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Noise Assessment of the New York City Rail Rapid Transit System

Polytechnic Inst of New York, Brooklyn

Prepared for

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NOISE ASSESSMENT OF THE NEW YORK CITY RAIL RAPID TRANSIT SYSTEM

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JANUARY 1979

INTERIM REPORT

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16. Abstract This report describes the noise climate on and near the New York City Transit Authority (NYCTA) urban rail system, including the Staten Island Rapid Transit Operating Authority (SIRTOA). Noise level data is also presented for the Port Authority Trans-Hudson (PATH) urban rail system. The report is one of a series of coordinated assessments sponsored by the Urban Mass Transportation Administration and technically administered through the Transportation Systems Center of the U.S. Department of Transportation.

The NYCTA (including SIRTOA) urban rail system has 485 stations and approximately 246 route miles, of which 137 miles are underground.

Noise level data are given for specific measurements made in cars, stations and along the above ground wayside at approximate locations. Based on these measurements, in-car average maximum A-weighted sound levels, $L_A(MAX)$, are estimated to be less than or equal to 80 dBA for 15 percent of the NYCTA and SIRTOA route mileage, between 80 and 90 dBA for 38 percent of the route mileage, and greater than 90 dBA for the remaining 47 percent. Station $L_A(MAX)$ levels are less than or equal to 90 dBA for 15 percent of the NYCTA stations, between 90 and 100 for 72 percent of the stations, and greater than 100 dBA for 13 percent of the stations. Wayside $L_A(MAX)$ levels at 15 m (50 ft.) from the near track are less than or equal to 80 dBA for 15 percent of the route mileage along which residential areas are located, between 80 to 90 dBA for 32 percent, and greater than 90 dBA for 53 percent.

The rationale for choice of measurement sites and the methodology for arriving at the summary noise distributions from the data is discussed explicitly. Measurement and analysis instrumentation and procedures are also described.

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PREFACE

This report has been prepared under the sponsorship of the Urban Mass Transportation Administration's (UMTA's) Univeristy Research and Training Division. The work was performed under the technical direction of the U.S. Department of Transportation's Transportation Systems Center (TSC), which manages the Urban Rail Noise Abatement Program for UMTA's Office of Technology Development and Deployment. The Objectives of this program are to assess noise produced by urban rail transit operations and to appraise methods and costs for noise reduction.

This report deals with the noise assessment analysis on the New York City Transit System (including the Staten Island Rapid Transit). Data were also taken on the Port Authority Trans-Hudson (PATH) system.

The cooperation of the New York City Transit Authority was indispensible in this work and is gratefully acknowledged. The assistance of the Staten Island Rapid Transit Operating Authority and the Port Authority Trans-Hudson property were also valuable to the study.

Substantial contributions were made by J.J. Starace in the development of equipment and data collection; by T. LaManna in data reduction, analysis, and presentation; and by J. Wenger and S. Maroof in the field work and other related areas.

The researchers wish to thank Dr. Louis J. Pignataro, head of the Department of Transportation Planning and Engineering, for his support and comments throughout the project.

This report is one of the series of six noise assessment reports covering noise produced by transit operations on seven rail systems in five U.S. cities. Consistent results of the six assessments were acheived through use of standardized noise measurement and data reduction procedures developed at TSC and tested on the Massachusetts Bay Transportation Authority (MBTA) in Boston. The assessment report for the MBTA was published in 1974.*

Physical differences among the transit systems, as well as differences in the technical orientations of the teams, and in funds available to the teams for measurement and analysis, led to some differences in report organization, technical depth and writing style. Therefore, to provide at least introductory consistency among the reports for the reader, the front meterial, including the introduction of each assessment report, has been edited at TSC. The organization and technical content of each report, however, are basically as originally written by the respective teams and are, together with the accuracy of the measurements, the responsibility of the authors: William R. McShane, Simon Slutsky, and Martin F. Huss. Dr. Leonard Kurzweil of the Transportation Systems Center directed the final technical editing of the report.

*Kurzweil, L.G., Lotz, R., Apgar, E.G., "Noise Assessment and Abatement in Rapid Transit Systems (MBTA Pilot Study)." U.S. Department of Transportation, Report No. UMTA-MA-06-0025-74-8, September, 1974.

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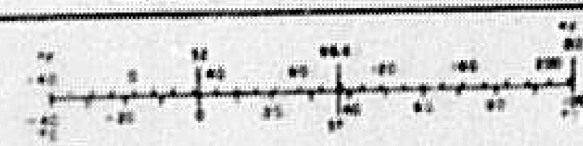
METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (exact)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



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LIST OF DEFINITIONS

L_A - A-weighted sound pressure level, measured in dBA.

$L_A(MAX)$ - Maximum A-weighted sound pressure level for a given noise event, measured in dBA.

L_R - The time-weighted sound pressure level, defined as $L_A(MAX)+10 \log T_5$, in dBA.

T_5 - Duration between the 5 dBA-down-from-$L_A(MAX)$ points measured in seconds.

NAE - Noise Accumulation Estimate - An expression of noise dosage based on the time varying A-weighted sound level (See Appendix I for derivation of NAE).

SUMMARY

The Urban Mass Transportation Administration is supporting a program under the technical administration of the Transportation Systems Center to determine the noise climate of the major rapid rail transit systems in the United States and to assess the impact of that noise on patrons, employees and wayside communities. The results are to be used in determining approaches and associated costs to reach various selected noise abatement levels. The methodology, measurement techniques, and analysis are common to all the studies, so that the results can easily be compared. Noise assessment reports, covering each of the major rapid transit systems, are being issued as a series. This report describes the noise climate on and near the New York City Transit Authority (NYCTA) urban rail transit system, and the urban rail lines of the Staten Island Rapid Transit Operating Authority (SIRTOA). The NYCTA system has approximately 230 route miles and 463 stations. The SIRTOA system has 16 route miles and 22 stations. The routes of the two systems include a variety of track structure configurations, virtually all incorporating jointed, rather than welded, rails. Approximately 7000 cars of 22 different types are presently operated on the systems. About 20 percent of those in service at the time of the noise measurements were less than 10 years old.

Noise data has also been taken on the Port Authority Trans-Hudson Corporation (PATH) urban rail lines which comprise 14 route miles. Three of the four types of transit cars operated on PATH have been introduced since 1964.

Noise measurements for this assessment were taken in three receiver environments: in the transit car, in the station, and in the wayside community near the rail right-of-way. Each receiver environment has been characterized in terms of the maximum A-weighted sound levels, L_A(MAX), as well as the time weighted sound pressure levels, L_R.

Conditions for each type of measurement were standardized and documented as much as possible to support later analysis and to ensure comparability of results with those of assessments performed on other systems.

Detailed results are too extensive to show in this summary. However, the following estimates, in dBA, were determined for the NYCTA system (including SIRTOA) and are presented in Table S.1.

TABLE 5.1. AVERAGE MAXIMUM A-WEIGHTED SOUND LEVEL DISTRIBUTION ON THE NYCTA/SIRTOA SYSTEMS*

	MAXIMUM SOUND LEVELS (dBA)									
	66-70	71-75	76-80	81-85	86-90	91-95	96-100	101-105	106-110	>110
Car Interior (Percent of Route Mileage)	1	5	9	15	23	28	18	2	0	0
Station Platform (Percent of Stations)	0	0	1	3	11	31	41	5	7	2
Wayside Residential Areas (Percent of Above Ground Route Mileage)	2	4	9	19	13	19	32	2	0	0

*Based on the observed mix of train car models.

CHAPTER ONE

INTRODUCTION

1.1 PROGRAM SCOPE

This report describes the noise climate of the rail transit systems operated by the New York City Transit Authority (NYCTA), the Staten Island Rapid Transit Authority (SIRTOA), and the Port Authority Trans-Hudson (PATH). Similar assessments have been undertaken by other contractors on the urban rail transit systems operated by:

- Massachusetts Bay Transportation Authority (MBTA)
- San Francisco Bay Area Rapid Transit District (BART)
- Southeastern Pennsylvania Transportation Authority (SEPTA)
- Port Authority Transit Corporation (PATCO)
- Greater Cleveland Rapid Transit Authority (RTA) formerly the Cleveland Transit System (CTS)
- Chicago Transit Authority (CTA)

Their assessments are reported in other documents of this series.

The report was done as part of an Urban Mass Transportation Administration (UMTA) program to assess the noise produced by various U.S. urban rail transit operations and to appraise methods and costs for noise reduction. The characterization of the noise climate of each rail transit system, carried out in a uniform manner, provides data to assist in determining UMTA priorities and funding decisions. The noise assessment activity has three elements:

1. Noise climate assessment
2. Consideration of abatement technique options
3. Cost estimation for abatement to specified noise levels

Specifically, this activity allows noise level comparisons of systems, different types of equipment or track structures on the same system, and before and after noise control actions. It also provides data pertinent to the establishment of possible regulatory action to control noise levels.

The specific purpose of the work reported in this volume was to measure and otherwise describe the noise climate of the NYCTA/SIRTOA systems and to detail the measurement and analysis methodology used. This report also presents a physical inventory of system characteristics such as track structure type, vehicle type, station type, and other factors that influence generated and perceived system noise.

Each of the New York rail transit lines was surveyed and classified by operation vehicle and station types, roadbed construction, and of the location and classification of wayside land use. Representative measurement locations were then defined for each of these categories as well as for other locations with unique noise characteristics. This approach, common to all the assessments, was based on the noise assessment of the Massachusetts Bay Transportation Authority (MBTA)* which served as a pilot study for these later assessments. Consistancy of results was acheived through the use of standardized noise measurement and data reduction. This process was successfully validated through "round robin" tests in which the assessment teams made simultaneous measurements of noise from Massachusetts Bay Transportation Authority trains and, without communication between teams, reported the resulting reduced data. The findings of all teams were generally within 3 dBA of the average for any particular measurement and, in most cases, within 1 dBA.

For the purposes of this assessment activity, it was adequate to measure a limited but statistically sufficient number of vehicles, stations, and community sites selected to cover the major construction and operating features of the system.

The present data describe the existing system noise climate and permit a first order estimate of abatement techniques and associated costs to satisfy reduced noise level criteria. When a preliminary investigation such as this reveals noise problems, and a decision is made to proceed with their solution, more detailed measurements and analyses must be made. Normally, this would include detailed diagnostic measurements to identify the dominant sources and paths for engineering design of site-specific noise control treatments.

1.2 READERS GUIDE TO REPORT

The remainder of this section describes the routes and equipment operated on the NYCTA/SIRTOA rapid rail transit systems. The noise measurement procedures including microphone placement and instrumentation are explained in Section 2. Sections 3, 4, and 5 present the general measurement methodology and noise measurement results for the in-train, in-station, and community environments, respectively. In Section 6, the Port Authority Trans-Hudson Corporation (PATH) urban rail lines are described along with the results of the noise measurements taken on PATH. In addition, locations on the NYCTA system with excessively high noise levels ("hot spots") are given in Section 6. Some comments on the findings related to employee noise exposure are given in Section 6.6. Finally Section 6.7 discusses the assessment effort in relation to the overall urban rail noise abatement program.

Data reporting forms, analytical notes, and tabulations of measurement data and physical system parameters are given in Appendices A through L.

* Kurzweil, L.G., Lotz, R., Apgar, E.G., "Noise Assessment and Abatement in Rapid Transit Systems (MBTA Pilot Study)." U.S. Department of Transportation, Report No. UMTA-MA-06-0025-74-8, September, 1974.

1.3 THE TRANSIT SYSTEM

The New York City Transit Authority's rapid rail transit operation has approximately 230 route-miles (700 track miles) and 463 stations, serving the boroughs of Manhattan, Bronx, Brooklyn, and Queens. The Staten Island Rapid Transit has approximately 16 route miles of two-track line, with 22 stations in the borough of Richmond. Track configurations in the five boroughs include not only underground, but open-cut, at-grade, embankment, steel structured and concrete structured elevated lines. A breakdown of the approximate mileages and stations at each of these various configurations is given in Tables 1.1 and 1.2.

The NYCTA operation system is a combination of what were previously four separate systems. Presently, the NYCTA routes are designated as three major divisions. They are the IND, BMT and IRT. Most of the IRT lines were originally those of the Interborough Rapid Transit Company, which started operations in 1904. Most of the BMT lines were formerly routes of the Brooklyn-Manhattan Rapid Transit Company, which got started in 1913. The Independant (IND) lines were built, or acquired by the City, beginning in 1932. In 1940, the City of New York purchased the IRT and BMT, creating the unified subway system. Through the years, lines have been extended, new lines built, and abandoned railroad lines acquired and converted into rapid transit. (The Dyre Ave. Line was part of the Boston and Westchester Railroad, and the Rockaway Line was part of the Long Island Railroad).

The Staten Island Rapid Transit was originally a Baltimore and Ohio Railroad property.

All segments of the system run on standard gauge track (4 feet 8 1/2 inches) and use 600 volt power supplied from a third rail. Tunnel and station clearances on IRT lines allow maximum-size vehicles 51 feet long and 9 feet wide, while and BMT-IND-SIRT lines allow 67 feet long and 10.5 feet wide vehicles. Some sections of the latter also accommodate 75 feet long R-44s.

Table 1.3 is a tabulation of the entire fleet of approximately 7,000 cars presently in service. At the time of this study, the oldest cars in service were the R1-9 models. The R-44 was the newest car of significant numbers running in the system. The R-46 model cars, quite similar to the R-44s, were scheduled to begin service in 1975. It is expected that the order of 750 R-46s will replace and retire all of the R1-9s and possibly some R-10s. The R-46 is the only 75-foot car. They are air-conditioned and the best acoustically insulated model. The remainder of BMT-IND cars are 60 feet long and date from 1932 to 1971. The IRT cars in service are of a smaller size and date from 1948 to 1969.

TABLE 1.1 APPROXIMATE TRACK AND ROUTE MILEAGES		
Configuration	Route Miles	Track Miles
A. NYC SYSTEM		
Subway	137	445
Open Cut	9	33
At-Grade	10	25
Embankment	4	12
Steel "EL"	65	175
Concrete "EL'	5	10
	230	700
B. STATEN ISLAND		
Subway	0.5	1.0
Open Cut	6	12
At-Grade	6	12
Embankment	4	8
	16.5	33

TABLE 1.2 STATIONS	
Configurations	Number
A. NYC SYSTEM	
Subway	266
Open Cut	20
At-Grade	9
Embankment	9
Steel "EL"	144
Concrete "EL"	15
	463
B. STATEN ISLAND	
Subway	1
Open Cut	4
At-Grade	12
Embankment	5
	22

TABLE 1.3

RAPID TRANSIT CARS CURRENTLY IN SERVICE

Car Model	1st Year in Service	Dimensions	Quantity
R1-9	1932-1940	60' x 10'	900 (approx)
R10	1948	60' x 10'	400
R11	1949	60' x 10'	10
R12	1948	51' x 9.5'	100
R14	1949	51' x 9.5'	150
R15	1950	51' x 9.5'	100
R16	1955	60' x 10'	200
R17	1955	51' x 9.5'	400
R21	1956	51' x 9.5'	250
R22	1957	51' x 9.5'	450
R26	1959	51' x 9.5'	110
R27	1960	60' x 10'	230
R28	1960	51' x 9.5'	100
R29	1962	51' x 9.5'	236
R30,A	1961	60' x 10'	320
R32,A	1964	60' x 10'	600
R33	1962	51' x 9.5'	540
R36	1963	51' x 9.5'	424
R38	1966	60' x 10'	200 (10 air cond.)
R40,M	1968	60' x 10'	400 (200 air cond.)
R42	1970	60' x 10'	400 (all air cond.)
R44	1972	75' x 10.5'	300* (all air cond.)
		SUM	6820
R46	1976	75' x 10.5'	750** (all air cond.)

* Approximately 50 cars on the SIRTOA's property.
** Scheduled for delivery; not in service at the time of this study.

CHAPTER TWO

MEASUREMENT PROCEDURES

The instrumentation package for in-station, in-train and community noise measurements consisted (unless otherwise noted) of a half-inch microphone with windscreen, preamplifier and portable power supply feeding into one direct record channel of a portable tape recorder. A second high-output microphone used for voice commentary was fed to the second channel. A pistonphone for calibration of the tapes and a set of earphones for monitoring the signal quality were also used. The entire assembly was packaged in a wheeled cart (a modified and reinforced upright type of heavy-duty shopping cart) for easy setup. Refer to Figure 2.1. A hand-held sound level meter was also used as an independent check on event levels. The instrument models used are listed as follows:

Microphone - Bruel and Kjaer (B&K)/Type 4133
condenser microphone
Preamplifier - B&K Type 2619
Power Supply - B&K Type 2804
Tape Recorder - Nagra IV-SJ
Pistonphone - B&K Type 4220
Commentary Mike
High Impedence Earphones
Sound Level Meter - B&K 2203

In addition to the sound recording system described, the FM channel of the NAGRA tape recorder was used to record vertical vibration amplitudes during in-train measurements. This was accomplished by means of an accelerometer stuck (by means of double coated adhesive tape) to the floor of the car. The accelerometer used was an Entran Devices EGC-240-10 strain gage device with a sensitivity of 15 mv/g and designed for operation at frequencies between DC and 10 KHz. Accompanying it was a 12-volt dry cell battery to supply bridge power and a Princeton Applied Research PAR 113 low noise portable amplifier with maximum gain of 80 dB. The output of the amplifier was fed into the FM input of the recorder as noted above. A calibration signal of 0.1 g was recorded on the tape in the laboratory before leaving. This signal was generated by means of an MB electrically driven shaker monitored with an MB vibration meter.

A diagram of the instrumentation arrangement is shown in Figure 2.2.

2.1 IN-TRAIN MEASUREMENT

The equipment was set up in-train by rolling the cart to a seat position near the middle of the second car but not opposite a door. A diagram of the in-car location is shown in Figure 2.3. The microphone was supported in a shock isolation mounting consisting of a six-inch diameter, steel ring with rubber cords connecting the ring to a clamp holding the microphone (much in the same manner used in old-fashioned broadcast microphones). The ring was attached to a rod which was collapsed into the cart during transportation and extended when set up. A marker on the rod indicated the correct height, resulting in a microphone position of 1.2 meters (4 feet) above the floor. The above noted shock mounting was adopted to assure freedom from vibration-induced microphonic noise.

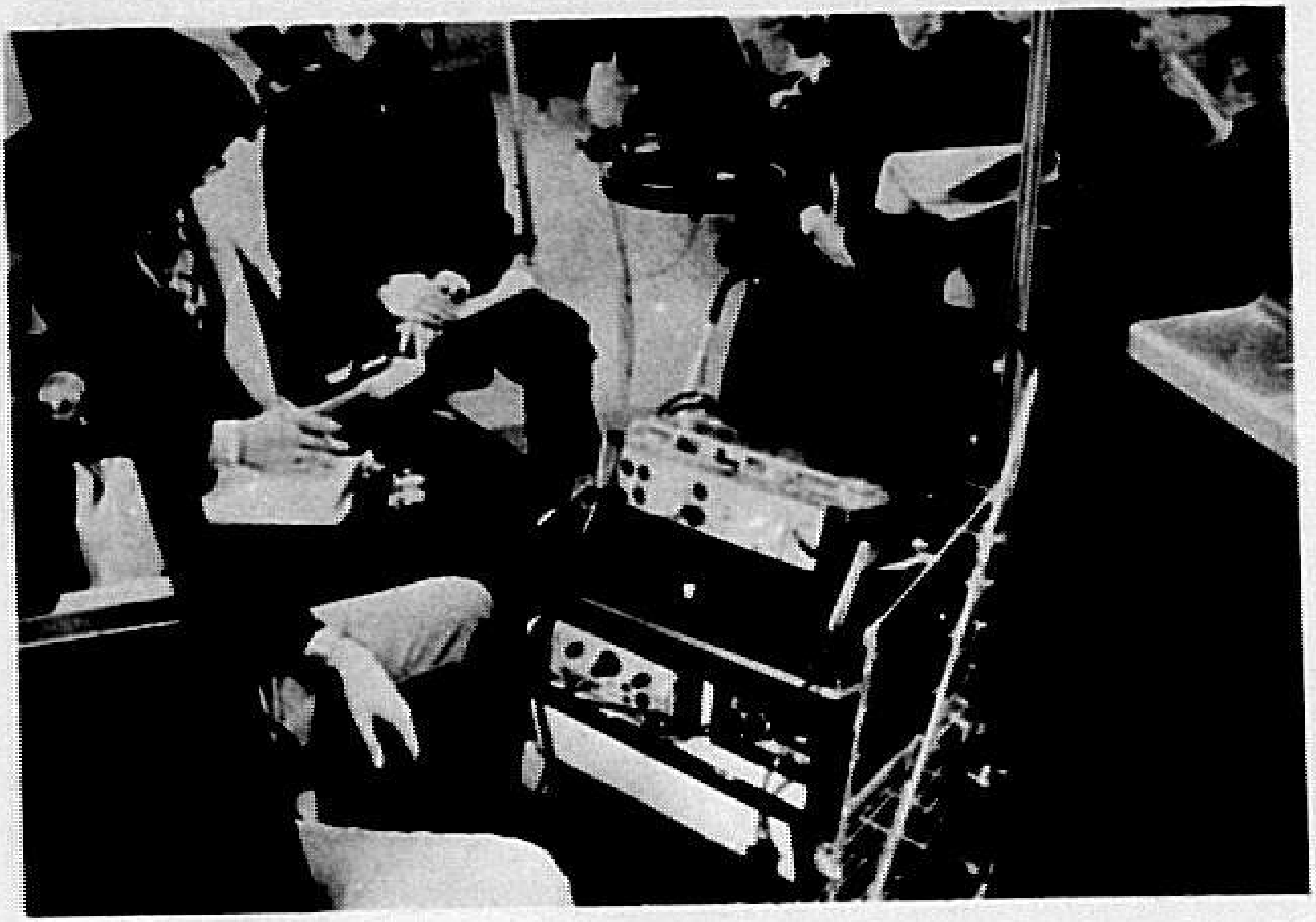
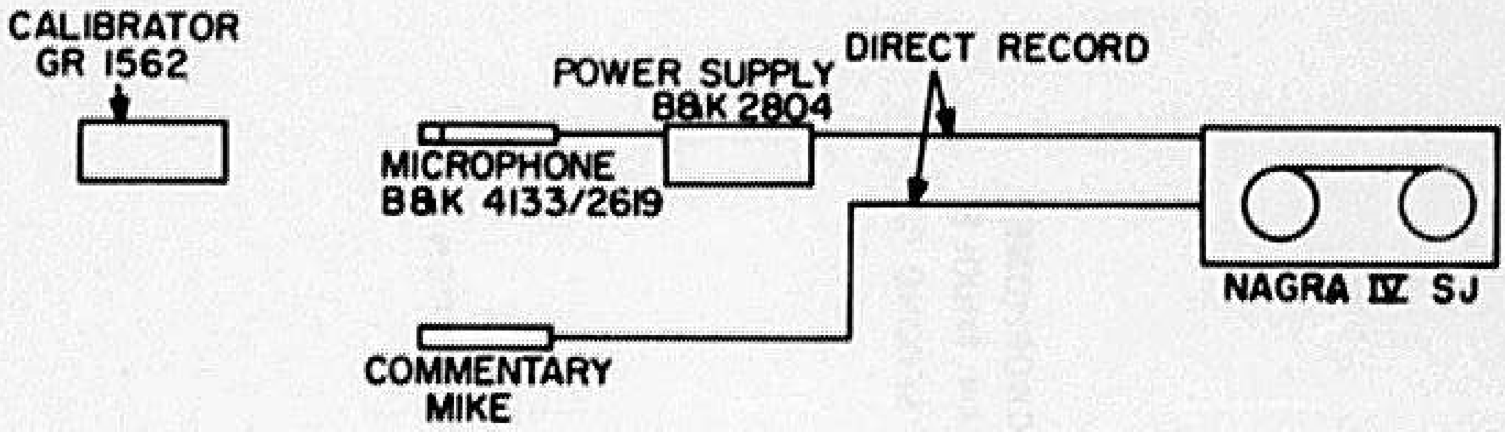


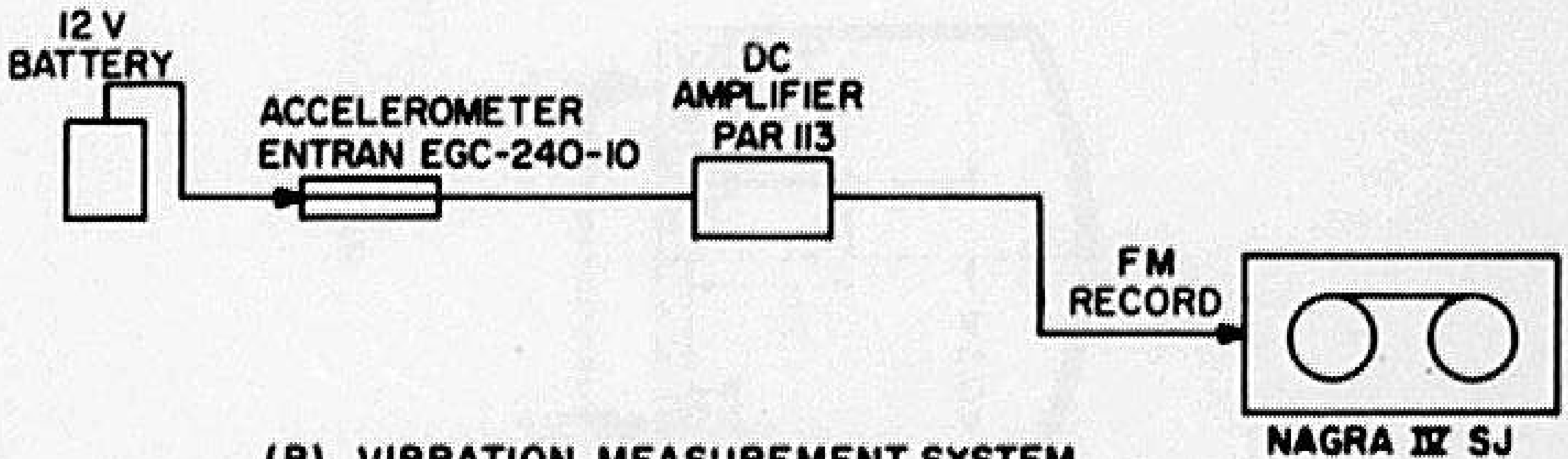
FIGURE 2.1

PHOTOGRAPH OF PORTABLE

MEASUREMENT SYSTEM



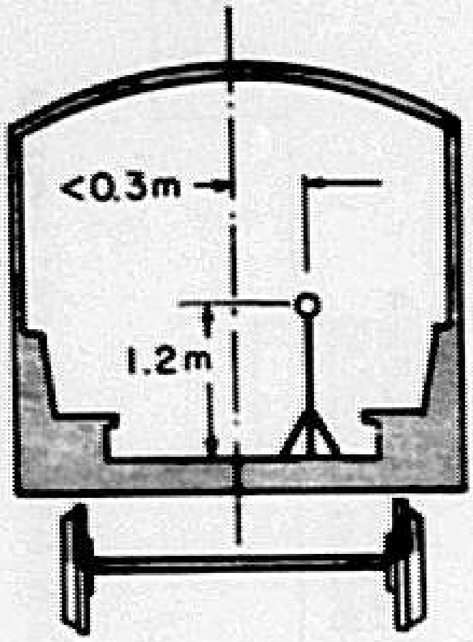
(A) BASIC NOISE MEASUREMENT SYSTEM



(B) VIBRATION MEASUREMENT SYSTEM

FIGURE 2.2

BASIC MEASUREMENT SYSTEMS



MICROPHONE NEAR MIDDLE OF SECOND CAR

FIGURE 2.3
IN-TRAIN MEASUREMENT LOCATION

Similar precautionary measures were taken to guard against vibration noise induction in the tape recorder and the PAR amplifier. In these cases, a 1 1/2 inch thick slab of foam was put under each item.

The accelerometer was positioned under the cart for physical safety. A bias of 3.1 volts was required in connection with the NAGRA FM recording channel. This was generated by a dry cell-powered circuit mounted in the cart.

Each crew was furnished with a detailed checklist of items to be checked off before leaving the laboratory to make sure that all required equipment was present and in proper working order. Other items were checked off during set up and activation of equipment in the train, and finally, the shut down and battery recharge operations were checked upon return to the laboratory. Appendix A contains a copy of the detailed checklist and other forms cited in this chapter.

Tapes were sampled the same night or the following day to verify their dependability and the operator's methodology.

In-train data included observation of the car type, identification of the number of cars and lead car number, route, time of day, state of doors and windows, calibrator used, and associated tape recorder attenuator settings (generally different from operating settings).

Each station was entered on the data from, and during the run, after leaving that station, the following items were noted: peak L_A reached as noted on sound level meter, the gain on the PAR, number of people in-train and the tape identification number.

The commentator noted all relevant information on the second tape channel and added additional comments as needed, such as interpretation of sounds, including where squeal, brake screech, brake compressed air exhaust, passenger noise, or any special noises that would require interpretation on the subsequent strip chart.

2.2 IN-STATION MEASUREMENT

The same basic equipment was used for in-station noise measurements as previously noted for in-train application, except that the accelerometer was not used. The microphone and sound level meter were set up opposite the point at which the center of the train came to rest. The distance was taken from the edge of the platform at 2 meters, if the platform was wider than 4 meters (13 feet) or at the platform centerline if the platform width was less than 4 meters. The height of the microphone was 1.6 meters (5 feet), as illustrated in Figure 2.4. In addition, a sound level meter (not shown in figure) was also used and positioned at the same height as the microphone.

In-station data forms used by the crew contained space for the following information: run-number, time, tape number, attenuator setting, maximum L_A level of arrival and of departure from sound level meter, L_A with train at rest, L_A with station empty, car type, number of cars, estimated speed, and number of the lead car. An additional sheet was used for a sketch showing station layout and track under consideration, and another sheet was used for additional data such as the date, location, crew member's identity, purpose of test and instrumentation used.

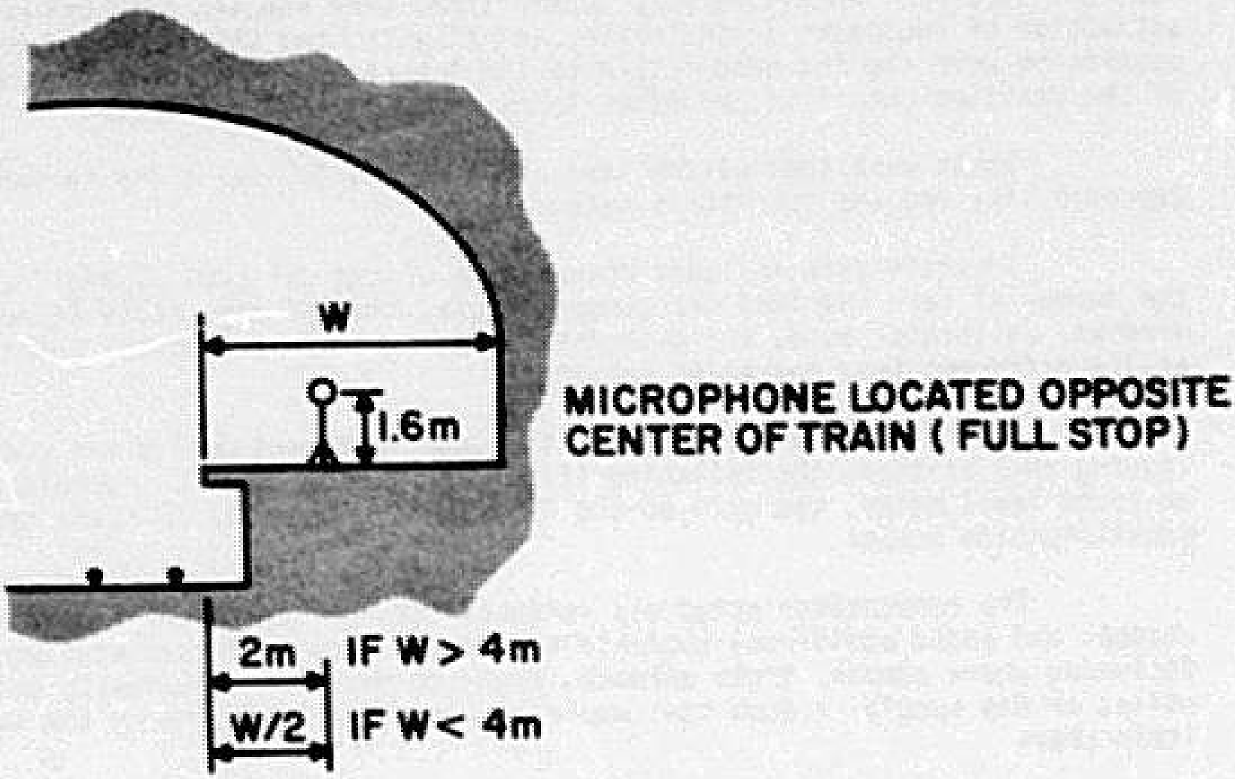


FIGURE 2.4
STATION PLATFORM MEASUREMENT LOCATION

2.3 COMMUNITY MEASUREMENTS

Equipment used for community noise measurements was the same as for in-station. The microphone and sound level meter positions depended on the site configuration, and the options were as summarized in Figures 2.5 to 2.9 for at-grade embankment, open cut, elevated on open steel, and elevated on concrete sound barrier construction, respectively.

In all cases, the microphone was placed at 1.6 meters above the ground, except in the case of the concrete sound barrier construction, where the microphone tower height was 1.2 meters above the track. The preferred distance from the near track centerline was 15 meters with an additional 100 meters of free field without reflective surfaces. This was often not available, and on many sites the concern was with noise impacting on structures much closer to the track. In such cases, 7.5 meters was the next acceptable measuring distance, as noted in Figure 2.5. The same basic conditions are described in Figures 2.6, 2.7, and 2.8 for embankment open cut, and open steel elevated configuration.

The radiation from the elevated concrete sound barrier construction is generally attenuated at ground level so that ground measurements are inadequate. A tower on which microphones can be placed at an elevation of 1.2 meters (4 feet) above rail height was therefore used, as illustrated in Figure 2.9.

The set up procedure for the tower is illustrated in Figures 2.10 and 2.11. The tower was very lightweight (35 pounds) and was transportable in three sections. Erection involved assembly of three sections (plus an extra 10-foot pipe section if required) on the ground, which were bolted to a steel plate. The plate was attached by hinges to a base assembly and anchored to the ground by the weight of a station wagon used to transport the necessary equipment and personnel. The tower was then raised by "walking" it up.

2.4 EMPLOYEE EXPOSURE MEASUREMENTS

Dosimeter measurements of employee exposure were not made in connection with this program. However, the maximum L_5 values and the T_5 durations were used to calculate a measure which has been termed "Noise Accumulation Estimate" (NAE), and which can be interpreted as a measure of employee exposure. The procedure for calculating this estimator is given in Appendix I.

2.5 OTHER MEASUREMENTS

A number of special data collection items were executed as part of this undertaking. These included runs between special station pairs on a variety of model cars, runs at certain "hot spot" locations, and acquisition of vibration data. The measurement procedures for each of these items conform to the appropriate procedures (in-station, in-train, etc.) already enumerated.

2.6 DATA FORMS

Forms used in the data reduction and the checklist used by the field crews are contained in Appendix A.

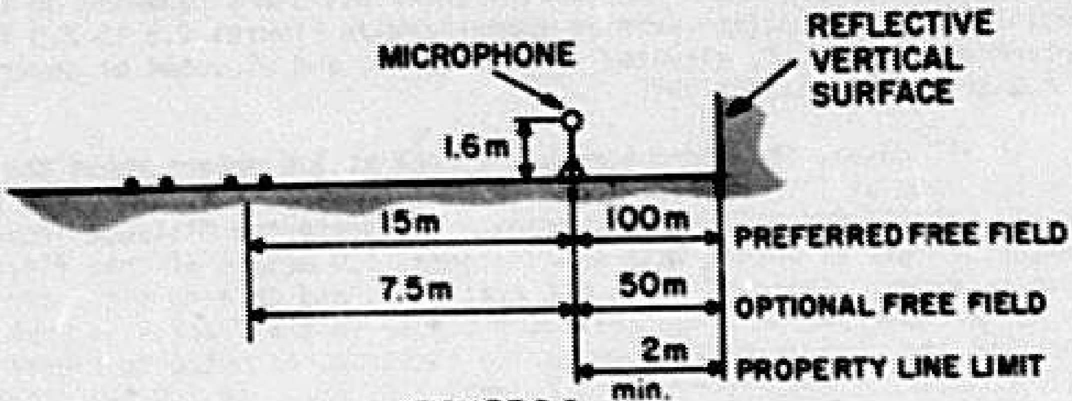


FIGURE 2.5
MEASUREMENT AT-GRADE SITES (COMMUNITY LOCATIONS)

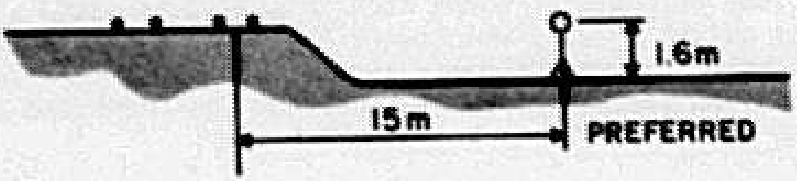


FIGURE 2.6
MEASUREMENTS AT EMBANKMENTS (COMMUNITY LOCATIONS)

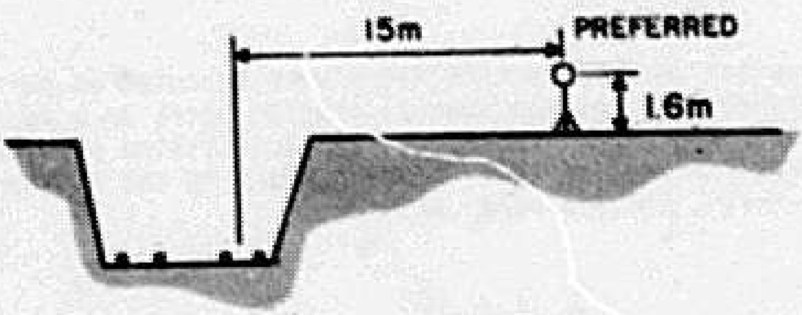


FIGURE 2.7
MEASUREMENTS AT OPEN CUT SITES (COMMUNITY LOCATIONS)

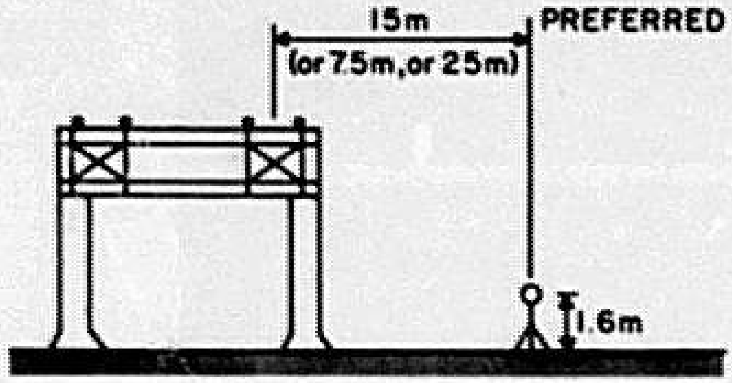


FIGURE 2.8

MEASUREMENT AT ELEVATED SITES WITH OPEN STEEL CONSTRUCTION (COMMUNITY LOCATION)

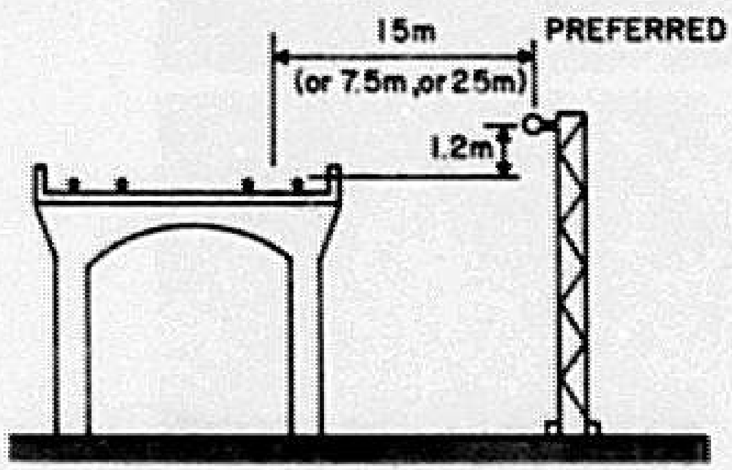


FIGURE 2.9

MEASUREMENT AT ELEVATED SITES WITH CONCRETE SOUND BARRIER CONSTRUCTION (COMMUNITY LOCATION)

(A)
INITIAL ASSEMBLY
OF TOWER BASE

(B)
TOWER PINS IN
PLACE

(C)
TOWER BEING RAISED

FIGURE 2.10
TOWER SET-UP FOR COMMUNITY MEASUREMENT

(A) TOWER ERECTION COMPLETED

(B) VIEW OF TOWER AND EL

FIGURE 2.11

TOWER IN PLACE FOR COMMUNITY MEASUREMENT

CHAPTER THREE

IN-TRAIN DATA

This phase of the study quantified thenoise levels experienced by those riding in the trains.

3.1 CONSIDERATIONS IN MEASUREMENT

The in-train measurement program involved the following elements:

- routes
- car model
- variation between cars of the same type
- track structure
- tunnel
- number of tracks

Each of the above is described in some detail in the subsections below.

a. Routes There are 25 distinct routes in the New York City Transit Authority (NYCTA) System. They are listed in Figure 3.1. In addition, there are the routes on the Staten Island Rapid Transit Operating Authority (SIRTOA) system and the Port Authority Trans-Hudson (PATH) system.

Of the 25 NYCTA Routes, three run during rush hours only (CC, K, QB). These were excluded from the routes surveyed because of the practical difficulty in making measurements. It must also be noted that the trackage used by the other lines was not necessarily fixed, because some changes in assigned trackage and even stations take place at designated hours of the day. This has at times resulted in two surveys of the same nominal route which differ because one survey will note stops on certain local stations, while the other trip passed through on the express track.

b. Number of Trips Two complete round trips were made on each route. In addition, a number of repeated passes were made of selected rail strips to supplement some of the data taken on the in-train runs.

c. Car Model The NYCTA uses a substantial number of car models. For purposes of this report, these can be grouped into 22 categories. There are significant numbers of every NYCTA car model in service. One round trip was made on the newest car model available on each route, preferably the R-44. The second round trip was made on the most commonly used car type.

In order to evaluate overall system characteristics, it was also necessary to have estimates of sound level variation among cars of the same model as well as among different models, without regard to possible variations due to roadbed condition. To have such estimates, measurements were made on selected short lengths of track, continually riding different trains, until all available models (and a number of cars of the same model) were sampled.

The SIRT system has only one car model (the R-44); PATH has only four.

d. Track and Tunnel Structure As mentioned above, a technique is needed

IRT	IND	BMT
1	A	J
2	AA	K
3	B	LL
4	CC	M
5	D	N
6	E	QB
7	EE	RR
SS*	F	SS*
	GG	

FIGURE 3.1

ROUTES IN THE
NEW YORK CITY TRANSIT SYSTEM

*Actually two shuttles on each of IRT/BMT. See page 121.

whereby ride characteristics measured for instance on an R-44 or R-40, during the course of a route circuit can be extrapolated to other car models which are (or might be) on the same route. This technique can be established by use of two types of data:

- The in-train runs for Model X may be observed on roadbed Y on a certain route, and can thus be extrapolated to the same roadbed on another route (on which Model X was not measured).

- The special runs on short segments of routes complement the data from the in-train runs for combinations which are sparsely represented.

There are 17 basic configurations of track and tunnel structure which are defined for completeness. Some of these are not represented on certain divisions (the IRT, for instance, has no four-track tunnel configuration with rails set in concrete with wood half-ties). Because each of these basic structures could affect the noise characteristics observed; they are defined as the basic Track Noise Control Groups (TNCG's) which are considered. In an abatement methodology, it may be possible to aggregate these basic groups.

The basic TNCG's are defined in Table 3.1.

Each route was defined in terms of the sequence of links over which it travelled, where a "link" is a specific track from one station to another. Each link is characterized by its length, TNCG, and scheduled travel time. Because a route may have different patterns throughout the day, it was necessary to code each pattern. Figure 3.2 illustrates one such route coding (for the "AA"); Table 3.2 contains the corresponding detailed code.

3.2 DATA REDUCTION PROCEDURES

a. Basic Procedure All tapes were processed by one of two methods. In Method I, the tapes were played back through the A-weighted filter network of the NAGRA tape recorder into a B&K graphic level recorder, type 2205, using 100 mm width chart paper. In Method II, the tapes were played back on a Stellavox SP7 tape recorder (linear reproduce network) through the A-weighted filter network of a B&K type 2107 audio frequency analyzer, whose output was then coupled to the graphic level recorder.

The graphic level recorder settings decided on, in concert with TSC and collaborating contractors, were as follows:

Potentiometer	- 50 dB
Potentiometer control setting	- 40 dB
Writing Speed	- 200 mm/sec
Lower Limiting Frequency	- 10 Hz
Paper Speed	- 1 mm/sec

This combination of settings was identified by Webster and Farinacci* as giving recordings with pen dynamics which most closely resembled the meter dynamics of a Class 1 sound level meter in the SLOW mode setting.

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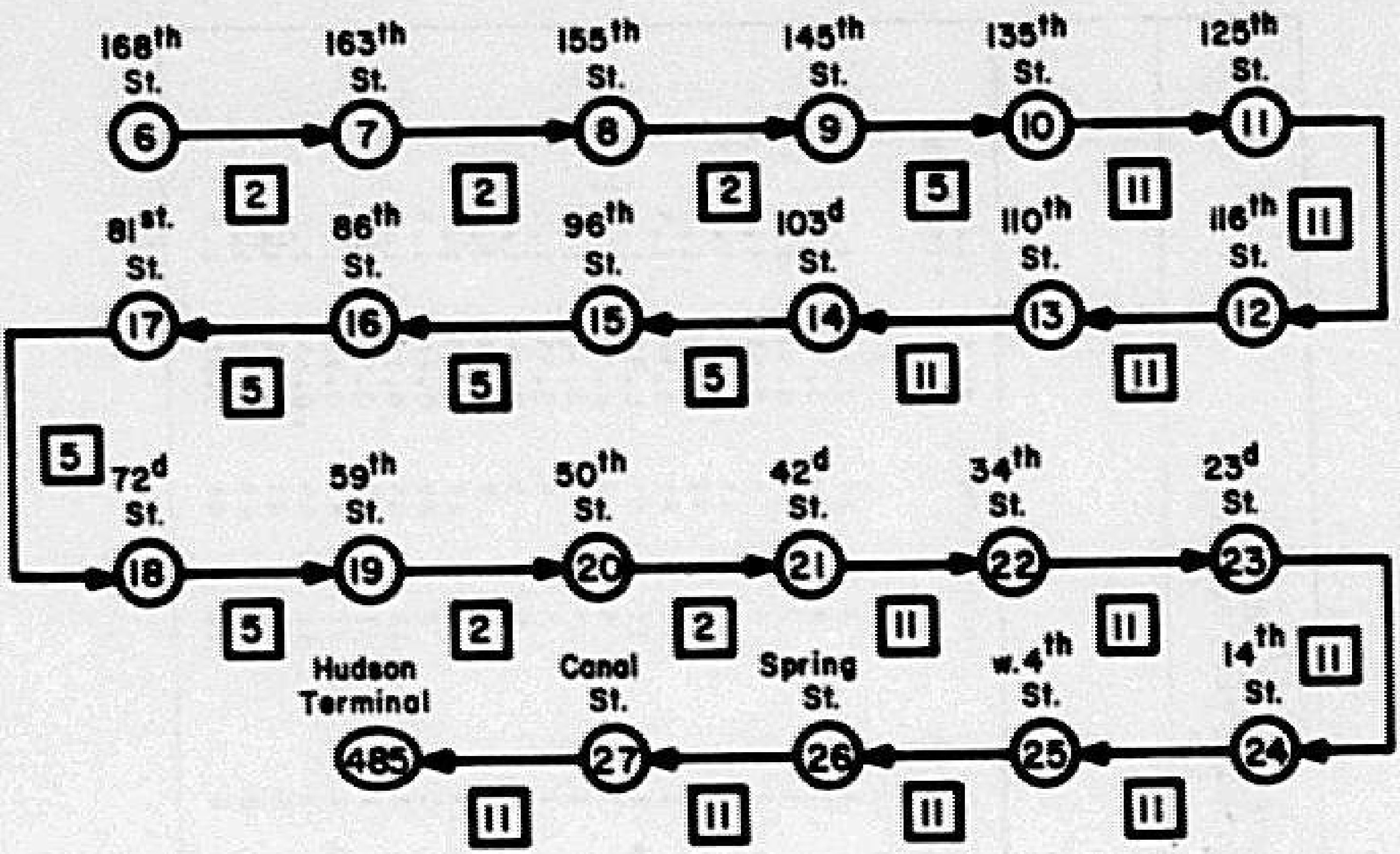
* Webster, W.J., and Farinacci, W.J., "Use of Graphic Level Recorders as Indicating Instruments," Bureau of Noise, New York State Department of Environmental Conservation, Albany, New York.

TABLE 3.1 DEFINITION OF THE BASIC TRACK NOISE CONTROL GROUPS (TNCG's)	
TNCG	DEFINITION
1	Tunnel, one track, ballast with wood ties
2	Tunnel, one track, concrete with wood and invert
3	Tunnel, one track, concrete direct mount
4	Tunnel, two track, ballast with wood ties
5	Tunnel, two track, concrete with wood invert
6	Tunnel, two track, concrete direct mount
7	Tunnel, three track, ballast with wood ties
8	Tunnel, three track, concrete with wood and invert
9	Tunnel, three track, concrete direct mount
10	Tunnel, four track, ballast with wood ties
11	Tunnel, four track, concrete with wood and invert
12	Tunnel, four track, concrete direct mount
13	Steel elevated, wood ties
14	Concrete elevated, ballast with wood ties
15	At-Grade, ballast with wood ties
16	Embankment, ballast with wood ties
17	Open-cut, ballast with wood ties



NOTES: (1) Station Codes shown in circles; See Appendix E for a complete listing of station codes.

(2) TNCG shown in box; definitions found in Table 3.1

FIGURE 3.2

TNCG IDENTIFICATION FOR THE SOUTHBOUND "AA"

PATTERN 2

TABLE 3.2
DETAILED CODE FOR THE
SOUTHBOUND "AA", PATTERN 1

ROUTE AA
VARIATION 1
TERMINAL HT
DIRECTION S-BOUND

LINK	FROM STA	TO STA	ON TRACK	TNCG	ETNCG	MILES	TRAVEL TIME(MIN)
1	6	7	1	2	29	0.33	1.5
2	7	8	1	2	29	0.34	1.5
3	8	9	1	2	29	0.43	2.0
4	9	10	1	5	5	0.51	1.5
5	10	11	1	11	83	0.53	1.5
6	11	12	1	11	83	0.45	1.5
7	12	13	1	11	83	0.36	1.5
8	13	14	1	11	83	0.35	1.5
9	14	15	1	5	5	0.35	1.5
10	15	16	1	5	5	0.46	1.5
11	16	17	1	5	5	0.35	1.0
12	17	18	1	5	5	0.46	1.5
13	18	19	1	5	5	0.57	2.0
14	19	20	1	2	29	0.43	1.5
15	20	21	1	2	29	0.46	1.5
16	21	22	1	11	85	0.35	1.5
17	22	23	1	11	83	0.50	1.5
18	23	24	1	11	83	0.39	1.5
19	24	25	8	11	85	0.65	2.0
20	25	26	8	11	83	0.46	1.5
21	26	27	8	11	83	0.38	1.5
22	27	485	8	11	83	0.63	1.5

It should be noted that before the above settings were agreed on, the graphic level recorder had been adjusted to operate at a potentiometer control setting of 50 dB, a writing speed of 50 mm/sec and a lower limiting fre-frequency of 2 Hz. These earler settings yielded comparable results for the subway noises of concern in this study, i.e., maximum event levels within 1 dB and the same shape in the vicinity of the maximum, but not for noises due to passenger conversation, door chimes or the compressed air release pulse. The latter groups of sounds were displayed with greater amplitude using the earler (2 Hz lower limiting frequency) setting. Since all such sounds are identified on the tapes by the commentator, and on the graphic level recordings during transcription, and also since these sounds are not included in the impact assessment, no need was evidenced to rechart the data. (Data taken subsequent to the agreement on standardization was transcribed according to the new procedure).

b. <u>Annotation and Coding</u> The in-train noise level strip charts were annotated to indicate the basic data such as tape source number, date, time, route, car type, air conditioning, open window, etc. Then recorded on the chart were events such as station arrival, departure (including station name) and all significant sound levels needing special interpretation such as brake release sounds, door opeining or closing noises, conductor announcements and passenger generated noises. The levels read on the charts were established relative to the pistonphone calibration reading entered on the tape. This signal (in conjunction with the tape recorder attenuator setting) made possible the identification of all signal levels.

The LA(MAX) levels reached between stations were identified. In addition, the duration, T_5, of each event (defined as the time in seconds for which the level remained within 5 dB of the maximum value) were marked on the chart. The latter piece of information was used to calculate the term L_R, defined by T. Schultz * as $L_R(dB) = L_A(MAX) + 10 \log \frac{T_5(SEC)}{1\ (SEC)}$ (+5 dB when pure tones are present).

This quantity was devised as a measure of annoyance, but it can also be used as a measure of the total acoustic energy in a noise event or in a series of noise events.

An analysis of the uniqueness of the L_R measure and of the manual procedures for determining the 5 dB intercept points was carried out and is incorporated in Appendix B. It was concluded that although there was considerable variation in the shape of the graphic level curves and of the interpretation of their energy distribution, the final computed values of L_R did not vary significantly. They therefore did not warrant the use of more sophisticated or complicated estimation procedures than the determination of the time interval between the 5 dB intercepts. In addition, a typical strip chart result is shown in Figure 3.3.

The data identified by the above procedure was entered onto punch cards.

c. <u>Uniformity</u> This effort was the first one initiated after the MBTA pilot study conducted by TSC. At the time at which other contractors' efforts reached the data collection and reduction stage, much data had been reduced. In order to assure that procedures among the several contractors were uniform, copies of selected tape recordings were made from some of this data. Each selected tape was played back on the tape recorder, and its output transcribed on the graphic

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* Schultz, T., "Development of an Acoustic Rating Scale for Assessing Annoyance Caused by Wheel/Rail Noise in Urban Mass Transit", Report No. UMTA-MA-06-0025-74-2, February, 1974.

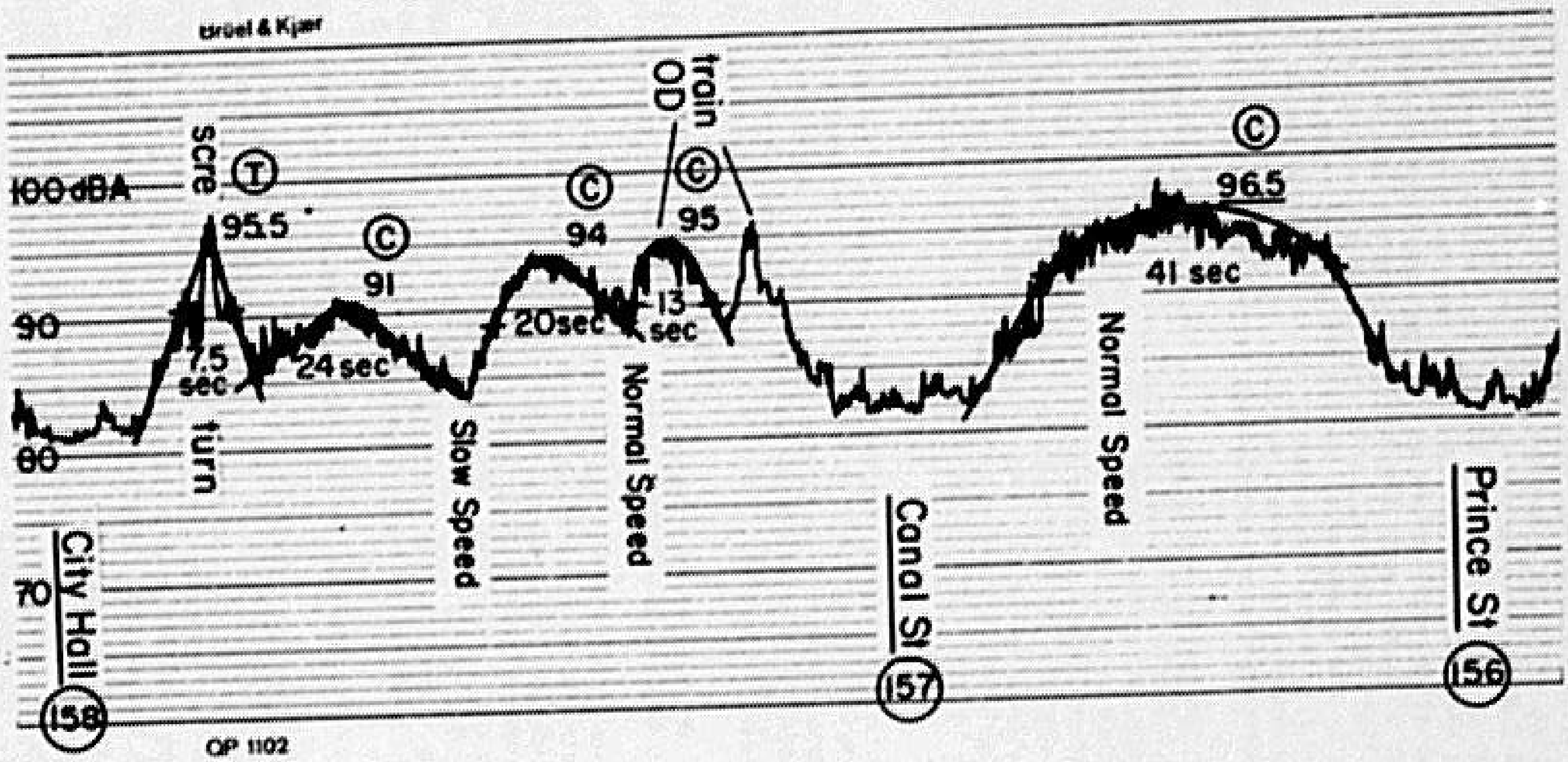

FIGURE 3.3
TYPICAL STRIP CHART RECORDING
FOR IN-TRAIN DATA

level recorder. A copy of each tape with its corresponding strip chart was then sent to each contractor and to TSC. The tapes were intepreted on the equipment used by each of the contractors, so that deviation or discrepancies could be noted and discussed.

A later effort by TSC had each of the contractors collect data at the same location at the same time, and reduce it according to their individual understanding of the proper procedure. This served as a check on both the use of the procedures in force and the equipment used. The results were generally satisfactory.*

In addition, the physical significance of the L_R measure as defined seems to be well supported by experimental data analyzed by L. Kurzweil ** in which values of L_{eq} measured in-train between two stations and the elapsed time allowed for the determination of the total energy (in decibels) agreed well with L_R.

3.3 DATA OUTPUT

The data from the above mentioned cards was processed in a number of ways.

a. Pictorial Representation of L_A(MAX) The data has been organized in a pictorial representation by means of a sequence of stylized maps. An example is shown in Figure 3.4, Parts A through D, for the "A" route. Similar representations are contained in Appendix C for all other routes.

Part A of each representation is a diagram of the station sequence for the entire route plus an insert in the upper left corner of the page which contains a diagram of the boroughs and the route configuration relative to the boroughs.

On the station sequence diagram, the circles represent stations; arrows represent transfer points to other routes; dotted lines across the sequence represent borough boundary crossings. The environment elevated, open-cut, tunnel and grade or embankment is represented by the various types of shading indicated at the lower left of Figure 3.4.A.

It will be noted that a given route designation often has branches with different "terminal" stations. For this reason, the terminals in effect during measurement are specified opposite the car model in the upper right hand corner of the page.

Part B in each representation contains two station sequence diagrams, showing the L_A(MAX) for each link. The shadings were chosen to characterize five noise level zones: 80 dBA and below: 80^+ to 85; 85^+ to 90; 90^+ to 95; and greater than 95.

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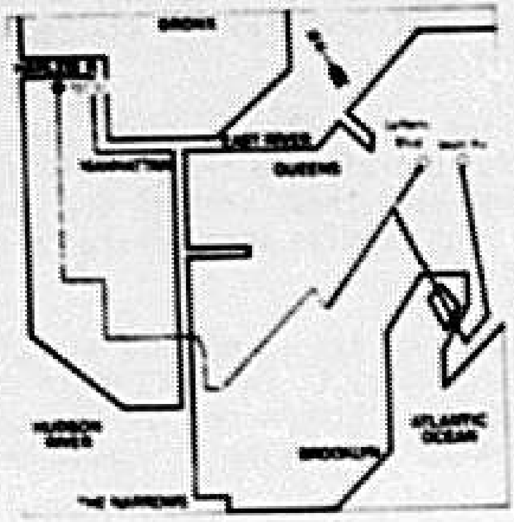
* Apgar, E., "Report on Round Robin Measurement Comparison," Memorandum letter, Department of Transportation, Transportation System Center, Cambridge, Massachusetts, dated April 25, 1975.

** Kurzweil, L.G., "On the Interpretation of L_R" Memorandum letter, Department of Transporatation, Transportation System Center, Cambridge, Massachusetts, dated April 15, 1975. This memorandum verified the equivalence to within 1 dB of the L_R and L_{eq} when the overall time of an event is known.

