

TRAFFIC SPEED REPORT
NO. 74

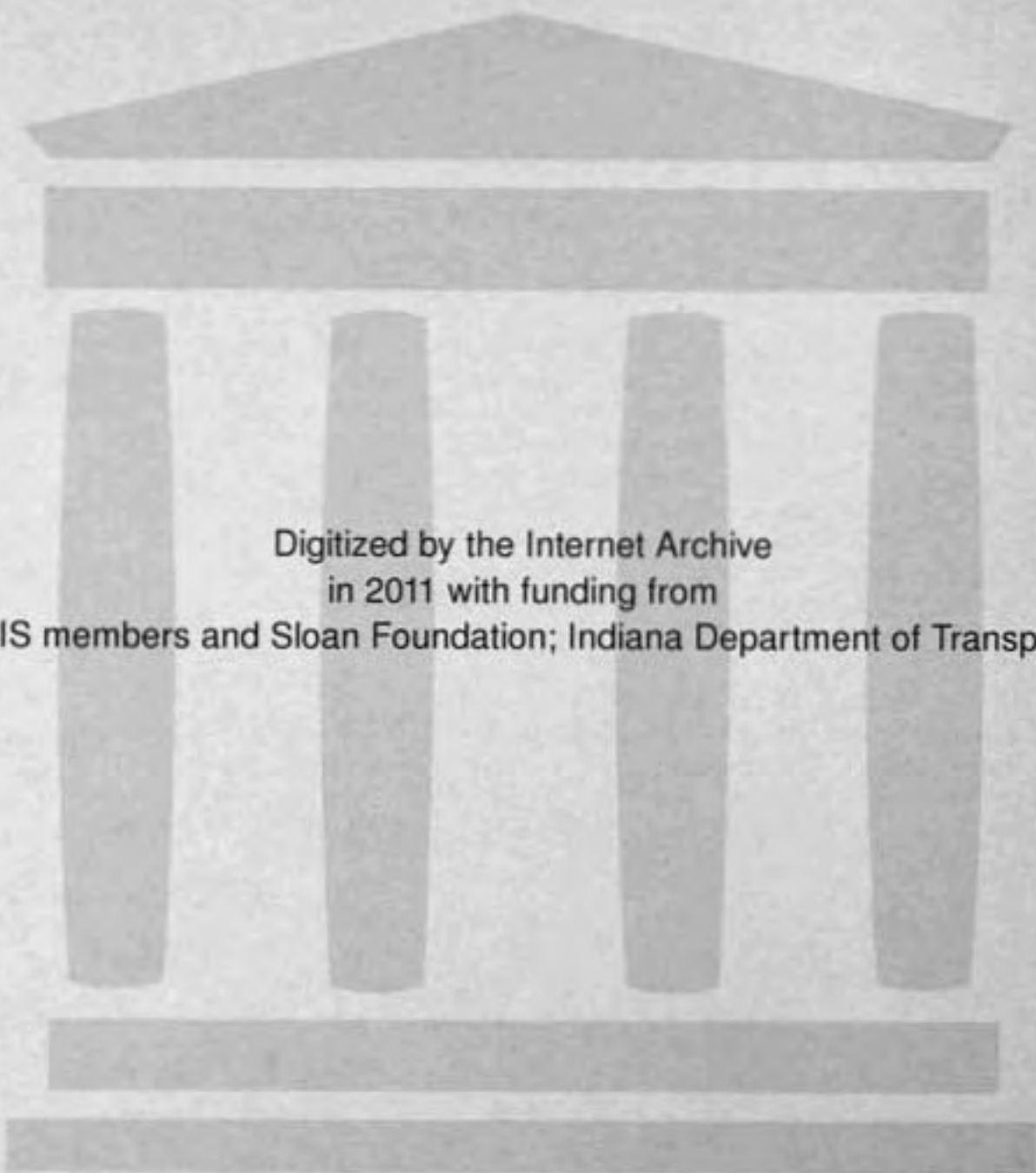
NOVEMBER, 1961
NO. 28

Joint
Highway
Research
Project

PURDUE UNIVERSITY
LAFAYETTE INDIANA

by

K. J. THARP
D. F. PETTY



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Progress Report

TRAFFIC SPEED REPORT NO. 74

TO: K. B. Woods, Director
Joint Highway Research Project

November 8, 1961

FROM: H. L. Michael, Associate Director
Joint Highway Research Project

File: 8-3-3
Project: C-36-10C

A copy of Traffic Speed Report No. 74 is attached. This report covers the summer, semi-annual speed study of free-flowing rural traffic on state highways in the vicinity of Lafayette, Indiana. These studies have been in progress for over 20 years and provide data on the trend of rural vehicular speeds in Indiana.

This report is similar to the previous ones but also reports two important changes in this long-term trend study. Interstate highways have been added as a separate classification to the study and 2-lane and non-interstate 4-lane highways have been retained as other classifications. Statistical analysis has also been used more extensively in this study and the results include information on the variability of the data as well as the averages previously reported. In this connection, four stations were selected as the most desirable number of locations for each classification. Two stations on non-interstate 4-lane highways were, therefore, also added to the study.

The report is submitted for the record and for release to the Bureau of Public Roads, the Indiana State Police and the Office of Traffic Safety.

Respectfully submitted,

Harold L. Michael

Harold L. Michael
Secretary

HLM:kmc

Attachment

cc: F. L. Ashbaucher
J. R. Cooper
W. L. Dolch
W. H. Goetz
F. F. Havey
F. S. Hill
G. A. Leonards

J. F. McLaughlin
R. D. Miles
R. E. Mills
M. B. Scott
J. V. Skythe
J. L. Waling
E. J. Yoder

Progress Report

TRAFFIC SPEED REPORT NO. 74

by

K. J. Tharp
and
D. F. Petty
Research Assistants

Joint Highway Research Project

File: 8-3-3

Project: C-36-100

Purdue University
Lafayette, Indiana

November 8, 1961

TRAFFIC SPEED REPORT NO. 74

Introduction

This report is an analysis of spot-speed observations made in June, July, and August 1961. All observations were made of free-moving vehicles on level, tangent sections of rural highways during daylight hours and under favorable weather conditions. Speeds were recorded to the nearest mile per hour.

Because Interstate highways are becoming a vital portion of the highway system in Indiana, they have been added to the scope of the study. Thus, data were collected for three classifications of highway - two lane, four lane and Interstate.

A review of the previous Traffic Speed Reports also formed the basis for a revision of the study. This revision was made to provide for a better statistical analysis of the data collected on the highways. The earlier reports indicated that four stations in each classification would provide a reasonable estimate of average speeds at a moderate cost. To comply with this evidence the stations on four-lane highways were increased to four; four stations were selected on Interstate highways; and the previous four stations on two-lane highways were retained.

The amount of data collected at each station was reduced considerably. The data from the previous studies indicated that 215 observations would allow an estimation of the average passenger car speed within plus or minus one mile per hour at a confidence level of 95%. Similarly, 35 observations of heavy trucks would permit on

estimation of average truck speed within plus or minus two miles per hour at a confidence level of 90%. These minimum sample sizes were adopted for this and future studies and consequently the average speeds recorded at the stations are estimates, with possible error and confidence as noted, of the true average speeds at those locations under the conditions existing at the time of observation.

Locations of Speed Stations

The following speed stations were used in this study.

Interstate Highways

1. I-80 0.7 mile east of junction of SR 912
2. I-65 1.0 mile north of junction of SR 334
3. I-74 1.0 mile east of junction of Post Road
4. I-65 2.9 mile north of junction of SR 160

4-Lane Highways

5. US 31 1.2 mile south of SR 38
- *6. US 52 1.0 mile south of south junction of SR 28
7. US 41 1.0 mile north of south junction of SR 2
- *8. US 52 1.0 mile north of Klondyke

2-Lane Highways

- *9. US 41 1.0 mile north of Boswell
- *10. US 52 2.0 mile north of Templeton
- *11. US 31 3.0 mile south of Rochester
- *12. SR 25 0.7 mile west of Americus

*indicates stations used in previous studies.

Equipment and Field Procedure

The data for this study were obtained by using an Electromatic Radar Speed Meter. The meter was placed approximately two feet from the edge of the pavement at an angle of less than 10° with the highway centerline. Speed inaccuracies are negligible at small angles, and corrections were unnecessary.

Since the radar equipment will not operate properly if the voltage varies more than plus one volt or minus one-half volt from the optimum twelve volts, the battery voltage was checked periodically and maintained in the proper range. Also, the meter was periodically checked with a 60 mile per hour tuning fork to maintain the correct calibration.

The observers and equipment were concealed from traffic as much as local conditions permitted in order to minimize their effect upon vehicle speed.

Procedure and Analysis

The field data for each station are listed in Tables 1 through 12, inclusive, Tables 13, 14, 15, and 16 are summaries of the interstate, four lane, two lane and all highways, respectively. Figures 1 through 16, inclusive, are cumulative frequency curves computed and drawn from the corresponding tables.

Trucks have been grouped into a "light" (less than 5,000 pounds gross weight) or "heavy" (more than 5,000 pounds gross weight) classification in order to compare observed speeds with legal speeds. Speed limits in the state of Indiana are: 65 miles per hour for passenger cars and light trucks; 55 miles per hour for heavy trucks

on four lane highways with a median width of 20 feet or more, and 50 miles per hour for heavy trucks on other highways. All four lane highways observed in this study have at least 20 foot wide medians.

Passenger car data^{were} classified into three groups - Indiana, out-of-state, and all passenger cars. Incomplete data, however, were obtained at station 4 because of its distance from Lafayette and the time available to obtain speeds at this site, only data for passenger cars without classification as to in or out-of-state and trucks were obtained at this site.

Summary of Results

The summary of spot-speed observations is recorded in Table 17. The mean speed of passenger cars appears to have become nearly stabilized over the past five years. The graphical presentation (Figure 17) of rural speeds show that the variations obtained by different studies during this period of time have been minor. The 85th percentile speed also shows a trend towards becoming stable - at a value slightly below the 65 mile per hour speed limit.

However, since 1954 the mean truck speed appears to be slowly increasing (Figure 17). Figure 18 indicates that this upward trend in truck speeds also applies to the 15th percentile, and results in a reduction in the speed differential.

Study of the Interstate highway observations shows speeds which are similar to those obtained on other four-lane highways. Passenger car speeds at three of the four stations on Interstate highways (Station 4, had no classification of passenger cars) showed both Indiana and non-Indiana passenger cars traveling slightly slower on the Interstate system than those at the stations on the other

Interstate highways (Figures 1, 2, 3, and 4) and resulted in an average speed slightly higher for all of the Interstate Highway stations.

Comments on Statistical Design of the Speed Study

An analysis of variance (Table 18) for the data collected during this speed study, reveals that highway type, station location, vehicle type, and the interaction between highway and vehicle types are all highly significant. This is as expected. The significance of station location is particularly important because it indicates that the selection of the stations for the observation of speed will cause variations in the results obtained.

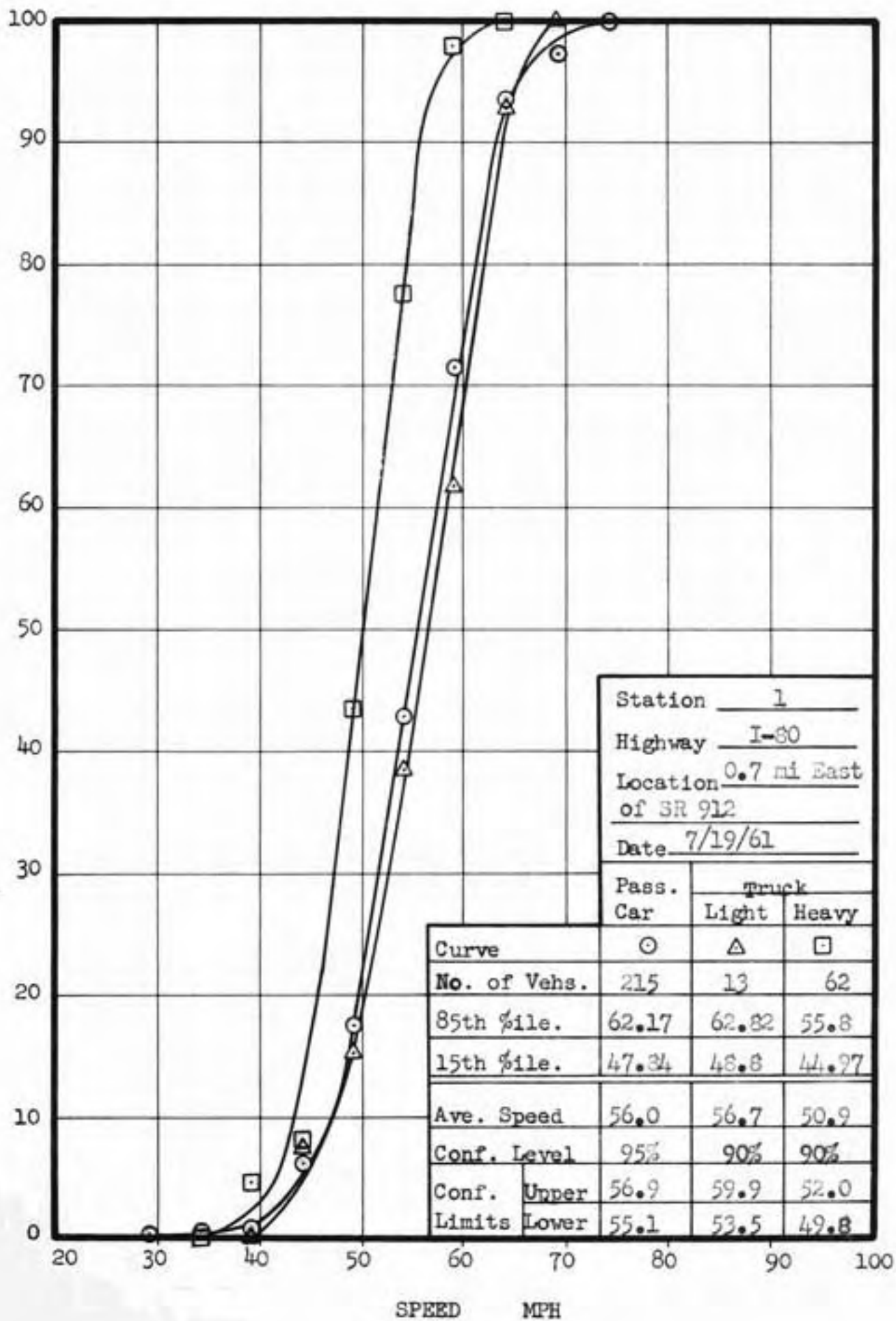
The estimate of the standard deviation of the location effect is 1.8%. The use of four stations in each highway type (as was done) allows an estimate of the true average speed - for that type of highway - within plus or minus 1.8 mile per hour with a confidence level of 95%. To appreciably increase the precision of this estimate would require a large increase in the number of stations. This, of course, would result in an excessive cost increase for the study.

