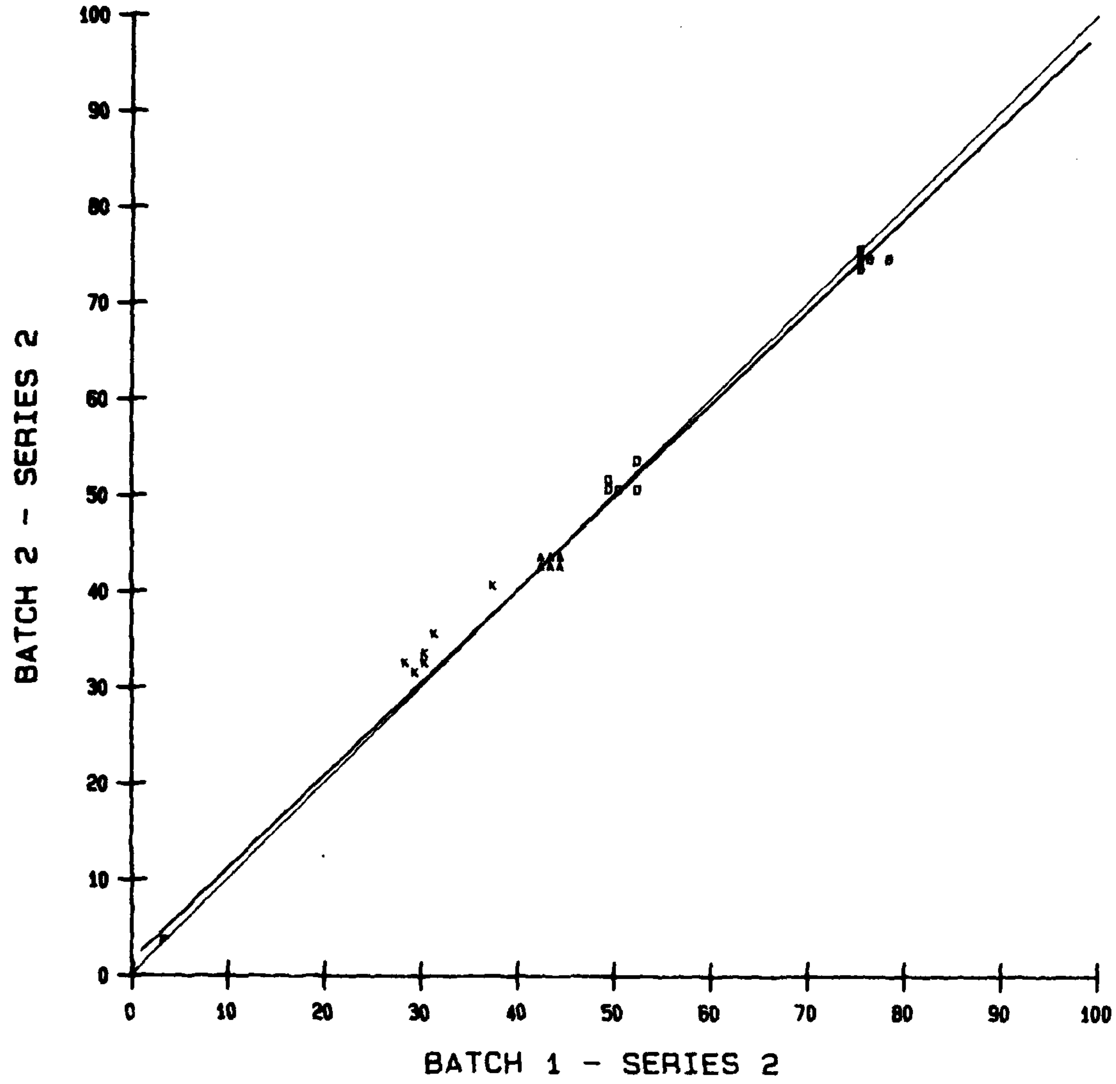
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40SKMC11.21

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 80
RANGE OF DATA : 3 TO 76

CURVE TYPE : LINEAR

$Y = -0.531 + 0.956X$

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 1.5407
COEFFICIENT B = 0.9669

COEF. OF CORR. = 0.9974
COEF. OF DET. = 0.9948
STD. ERR. EST. = 1.7332

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

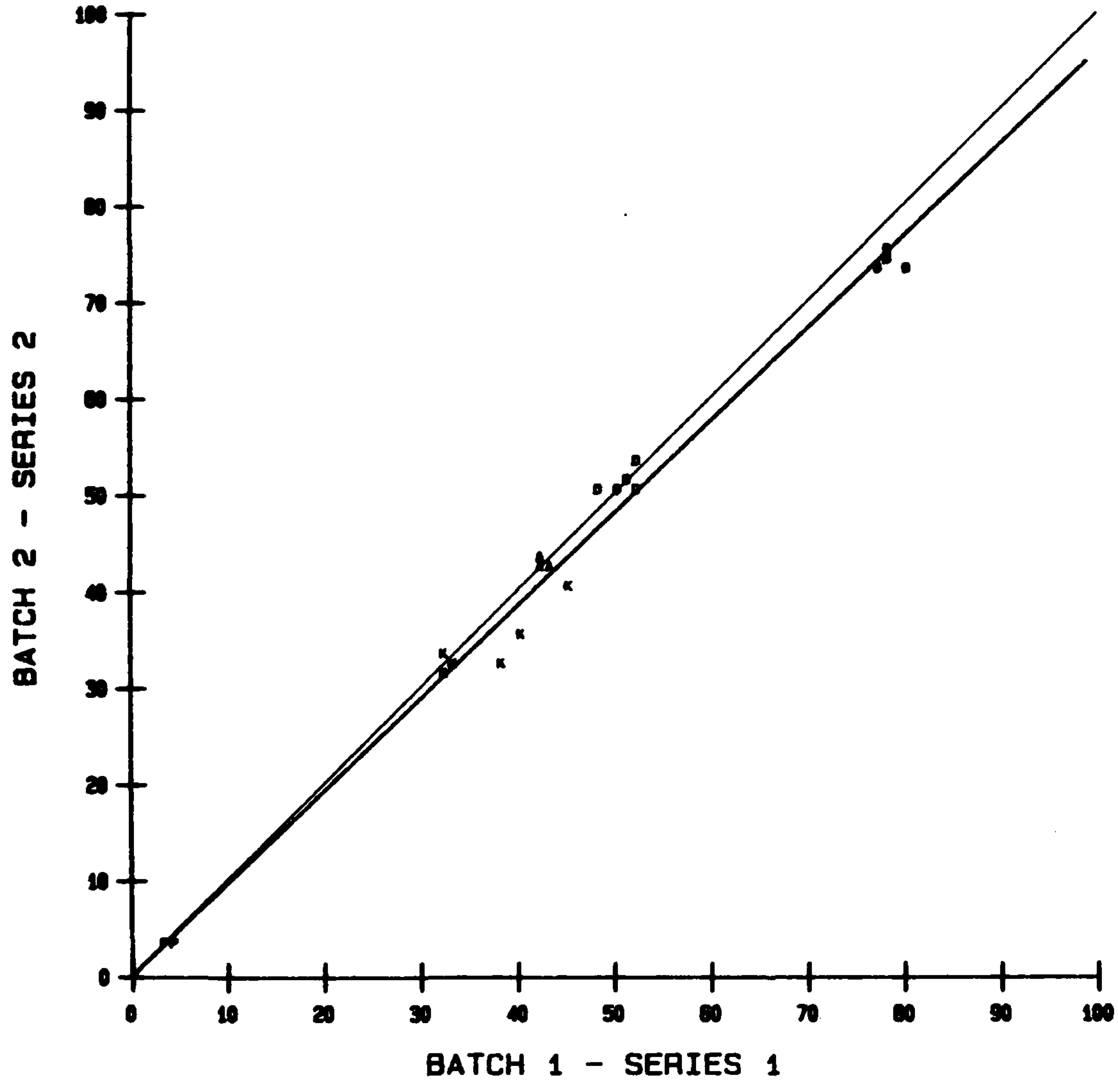
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40SKMC12.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 78
RANGE OF DATA : 3 TO 75

CURVE TYPE : LINEAR

Y = 1.541 + 0.967X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.2081
COEFFICIENT B	=	0.9588
COEF. OF CORR.	=	0.9959
COEF. OF DET.	=	0.9919
STD. ERR. EST.	=	2.1553

REGRESSION LINE = ———
X - Y LINE = ———

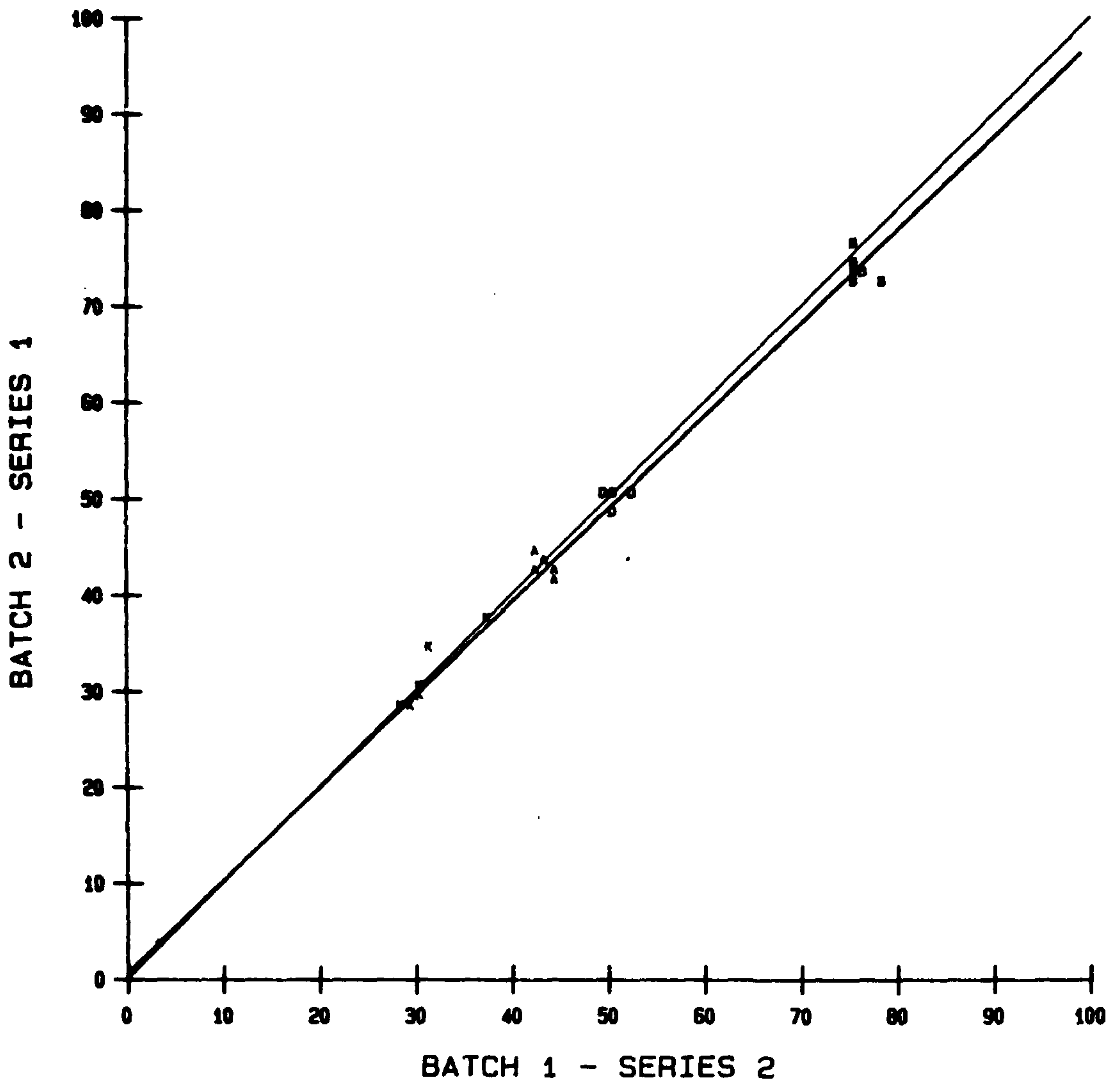
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SKMC11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 80
RANGE OF DATA	:	3 TO 75

CURVE TYPE : LINEAR

Y = 0.208 + 0.959X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.6889
COEFFICIENT B	=	0.9666
COEF. OF CORR.	=	0.9978
COEF. OF DET.	=	0.9957
STD. ERR. EST.	=	1.5762

REGRESSION LINE = ————
X - Y LINE = ————

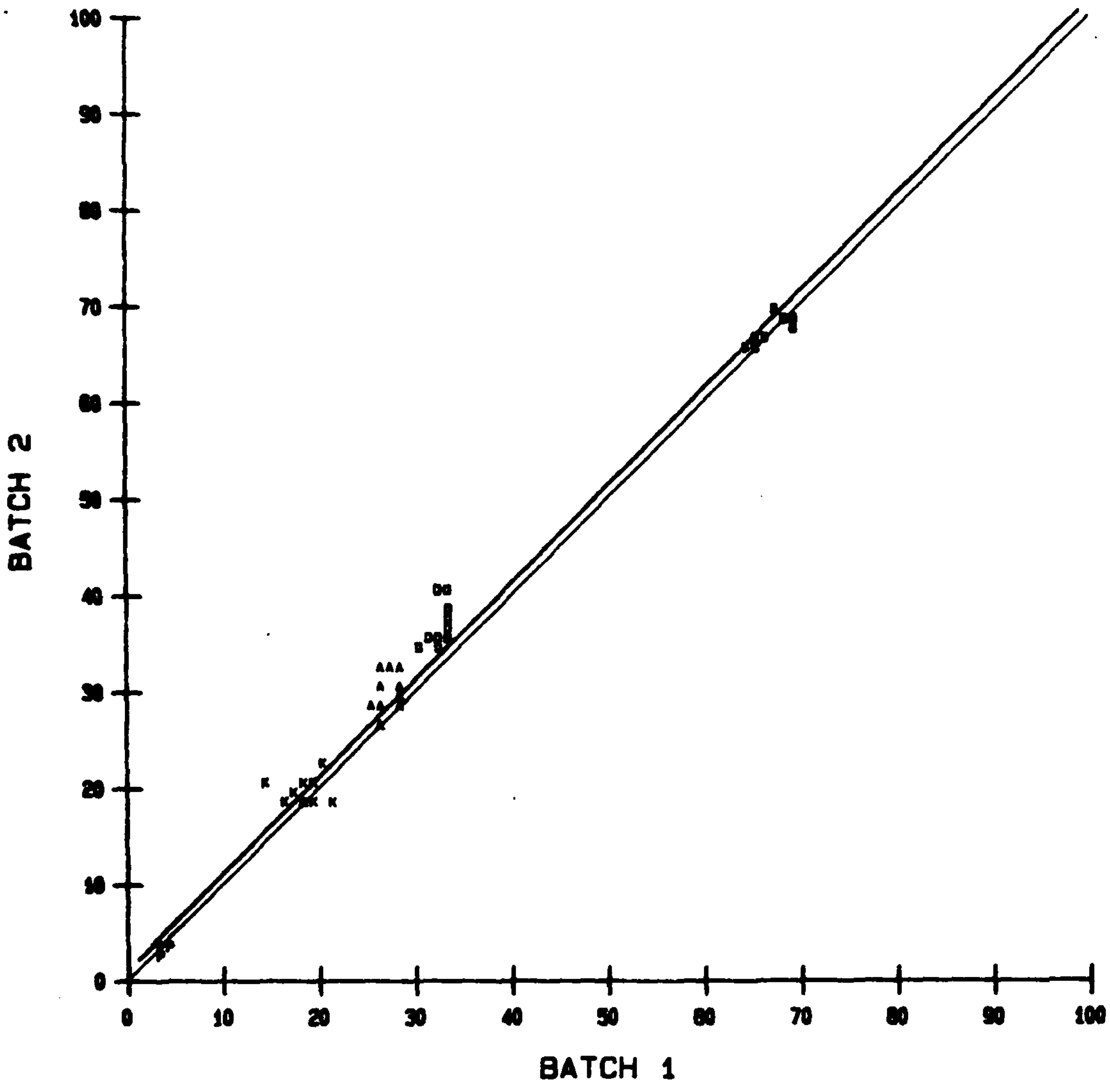
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SKMC12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 78
RANGE OF DATA	:	3 TO 76

CURVE TYPE : LINEAR

Y = 0.689 + 0.967X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	1.1882
COEFFICIENT B	=	1.0055
COEF. OF CORR.	=	0.9939
COEF. OF DET.	=	0.9878
STD. ERR. EST.	=	2.3956

REGRESSION LINE = ______
X - Y LINE = ______

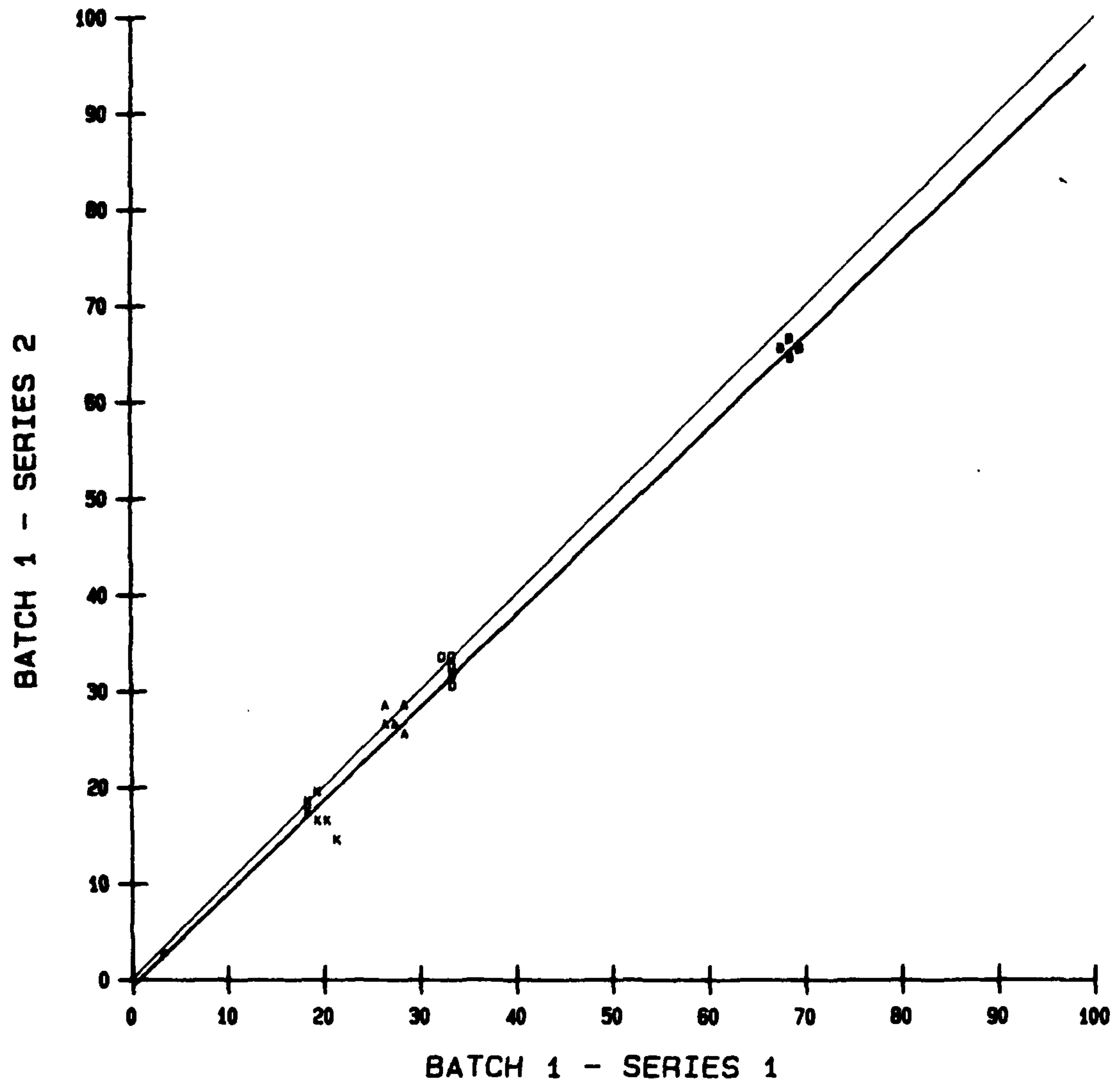
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SKMC1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 69
RANGE OF DATA	:	2 TO 69

CURVE TYPE : LINEAR

Y = 1.188 + 1.005X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.6167
COEFFICIENT B	=	0.9662
COEF. OF CORR.	=	0.9967
COEF. OF DET.	=	0.9934
STD. ERR. EST.	=	1.7626

REGRESSION LINE = ______
X - Y LINE = ______

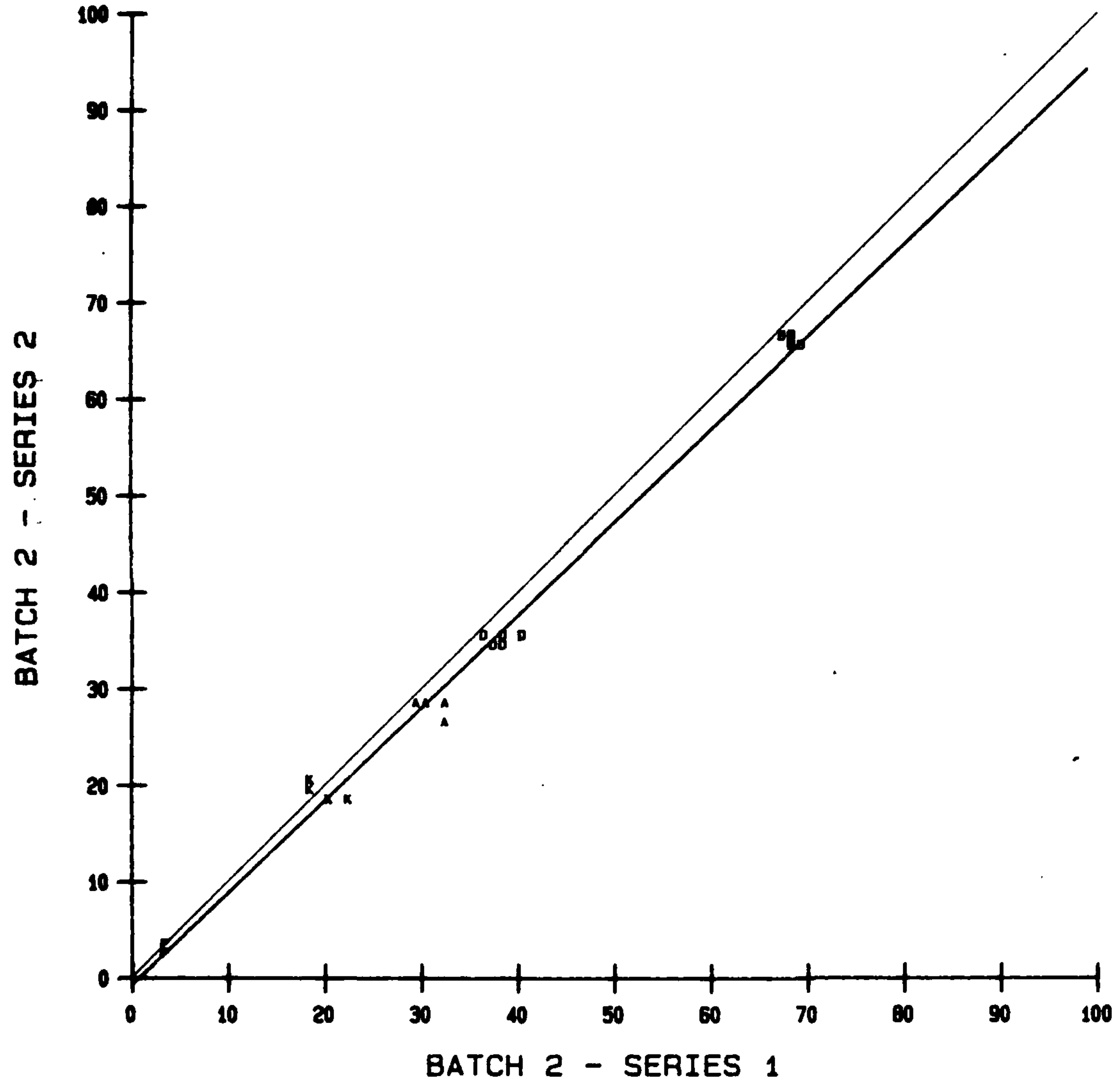
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SKMC11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 69
RANGE OF DATA	:	2 TO 66

CURVE TYPE : LINEAR

Y = - 0.617 + 0.966X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.6734
COEFFICIENT B	=	0.9593
COEF. OF CORR.	=	0.9960
COEF. OF DET.	=	0.9921
STD. ERR. EST.	=	1.9238

REGRESSION LINE = ———
X - Y LINE = ———

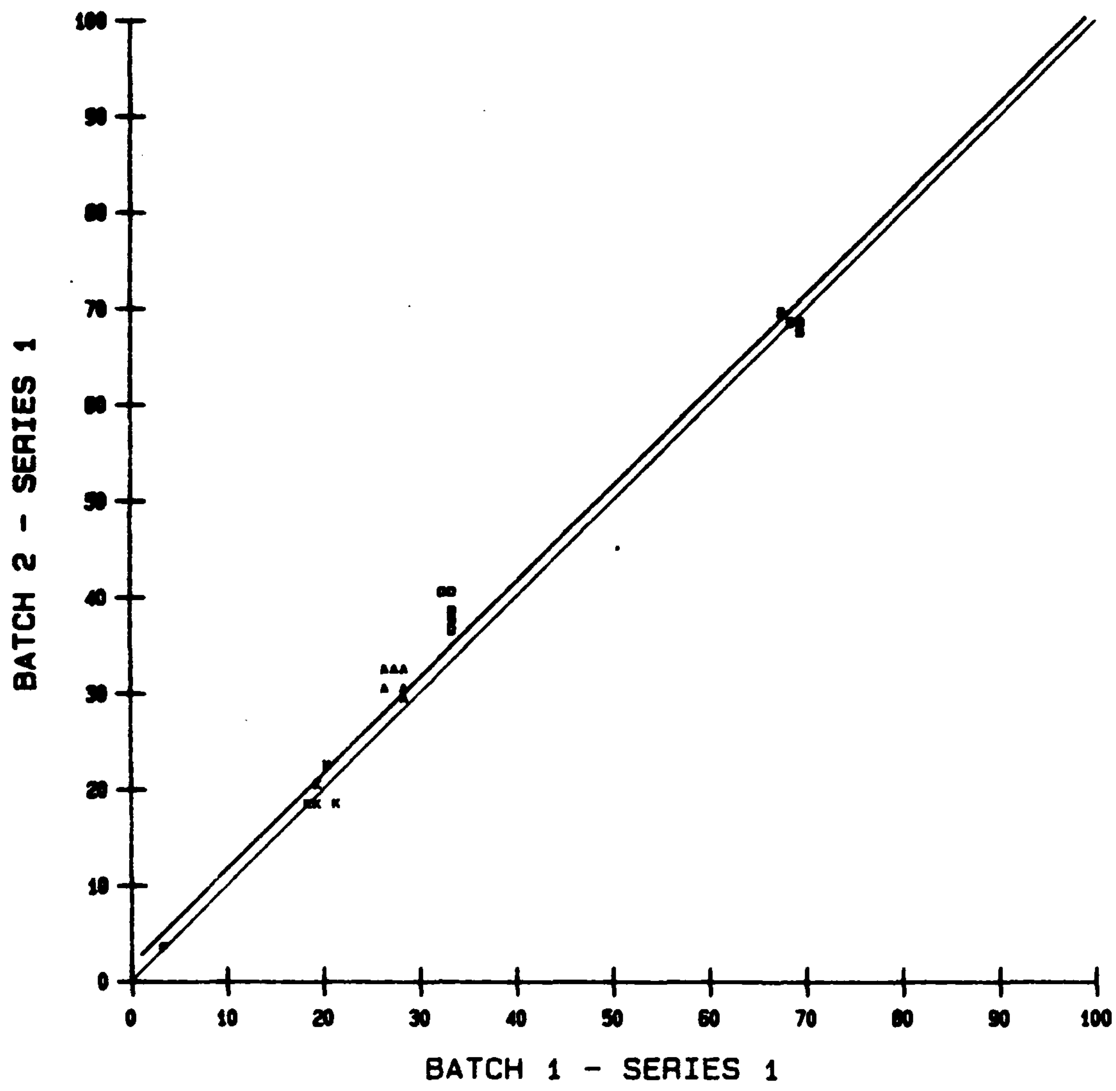
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SKMC21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 69
RANGE OF DATA	:	2 TO 66

CURVE TYPE : LINEAR

Y = - 0.673 + 0.959X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 1.8313
COEFFICIENT B = 0.9956

COEF. OF CORR. = 0.9920
COEF. OF DET. = 0.9841
STD. ERR. EST. = 2.8286

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

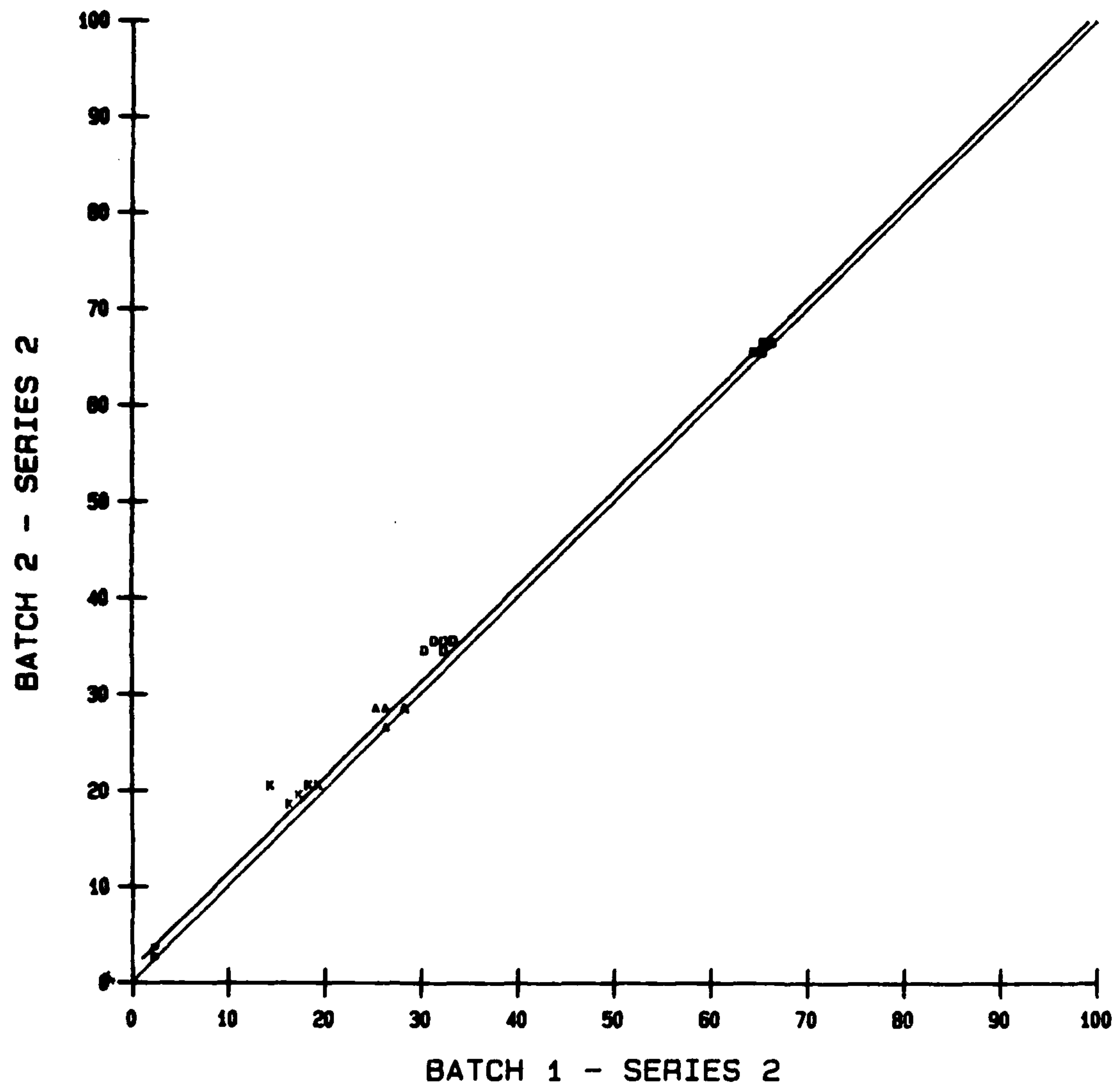
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60SKMC11.21

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 69
RANGE OF DATA : 3 TO 69

CURVE TYPE : LINEAR

Y = 1.831 + 0.99 X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	1.5205
COEFFICIENT B	=	0.9946
COEF. OF CORR.	=	0.9975
COEF. OF DET.	=	0.9949
STD. ERR. EST.	=	1.5421

REGRESSION LINE = ______

X - Y LINE = ______

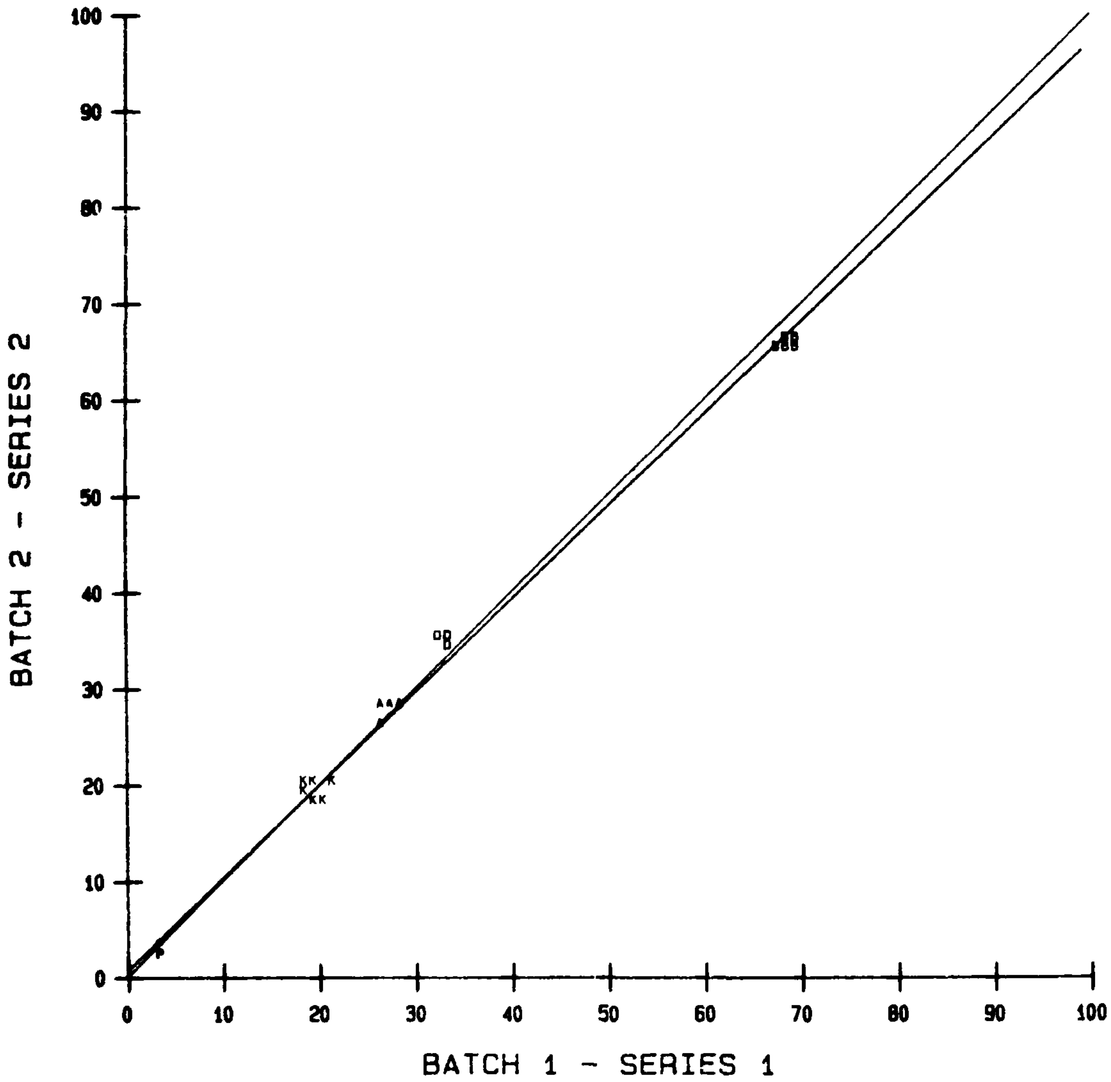
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SKMC12.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 66
RANGE OF DATA	:	2 TO 66

CURVE TYPE : LINEAR

Y = 1.52 + 0.995X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.8211
COEFFICIENT B	=	0.9639
COEF. OF CORR.	=	0.9971
COEF. OF DET.	=	0.9942
STD. ERR. EST.	=	1.6429

REGRESSION LINE = ______

X - Y LINE = ______

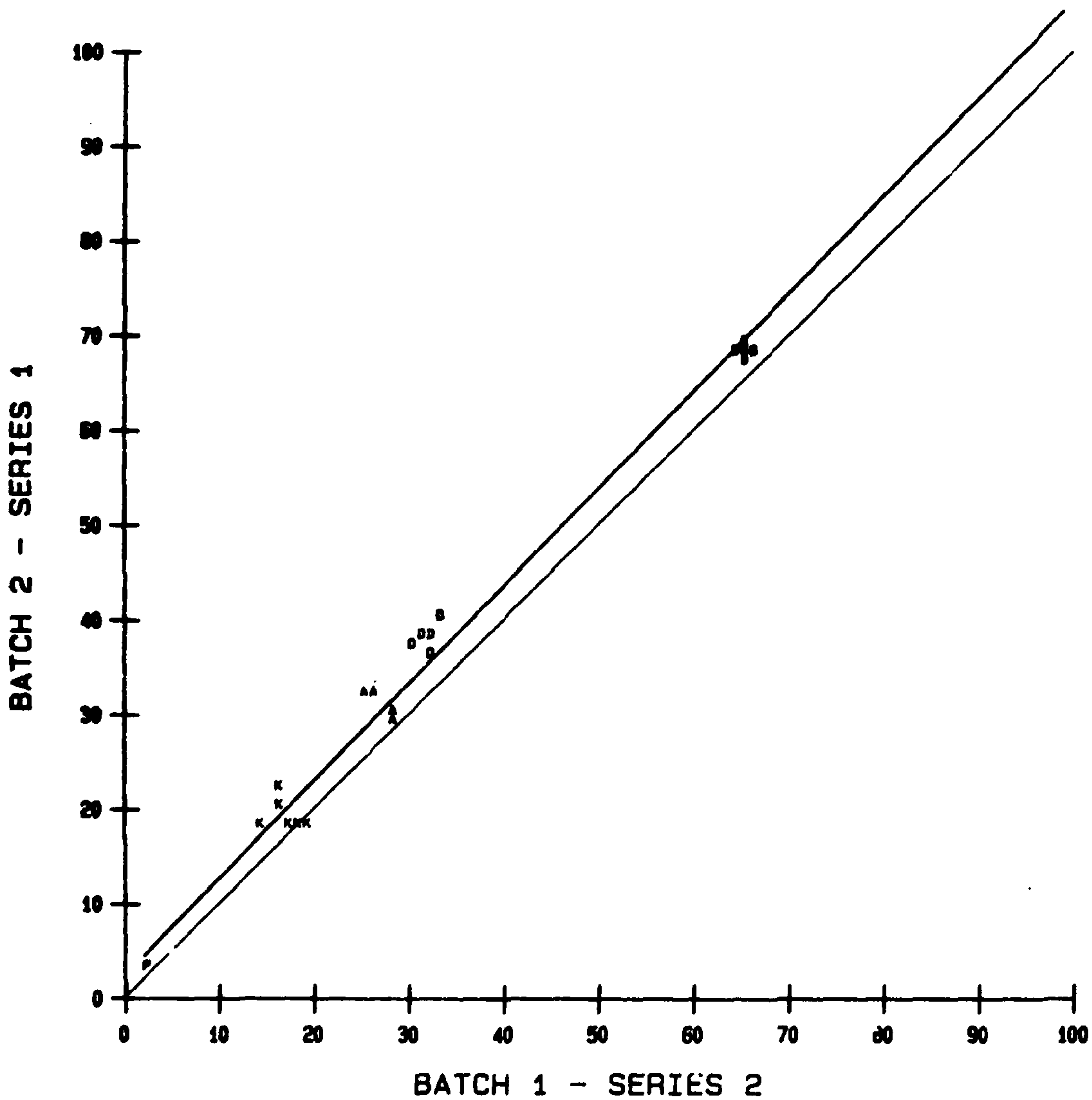
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SKMC11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 69
RANGE OF DATA	:	2 TO 66

CURVE TYPE : LINEAR

Y = 0.821 + 0.964X

McCREARY TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.5044
COEFFICIENT B	=	1.0291
COEF. OF CORR.	=	0.9940
COEF. OF DET.	=	0.9881
STD. ERR. EST.	=	2.4459
REGRESSION LINE	=	————
X - Y LINE	=	————

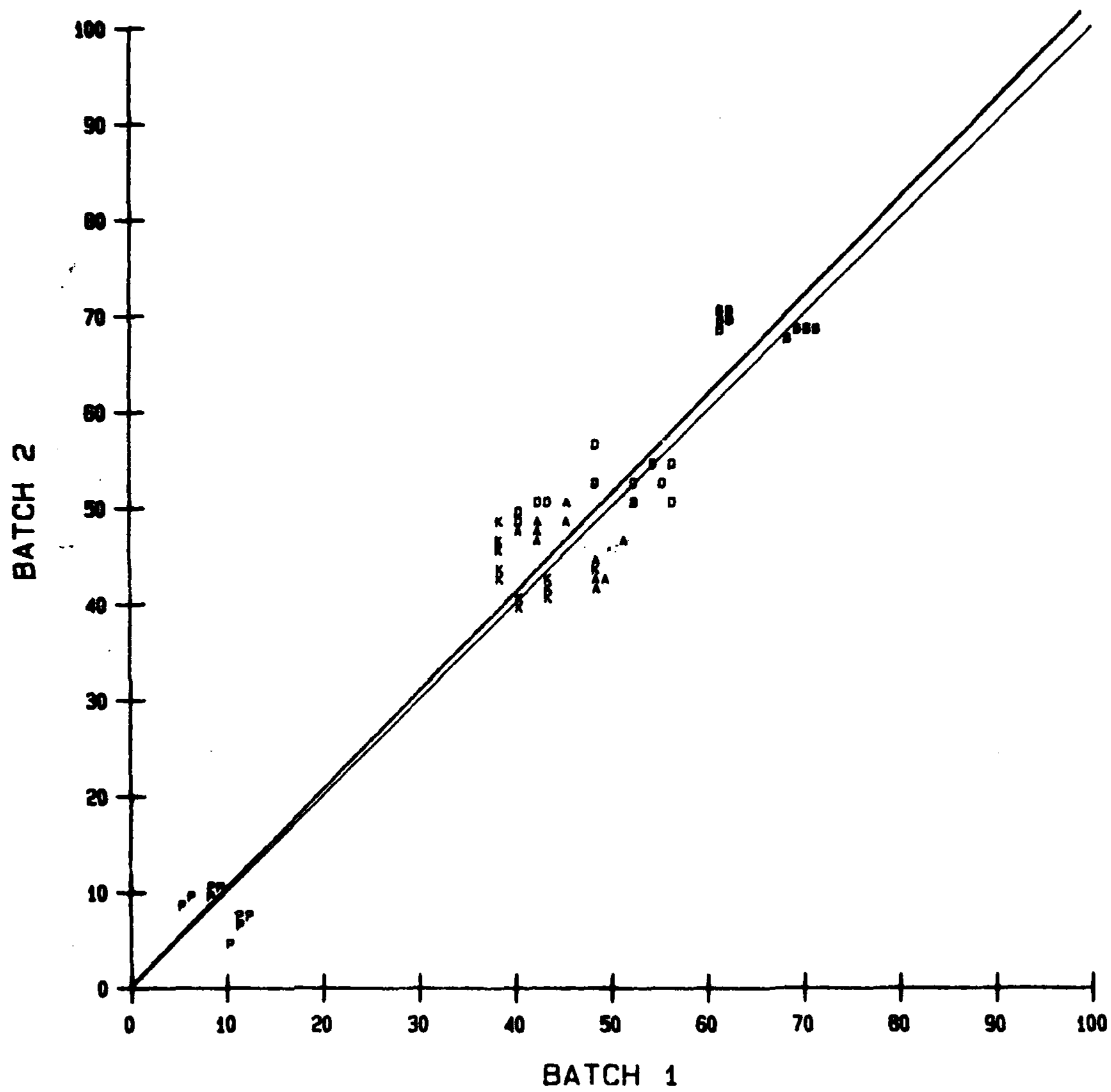
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SKMC12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 66
RANGE OF DATA	:	3 TO 69

CURVE TYPE : LINEAR

$Y = 2.504 + 1.029X$

McCREARY TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.2569
COEFFICIENT B	=	1.0245
COEF. OF CORR.	=	0.9679
COEF. OF DET.	=	0.9369
STD. ERR. EST.	=	5.1281

REGRESSION LINE = ______

X - Y LINE = ______

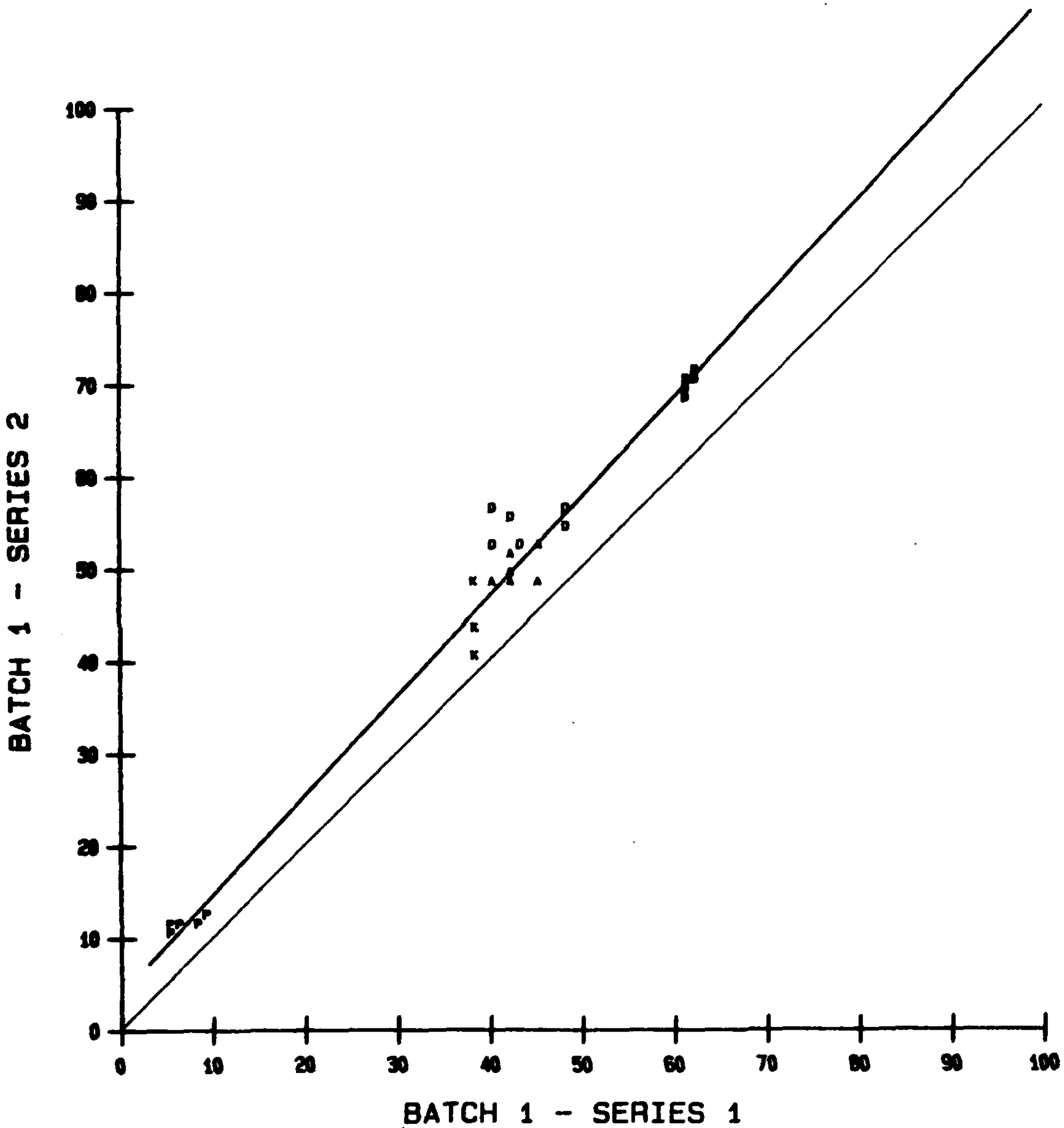
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUMC1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	5 TO 71
RANGE OF DATA	:	4 TO 70

CURVE TYPE : LINEAR

$Y = 0.257 + 1.024X$

McCREARY TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	3.9751
COEFFICIENT B	=	1.0760
COEF. OF CORR.	=	0.9887
COEF. OF DET.	=	0.9776
STD. ERR. EST.	=	3.0094

REGRESSION LINE = ———
X - Y LINE = ———

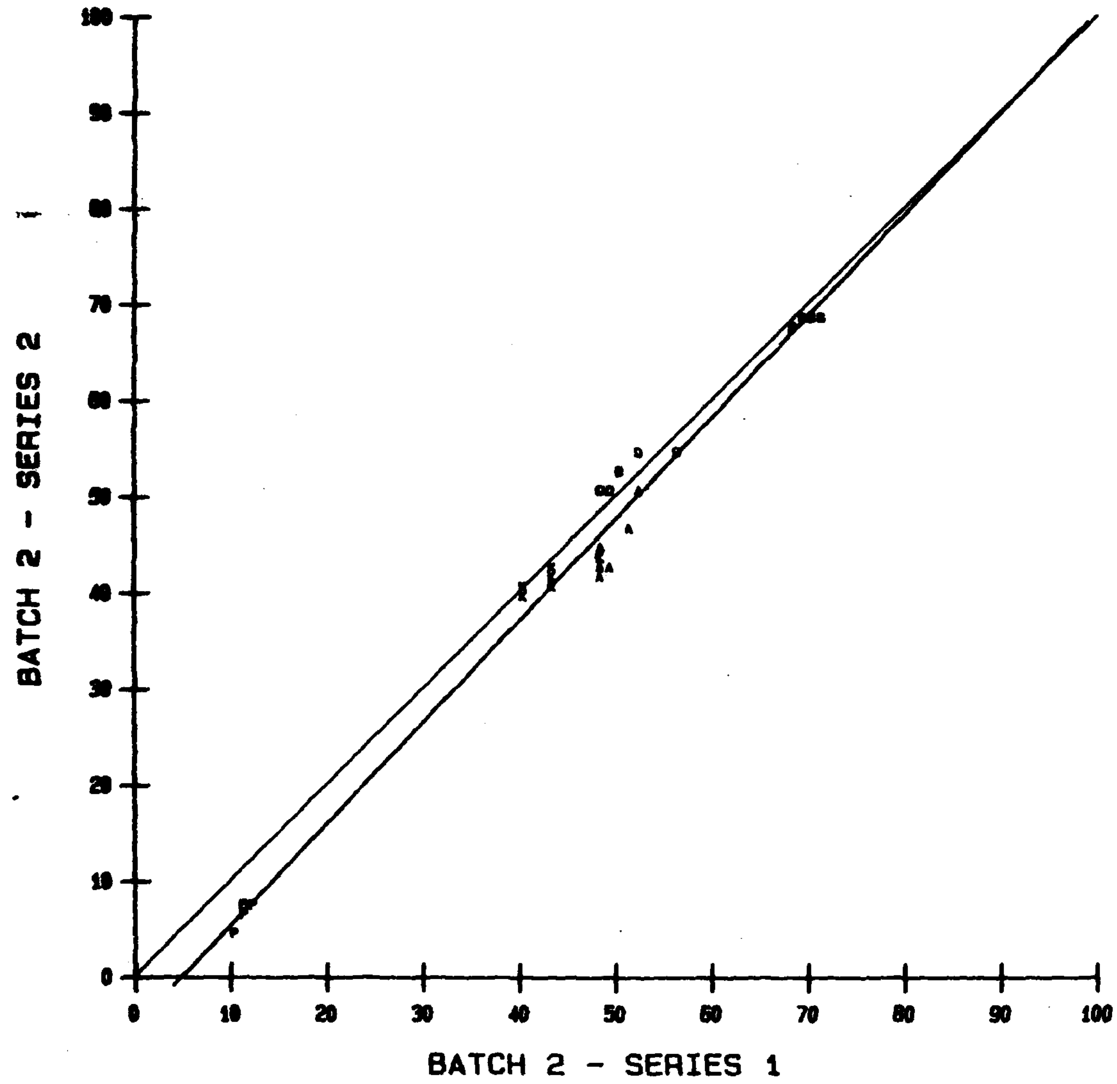
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUMC11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	5 TO 62
RANGE OF DATA	:	10 TO 71

CURVE TYPE : LINEAR

Y = 3.975 + 1.076X

McCREARY TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -5.1060
COEFFICIENT B = 1.0568

COEF. OF CORR. = 0.9927
COEF. OF DET. = 0.9855
STD. ERR. EST. = 2.5481

REGRESSION LINE = ————
X - Y LINE = ————

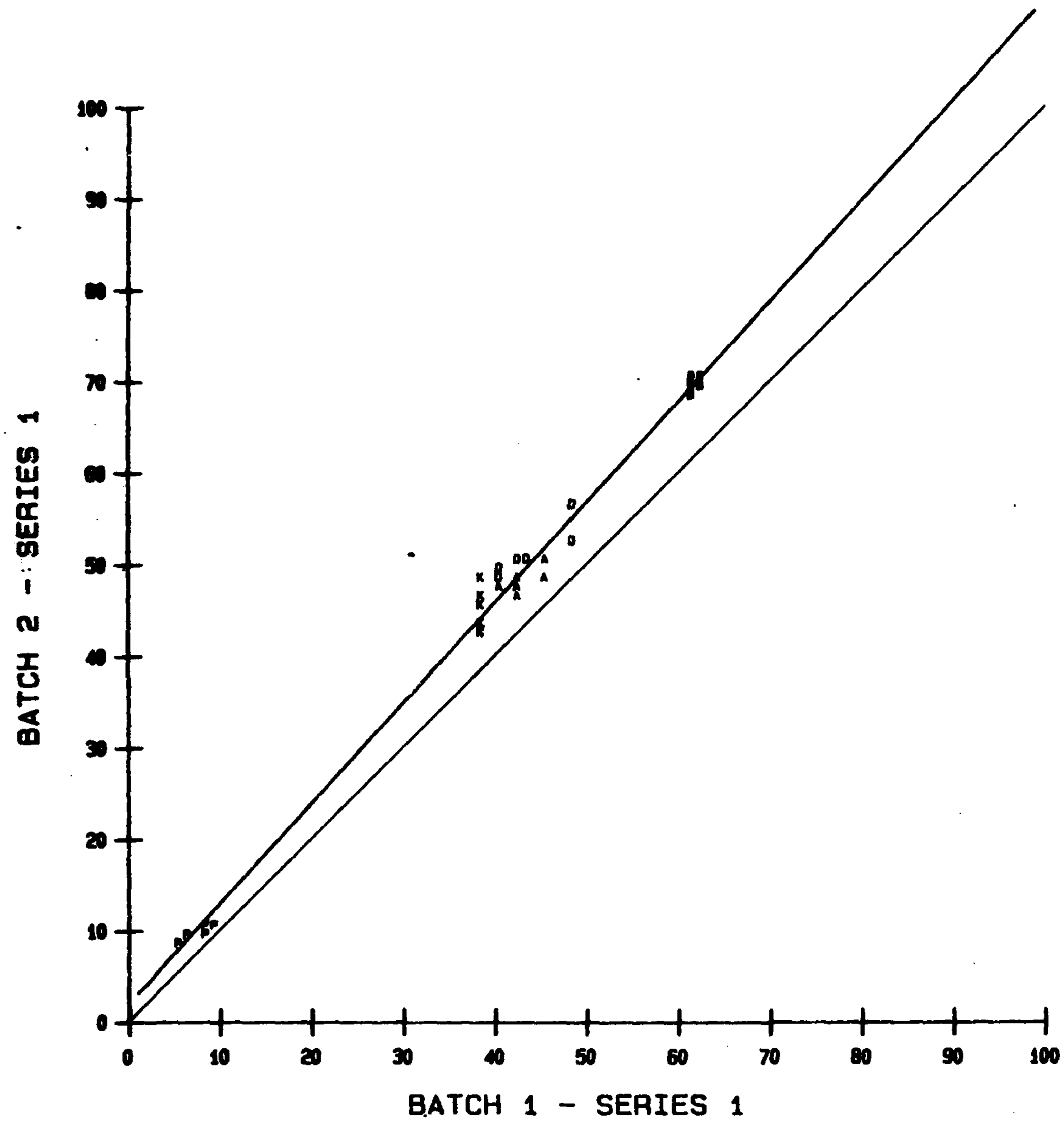
SOURCE DATA FILE INFO

DISK DRIVE : B:
SUBDIRECTORY : \
FILENAME : 40MUMC21.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 10 TO 71
RANGE OF DATA : 4 TO 68

CURVE TYPE : LINEAR
Y = - 5.106 + 1.057X

McCREARY TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.0466
COEFFICIENT B	=	1.0975
COEF. OF CORR.	=	0.9961
COEF. OF DET.	=	0.9922
STD. ERR. EST.	=	1.7932

REGRESSION LINE = ———

X - Y LINE = ———

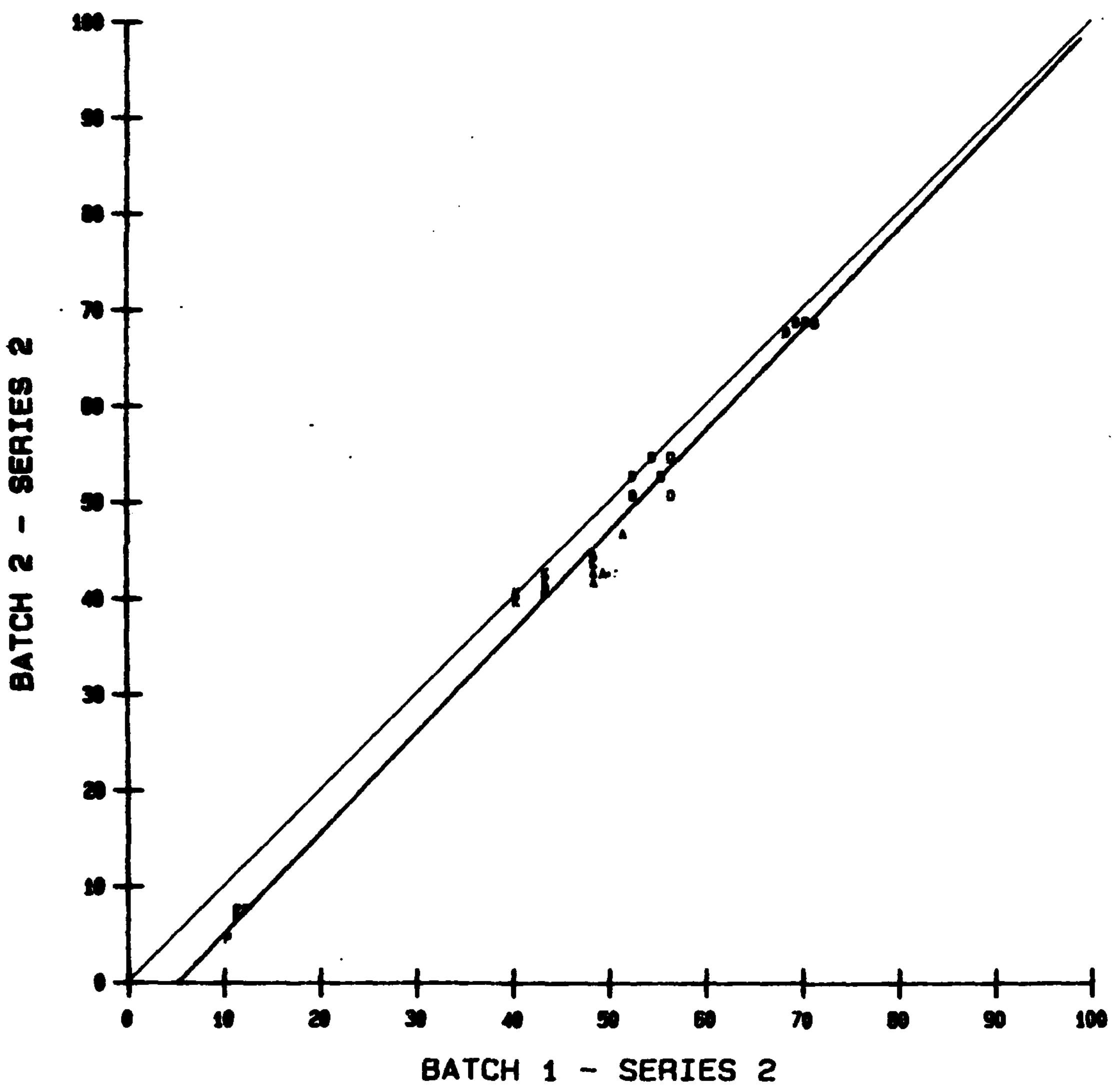
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUMC11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	5 TO 62
RANGE OF DATA	:	8 TO 70

CURVE TYPE : LINEAR

Y = 2.047 + 1.097X

McCREARY TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-5.3682
COEFFICIENT B	=	1.0470
COEF. OF CORR.	=	0.9957
COEF. OF DET.	=	0.9913
STD. ERR. EST.	=	1.9672

REGRESSION LINE = ———
X - Y LINE = ———

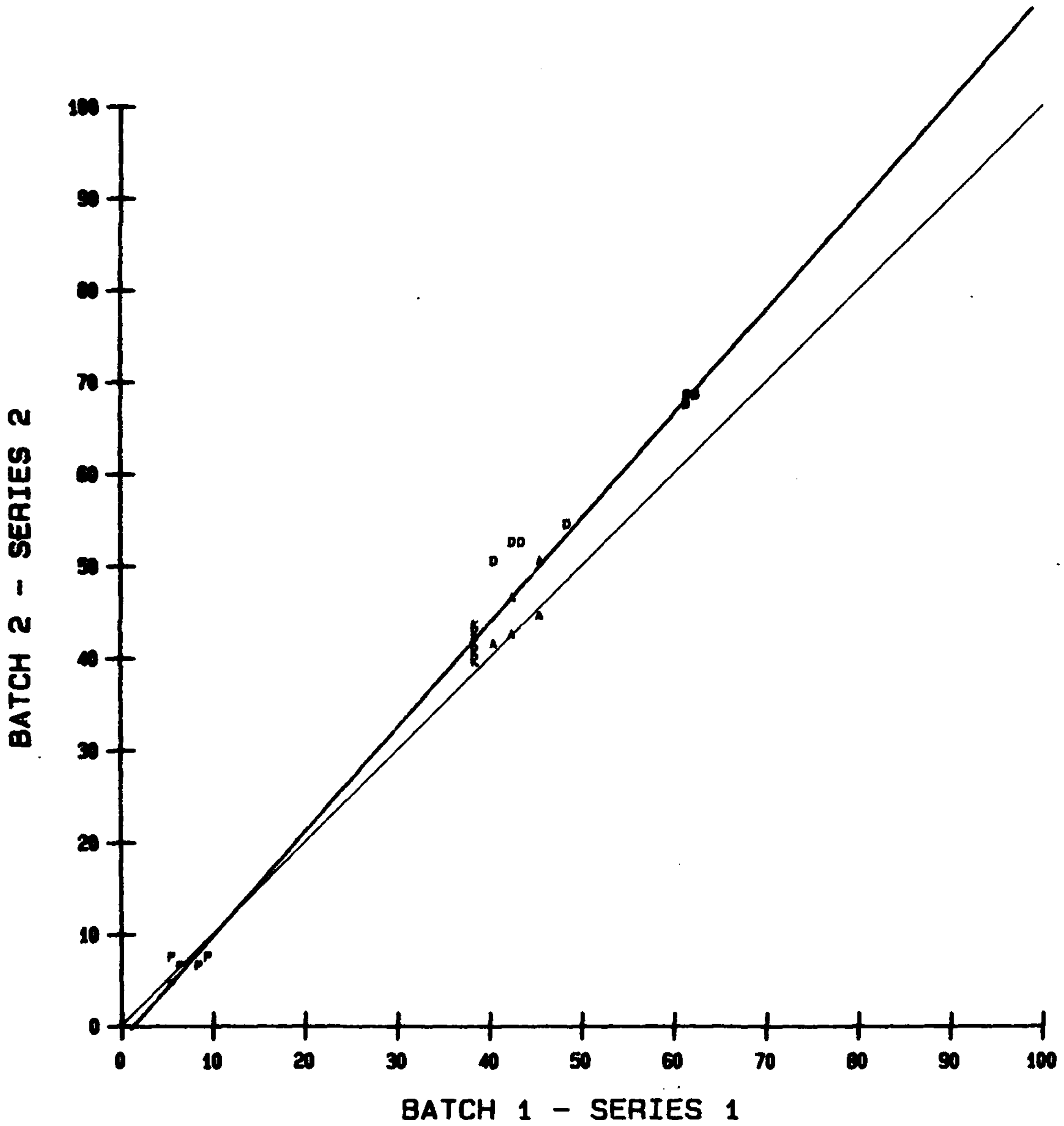
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUMC12.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	10 TO 71
RANGE OF DATA	:	4 TO 68

CURVE TYPE : LINEAR

$Y = -5.368 + 1.047X$

McCREARY TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.4656
COEFFICIENT B	=	1.1333
COEF. OF CORR.	=	0.9903
COEF. OF DET.	=	0.9807
STD. ERR. EST.	=	2.9336

REGRESSION LINE = ______

X - Y LINE = ______

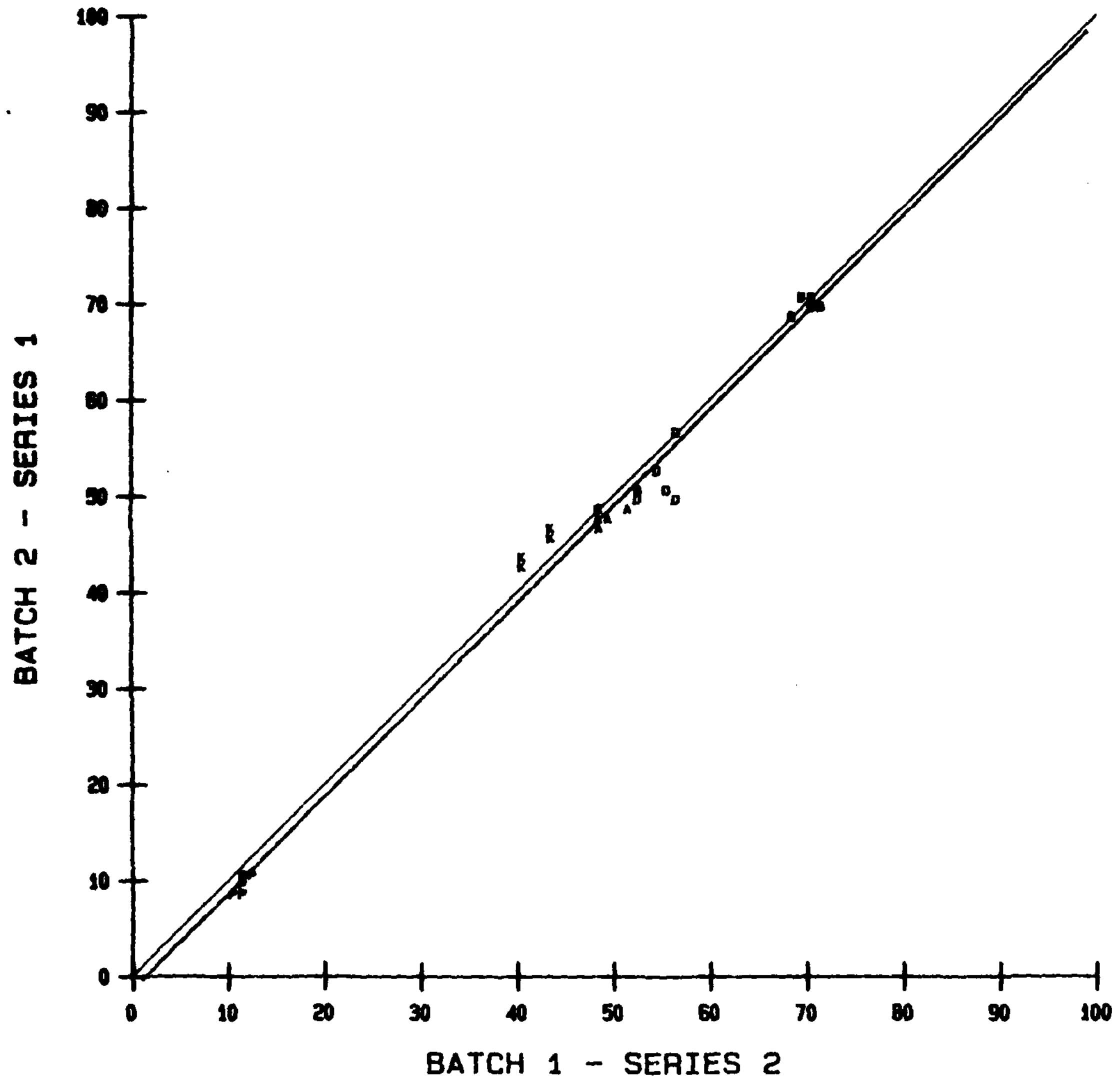
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUMC11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	5 TO 62
RANGE OF DATA	:	4 TO 68

CURVE TYPE : LINEAR

Y = - 1.466 + 1.133X

McCREARY TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.3669
COEFFICIENT B	=	1.0066
COEF. OF CORR.	=	0.9939
COEF. OF DET.	=	0.9878
STD. ERR. EST.	=	2.2470

REGRESSION LINE = ______

X - Y LINE = ______

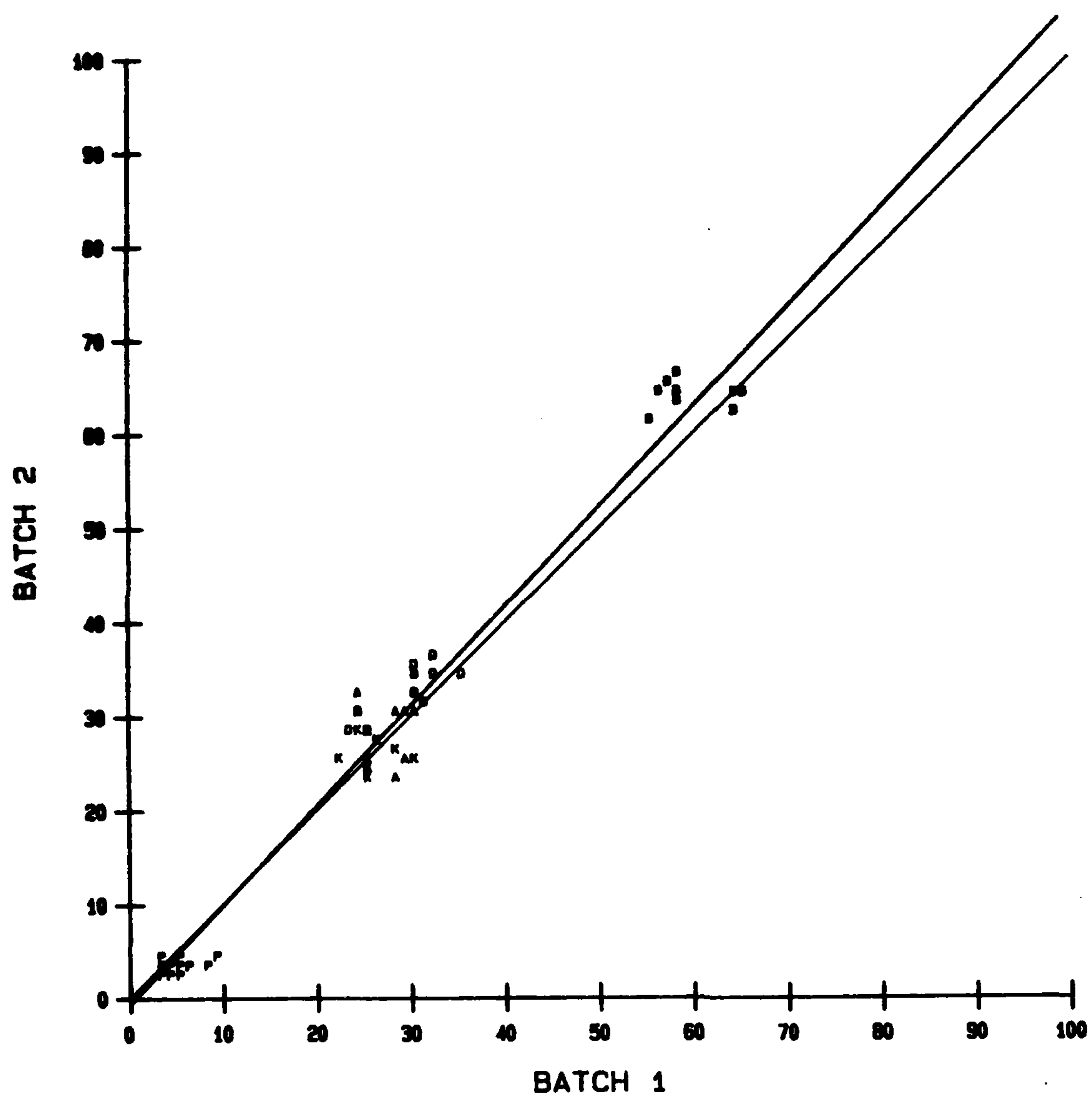
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUMC12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	10 TO 71
RANGE OF DATA	:	8 TO 70

CURVE TYPE : LINEAR

Y = - 1.367 + 1.007X

McCREARY TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.6009
COEFFICIENT B	=	1.0588
COEF. OF CORR.	=	0.9840
COEF. OF DET.	=	0.9683
STD. ERR. EST.	=	3.5169

REGRESSION LINE = ________
X - Y LINE = ________

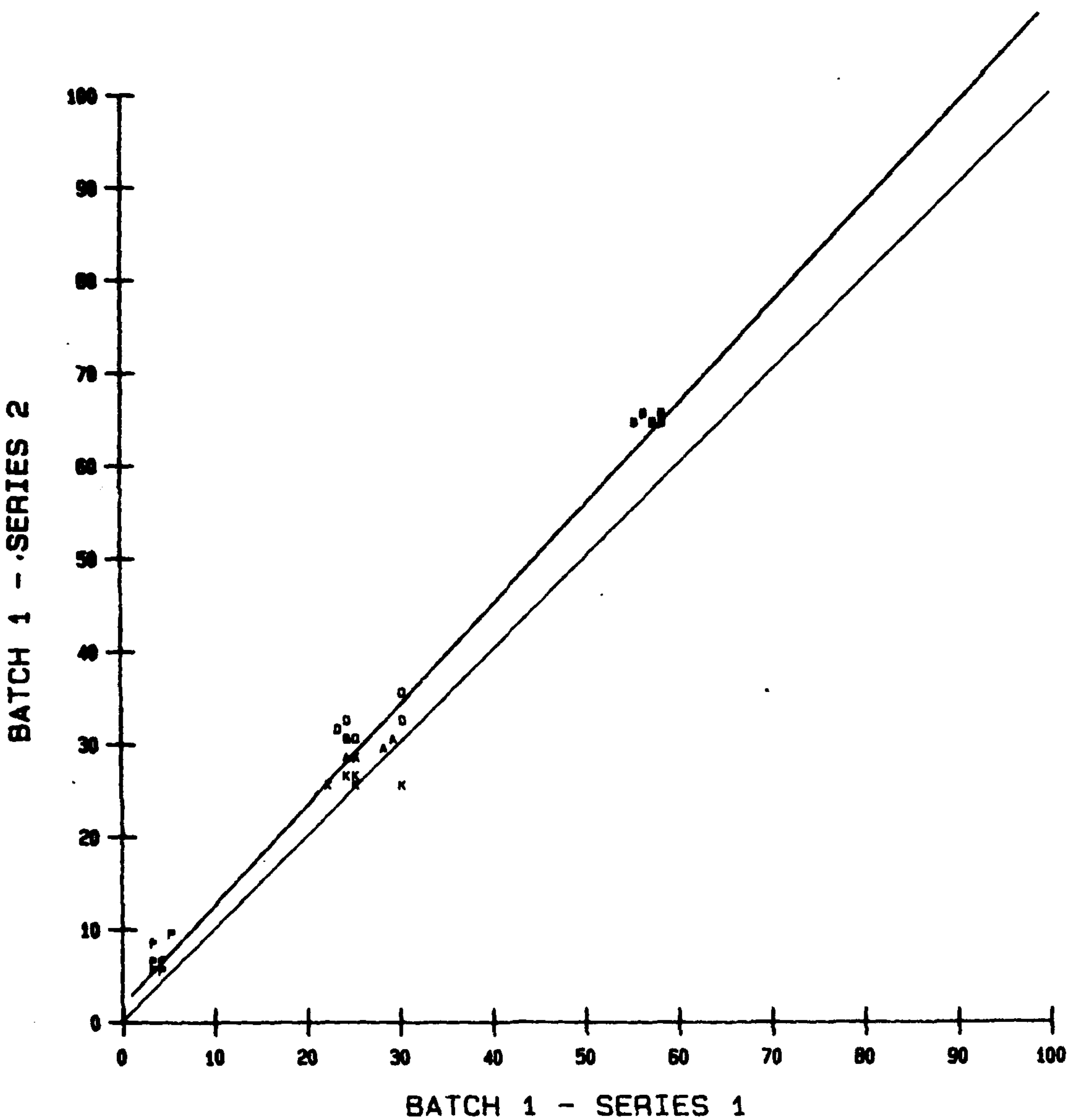
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMC1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 65
RANGE OF DATA	:	2 TO 66

CURVE TYPE : LINEAR

Y = - 0.601 + 1.059X

McCREARY TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	1.8262
COEFFICIENT B	=	1.0790
COEF. OF CORR.	=	0.9894
COEF. OF DET.	=	0.9789
STD. ERR. EST.	=	2.8088