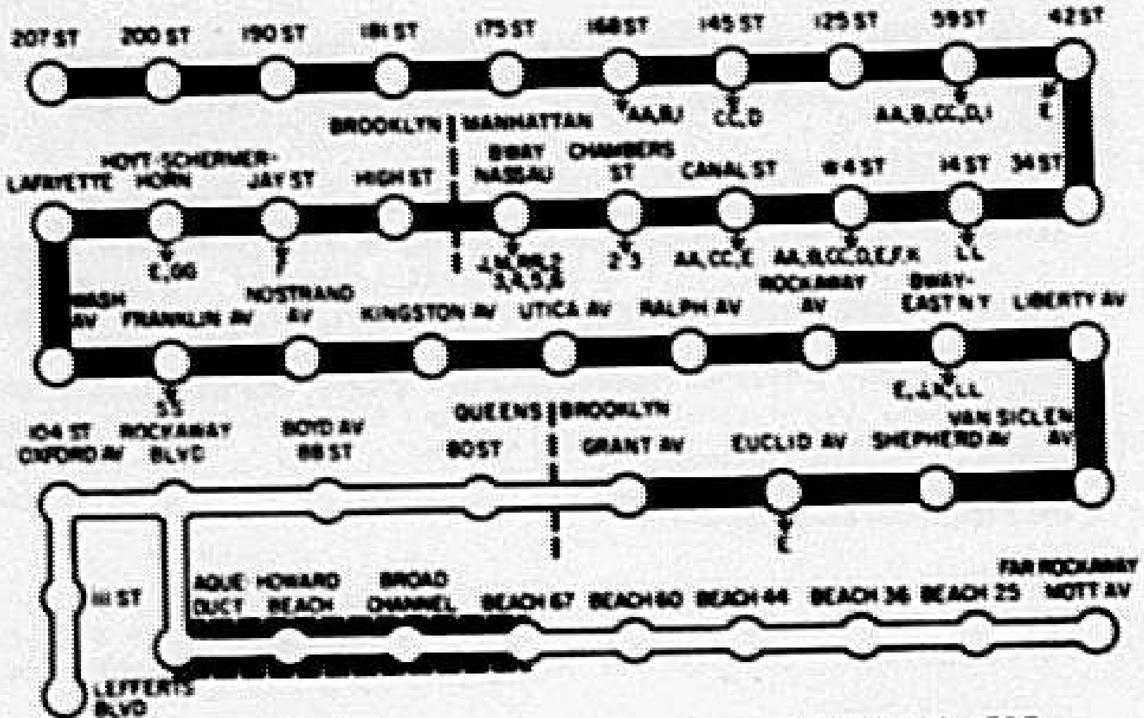


A IND

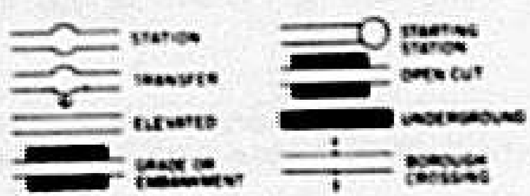
R-10 Lefferts Blvd to 207 St
207 St to Lefferts Blvd

R-44 Mott Av to 207 St
207 St to Mott Av

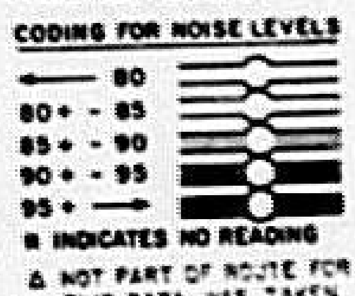
R-10 Mott Av to Euclid Av
Euclid Av to Mott Av



SYMBOLS FOR THE ABOVE FIGURE



SYMBOLS FOR FIGURES B, C, D

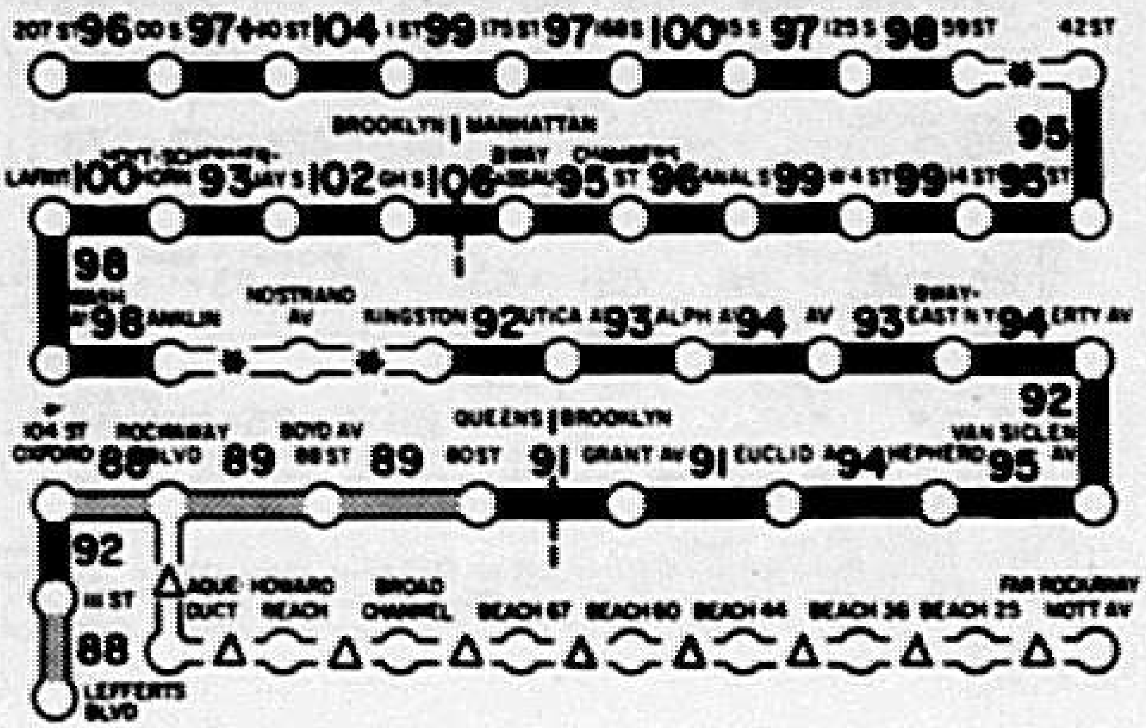


(A) PICTORIAL DIAGRAM

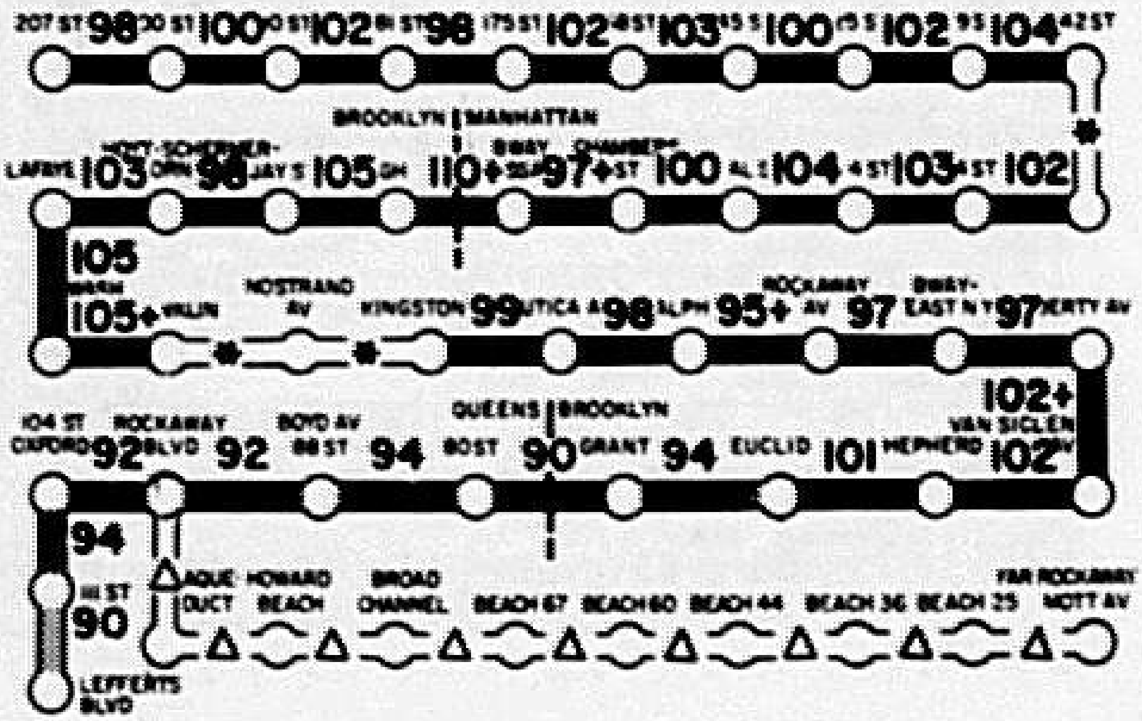
FIGURE 3.4

NOISE LEVELS ON THE "A" ROUTE

R-10 ←



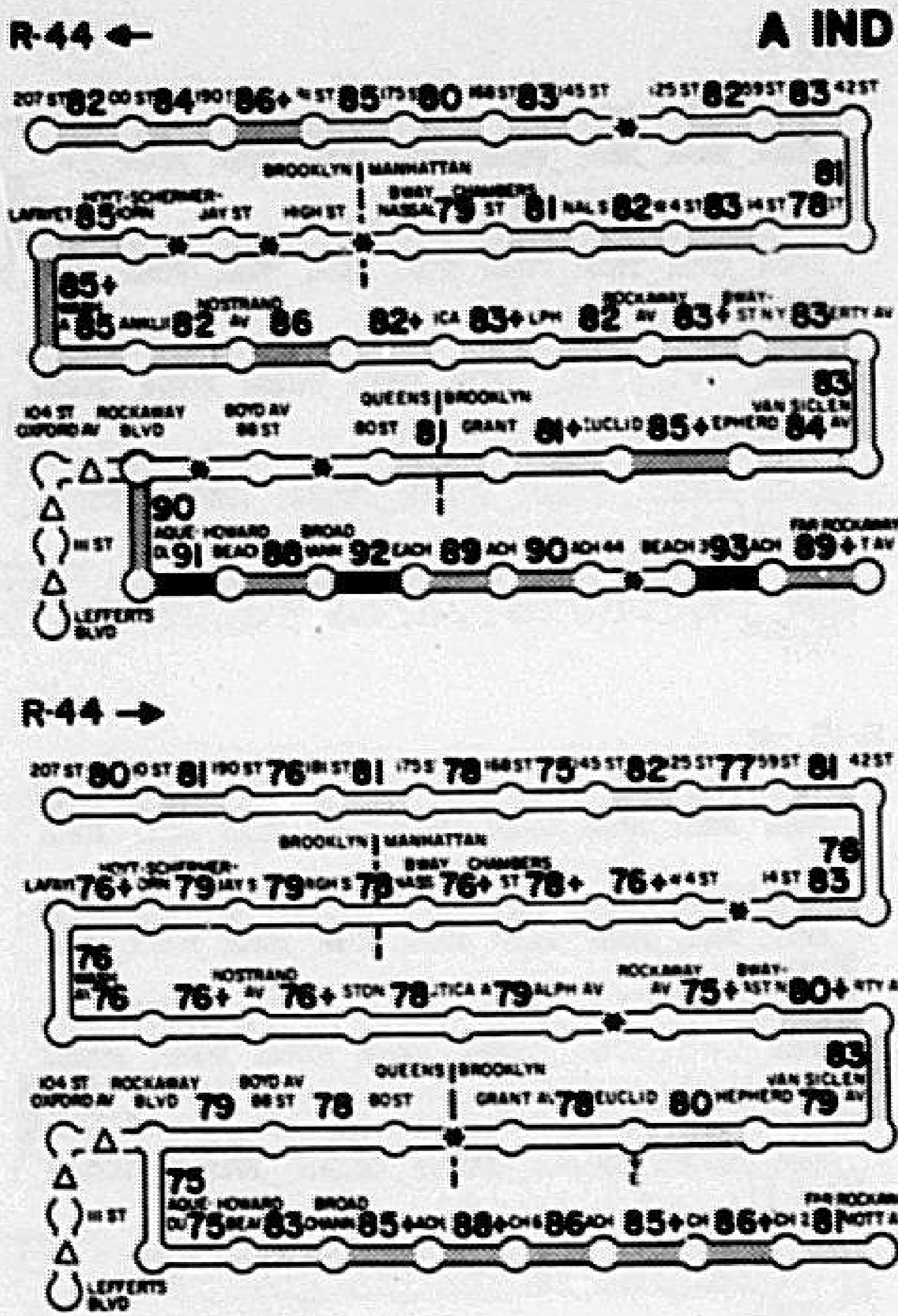
R-10 →



(B) CAR MODEL : R-10

FIGURE 3.4 (Cont)

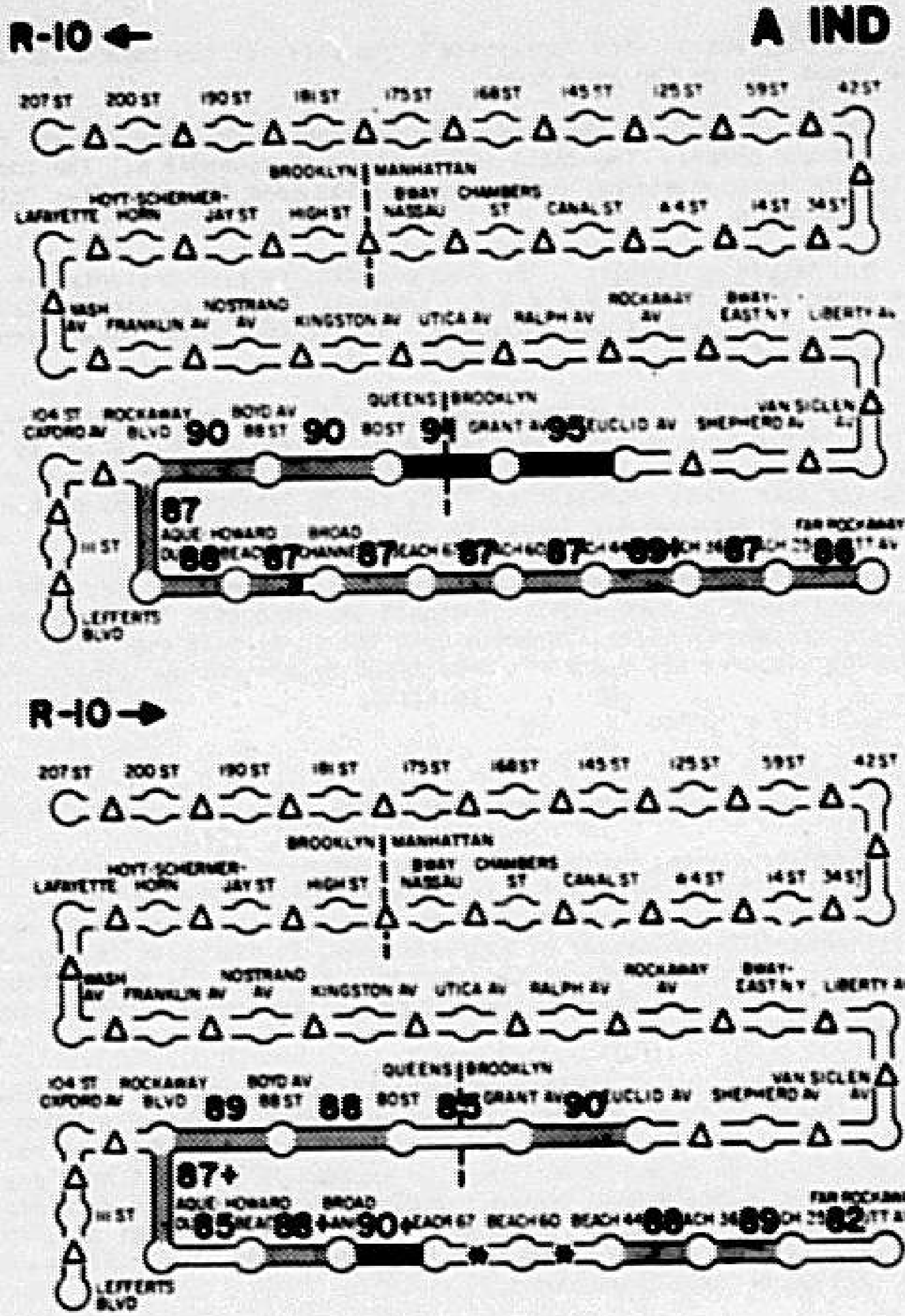
NOISE LEVELS ON THE "A" ROUTE



(C) CAR MODEL: R44

FIGURE 3.4 (CONT)

NOISE LEVELS ON THE "A" ROUTE



(D) CAR MODEL: R-10

FIGURE 3.4 (CONT)

NOISE LEVELS ON THE "A" ROUTE

When no data is available for a specific link on a particular run, the segment is left unshaded, and a symbol is used to avoid confusion with zones of less than 80 dB level.

Two diagrams on each page present the data for the runs which constitute a round trip on the same model.

Table 3.3 includes the window and end door conditions for the round trip of Figure 3.4 and others. The table is continued in Appendix H. The code "1" is used to signify open windows or end doors. The code "2" signifies "closed" windows or end doors.

b. Tabulated Results The complete data is also presented in a tabular form. An example is given in Table 3.4. Appendix D contains similar tables for all other runs on which data was collected. The station code numbers are tabulated in Appendix E.

In the sample tabulation offered in Table 3.4, data is presented for the A-route in a single trip starting at station 61 and ending at station 45. The car model type for the trip was the R-10. The A-weighted sound pressure levels $L_A(MAX)$ are listed for each station-to-station link, and T_5 (the durations of the signal within 5 dB of the maximum) are listed in the adjacent column.

The next column in Table 3.4 lists the values of L_R calculated for the single noisiest event on each link. It should be noted that there can be more than a single maximum per link, in which case the L_R of each event is calculated, and the energy sum over all events is determined by the energy summation formula;

$$L_R(LINK) = 10 \log \sum_{n=1}^{Ni} 10^{L_R(n)/10}$$

where N_i is the number of peaks in the link. Most links have only a single peak.

In addition a measure was calculated which is defined herein as the "Noise Accumulation Estimate" (NAE). It is an estimate of noise exposure as used by the United States Department of Labor (OSHA). The theoretical basis, for this estimator and its manner of approximation, is discussed in Appendix I. The NAE could be valuable as one of the objective functions of the abatement consideration. That is, it could be the measure of system wide noise impact which is to be minimized.

The significance of the NAE values with respect to the Occupational Safety and Health Act, is that, had they been generated by use of a Noise Dose Meter, complying with a value of 1.0 would indicate an accumulation of noise equal to the maximum to which an employee should be exposed in an eight hour day. A value of 0.5 would indicate that periodic audiometric testing was required. It must be noted that the estimator listed was not determined in that way, and it should not be considered at this time as a compliance estimator. It is discussed further in Section 6.1 and in Appendix I.

TABLE 3.3

CAR CONDITIONS DURING IN-TRAIN RUNS

ROUTE	CAR MODEL AND TERMINALS OF RUN		WINDOWS	END DOORS	FANS	AIR CONDITIONER	AVG. NO. OF PASS
A	R10 Euclid Ave.	Mott Ave.	1	1	1		23
	R10 Mott Ave.	Euclid Ave.	1	1	1		6
	R10 Lefferts Blvd.	207th Street	1	1	1		NA
	R10 207th Street	Lefferts Blvd.	1	1	1		NA
	R44 Mott Ave.	207th Street	2	2		1	74
	R44 207th Street	Mott Ave.	2	2		1	55
AA	R32 Chambers St.	168th Street	1	1	1		8
	R32 168th Street	Chambers Street	1	1	1		17
	R42 Chambers Street	168th Street	2	2		1	13
	R42 168th Street	Chambers Street	2	2		1	18
B	R32 Coney Island	57th Street	2	1		1	NA
	R32 57th Street	Coney Island	2	2		1	NA
	R42 Coney Island	57th Street	2	2		1	16
	R42 57th Street	Coney Island	2	2		1	14
D	R32 Brighton Beach	205 Street	2	2		1	NA
	R32 205 Street	Brighton Beach	2	2		1	NA
	R44 Brighton Beach	205 Street	2	2		1	38
	R44 205 Street	Brighton Beach	2	2		1	35
E	R40 Chambers St.	179th St.	1	2		1	NA
	R40 179th St.	Chambers St.	2	2		1	NA
	R40 Chambers St.	179th St.	2	2		2	NA
	R40 179th St.	Chambers St.	2	2		2	NA
F	R40 Coney Island	179th St.	2	2		1	41
	R40 179th St.	Coney Island	1	1		2	18

CODES:

1 - Open or On Conditions
2 - Closed or Off Conditions
NA - Information Not Available

Note: The continuation of this table can be found in Appendix H

TABLE 3.4
SUMMARY OF IN-TRAIN DATA
FOR ONE RUN ON THE "A" TRAIN

ROUTE No.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
A	R-10	N	61- 60	86.0	36.5	101.6	101.6	0.0
A	R-10	N	60- 59	87.0	34.0	107.8	107.8	0.0
A	R-10	N	59- 58	89.5	24.0	103.3	103.3	0.0
A	R-10	N	58- 57	87.0	57.5	104.6	104.6	0.0
A	R-10	N	57- 56	87.0	36.0	102.6	102.6	0.0
A	R-10	N	56- 55	87.0	54.0	104.3	108.4	0.0
A	R-10	N	55- 54	87.0	41.0	104.9	108.2	0.0
A	R-10	N	54- 53	88.0	36.0	103.6	103.6	0.0
A	R-10	N	53- 49	87.0	44.0	103.4	105.1	0.0
A	R-10	N	49- 48	90.0	34.0	105.3	105.3	0.0
A	R-10	N	48- 47	90.0	35.0	105.4	105.4	0.0
A	R-10	N	47- 46	91.0	17.5	103.4	103.4	0.000
A	R-10	N	46- 45	95.0	12.0	105.8	105.8	0.001

LA FOR THE ROUTE IS 116.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 89.8

NAE FOR ROUTE IS 0.00

In addition to the individual link statistics, the L_R, the energy-weighted $L_A(MAX)$, and the NAE for the route are calculated by energy summation of the individual link values of L_R on the entire route. The formula for L_R (Route) used is

$$L_R(\text{ROUTE}) = 10 \log \sum_m 10^{L_R(\text{LINK } m)/10}$$

where L_R(LINK m) denotes the link L_R on the m-th link. The "energy-weighted $L_A(MAX)$" for the route is obtained from the same computation on the $L_A(MAX)$ of each link. The NAE for the route is the ordinary arithmetic sum of the values for each link.

$$\text{NAE(ROUTE)} = \sum_m \text{NAE (LINK } m)$$

c. TNCG and Car Model Both the car model and the basic Track Noise Control Group (TNCG) were found to be significant factors in explaining the variation of in-train noise. This was so despite a significant variation among cars of the same model observed over the same trackage.

Table 3.5 indicates the average $L_A(MAX)$ and L_R observed for various in-train situations (car model and TNCG). Table 3.6 indicates the number of samples on which these averages are based.

The shaded boxes indicate combinations of car models and TNCG which cannot occur, due to such factors as car dimensions and TNCG specific to one division (e.g., the IRT). The blanks indicate combinations which must be estimated, so that an abatement methodology may consider the merits of certain models on trackage where they were not actually observed.

Figure 3.5 summarizes the average $L_A(MAX)$ observed on the various car models and TNCG. The car model averages were computed for each car model without regard to the TNCG on which the car was observed; the TNCG averages were computed analogously. They are not perfectly precise, because not all car models were observed on all TNCG's in the same proportions. Thus there are some internal distortions. Still, these prove to be minor, and the figure may be taken to be a measure of relative standing.

d. Histogram of System Histograms have been plotted from the data collected. The data was aggregated into 5 dBA bands, except for the extremes ($\leq$ 75, and $\geq$ 105+). An entire link was characterized by its $L_A(MAX)$, so that histograms of noise level by route-miles could be computed.

Refer to Figure 3.6. The histograms include:

- IRT only
- R-44 only
- NON-R-44, NON-IRT.

Clearly, the noise levels on the IRT are extreme. Just as notably, the R-44 (which does not fit on the IRT) gives rise to a dramatically different noise exposure characteristic. This is so even when it is compared to the other car models on the non-IRT runs.

TABLE 35

MATRIX OF NOISE LEVELS IN-TRAIN, CHARACTERIZED BY CAR MODEL AND TNCG

	MODEL \ TNCG	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
NON IRT	R44	76.5 / 95.4	81.8 / 97.3	80.5 / 97.7	— / —	80.4 / 102.3		— / —	82.1 / 97.1		— / —	80.6 / 96.8		79.8 / 96.1	85.4 / 101.8	79.1 / 95.7	78.7 / 95.1	76.7 / 93.1
	R42	90.4 / 105.9	91.8 / 107.1	91.4 / 108.1	88.5 / 101	89.6 / 104.6		— / —	— / —		89.1 / 104.6	90.6 / 106.2		86.3 / 101.8	— / —	84.2 / 102.1	84.5 / 100.1	86.0 / 101.7
	R40	90.5 / 105.7	93.5 / 109.0	— / —	— / —	94.2 / 110.4		— / —	92.0 / 106.2		89.2 / 105.3	93.2 / 109.5		88.1 / 103.6	87.9 / 103.4	— / —	— / —	— / —
	R38	92.5 / 107.6	103.0 / 118.1	89.0 / 103.9	— / —	— / —		— / —	— / —		94.9 / 110.5	102.9 / 119.2		93.3 / 112.6	— / —	86.3 / 103.2	— / —	91.6 / 106.6
	R32	90.4 / 106.1	98.0 / 113.6	96.4 / 114.0	— / —	98.4 / 114.2		— / —	102.2 / 117.6		— / —	97.5 / 112.7		91.1 / 106.5	— / —	84.3 / 102.1	81.6 / 92.7	91.8 / 107.9
	R27-30	94.6 / 109.8	96.9 / 111.9	— / —	— / —	88.6 / 102.4		— / —	— / —		95.6 / 110.3	92.4 / 107.4		87.3 / 102.9	— / —	87.3 / 92.0	— / —	83.4 / 97.8
	R16	— / —	98.9 / 114.0	— / —	— / —	99.9 / 115.2		— / —	96.0 / 110.4		— / —	98.5 / 113.3		— / —	89.0 / 102.7	— / —	— / —	— / —
	R10	— / —	98.8 / 114.0	— / —	— / —	100.0 / 124.5		— / —	89.3 / 103.8		— / —	98.5 / 114.7		90.4 / 105.1	87.3 / 103.7	87.1 / 106.2	87.3 / 105.5	— / —
	R9	— / —	95.8 / 111.9	— / —	94.8 / 106.7	91.8 / 106.6		— / —	— / —		— / —	— / —		87.8 / 101.0	— / —	91.6 / 104.5	83.0 / 101.7	— / —
IRT	R36	97.9 / 113.2	93.5 / 110.3	— / —	91.4 / 106.1	92.2 / 106.6	— / —	95.8 / 109.4	91.1 / 106.7		95.8 / 109.9	— / —		88.0 / 103.3	84.9 / 100.9	— / —		— / —
	R29-33	96.8 / 112.6	99.3 / 114.8	100.0 / 119.5	97.7 / 110.3	99.4 / 114.7	97.2 / 111.6	98.0 / 112.1	99.1 / 114.1		98.7 / 114.9	99.2 / 112.6		95.4 / 110.6	— / —	93.0 / 110.7		— / —
	R26-28	99.0 / 115.0	101.5 / 117.5	103.0 / 118.7	— / —	97.3 / 109.6	— / —	100.5 / 112.0	97.0 / 112.9		94.5 / 112.5	91.0 / 101.0		89.6 / 105.0	— / —	— / —		— / —
	R22	— / —	96.5 / 112.2	— / —	98.8 / 107.7	99.4 / 114.7	97.0 / 110.8	— / —	— / —		96.9 / 114.9	96.0 / 111.0		91.0 / 106.9	— / —	92.0 / 107.5		— / —
	R21	96.3 / 114.3	96.8 / 113.5	100.0 / 117.5	96.0 / 109.1	98.1 / 112.2	94.0 / 108.5	102.8 / 116.2	95.3 / 109.6		96.9 / 114.1	99.5 / 114.0		91.0 / 106.2		90.3 / 106.6		95.0 / 107.9
	R17	95.2 / 110.7	97.6 / 113.9	99.5 / 117.8	— / —	96.8 / 111.1	— / —	— / —	98.1 / 111.7		94.8 / 110.9	96.7 / 110.9		90.6 / 105.6	— / —	91.2 / 107.3		92.8 / 108.2
	R15	— / —	94.1 / 109.2	— / —	96.0 / 106.9	100.3 / 114.7	95.5 / 109.1	— / —	— / —		94.4 / 111.1	95.3 / 108.9		90.6 / 106.2	— / —	90.0 / 102.7		— / —
	R12-14	99.3 / 114.6	98.7 / 114.5	— / —	98.2 / 112.2	101.4 / 116.2	100.0 / 113.1	100.5 / 113.8	— / —		100.1 / 115.4	100.7 / 113.7		93.4 / 108.4	— / —	— / —		— / —

NOTE: 1) SHADED BOXES INDICATE COMBINATIONS WHICH CANNOT EXIST.

2) BLANK BOXES INDICATE COMBINATIONS WHICH MUST BE ESTIMATED FROM AVAILABLE DATA.

LEGEND

LA / LB

TABLE 3.6

NUMBER OF SAMPLES FOR THE CHARACTERIZATION

IN TABLE 3.5

MODEL	TNCG	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
NON IRT	R44	1	70	2	0	7		0	17		0	57		24	16	23	29	40
	R42	23	70	6	1	26		0	0		29	36		117	0	8	2	43
	R40	12	77	0	0	27		0	2		17	97		18	7	0	0	0
	R38	16	3	1	0	0		0	0		25	20		2	0	2	0	17
	R32	4	38	6	0	14		0	17		0	22		24	0	2	4	15
	R27-30	22	28	0	0	7		0	0		22	14		88	0	2	0	23
	R16	0	11	0	0	23		0	2		0	16		0	1	0	0	0
	R10	0	22	0	0	2		0	4		0	36		14	10	4	2	0
	R9	0	19	0	2	8		0	0		0	0		8	0	4	2	0
IRT	R36	17	9	0	6	3	0	4	4		30	0		60	12	0		0
	R29-33	5	34	1	6	29	3	1	14		38	9		43	0	1		0
	R26-28	1	2	1	0	2	0	1	1		4	1		9	0	0		0
	R22	0	10	0	2	5	1	0	0		6	2		21	0	1		0
	R21	3	18	3	2	11	1	2	2		21	1		46	0	3		1
	R17	6	18	2	0	9	0	0	16		31	11		29	0	6		9
	R15	0	11	0	2	5	1	0	0		6	2		23	0	1		0
	R12-14	19	13	0	10	24	2	4	0		43	3		16	0	0		0

NOTES:

(1) Shaded boxes indicate combinations which cannot exist

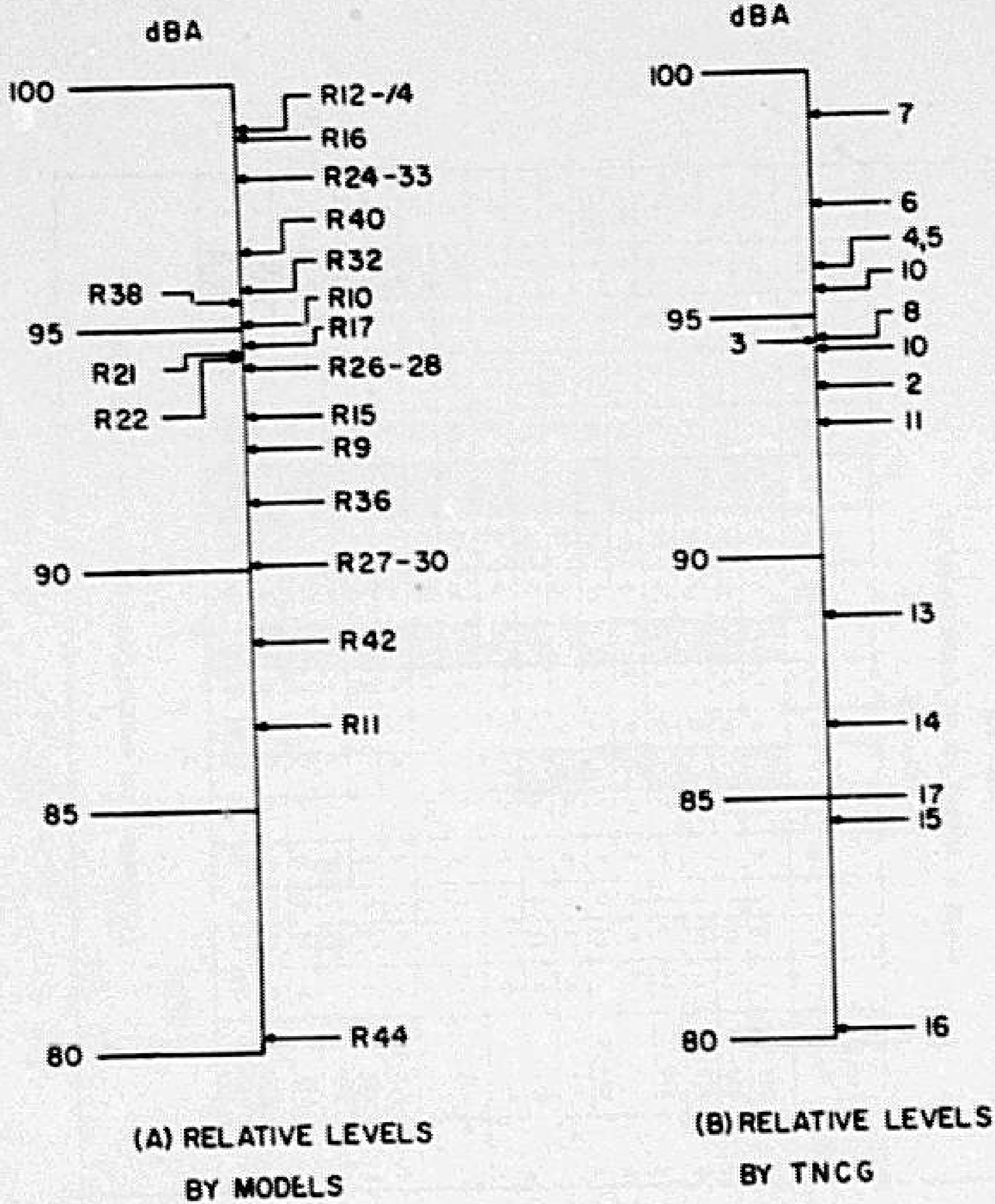
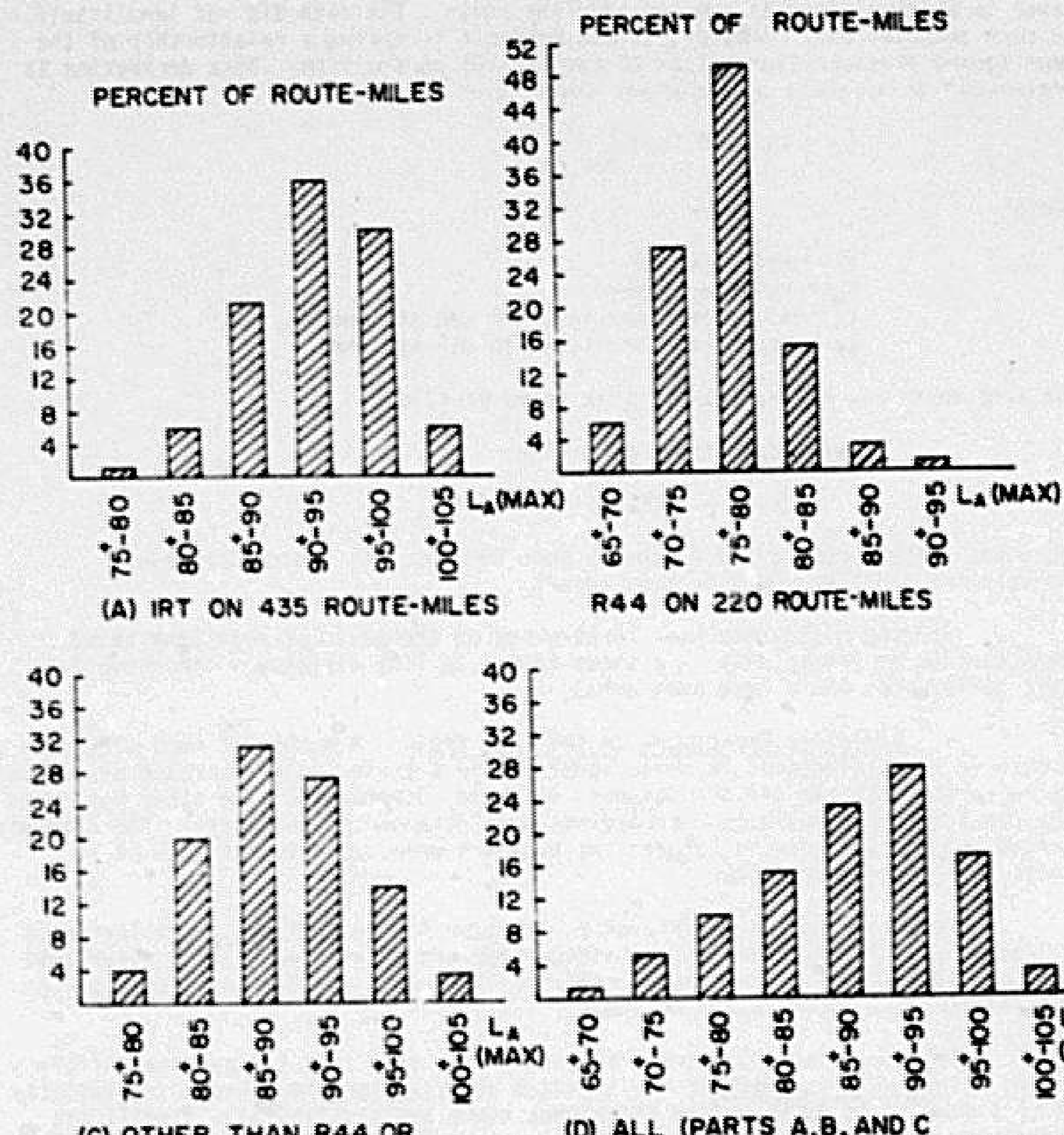


FIGURE 35

L_A (MAX) LEVELS IN-TRAIN: RELATIVE LEVELS ON VARIOUS MODELS AND TNCG



NOTE: "ROUTE-MILES" INDICATES THE TOTAL MILAGE COVERED IN-TRAIN IN THE CATEGORY SPECIFIED; BOTH DIRECTIONS AND MULTIPLE RUNS ARE INCLUDED AS APPROPRIATE.

FIGURE 3-6

HISTOGRAMS OF L_A(MAX) FOR THE IN-TRAIN DATA

What is actually desired are histograms of the mean square pressure level to which a rider is exposed over the route. The data did not lend itself to such computations. However, it was possible to derive a relationship of the mean square pressure over a link to the L_A(AVG) on the link. This derivation is presented* in Appendix J, and makes use of the relation

$$L_A + L_0 + 10 \log \left(\frac{v}{v_0} \right)^3$$

where

V = vehicle speed
V_0 = reference speed
L_0 = sound pressure level in dBA at speed V_0
L_A = sound pressure level in dBA at speed V

and also makes use of the typical link speed profile.

It was found that, on a link,

$$L_A(\text{AVG}) = L_A(\text{MAX}) - (2\text{-}4 \text{ dBA})$$

where the range 2 dBA to 4 dBA depends upon the specific vehicle profile. The value of 3 dBA was used in this report.

Had the histograms been constructed on the basis of each link being characterized by its L_A(MAX) -- without regard to link distance -- the same dramatic differences would have been noted.

e. Variation Among Cars in the Same Train A number of runs were done to observe the differences in noise level within a train. One recording system was placed in the last car (in the standard position, otherwise). The other was moved from car to car. Simultaneous recordings were obtained in both cars. The data was charted and the differences between the two cars were tabulated at each of 10 points in a typical trajectory.

The resultant mean differences relative to the last car are illustrated in Figure 3.7. The extremes in the differences are also noted. It is clear that there are significant instantaneous differences between any two cars, even on the equivalent of the "SLOW" meter setting.

The range indicated tends to obscure the fact that the average difference is rather well estimated. The standard deviation on the average is typically 0.5 to 1.0 dBA. It is therefore clear that there are statistically significant differences among cars of the same model in the same train. It is not clear, however, that this is due to their position in the train.

Inspection of the results shown in Figure 3.6 fails to reveal a pattern -- a rise or fall -- that is logically attributable to position. Indeed, three radically different pattern are shown.

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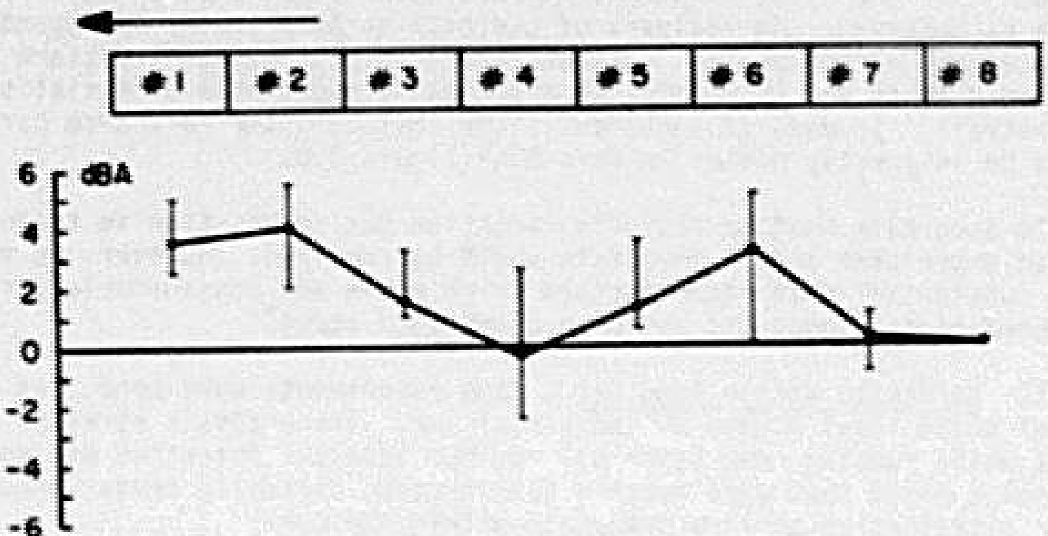
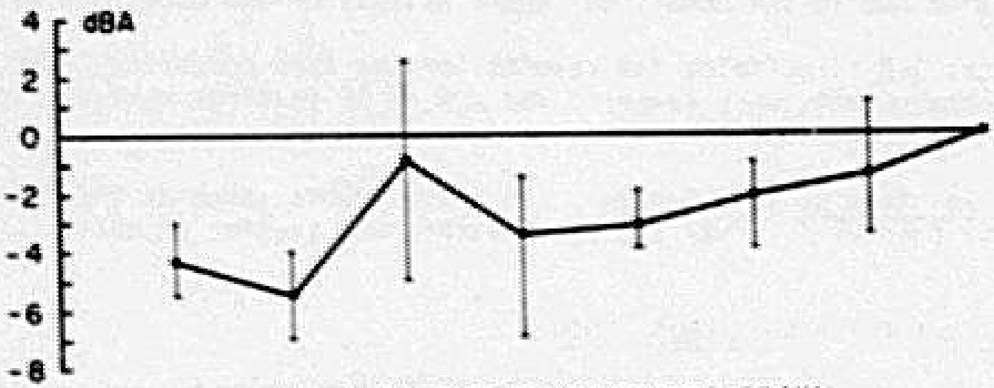
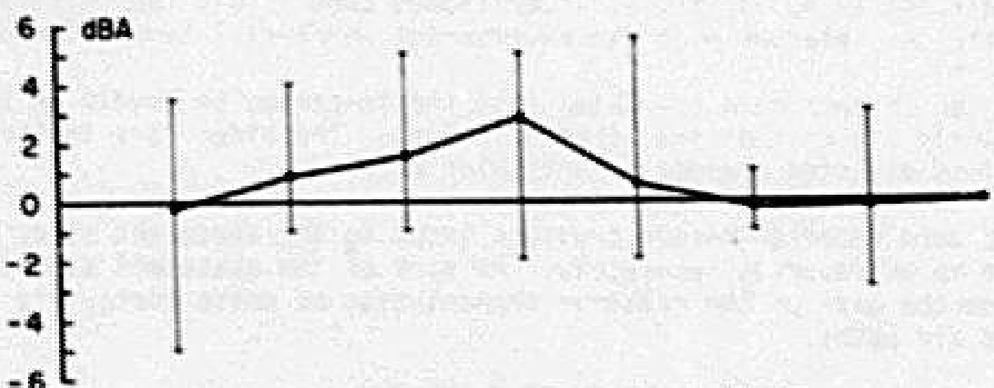
* Manning, J.E., Cann, R.J., and Fredberg, J.J., "Prediction and Control of Rail Transit Noise and Vibration, A State-Of-The-Art Assessment." Report No. UMTA-MA-06-0025-74-5, March, 1974.



(A) A SAMPLE ON AN R27/30 TRAIN



(B) A SAMPLE ON AN R27/30 TRAIN



(C) A SAMPLE ON AN R-42 TRAIN

NOTE: 1. THE R-42 IS AIR CONDITIONED, WITH WINDOWS AND DOORS CLOSED

2. THE LAST CAR IS THE REFERENCE POSITION

LEGEND:

MAXIMUM
MEAN
MINIMUM
} DIFFERENCE OBSERVED

FIGURE 3.7

SOME RESULTS CONCERNING VARIATION WITHIN TRAIN

Consider the hypothesis that car condition alone causes the differences in the mean L_A observed. An analysis of the data at hand (refer to Appendix K) cannot refute such a hypothesis. Further, there is no consistent pattern in the data that would cause one to support an alternative hypothesis of variation due to position in-train. Indeed, it looks as if the last car (the reference car) just happened to be inherently noiser in Part B of Figure 3.6.

To ascertain whether there is variation due to position in train, a more refined experiment and/or more data would be required. However, it appears to be less substantial than other factors which would add considerable variation (e.g. car condition, window and end door condition, etc.).

f. Variation Within Same Car Some experiments were conducted on the variation of noise level within an individual car. The analysis stressed mean differences while running near (typical) maximum levels. Attention did not focus on the absoulut peaks that were reached (short-term, virtually instantaneous events), or on their attentuation as they propagate within the car.

The analysis considered not only the variation due to position within the car, but also due to the condition (open, closed) of end doors and windows.

Figure 3.8 illustrates the results for the runs conducted. Two simultaneous measurements were taken; a minimum of 10 readings were averaged to obtain the indicated levels.

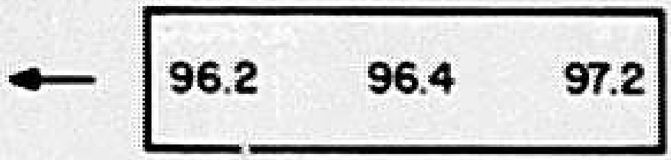
g. Relation to PATH System The measurements taken on the PATH system are reported in Chapter 6. They include in-train and in-station data.

3.4 COMMENTS ON THE IN-TRAIN NOISE DATA

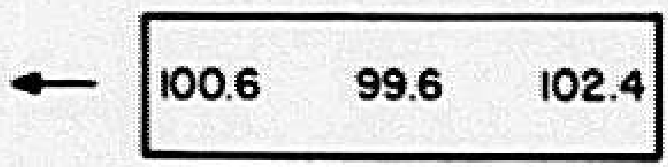
Inspection of the data indicates that in-train levels can be typically expected to exceed 90 dBA. For much of the year, open windows and end doors are the rule, except in the air-conditioned cars. This facilitates coupling of the car interior with the reverberant wheel-rail tunnel field.

It can be seen from the data, that the in-car noise levels on the IRT are significantly higher than the other divisions. The older cars in the tunnel sections on this division present a particular problem.

The data reported herein provides input to the abatement study and cost estimate to be reported separately. As part of the abatement study, insight is gained from the data on the relative transmission of noise energy via structure and air paths.



(A) WINDOWS CLOSED
END DOORS CLOSED



(B) WINDOWS OPEN
END DOORS OPEN

FIGURE 3.8

L_A(MAX) VARIATION WITHIN CAR ON AN R-38

CHAPTER FOUR

IN-STATION DATA

The stations on the New York City Transit System (NYCTA and SIRTOA porperties) are defined in terms of 488 component stations, some of which are elements of complex (perhaps multi-tiered) stations. These component stations with code numbers assigned are listed in Appendix E.

The 488 component stations can be classified into 36 distinct configurations. These differ according to number of tracks, basic dimensions, and location (indoor vs. outdoor, steel vs. concrete, elevated, etc.). Because they have been distinguished by their essential noise-characterizing attributes, this list of 36 "types" constitutes the list of different Station Noise Control Groups (SNCG's). Table 4.1 lists the 36 SNCG's.

Data was collected in 43 component stations, with samples drawn from 29 of the 36 SNCG's.

For simplicity, "component stations" will be referred to simply as "stations".

4.1 MEASUREMENT AND REDUCTION

The measurement procedure for in-station noise is described in Chapter Two. The data collected and reduced from in-station measurement included:

- L_A(MAX)
- duration in seconds at 5 dBA down from the peak
- car model(s)
- lead car number

as well as descriptive commentary on the nature of noises and other special events. A typical strip chart record is shown in Figure 4.1.

The data was coded and keypunched, and a number of analyses were conducted. Both L_A(MAX) and L_R (as defined in Section 3.2) were considered.

The data was analyzed with respect to:

- L_A(MAX) for arriving trains
- L_A(MAX) for departinq trains
- L_A(MAX) for express pass-throughs

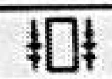
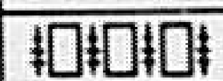
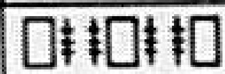
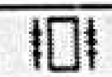
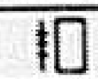
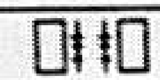
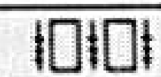
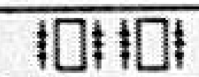
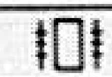
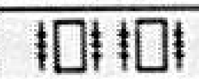
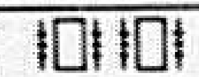
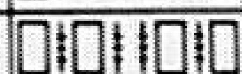
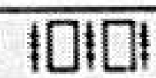
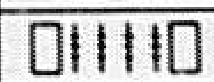
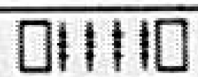
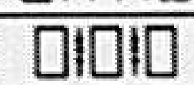
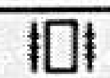
L_R was investigated in the same way.

4.2 CHARACTERIZATION OF THE SYSTEM

a. Maximum Levels Figure 4.2 indicates the highest L_A(MAX) level observed in the stations studied, without respect to configuration of station or car model. Figure 4.3 is a similar characterization for the R44 (the newest model) only. Because the R44 was not seen in all stations (it does not pass

TABLE 4.1

DEFINITION OF THE 36 STATION NOISE CONTROL GROUPS (SNCG'S)

SNCG	TRACK LAYOUT	LOCATION	SNCG	TRACK LAYOUT	LOCATION
1		SUBWAY	20		SUBWAY
2		STEEL EL	21		SUBWAY
3		CONCRETE EL	22		SUBWAY
4		SUBWAY	23		SUBWAY
5		STEEL EL	24		SUBWAY
6		CONCRETE EL			
7		SUBWAY	25		SUBWAY
8		STEEL EL	26		SUBWAY
9		SUBWAY	27		OPEN CUT
10		OPEN CUT	28		EMBANKMENT
11		EMBANKMENT	29		STEEL EL
12		STEEL EL	30		SUBWAY
13		CONCRETE EL	31		SUBWAY
14		GRADE	32		OPEN CUT
15		SUBWAY	33		GRADE
16		GRADE	34		CONCRETE EL
17		EMBANKMENT	35		STEEL EL
18		STEEL EL	36		EMBANKMENT
19		GRADE			

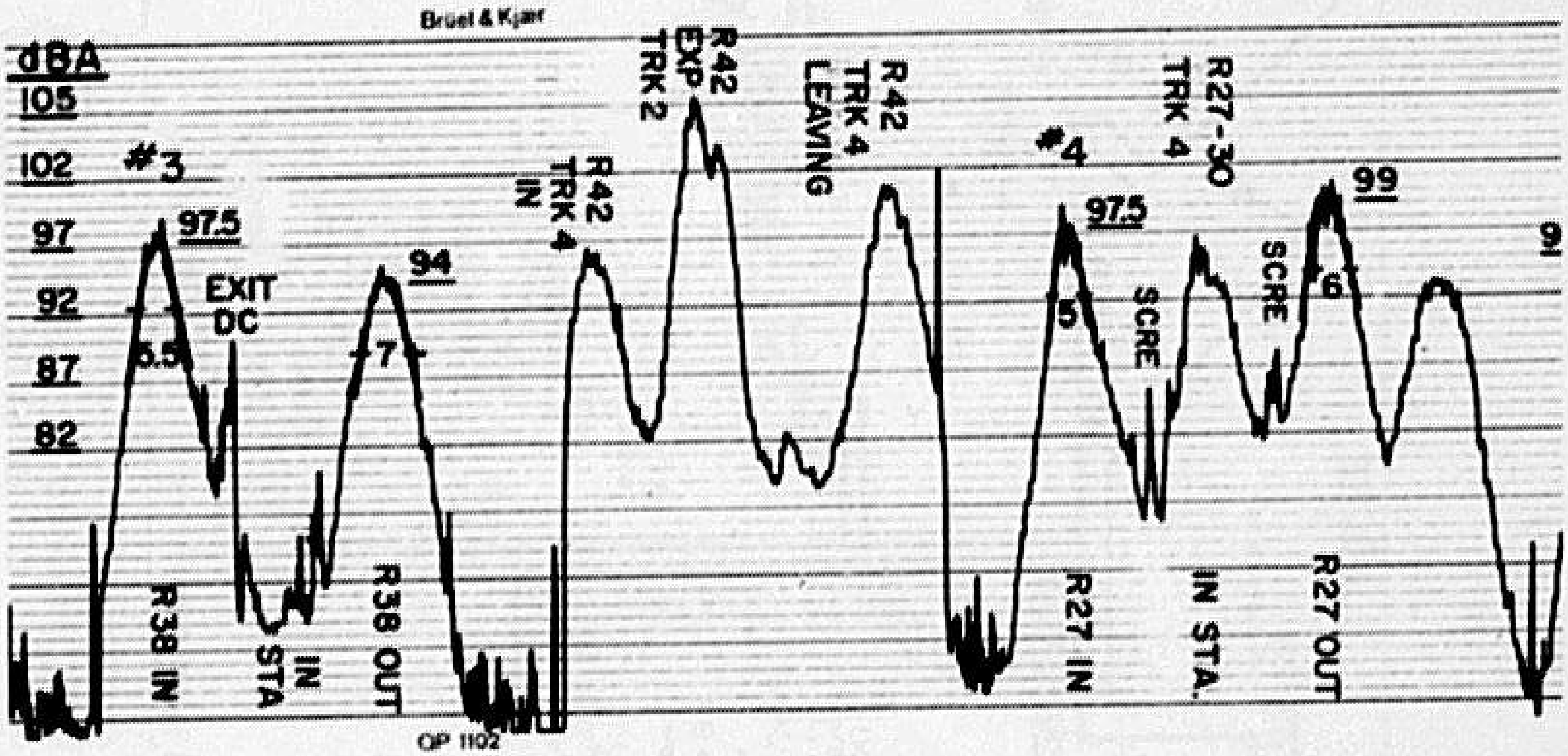


FIGURE 4.1
TYPICAL STRIP CHART RECORD
FOR IN-STATION RUN

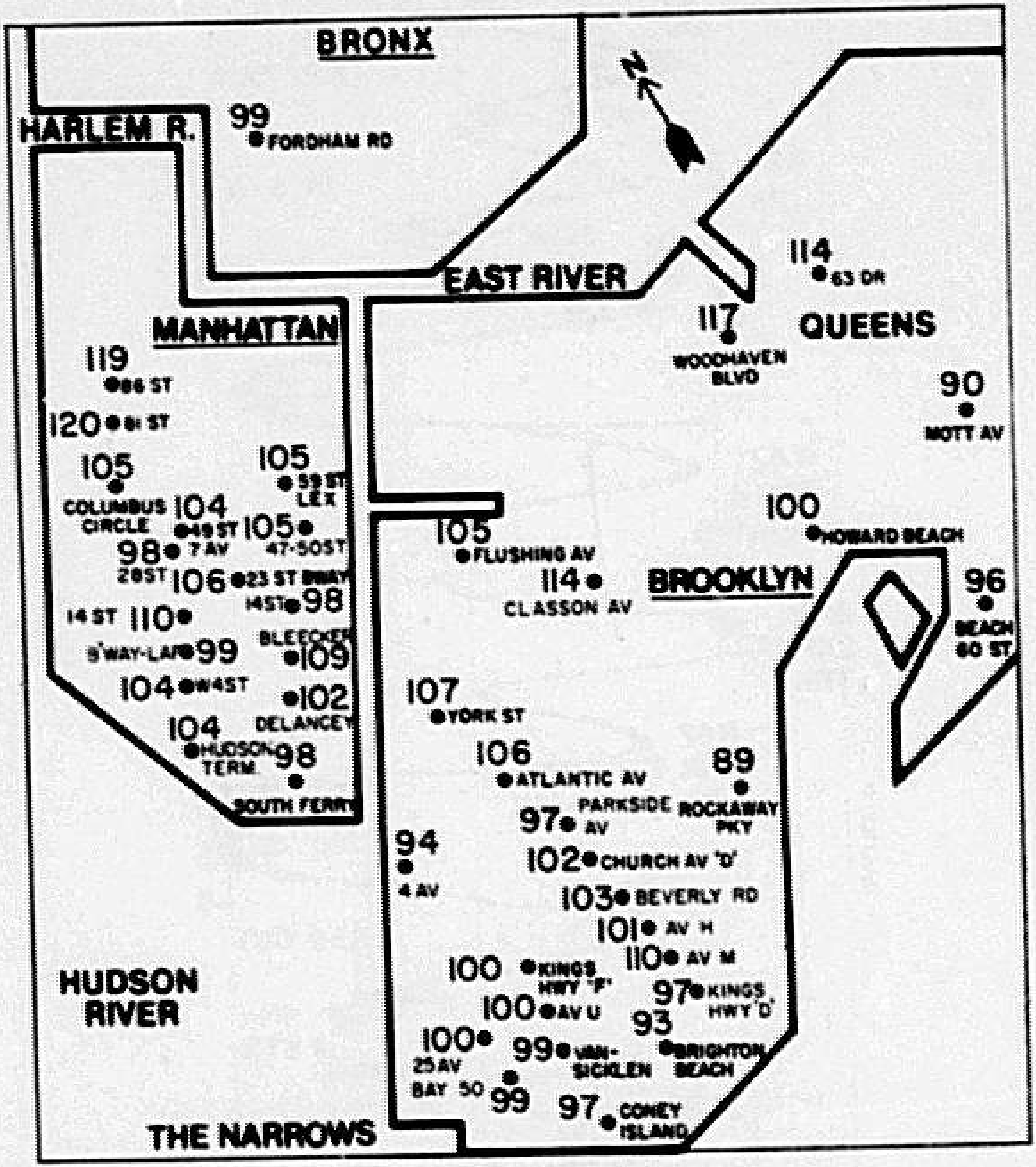


FIGURE 4.2

MAXIMUM L_A OBSERVED IN EACH OF THE STATIONS STUDIED

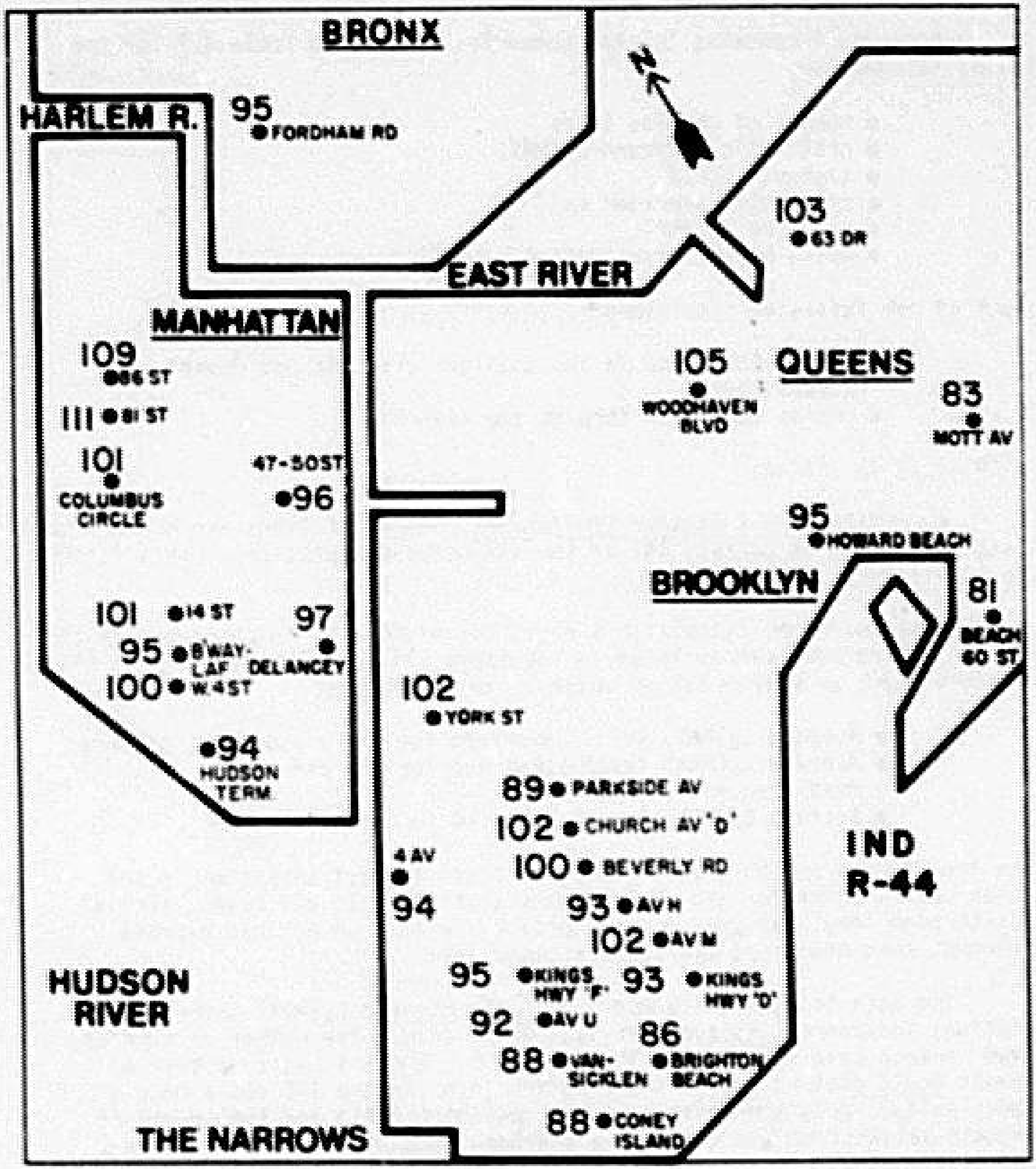


FIGURE 4.3

MAXIMUM L_A OBSERVED IN STATIONS FOR THE R-44 ONLY through all stations), a comparison of Figures 4.2 and 4.3 does not yield a precise description of "what would happen if the R44 replaced all other models."

b. Average L_A(MAX) by Station and Model Table 4.2 presents an illustration of the tabulation of the arithmetic-averaged L_A(MAX) for the stations studied, classified by the car model groupings indicated.

Appendix F contains tabular summaries similar to Table 4.2 for the following information:

- number of samples taken
- arithmetic-averaged L_A(MAX)
- highest L_A(MAX)
- arithmetic-averaged L_R
- range of L_A(MAX)
- Noise Accumulation Estimate (NAE)

for each of the following conditions:

- trains that stop in the station (arrivals and departures, separately)
- trains that pass through the station

for a total of 18 tables.

c. Histogram of Station Environment The 43 stations are drawn from 29 distinct SNCG's, which contain 441 of the 488 component stations. This is 90% of the total number of stations.

Based upon the observations made, one might wish to characterize the in-station environment extrapolated to represent all component stations. Figure 4.4 presents such an extrapolation under three conditions:

- Average L_A(MAX) levels observed for the mix of cars observed
- Average L_A(MAX) levels observed for the car model most frequently observed
- Average L_A(MAX) levels observed for the R44.

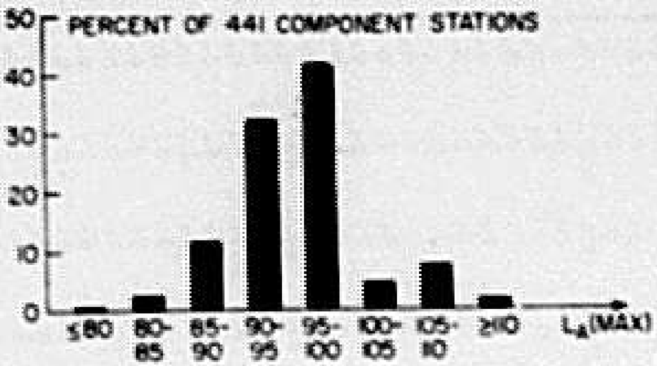
Because the R44 was not observed in all stations, the extrapolation in the last case was to a smaller set of component stations. In all cases, arrival or pass-through level was used as appropriate; certain SNCG's had express pass-through that dominated the station sound level.

The data in Figure 4.2 and 4.3 is the highest L_A(MAX) observed in the stations indicated. As such, it is a worst case. The number of samples involved in each case is reported in Appendix F. While it is true that a rare event could distort such a presentation (e.g. is the 120 dBA a once a year pecularity), both the pattern of the average L_A(MAX) and the spread of the highest values from the respective averages support the assumption that typical distribution of train condition and operation is such that these peaks will occur routinely.

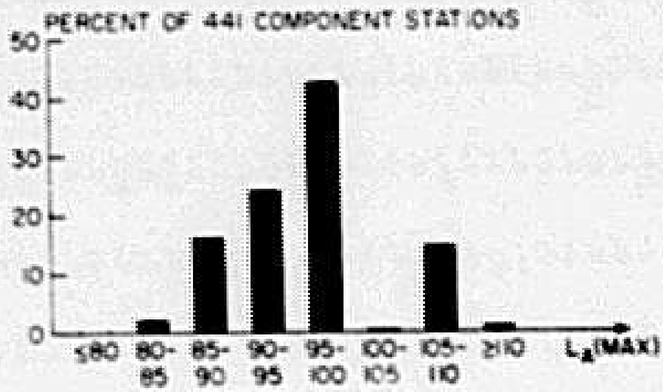
d. Variation Within Station Figure 4.5 indicates the variation with one subway station, York Street. The levels shown are for arrivals of trains that stop in the station. Note that the variation within the station is in the

TABLE 4.2
IN-STATION DATA: EXPECTED LA(MAX) FOR ARRIVALS OF TRAINS THAT STOP

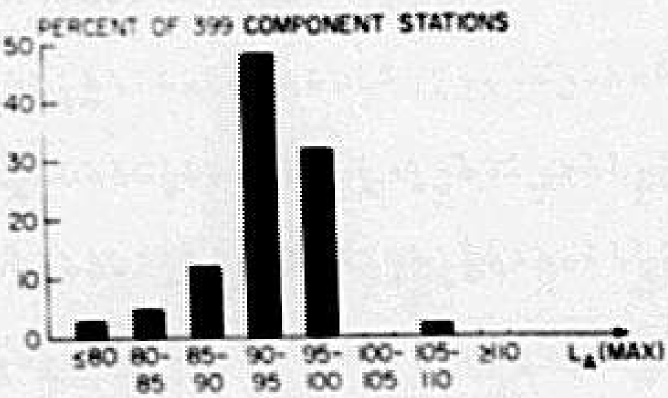
	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
200 14TH ST	99.	104.	131.	100.	100.	0.	0.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	100.
328 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.	96.	97.	0.	0.	0.	93.
16 86TH ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17 81ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
89 B'WAY-LAF.	91.	93.	96.	94.	93.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.
202 DELANCEY ST	93.	0.	98.	97.	0.	0.	0.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	94.
264 YORK ST	96.	103.	101.	101.	0.	0.	0.	0.	0.	102.	0.	0.	0.	0.	0.	0.	0.	100.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	101.	102.	101.	100.	99.	100.	0.	100.
76 FORDHAM RD	92.	97.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	95.
232 CLASSON AVE.	0.	0.	105.	104.	0.	0.	104.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	104.
405 HUDSON TERM.	93.	94.	0.	0.	0.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	0.	95.
19 COLUMBUS CIR	93.	96.	0.	0.	94.	0.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	96.
85 47-50TH ST.	90.	97.	98.	0.	95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	95.
46 WEST 4TH ST	95.	97.	96.	102.	96.	0.	0.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	96.
149 49TH 7TH AVE	0.	99.	100.	94.	0.	98.	96.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
152 28TH ST.	0.	0.	95.	0.	0.	94.	93.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.
153 23RD B'WAY	0.	103.	102.	99.	0.	97.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
165 63RD DRIVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160 WOODHAVEN BL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
336 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	100.	0.	97.	99.	97.	0.	99.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.	0.	96.	94.	0.	0.	96.
431 BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	103.	0.	0.	103.	0.	0.	105.
57 BEACH 60TH	80.	85.	0.	0.	0.	0.	0.	0.	90.	0.	0.	0.	0.	0.	0.	0.	0.	88.
61 MOTT AVE	76.	0.	0.	0.	0.	0.	0.	0.	81.	0.	0.	0.	0.	0.	0.	0.	0.	80.
222 VAN SICLEN	83.	98.	88.	90.	0.	0.	0.	0.	0.	92.	0.	0.	0.	0.	0.	0.	0.	89.
266 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	[illegible]	0.	0.	0.	0.	0.	0.	0.
290 ROCKAWAY PKY	0.	81.	0.	0.	0.	0.	0.	0.	0.	82.	0.	0.	0.	0.	0.	0.	0.	87.
128 25TH AVE.	0.	0.	0.	0.	93.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	93.
129 BAY 50TH ST.	0.	0.	0.	0.	91.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	91.
219 KINGS HWY F	87.	103.	90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	90.
226 AVE U	91.	0.	91.	95.	0.	0.	0.	0.	0.	90.	0.	0.	0.	0.	0.	0.	0.	91.
253 FLUSHING AVE	0.	98.	0.	0.	96.	99.	0.	0.	0.	95.	0.	0.	0.	0.	0.	0.	0.	97.
54 HOWARD BCH	93.	93.	0.	0.	0.	0.	0.	0.	95.	0.	0.	0.	0.	0.	0.	0.	0.	94.
95 PARKSIDE AVE	0.	77.	0.	0.	0.	86.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	84.
96 CHURCH AVE	90.	93.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	93.
97 BEVERLEY RD.	0.	0.	0.	0.	0.	88.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	88.
130 AVE N	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
162 AVE M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
103 KINGS HWY D	87.	90.	0.	0.	91.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	90.
107 BRIGHTON BCH	84.	87.	0.	0.	89.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	87.
268 4TH AVE.	86.	0.	92.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	87.
116 CONEY ISLAND	78.	85.	83.	83.	85.	85.	0.	0.	0.	83.	0.	0.	0.	0.	0.	0.	0.	83.
999	90.	95.	95.	96.	92.	94.	98.	0.	92.	93.	101.	100.	99.	97.	100.	98.	0.	94.



(A) BASED UPON AVERAGE LEVEL FOR OBSERVED MIX OF MODELS



(B) BASED UPON AVERAGE LEVEL FOR MOST FREQUENTLY OBSERVED MODEL



(C) BASED UPON AVERAGE LEVEL FOR OBSERVED R44

FIGURE 4.4

IN-STATION NOISE ENVIRONMENTS

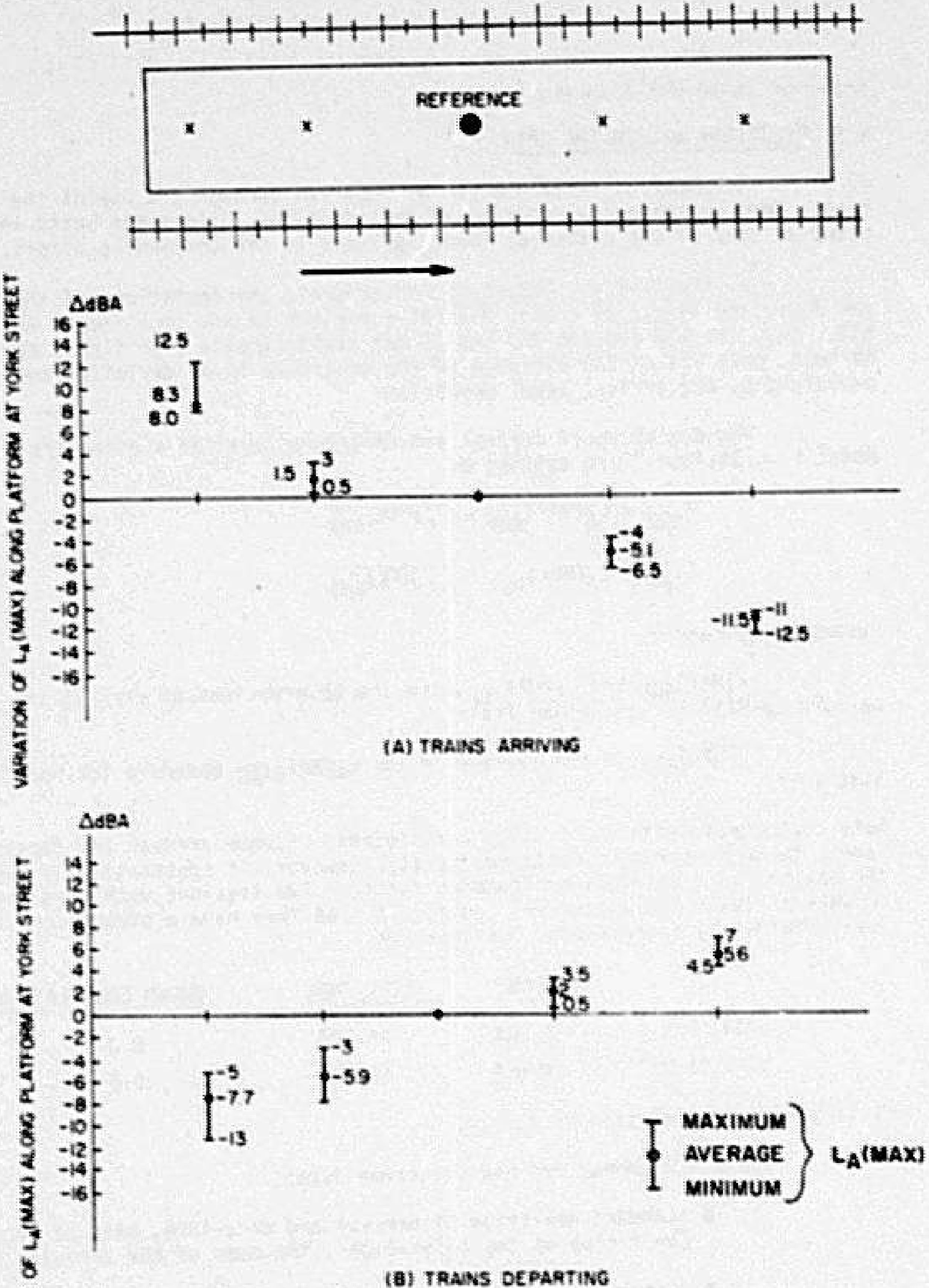


FIGURE 4.5
VARIATION OF L_A(MAX) ALONG PLATFORM
AT YORK STREET

order of 15-20 dBA from end to end.