It is recommended, therefore, that four stations on each type of highway be continued in future studies. The techniques of securing speed data should be carefully and continuously reviewed by the observers in order to minimize observation effects which could cause a large station to station variance.

The data from this study indicates that the observation of 215 passenger cars produced the desired probable error - plus or minus one mile per hour at each station at a 95% confidence level - at eleven of the twelve stations. Thirty heavy truck observations would

have been adequate to attain the desired probable error of plus or minus two miles per hour at a 90% confidence level. At two locations, the number of heavy trucks controlled the survey time period. It is recommended, therefore, that the minimum station sample size for future studies continue to be 215 passenger cars and 35 heavy trucks.

PERCENTILE



Station 1
 Highway I-80
 Location 0.7 mi East of SR 912
 Date 7/19/61

Figure 1

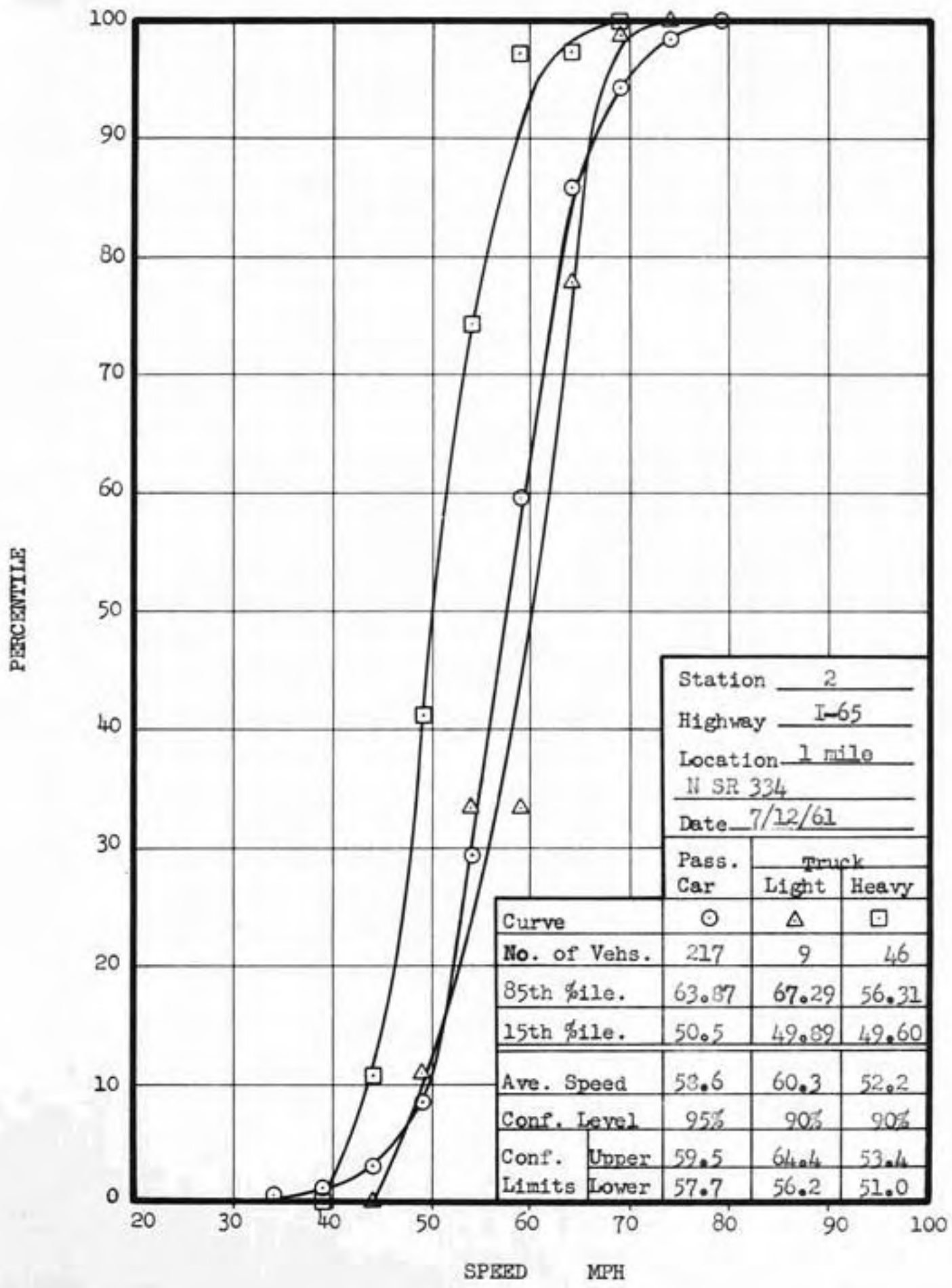


Figure 2

PERCENTILE

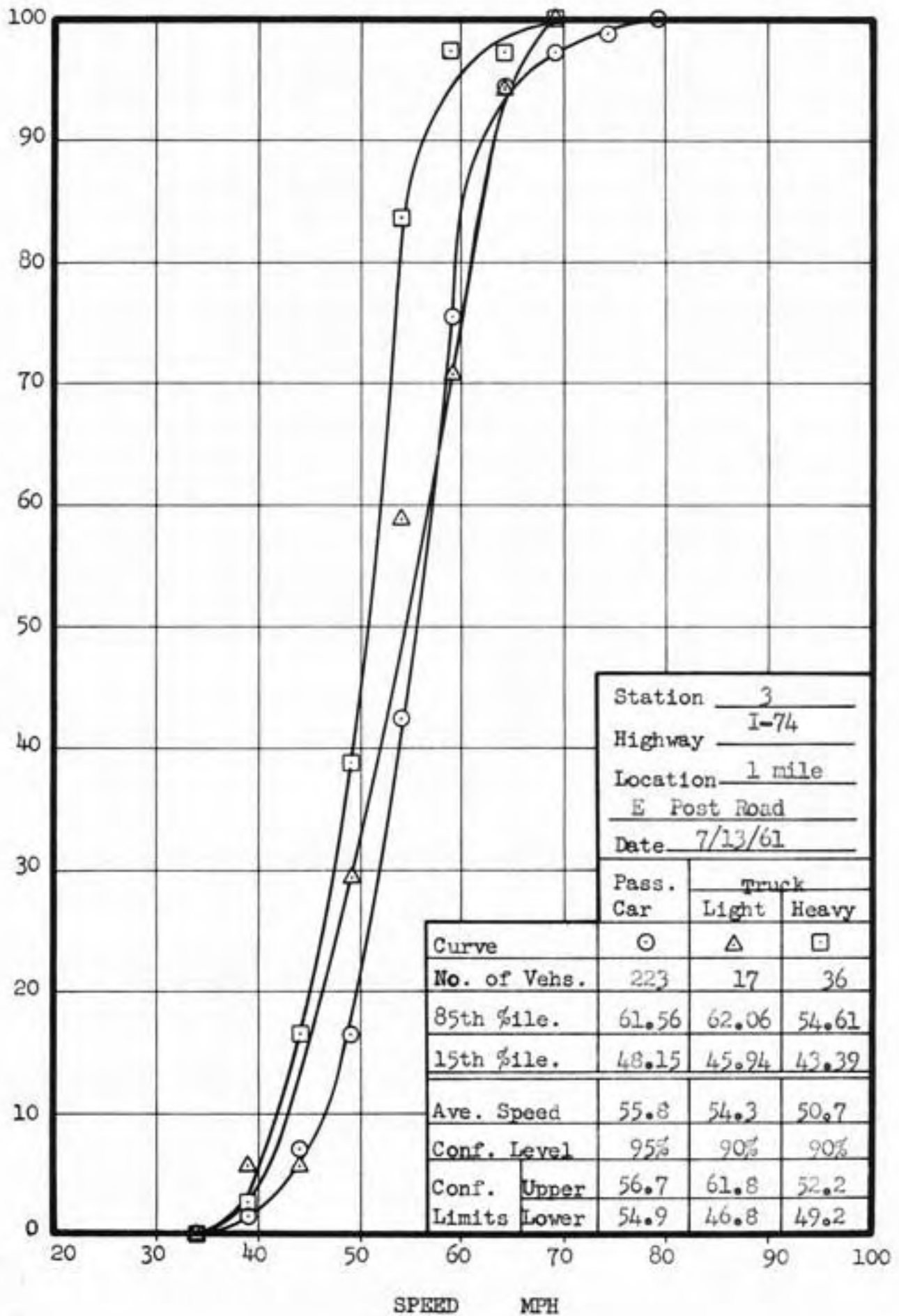


Figure 3

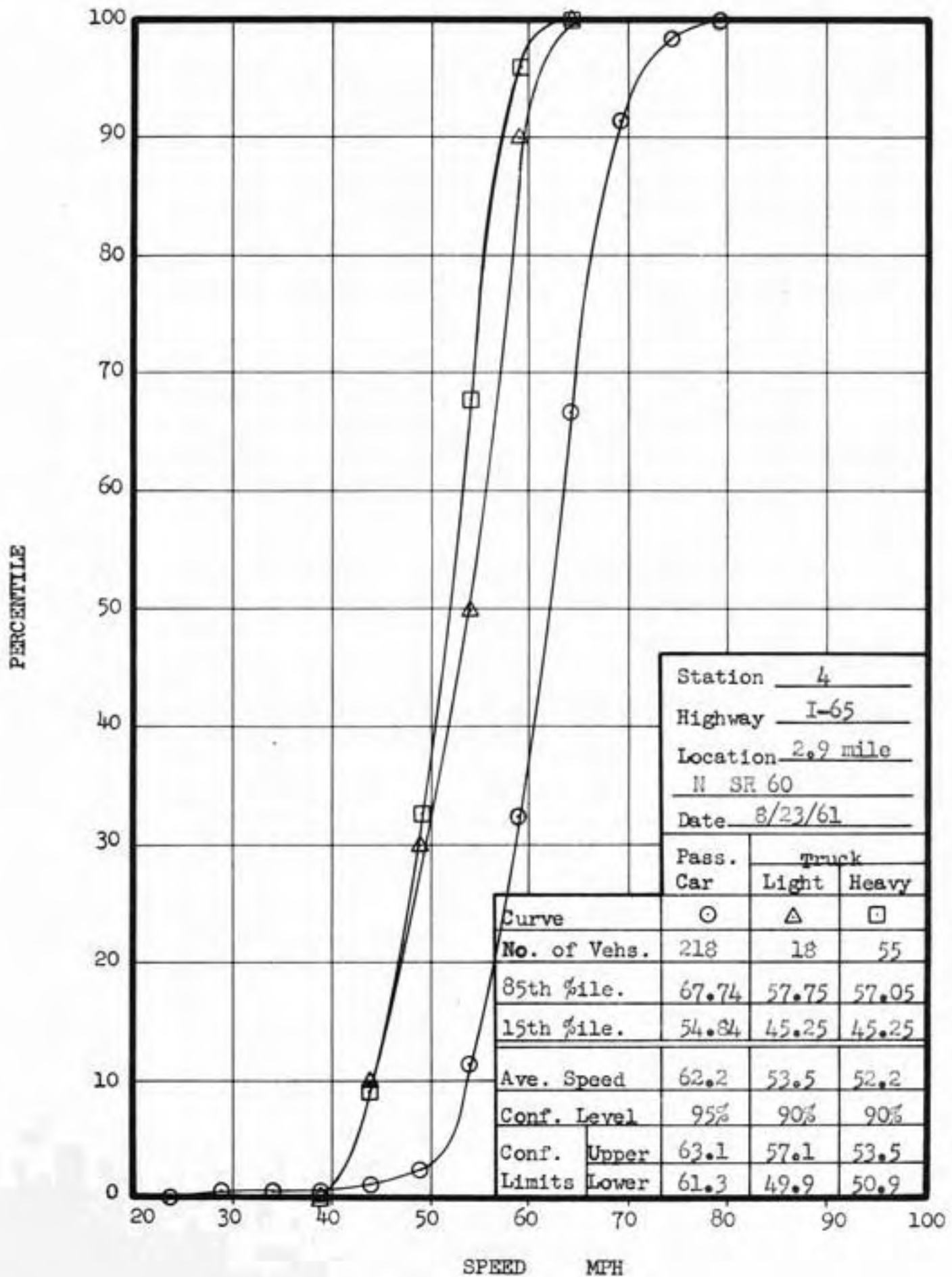


Figure 4

PERCENTILE

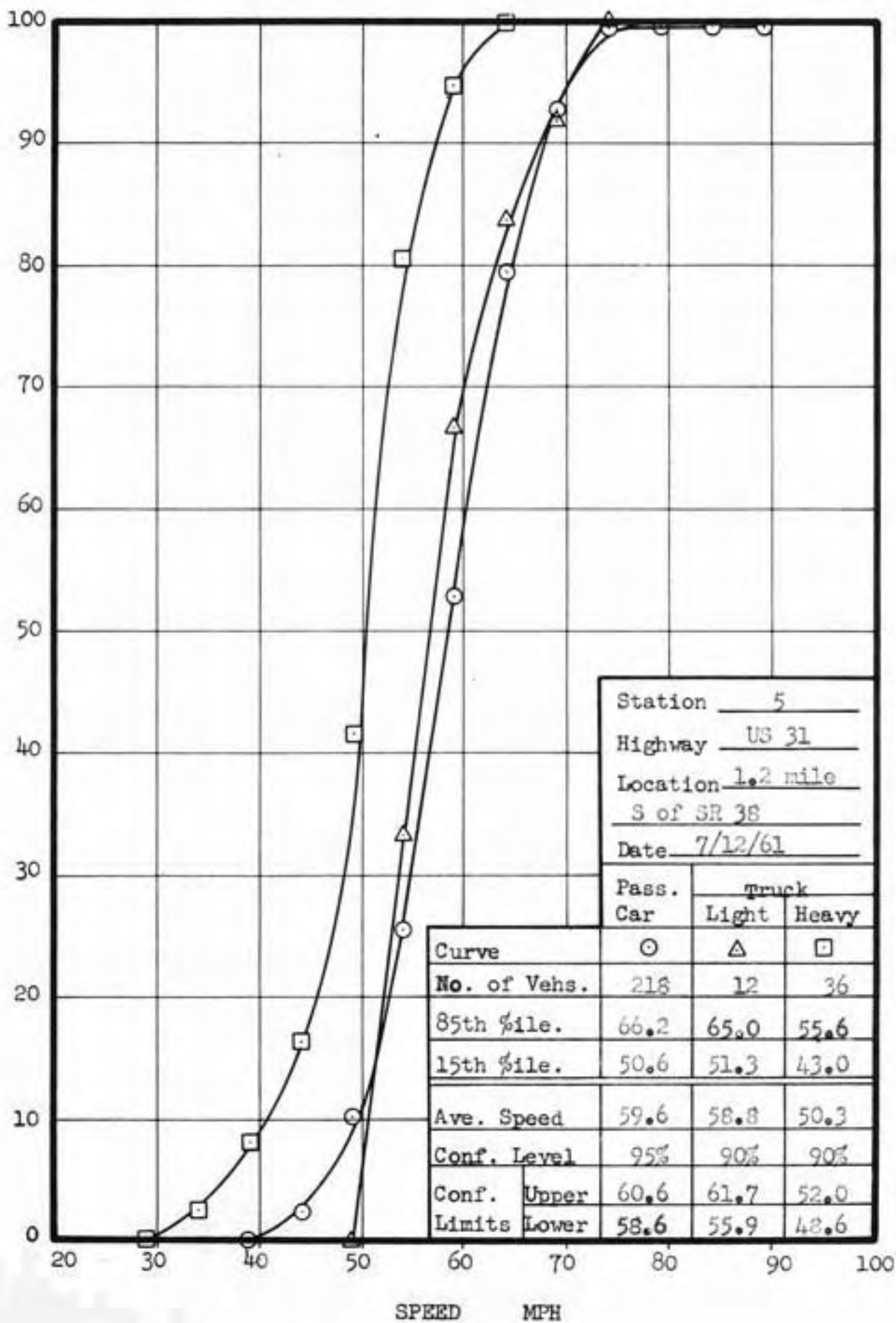


Figure 5

PERCENTILE

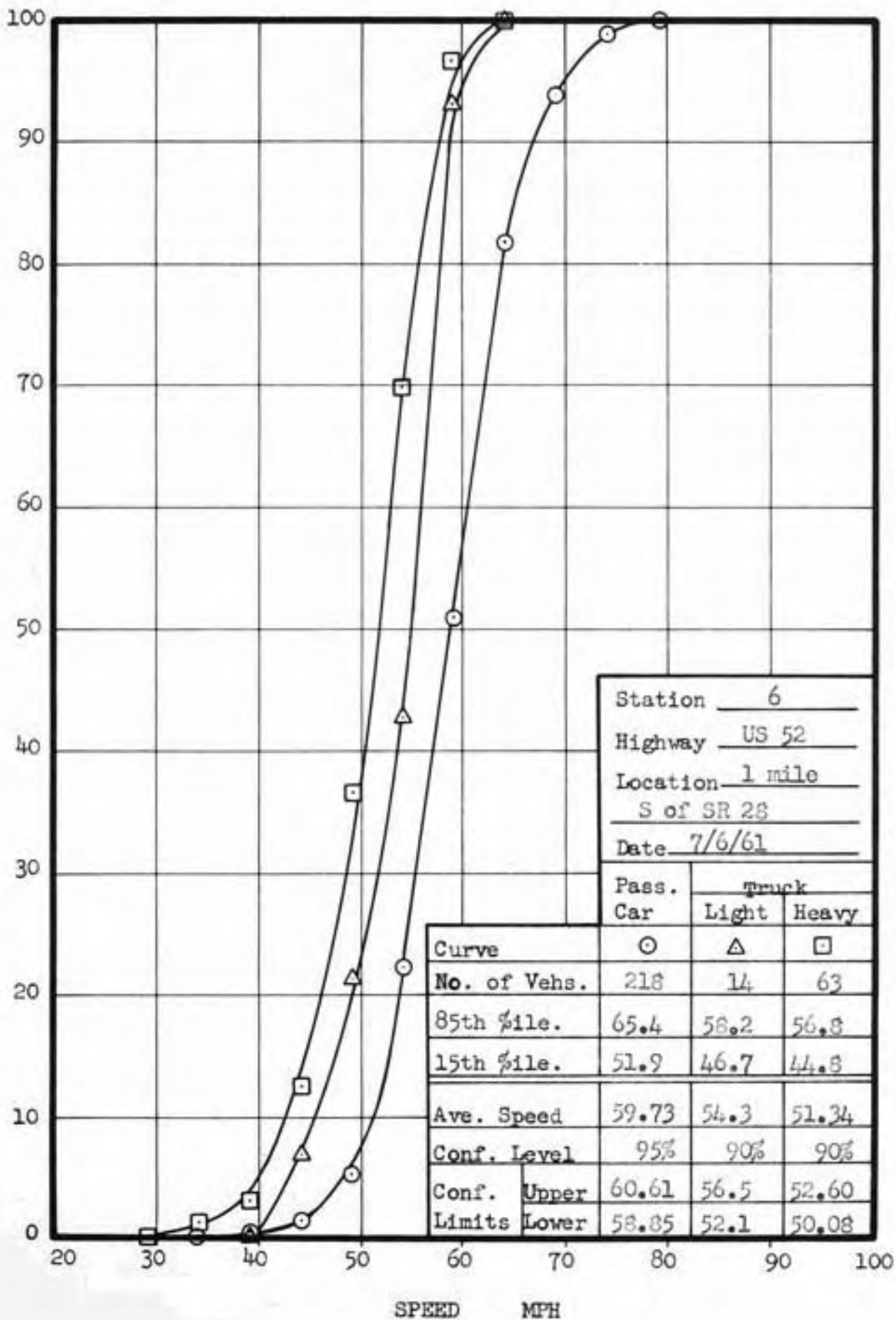


Figure 6

PERCENTILE

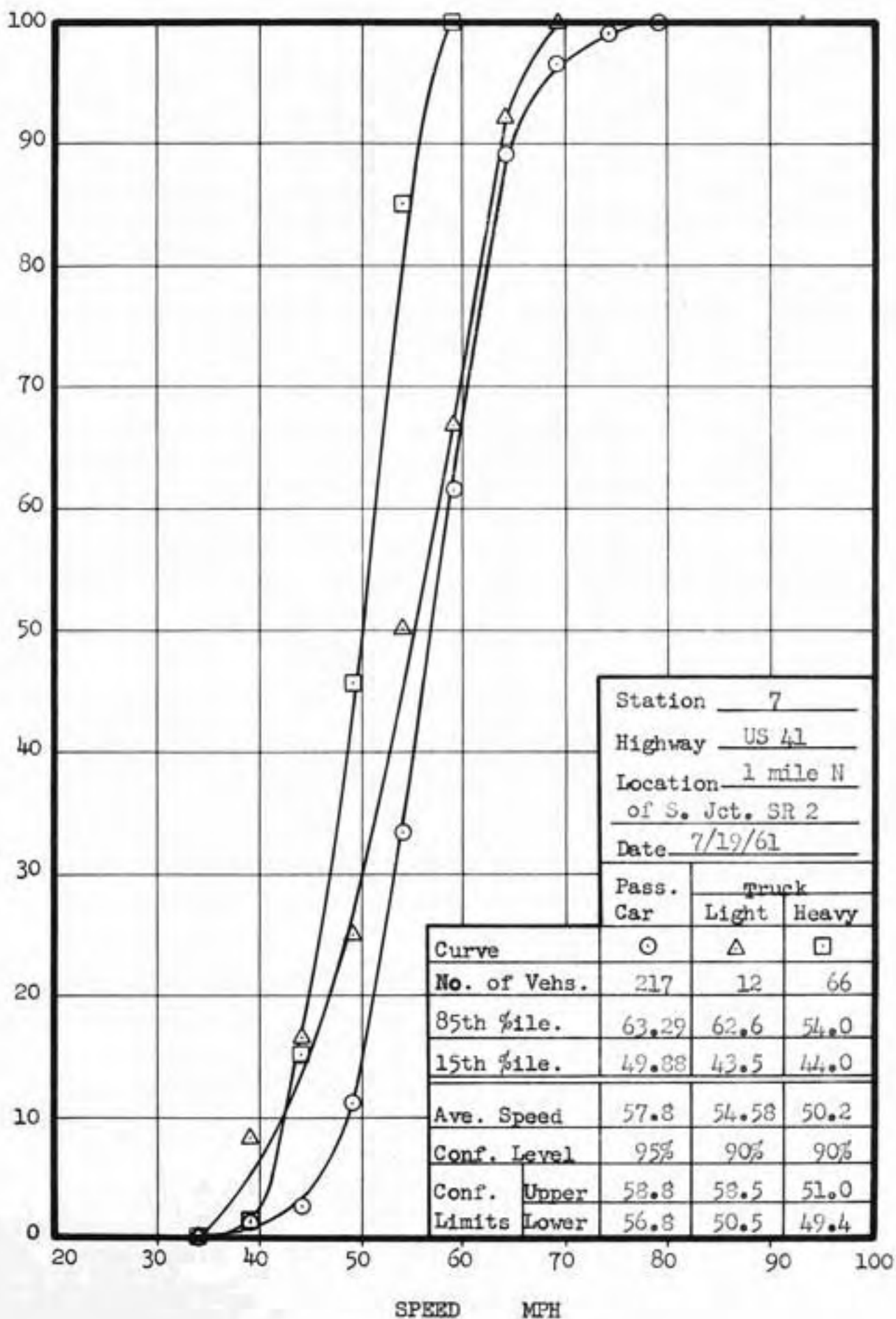


Figure 7

PERCENTILE

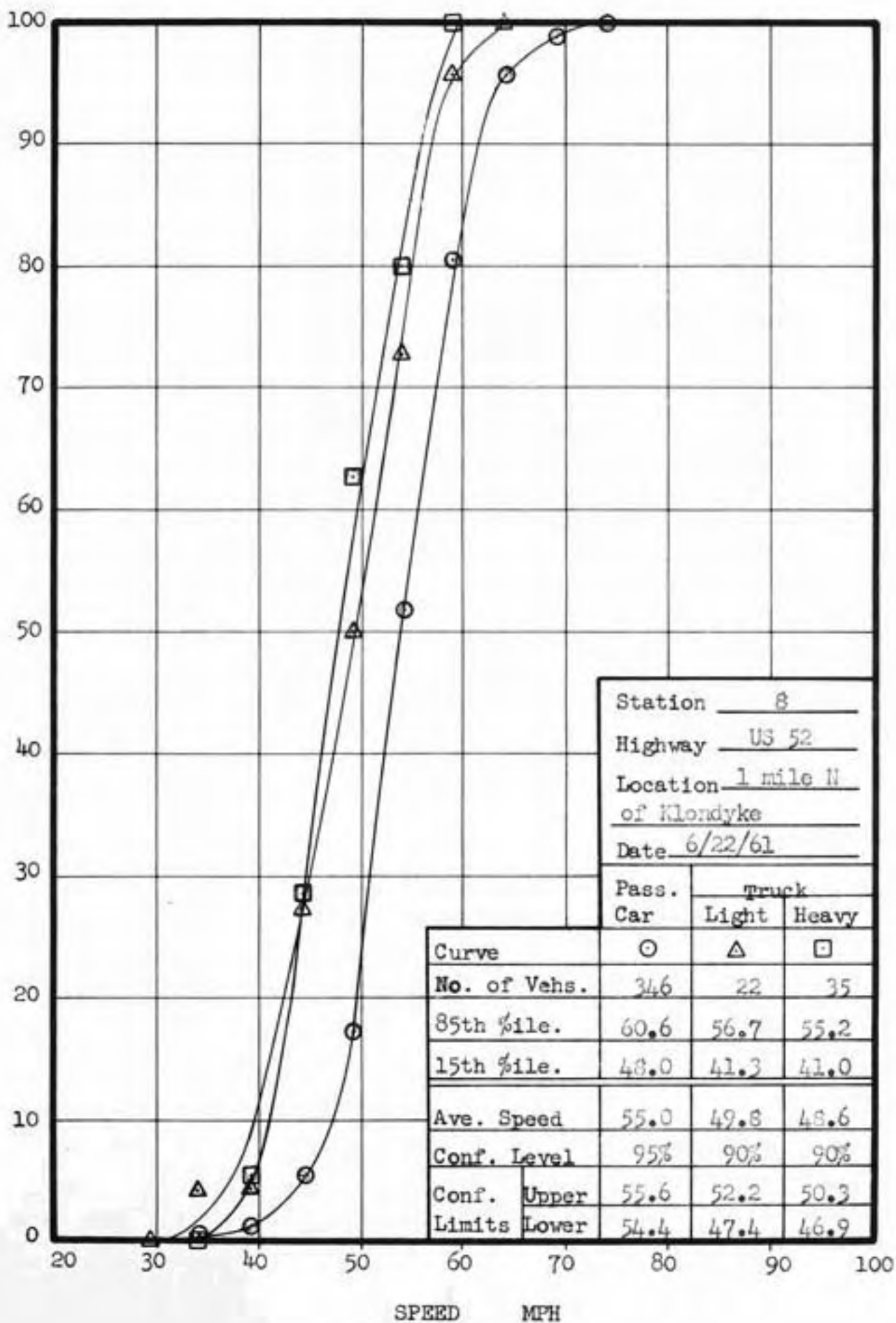


Figure 8

PERCENTILE

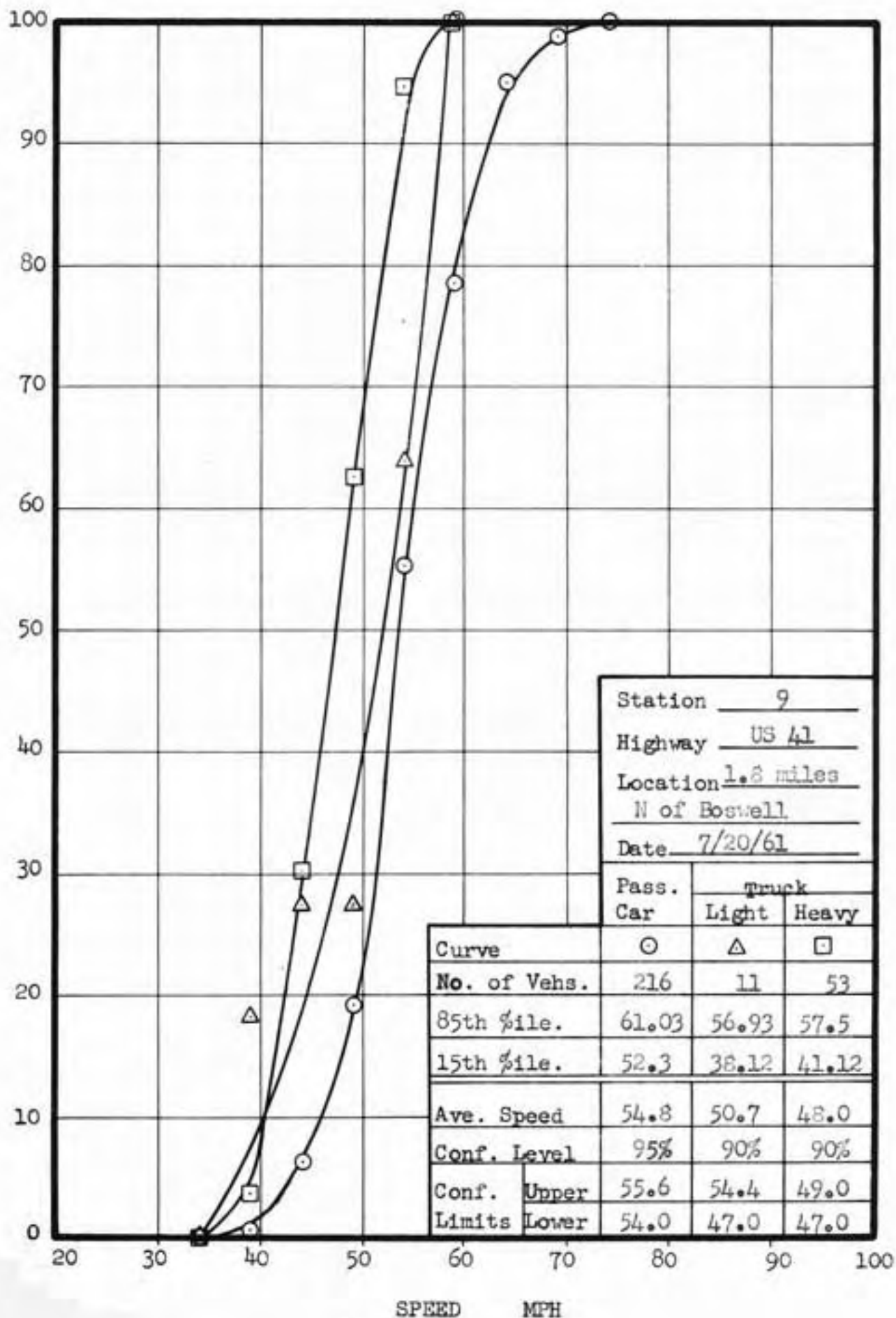


Figure 9

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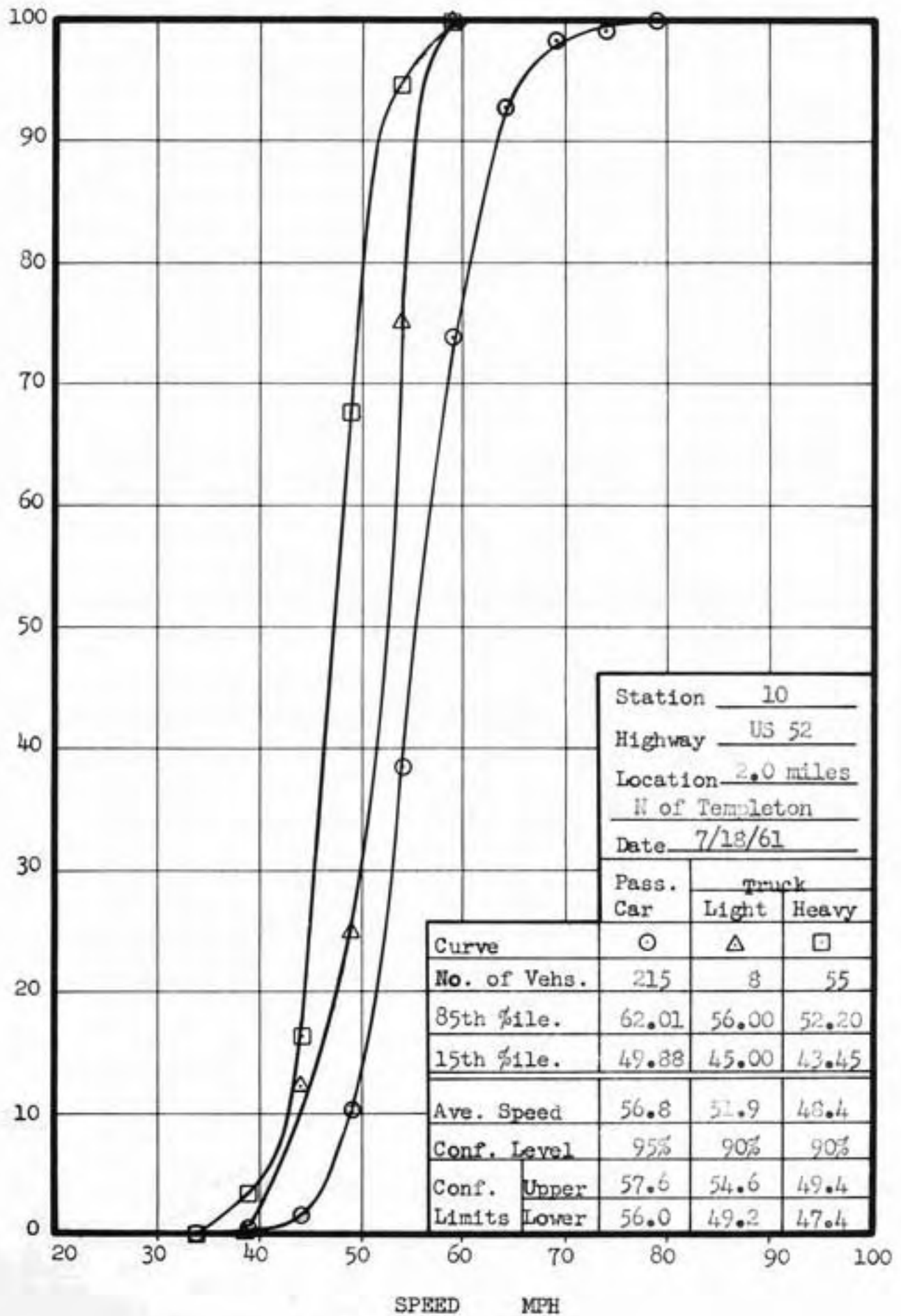