REGRESSION LINE = ______
X - Y LINE = ______

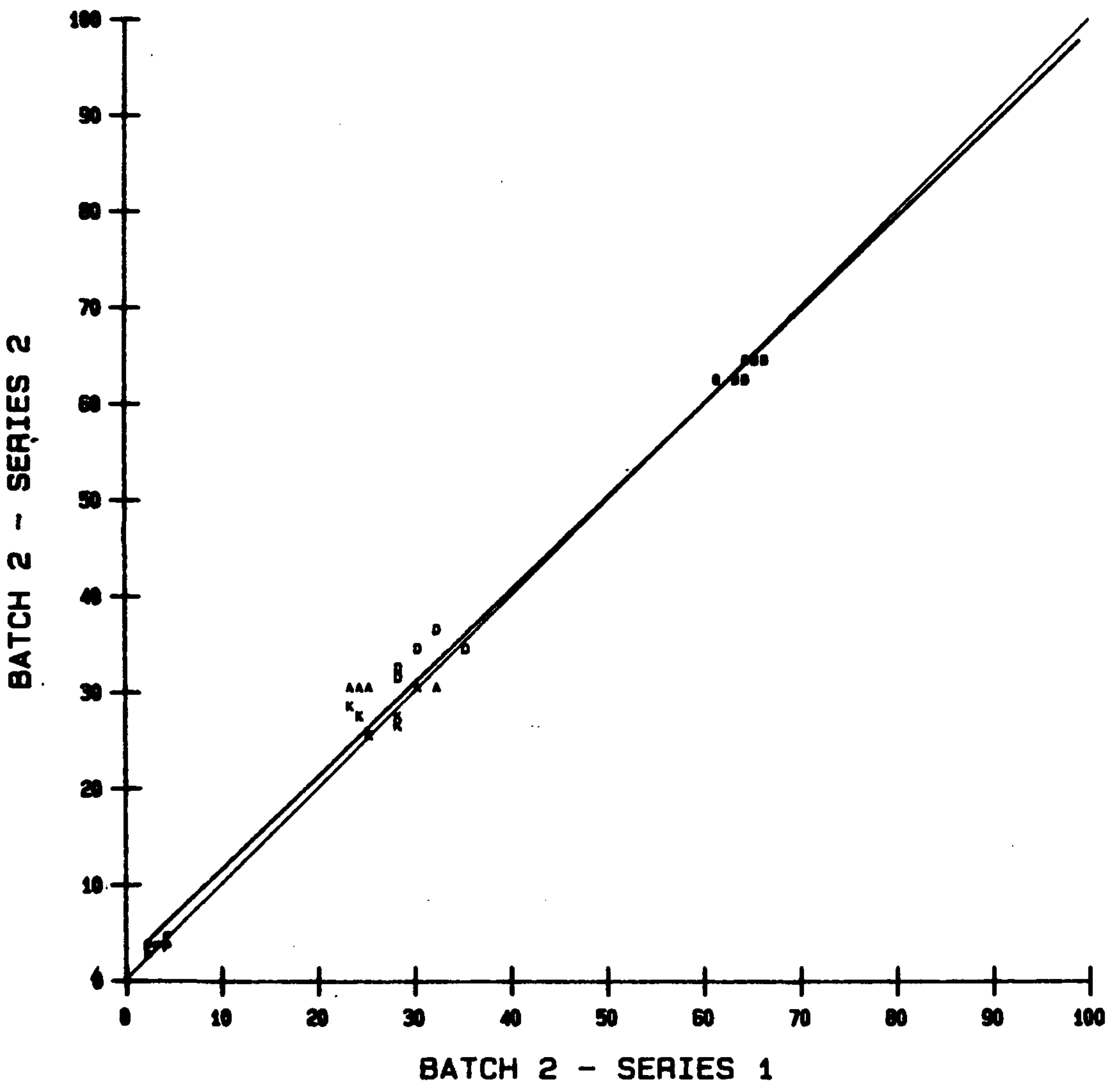
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMC11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 58
RANGE OF DATA	:	5 TO 65

CURVE TYPE : LINEAR

Y = 1.826 + 1.079X

McCREARY TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	1.9995
COEFFICIENT B	=	0.9690
COEF. OF CORR.	=	0.9910
COEF. OF DET.	=	0.9820
STD. ERR. EST.	=	2.6644

REGRESSION LINE = ————

X - Y LINE = ————

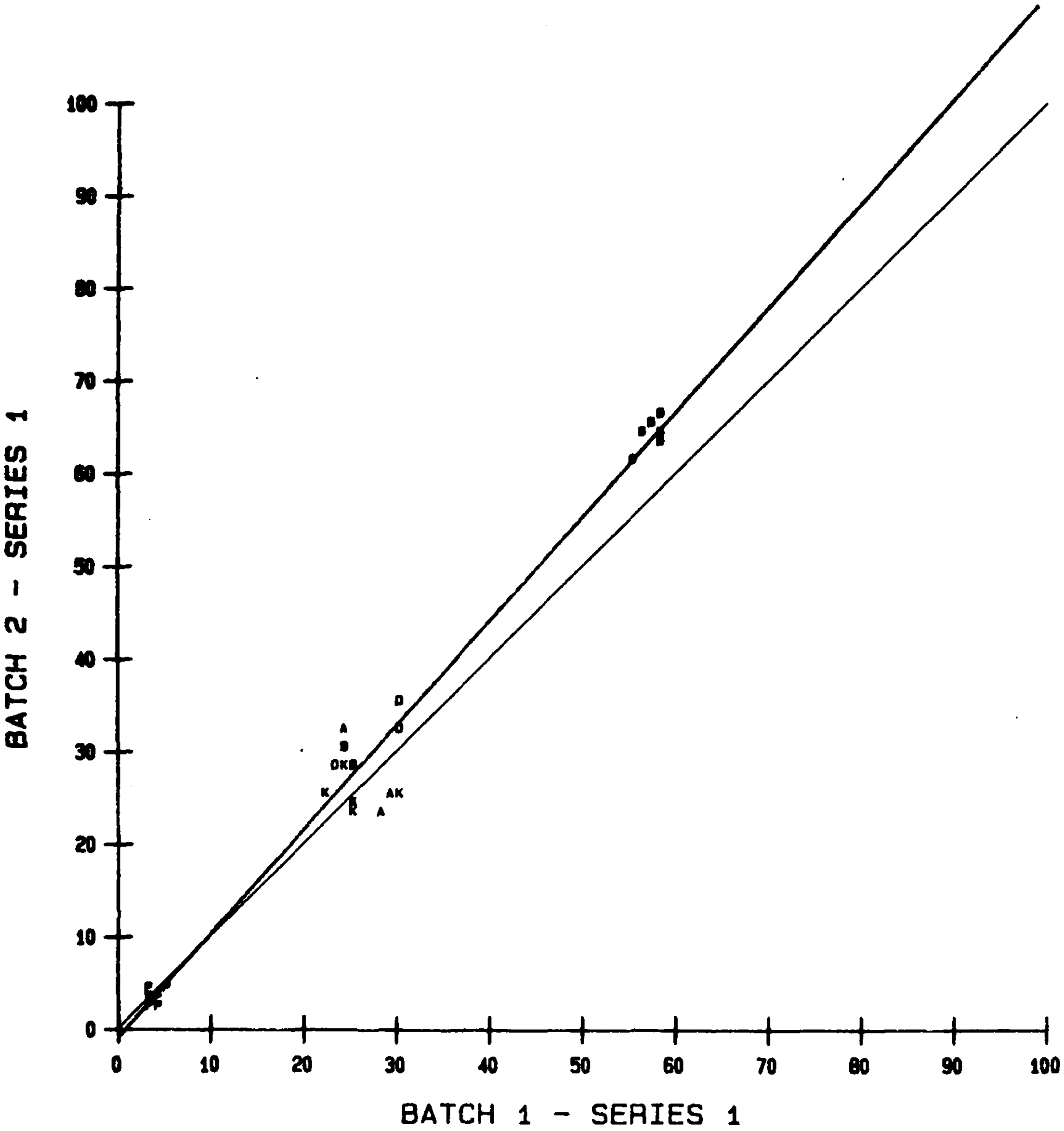
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMC21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 66
RANGE OF DATA	:	2 TO 64

CURVE TYPE : LINEAR

Y = 1.999 + 0.969X

McCREARY TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.8962
COEFFICIENT B	=	1.1271
COEF. OF CORR.	=	0.9844
COEF. OF DET.	=	0.9691
STD. ERR. EST.	=	3.5691

REGRESSION LINE = ______

X - Y LINE = ______

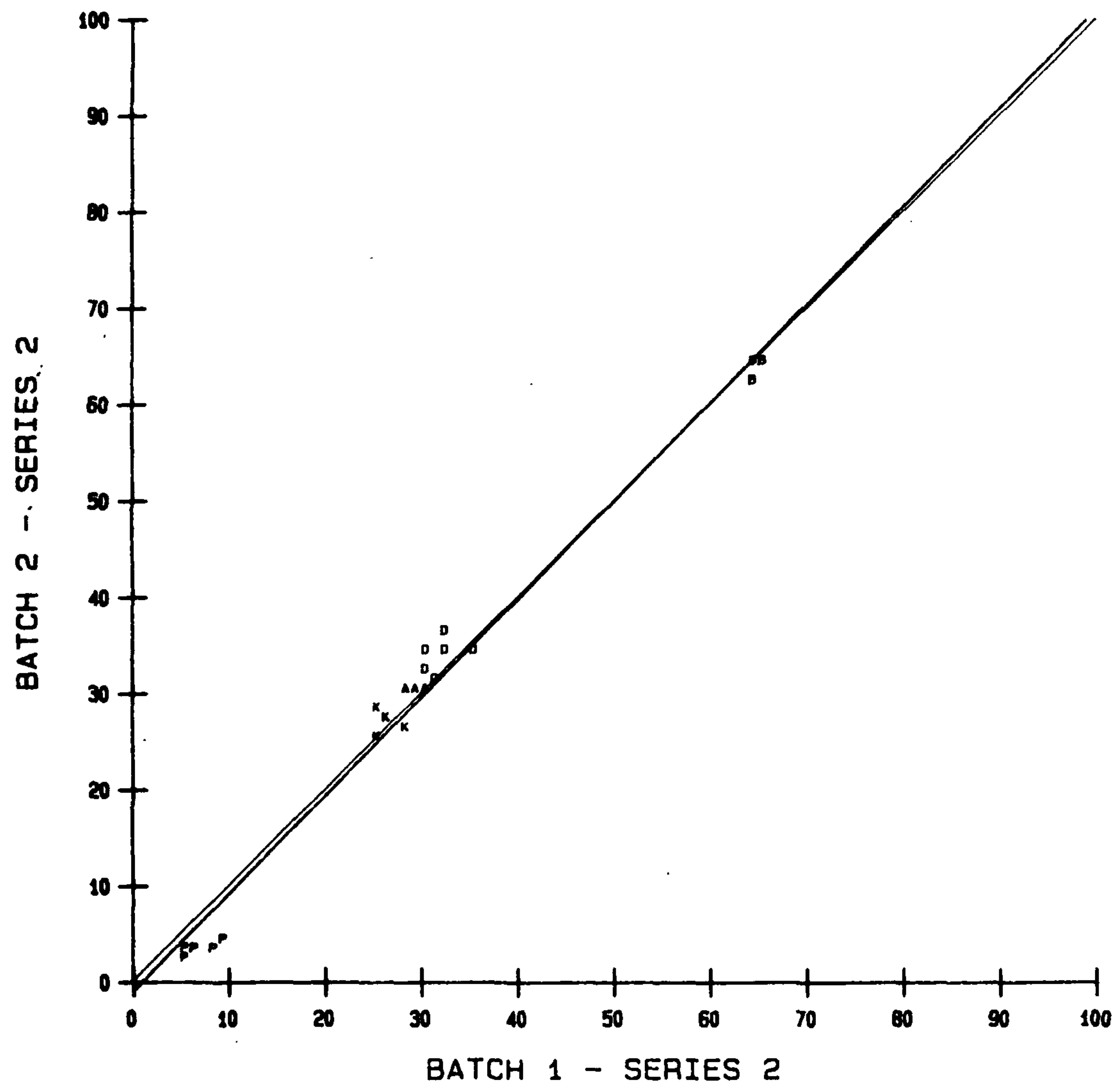
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMC11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 58
RANGE OF DATA	:	2 TO 66

CURVE TYPE : LINEAR

Y = - 0.896 + 1.127X

McCREARY TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.9461
COEFFICIENT B	=	1.0195
COEF. OF CORR.	=	0.9931
COEF. OF DET.	=	0.9862
STD. ERR. EST.	=	2.3353

REGRESSION LINE = ———

X - Y LINE = ———

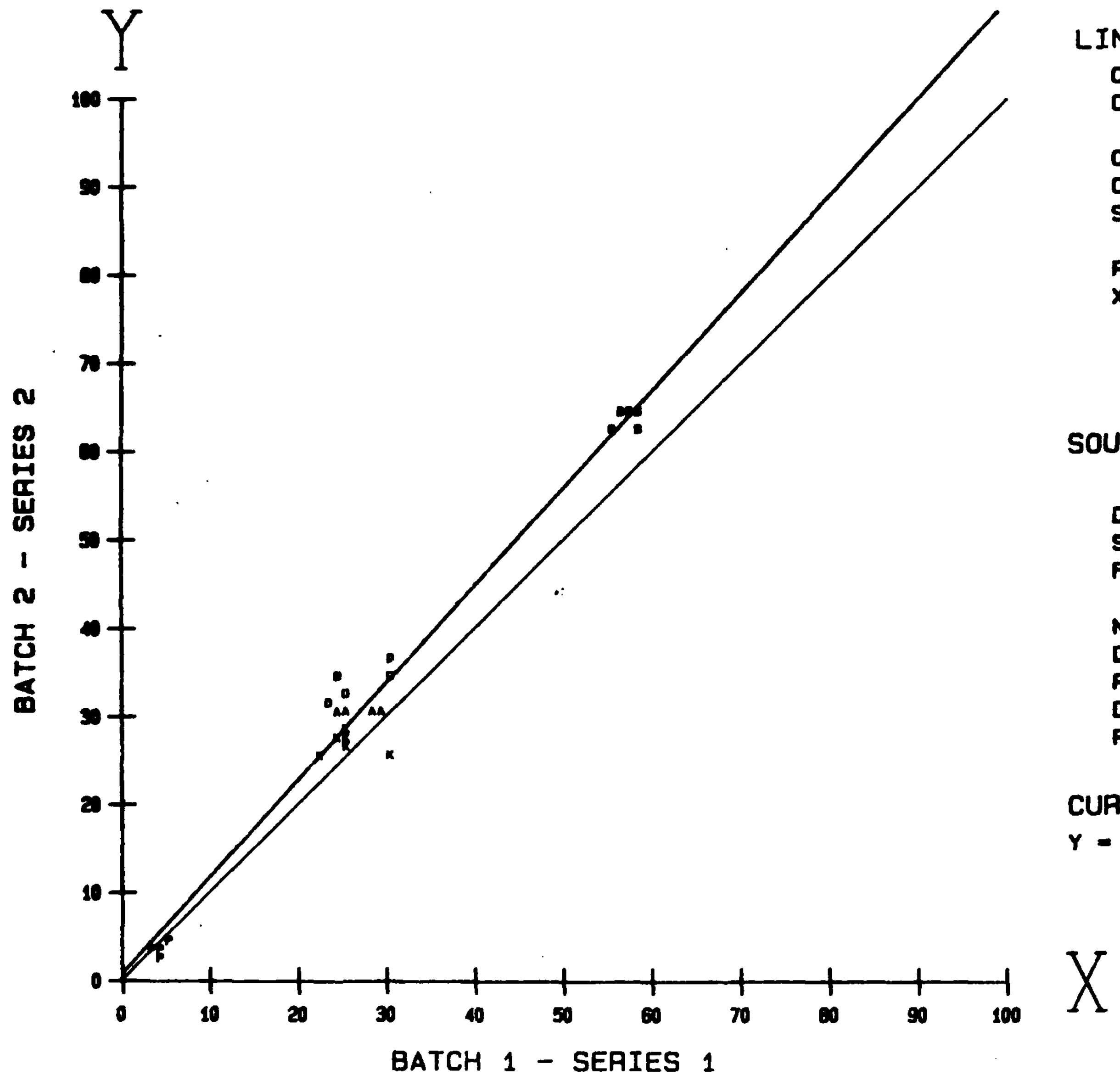
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMC12.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	5 TO 65
RANGE OF DATA	:	2 TO 64

CURVE TYPE : LINEAR

Y = - 0.946 + 1.019X

McCREARY TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.7943
COEFFICIENT B	=	1.1045
COEF. OF CORR.	=	0.9865
COEF. OF DET.	=	0.9732
STD. ERR. EST.	=	3.2539

REGRESSION LINE = ______
X - Y LINE = ______

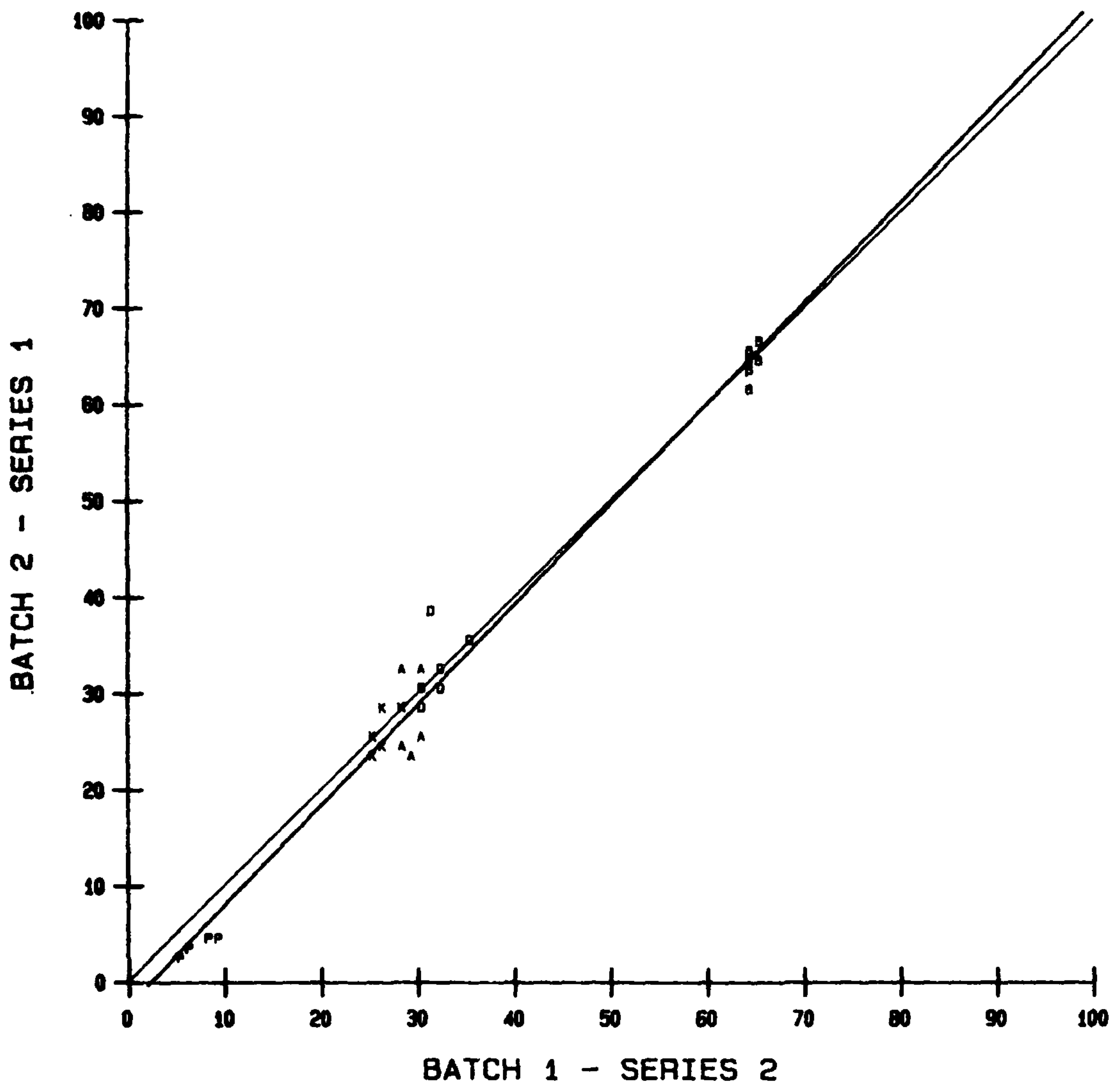
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMC11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 58
RANGE OF DATA	:	2 TO 64

CURVE TYPE : LINEAR

Y = 0.794 + 1.104X

McCREARY TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-2.4243
COEFFICIENT B	=	1.0431
COEF. OF CORR.	=	0.9912
COEF. OF DET.	=	0.9826
STD. ERR. EST.	=	2.6885

REGRESSION LINE = _______
X - Y LINE = _______

SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMC12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	5 TO 65
RANGE OF DATA	:	2 TO 66

CURVE TYPE : LINEAR

Y = - 2.424 + 1.043X

APPENDIX M

REGRESSION ANALYSIS CHARTS

SHOWING GRAPHIC PRESENTATION

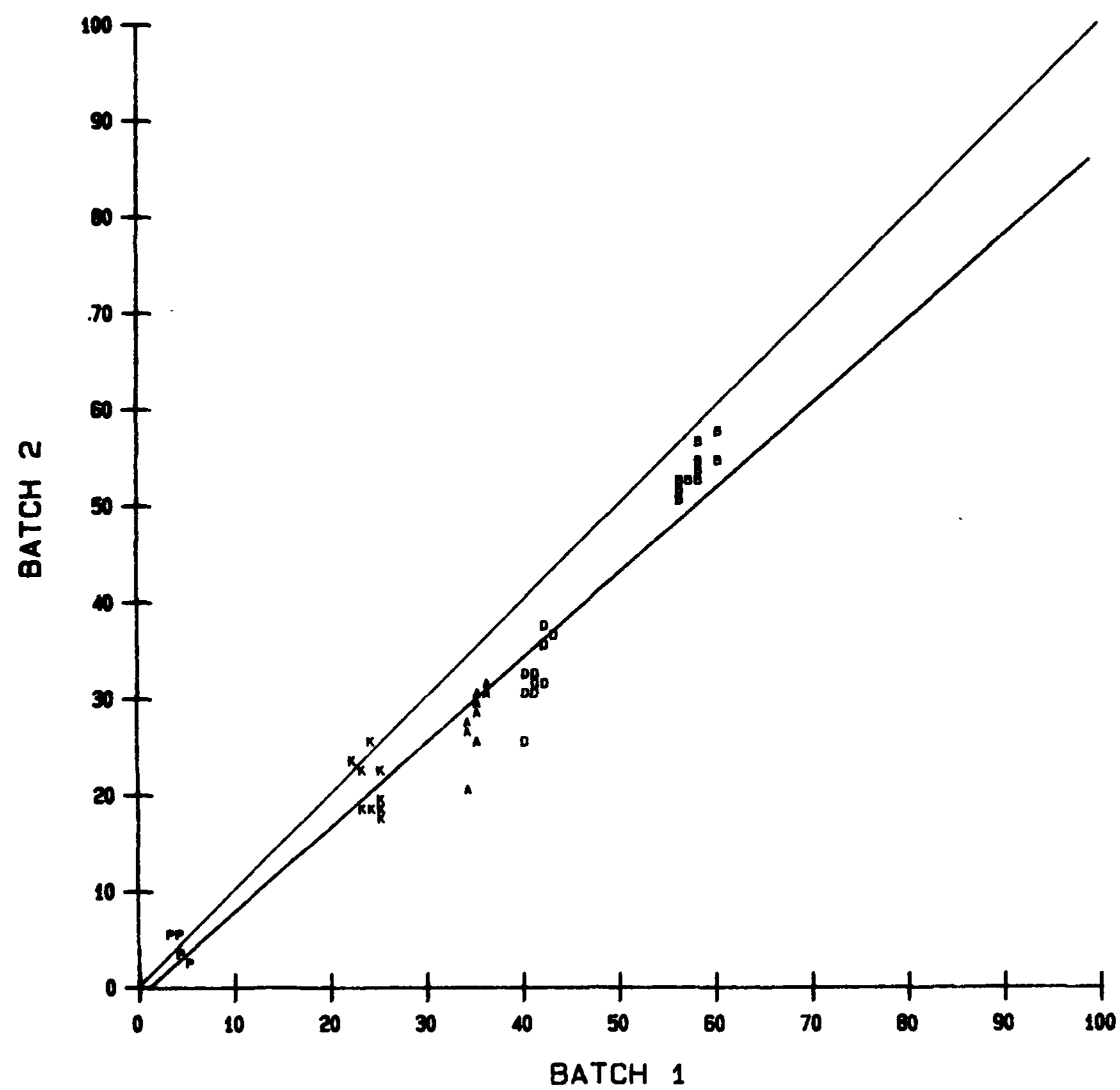
OF THE PERFORMANCE AND RELIABILITY OF THE DICO TIRE

MOUNTED ON FOUR FRICTION FRICTION DEVICES

USING SELF WATER SYSTEM

AT SPEEDS OF 40 AND 60 MPH

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.8887
COEFFICIENT B	=	0.8766
COEF. OF CORR.	=	0.9777
COEF. OF DET.	=	0.9559
STD. ERR. EST.	=	3.4400

REGRESSION LINE = ——————
X - Y LINE = ——————

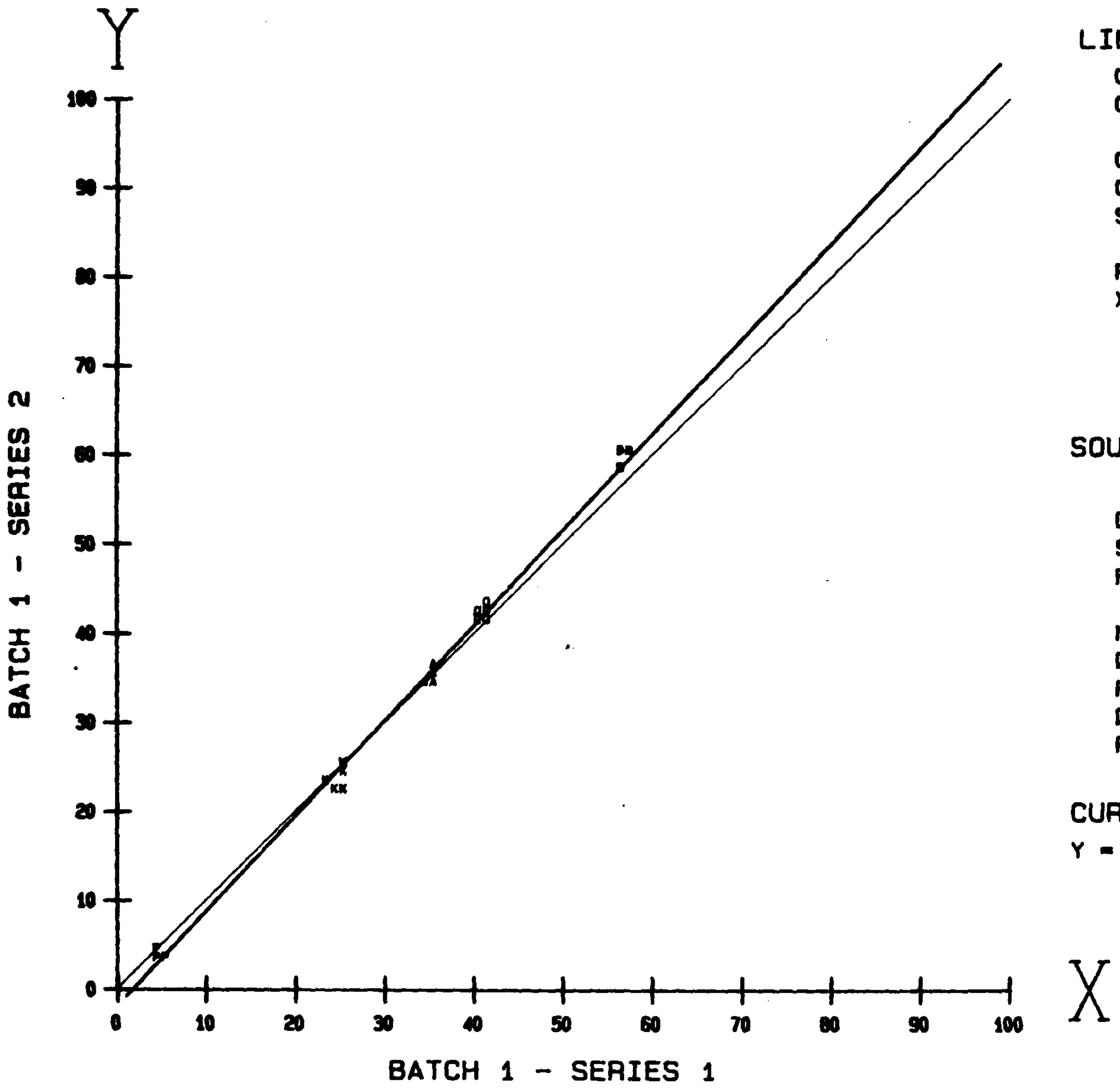
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40RFDK1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 60
RANGE OF DATA	:	2 TO 57

CURVE TYPE : LINEAR

Y = - 0.889 + 0.877X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.9117
COEFFICIENT B	=	1.0711
COEF. OF CORR.	=	0.9981
COEF. OF DET.	=	0.9962
STD. ERR. EST.	=	1.1884

REGRESSION LINE = ______
X - Y LINE = ______

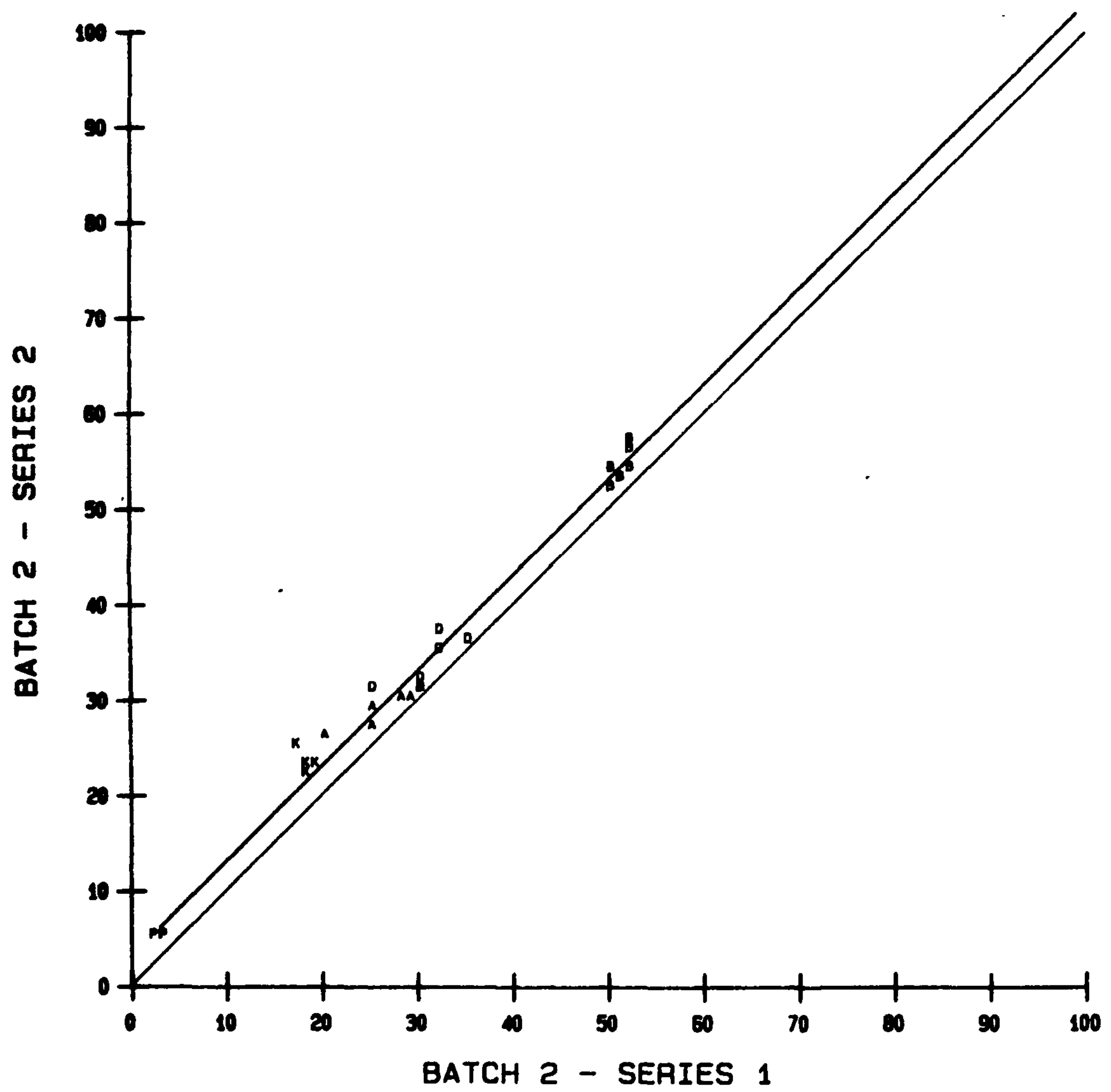
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40RFDK11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 57
RANGE OF DATA	:	3 TO 60

CURVE TYPE : LINEAR

Y = - 1.912 + 1.071X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	3.2390
COEFFICIENT B	=	0.9985
COEF. OF CORR.	=	0.9941
COEF. OF DET.	=	0.9883
STD. ERR. EST.	=	1.8006

REGRESSION LINE = ______
X - Y LINE = ______

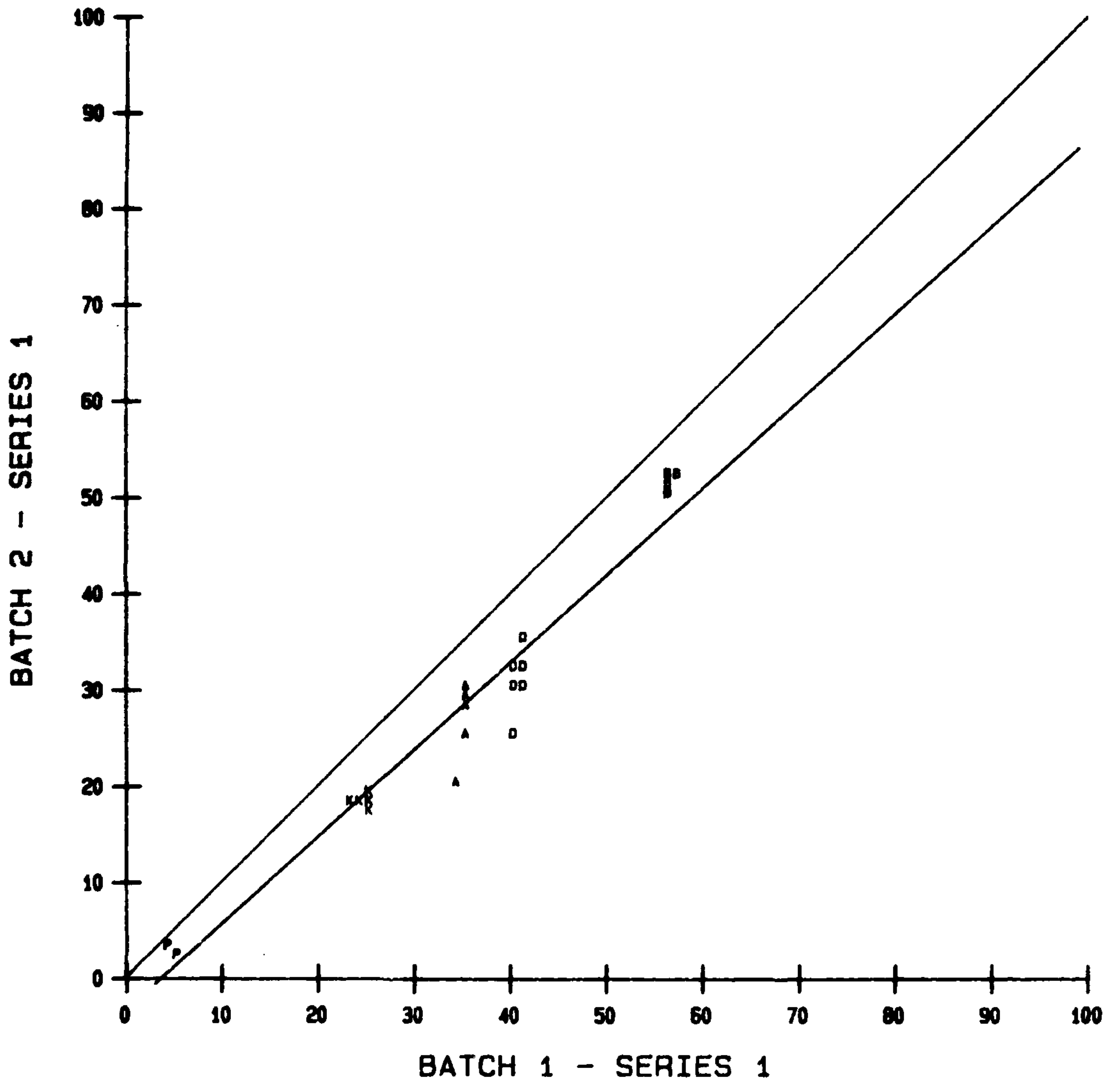
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40RFDK21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 52
RANGE OF DATA	:	5 TO 57

CURVE TYPE : LINEAR

Y = 3.239 + 0.998X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-3.2387
COEFFICIENT B	=	0.9055
COEF. OF CORR.	=	0.9801
COEF. OF DET.	=	0.9606
STD. ERR. EST.	=	3.2822

REGRESSION LINE = ______

X - Y LINE = ______

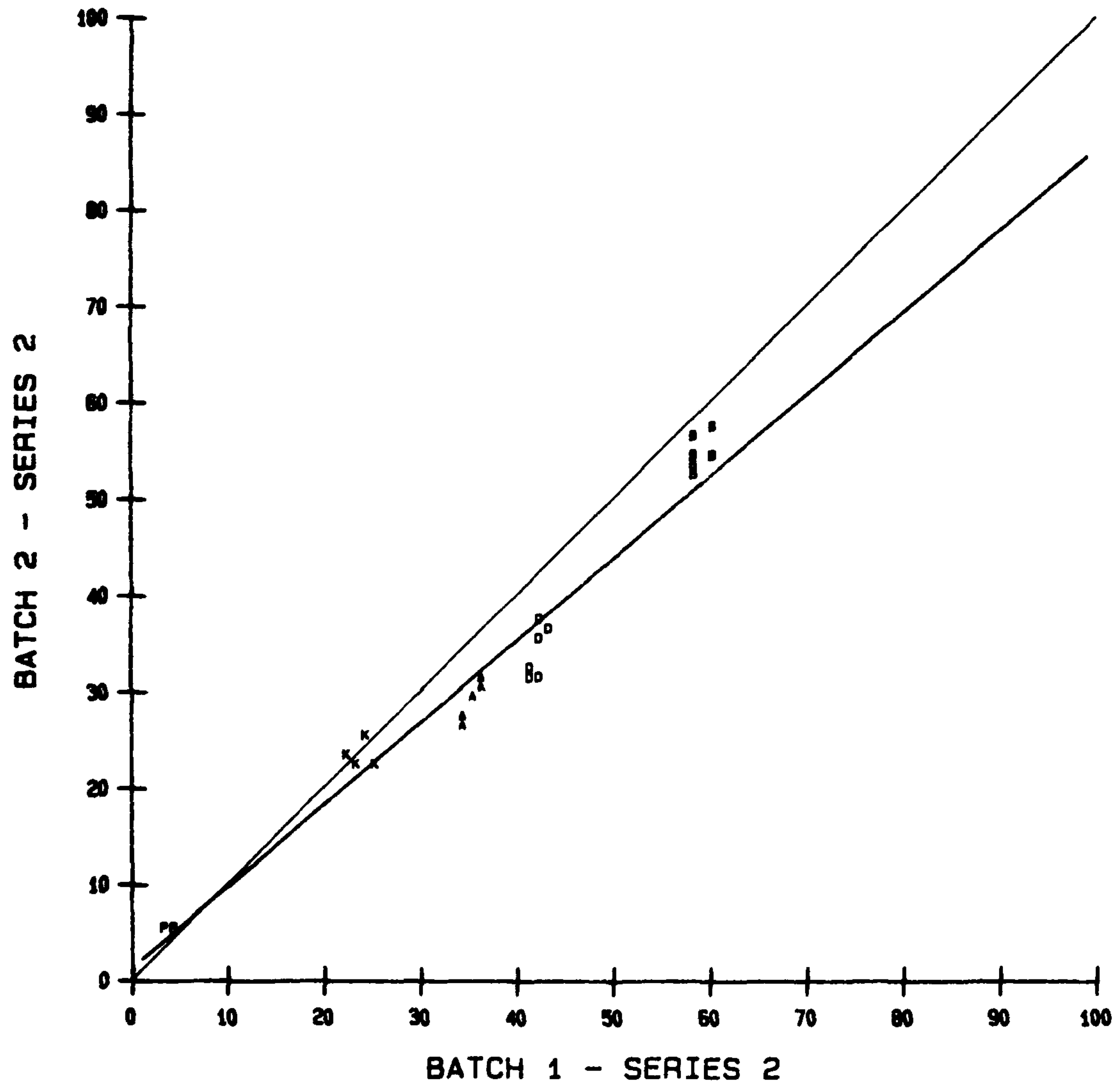
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40RFDK11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 57
RANGE OF DATA	:	2 TO 52

CURVE TYPE : LINEAR

Y = - 3.239 + 0.905X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 1.4004
COEFFICIENT B = 0.8508

COEF. OF CORR. = 0.9840
COEF. OF DET. = 0.9683
STD. ERR. EST. = 2.9592

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

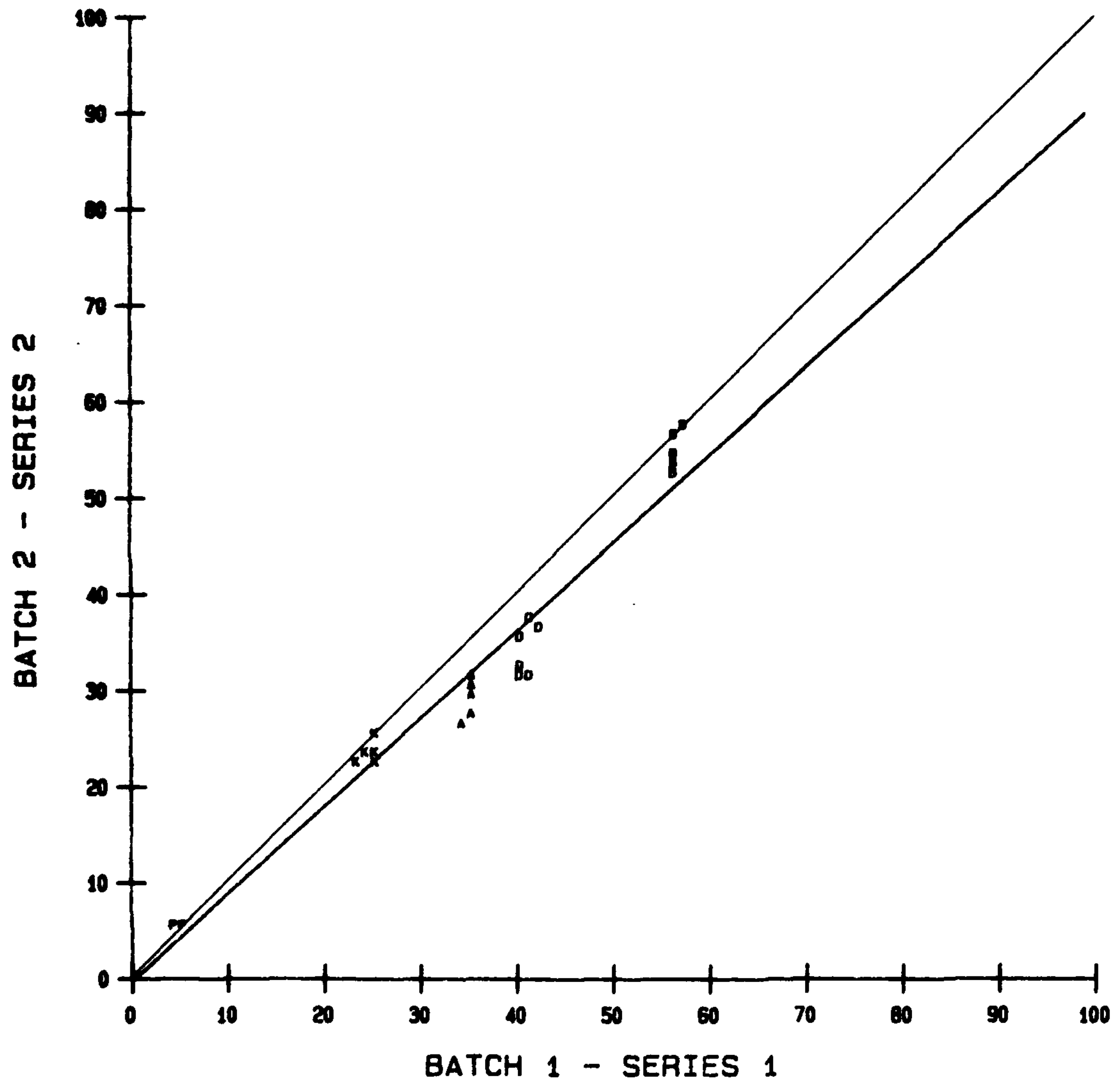
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40RFDK12.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 60
RANGE OF DATA : 5 TO 57

CURVE TYPE : LINEAR

Y = 1.4 + 0.851X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.2710
COEFFICIENT B	=	0.9118
COEF. OF CORR.	=	0.9837
COEF. OF DET.	=	0.9676
STD. ERR. EST.	=	2.9921

REGRESSION LINE = ———
X - Y LINE = ———

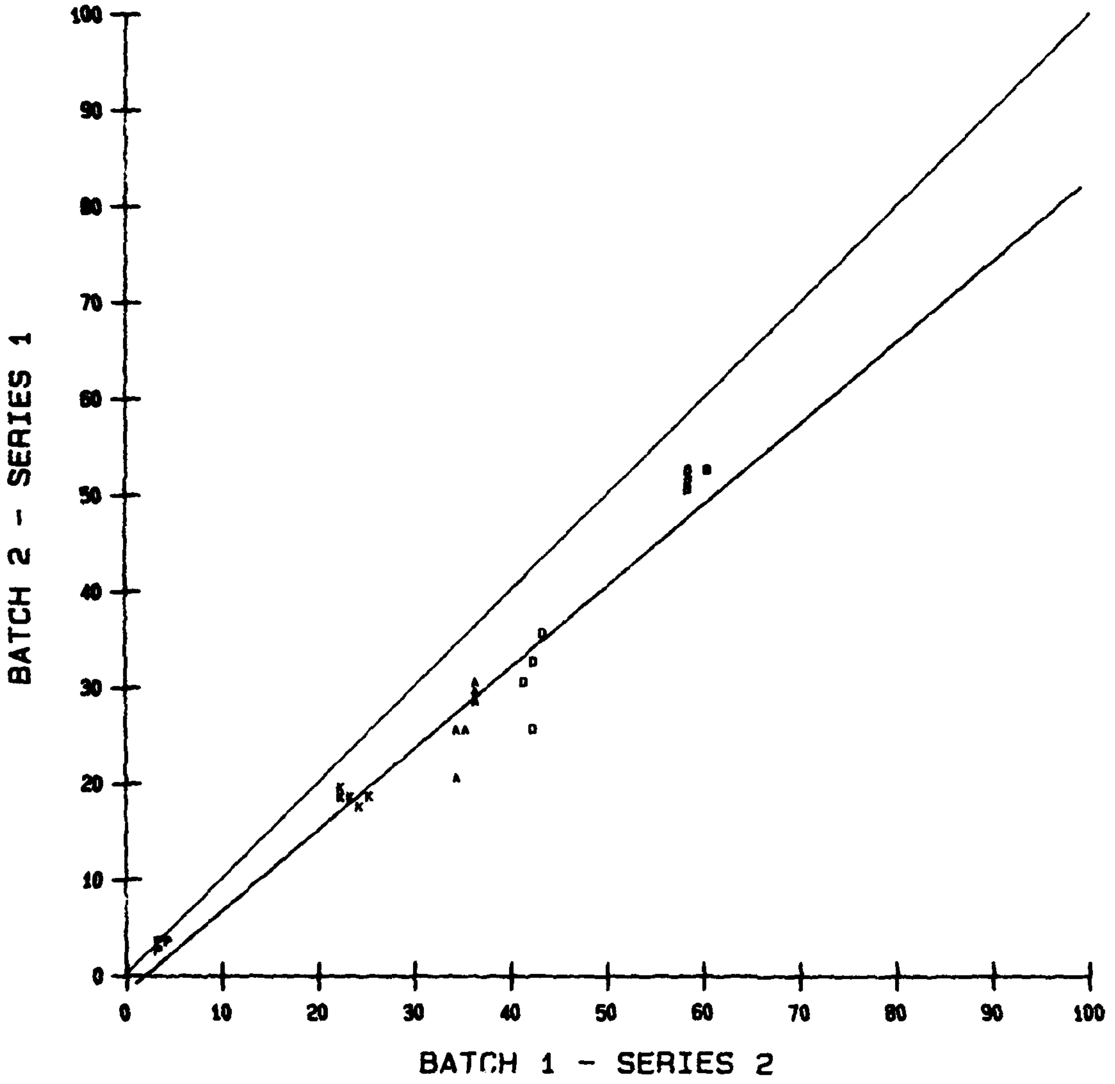
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40RFDK11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 57
RANGE OF DATA	:	5 TO 57

CURVE TYPE : LINEAR

Y = - 0.271 + 0.912X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -1.6411
COEFFICIENT B = 0.8459

COEF. OF CORR. = 0.9827
COEF. OF DET. = 0.9656
STD. ERR. EST. = 3.0674

REGRESSION LINE = ________
X - Y LINE = ________

SOURCE DATA FILE INFO

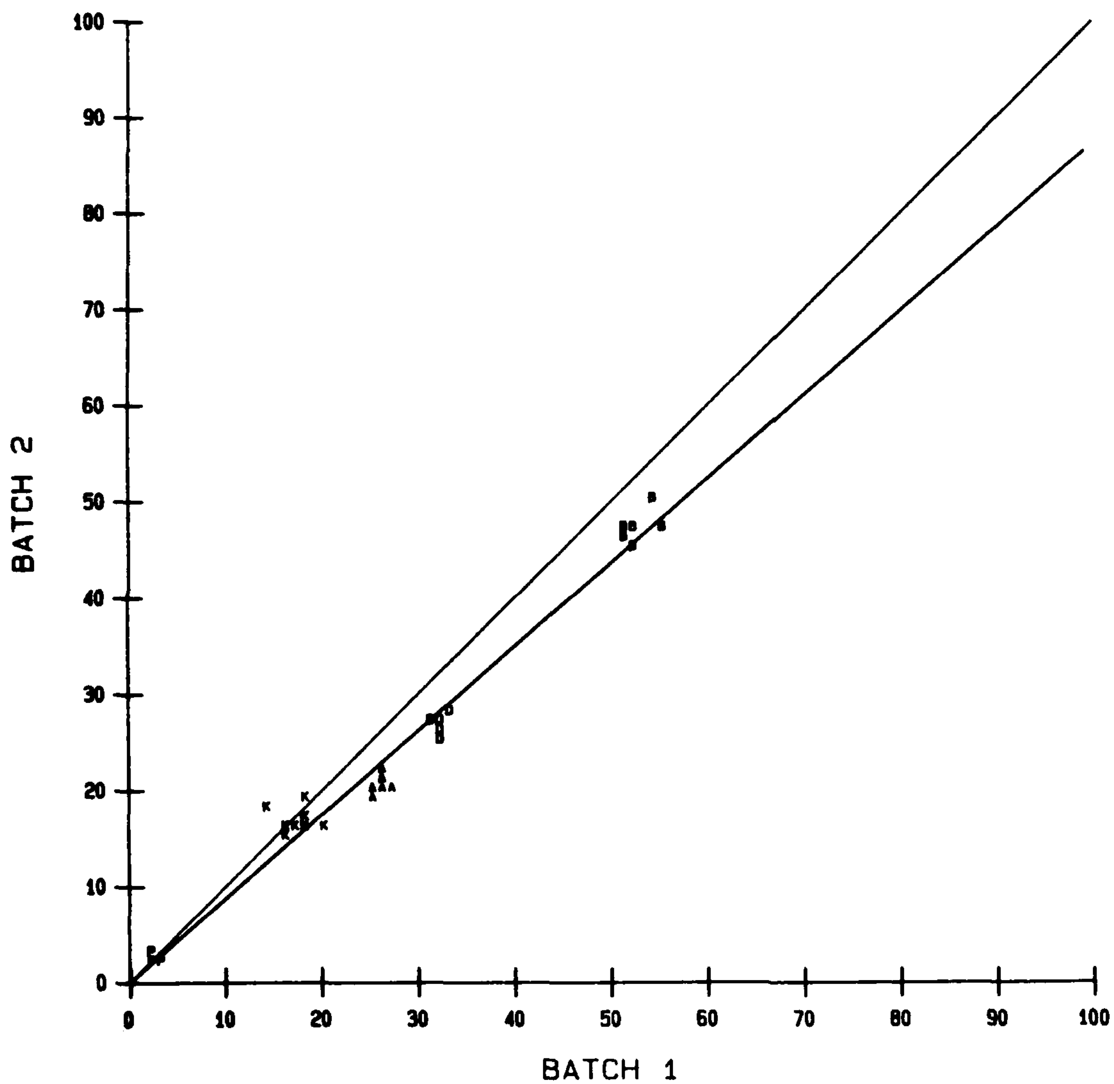
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40RFDK12.21

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 60
RANGE OF DATA : 2 TO 52

CURVE TYPE : LINEAR

Y = - 1.641 + 0.846X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.0747
COEFFICIENT B	=	0.8722
COEF. OF CORR.	=	0.9913
COEF. OF DET.	=	0.9826
STD. ERR. EST.	=	1.9490

REGRESSION LINE = _______
X - Y LINE = _______

SOURCE DATA FILE INFO

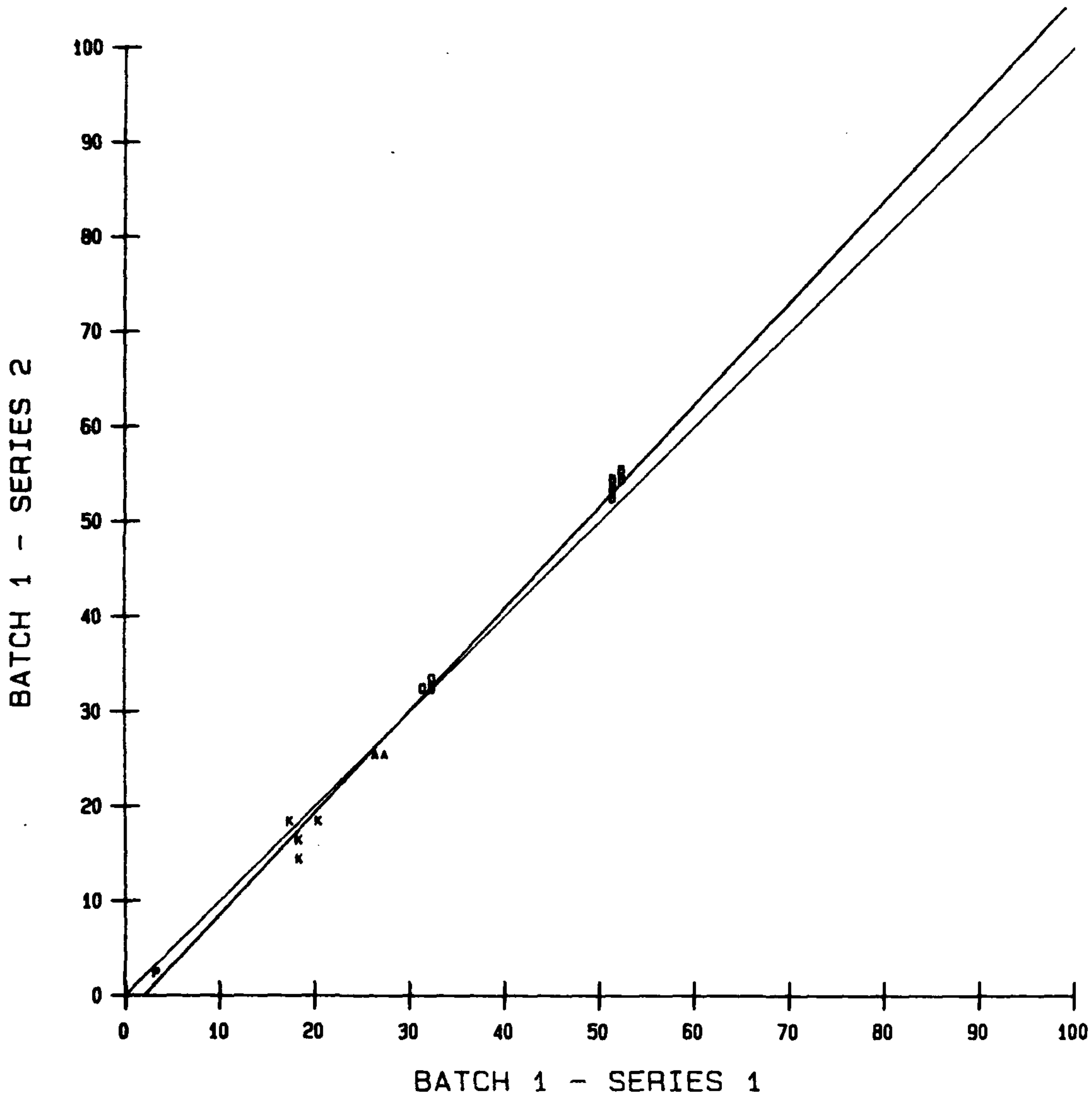
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60RFDK1.2

NUMBER OF POINTS : 48
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 2 TO 55
RANGE OF DATA : 2 TO 50

CURVE TYPE : LINEAR

Y = 0.075 + 0.872X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-2.1949
COEFFICIENT B	=	1.0753
COEF. OF CORR.	=	0.9978
COEF. OF DET.	=	0.9956
STD. ERR. EST.	=	1.1705

REGRESSION LINE = ______

X - Y LINE = ______

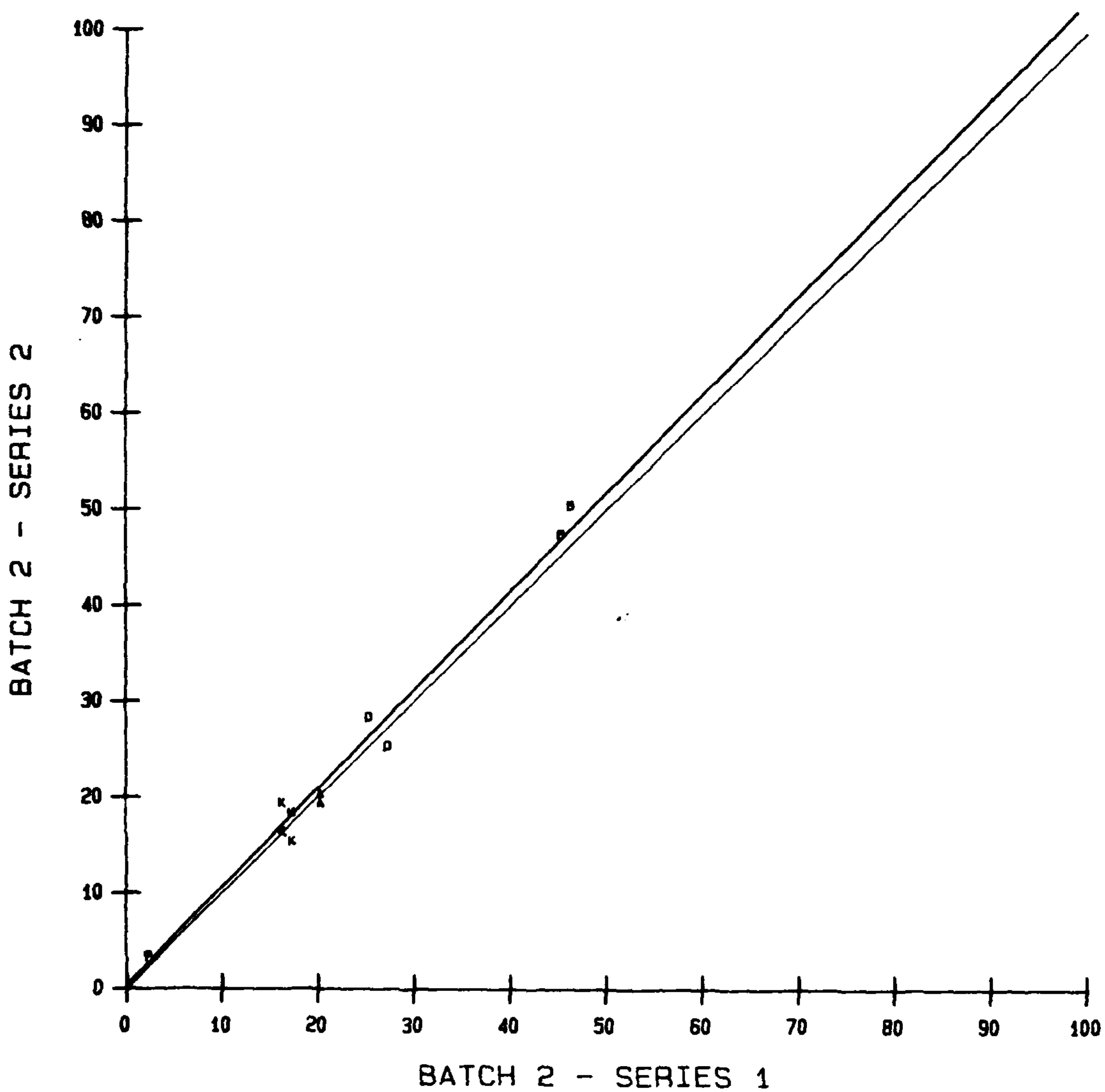
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60RFDK11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 52
RANGE OF DATA	:	2 TO 55

CURVE TYPE : LINEAR

Y = - 2.195 + 1.075X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.3124
COEFFICIENT B	=	1.0286
COEF. OF CORR.	=	0.9940
COEF. OF DET.	=	0.9880
STD. ERR. EST.	=	1.5917
REGRESSION LINE	=	______
X - Y LINE	=	______

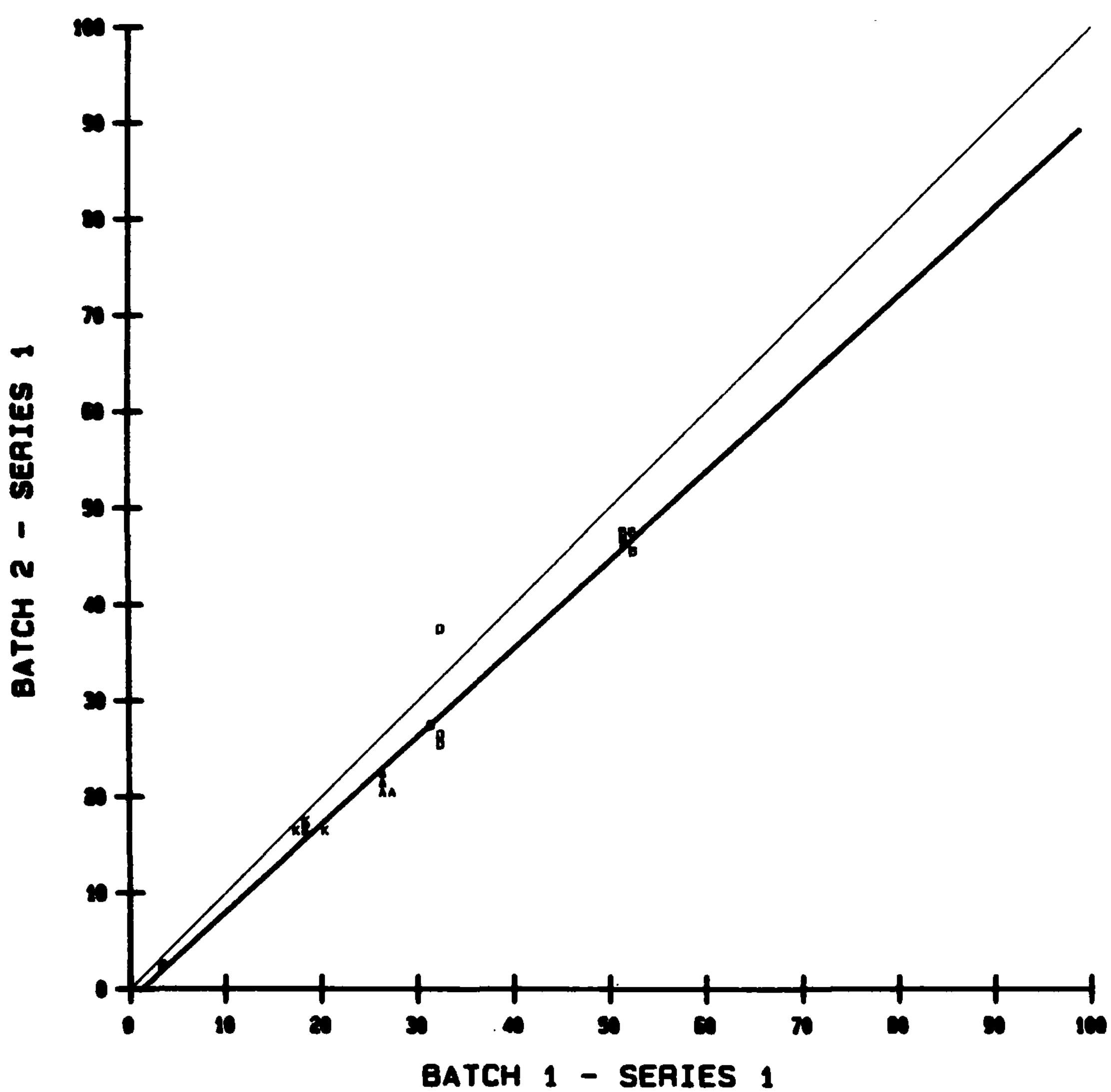
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60RFDK21.22
NUMBER OF POINTS	:	18
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 46
RANGE OF DATA	:	3 TO 50

CURVE TYPE : LINEAR

Y = 0.312 + 1.029X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -1.1414
COEFFICIENT B = 0.9146

COEF. OF CORR. = 0.9883
COEF. OF DET. = 0.9767
STD. ERR. EST. = 2.3271

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

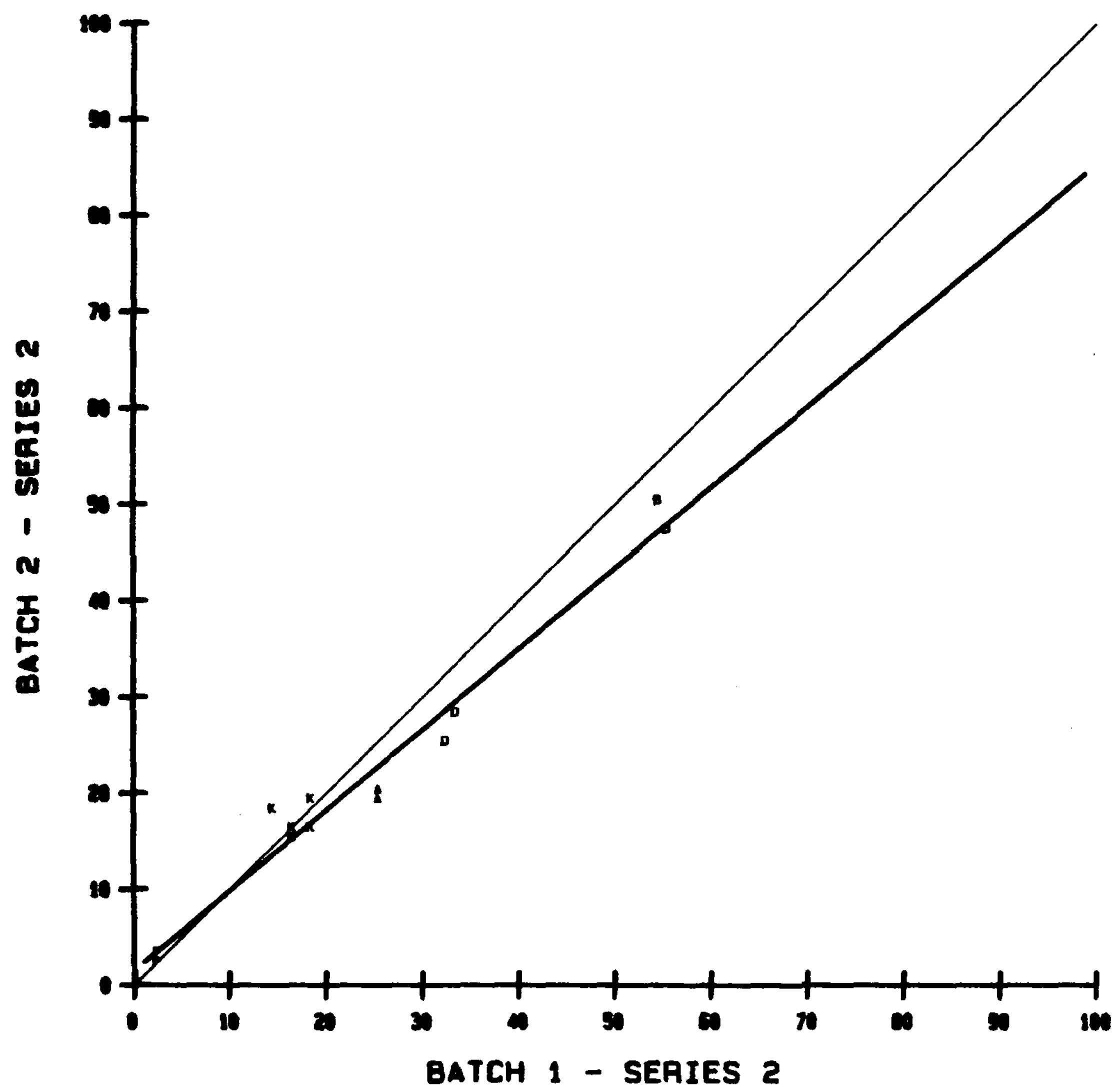
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60RFDK11.21

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 52
RANGE OF DATA : 2 TO 47

CURVE TYPE : LINEAR

Y = - 1.141 + 0.915X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 1.4511
COEFFICIENT B = 0.8380

COEF. OF CORR. = 0.9891
COEF. OF DET. = 0.9783
STD. ERR. EST. = 2.1496

REGRESSION LINE =
X - Y LINE =

SOURCE DATA FILE INFO

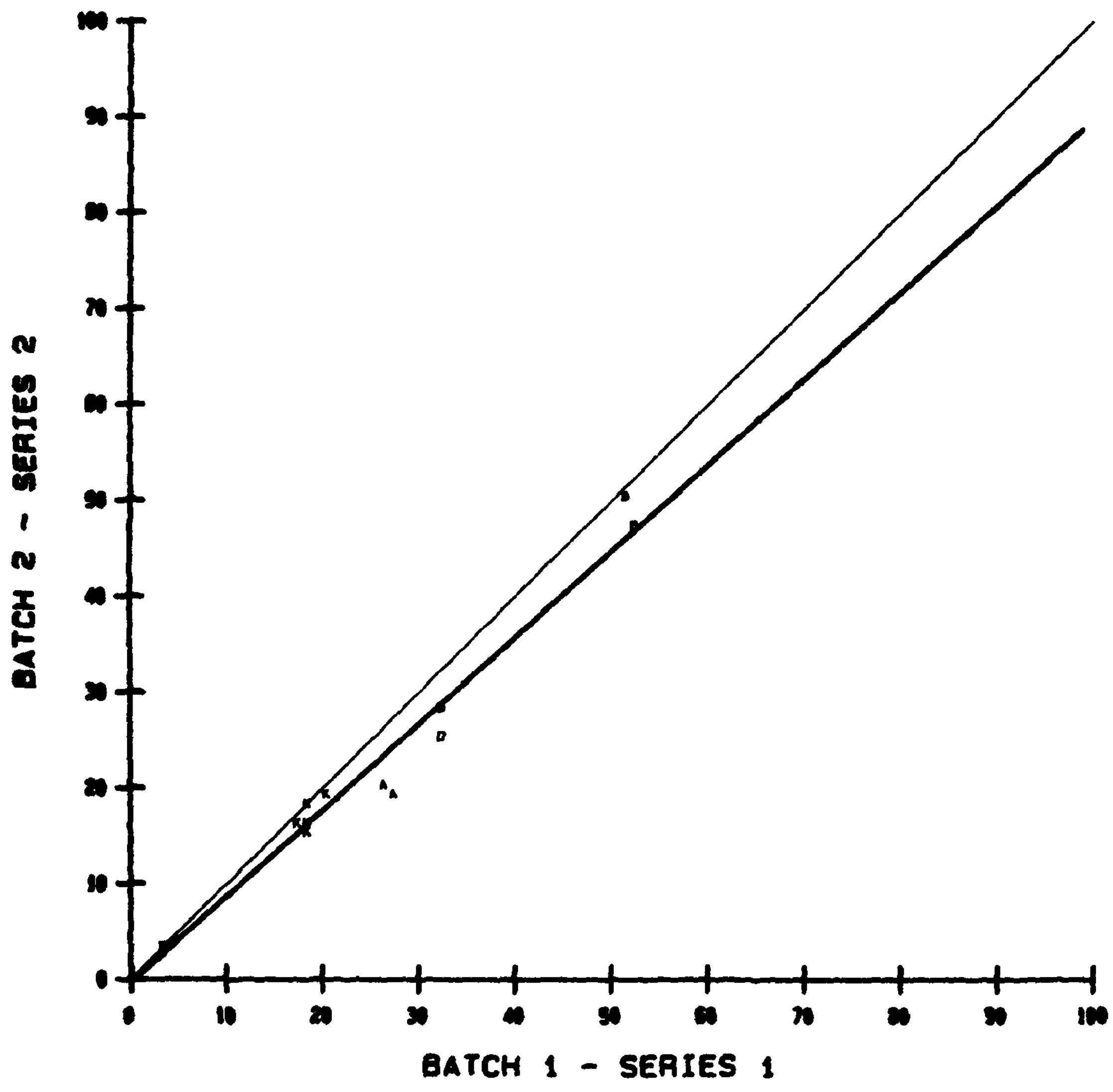
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60RFDK12.22

NUMBER OF POINTS : 18
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 2 TO 55
RANGE OF DATA : 2 TO 50

CURVE TYPE : LINEAR

Y = 1.451 + 0.838X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -0.3507
COEFFICIENT B = 0.9000

COEF. OF CORR. = 0.9887
COEF. OF DET. = 0.9775
STD. ERR. EST. = 2.1875

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

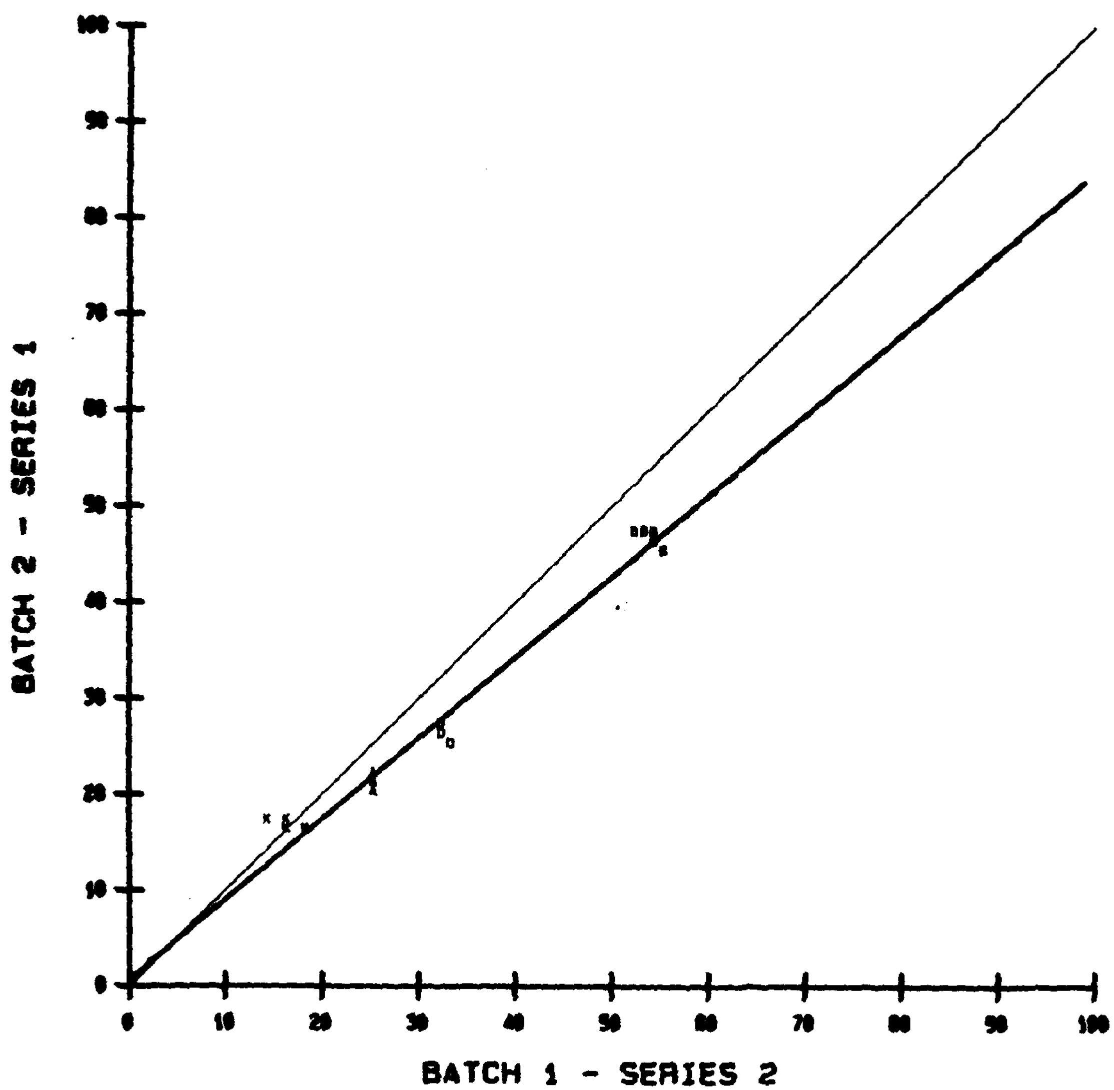
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : BORFDK11.22

NUMBER OF POINTS : 18
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 52
RANGE OF DATA : 2 TO 50

CURVE TYPE : LINEAR

Y = - 0.351 + 0.9X

DICO TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.8591
COEFFICIENT B	=	0.8403
COEF. OF CORR.	=	0.9930
COEF. OF DET.	=	0.9860
STD. ERR. EST.	=	1.7783

REGRESSION LINE = ———

X - Y LINE = ———

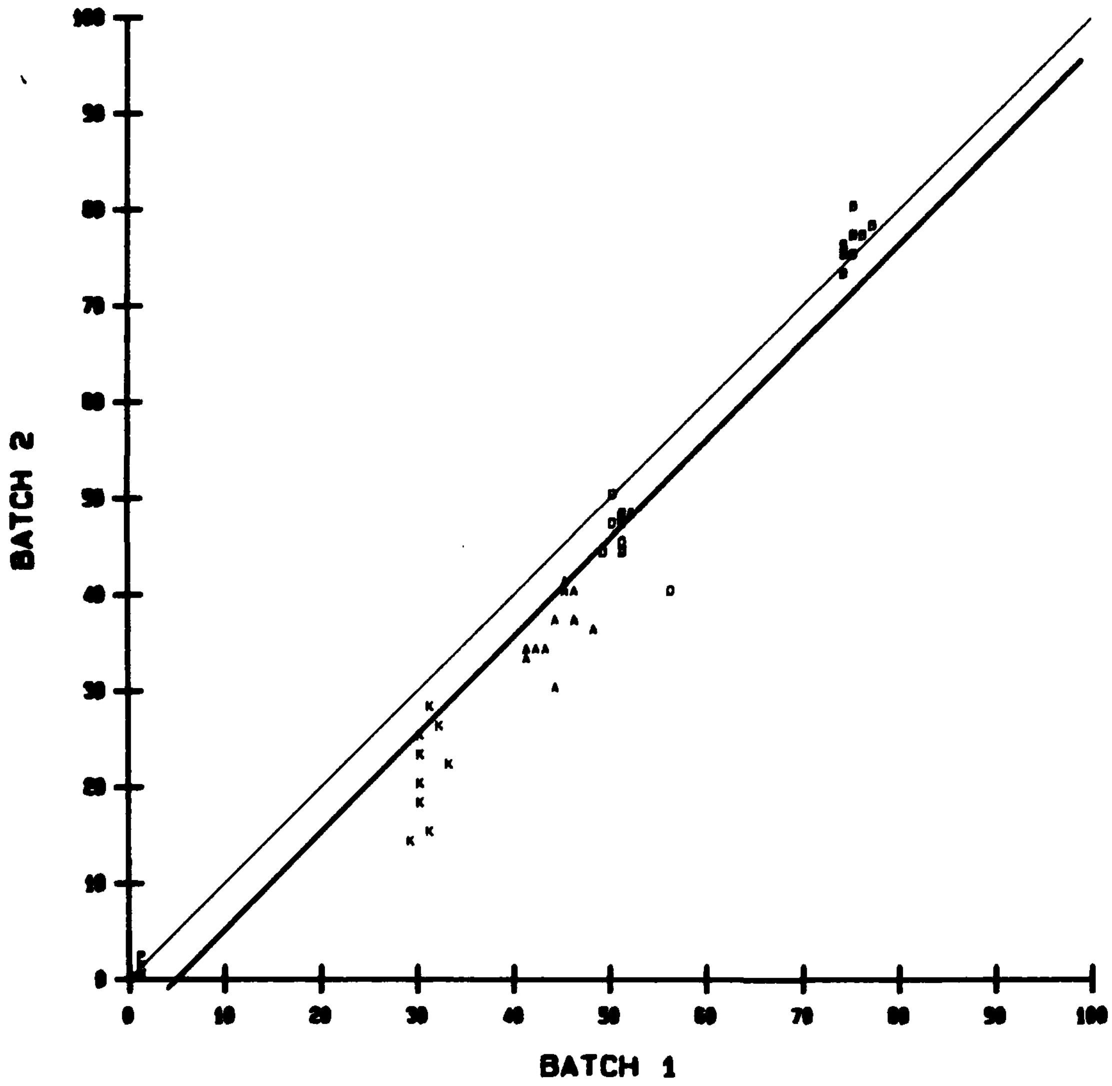
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60RFDK12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 55
RANGE OF DATA	:	2 TO 47