4.3 RELATIONS WITHIN THE DATA

A number of relations can be observed through the use of the data base. Some of these are reported in this section. Others are being investigated as part of the abatement investigations in the continuing effort.

a. Arrival vs. Departure In general, the deviations of the arrival and departure levels of trains did not correlate to any significant degree at all. Only the R32 and the R27 and 30 had statistically significant correlations. At best, only 22% of the variance of the departure level deviation could be explained by the arrival level deviation.

The deviation of arrival and departure level of a given train of Model X in Station Y are defined as

$$E_{ARR} = L_A(MAX)_{ARR} - \overline{L_A(MAX)_{ARR}} \qquad (4.1)$$

$$E_{DEP} = L_A(MAX)_{DEP} - \overline{L_A(MAX)_{ARR}}$$

respectively, where

$L_A(MAX)_{ARR}$ and $L_A(MAX)_{DEP}$ are the observations of arrival and departure $L_A(MAX)$ for the given train

$\overline{L_A(MAX)_{ARR}}$ is the average of the $L_A(MAX)_{ARR}$ observed for Model X in Station Y.

Note that these definitions allow a difference between arrival and departure levels to be preserved. Most importantly, however, it systematically removes the station as a possible confounding factor. Two stations with zero correlation between arrivals and departures could look like they have a strong correlation if indiscriminately aggregated. For instance,

	ARRIVAL	DEPARTURE	KNOWN CORRELATION
STATION 1	90 dBA	88 dBA	0.0
STATION 2	100 dBA	98 dBA	0.0

could yield a correlation up to 1.00.

Table 4.3 summarizes the deviation data:

- standard deviation of arrival and departure, mean of departure (by virtue of the definitions, the mean of the arrivals is zero):

- correlation of E_{ARR} and E_{DEP}

for all models for which the data was sufficient. Figure 4.6 presents the data for the R32's and R27-30's. The regression lines for these cases are also shown.

TABLE 4.3

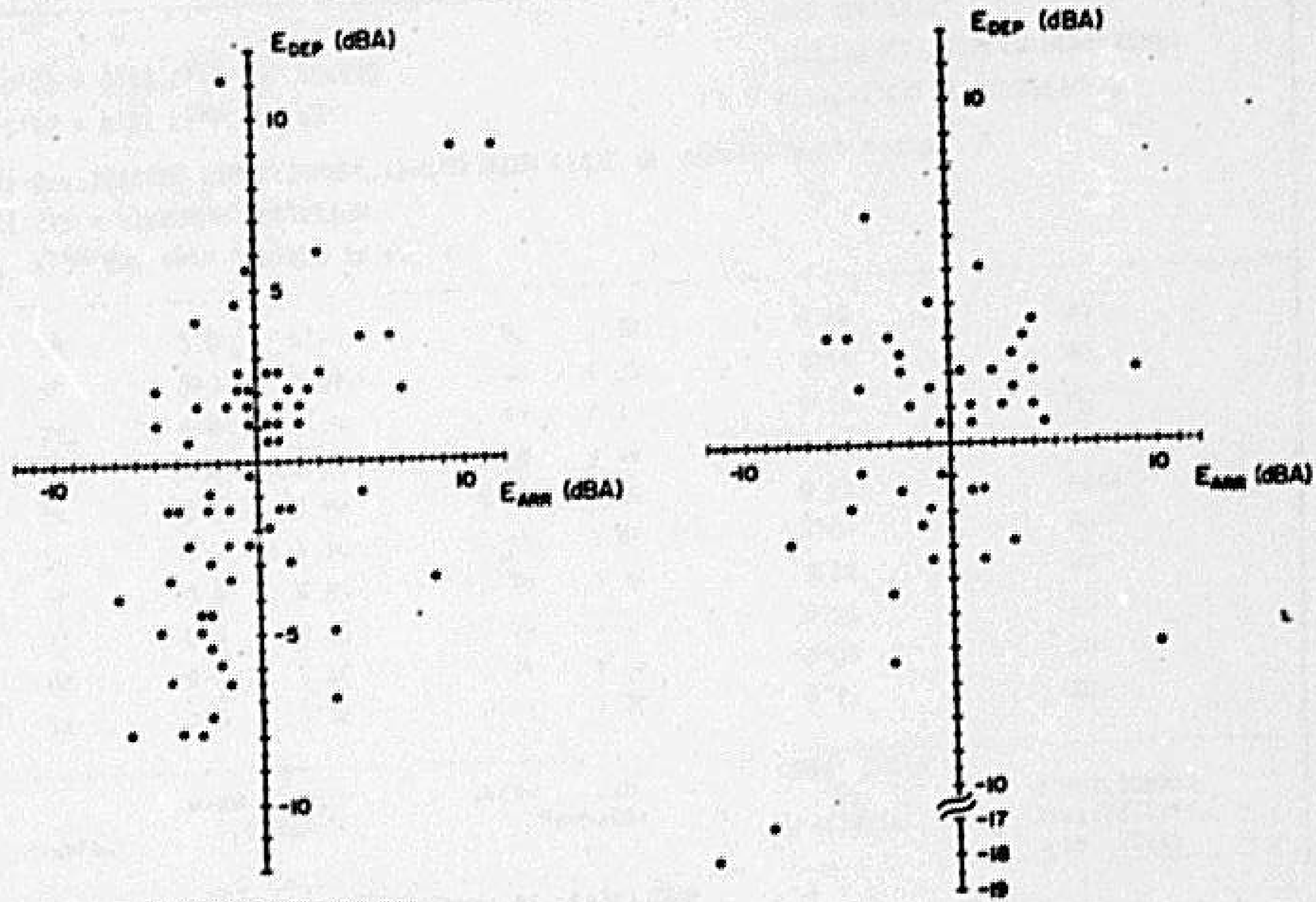
RELATIONS BETWEEN ARRIVAL AND DEPARTURE DEVIATIONS

MODEL GROUP	SAMPLES	$E_{ARRIVAL}$		$E_{DEPARTURE}$		ESTIMATE OF CORR. COEFF	CORR. COEFF STATISTICALLY SIGNIFICANT?
		MEAN	STD	MEAN	STD		
R44	74	0.0	2.70	0.57	3.58	0.13	NO
R42$^{\Delta}$	65	0.0	2.60	-1.34	4.39	-0.02	NO
R40	61	0.0	3.02	-0.70	3.25	0.20	NO
R38	35	0.0	2.67	-0.34	3.38	0.14	NO
R33	25	0.0	2.25	-2.77	2.65	0.01	NO
R32	74	0.0	3.65	-0.35	4.02	0.47	YES*
R27&30	54	0.0	4.12	-0.48	4.35	0.40	YES*
R16$^{\Delta}$	31	0.0	3.08	-1.54	2.37	-0.13	NO
R10	45	0.0	2.91	-0.79	4.52	0.24	NO
R1-9$^{\Delta}$	36	0.0	2.12	1.81	3.35	0.18	NO

NOTES: (1) E_{ARR} AND E_{DEP} DEFINED IN EQ. 4.1
(2) STD = STANDARD DEVIATION
(3) STATISTICAL SIGNIFICANCE TESTED WITH LEVEL OF SIGNIFICANCE $\alpha = 0.05$

* $E_{DEP} = -0.35 + 0.52\, E_{ARR}$ FOR R32
$E_{DEP} = -0.48 + 0.43\, E_{ARR}$ FOR R27&30

Δ STATISTICALLY SIGNIFICANT DIFFERENCE BETWEEN DEPARTURES AND ARRIVALS



(B) DIFFERENCES FOR R32

(A) DIFFERENCES FOR R32

NOTE: * INDICATES MULTIPLE DATA POINT

FIG. 4.6

COMPARISON OF E_{DEP} VS. E_{ARR} FOR THE TWO STATISTICALLY SIGNIFICANT MODELS

There is no easily identifiable cause for the correlation between arrival and departure deviations for the cases in which it exists; singularities due to car condition is one possibility. Likewise, it is not easy to ascribe a reason to statistically significant differences between departure and arrival deviations for certain models (R1-9 departures were slightly louder than arrivals; R42 and R16 departures were slightly quieter than arrivals).

b. Trains Seen Twice in Same Station Because a substantial amount of data was seen, and because it included the lead car number, it was possible to plot two observations of the same train in the same station against each other. Invariably, both observations were made in the same day.

Figure 4.7 presents plots of the L_A(MAX) and L_R, arrival and then departure, for this data. In all cases, the first observation was plotted on the vertical axis. Trains that pass through without stopping are indicated on the "arrival" plots with the data identified appropriately.

Table 4.4 summarizes the estimates of the mean and standard deviation of the differences for the data presented in Figure 4.7.

It may be observed that the L_R data is more clustered than the L_A(MAX) data. This is attributed to the fact that L_A tends to increase at the rate of 9 dBA per doubling of speed, whereas L_R should increase only at the rate of 6 dBA per doubling speed.

The departure data has statistically non-zero averages between first and second observations, with the second observations being higher. This is due to the presence of a few extreme occurences, in which the same train was 15 dBA higher on the second observation. Considered against the pattern of the other data, this can be written off as statistical happenstance.

From this data, one deduces that the noise level caused by a given train can vary substantially from one arrival (and departure) to another. The same train in the same station can vary by some random deviation from an "underlying mean." This deviation is described by a standard deviation of the order of 5 dBA for L_A(MAX) and 3 dBA for L_R. This ratio is consistent with the role of train velocity as the primary cause of sound level variations as discussed above.

c. Variation Among Stations and Car Models The data in Appendix F was reviewed to ascertain whether there were differences in the observed average L_A(MAX) due to :

- station configuration (SNCG)
- car model.

It was found that only two classes of cars could be distinguished:

- R44
- non-R44.

Figure 4.8 summarizes the average L_A(MAX) values observed in the 43 stations sampled. Note that for subway (i.e. indoor) stations, the number of tracks is used as a subclassification; it is an indicator of internal dimensions. For non-subway (i.e. outdoor) stations, the location is used as a subclassifi-

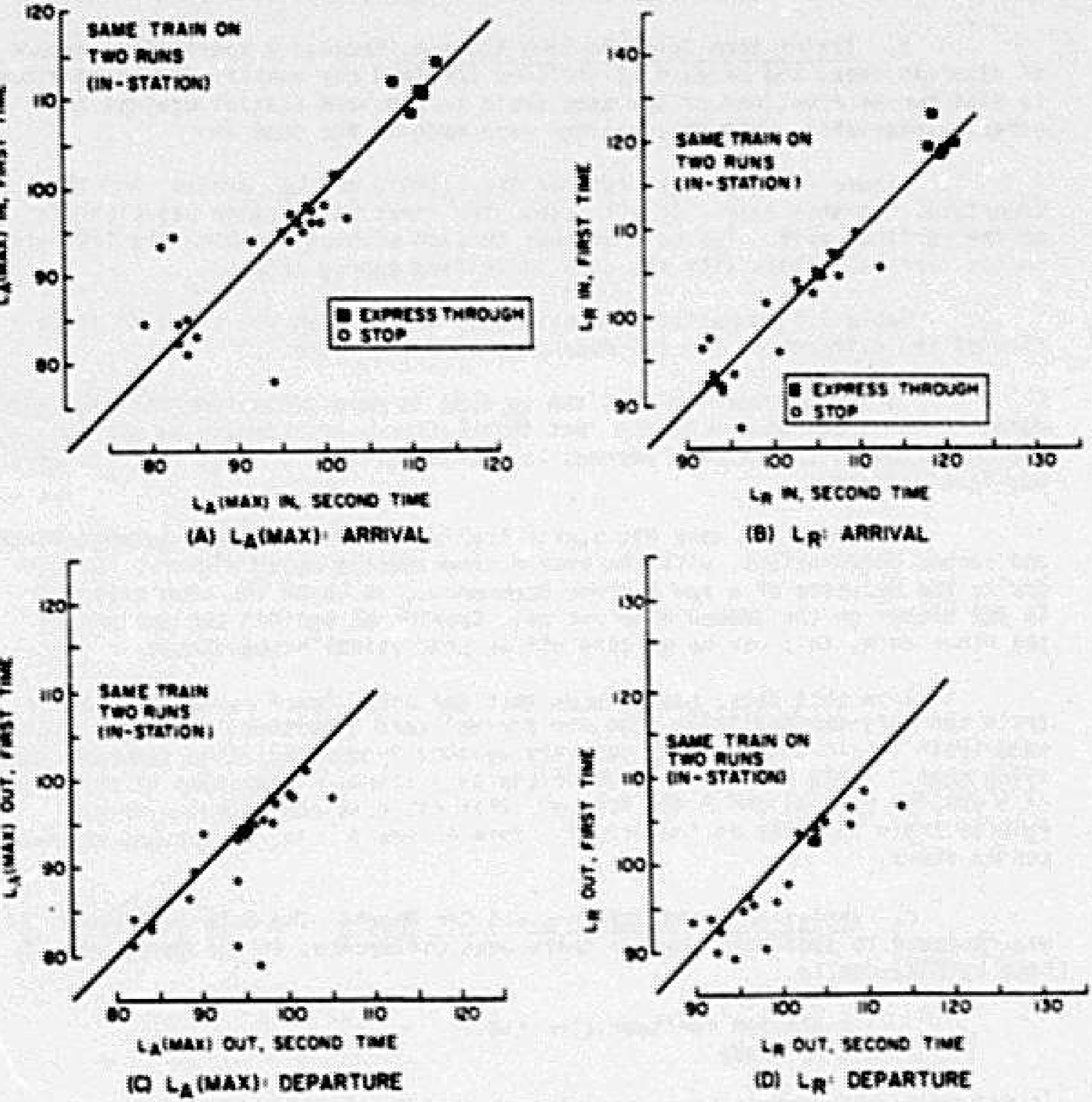


FIGURE 4.7

PLOTS OF OBSERVATIONS OF TRAINS
SEEN TWICE IN THE SAME STATION

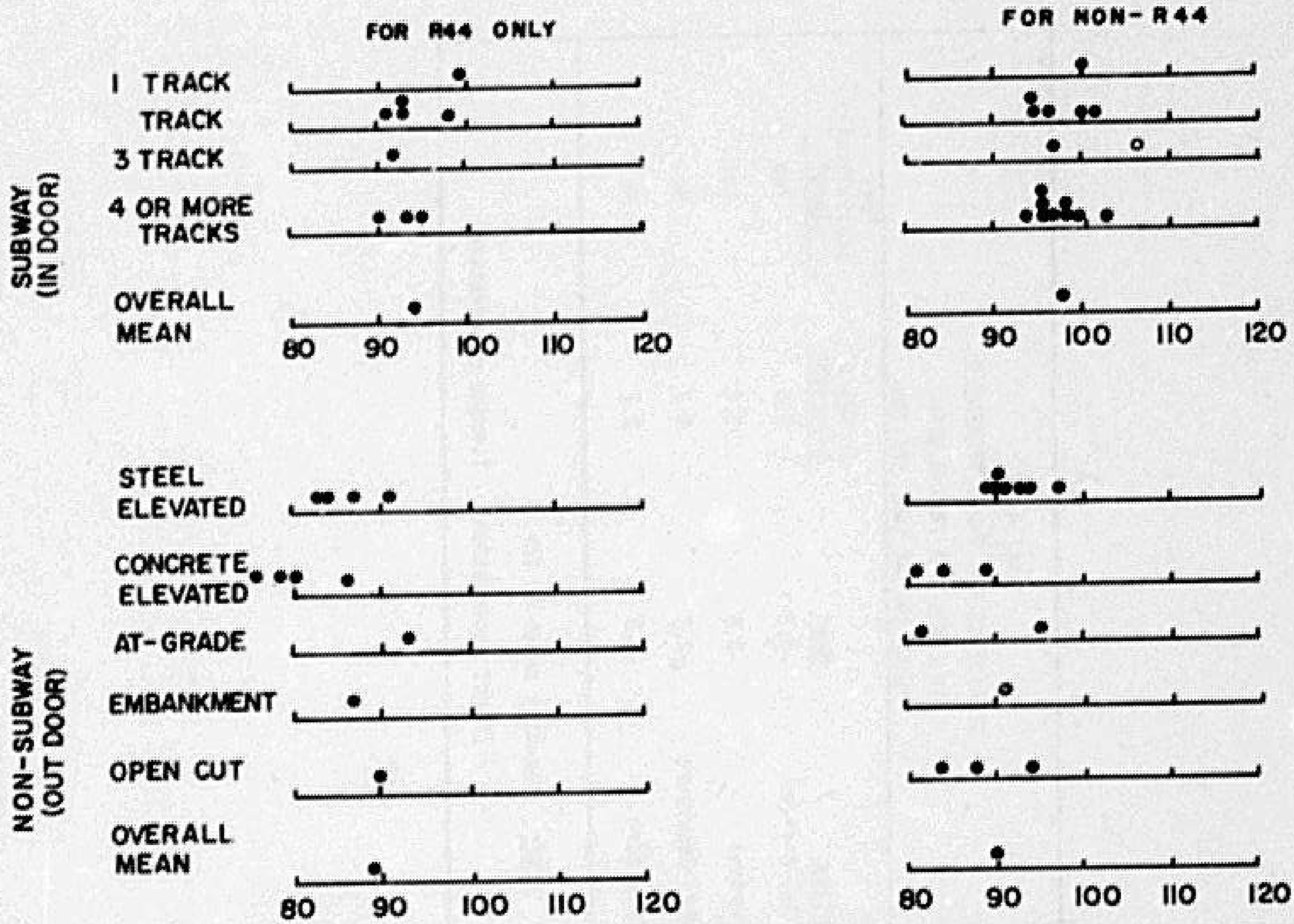
TABLE 4.4

STATISTICS FOR THE DIFFERENCES IN LEVEL FOR TRAINS SEEN TWICE IN THE SAME STATION

Quantity	Mean	Standard Deviation	Mean Statistically Zero?
L_A(MAX) Arrival	-0.3	5.5	Yes
LR Arrival	-0.9	3.2	Yes
L_A(MAX) Departure	-2.3	4.7	No
LR Departure	-1.5	2.7	No

Note: Quantity shown is for

x = (first observation) - (second observation)



EXPECTED L_A(MAX) OBSERVED IN THE 43 STATIONS FOR THOSE TRAINS THAT STOP (ARRIVALS)

FIGURE 4.8

cation: steel elevated, concrete elevated, at-grade, embankment, and open cut. This subclassification was motivated by radiation patterns. The steel elevated structure provides an additional transmission path (the structure), but this additional path is not significant with concrete elevation. Embankment stations tend to be on steel bridge structures, at-grade stations were not. Stations in open cuts were in a special right of way.

Table 4.5 summarizes the L_A(MAX) under two major factors: car model (R44 and non-R44) and station classification aggregated into two conditions (Underground and outdoor). All differences shown are statistically significant at a level of significance of α=0.05.

e. <u>Trains Seen in 49th Street and 28th Street Stations</u> Tests were carried out in 49th Street station and in 28th Street station in order to estimate the changes produced by the acoustic treatment at 49th Street (over-the-track absorptive ceiling, absorptive spray under the platform, partial acoustic barriers between the tracks). The two stations were identical before the acoustic treatment.

Measurements were made at both stations simultaneously, and a record of lead car numbers was made in the manner described in Section 4.3(d). Only southbound travelling local and express (thru) trains were monitored. Test runs were also made with both recorders side by side at 49th Street before the beginning of the sequence, and at 28th Street after the end of the sequence in order to verify that the responses of the two recorders were identified.

The improvement levels for trains that stop on the local track adjacent to the platform are indicated in Figure 4.9 (L_A(MAX) at 28th Street minus L_A(MAX) at 49th Street), and the similarly defined improvement levels for trains that pass through on the express track are indicated in Figure 4.10.

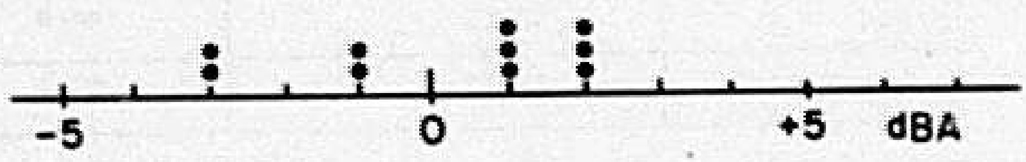


Figure 4.9 Improvement Levels For Trains That Stop

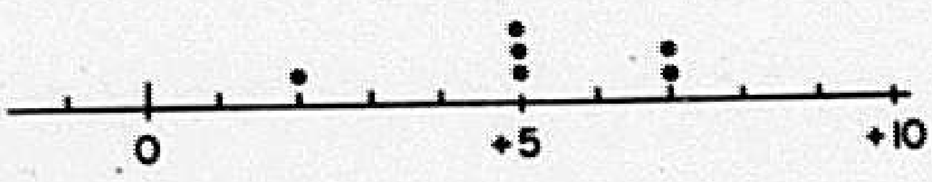


Figure 4.10 Improvement Levels For Through Trains

Calculations made on the basis of the 10 samples for trains that stop indicate that one can not reject the hypothesis of zero improvement at a level of significance of α=0.05.

TABLE 4.5

AVERAGE L_A(MAX) FOR ARRIVALS IN STATION

STATIONS / MODEL	THOSE THAT STOP	
	UNDERGROUND	OUTDOOR
R44	94.5	84.6
NON-R44	98.1	89.2

STATIONS / MODEL	THOSE THAT PASS THROUGH	
	UNDERGROUND	OUTDOOR
R44	102.5	95.8
NON-R44	110.2	97.3

However, in the case of the thru express trains, the 49th Street station was quieter. On the basis of seven samples, calculations indicated, with a confidence of 95%, that the improvement lies between 7 dBA and 2 dBA (a mean of 4.5 dBA).

It should be noted that these results are only an indicator and are not conclusive of the effect of sound treatment on the station noise response. This must be concluded because the teams were in the station long enough to include the second passage of one of the trains (as identified by the lead car number and car model type). This train registered the same levels in each passage through 28th Street, but indicated a level on the second passage through 49th Street that was 7 dBA higher than the first. This is consistent with the results obtained in Section 4.3(b) in which level differences between two passages of the same train through a given station showed variations with a standard deviation of 5 dBA. It is evident that the train speed variation is an important variable whose effect must be accounted for before station characteristics can be unambiguously compared.

It was also very interesting to note that the graphic level recording pattern made by each train can be easily recognized and distinguished from that of all other trains whether or not the recording was made in the 49th Street station or in 28th Street. Differences in peak level between two signatures of the same train were accompanied by a corresponding sound level shift of the whole sequential pattern, and sometimes (as during the passage through the same station at a different sound level) with a timewise stretching or contraction of the sequence.

It is believed that these patterns represent the contribution of three factors:

a) the noise emission characteristic of each individual car and its sequential order in the train, which thereby determines the decibel variation in sound level from point to point of the graphic level recording.

b) the acoustic path and acoustic absorption characteristics for the station and for the train position, which affect the magnitude of the localized station response.

c) the speed of the train, which fixes the source strengths reflected in the sequence, without substantially changing the relationship between levels in the sequence. (However, the duration of the sequence would reflect the speed).

It is concluded that the signature shapes are primarily attributable to the selection process in the train yards, and to the mechanical conditon of the cars selected. The signature levels reflect the train speed and station acoustics.

4.4 COMMENTS ON THE IN-STATION NOISE DATA

It was found that the observed levels in-station on the New York City Transit System vary substantially according to car model and station configuration, and that the levels can be rather high. In three of the 43 stations sampled, individual levels in excess of 115 dBA were recorded for $L_A(MAX)$.

individual observations in excess of 100 dBA were not all uncommon.

In terms of average $L_A(MAX)$, it is estimated that 26% of the component stations in the system exceed 100 dBA; 81% exceed 90 dBA.

It was also found that the arrival and departure levels for a given train are well correlated. In general, a train that is noisier than average (even for its model) on the arrival will be noisier than average on the departure. This was attributed to train condition, although motorman behavior could also be a factor.

The arrival of the same train, observed repeatedly from within the same station, will show a variation of the observed $L_A(MAX)$ and L_R. This variation has a standard deviation of 5 dBA for $L_A(MAX)$ and 3 dBA for L_R.

The R44 was found to be approximately 5 dBA quieter in both underground and outdoor stations than the other models.

It was also found that the special acoustic treatments made by the NYCTA in the 49th Street station resulted in a statistically significant improvement for the thru express trains, which dominate the station noise. The average of the data indicated a 4.5 dBA improvement; the confidence band is 2 to 7 dBA (95% confidence). As would be expected, stations lacking treatment, but in the same SNCG as the acoustically treated 49th Street Station, showed statistically significant differences.

CHAPTER FIVE

COMMUNITY NOISE DATA

The New York City Transit System (including SIRTOA) has 109 miles of route above ground. This mileage may be classified by:

- track or route classification
- distance to nearest structure or land use
- type of land use

The five land use categories and five route classifications considered are defined in Table 5.1. Tables of route mileage for each land use category were constructed from available information, and are shown in Table 5.2.

This chapter reports on the community measurements undertaken and the estimates made of community noise exposure. Two special topics are also addressed: tower measurements near a concrete elevated structure and a community noise map.

5.1 COMMUNITY MEASUREMENTS

Measurements were taken at 30 community sites in accord with the procedures described in Chapter Two.

In order to characterize the system, these measurements were normalized to a standard distance of 50 feet and pooled. Reference 6 was used to estimate the attenuation of L_A(MAX) with lateral distance. These normalized measures are shown in Table 5.3. There is no overpowering reason for the normalized L_A(MAX) to vary according to adjacent land use. Thus, average L_A(MAX) were computed by aggregating without respect to land use.

Actually, there may be one or more significant reasons why aggregation should not be done without regard to land use. Certain land uses will have buildings and other structures reflecting sound, while other land uses will simply have open space. To carry this further, certain land uses should have subcategories, particularly the residential category, which includes high rise, compact 3-5 story structures, low-level private homes, etc. This would explain the different noise fields encountered.

This approach (subcategorization) was not taken because of: (1) the amount of data that would be thus implied, and (2) the difficulty of obtaining mileage estimates such as in Table 5.2 on this level of detail.

The data collected exhibits certain weaknesses which cannot be explained solely by this failure to subcategorize. These weaknesses relate principally to the range of the L_A(MAX) values observed, including apparent inconsistencies with distance in some cases.

TABLE 5.1 LAND USE AND ROUTE CLASSIFICATIONS FOR IN COMMUNITY ANALYSIS
A. LAND USE CATEGORIES
1. Residential 2. Public Spaces* 3. Retail 4. Commercial/Industrial 5. Other **
B. ROUTE CLASSIFICATION
1. Steel Elevated 2. Concrete Elevated 3. Open Cut 4. At-Grade 5. Embankment
* Includes parks, recreational areas, cemetaries, vacant land ** Includes runs over water, etc.

TABLE 5.2

ROUTE-MILES OF COMMUNITY EXPOSED

TO VARIOUS CONFIGURATIONS

LAND USE	ROUTE CLASSIFICATION	MILEAGE AT VARIOUS DISTANCES				
		0-25ft	25-50ft	50-100ft	100-200ft	200-400ft
Residential	Steel Elevated	32.4	10.0	5.3	4.1	3.7
	Concrete Elevated	1.6	1.3	1.8	0.9	1.1
	Open Cut	6.4	2.3	2.7	0.7	0.4
	At-Grade	2.2	1.1	1.1	0.9	0.9
	Embankment	6.2	5.1	3.4	1.7	0.9
Public Spaces	Steel Elevated	6.4	1.2	0.0	0.1	0.3
	Concrete Elevated	2.1	0.2	0.0	0.0	0.0
	Open Cut	0.5	0.2	0.0	0.0	0.0
	At-Grade	1.8	0.1	0.0	0.0	0.5
	Embankment	2.6	0.1	0.0	0.0	0.0
Retail	Steel Elevated	8.0	0.3	0.0	0.0	0.0
	Concrete Elevated	0.8	0.3	0.1	0.0	0.0
	Open Cut	0.5	0.2	0.0	0.0	0.0
	At-Grade	0.2	0.0	0.0	0.0	0.0
	Embankment	1.0	0.1	0.0	0.0	0.0
Commercial-Industrial	Steel Elevated	9.9	4.5	1.1	0.1	0.3
	Concrete Elevated	1.6	0.7	0.2	0.1	0.1
	Open Cut	1.4	0.5	0.1	0.2	0.0
	At-Grade	3.1	0.4	0.1	0.1	0.1
	Embankment	2.6	2.4	0.0	0.0	0.0
Other	Steel Elevated	1.0	0.0	0.0	0.0	0.0
	Concrete Elevated	0.0	0.0	0.0	0.0	0.0
	Open Cut	0.0	0.0	0.0	0.0	0.0
	At-Grade	4.9	0.0	0.0	0.0	0.0
	Embankment	0.0	0.0	0.0	0.0	0.0

TABLE 5.3

EXPECTED L_A(MAX) OBTAINED BY NORMALIZING MEASUREMENTS TO 50 FEET

ROUTE TYPE	EXPECTED L_A(MAX)	
	TOTAL	STRUCTURAL COMPONENT
Steel Elevated	92 dBA	91 dBA
Concrete Elevated	84 dBA	--
Open Cut	76 dBA	--
At-Grade	82 dBA	--
Embankment	84 dBA	--

Review of the data leads the researchers to suspect two factors which were not controlled were significant. These were train speed and train condition. It is judged that controlled experiments with a special train, with observable controlled speed, would be appropriate for future researchers.

The data in hand is, nonetheless, a characterization of the existing system. It must be recognized that it has flaws, but that it can provide some insight into the extent of community noise impact.

5.2 ESTIMATE OF COMMUNITY IMPACT

The data in Table 5.3 provides an estimate of noise exposure due to the route classifications indicated. Reference 6 can then be used to adjust these average levels (arithmetic averages) to the center distances in each of the five distance categories. These averages, in conjunction with Table 5.2, can be used to construct histograms of exposure by route-miles.

Figures 5.1 through 5.4 present the histograms thus constructed. Because the last land use category ("Other") contains principally such uses as "water," no histogram is presented for it.

In considering these histograms, it must be remembered that they depict the average $L_A(MAX)$ to which the indicated mileage is exposed by the passage of a single train. This value can be increased by train speed and train condition in individual instances. Further, it can be systematically higher in some subcategorizations of land use (such as 3-5 story buildings approximately 25 feet from the tracks), although it is already taken into account to some extent by the nature of the sites sampled. In some limited cases, levels approaching 110 dBA were observed at the street level, when a steel elevated line was present.

5.3 TOWER MEASUREMENTS

The measurement of noise levels adjacent to a concrete elevated line was of special interest because of the shielding provided by the structure itself. These measurements required use of an elevated tower as described in Chapter Two.

The measurements were complicated by several practical considerations. Generally, sites without structures that would cause reflection were not present, due to the nature of the system. Further, locations had to be chosen such that a station wagon could be maneuvered and the tower raised (and taken down). This not only limited the number of sites, but also the distances that could be used at any given site.

The results were of particular interest in three respects: (1) the variation of noise level vertically at any given distance, (2) the variation of this vertical pattern with lateral distance from the concrete elevated structure, and (3) the variation of the sharpness of the peak observed at these various locations. Figure 5.5 presents recordings from two concrete elevated sites. These recordings differ in the distance from site to source and also in the train passby speed.

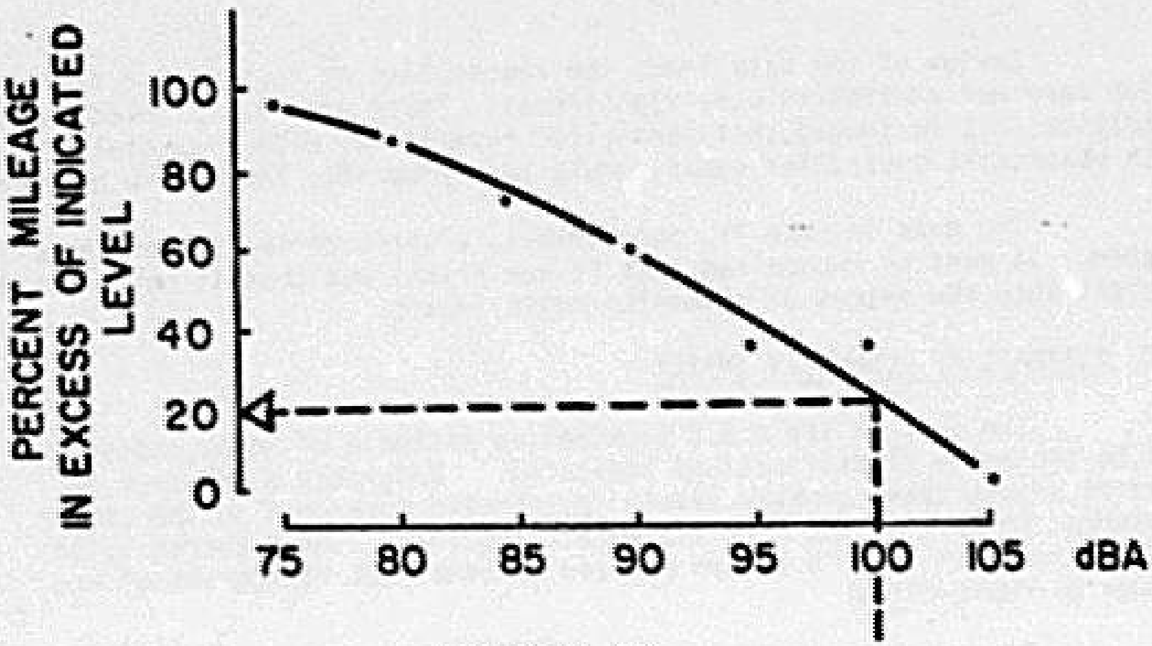


FIGURE 5.1
HISTOGRAM OF AVERAGE L_A(MAX) EXPOSURE
OF 98.2 MILES OF RESIDENTIAL LAND USE.

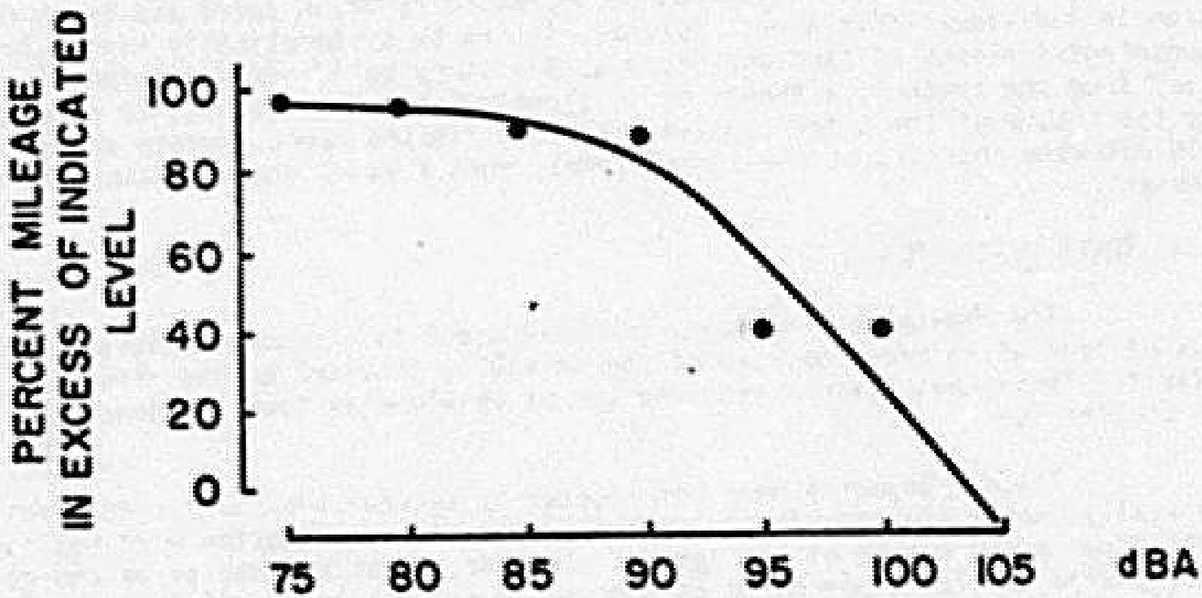


FIGURE 5.2
HISTOGRAM OF AVERAGE L_A(MAX) EXPOSURE
OF 29.6 MILES OF PUBLIC SPACE LAND USE

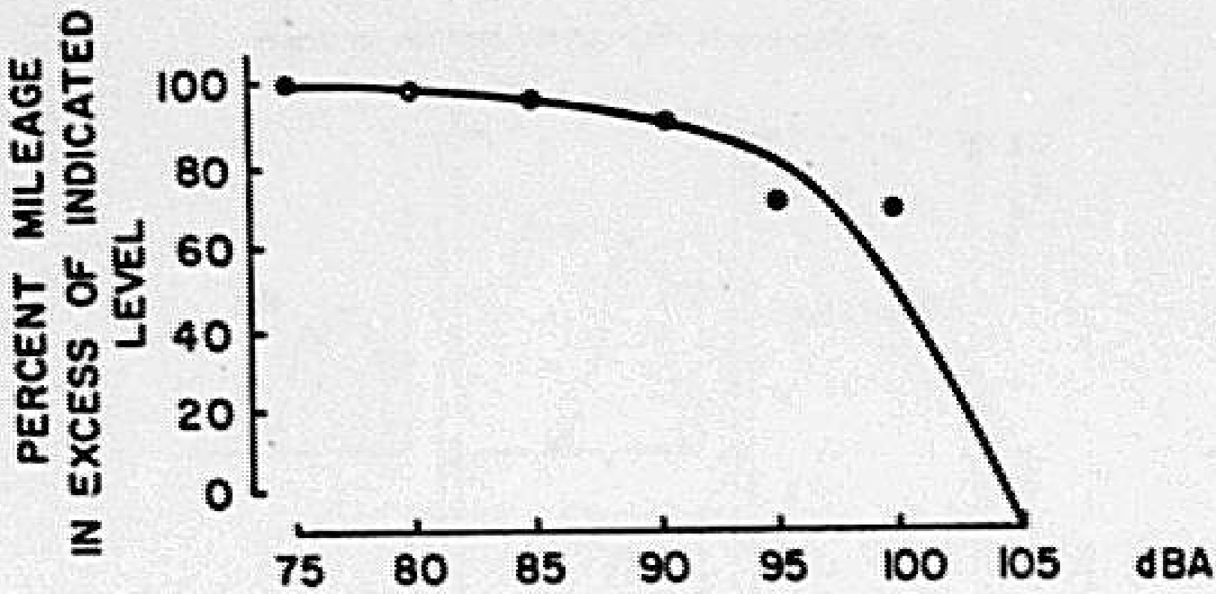


FIGURE 5.3
HISTOGRAM OF AVERAGE L_A(MAX) EXPOSURE
OF 11.5 MILES OF RETAIL LAND USE

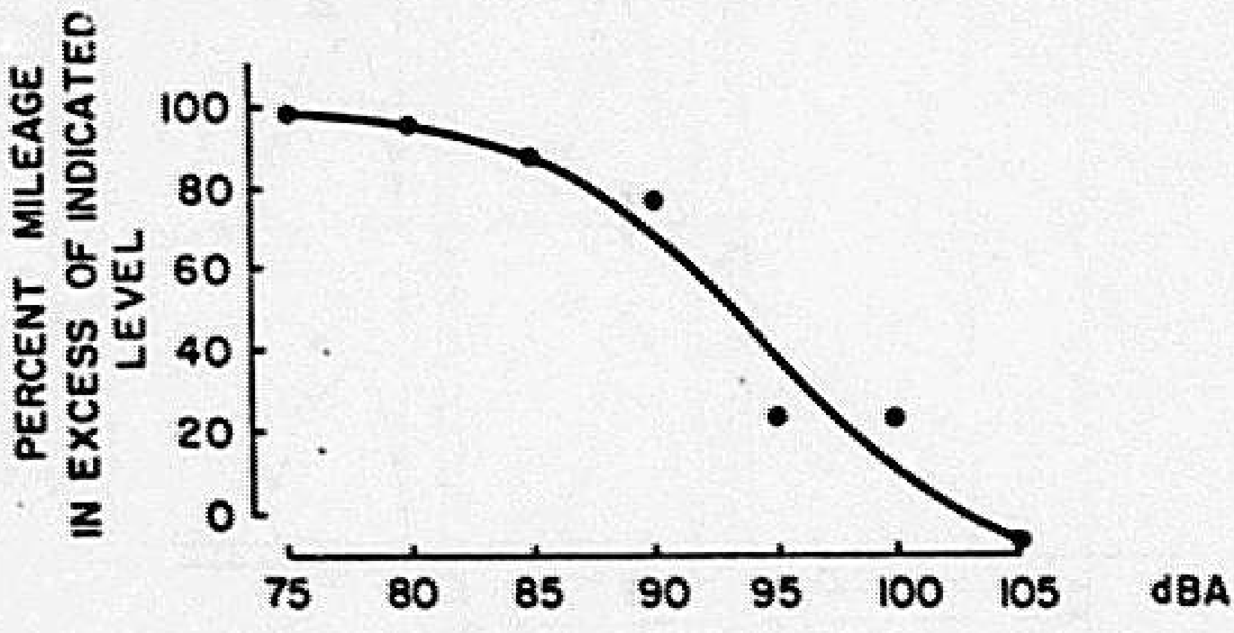
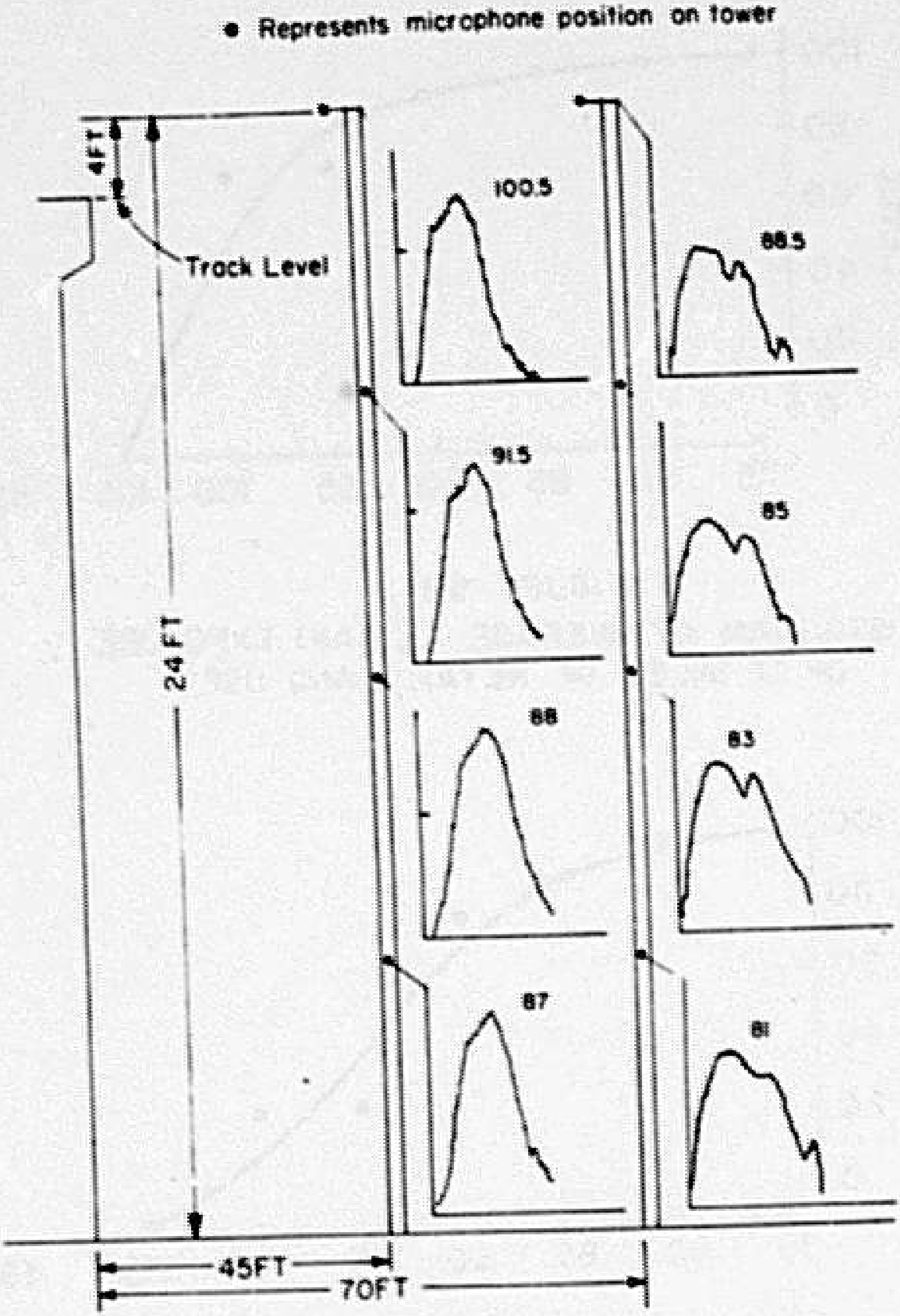


FIGURE 5.4
HISTOGRAM OF AVERAGE L_A(MAX) EXPOSURE
OF 162 MILES OF COMMERCIAL / INDUSTRIAL LAND USED



NOTE: NUMBERS SHOWN ARE L_A(MAX) VALUES

FIGURE 5.5

NOISE MEASUREMENT NEAR A CONCRETE ELEVATED STRUCTURE

It may be noted that the structure provides considerable shielding, and that the effectiveness of the shielding does vary significantly with position.

5.4 COMMENTS ON THE IN-COMMUNITY DATA

The data reported herein serve to provide a first-order estimate of the community noise exposure due to the New York City Transit System. It has been established that future work should take more precise account of speed, and should perhaps plan on using a common train or one(s) whose condition is known (no wheel flats, etc). Further, despite the increase in the data base, subcategorization of residential land use should be considered.

CHAPTER SIX

SOME SPECIAL TOPICS AND

CLOSURE

This chapter addresses three special efforts which were undertaken in addition to the data and analyses reported in the earlier chapters. These efforts include measurements on the PATH system, analyses of hot spots on the New York City Transit System, and consideration of employee exposure on the New York City Transit System. A closure addresses the utilization of the reported data.

The data on the PATH system were to be taken solely as a basis of comparison for the IRT: the PATH cars are newer and a car of that type can fit into the IRT tunnels, but the R-44 and R-46 cannot. Nevertheless, the magnitude of the measurements justify the reporting of this effort as a separate system in its own right, which in fact it is.

6.1 CHARACTERISTICS OF PATH

The organization which operates, maintains, and exercises control of the rapid transit system between New Jersey and New York is the Port Authority Trans-Hudson Corporation (PATH), a subsidiary of the Port Authority of New York and New Jersey. The system was initiated by the then Hudson and Manhattan Railroad, which began construction of the tunnels under the Hudson River on November 17, 1874. However, it was not until many difficult engineering and financial problems were solved that the system began operation in 1908 *.

Today, PATH carries over 70 percent of all passenger entering New York City by rail from New Jersey, approximately 70,000 each weekday. It operates on a total of 14 miles of primary track on four routes: the recently constructed station at the World Trade Center (WTC) to Newark; the World Trade Center to Hoboken: 33rd Street Manhattan to Hoboken; and 33rd Street Manhattan to Journal Square, New Jersey. Figure 6.1 is a diagram of PATH track, station and platform configuration.

All roadbeds located to the east end of Grove Street station are laid either in a single track tunnel or in a tunnel of double track cut with cover construction and a dividing wall between tracks. To the west of the portal, the system is essentially open cut between the portal and Journal Square. Further west the track is at grade or low embankment.

All roadbed** is of wood tie-on-ballast type except for several short lengths (including the World Trade Center) which are of tie-on-concrete construction. The track is primarily jointed rail except for a 3000 foot section of welded rail on the eastbound side between Harrison and Journal Square and a shorter section on the westbound side.

The car fleet operated by PATH includes three modern types designated PA1, PA2, and PA3 as well as a slightly older type K. Statistics for these cars are summarized in Table 6.1. It can be seen that the principal difference between

* "The PATH Story", Port Authority Trans-Hudson Corporation, One World Trade Center, 64W, New York, New York 10048

** Small deviations from these statistics exist, which are not relevant for acoustic characteristics.

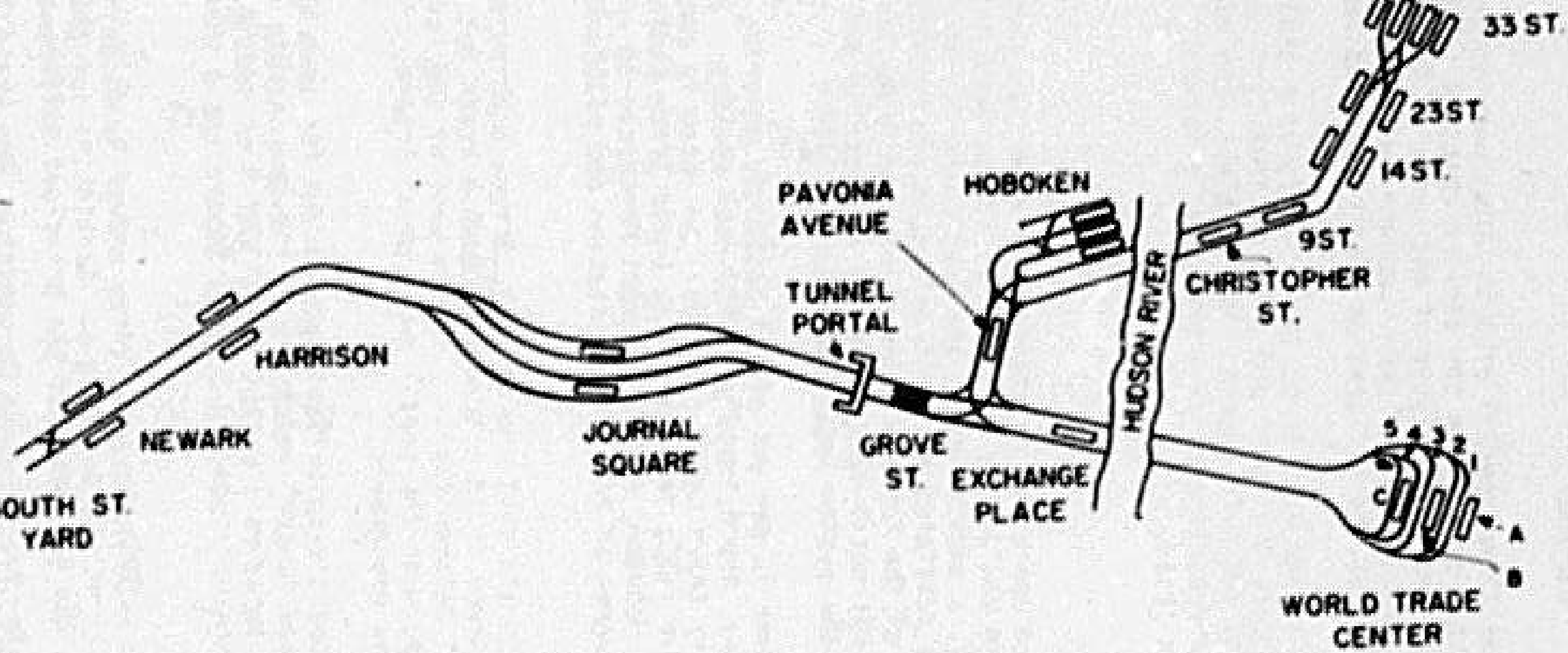


FIGURE 61

DIAGRAM OF PATH TRACK
AND STATION CONFIGURATION

TABLE 6.1

PATH Car Characteristics

Car Designation	PA1	PA2	PA3	K
Dates of Acquisition	1964-65	1966-67	1972	1958-59
Quantity	161	44	46	47
Length	51'-3"	51'-3"	51'-3"	51'-3"
Width (Max)	9'-3"	9'-3"	9'-3"	8'-8"
Height (top of rail to top of car)	11'-8"	11'-8"	11'-8"	11'-8"
Truck Primary Suspension	Equalizer Bars	Equalizer Bars	Rubber Charrons	Equalizer Bars
Truck Secondary Suspension	Coil Spring Next to Air Bag	Coil Spring Next to Air Bag	Coil Spring Inside Air Bag	Coil Spring
Insulation	PTI* on side-walls and ceiling	PTI on side-walls and ceiling	Hexacal on side-walls and ceiling and fiberglass under floor	

* Polyethylene Thermal Insulation

the PA1, PA2, and PA3 models is the configuration of the truck suspension. The later model PA3 uses coil springs inside the air bag suspension and rubber chevrons instead of equalizer bars. The PA3 also has a layer of fiberglass under the floor as well as the sidewall and ceiling insulation used in the PA1 and PA2. Another important acoustic modification on the PA3 is the use of a tongue-in-groove seal on the side doors, which is very effective. (Gaps of 1/4 to 1/2 inch are not uncommon on the conventional flush door seals of both the PA1 and PA2 and models on other properties).

The K model was not investigated.

6.2 MEASUREMENTS ON PATH

Measurements were made on three in-train runs and in two stations (World Trade Center and 14th Street). The methodology described in Chapter Two was used.

a. In-Train Measurement Two round trips were made between the following stations:

(a) World Trade Center and Hoboken
(b) World Trade Center and Newark
(c) Journal Square and 33rd Street

A fourth combination of terminals was available, e.g., 33rd Street and Hoboken. This pair was not investigated because its track is traversed on the other trips (except for a short section of curved junction track below Hoboken).

Two recording systems were used: one was that described in Figure 2.2A, and the second was a B&K 2203 sound level meter (on the "Linear" filter setting) connected via the output plug to a Stellavox Model SP7 "diode" input. The Stellavox system was always located in car 744. Car 744, a type of PA3 car, contained a speedometer. The NAGRA system was set up in one of the adjacent cars (PA1 or PA2 in every case). During the second of the two trips, the NAGRA was sometimes shifted from the car leading the 744 to that behind it in order to sample car variability effects. No vibration data was collected.

Windows in the PA3 cars were sealed except for small sliding panels located opposite the control cabs, which are normally shut. All end doors which operate by sliding laterally in a track are normally shut by gravity. These end doors and windows were shut during all trips, except for a number of short periods in which both end doors were simultaneously opened in order to assess the noise impact.

A PATH representative who was highly familiar with the system accompanied the data crew on all trips and tape recorded a running commentary including such useful data as track location, type, grade, speed, rail crossovers, and junctions. This data was not reduced and coded, but was used as an auxiliary in the interpretation of results.

b. In-Station Measurement Station measurements were made at the 14th Street and World Trade Center stations. The first station is of interest as part of the current program because the station track approach is straight and representative of NYCTA speed conditions. (The large number of unavoidable high-curvative trackbed sections near stations on the eastern portion of the

PATH system leads to generally low station approach and departure speeds which do not resemble NYCTA conditions.)

The second station is of interest because it is the first major rail terminal to be constructed in the New York area in more than 30 years. The new terminal's platforms are longer and wider than those of the old Hudson Terminal, and provisions for noise control were included as part of the design (neoprene track pads, wall surface treatment, acoustic ceiling, etc.).

Two measurement systems were used. At the World Trade Center the NAGRA system was set up on Platform B opposite the middle of the train stop on Track 3. The Stellavox system was set up at a distance of 15 feet from the northern (departure) end of Platform B, alongside Track 3. Likewise, at 14th Street, the NAGRA system was set up at the middle position of the southbound platform, while the Stellavox system was set up at a distance of 15 feet from the arrival end of the same platform. The two tracks in this station are separated by a massive concrete and steel wall, so that the northbound and southbound sides of the station are effectively isolated and acoustically independent.

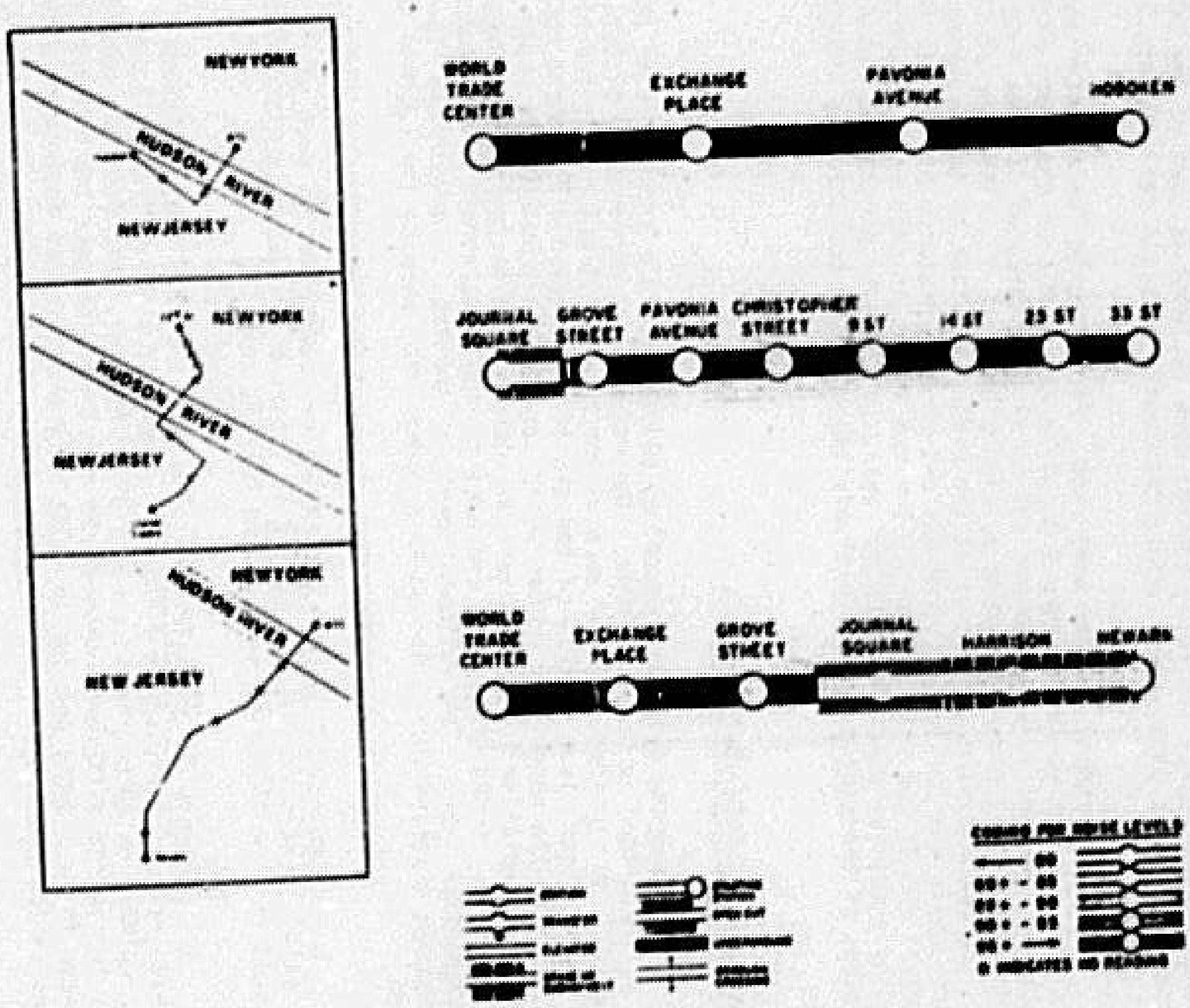
6.3 ANALYSIS OF PATH IN-TRAIN DATA

The recorder data was reduced by playback onto a graphic level recorder as prescribed in Chapter Three. The results are represented pictorially in Figure 6.2 on stylized maps for each of the three distinct routes travelled. Part A of the figure is a diagram of the station sequence for the three routes, plus inserts in the upper left corner which contain a diagram of the route configurations relative to the New York-New Jersey land masses and the Hudson River crossings. Coded gradations are used to represent tunnel, grade and open cut construction types. The following parts of the figure contain two station sequence diagrams corresponding to a round trip, showing the L_A(MAX) for each link.

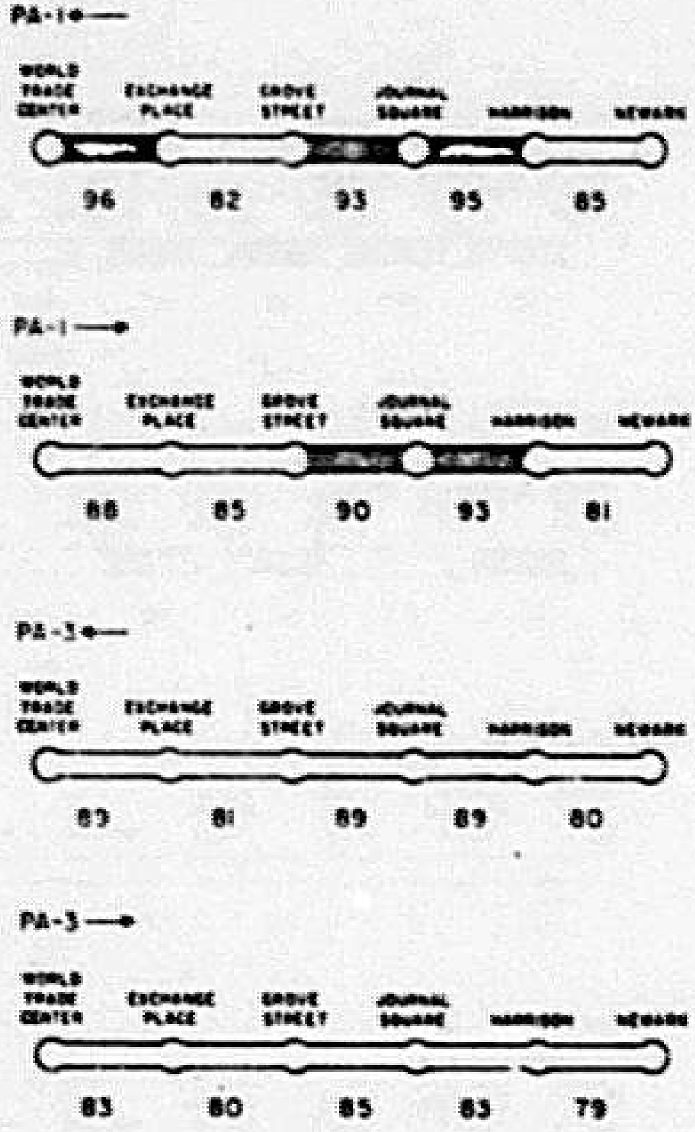
a. Histogram of System Histograms of route-miles in each of several L_A(MAX) categories are presented in Figure 6.3. Separate histograms are plotted for the PA3 trips and for the PA1/PA2 trips.

b. Comments on In-Train Data The data indicate that the overall system-wide effect of riding in a PA3 car instead of a PA1 or PA2 is to reduce the L_A(MAX) on each link by about 6 dBA. However, this does not completely characterize the difference between the car types, because the highest levels experienced in both types are due to relatively short surges associated with track and switch crossings.

The advantage of the PA3 over the PA1 or PA2 for high impact, structurally transmitted noise is about 5 dBA. The PA3 is also found to be about 7-10 dBA quieter on straight, uninterrupted sections of rail. Thus, when these cars are compared on the basis of integrated measures such as L_E or NAE, the PA3 shows a mean improvement of 8-10 dBA.