Figure 10

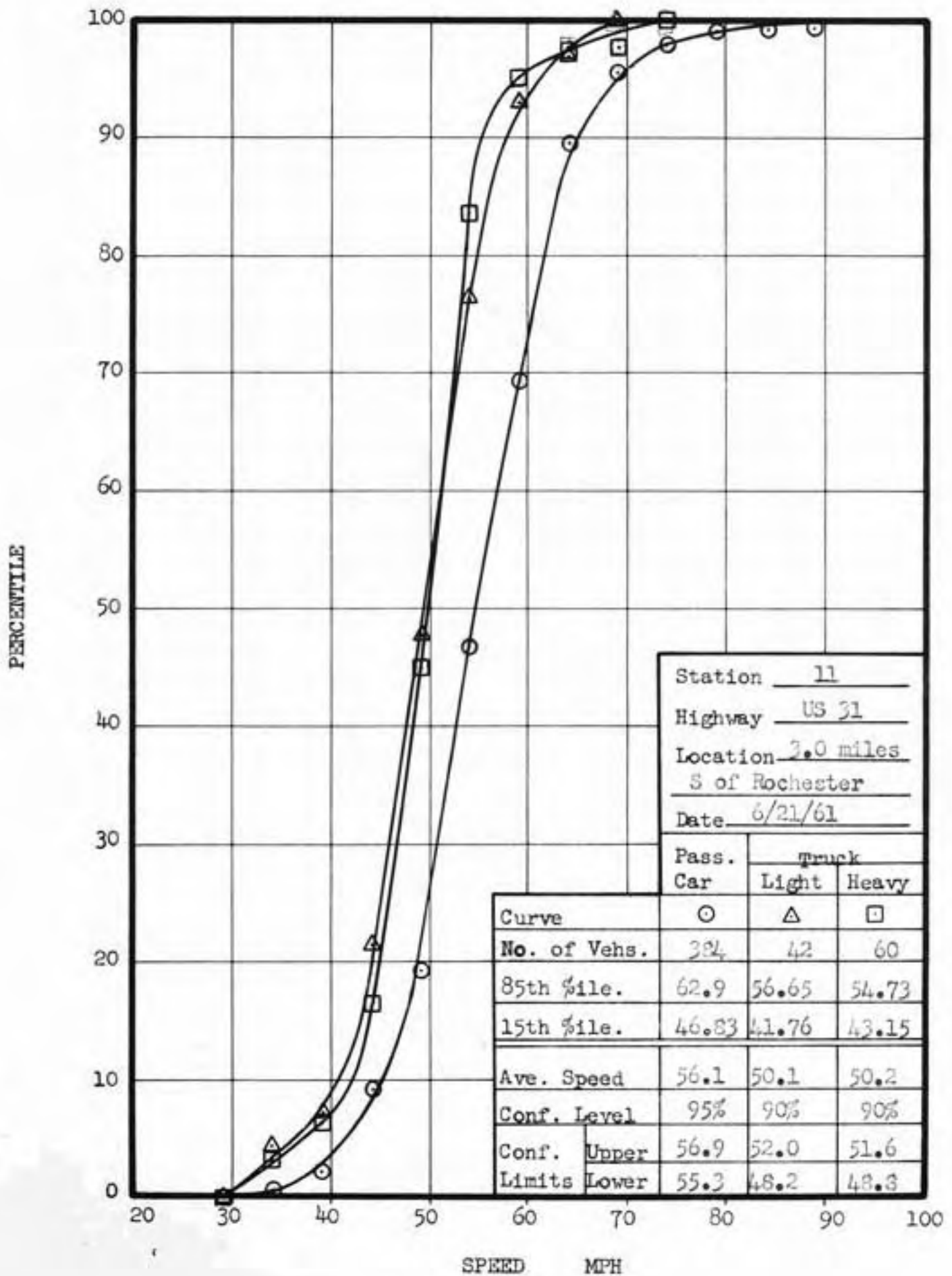


Figure 11

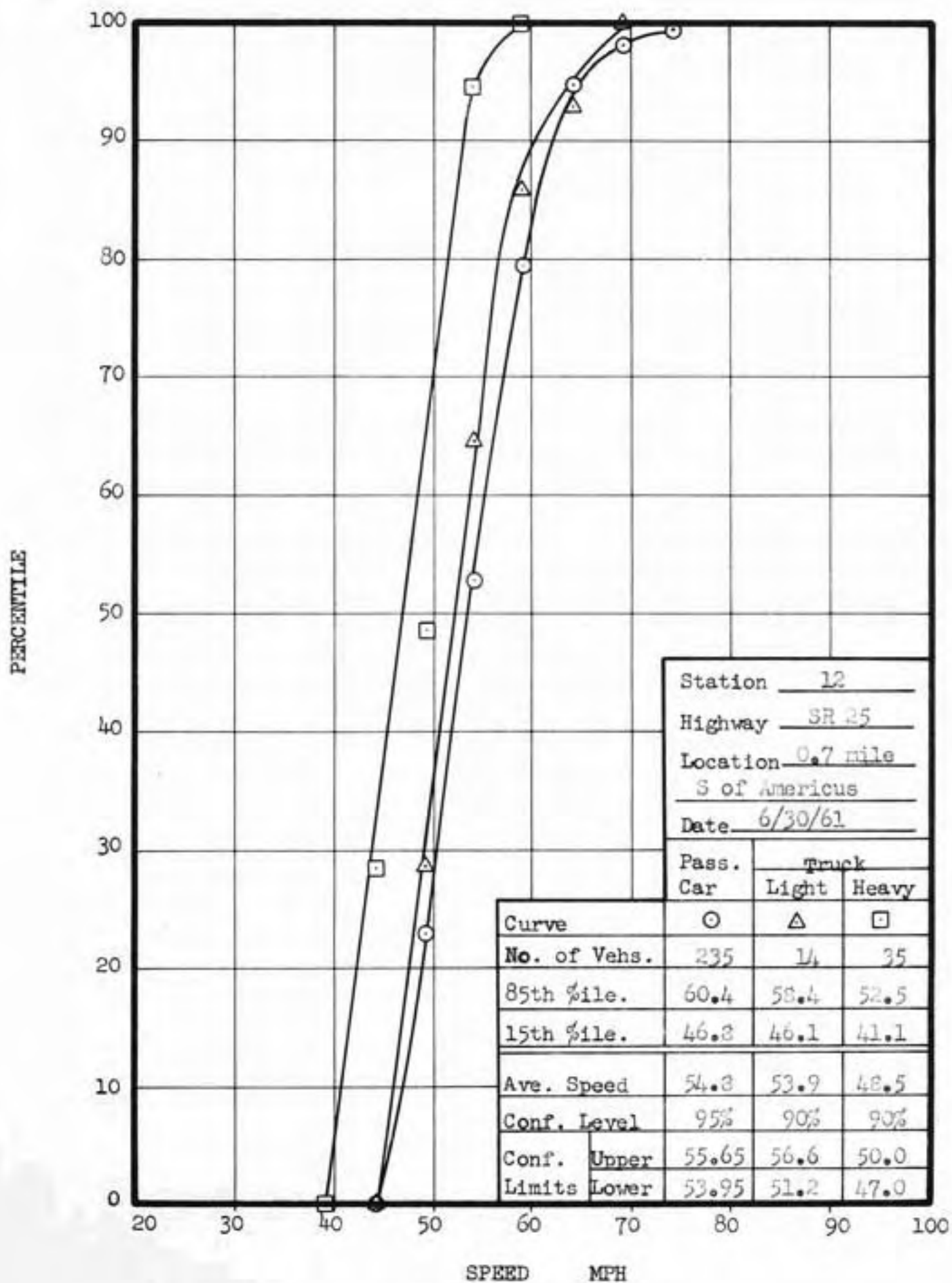


Figure 12

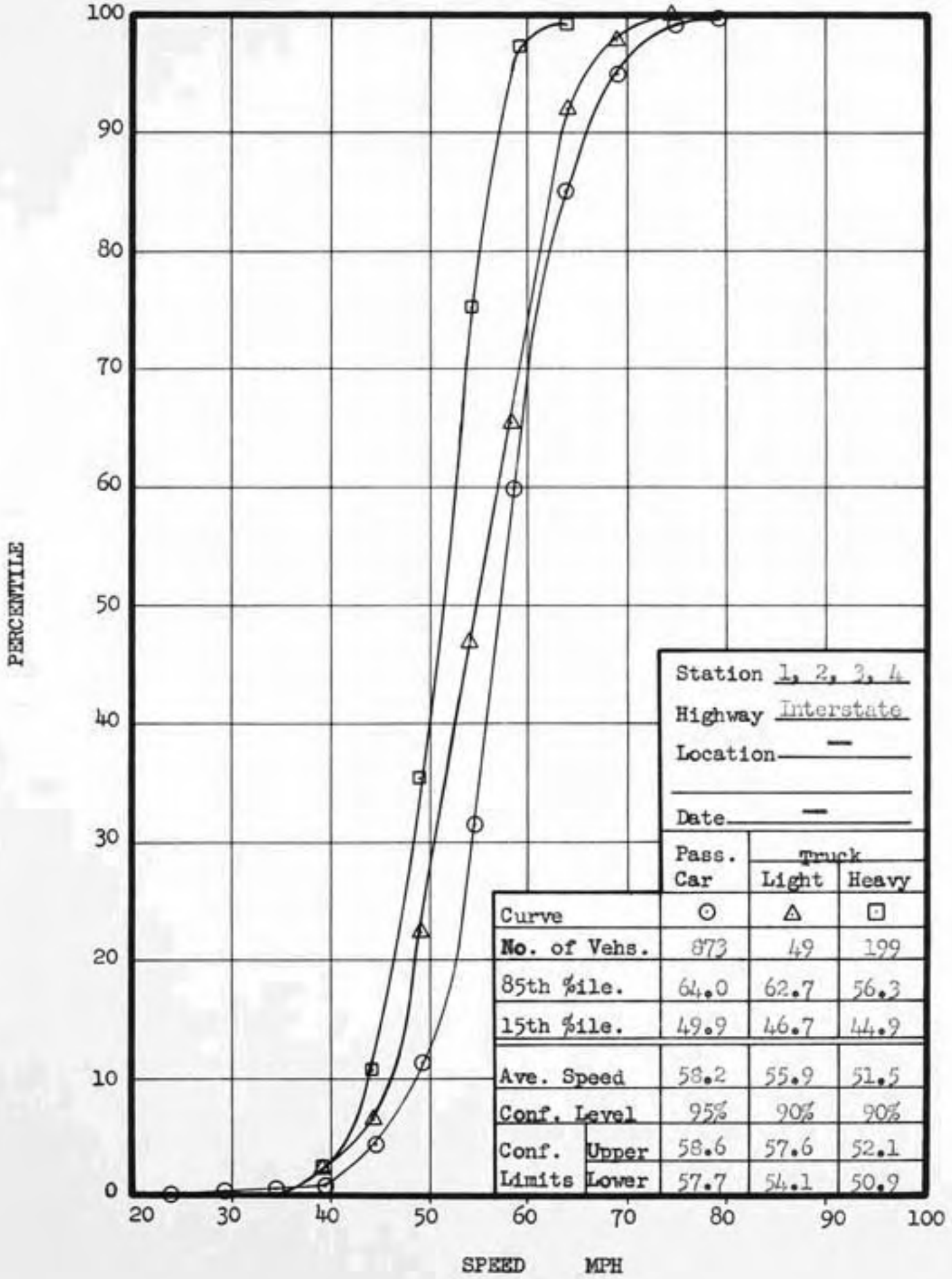


Figure 13

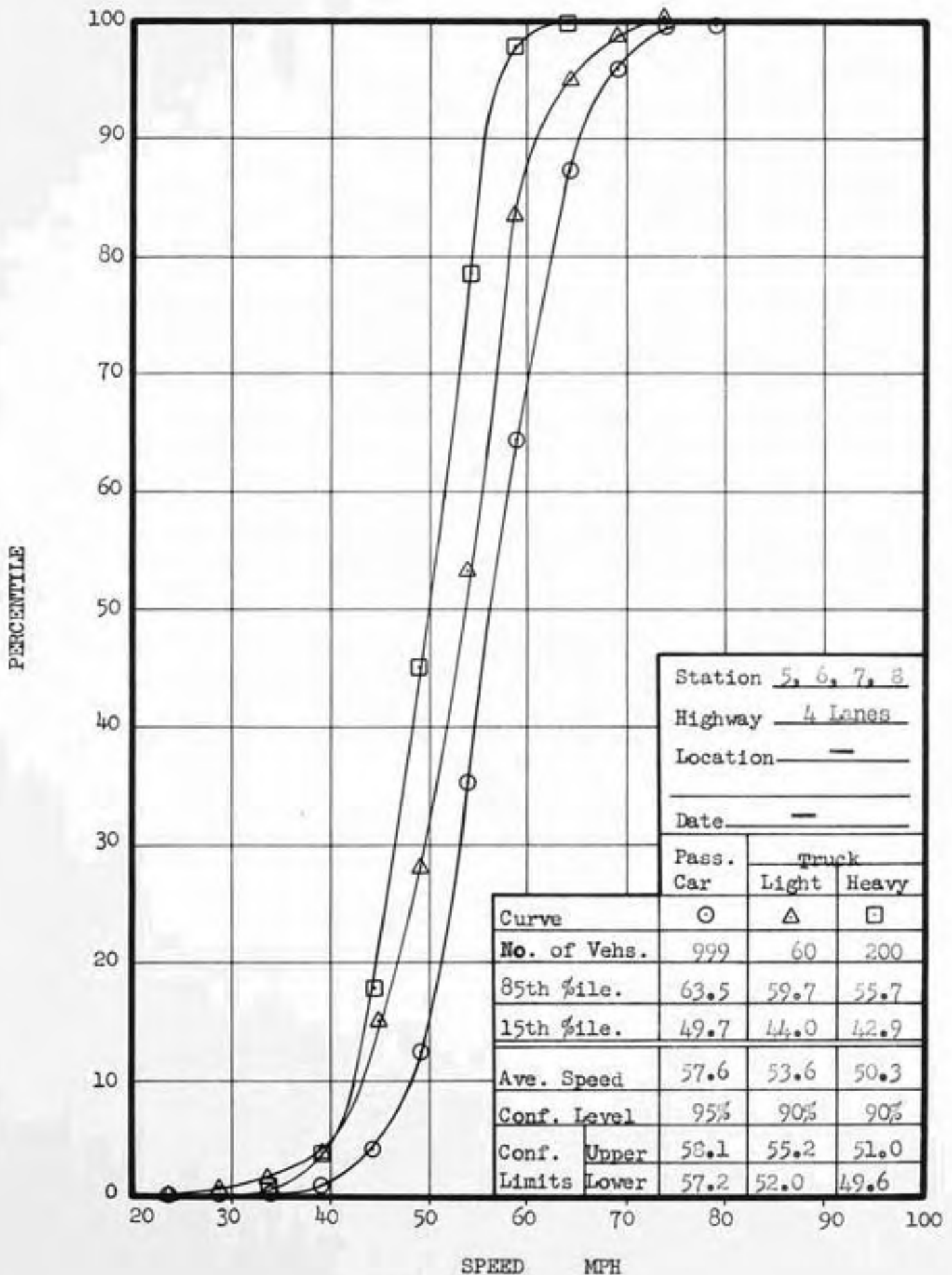


Figure 14

PERCENTILE

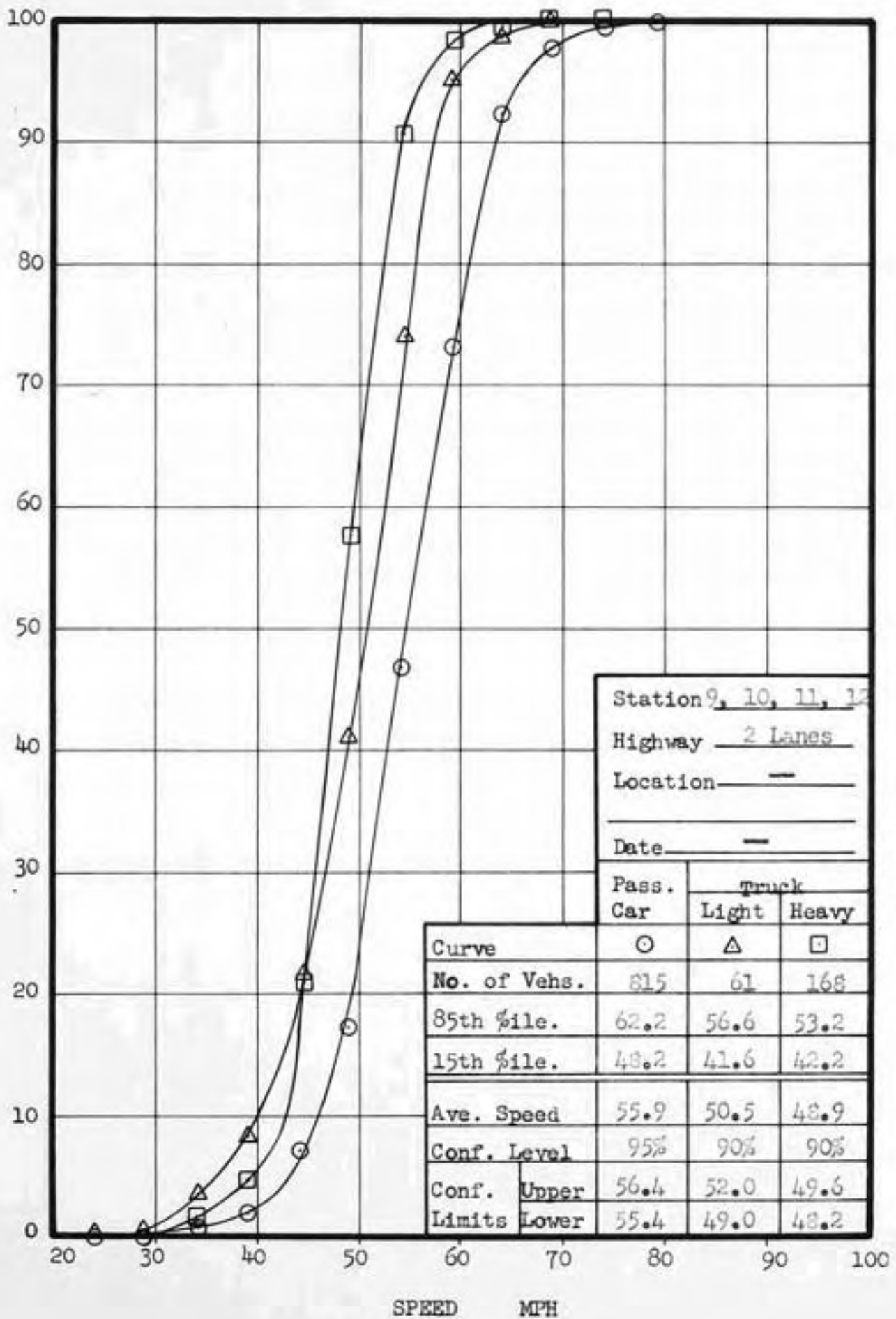


Figure 15

PERCENTILE

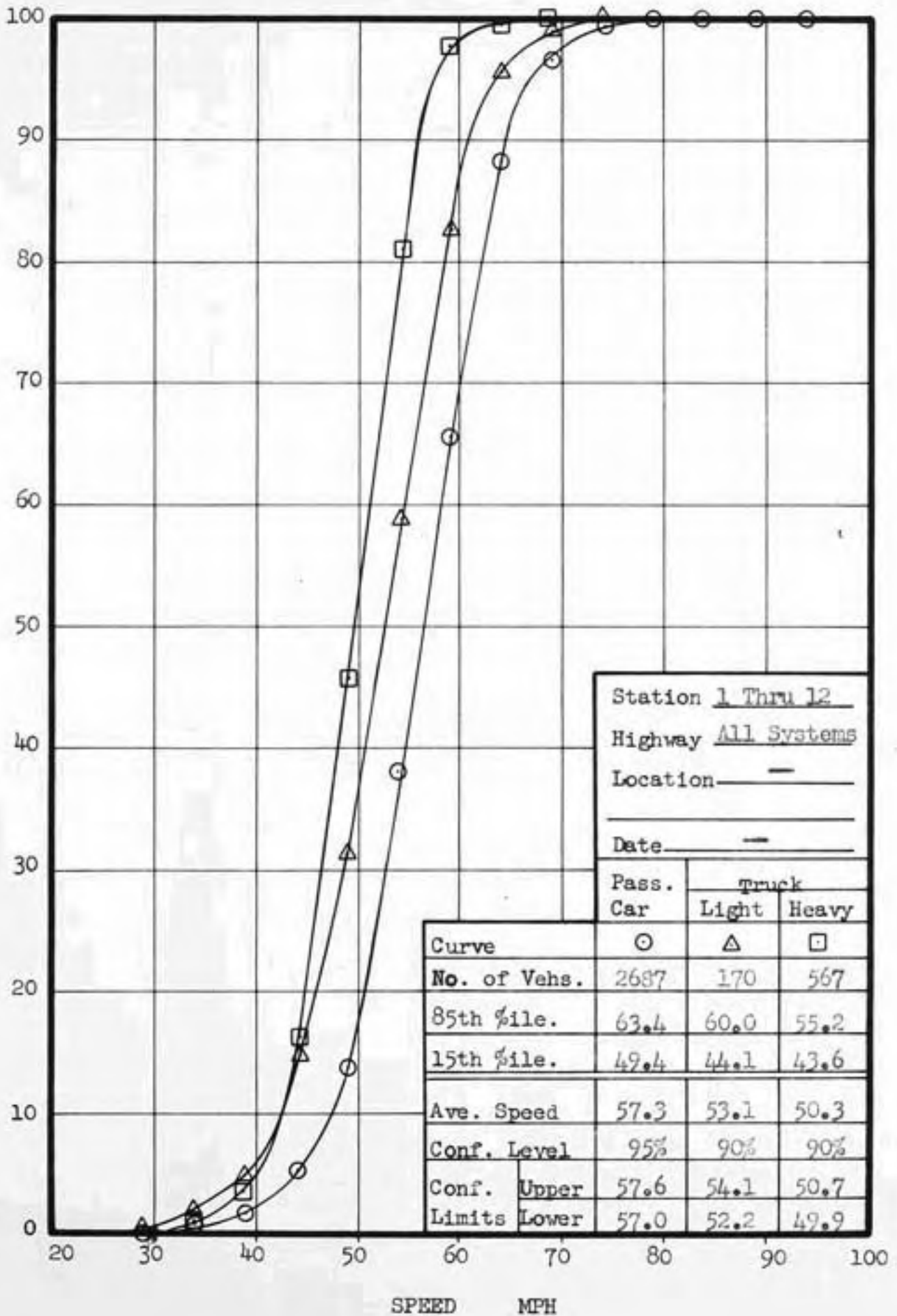
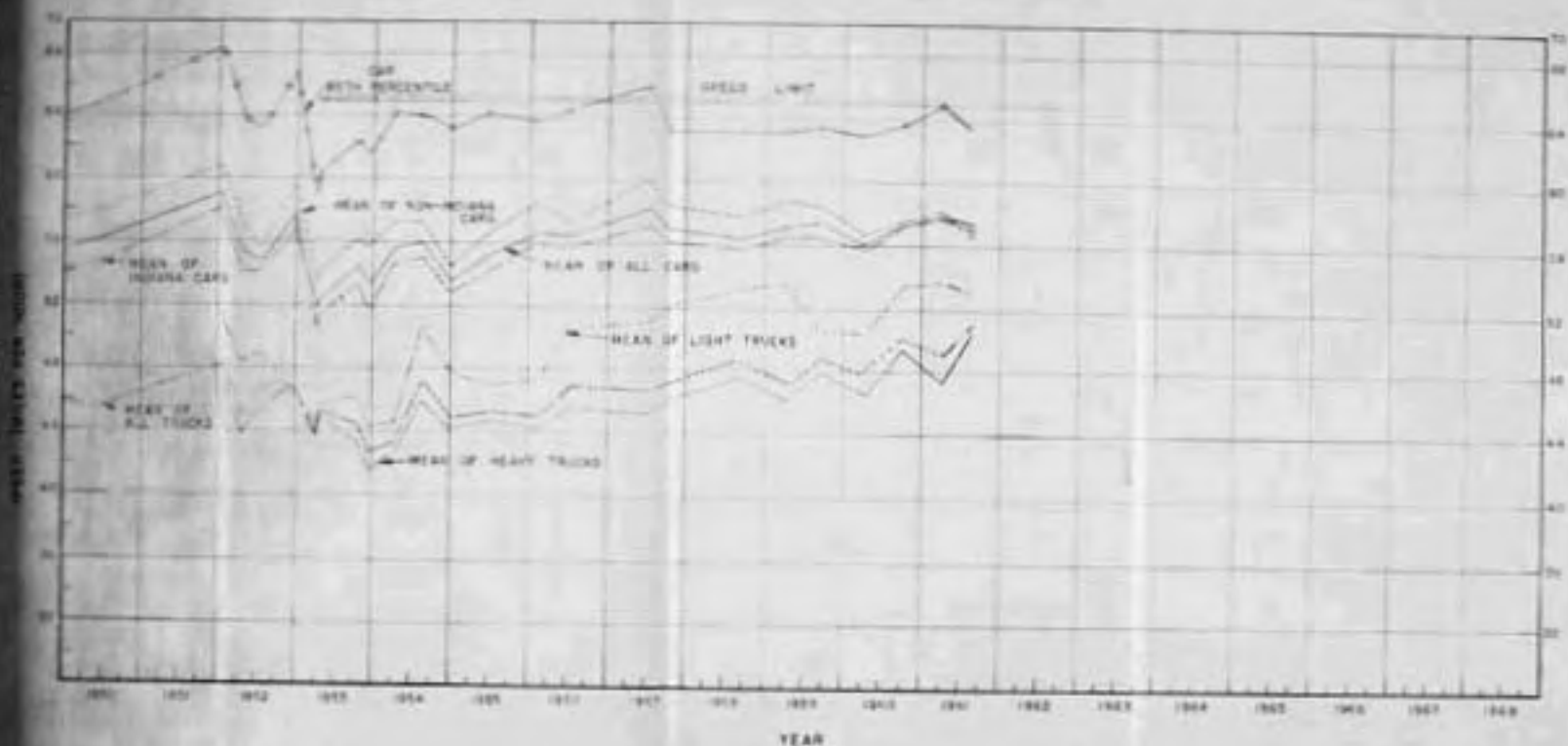
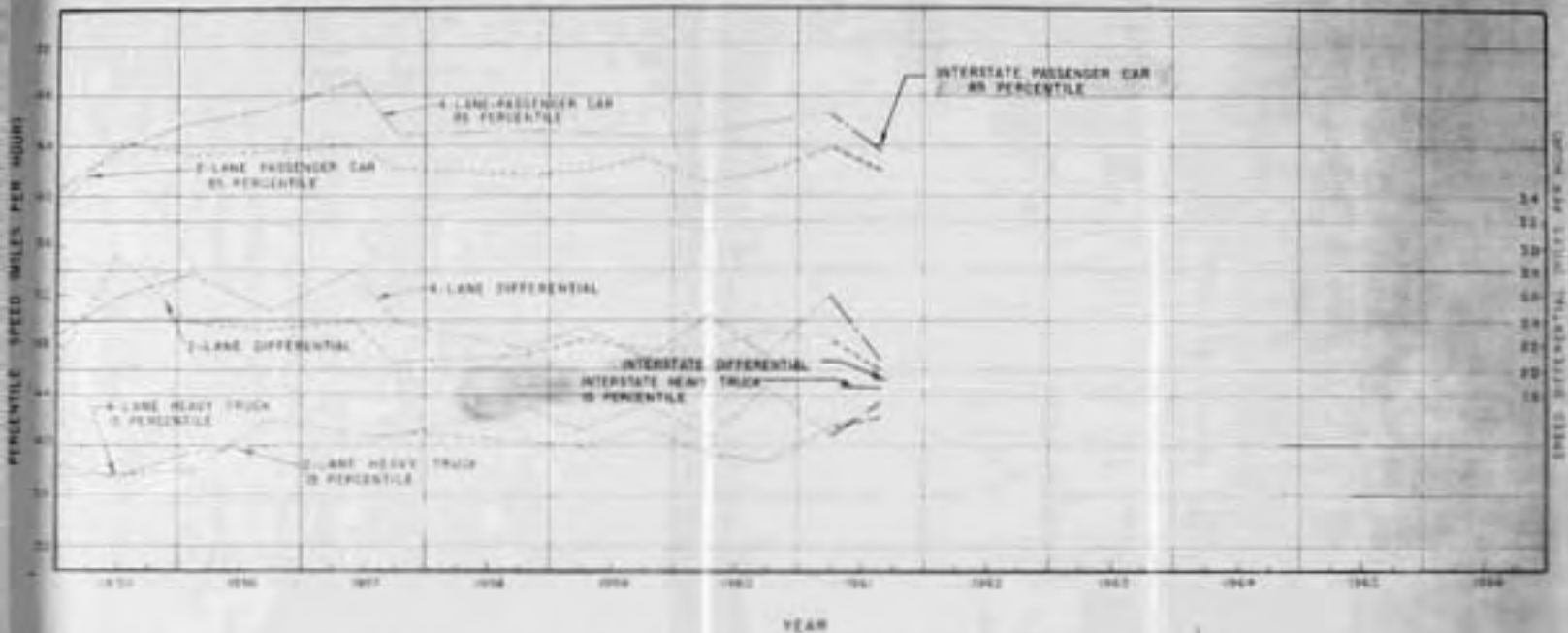


Figure 16



INDIANA RURAL SPEED TRENDS 1950-1961



TRENDS IN PERCENTILE SPEED & SPEED DIFFERENTIAL 1955-1961

TABLE 1 SPEED DATA

Station 1 Highway I-80 Location 0.7 mi east of SR 912
 No. of Lanes 4 This Observation of Surface Concrete Weather Partly cloudy
 Date July 19, 1961 Last Previous Observation (Speed Report No.)
 Time 11:15 AM Date no previous study at this
 Time location

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.		215		111		104		75		13		62
Average speed (m.p.h.)		56.0		55.7		56.4		51.9		56.7		50.9
Standard deviation		6.97		7.91		6.12		5.9 1/4		7.0		5.1
24 m.p.h.		—		—		—		—		—		—
29 m.p.h.		0		0		—		—		—		—
34 m.p.h.		0.5		0.9		—		—		—		0
39 m.p.h.		0.9		1.8		0		4.0		0		4.9
44 m.p.h.		6.1		9.0		2.9		8.0		7.7		8.1
49 m.p.h.		17.7		20.7		14.4		33.7		15.4		43.5
54 m.p.h.		42.8		45.1		40.4		70.7		33.5		77.4
59 m.p.h.		71.2		70.3		72.1		92.0		61.5		98.4
64 m.p.h.		93.0		91.9		94.2		98.7		92.3		100.0
69 m.p.h.		97.7		97.3		98.1		100.0		100.0		—
74 m.p.h.		100.0		100.0		100.0		—		—		—
79 m.p.h.		—		—		—		—		—		—
84 m.p.h.		—		—		—		—		—		—
89 m.p.h.		—		—		—		—		—		—
No. of vehicles obs.		105		46		59		34		6		28
Average speed		55.6		54.8		56.3		50.6		55.5		49.6
No. of vehicles obs.		110		65		45		41		7		34
Average speed		55.1		55.1		55.0		51.9		55.6		51.1

All vehicles

% of vehicles traveling at or less than

TABLE 2 SPEED DATA

Station 2 Highway I-65 Location 1 mile N SR 334 Weather Clear