CURVE TYPE : LINEAR

Y = 0.859 + 0.84X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-4.9893
COEFFICIENT B	=	1.0167
COEF. OF CORR.	=	0.9795
COEF. OF DET.	=	0.9593
STD. ERR. EST.	=	5.1880

REGRESSION LINE = ———

X - Y LINE = ———

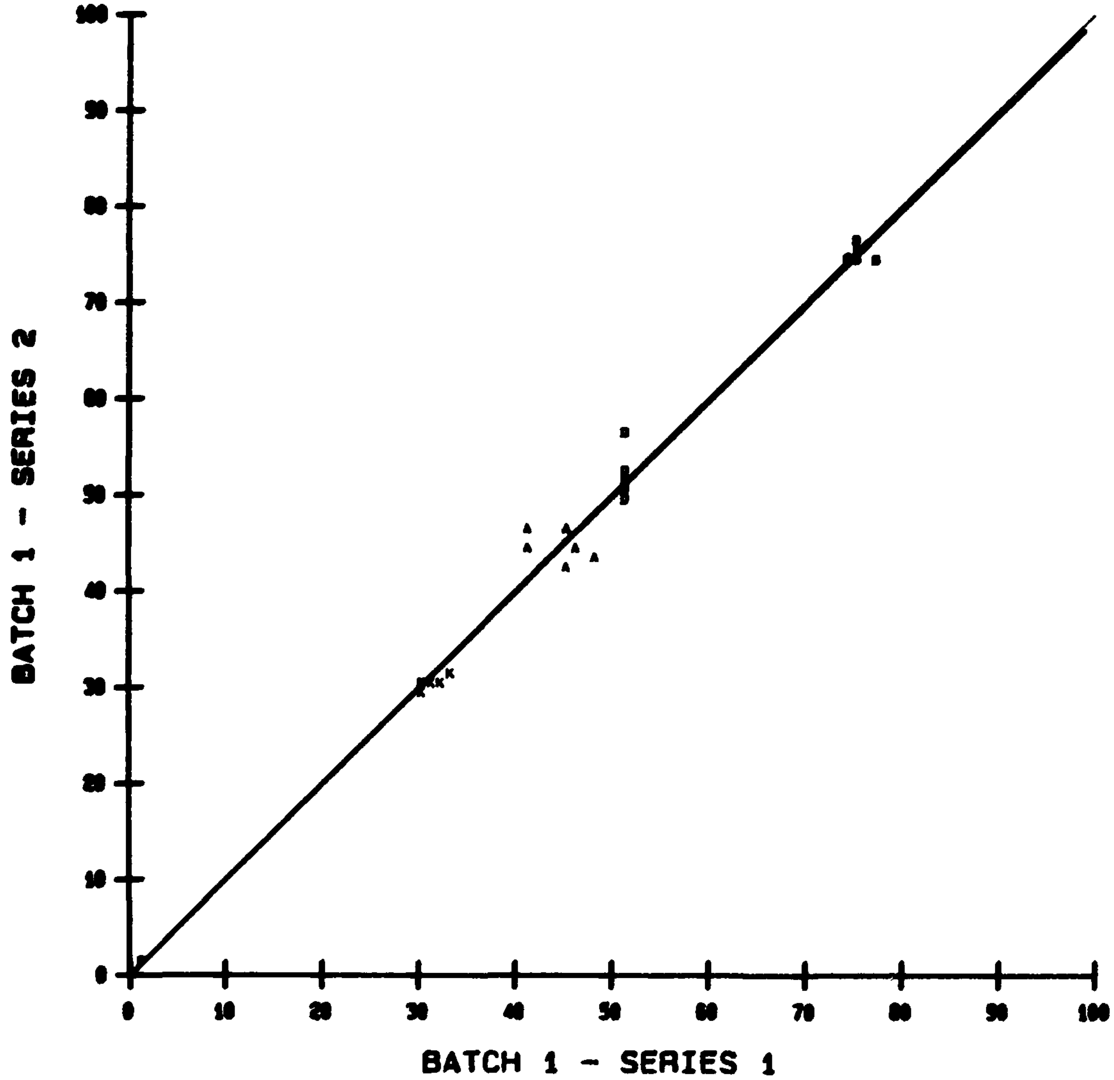
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFDK1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 77
RANGE OF DATA	:	0 TO 80

CURVE TYPE : LINEAR

$Y = -4.989 + 1.017X$

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -0.0620
COEFFICIENT B = 0.9949

COEF. OF CORR. = 0.9965
COEF. OF DET. = 0.9931
STD. ERR. EST. = 2.0994

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

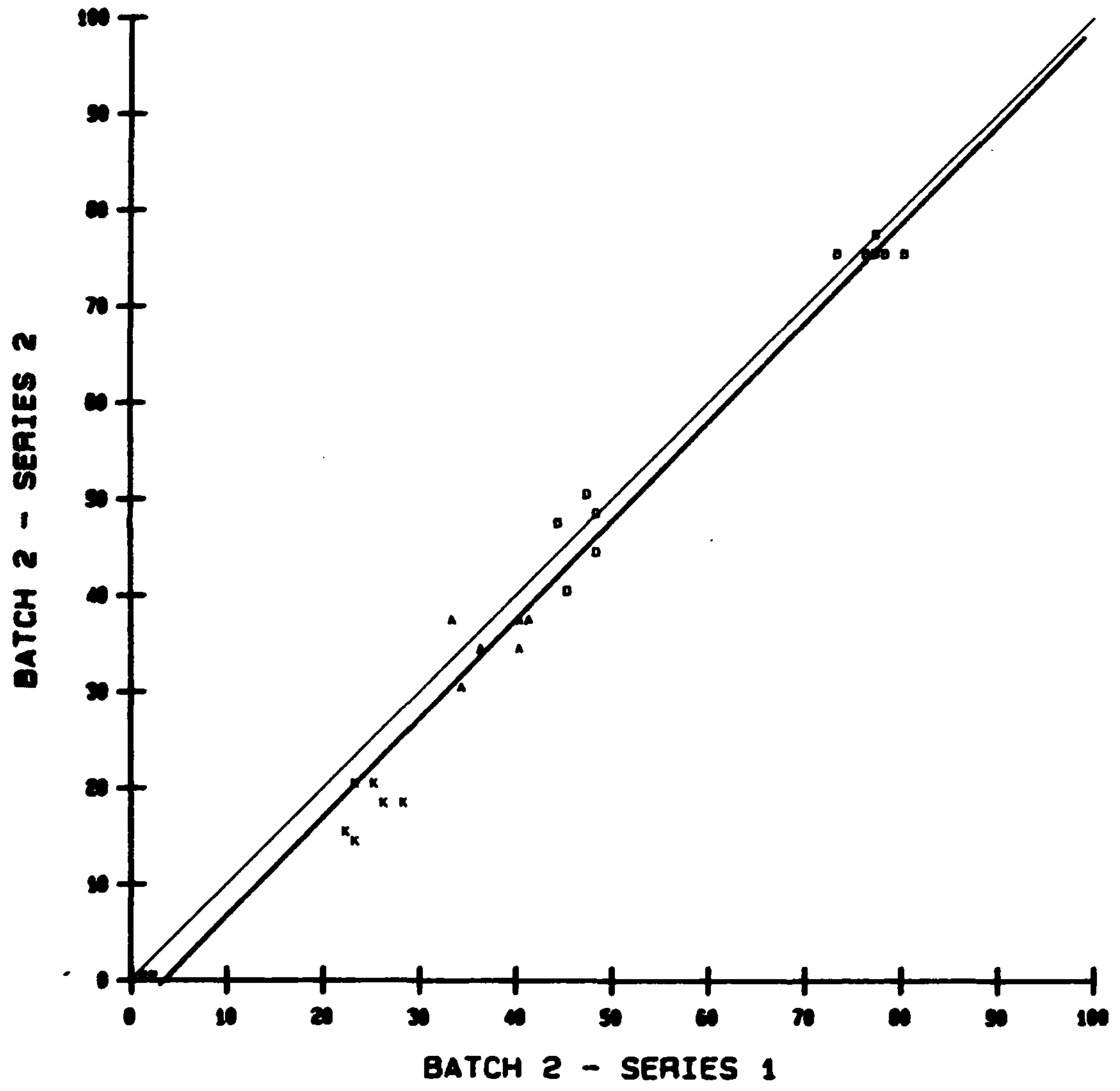
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40SFDK11.12

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 1 TO 77
RANGE OF DATA : 1 TO 76

CURVE TYPE : LINEAR

Y = - 0.062 + 0.995X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-3.5310
COEFFICIENT B	=	1.0259
COEF. OF CORR.	=	0.9912
COEF. OF DET.	=	0.9825
STD. ERR. EST.	=	3.5204

REGRESSION LINE = ————

X - Y LINE = ————

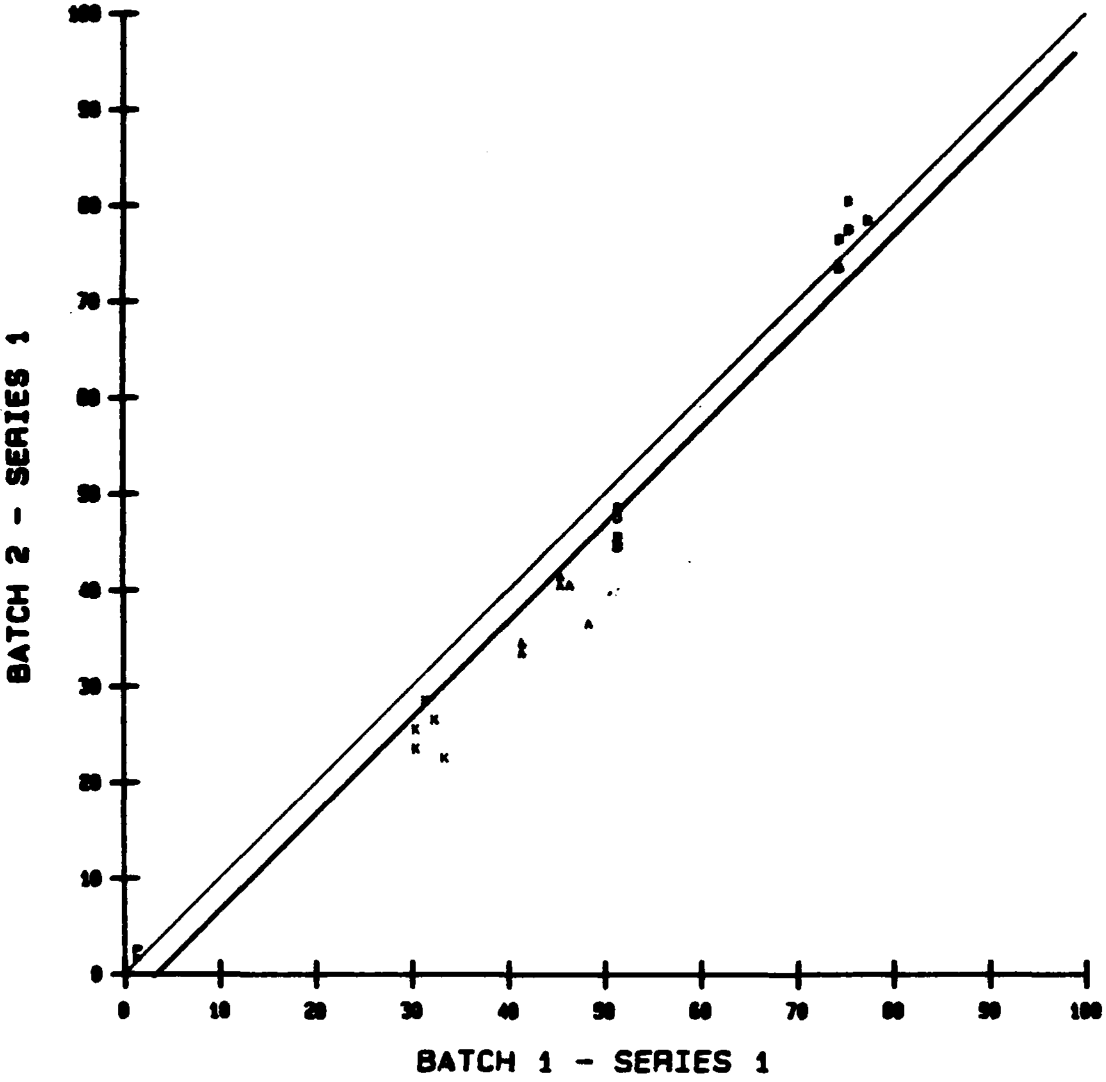
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFDK21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 80
RANGE OF DATA	:	0 TO 77

CURVE TYPE : LINEAR

Y = - 3.531 + 1.026X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-3.2921
COEFFICIENT B	=	1.0031
COEF. OF CORR.	=	0.9855
COEF. OF DET.	=	0.9711
STD. ERR. EST.	=	4.3671

REGRESSION LINE = ———

X - Y LINE = ———

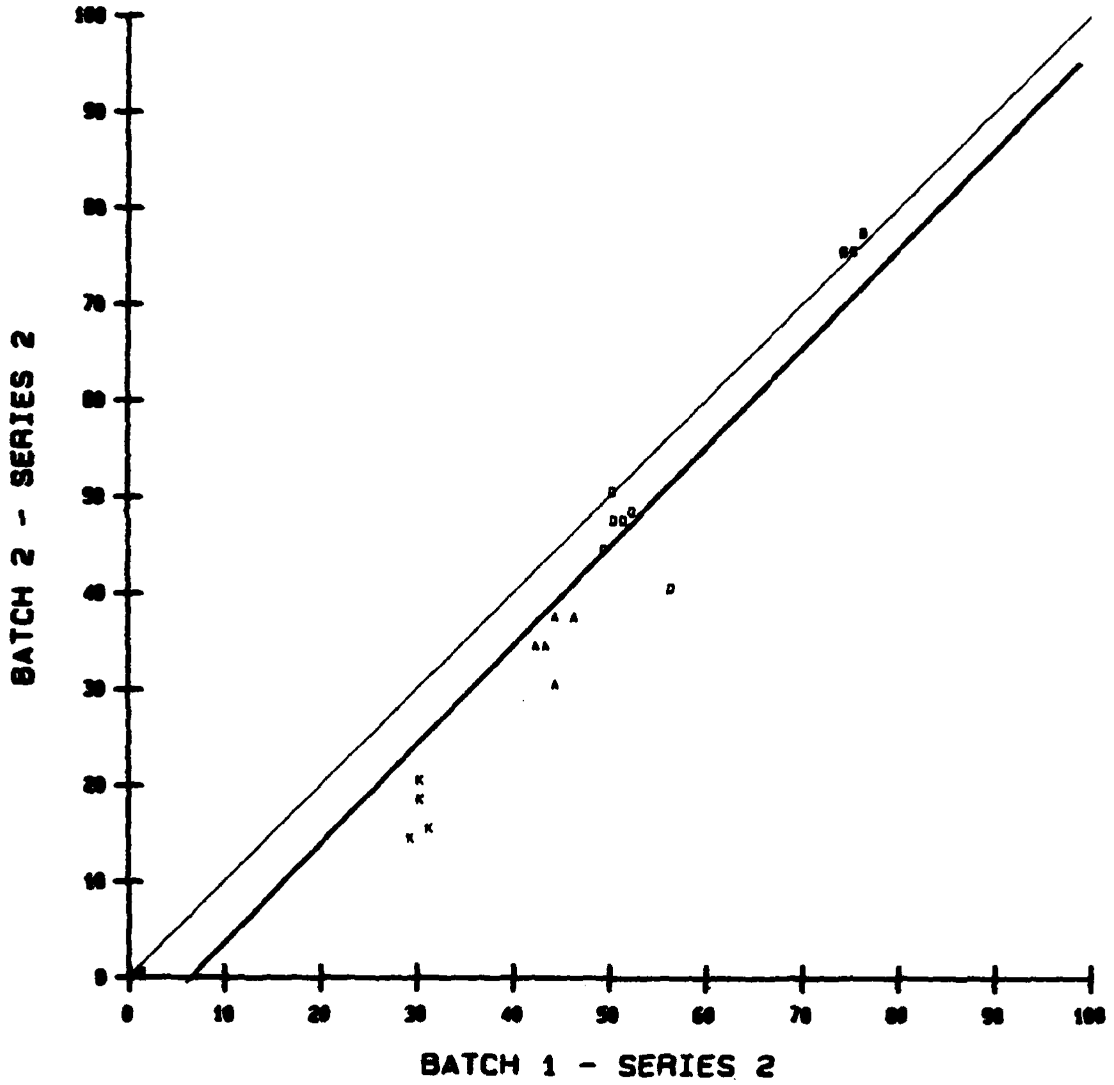
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFDK11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 77
RANGE OF DATA	:	1 TO 80

CURVE TYPE : LINEAR

Y = - 3.292 + 1.003X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-6.6638
COEFFICIENT B	=	1.0298
COEF. OF CORR.	=	0.9759
COEF. OF DET.	=	0.9525
STD. ERR. EST.	=	5.7983

REGRESSION LINE = ______
X - Y LINE = ______

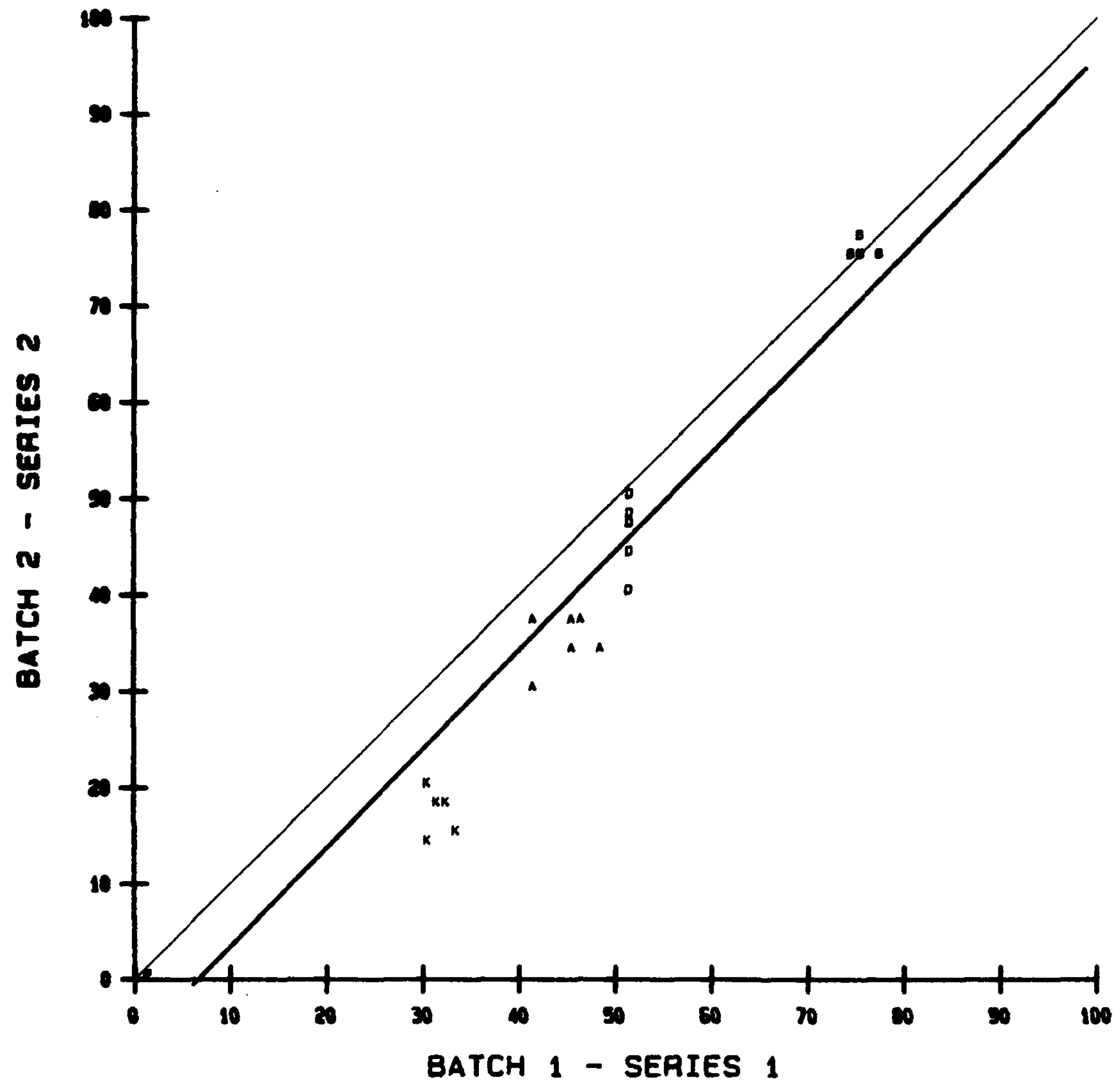
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFDK12.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 76
RANGE OF DATA	:	0 TO 77

CURVE TYPE : LINEAR

Y = - 6.664 + 1.03X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-6.8381
COEFFICIENT B	=	1.0273
COEF. OF CORR.	=	0.9751
COEF. OF DET.	=	0.9509
STD. ERR. EST.	=	5.8936
REGRESSION LINE	=	———
X - Y LINE	=	———

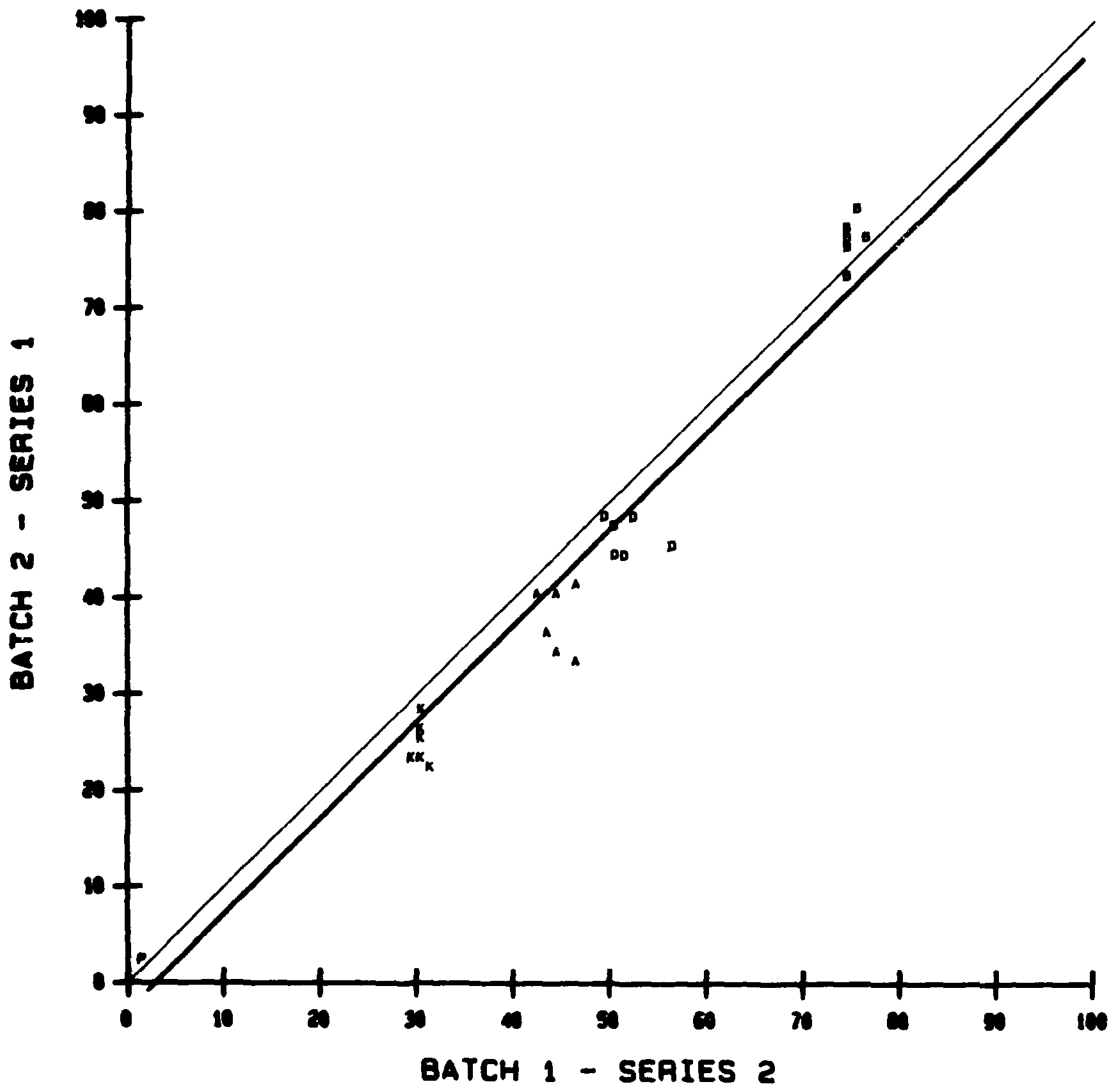
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFDK11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 77
RANGE OF DATA	:	0 TO 77

CURVE TYPE : LINEAR

Y = - 6.838 + 1.027X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-2.8762
COEFFICIENT B	=	1.0002
COEF. OF CORR.	=	0.9830
COEF. OF DET.	=	0.9663
STD. ERR. EST.	=	4.7112

REGRESSION LINE = ————

X - Y LINE = ————

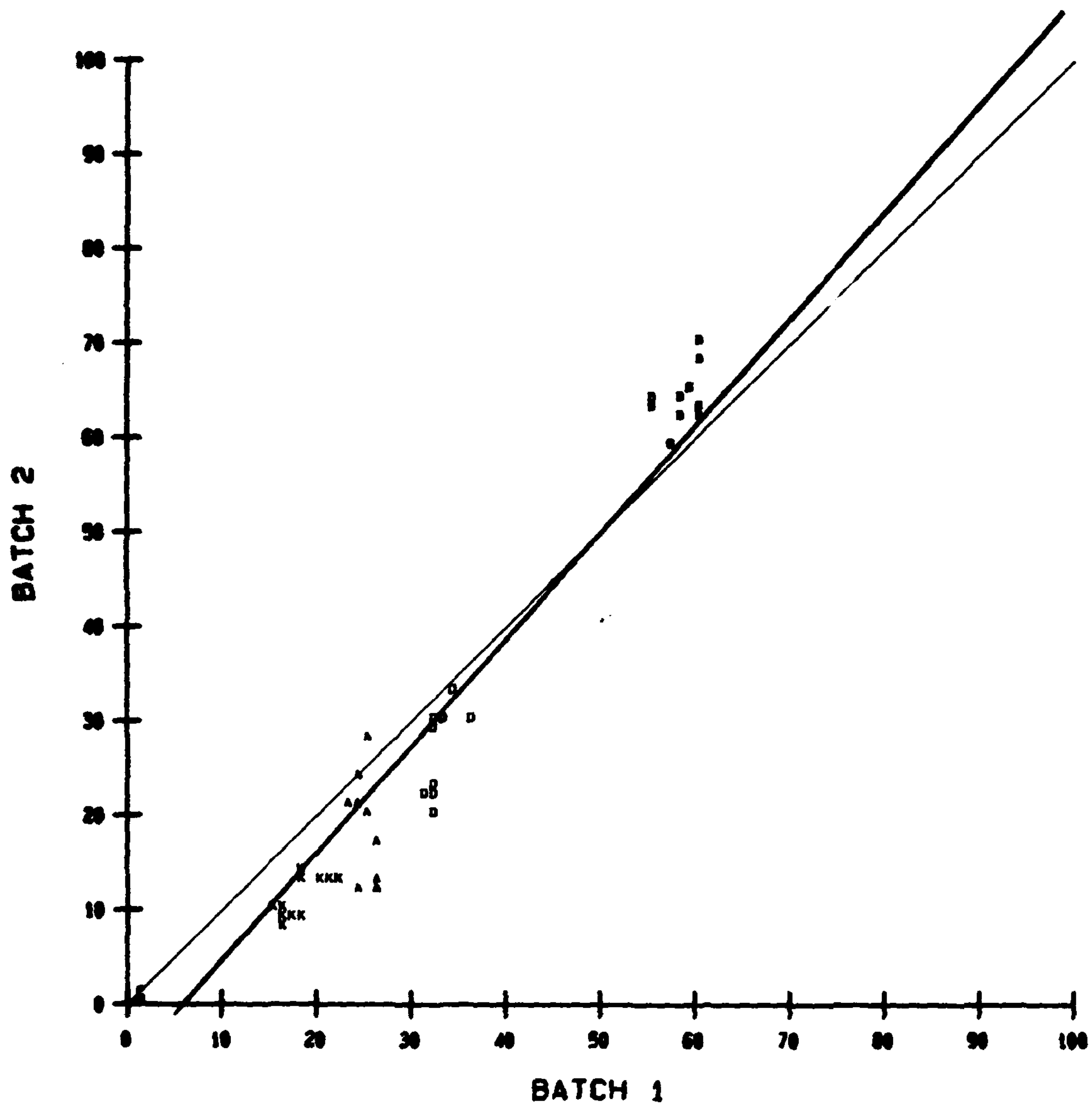
SOURCE DATA FILE INFO

DISK DRIVE	: A:
SUBDIRECTORY	: \
FILENAME	: 40SFDK12.21
NUMBER OF POINTS	: 30
DOMAIN OF PLOT	: 0 TO 100
RANGE OF PLOT	: 0 TO 100
DOMAIN OF DATA	: 1 TO 76
RANGE OF DATA	: 2 TO 80

CURVE TYPE : LINEAR

Y = - 2.876 + 1.0X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-6.6984
COEFFICIENT B	=	1.1314
COEF. OF CORR.	=	0.9684
COEF. OF DET.	=	0.9379
STD. ERR. EST.	=	5.5747

REGRESSION LINE = ______

X - Y LINE = ______

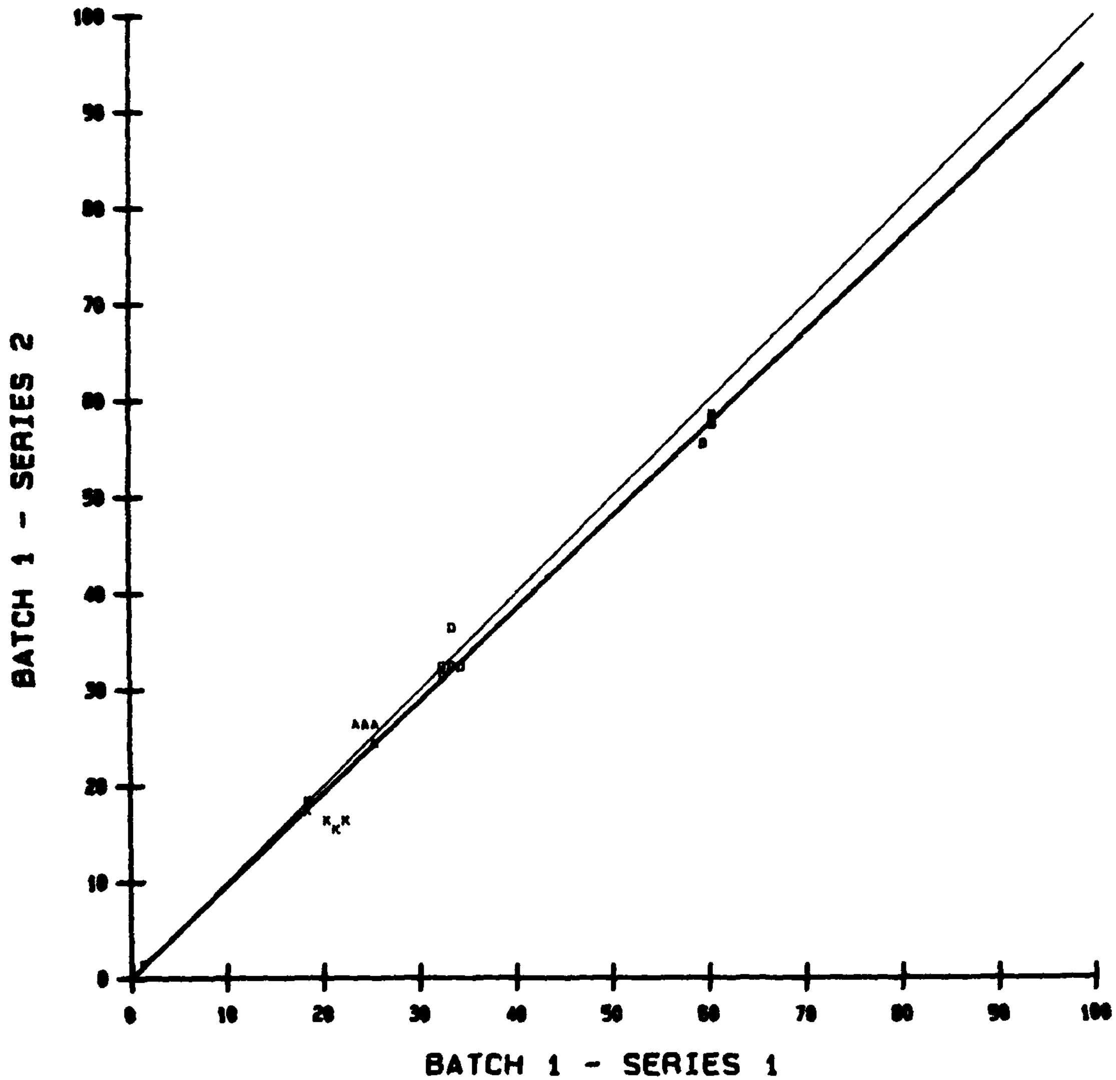
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SFOK1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 60
RANGE OF DATA	:	0 TO 70

CURVE TYPE : LINEAR

Y = - 6.698 + 1.131X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 0.0608
COEFFICIENT B = 0.9567

COEF. OF CORR. = 0.9920
COEF. OF DET. = 0.9841
STD. ERR. EST. = 2.4114

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

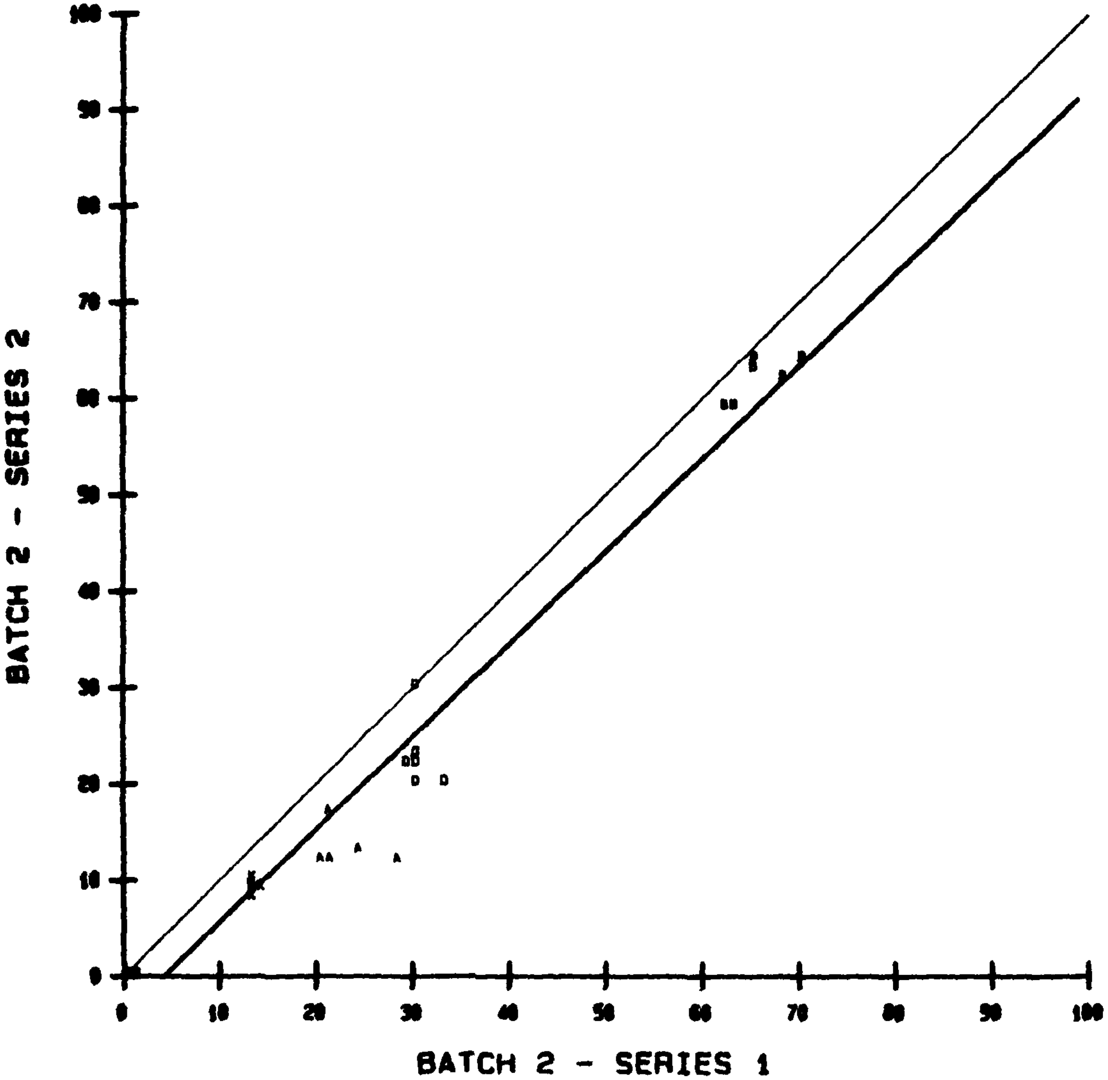
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60SFDK11.12

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 1 TO 60
RANGE OF DATA : 1 TO 58

CURVE TYPE : LINEAR

Y = 0.061 + 0.957X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-3.9389
COEFFICIENT B	=	0.9610
COEF. OF CORR.	=	0.9823
COEF. OF DET.	=	0.9650
STD. ERR. EST.	=	4.1862

REGRESSION LINE = ______

X - Y LINE = ______

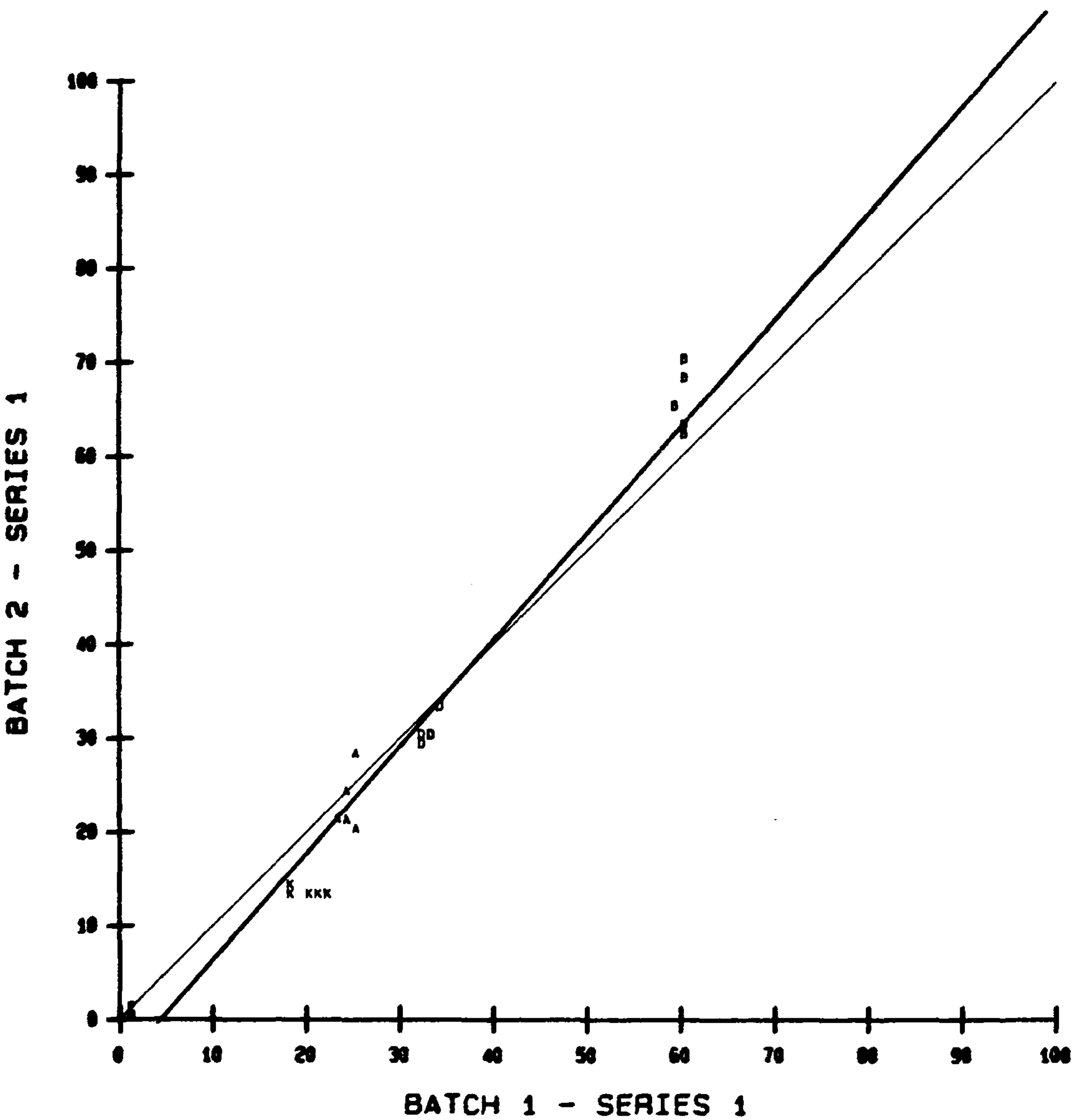
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SFDK21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 70
RANGE OF DATA	:	0 TO 64

CURVE TYPE : LINEAR

Y = - 3.939 + 0.961X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-5.0055
COEFFICIENT B	=	1.1368
COEF. OF CORR.	=	0.9857
COEF. OF DET.	=	0.9716
STD. ERR. EST.	=	3.8512

REGRESSION LINE = ______
X - Y LINE = ______

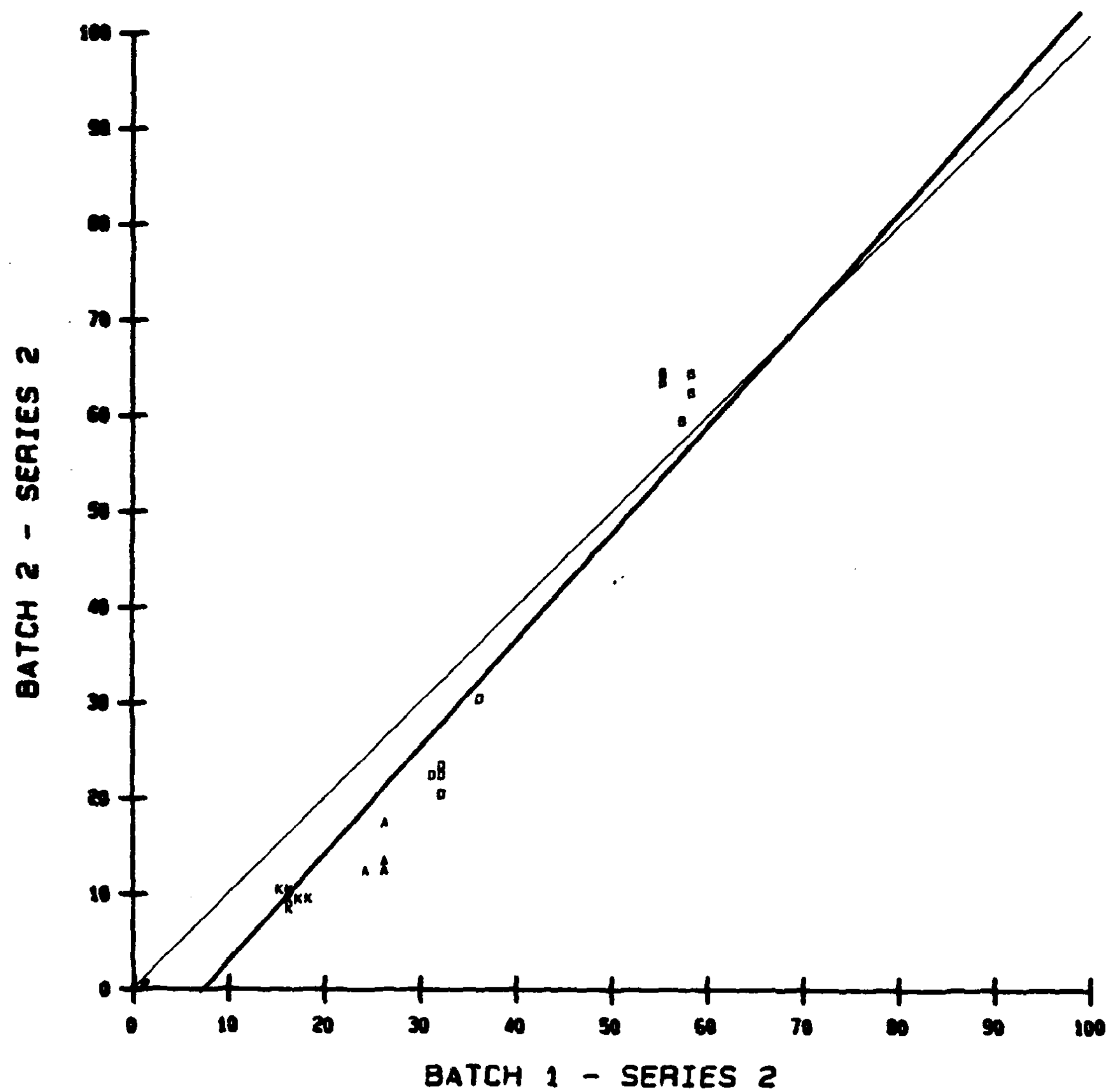
SOURCE DATA FILE INFO

DISK DRIVE	:	A:		
SUBDIRECTORY	:	\		
FILENAME	:	60SFDK11.21		
NUMBER OF POINTS	:	30		
DOMAIN OF PLOT	:	0	TO	100
RANGE OF PLOT	:	0	TO	100
DOMAIN OF DATA	:	1	TO	60
RANGE OF DATA	:	0	TO	70

CURVE TYPE : LINEAR

Y = - 5.006 + 1.137X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-8.2248
COEFFICIENT B	=	1.1195
COEF. OF CORR.	=	0.9569
COEF. OF DET.	=	0.9156
STD. ERR. EST.	=	6.4966

REGRESSION LINE = ______
X - Y LINE = ______

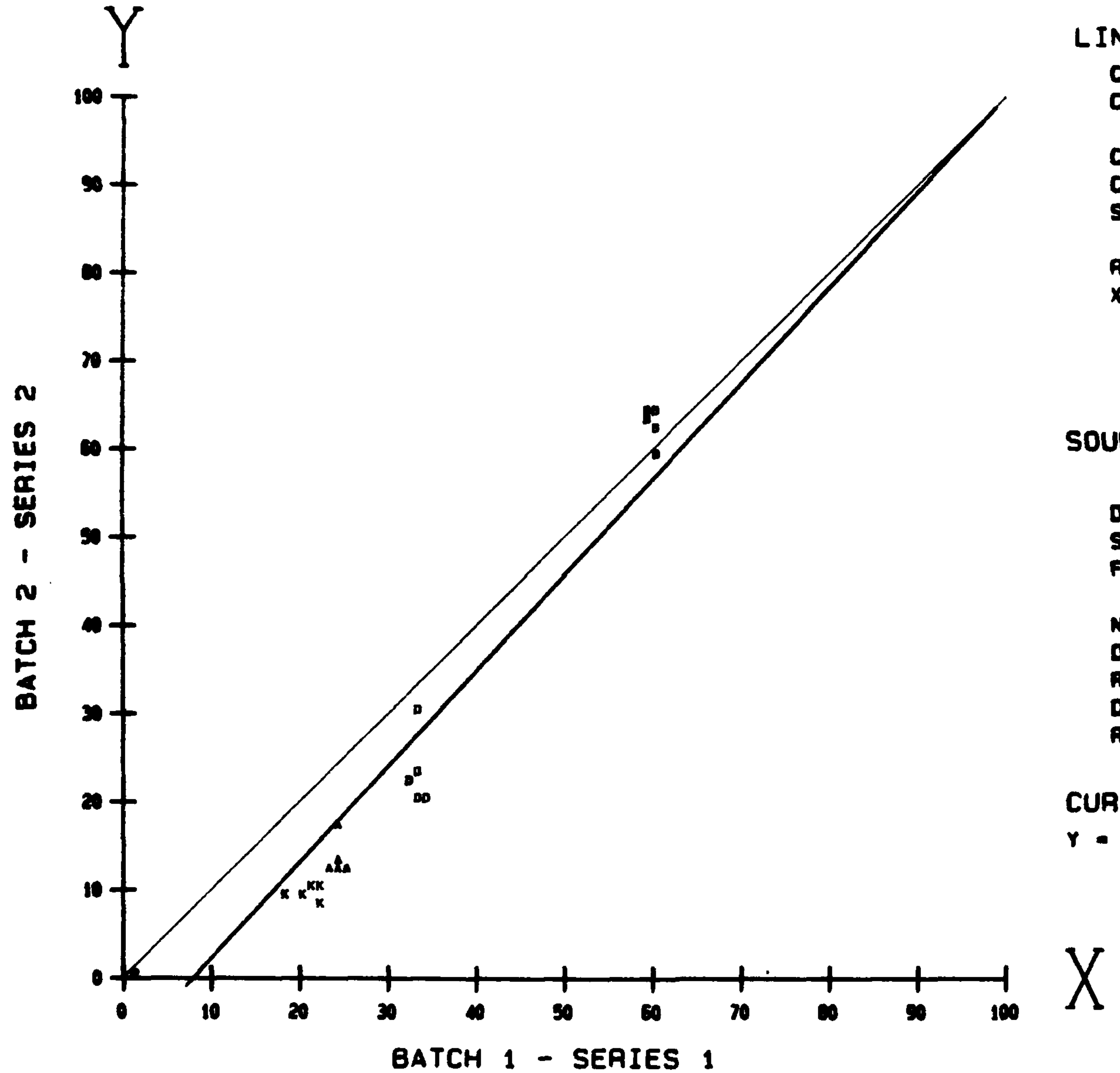
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SFDK12.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 58
RANGE OF DATA	:	0 TO 64

CURVE TYPE : LINEAR

$Y = -8.225 + 1.119X$

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT `	=	-8.5756
COEFFICIENT B	=	1.0862
COEF. OF CORR.	=	0.9627
COEF. OF DET.	=	0.9268
STD. ERR. EST.	=	6.0506

REGRESSION LINE = ______

X - Y LINE = ______

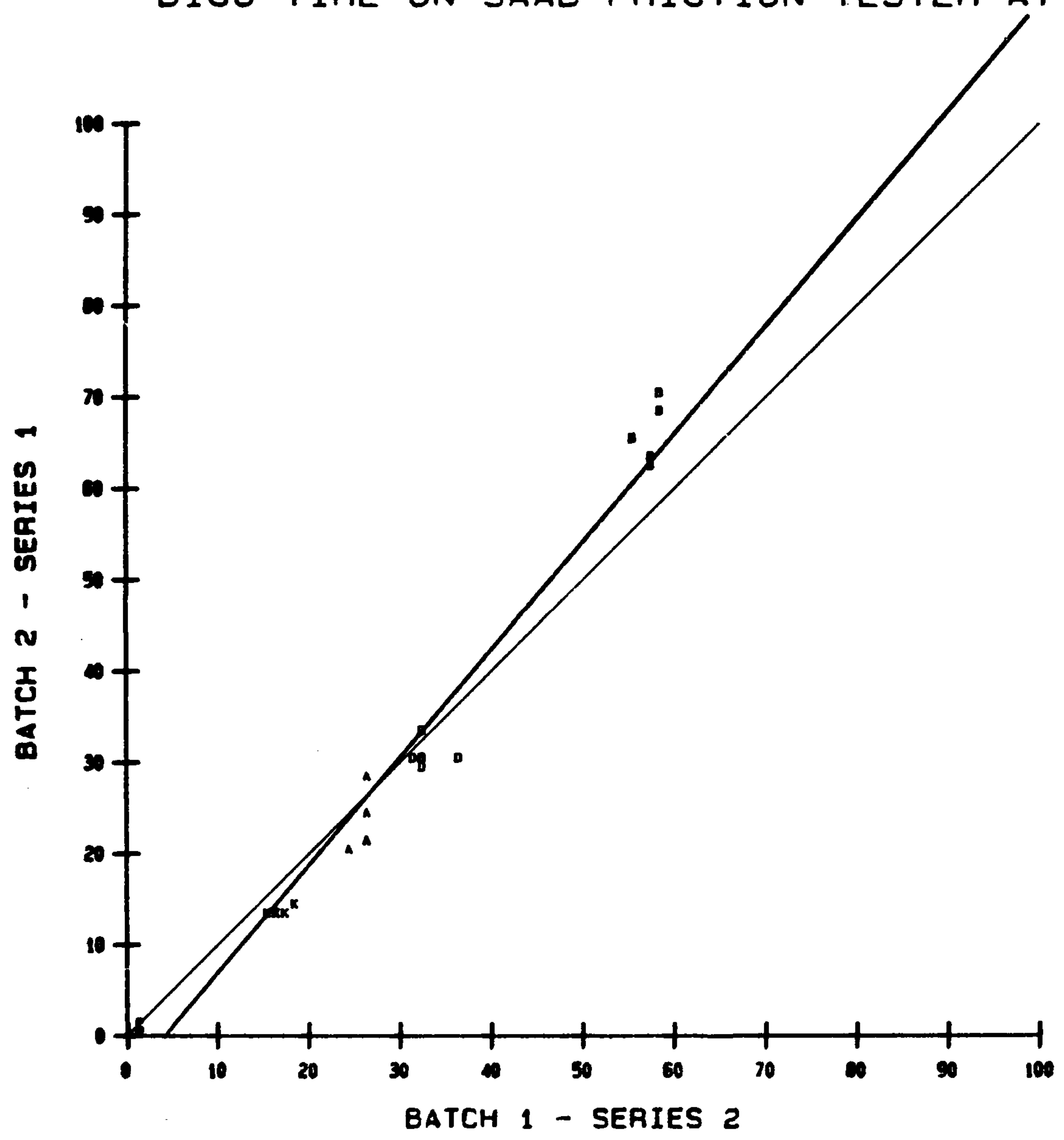
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SFDK11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 60
RANGE OF DATA	:	0 TO 64

CURVE TYPE : LINEAR

Y = - 8.576 + 1.086X

DICO TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-4.8475
COEFFICIENT B	=	1.1796
COEF. OF CORR.	=	0.9864
COEF. OF DET.	=	0.9729
STD. ERR. EST.	=	3.7632

REGRESSION LINE = ———

X - Y LINE = ———

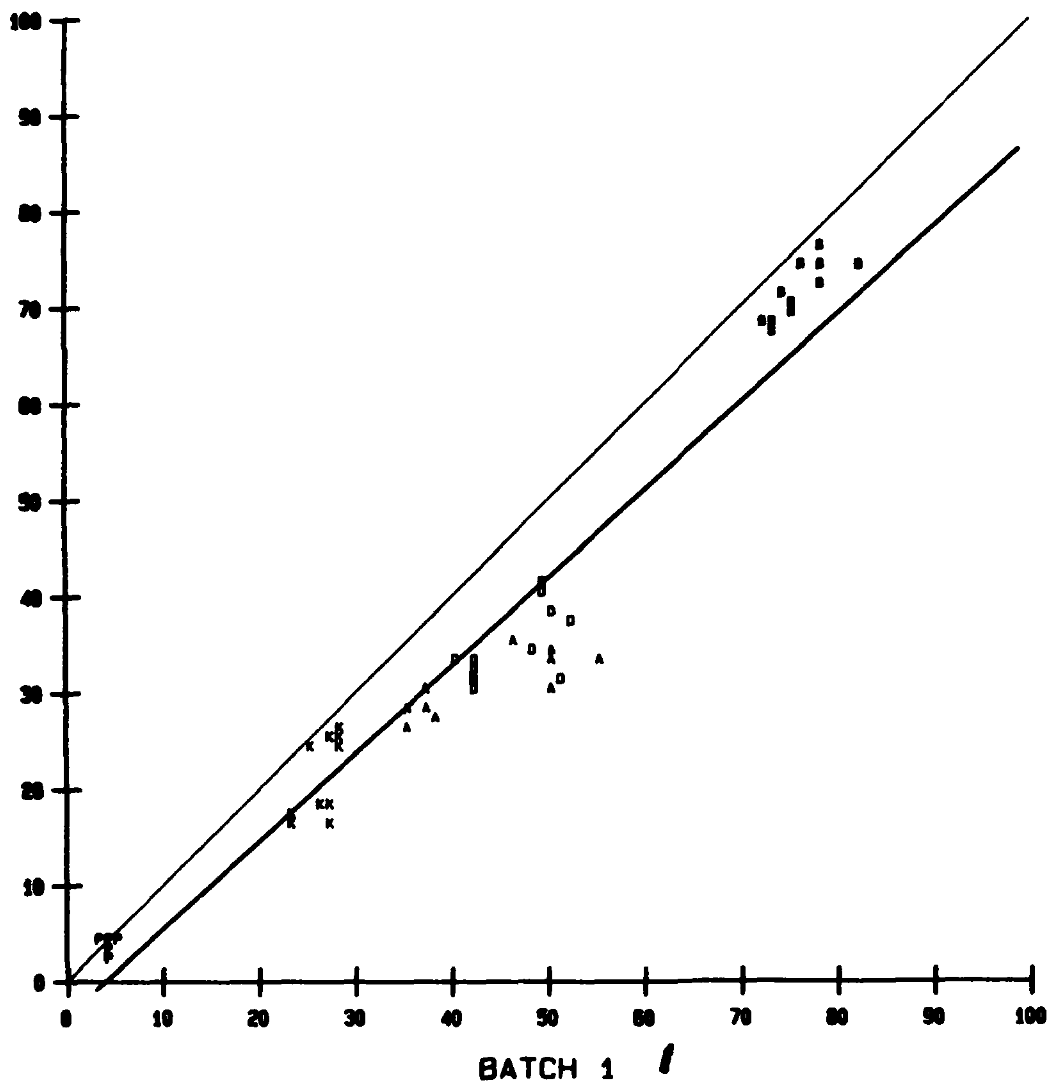
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SFDK12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 58
RANGE OF DATA	:	0 TO 70

CURVE TYPE : LINEAR

Y = - 4.847 + 1.18X

DICO TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-3.5875
COEFFICIENT B	=	0.9105
COEF. OF CORR.	=	0.9738
COEF. OF DET.	=	0.9482
STD. ERR. EST.	=	5.2490

REGRESSION LINE = ———
X - Y LINE = ———

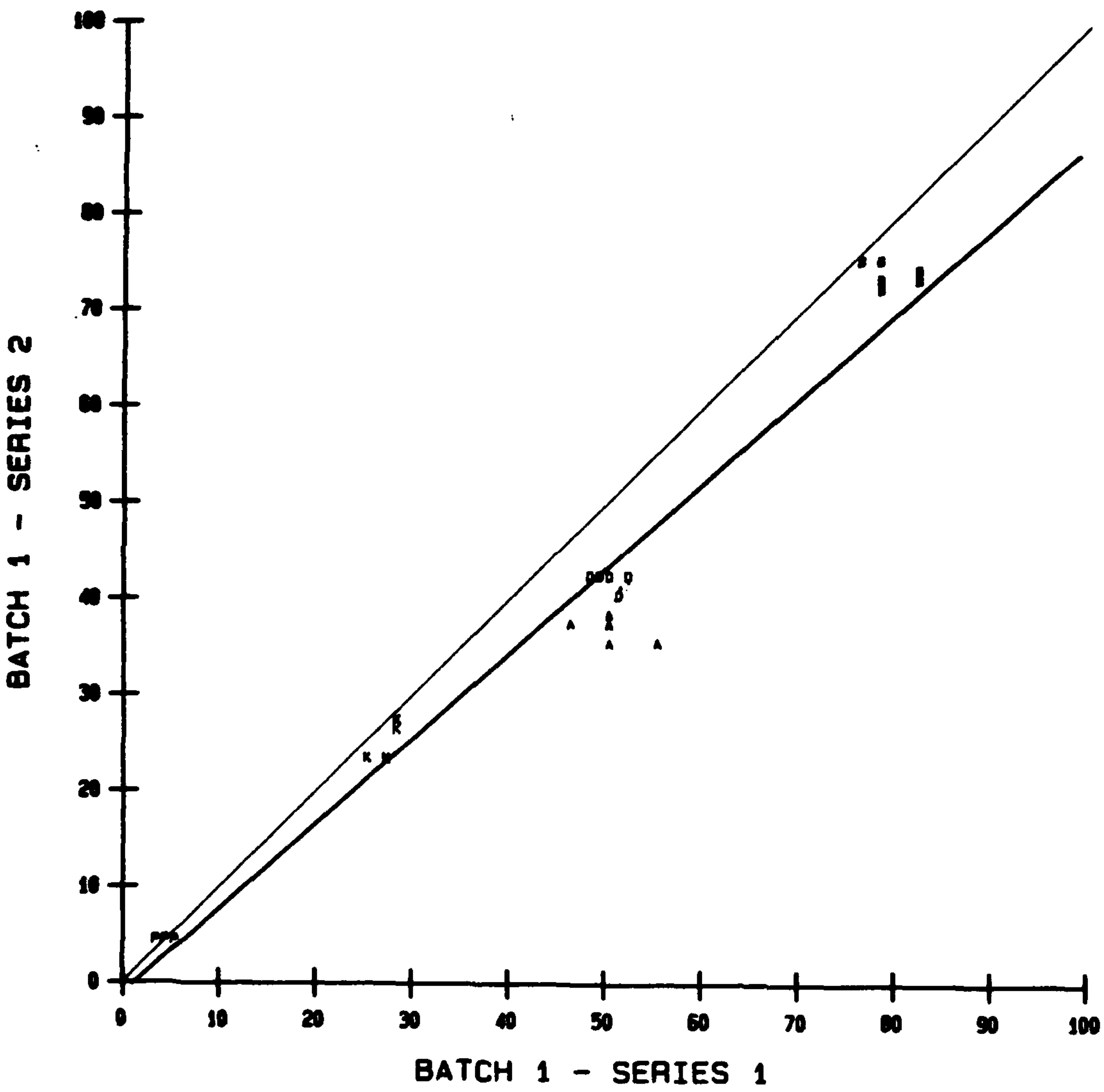
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SKDK1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 82
RANGE OF DATA	:	2 TO 76

CURVE TYPE : LINEAR

Y = - 3.588 + 0.911X

DICO TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.1122
COEFFICIENT B	=	0.8868
COEF. OF CORR.	=	0.9809
COEF. OF DET.	=	0.9623
STD. ERR. EST.	=	4.5914

REGRESSION LINE = ______

X - Y LINE = ______

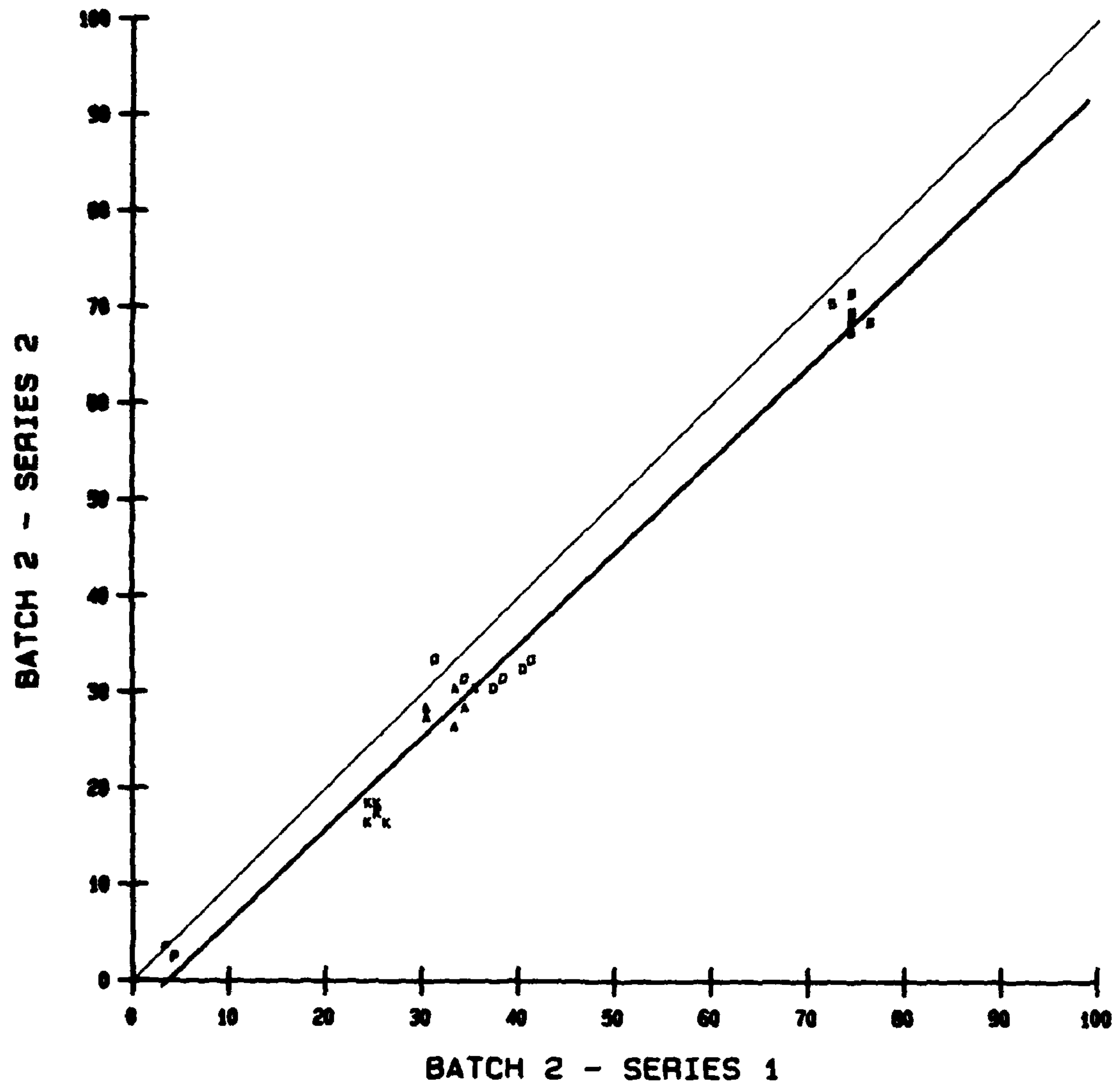
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SKDK11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 82
RANGE OF DATA	:	4 TO 75

CURVE TYPE : LINEAR

Y = - 1.112 + 0.887X

DICO TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-3.5186
COEFFICIENT B	=	0.9618
COEF. OF CORR.	=	0.9921
COEF. OF DET.	=	0.9844
STD. ERR. EST.	=	2.8735

REGRESSION LINE = ______
X - Y LINE = ______

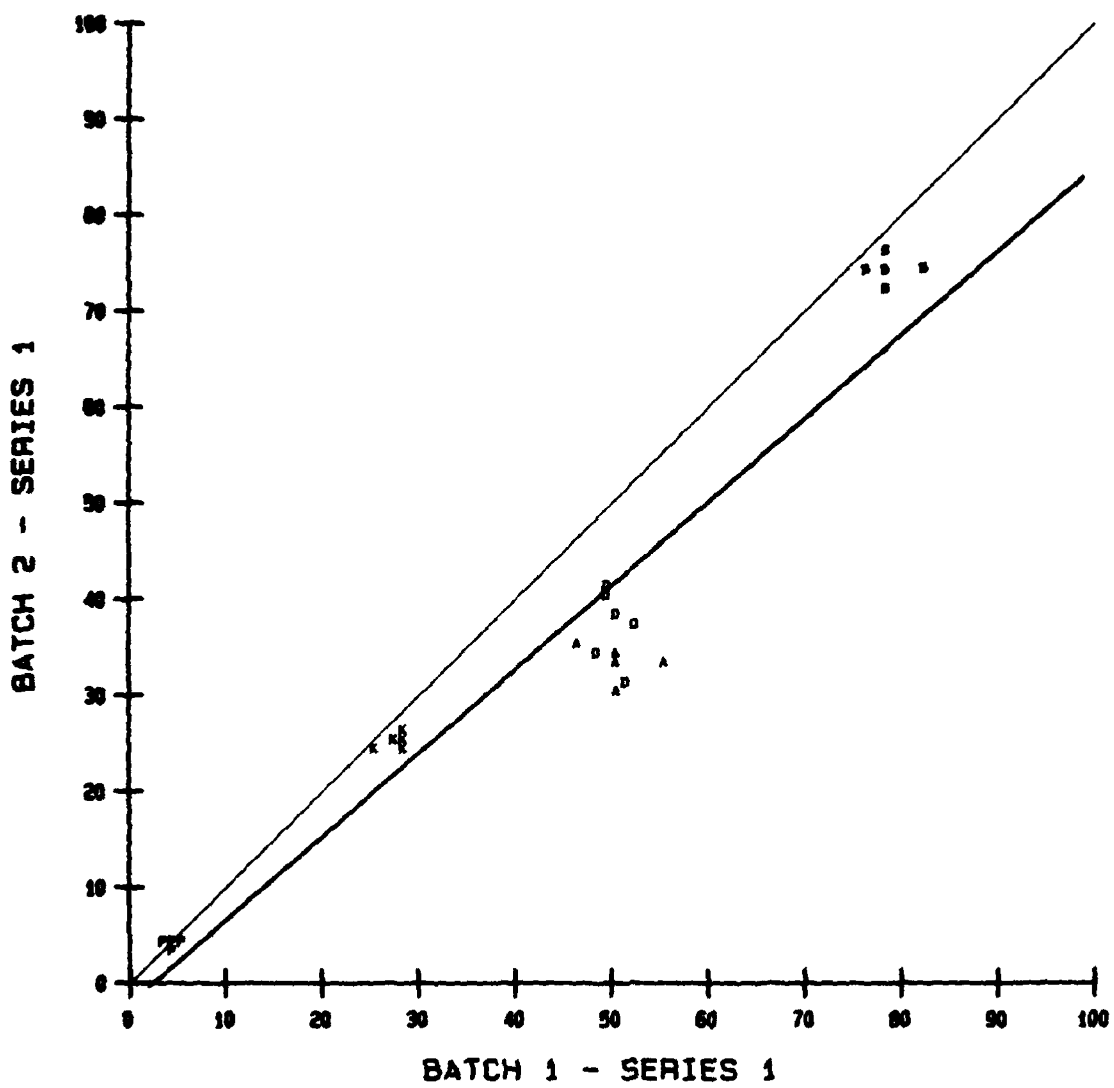
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SKDK21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 76
RANGE OF DATA	:	2 TO 71

CURVE TYPE : LINEAR

Y = - 3.519 + 0.962X

DICO TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-2.1497
COEFFICIENT B	=	0.8702
COEF. OF CORR.	=	0.9599
COEF. OF DET.	=	0.9215
STD. ERR. EST.	=	6.6413

REGRESSION LINE = ________

X - Y LINE = ________

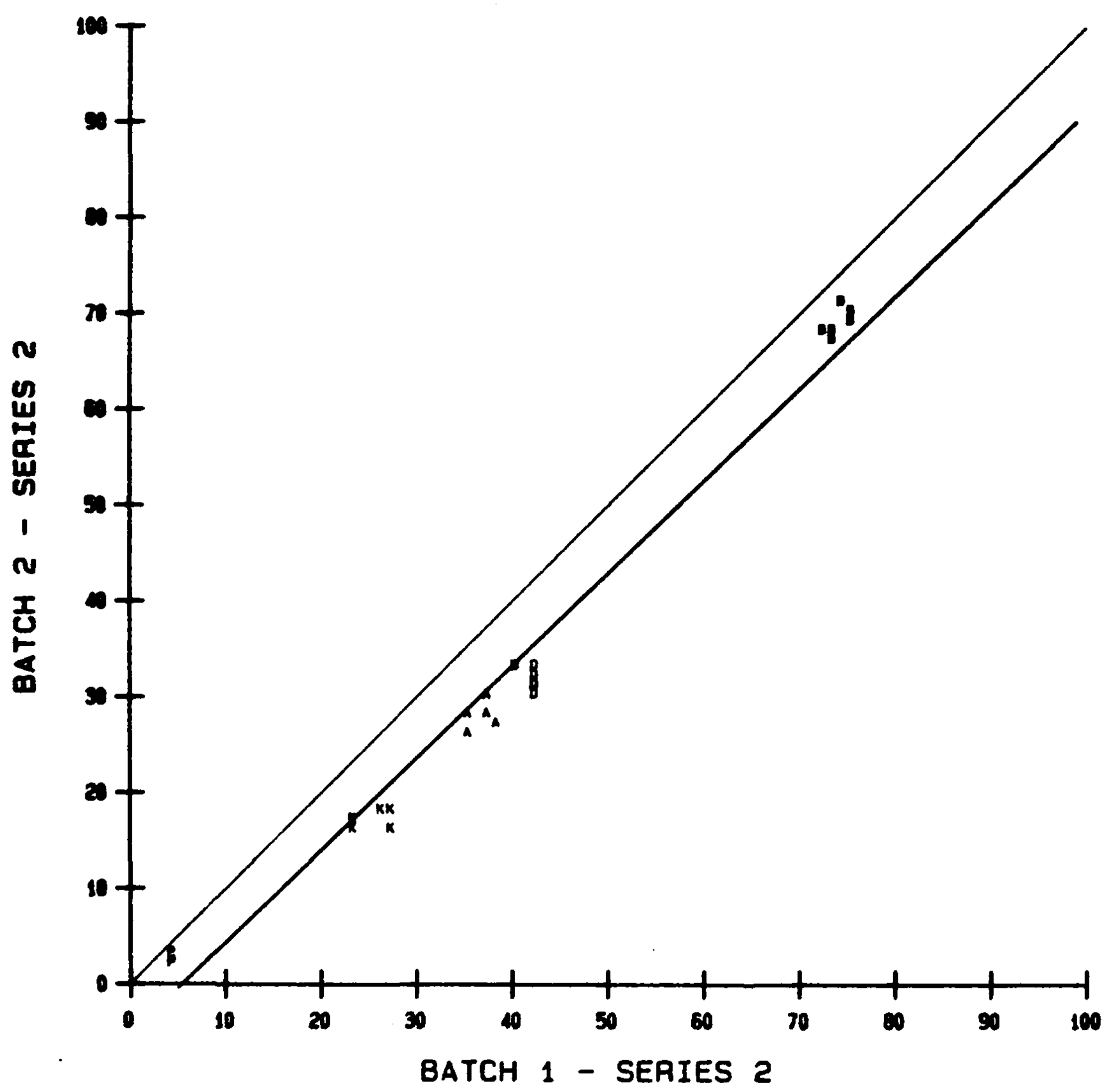
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SKDK11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 82
RANGE OF DATA	:	3 TO 76

CURVE TYPE : LINEAR

Y = - 2.15 + 0.87X

DICO TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -5.2178
COEFFICIENT B = 0.9627

COEF. OF CORR. = 0.9903
COEF. OF DET. = 0.9807
STD. ERR. EST. = 3.1936

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

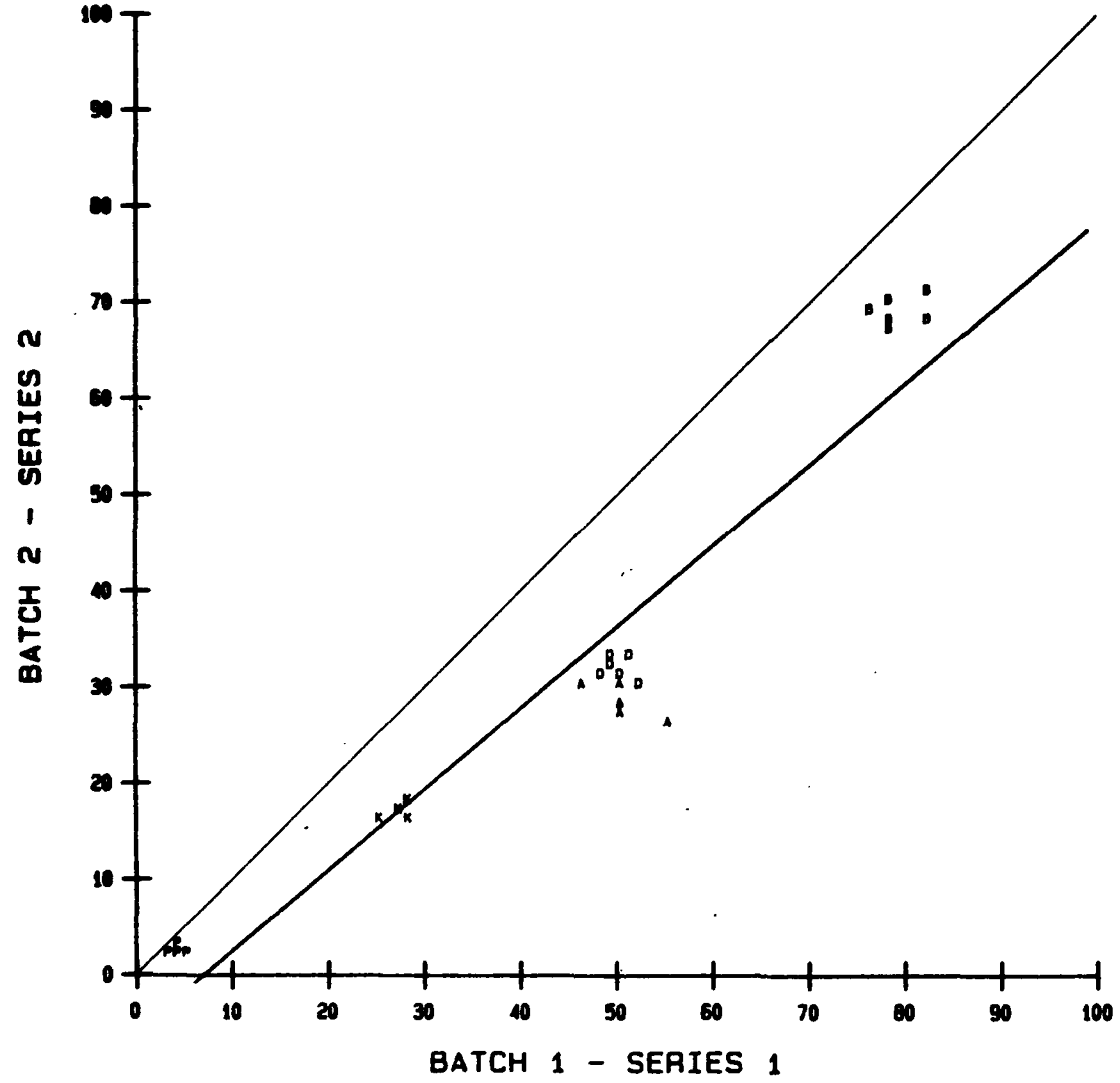
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40SKDK12.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 4 TO 75
RANGE OF DATA : 2 TO 71

CURVE TYPE : LINEAR

$Y = -5.218 + 0.963X$

DICO TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -5.8350
COEFFICIENT B = 0.8429

