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STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

TRAFFIC NOISE STUDY NEAR VENTURA FREEWAY AT MARIOTA AVENUE

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August 1963

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State of California
Department of Public Works
Division of Highways
Materials and Research Department

August 1963

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Proj. W.O. S-63311

Mr. A. C. Birnie
District Engineer, District VII
Division of Highways
Los Angeles, California

Attention: Mr. A. D. Mayfield

Dear Sir:

Submitted in compliance with your request of July 5, 1963, is a report of:

TRAFFIC NOISE STUDY

NEAR VENTURA FREEWAY AT MARIOTA AVENUE

Study made by . . . . . Structural Materials Section
Under general direction of . . . . . E. F. Nordlin
Measurements by . . . . . Louis Bourget and Sam Muraki
Report by . . . . . Louis Bourget

Very truly yours,

F. N. Hveem
Materials and Research Engineer

LB:mw
cc: LRGillis
JALegarra
GMWebb
WLWarren
Dist. VII

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INTRODUCTION

The purpose of this study is to document traffic noise conditions at a distance of 100 feet from the north side of Ventura Freeway in the vicinity of Mariota Avenue and Clybourn Avenue during the periods of 6:00 P.M. to 4:00 A.M., Thursday and Sunday nights, July 11 and 14, 1963. Thursday and Sunday nights were specified because they are regarded as times of greatest truck traffic, representing end of week and beginning of week maximums.

Graphs are presented separately for both A scale and C scale decibel levels to enable comparison with each other or with earlier reports based on C scale noise levels. These graphs were developed from recordings made for at least 15 minutes of every hour, on the hour, during the 6:00 P.M. to 4:00 A.M. periods. The information is presented in a manner to facilitate comparison with other areas or to identify any significant changes that may occur later from opening of additional freeway sections in the Los Angeles area.

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DISCUSSION

The noise exposure to traffic along the north side of Ventura Freeway is identical at either Mariota Avenue cul-de-sac or Clybourn Avenue cul-de-sac. Therefore, while the measurements in this report were obtained at the Mariota Avenue location, the results apply equally to the adjacent Clybourn Avenue site.

The measured noise peaks are presented in a manner to show intensity levels, the type of vehicle emitting the noise, and the number of vehicles recorded at each intensity level. Separately identified are: diesel trucks, motorcycles, gasoline powered trucks, and sports cars. Automobiles have been omitted because they do not constitute a significant part of the noise problem and would only serve to clutter the information on the noise charts at the lower levels.

Separate charts, Figures 1 and 2, for dbA and dbC measurements are attached. These charts clearly show that diesel trucks are responsible for virtually all noise peaks above 80 dbA and 90 dbC; and for 90 percent of all noise peaks of 76 dbA and over, or 86 dbC and over, at 100 feet.

It is interesting to note that the dbA distribution of diesel truck noise is in remarkable accord with the intensity range predicted by our earlier report, "The Effect of Basic Highway Designs on Traffic Noise Attenuation", September 1961 (refer to the attached extract of Figure 3, Flat Section at the 100 foot mark). One purpose of this earlier report was to enable districts to estimate truck noise conditions. The validity with which this can be done indicates that the truck count per unit time may vary widely from one freeway to another and yet the range of peak noise levels attained will be of the same general order. This situation is likely to persist until legal noise limits become mandatory for diesel trucks.

If a person is trying to sleep, it makes relatively little difference whether noise peaks occur 3 times a minute or once every 3 minutes. Complaint can be equally strong if the noise peaks reach similar levels. Therefore, it may be prudent to be conservative concerning estimated noise relief that may result from a reduction of truck count when new freeways are activated. The opening of a new freeway may conceivably divert several times as much traffic along a new route as compared to an older route without appreciably changing public opinion along the less traveled freeway.

Our records indicate about four times as many trucks pass along Ventura Freeway at St. Clair Drive than pass near Mariota and Clybourn Avenues, yet the complaints are about the same.

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IMMEDIATE POSSIBILITIES

A special effort may be worthwhile to speed the planting program in principal areas of complaint. While it is well known that planting of a fairly dense nature can effect only modest amounts of noise reduction, the effect on public attitude is usually favorable. These efforts seem to convey a message that we are trying to do something about the noise problem. It may also be desirable to install wooden strips in the apertures of the right-of-way fence at the Clybourn and Mariota cul-de-sacs for psychological effect. True noise barriers assume rather large dimensions and proportionate costs and might even stimulate complaint about engineering monstrosities.