 No. of Lanes 4 This Observation Type of Surface PCC Last Previous Observation (Speed Report No.)
 Date July 12, 1961 Date No previous study at this
 Time 9:15 - 9:45 AM Time location

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.		217		174		43		55		9		46
Average speed (m.p.h.)		58.6		58.68		57.62		53.50		60.27		52.2
Standard deviation		6.65		7.42		6.24		6.28		7.55		4.77
% of vehicles traveling at or less than	24 m.p.h.	0	0	0	0	0	0	0	0	0	0	0
	29 m.p.h.	0	0	0	0	0	0	0	0	0	0	0
	34 m.p.h.	0.5	0.6	1.7	3.4	2.3	7.0	9.1	0	0	0	10.9
	39 m.p.h.	1.4	3.2	9.2	24.6	37.2	62.9	23.6	0	0	0	41.1
	44 m.p.h.	3.2	8.6	24.6	58.6	83.9	93.0	67.2	0	0	0	74.0
	49 m.p.h.	8.6	29.5	58.6	83.9	93.0	97.6	87.1	0	0	0	97.8
	54 m.p.h.	29.5	85.7	93.1	98.1	100.0	100.0	94.5	0	0	0	100.0
	59 m.p.h.	59.5	94.0	98.1	100.0	100.0	100.0	100.0	0	0	0	100.0
	64 m.p.h.	85.7	98.0	100.0	100.0	100.0	100.0	100.0	0	0	0	100.0
	69 m.p.h.	94.0	100.0	100.0	100.0	100.0	100.0	100.0	0	0	0	100.0
74 m.p.h.	98.0	100.0	100.0	100.0	100.0	100.0	100.0	0	0	0	100.0	
79 m.p.h.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0	0	0	100.0	
84 m.p.h.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0	0	0	100.0	
89 m.p.h.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0	0	0	100.0	
No. of vehicles obs.	108	88	20	58.1	57.0	20	58.1	20	58.1	57.0	20	58.1
Average speed	109	86	23	59.3	59.3	23	59.3	26	59.3	26	59.3	59.3
No. of vehicles obs.	109	86	23	59.3	59.3	23	59.3	26	59.3	26	59.3	59.3
Average speed	109	86	23	59.3	59.3	23	59.3	26	59.3	26	59.3	59.3

TABLE 3 SPEED DATA

Station 3 Highway I-74 Location 1 mile E of Post Road Weather Cloudy
 No. of Lanes 4 This Observation Type of Surface Last Previous Observation (Speed Report No.)
 Date July 13, 1961 Date No previous study at this
 Time 3:30 - 4:15 PM Time location

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.		223		188		35		53		17		36
Average speed (m.p.h.)		55.8		55.4		57.6		57.8		54.2		50.7