COEF. OF CORR. = 0.9591
COEF. OF DET. = 0.9199
STD. ERR. EST. = 6.5003

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

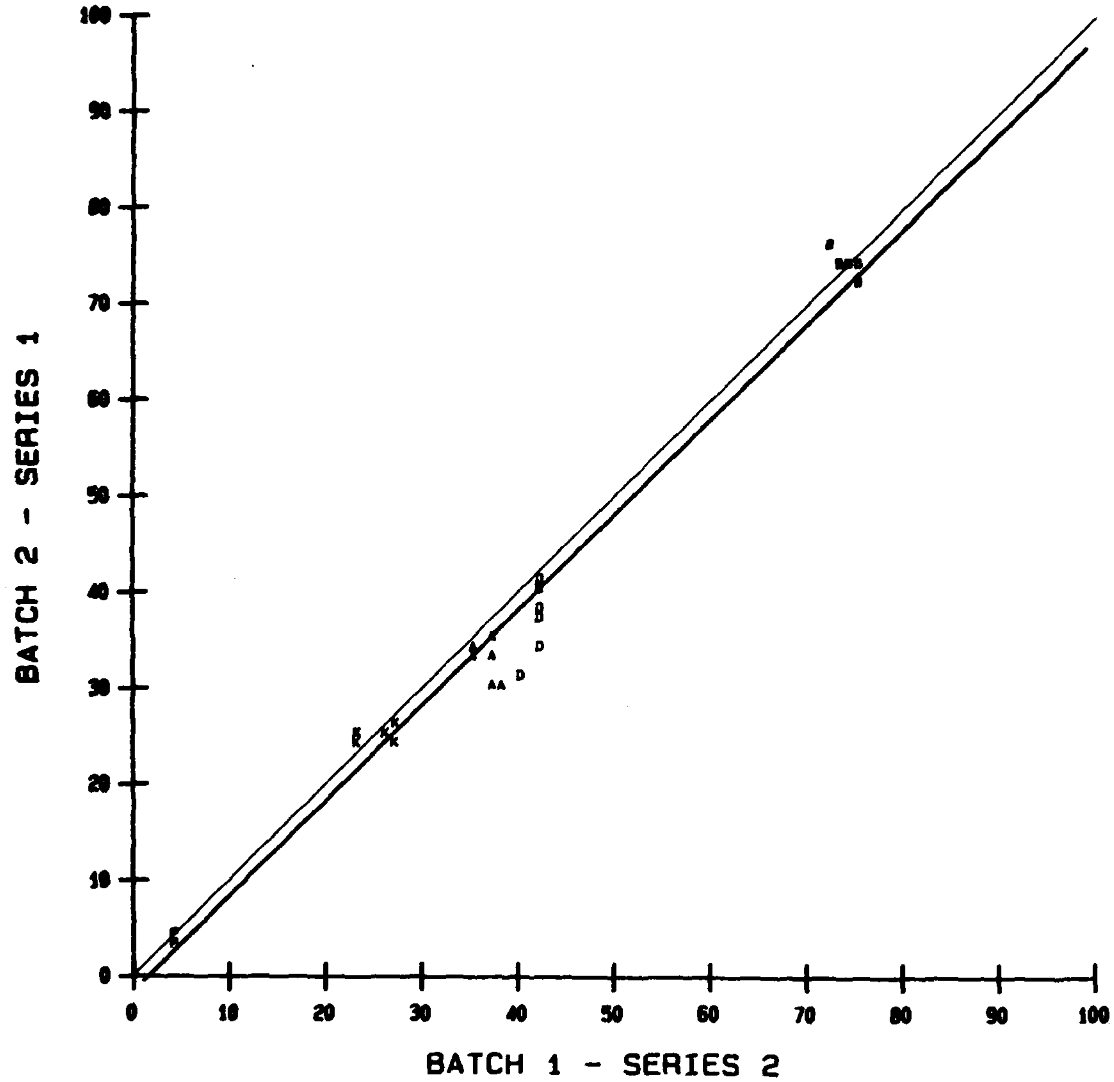
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40SKDK11.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 82
RANGE OF DATA : 2 TO 71

CURVE TYPE : LINEAR

Y = - 5.835 + 0.843X

DICO TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.5021
COEFFICIENT B	=	0.9936
COEF. OF CORR.	=	0.9908
COEF. OF DET.	=	0.9817
STD. ERR. EST.	=	3.2028

REGRESSION LINE = ______
X - Y LINE = ______

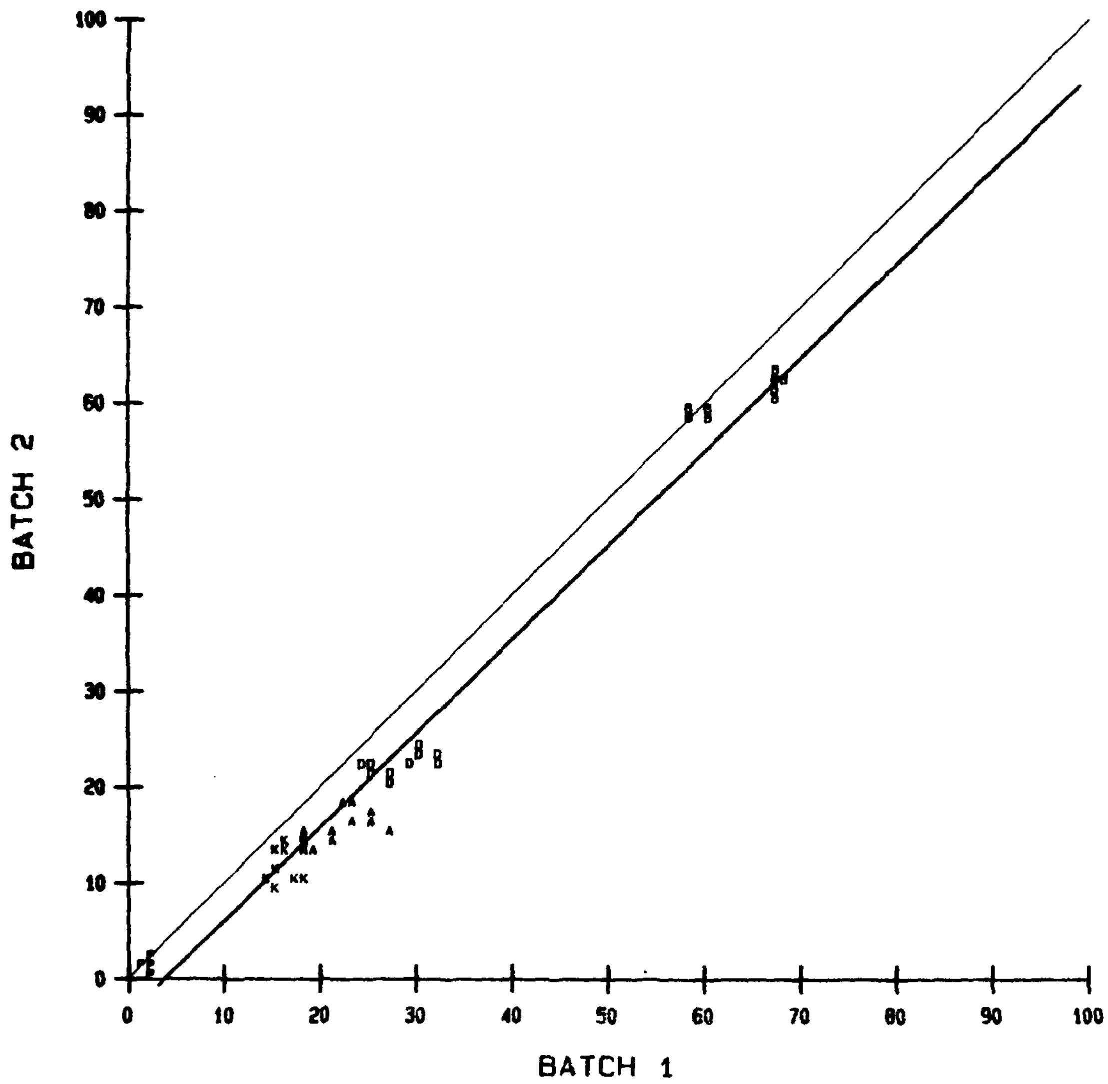
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SKDK12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 75
RANGE OF DATA	:	3 TO 76

CURVE TYPE : LINEAR

Y = - 1.502 + 0.994X

DICO TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -3.6261
COEFFICIENT B = 0.9780

COEF. OF CORR. = 0.9902
COEF. OF DET. = 0.9804
STD. ERR. EST. = 2.8927

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

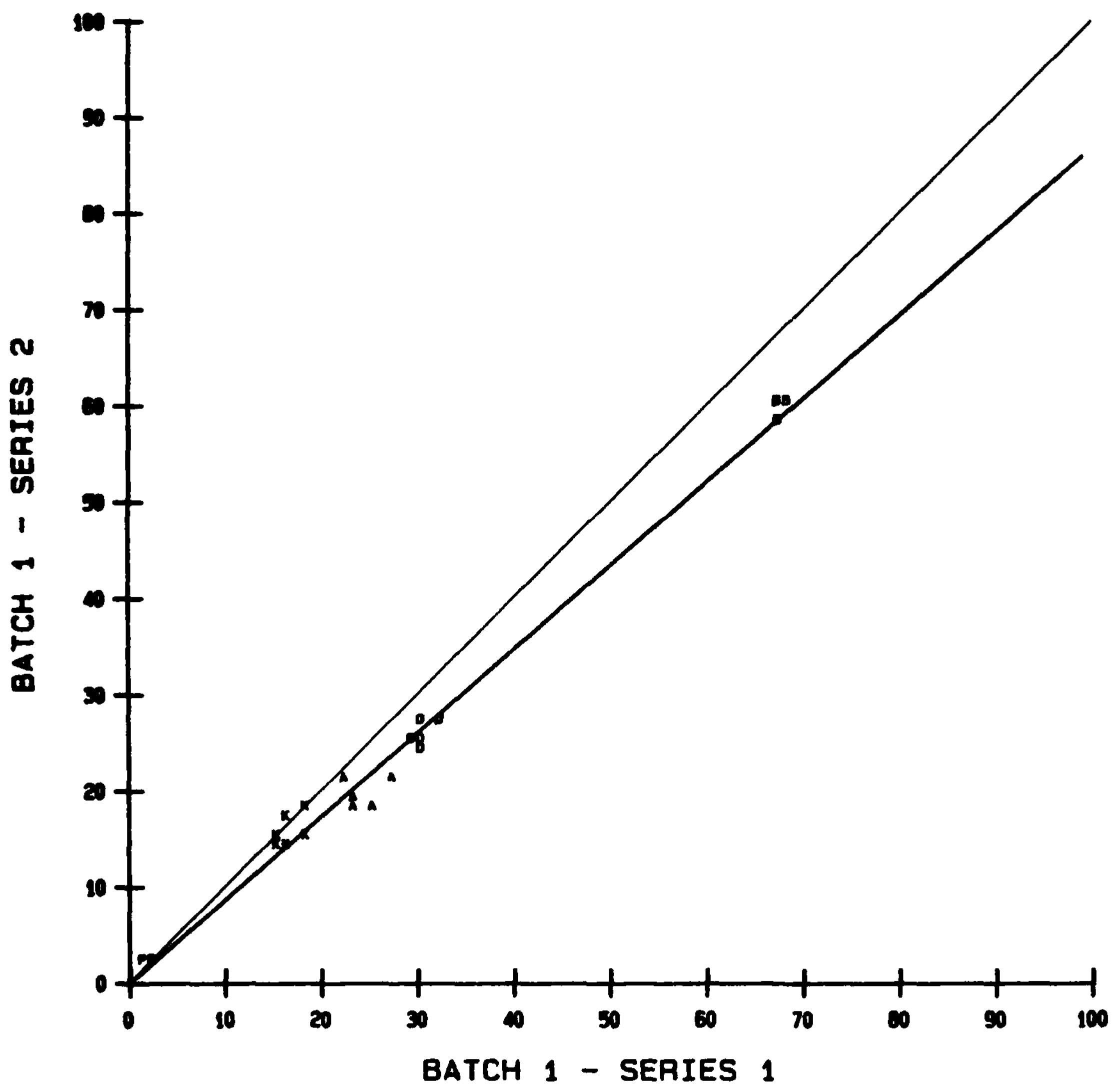
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60SKDK1.2

NUMBER OF POINTS : 60
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 1 TO 68
RANGE OF DATA : 0 TO 63

CURVE TYPE : LINEAR

Y = - 3.626 + 0.978X

DICO TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.0277
COEFFICIENT B	=	0.8679
COEF. OF CORR.	=	0.9963
COEF. OF DET.	=	0.9926
STD. ERR. EST.	=	1.6944

REGRESSION LINE = ———

X - Y LINE = ———

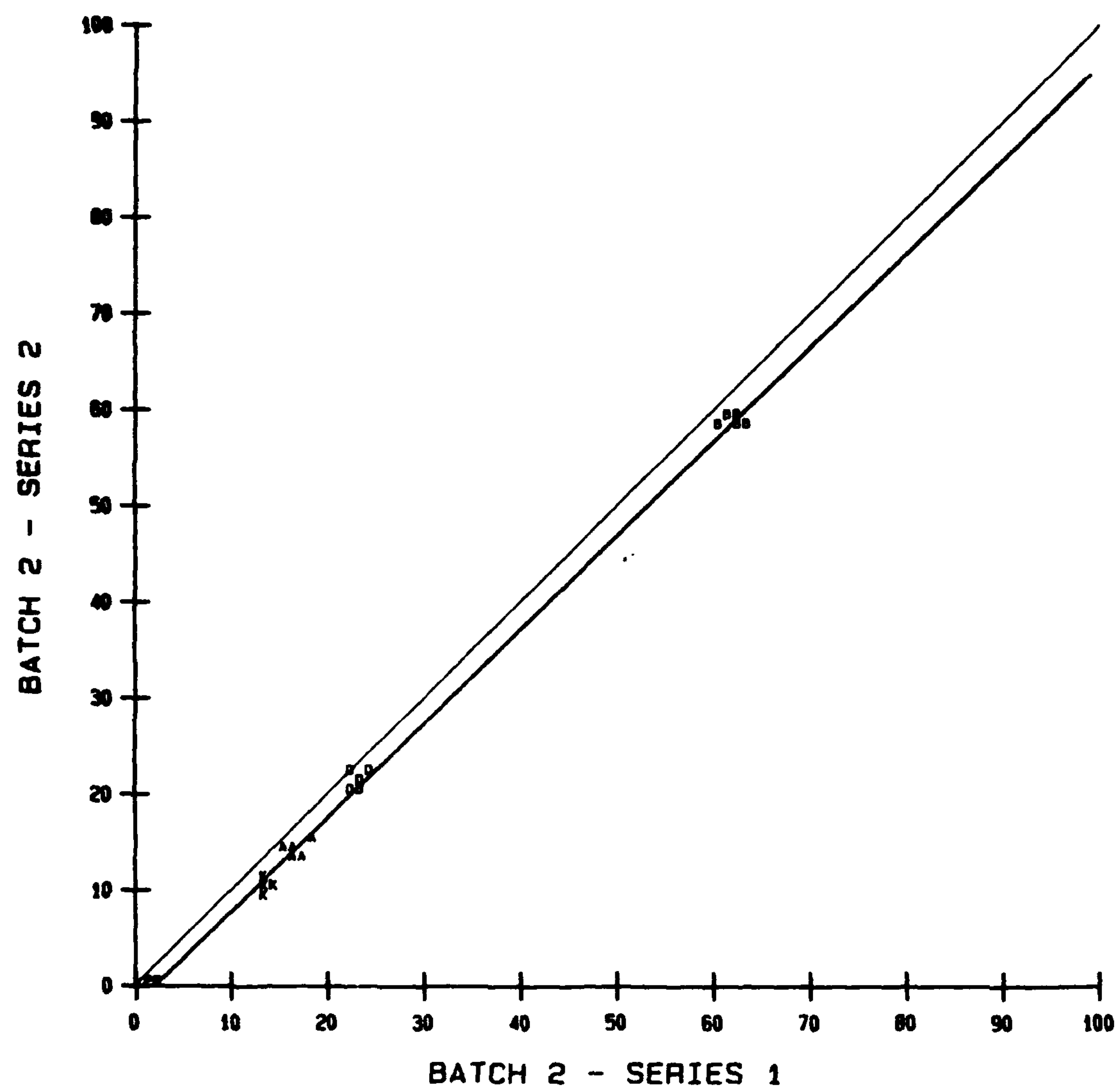
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SKDK11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 68
RANGE OF DATA	:	2 TO 60

CURVE TYPE : LINEAR

Y = 0.028 + 0.868X

DICO TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -1.9766
COEFFICIENT B = 0.9788

COEF. OF CORR. = 0.9986
COEF. OF DET. = 0.9972
STD. ERR. EST. = 1.0991

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

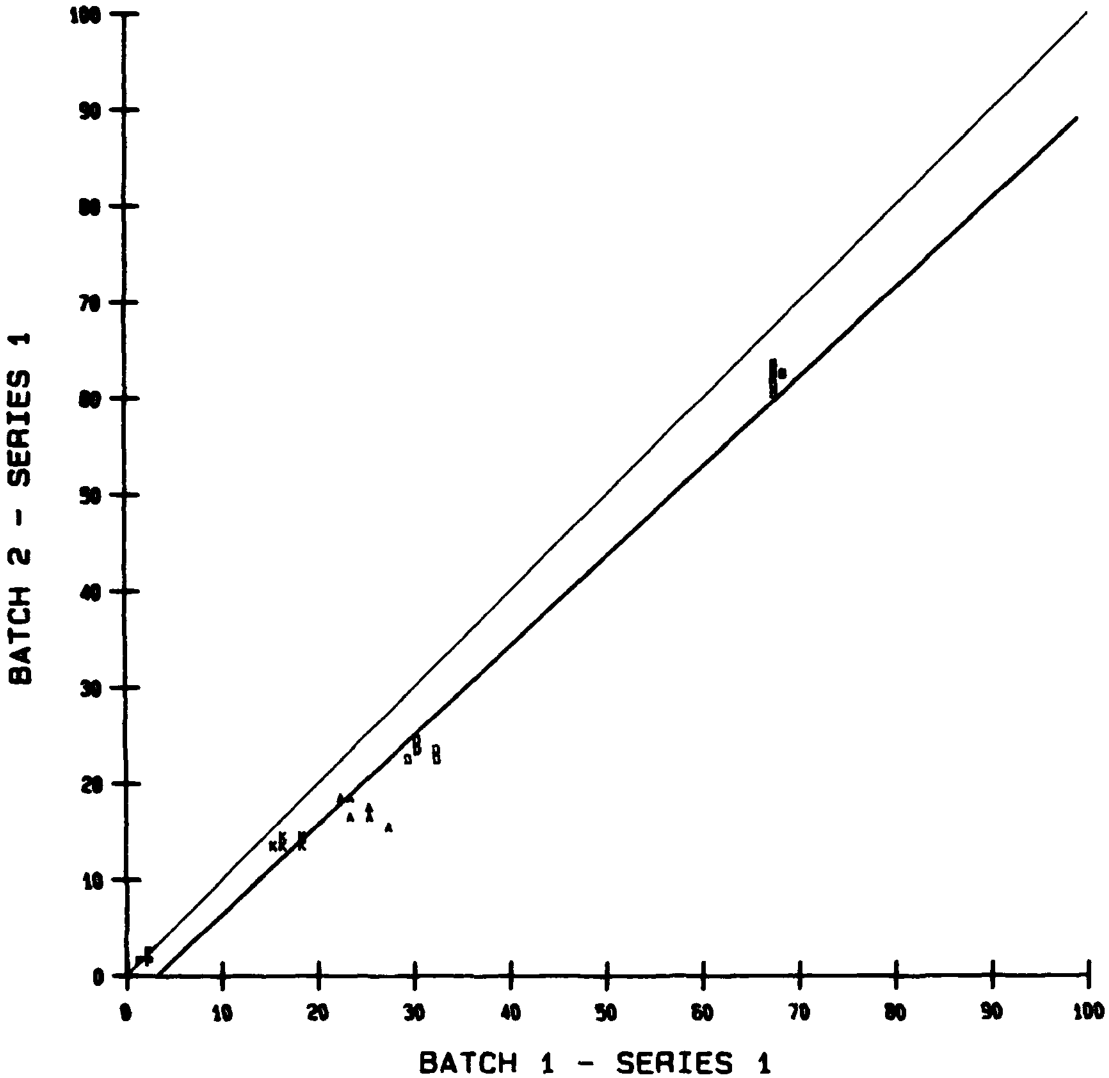
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60SKDK21.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 1 TO 63
RANGE OF DATA : 0 TO 59

CURVE TYPE : LINEAR

Y = - 1.977 + 0.979X

DICO TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-2.8115
COEFFICIENT B	=	0.9289
COEF. OF CORR.	=	0.9908
COEF. OF DET.	=	0.9817
STD. ERR. EST.	=	2.8679

REGRESSION LINE = ______
X - Y LINE = ______

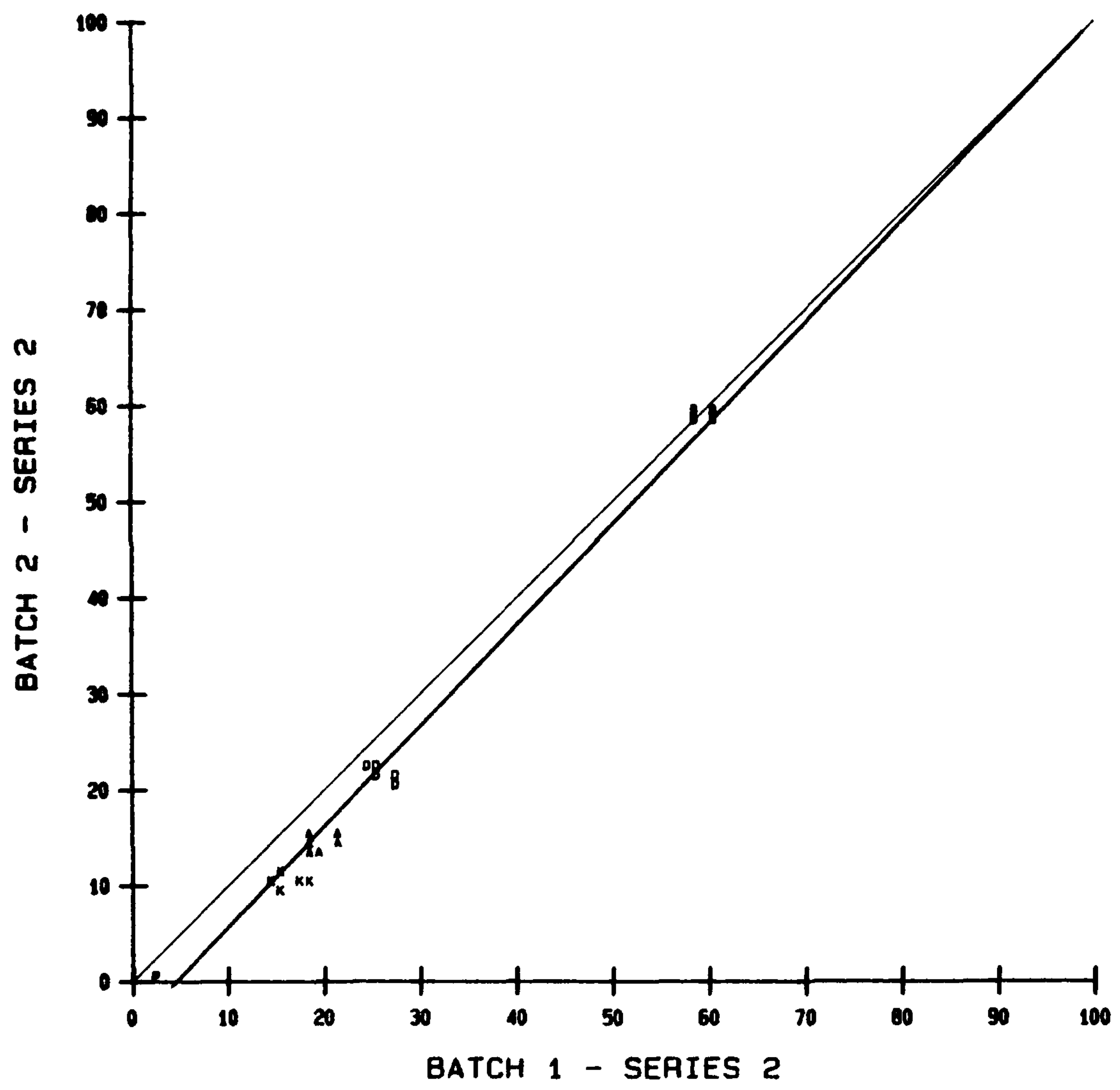
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SKDK11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 68
RANGE OF DATA	:	1 TO 63

CURVE TYPE : LINEAR

Y = - 2.812 + 0.929X

DICO TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -4.7775
COEFFICIENT B = 1.0485

COEF. OF CORR. = 0.9939
COEF. OF DET. = 0.9878
STD. ERR. EST. = 2.2963

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

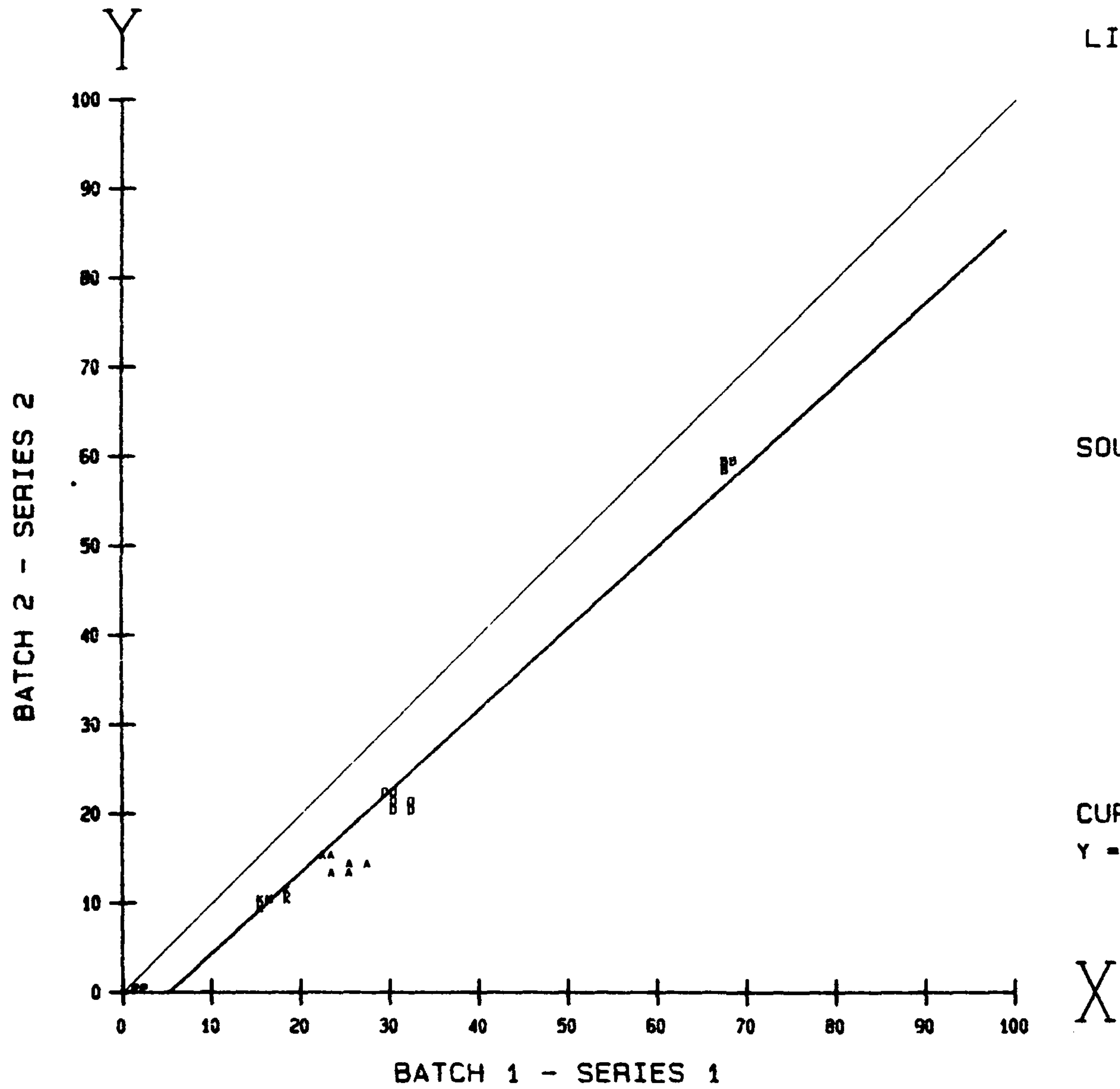
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60SKDK12.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 2 TO 60
RANGE OF DATA : 0 TO 59

CURVE TYPE : LINEAR

Y = - 4.777 + 1.048X

DICO TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-4.7625
COEFFICIENT B	=	0.9105
COEF. OF CORR.	=	0.9908
COEF. OF DET.	=	0.9816
STD. ERR. EST.	=	2.8213

REGRESSION LINE = ______

X - Y LINE = ______

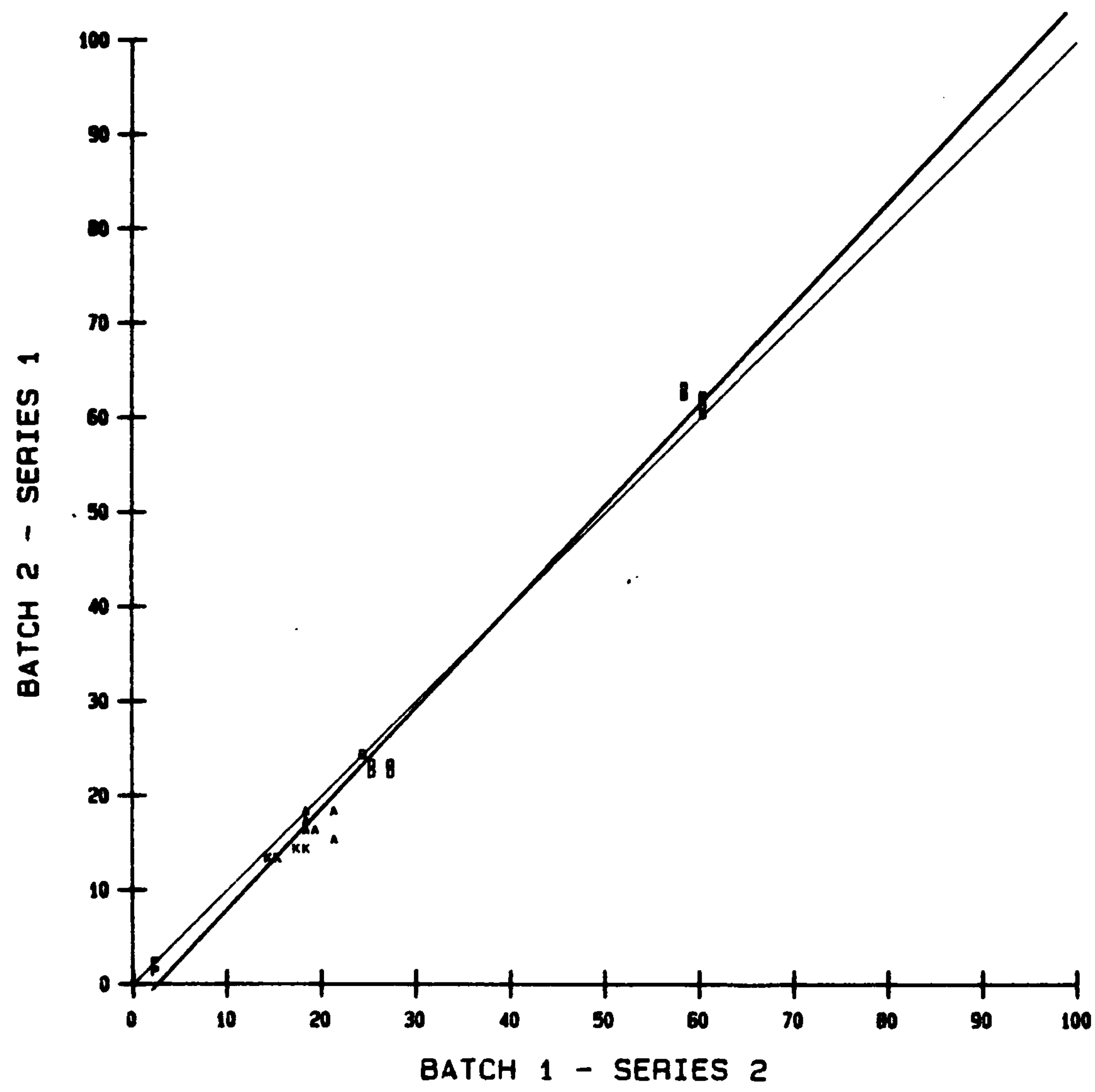
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SKDK11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 68
RANGE OF DATA	:	0 TO 59

CURVE TYPE : LINEAR

Y = - 4.763 + 0.91X

DICO TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-2.8417
COEFFICIENT B	=	1.0703
COEF. OF CORR.	=	0.9945
COEF. OF DET.	=	0.9891
STD. ERR. EST.	=	2.2174
REGRESSION LINE	=	______
X - Y LINE	=	______

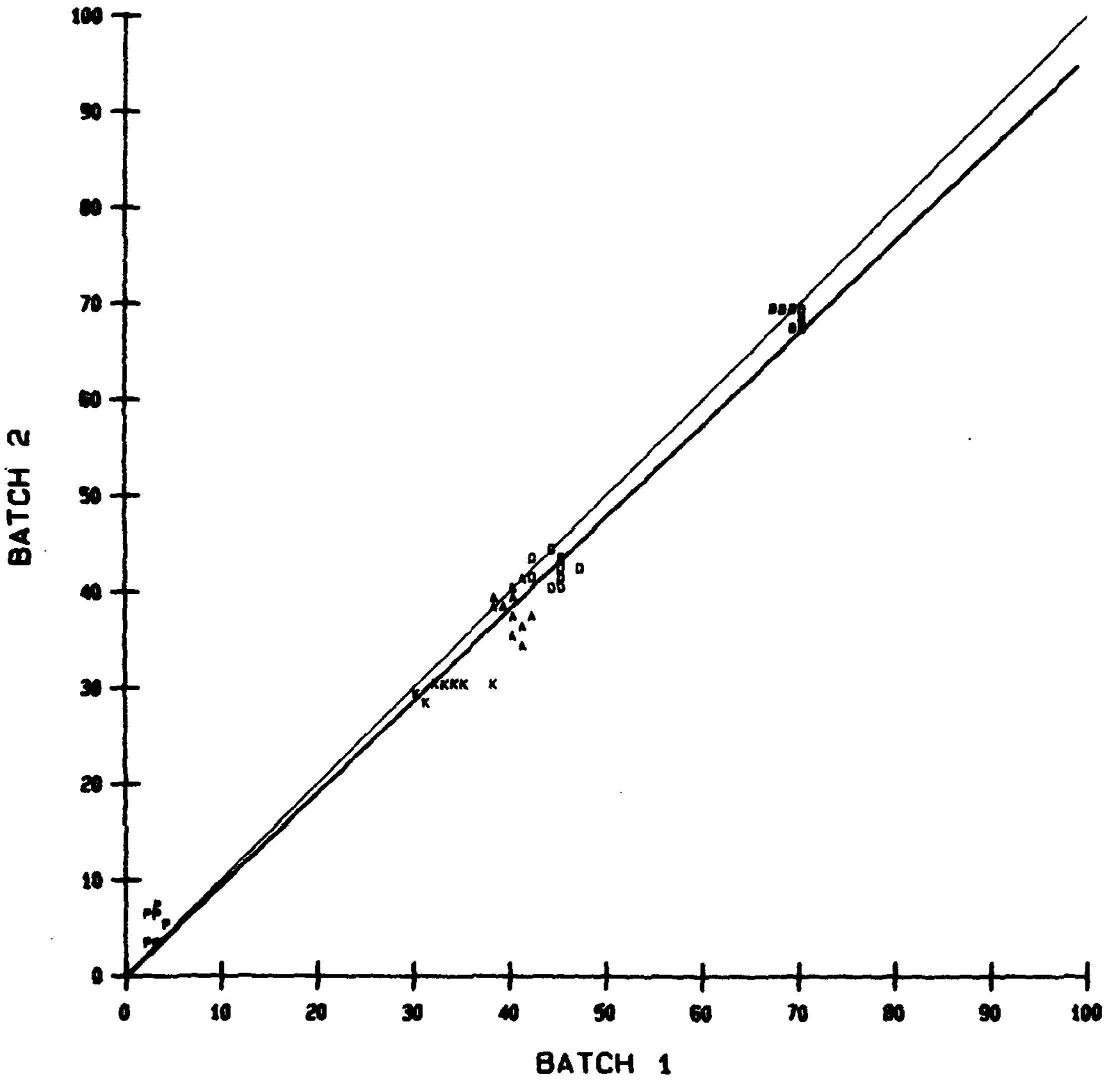
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60SKDK12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 60
RANGE OF DATA	:	1 TO 63

CURVE TYPE : LINEAR

Y = - 2.842 + 1.07X

DICO TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.0473
COEFFICIENT B	=	0.9579
COEF. OF CORR.	=	0.9927
COEF. OF DET.	=	0.9854
STD. ERR. EST.	=	2.5297

REGRESSION LINE = ______
X - Y LINE = ______

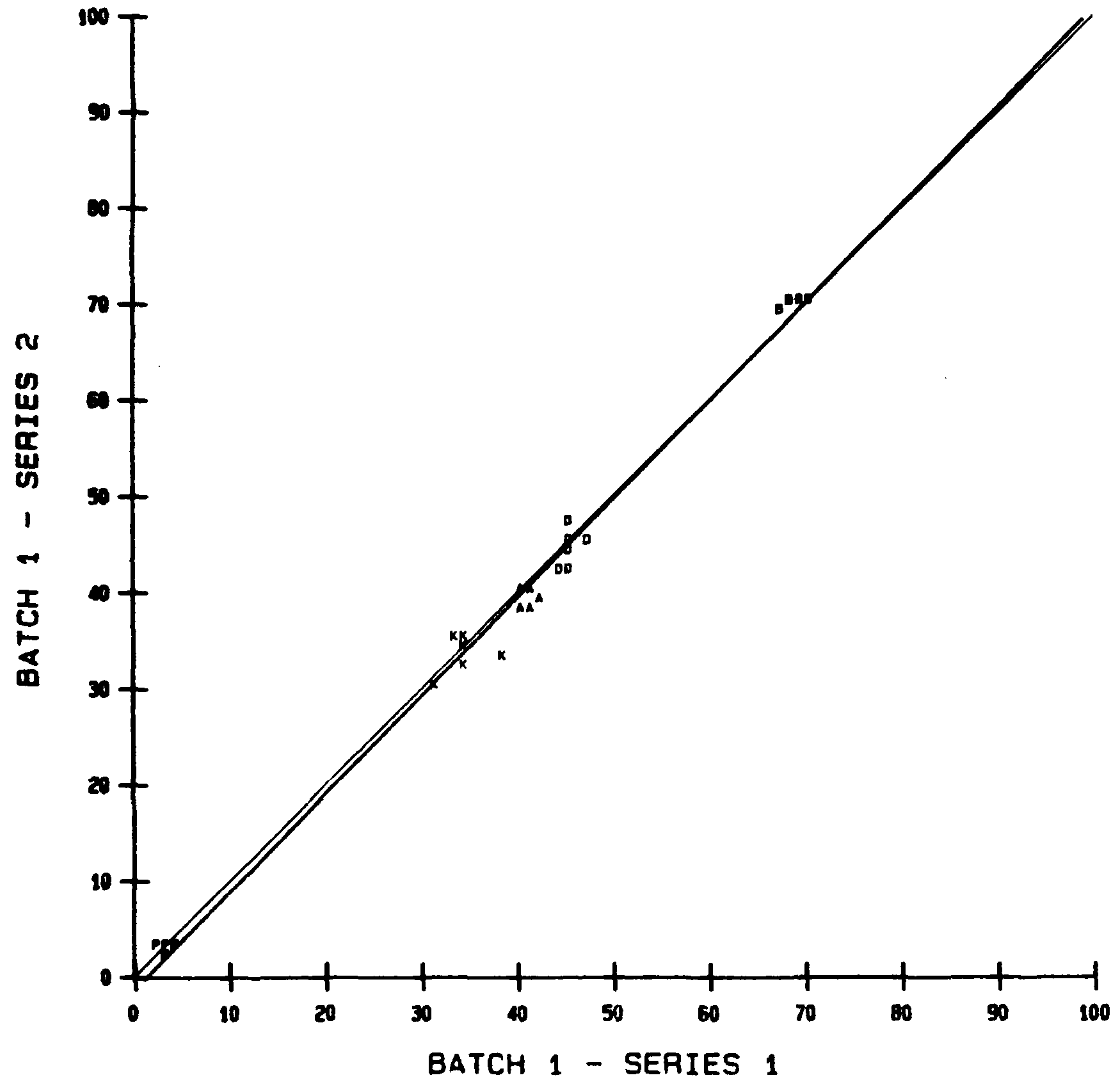
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40MUDK1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 70
RANGE OF DATA	:	3 TO 69

CURVE TYPE : LINEAR

Y = - 0.047 + 0.958X

DICO TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -1.3180
COEFFICIENT B = 1.0205

COEF. OF CORR. = 0.9969
COEF. OF DET. = 0.9939
STD. ERR. EST. = 1.7512

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

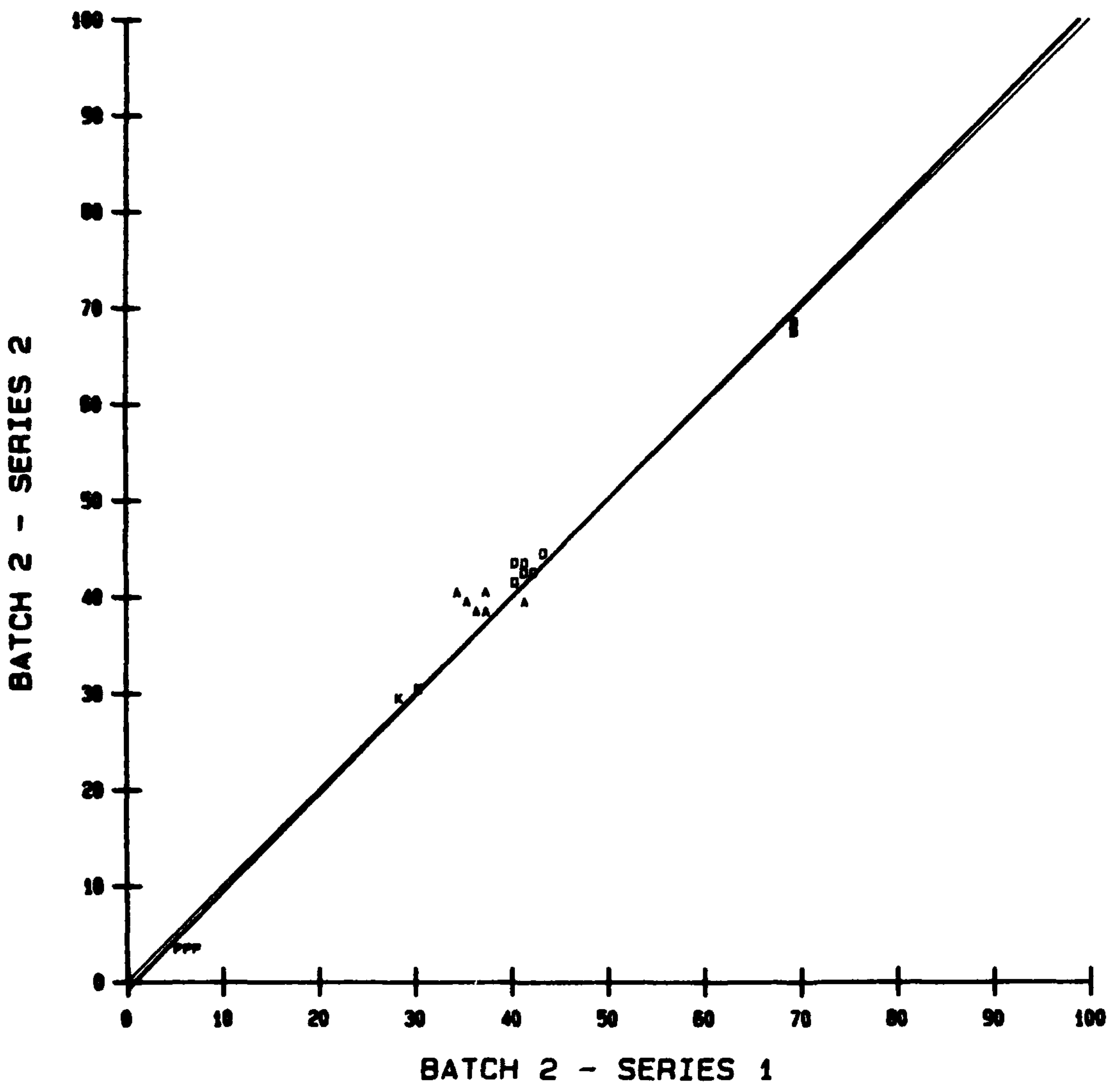
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40MUDK11.12

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 2 TO 70
RANGE OF DATA : 2 TO 70

CURVE TYPE : LINEAR

Y = - 1.318 + 1.02X

DICO TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.7523
COEFFICIENT B	=	1.0179
COEF. OF CORR.	=	0.9943
COEF. OF DET.	=	0.9886
STD. ERR. EST.	=	2.3047

REGRESSION LINE = ________

X - Y LINE = ________

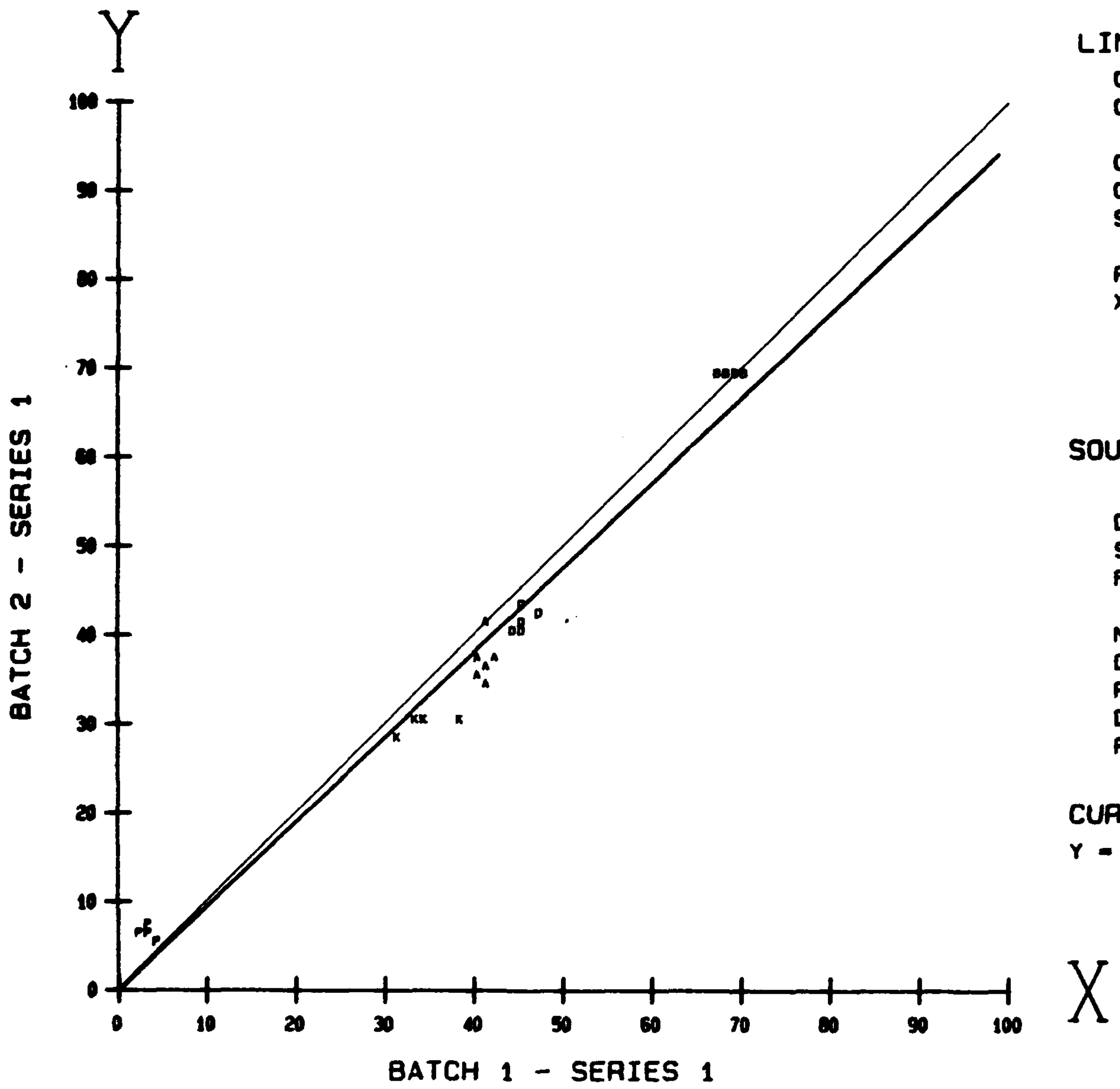
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40MUDK21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	5 TO 69
RANGE OF DATA	:	3 TO 68

CURVE TYPE : LINEAR

Y = - 0.752 + 1.018X

DICO TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.0887
COEFFICIENT B	=	0.9536
COEF. OF CORR.	=	0.9882
COEF. OF DET.	=	0.9766
STD. ERR. EST.	=	3.2224

REGRESSION LINE = ———
X - Y LINE = ———

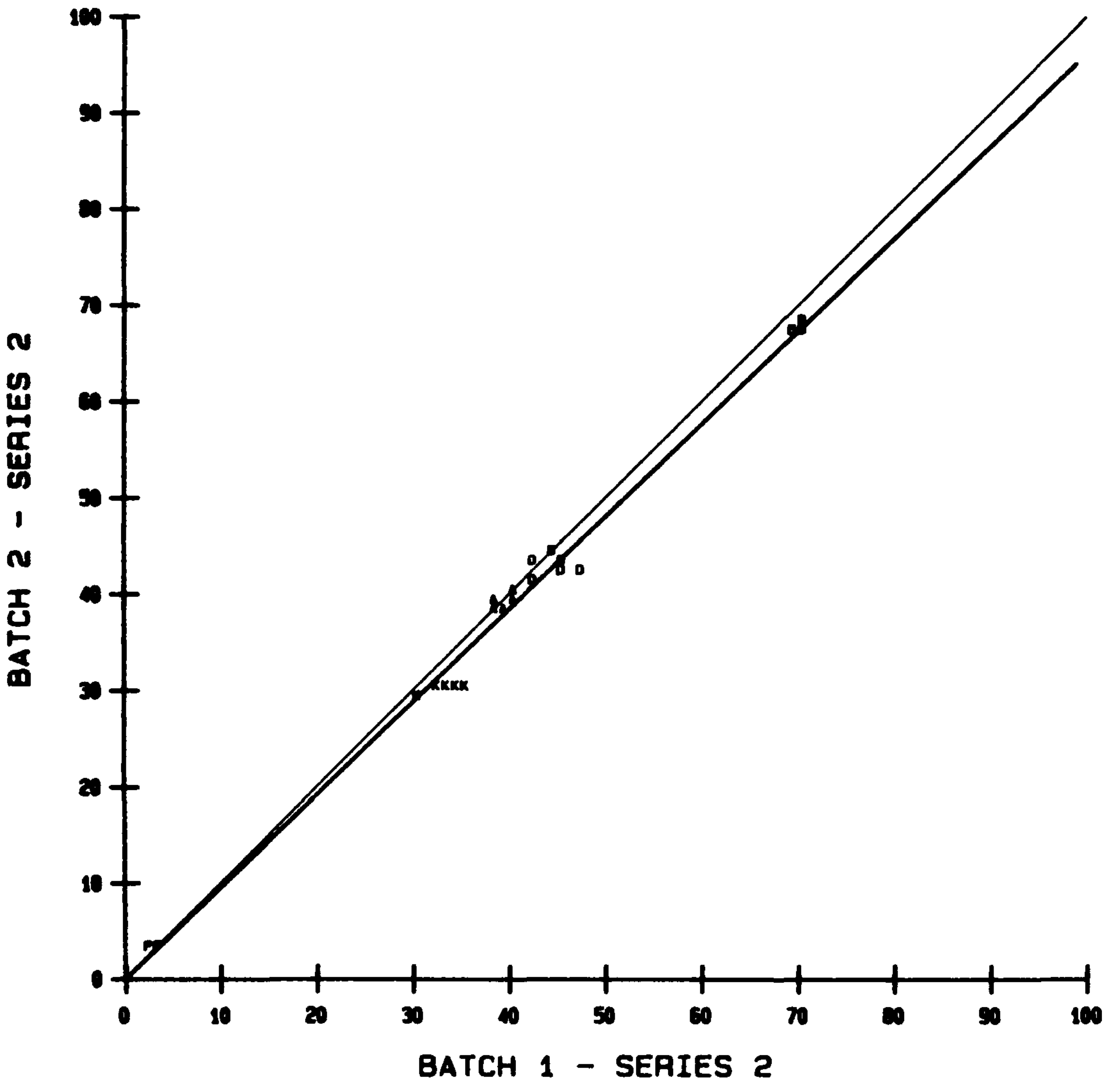
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40MUDK11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 70
RANGE OF DATA	:	5 TO 69

CURVE TYPE : LINEAR

$Y = -0.089 + 0.954X$

DICO TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -0.0052
COEFFICIENT B = 0.9622

COEF. OF CORR. = 0.9970
COEF. OF DET. = 0.9941
STD. ERR. EST. = 1.6626

REGRESSION LINE = ———
X - Y LINE = ———

SOURCE DATA FILE INFO

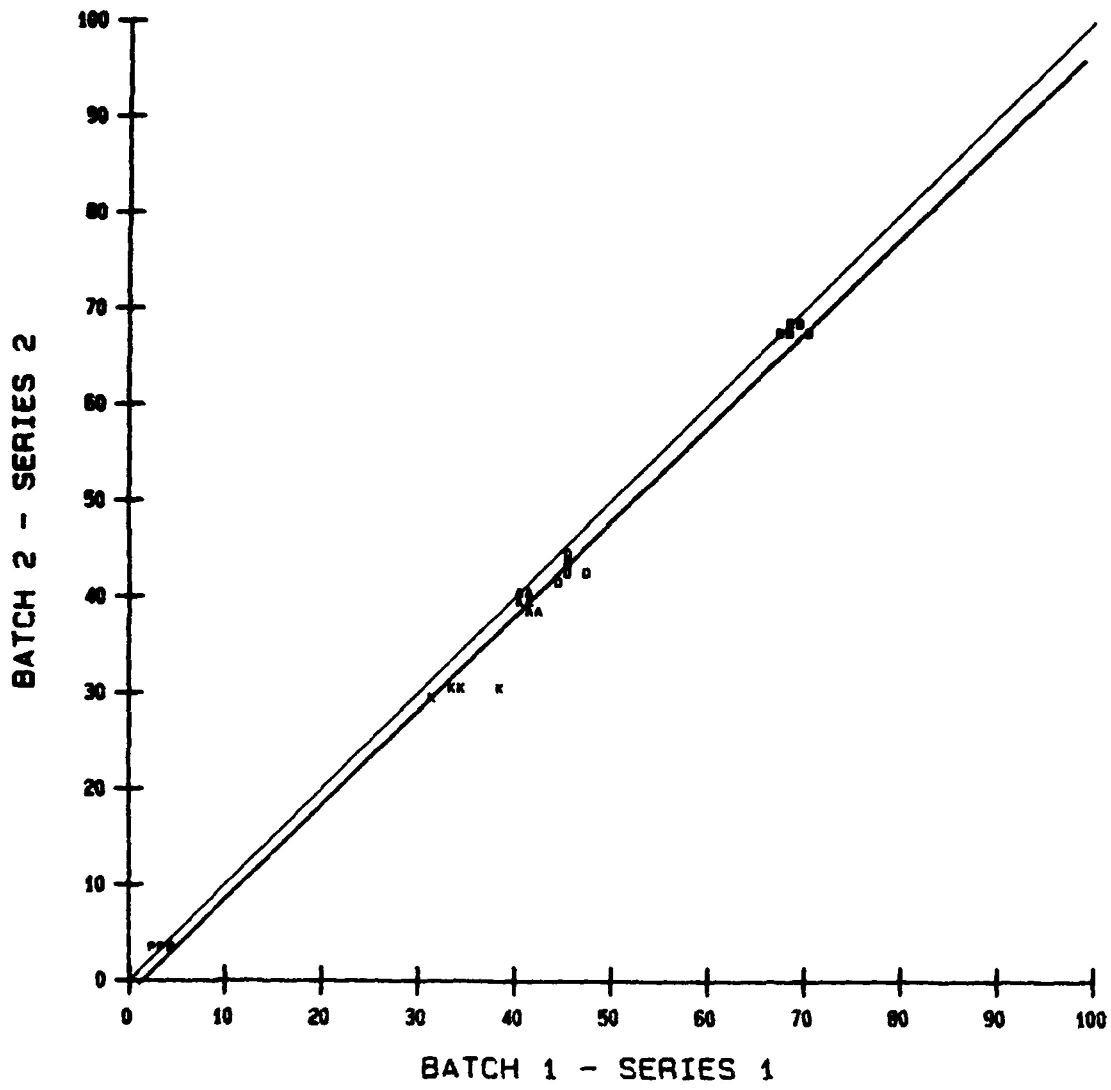
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40MUDK12.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 2 TO 70
RANGE OF DATA : 3 TO 68

CURVE TYPE : LINEAR

Y = - 0.005 + 0.962X

DICO TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.3514
COEFFICIENT B	=	0.9839
COEF. OF CORR.	=	0.9960
COEF. OF DET.	=	0.9921
STD. ERR. EST.	=	1.9229

REGRESSION LINE = ______

X - Y LINE = ______

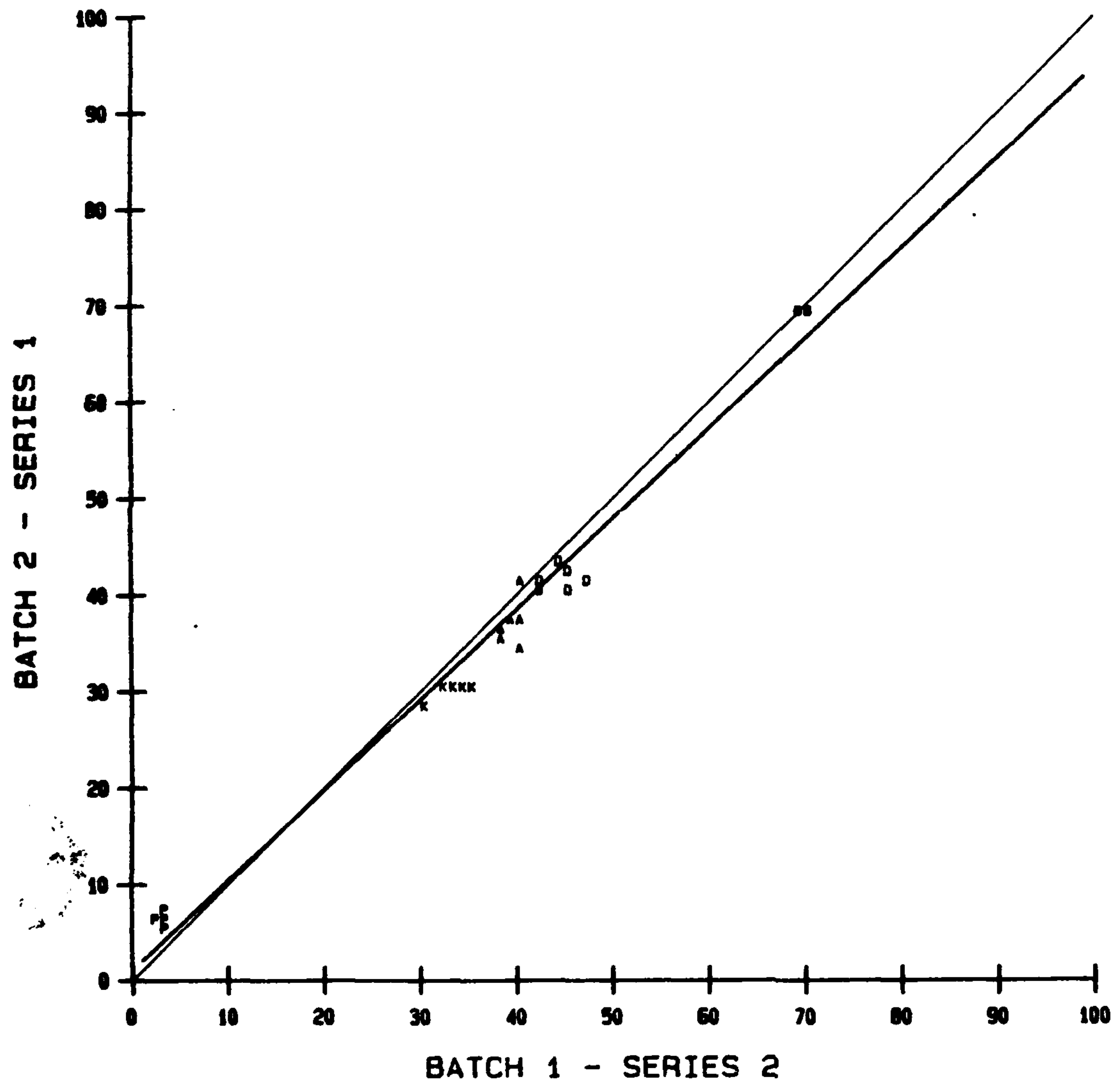
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40MUDK11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 70
RANGE OF DATA	:	3 TO 68

CURVE TYPE : LINEAR

Y = - 1.351 + 0.984X

DICO TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	1.0929
COEFFICIENT B	=	0.9358
COEF. OF CORR.	=	0.9927
COEF. OF DET.	=	0.9854
STD. ERR. EST.	=	2.5427

REGRESSION LINE = ______
X - Y LINE = ______

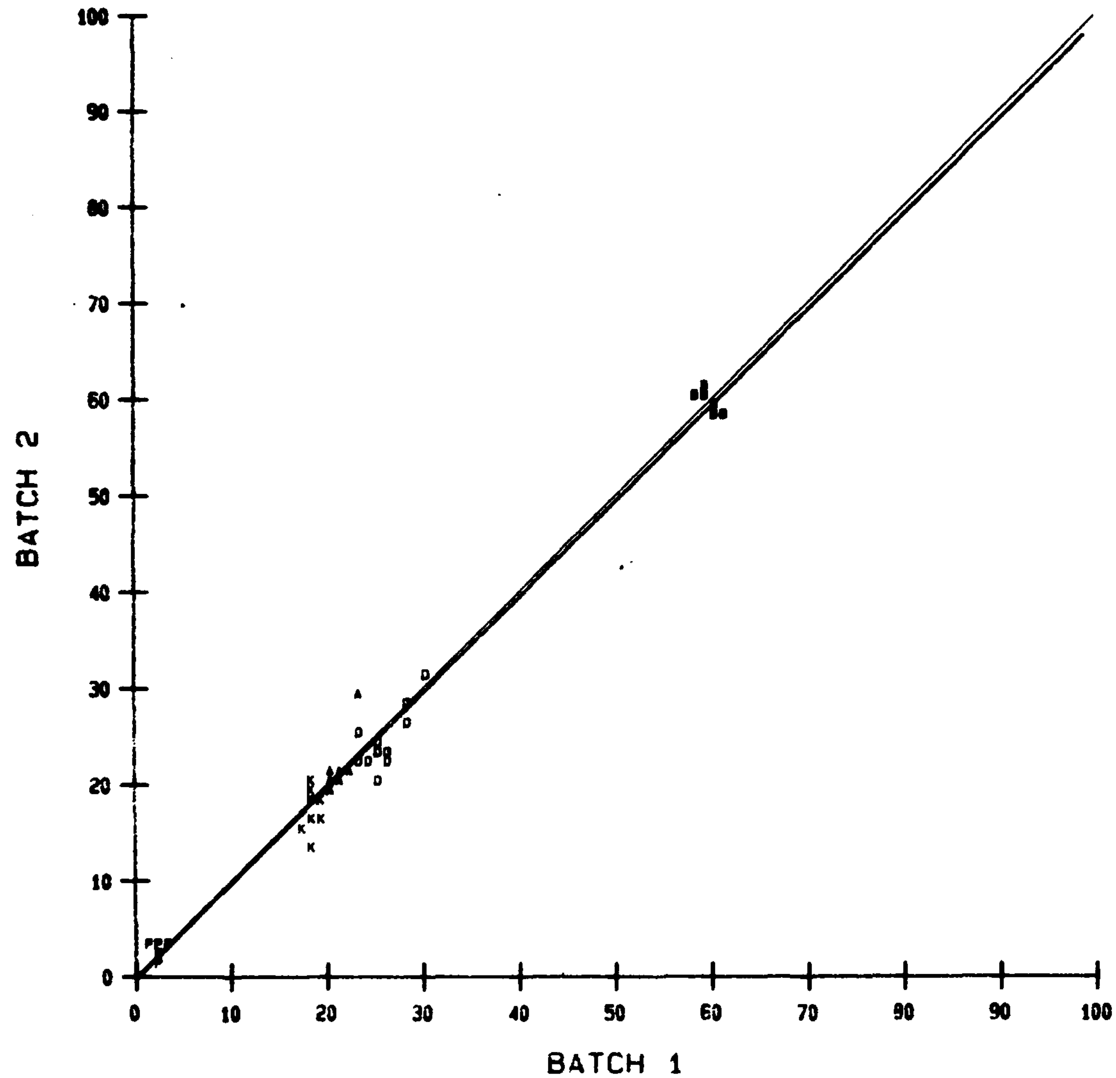
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40MUDK12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 70
RANGE OF DATA	:	5 TO 69

CURVE TYPE : LINEAR

$Y = 1.093 + 0.936X$

DICO TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.2327
COEFFICIENT B	=	0.9927
COEF. OF CORR.	=	0.9949
COEF. OF DET.	=	0.9898
STD. ERR. EST.	=	1.9363

REGRESSION LINE = ————
X - Y LINE = ————

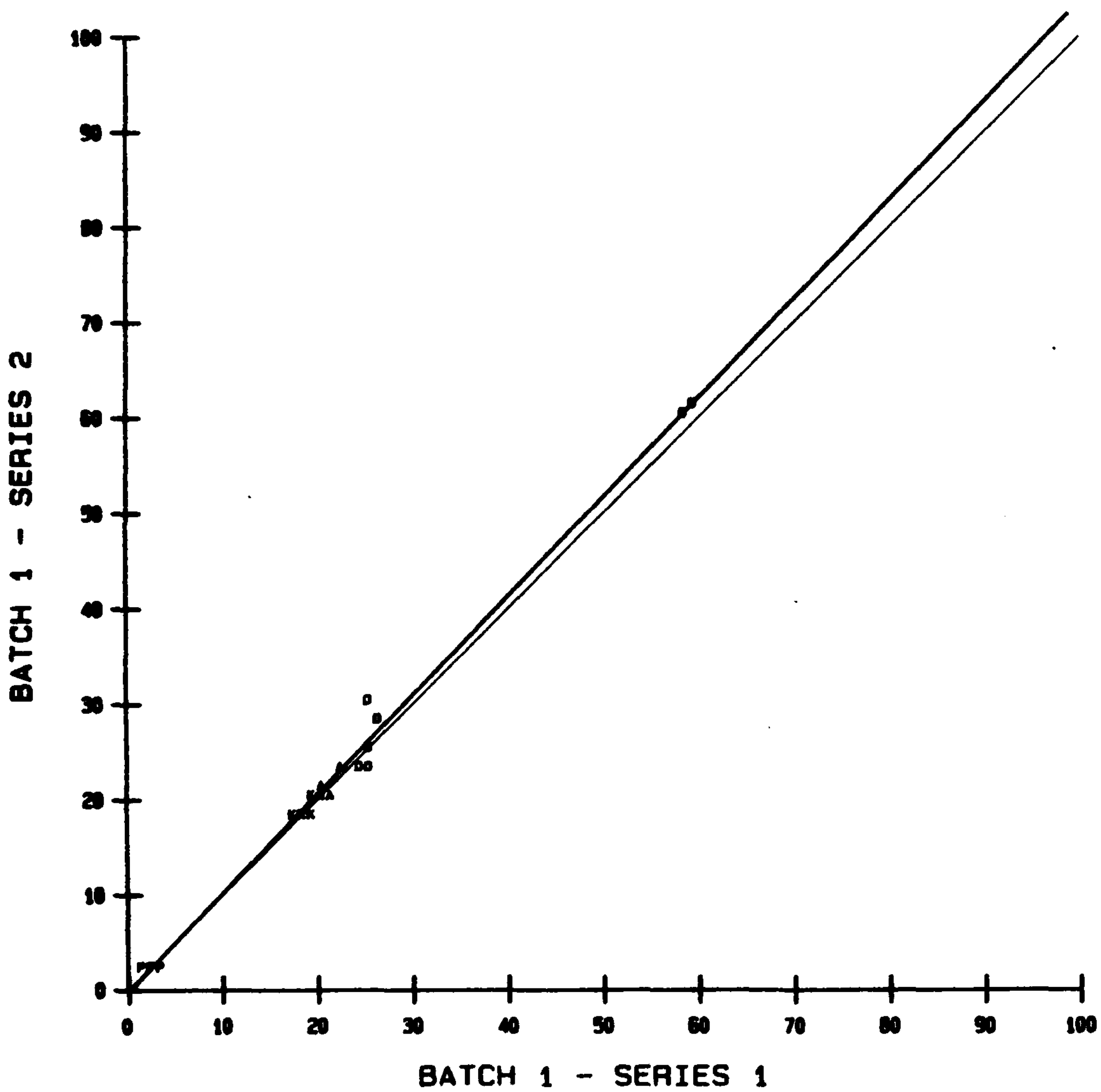
SOURCE DATA FILE INFO

DISK DRIVE	: A:
SUBDIRECTORY	: \
FILENAME	: 60MUDK1.2
NUMBER OF POINTS	: 60
DOMAIN OF PLOT	: 0 TO 100
RANGE OF PLOT	: 0 TO 100
DOMAIN OF DATA	: 1 TO 61
RANGE OF DATA	: 1 TO 61

CURVE TYPE : LINEAR

Y = - 0.233 + 0.993X

DICO TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.2366
COEFFICIENT B	=	1.0377
COEF. OF CORR.	=	0.9980
COEF. OF DET.	=	0.9960
STD. ERR. EST.	=	1.2503

REGRESSION LINE = ______

X - Y LINE = ______

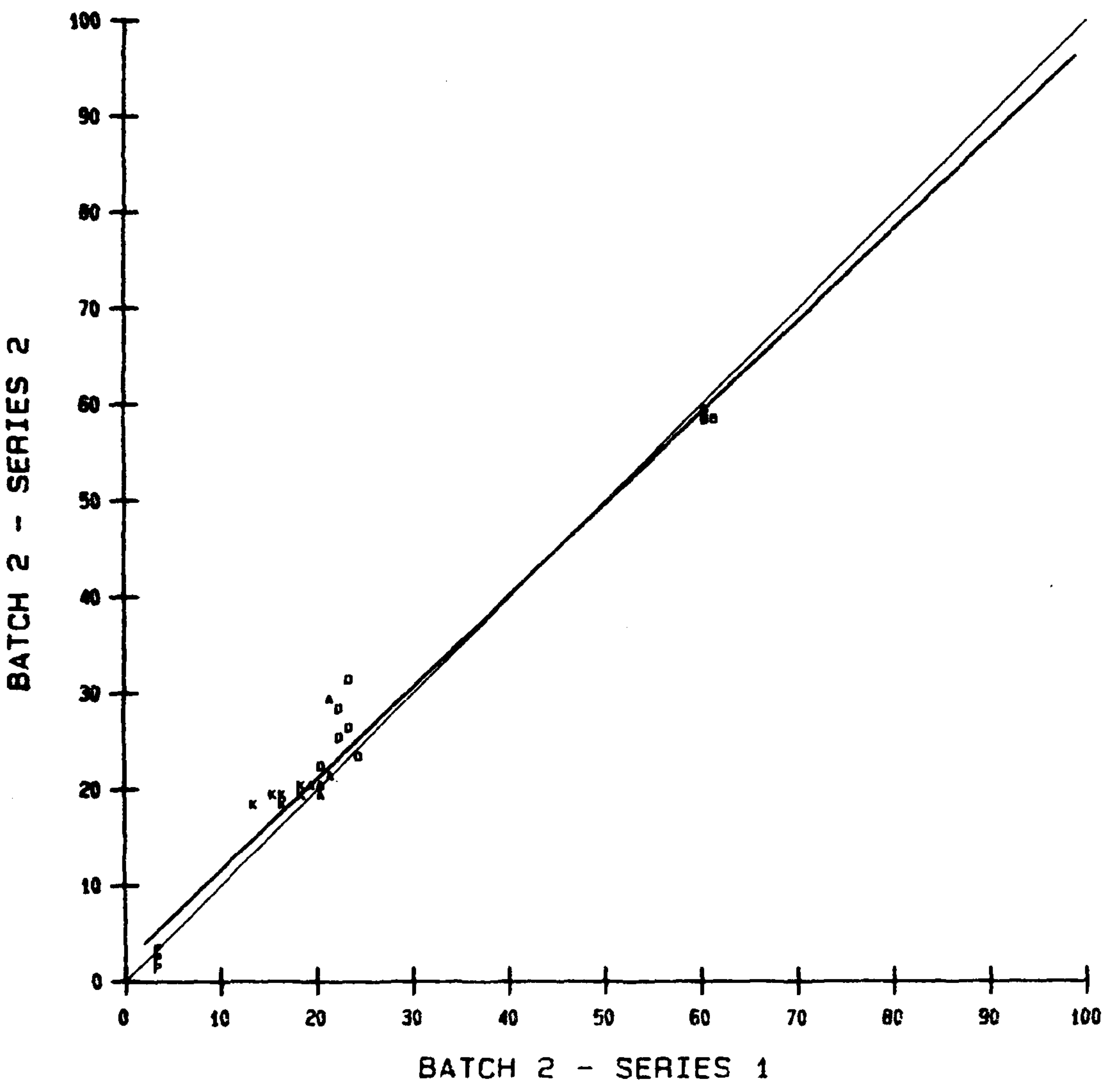
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60MUDK11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 59
RANGE OF DATA	:	2 TO 61

CURVE TYPE : LINEAR

Y = - 0.237 + 1.038X

DICO TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 2.1031
COEFFICIENT B = 0.9519

COEF. OF CORR. = 0.9886
COEF. OF DET. = 0.9774
STD. ERR. EST. = 2.8687

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

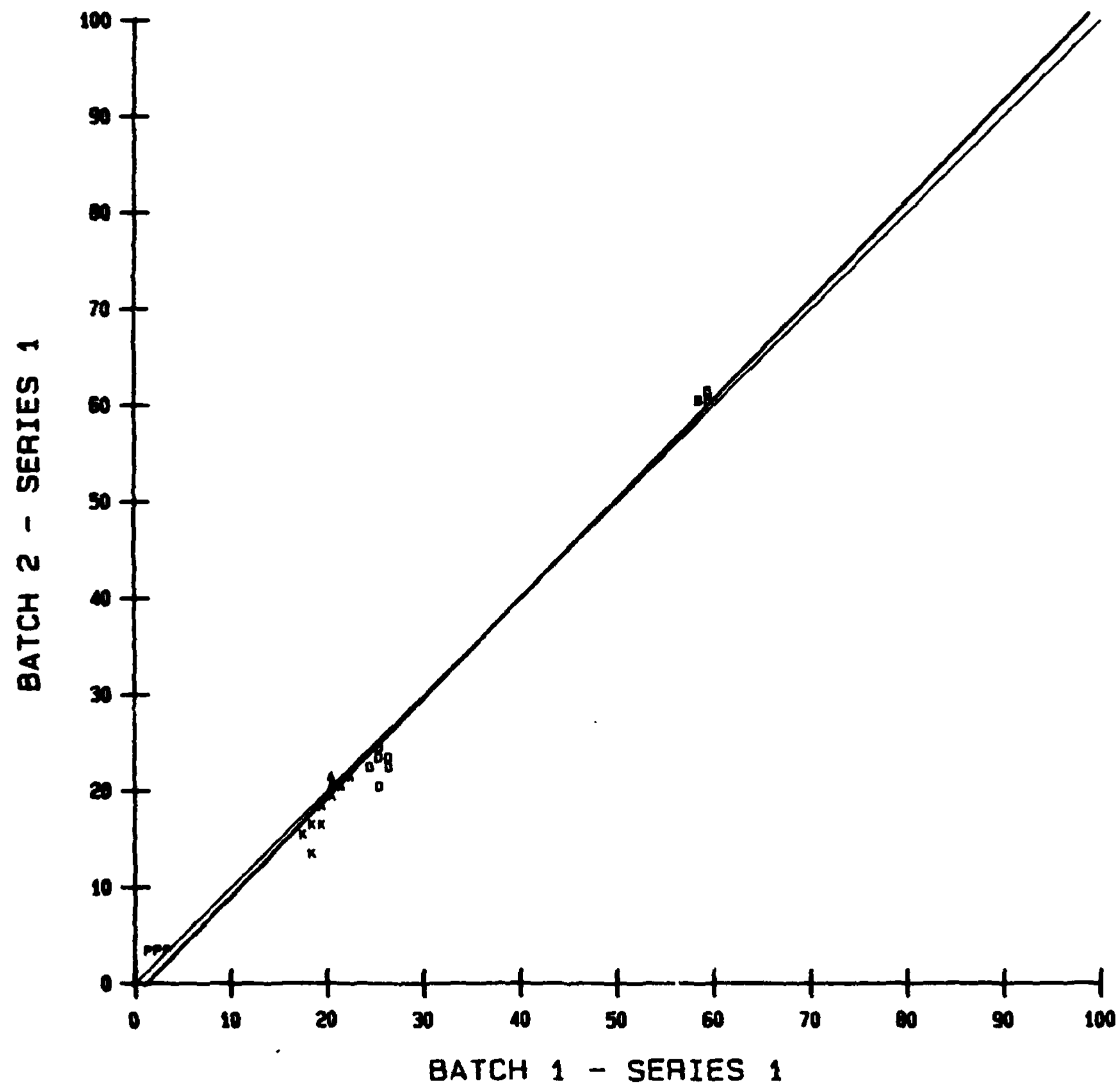
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60MUDK21.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 61
RANGE OF DATA : 1 TO 59

CURVE TYPE : LINEAR

Y = 2.103 + 0.952X

DICO TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -1.3074
COEFFICIENT B = 1.0311

COEF. OF CORR. = 0.9946
COEF. OF DET. = 0.9891
STD. ERR. EST. = 2.0662

REGRESSION LINE = ______
X - Y LINE = ______

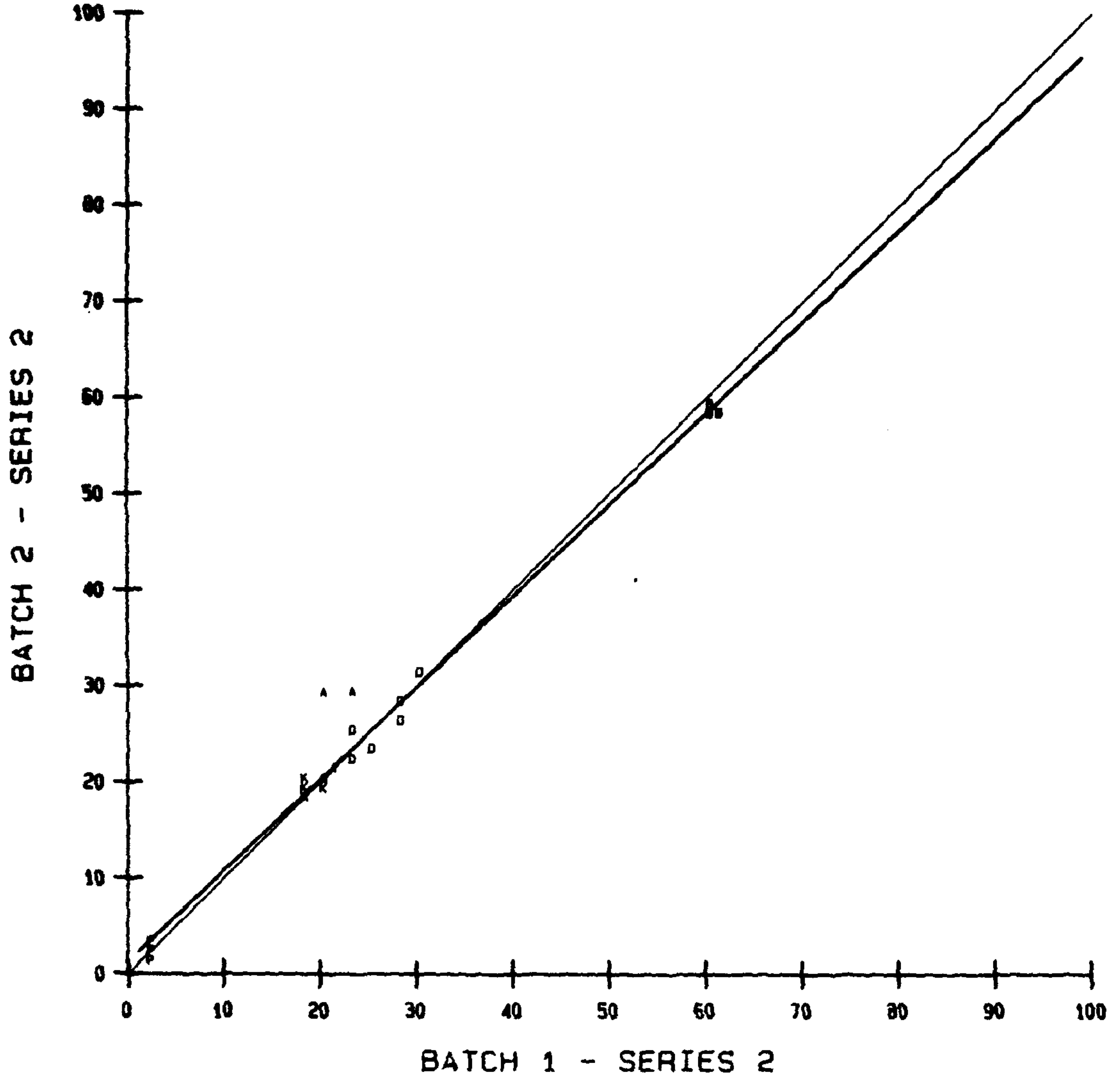
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60MUDK11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 59
RANGE OF DATA	:	3 TO 61