LONG TERM POSSIBILITIES

In 1955 the American Trucking Association adopted 125 sones measurement at 50 feet as the limit for truck muffler noise. However, adherence to industry's voluntary standard has continually declined. The 125 sones limit agrees closely with the diesel truck noise level limit suggested by the Materials and Research Department after study and observation for a number of years; namely, 92 dbA measured at 25 feet from the center of the outside lane. This is the same as 80 dbA measured at 100 feet and is included on Figure 1 in this report. If all trucks were no louder than 80 dbA on this chart, there is no doubt that complaints would be greatly reduced. It is apparent that a noise limit of this order would eliminate the worst aspects of the vehicle noise problem. Acoustical engineers agree that the best place to control noise is at the source.

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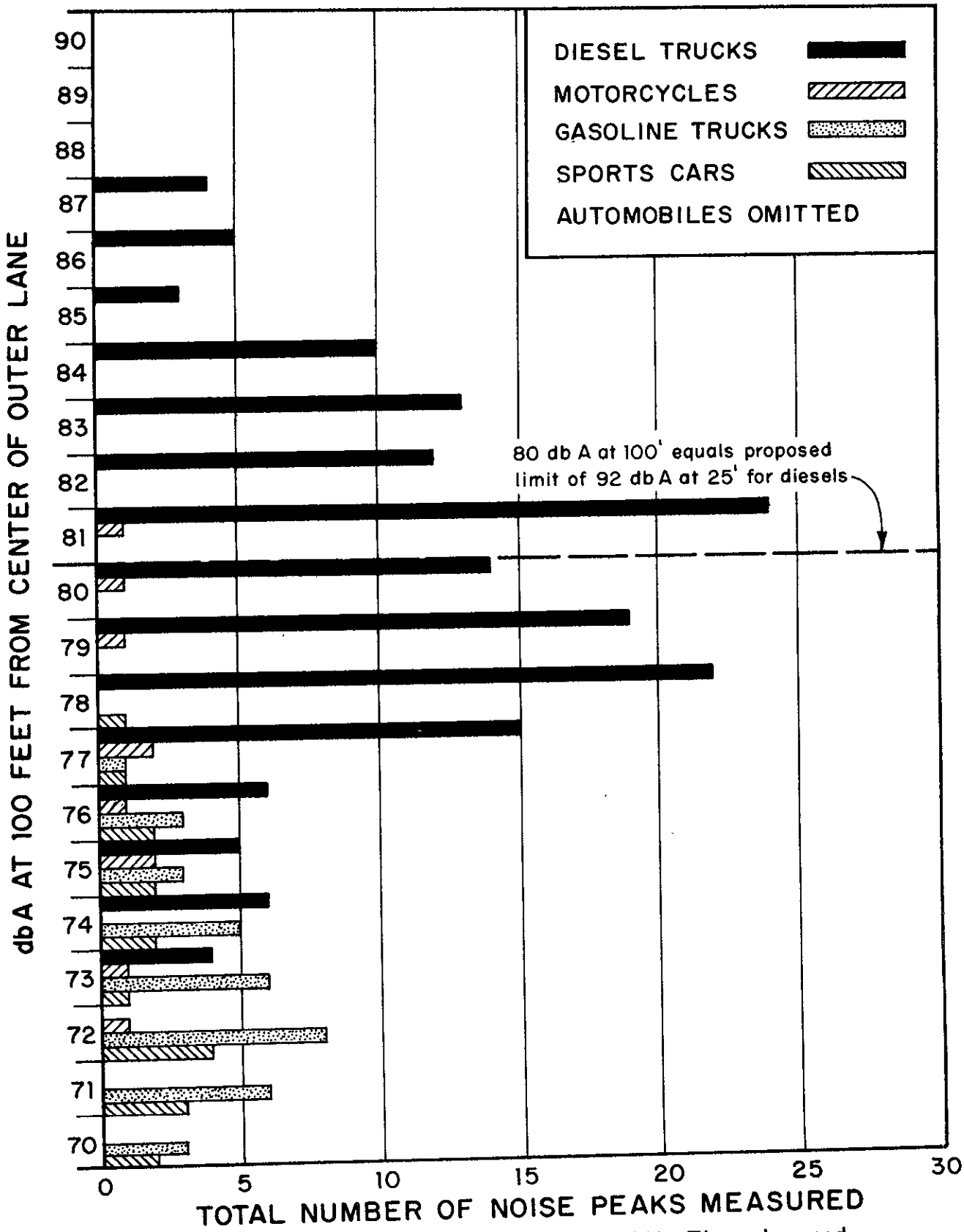
Figure 1