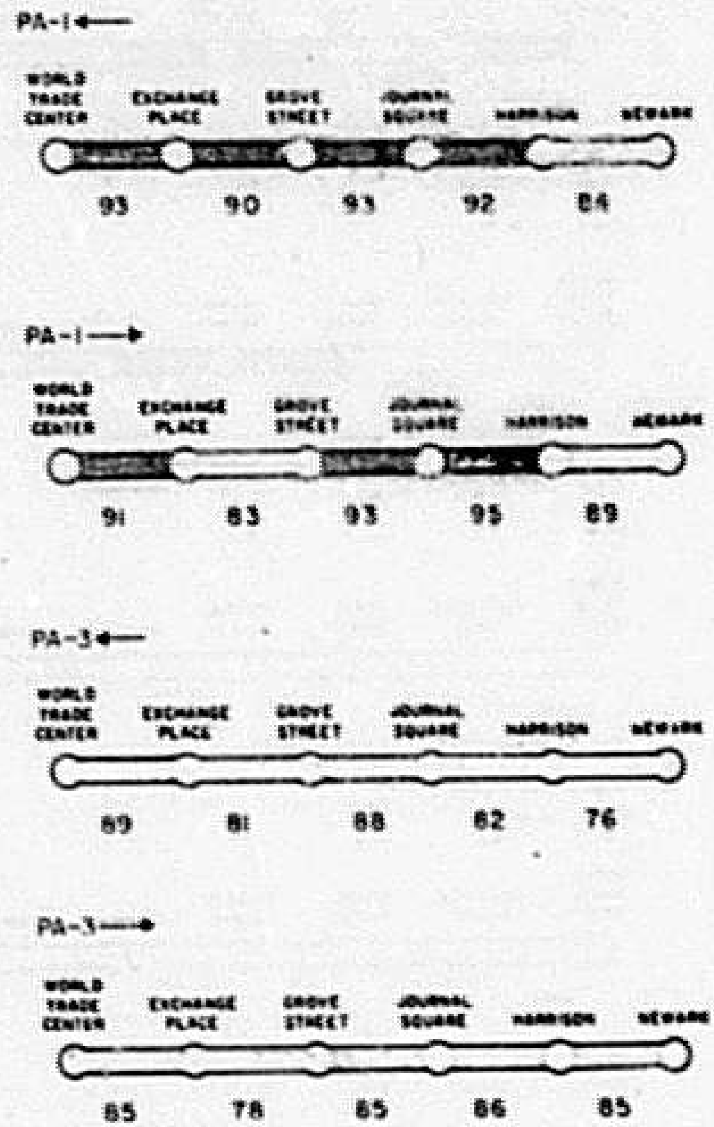


(A) PICTORIAL DEPICTIONS
FIGURE 6.2
IN-TRAIN RUNS ON THE PATH SYSTEM



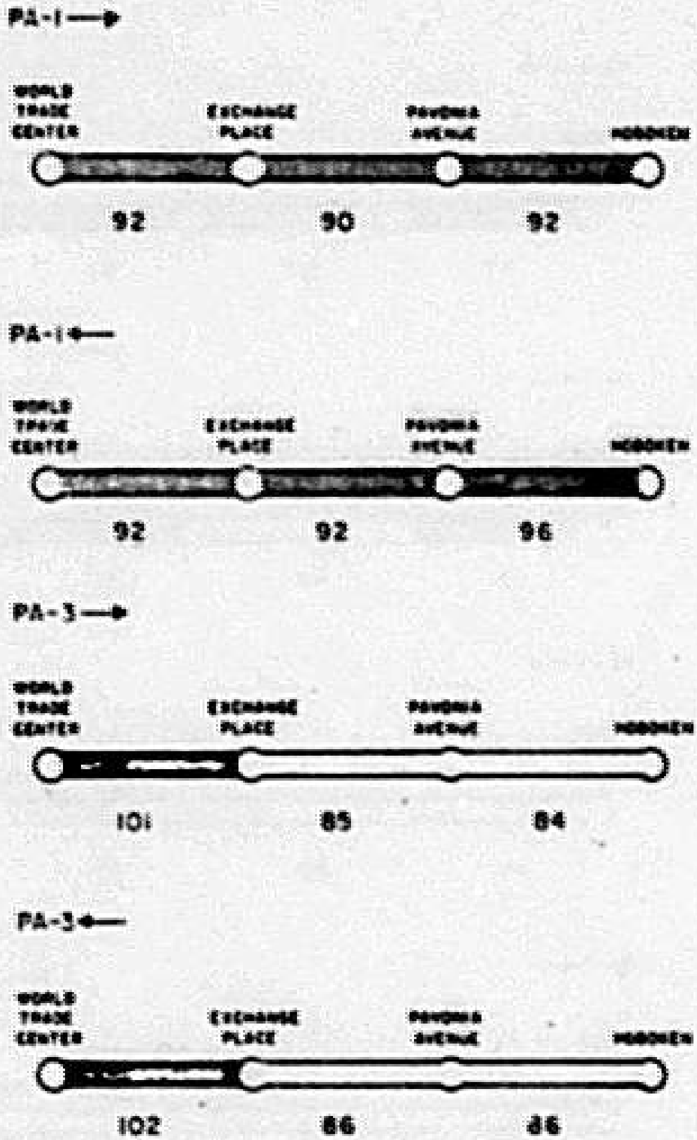
(B) WORLD TRADE CENTER-NEWARK

FIGURE 6.2
IN-TRAIN RUNS ON THE PATH SYSTEM



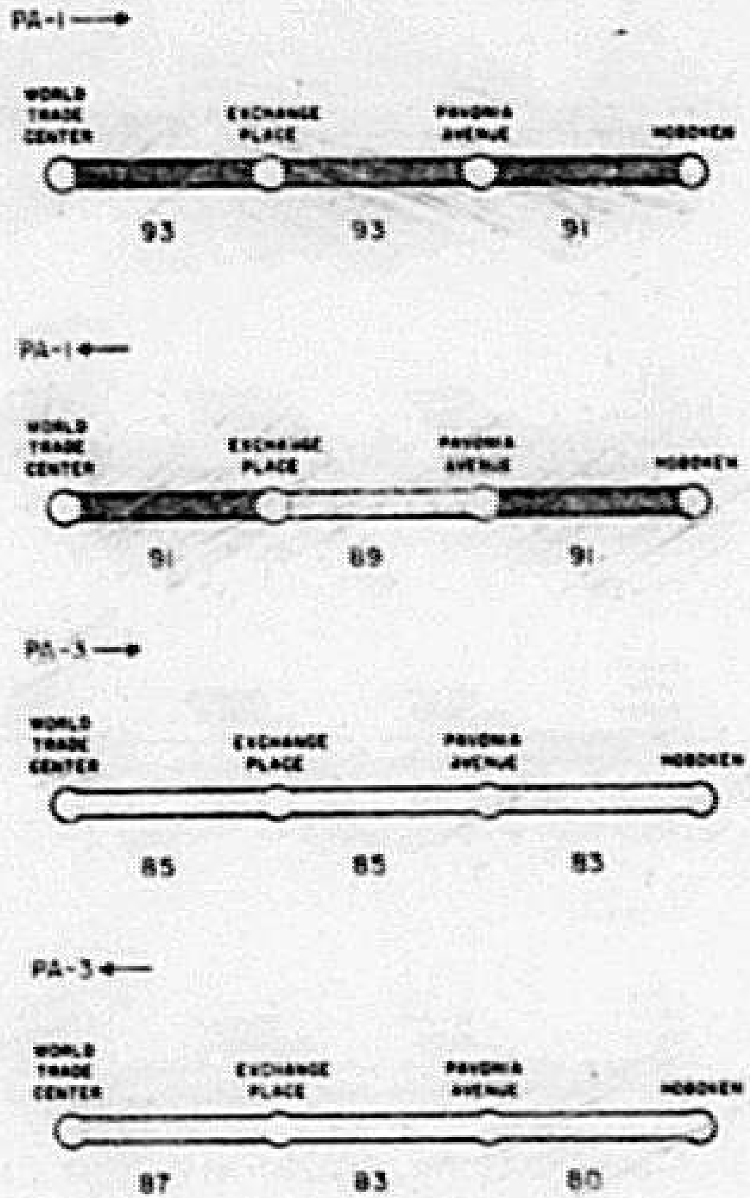
(C) WORLD TRADE CENTER NEWARK

FIGURE 6.2
IN-TRAIN RUNS ON THE PATH SYSTEM



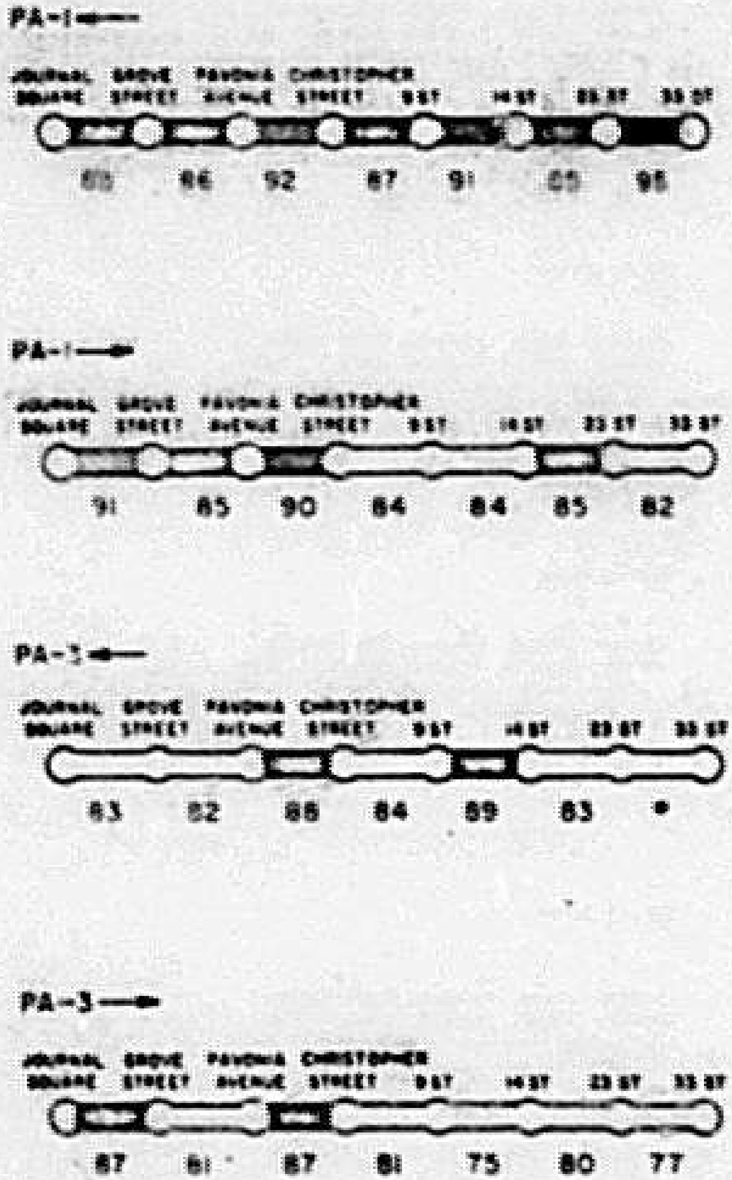
(D) WORLD TRADE CENTER-HOBOKEN

FIGURE 6.2
IN-TRAIN RUNS ON THE PATH SYSTEM



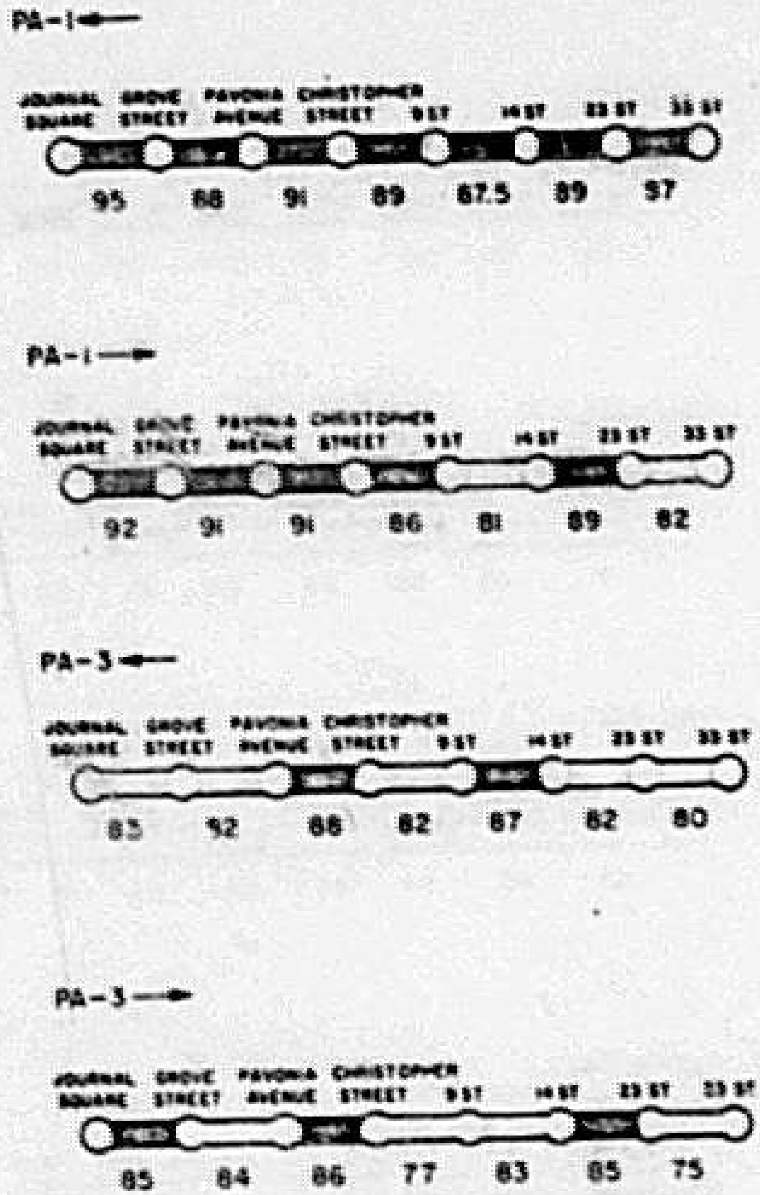
(E) WORLD TRADE CENTER-HOBOKEN

FIGURE 6.2
IN-TRAIN RUNS ON THE PATH SYSTEM



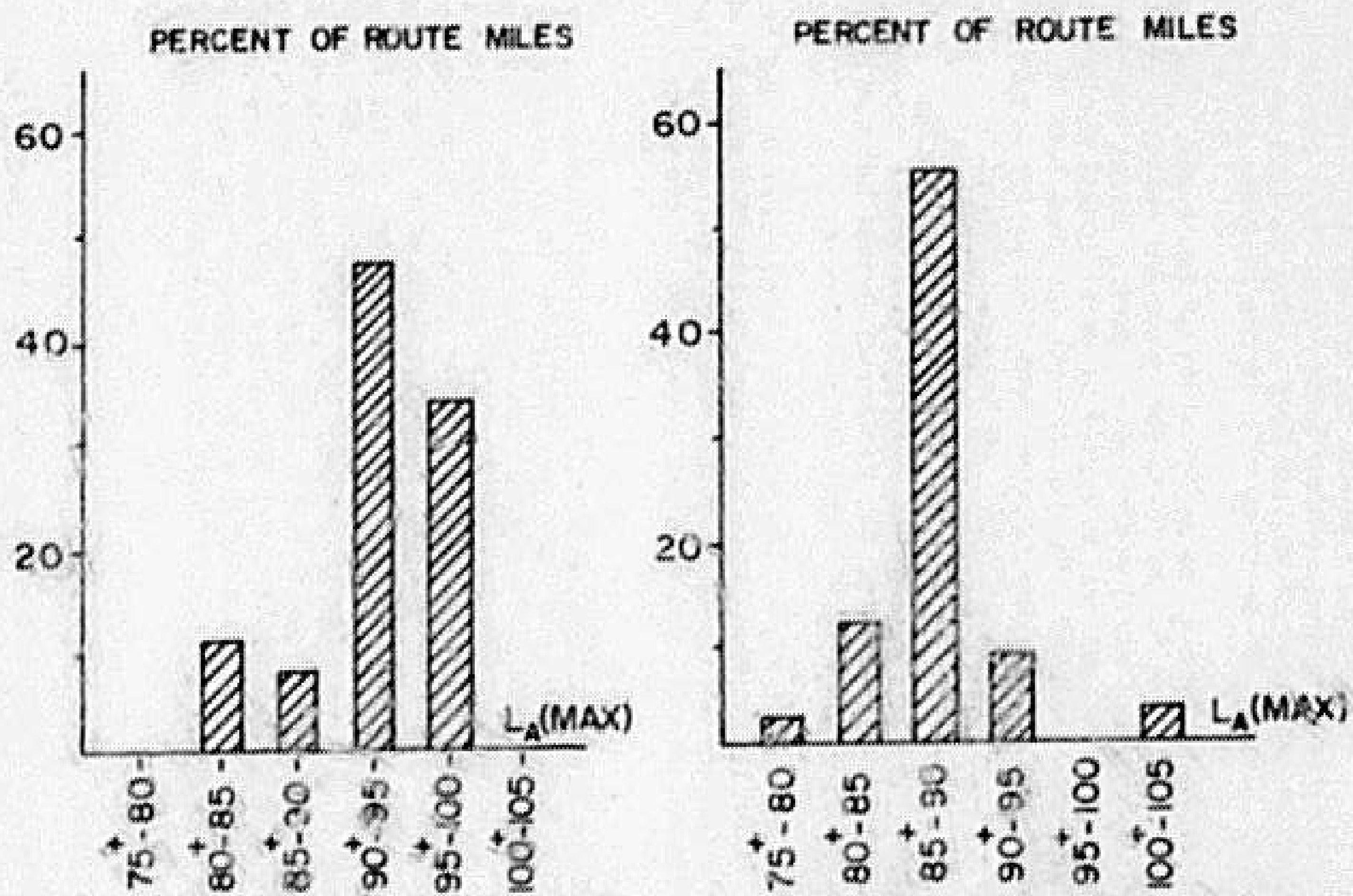
(F) JOURNAL SQUARE-33RD STREET

FIGURE 6.2
IN-TRAIN RUNS ON THE PATH SYSTEM



(G) JOURNAL SQUARE-33RD STREET

FIGURE 6.2
IN-TRAIN RUNS ON THE PATH SYSTEM



(A) PA1 ON 65.8 ROUTE MILES (B) PA3 ON 65.4 ROUTE MILES

NOTE: "ROUTE-MILES" INDICATES THE TOTAL MILEAGE COVERED IN-TRAIN IN THE CATEGORY SPECIFIED, BOTH DIRECTIONS AND MULTIPLE RUNS ARE INCLUDED AS APPROPRIATE.

FIGURE 63

HISTOGRAMS OF L_A(MAX) FOR THE IN-TRAIN DATA

A number of additional facts of interest were noted during data reduction. Some of these will now be discussed.

When the train passes through the tunnel portal between the Grove Street and Journal Square stations (generally at a speed of about 25-30 mph), the decrease in L_A is about 5 dBA. At the exit, the tunnel becomes one-track. The outdoor section is initially at grade for several hundred feet, followed by an open cut. The sidewalls of the cut are of rough-faced natural rock. It is interesting to note that, although the speed stays constant, the sound levels measured in the open cut section were almost as high as the levels measured in the tunnel. The 5 dBA persists only in the at-grade section.

Higher noise levels appear to be primarily of two types. During the outdoor runs, the speeds are in the 40-50 mph range and ordinary wheel-rail noises (joints, roughness, etc.) predominate. During tunnel operation, many of the 90-95 dBA observations are generated by wheel squeal during low speed operation around sharp curves. On tha straight sections both in tunnel and above ground, switches and crossovers were identified as the source of 5-7 dBA increments.

The effect of steel bridge crossings were very interesting. Crossing the Dock Bridge between Newark and Harrison resulted in a 10 dBA increase in measured interior level, while crossing the Hackensack Bridge between Harrison and Journal Square resulted in no significant noise increase.

During some of the straight high speed runs, end doors on one or both cars were opened. It was found that the sound level in the PA-3 rose by about 10 dBA in the tunnel section and by about 5 dBA above ground. The PA1 sound level increments were not as well defined, but seem to be in the range of 5-7 dBA.

C. Comparison with NYCTA Data It is relevant to hypothesize what impact transferring a modern PATH car to a NYCTA IRT track would have on noise levels. The question reduces to that of how measured noise levels compare on comparable track segments. For instance, IRT trains tend to give L_A(MAX) levels of about 95 dBA in tunnel operation, and 90 at grade. These measurements pertain to high speed operation on straight track sections with windows and end doors generally open. Measurements on comparable sections on the PA3 with open end doors at speeds of 52 mph resulted in levels of about 86 dBA, and when end doors were closed, levels dropped back to 81 dBA. In tunnel measurements, the the PA3 at about 35 mph showed a jump from 85 to 95 dBA when end doors were opened. These results agree reasonably with IRT values, and show the potential achievable with good acoustic isolation of the car interior from the exterior noise. More detailed comparisons are difficult to make within the scope of the present work.

6.4 ANALYSIS OF PATH IN-STATION DATA

The in-station measurements were reduced in the standard manner. Values of L_A(MAX), L_B, and NAE for trains arriving and departing were calculated. No possibility of separately estimating the levels due to the different car types existed, because of the general mixture of all car types among all trains. In addition, no scheduled passbys occurred on these stations.

The data are summarized in Table 6.2 and 6.3 in terms of the average values of L_A(MAX), L_B, and NAE. The standard deviations of L_A(MAX) are also shown. Both arrival and departures are shown at each of two posi-

TABLE 6.2
IN-STATION DATA AT THE PATH
14th STREET STATION (SOUTHBOUND)

QUANTITY	NORTH (ARRIVAL) END ARRIVALS	NORTH (ARRIVAL) END DEPARTURE	CENTER OF PLATFORM ARRIVAL	CENTER OF PLATFORM DEPARTURE
Averages				
• L_A(MAX)	94	74	90	85
• L_R	102	87	99	94
• NAE	0.000	0.000	0.000	0.000
Standard Deviation				
• L_A(MAX)	2.81	1.71	2.06	1.55
Number of Samples	8	4	8	8

TABLE 6.3

IN-STATION DATA AT THE PATH

WORLD TRADE CENTER STATION (PLATFORM B)

QUANTITY	CENTER OF PLATFORM ARRIVAL	CENTER OF PLATFORM DEPARTURE
Averages		
• L_A(MAX)	81	81
• L_R	91	93
• NAE	0.000	0.000
Standard Deviation		
• L_A(MAX)	1.15	2.04
Number of Samples	5	5

tions on the platform.

The arrival levels at the middle of the World Trade Center station were all found to cluster very closely about 81 1/2 dBA and the departures around 79 1/2 dBA. The background level varied from about 73 to 77 dBA depending on the number and proximity of the trains resting in the terminal with air conditioning systems operating. It is apparent that the increment from minimum to maximum noise levels in mid-station due to train operation is only about 7 dBA. At the north end of the station (departure end) the arrival levels are inaudible above the background, but the departure noise is lower at this position (68-77 dBA), so that the noise contrast is large. The higher levels are associated with the very sharp turns occurring just beyond the ends of the platforms. It must be noted that even with 7 or 8 car trains, the transit rider is not ordinarily found at those exposed positions.

The 14th Street station has a very low background level of 58 dBA. Arrivals measured at mid-station average about 90 dBA, departures about 85 dBA and train rest conditions are in the neighborhood of 80 dBA. All arrivals showed additional short brake noise spikes which were 3-6 dBA higher than the wheel-rail noise. Measurements made at the arrival end of the platform show much higher levels, as anticipated, averaging about 94 dBA (neglecting the short but more intense 99 dBA bursts of brake screech).

It is interesting to compare the above data on the PATH 14th Street station with that measured in the middle of the similarly constructed NYCTA 14th Street station at 6th Avenue, used by the K, B and F lines. The levels measured in the NYCTA station had an average $L_A(MAX)$ of 96 dBA for trains entering, 98 dBA for trains leaving and 72 dBA for trains resting in the station. The models noted in the NYCTA tests were primarily R21 and R22. In one instance for each, trains were comprised of R-17 and R-29 cars. It will be noted that the wheel-rail noise on NYCTA was much higher, but rest noise was lower. It is believed that the differences in wheel-rail noise are explained primarily by the different tunnel and station speed procedures used on the two systems, while the different rest noise levels are due to the air conditioning on PATH cars (which is absent on the NYCTA cars cited).

6.5 HOT SPOTS ON THE NYCTA PROPERTY

Early in the project, a preliminary survey was made of locations with excessively high noise levels (hot spots). This list was refined in the course of the project, including both additions and deletions. This section reports on hot spots on subway tangent sections and in stations. These reflect in-train and in-station exposure respectively.

In general, in-train noise levels on outdoor sections are substantially lower than underground (subway) sections. Thus no hot spot identification was done for these cases. The community hot spots are reflected in the histograms of Figures 5.1 through 5.4. The hot spots on curves, where they exist, are being addressed through a lubrication program based upon a maintenance cost-effectiveness analysis.

a. <u>In-Train (Tangent, Subway)</u> For each location, the $L_A(MAX)$ and duration (at 5 dBA down from the maximum), and the total L_R for the station-to-station run are given in Appendix G by car model type. As a comparison to other nearby runs, the average (arithmetic) L_R for <u>four</u> station-to-station links on either side of the site (total of eight) is given, to represent a better picture of the hot spot in relation to its neighboring links. It is clear from these tables that these hot spots range from approximately 2 to 14 dBA higher than the average noise levels in the immediate vicinity. The in-train hot spots on tangent subway sections are summarized in Table 6.4.

It appears that the R-44's are quieter in hot spots than the other cars, in terms of a smaller increment relative to the links adjoining the hot spot. This indicates that the poorer the track section, the greater the benefit for running R-44's on that section to decrease in-train noise. To illustrate this, the average increment for each car model is listed in Table 6.5

b. In-Station Table 6.6 summarizes the L_A(MAX) levels in nine component stations out of the 43 sampled. These nine stations are designated as hot spots if two or more models had at least one train each which exceeded 105 dBA in the subject station.

The nine component stations represent seven different SNCG's. There are 145 component stations in these SNCG's. If they are all classified as hot spots, this would represent 30% of all component stations.

If the selection level had been lowered to 100 dBA, 17 of the 41 component stations sampled would have been designated as hot spots. They would represent 12 SNCG's, which contain 71% of the total number of component stations.

6.6 EMPLOYEE EXPOSURE

No direct data was collected on employee exposure. However, the Noise Accumulation Estimate (NAE) will provide some insight into the extent to which problems with exposure dosage might occur. The NAE is derived in Appendix I. The NAE is tabulated in Appendix F for the in-station data.

It is possible to estimate total exposure by a simple addition of the component NAE's. Thus, the impact of two round-trips in-train can be determined. Likewise, the impact of X arrivals (stopping), Y pass throughs, and Z departures can be determined.

It must be emphasized that NAE is a rational indicator proposed in this research as a derived measure. It has not been calibrated relative to or correlated with dosimeter measurements.

The community data can provide only the most limited insight into employee exposure. The relevant figures (Figures 5.1 through 5.4) indicate that some substantial levels are encountered. Still, a total of 30 minutes of exposure is necessary even if each train passby were above 110 dBA (but not exceeding 115 dBA, which is prohibited). Even if 5 seconds exposure occurred with each passby, 360 passbys would be required to exceed OSHA (Occupational Safety and Health Administration) levels. Such levels, durations, and number of events are improbable in the areas accessible to the public. (No measurements were taken in tunnel working areas, but similar arguments for needed passbys could be developed).

6.7 CLOSURE

The purpose of this report is simply one of reporting

TABLE 6.4

IN-TRAIN HOT SPOTS ON SUB-
WAY TANGENT SECTIONS

- 59th St. - 125th St.
- W. 4th St. - 34th St.
- High St. - Broadway Nassau
- 7th Ave. - Prospect Park
- Wall St. Clark St.
- Bowling Green - Boro Hall
- 86th St. - 125th St.
- Jackson Heights - Forest Hills
- W. 4th St. - Broadway Lafayette
- Jackson Heights - Queens Pl.
- 23rd Ely - Lexington Ave.
- Chambers ST. - 14th St.
- 155th St. - 161st St.

NOTES: (1) Links shown; station from, station to (in that order)

(2) Supporting analysis appears in Appendix G

TABLE 6.5

IN-TRAIN COMPARISON OF HOT SPOT TO ITS NEIGHBORS

Car Model	Number of Observations	Average Δ
R44	17	4.9
R42	2	1.5*
R40	12	5.6
R32	10	5.8
R27-R30	2	7.7*
R10	4	9.0
R12	4	5.0
R15	2	2.3*
R17	4	10.6
R21	8	6.9

NOTE: Δ = Difference in L_R Between Hot Spot and its Neighbors

* Weak, because of sample size and small difference

TABLE 6.6

HIGHEST L_A(MAX) LEVELS OBSERVED IN HOT-SPOT STATIONS

STATION	Model								
	R44	R42	R40	R38	R32	R33 R29	R17	R10	R1-9
York St.	101.	105.	107.	104.					102.
63rd Drive	103.	108.	114.	113.					112.
14th St.	101.	110.	104.	101.	115.				98.
86th ST. CPW	109.	118.			119.			116.	0.
Bleeker St.						107.	109.		0.
81st St. CPW	111.	120.			114.			113.	
Woodhaven Bl.	105.	109.	114.	117.					109.
Classon Ave.			105	107					
Avenue M	102	110			109				

existing noise levels with some analysis of their characteristics. These characteristics have been related primarily to variability of the data, identification of important underlying factors, and definition of appropriate Noise Control Groups.

From observation of existing levels, it is clear that the levels on the New York City Transit System are in need of abatement. The NYCTA recognizes this and has initiated a major noise abatement program.

The present work has gone beyond the simple tasks of reporting with only "some analysis of characteristics." The extent to which L_p has been used and the introduction of NAE have presented new analyses for the profession to consider. Yet this report is still only the first step.

Figure 6.4 depicts the sequence of events in the overall project. Clearly, the present report addresses at most two boxes ("Assessment Data" and "Characterization"). The remaining steps are reported in a separate document which includes a review of available abatement treatments, estimation of costs, and development and execution of an abatement methodology. This work uses the MBTA pilot study as a guide.*

* Kurzweil, L.G., Lotz, R., Apgar, E.G., "Noise Assessment and Abatement in Rapid Transit Systems (MBTA Pilot Study)." U.S. Department of Transportation, Report No. UMTA-MA-06-0025-74-8, September, 1974.

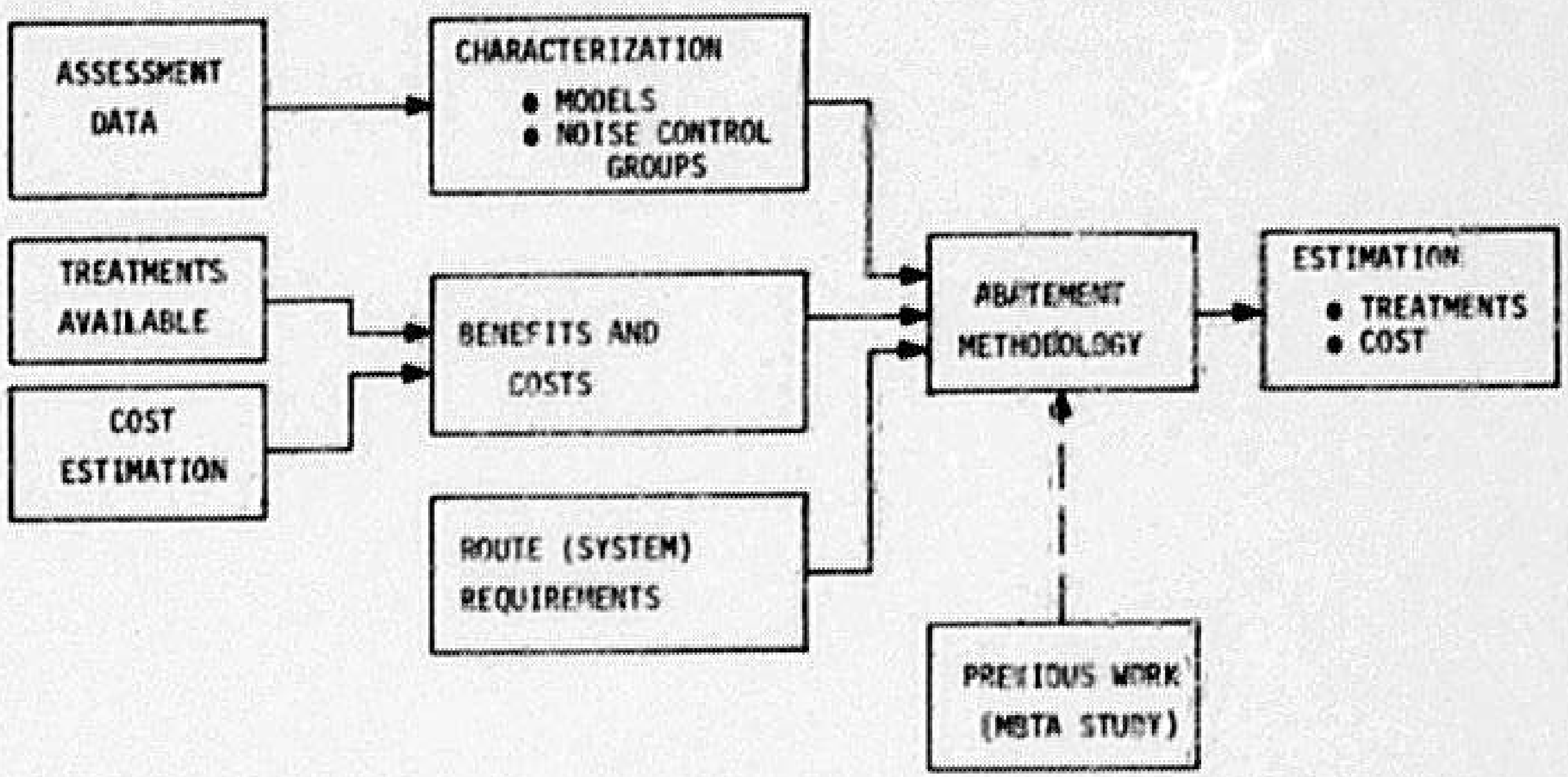


FIGURE 6.4
FLOW OF ASSESSMENT AND ABATEMENT TASKS

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APPENDIX A

FORMS USED IN FIELD MEASUREMENTS
AND IN PREPARATION FOR FIELD
MEASUREMENTS

The following forms are contained in this appendix, and relate to the measurement procedures described in Chapter Two:

- In-House Checklist
- Data Collection Form for In-Train Noise Measurements
- Data Collection Form (In-Station Data)
- Data Collection Form for Community Noise Measurements

Table A.1: In-House Checklist

DATE ____________________ CREW NUMBER ______

( ) RECORDER

( ) TAPES AS REQUIRED

( ) TRIPOD

( ) B & K POWER SUPPLY

( ) CAPT

( ) MIKE MOUNTING RING

( ) MICROPHONE (B & K)

( ) COMMENT MIKE

( ) G. R. CALIBRATOR (AND COUPLER)

( ) HEADPHONES

( ) WINDSCREENS (FOR BOTH SOUND LEVEL METER AND B & K MIKE)

( ) SOUND LEVEL METER (SLM)

( ) BNC COUPLERS

( ) GREEN CABLE (GREEN MEANS CABLE HAS GREEN PAINT MARKS AT ENDS)

( ) RED CABLES (THERE ARE TWO RED CABLES THAT COUPLE TO EACH OTHER)

( ) SILVER CABLE

( ) YELLOW CABLE

( ) ACCELEROMETER CABLE PAIR (2 CABLES)

( ) PRE-AMP BOX

( ) ACCELEROMETER BLOCK (*** CAREFULL ***)

- BATTERY CHECKS -

( ) NAGRA (VOLTAGE ABOVE 1.9v.)

( ) G. R. CALIBRATOR (DIAL TO BATT TEST . BRIGHT LIGHT - BATTERIES O.K.)

( ) B & K POWER SUPPLY (KNOB TO ON METER TO READ IN GREEN AREA)

( ) PAR TEST (SWITCH ON (i.e. IN) BATT TEST TO & GREEN LIGHT BRIGHT)

- FIELD SET UP CHECKLIST -

( ) SET UP MICROPHONE, POST, AND RING (KNURL DOWN)

( ) LOOSEN KNURL, INSERT B & K MIKE, AS FAR UP AS POSSIBLE, TIGHTEN KNURL

( ) ADJUST HIGHT OF POST (IN TRAIN - 1.2m, IN STATION - 1.6m)

( ) B & K MIKE CABLE TO B & K POWER SUPPLY

( ) B & K CABLE (RED) TO RED CABLE (NAGRA INPUT) TO CHN 1 - RED

( ) COMMENT MIKE TO GREEN CABLE TO NAGRA INPUT CHN. 2 - GREEN

(USE EXTENSION AND COUPLERS AS NEC.)

Table A.1(cont.): In-House Checklist

( ) PLUG IN HEAD PHONES (AND USE THEM !!!)

( ) SILVER CABLE TO G. R. CALIBRATOR TO PRE AMP BOX TERM-CAL (SILVER)
(USE EXTENSION TO REACH CALIBRATOR WHEN ON MIKE)

( ) YELLOW CABLE TO NAGRA CHN. 3 CUE. (YELLOW) TO PRE AMP BOX TERM-NAGRA (YELLOW)

( ) CLEAN FLOOR BELOW TRIPOD FOR ACCEL. BLOCK

( ) PUT DOUBLE SIDED TAPE ON BLOCK AND ACCELEROMETER (CAREFULL), STICK TO FLOOR

( ) ACCELEROMETER CABLE PAIR TO BLOCK AND PRE AMP BOX (GOLD TERMS.)

- CALIBRATION PROCEDURE -

( ) B & K POWER SUPPLY ON NAGRA SETTINGS

( ) METER FUNCTION SWITCH-PEAK

( ) WEIGHTING SCALES RED LIN, GREEN LIN

( ) CHN MONITOR SWITCH (1)

( ) BOTH LINE MIKE SWITCHES LINE

( ) TAPE-DIRECT SWITCH DIRECT SWITCH TO TAPE ONCE IN A WHILE TO CHECK RECORDING)

( ) POWER SWITCH BATTERY

( ) (CHN 2 ATTENUATOR FOR GOOD DEFLECTION FOR COMMENT MIKE)

( ) TAPE SPEED 7.5 IPS

( ) PRE AMP SETTINGS

( ) A CHN GND

( ) B CHN AC

( ) L. F. ROLL OFF .1Hz

( ) H. F. ROLL OFF 10 kHz

( ) GAIN VERNIER CAL (CLICK WHEN IN CAL!!!!)

( ) GAIN STEP 10

( ) P A R-ON (SWITCH IN)

( ) FUNCTION SWITCH 1.0g

( ) NAGRA FUNCTION SWITCH IN TEST

( ) PLACE G.R. CALIBRATOR ON B & K MIKE (CALIBRATOR ON AT 250Hz)

( ) ADJUST RED CHN. (1) FOR 20 dB DEFLECTION (JUST AT BLACK MARK ON METER)

( ) SET NAGRA METER FUNCTION TO CUE AND PILOT POSITION

( ) NAGRA FUNCTION TO RECORD OR RECORD SP

( ) ON PAR PRESS DOWN OL REC SWITCH (OVERLOAD RECOVER)

( ) INCREASE GAIN ON PAR STEP BY STEP TILL NAGRA METER READS 20 PERCENT
(OL REC SWITCH MUST BE PRESSED EVERY TIME THE GAIN ON THE PAR IS CHANGED)

( ) ON COMMENT MIKE GIVE HEADER INFO (TRAIN, STATION, DATE, ETC.)

( ) ON COMMENT GIVE CALIBRATION INFO (ATTANUATOR SETTING ON CHN 1, GAIN SETTING ON PAR, FUNCTION SETTING ON PRE AMP (1.0g & 0.1g)

Table A.1(cont.): In-House Checklist

( ) RECORD CAL SIGNALS FOR ONE MINUTE ON FIRST REEL OF DAR FIVE SECONDS ON OTHER REELS

( ) REMOVE CALIBRATOR AND TURN OFF

( ) SET NAGRA FUNCTION SWITCH (METER SWITCH TO PEAK)

****

( ) READJUST CHN 1 ATTEN. SO THAT SOUND LEVEL OF ENVIRONMENT IN TRAIN PEAK, OR STATION PEAK GIVES 15 dB DEFLECTION. THIS MEANS THAT THE VERNIER AS WELL AS THE STEP ATTENUATOR MAY HAVE TO BE CHANGED TO RESCALE FOR THE LEVELS MEASURED.

****

( ) SET NAGRA METER SWITCH TO CUE AND PILOT

( ) SET FUNCION SWITCH ON PRE AMP BOX TO RUN

( ) IF NEC READJUST GAIN ON PAR TO GIVE AN AVERAGE READING OF APPROXIMATELY 20% (DON'T FORGET TO PRESS OL REC AFTER EACH TIME THE GAIN IS CHANGED)

**************DON'T LET MODULATION EXCEED 40% . DECREASE GAIN IF NEC. ************

( ) ON COMMENT MIKE GIVE NEW SETTINGS OF ATTANUATORS AND GAIN ON PAR IF CHANGED

DON'T FORGET:

GIVE ON COMMENT CHN. ANY INFO WHICH SEEMS TO BE IMPORTANT SUCH AS WINDOWS OPEN, DOOR JUST OPENED, BUMPY SECTION OF TRACK, ETC. RECORD ON COMMENT CHN. SOUND LEVEL READINGS ON METER SET TO A SCALE. IDENTIFY TRAINS AND OTHER NOISE AS WELL AS POSSIBLE (eg. " AN R-40 JUST PASSED ON THE FAR TRACK.) IN YOUR SKETCH OF THE STATION NUMBER THE TRACKS ON PAPER AND USE THESE NUMBERS TO REFERENCE HAPPENINGS ON OTHER TRACKS.

- UPON RETURNING CHECK LIST -

( ) NAGRA ON CHARGE AND FUNCTION SWITCH ON STOP

( ) PAR ON CHARGE AND SWITCH OFF

( ) B & K POWER SUPPLY OFF

( ) G.R. CLAIBRATOR OFF

( ) PRE AMP BOX FUNCTION SWITCH ON OFF

( ) SOUND LEVEL METER ON OFF POSITION

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

I, THE UNDER SIGNED, DO HERBY TESTIFY THAT I HAVE WITNESSED THE EXECUTION OR HAVE PERFORMED THE EXECUTION OF ALL PARTS OF THIS CHECKLIST AND DECLARE THAT ALL ITEMS WERE PERFORMED TO THE BEST OF MY ABILITY.

______________________________ DATE ____________

Table A.2: Data Collection Form for In-Train Noise Measurements

DATA COLLECTION FORM FOR IN TRAIN NOISE MEASURMENTS

DATE ___/___/___ ASSIGNMENT ___ ___ ___

OPERATOR ______________

TIME _____ [ ] AM [ ] PM TO _______ [ ] AM [ ] PM

ATTENUATOR SETTING ______________ dB

CALIBRATOR: 114dB [ ] 124 dB [ ] both [ ]

VIBRATION CAL. 1g [ ] .1g [ ] both [ ]

GAIN: __________ VERNIER ________

TAPES: ______ ______ ______ ______ ______

STANDARD EQUIPMENT: YES [ ] NO [ ]
IF NO EXPLAIN: ______________________________

____

LINE: ______________

CAR MODEL: ______________ LEAD CAR # ______________

DATA COLLECTION CAR NO. __________ NO. OF CARS __________

DESTINATION: FROM __________ TO __________
FROM __________ TO __________
FROM __________ TO __________

Table A.2(cont.): Data Collection Form for In-Train Noise Measurement Assignment___ ___ ___

NO.	STATION	MAX. DBA LEVEL	CH.1 ATTE. SETT.	GAIN	# OF PEOPLE	TAPE #	NO.	STATION	MAX. DBA LEVEL	CH.1 ATTE SETT.	GAIN	# OF PEOPLE	TAPE #
1							23						
2							24						
3							25						
4							26						
5							27						
6							28						
7							29						
8							30						
9							31						
10							32						
11							33						
12							34						
13							35						
14							36						
15							37						
16							38						
17							39						
18							40						
19							41						
20							42						
21							43						
22							44						

Table A.3: Data Collection Form
(In Station Data)

DATA COLLECTION SHEET

DATE / /

LOCATION ——

[ ]

OPERATORS ——

ASSIGNMENT — — —

PURPOSE

[ ] STATION
[ ] COMMUNTIY

TIME ——— [ ]AM ——— [ ]AM
[ ]PM [ ]PM

SKETCH: ATTACH INDICATED POSITION(S) BY NUMBER

INSTUMENTS:

TAPES ——— ——— ———

RECORDER: NAGRA [ ] STELLAVOX [ ]

STANDARD ANCILLARY EQUIPMENT: YES [ ] NO [ ]

IF NO EXPLAIN : ___

___

COMMENTS: ___

___

Table A.3(cont.): Data Collection Form
(In Station Data)

ASSIGNMENT — — — [ ]

SKETCH

INDICATE ALL DIMENSIONS AND DETAILS WHERE APPROPRIATE. NUMBER POSITIONS.

Table A.3(cont.): Data Collection Form
(In Station Data)

ASSIGNMENT ———( ))

RUN	TIME	TAPE NO.	ATTENUATOR SETTING	DRA LEVEL					TRAIN DATA			
				MAXIMUM ARRIVAL	MAXIMUM DEPARTURE	AVE.	IN – STATION	STATION EMPTY	MODEL	# OF CARS	SPEED	LEAD CAR #
CAL.												
TEST												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

Table A.4: Data Collection Form for Community Noise Measurements

DATA COLLECTION FORM FOR COMMUNITY NOISE MEASUREMENTS

DATE ___/___/___ ASSIGNMENT ___ ___ ___

LOCATION ______________ [ ]

OPERATOR ______________

TIME ________ [ ] AM TO ________ [ ] AM
[ ] PM [ ] PM

ATTENUATOR: __________ DB

CALIBRATOR: 114 db [ ] 124 db [ ]

RECORDER: NAGRA [ ] STELLAVOX [ ]

TAPES: ______ ______ ______ ______

STANDARD EQUIPMENT: YES [ ] NO [ ]

IF NO EXPLAIN ______________________________

____

COMMENTS: ____________________________________

____

Table A.4(cont.): Data Collection Form for Community Noise Measurements

ASSIGNMENT ___ ___ ___

NO.	MAXIMUM DBA LEVEL	CAR MODEL	LEAD CAR #	# OF CARS	SPEED
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					

APPENDIX B
NOTE ON APPROXIMATIONS AND ERRORS INCURRED IN CALCULATION OF ENERGY LEVEL MEASURES

The purpose of these notes is to suggest a procedure for choosing an effective time duration of peak signatures measured in our current subway noise program. It will be remembered that the "effective duration" arose during one of the first contractor meetings at Transportation Systems Center as a recommendation by Dr. T. Schultz of BBN in connection with the L_R measure. This was defined by $L_R = L_A$ (peak) + 10 log T_5 where T_5 is the duration of the signature at a level of 5 dB below the peak dBA level. This measure is consistent with current thinking on the importance of sound energy as a basis for as assessment of transportation generated and other urban noises. In fact, if the falloff of mean sound pressure level from a peak value as displayed on a strip chart recording, reasonably approximates a straight line (mean squared pressure is exponential), then the total mean energy from t_0 to ∞, E_∞ is

$$E_\infty = \int_{t_0}^{\infty} \langle p^2(t) \rangle \, dt = p_0^2 \tau = p_0^2 T \cdot \frac{\tau}{T}$$

As shown in Figure B.1.A. The < > symbol for mean should be interpreted as the very low pass filtered part of the pressure squared. If ΔL is 5dB, then, Δt is defined by

$$10 \log e^{-\Delta t/\tau} = -5$$

or

$$-4.34 \, \Delta t/\tau = -5$$

$$\frac{\Delta t}{\tau} = 1.15$$

It is seen that $E_\infty = p_0^2 \Delta t / 1.15$

$$L_E = 10 \log_{10} E = L_o + 10 \log \Delta t - 0.6 \quad dB$$

Except for the correction of .6dB this is identical with the definition of L_R when Δ t corresponds to a Δ L of 5dB down. (The correction would also disappear if 4.34 dB down had been designated as standard instead of 5dB.) The conclusions are not changed by a distribution consisting of linear rise to the peak value preceding the linear drop as discussed above.

When the line for t > to does not extend very far, then it may be necessary to incorporate a correction for the energy level expression. Thus if $\Delta L_1 = L_0 - L_1$ is not very large, then

$$E(t) = \int_{t_0}^{t_1} p^2(t)\, dt = p_0^2 \tau (1 - e^{-T/\tau}; \frac{\tau}{T}$$

which may be put in the form

$$L_E = 10 \log E(t) = L_o + 10 \log T - \epsilon_1(\Delta L)$$

or

$$L_E = L_o + 10 \log T_5 - \epsilon_2(\Delta L)$$

The first form is suitable for small Δ L and the second for large ΔL. Some simple curve fitting of calculated values of ϵ_1 and ϵ_2 suggested the following fits as adequate

$$\epsilon_1 = \frac{\Delta L}{2} \quad \text{for} \quad \Delta L \leq 5 \text{ dB} \quad \text{with} \quad \text{error} < 0.3 \text{ dB}$$

$$\epsilon_2 = -1 \quad \text{for} \quad \Delta L > 5 \text{ dB} \quad \text{with} \quad \text{error} < 0.5 \text{ dB}$$

Many pressure level curves which are better fitted by parabolas than by straight lines were also observed, especially during in-train runs. It was found that a simple correction to the L_R concept could also be applied.

In this case, represent the mean pressure squared by

$$\langle p^2(t) \rangle = p_0^2 e^{-t^2/\tau^2}$$

which corresponds to the parabola of Figure B.1.B:

$$L_p = L_o - 4.34\, t^2/\tau^2$$

so that

$$\frac{T}{\tau} = \sqrt{\frac{L_0 - L_1}{4.34}}$$

The energy E under the curve from t_0 to ∞ is then $.886\, P_0^2\, \tau$. This energy can be expressed in terms of T_5, the time duration corresponding to $\Delta L = 5$ dB.

$$E_\infty = 0.886\, p_0^2\, T_5 \cdot \tau/T_5 = 0.886\sqrt{\frac{4.34}{5}}\; p_0^2\, T_5$$

and taking the logarithm,

$$L_{E_\infty} = L_0 + 10 \log T_5 - 0.85 \text{ dB}$$

For finite values of T,

$$E(T) = p_0^2 \int_0^T e^{-t^2/\tau^2}\, dt = (p_0^2 \tau)(0.886)\, \mathrm{erf}\,(T/\tau)$$

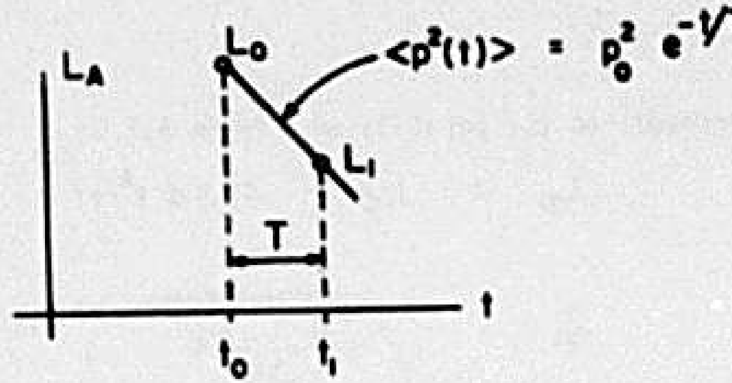
The energy level can then be approximated with adequate precision by the formulas

$$L_E = \begin{cases} L_o + 10 \log T_s - \dfrac{\Delta L}{3} & \Delta L \leq 5 \quad \text{error} < 0.1 \text{ dB} \\ L_o + 10 \log T_s - 1 & \Delta L > 5 \quad \text{error} < 0.3 \text{ dB} \end{cases}$$

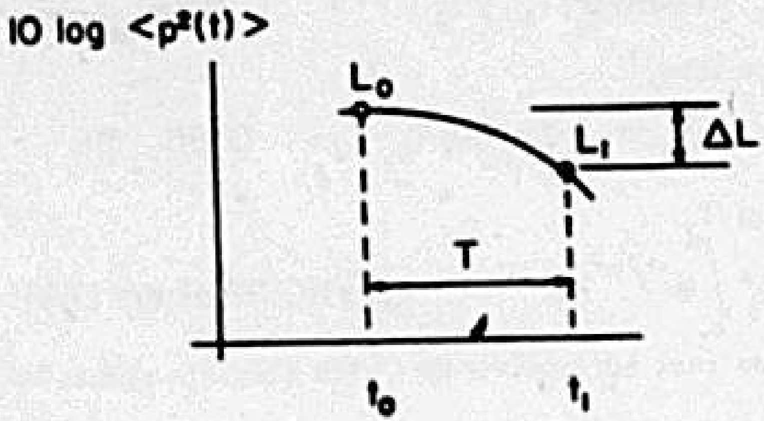
The above formulas for the linear and parabolic (DC) level variations are found to be particularly important when the levels are almost plateau-like, when the assumption of $L_1 \rightarrow -\infty$ leads to large errors in the estimates of energy level.

Another question that is encountered is in the interpretation of the effective duration of a signal with a localized spike, which produces a peak value of L_0 greater than would result from extrapolation of the curve $L_1 \rightarrow L_2$ in the figure below. Refer to Figure B.1.C for an illustration.

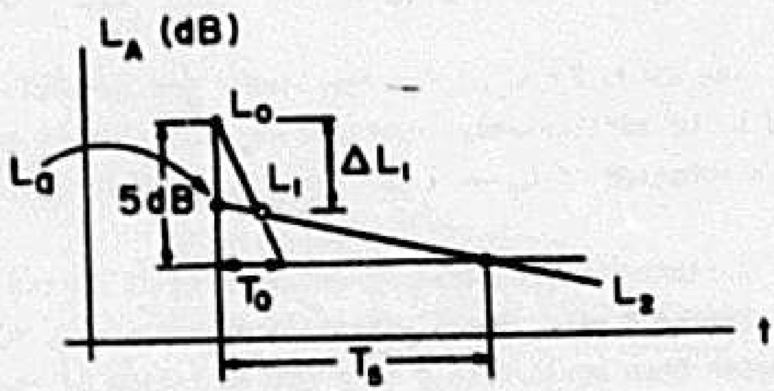
In order to assess the effect of ignoring or including (approximately or exactly) the local spike, a calculation was carried out for a number of cases of interest. If the attenuation constant of the line segment from L_0 to L_1 is characterized by τ_1 and that beyond L_1 by τ_2, one obtains an expression for (half) the energy



(A) STRAIGHT LINE DECAY



(B) PARABOLIC DECAY



(C) SPIKE PRESENT

FIGURE B.1

BASIC SHAPES OBSERVED IN IN-TRAIN NOISE PROFILES

$$\tfrac{1}{2}E_1 = \frac{p_0^2 T_0}{1.15}\left[\left(1 - e^{-\frac{\Delta L_1}{4.34}}\right) + \frac{\tau_2}{\tau_1} e^{-\frac{\Delta L_1}{4.34}}\right] = p_0^2 T_0 \delta_1$$

Compare this with the approximation

$$\tfrac{1}{2}E_2 = p_0^2 T_5 = p_0^2 T_0 \delta_2$$

Finally if the spike at L_0 is ignored, and the line L_1 L_2 is extrapolated back to L_a, one obtains for (half) the energy:

$$\tfrac{1}{2}E_3 = p_0^2 \tau_2 = p_0^2 T_0 \delta_3$$

The expressions for δ_1, δ_2 and δ_3 in terms of ΔL_1 and the ratio of the slopes τ_2/τ_1 are

$$\delta_1 = \frac{1}{1.15}\left[\left(1 - e^{-\Delta L_1/4.34}\right) + \frac{\tau_2}{\tau_1} e^{-\Delta L_1/4.34}\right] \quad \text{"exact"}$$

$$\delta_2 = \left[\frac{\Delta L_1}{5} + \frac{\tau_2}{\tau_1}\left(1 - \frac{\Delta L_1}{5}\right)\right] \quad \text{approximate}$$

$$\delta_3 = 10 \log \tau_2/\tau_1 - \Delta L_1 (1 - \tau_1/\tau_2) - 0.6 \quad \text{spikeless}$$

A table of values of δ_1, δ_2 and δ_3 for several values of ΔL_1 and τ_2/τ_1 was computed, and is shown as TABLE B.1.

Table B.1.
A STUDY OF ONE APPROXIMATION

τ_2/τ_1 \ ΔL_1		2	3	4	5 dB
2	δ_1	1.42	1.3	1.23	1.15
	δ_2	1.16	1.4	1.2	1.0
	δ_3	1.38	1.2	1.14	.98
3	δ_1	1.97	1.74	1.58	1.42
	δ_2	2.20	1.80	1.40	1.0
	δ_3	1.92	1.65	1.42	1.22
4	δ_1	2.50	2.17	1.94	1.70
	δ_2	2.80	2.20	1.60	1.0
	δ_3	2.45	2.06	1.73	1.46

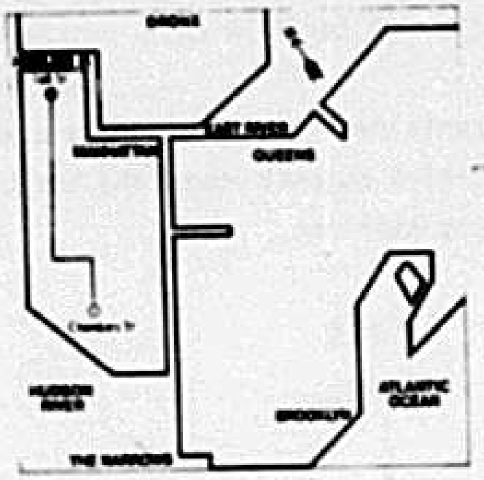
It will be seen from a comparison of δ_1 and δ_3 that (1) the energy contribution of the spike is not very important, (2) The error incurred by using the approximation δ_2 is greater than that obtained by using the δ_3 correction (which ignores the spike). The difference is only significant for $L_1 \geq 5$dB. (3) Since it is desired to have a record of peak value L_{peak}, and to base conclusions on L_{peak}, use of the level $L_{E2} = L_{peak} + 10 \log T_5$ would be desirable, and generally involves an acceptably small error.

APPENDIX C

PICTORIAL DIAGRAMS FOR IN-TRAIN DATA

The following figures contained in this appendix are the Train Route Maps which indicate each station on that route and the L_A(MAX) levels measured in the train between those stations.

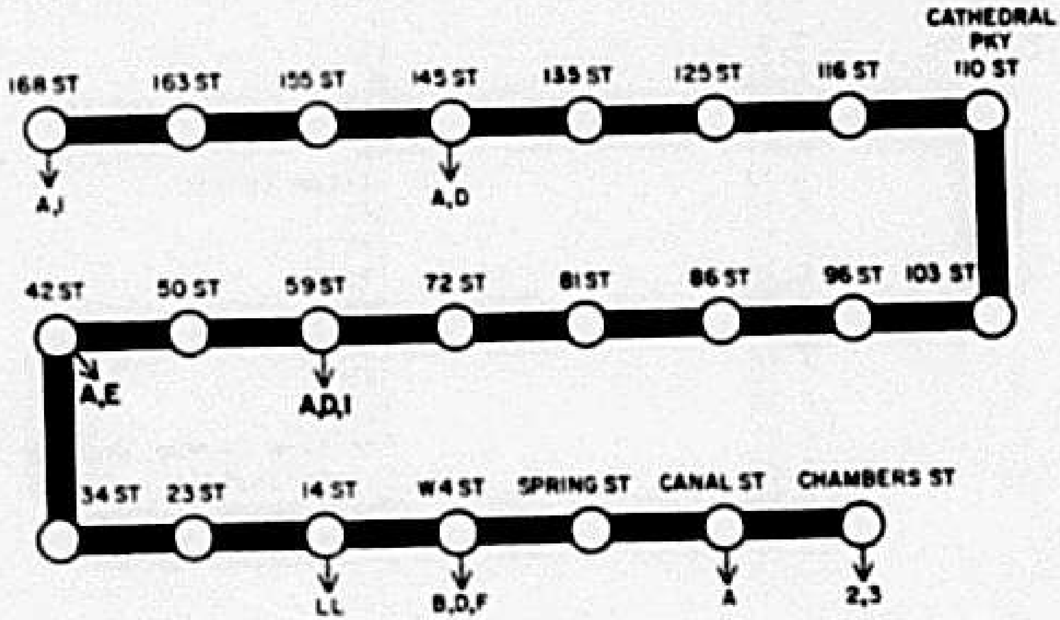
<u>NOTE</u>: The A, CC, K and QB Routes are not represented. The A Route is on pages 28-31. The other three run only during rush hours, and their Routes are, in all probability, accounted for in the following pages.



AA IND

R-32 Chambers St to 168 St
168 St to Chambers St

R-42 Chambers St to 168 St
168 St to Chambers St



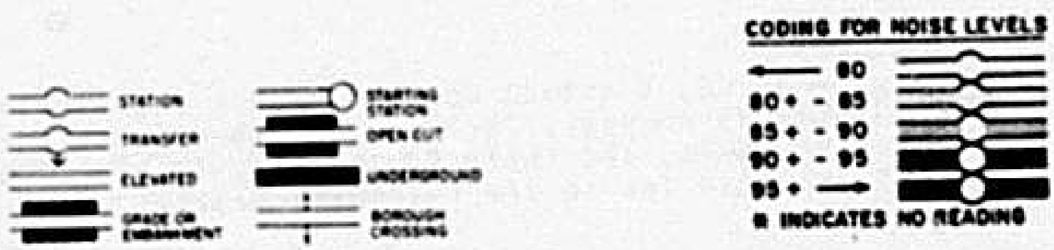
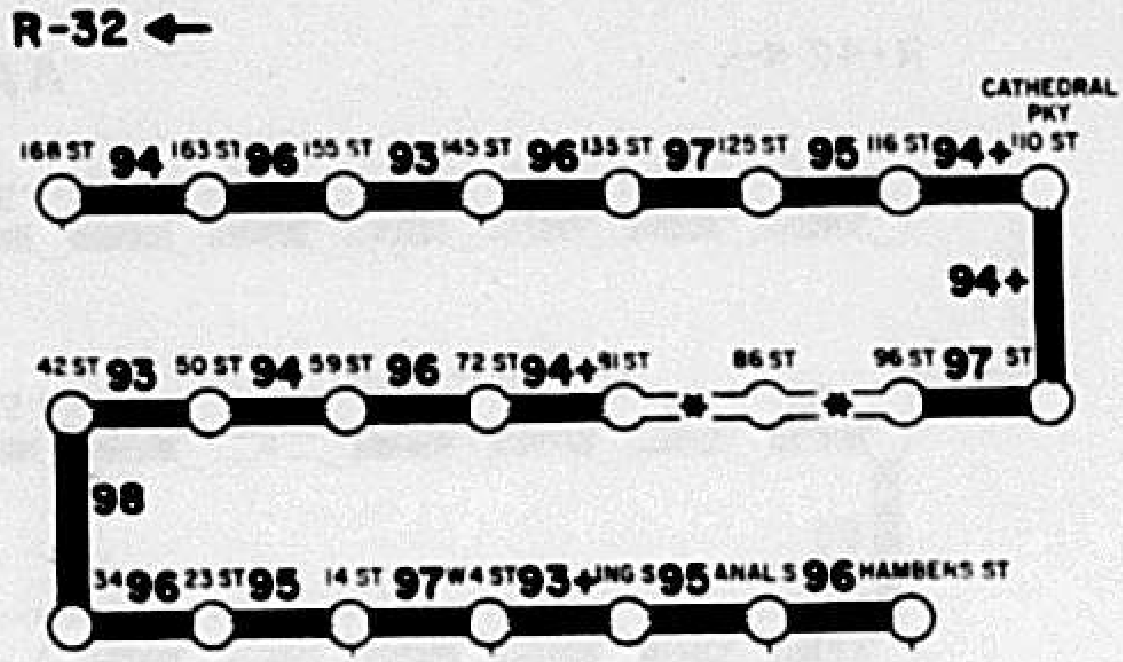


FIGURE C.1.A
Description of the AA Route from Terminal to Terminal



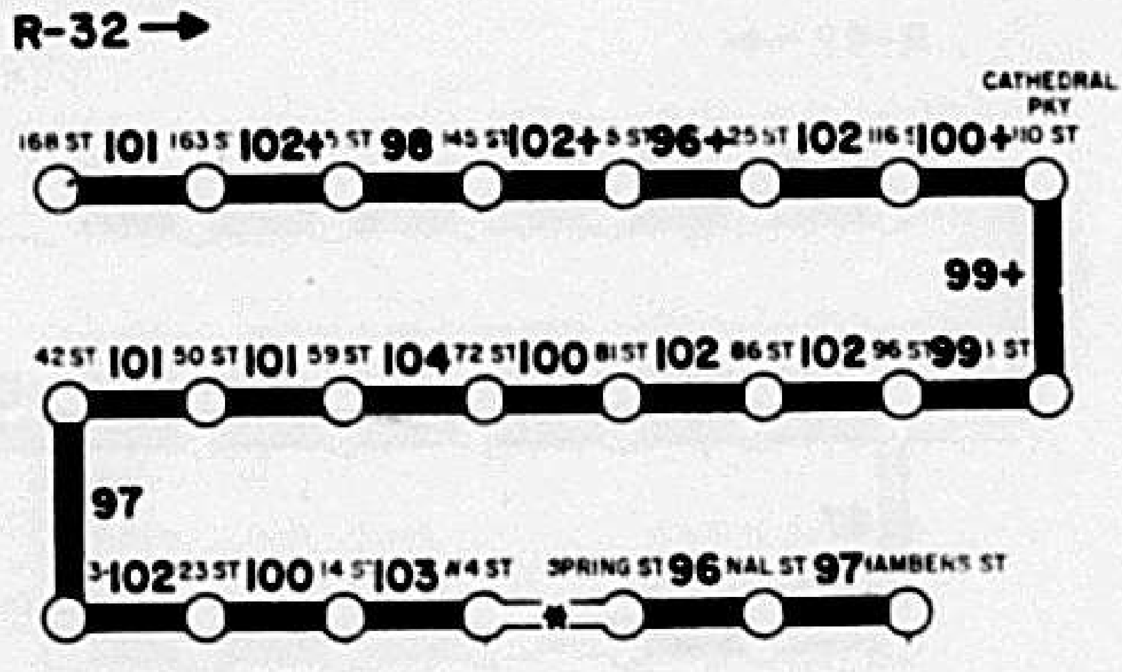
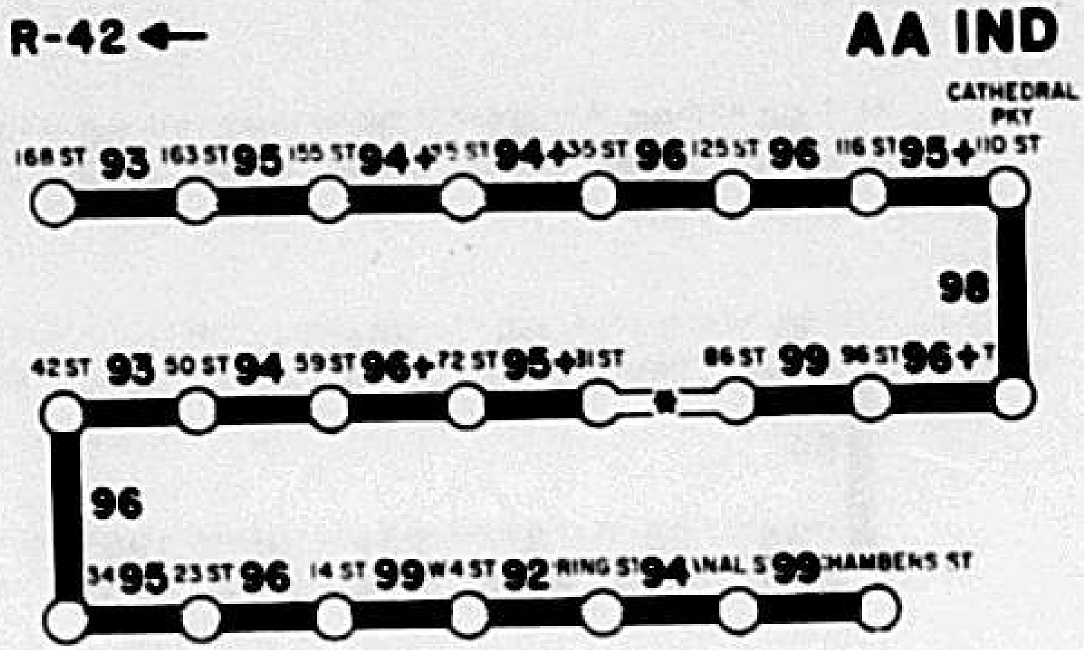


FIGURE C.1.B

Description of the AA ROUTE from/to 168 St. to/from Chambers St. on the R-32



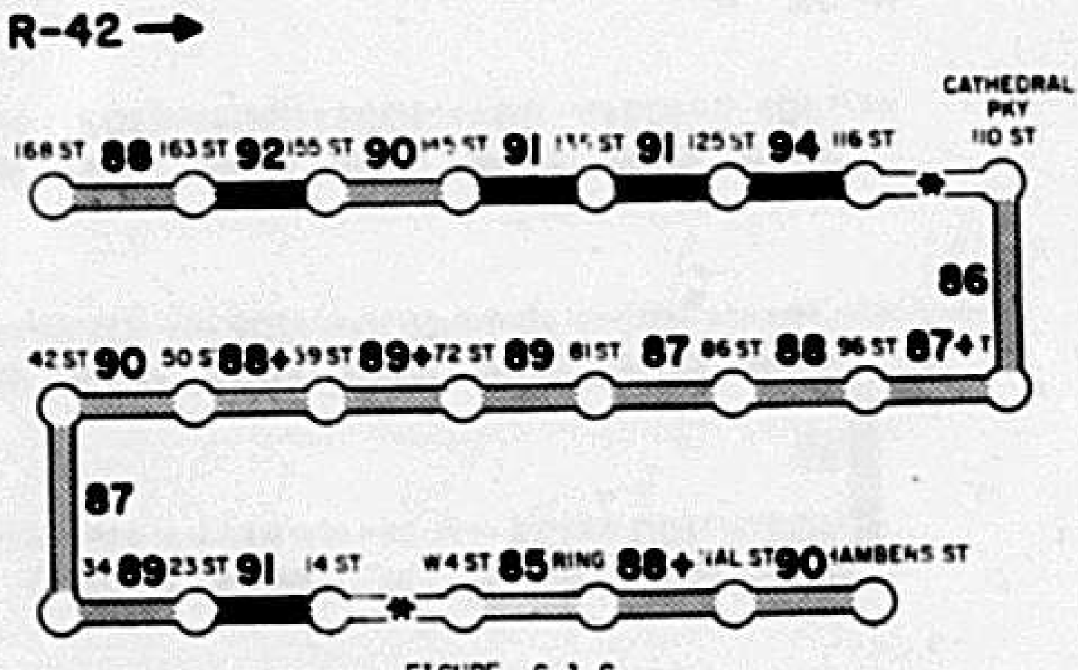
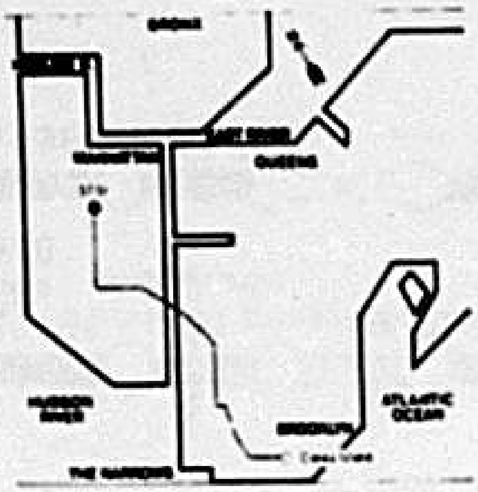


FIGURE C.1.C
Description of the AA Route From/to 168 St. to/from Chambers St. on the R-42