Standard deviation		6.83		6.75		5.69		6.86		7.48		5.60
24 m.p.h.		0		0		0		0		0		0
29 m.p.h.		0		0		0		0		0		0
34 m.p.h.		0		0		0		0		0		0
39 m.p.h.		1.8		1.6		2.9		3.8		5.9		2.8
44 m.p.h.		7.2		7.4		5.7		13.2		5.9		16.7
49 m.p.h.		16.6		18.1		8.6		35.8		29.4		38.9
54 m.p.h.		42.2		43.6		34.3		75.5		58.8		83.3
59 m.p.h.		75.3		78.2		60.0		88.7		70.6		97.2
64 m.p.h.		94.2		94.7		91.4		96.2		94.1		97.2
69 m.p.h.		97.8		97.9		97.1		100.0		100.0		100.0
74 m.p.h.		99.1		99.5		97.1		---		---		---
79 m.p.h.		100.0		100.0		100.0		---		---		---
84 m.p.h.		---		---		---		---		---		---
89 m.p.h.		---		---		---		---		---		---
No. of vehicles obs.		120		100		20		---		---		16
Average speed		55.37		54.75		58.50		---		---		50.0
No. of vehicles obs.		103		88		15		---		---		20
Average speed		56.28		56.25		56.50		---		---		51.25

TABLE 4 SPEED DATA

Station 4 Highway I-65 Location 2.9 miles north of SR 60 (Milepost 22) PCC --- Weather Partially cloudy, warm
 No. of Lanes 4 This Observation of Surface --- Last Previous Observation (Speed Report No. ---)
 Date August 23, 1961 Date --- No previous study at this ---
 Time 2:30 - 4:20 PM Time --- location ---

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.		218						65				55
Average speed (m.p.h.)		62.2						52.4				52.2
Standard deviation		6.64						5.26				5.06
24 m.p.h.		0										
29 m.p.h.		0.46										
34 m.p.h.		0.46										
39 m.p.h.		0.46						0				0
44 m.p.h.		1.38						9.2				9.09
49 m.p.h.		2.75						32.3				32.73
54 m.p.h.		11.47						64.6				67.27
59 m.p.h.		32.57						95.4				96.36
64 m.p.h.		66.51						100.0				100.0
69 m.p.h.		91.28										
74 m.p.h.		98.20										
79 m.p.h.		100.0										
84 m.p.h.												
89 m.p.h.												
No. of vehicles obs.		110						29				23
Average speed		62.0						50.9				50.1
No. of vehicles obs.		108						36				32
Average speed		62.4						53.6				53.8