VEHICLE NOISE FROM VENTURA FREEWAY TO MARIOTA AVENUE

DECIBELS A SCALE



15 Min. of each hour from 6 PM to 4 AM Thursday and Sunday nights, July 11/12, 14/15, 1963.

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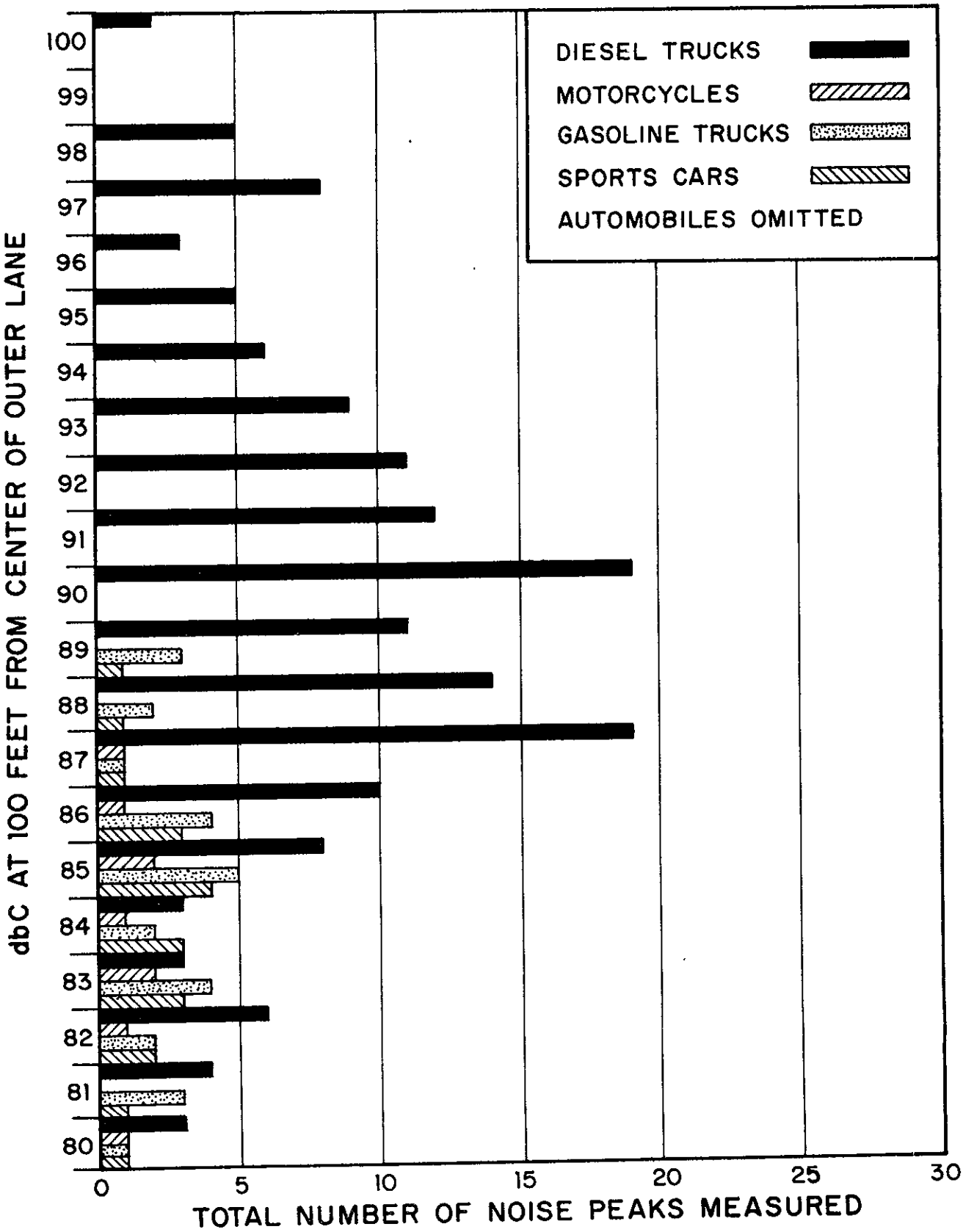
Figure 2