B IND

R-32 Coney Island to 57 St
57 St to Coney Island

R-42 Coney Island to 57 St
57 St to Coney Island

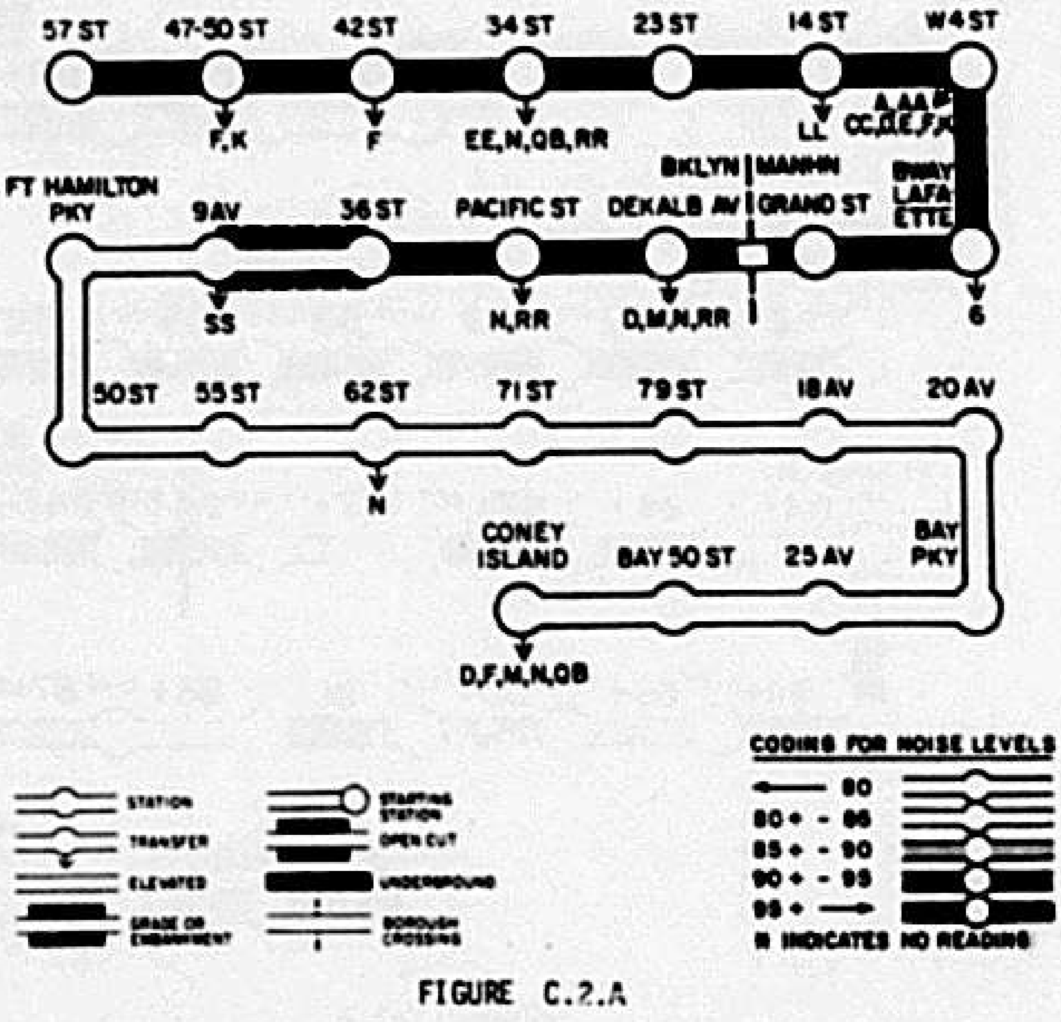


FIGURE C.2.A

Description of the B Route from Terminal to Terminal

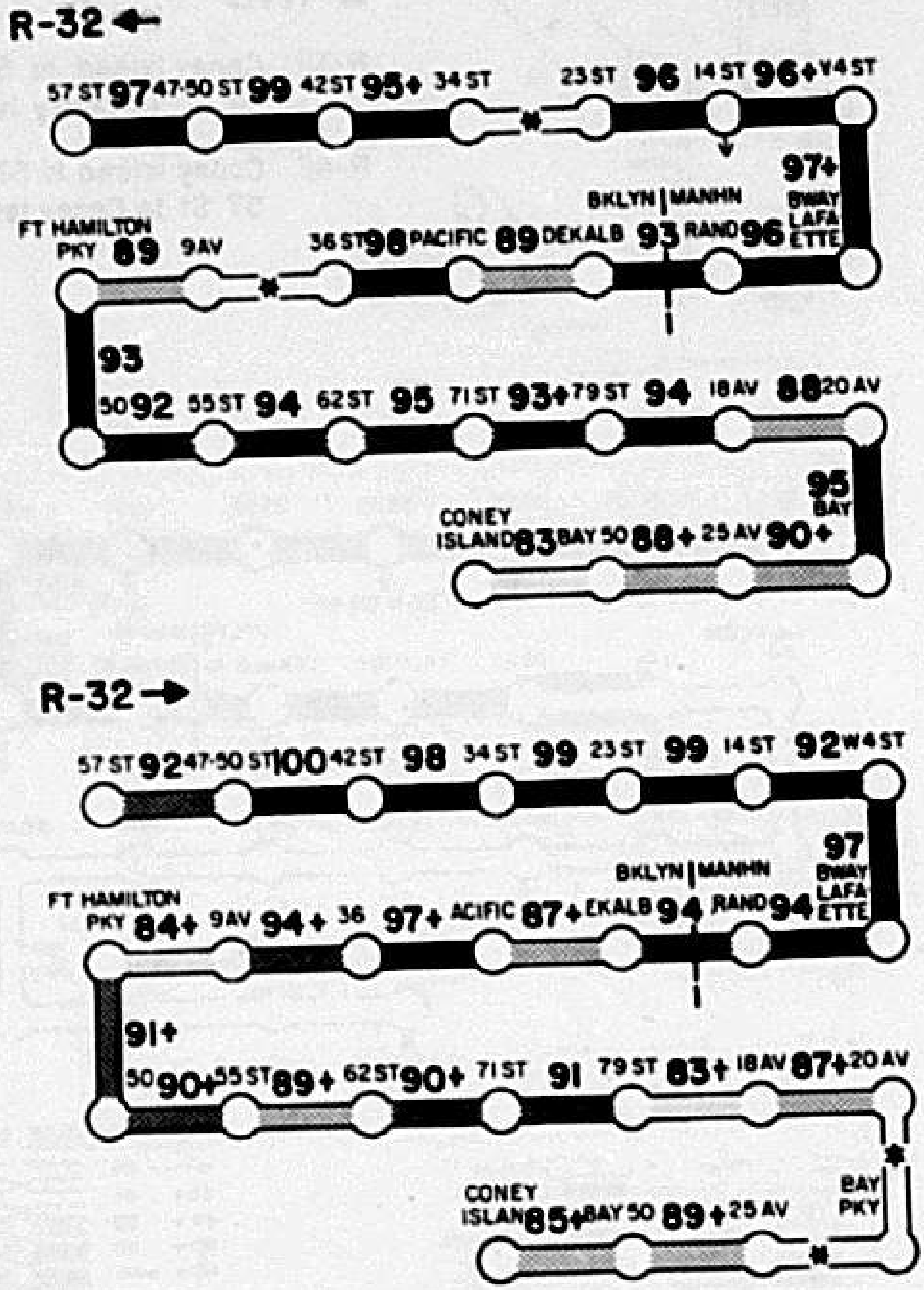


FIGURE C.2.P

Description of the B Route from/to 57 St. to/from Coney Island on the R-32

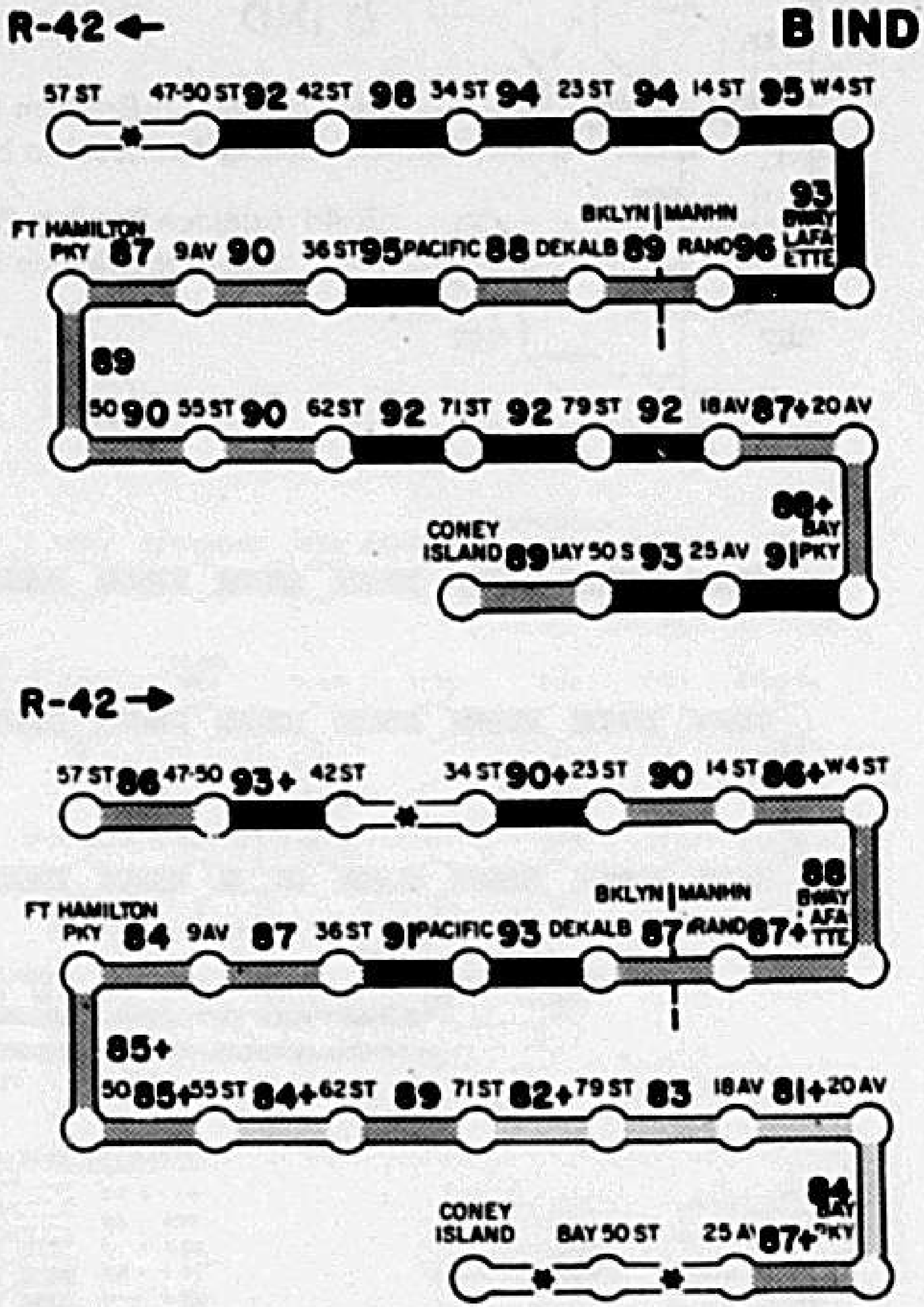
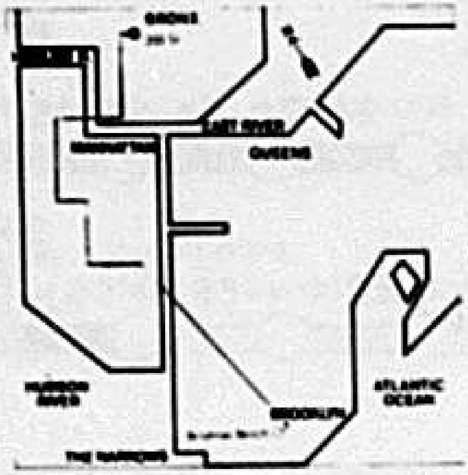


FIGURE C.2.C

Description of the B Route from/to 57 St. to/from Coney Island on the R-42



D IND

R-32 205 St to Brighton Beach
Brighton Beach to 205 St

R-44 Brighton Beach to 205 St
205 St to Brighton Beach

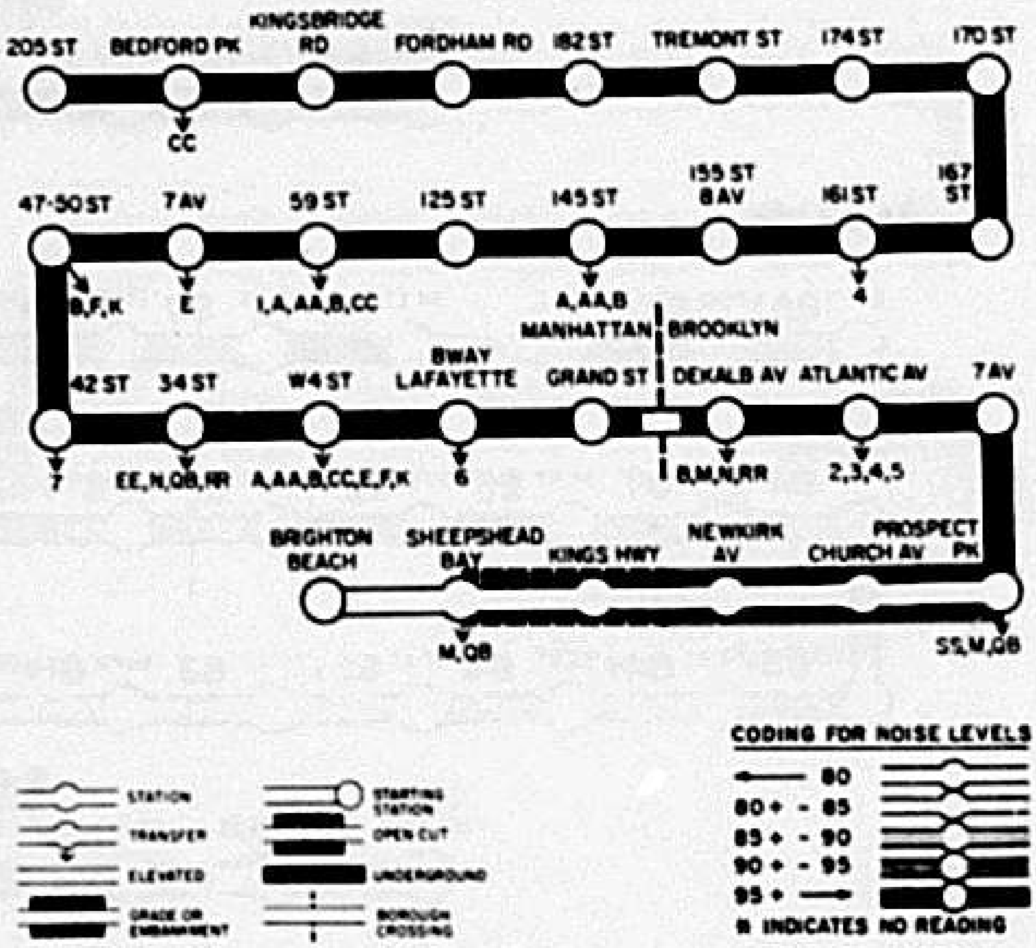
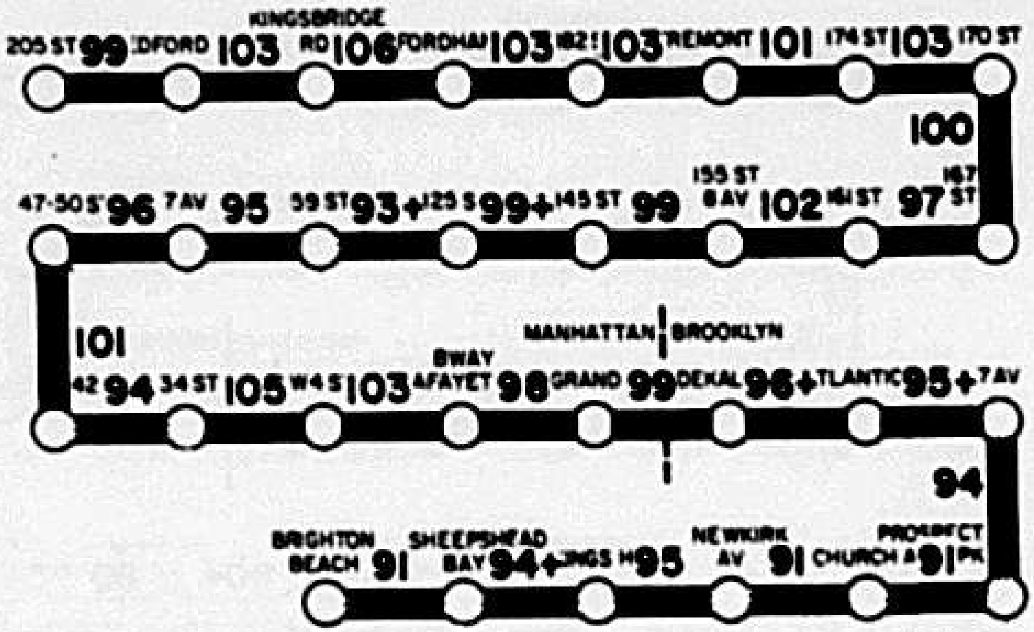


FIGURE C.3.A

Description of the D Route from Terminal to Terminal

R-32 →



R-32 ←

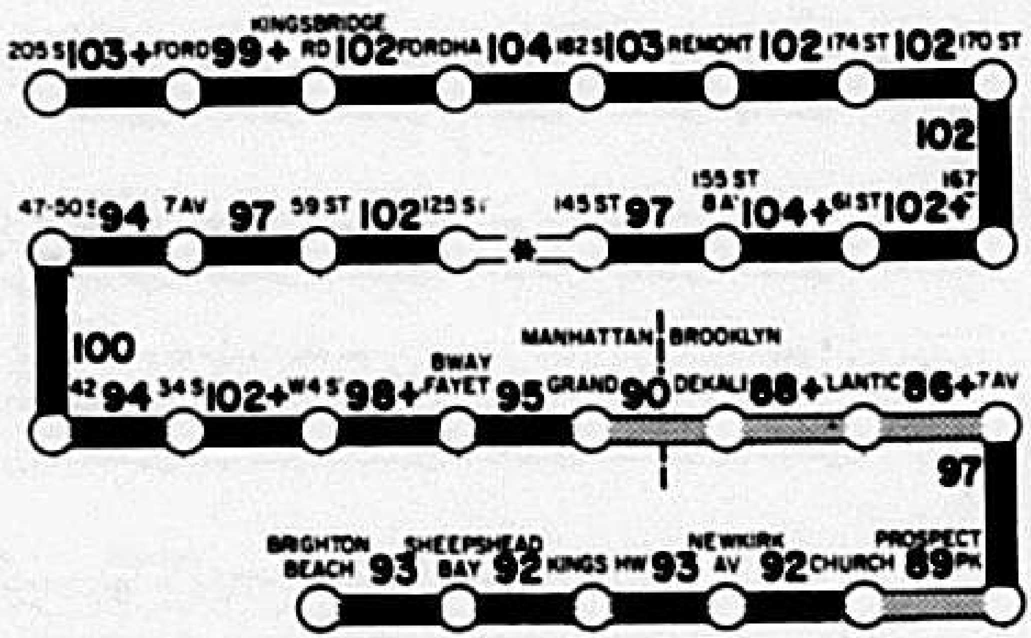


FIGURE C.3.B

Description of the D Route from/to 205 St. to/from Brighton Beach on the R-32

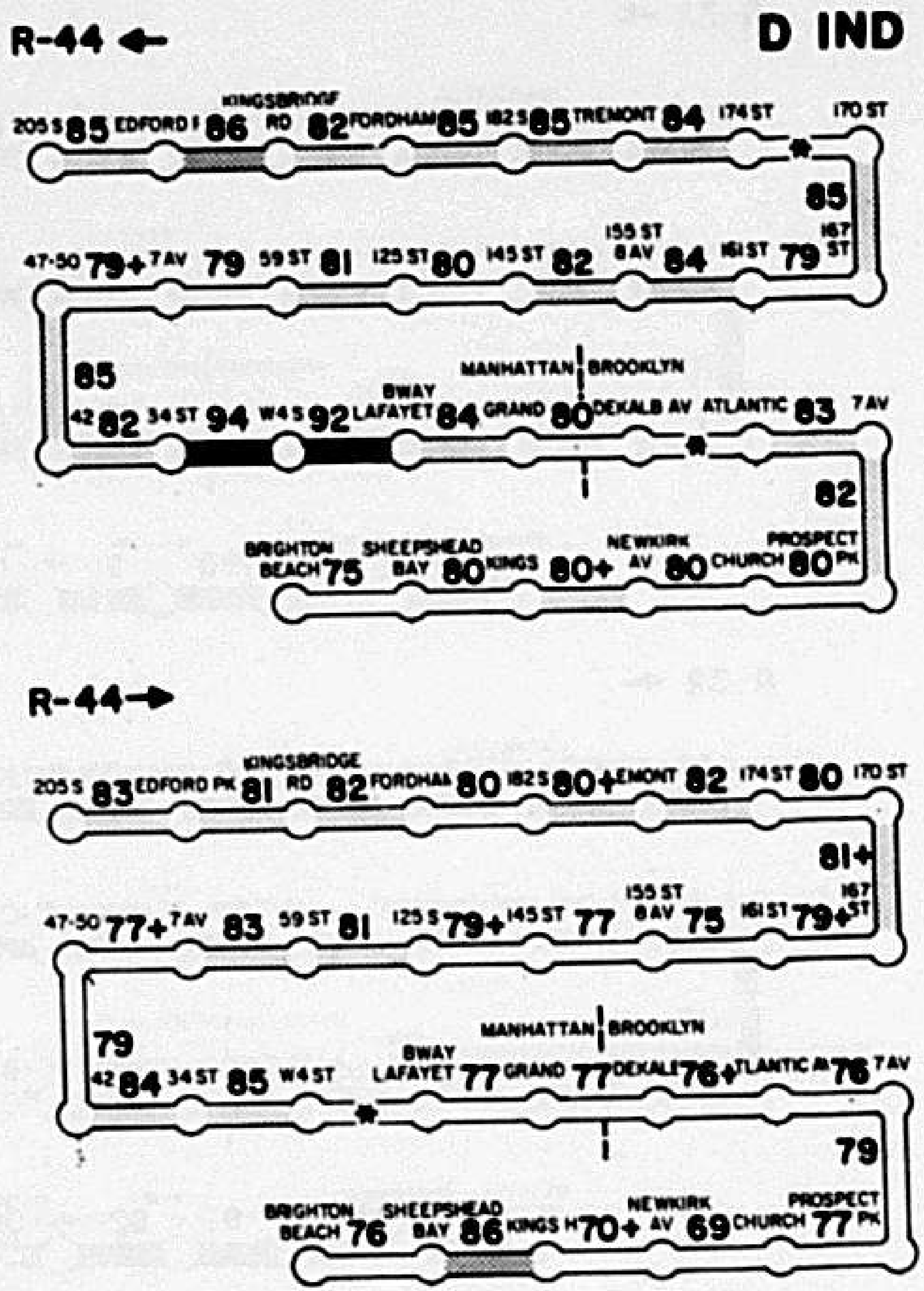
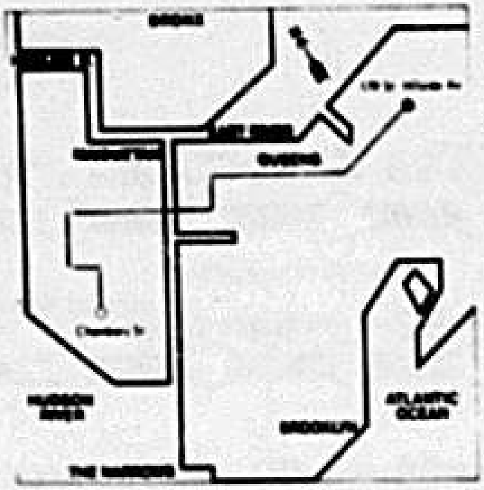


FIGURE C.3.C

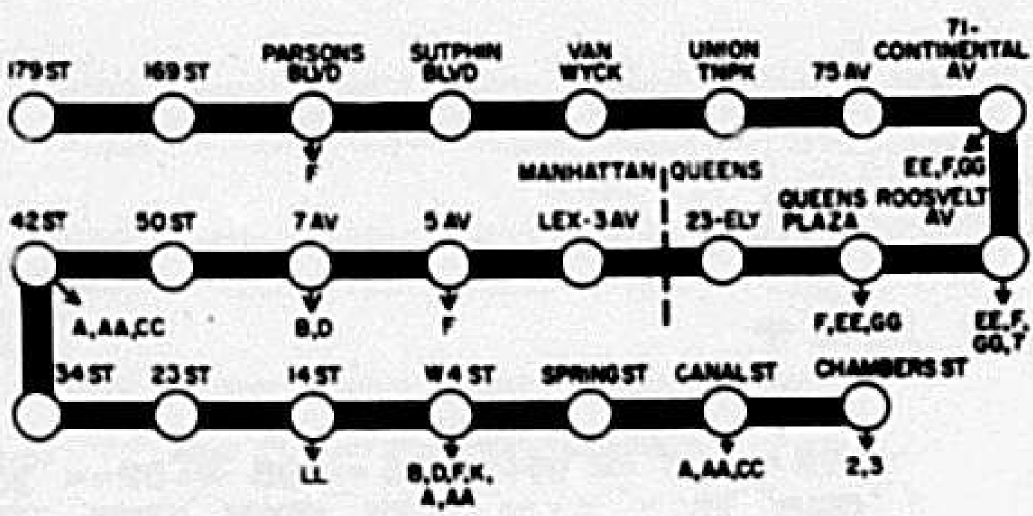
Description of the D Route from/to 205 St. to/from Brighton Beach on tne R-44



E IND

R-40 179 St to Chambers St
Chambers St to 179 St

R-40M 179 St to Chambers St
Chambers St to 179 St



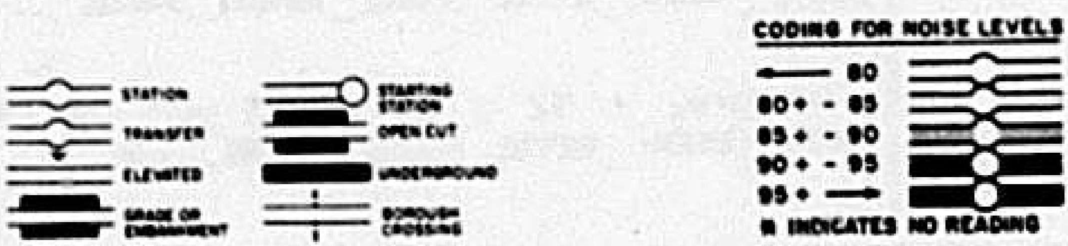
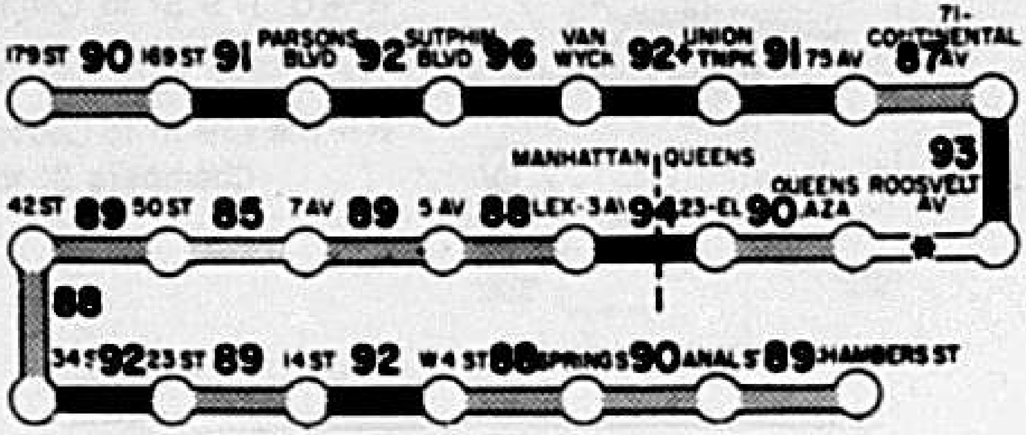


FIGURE C.4.A

Description of the E Route from Terminal to Terminal

R-40 →



R-40 ←

FIGURE C.4.B

Description of the E Route from/to 179 St. to/from Chambers St. on the R-40

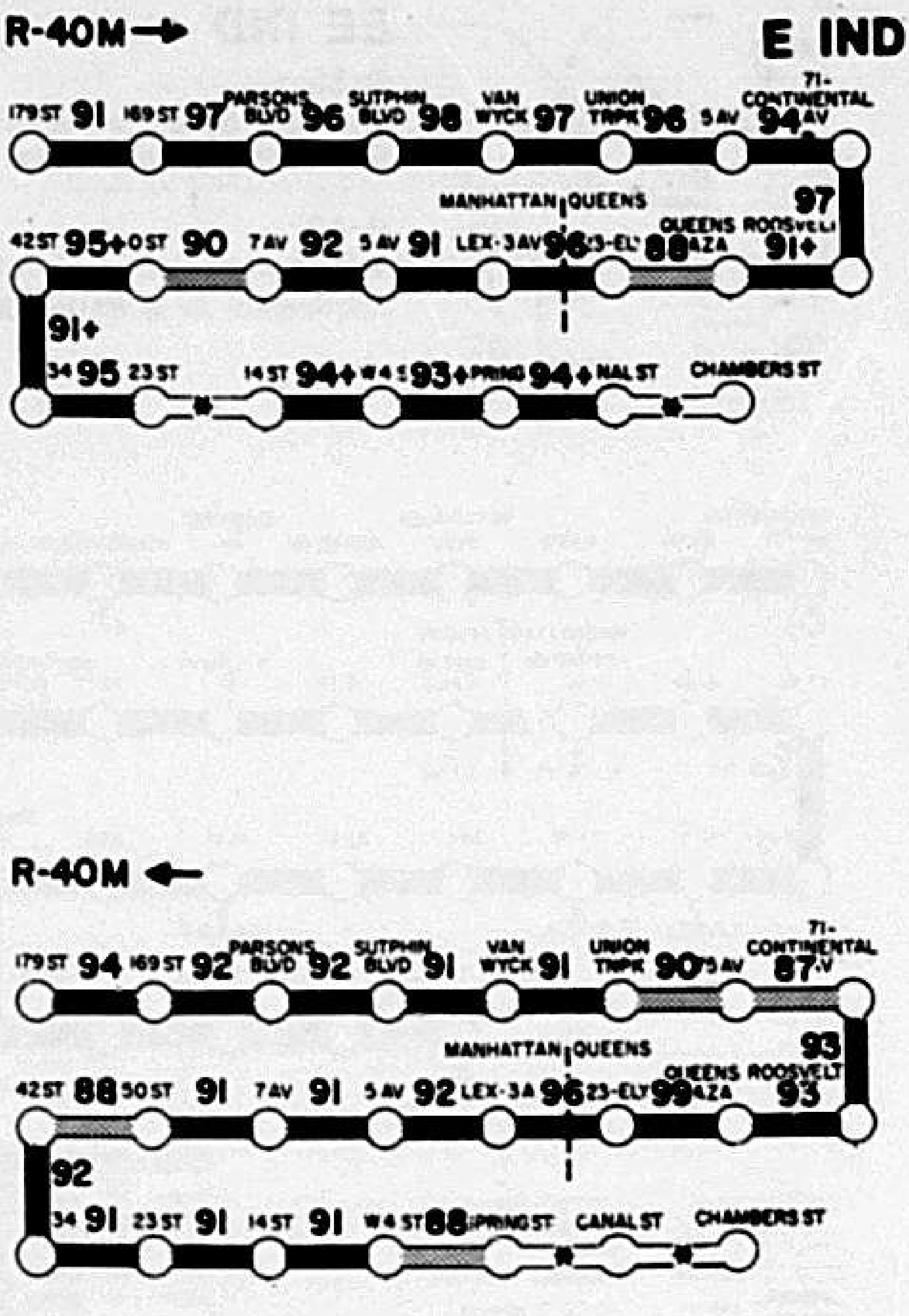
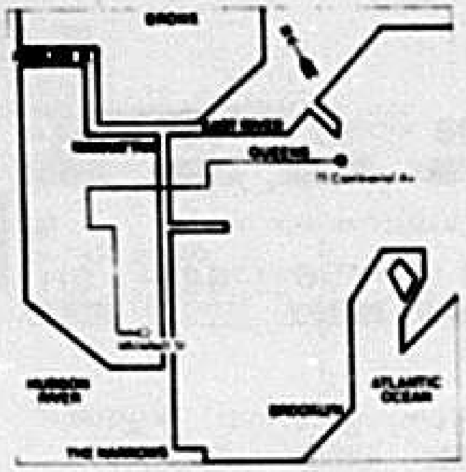


FIGURE C.4.C

Description of th~ E Route from/to 179 St. to/from Chambers St. on the R-40M



EE IND

R-38
Whitehall St to Continental Av
Continental Av to Whitehall St

R-40
Whitehall St to Continental Av
Continental Av to Whitehall St

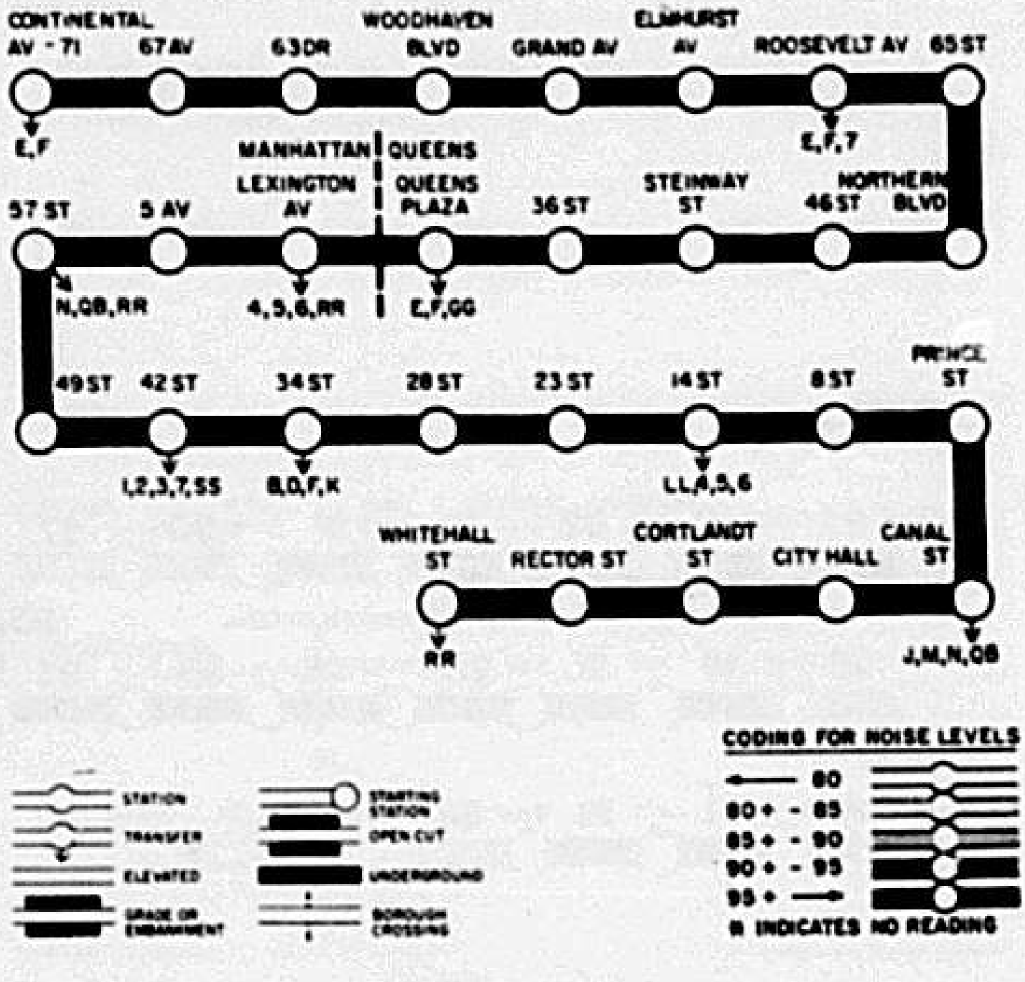
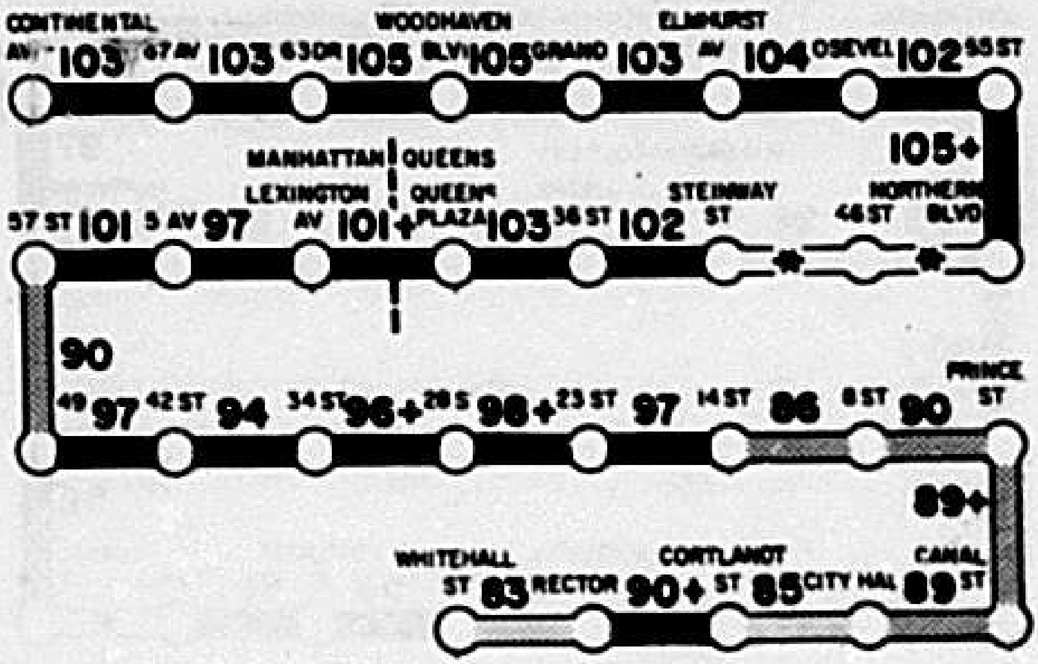


FIGURE C.5.A

Description of the EE Route from Terminal to Terminal

R-38 ←



R-38 →

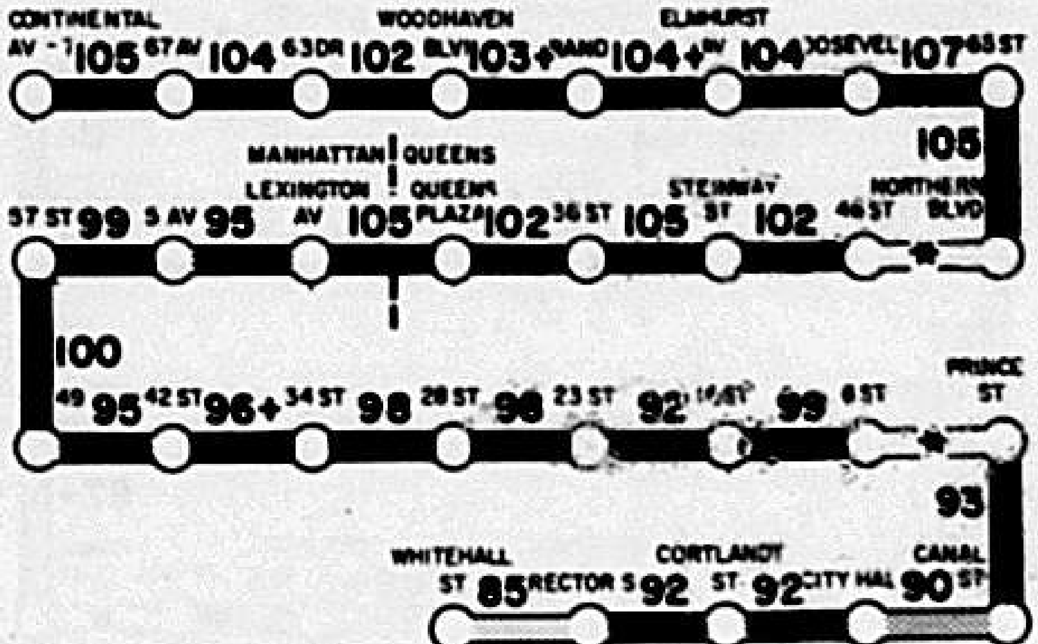


FIGURE C.5.P

Description of the EE Route from/to Continental Ave. to/from Whitehall St. on the R-38

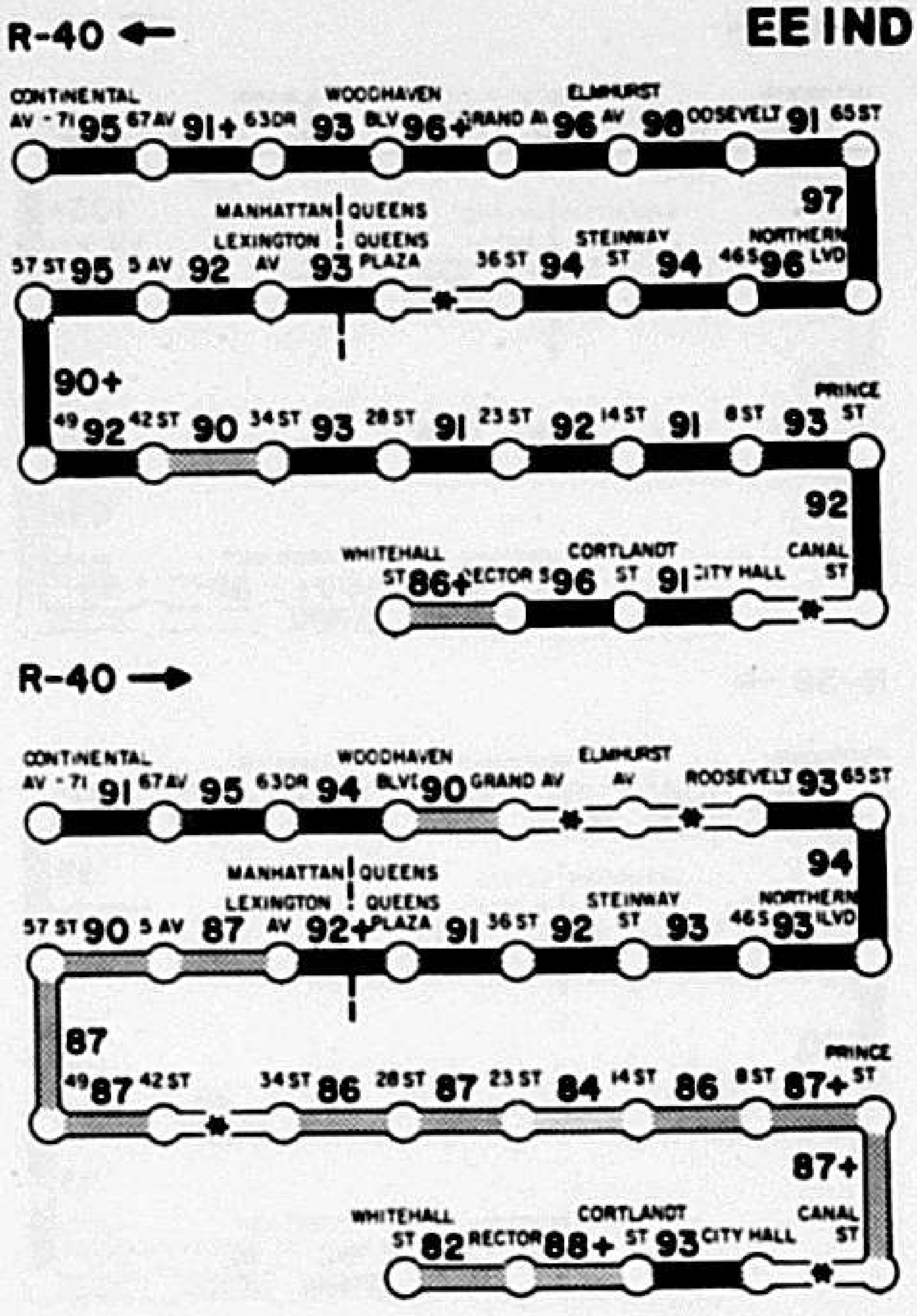
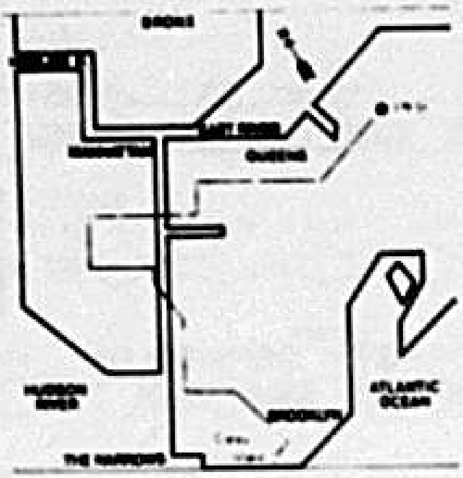


FIGURE C.5.C

Description of the EE Route from/to Continental Ave. to/from Whitehall St. on the R-40



F IND

R-40 Coney Island to 179 St
179 St to Coney Island

R-44 179 St to Coney Island
Coney Island to 179 St

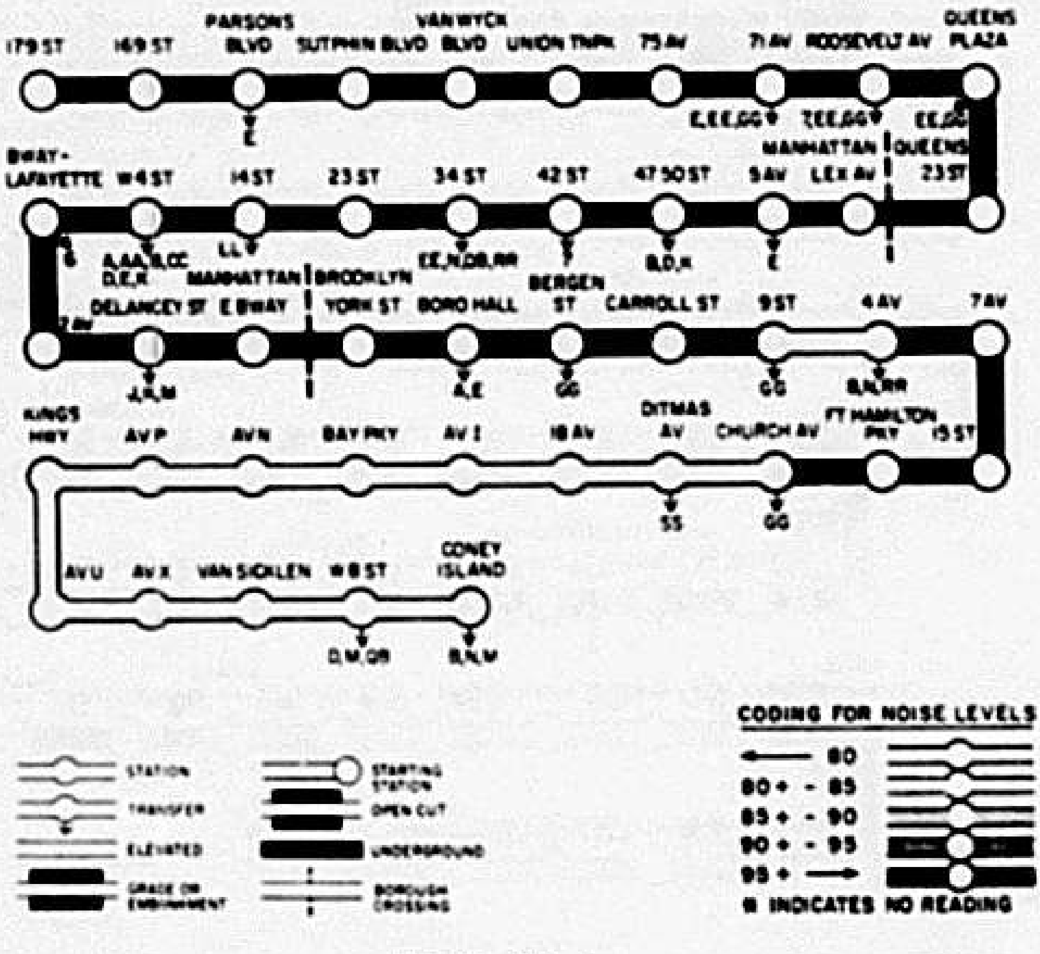


FIGURE C.6.A

Description of the F Route from Terminal to Terminal

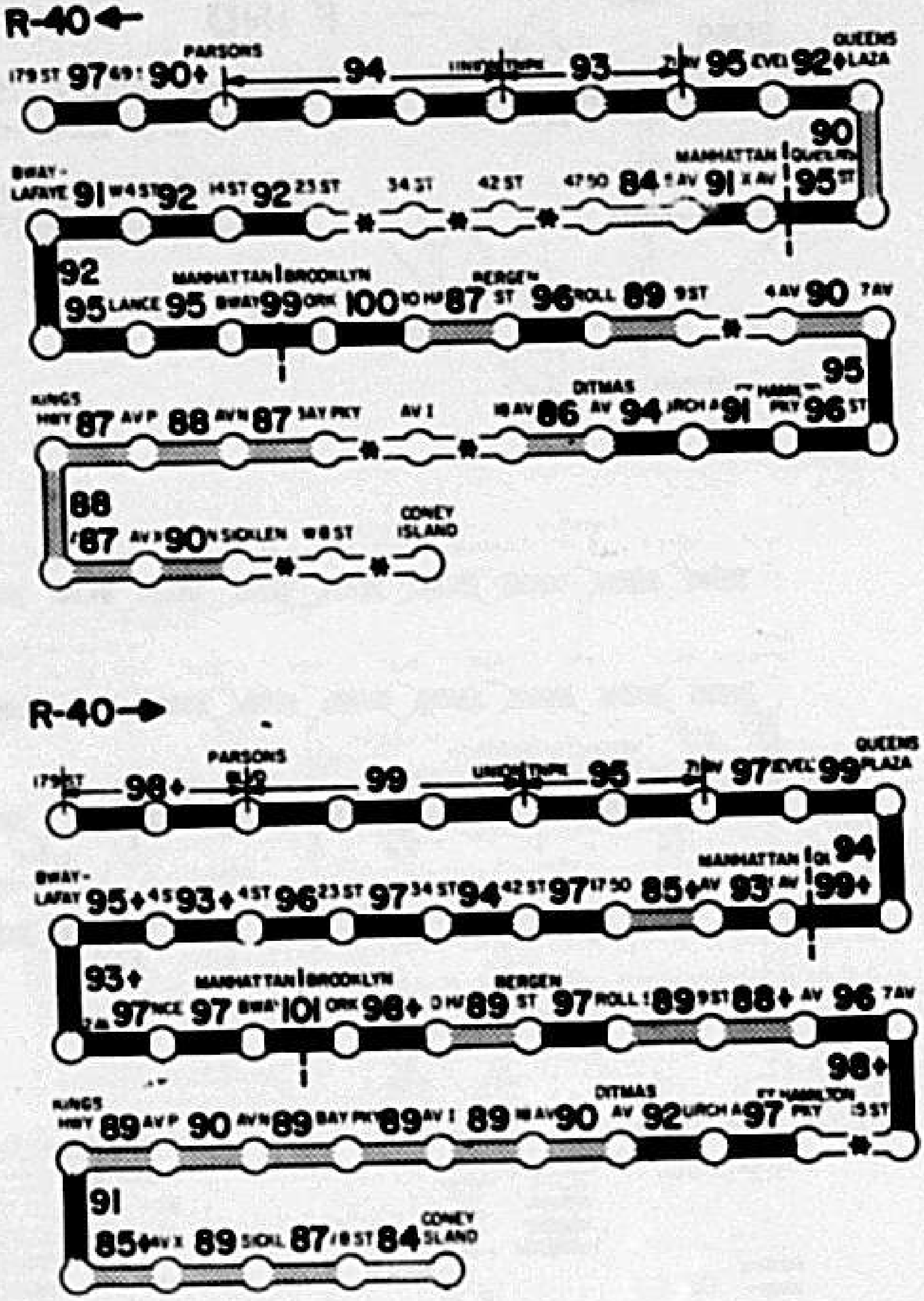
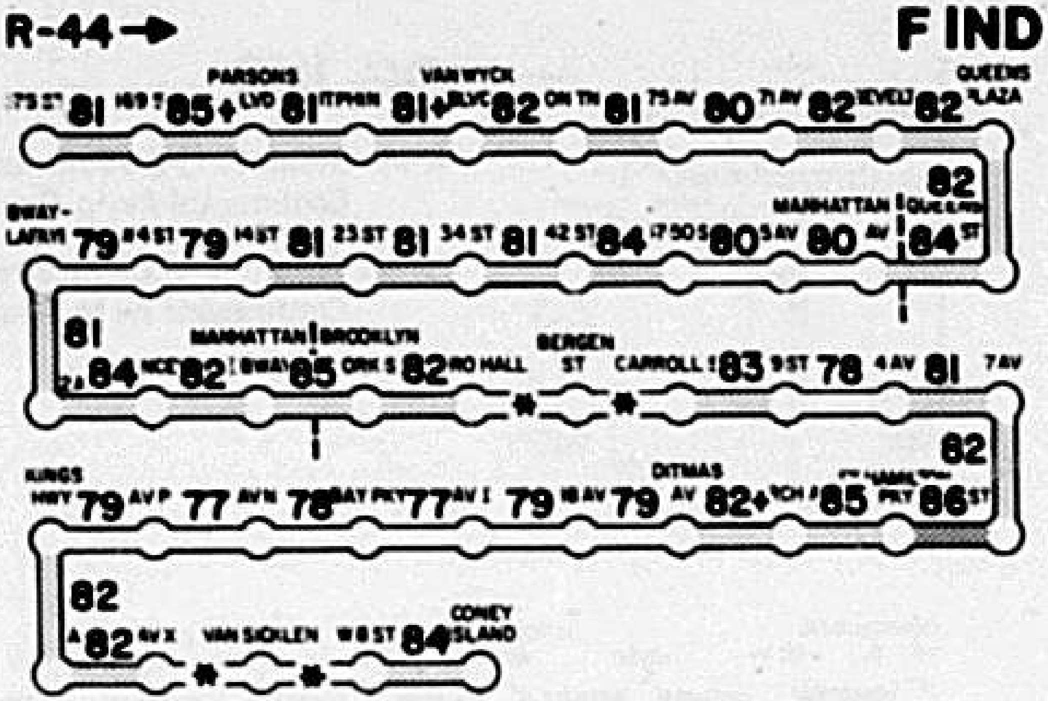


FIGURE C.6.B

Description of the F Route from/to 179 St. to/from Coney Island on the R-40



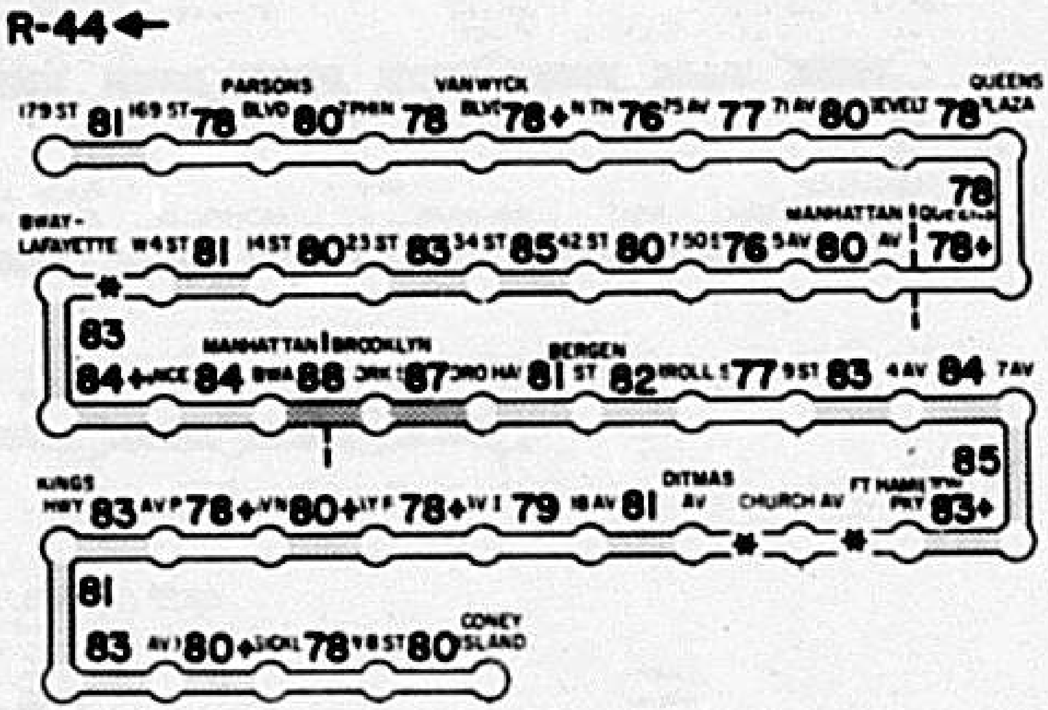
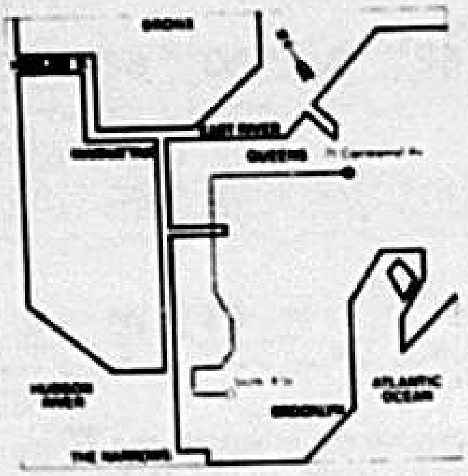


FIGURE C.6.C

Description of the F Route from/to 179 St. to/from Coney Island on the R-44



GG IND

R-16 Smith St to Continental Av
Continental Av to Smith St

R-40 Smith St to Continental Av
Continental Av to Smith St

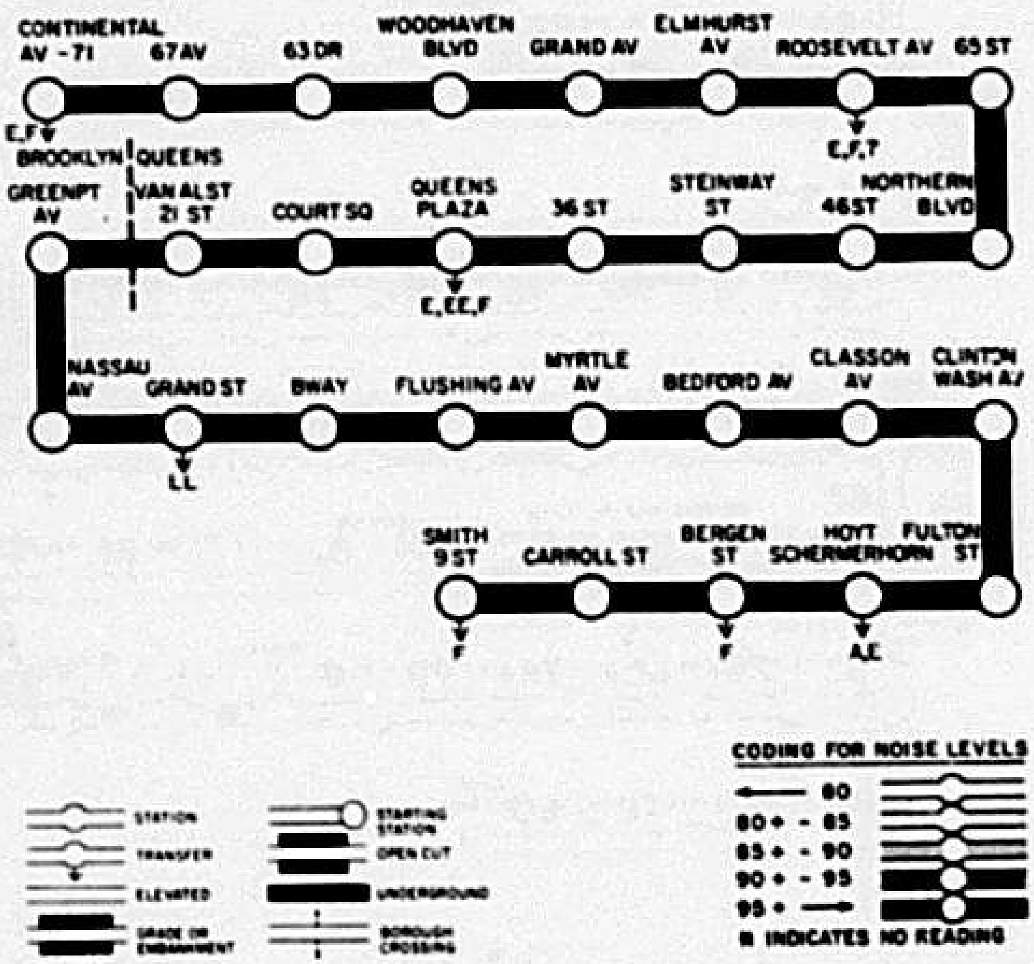


FIGURE C.7.A

Description of the GG Route from Terminal to Terminal

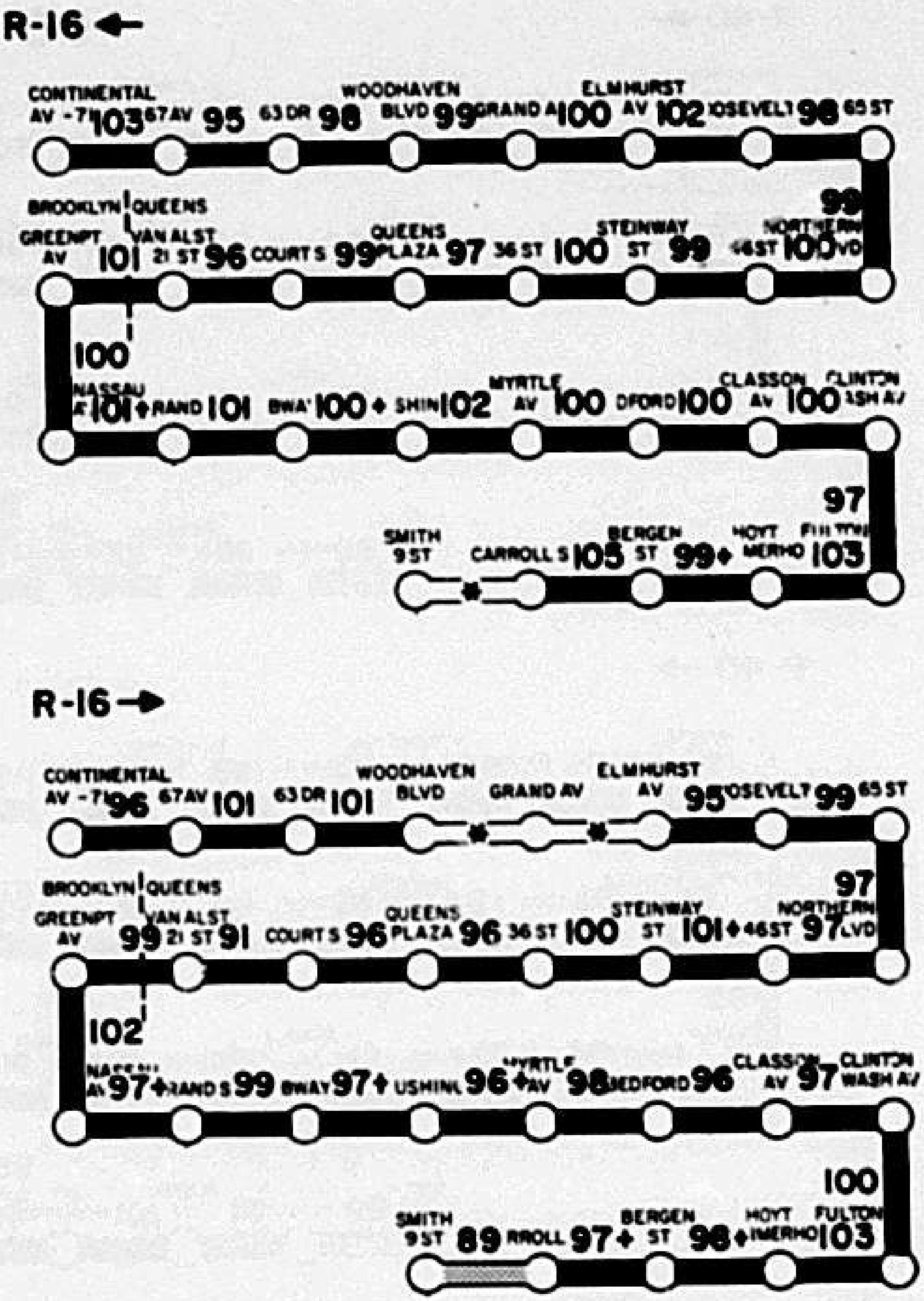


FIGURE C.7.8

Description of the GG Route from/to Continental Ave. to/from Smith-9 St. on the R-16

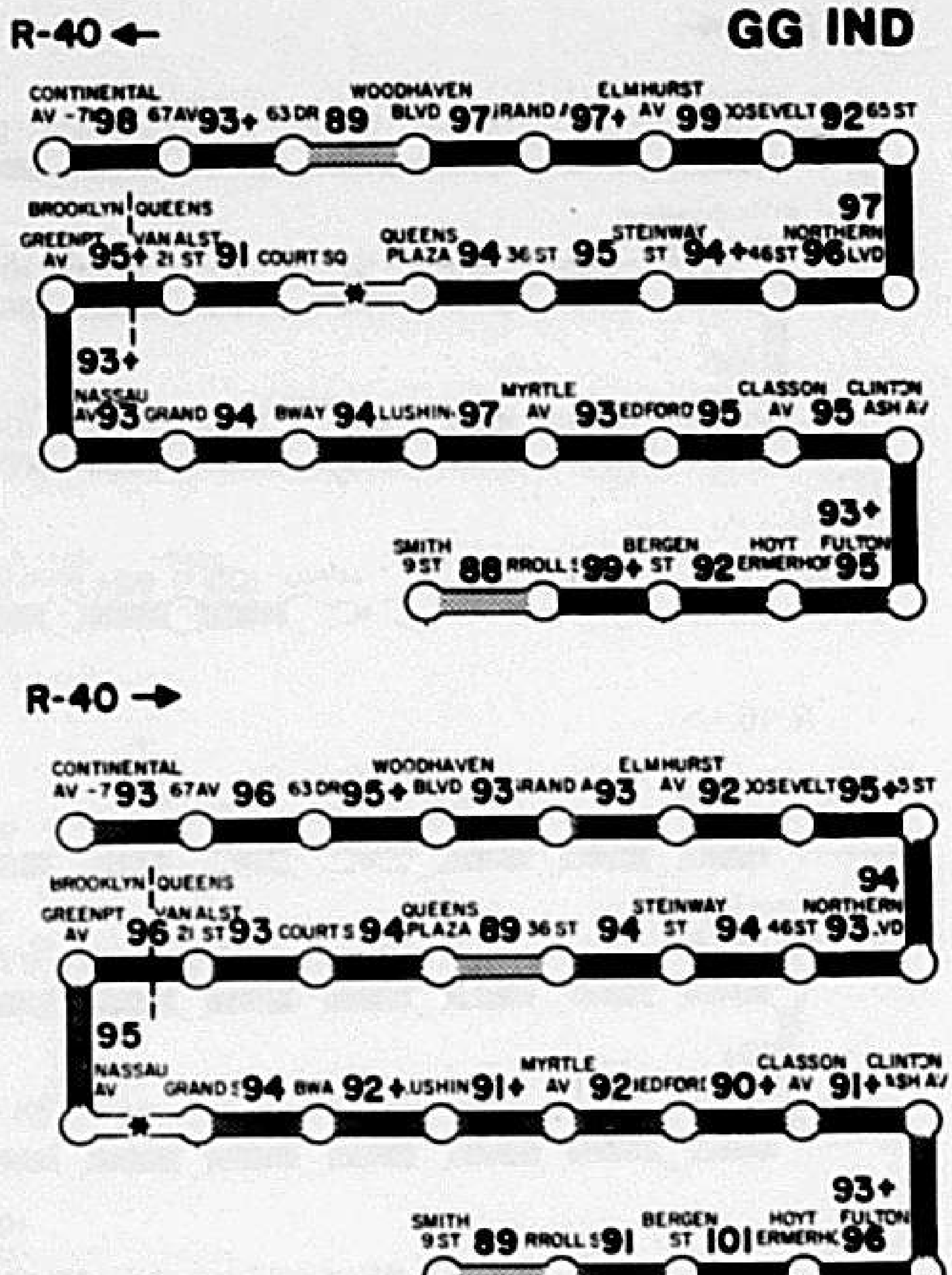
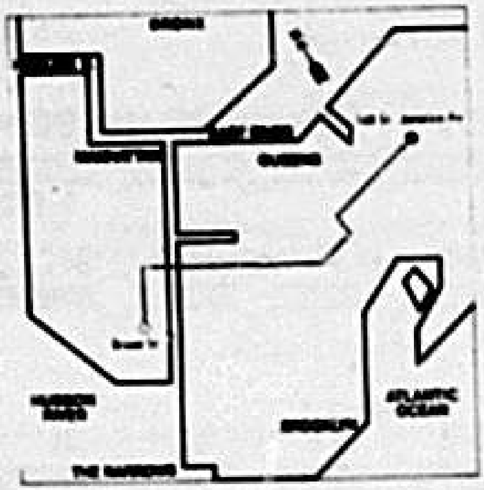