TABLE 5 SPEED DATA

Station 5 Highway US 31 Location 1.2 miles S of SR 38 Weather Cloudy - Clear
 No. of Lanes 4 This Observation PCC and Bituminous Last Previous Observation (Speed Report No.)
 Date July 12, 1961 Date No previous study at this
 Time 1 - 2 PM Time location

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.		218		166		52		48		12		36
Average speed (m.p.h.)		59.6		59.6		59.5		52.4		58.8		50.3
Standard deviation		7.56		7.81		7.25		6.56		6.17		6.33
24 m.p.h.		---		---		---		---		---		---
29 m.p.h.		---		---		---		---		---		---
34 m.p.h.		---		---		---		2.1		---		2.8
39 m.p.h.		---		---		---		6.3		---		8.3
44 m.p.h.		2.7		2.4		3.9		12.5		---		16.7
49 m.p.h.		10.1		10.8		7.7		31.2		---		41.6
54 m.p.h.		25.6		25.7		25.0		68.8		33.3		80.5
59 m.p.h.		52.7		52.6		50.0		87.5		66.6		94.5
64 m.p.h.		79.3		78.2		82.6		95.7		83.4		100.0
69 m.p.h.		92.5		92.4		90.4		97.8		91.6		---
74 m.p.h.		98.0		97.5		100.0		100.0		100.0		---
79 m.p.h.		99.0		98.7		---		---		---		---
84 m.p.h.		99.0		98.7		---		---		---		---
89 m.p.h.		99.0		98.7		---		---		---		---
No. of vehicles obs.		106		80		26		23		6		17
Average speed		59.7		60.6		57.1		55.1		59.2		53.7
No. of vehicles obs.		112		86		26		25		6		19
Average speed		59.4		58.6		61.9		49.9		58.3		47.2

TABLE 6 SPEED DATA

Station 6 Highway US 52 Location 1 mile S of SR 28 Weather Clear & sunny
 No. of Lanes 4 This Observation of Surface Bituminous Last Previous Observation (Speed Report No.)
 Date July 6, 1951 Date March 17, 1961
 Time 3 - 4 PM Time 2 - 3:40 PM; 4 - 5:20 PM

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.	521	218	339	138	182	80	116	77	19	14	97	63
Average speed (m.p.h.)	60.4	59.75	59.7	60.4	61.8	58.7	48.1	51.85	59.5	54.3	45.9	51.3
Standard deviation	---	6.63	---	7.34	---	5.11	---	6.00	---	5.06	---	6.1
24 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
29 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
34 m.p.h.	---	---	---	---	---	---	---	1.3	---	---	---	1.6
39 m.p.h.	---	0.5	---	0.7	---	---	---	2.6	---	---	---	3.2
44 m.p.h.	---	1.8	---	2.9	---	---	35.3	14.3	5.3	7.1	41.2	12.7
49 m.p.h.	5.4	5.5	6.5	7.7	3.3	1.3	56.0	33.8	10.5	21.4	64.9	36.5
54 m.p.h.	17.1	22.4	20.0	21.0	11.5	25.0	85.3	64.9	31.6	42.8	95.9	69.8
59 m.p.h.	38.6	50.9	43.1	43.5	30.2	63.7	92.2	96.1	52.6	92.9	100.0	96.9
64 m.p.h.	75.2	81.5	79.1	77.5	63.1	88.7	96.6	100.0	78.9	100.0	---	100.0
69 m.p.h.	92.5	93.6	94.7	91.4	91.2	97.5	99.1	---	94.7	---	---	---
74 m.p.h.	99.0	98.5	99.7	97.8	97.8	100.0	100.0	---	100.0	---	---	---
79 m.p.h.	---	100.0	---	100.0	---	---	---	---	---	---	---	---
84 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
89 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
No. of vehicles obs.	273	106	174	73	99	33	52	52	12	8	40	44
Average speed	62.3	61.1	61.3	61.9	64.0	59.3	50.5	53.3	59.0	51.9	48.0	53.6
No. of vehicles obs.	248	112	165	65	83	47	64	25	7	6	57	19
Average speed	58.4	58.5	57.9	58.6	59.3	58.2	46.2	48.9	60.4	57.5	44.5	46.1

TABLE 7 SPEED DATA

Station 7 Highway US 41 Location 1 mile N of S Jct. of SR 2
 No. of Lanes 4 This Observation of Surface PCC Weather Cloudy
 Date July 19, 1961 Last Previous Observation (Speed Report No.)
 Time 1:20 PM Date No previous study at this
 Time location

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.		217		102		115		78		12		66
Average speed (m.p.h.)		57.8		58.1		57.5		50.8		54.6		50.2
Standard deviation		7.67		7.25		6.29		5.75		8.53		4.2
24 m.p.h.		---		---		---		---		---		---
29 m.p.h.		---		---		---		---		---		---
34 m.p.h.		---		---		---		---		---		---
39 m.p.h.		1.4		2.0		0.9		2.6		8.3		1.5
44 m.p.h.		2.8		4.9		0.9		15.4		16.7		15.2
49 m.p.h.		11.1		10.8		11.3		42.3		25.0		45.5
54 m.p.h.		32.2		32.4		33.9		79.5		50.0		84.8
59 m.p.h.		61.3		56.9		65.2		94.9		66.7		100.0
64 m.p.h.		88.9		86.3		91.3		98.7		91.7		---
69 m.p.h.		96.3		95.1		97.4		100.0		100.0		---
74 m.p.h.		99.5		100.0		99.1		---		---		---
79 m.p.h.		100.0		---		100.0		---		---		---
84 m.p.h.		---		---		---		---		---		---
89 m.p.h.		---		---		---		---		---		---
No. of vehicles obs.		106		50		56		---		---		30
Average speed		58.2		59.3		57.1		---		---		50.0
No. of vehicles obs.		111		52		59		---		---		36
Average speed		57.4		56.9		57.8		---		---		50.3

TABLE 8 SPEED DATA

Station 8 Highway US 52 Location 1 mile N of Klondyke Weather Clear - sunny
 No. of Lanes 4 This Observation Type of Surface Last Previous Observation (Speed Report No.)
 Date June 22, 1961 Date April 4, 1961
 Time 3:15 PM Time 8 - 10:20 AM; 1:30-2:20 PM; 5 - 5:40 PM

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.	532	346	356	260	176	86	170	57	49	22	121	35
Average speed (m.p.h.)	58.9	55.0	58.2	54.7	60.2	55.8	49.4	49.1	51.9	49.8	48.4	48.6
Standard deviation	—	5.93	—	6.44	—	5.60	—	6.18	—	6.83	—	6.21
24 m.p.h.	—	—	—	—	—	—	—	—	—	—	—	—
29 m.p.h.	—	—	—	—	—	—	—	—	—	—	—	—
34 m.p.h.	—	0.3	—	0.4	—	—	—	1.8	—	4.6	—	—
39 m.p.h.	—	1.5	—	1.9	—	—	—	5.3	—	4.6	—	5.7
44 m.p.h.	—	5.8	—	6.5	—	2.5	25.9	28.1	26.5	27.3	25.6	28.6
49 m.p.h.	8.8	17.3	11.8	19.2	2.8	11.6	17.6	57.9	45.0	50.0	48.8	62.9
54 m.p.h.	24.4	51.7	28.1	53.9	17.5	45.4	77.6	77.2	65.3	72.7	82.6	80.0
59 m.p.h.	49.8	80.4	52.0	80.0	45.5	81.4	92.5	98.3	81.6	95.5	98.3	100.0
64 m.p.h.	80.6	95.1	81.7	95.4	78.4	94.2	100.0	100.0	100.0	100.0	100.0	—
69 m.p.h.	92.4	98.8	94.1	98.8	92.0	98.8	—	—	—	—	—	—
74 m.p.h.	98.1	100.0	98.3	100.0	97.7	100.0	—	—	—	—	—	—
79 m.p.h.	—	—	—	—	—	—	—	—	—	—	—	—
84 m.p.h.	—	—	—	—	—	—	—	—	—	—	—	—
89 m.p.h.	—	—	—	—	—	—	—	—	—	—	—	—
No. of vehicles obs.	275	171	172	133	103	38	66	25	25	11	41	34
Average speed	57.0	54.8	56.1	54.7	58.1	55.4	47.9	47.5	50.6	48.0	46.2	47.1
No. of vehicles obs.	257	175	184	127	73	48	104	32	24	11	80	21
Average speed	61.0	55.1	60.1	54.8	63.2	59.0	57.4	50.3	55.3	51.6	49.5	45.4

TABLE 9 SPEED DATA

Station 9 Highway US 41 Location 1.0 miles N of Roswell Weather Sunny - Clear
 No. of Lanes 2 This Observation of Surface Asphalt Last Previous Observation (Speed Report No. 72)
 Date July 20, 1961 Date March 31, 1961
 Time 2:30 - 4:25 PM Time 9:30 - 11:10 AM

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.	34.3	216	14.3	98	200	116	52	64	16	11	36	53
Average speed (m.p.h.)	55.7	54.8	55.6	55.2	55.7	54.4	46.7	48.4	50.7	50.7	44.9	48.0
Standard deviation	---	6.25	---	7.15	---	5.63	---	5.49	---	7.48	---	4.60
24 m.p.h.	---	0	---	0	---	0	---	0	---	0	---	0
29 m.p.h.	---	0	---	0	---	0	---	0	---	0	---	0
34 m.p.h.	---	0	---	0	---	0	---	0	---	0	---	0
39 m.p.h.	---	0.9	---	2.0	---	0	---	6.3	---	18.2	---	3.8
44 m.p.h.	---	6.5	---	7.1	---	5.9	42.3	29.7	12.8	27.3	52.2	30.2
49 m.p.h.	12.0	19.4	16.8	20.4	8.5	18.7	63.5	56.3	31.3	27.3	77.8	62.3
54 m.p.h.	38.8	55.1	39.9	53.1	38.0	56.8	84.6	89.1	75.0	63.6	88.9	94.3
59 m.p.h.	72.6	78.2	72.7	72.4	62.5	83.1	98.1	100.0	93.8	100.0	100.0	100.0
64 m.p.h.	94.5	94.9	93.7	92.9	80.0	96.6	100.0	---	100.0	---	---	---
69 m.p.h.	98.5	99.1	97.2	98.0	99.5	100.0	---	---	---	---	---	---
74 m.p.h.	99.4	100.0	98.6	100.0	100.0	---	---	---	---	---	---	---
79 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
84 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
89 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
No. of vehicles obs.	93	113	43	50	26	63	26	---	6	---	20	20
Average speed	56.7	53.7	57.4	54.3	46.3	53.2	46.3	---	50.7	---	45.1	46.0
No. of vehicles obs.	250	103	100	48	26	55	26	---	10	---	16	33
Average speed	55.4	55.9	54.8	56.1	47.0	55.8	47.0	---	50.7	---	44.7	49.2

2

3

TABLE 10 SPEED DATA

Station 10 Highway US 52 Location 2.0 miles N. of Templeton Weather Cloudy - Clear
 No. of Lanes 2 Type of Surface Bituminous Last Previous Observation (Speed Report No. 72)
 Date July 15, 1961 Date March 31, 1961
 Time 2:15 PM Time 12:15 - 1:30 PM

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.	355	215	140	97	215	118	46	63	10	8	36	55
Average speed (m.p.h.)	56.5	56.8	56.3	57.4	56.6	56.4	48.7	48.9	51.3	51.9	48.0	48.4
Standard deviation	---	6.1	---	6.48	---	5.19	---	4.46	---	4.58	---	4.38
24 m.p.h.	---	0	---	0	---	0	---	0	---	0	---	0
29 m.p.h.	---	0	---	0	---	0	---	0	---	0	---	0
34 m.p.h.	---	0	---	0	---	0	---	0	---	0	---	0
39 m.p.h.	---	0.5	---	0	---	0.9	---	3.2	---	0	---	3.6
44 m.p.h.	---	1.9	---	2.1	---	1.7	30.4	15.9	20.0	12.5	33.3	16.4
49 m.p.h.	10.1	10.2	12.1	12.4	8.8	8.5	43.5	61.9	40.0	25.0	44.4	67.3
54 m.p.h.	36.9	38.5	35.0	35.1	38.1	38.1	80.4	92.1	100.0	75.0	86.1	94.5
59 m.p.h.	62.3	73.5	62.9	69.1	61.9	77.1	97.8	100.0	90.0	100.0	100.0	100.0
64 m.p.h.	92.9	92.6	92.9	88.7	93.0	95.8	100.0	---	100.0	---	---	---
69 m.p.h.	99.2	98.6	99.3	96.9	99.1	100.0	---	---	---	---	---	---
74 m.p.h.	99.7	99.5	99.3	99.0	100.0	---	---	---	---	---	---	---
79 m.p.h.	---	100.0	---	100.0	---	---	---	---	---	---	---	---
84 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
89 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
No. of vehicles obs.	174	131	83	56	91	75	16	30	3	4	13	26
Average speed	57.4	57.6	57.2	59.0	57.6	56.5	46.3	49.7	49.3	53.8	45.5	49.0
No. of vehicles obs.	181	84	57	41	124	43	30	33	7	4	23	29
Average speed	55.5	55.6	54.9	55.2	55.8	56.1	50.1	48.1	52.1	50.0	49.4	47.8

All vehicles at or less than

TABLE 11 SPEED DATA

Station 11 Highway US 31 Location 3.0 miles S of Rochester Weather Clear - Sunny
 No. of Lanes 2 This Observation Type of Surface Asphalt Last Previous Observation (Speed Report No. 72)
 Date June 21, 1961 Date April 3, 1961
 Time 10:40-12:00 AM, 1:00 PM - Time 3:15 - 5:35 PM