CURVE TYPE : LINEAR

Y = - 1.307 + 1.031X

DICO TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 1.2629
COEFFICIENT B = 0.9519

COEF. OF CORR. = 0.9928
COEF. OF DET. = 0.9857
STD. ERR. EST. = 2.2784

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

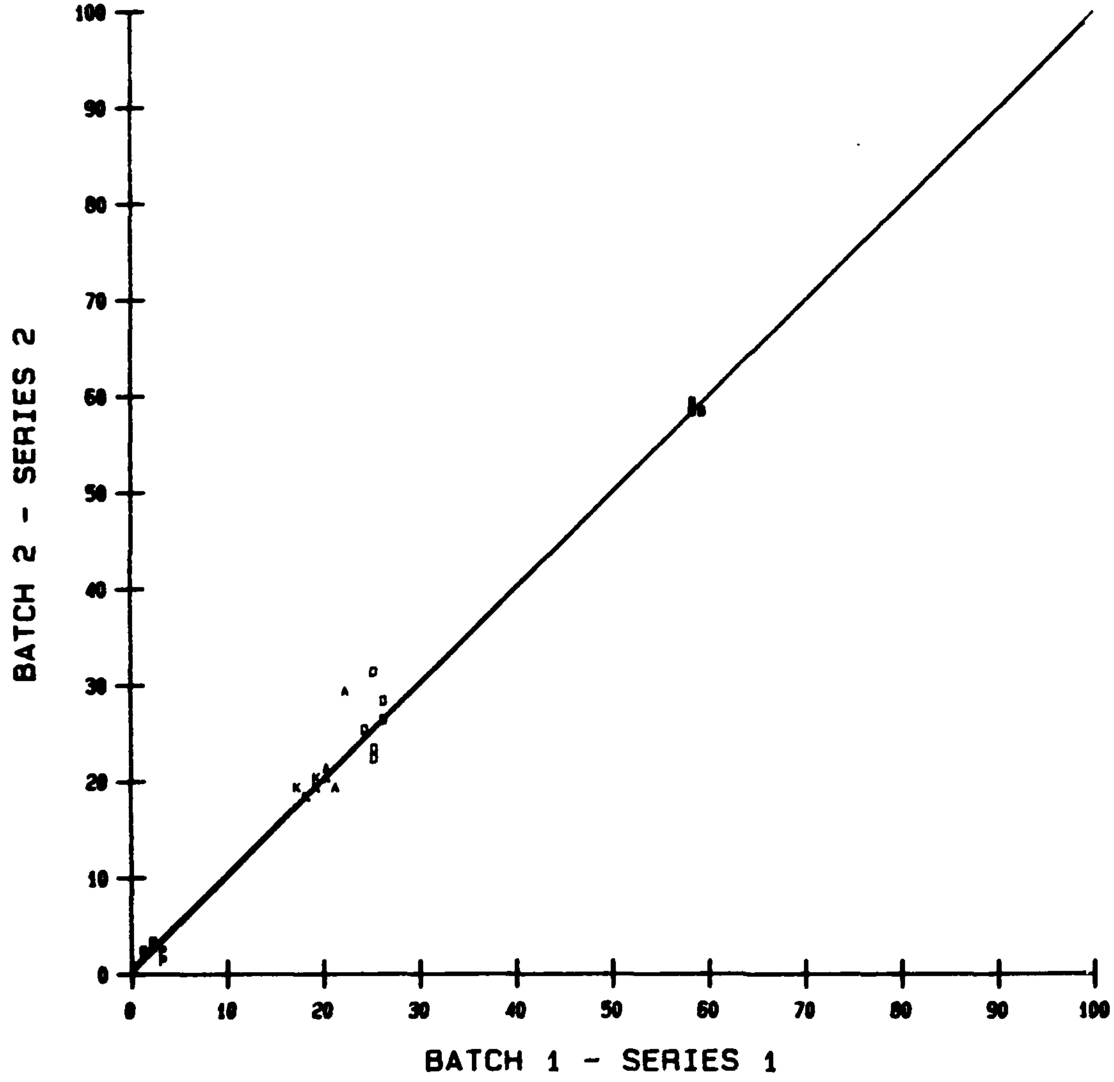
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60MUDK12.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 2 TO 61
RANGE OF DATA : 1 TO 59

CURVE TYPE : LINEAR

Y = 1.263 + 0.952X

DICO TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.5879
COEFFICIENT B	=	0.9924
COEF. OF CORR.	=	0.9942
COEF. OF DET.	=	0.9884
STD. ERR. EST.	=	2.0582

REGRESSION LINE = ______

X - Y LINE = ______

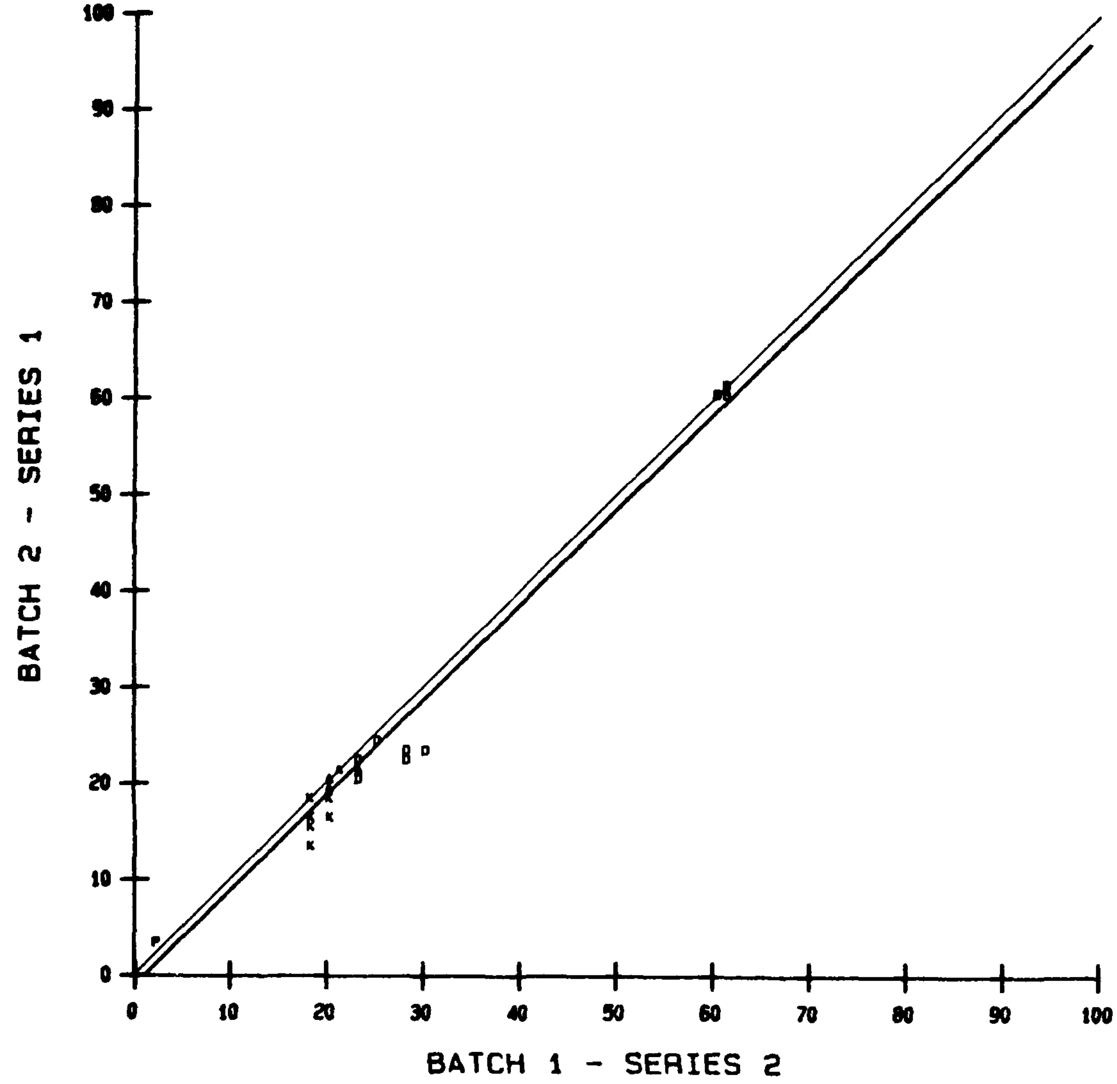
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60MUDK11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 59
RANGE OF DATA	:	1 TO 59

CURVE TYPE : LINEAR

Y = 0.588 + 0.992X

DICO TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -0.9931
COEFFICIENT B = 0.9906

COEF. OF CORR. = 0.9934
COEF. OF DET. = 0.9869
STD. ERR. EST. = 2.2709

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60MUDK12.21

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 2 TO 61
RANGE OF DATA : 3 TO 61

CURVE TYPE : LINEAR

Y = - 0.993 + 0.991X

APPENDIX N

REGRESSION ANALYSIS CHARTS

SHOWING GRAPHIC PRESENTATION

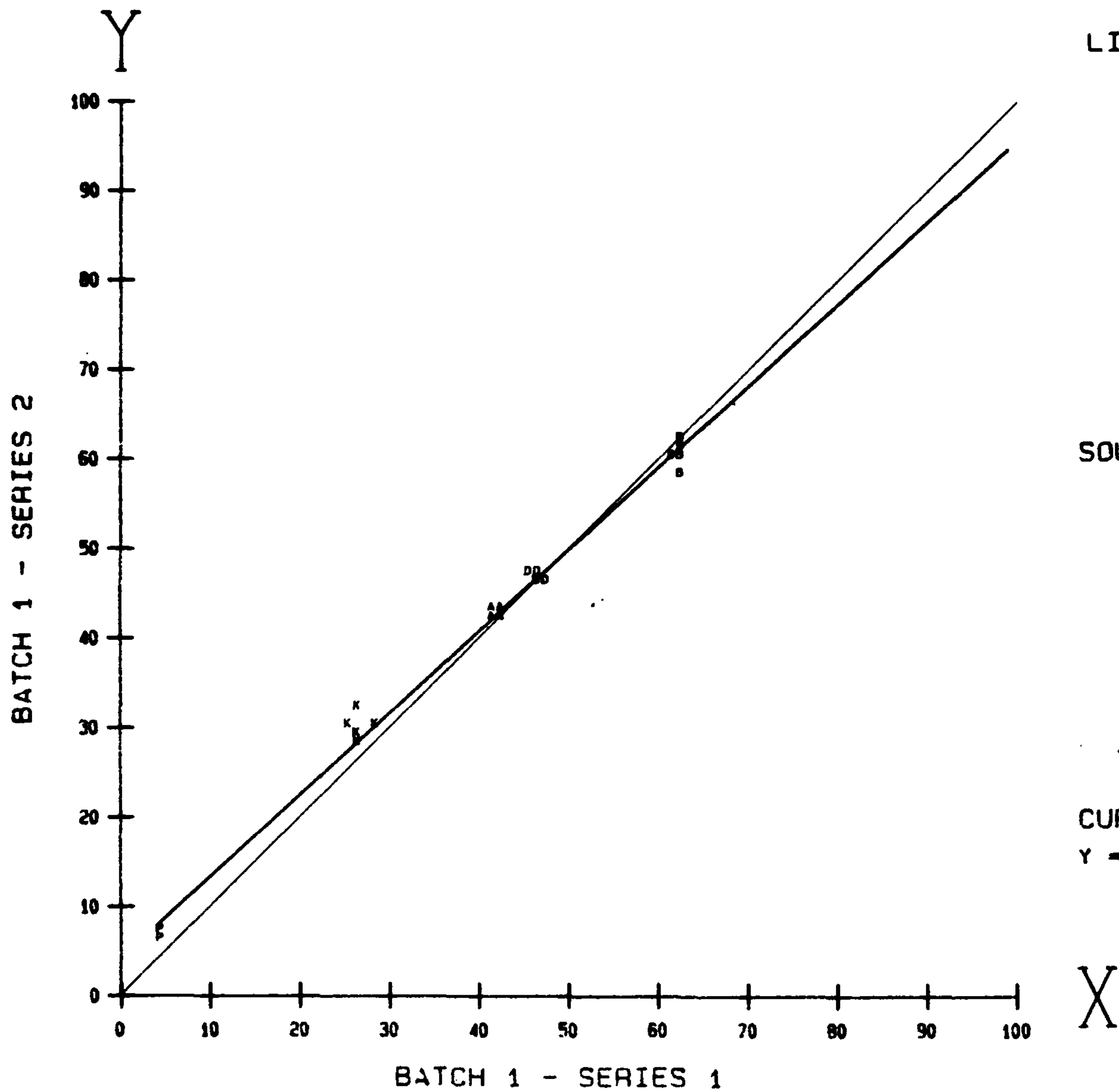
OF THE PERFORMANCE AND RELIABILITY OF THE DUNLOP TIRE

MOUNTED ON FOUR FRICTION FRICTION DEVICES

USING SELF WATER SYSTEM

AT SPEEDS OF 40 AND 60 MPH

DUNLOP TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 4.2630
COEFFICIENT B = 0.9147

COEF. OF CORR. = 0.9970
COEF. OF DET. = 0.9940
STD. ERR. EST. = 1.3966

REGRESSION LINE =
X - Y LINE =

SOURCE DATA FILE INFO

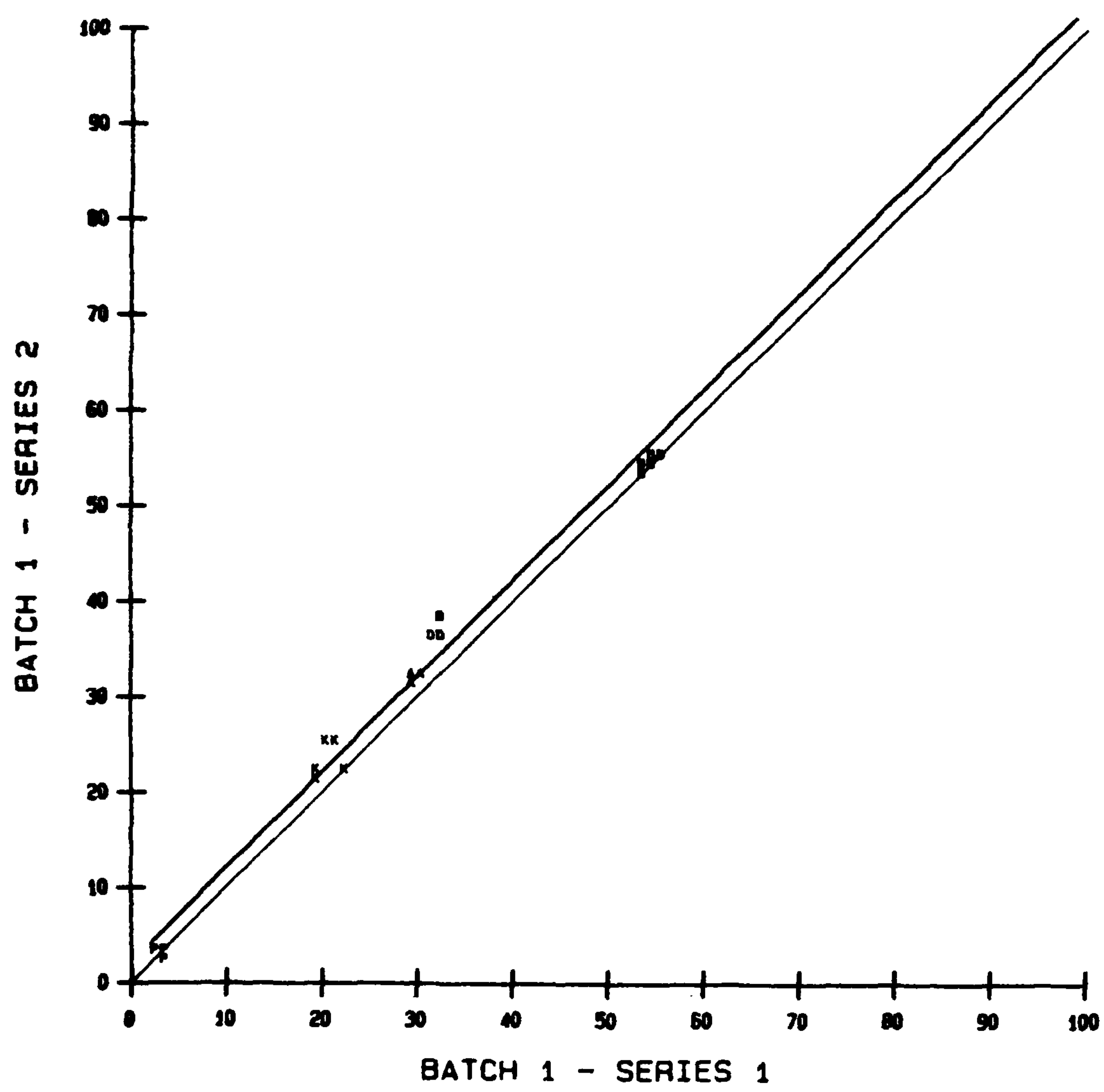
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40RFDU11.12

NUMBER OF POINTS : 29
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 4 TO 62
RANGE OF DATA : 6 TO 62

CURVE TYPE : LINEAR

Y = 4.263 + 0.915X

DUNLOP TIRE ON RUNWAY FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 2.0622
COEFFICIENT B = 1.0038

COEF. OF CORR. = 0.9939
COEF. OF DET. = 0.9878
STD. ERR. EST. = 1.9277

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

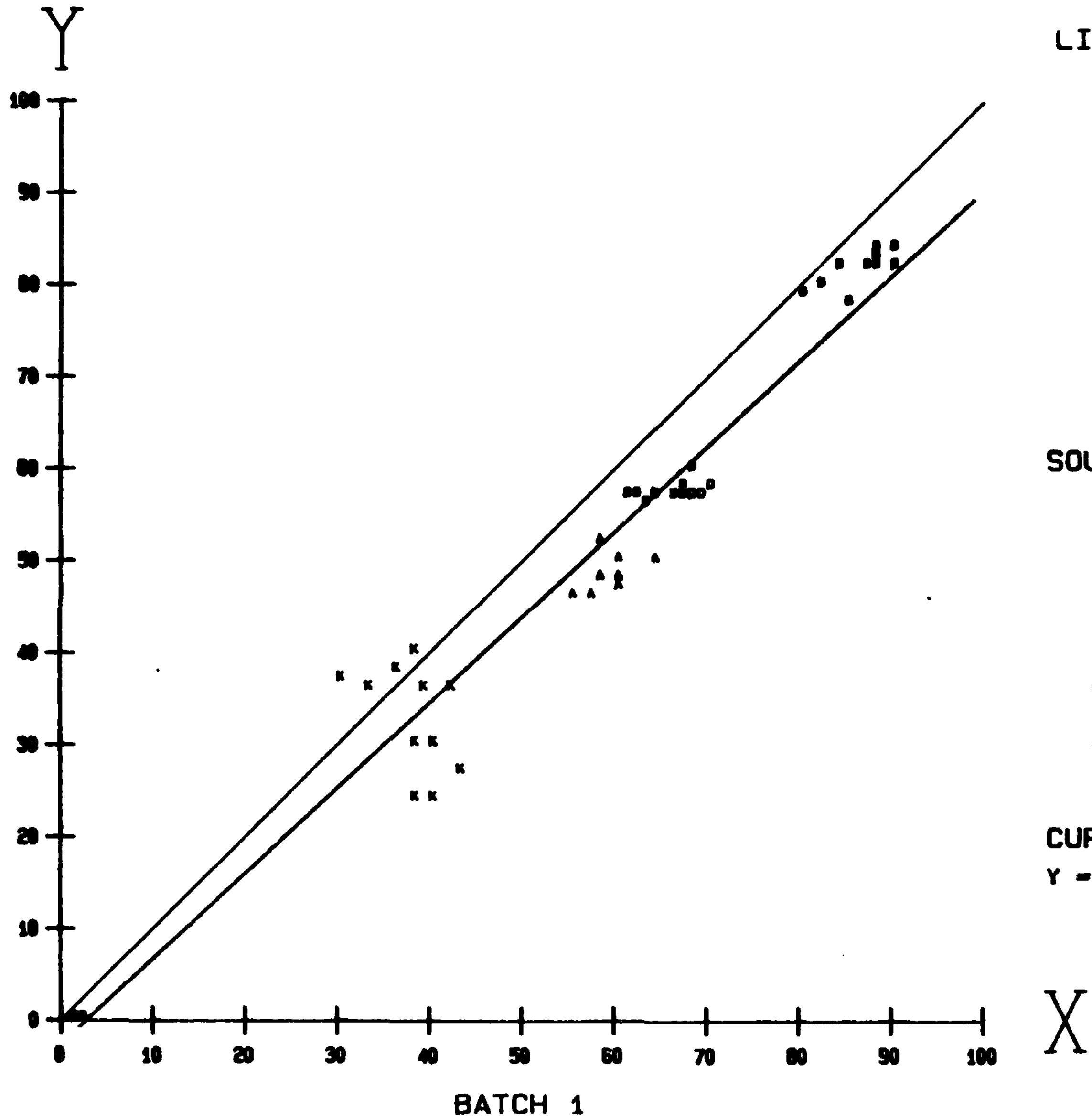
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60RFDU11.12

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 2 TO 55
RANGE OF DATA : 2 TO 55

CURVE TYPE : LINEAR

Y = 2.062 + 1.004X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -2.5450
COEFFICIENT B = 0.9285

COEF. OF CORR. = 0.9852
COEF. OF DET. = 0.9707
STD. ERR. EST. = 4.7325

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

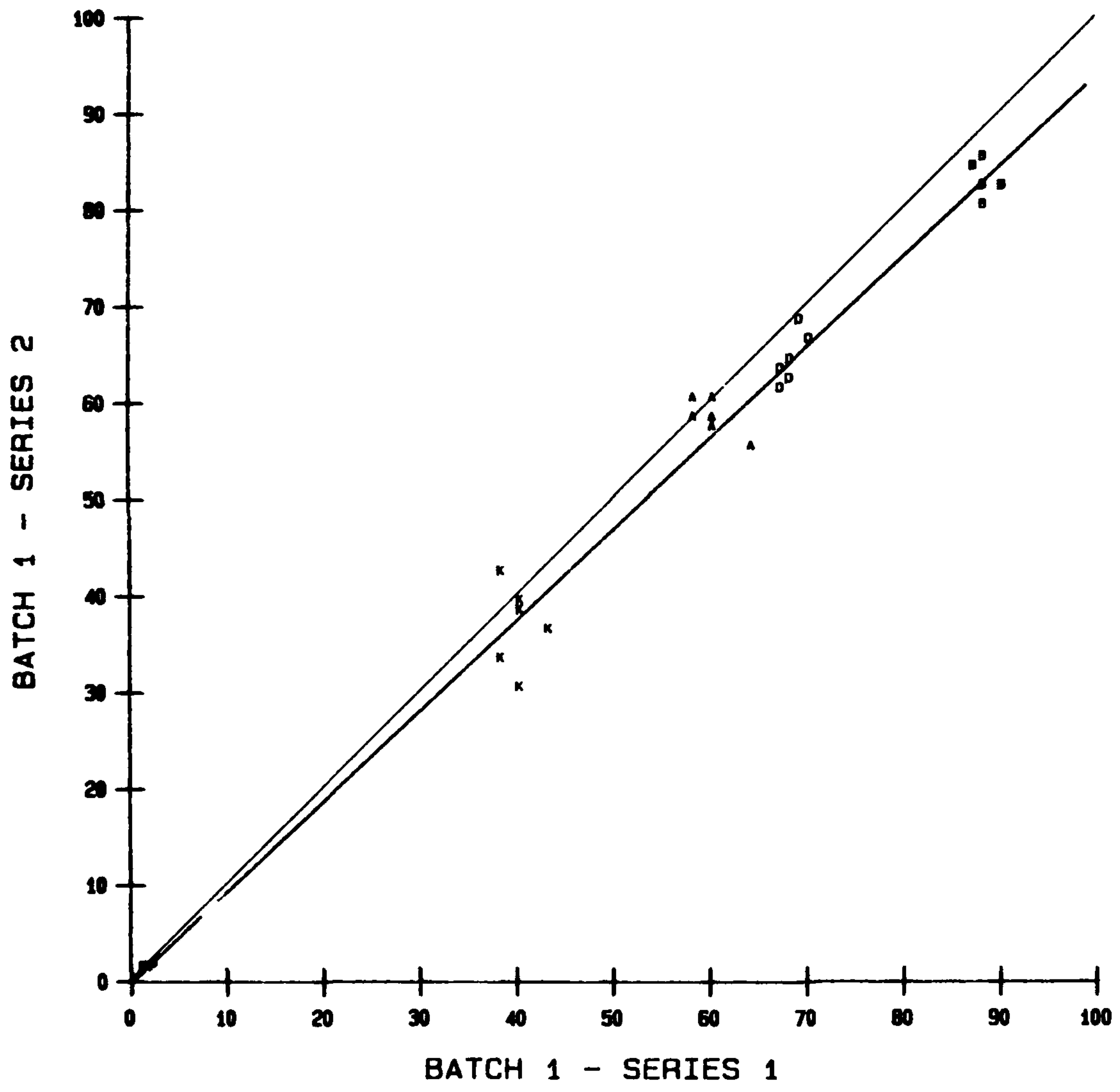
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 40SFDU1.2

NUMBER OF POINTS : 60
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 1 TO 90
RANGE OF DATA : 0 TO 84

CURVE TYPE : LINEAR

Y = - 2.545 + 0.929X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.1230
COEFFICIENT B	=	0.9403
COEF. OF CORR.	=	0.9944
COEF. OF DET.	=	0.9889
STD. ERR. EST.	=	3.0543

REGRESSION LINE = ———
X - Y LINE = ———

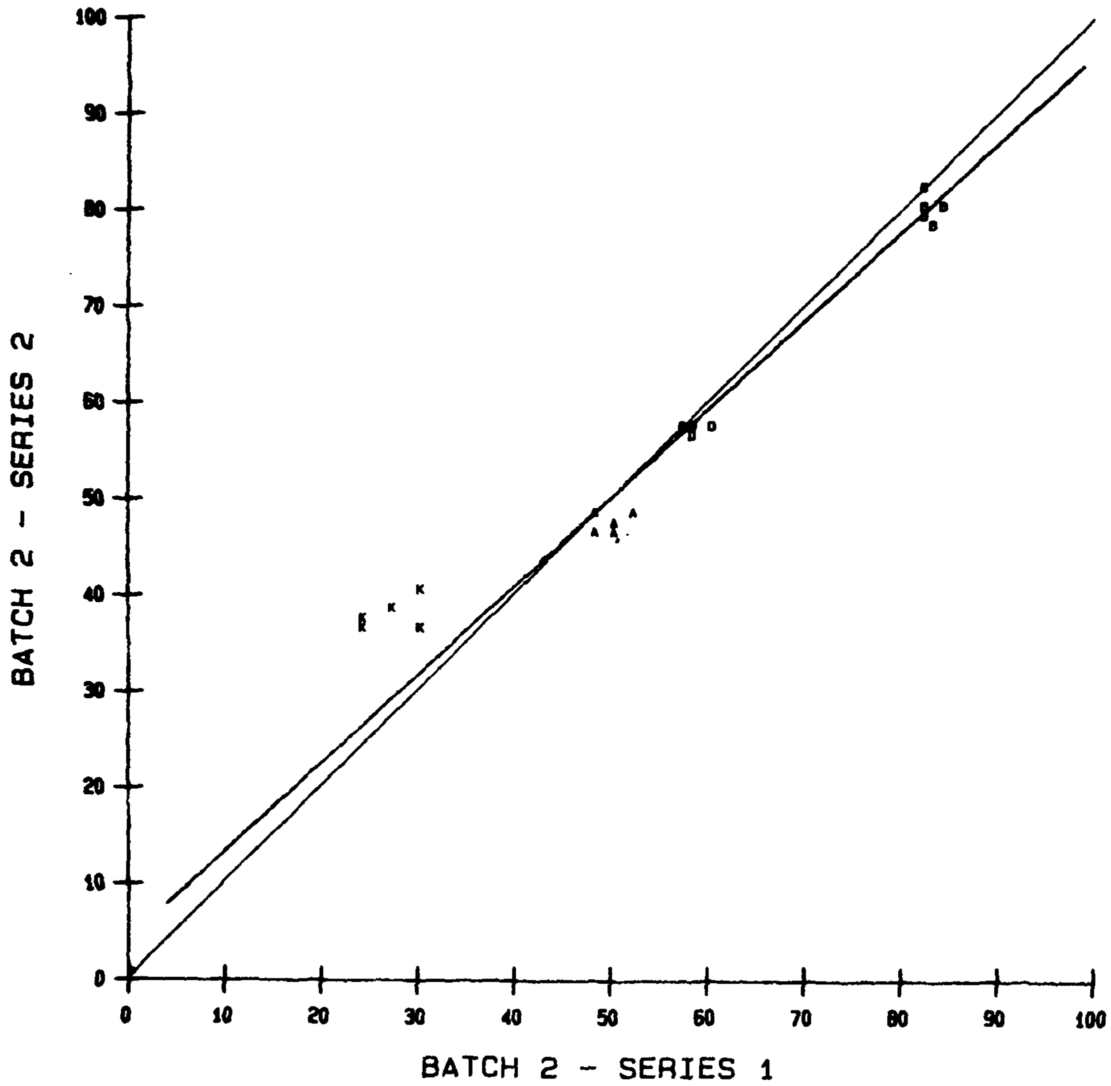
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFDU11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 90
RANGE OF DATA	:	1 TO 85

CURVE TYPE : LINEAR

Y = - 0.123 + 0.94X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	4.1199
COEFFICIENT B	=	0.9214
COEF. OF CORR.	=	0.9860
COEF. OF DET.	=	0.9722
STD. ERR. EST.	=	4.5275
REGRESSION LINE	=	———
X - Y LINE	=	———

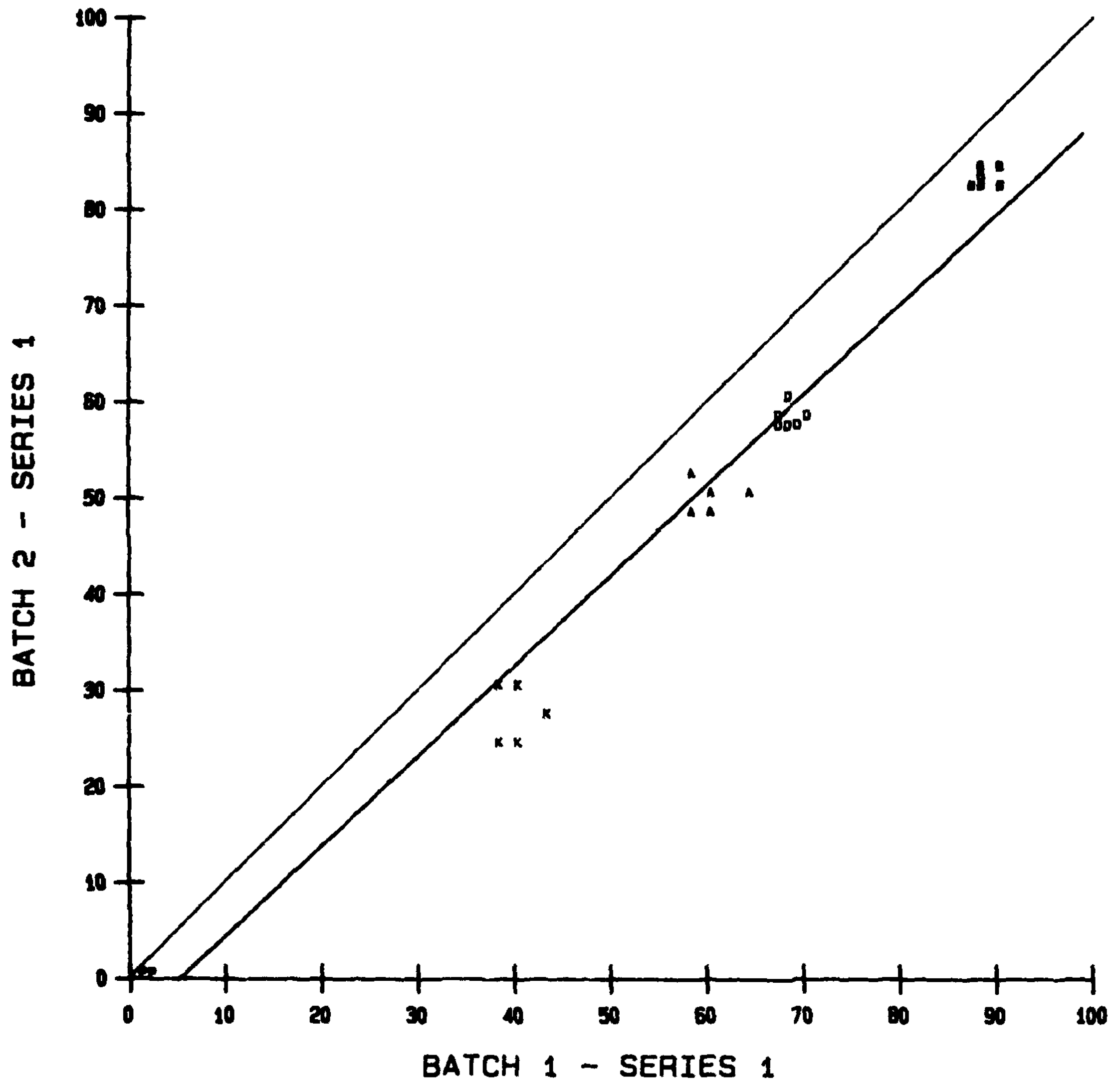
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFDU21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 84
RANGE OF DATA	:	0 TO 82

CURVE TYPE : LINEAR

Y = 4.12 + 0.921X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-4.9106
COEFFICIENT B	=	0.9388
COEF. OF CORR.	=	0.9892
COEF. OF DET.	=	0.9785
STD. ERR. EST.	=	4.2653
REGRESSION LINE	=	______
X - Y LINE	=	______

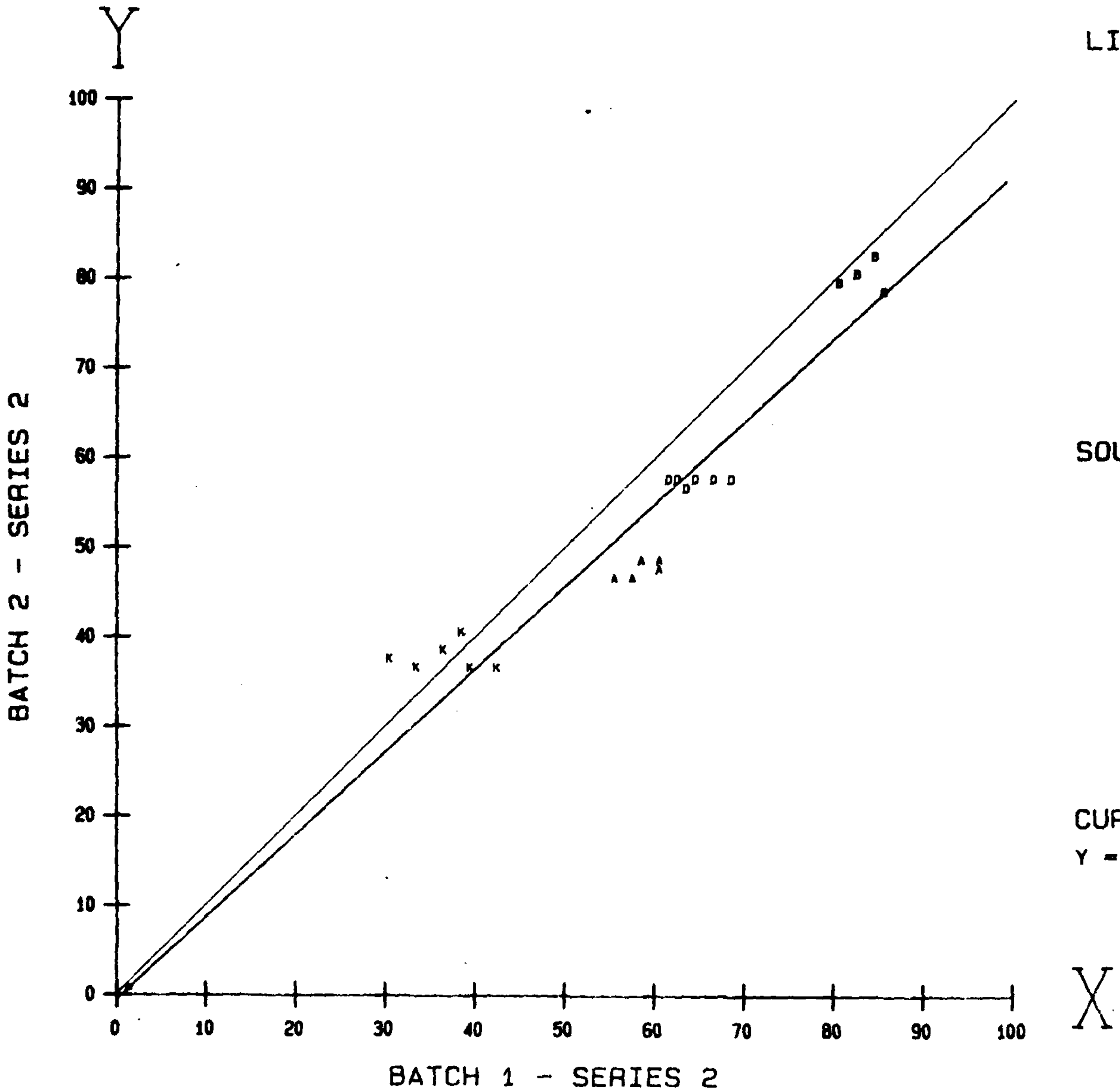
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFDU11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 90
RANGE OF DATA	:	0 TO 84

CURVE TYPE : LINEAR

Y = - 4.911 + 0.939X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.5159
COEFFICIENT B	=	0.9245
COEF. OF CORR.	=	0.9858
COEF. OF DET.	=	0.9717
STD. ERR. EST.	=	4.5679
REGRESSION LINE	=	______
X - Y LINE	=	______

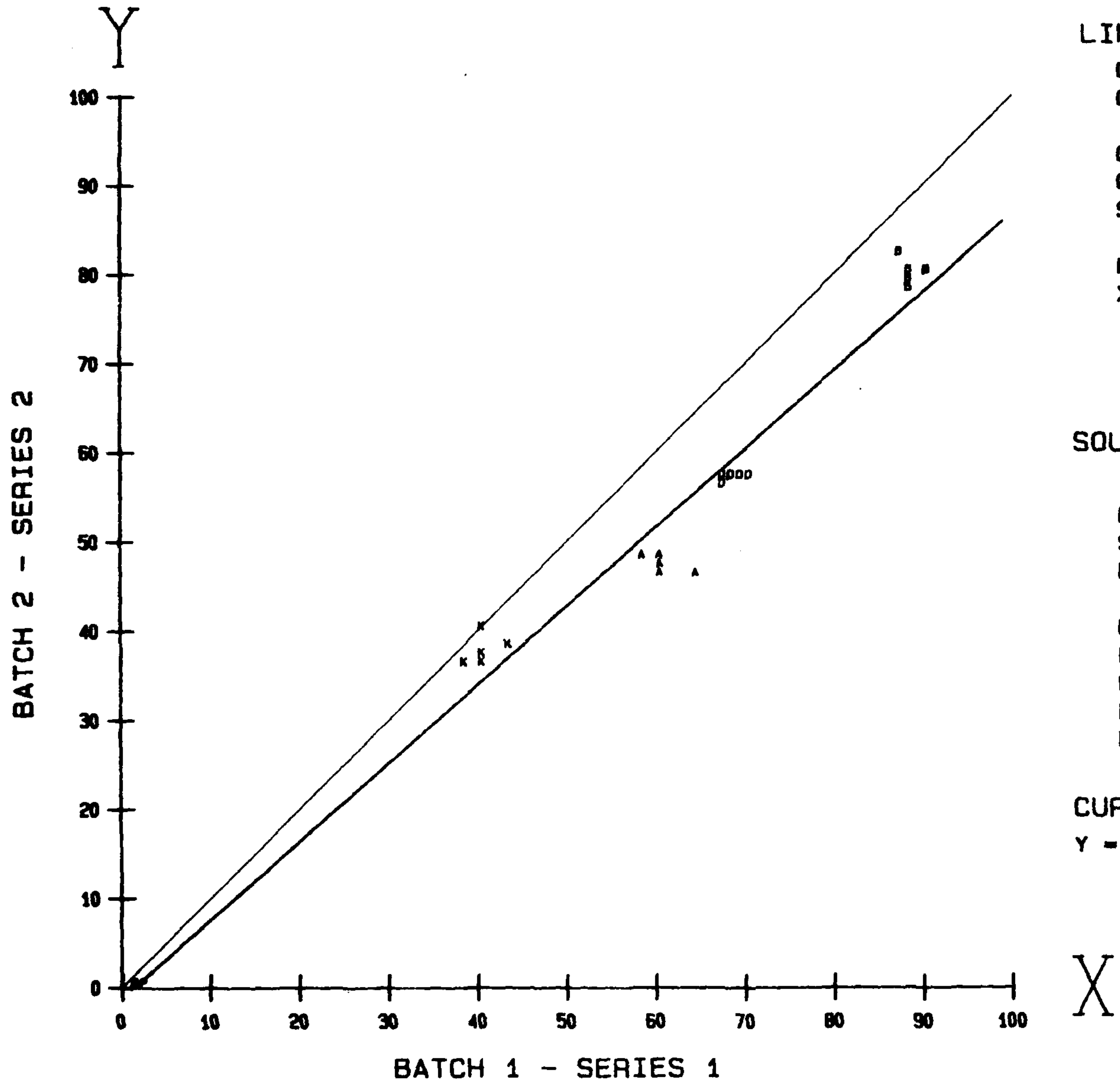
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFDU12.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 85
RANGE OF DATA	:	0 TO 82

CURVE TYPE : LINEAR

Y = - 0.516 + 0.925X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -1.1546
COEFFICIENT B = 0.8795

COEF. OF CORR. = 0.9918
COEF. OF DET. = 0.9836
STD. ERR. EST. = 3.4820

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

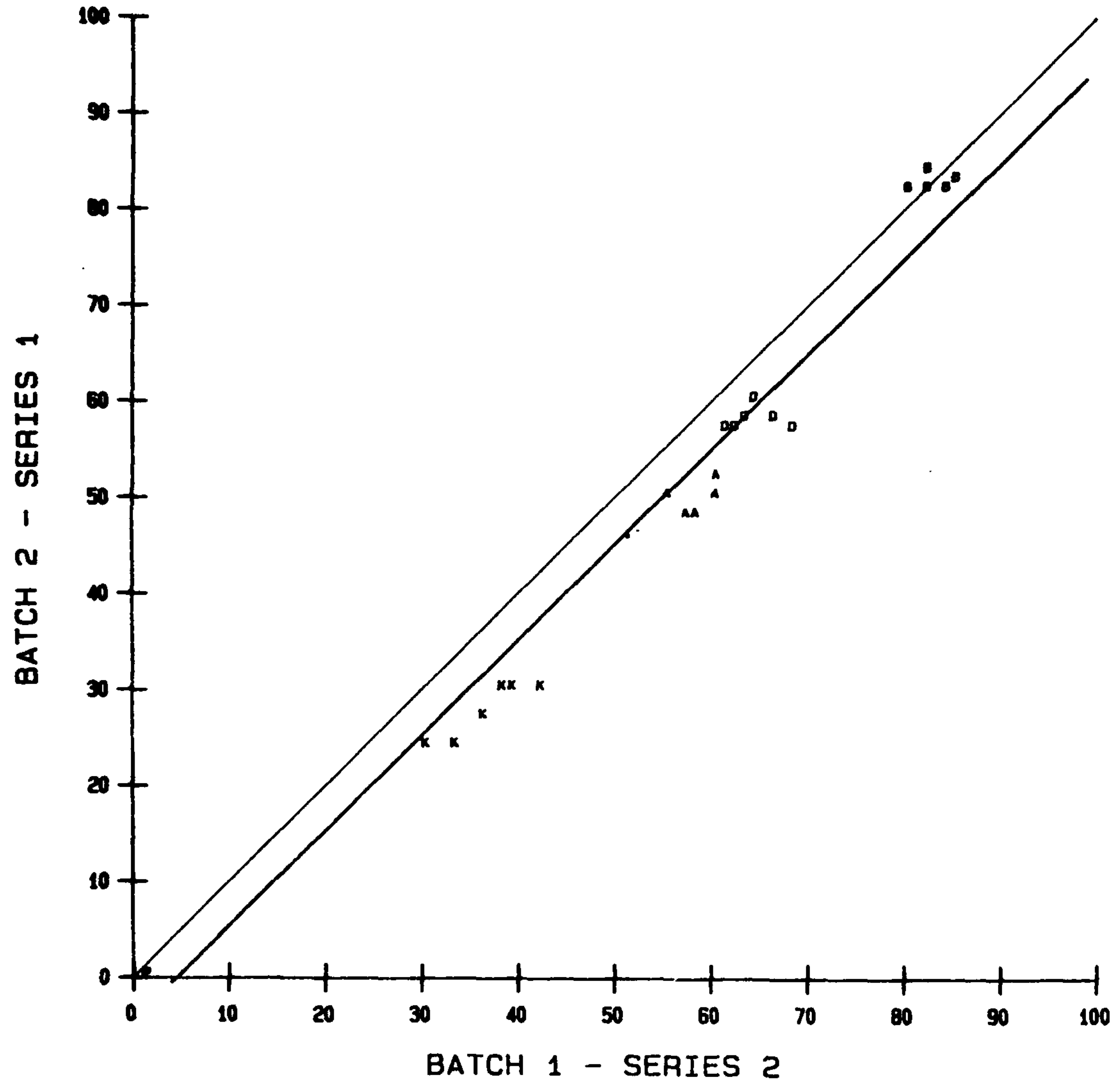
DISK DRIVE : B:
SUBDIRECTORY : \
FILENAME : 40SFDU11.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 1 TO 90
RANGE OF DATA : 0 TO 82

CURVE TYPE : LINEAR

Y = - 1.155 + 0.88X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-4.4891
COEFFICIENT B	=	0.9922
COEF. OF CORR.	=	0.9886
COEF. OF DET.	=	0.9773
STD. ERR. EST.	=	4.3836

REGRESSION LINE = ______

X - Y LINE = ______

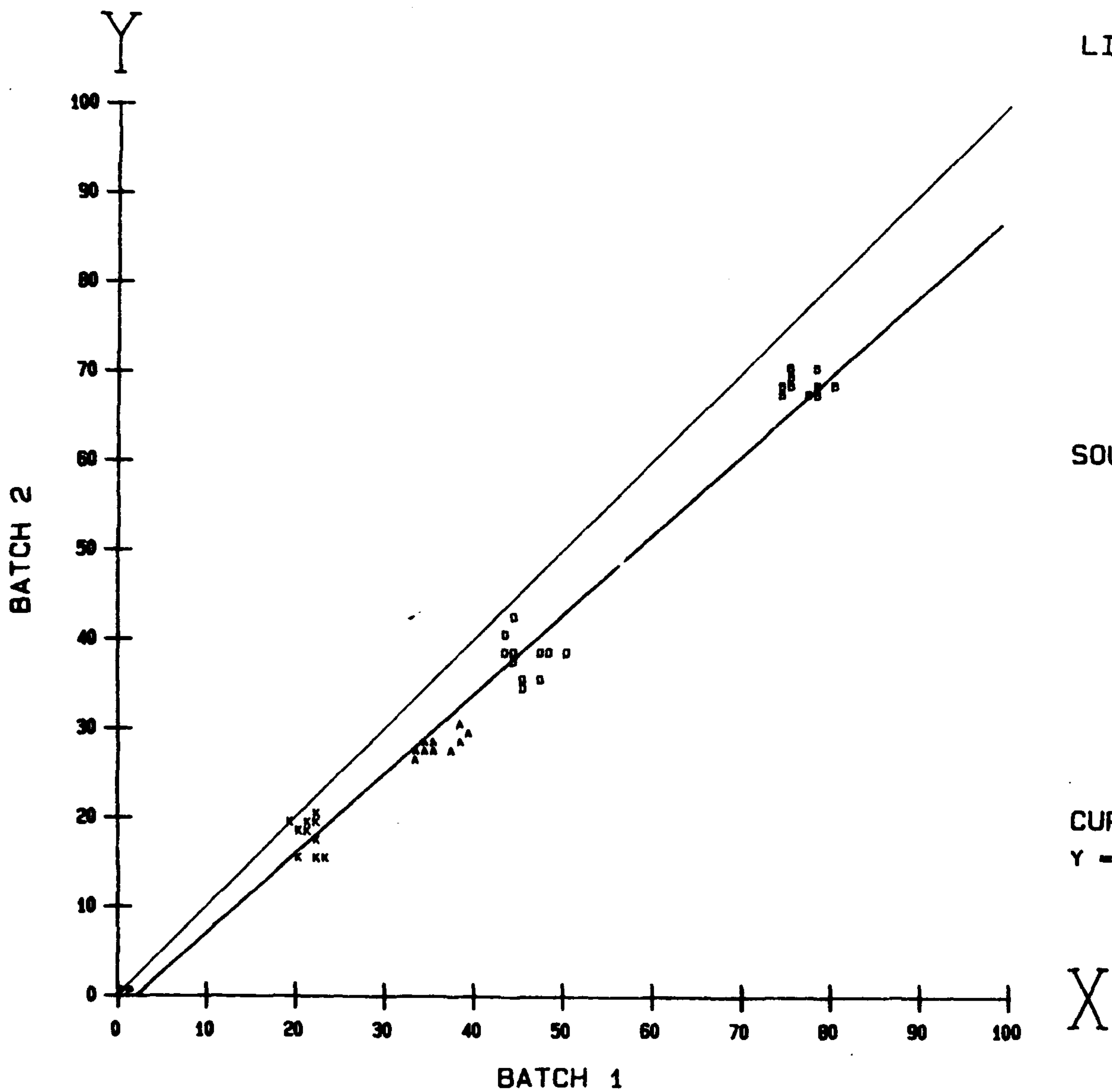
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SFDU12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 85
RANGE OF DATA	:	0 TO 84

CURVE TYPE : LINEAR

$Y = -4.489 + 0.992X$

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -1.8519
COEFFICIENT B = 0.8940

COEF. OF CORR. = 0.9934
COEF. OF DET. = 0.9868
STD. ERR. EST. = 2.6650

REGRESSION LINE = ———
X - Y LINE = ———

SOURCE DATA FILE INFO

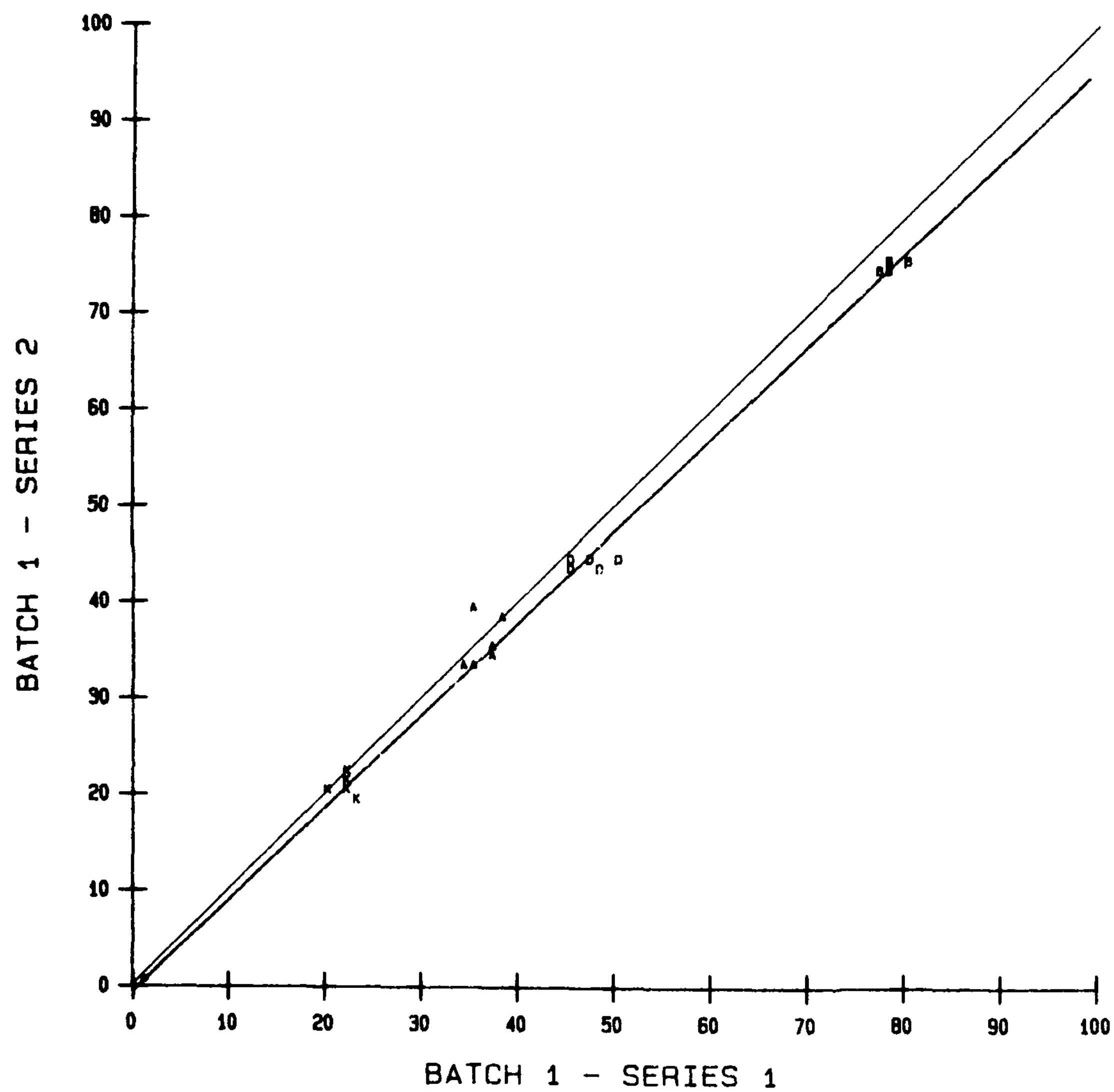
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60SFDU1.2

NUMBER OF POINTS : 60
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 0 TO 80
RANGE OF DATA : 0 TO 70

CURVE TYPE : LINEAR

Y = - 1.852 + 0.894X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.5554
COEFFICIENT B	=	0.9617
COEF. OF CORR.	=	0.9979
COEF. OF DET.	=	0.9958
STD. ERR. EST.	=	1.6647

REGRESSION LINE = ______

X - Y LINE = ______

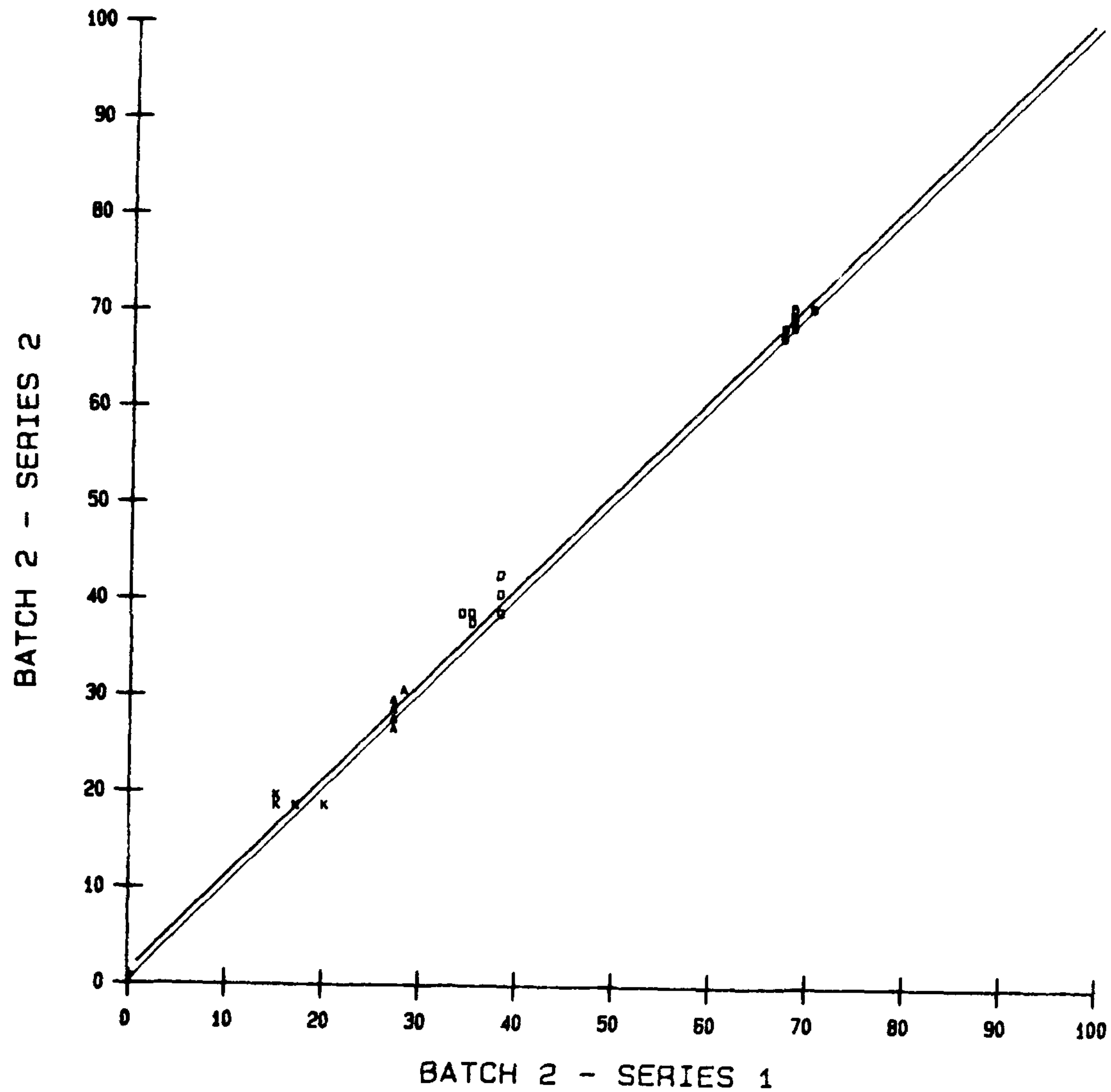
SOURCE DATA FILE INFO

DISK DRIVE	:	B:		
SUBDIRECTORY	:	\		
FILENAME	:	60SFDU11.12		
NUMBER OF POINTS	:	30		
DOMAIN OF PLOT	:	0	TO	100
RANGE OF PLOT	:	0	TO	100
DOMAIN OF DATA	:	1	TO	80
RANGE OF DATA	:	1	TO	75

CURVE TYPE : LINEAR

Y = - 0.555 + 0.962X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	1.2159
COEFFICIENT B	=	1.0017
COEF. OF CORR.	=	0.9975
COEF. OF DET.	=	0.9949
STD. ERR. EST.	=	1.6884

REGRESSION LINE = ______
X - Y LINE = ______

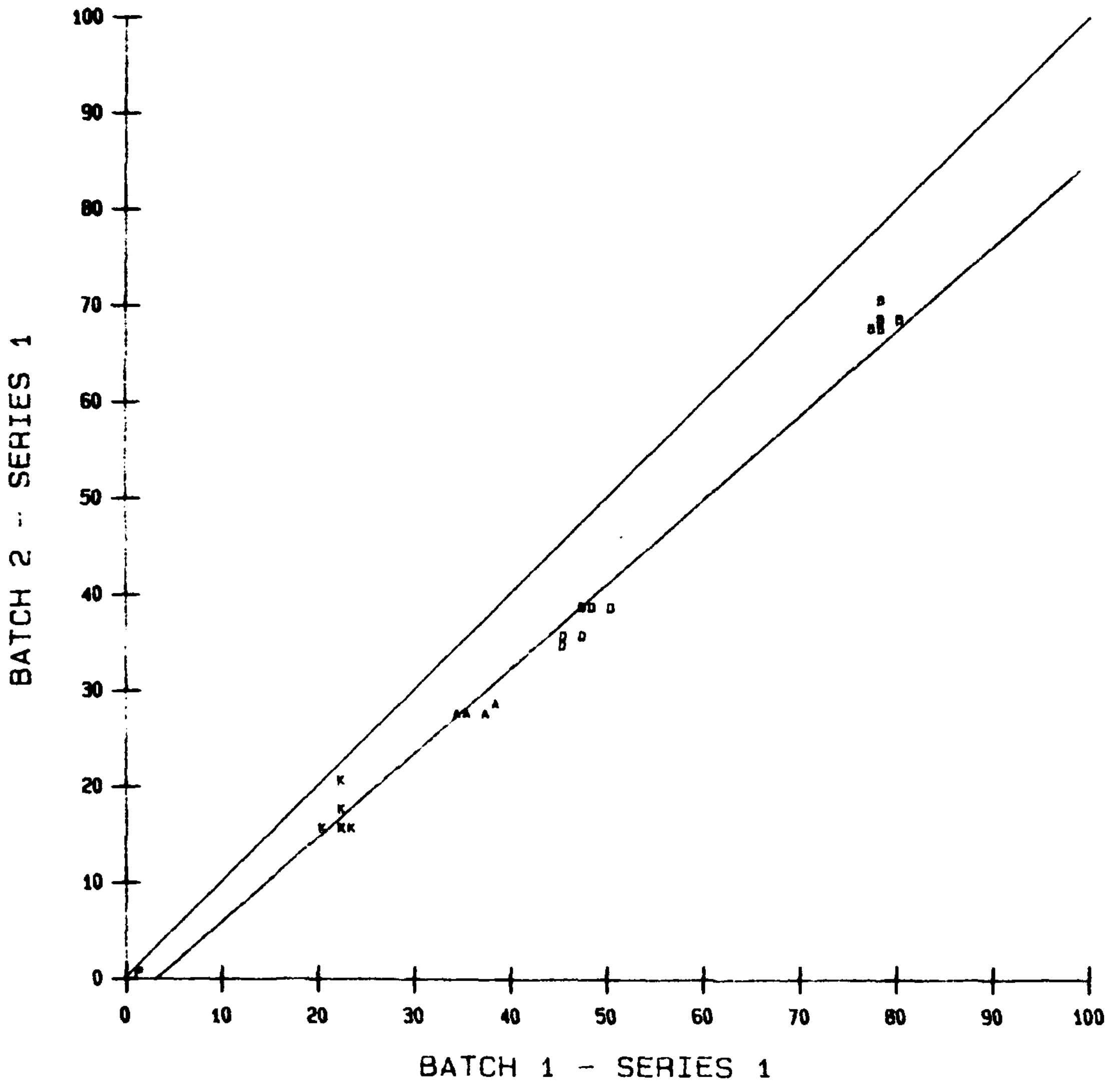
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60SFDU21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 70
RANGE OF DATA	:	0 TO 70

CURVE TYPE : LINEAR

Y = 1.216 + 1.002X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-2.7855
COEFFICIENT B	=	0.8782
COEF. OF CORR.	=	0.9956
COEF. OF DET.	=	0.9911
STD. ERR. EST.	=	2.2182

REGRESSION LINE = ______

X - Y LINE = ______

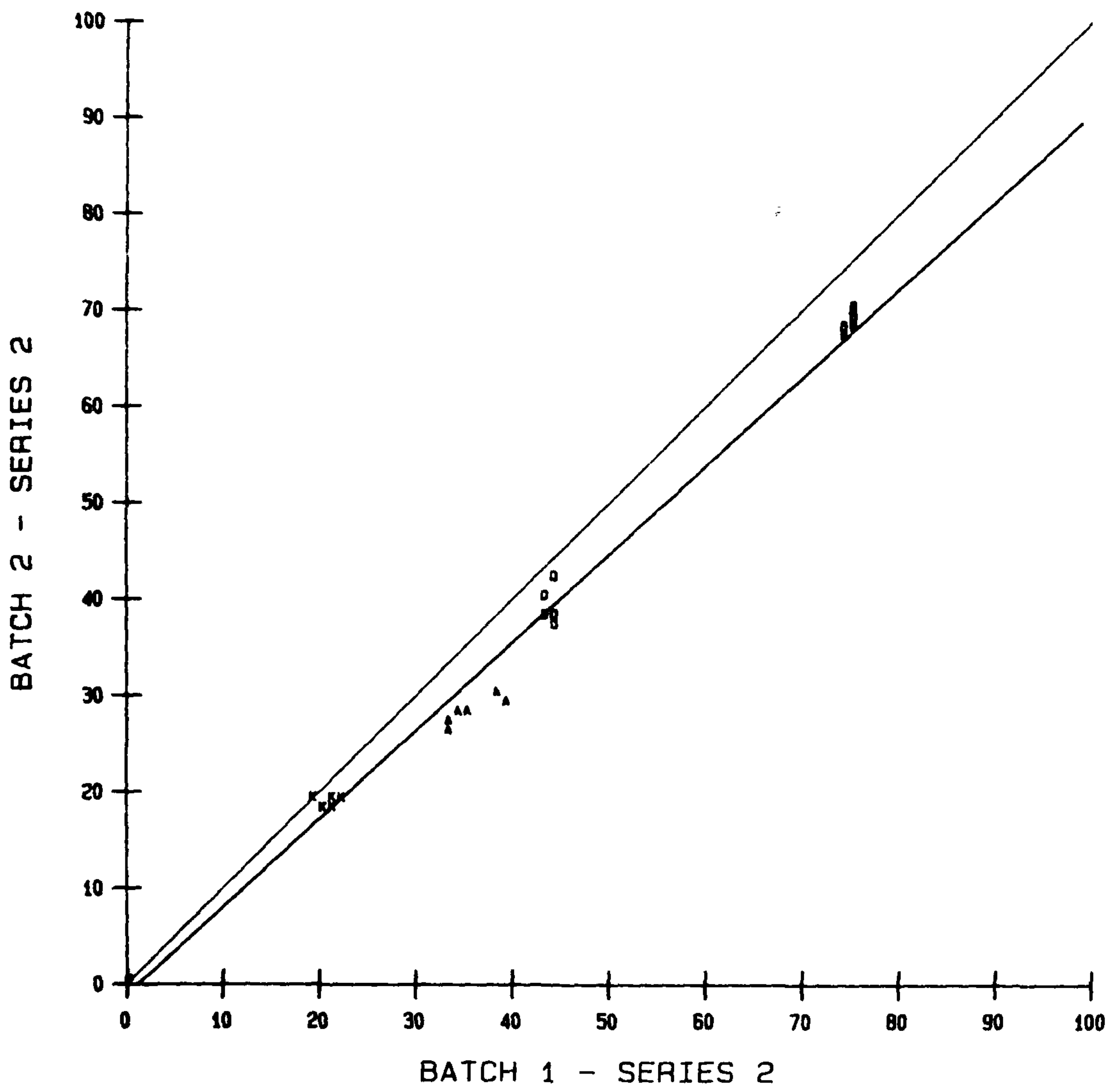
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60SFDU11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 80
RANGE OF DATA	:	0 TO 70

CURVE TYPE : LINEAR

Y = - 2.786 + 0.878X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -1.0971
COEFFICIENT B = 0.9157

COEF. OF CORR. = 0.9961
COEF. OF DET. = 0.9921
STD. ERR. EST. = 2.0976

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

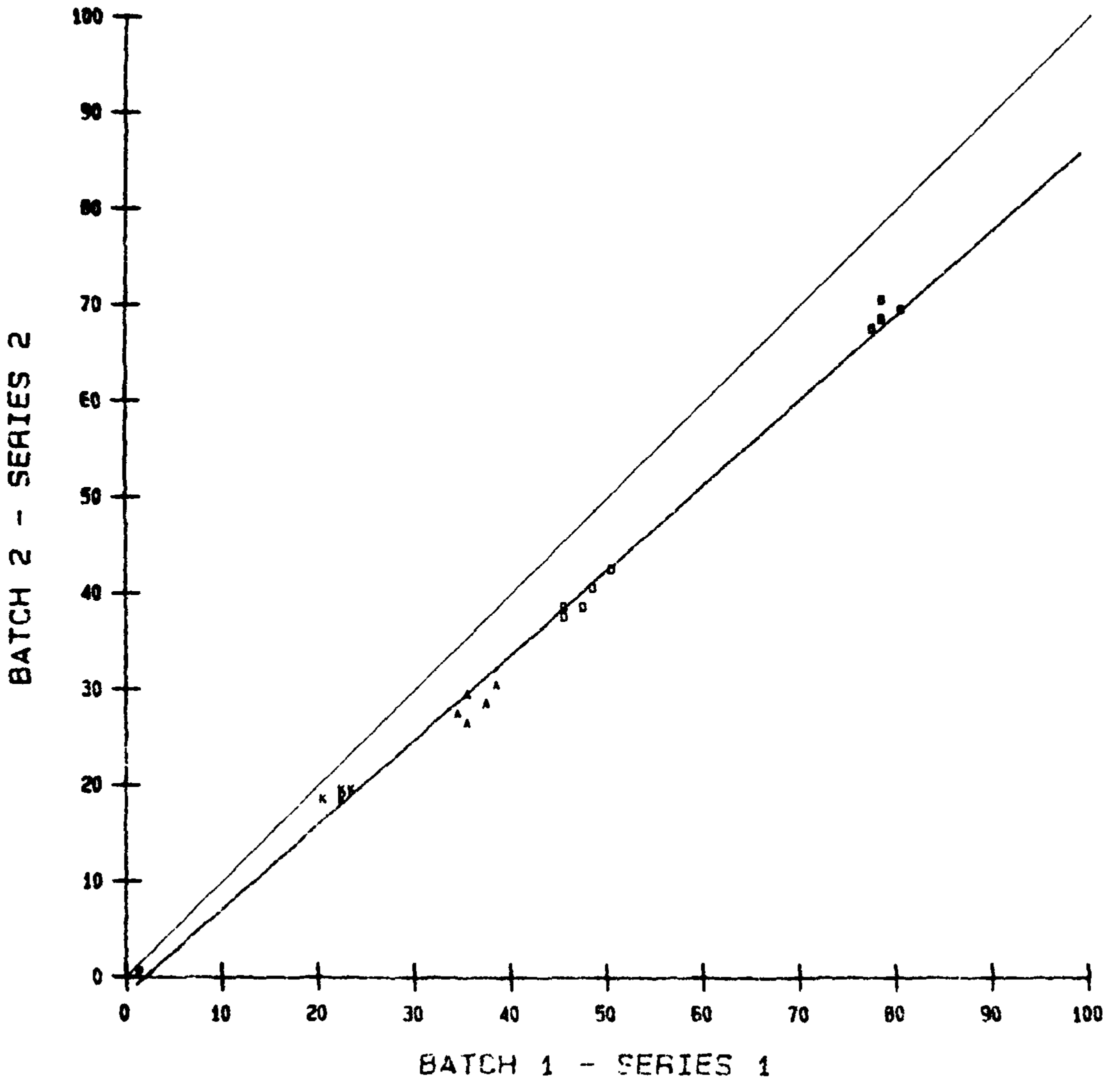
DISK DRIVE : B:
SUBDIRECTORY : \
FILENAME : 60SFDU12.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 0 TO 75
RANGE OF DATA : 0 TO 70

CURVE TYPE : LINEAR

Y = - 1.097 + 0.916X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.7282
COEFFICIENT B	=	0.8839
COEF. OF CORR.	=	0.9977
COEF. OF DET.	=	0.9955
STD. ERR. EST.	=	1.5915

REGRESSION LINE = ______
X - Y LINE = ______

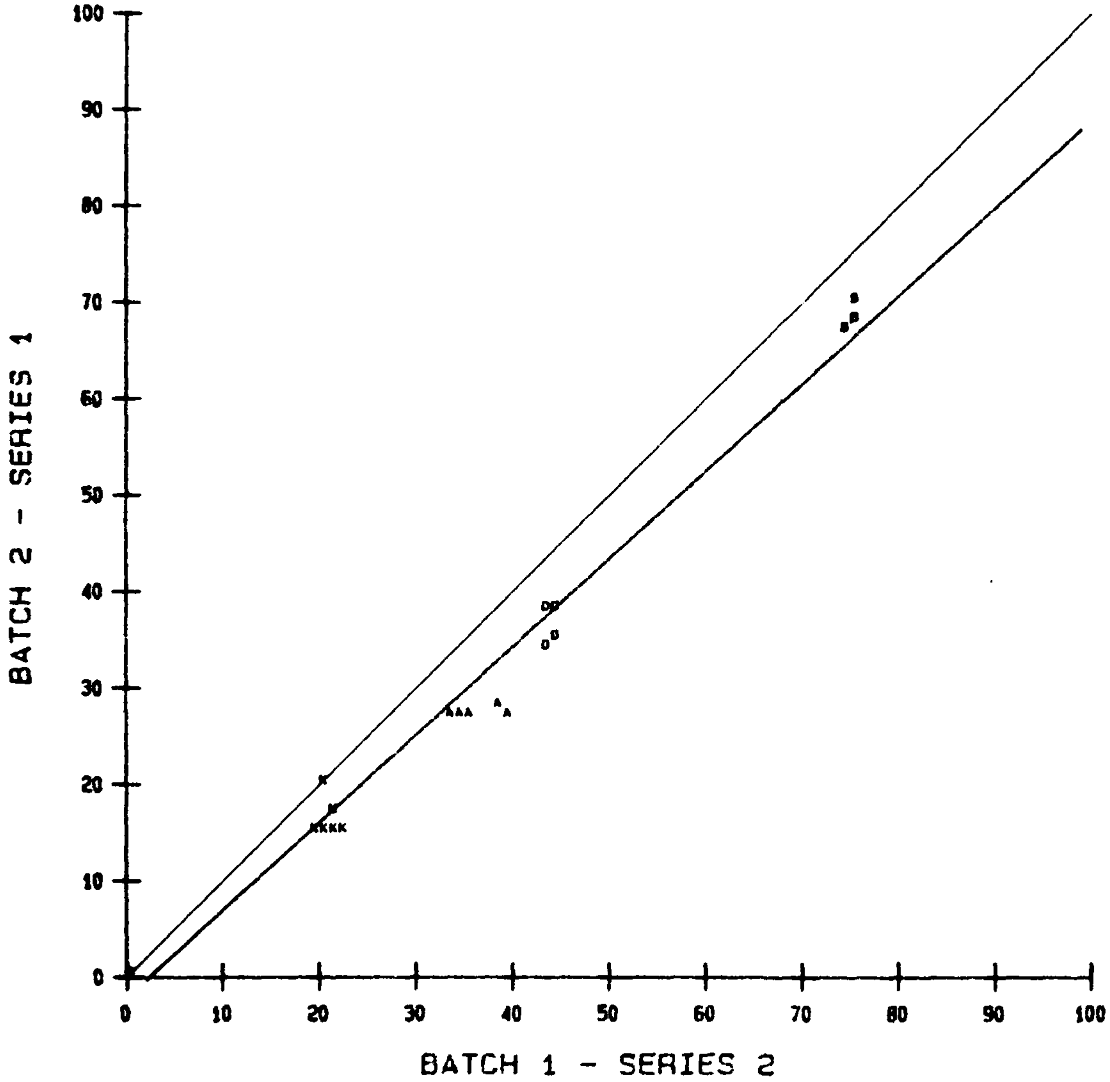
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60SFDU11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 80
RANGE OF DATA	:	0 TO 70

CURVE TYPE : LINEAR

Y = - 1.728 + 0.884X

DUNLOP TIRE ON SAAB FRICTION TESTER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-2.1603
COEFFICIENT B	=	0.9099
COEF. OF CORR.	=	0.9939
COEF. OF DET.	=	0.9879
STD. ERR. EST.	=	2.5887
REGRESSION LINE	=	______
X - Y LINE	=	______

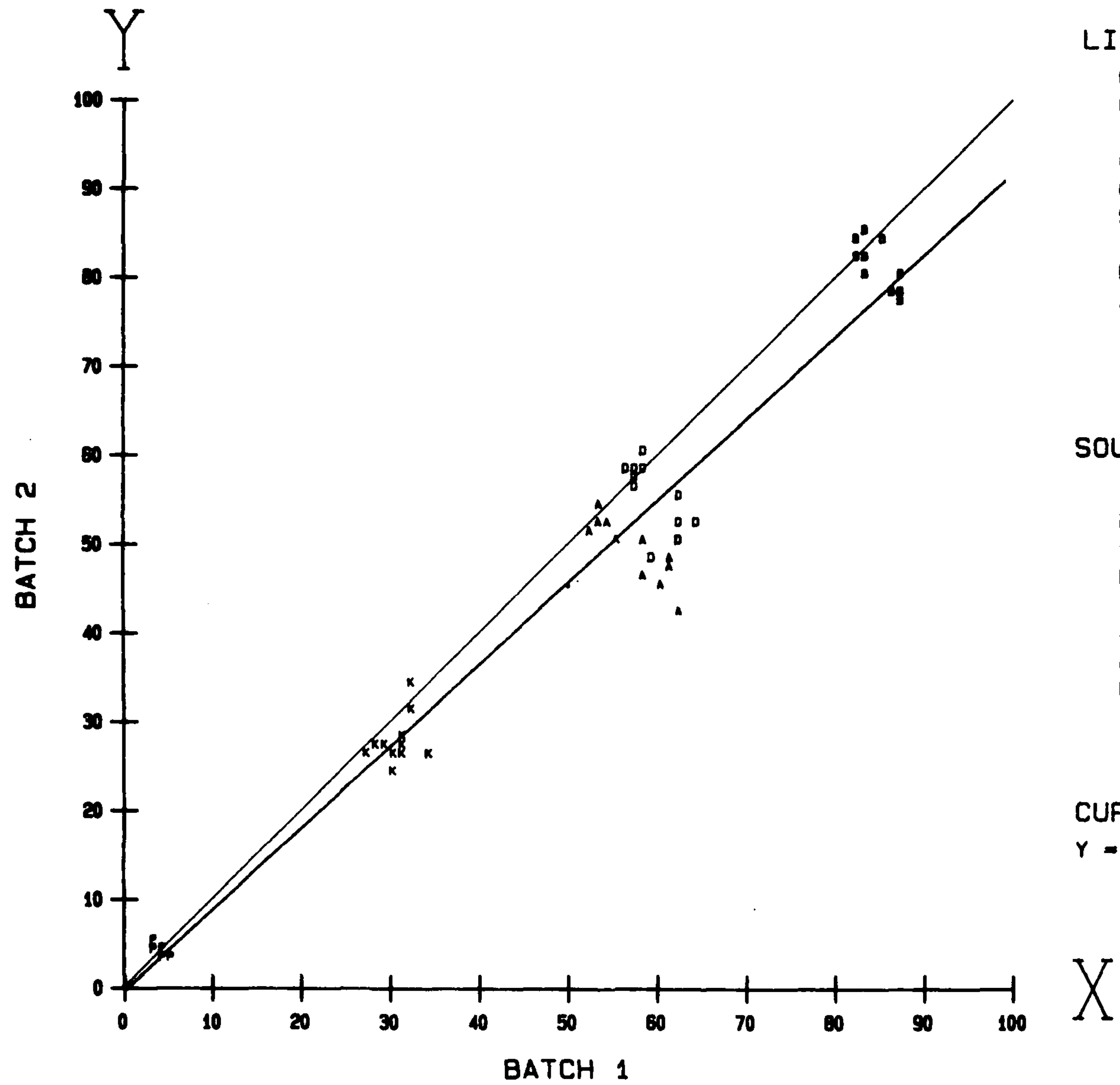
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60SFDU12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 75
RANGE OF DATA	:	0 TO 70