FIGURE C.7.C

Description of the GG Route from/to Continental Ave. to/from Smith - 9 St. on the R-40



J BMT

R-27 Broad St to 168 St
168 St to Broad St

R-42 Broad St to 168 St
168 St to Broad St

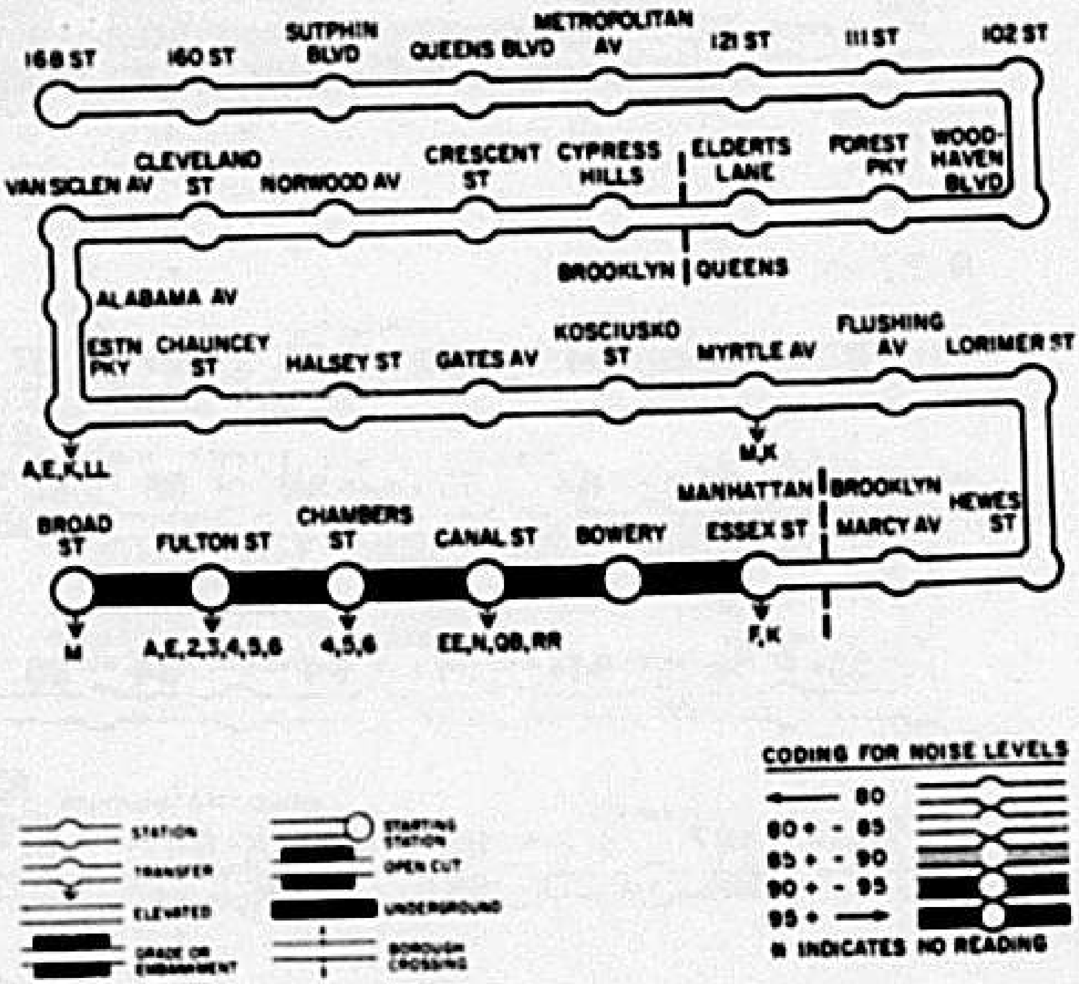
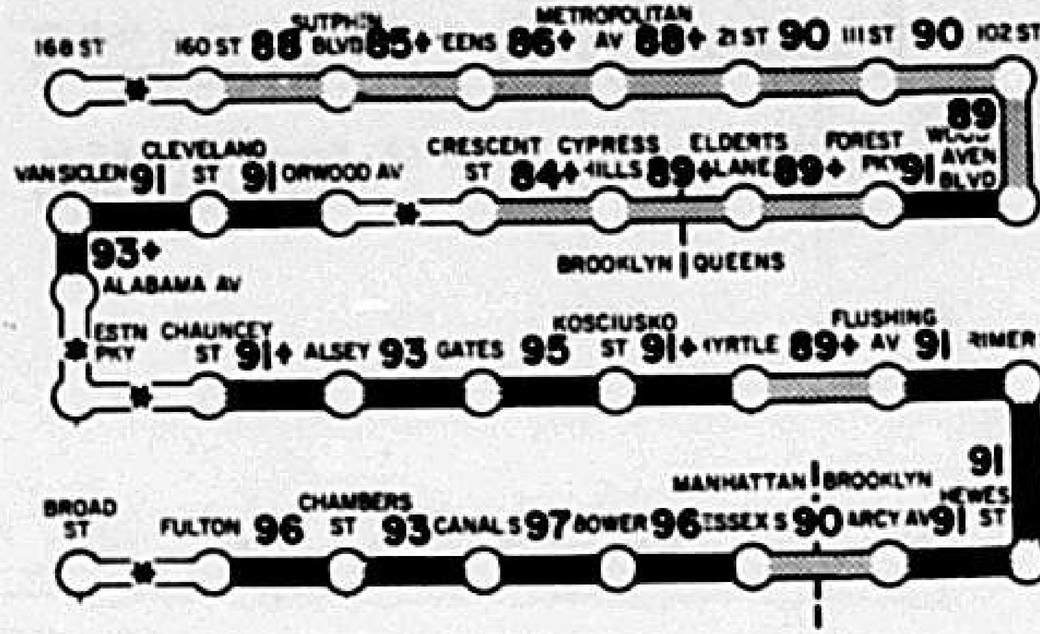


FIGURE C.8.A

Description of the J Route from Terminal to Terminal

R-27 ←



R-27 →

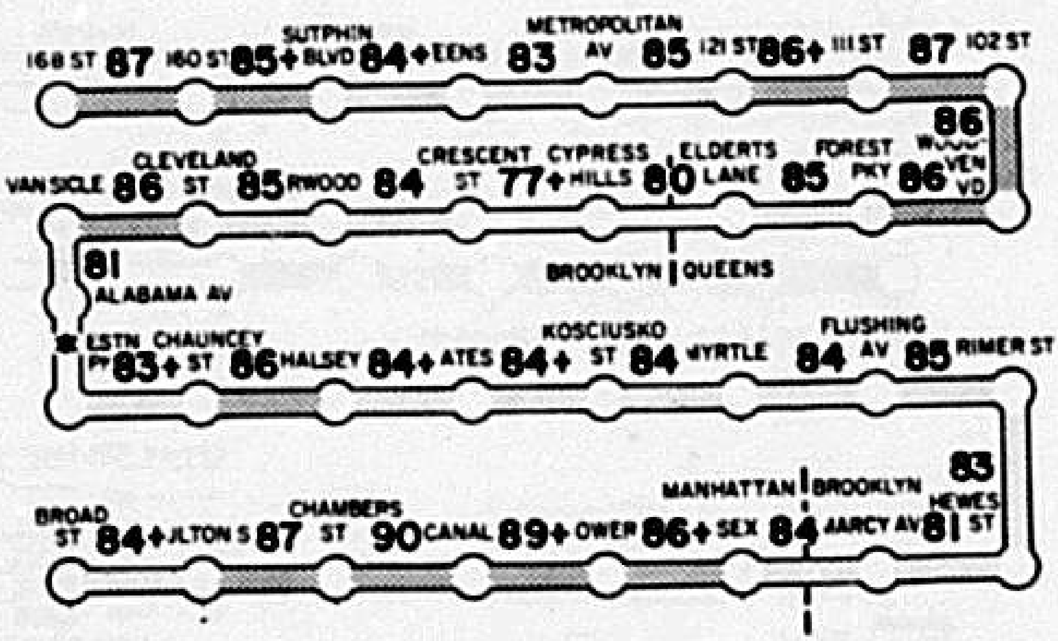


FIGURE C.8.6

Description of the J Route from/to 168 St. to/from Broad St. on the R-27

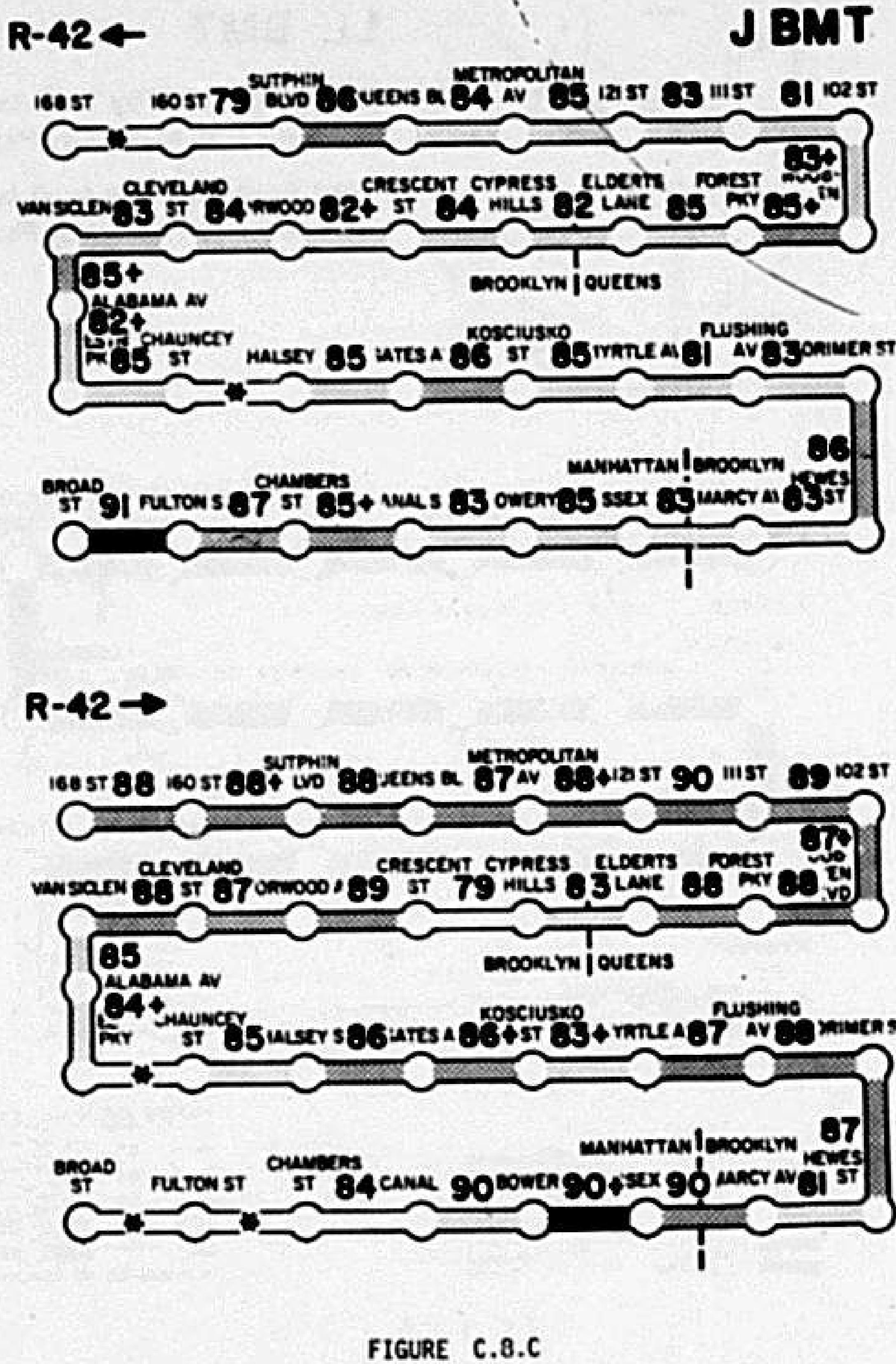
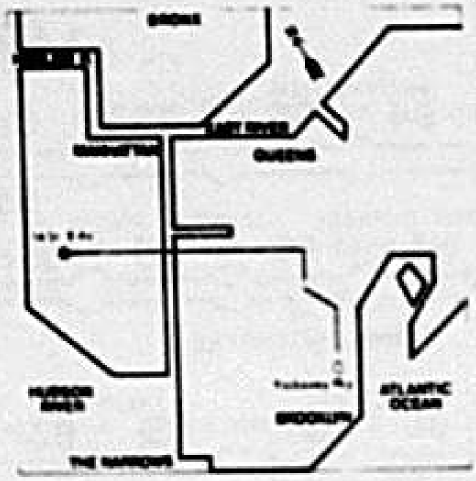


FIGURE C.8.C

Description of the J Route from/to 168 St. to/from Broad St. on the R-42



LL BMT

R-9 Rockaway Pky to 8 Av
8 Av to Rockaway Pky

R-42 Rockaway Pky to 8 Av
8 Av to Rockaway Pky

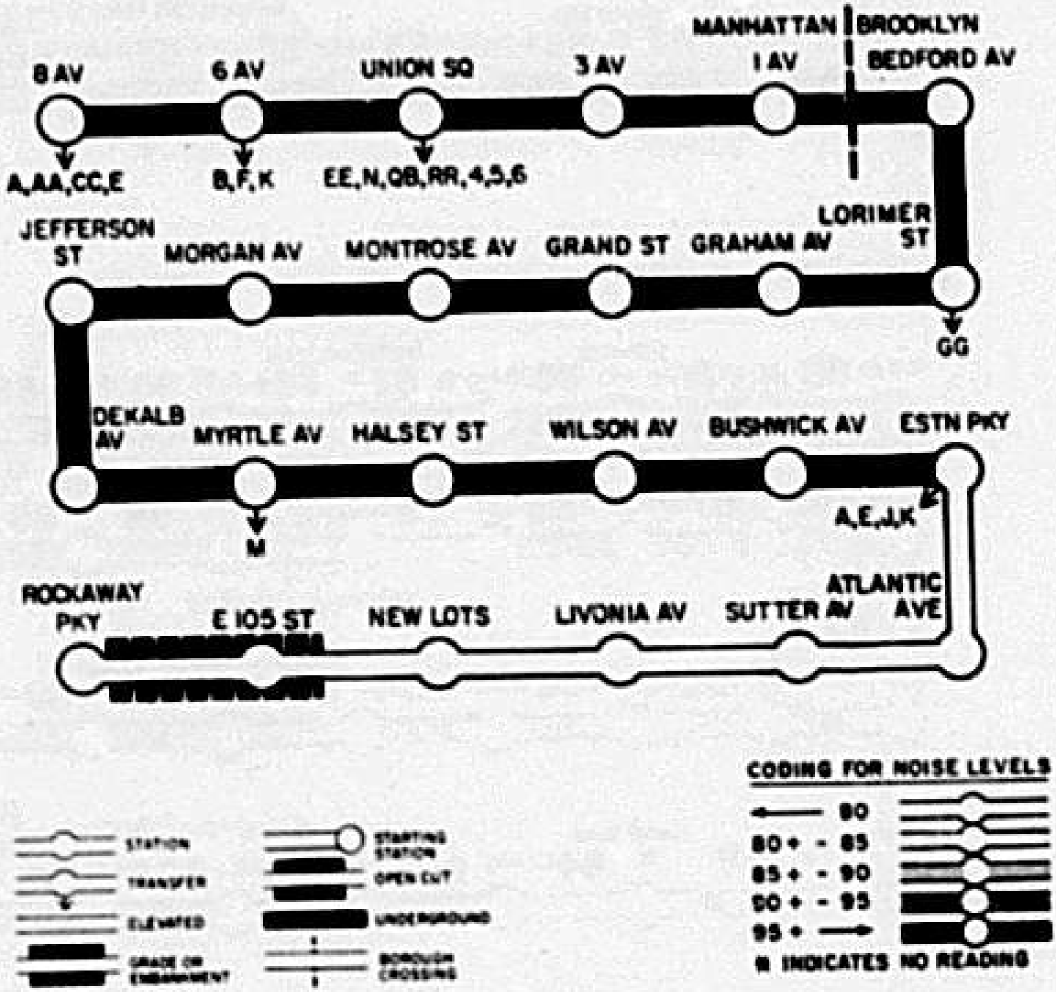


FIGURE C.9.A

Description of the LL Route from Terminal to Terminal

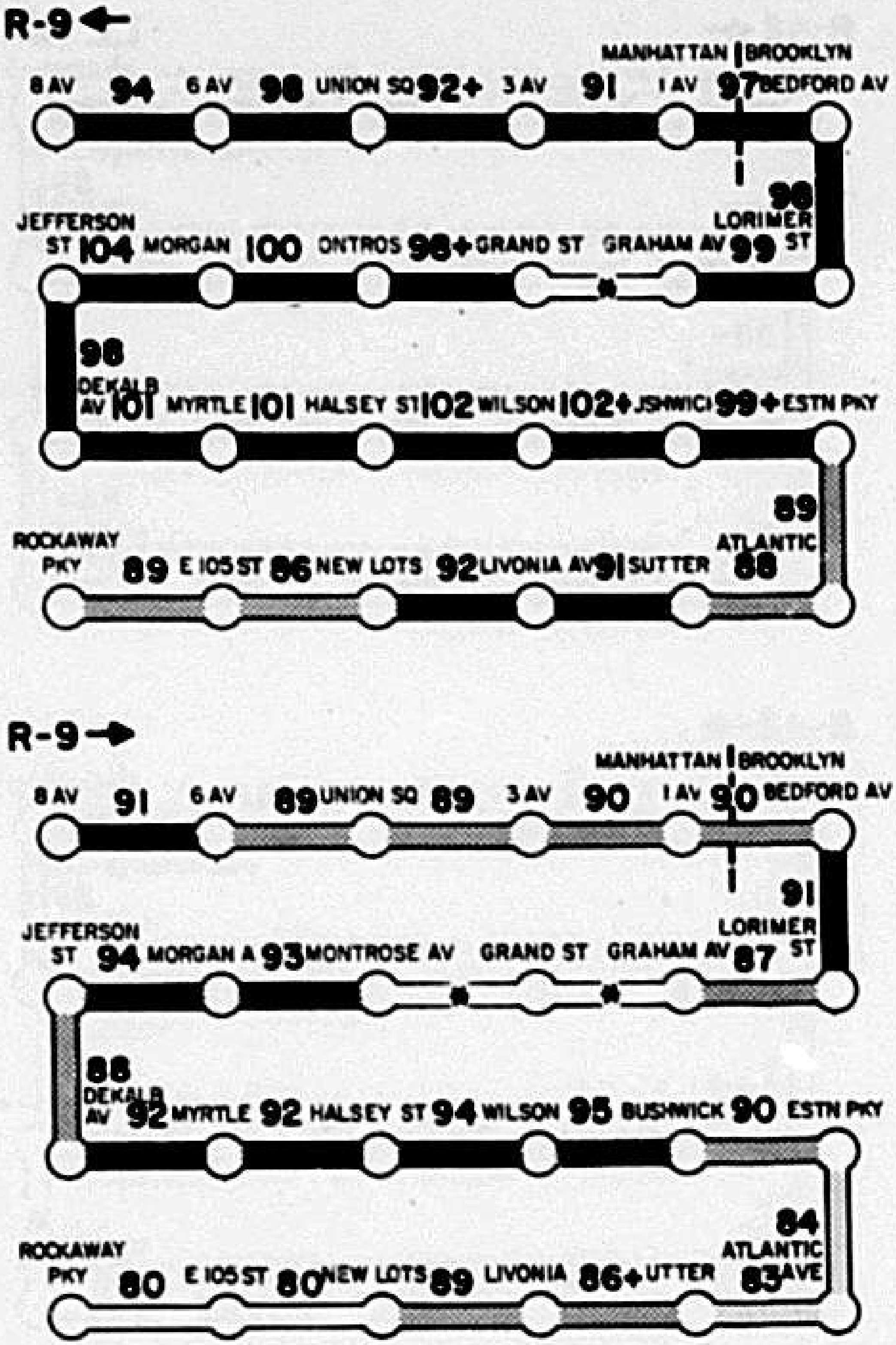


FIGURE C.9.B

Description of the LL Route from/to 8 Ave. to/from
Rockaway Pkwy. on the R-9

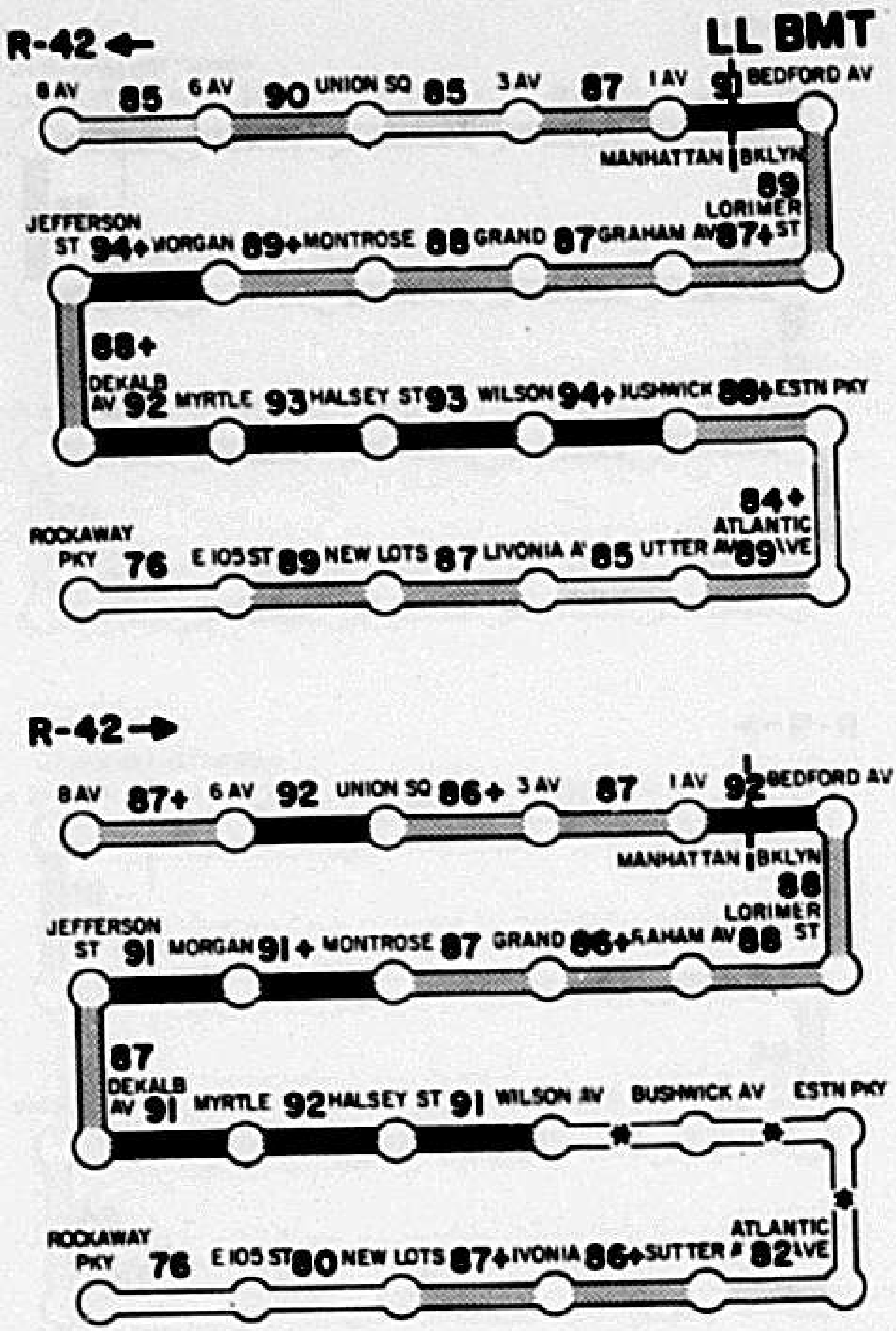
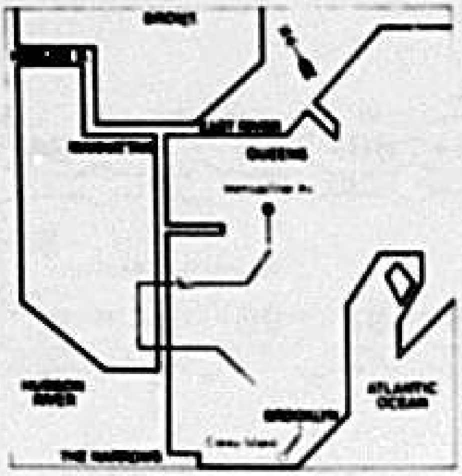


FIGURE C.9.C

Description of the LL Route from/to 8 Ave. to/from Rockaway Pkwy. on the R-42



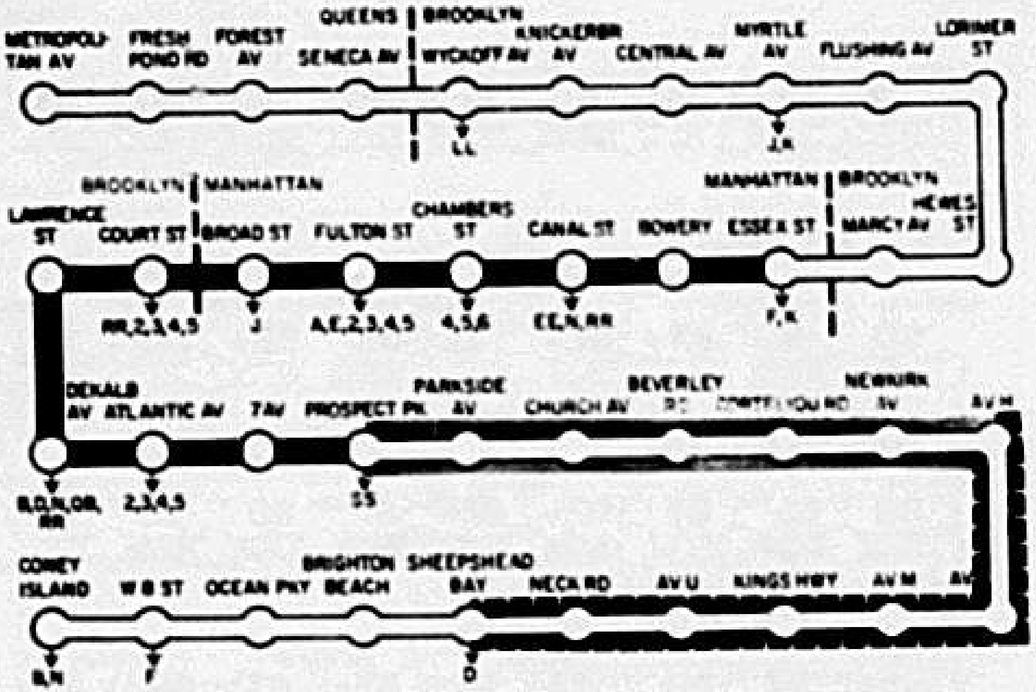
M BMT

R-27-30

Coney Island to Metropolitan Av
Metropolitan Av to Coney Island

R-42

Coney Island to Metropolitan Av
Metropolitan Av to Coney Island



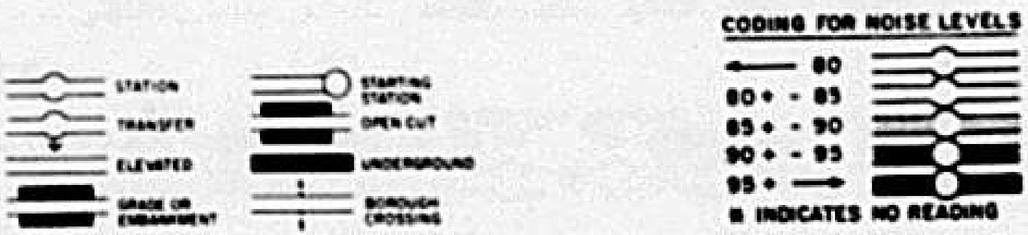
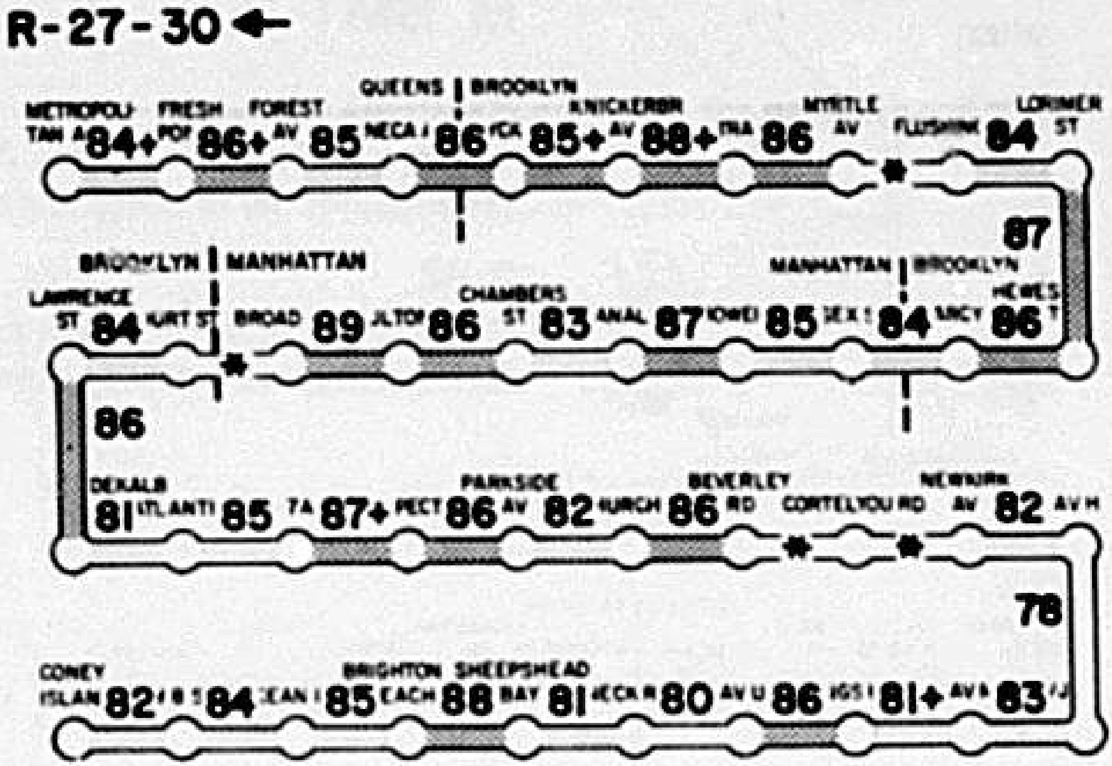


FIGURE C.10.A

Description of the M Route from Terminal to Terminal



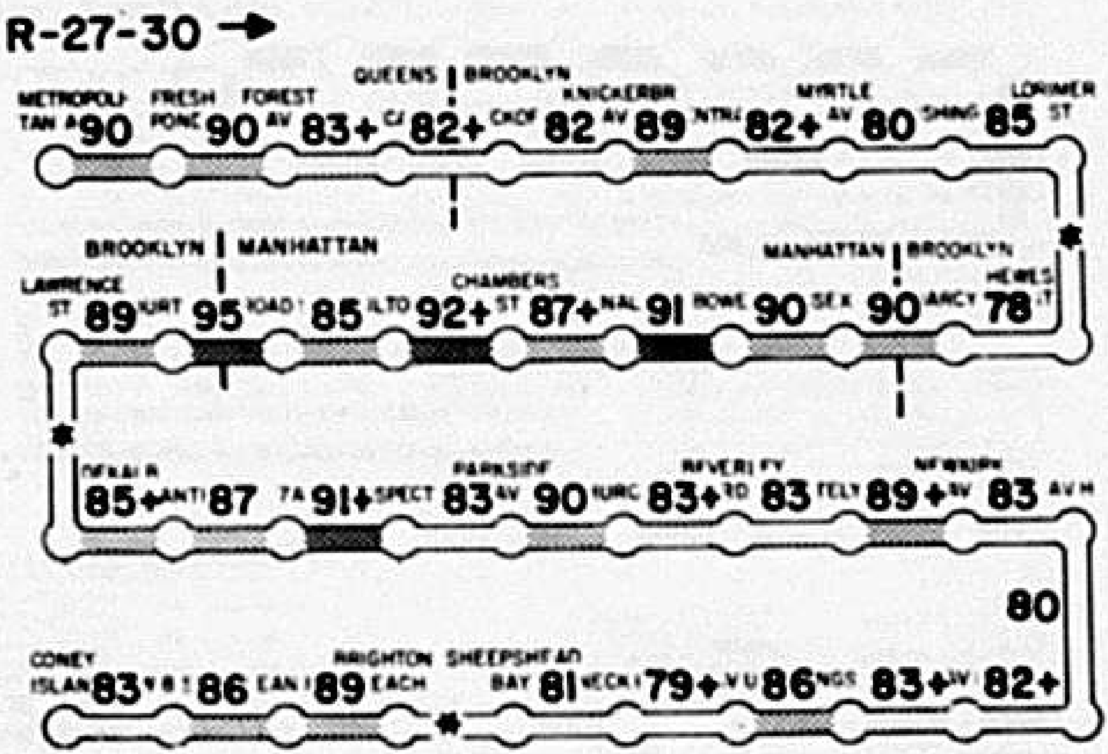


FIGURE C.10.B

Description of the M Route from/to Metropolitan Ave. to/from Coney Island on the R-27

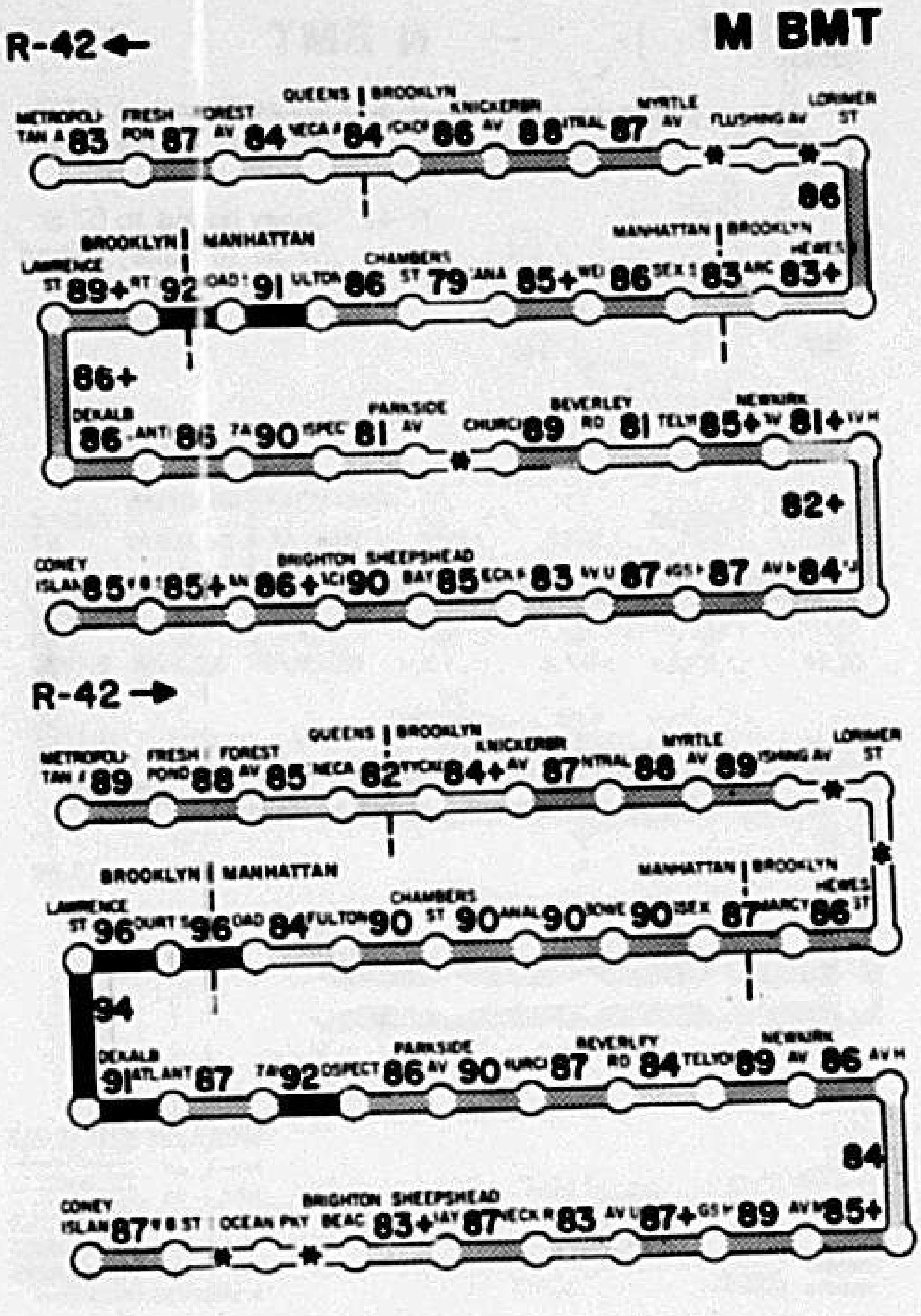
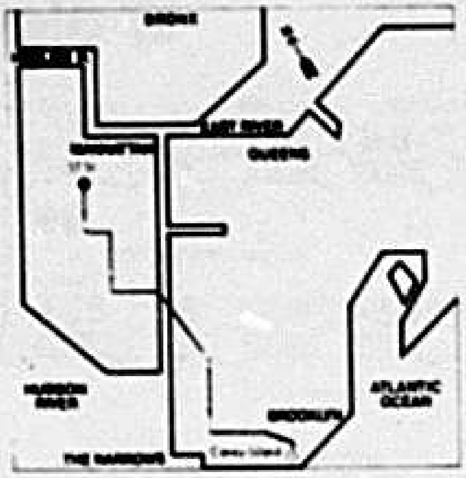


FIGURE C.10.C

Description of the M Route from/to Metropolitan Ave. to/from Coney Island on the R-42



N BMT

R-38 Coney Island to 57 St
57 St to Coney Island

R-42 Coney Island to 57 St
57 St to Coney Island

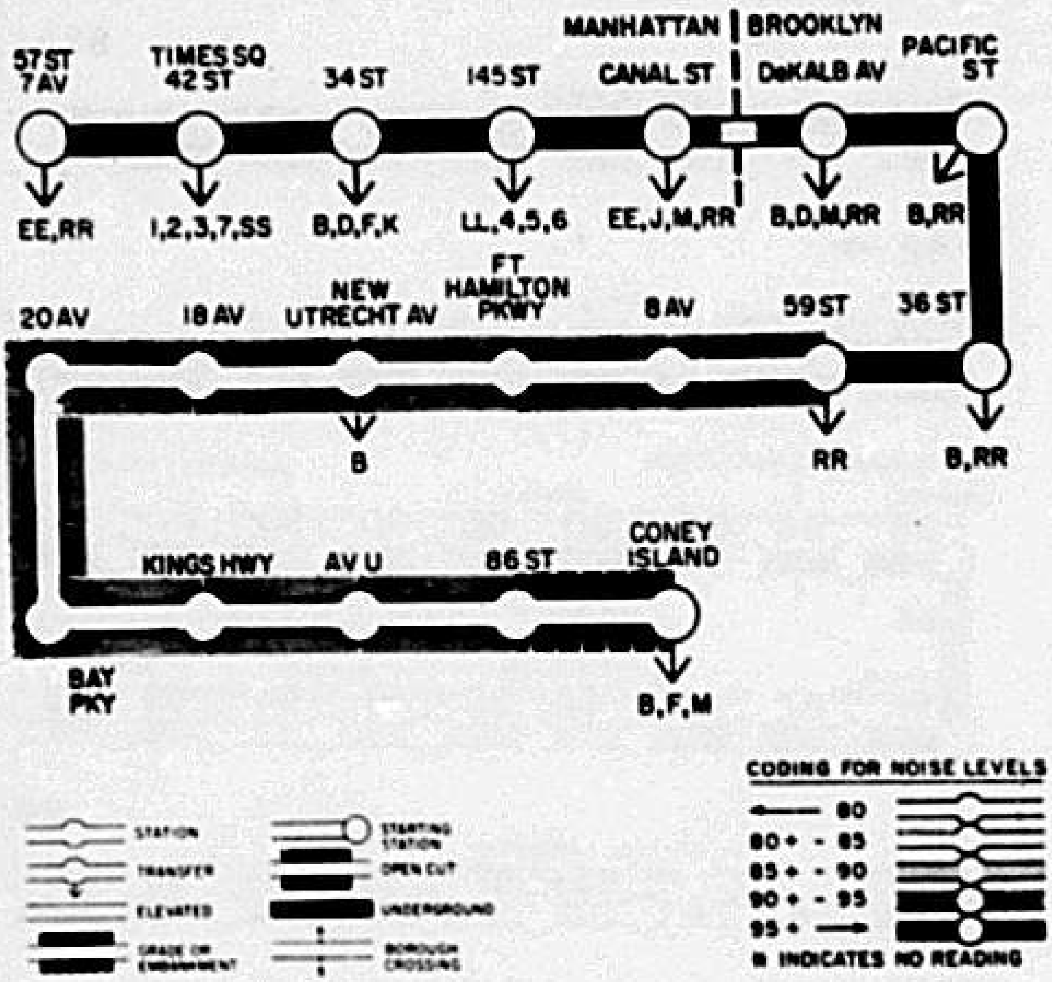


FIGURE C.11.A

Description of the N Route from Terminal to Terminal

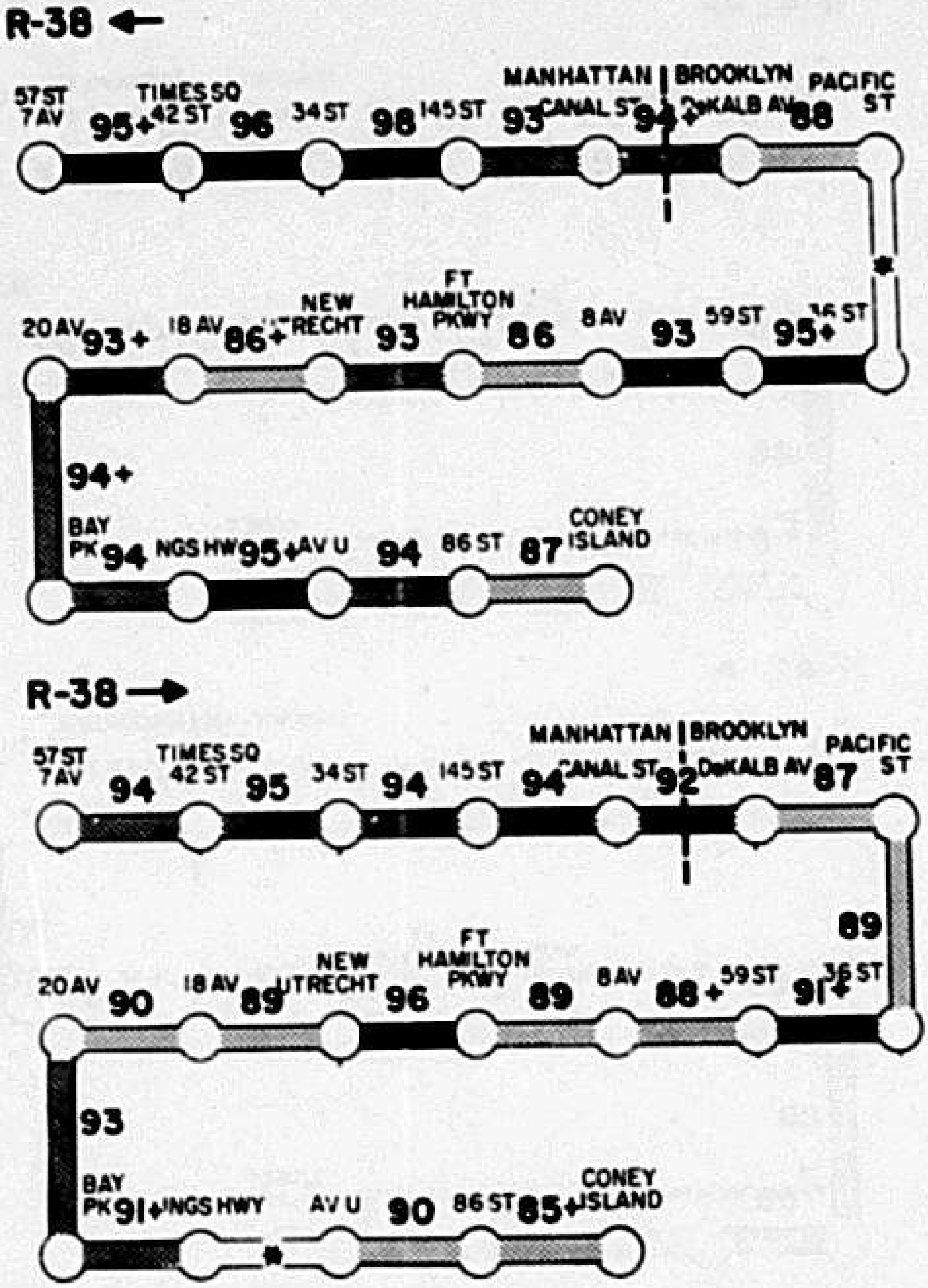


FIGURE C.11.B

Description of the N Route from/to 57 st-7 Ave. to/from Coney Island on the R-38

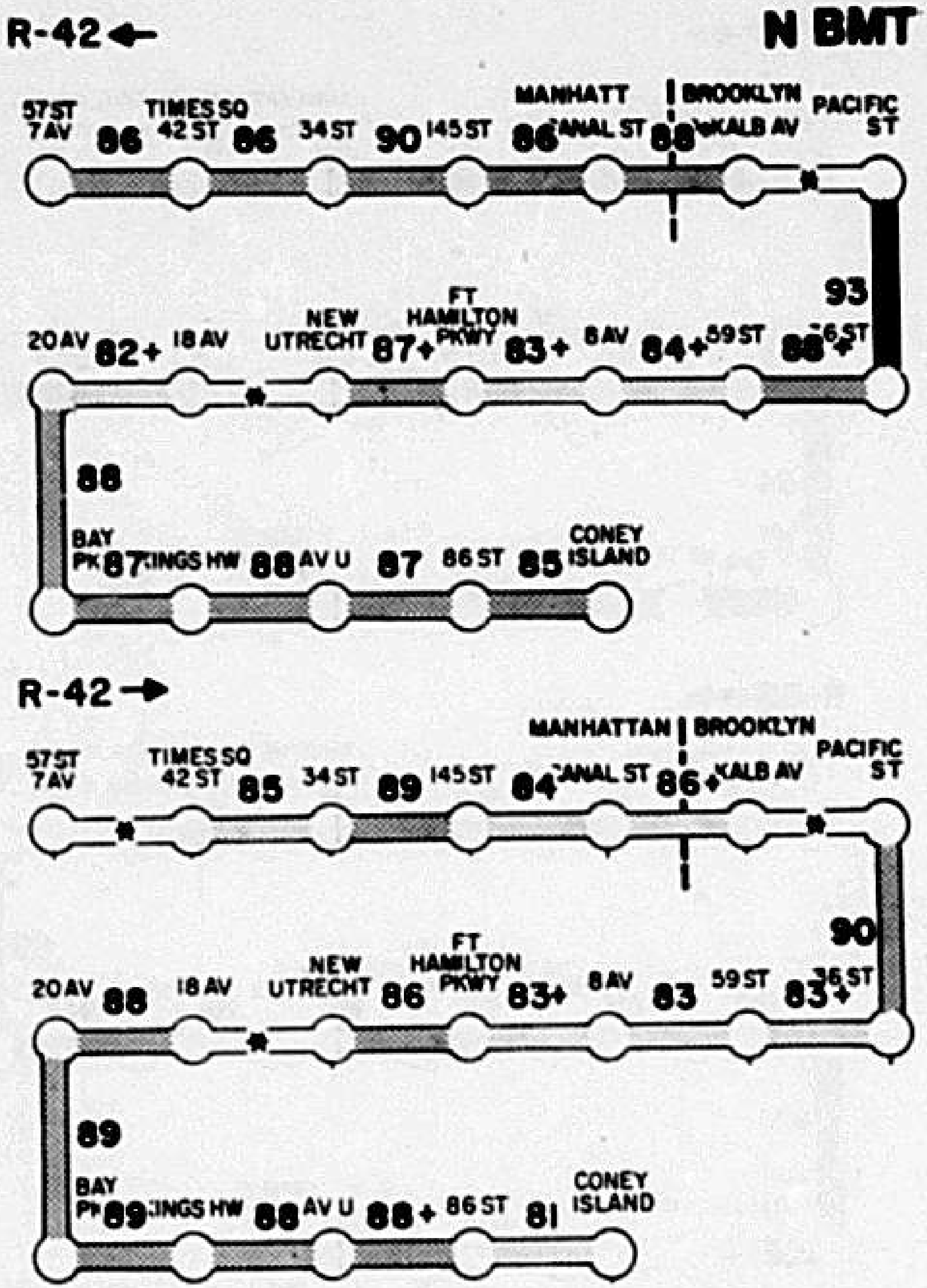
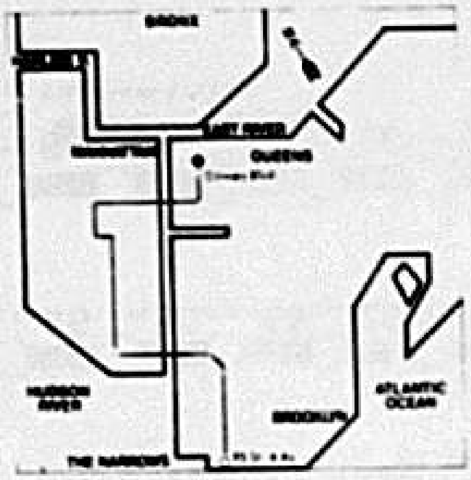


FIGURE C.11.C

Description of the N Route from/to 57 St.-7 Ave. to/from Coney Island on the R-42



RR BMT

R-27-30 95 St to Ditmars Blvd
Ditmars Blvd to 95 St

R-42 95 St to Ditmars Blvd
Ditmars Blvd to 95 St

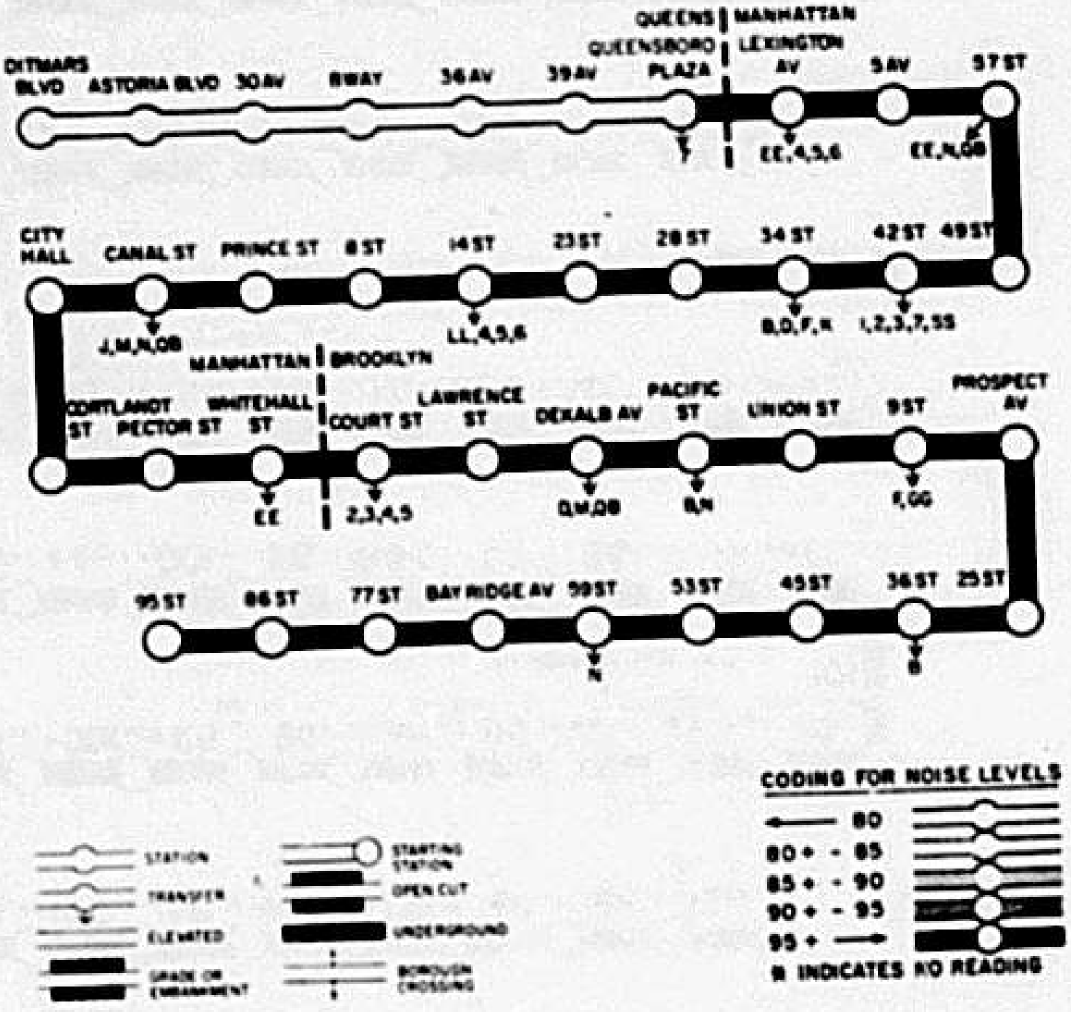
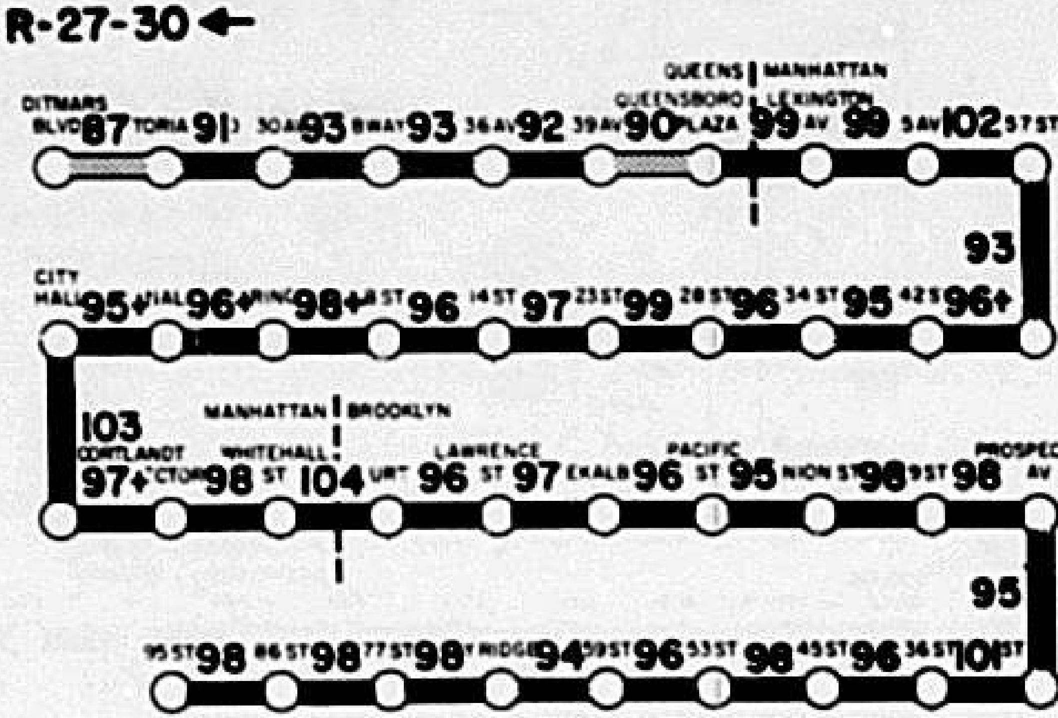


FIGURE C.12.A

Description of the RR Route from Terminal to Terminal



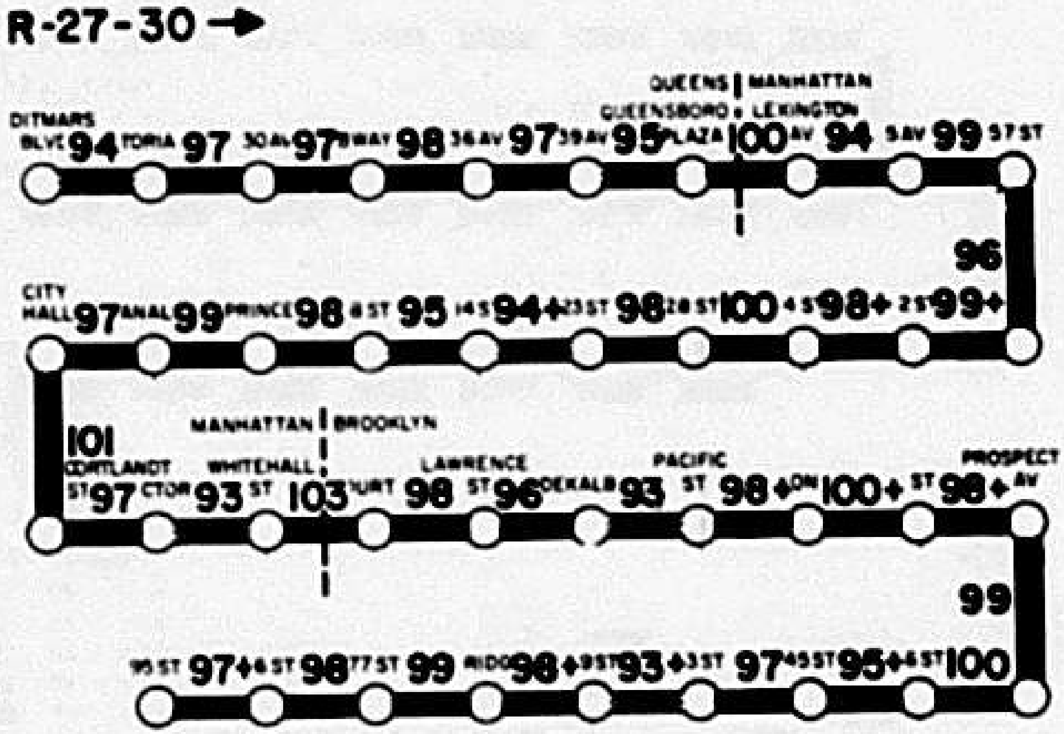


FIGURE C.12.B

Description of the RR Route from/to Ditmars Blvd. to/from 95 St. on the R-27

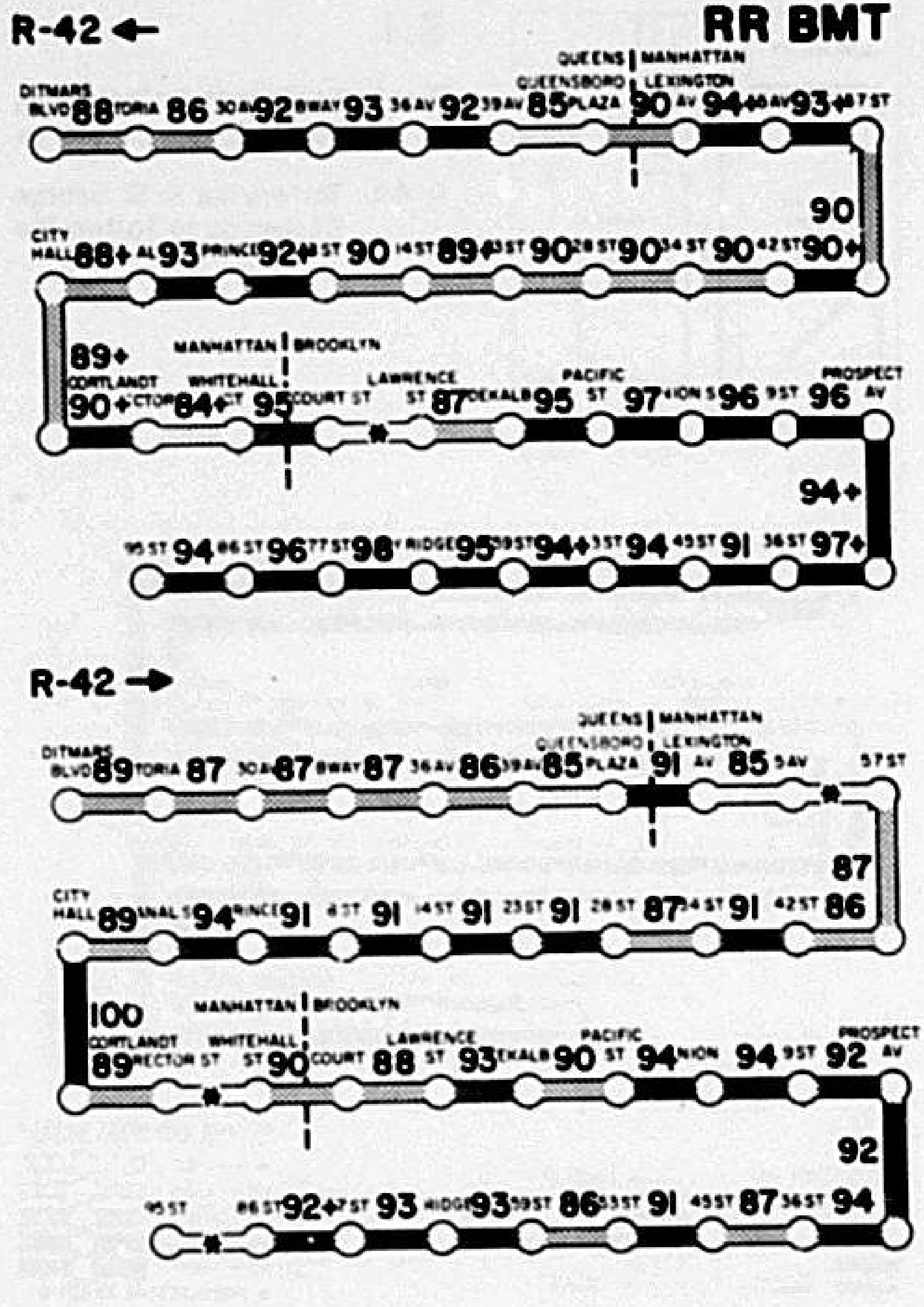
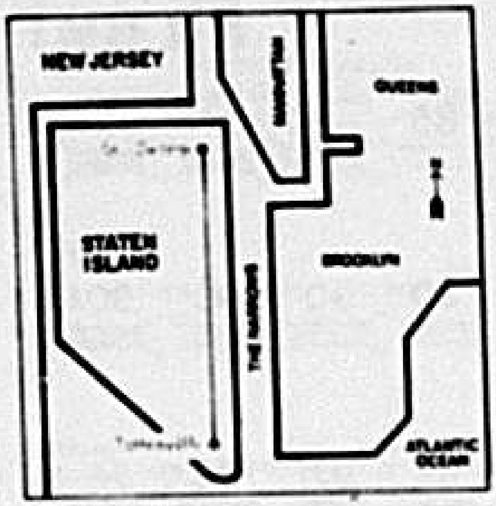


FIGURE C.12.C

Description of the RR Route from/to Ditmars Blvd. to/from 95 St. on the R-42



S.I.