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.	339	384	271	285	68	99	82	102	25	42	57	60
Average speed (m.p.h.)	57.1	56.0	57.1	56.1	57.4	55.9	49.9	50.2	54.6	50.1	47.8	50.2
Standard deviation	---	8.18	---	9.02	---	6.58	---	6.97	---	7.33	---	6.48
24 m.p.h.	---	0	---	0	---	0	---	0	---	0	---	0
29 m.p.h.	---	0	---	0	---	0	---	0	---	0	---	0
34 m.p.h.	---	0.8	---	1.1	---	0	---	3.9	---	4.8	---	3.3
39 m.p.h.	---	2.1	---	2.5	---	1.0	---	6.9	---	7.1	---	6.7
44 m.p.h.	---	9.4	---	11.2	---	4.0	23.1	18.6	4.0	21.4	31.5	16.7
49 m.p.h.	11.2	19.3	12.2	20.7	7.4	15.0	45.1	46.1	28.0	47.6	52.6	45.0
54 m.p.h.	35.1	46.8	37.6	45.2	25.0	52.0	76.8	80.4	52.0	76.2	87.7	83.3
59 m.p.h.	61.1	69.0	62.0	69.1	57.4	68.0	84.1	94.0	60.0	92.8	94.7	95.0
64 m.p.h.	88.8	89.5	87.8	88.5	92.6	92.0	97.5	98.0	92.0	97.5	100.0	98.3
69 m.p.h.	94.6	95.4	94.1	94.0	95.6	98.0	100.0	99.0	100.0	100.0	---	98.3
74 m.p.h.	---	97.8	97.8	97.3	98.5	100.0	---	100.0	---	---	---	100.0
79 m.p.h.	---	99.5	---	99.3	---	---	---	---	---	---	---	---
84 m.p.h.	---	99.5	---	99.3	---	---	---	---	---	---	---	---
89 m.p.h.	---	99.5	---	99.3	---	---	---	---	---	---	---	---
No. of vehicles obs.	180	180	140	133	40	47	30	48	13	23	17	25
Average speed	57.5	56.4	57.3	57.0	58.2	55.2	49.8	50.4	53.8	50.5	46.8	50.9
No. of vehicles obs.	159	204	131	152	28	52	52	54	12	19	40	35
Average speed	56.7	55.6	56.8	55.3	55.3	56.7	49.9	50.0	55.6	49.6	48.2	49.7

TABLE 12 SPEED DATA

Station 12 Highway SR 25 Location 0.7 mile S of Americus Weather Clear
 No. of Lanes 2 This Observation Bituminous Last Previous Observation (Speed Report No. 72)
 Date June 30, 1961 Date March 16, 1961
 Time 1:40 - 3 PM Time 10 AM - 12:45 PM

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.	366	235	340	200	26	35	135	49	42	14	93	35
Average speed (m.p.h.)	57.0	54.8	56.9	54.7	57.5	55.4	50.2	50.0	54.8	53.9	48.1	48.5
Standard deviation	---	6.60	---	---	---	---	---	---	---	6.08	---	5.45
24 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
29 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
34 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
39 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
44 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
49 m.p.h.	16.7	23.0	17.1	24.5	11.5	14.3	21.5	20.4	11.3	---	24.7	28.5
54 m.p.h.	38.3	52.7	38.2	50.3	38.5	51.4	46.7	42.8	26.2	28.6	55.9	48.6
59 m.p.h.	62.3	79.2	62.6	79.5	57.7	77.1	81.5	85.6	61.9	64.3	90.3	94.2
64 m.p.h.	80.9	94.4	81.2	92.0	76.9	97.1	92.3	95.8	78.6	85.6	100.0	100.0
69 m.p.h.	92.6	98.2	92.6	98.0	92.3	100.0	96.3	97.9	88.2	92.8	---	---
74 m.p.h.	97.3	99.5	97.4	99.5	96.2	---	98.5	---	95.2	100.0	---	---
79 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
84 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
89 m.p.h.	---	---	---	---	---	---	---	---	---	---	---	---
No. of vehicles obs.	179	111	168	92	11	19	72	22	25	5	47	17
Average speed	57.8	55.6	57.5	55.5	61.5	56.2	50.6	50.0	55.4	54.2	48.0	48.7
No. of vehicles obs.	187	124	172	108	15	16	63	27	17	9	46	18
Average speed	56.2	54.1	56.4	54.0	54.5	54.5	49.7	50.1	53.8	53.7	48.2	48.3

TABLE 13 SPEED DATA

Station 1, 2, 3, 4 Highway Interstate Location See individual stations
 No. of Lanes 4 Type of Surface Weather
 This Observation (Speed Report No.)
 Date No previous study
 Time

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.		873		473		182		248		49		199
Average speed (m.p.h.)		58.2		56.7		56.9		52.4		55.9		51.5
Standard deviation		7.13		7.31		6.41		6.00		7.26		5.27
24 m.p.h.		0		---		---		---		---		---
29 m.p.h.		0.1		0		---		---		---		---
34 m.p.h.		0.3		0.4		0		0		0		0
39 m.p.h.		1.1		1.6		0.6		2.0		2.0		2.0
44 m.p.h.		4.4		6.3		3.2		9.6		6.1		10.6
49 m.p.h.		11.4		15.4		11.5		33.0		22.4		35.6
54 m.p.h.		31.5		38.0		36.4		69.4		47.0		74.8
59 m.p.h.		59.8		69.1		67.6		91.1		65.3		97.4
64 m.p.h.		85.0		90.0		93.4		97.6		91.8		99.0
69 m.p.h.		95.2		96.0		97.8		99.6		98.0		100.0
74 m.p.h.		98.8		99.2		98.9		100.0		100.0		---
79 m.p.h.		100.0		100.0		100.0		---		---		---
84 m.p.h.		---		---		---		---		---		---
89 m.p.h.		---		---		---		---		---		---
No. of vehicles obs.		---		---		---		---		---		---
Average speed		---		---		---		---		---		---
No. of vehicles obs.		---		---		---		---		---		---
Average speed		---		---		---		---		---		---

All vehicles

24 or vehicles traveling at or less than

Bound

Bound

TABLE 14 SPEED DATA

Station 5, 6, 7, 8 Highway 4 Lanes 4 Location See individual stations
 No. of Lanes 4 Type of Surface Weather
 This Observation (Speed Report No.)
 Date No previous study
 Time

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.		999		666		333		260		60		200
Average speed (m.p.h.)		57.6		57.6		57.6		51.0		53.6		50.3
Standard deviation		7.13		7.54		6.15		6.39		7.61		5.74
24 m.p.h.		---		---		---		---		---		---
29 m.p.h.		---		---		---		---		---		---
34 m.p.h.		0.1		0.2		---		1.2		1.7		1.0
39 m.p.h.		0.9		1.2		0.3		3.8		3.3		4.0
44 m.p.h.		3.6		4.5		1.8		17.3		15.0		18.0
49 m.p.h.		11.8		13.5		8.4		41.2		28.3		45.0
54 m.p.h.		35.6		36.8		33.3		72.7		53.3		78.5
59 m.p.h.		63.3		62.3		66.6		94.6		83.3		98.0
64 m.p.h.		87.4		86.0		90.0		98.8		95.0		100.0
69 m.p.h.		95.8		95.3		96.6		99.6		98.3		---
74 m.p.h.		99.2		99.0		99.6		100.0		100.0		---
79 m.p.h.		99.8		99.6		100.0		---		---		---
84 m.p.h.		99.3		99.6		---		---		---		---
89 m.p.h.		99.8		99.6		---		---		---		---
No. of vehicles obs.		---		---		---		---		---		---
Average speed		---		---		---		---		---		---
No. of vehicles obs.		---		---		---		---		---		---
Average speed		---		---		---		---		---		---

All vehicles

2 or vehicles traveling at or less than

Bound

TABLE 15 SPEED DATA

Station 9, 10, 11, 12 Highway 2 Lanes See individual stations Location Weather
 No. of Lanes 4 This Observation of Surface Last Previous Observation (Speed Report No. _____)
 Date No previous study
 Time _____

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.		81.5		480		325		229		61		168
Average speed (m.p.h.)		55.9		56.2		55.6		49.2		50.4		48.9
Standard deviation		7.33		8.17		5.88		6.05		7.10		5.52
24 m.p.h.		---		---		---		---		---		---
29 m.p.h.		0.0		0.0		---		0.0		0.0		0.0
34 m.p.h.		0.4		0.6		0.0		1.7		3.2		1.2
39 m.p.h.		1.4		1.8		0.6		5.6		8.2		4.8
44 m.p.h.		6.6		8.5		3.3		21.0		21.3		20.8
49 m.p.h.		16.9		19.0		14.0		53.2		41.0		57.7
54 m.p.h.		46.4		44.8		48.6		86.0		73.8		90.5
59 m.p.h.		72.6		69.8		76.7		97.4		95.0		98.2
64 m.p.h.		91.8		89.4		95.2		99.1		98.4		99.4
69 m.p.h.		97.2		95.4		99.7		99.6		100.0		99.4
74 m.p.h.		98.8		98.1		100.0		100.0		---		100.0
79 m.p.h.		99.8		99.6		---		---		---		---
84 m.p.h.		99.8		99.6		---		---		---		---
89 m.p.h.		99.8		99.6		---		---		---		---
No. of vehicles obs.		---		---		---		---		---		---
Average speed		---		---		---		---		---		---
No. of vehicles obs.		---		---		---		---		---		---
Average speed		---		---		---		---		---		---

All vehicles at or less than

Bound

TABLE 16 SPEED DATA

Station 1 thru 12 Highway All Systems Location See individual stations
 No. of Lanes This Observation Type of Surface Last Previous Observation (Speed Report No.)
 Date Date No previous study
 Time Time Weather

OBSERVATION	PASSENGER CARS						TRUCKS					
	All		Indiana		Non-Indiana		All		Less than 5000 pounds		5000 pounds or more	
	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present	Last	Present
No. of vehicles obs.	2687	1619	850	737	567	170	567	567	567	567	567	567
Average speed (m.p.h.)	57.3	56.9	56.7	51.0	53.1	50.3	50.3	50.3	50.3	50.3	50.3	50.3
Standard deviation	7.25	7.69	6.17	6.30	7.66	5.67	5.67	5.67	5.67	5.67	5.67	5.67
24 m.p.h.	0.0	—	—	—	—	—	—	—	—	—	—	—
29 m.p.h.	0.04	0.0	—	0.0	—	—	0.0	0.0	0.0	0.0	0.0	0.0
34 m.p.h.	0.26	0.4	0.0	0.9	1.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7
39 m.p.h.	1.1	1.5	0.5	3.8	4.7	3.5	3.5	3.5	3.5	3.5	3.5	3.5
44 m.p.h.	4.8	6.2	2.9	15.9	14.7	16.2	16.2	16.2	16.2	16.2	16.2	16.2
49 m.p.h.	13.2	15.7	12.9	42.2	31.2	46.5	46.5	46.5	46.5	46.5	46.5	46.5
54 m.p.h.	37.6	39.5	40.5	75.7	58.6	80.6	80.6	80.6	80.6	80.6	80.6	80.6
59 m.p.h.	65.1	66.5	70.6	94.3	82.4	97.9	97.9	97.9	97.9	97.9	97.9	97.9
64 m.p.h.	87.9	88.2	92.8	98.5	95.3	99.5	99.5	99.5	99.5	99.5	99.5	99.5
69 m.p.h.	96.0	95.6	98.1	99.6	98.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
74 m.p.h.	99.0	98.8	99.6	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
79 m.p.h.	99.9	99.8	100.0	—	—	—	—	—	—	—	—	—
84 m.p.h.	99.9	99.8	—	—	—	—	—	—	—	—	—	—
89 m.p.h.	99.9	99.8	—	—	—	—	—	—	—	—	—	—
No. of vehicles obs.	—	—	—	—	—	—	—	—	—	—	—	—
Average speed	—	—	—	—	—	—	—	—	—	—	—	—
No. of vehicles obs.	—	—	—	—	—	—	—	—	—	—	—	—
Average speed	—	—	—	—	—	—	—	—	—	—	—	—

All vehicles at or less than

Bound Bound

TABLE 17

SUMMARY OF SPOT SPEED OBSERVATION
ON INDIANA HIGHWAYS
(Free-Moving Vehicles on Level, Tangent Sections)

	Passenger Cars				Trucks		
	Ind. Mean	Non-Ind. Mean	All Mean	All 85 per	Light Mean	Heavy Mean	All Mean
Two-Lane Highways							
May '57	55.6	59.1	56.9	64.0	50.2	44.8	46.1
Aug. '57	55.5	56.7	55.9	62.1	51.7	45.8	47.3
Aug. '58	54.3	56.3	55.0	61.7	53.0	46.3	47.8
Mar. '59	55.5	57.7	56.1	61.9	50.4	45.4	46.3
Aug. '59	55.6	55.3	55.9	63.2	49.7	46.7	48.0
Mar. '60	53.3	54.8	53.7	61.2	48.5	45.9	46.6
Sept. '60	55.7	55.6	55.6	62.0	53.0	48.1	49.1
Mar. '61	56.7	56.4	56.6	63.9	53.7	47.5	49.3
Aug. '61	56.2	55.7	55.9	62.2	50.4	48.9	49.3
Four-Lane Highways							
May '57	59.9	63.6	61.0	69.0	52.2	46.0	47.9
Aug. '57	57.5	59.9	58.5	64.8	52.0	46.6	47.6
Aug. '58	58.0	59.6	58.7	65.0	54.3	49.0	50.0
Mar. '59	58.2	61.7	59.0	64.9	53.6	47.0	48.4
Aug. '59	58.4	60.1	59.1	64.5	50.0	53.1	49.5
Mar. '60	58.1	59.2	58.4	65.0	52.4	47.3	48.4
Sept. '60	59.5	60.2	59.7	65.8	54.8	51.3	52.0
Mar. '61	58.9	61.0	59.6	66.7	54.0	47.3	48.9
Aug. '61	57.6	57.6	57.6	63.5	53.6	50.3	51.0
Interstate Highways							
Aug. '61	56.7*	56.9*	58.2	64.0	55.9	51.5	52.4
All Highways							
May '57	57.2	60.3	58.3	66.0	50.9	45.2	46.6
Aug. '57	56.2	58.3	56.9	63.2	51.8	46.1	47.4
Aug. '58	55.7	57.9	56.5	63.1	53.4	47.5	48.7
Mar. '59	56.6	59.0	57.2	63.1	51.5	45.9	47.0
Aug. '59	56.5	58.4	57.4	63.5	50.6	47.8	48.6
Mar. '60	55.6	57.1	56.0	63.0	50.2	46.6	47.5
Sept. '60	57.3	57.6	57.4	63.7	53.7	49.4	50.2
Mar. '61	57.7	58.3	57.9	65.1	53.8	47.4	49.1
Aug. '61	56.9	56.7	57.3	63.4	53.1	50.3	51.0

*Includes data for only three of the four stations on Interstate Highways

Table 18. Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Square	F*value
Highway Type	2	4277	2138	46.5
Stations (in highway type)	9	8982	998	21.7
Vehicle type	2	25028	12512	272.0
Highway by Vehicle interaction	4	1396	349	7.6
Error	<u>3690</u> 3707	<u>168969</u> 208652	46	

*An F value above 5.30 (2 and infinite degree of freedom) indicates significance at the 99.5% confidence level.