CURVE TYPE : LINEAR

Y = - 2.16 + 0.91X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.3103
COEFFICIENT B	=	0.9220
COEF. OF CORR.	=	0.9824
COEF. OF DET.	=	0.9651
STD. ERR. EST.	=	4.9533

REGRESSION LINE = ______

X - Y LINE = ______

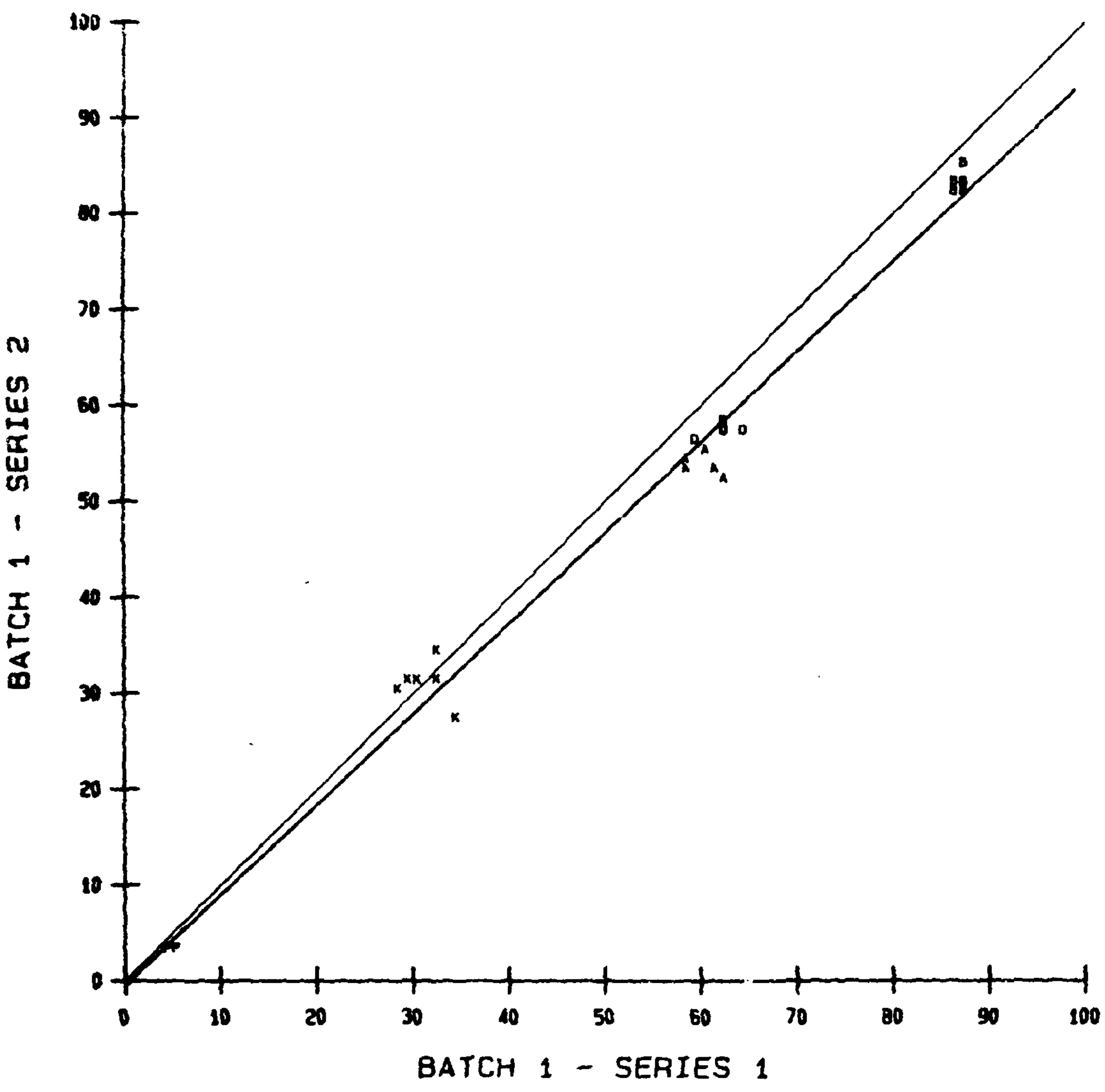
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40SKDU1.2
NUMBER OF POINTS	:	60
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 87
RANGE OF DATA	:	3 TO 85

CURVE TYPE : LINEAR

Y = - 0.31 + 0.922X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.4923
COEFFICIENT B	=	0.9430
COEF. OF CORR.	=	0.9956
COEF. OF DET.	=	0.9912
STD. ERR. EST.	=	2.6250
REGRESSION LINE	=	______
X - Y LINE	=	______

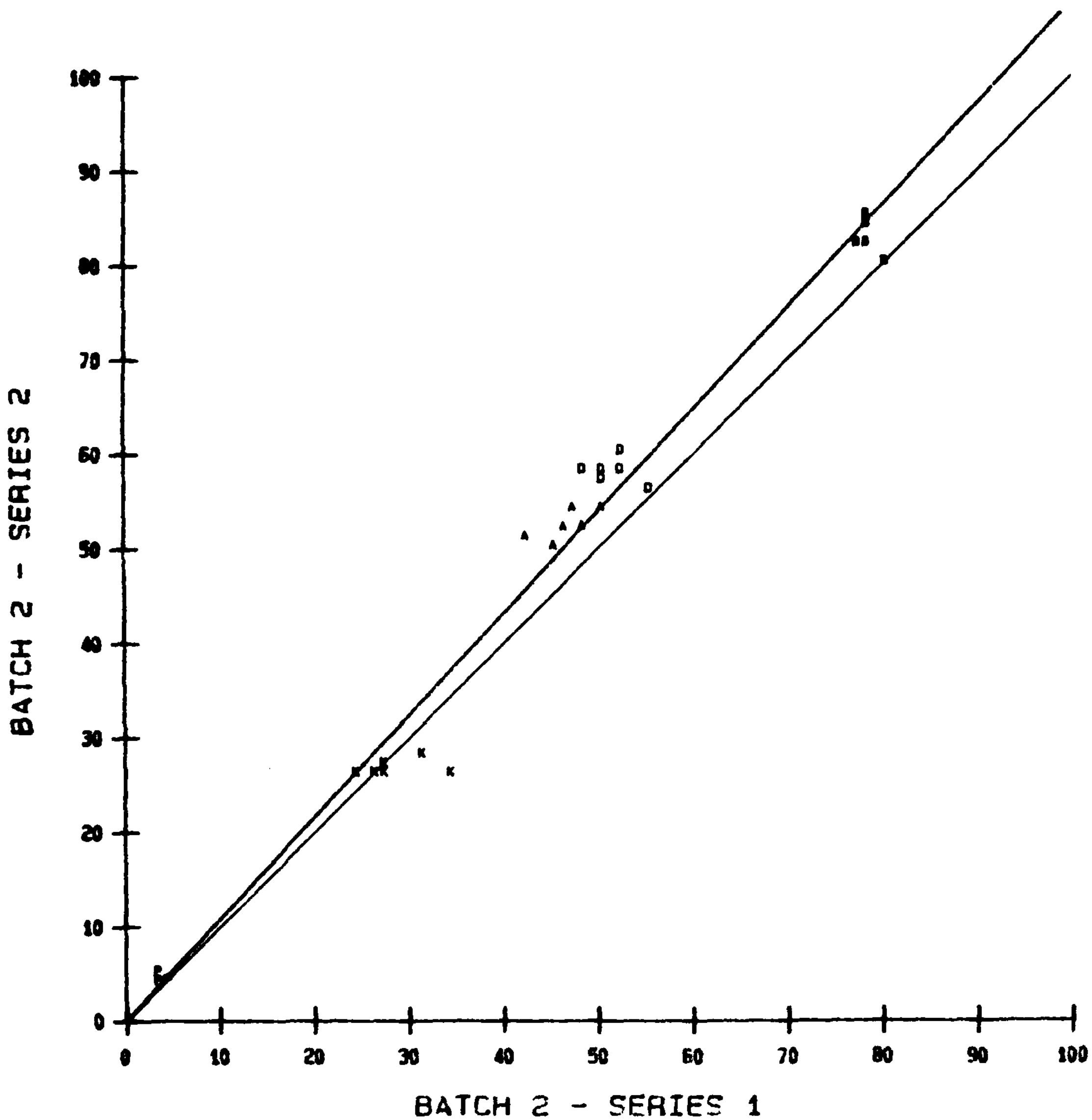
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40SKDU11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 87
RANGE OF DATA	:	3 TO 85

CURVE TYPE : LINEAR

$Y = -0.492 + 0.943X$

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 0.0345
COEFFICIENT B = 1.0771

COEF. OF CORR. = 0.9918
COEF. OF DET. = 0.9837
STD. ERR. EST. = 3.5780

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

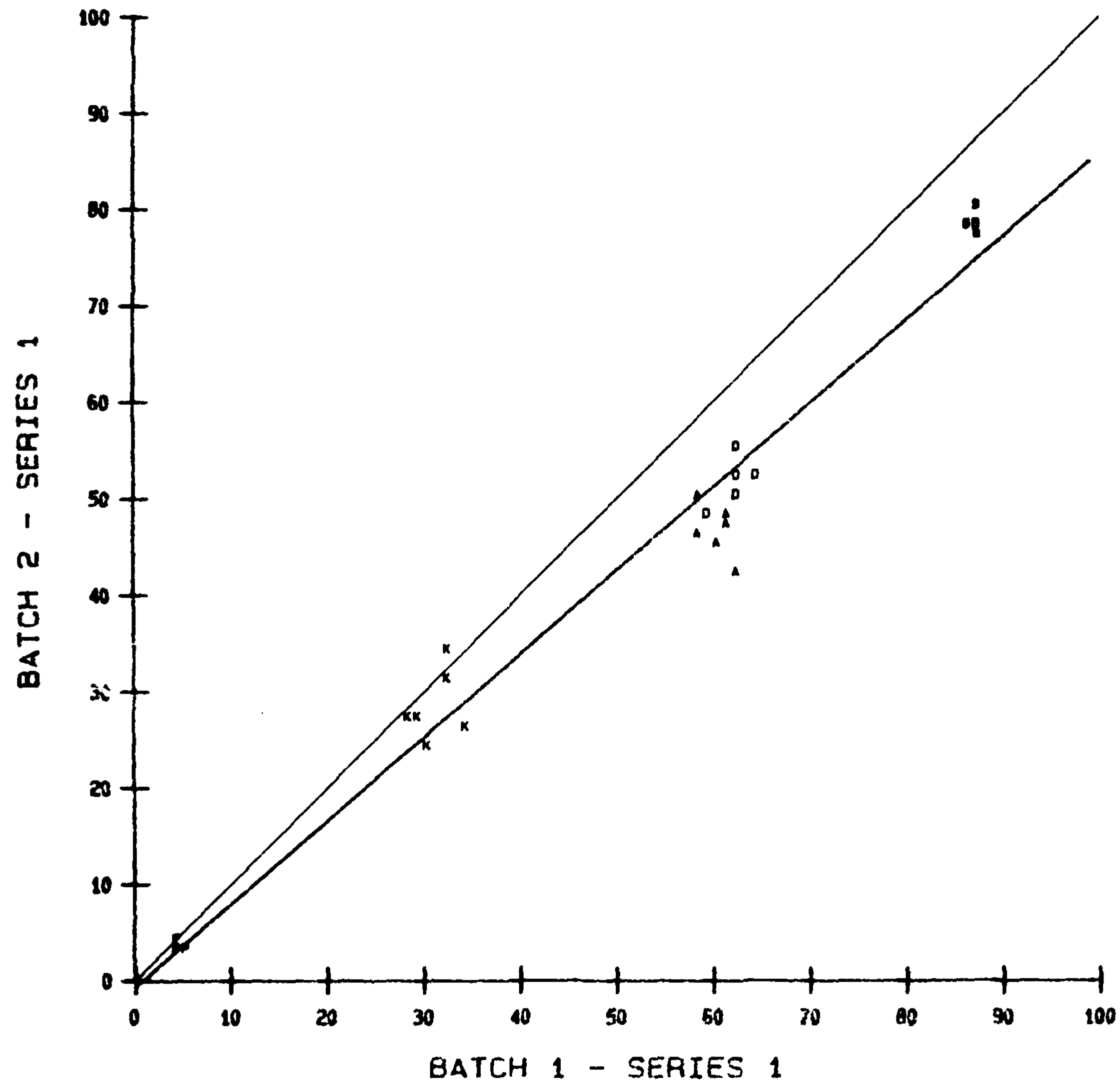
DISK DRIVE : B:
SUBDIRECTORY : \
FILENAME : 40SKOU21.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 80
RANGE OF DATA : 4 TO 85

CURVE TYPE : LINEAR

Y = 0.035 + 1.077X

DUNLOP TIRE ON SKIDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.6586
COEFFICIENT B	=	0.8650
COEF. OF CORR.	=	0.9881
COEF. OF DET.	=	0.9763
STD. ERR. EST.	=	3.9737
REGRESSION LINE	=	______
X - Y LINE	=	______

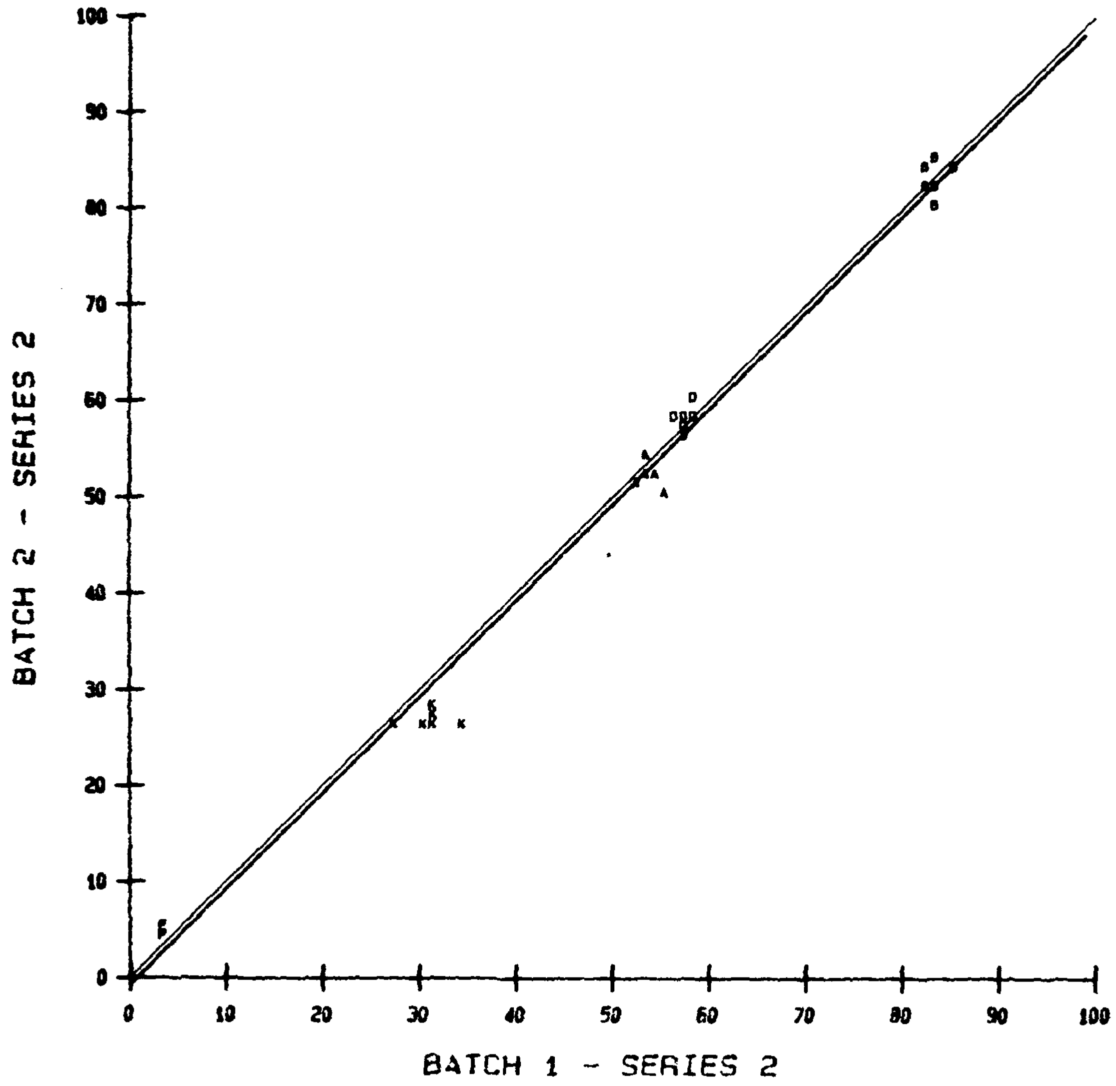
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40SKDU11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 87
RANGE OF DATA	:	3 TO 80

CURVE TYPE : LINEAR

Y = - 0.659 + 0.865X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.7095
COEFFICIENT B	=	0.9995
COEF. OF CORR.	=	0.9958
COEF. OF DET.	=	0.9915
STD. ERR. EST.	=	2.5764

REGRESSION LINE = ______

X - Y LINE = ______

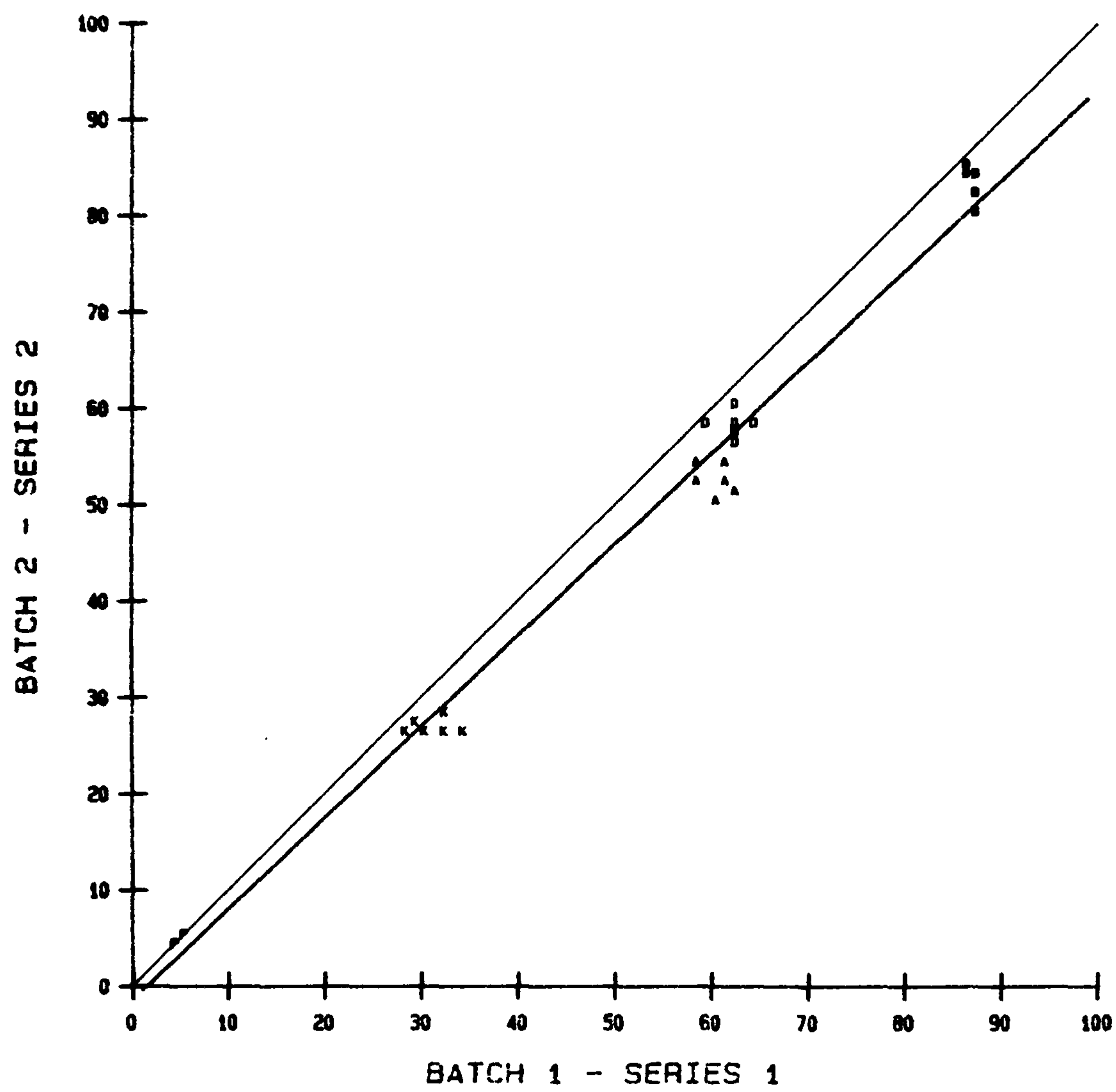
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40SKDU12.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 85
RANGE OF DATA	:	4 TO 85

CURVE TYPE : LINEAR

Y = - 0.709 + 0.999X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.3666
COEFFICIENT B	=	0.9459
COEF. OF CORR.	=	0.9949
COEF. OF DET.	=	0.9899
STD. ERR. EST.	=	2.8214

REGRESSION LINE = ______

X - Y LINE = ______

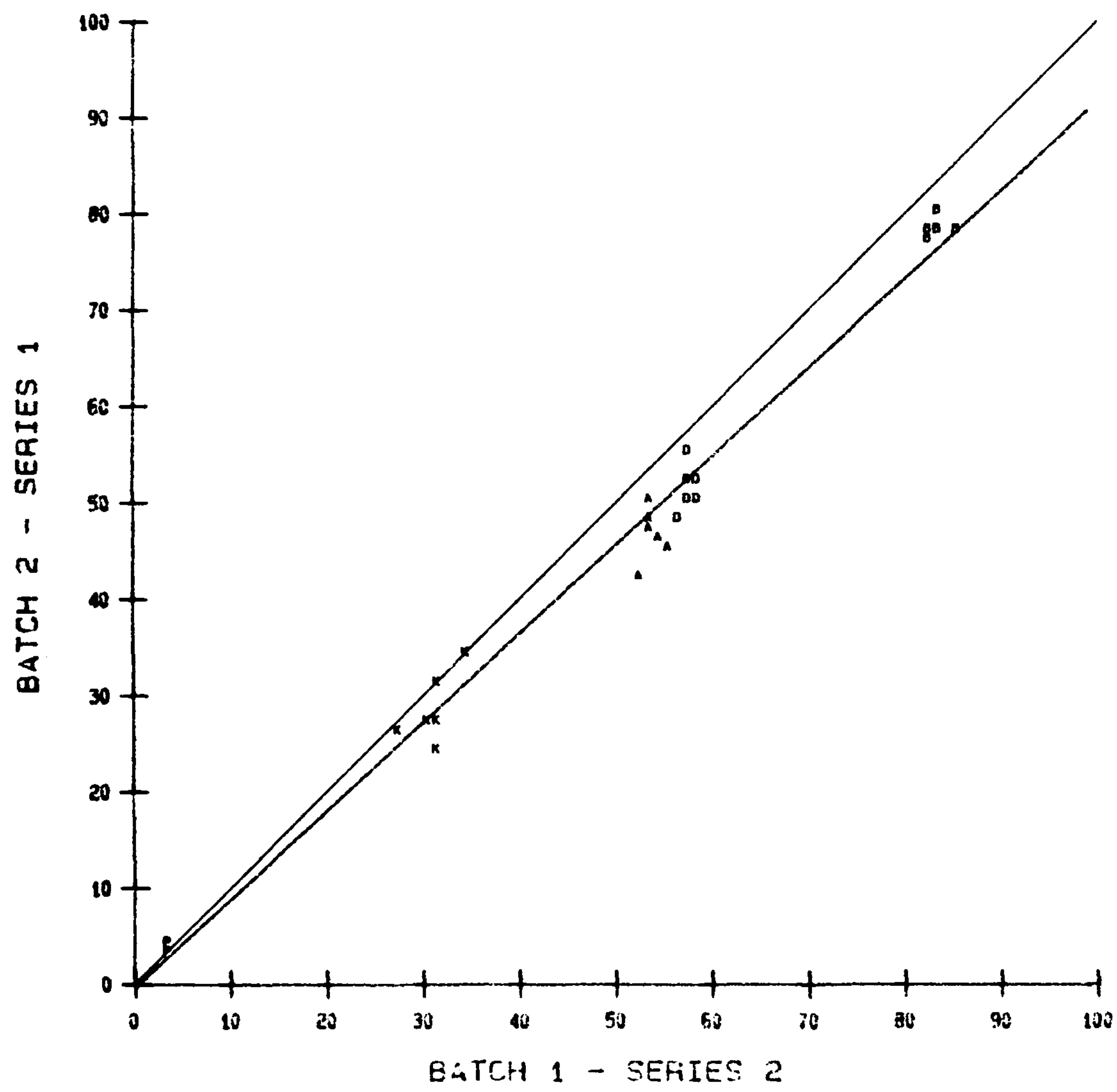
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40SKDU11.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 87
RANGE OF DATA	:	4 TO 85

CURVE TYPE : LINEAR

Y = - 1.367 + 0.946X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.3093
COEFFICIENT B	=	0.9195
COEF. OF CORR.	=	0.9949
COEF. OF DET.	=	0.9898
STD. ERR. EST.	=	2.6020

REGRESSION LINE = ________
X - Y LINE = ________

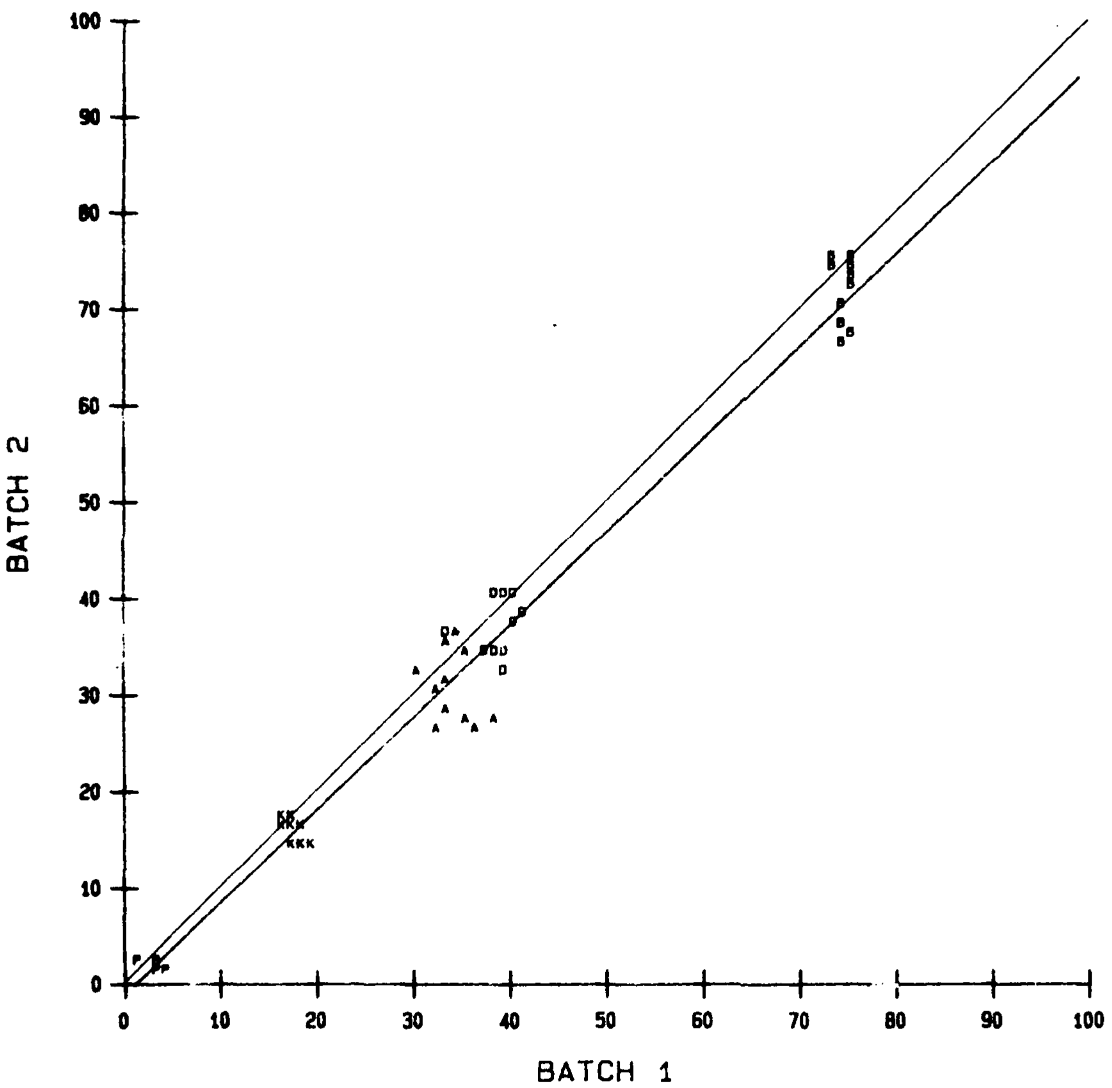
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40SKDU12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 85
RANGE OF DATA	:	3 TO 80

CURVE TYPE : LINEAR

Y = - 0.309 + 0.92X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -1.1026
COEFFICIENT B = 0.9609

COEF. OF CORR. = 0.9904
COEF. OF DET. = 0.9809
STD. ERR. EST. = 3.3078

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

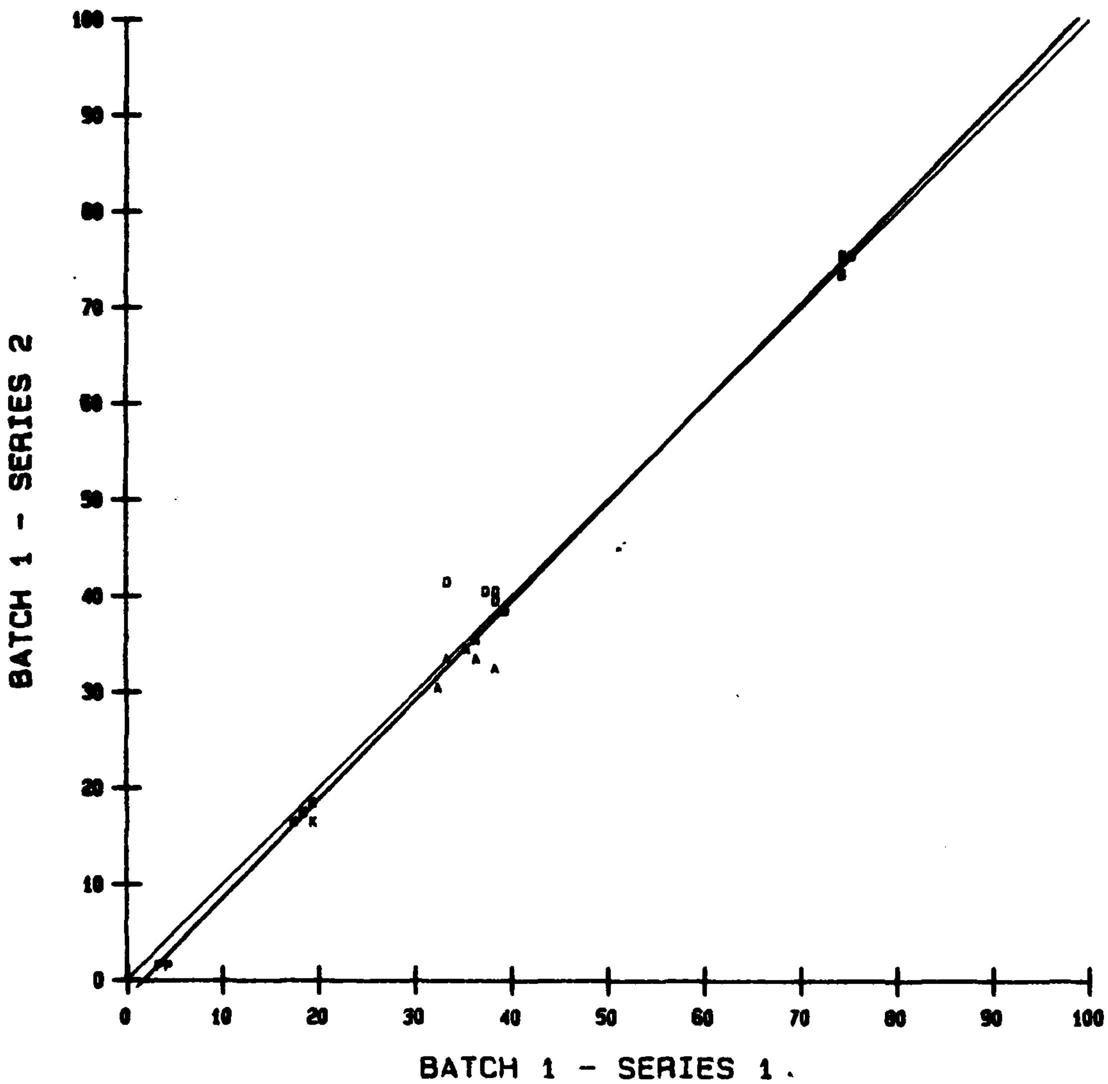
DISK DRIVE : A:
SUBDIRECTORY : \
FILENAME : 60SKDU1.2

NUMBER OF POINTS : 60
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 1 TO 75
RANGE OF DATA : 1 TO 75

CURVE TYPE : LINEAR

Y = - 1.103 + 0.961X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.7457
COEFFICIENT B	=	1.0312
COEF. OF CORR.	=	0.9959
COEF. OF DET.	=	0.9919
STD. ERR. EST.	=	2.2975

REGRESSION LINE = ______
X - Y LINE = ______

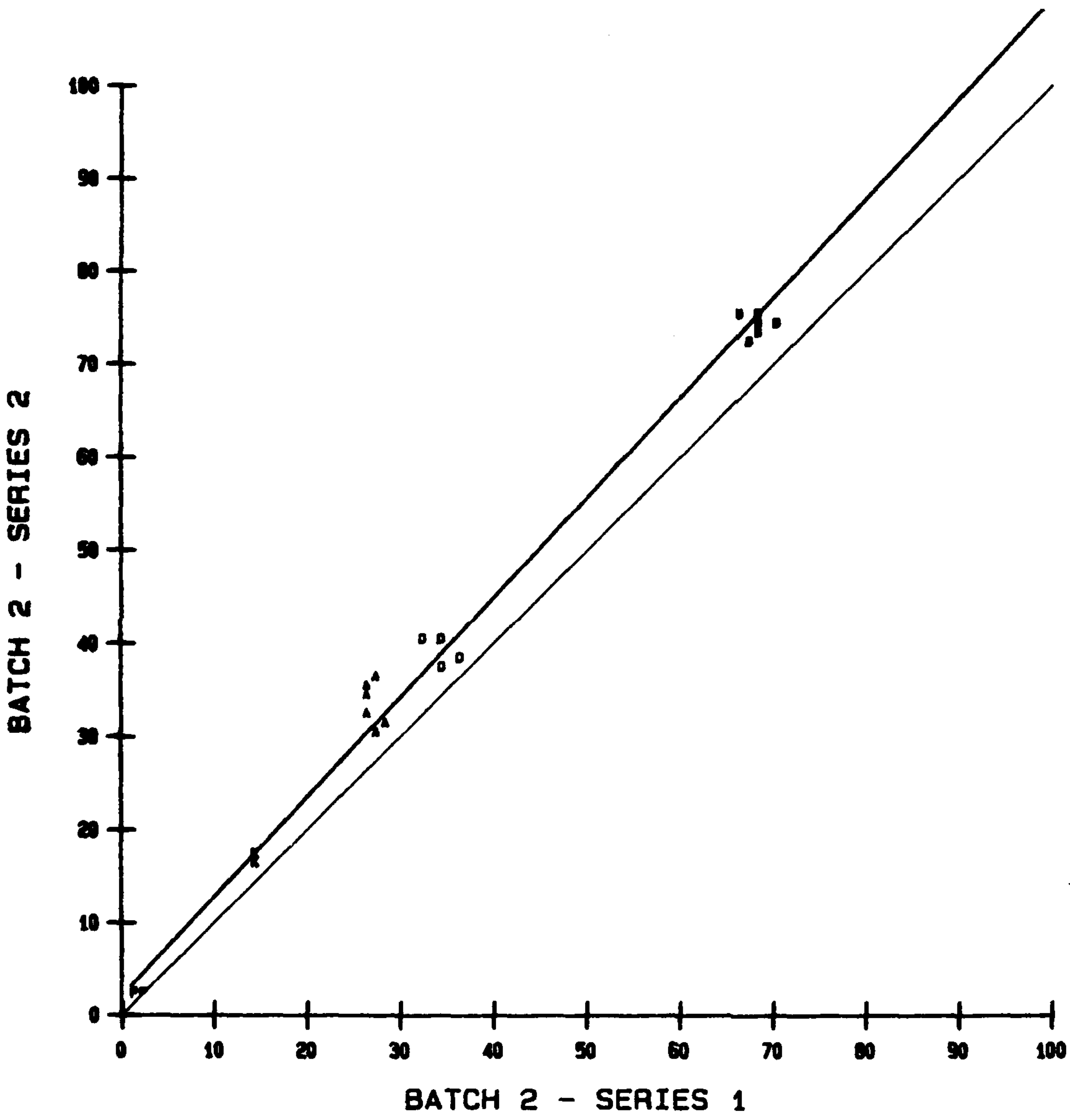
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60SKDU11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 75
RANGE OF DATA	:	1 TO 75

CURVE TYPE : LINEAR

Y = - 1.746 + 1.031X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.0856
COEFFICIENT B	=	1.0724
COEF. OF CORR.	=	0.9960
COEF. OF DET.	=	0.9921
STD. ERR. EST.	=	2.2375

REGRESSION LINE = ______
X - Y LINE = ______

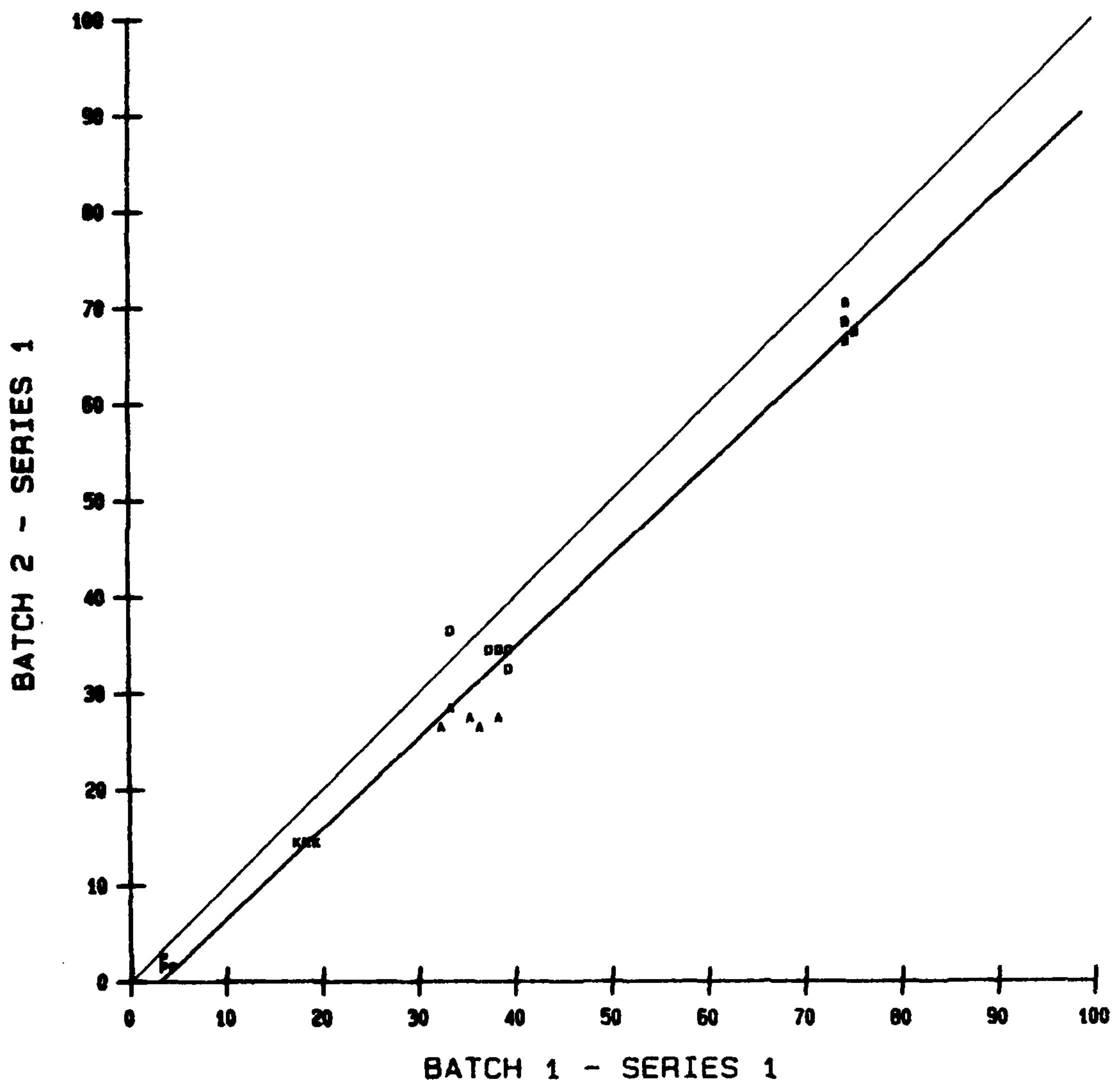
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60SKDU21.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 70
RANGE OF DATA	:	2 TO 75

CURVE TYPE : LINEAR

Y = 2.086 + 1.072X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-2.8445
COEFFICIENT B	=	0.9407
COEF. OF CORR.	=	0.9936
COEF. OF DET.	=	0.9872
STD. ERR. EST.	=	2.6353

REGRESSION LINE = ———
X - Y LINE = ———

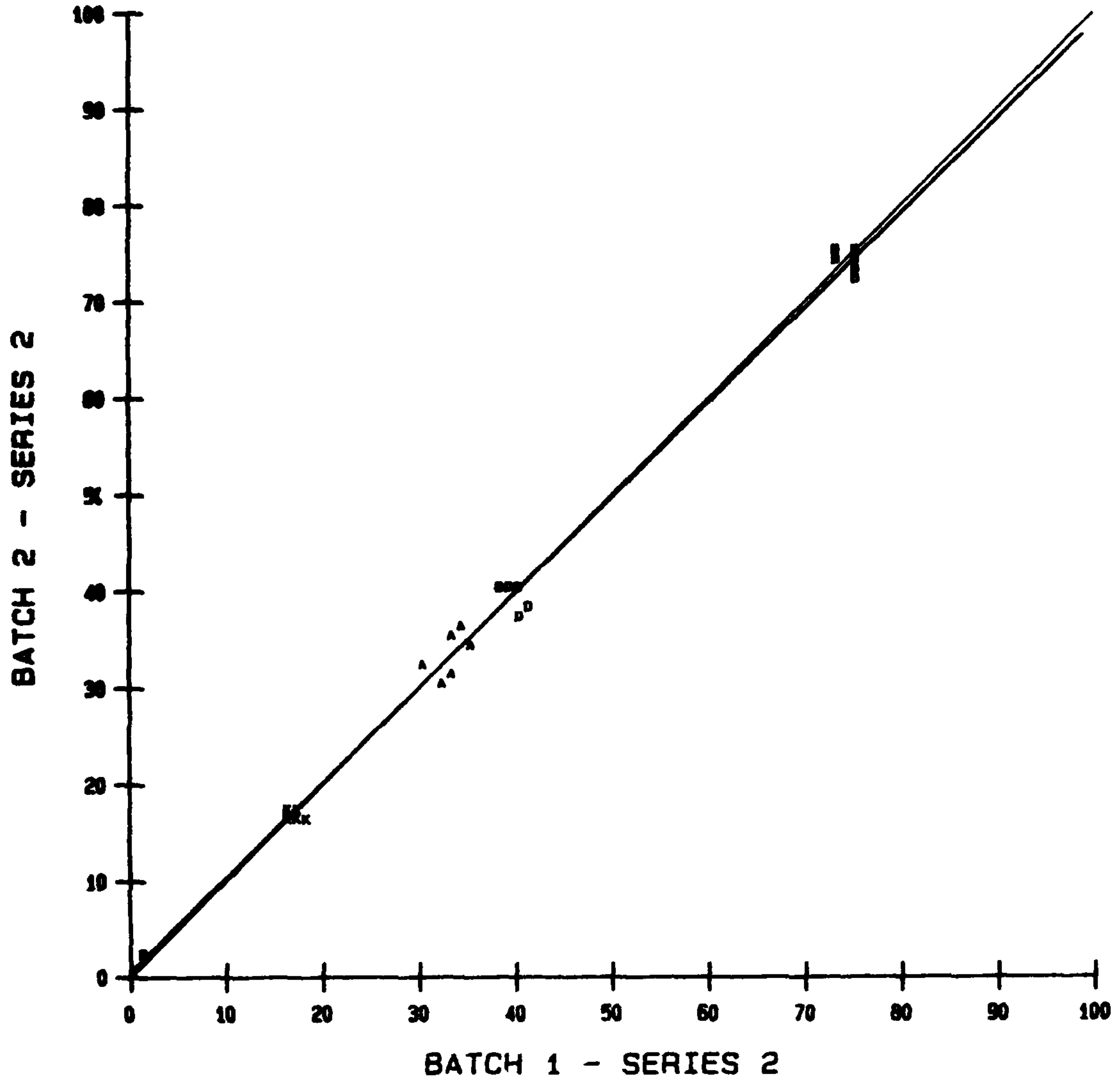
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60SKDU11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	3 TO 75
RANGE OF DATA	:	1 TO 70

CURVE TYPE : LINEAR

$Y = -2.844 + 0.941X$

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.6063
COEFFICIENT B	=	0.9826
COEF. OF CORR.	=	0.9979
COEF. OF DET.	=	0.9958
STD. ERR. EST.	=	1.6194

REGRESSION LINE = ________

X - Y LINE = ________

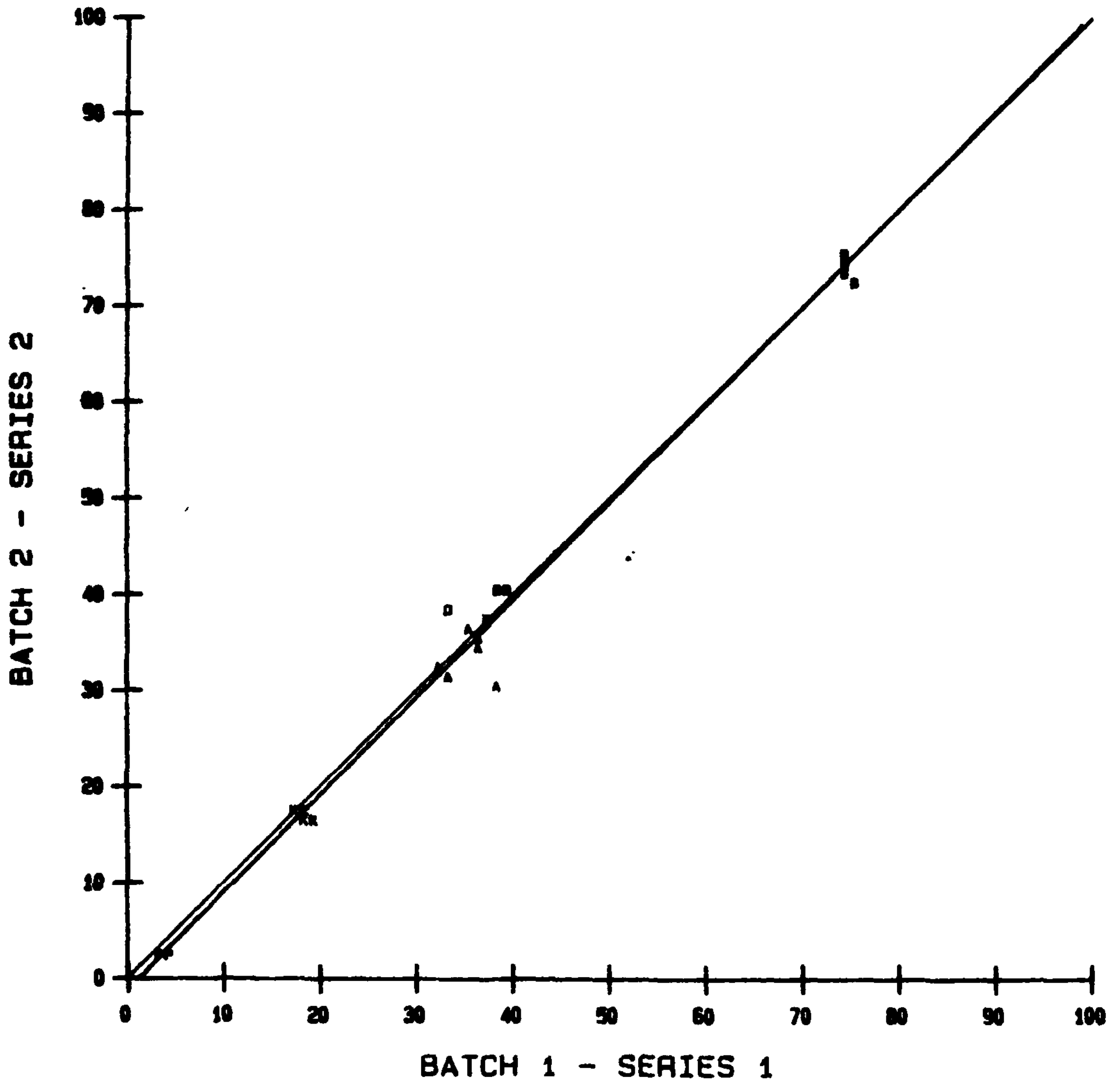
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60SKDU12.22
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 75
RANGE OF DATA	:	2 TO 75

CURVE TYPE : LINEAR

Y = 0.606 + 0.983X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -1.1863
COEFFICIENT B = 1.0155

COEF. OF CORR. = 0.9961
COEF. OF DET. = 0.9923
STD. ERR. EST. = 2.2087

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

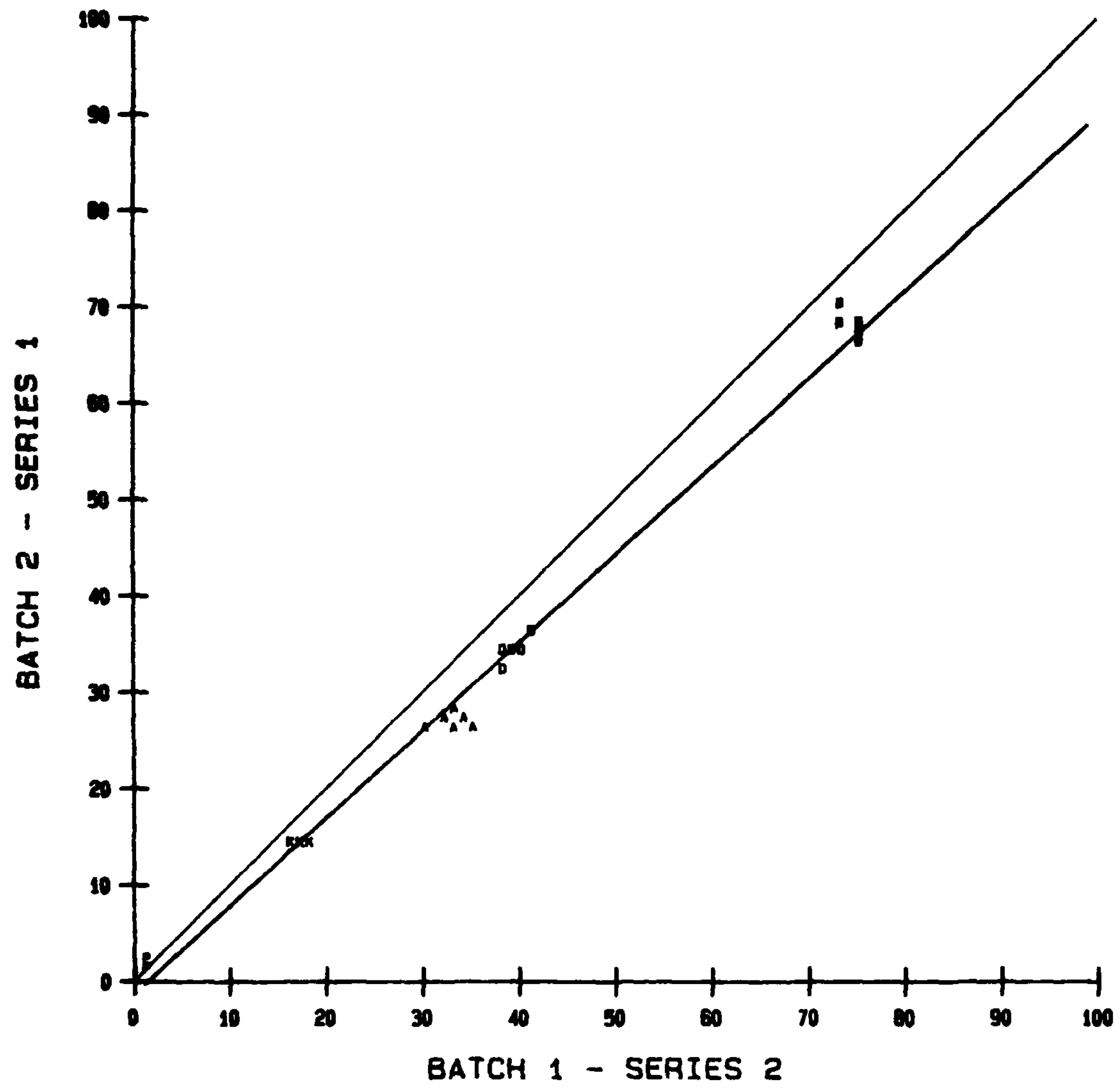
DISK DRIVE : B:
SUBDIRECTORY : \
FILENAME : 60SKDU11.22

NUMBER OF POINTS : 30
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 3 TO 75
RANGE OF DATA : 2 TO 75

CURVE TYPE : LINEAR

Y = - 1.186 + 1.015X

DUNLOP TIRE ON SKIDDOMETER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.2303
COEFFICIENT B	=	0.9117
COEF. OF CORR.	=	0.9969
COEF. OF DET.	=	0.9939
STD. ERR. EST.	=	1.8245

REGRESSION LINE = ______

X - Y LINE = ______

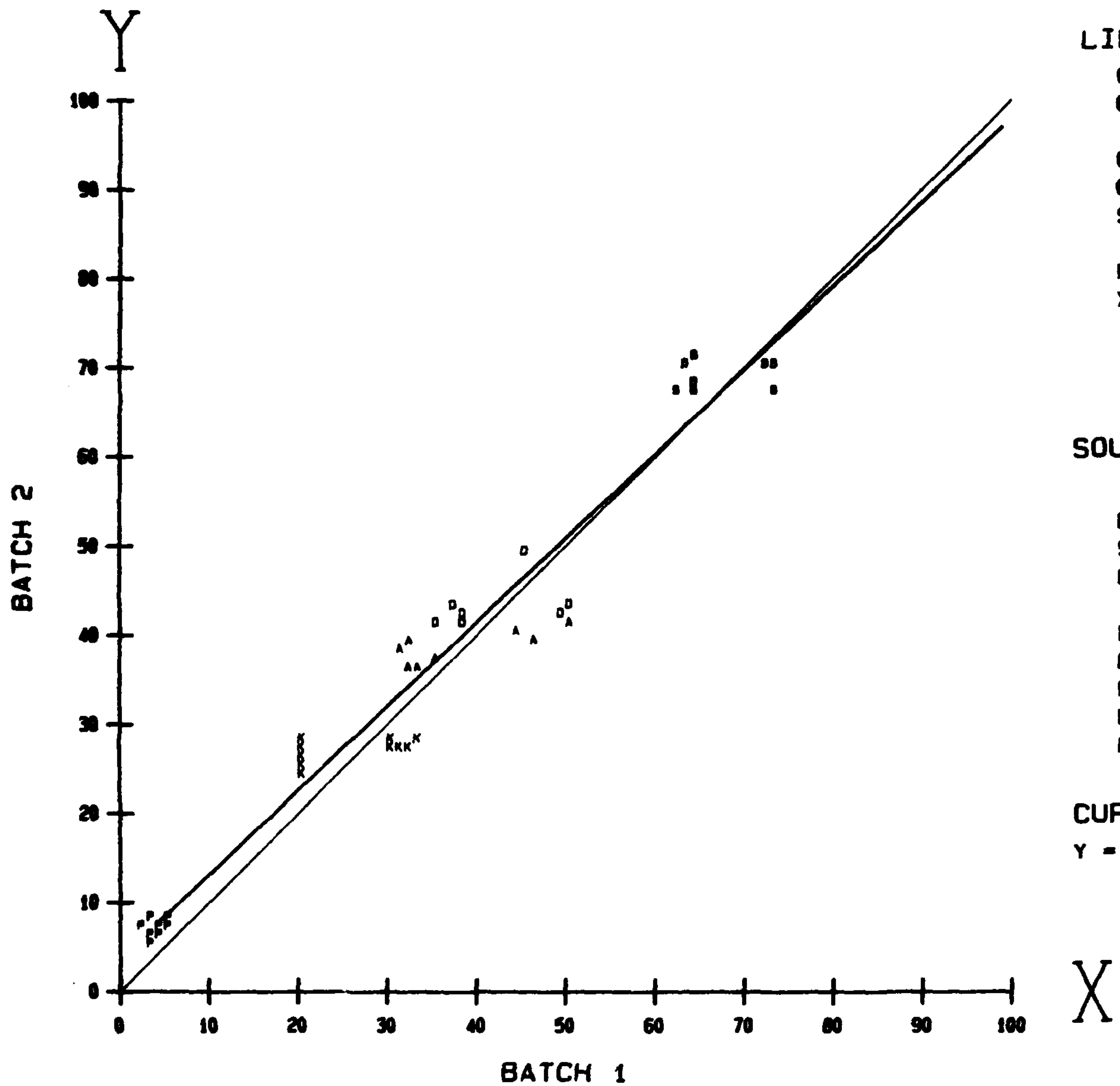
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60SKDU12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 75
RANGE OF DATA	:	1 TO 70

CURVE TYPE : LINEAR

Y = - 1.23 + 0.912X

DUNLOP TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	3.7872
COEFFICIENT B	=	0.9424
COEF. OF CORR.	=	0.9771
COEF. OF DET.	=	0.9548
STD. ERR. EST.	=	4.4304
REGRESSION LINE	=	————
X - Y LINE	=	————

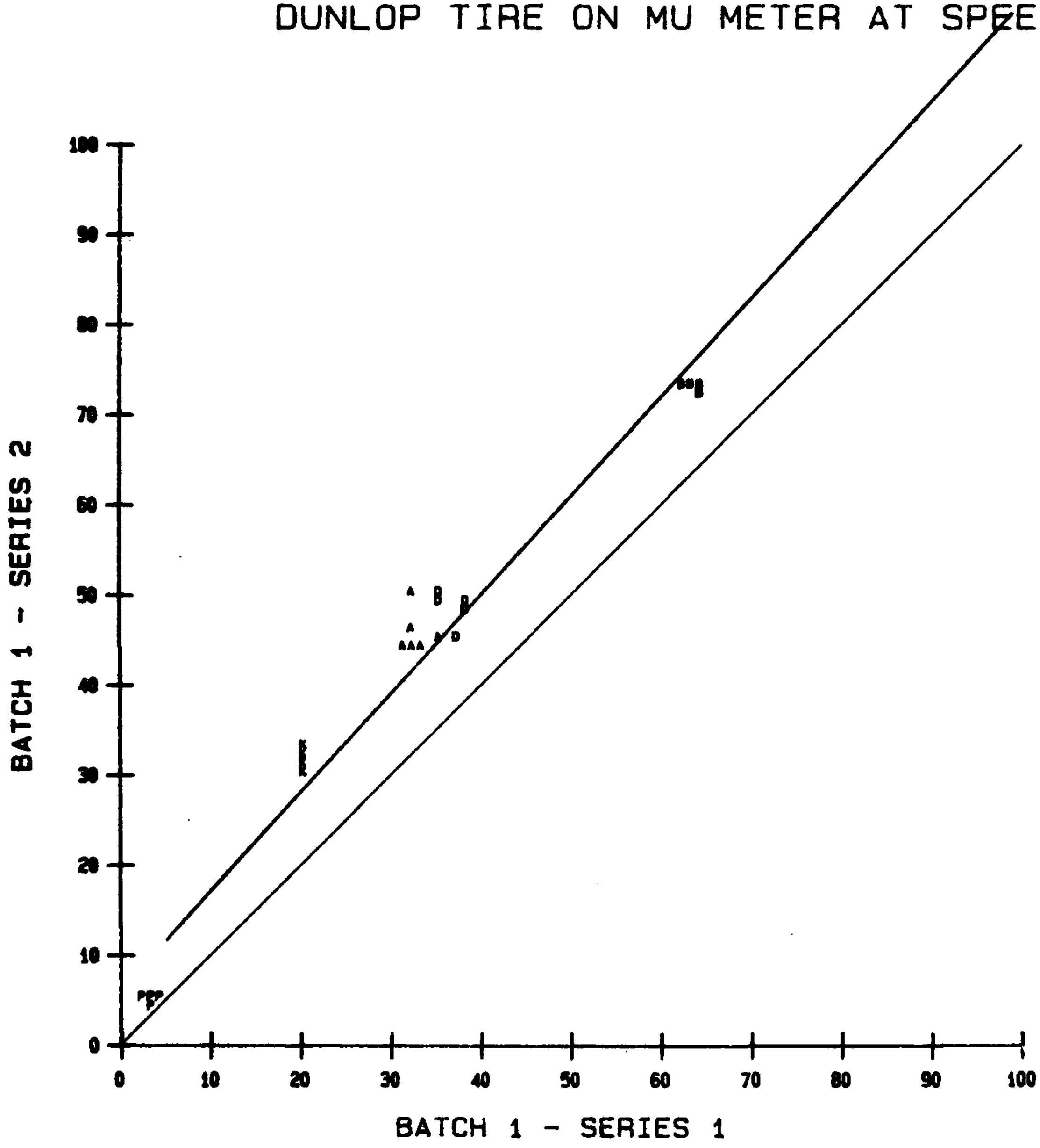
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	40MUDU1.2
NUMBER OF POINTS	:	51
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 73
RANGE OF DATA	:	5 TO 71

CURVE TYPE : LINEAR

Y = 3.787 + 0.942X

DUNLOP TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	6.2365
COEFFICIENT B	=	1.0962
COEF. OF CORR.	=	0.9850
COEF. OF DET.	=	0.9703
STD. ERR. EST.	=	3.9746

REGRESSION LINE = ———

X - Y LINE = ———

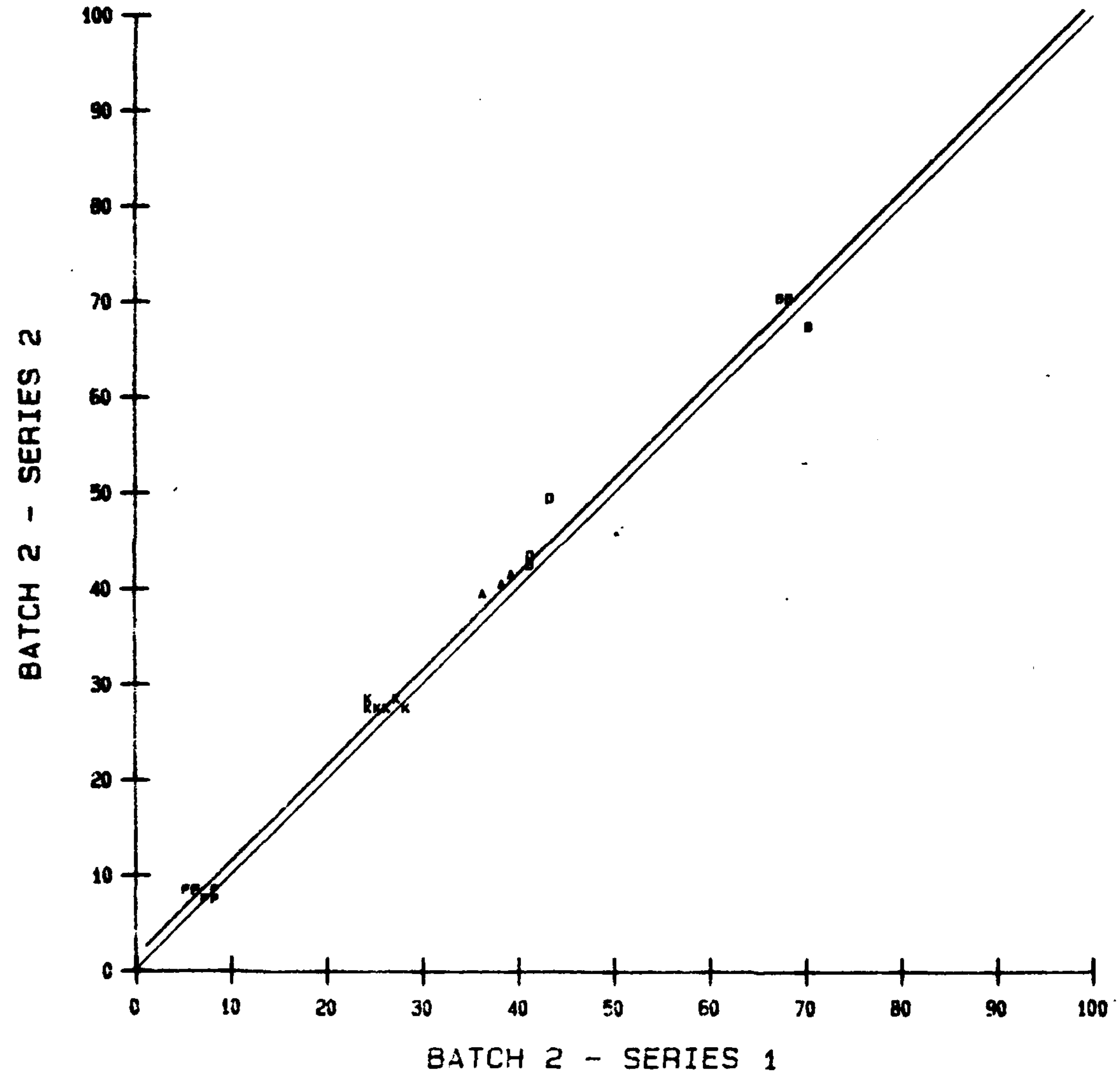
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUDU11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 64
RANGE OF DATA	:	4 TO 73

CURVE TYPE : LINEAR

Y = 6.237 + 1.096X

DUNLOP TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	1.5733
COEFFICIENT B	=	1.0015
COEF. OF CORR.	=	0.9956
COEF. OF DET.	=	0.9912
STD. ERR. EST.	=	1.9859

REGRESSION LINE = ______

X - Y LINE = ______

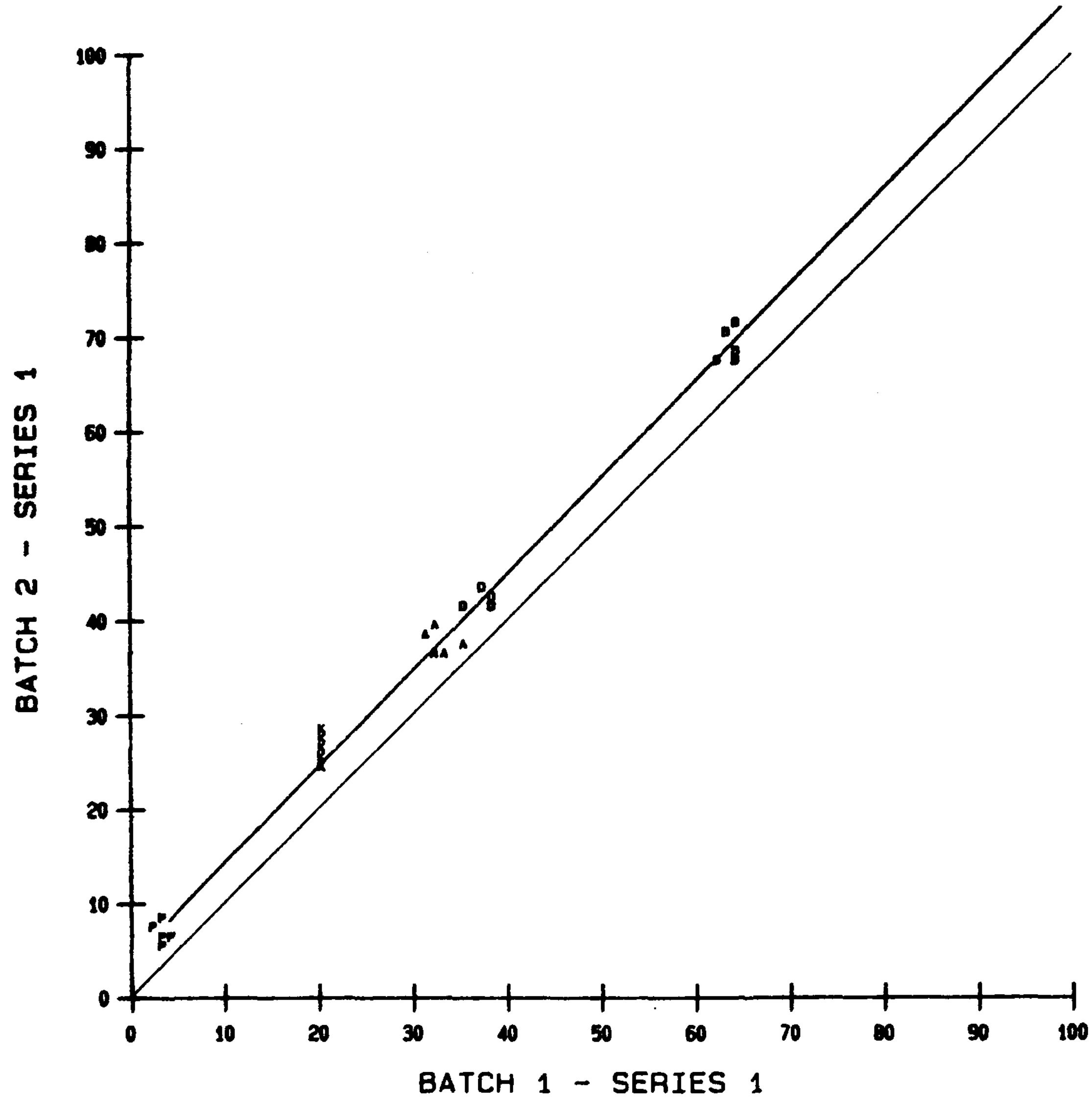
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUDU21.22
NUMBER OF POINTS	:	21
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	5 TO 70
RANGE OF DATA	:	7 TO 70

CURVE TYPE : LINEAR

Y = 1.573 + 1.002X

DUNLOP TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	4.1824
COEFFICIENT B	=	1.0198
COEF. OF CORR.	=	0.9967
COEF. OF DET.	=	0.9933
STD. ERR. EST.	=	1.7329

REGRESSION LINE = ————

X - Y LINE = ————

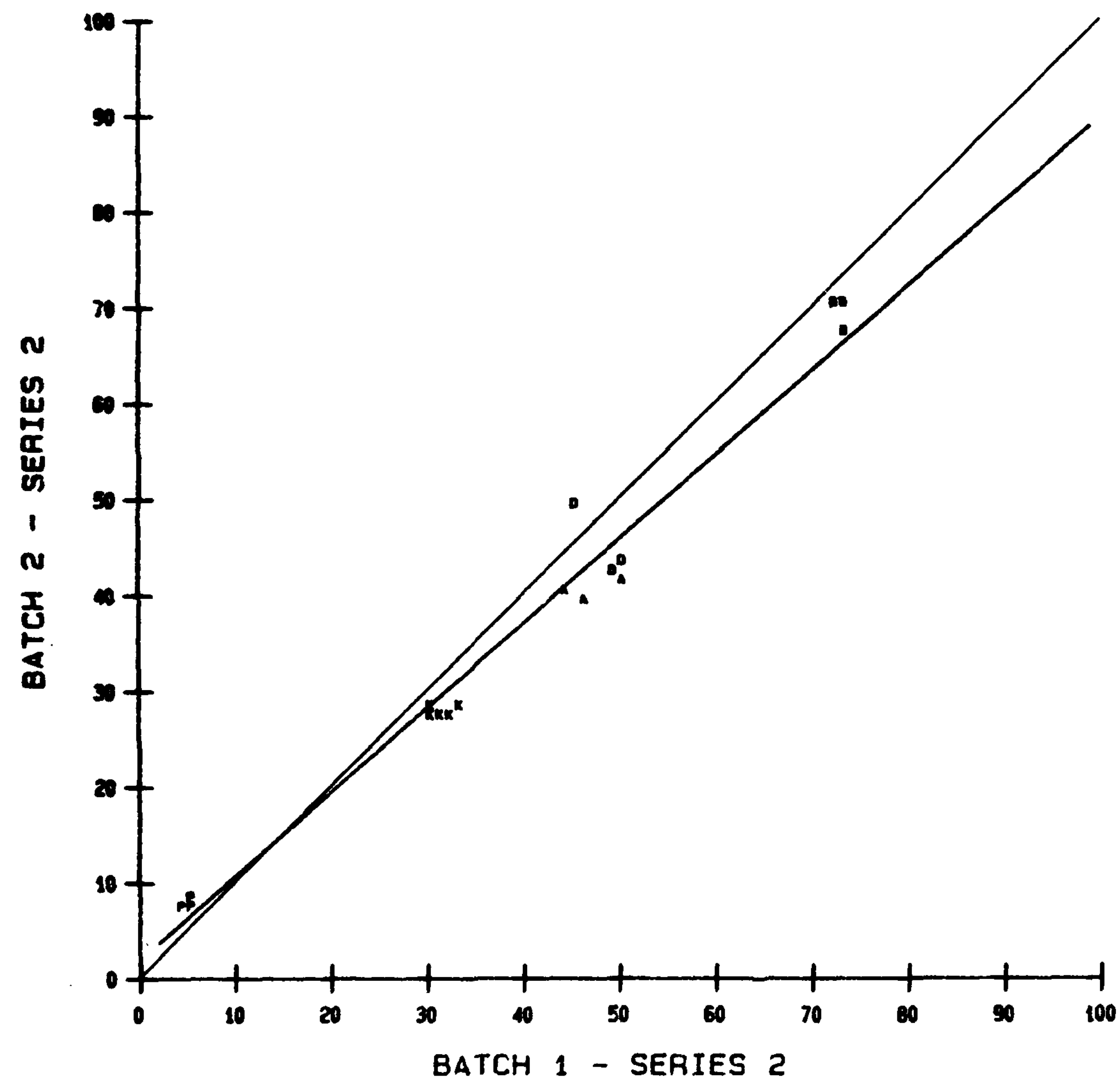
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUDU11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 64
RANGE OF DATA	:	5 TO 71

CURVE TYPE : LINEAR

$Y = 4.182 + 1.02X$

DUNLOP TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 1.9317
COEFFICIENT B = 0.8793

COEF. OF CORR. = 0.9889
COEF. OF DET. = 0.9778
STD. ERR. EST. = 3.1496

REGRESSION LINE = ———
X - Y LINE = ———

SOURCE DATA FILE INFO

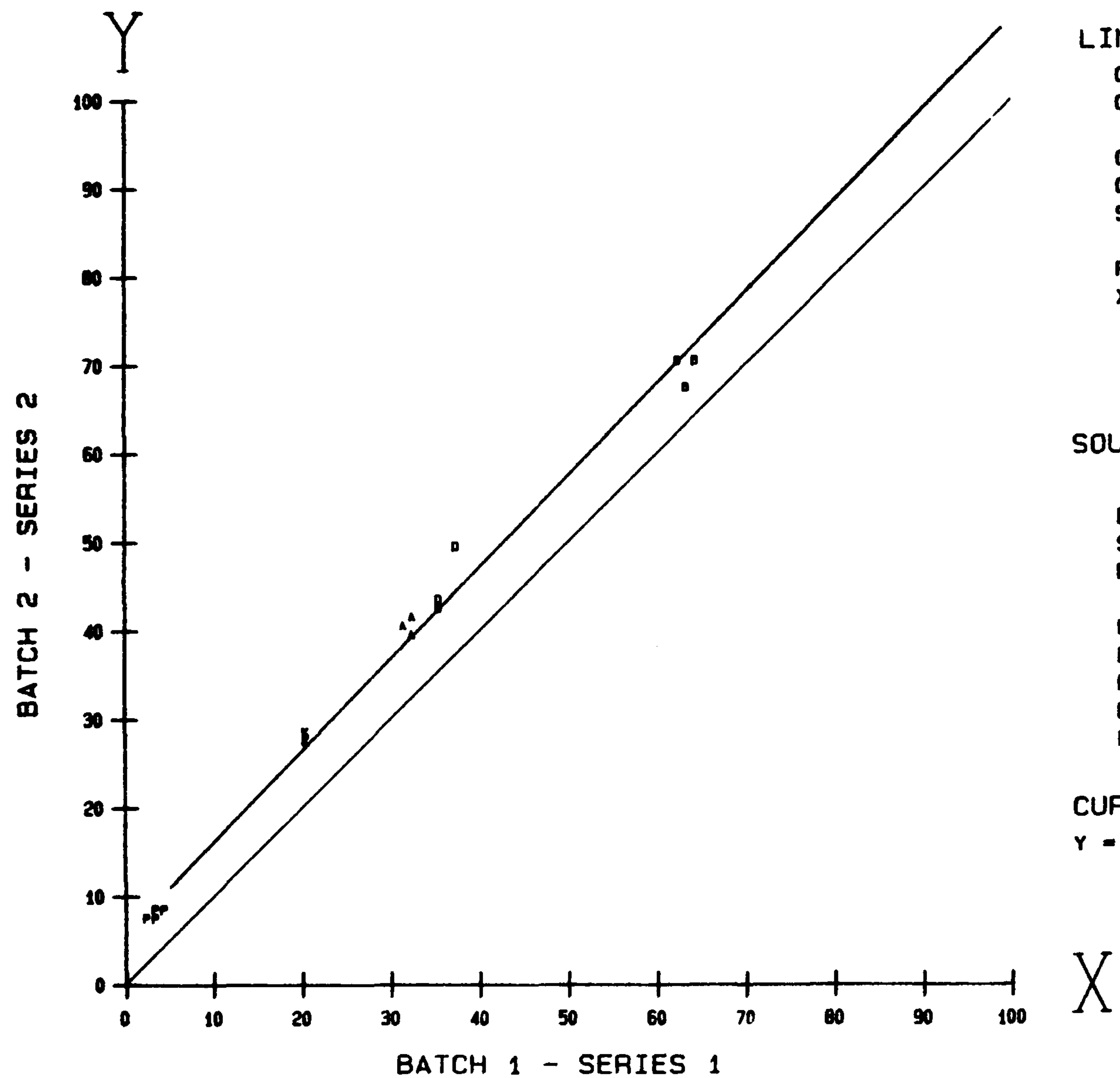
DISK DRIVE : B:
SUBDIRECTORY : \
FILENAME : 40MUDU12.22

NUMBER OF POINTS : 21
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 4 TO 73
RANGE OF DATA : 7 TO 70

CURVE TYPE : LINEAR

Y = 1.932 + 0.879X

DUNLOP TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	5.8719
COEFFICIENT B	=	1.0353
COEF. OF CORR.	=	0.9959
COEF. OF DET.	=	0.9918
STD. ERR. EST.	=	1.9193