R-44 St. George to Tottenville
Tottenville to St George

R-44 Tottenville to St George
St George to Tottenville

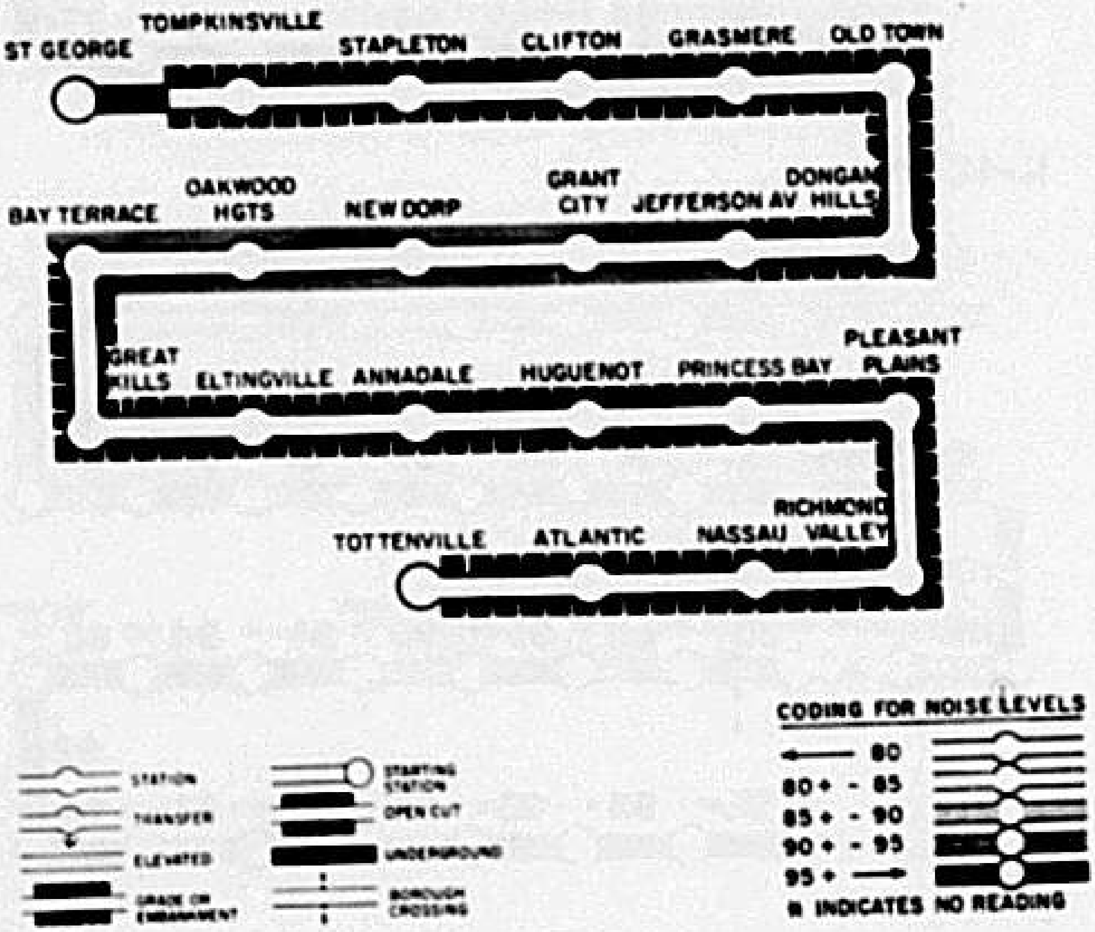


FIGURE C.13.A

Description of the Staten Island Route from Terminal to Terminal

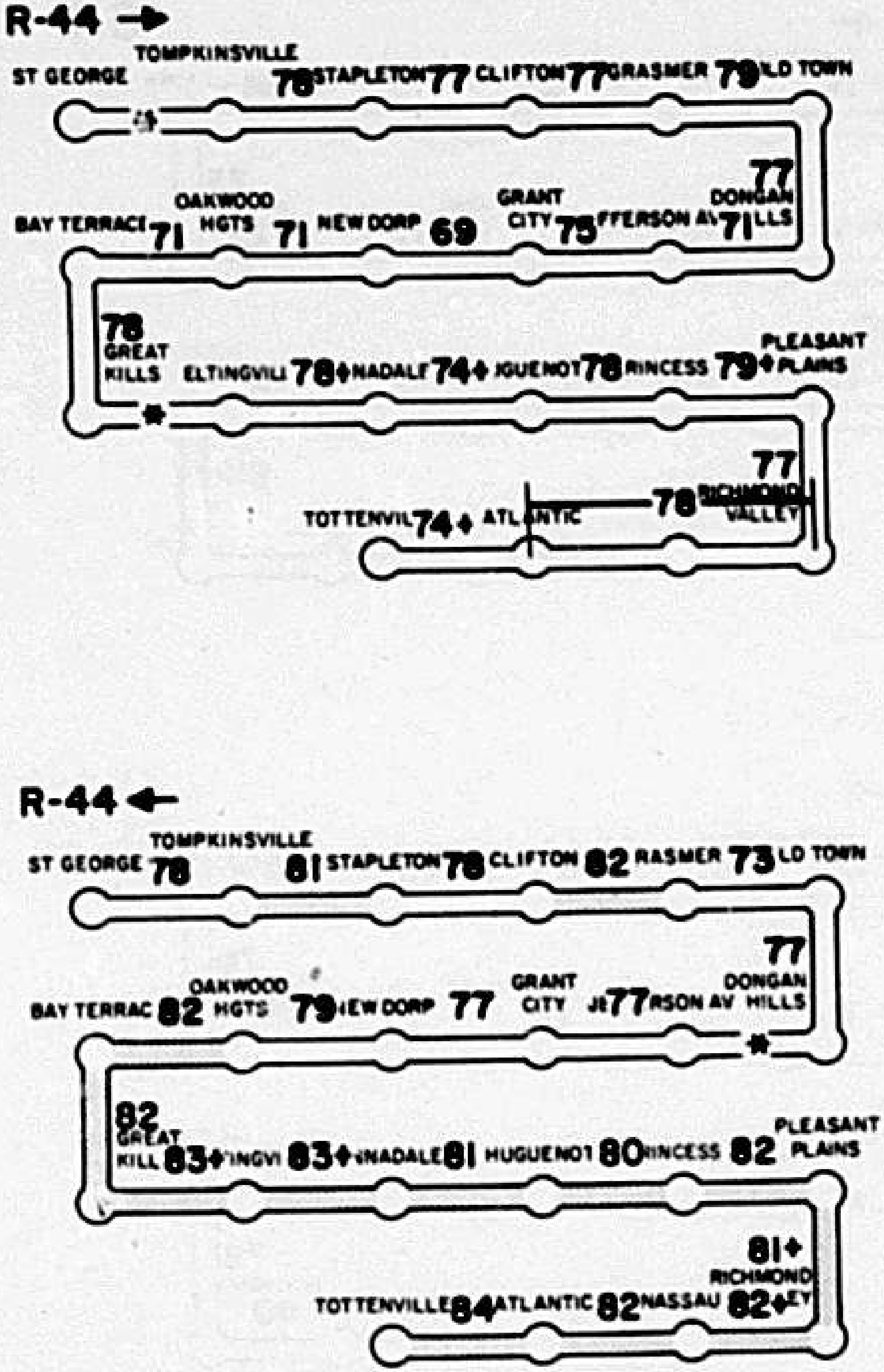


FIGURE C.13.B

Description of the Staten Island Route from/to St. George to/from Tottenville on the R-44

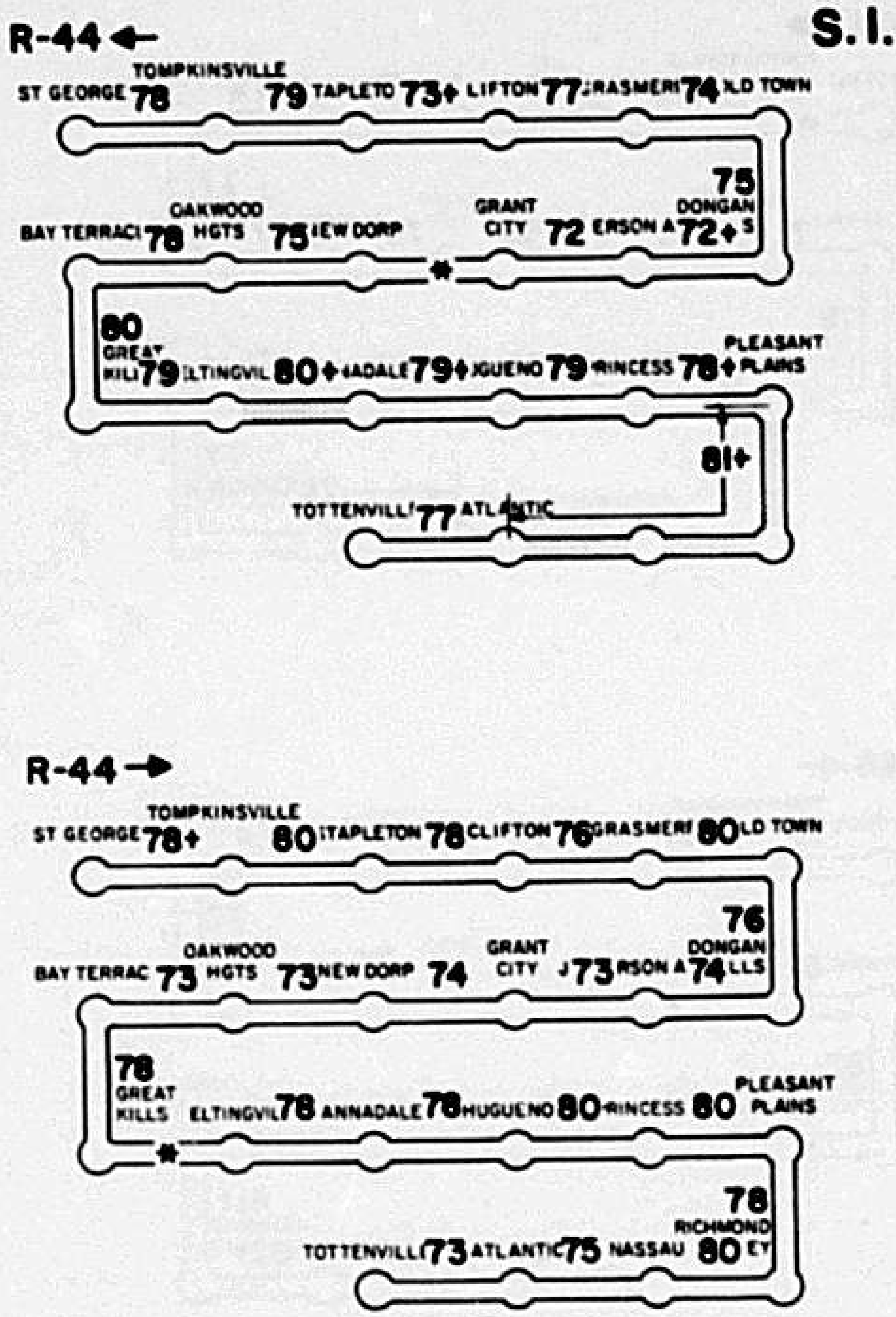


FIGURE C.13.C

Description of the Staten Island Route from/to St. George to/from Tottenville on the R-44

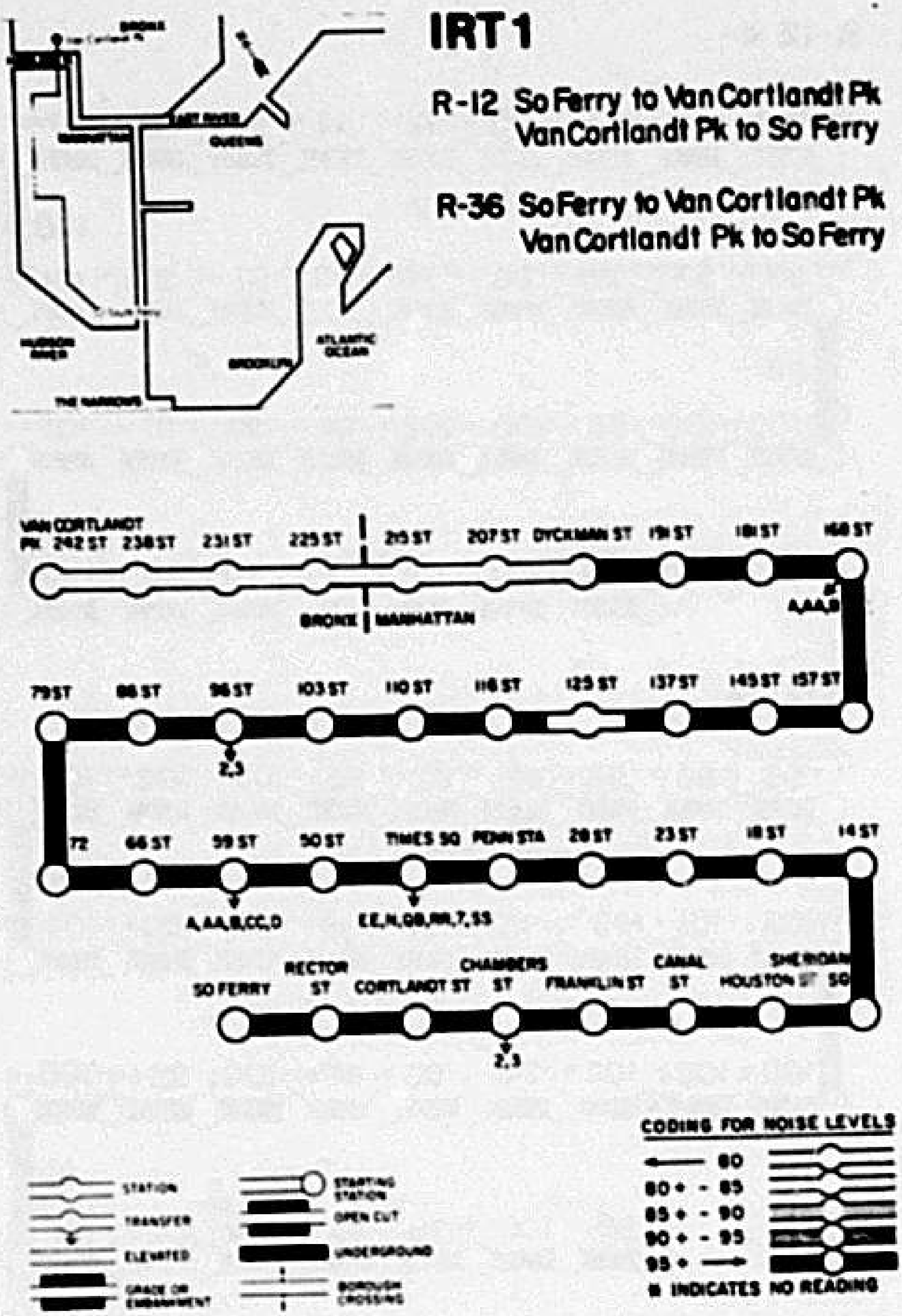


FIGURE C.14.A

Description of the IRT 1 Route from Terminal to Terminal

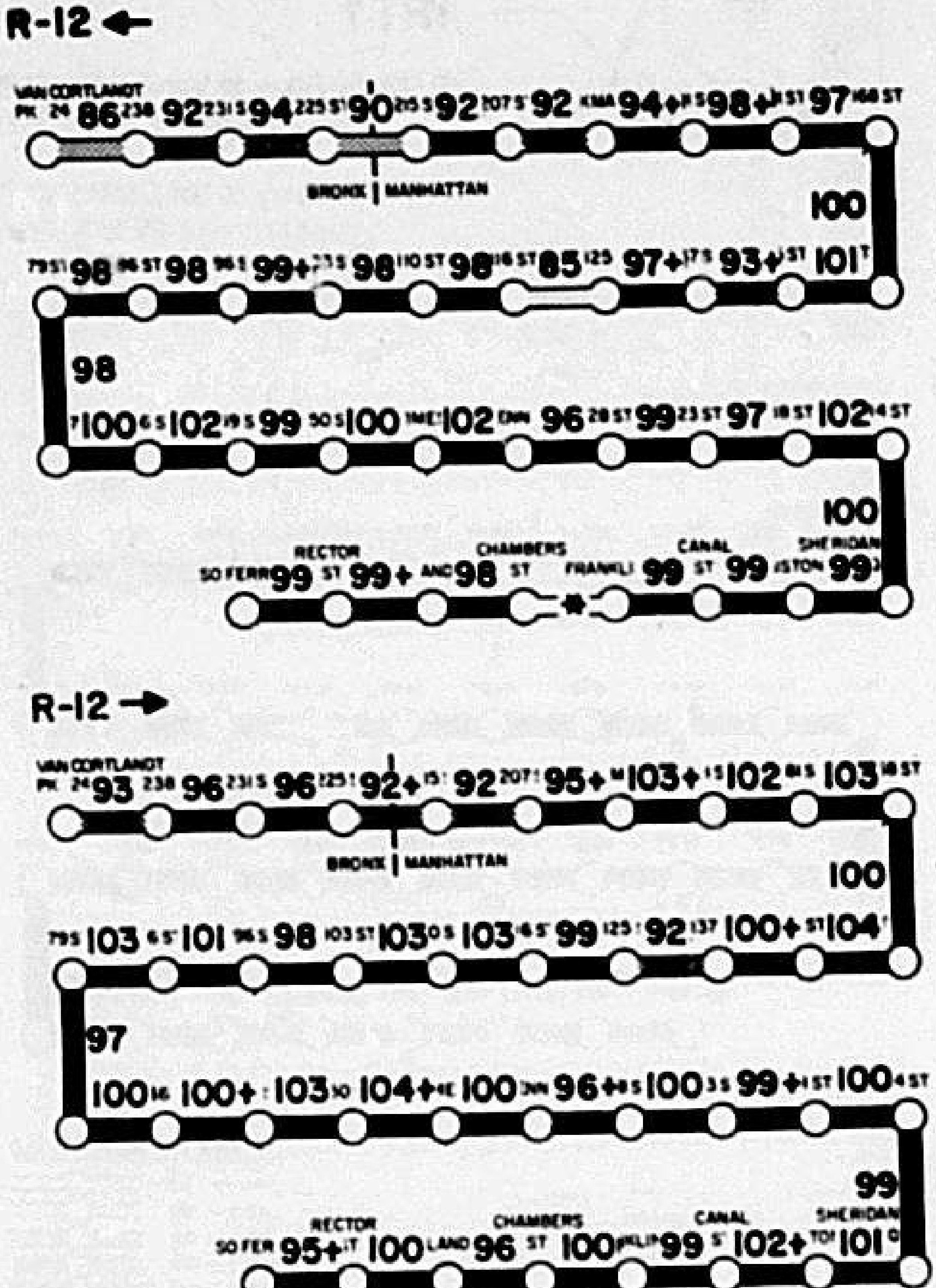


FIGURE C.14.5

Description of the IRT 1 Route from/to Van Cortlandt Park to/from So. Ferry on the IRT

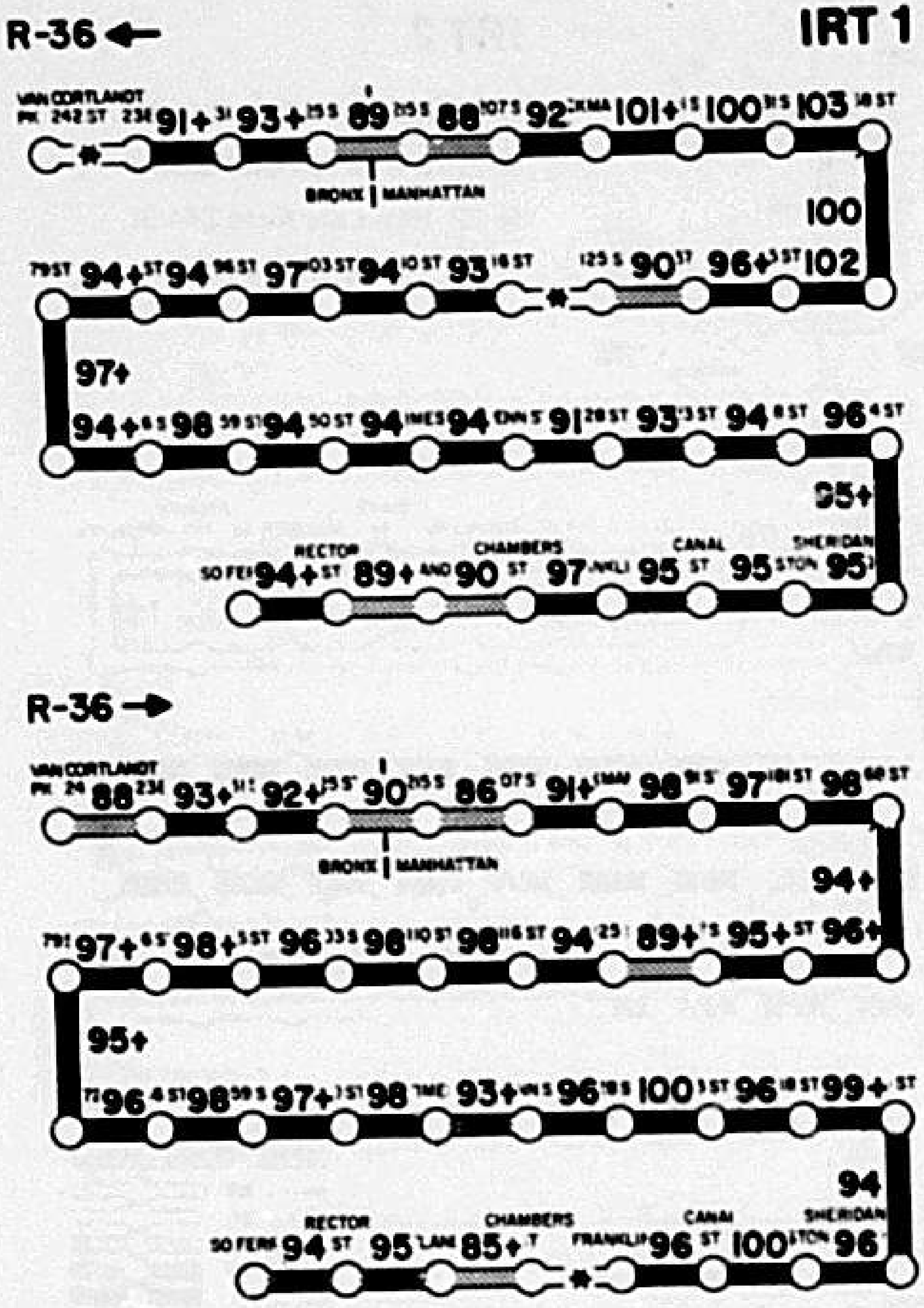


FIGURE C.14.C

Description of the IRT 1 Route from/to Van Cortlandt Park to/from So. Ferry on the IRT

IRT 2

R-15 New Lots Av to 241 St
R-21 241 St to New Lots Av
R-22 New Lots Av to 241 St
R-29 241 St to New Lots Av

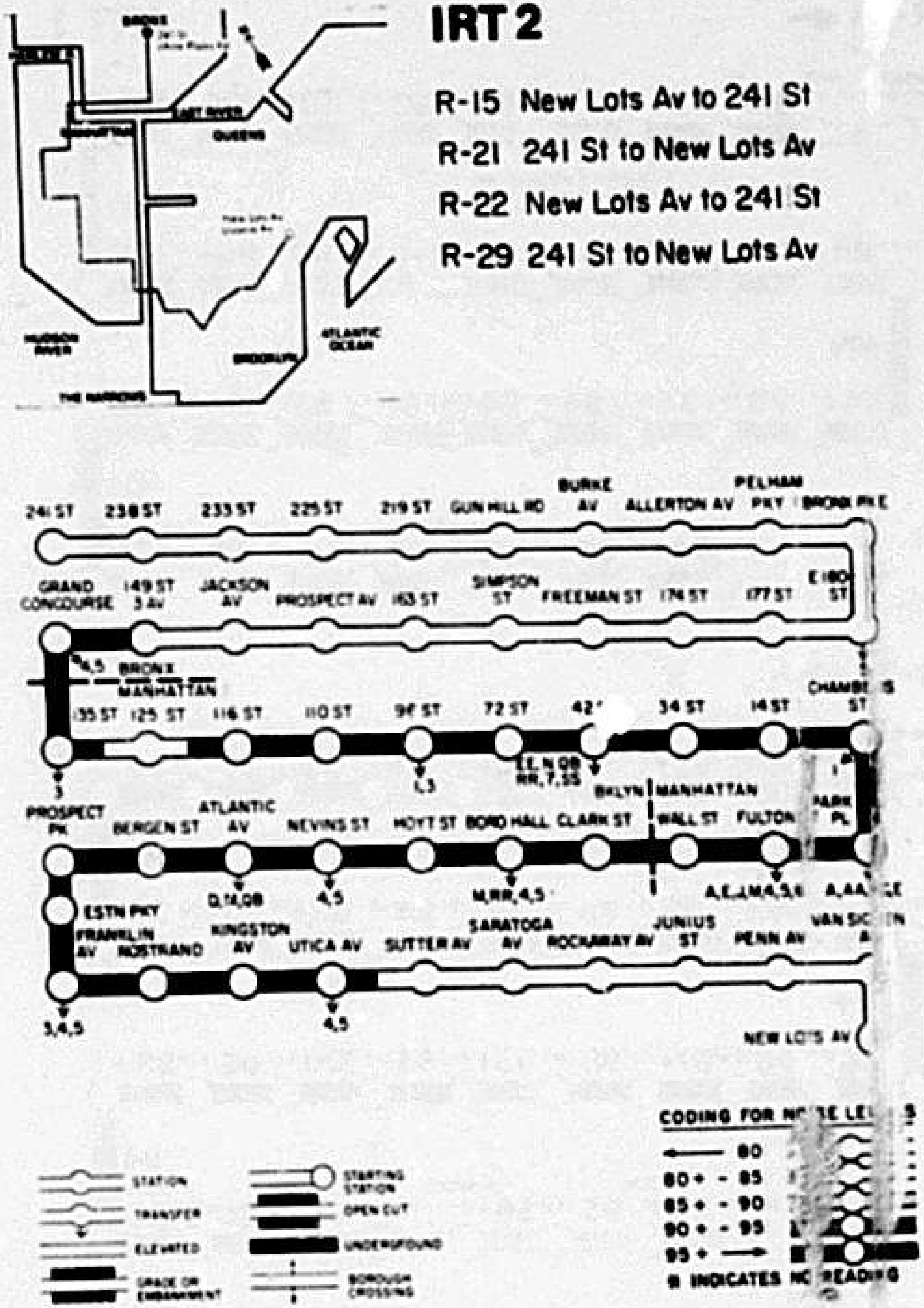


FIGURE C.15.A

Description of the IRT 2 Route from Terminal to Terminal

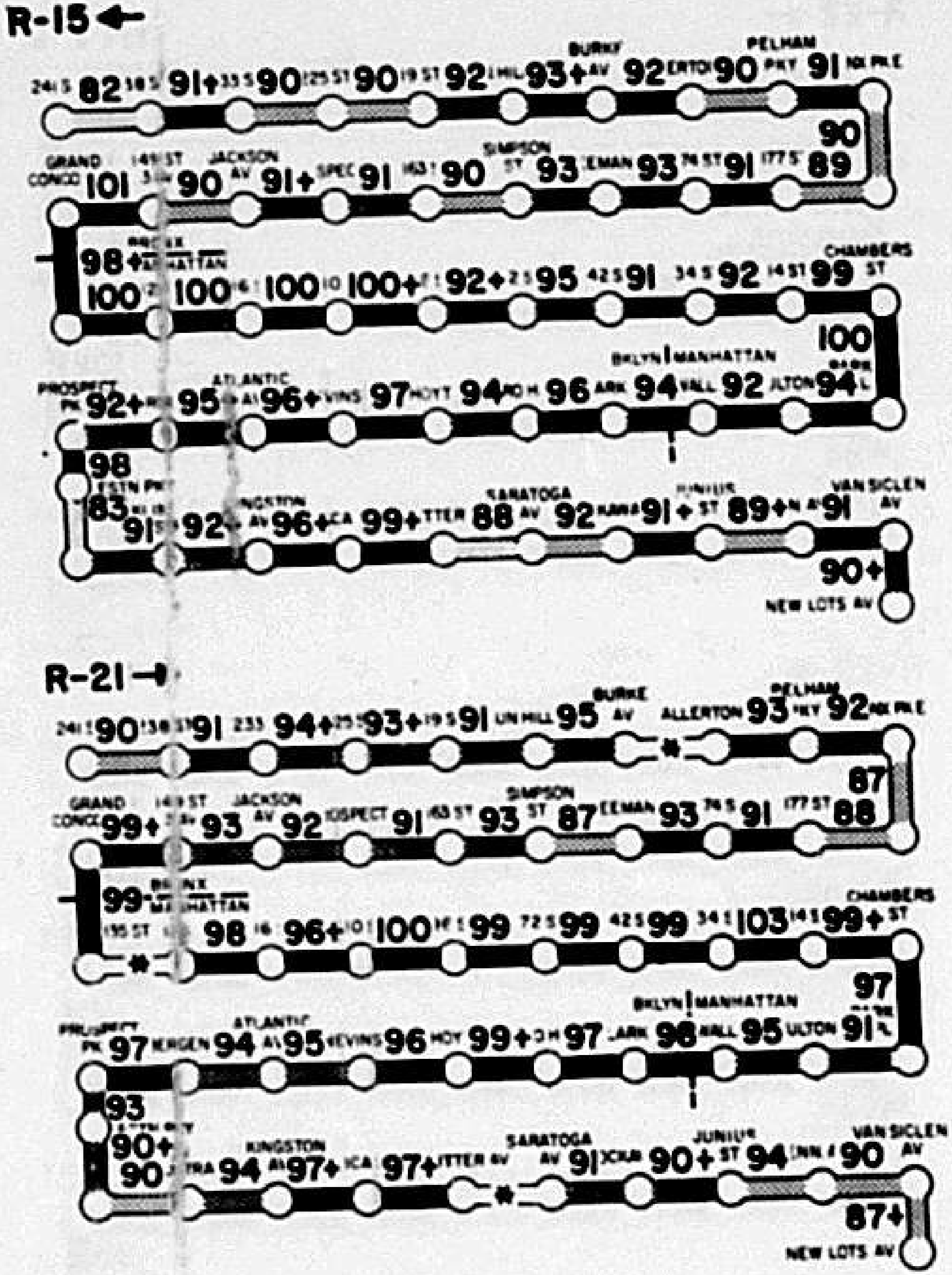


FIGURE C.15.B

Description of the IRT 2 Route from/to 241 St. to/from New Lots Ave. on the IRT

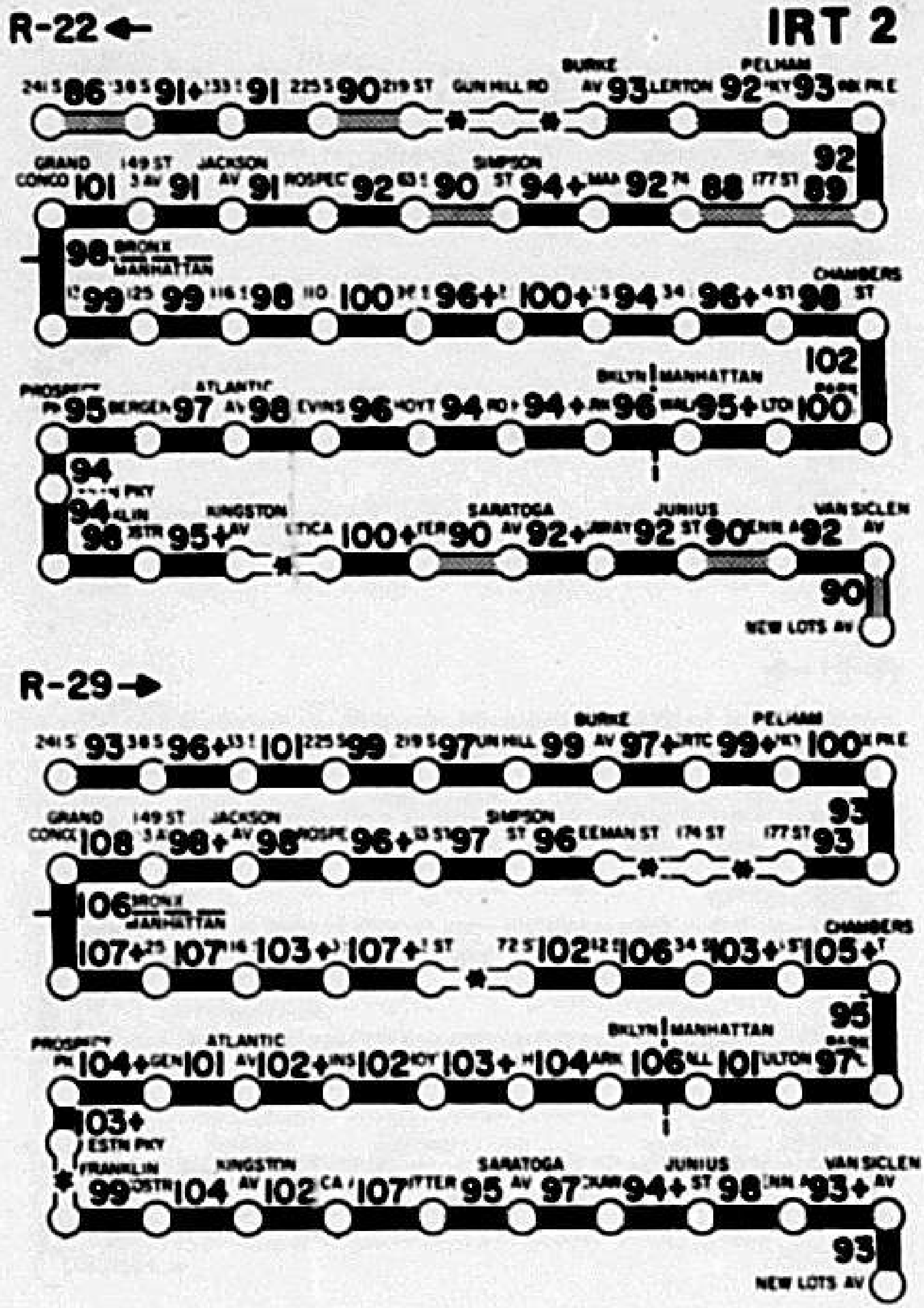
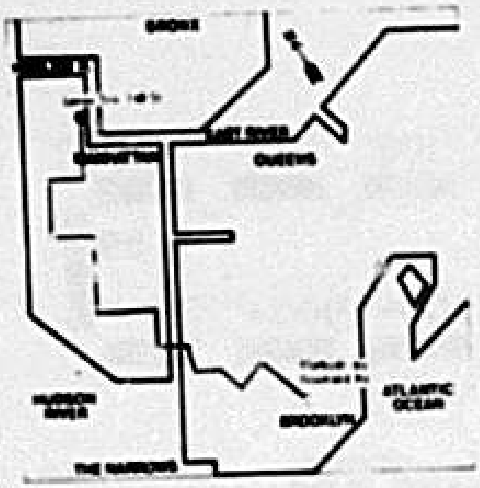


FIGURE C.15.C

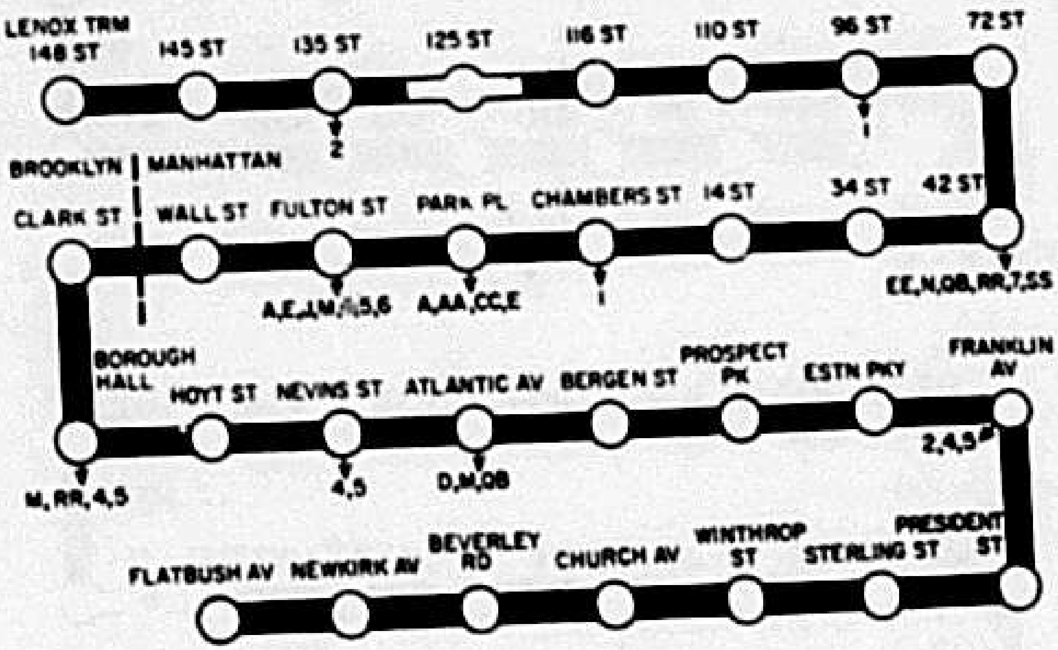
Description of the IRT 2 Route from/to 241 St. to/from New Lots Ave. on the IRT



IRT 3

R-12 Flatbush Av to Lenox Trm
Lenox Trm to Flatbush Av

R-29 Flatbush Av to Lenox Trm
Lenox Trm to Flatbush Av



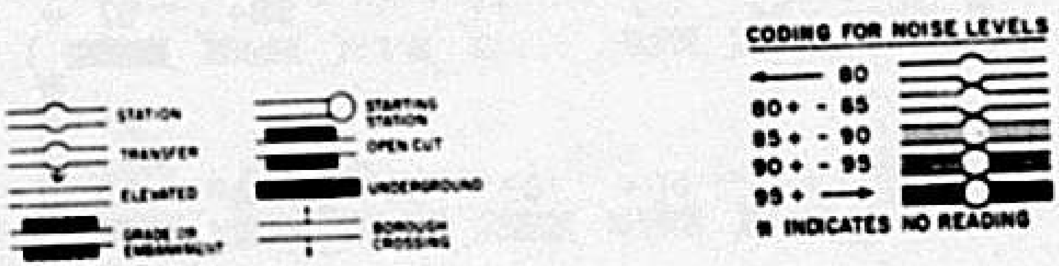
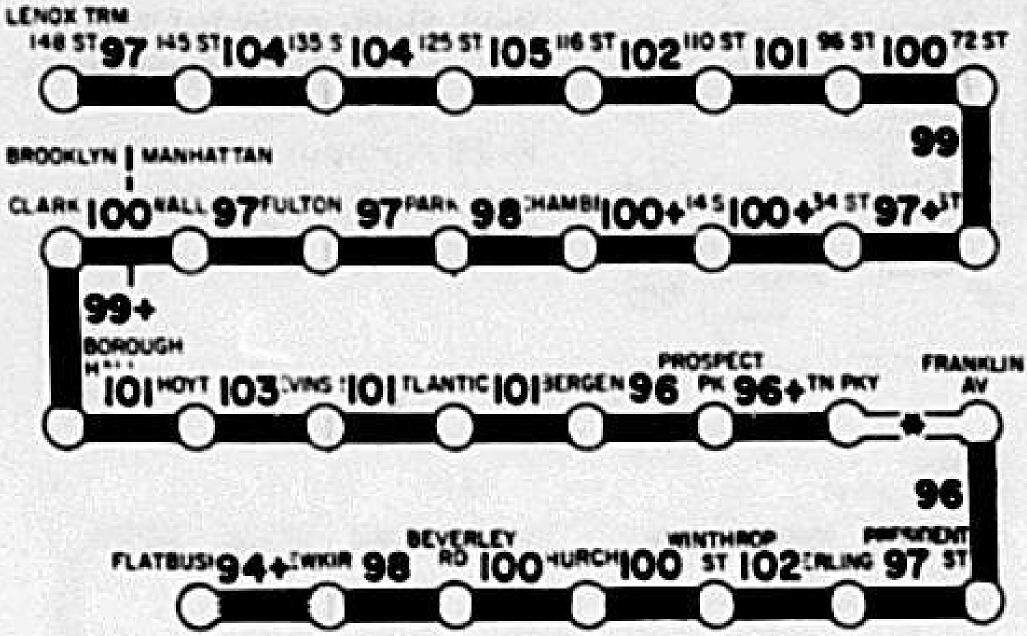


FIGURE C.16.A

Description of the IRT 3 Route from Terminal to Terminal

R-12 ←



R-12 →

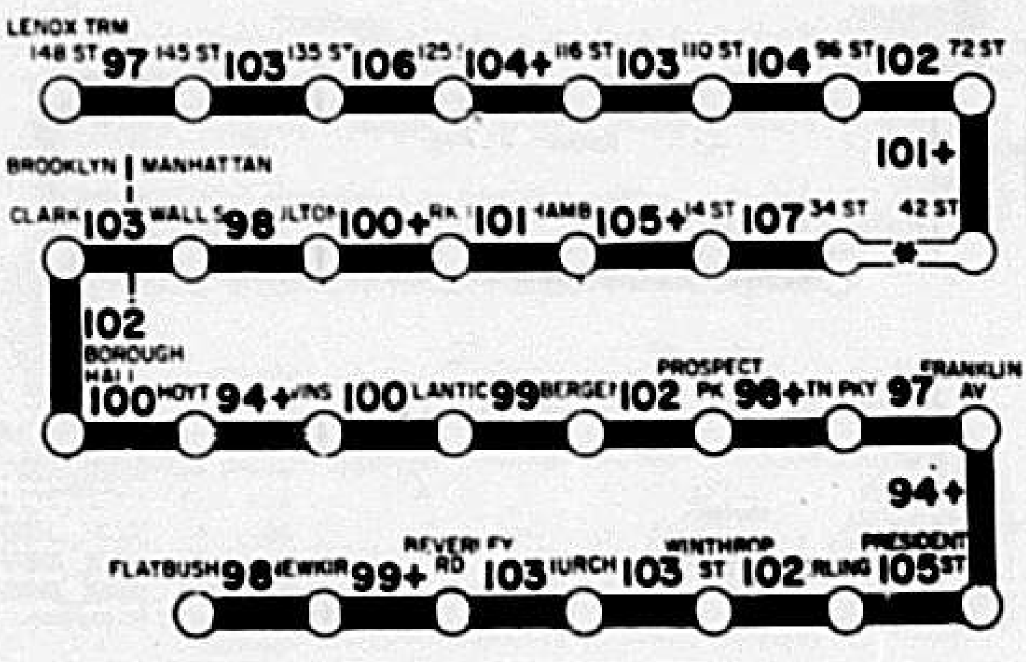
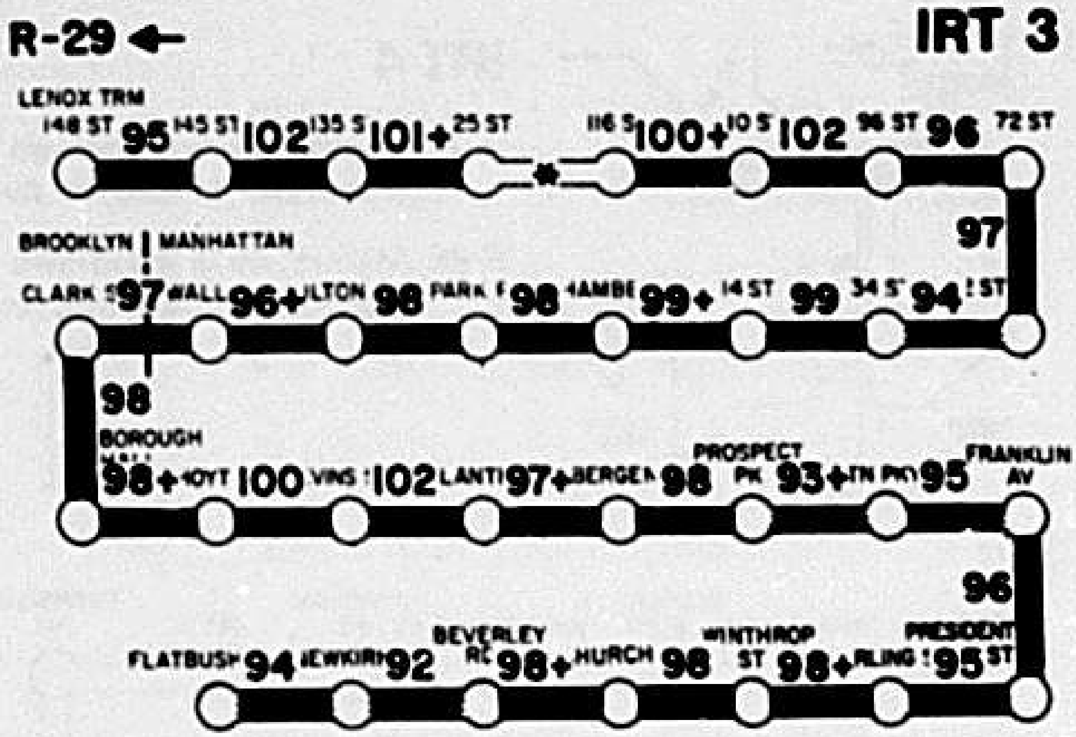


FIGURE C.16.B

Description of the IRT 3 Route from/to Lenox Trm. 148 St. to/from Flatbush Ave. on the IRT.



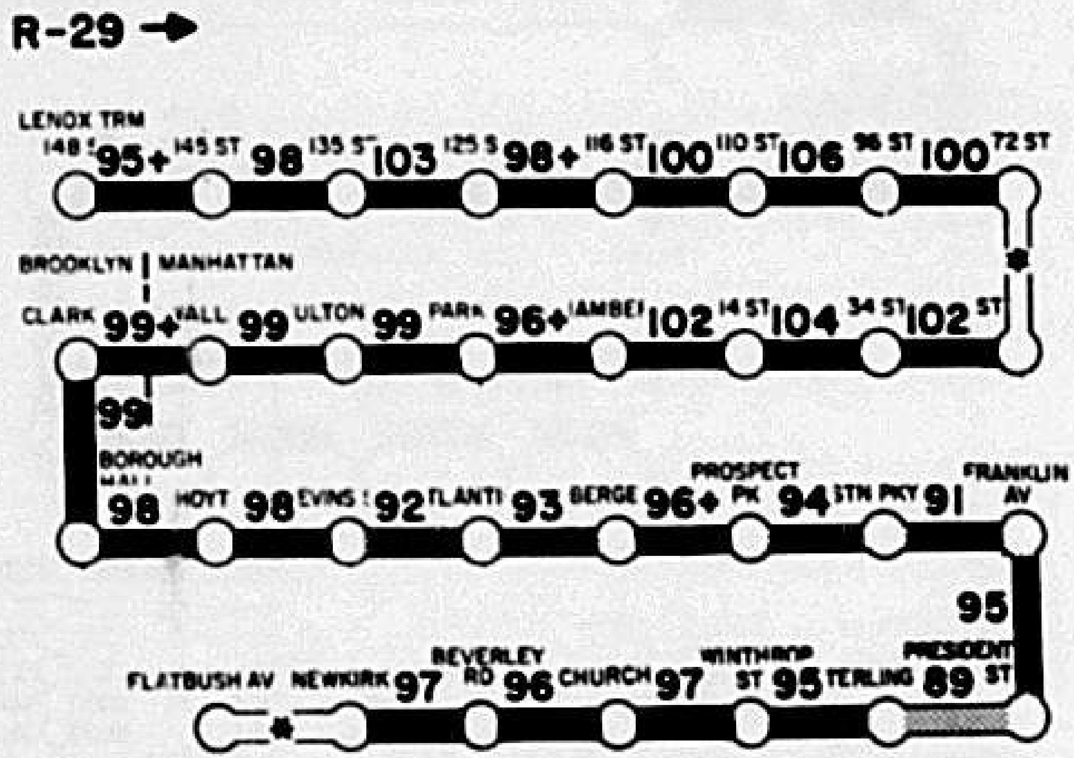
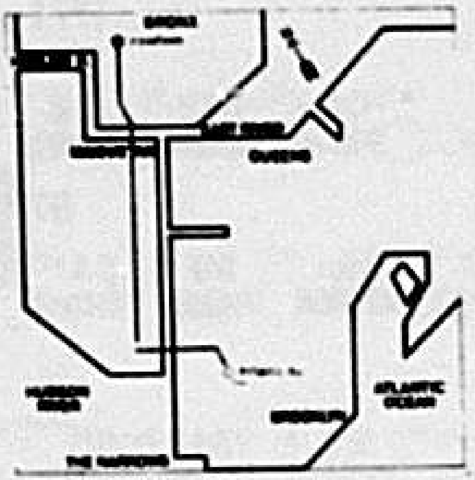


FIGURE C.16.C

Description of the IRT 3 Route from/to Lenox TRM 148 St. to/from Flatbush Ave. on the IRT



IRT 4

R-21 Atlantic Av to Woodlawn
Woodlawn to Atlantic Av

R-26 Atlantic Av to Woodlawn
Woodlawn to Atlantic Av

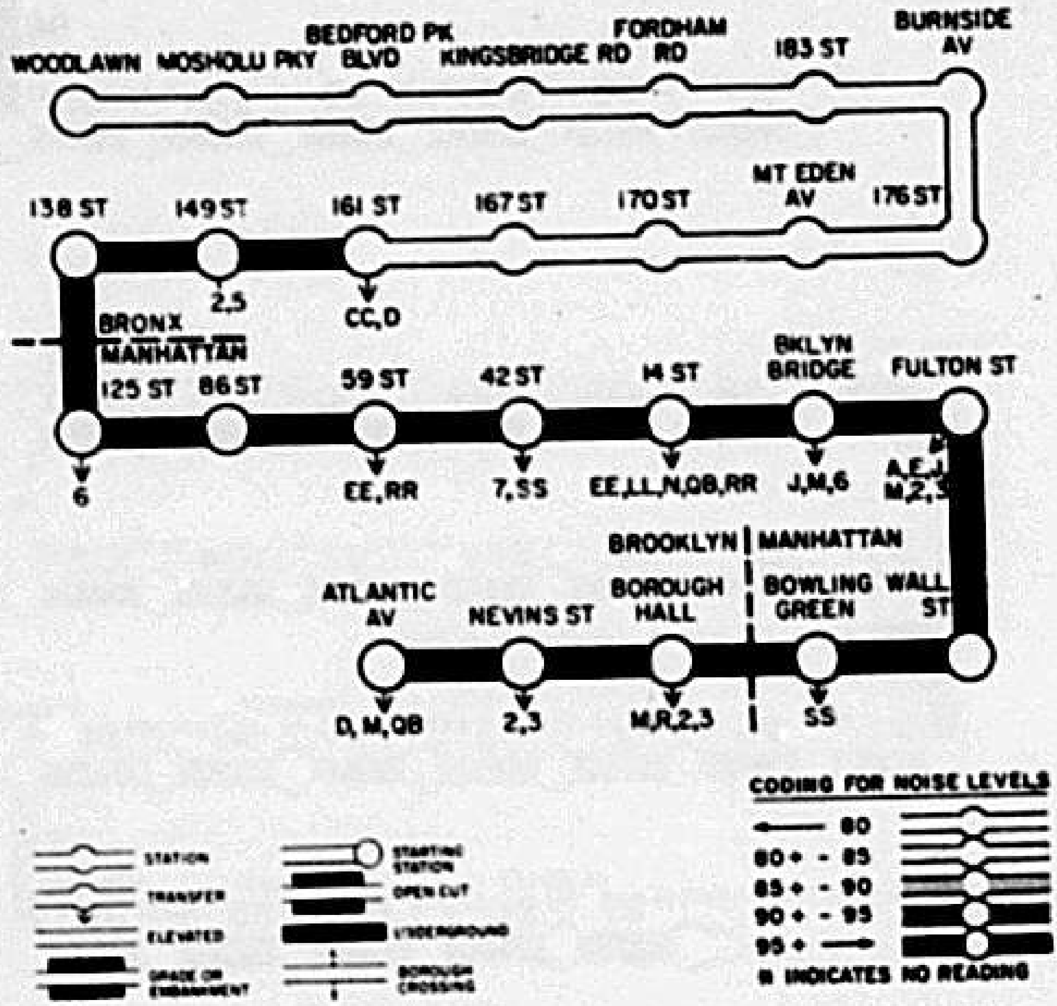


FIGURE C.17.A

Description of the IRT 4 Route from Terminal to Terminal

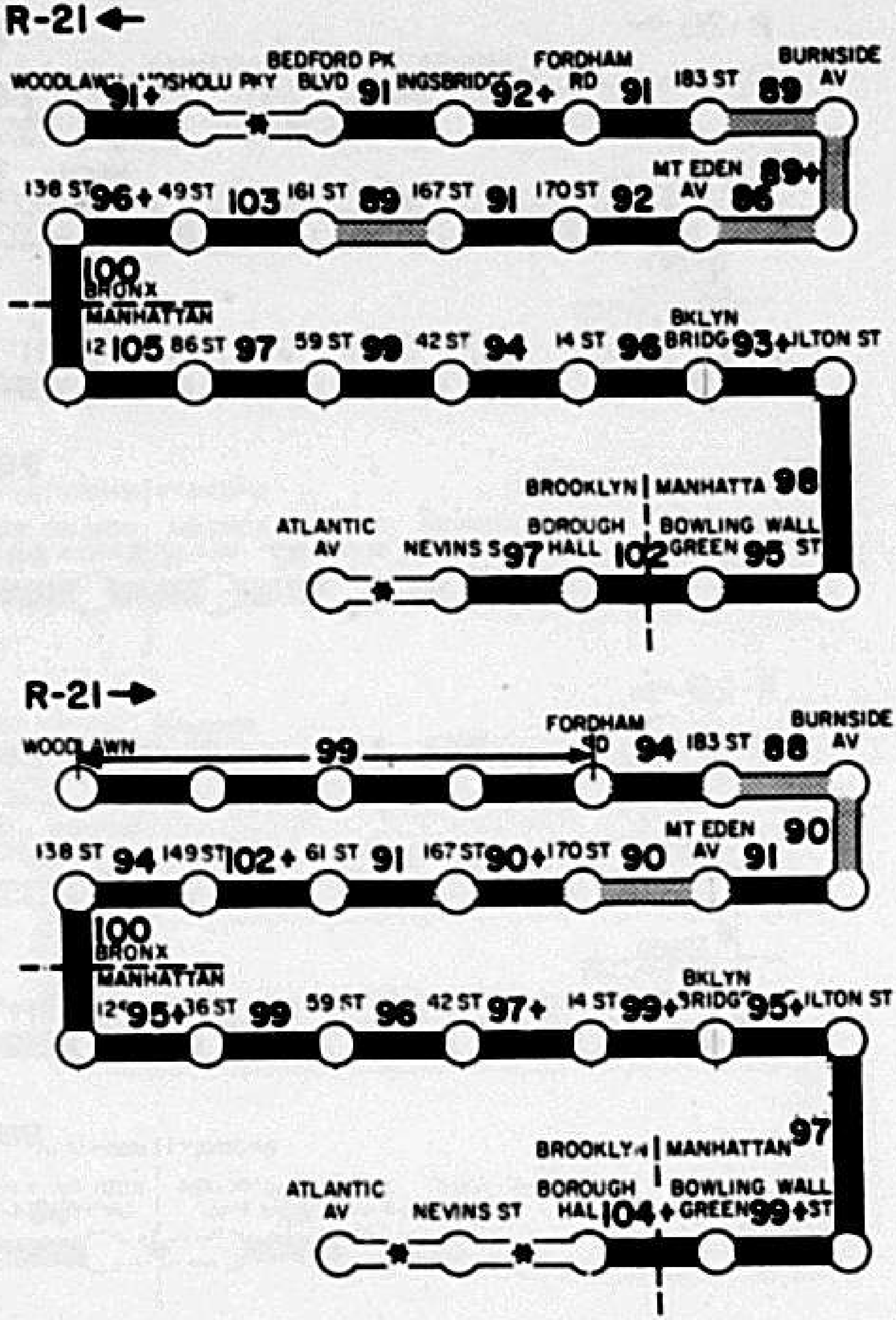


FIGURE C.17.B

Description of the IRT 4 Route from/to Woodlawn to/from Atlantic Ave. on the IRT

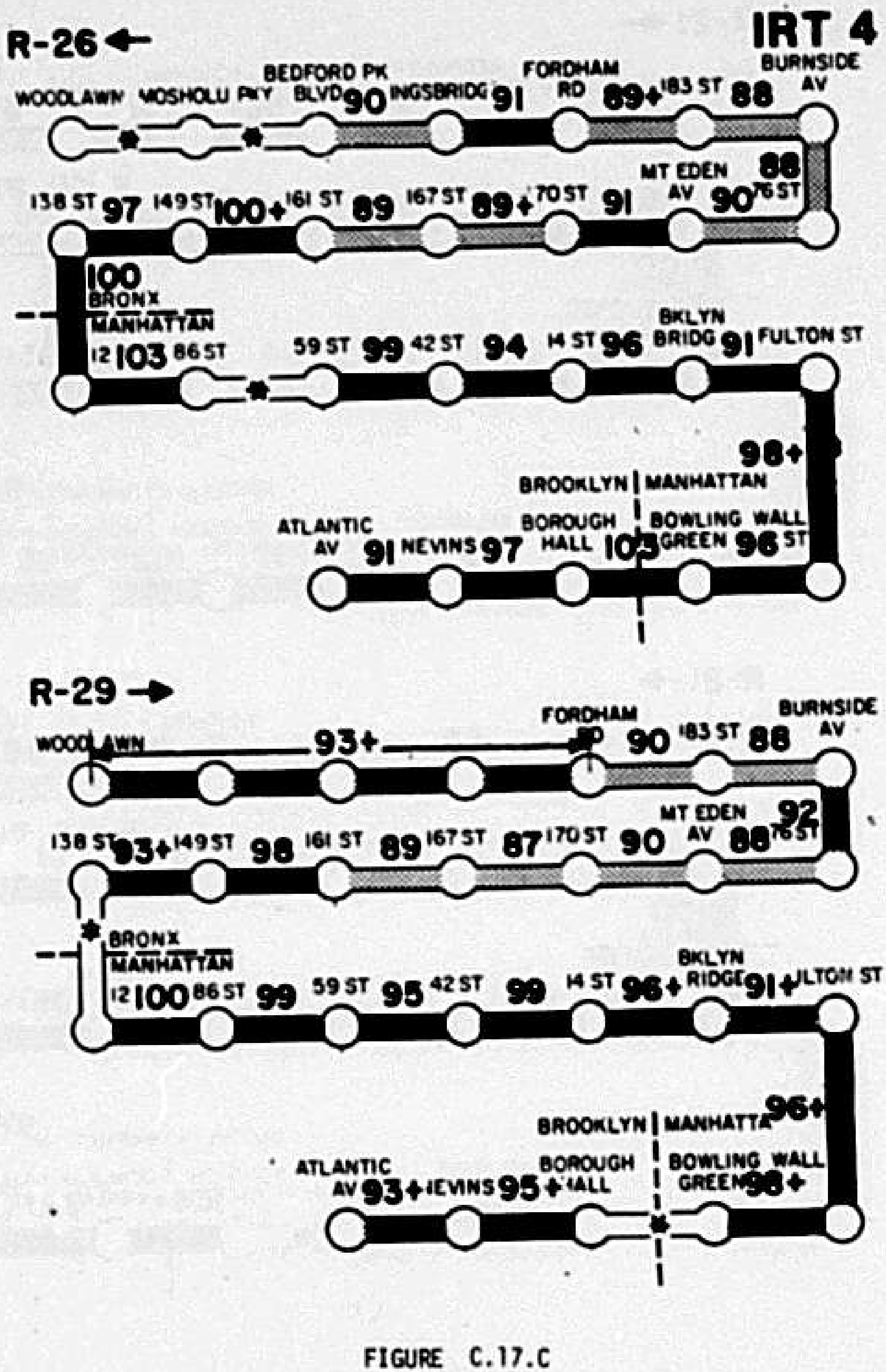
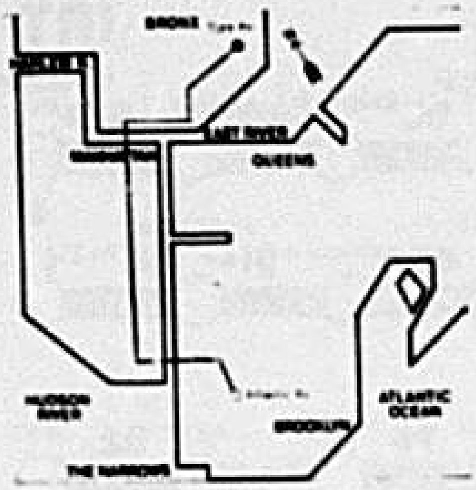


FIGURE C.17.C

Description of the IRT 4 Route from/to Woodlawn to/ from Atlantic Ave. on the IRT



IRT 5

R-17 Atlantic Av to Dyre Av

R-21 Dyre Av to Atlantic Av

R-17 Atlantic Av to Dyre Av
Dyre Av to Atlantic Av

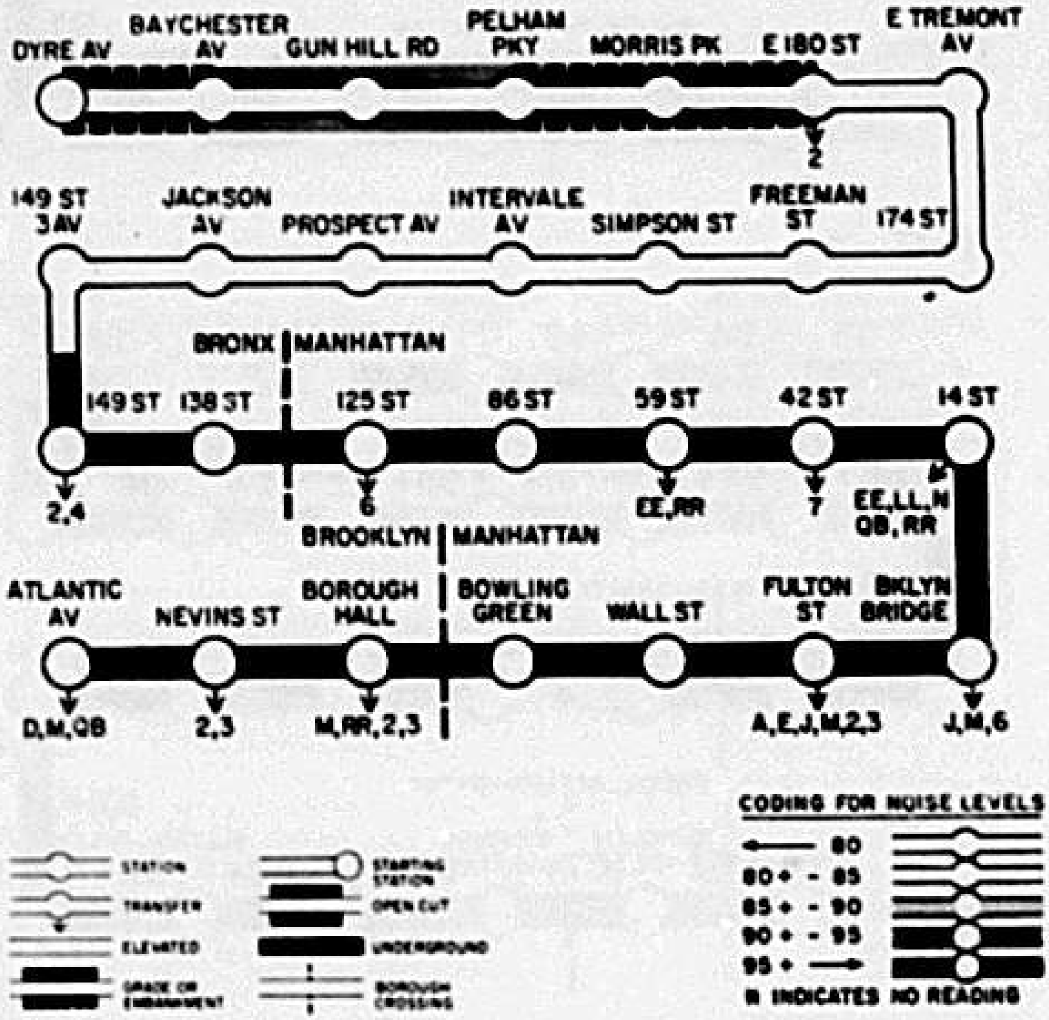


FIGURE C.18.A

Description of the IRT 5 Route from Terminal to Terminal

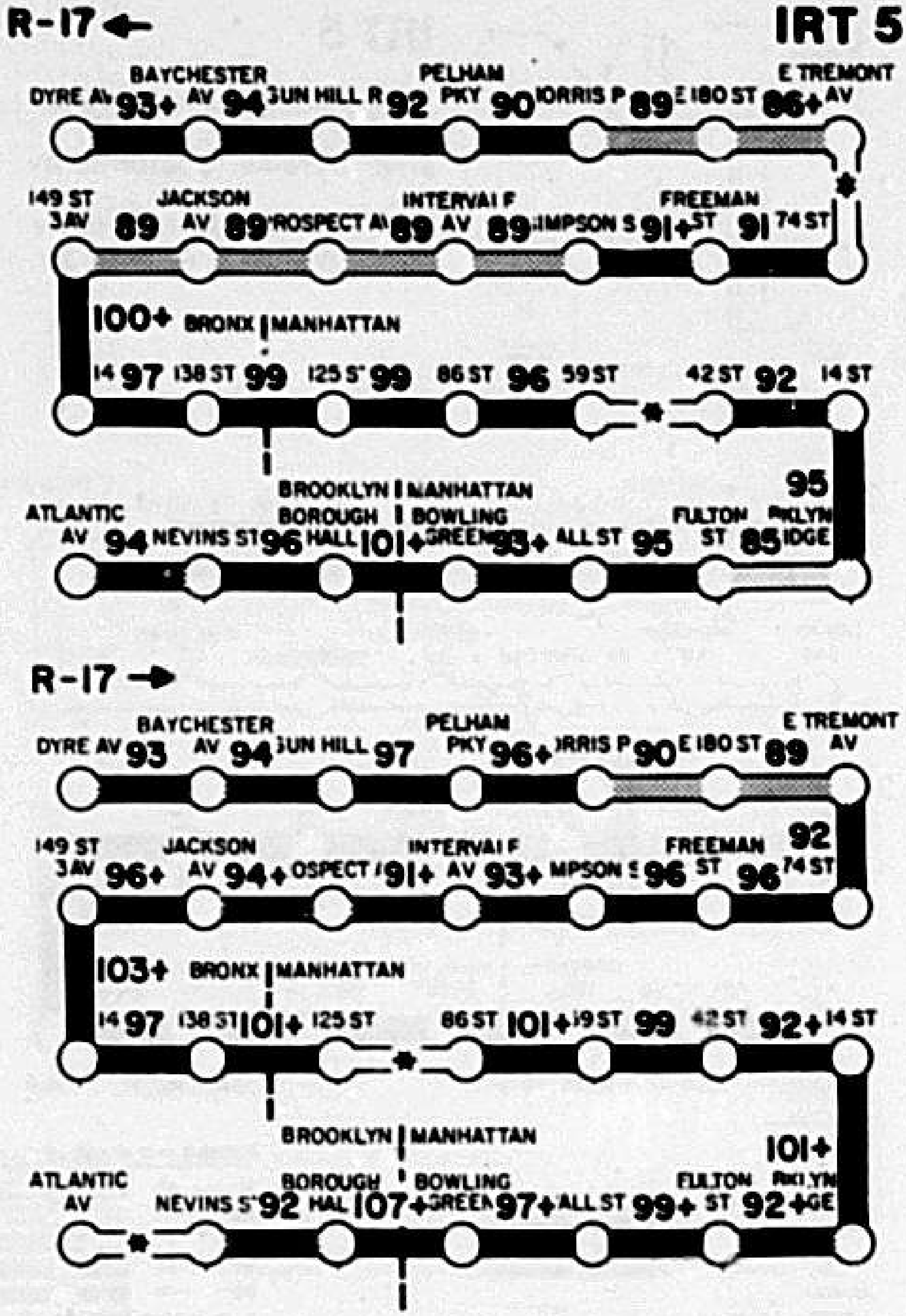


FIGURE C.18.B

Description of the IRT 5 Route from/to Dyre Ave. to/from Atlantic Ave. on the IRT

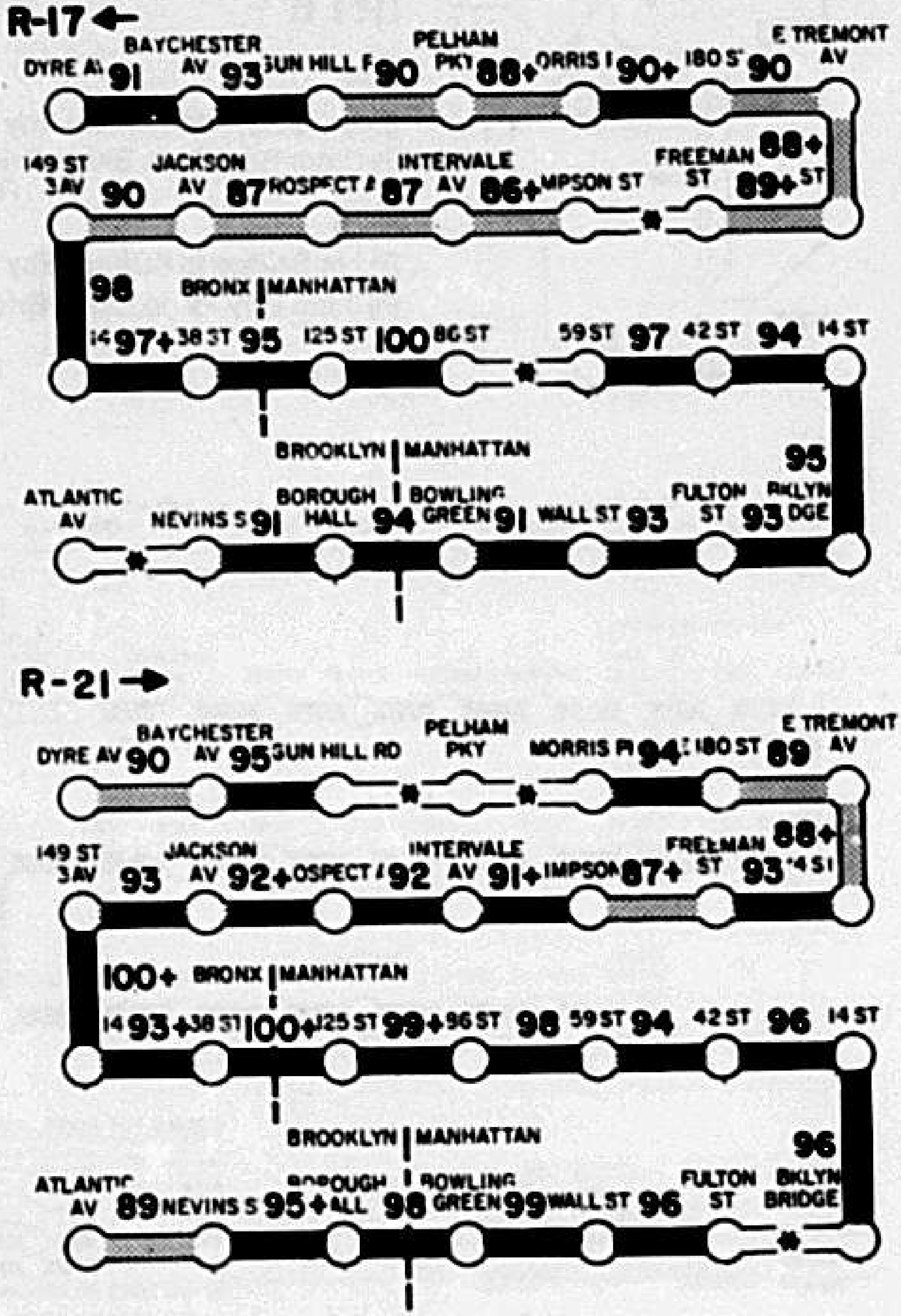
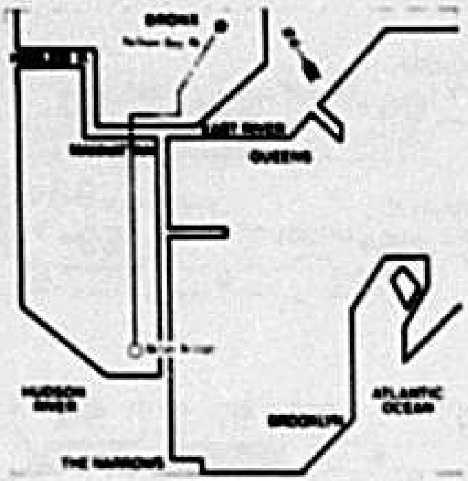