VEHICLE NOISE FROM VENTURA FREEWAY TO MARIOTA AVENUE

DECIBELS C SCALE



15 Min. of each hour from 4 PM to 6 AM, Thursday and Sunday nights, July 11/12, 14/15, 1963.

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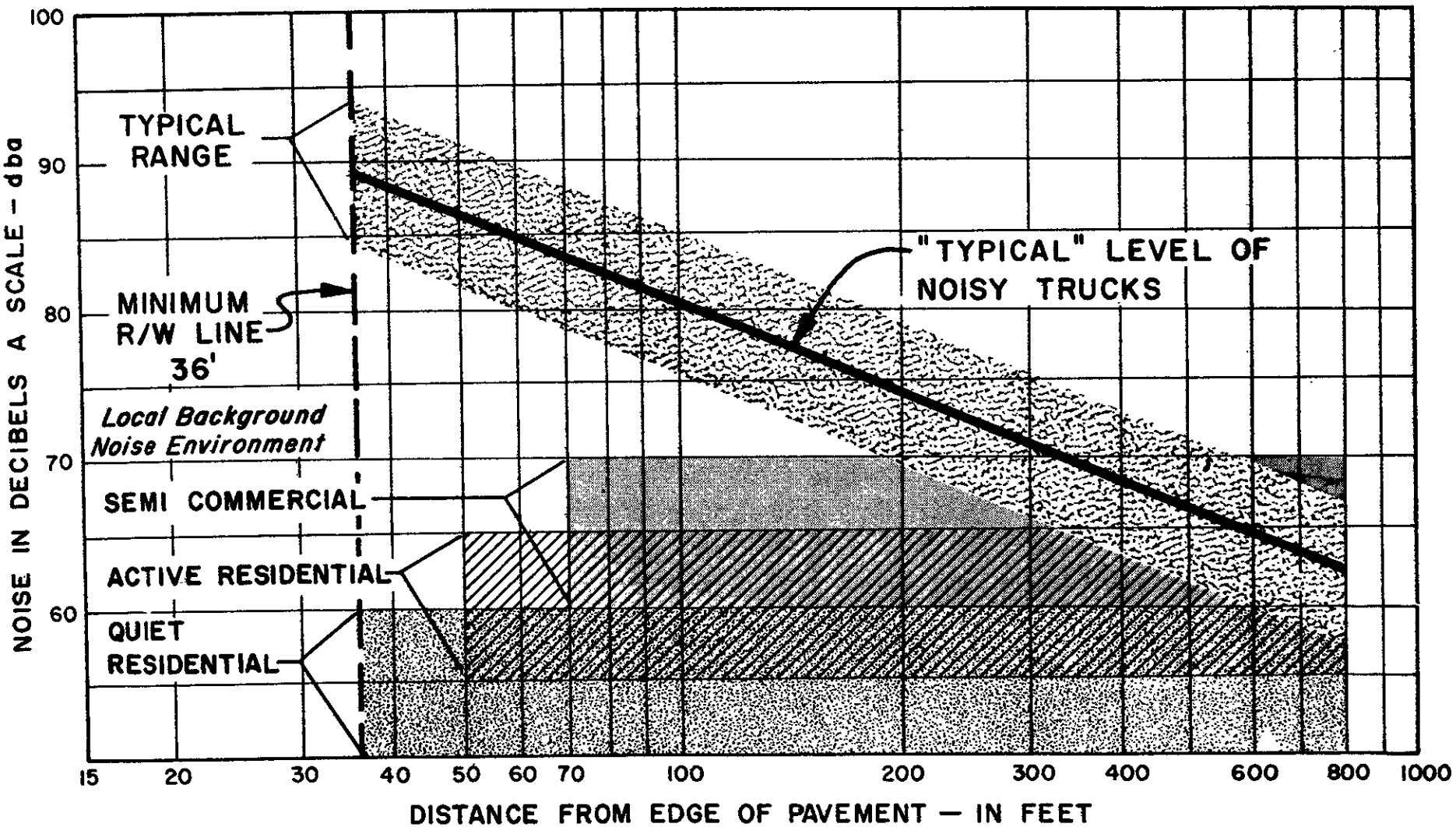
FLAT SECTION

TRUCK PEAK NOISE RANGE OF MOST FREQUENT OCCURRENCE



Extract from "The Effect of Basic Highway Designs on Traffic Noise Attenuation"

Figure 3

	dbC			dbA		
	MAX.	MIN.	DIFF.	MAX.	MIN.	DIFF.
6:00 P.M.	92	62/65	30	81	55/60	26
7:00 P.M.	92	62/65	30	84	54/59	30
8:00 P.M.	97	61/65	36	87	52/57	35
9:00 P.M.	95	62/65	33	83	54/57	29
10:00 P.M.	98	60/65	38	87	52/57	35
11:00 P.M.	97	55/60	42	87	50/55	37
12:00 Mid.	93	55/60	38	80	45/50	35
1:00 A.M.	93	50/55	43	86	40/45	46
2:00 A.M.	98	50/55	48	84	40/44	44
3:00 A.M.	98	45/50	53	84	37/41	47
4:00 A.M.	90	45/50	45	79	35/40	44

TYPICAL MAXIMUM AND MINIMUM LEVELS

SUNDAY NIGHT, JULY 14, 1963

FIGURE 4

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