REGRESSION LINE = ________

X - Y LINE = ________

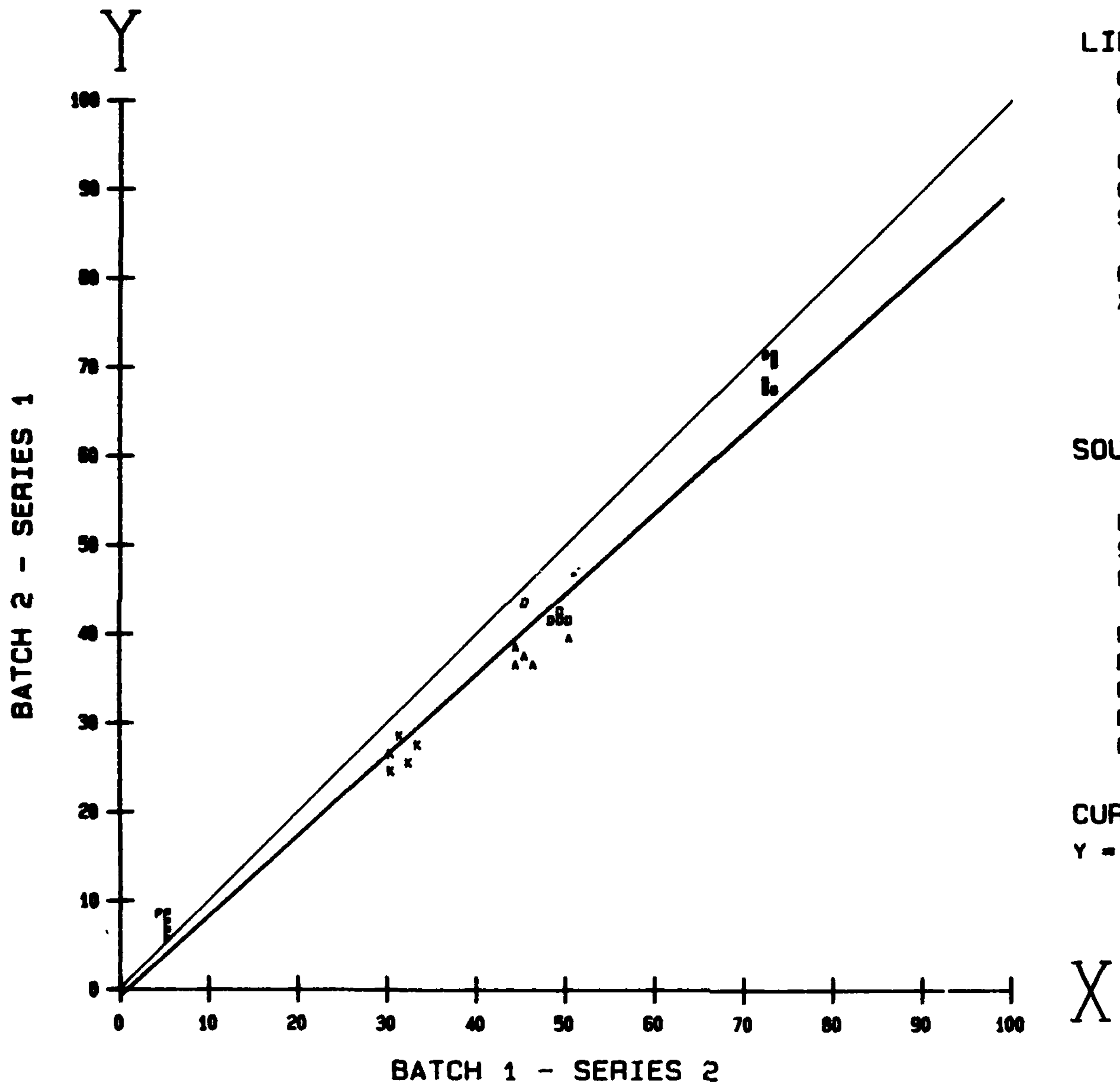
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUDU11.22
NUMBER OF POINTS	:	21
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 64
RANGE OF DATA	:	7 TO 70

CURVE TYPE : LINEAR

Y = 5.872 + 1.035X

DUNLOP TIRE ON MU METER AT SPEED OF 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.6881
COEFFICIENT B	=	0.9073
COEF. OF CORR.	=	0.9867
COEF. OF DET.	=	0.9736
STD. ERR. EST.	=	3.4411

REGRESSION LINE = ______
X - Y LINE = ______

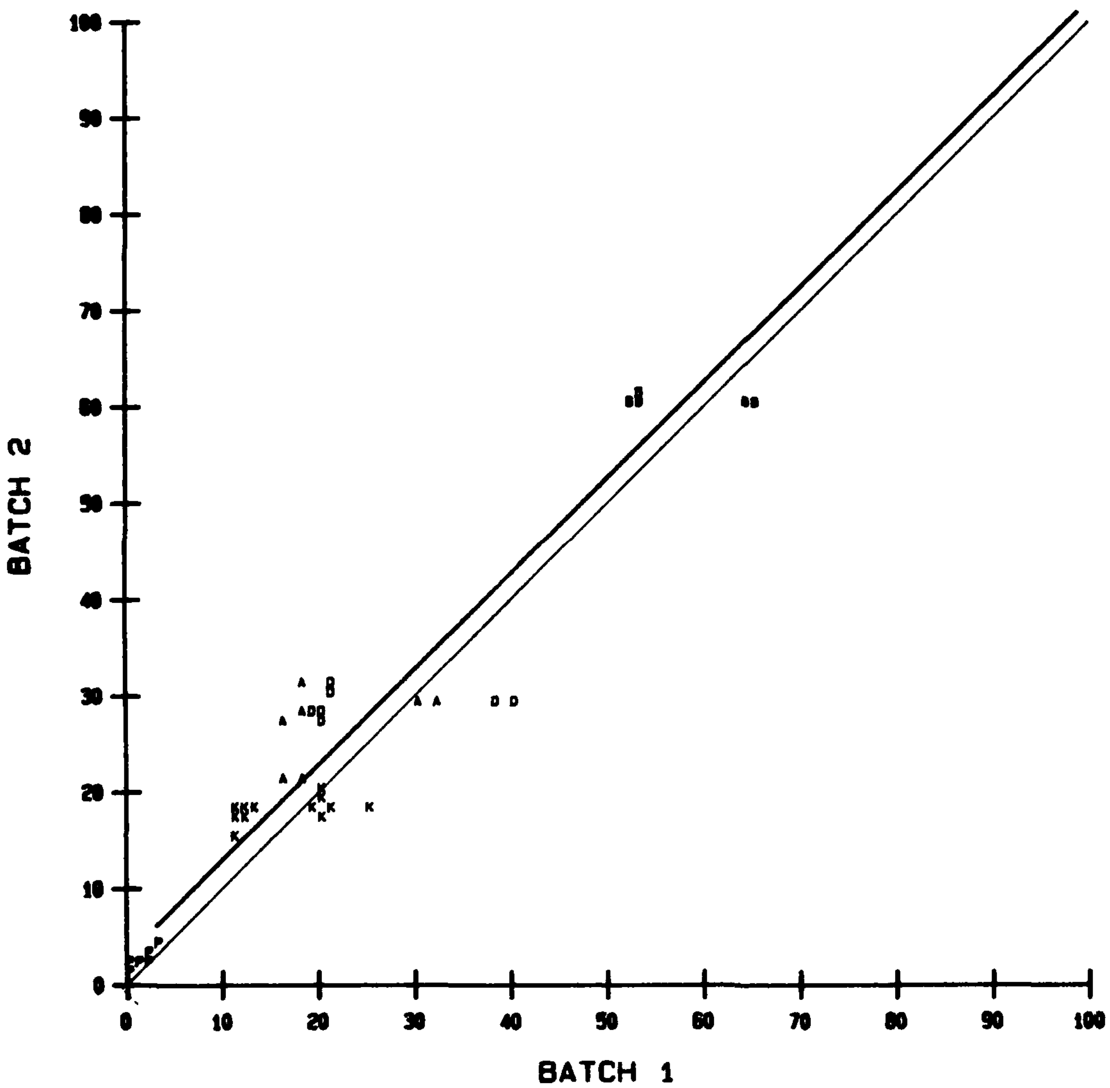
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUDU12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 73
RANGE OF DATA	:	5 TO 71

CURVE TYPE : LINEAR

Y = - 0.688 + 0.907X

DUNLOP TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	3.1151
COEFFICIENT B	=	0.9906
COEF. OF CORR.	=	0.9593
COEF. OF DET.	=	0.9203
STD. ERR. EST.	=	5.4259

REGRESSION LINE = ———
X - Y LINE = ———

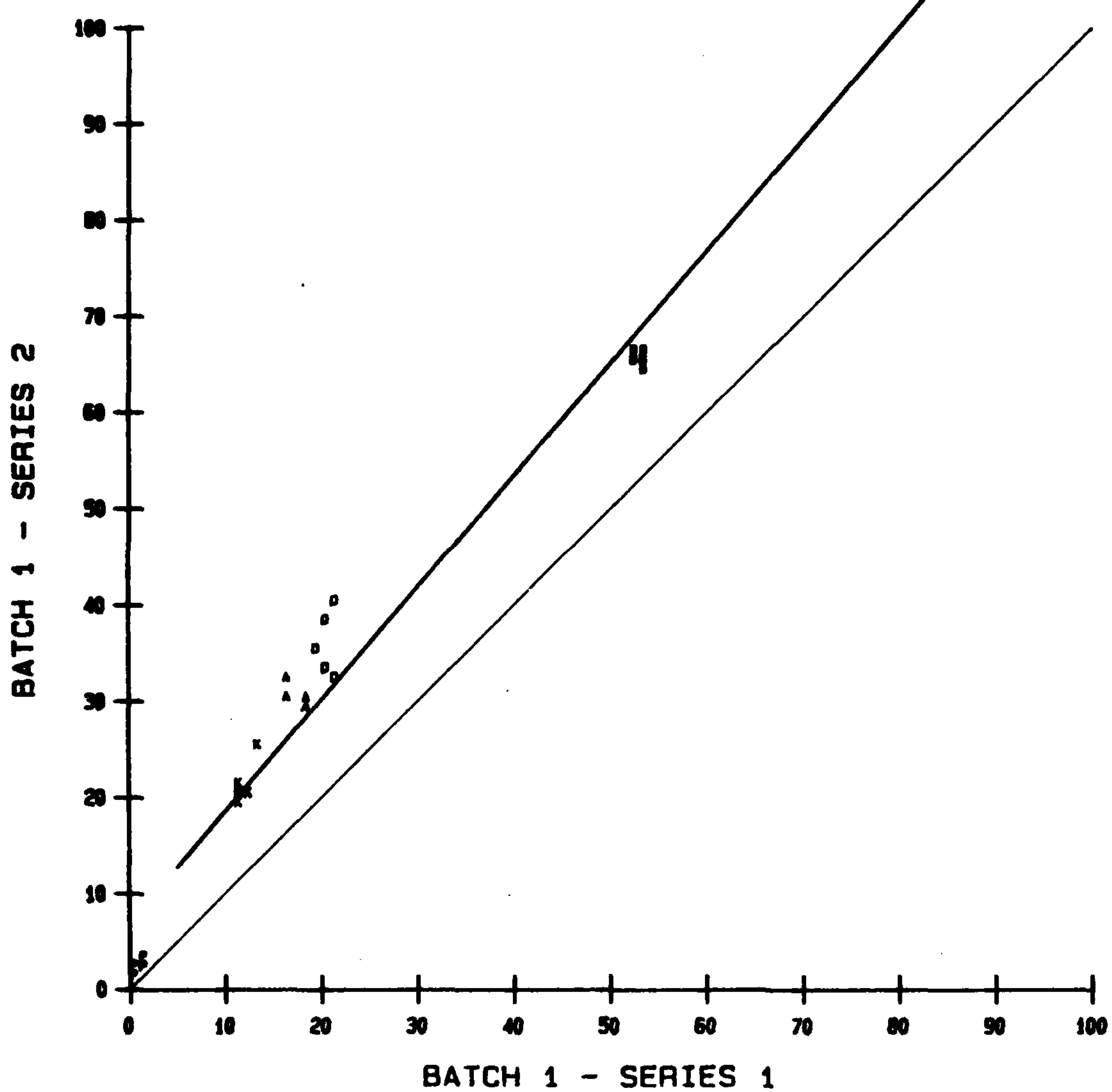
SOURCE DATA FILE INFO

DISK DRIVE	:	A:
SUBDIRECTORY	:	\
FILENAME	:	60MUDU1.2
NUMBER OF POINTS	:	48
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 65
RANGE OF DATA	:	1 TO 61

CURVE TYPE : LINEAR

Y = 3.115 + 0.991X

DUNLOP TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	6.9232
COEFFICIENT B	=	1.1642
COEF. OF CORR.	=	0.9793
COEF. OF DET.	=	0.9591
STD. ERR. EST.	=	4.3367

REGRESSION LINE = ______
X - Y LINE = ______

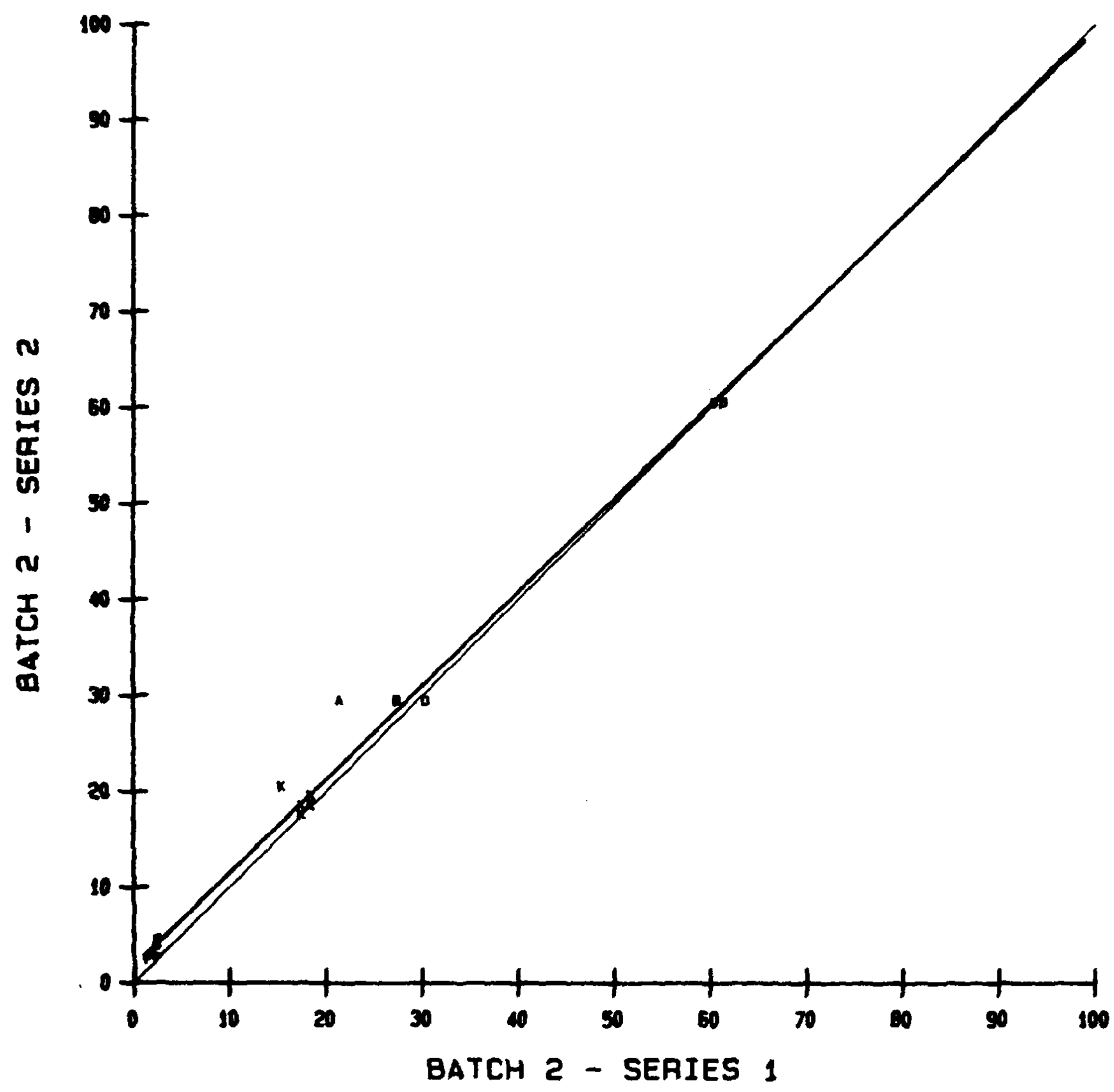
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUDU11.12
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 53
RANGE OF DATA	:	1 TO 66

CURVE TYPE : LINEAR

Y = 6.923 + 1.164X

DUNLOP TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	1.7144
COEFFICIENT B	=	0.9768
COEF. OF CORR.	=	0.9928
COEF. OF DET.	=	0.9857
STD. ERR. EST.	=	2.1886

REGRESSION LINE = ______
X - Y LINE = ______

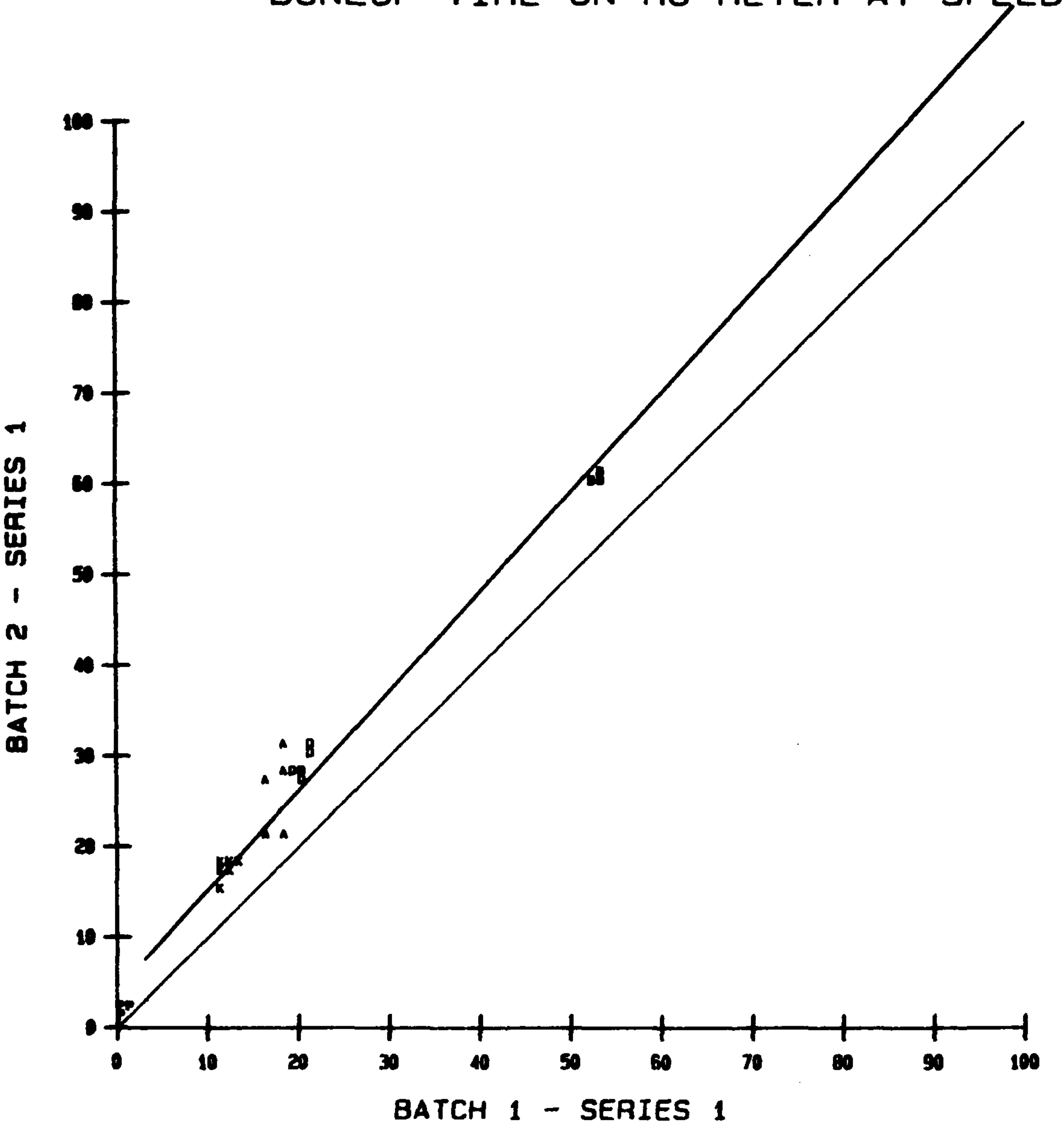
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUDU21.22
NUMBER OF POINTS	:	18
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 61
RANGE OF DATA	:	2 TO 60

CURVE TYPE : LINEAR

Y = 1.714 + 0.977X

DUNLOP TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	4.1472
COEFFICIENT B	=	1.0975
COEF. OF CORR.	=	0.9900
COEF. OF DET.	=	0.9801
STD. ERR. EST.	=	2.8216
REGRESSION LINE	=	———
X - Y LINE	=	———

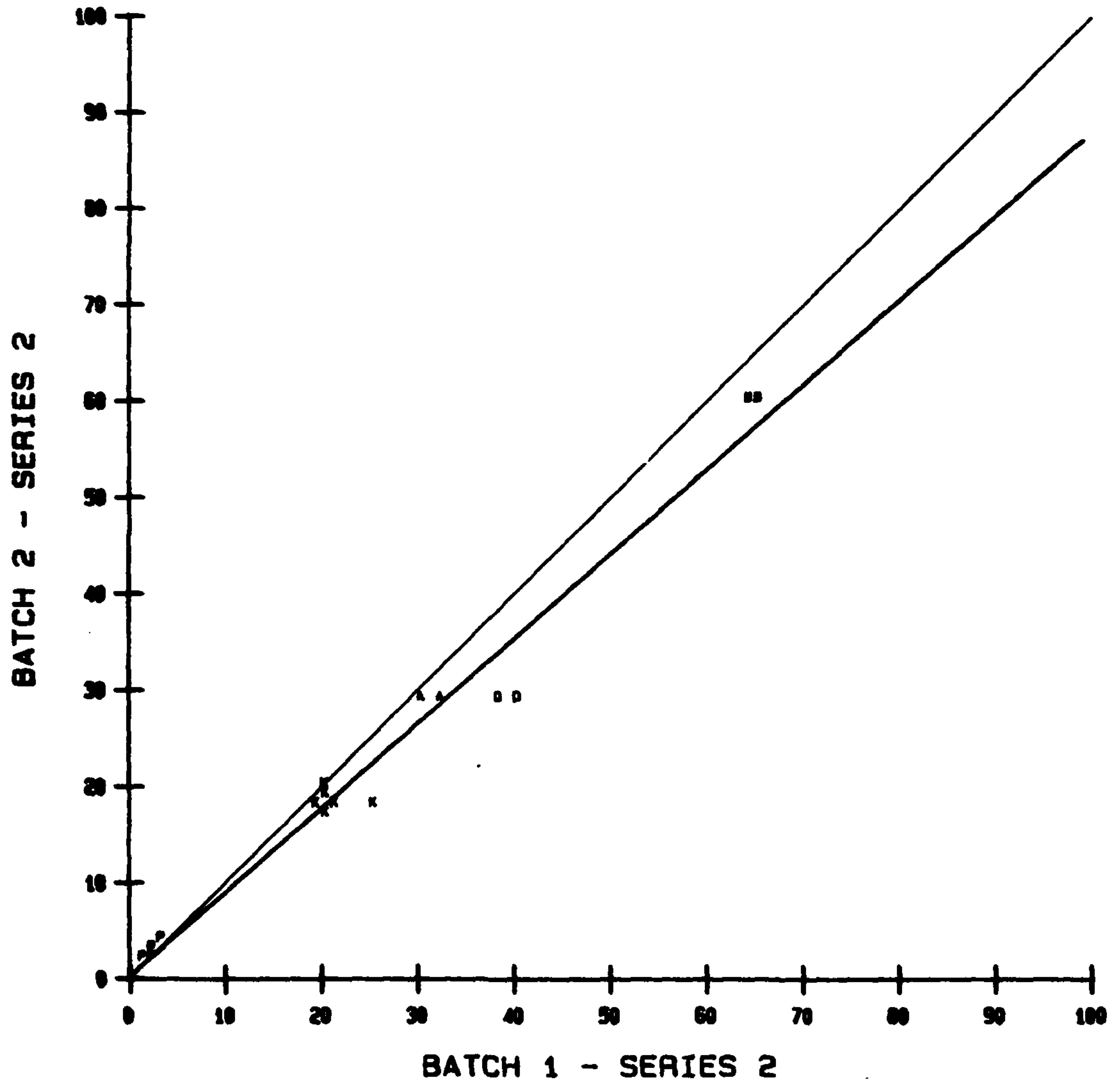
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUDU11.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 53
RANGE OF DATA	:	1 TO 61

CURVE TYPE : LINEAR

Y = 4.147 + 1.098X

DUNLOP TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.3002
COEFFICIENT B	=	0.8783
COEF. OF CORR.	=	0.9889
COEF. OF DET.	=	0.9780
STD. ERR. EST.	=	2.7156

REGRESSION LINE = ______

X - Y LINE = ______

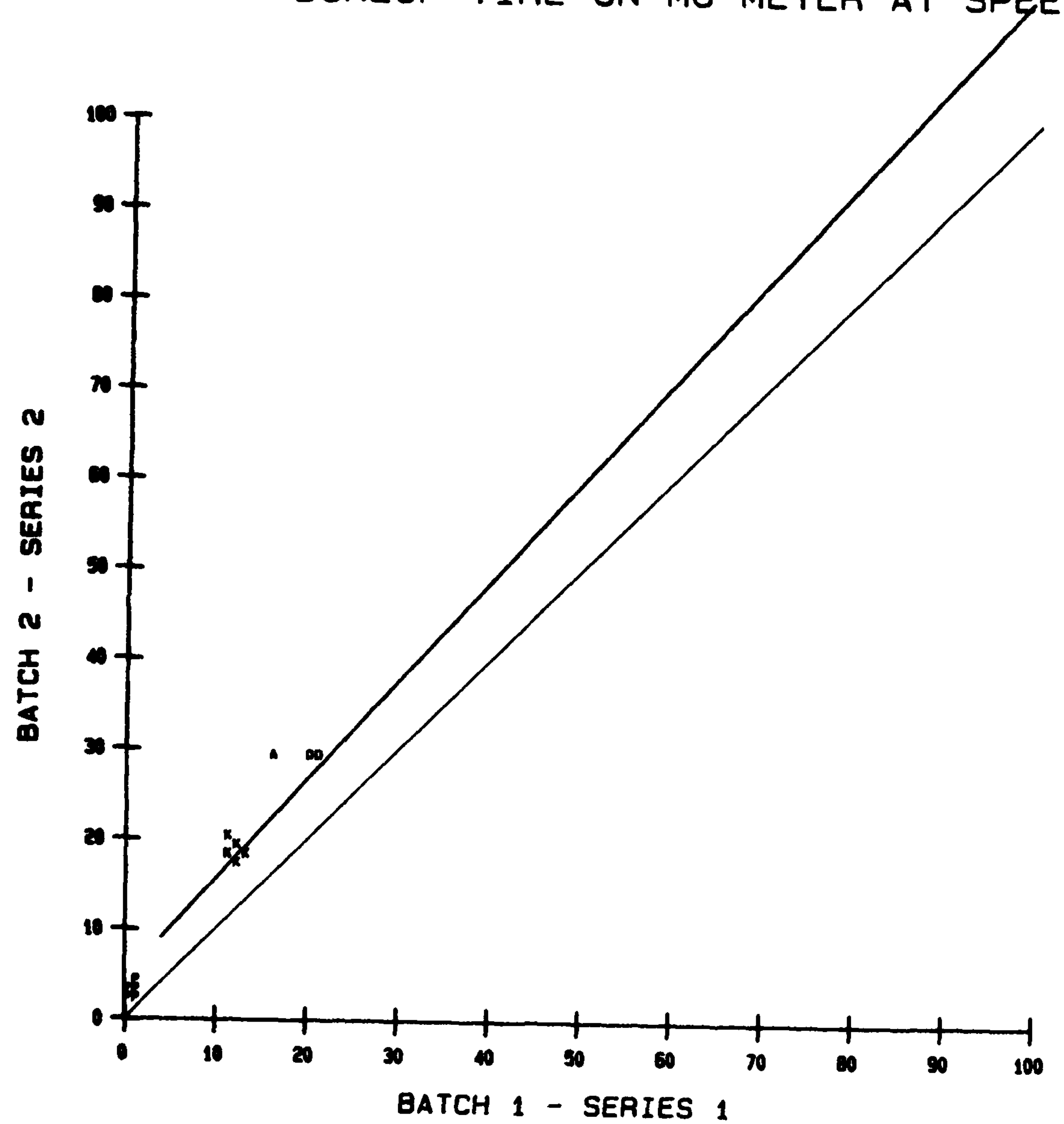
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUDU12.22
NUMBER OF POINTS	:	18
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 65
RANGE OF DATA	:	2 TO 69

CURVE TYPE : LINEAR

Y = 0.3 + 0.878X

DUNLOP TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = 4.6868
COEFFICIENT B = 1.1017

COEF. OF CORR. = 0.9836
COEF. OF DET. = 0.9676
STD. ERR. EST. = 3.2942

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

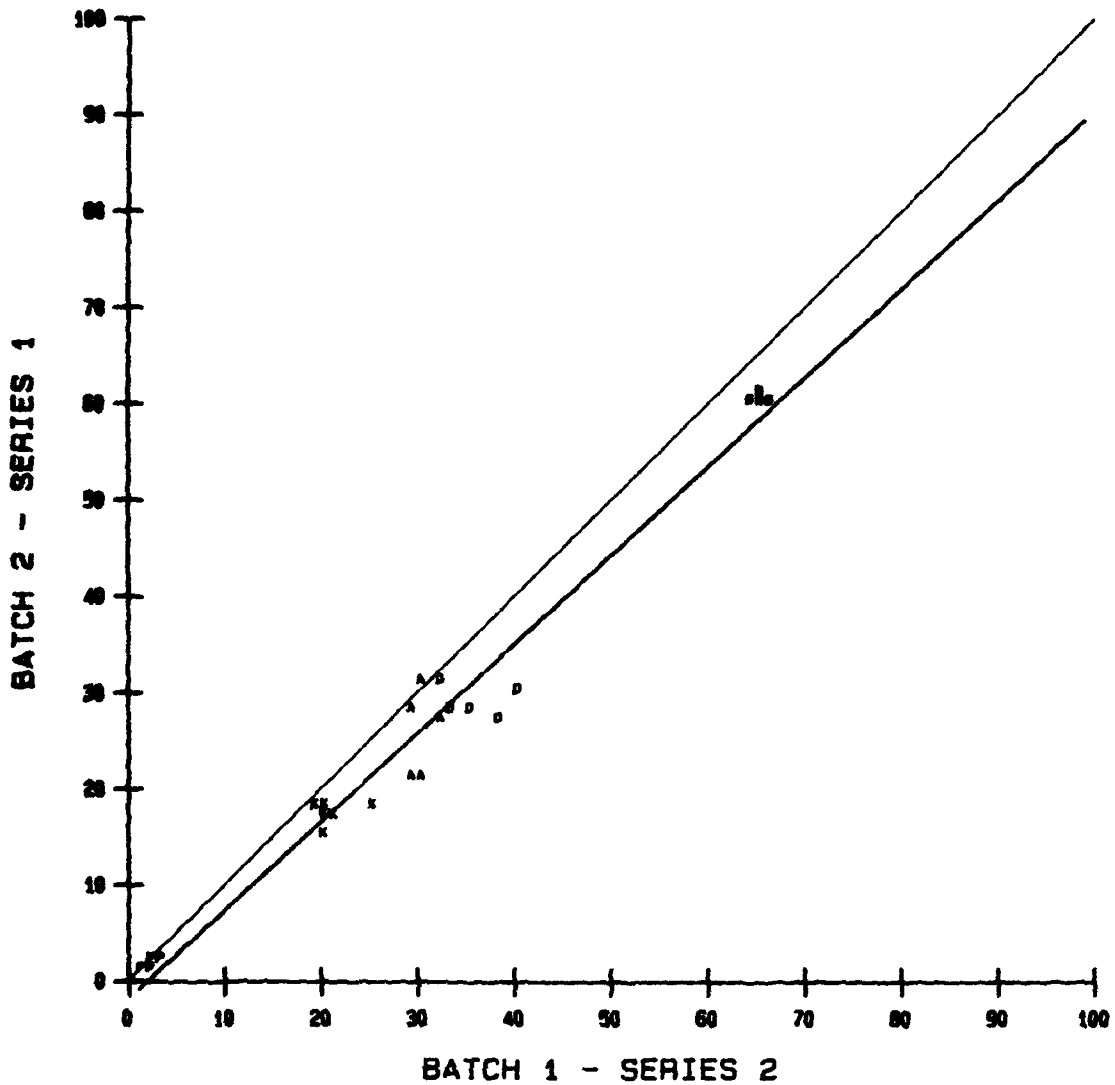
DISK DRIVE : B:
SUBDIRECTORY : \
FILENAME : 60MUDU11.22

NUMBER OF POINTS : 18
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 0 TO 53
RANGE OF DATA : 2 TO 60

CURVE TYPE : LINEAR

Y = 4.687 + 1.102X

DUNLOP TIRE ON MU METER AT SPEED OF 60 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.7551
COEFFICIENT B	=	0.9224
COEF. OF CORR.	=	0.9890
COEF. OF DET.	=	0.9782
STD. ERR. EST.	=	2.9517

REGRESSION LINE = ______
X - Y LINE = ______

SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUDU12.21
NUMBER OF POINTS	:	30
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 66
RANGE OF DATA	:	1 TO 61

CURVE TYPE : LINEAR

Y = - 1.755 + 0.922X

APPENDIX O

PROCEDURES FOR CONDUCTING

LINEAR REGRESSION ANALYSES

APPENDIX O

Procedures for Calculating the Standard Error of Estimate

The method for calculating the Standard Error of Estimate is given below:

Consider the straight line, which is the regression equation, in terms of Y,

$$\boxed{Y = m_{yx}X + b_{yx}}$$

where: X is the independent variable and Y is the dependent variable, in this case, the Saab Friction Tester values are determined from a Mu Meter reading.

m_{yx} is the slope of the regression equation.

b_{yx} is the Y intercept.

or in terms of X,

$$\boxed{X = m_{xy}Y + b_{xy}}$$

where: Y is the independent variable and X is the dependent variable, in this case, the Mu Meter values are determined from a Saab Friction Tester reading.

m_{xy} is the slope of the regression equation.

b_{xy} is the X intercept.

The slope of the regression equation in terms of Y,

$$\boxed{m_{yx} = \frac{\sum(XY) - nM_xM_y}{\sum(X^2) - n(M_x)^2}} \quad \text{or,} \quad m_{yx} = \frac{\sum(XY) - nM_xM_y}{ns_x^2}$$

where:

$$\boxed{\begin{array}{l} M_x = \sum\frac{X}{n} \\ M_y = \sum\frac{Y}{n} \end{array}}$$

n is the number of pairs of X and Y values.

M is the mean average of the X and Y values.

or in terms of X,

$$\boxed{m_{xy} = \frac{\sum(XY) - nM_xM_y}{\sum(Y^2) - n(M_y)^2}} \quad \text{or,} \quad m_{xy} = \frac{\sum(XY) - nM_xM_y}{ns_y^2}$$

The Y intercept is given by: $b_{yx} = M_y - m_{yx}M_x$

The X intercept is given by: $b_{xy} = M_x - m_{xy}M_y$

The unadjusted coefficient of correlation is determined by:

$$\boxed{r_{xy} = r_{yx} = \frac{\sum(XY) - nM_xM_y}{\sqrt{\left[\sum(X^2) - n(M_x)^2\right]\left[\sum(Y^2) - n(M_y)^2\right]}}} \quad \text{or} \quad \frac{\sum(XY) - nM_xM_y}{ns_xs_y}$$

When the correlation is perfect, that is, when $r_{xy} = r_{yx} = 1$,

then; $$\boxed{b_{yx} = \frac{1}{b_{xy}}}$$

The standard deviations for X and Y are:

$$s_x = \sqrt{\frac{\sum(X^2) - n(M_x)^2}{n}},$$

$$s_y = \sqrt{\frac{\sum(Y^2) - n(M_y)^2}{n}}$$

The adjusted Standard Error of Estimate in the X direction is given by:

$$\bar{S}_{xy} = \sqrt{\frac{\sum(X^2) - n(M_x)^2}{n - 2} (1 - r^2_{yx})}$$

This means when the Saab Friction Tester reads 40 the Mu Meter reads between 32.7 and 40.3, or a difference of 7.6.

The adjusted Standard Error of Estimate in the Y direction is given by:

$$\bar{S}_{yx} = \sqrt{\frac{\sum(Y^2) - n(M_y)^2}{n - 2} (1 - r^2_{xy})}$$

This means when the Mu Meter reads 40, the Saab Friction Tester reads between 41.5 and 52.3, or a difference of 10.8.

The Coefficient of Determination is given by:

$$d_{xy} = d_{yx} = r^2_{xy} = r^2_{yx}$$

APPENDIX P

SUMMARY TABLES SHOWING THE RESULTS

OF THE LIMITS OF ACCEPTABILITY EVALUATION

BASED ON PERFORMING REGRESSION ANALYSES OF VARIOUS

COMBINATIONS OF BATCHES AND SERIES OF McCREARY TIRES

MOUNTED ON FOUR FRICTION FRICTION DEVICES

USING SELF WATER SYSTEM

AT SPEEDS OF 40 AND 60 MPH

TABLE P - 1 LIMITS OF ACCEPTABILITY FOR THE RUNWAY FRICTION TESTER USING THE McCREARY TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	+0.3916	+1.0057	+0.9616	0.9945	0.9891	1.7522	60
11.12	+0.5692	+0.9635	-3.0808	0.9978	0.9956	1.0970	10
21.22	+0.6939	+0.9615	-3.1561	0.9988	0.9977	0.8108	10
11.21	+0.2641	+1.0089	+1.1541	0.9962	0.9924	1.5202	10
12.22	+0.5232	+1.0023	+0.7532	0.9928	0.9856	2.0103	10
11.22	+1.0017	+0.9685	-2.1483	0.9934	0.9868	1.9242	10
12.21	-0.2056	+1.0433	+4.1244	0.9947	0.9895	1.7822	10

TABLE P - 2 LIMITS OF ACCEPTABILITY FOR THE RUNWAY FRICTION TESTER USING THE McCREARY TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	+2.3476	+0.9338	-4.2720	0.9940	0.9880	1.6967	60
11.12	+0.4867	+0.9852	-0.9933	0.9961	0.9922	1.4754	10
21.22	+0.4600	+0.9754	-2.0000	0.9960	0.9920	1.3952	10
11.21	+2.3203	+0.9405	-3.6297	0.9963	0.9925	1.3768	10
12.22	+2.3780	+0.9270	-4.9220	0.9918	0.9836	1.9991	10
11.22	+2.7721	**+0.9155**	**-5.6779**	0.9903	0.9806	2.1742	5
12.21	+1.9816	+0.9498	-3.0384	0.9951	0.9903	1.5697	10

TABLE P - 3 LIMITS OF ACCEPTABILITY FOR THE SAAB FRICTION TESTER USING THE McCREARY TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	+2.3066	+0.9606	-1.6334	0.9935	0.9871	2.7039	60
11.12	-0.4693	+0.9402	**-6.4493**	0.9960	0.9920	2.1684	5
21.22	-0.5553	+0.9957	-0.9853	0.9961	0.9922	2.1345	10
11.21	+2.2734	+0.9360	-4.1266	0.9936	0.9873	2.7352	10
12.22	+2.0653	+0.9941	+1.4753	0.9965	0.9930	2.0318	10
11.22	+1.3903	+0.9396	-4.6497	0.9977	0.9955	1.6304	10
12.21	+2.9381	+0.9905	+1.9881	0.9926	0.9852	2.9513	10

TABLE P - 4 LIMITS OF ACCEPTABILITY FOR THE SAAB FRICTION TESTER USING THE McCREARY TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	+1.8599	+0.9777	-0.3701	0.9933	0.9867	2.4443	60
11.12	-1.4864	+0.9989	-1.5964	0.9941	0.9882	2.4131	10
21.22	-0.7338	+1.0266	+1.9262	0.9909	0.9819	2.9351	10
11.21	+1.3112	+0.9665	-2.0388	0.9953	0.9906	2.0390	10
12.22	+2.3842	+0.9918	+1.5642	0.9934	0.9868	2.5476	10
11.22	+0.4950	+0.9965	+0.1450	0.9905	0.9811	2.9943	10
12.21	+2.7895	+0.9639	-0.8205	0.9974	0.9948	1.5414	10

TABLE P - 5 LIMITS OF ACCEPTABILITY FOR THE SKIDDOMETER USING THE McCREARY TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	+0.5806	+0.9594	-3.4794	0.9940	0.9880	2.5752	60
11.12	-1.1423	+0.9860	-2.5423	0.9929	0.9859	2.9306	10
21.22	+0.9049	+0.9990	+0.8049	0.9982	0.9964	1.4324	10
11.21	-0.5313	+0.9558	-4.9513	0.9936	0.9873	2.6949	10
12.22	+1.5407	+0.9669	-1.7693	0.9974	0.9948	1.7332	10
11.22	+0.2081	+0.9588	-3.9119	0.9959	0.9919	2.1553	10
12.21	+0.6889	+0.9666	-2.6511	0.9978	0.9957	1.5762	10

TABLE P - 6 LIMITS OF ACCEPTABILITY FOR THE SKIDDOMETER USING THE McCREARY TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	+1.1882	+1.0055	+1.7382	0.9939	0.9878	2.3956	60
11.12	-0.6167	+0.9662	-3.9967	0.9967	0.9934	1.7626	10
21.22	-0.6734	+0.9593	-4.7434	0.9960	0.9921	1.9238	10
11.21	+1.8313	+0.9956	+1.3913	0.9920	0.9841	2.8286	10
12.22	+1.5205	+0.9946	+0.9805	0.9975	0.9949	1.5421	10
11.22	+0.8211	+0.9639	-2.7889	0.9971	0.9942	1.6429	10
12.21	+2.5044	+1.0291	**+5.4144**	0.9940	0.9881	2.4459	5

TABLE P - 7   LIMITS OF ACCEPTABILITY FOR THE MU METER
USING THE McCREARY TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	+0.2569	+1.0245	+2.7069	**0.9679**	**0.9369**	**5.1281**	30
11.12	**+3.9751**	+1.0760	**+11.5751**	0.9887	0.9776	**3.0094**	2
21.22	**-5.1060**	+1.0568	+0.5740	0.9927	0.9855	2.5481	5
11.21	+2.0466	**+1.0975**	**+11.7966**	0.9961	0.9922	1.7932	5
12.22	**-5.3682**	+1.0470	-0.6682	0.9957	0.9913	1.9672	5
11.22	-1.4656	**+1.1333**	**+11.8644**	0.9903	0.9807	2.9336	5
12.21	-1.3669	+1.0066	-0.7069	0.9939	0.9878	2.2470	10

TABLE P - 8 LIMITS OF ACCEPTABILITY FOR THE MU METER USING THE McCREARY TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	-0.6009	+1.0588	**+5.2791**	0.9840	0.9683	**3.5169**	12
11.12	+1.8262	+1.0790	**+9.7262**	0.9894	0.9789	2.8088	5
21.22	+1.9995	+0.9690	-1.1005	0.9910	0.9820	2.6644	10
11.21	-0.8962	**+1.1271**	**+11.3748**	0.9844	0.9691	**3.5691**	2
12.22	-0.9461	+1.0195	+1.0039	0.9931	0.9862	2.3353	10
11.22	+0.7943	**+1.1045**	**+11.2443**	0.9865	0.9732	**3.2539**	2
12.21	-2.4243	+1.0431	+1.8857	0.9912	0.9826	2.6885	10

APPENDIX Q

SUMMARY TABLES SHOWING THE RESULTS

OF THE LIMITS OF ACCEPTABILITY EVALUATION

BASED ON PERFORMING REGRESSION ANALYSES OF VARIOUS

COMBINATIONS OF BATCHES AND SERIES OF DICO TIRES

MOUNTED ON FOUR FRICTION FRICTION DEVICES

USING SELF WATER SYSTEM

AT SPEEDS OF 40 AND 60 MPH

TABLE Q - 1 LIMITS OF ACCEPTABILITY FOR THE RUNWAY FRICTION TESTER USING THE DICO TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	-0.8887	**+0.8766**	**-13.2287**	**0.9777**	**0.9559**	**3.4400**	0
11.12	-1.9117	+1.0711	**+5.1983**	0.9981	0.9962	1.1884	5
21.22	**+3.2390**	+0.9985	+3.0890	0.9941	0.9883	1.8006	5
11.21	**-3.2387**	**+0.9055**	**-12.6887**	0.9801	0.9606	**3.2822**	2
12.22	+1.4004	**+0.8508**	**-13.5196**	0.9840	0.9683	2.9592	5
11.22	-0.2710	**+0.9118**	**-9.0910**	0.9837	0.9676	2.9921	5
12.21	-1.6411	**+0.8459**	**-17.0511**	0.9827	0.9656	**3.0674**	2

TABLE Q - 2 LIMITS OF ACCEPTABILITY FOR THE RUNWAY FRICTION TESTER USING THE DICO TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	-0.0747	**+0.8722**	**-12.8547**	0.9913	0.9826	1.9490	30
11.12	-2.1949	+1.0753	**+5.3351**	0.9978	0.9956	1.1705	5
21.22	+0.3124	+1.0286	+3.1724	0.9940	0.9880	1.5917	10
11.21	-1.1414	**+0.9146**	**-9.6814**	0.9883	0.9767	2.3271	5
12.22	+1.4511	**+0.8380**	**-14.7489**	0.9891	0.9783	2.1496	5
11.22	-0.3507	**+0.9000**	**-10.3507**	0.9887	0.9775	2.1875	5
12.21	+0.6591	**+0.8403**	**-15.3109**	0.9930	0.9860	1.7783	5

TABLE Q - 3 LIMITS OF ACCEPTABILITY FOR THE SAAB FRICTION TESTER USING THE DICO TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	**-4.9893**	+1.0167	-3.3193	**0.9795**	**0.9593**	**5.1880**	0
11.12	-0.0620	+0.9949	-0.5720	0.9965	0.9931	2.0994	10
21.22	**-3.5310**	+1.0259	-0.9410	0.9912	0.9825	**3.5204**	2
11.21	**-3.2921**	+1.0031	-2.9821	0.9855	0.9711	**4.3671**	2
12.22	**-6.6638**	+1.0298	-3.6838	**0.9759**	**0.9525**	**5.7993**	0
11.22	**-6.8381**	+1.0273	-3.1081	**0.9751**	**0.9509**	**5.8936**	0
12.21	-2.8762	+1.0002	-2.8562	0.9830	0.9663	**4.7112**	7

TABLE Q - 4 LIMITS OF ACCEPTABILITY FOR THE SAAB FRICTION TESTER USING THE DICO TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	**-6.6984**	**+1.1314**	**+6.4416**	**0.9684**	**0.9379**	**5.5747**	0
11.12	+0.0608	+0.9567	-4.2692	0.9920	0.9841	2.4114	10
21.22	**-3.9389**	+0.9610	**-7.8389**	0.9823	0.9650	**4.1862**	2
11.21	**-5.0055**	**+1.1368**	**+8.6745**	0.9857	0.9716	**3.8512**	2
12.22	**-8.2248**	**+1.1195**	+3.7252	**0.9569**	**0.9156**	**6.4966**	0
11.22	**-8.5756**	**+1.0862**	+0.0444	**0.9627**	**0.9268**	**6.0506**	0
12.21	**-4.8475**	**+1.1796**	**+13.1125**	0.9864	0.9729	**3.7632**	2

TABLE Q - 5 LIMITS OF ACCEPTABILITY FOR THE SKIDDOMETER USING THE DICO TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	**-3.5875**	**+0.9105**	**-12.5375**	**0.9738**	**0.9482**	**5.2490**	0
11.12	-1.1122	**+0.8868**	**-12.4322**	0.9809	0.9623	**4.5914**	2
21.22	**-3.5186**	+0.9618	**-7.3386**	0.9921	0.9844	2.8735	5
11.21	-2.1497	**+0.8702**	**-14.1297**	**0.9599**	**0.9215**	**6.6413**	0
12.22	**-5.2178**	+0.9627	**-8.9478**	0.9903	0.9807	**3.1936**	2
11.22	**-5.8350**	**+0.8429**	**-21.5450**	**0.9591**	**0.9199**	**6.5003**	0
12.21	-1.5021	+0.9936	-2.1421	0.9908	0.9817	**3.2028**	7

TABLE Q - 6 LIMITS OF ACCEPTABILITY FOR THE SKIDDOMETER USING THE DICO TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	**-3.6261**	+0.9780	**-5.8261**	0.9902	0.9804	2.8927	30
11.12	+0.0277	**+0.8679**	**-13.1823**	0.9963	0.9926	1.6944	5
21.22	-1.9766	+0.9788	-4.0966	0.9986	0.9972	1.0991	10
11.21	-2.8115	+0.9289	**-9.9215**	0.9908	0.9817	2.8679	5
12.22	**-4.7775**	+1.0485	+0.0725	0.9939	0.9878	2.2963	5
11.22	**-4.7625**	**+0.9105**	**-13.7125**	0.9908	0.9816	2.8213	5
12.21	-2.8417	+1.0703	+4.1883	0.9945	0.9891	2.2174	10

TABLE Q - 7 LIMITS OF ACCEPTABILITY FOR THE MU METER USING THE DICO TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	-0.0473	+0.9579	-4.2573	0.9927	0.9854	2.5297	60
11.12	-1.3180	+1.0205	+0.7320	0.9969	0.9939	1.7512	10
21.22	-0.7523	+1.0179	+1.0377	0.9943	0.9886	2.3047	10
11.21	-0.0887	+0.9536	-4.7287	0.9882	0.9766	**3.2224**	7
12.22	-0.0052	+0.9622	-3.7852	0.9970	0.9941	1.6626	10
11.22	-1.3514	+0.9839	-2.9614	0.9960	0.9921	1.9229	10
12.21	+1.0929	+0.9358	**-5.3271**	0.9927	0.9854	2.5427	5

TABLE Q - 8 LIMITS OF ACCEPTABILITY FOR THE MU METER USING THE DICO TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	-0.2327	+0.9927	-0.9627	0.9949	0.9898	1.9363	60
11.12	-0.2366	+1.0377	+3.5334	0.9980	0.9960	1.2503	10
21.22	+2.1031	+0.9519	-2.7069	0.9886	0.9774	2.8687	10
11.21	-1.3074	+1.0311	+1.7926	0.9946	0.9891	2.0662	10
12.22	+1.2629	+0.9519	-3.5471	0.9928	0.9857	2.2784	10
11.22	+0.5879	+0.9924	-0.1721	0.9942	0.9884	2.0582	10
12.21	-0.9931	+0.9906	-1.9331	0.9934	0.9869	2.2709	10

APPENDIX R

SUMMARY TABLES SHOWING THE RESULTS

OF THE LIMITS OF ACCEPTABILITY EVALUATION

BASED ON PERFORMING REGRESSION ANALYSES OF VARIOUS

COMBINATIONS OF BATCHES AND SERIES OF DUNLOP TIRES

MOUNTED ON FOUR FRICTION FRICTION DEVICES

USING SELF WATER SYSTEM

AT SPEEDS OF 40 AND 60 MPH

TABLE R - 1 LIMITS OF ACCEPTABILITY FOR THE RUNWAY FRICTION TESTER USING THE DUNLOP TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2							
11.12	**+4.2630**	**+0.9147**	-4.2670	0.9970	0.9940	1.3966	5
21.22							
11.21							
12.22							
11.22							
12.21							

NOTE: BATCH 2 NOT ACQUIRED DUE TO ACCIDENTAL DAMAGE TO VEHICLE.

TABLE R - 2 LIMITS OF ACCEPTABILITY FOR THE RUNWAY FRICTION TESTER USING THE DUNLOP TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2							
11.12	+2.0622	+1.0038	+2.4422	0.9939	0.9878	1.9277	10
21.22							
11.21							
12.22							
11.22							
12.21							

NOTE: BATCH 2 NOT ACQUIRED DUE TO ACCIDENTAL DAMAGE TO VEHICLE.

TABLE R - 3 LIMITS OF ACCEPTABILITY FOR THE SAAB FRICTION TESTER USING THE DUNLOP TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	-2.5450	+0.9285	**-9.6950**	0.9852	0.9707	**4.7325**	12
11.12	-0.1230	+0.9403	**-6.0930**	0.9944	0.9889	**3.0543**	2
21.22	**+4.1199**	+0.9214	-3.7401	0.9860	0.9722	**4.5275**	2
11.21	**-4.9106**	+0.9388	**-11.0306**	0.9892	0.9785	**4.2653**	2
12.22	-0.5159	+0.9245	**-8.0659**	0.9858	0.9717	**4.5679**	2
11.22	-1.1546	**+0.8795**	**-13.2046**	0.9918	0.9836	**3.4820**	2
12.21	**-4.4891**	+0.9922	**-5.2691**	0.9886	0.9773	**4.3836**	2

TABLE R - 4 LIMITS OF ACCEPTABILITY FOR THE SAAB FRICTION TESTER USING THE DUNLOP TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	-1.8519	**+0.8940**	**-12.4519**	0.9934	0.9868	2.6650	30
11.12	-0.5554	+0.9617	-4.3854	0.9979	0.9958	1.6647	10
21.22	+1.2159	+1.0017	+1.3859	0.9975	0.9949	1.6884	10
11.21	-2.7855	**+0.8782**	**-14.9655**	0.9956	0.9911	2.2182	5
12.22	-1.0971	**+0.9157**	**-9.5271**	0.9961	0.9921	2.0976	5
11.22	-1.7282	**+0.8839**	**-13.3382**	0.9977	0.9955	1.5915	5
12.21	-2.1603	**+0.9099**	**-11.1703**	0.9939	0.9879	2.5887	5

TABLE R - 5 LIMITS OF ACCEPTABILITY FOR THE SKIDDOMETER USING THE DUNLOP TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	-0.3103	+0.9220	**-8.1103**	0.9824	0.9651	**4.9533**	12
11.12	-0.4923	+0.9430	**-6.1923**	0.9956	0.9912	2.6250	5
21.22	+0.0345	+1.0771	**+7.7445**	0.9918	0.9837	**3.5780**	2
11.21	-0.6586	**+0.8650**	**-14.1586**	0.9881	0.9763	**3.9737**	2
12.22	-0.7095	+0.9995	-0.7595	0.9958	0.9915	2.5764	10
11.22	-1.3666	+0.9459	**-6.7766**	0.9949	0.9899	2.8214	5
12.21	-0.3093	+0.9195	**-8.3593**	0.9949	0.9898	2.6020	5

TABLE R - 6   LIMITS OF ACCEPTABILITY FOR THE SKIDDOMETER USING THE DUNLOP TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	-1.1026	+0.9609	**-5.0126**	0.9904	0.9809	**3.3078**	12
11.12	-1.7457	+1.0312	+1.3743	0.9959	0.9919	2.2975	10
21.22	+2.0856	+1.0724	**+9.3256**	0.9960	0.9921	2.2375	5
11.21	-2.8445	+0.9407	**-8.7745**	0.9936	0.9872	2.6353	5
12.22	+0.6063	+0.9826	-1.1337	0.9979	0.9958	1.6194	10
11.22	-1.1863	+1.0155	+0.3637	0.9961	0.9923	2.2087	10
12.21	-1.2303	**+0.9117**	**-10.0603**	0.9969	0.9939	1.8245	5

TABLE R - 7 LIMITS OF ACCEPTABILITY FOR THE MU METER USING THE DUNLOP TIRE AT SPEED OF 40 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	**+3.7872**	+0.9424	-1.9728	**0.9771**	**0.9548**	**4.4304**	0
11.12	**+6.2365**	**+1.0962**	**+15.8565**	0.9850	0.9703	**3.9746**	2
21.22	+1.5733	+1.0015	+1.7233	0.9956	0.9912	1.9859	10
11.21	**+4.1824**	+1.0198	**+6.1624**	0.9967	0.9933	1.7329	5
12.22	+1.9317	**+0.8793**	**-10.1383**	0.9889	0.9778	**3.1496**	2
11.22	**+5.8719**	+1.0353	**+9.4019**	0.9959	0.9918	1.9193	5
12.21	-0.6881	**+0.9073**	**-9.9581**	0.9867	0.9736	**3.4411**	2

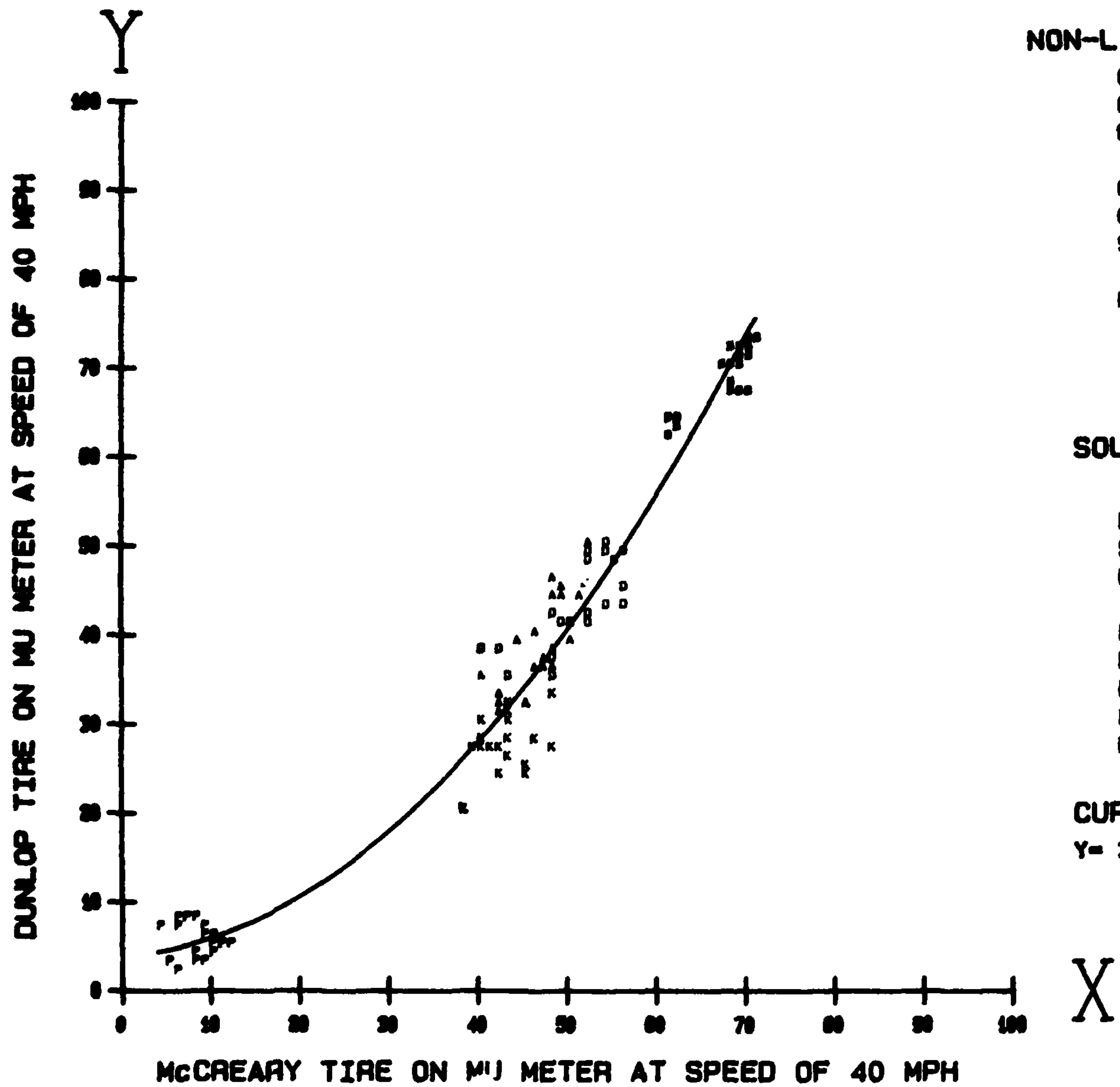
TABLE R - 8 LIMITS OF ACCEPTABILITY FOR THE MU METER USING THE DUNLOP TIRE AT SPEED OF 60 MPH

TIRE CODE BATCH SERIES	SI X = 0 ± 3	S X = Y +0.9200 TO +1.0800	SI X = 100 ± 5	CC >0.9800	CD >0.9604	SEE ± 3	ACCRUED POINT PER CATEGORY IN TIRE PERFORMANCE EVALUATION
1.2	**+3.1151**	+0.9906	+2.1751	**0.9593**	**0.9203**	**5.4259**	0
11.12	**+6.9232**	**+1.1642**	**+23.3432**	**0.9793**	**0.9591**	**4.3367**	0
21.22	+1.7144	+0.9768	-0.6056	0.9928	0.9857	2.1886	10
11.21	**+4.1472**	**+1.0975**	**+13.8972**	0.9900	0.9801	2.8216	5
12.22	+0.3002	**+0.8783**	**-11.8698**	0.9889	0.9780	2.7156	5
11.22	**+4.6868**	**+1.1017**	**+14.8568**	0.9836	0.9676	**3.2942**	2
12.21	-1.7551	+0.9224	**-9.5151**	0.9890	0.9782	2.9517	5

APPENDIX S

REGRESSION ANALYSIS CHARTS
SHOWING GRAPHIC PRESENTATION
OF THE CORRELATION BETWEEN
FOUR FRICTION FRICTION DEVICES
MOUNTED WITH THE McCREARY TIRE
USING SELF WATER SYSTEM
AT SPEEDS OF 40 AND 60 MPH

McCREARY/DUNLOP TIRE ON MU METER AT SPEED OF 40 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	3.8726
COEFFICIENT B	=	0.0779
COEFFICIENT C	=	0.0131
COEF. OF CORR.	=	0.9810
COEF. OF DET.	=	0.9623
STD. ERR. EST.	=	4.1356

REGRESSION LINE = ______

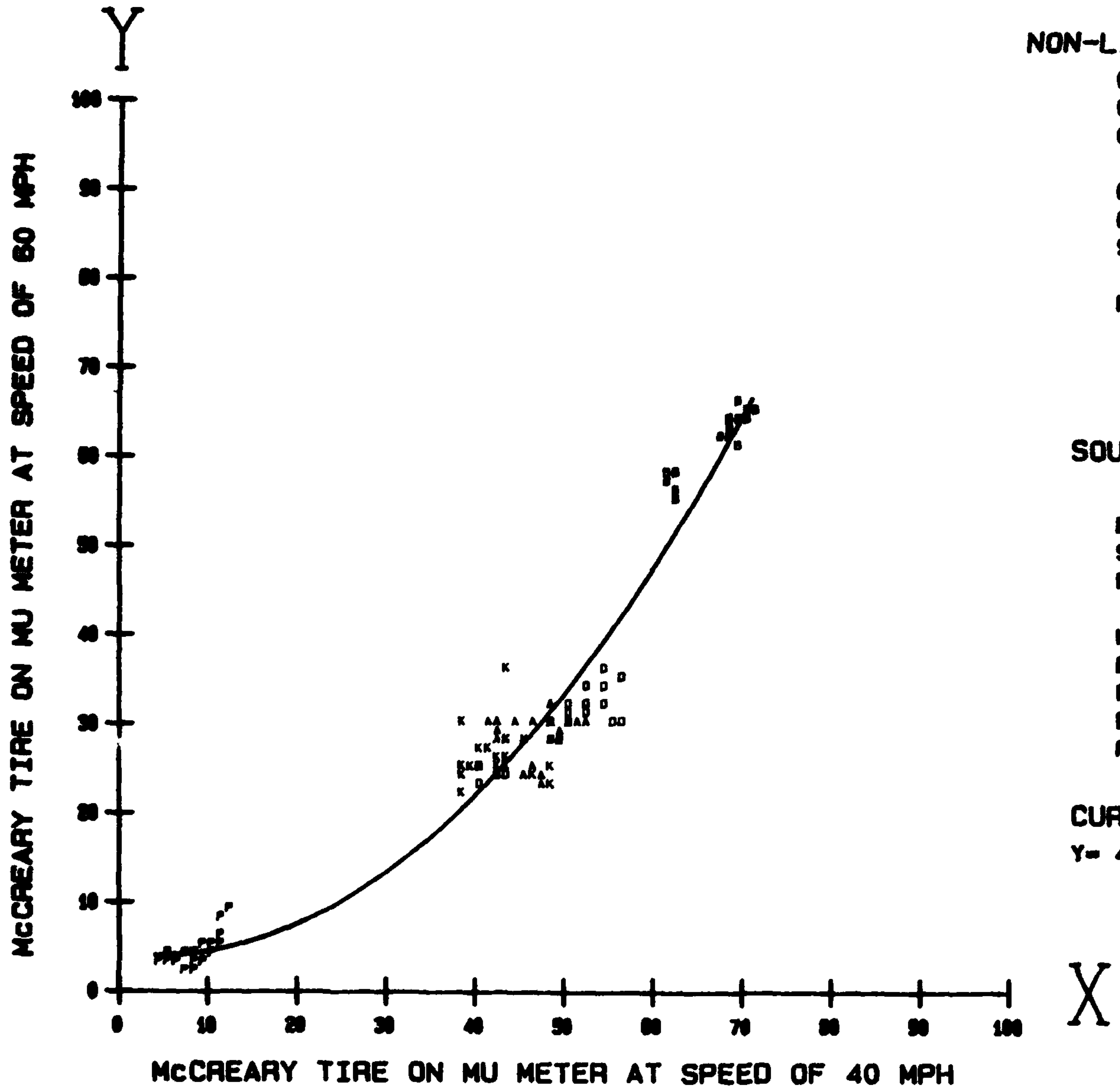
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUMMAC.DUN
NUMBER OF POINTS	:	111
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 71
RANGE OF DATA	:	2 TO 73

CURVE TYPE : POLYNOMIAL

Y= 3.873+0.078X+0.013X^2

McCREARY TIRE ON MU METER AT SPEEDS OF 40 AND 60 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	4.3028
COEFFICIENT B	=	-0.1120
COEFFICIENT C	=	0.0139
COEF. OF CORR.	=	0.9772
COEF. OF DET.	=	0.9549
STD. ERR. EST.	=	4.0182

REGRESSION LINE = ______

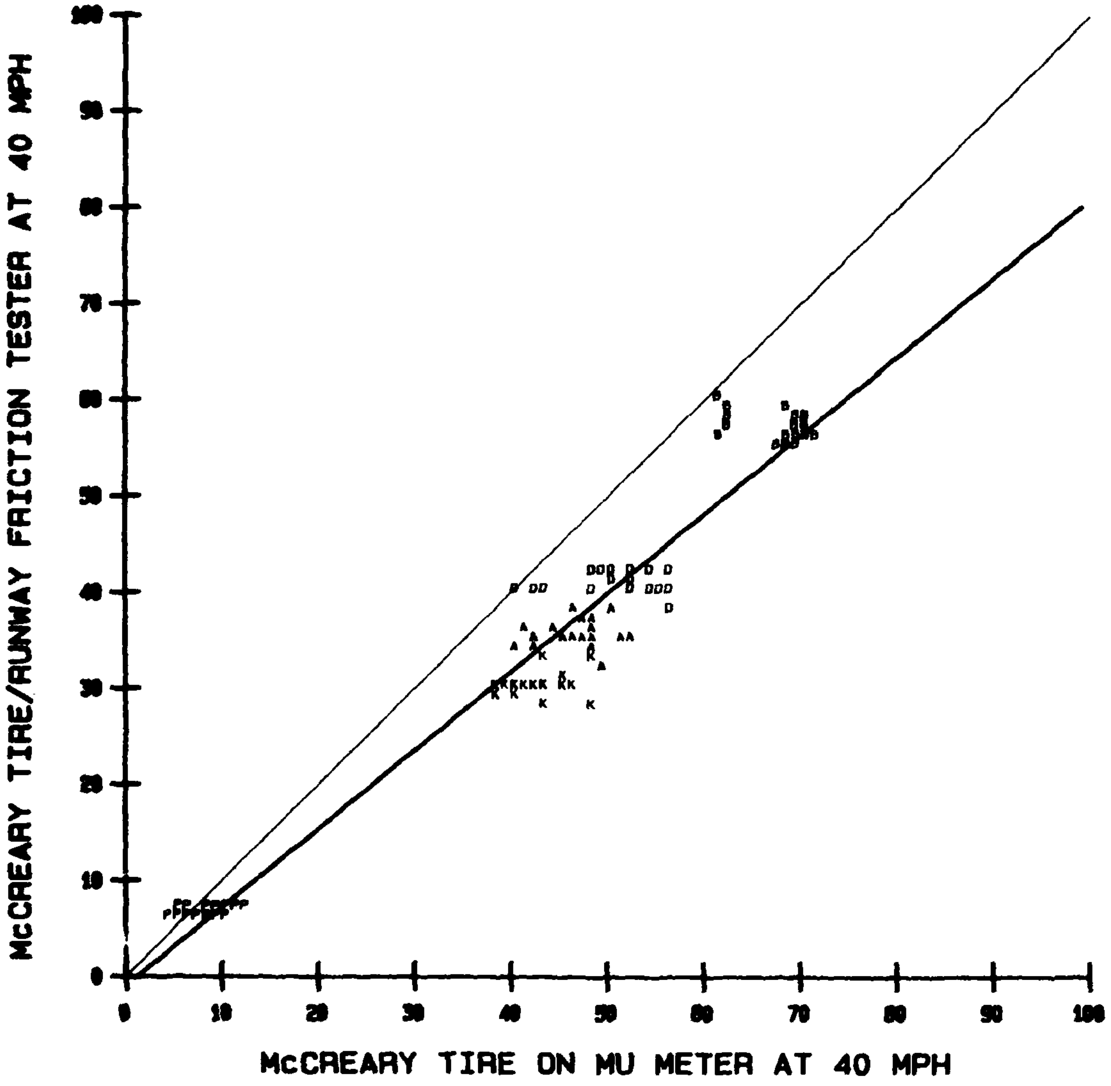
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUM60.MAC
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 71
RANGE OF DATA	:	2 TO 66

CURVE TYPE : POLYNOMIAL

Y= 4.303+0.112X+0.014X^2

McCREARY TIRE ON MU METER/RUNWAY FRICTION TESTER AT 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.0196
COEFFICIENT B	=	0.8186
COEF. OF CORR.	=	0.9752
COEF. OF DET.	=	0.9510
STD. ERR. EST.	=	3.6612

REGRESSION LINE = ————
X - Y LINE = ————

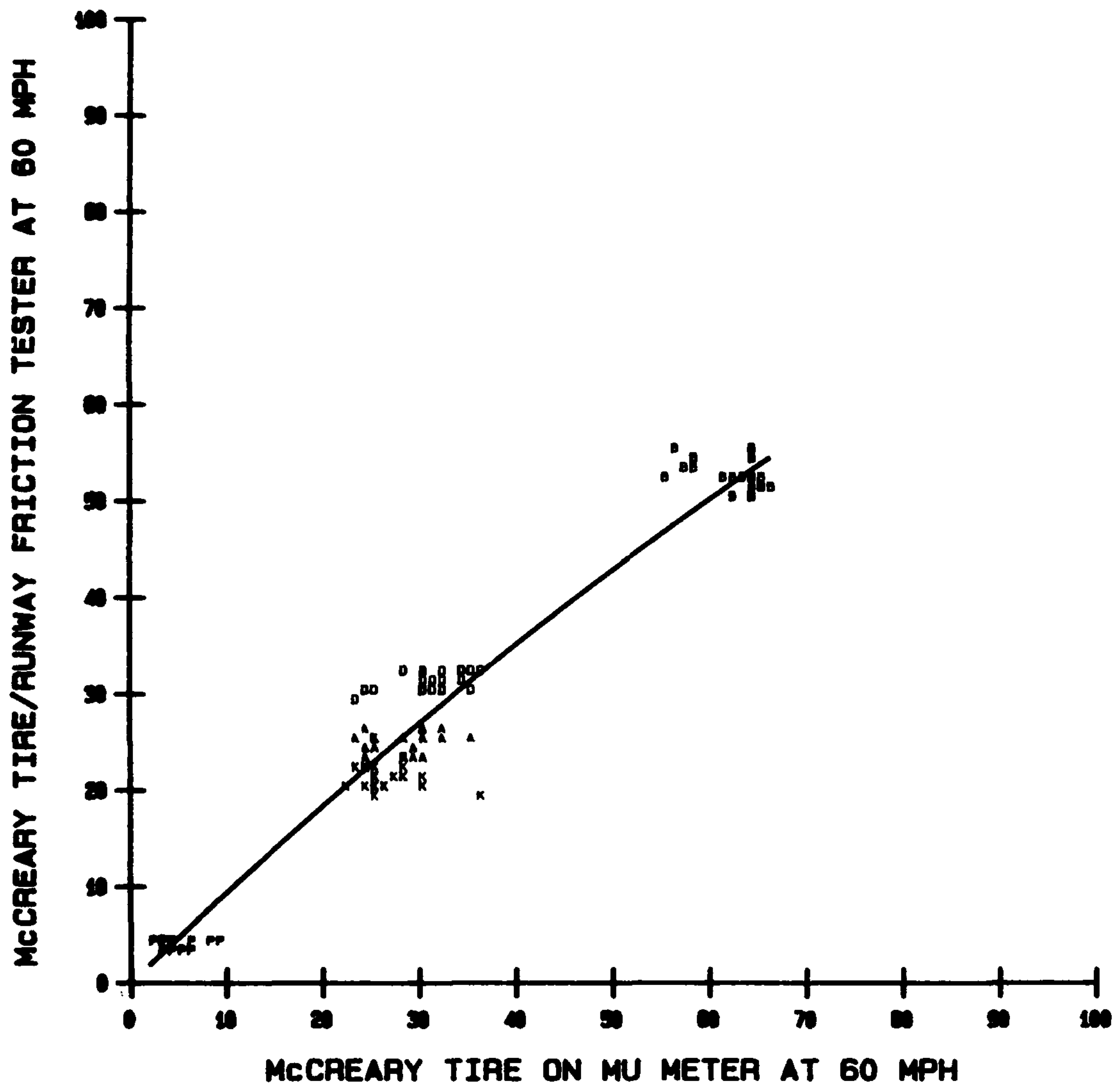
SOURCE DATA FILE INFO

DISK DRIVE	: B:
SUBDIRECTORY	: \
FILENAME	: 40MUNRFT.MAC
NUMBER OF POINTS	: 120
DOMAIN OF PLOT	: 0 TO 100
RANGE OF PLOT	: 0 TO 100
DOMAIN OF DATA	: 4 TO 71
RANGE OF DATA	: 6 TO 60

CURVE TYPE : LINEAR

Y = - 1.02 + 0.819X

McCREARY TIRE ON MU METER/RUNWAY FRICTION TESTER AT 60 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.0008
COEFFICIENT B	=	0.9853
COEFFICIENT C	=	-0.0021
COEF. OF CORR.	=	0.9762
COEF. OF DET.	=	0.9529
STD. ERR. EST.	=	3.4449

REGRESSION LINE = ______

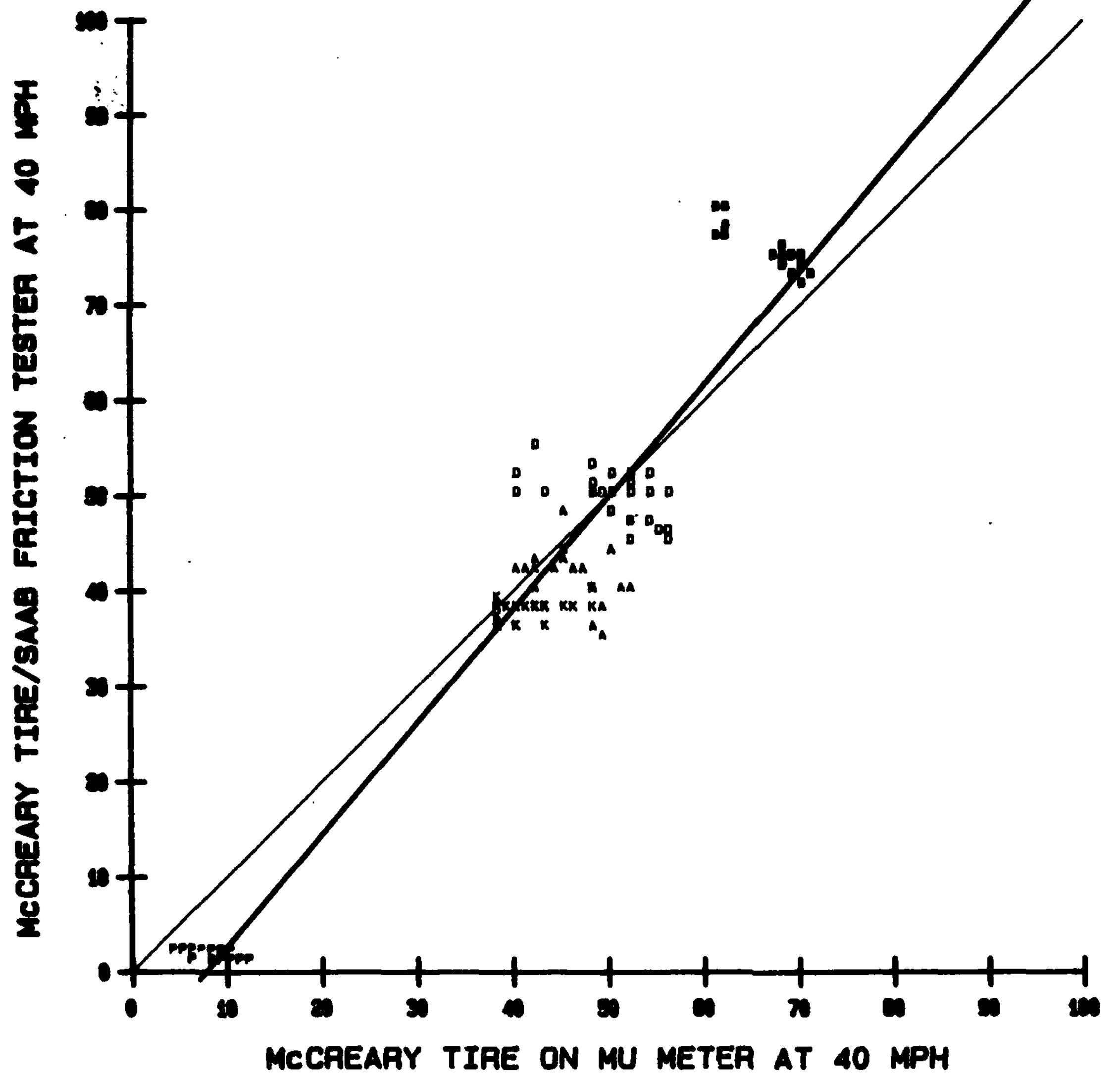
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMRFT.MAC
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 66
RANGE OF DATA	:	3 TO 55

CURVE TYPE : POLYNOMIAL

Y=- 0.001+0.985X+0.002X^2

McCREARY TIRE ON MU METER/SAAB FRICTION TESTER AT 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A = -9.1162
COEFFICIENT B = 1.1797

COEF. OF CORR. = 0.9679
COEF. OF DET. = 0.9368
STD. ERR. EST. = 6.0374

REGRESSION LINE = ———
X - Y LINE = ———

SOURCE DATA FILE INFO

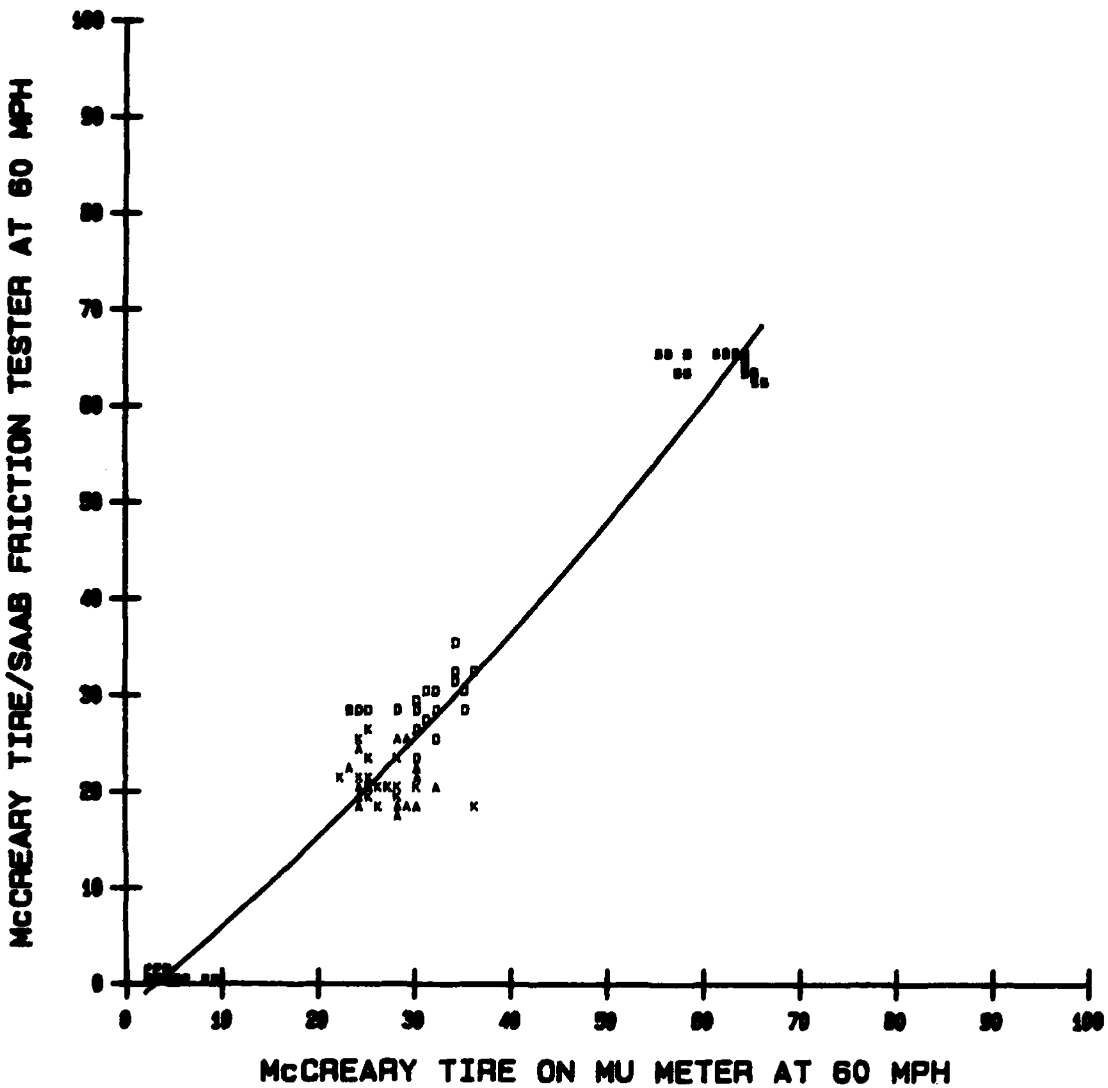
DISK DRIVE : B:
SUBDIRECTORY : \
FILENAME : 40MUMSFT.MAC

NUMBER OF POINTS : 120
DOMAIN OF PLOT : 0 TO 100
RANGE OF PLOT : 0 TO 100
DOMAIN OF DATA : 4 TO 71
RANGE OF DATA : 1 TO 80

CURVE TYPE : LINEAR

Y = - 9.116 + 1.18X

McCREARY TIRE ON MU METER/SAAB FRICTION TESTER AT 60 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-2.8108
COEFFICIENT B	=	0.8164
COEFFICIENT C	=	0.0039
COEF. OF CORR.	=	0.9799
COEF. OF DET.	=	0.9603
STD. ERR. EST.	=	4.1933

REGRESSION LINE = ______

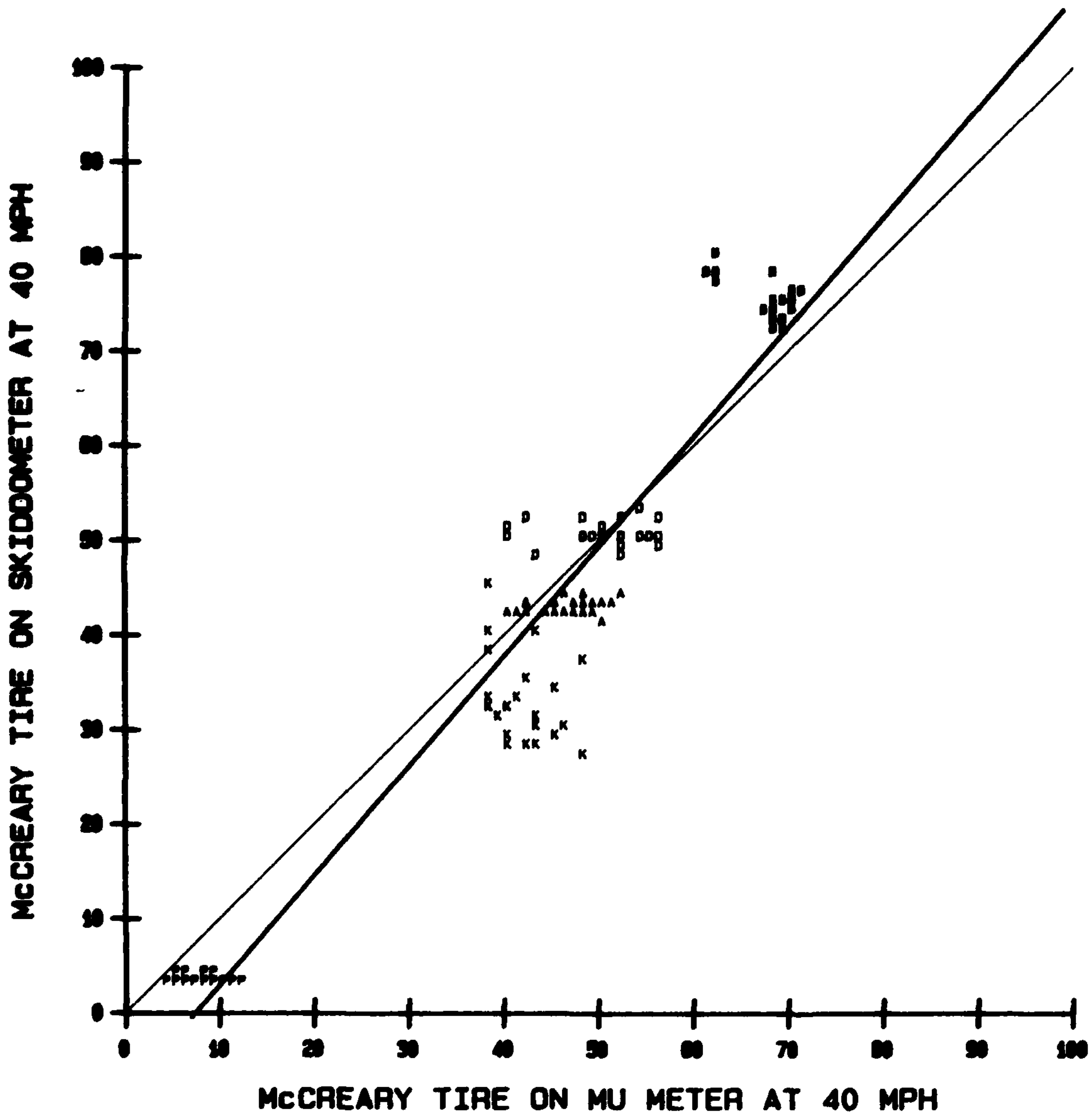
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMSFT.MAC
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 66
RANGE OF DATA	:	0 TO 65

CURVE TYPE : POLYNOMIAL

Y=- 2.811+0.816X+0.004X^2

McCREARY TIRE ON MU METER/SKIDDOMETER AT 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-8.5669
COEFFICIENT B	=	1.1586
COEF. OF CORR.	=	0.9594
COEF. OF DET.	=	0.9204
STD. ERR. EST.	=	6.7166

REGRESSION LINE = ______

X - Y LINE = ______

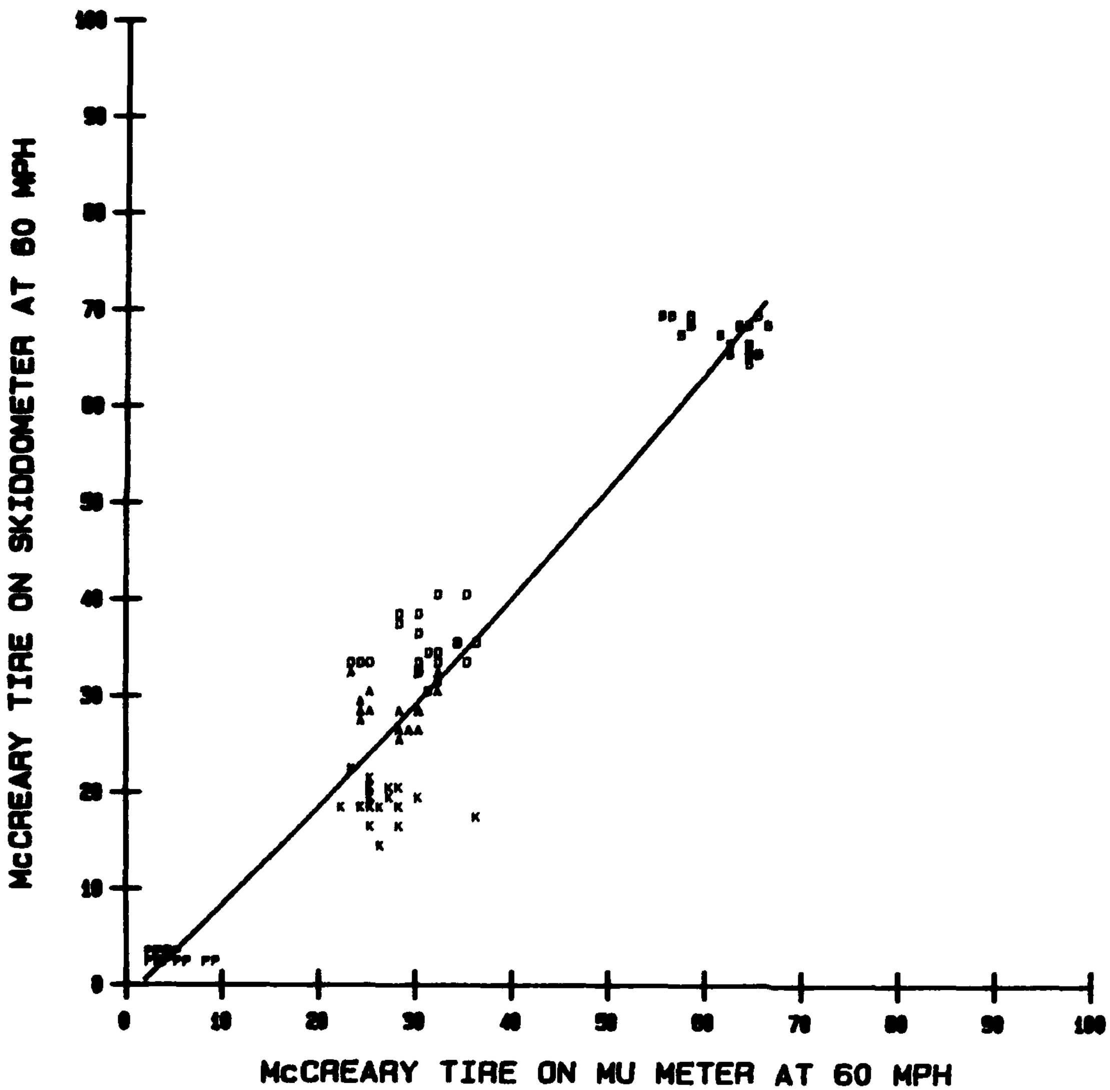
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUMSKD.MAC
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	4 TO 71
RANGE OF DATA	:	3 TO 80

CURVE TYPE : LINEAR

Y = - 8.567 + 1.159X

McCREARY TIRE ON MU METER/SKIDDOMETER AT 60 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.3518
COEFFICIENT B	=	0.9504
COEFFICIENT C	=	0.0022
COEF. OF CORR.	=	0.9693
COEF. OF DET.	=	0.9396
STD. ERR. EST.	=	5.2838

REGRESSION LINE = ______

SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMSKD.MAC
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 66
RANGE OF DATA	:	2 TO 69

CURVE TYPE : POLYNOMIAL

$Y = -1.352 + 0.95X + 0.002X^2$

APPENDIX T

REGRESSION ANALYSIS CHARTS

SHOWING GRAPHIC PRESENTATION

OF THE CORRELATION BETWEEN

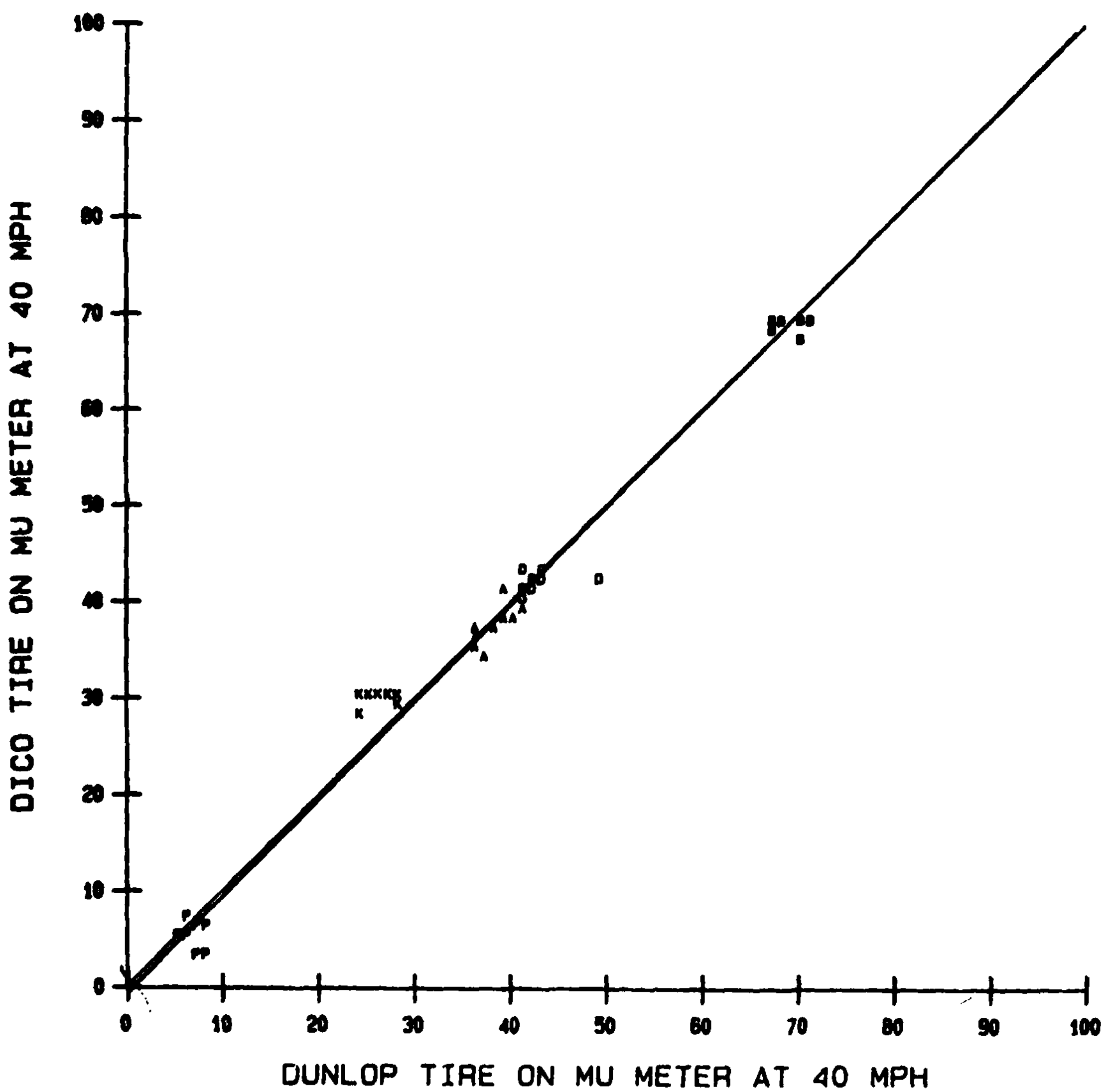
FOUR FRICTION FRICTION DEVICES

MOUNTED WITH THE McCREARY/DICO TIRE

USING SELF WATER SYSTEM

AT SPEEDS OF 40 AND 60 MPH

DUNLOP/DICO TIRE ON MU METER AT 40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.6210
COEFFICIENT B	=	1.0095
COEF. OF CORR.	=	0.9908
COEF. OF DET.	=	0.9816
STD. ERR. EST.	=	2.8666

REGRESSION LINE = ________

X - Y LINE = ________

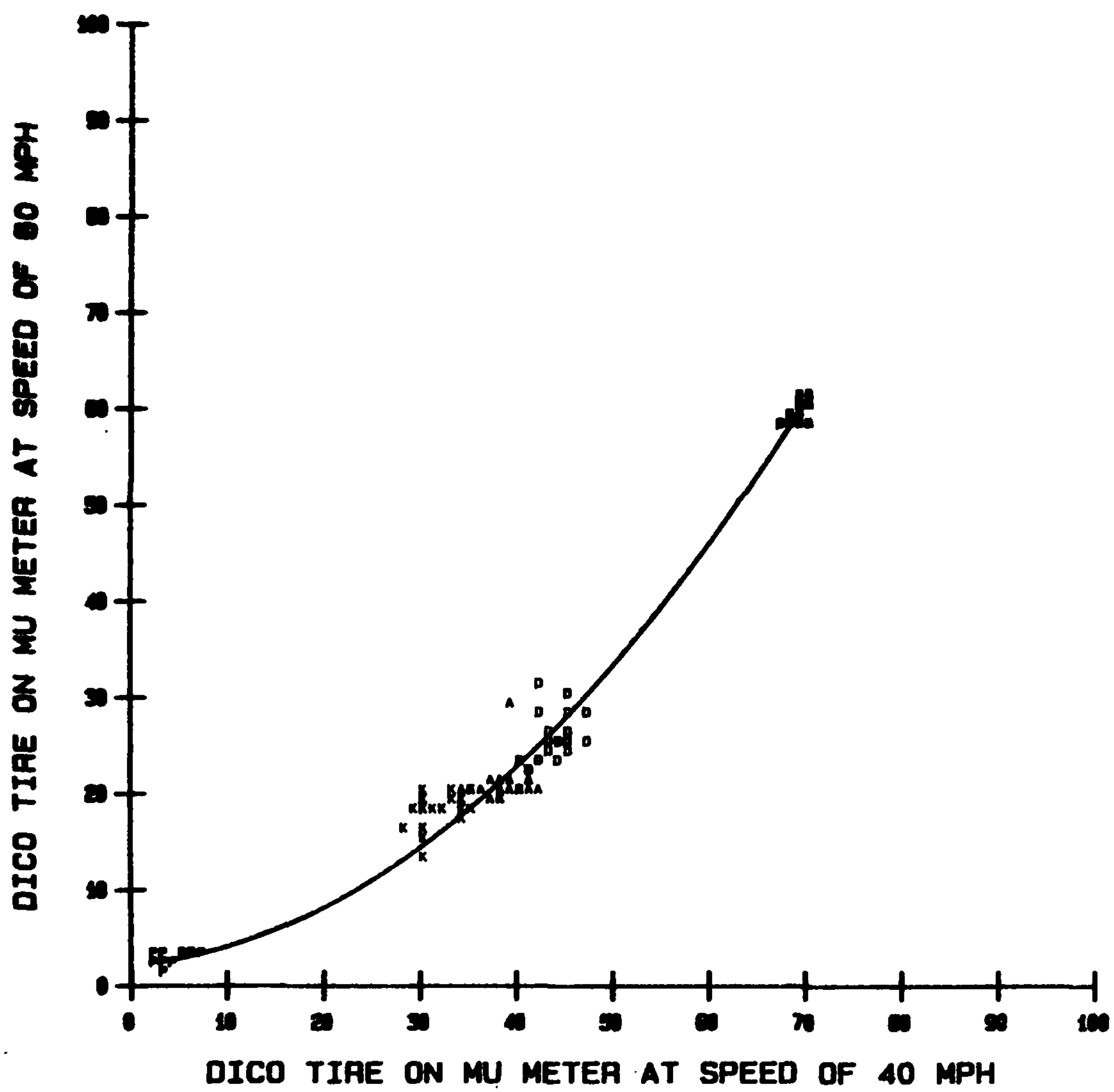
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40DUNMUM.DIK
NUMBER OF POINTS	:	51
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	5 TO 71
RANGE OF DATA	:	3 TO 69

CURVE TYPE : LINEAR

Y = - 0.621 + 1.01X

DICO TIRE ON MU METER AT SPEEDS OF 40 AND 60 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	2.1717
COEFFICIENT B	=	0.0878
COEFFICIENT C	=	0.0107
COEF. OF CORR.	=	0.9929
COEF. OF DET.	=	0.9859
STD. ERR. EST.	=	2.2521

REGRESSION LINE = ______

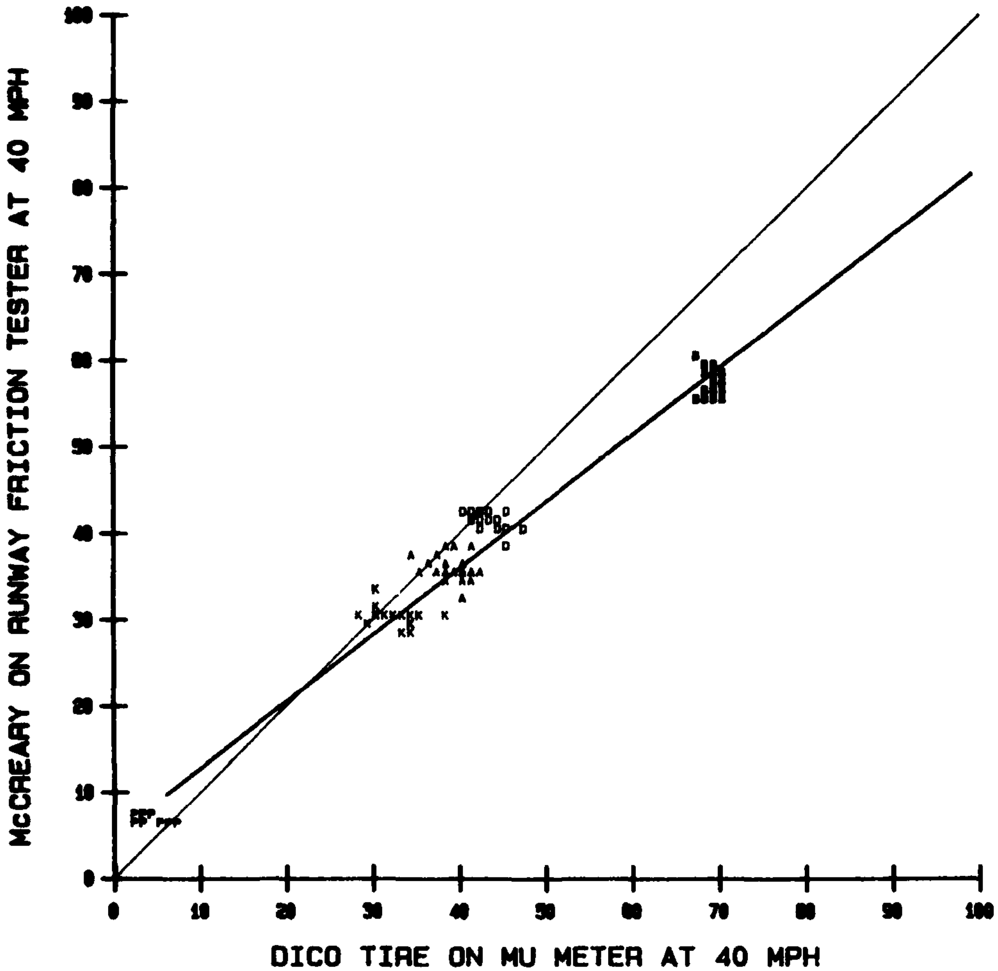
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MU60.DIK
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 70
RANGE OF DATA	:	1 TO 61

CURVE TYPE : POLYNOMIAL

Y= 2.172+0.088X+0.011X^2

DICO ON MU METER - McCREARY ON RUNWAY FRICTION TESTER/40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	5.1043
COEFFICIENT B	=	0.7721
COEF. OF CORR.	=	0.9881
COEF. OF DET.	=	0.9763
STD. ERR. EST.	=	2.5462
REGRESSION LINE	=	———
X - Y LINE	=	———

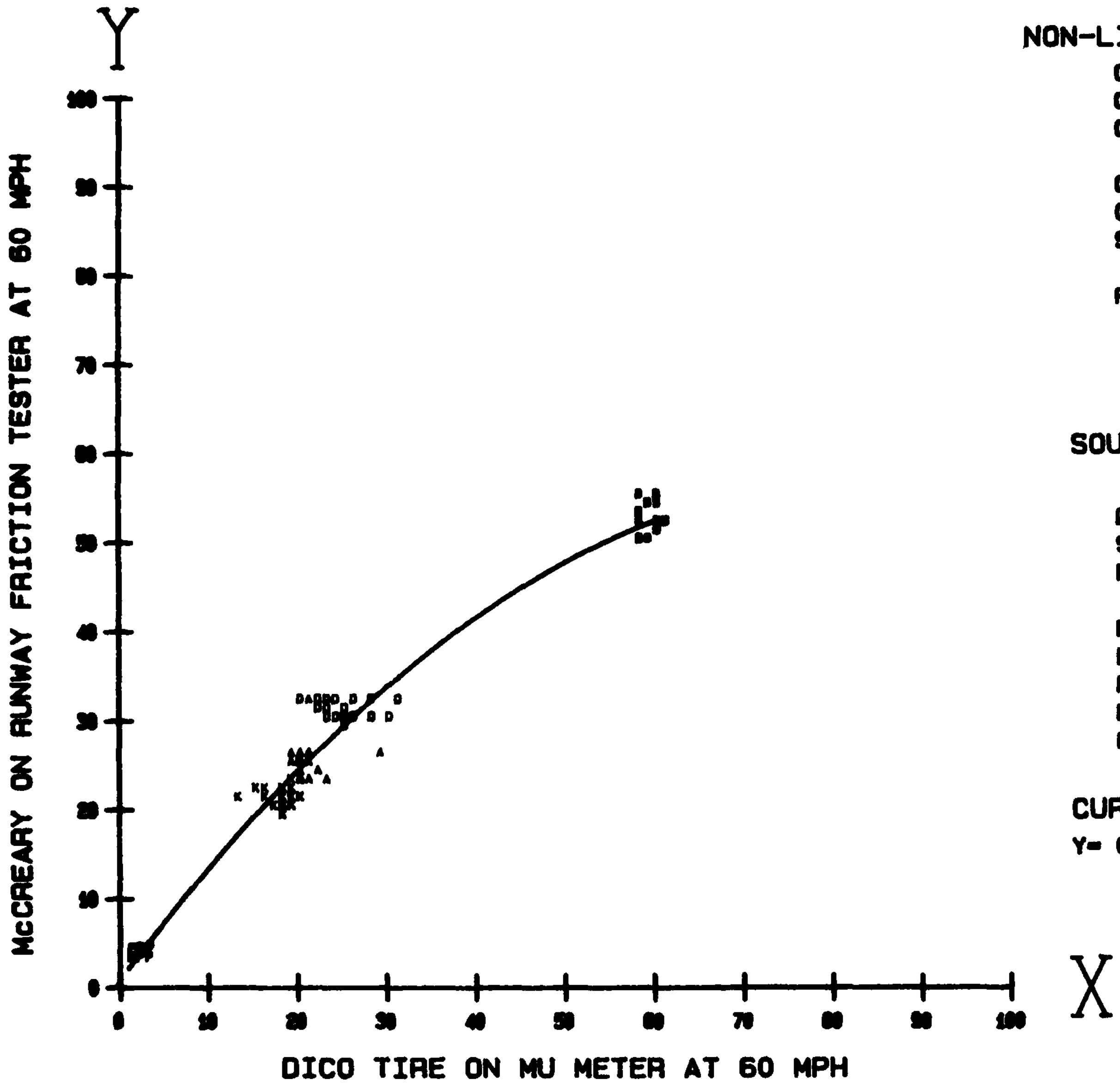
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	MUDKRFMC.40
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 70
RANGE OF DATA	:	1 TO 60

CURVE TYPE : LINEAR

Y = 5.104 + 0.772X

DICO ON MU METER - McCREARY ON RUNWAY FRICTION TESTER/60 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.7518
COEFFICIENT B	=	1.3431
COEFFICIENT C	=	-0.0080
COEF. OF CORR.	=	0.9894
COEF. OF DET.	=	0.9789
STD. ERR. EST.	=	2.3055

REGRESSION LINE = ______

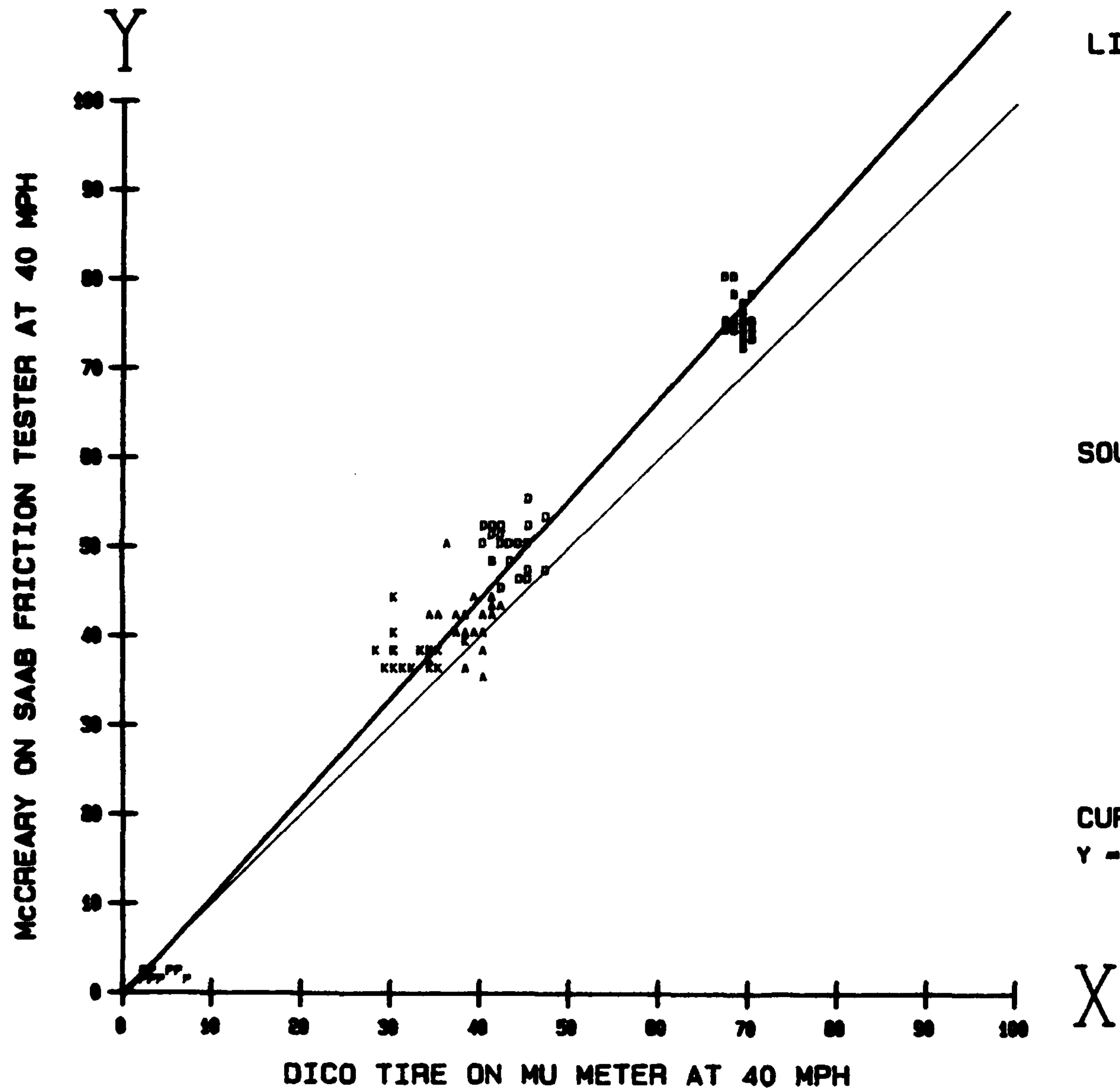
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	MUDKRFMC.60
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 61
RANGE OF DATA	:	3 TO 55

CURVE TYPE : POLYNOMIAL

Y= 0.752+1.343X+0.008X^2

DICO ON MU METER - McCREARY ON SAAB FRICTION TESTER/40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.8109
COEFFICIENT B	=	1.1213
COEF. OF CORR.	=	0.9883
COEF. OF DET.	=	0.9767
STD. ERR. EST.	=	3.8874

REGRESSION LINE = ______
X - Y LINE = ______

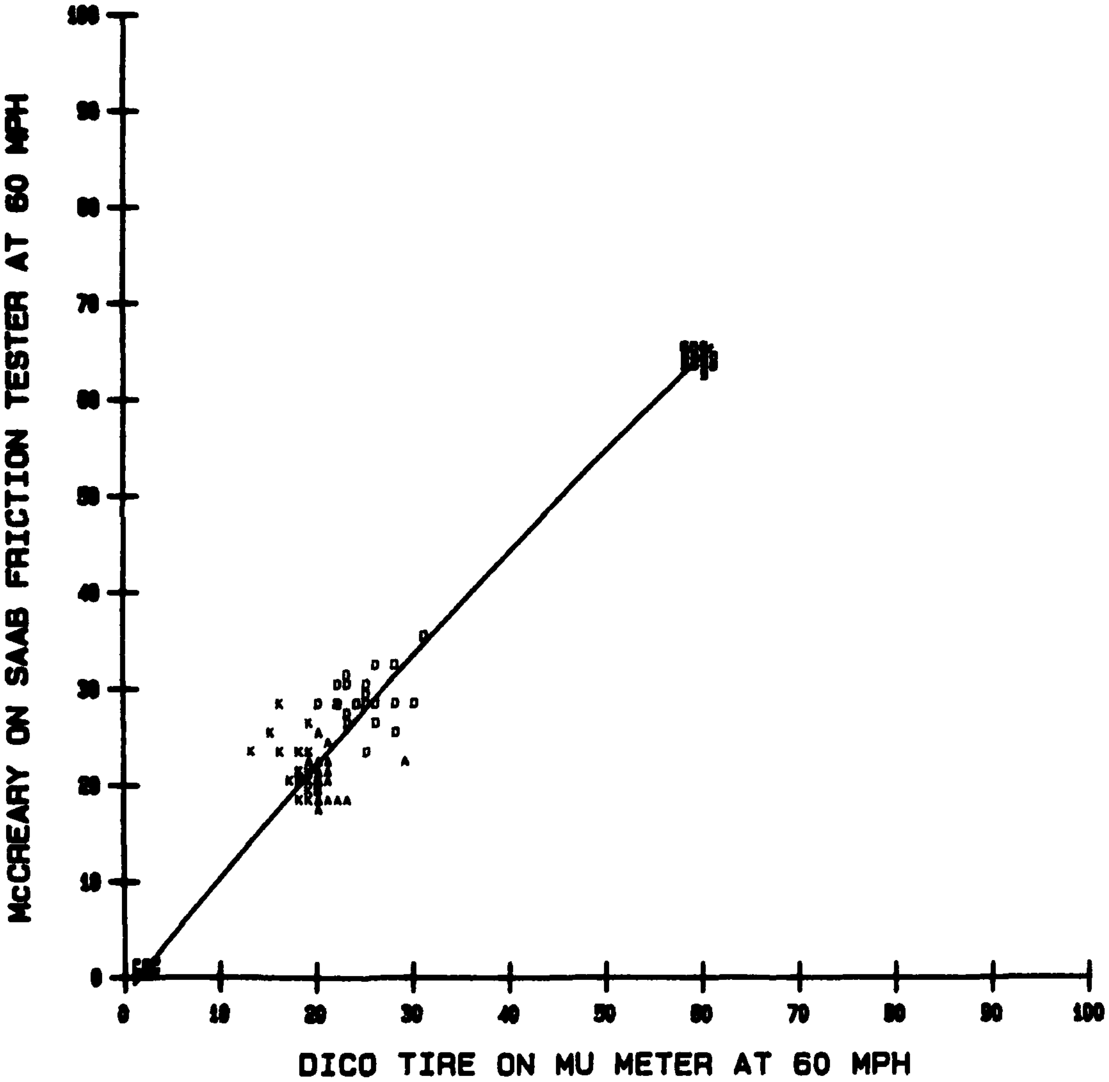
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	MUDKSFNC.40
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 70
RANGE OF DATA	:	1 TO 80

CURVE TYPE : LINEAR

Y = - 0.811 + 1.121X

DICO ON MU METER - McCREARY ON SAAB FRICTION TESTER/60 MPH



NON-LINEAR REGRESSION RESULTS

```
COEFFICIENT A    =   -1.8876
COEFFICIENT B    =    1.2368
COEFFICIENT C    =   -0.0022

COEF. OF CORR.   =   0.9889
COEF. OF DET.    =   0.9779
STD. ERR. EST.   =   3.1262

REGRESSION LINE = ________
```

SOURCE DATA FILE INFO

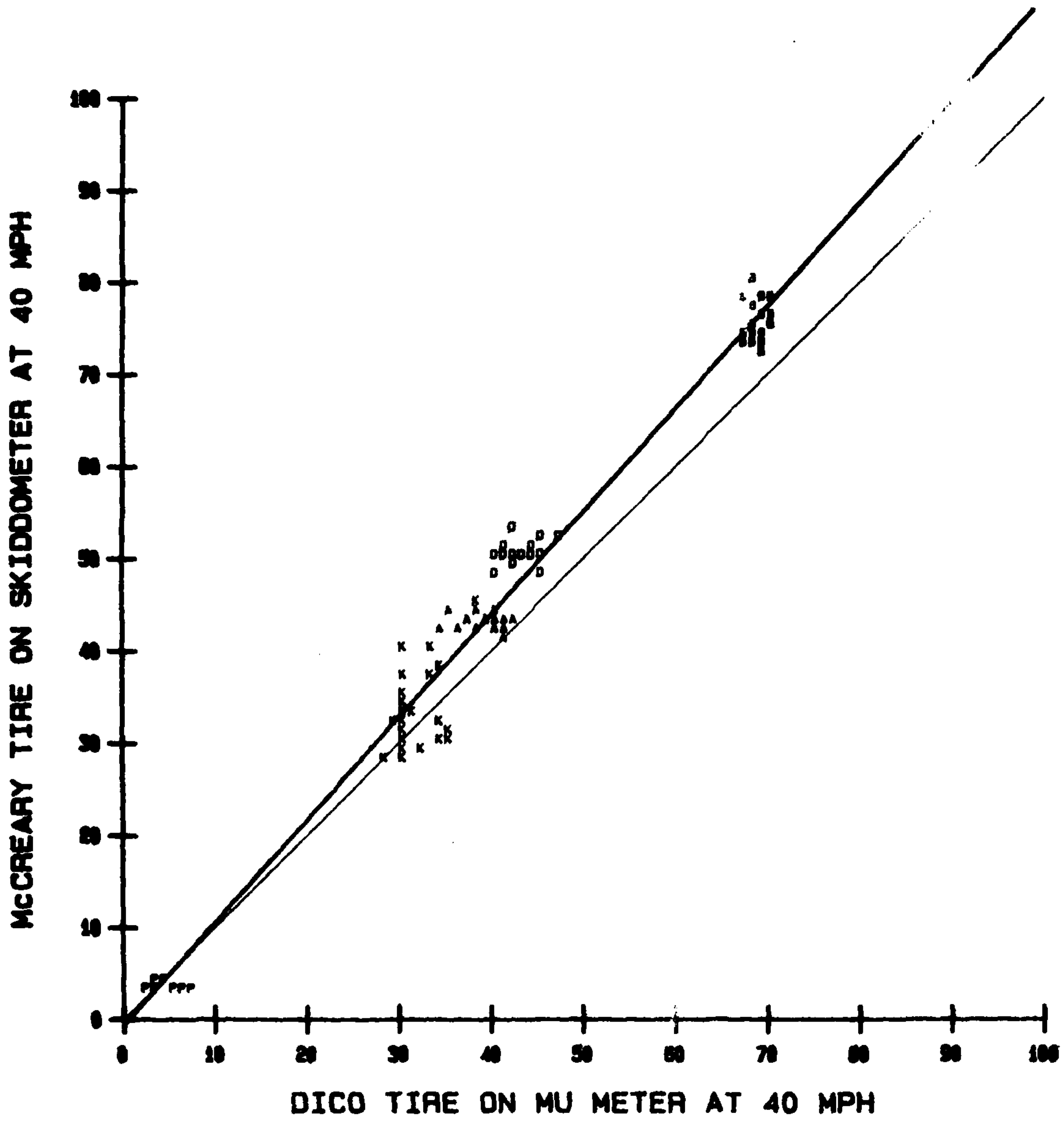
```
DISK DRIVE        : B:
SUBDIRECTORY      : \
FILENAME          : MUDKSFMC.60

NUMBER OF POINTS  : 120
DOMAIN OF PLOT    : 0  TO  100
RANGE  OF PLOT    : 0  TO  100
DOMAIN OF DATA    : 1  TO  61
RANGE  OF DATA    : 0  TO  65
```

CURVE TYPE : POLYNOMIAL

Y=- 1.888+1.237X+0.002X^2

DICO ON MU METER - McCREARY ON SKIDDOMETER/40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.5894
COEFFICIENT B	=	1.1136
COEF. OF CORR.	=	0.9918
COEF. OF DET.	=	0.9837
STD. ERR. EST.	=	3.0321

REGRESSION LINE = ———

X - Y LINE = ———

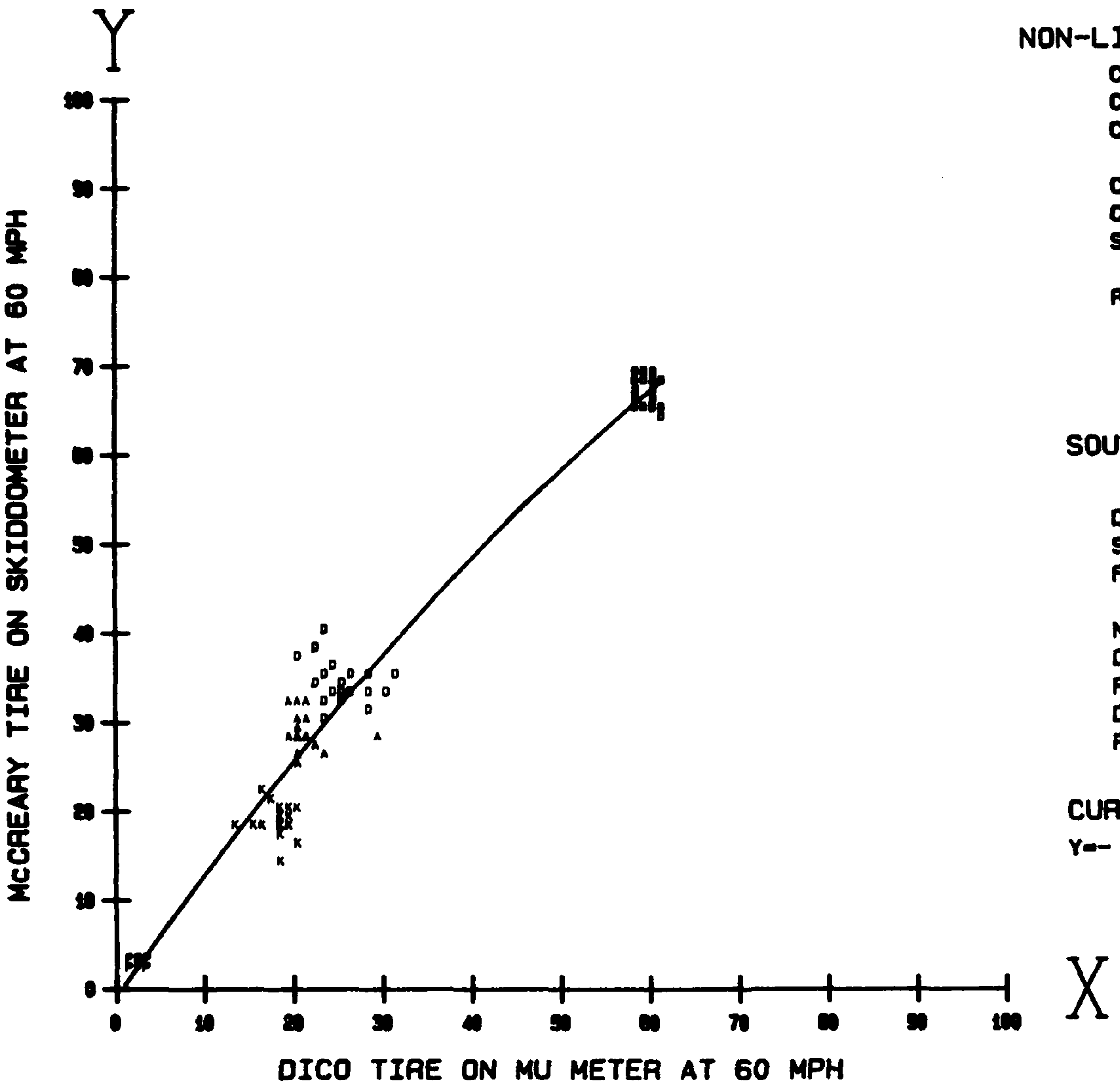
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	MUDKSKMC.40
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 70
RANGE OF DATA	:	3 TO 80

CURVE TYPE : LINEAR

Y = - 0.589 + 1.114X

DICO ON MU METER - McCREARY ON SKIDDOMETER/60 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.9254
COEFFICIENT B	=	1.4294
COEFFICIENT C	=	-0.0049
COEF. OF CORR.	=	0.9830
COEF. OF DET.	=	0.9662
STD. ERR. EST.	=	3.9503

REGRESSION LINE = ______

SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	MUDKSKMC.60
NUMBER OF POINTS	:	120
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	1 TO 61
RANGE OF DATA	:	2 TO 69

CURVE TYPE : POLYNOMIAL

$Y=-0.925+1.429X+0.005X^2$

APPENDIX U

REGRESSION ANALYSIS CHARTS

SHOWING GRAPHIC PRESENTATION

OF THE CORRELATION BETWEEN

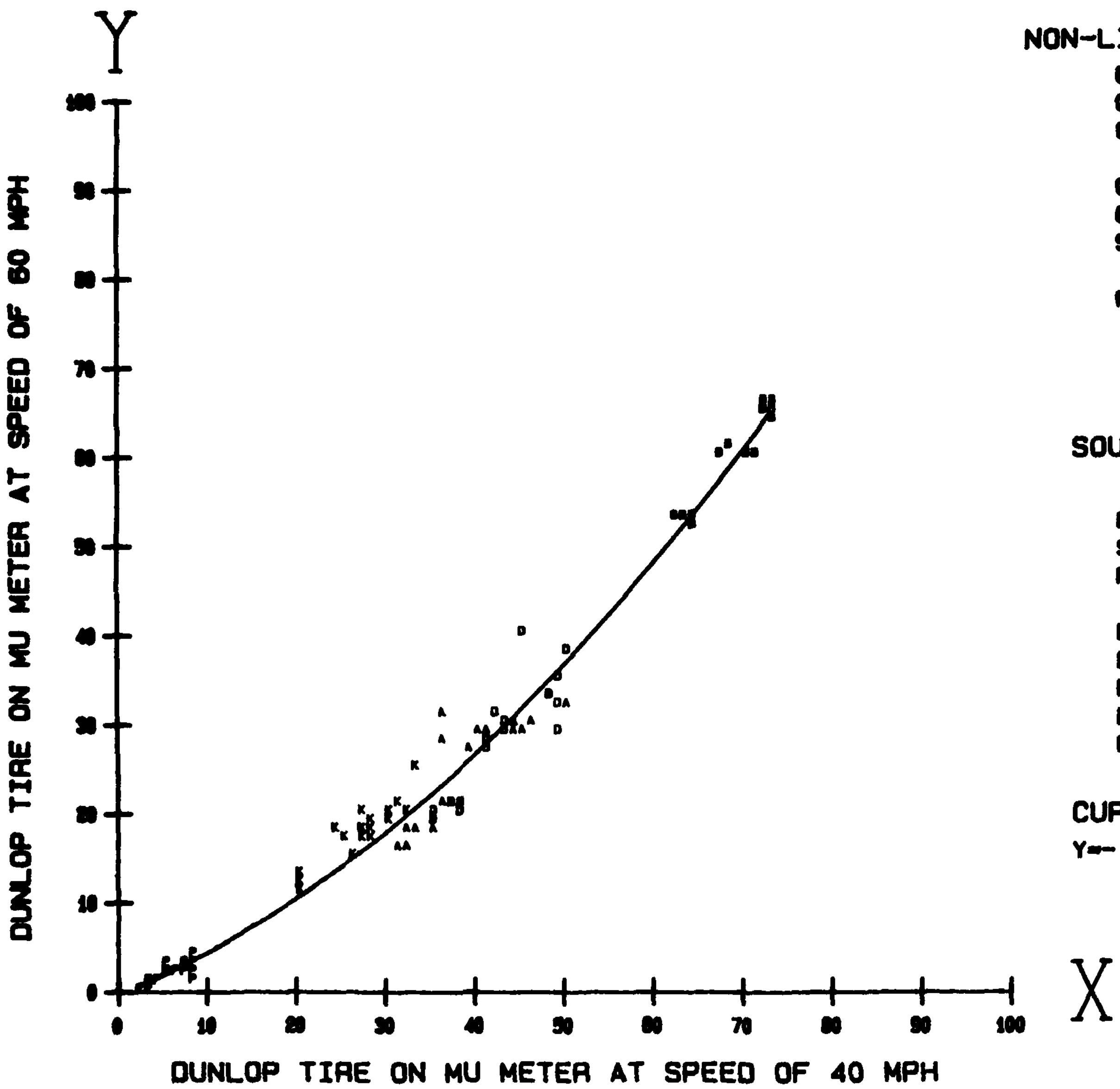
FOUR FRICTION FRICTION DEVICES

MOUNTED WITH THE DUNLOP TIRE

USING SELF WATER SYSTEM

AT SPEEDS OF 40 AND 60 MPH

DUNLOP TIRE ON MU METER AT SPEEDS OF 40 AND 60 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-0.2885
COEFFICIENT B	=	0.4105
COEFFICIENT C	=	0.0066
COEF. OF CORR.	=	0.9916
COEF. OF DET.	=	0.9832
STD. ERR. EST.	=	2.5355

REGRESSION LINE = ______

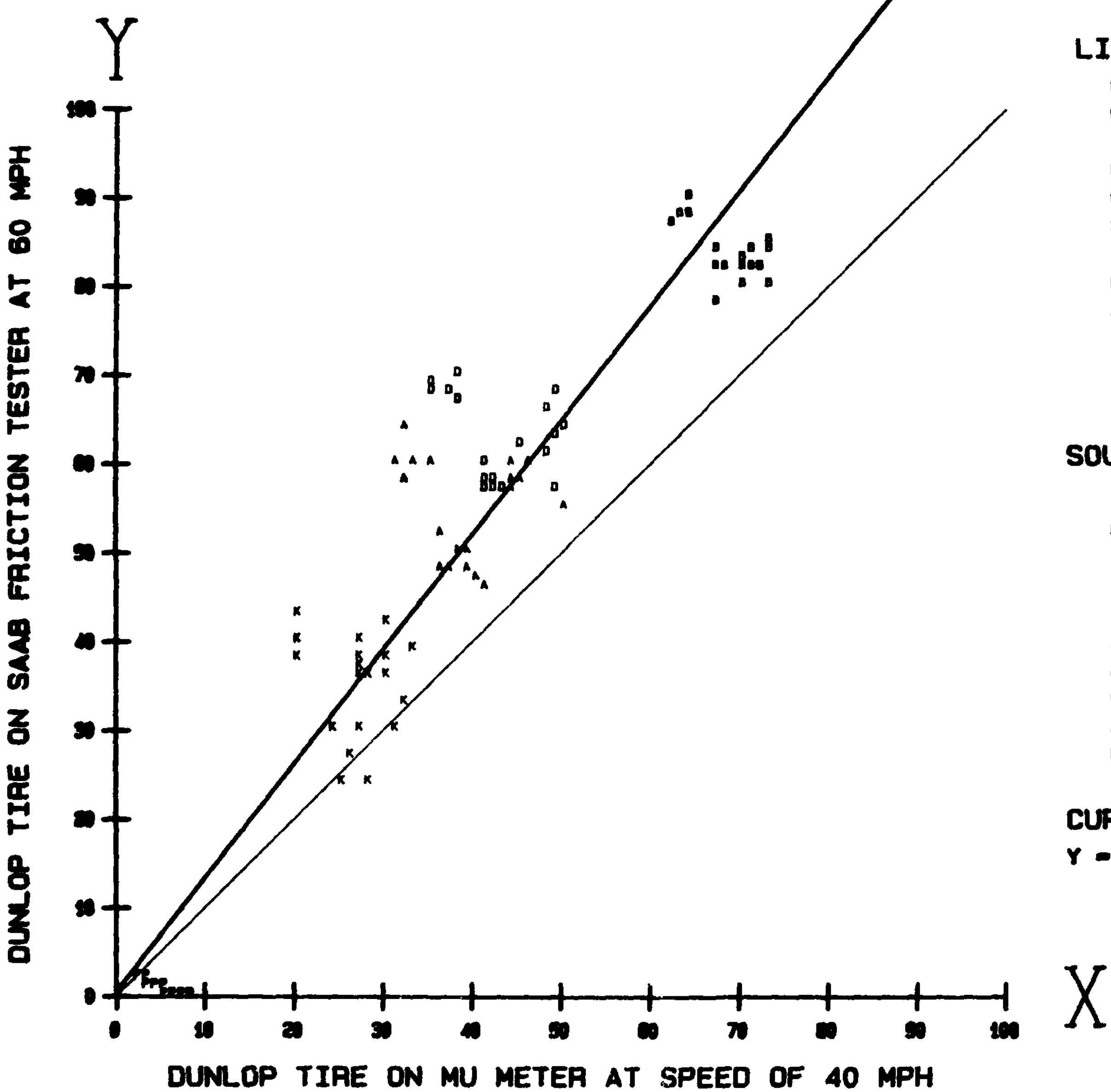
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUM60.DUN
NUMBER OF POINTS	:	108
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 73
RANGE OF DATA	:	0 TO 66

CURVE TYPE : POLYNOMIAL

Y=- 0.289+0.411X+0.007X^2

DUNLOP ON MU METER - DUNLOP ON SAAB FRICTION TESTER/40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.4883
COEFFICIENT B	=	1.2891
COEF. OF CORR.	=	0.9468
COEF. OF DET.	=	0.8964
STD. ERR. EST.	=	9.3383

REGRESSION LINE = ______

X - Y LINE = ______

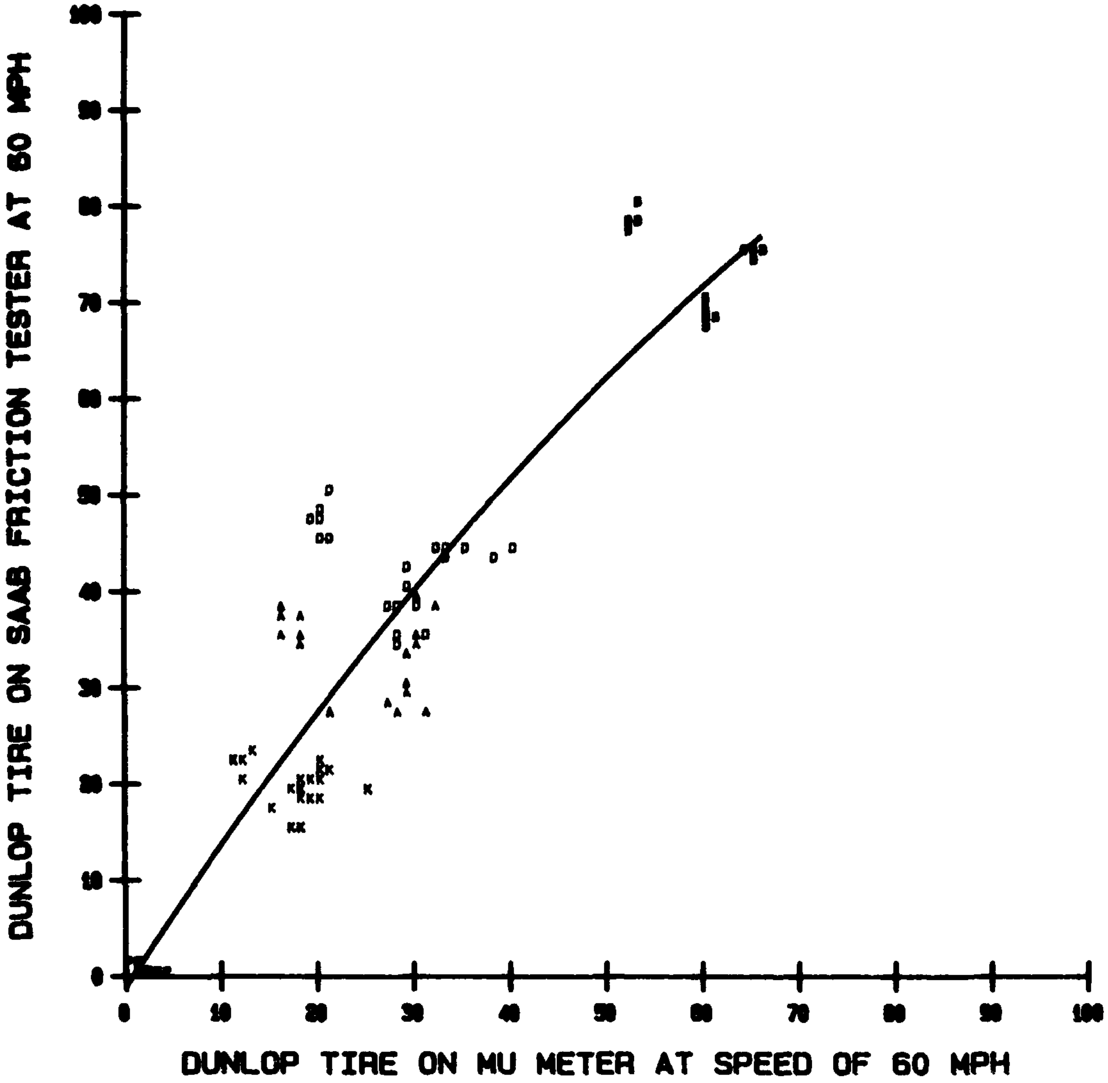
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	40MUMSFT.DUN
NUMBER OF POINTS	:	111
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	2 TO 73
RANGE OF DATA	:	0 TO 90

CURVE TYPE : LINEAR

Y = 0.488 + 1.289X

DUNLOP ON MU METER - DUNLOP ON SAAB FRICTION TESTER/60 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	-1.1043
COEFFICIENT B	=	1.5292
COEFFICIENT C	=	-0.0053
COEF. OF CORR.	=	0.9463
COEF. OF DET.	=	0.8955
STD. ERR. EST.	=	8.0194
REGRESSION LINE	=	______

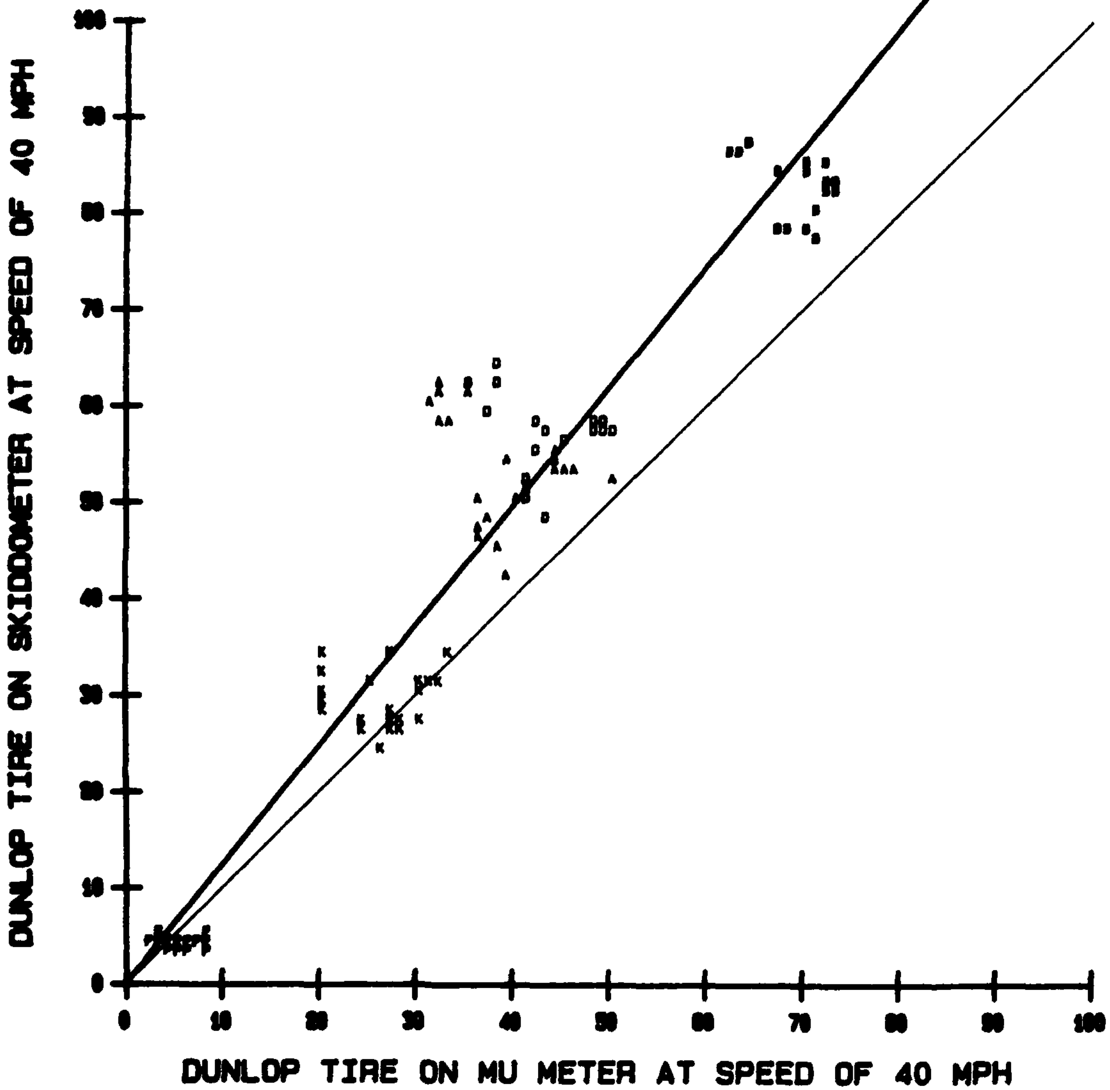
SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMSFT.DUN
NUMBER OF POINTS	:	108
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 66
RANGE OF DATA	:	0 TO 80

CURVE TYPE : POLYNOMIAL

Y=- 1.104+1.529X+0.005X^2

DUNLOP ON MU METER - DUNLOP ON SKIDDOMETER/40 MPH



LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.1000
COEFFICIENT B	=	1.2373
COEF. OF CORR.	=	0.9575
COEF. OF DET.	=	0.9168
STD. ERR. EST.	=	7.9419

REGRESSION LINE = ———
X - Y LINE = ———

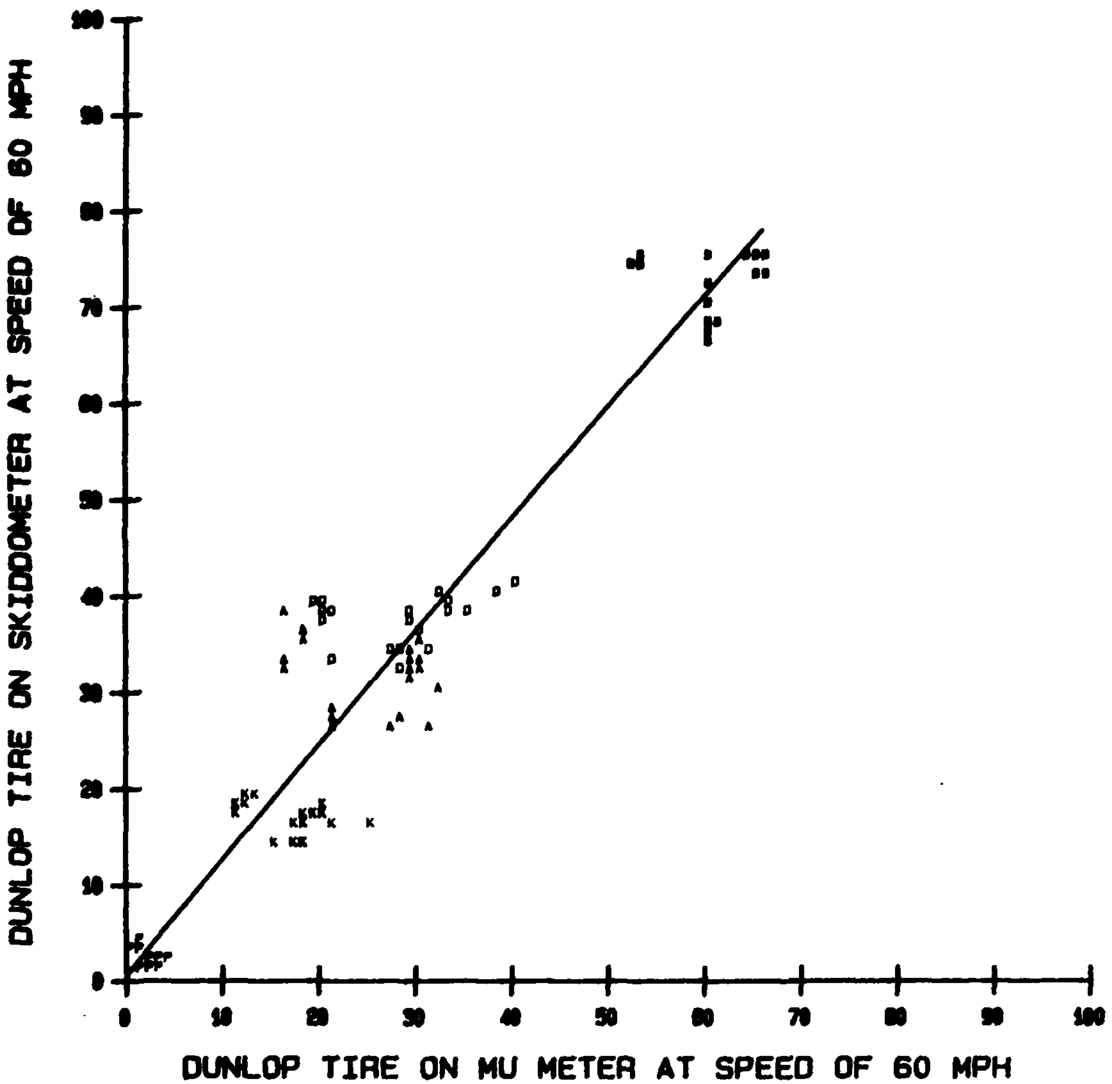
SOURCE DATA FILE INFO

DISK DRIVE	: B:
SUBDIRECTORY	: \
FILENAME	: 40MUMSKD.DUN
NUMBER OF POINTS	: 111
DOMAIN OF PLOT	: 0 TO 100
RANGE OF PLOT	: 0 TO 100
DOMAIN OF DATA	: 2 TO 73
RANGE OF DATA	: 3 TO 87

CURVE TYPE : LINEAR

Y = 0.1 + 1.237X

DUNLOP ON MU METER - DUNLOP ON SKIDDOMETER/60 MPH



NON-LINEAR REGRESSION RESULTS

COEFFICIENT A	=	0.5361
COEFFICIENT B	=	1.2123
COEFFICIENT C	=	-0.0006
COEF. OF CORR.	=	0.9590
COEF. OF DET.	=	0.9197
STD. ERR. EST.	=	6.7917

REGRESSION LINE = ______

SOURCE DATA FILE INFO

DISK DRIVE	:	B:
SUBDIRECTORY	:	\
FILENAME	:	60MUMSKD.DUN
NUMBER OF POINTS	:	108
DOMAIN OF PLOT	:	0 TO 100
RANGE OF PLOT	:	0 TO 100
DOMAIN OF DATA	:	0 TO 66
RANGE OF DATA	:	1 TO 75

CURVE TYPE : POLYNOMIAL

Y= 0.536+1.212X+0.001X^2

APPENDIX V

EXAMPLE OF COMPUTER SET-UP FOR REGRESSION ANALYSIS

APPENDIX V

TYPICAL EXAMPLE SHOWING HOW THE DATA WAS SET UP IN THE COMPUTER PROGRAM TO OBTAIN THE MATHEMATICAL REGRESSION ANALYSES

```
C:\>

C:\>CD\SCATPLOT  CR

C:\SCATPLOT>BASICA SCAT9  CR

Is the Plotter to be Used in This Session?  (Y/N, CR=Y) : ?  CR

                    S C A T P L O T

                      C A U T I O N

    BEFORE Using SCATPLOT, Perform the Following Checklist:

        A.   LOAD Pen Carousel as Follows,
               1.   Place Black Pen P.7 in Position 1,
               2.   Place Black Pen P.3 in Position 2,

        B.   LOAD Paper into Plotter,

        C.   TURN ON Plotter.

             Perform Checklist and Type Y to Proceed.

Proceed?    (Y/N,CR=N) : Y   CR

                       DATA ENTRY

                   Is Data to be Entered from:
                      1.   Stored Data File on Disk, or
                      2.   Manual Entry from Keyboard.

                      Choose 1 or 2: ? 1   CR
```

DATA FILE

ENTER Disk Drive Specifier (A,B, or C): B   CR

Disk Drive Specified: B:

    Change?   (Y/N,CR=N) : ?   CR

ENTER Pathname to Subdirectory of File: >   CR

Pathname Specified: \

    Change? (Y/N,CR=N) : ?   CR

ENTER File Name (Including Extension) : 40MUM60.MAC   CR

File Name Selected: 40MUM60.MAC

    Change? (Y/N,CR=N) : ?   CR

Location of Data File: B:\40MUM60.MAC

  Proceed? (Y/N,CR=Y): ?   CR

Do You Want to Review the Data Points? (Y/N,CR=N) : ?   CR

EXAMPLE IF YOU WISH TO REVIEW/CHANGE DATA POINTS

....

Do You Want to Review the Data Points ? (Y/N, CR=N) : ? Y CR

REVIEW/CHANGE DATA

Index	X Value	Y Value
1	56.0000	35.0000
2	52.0000	32.0000
3	50.0000	30.0000
4	50.0000	30.0000
5	48.0000	28.0000
6	49.0000	28.0000
7	64.0000	44.0000
8	54.0000	36.0000
9	52.0000	34.0000
10	52.0000	34.0000

Do You Want to:

1. Change Data in This Set,
2. Get to Next Set of Data,
3. Get Previous Set of Data, or
4. Exit from REVIEW/CHANGE.

Choose 1, 2, 3, or 4: 1 CR

ENTER Index of Data Point to be Changed (CR to Quit) ? 7 CR

ENTER New X and Y Pair (e.g. 16.7,35.09) : ? 54, 34 CR

REVIEW/CHANGE DATA

Index	X Value	Y Value
1	56.0000	35.0000
2	52.0000	32.0000
3	50.0000	30.0000
4	50.0000	30.0000
5	48.0000	28.0000
6	49.0000	28.0000
7	54.0000	34.0000
8	54.0000	36.0000
9	52.0000	34.0000
10	52.0000	34.0000

```
Do You Want to:

   1.  Change Data in This Set,
   2.  Get to Next Set of Data,
   3.  Get Previous Set of Data, or
   4.  Exit from REVIEW/CHANGE

Choose 1, 2, 3, or 4:  4  CR
.................................................................


                         FILE OUTPUT

        Disk Drive          : B:
        Subdirectory        : \
        Filename            : 40MUM60.MAC

        Number of Points    : 60
        Domain of Plot      : 0 to 100
        Range of Plot       : 0 to 100
        Domain of Data      : 4 to 70
        Range of Data       : 2 to 66

Do You Want to Store the Data?  (Y/N,CR=N) : ? Y  CR

Change Target File?  (Y/N,CR=N : ? Y  CR
```

DATA FILE

ENTER Disk Drive Specifier (A,B, or C) : B CR

Disk Drive Specified: B:

Change? (Y/N,CR=N) : ? CR

ENTER Pathname to Subdirectory of File: \ CR

Pathname Specified: \

Change? (Y/N,CR=N): ? CR

ENTER File Name (Including Extension) : 40MUM60.MAC CR

File Name Selected: 40MUM60.MAC

Change? (Y/N,CR=N): ? CR

Location of Data File: B:\40MUM60.MAC

Proceed? (Y/N,CR=Y): ? CR

PAGE SET-UP

This Program Will Set up the Plotter to Plot Data on Either EVEN or ODD Pages Based on Your Preference.

Is This Plot to be on an EVEN (Left Hand) PAGE? (Y/N,CR=N): ? CR

PLOT SCALING

```
            Legal Values are Between: -32767 and 32767
            ENTER Minimum X-Value (CR= 4 ): ? 0  CR

            Legal Values are Between: 0 and 32767
            ENTER Maximum X-Value (CR= 70 ): ? 100  CR

Domain of Plotter is: 0 to 100

    Change? (Y/N,CR=N): ?  CR

            Legal Values are Between:  0 and 32767
            ENTER Maximum Y-Value (CR= 66 ): ? 100  CR

Range of Plotter is:  0 to 100

   Change? (Y/N,CR=N): ?  CR

Domain of Plotter is:  0 to 100
Range of Plotter is:   0 to 100

   Change Scaling? (Y/N,CR=N): ?  CR
```

```
Do You Want Tick Marks ? (Y/N, CR=N): ? Y  CR

                         Minimum X Value: 0
                         Maximum X Value: 100

Enter Tick Mark Increment  (CR= 10.0000): ?  CR

Do You Want to Label Tick Marks ?  (Y/N, CR=N): ?  Y  CR

                         Minimum Y Value:  0
                         Maximum Y Value:  100

Enter Tick Mark Increment  (CR=10.0000) ?  CR

Do You Want to Label Tick Marks ?  (Y/N, CR=N): ? Y  CR


Do You Want to Title the Plot ?  (Y/N, CR=N): ? Y  CR

ENTER Plot Title:  MU METER SPEED/FRICTION RELATIONSHIP  CR

Title for Plot is:  MU METER SPEED/FRICTION RELATIONSHIP

Change ?  (Y/N, CR=N): ?  CR

                      The Title Must be 60 Characters or Less
                      Number of characters = 36
```

Do You Wish to Label the Axes ? (Y/N, CR=N): ? Y CR

Axes Labels can be up to 45 Characters Long and Either
in UPPER of lower Case. The Labels MUST be ENTERED EXACTLY
as You Wish Them to Appear on the Graph.

Enter X Axis Label: ? MU METER AT SPEED OF 60 MPH CR

Label for Y is: MU METER AT SPEED OF 60 MPH

Change ? (Y/N, CR=N): ? CR

Label for X Axis: MU METER AT SPEED OF 40 MPH
Label for Y Axis: MU METER AT SPEED OF 60 MPH

Change Labels ? (Y/N, CR=N): ? CR

```
                    Location of Source File: B:\40MUM60.MAC
                    Number of Data Points  :  60

ENTER The Total Number of Scatterplot
Groupings (1 to 60, CR=1): ? 5  CR

                     Number of Scatter Pilot Groupings:  5

Group 1 of 5 Group(s)
ENTER Range:  1 to:? 12  CR
ENTER Scatter Plot Symbol: D  CR

Group 2 of 5 Group(s)
ENTER Range:  25 to: ? 36  CR
ENTER Scatter Plot Symbol: B  CR

Group 3 of 5 Group(s)
ENTER Range:  25 to: ? 36  CR
ENTER Scatter Plot Symbol: A  CR

Group 4 of 5 Group(s)
ENTER Range:  37 to: ? 48  CR
ENTER Scatter Plot Symbol: K  CR

Group 5 of 5 Group(s)
ENTER Range:  49 to: ? 60  CR
ENTER Scatter Plot Symbol: P  CR

Location of Source File  : B:\40MUM60.MAC
Number of Data Points    : 60
Total Number of Groupings: 5

Group#          Range          Symbol

   1            1 to 12           D
   2           13 to 24           B
   3           25 to 36           A
   4           37 to 48           K
   5           49 to 60           P

Change?  (Y/N,CR=N): ?  CR
```

REGRESSION ANALYSIS

<table>
<tr><td colspan="3">Do You Want Regression Analysis? (Y/N,CR=N) : Y CR</td></tr>
<tr><td></td><td>TYPE</td><td>EQUATION</td></tr>
<tr><td>Use Up and Down Keys
to Select Analysis Type.
Press ENTER, Execute
Choice.</td><td>Linear
Exponential
Logarithmic
Power Law
≥ Polynomial</td><td>$Y = A+B^{x}$
$Y = Ae^{(Bx)}$
$Y = A=B \text{ Log}^{(x)}$
$Y = AX^{B}$
$Y = A=Bx+Cx^{2}+nx^{n}$ CR</td></tr>
<tr><td colspan="3">Enter the Degree of Polynomial (1, 2, 3, 4, or 5, CR = 2): ? CR</td></tr>
<tr><td>Use Up and Down Keys
to Select Option.
Press ENTER, Execute
Choice.</td><td colspan="2">VIEW Regression Plot
PRINT Regression Plot
PRINT Regression Results
≥ PLOT Regression Line CR
≥ PLOT Regresssion Analysis Results CR
SELECT Another Analysis Type
≥ EXIT Menu CR</td></tr>
<tr><td>STATUS: Done</td><td>TYPE: Polynomial</td><td>ACTION: EXIT</td></tr>
</table>

FILE OUTPUT

Disk Drive : B:
Subdirectory : \
Filename : 40MUM60.MAC

Number of Points : 60
Domain of Plot : 0 to 100
Range of Plot : 0 to 100
Domain of Data : 4 to 70
Range of Data : 2 to 66

Do You Want to Plot This Information ? (Y/N, CR=N): Y CR

PLOTTER BUSY; PLEASE BE PATIENT

NEXT PLOT

Do You Want to dc Another Plot ? (Y/N, CR=N): ? CR

RETURNING TO SYSTEM

SYSTEM CR

C:\SCATPLOT>CD\ CR

C:\

APPENDIX W

CALIBRATION ADJUSTMENT FACTOR FOR RUNWAY FRICTION NUMBERS

K•J•LAW
ENGINEERS, INC.

PROFILOMETER
HIGHWAY FRICTION TESTERS
RUNWAY FRICTION TESTER
ROUGHNESS SURVEYOR
TESTING SERVICES

August 14, 1989

FEDERAL AVIATION ADMINISTRATION
800 Independence Avenue, S.W.
Washington, D.C. 20591

Att: Mr. Tom Morrow, P.E.
Program Manager

Ref: Calibration Adjustment Factor for Runway Friction Numbers

Dear Mr. Morrow:

We discovered immediately after the recent friction tire tests at Wallops Flight Facility an incorrect entry of the calibration factor for the K. J. Law Runway Friction Tester.

The calibration number should have been 346 lbs., however, our operator entered it as 274 lbs. (perhaps because the load calibration factor was in that range, at 290 lbs.) This creates a correction multiplier of 1.26 to increase the measured friction numbers to the correct values.

We respectfully request that you apply this multiplier to the data to adjust it to the correct Mu numbers. Since the transducer system is completely linear, within less than 0.5%, there will result no significant error by the use of the adjustment factor.

Thank you very much for your consideration and implementation of this request. We look forward to the issuance of your report. We certainly need new qualified test tires for the Runway Friction Tester.

Sincerely yours,

K. J. LAW ENGINEERS, INC.

K. J. Law

K. J. Law, P.E.,
President

KJL/djf

cc: F. X. Schwartz

42300 W. Nine Mile Road
Novi, Michigan 48050-3627

313-347-3300
800-521-5245

Telex 23-1179 KJLAW FMHL
Fax 313-347-3345