FIGURE C.13.C

Description of the IRT 5 Route from/to Dyre Ave. to/from Atlantic Ave. on the IRT



IRT 6

R-17
Bklyn Bridge to Pelham Bay Pk
Pelham Bay Pk to Bklyn Bridge

R-29
Bklyn Bridge to Pelham Bay Pk
Pelham Bay Pk to Bklyn Bridge

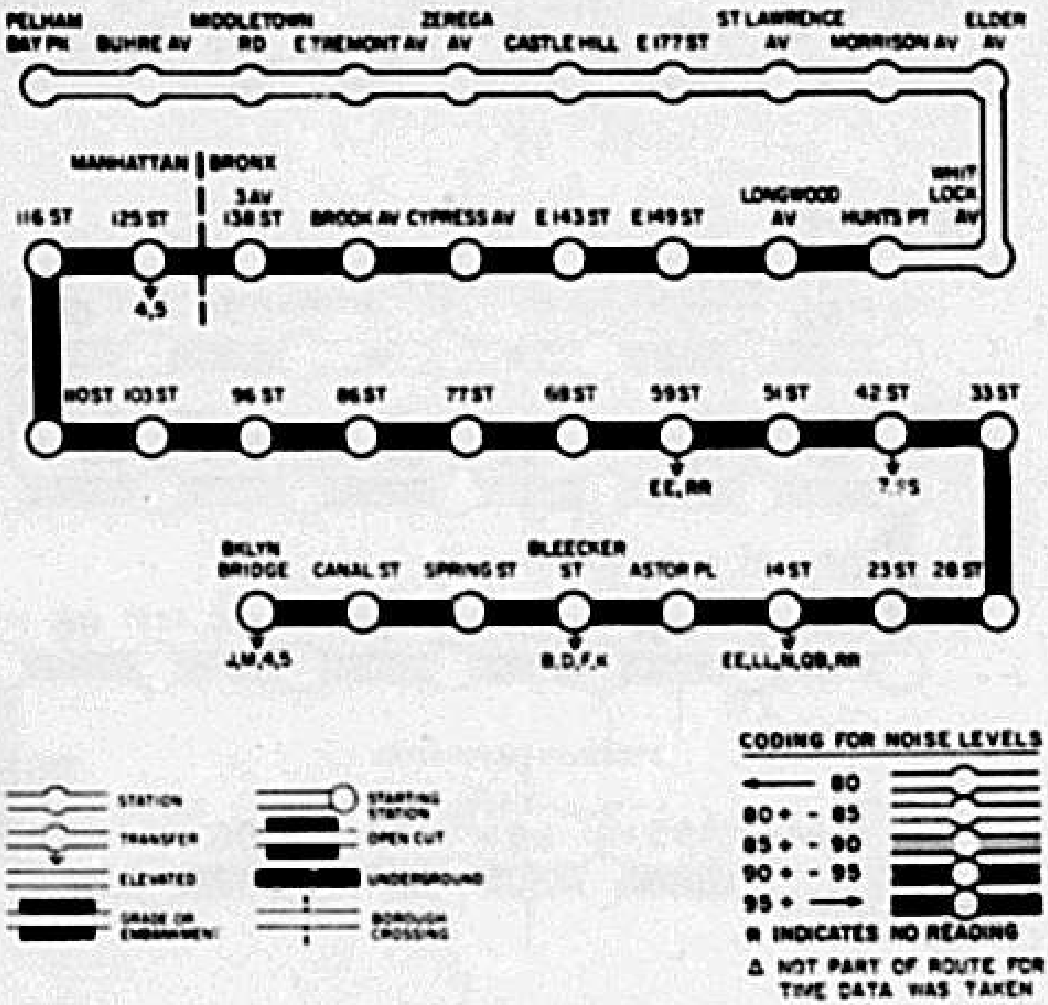


FIGURE C.19.A

Description of the IRT 6 Route from Terminal to Terminal

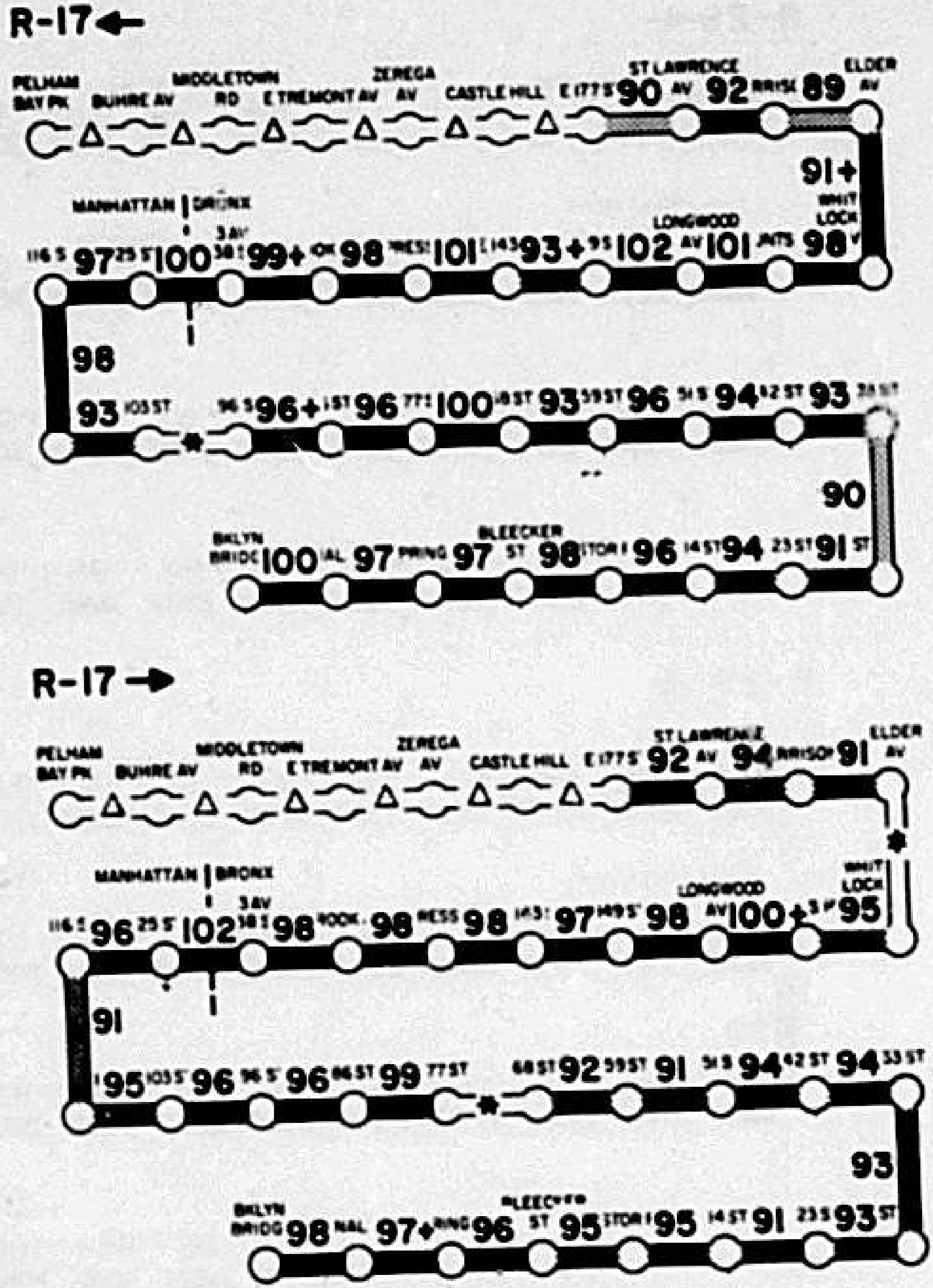
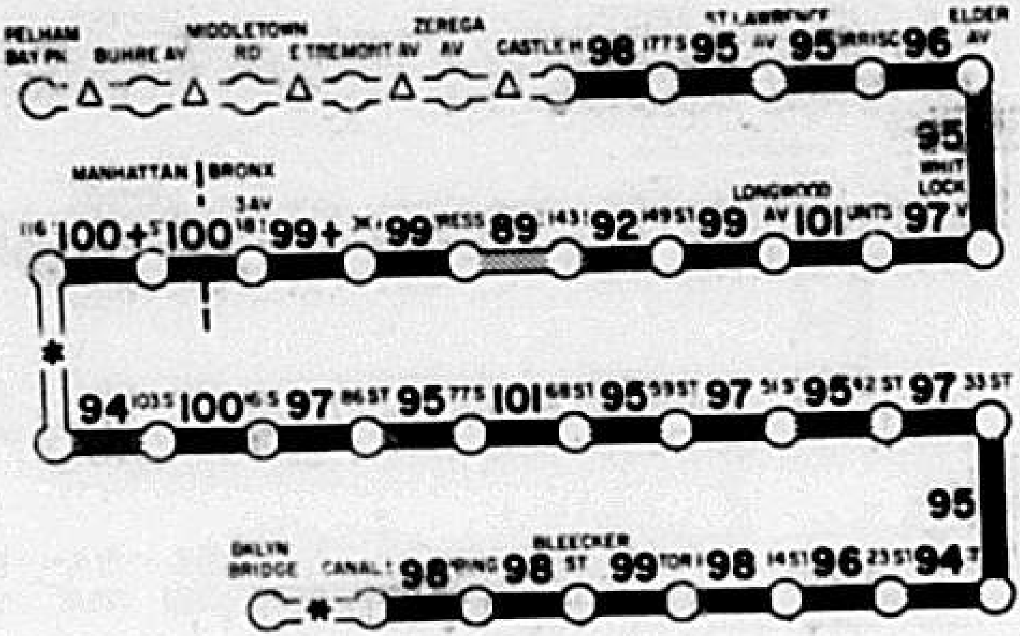


FIGURE C.19.B

Description of the IRT 6 Route from/to Pelham Bay Pk to/from Bklyn. Bridge on the IRT

R-29 ←

IRT 6



R-29 →

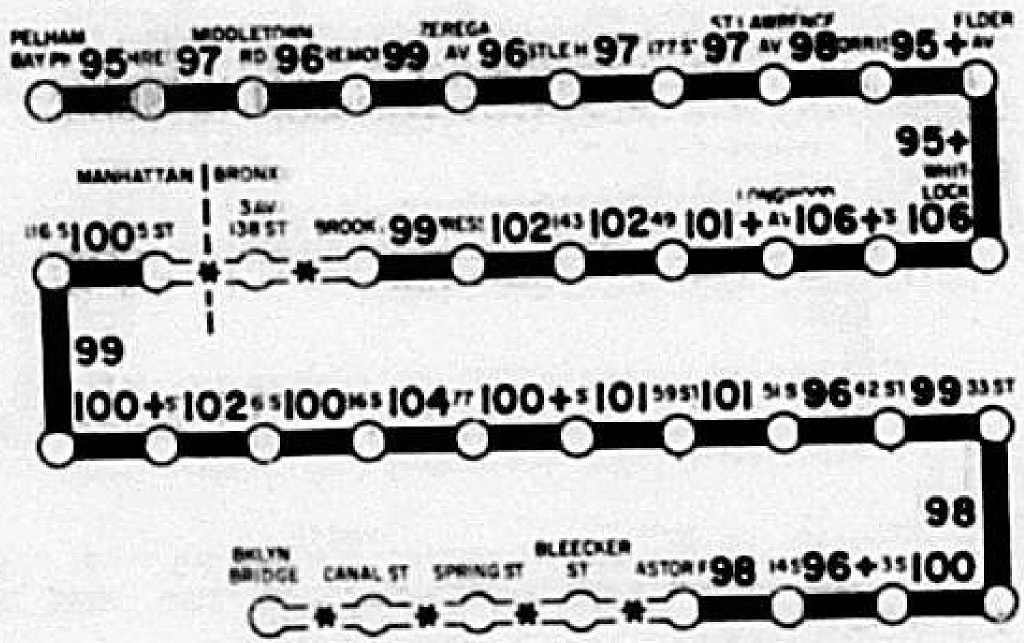


FIGURE C.19.C

Description of the IRT 6 Route from/to Pelham Bay pk to/from Bklyn. Bridge on the IRT

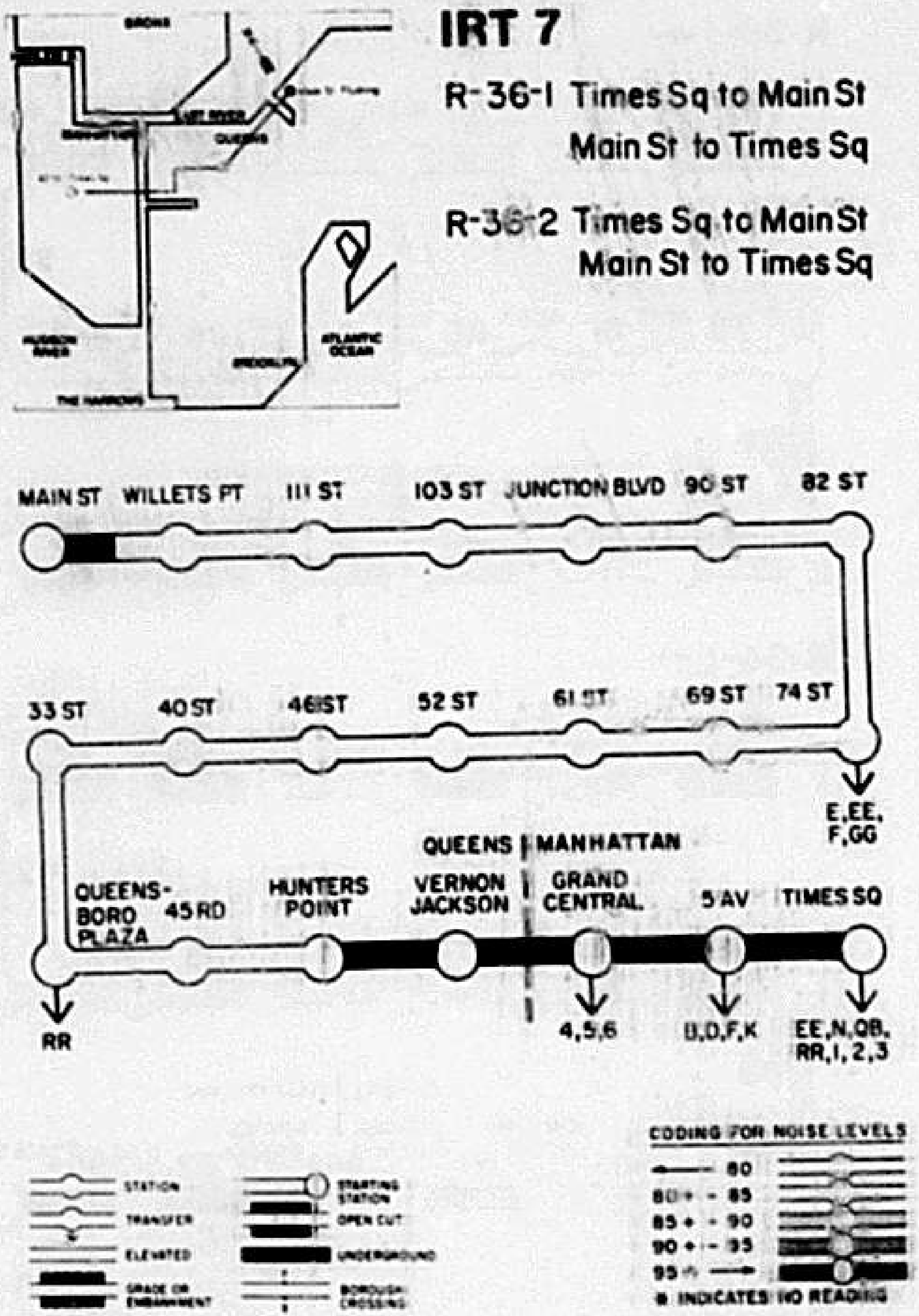


FIGURE C.20.A

Description of the IRT 7 Route from Terminal to Terminal

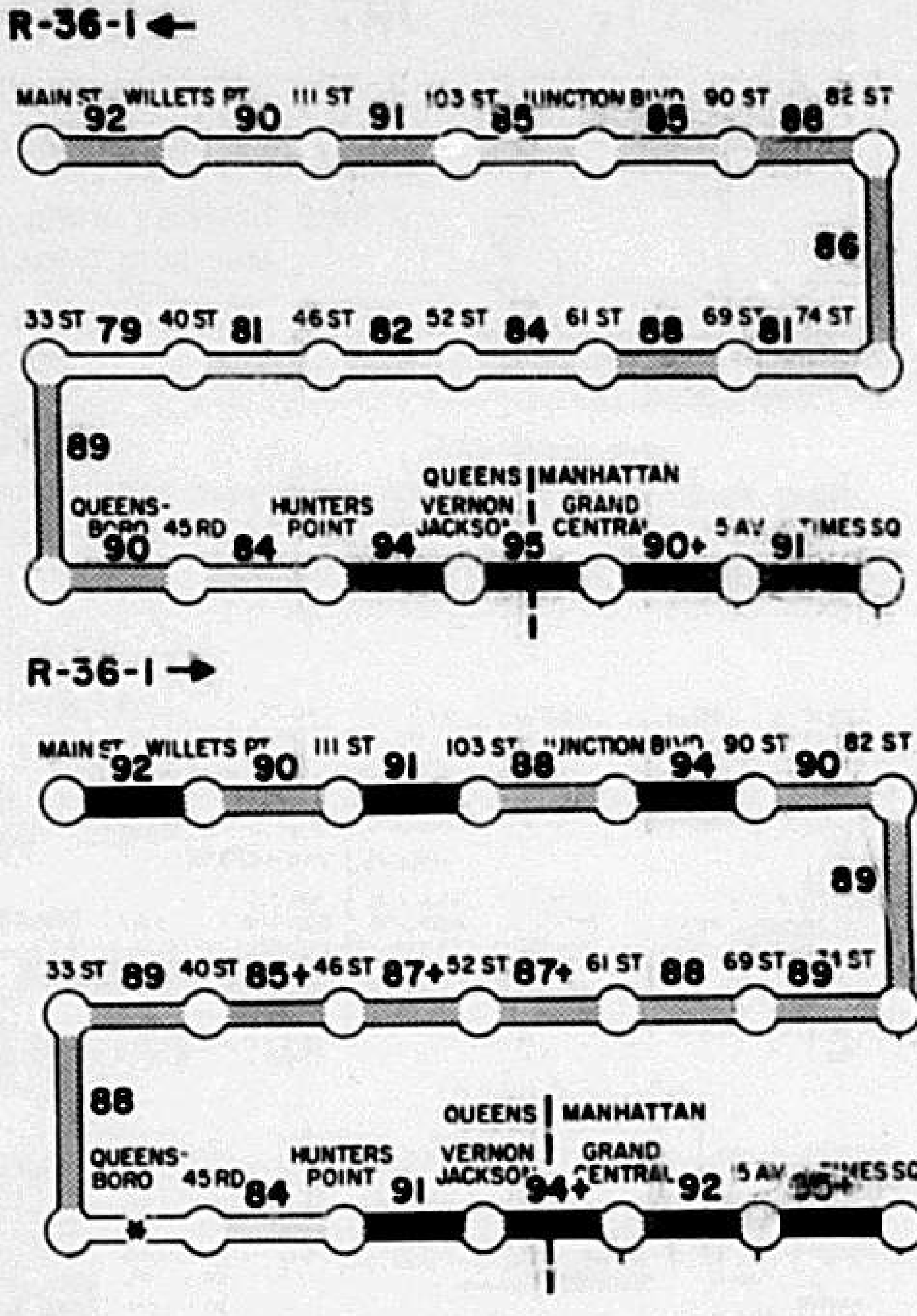


FIGURE C.20.B

Description of the IRT 7 Route from/to Main St. to/from Times Square on the R-36

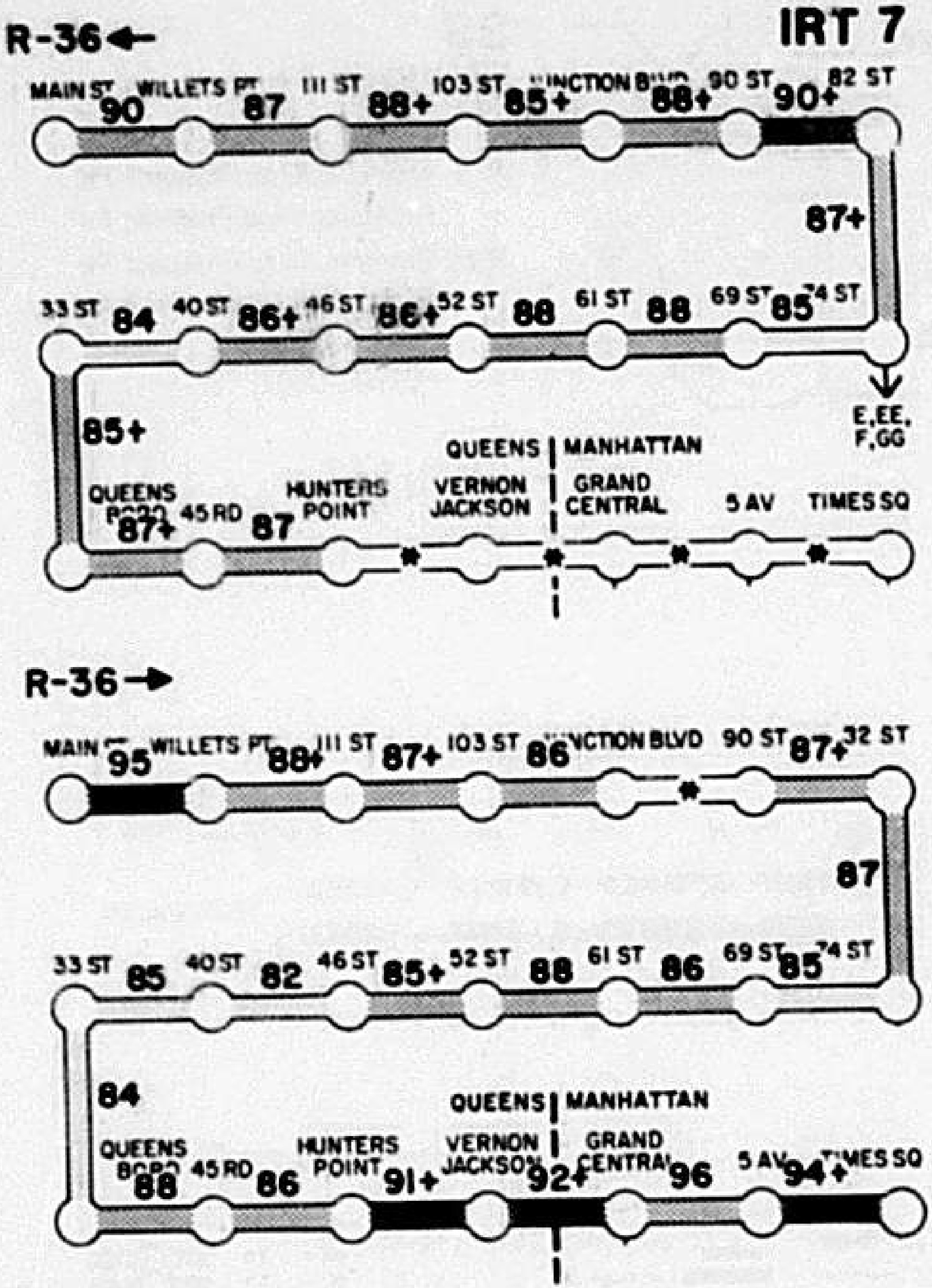
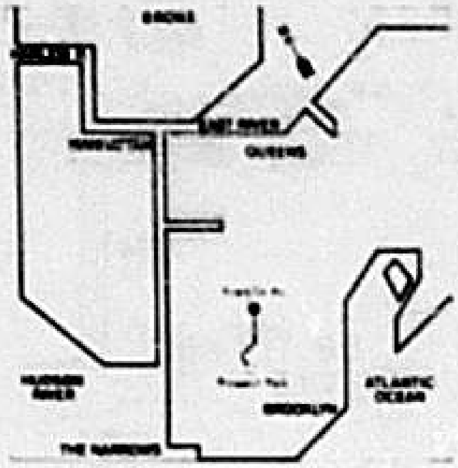


FIGURE C.20.C

Description of the IRT 7 Route from/to Main St. to/from Times Square on the R-36



SS
FRANKLIN AV SHUTTLE

R-11 Franklin Av to Prospect Pk
Prospect Pk to Franklin Av

R-32 Franklin Av to Prospect Pk
Prospect Pk to Franklin Av

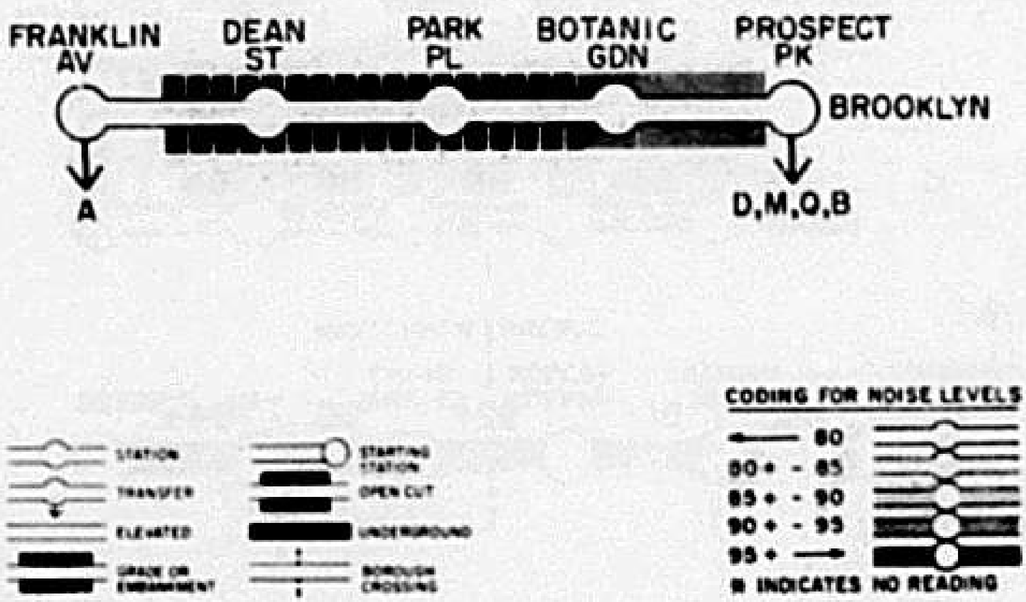


FIGURE C.21.A

Description of the Franklin Ave. Shuttle Route from Terminal to Terminal

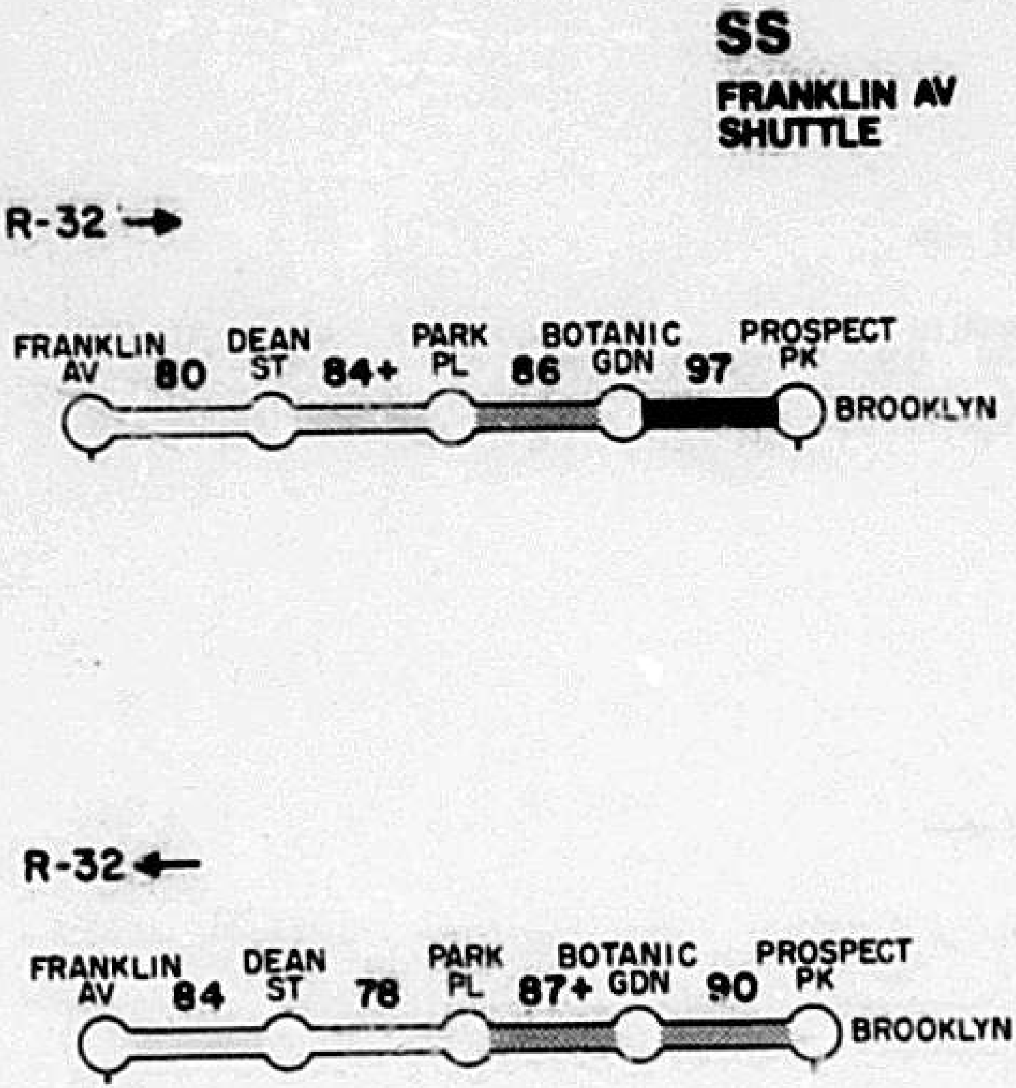
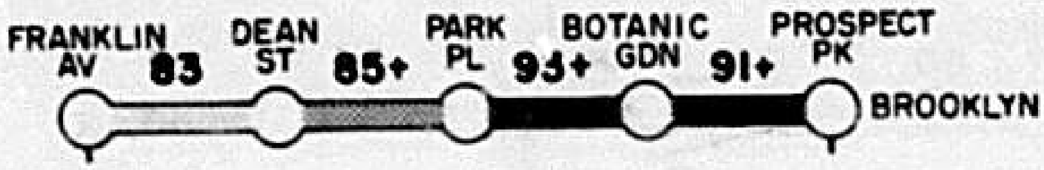


FIGURE C.21.B

Description of the Franklin Ave. Shuttle Route from/to Franklin Ave. to/from Prospect Pk. on the R-32

R-11 →



R-11 ←

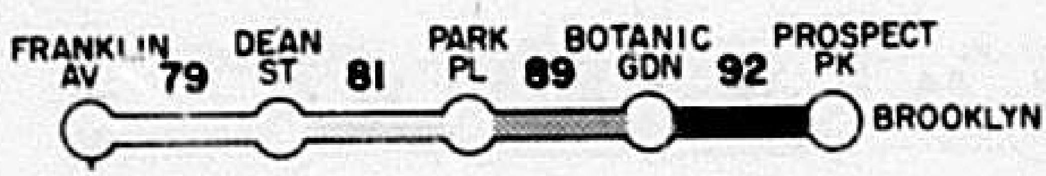
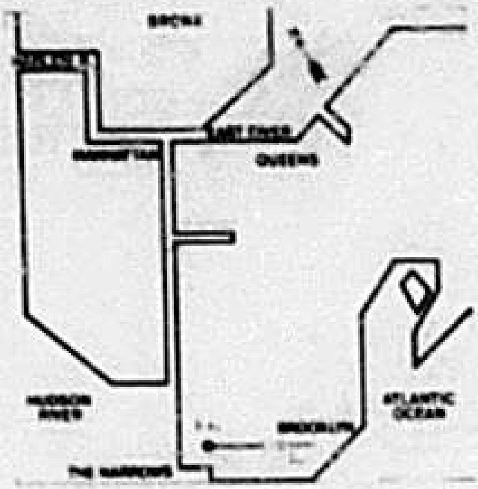


FIGURE C.21.C

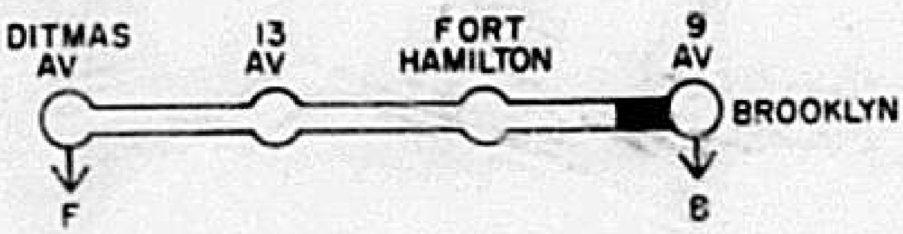
Description of the Franklin Ave. Shuttle Route from/to Franklin Ave. to/from Prospect Pk. on the R-11

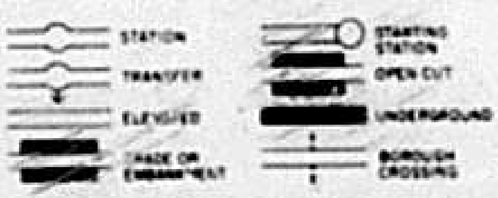


SS
CULVER SHUTTLE

R-27 Ditmus Av to 9 Av
9 Av to Ditmus Av

R-27 Ditmus Av to 9 Av
9 Av to Ditmus Av





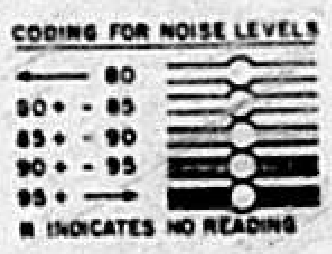


FIGURE C.22.A

Description of the Culver Shuttle Route from Terminal to Terminal

SS

CULVER SHUTTLE

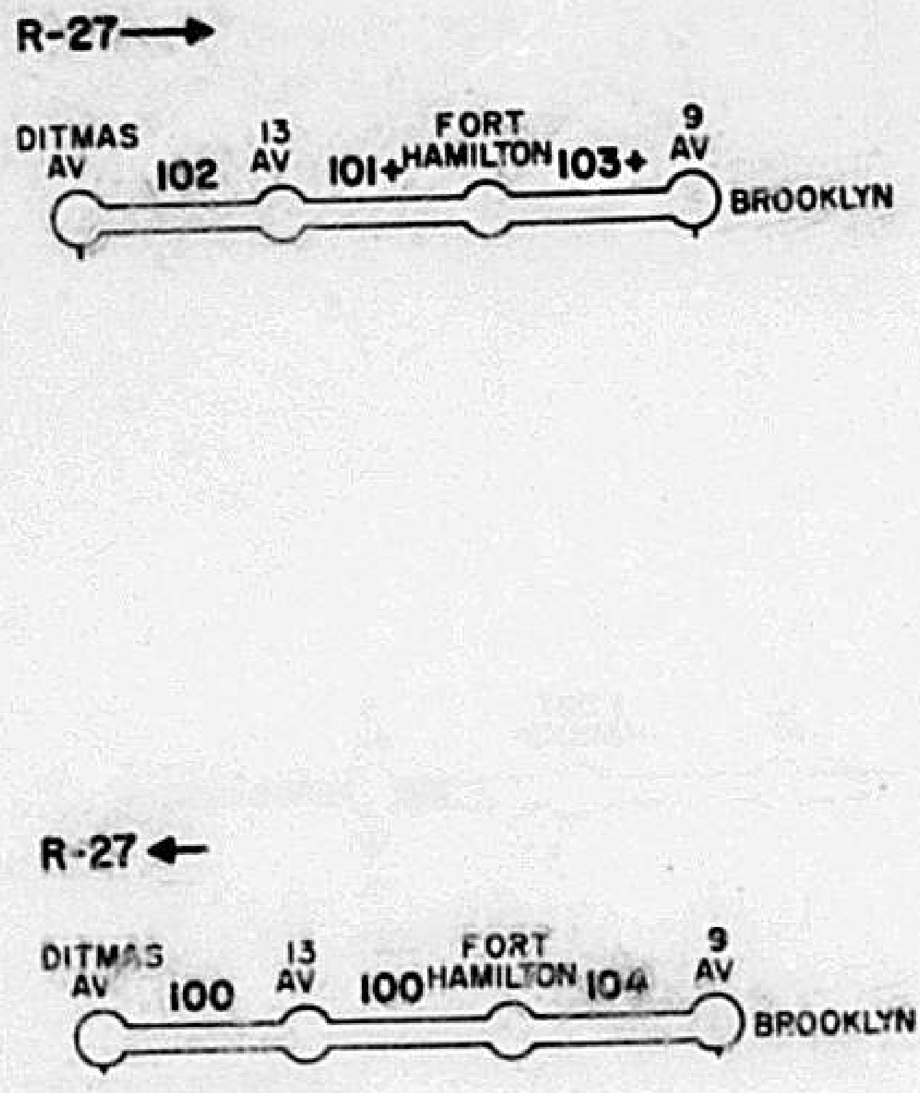


FIGURE C.22.B

Description of the Culver Shuttle Route from/to Ditmas Ave. to/from 9 Ave. on the R-27

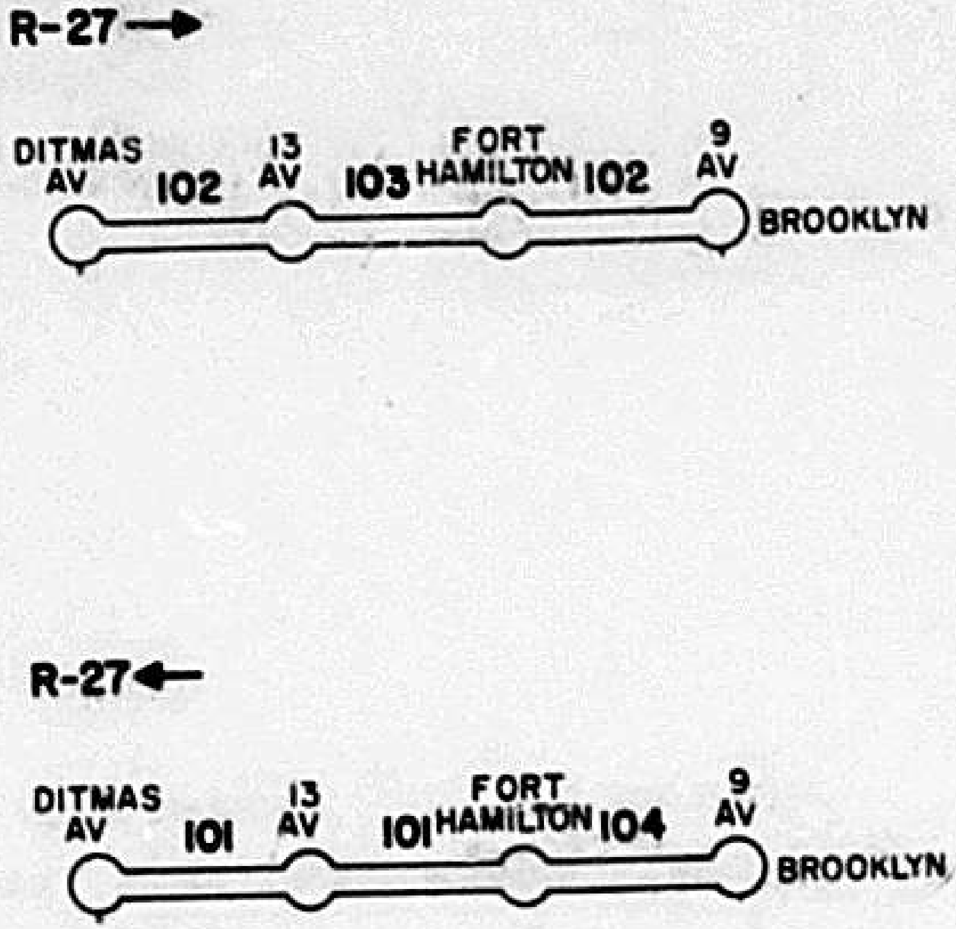


FIGURE C.22.C

Description of the Culver Shuttle Route from/to Ditmas Ave. to/from 9 Ave. on the R-27

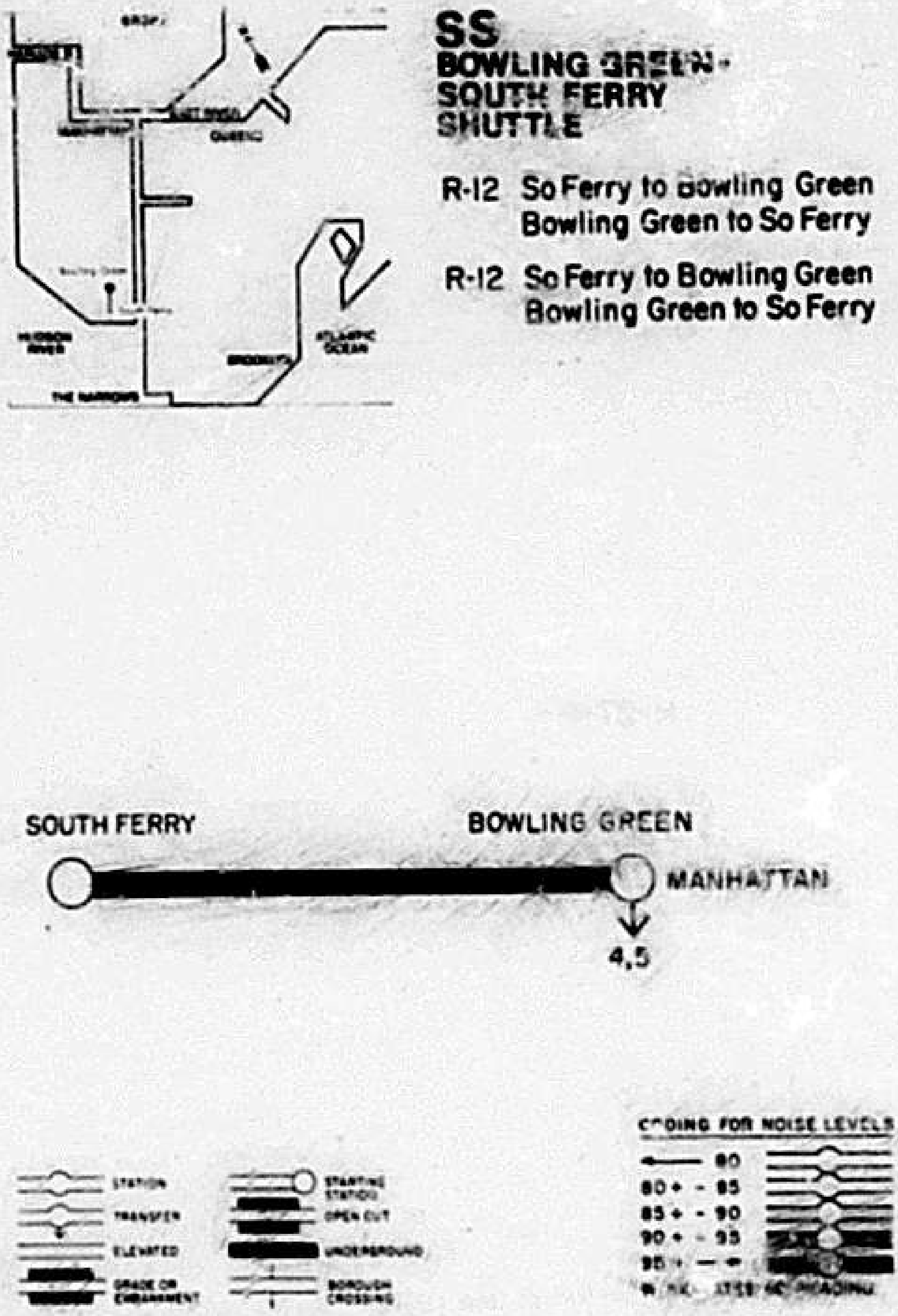


FIGURE C.23.A

Description of the So. Ferry Shuttle Route from Terminal to Terminal

SS

**BOWLING GREEN -
SOUTH FERRY
SHUTTLE**

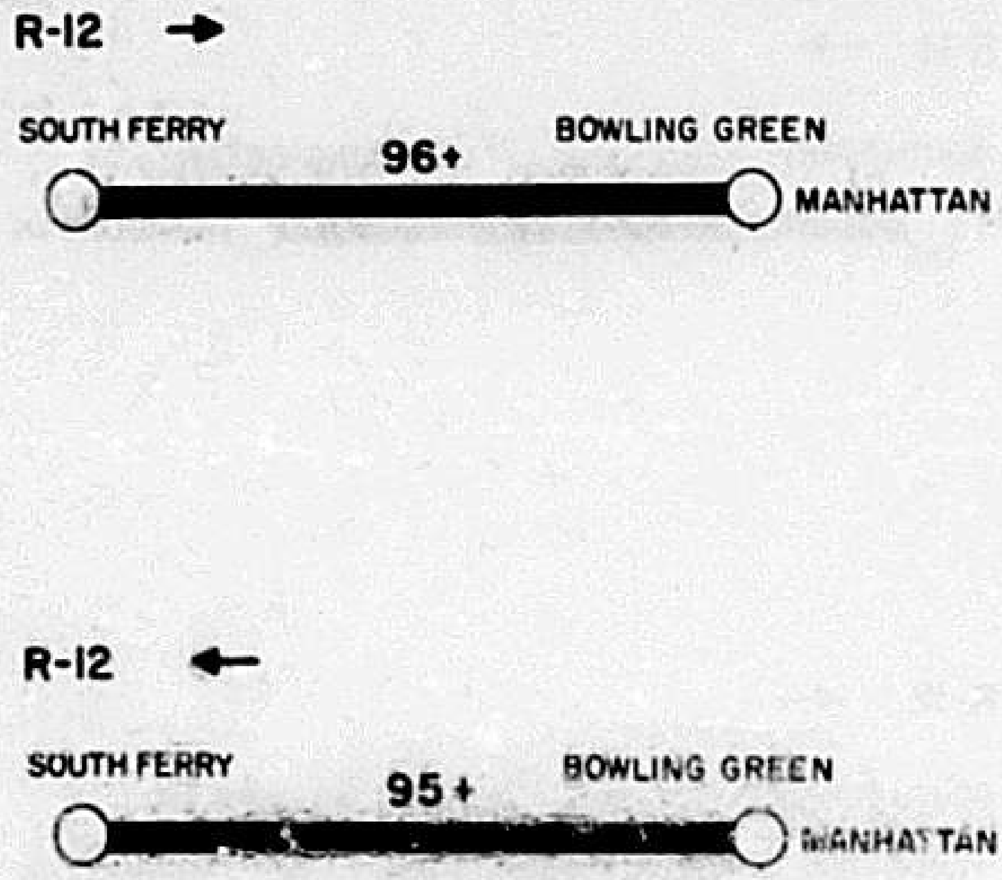
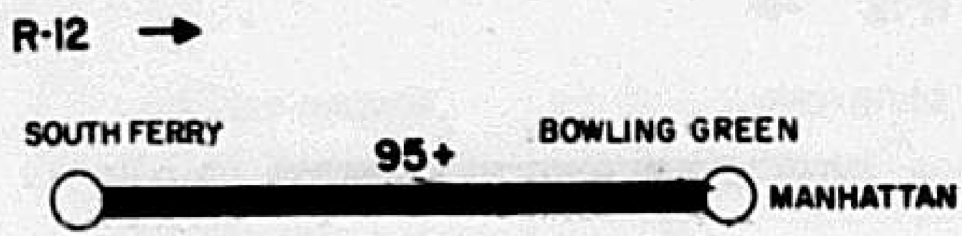


FIGURE C.23.B

Description of the So. Ferry Shuttle Route from/to So. Ferry to/from Bowling Green on the IRT



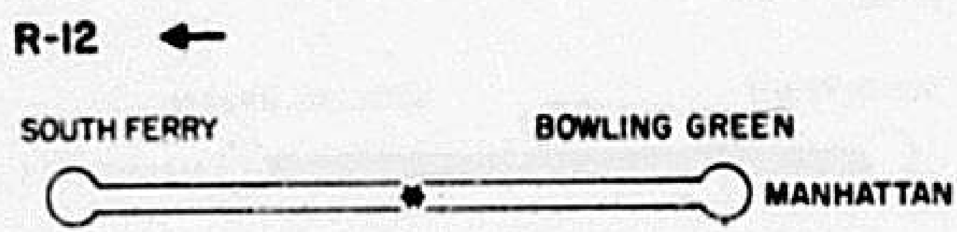
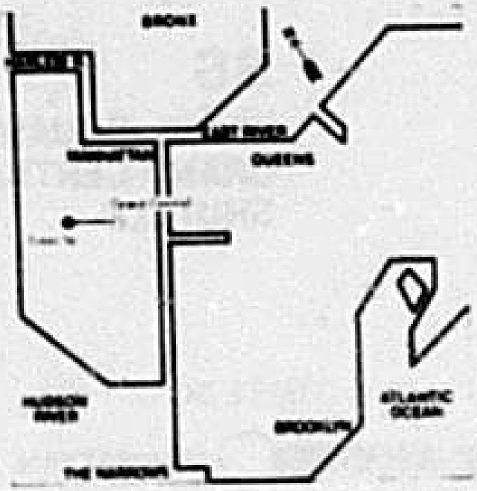


FIGURE C.23.C

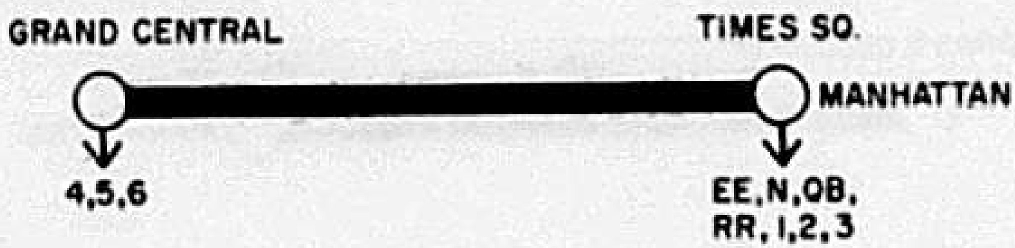
Description of the So. Ferry Shuttle Route from/ to So. Ferry to/from Bowling Green on the IRT



SS
TIMES SQUARE GRAND CENTRAL SHUTTLE

R-17 Grand Central to Times Sq
Times Sq to Grand Central

R-17 Grand Central to Times Sq
Times Sq to Grand Central



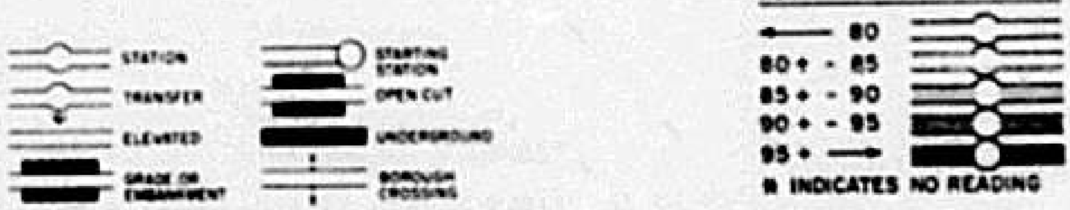


FIGURE C.24.A

Description of the Times Square Shuttle Route from terminal to terminal

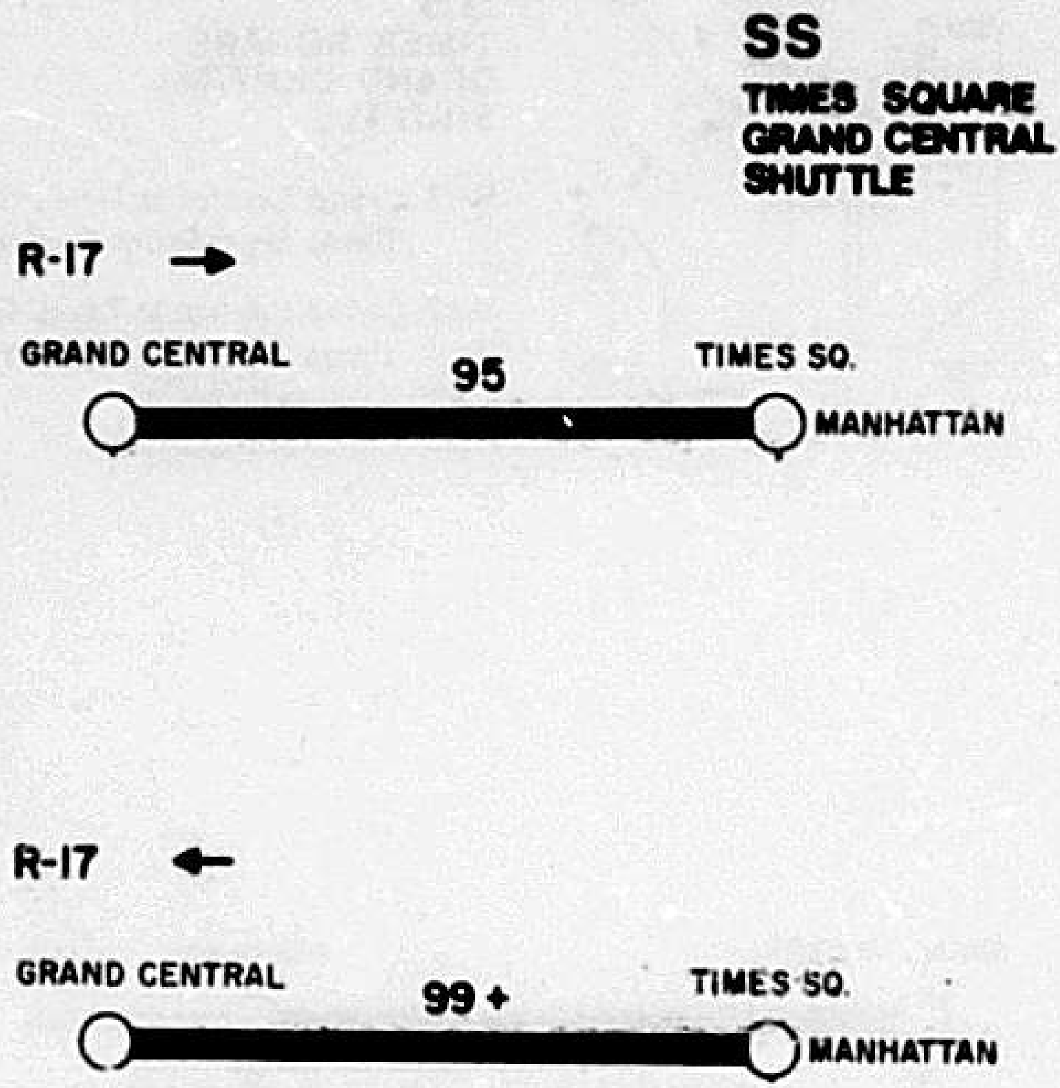


FIGURE C.24.B

Description of the Times Square Shuttle Route from/to Times Square to/from Grand Central on the IRT

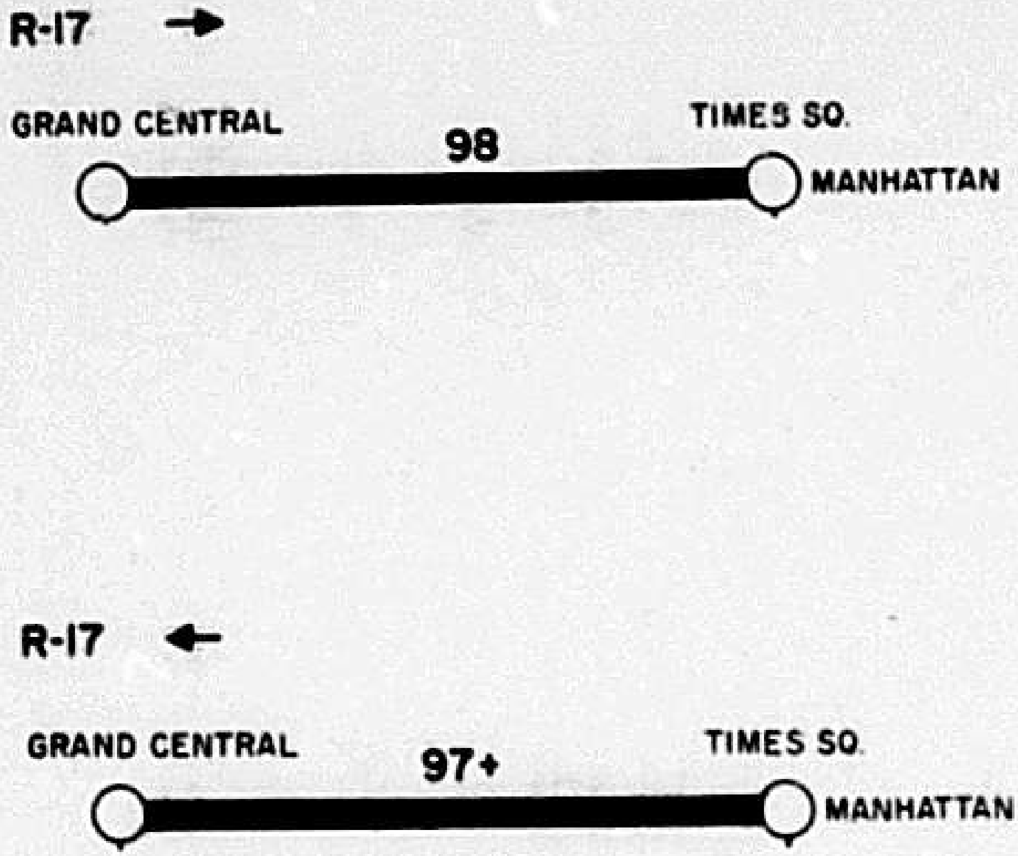


FIGURE C.24.C

Description of the Times Square Shuttle Route from/ to Times Square to/from Grand Central on the IRT

APPENDIX D
TABLES FOR IN-TRAIN DATA
INDICATING THE ROUTE, MODEL,
AND DIRECTION OF EACH RUN

The following tables give the L_A(MAX), L_R, and NAE (Noise Accumulation Estimate; refer to Section 6.6) for each link of the route, the L_R for the entire route, the energy-weighted L_A for the entire route, and the NAE for the entire route. ("Entire Route" is that portion of a route on which data was taken, and is so shown in the tables).

TABLE	ROUTE	MODEL	DIRECTION	CORRESPONDING TO FIGURE
D.1	A	R-10	1	3. 4.B
D.2	A	R-10	2	3. 4.B
D.3	A	R-44	1	3. 4.C
D.4	A	R-44	2	3. 4.C
D.5	A	R-10	1	3. 4.D
D.6	A	R-10	2	3. 4.D
D.7	AA	R-32	1	C. 1.B
D.8	AA	R-32	2	C. 1.B
D.9	AA	R-42	1	C. 1.C
D.10	AA	R-42	2	C. 1.C
D.11	B	R-32	1	C. 2.B
D.12	B	R-32	2	C. 2.B
D.13	B	R-42	1	C. 2.C
D.14	B	R-42	2	C. 2.C
D.15	D	R-32	1	C. 3.B
D.16	D	R-32	2	C. 3.B
D.17	D	R-44	1	C. 3.C
D.18	D	R-44	2	C. 3.C
D.19	E	R-40	1	C. 4.B
D.20	E	R-40	2	C. 4.B
D.21	E	R-40M	1	C. 4.C
D.22	E	R-40M	2	C. 4.C
D.23	EE	R-38	1	C. 5.B
D.24	EE	R-38	2	C. 5.B
D.25	EE	R-40	1	C. 5.C
D.26	EE	R-40	2	C. 5.C
D.27	F	R-40	1	C. 6.B
D.28	F	R-40	2	C. 6.B
D.29	F	R-44	1	C. 6.C
D.30	F	R-44	2	C. 6.C
D.31	GG	R-16	1	C. 7.B
D.32	GG	R-16	2	C. 7.B
D.33	GG	R-40	1	C. 7.C

TABLE	ROUTE	MODEL	DIRECTION	CORRESPONDING TO FIGURE
D.34	GG	R-40	2	C . 7.C
D.35	J	R-27	1	C . 8.B
D.36	J	R-27	2	C . 8.B
D.37	J	R-42	1	C . 8.C
D.38	J	R-42	2	C . 8.C
D.39	LL	R-9	1	C . 9.B
D.40	LL	R-9	2	C . 9.B
D.41	LL	R-42	1	C . 9.C
D.42	LL	R-42	2	C . 9.C
D.43	M	R-27	1	C .10.B
D.44	M	R-27	2	C .10.B
D.45	M	R-42	1	C .10.C
D.46	M	R-42	2	C .10.C
D.47	N	R-38	1	C .11.B
D.48	N	R-38	2	C .11.B
D.49	N	R-42	1	C .11.C
D.50	N	R-42	2	C .11.C
D.51	RR	R-27	1	C .12.B
D.52	RR	R-27	2	C .12.B
D.53	RR	R-42	1	C .12.C
D.54	RR	R-42	2	C .12.C
D.55	S.I.	R-44	1	C .13.B
D.56	S.I.	R-44	2	C .13.B
D.57	S.I.	R-44	1	C .13.C
D.58	S.I.	R-44	2	C .13.C
D.59	IRT 1	R-12	1	C .14.B
D.60	IRT 1	R-12	2	C .14.B
D.61	IRT 1	R-36	1	C .14.C
D.62	IRT 1	R-36	2	C .14.C
D.63	IRT 2	R-15	1	C .15.B
D.64	IRT 2	R-21	2	C .15.B
D.65	IRT 2	R-22	1	C .15.C
D.66	IRT 2	R-29	2	C .15.C

TABLE	ROUTE	MODEL	DIRECTION	CORRESPONDING TO FIGURE
D.67	IRT 3	R-12	1	C.16.B
D.68	IRT 3	R-12	2	C.16.B
D.69	IRT 3	R-29	1	C.16.C
D.70	IRT 3	R-29	2	C.16.C
D.71	IRT 4	R-21	1	C.17.B
D.72	IRT 4	R-21	2	C.17.B
D.73	IRT 4	R-26	1	C.17.C
D.74	IRT 4	R-29	2	C.17.C
D.75	IRT 5	R-17	1	C.18.B
D.76	IRT 5	R-17	2	C.18.B
D.77	IRT 5	R-17	1	C.18.C
D.78	IRT 5	R-21	2	C.18.C
D.79	IRT 6	R-17	1	C.19.B
D.80	IRT 6	R-17	2	C.19.B
D.81	IRT 6	R-29	1	C.19.C
D.82	IRT 6	R-29	2	C.19.C
D.83	IRT 7	R-36-1	1	C.20.B
D.84	IRT 7	R-36-1	2	C.20.B
D.85	IRT 7	R-36	1	C.20.C
D.86	IRT	R-36	2	C.20.C
D.87	Franklin Ave. Shuttle	R-32	1	C.21.B
D.88	Franklin Ave. Shuttle	R-32	2	C.21.B
D.89	Franklin Ave. Shuttle	R-11	1	C.21.C
D.90	Franklin Ave. Shuttle	R-11	2	C.21.C
D.91	Culver Shuttle	R-27	1	C.22.B
D.92	Culver Shuttle	R-27	2	C.22.B
D.93	Culver Shuttle	R-27	1	C.22.C
D.94	Culver Shuttle	R-27	2	C.22.C
D.95	South Ferry Shuttle	R-12	1	C.23.B

TABLE	ROUTE	MODEL	DIRECTION	CORRESPONDING TO FIGURE
D.96	South Ferry Shuttle	R-12	2	C .23.B
D.97	South Ferry Shuttle	R-12	1	C .23.C
D.98	South Ferry Shuttle	R-12	2	C .23.C
D.99	Grand Central Shuttle	R-17	1	C .24.B
D.100	Grand Central Shuttle	R-17	2	C .24.B
D.101	Grand Central Shuttle	R-17	1	C .24.B
D.102	Grand Central Shuttle	R-17	2	C .24.C

TABLE D-1

IN-TRAIN DATA FOR THE A ROUTE ON THE R-10

MODEL NORTHBOUND

ROUTE No.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
A	R-10	N	61- 60	86.0	36.5	101.6	101.4	0.0
A	R-10	N	60- 59	87.0	39.0	102.8	102.8	0.0
A	R-10	N	59- 58	89.5	24.0	103.3	103.3	0.0
A	R-10	N	58- 57	87.0	57.5	104.6	104.6	0.0
A	R-10	N	57- 56	87.0	36.0	102.6	102.6	0.0
A	R-10	N	56- 55	87.0	54.0	104.3	108.4	0.0
A	R-10	N	55- 54	87.0	61.0	104.9	108.2	0.0
A	R-10	N	54- 53	88.0	36.0	103.6	103.6	0.0
A	R-10	N	53- 49	87.0	44.0	103.4	105.1	0.0
A	R-10	N	49- 48	90.0	34.0	105.3	105.3	0.0
A	R-10	N	48- 47	90.0	35.0	105.4	105.4	0.0
A	R-10	N	47- 46	95.0	17.5	103.4	103.4	0.000
A	R-10	N	46- 45	95.0	17.0	105.8	105.8	0.001

LR FOR THE ROUTE IS 116.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 89.8

NAE FOR ROUTE IS 0.00

TABLE D-2

IN-TRAIN DATA FOR THE A ROUTE ON THE R-10

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIRAC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACTION ESTIMATE (NAE)
A	R-10	S	43- 46	94.0	10.0	104.0	108.2	0.000
A	R-10	S	46- 47	85.0	54.0	102.3	102.3	0.0
A	R-10	S	47- 48	98.0	39.5	104.0	104.0	0.0
A	R-10	S	48- 49	89.0	37.5	104.7	104.7	0.0
A	R-10	S	49- 53	87.5	44.0	104.3	109.9	0.0
A	R-10	S	53- 54	85.0	44.3	101.6	101.6	0.0
A	R-10	S	54- 55	88.5	49.5	105.1	111.9	0.0
A	R-10	S	55- 56	90.5	35.0	105.9	110.0	0.300
A	R-10	S	56- 57				NO DATA FOR THIS LINK	
A	R-10	S	57- 58				NO DATA FOR THIS LINK	
A	R-10	S	58- 59	88.0	26.5	132.2	103.6	0.0
A	R-10	S	59- 60	89.0	8.0	98.0	104.0	0.0
A	R-10	S	60- 61	82.0	25.0	96.0	96.0	0.0
A	R-10	S	[illegible]					

LA FOR THE ROUTE IS 114.9

ENERGY-WEIGHTED LA FOR THE ROUTE IS 91.4

NAE FOR ROUTE IS 0.00

TABLE D-3

IN-TRAIN DATA FOR THE A ROUTE ON THE R-44

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
A	R-44	N	61- 60	89.5	29.0	103.9	103.9	0.0
A	R-44	N	60- 59	93.0	52.5	100.1	100.1	0.001
A	R-44	N	59- 58				NO DATA FOR THIS LINE	
A	R-44	N	58- 57	90.0	30.0	105.0	105.0	0.0
A	R-44	N	57- 56	89.0	21.0	102.2	102.2	0.0
A	R-44	N	56- 55	92.0	34.0	107.6	110.5	0.001
A	R-44	N	55- 54	88.0	31.5	103.0	109.0	0.0
A	R-44	N	54- 53	91.0	40.0	107.0	107.0	0.000
A	R-44	N	53- 49	90.0	29.0	104.6	104.6	0.0
A	R-44	N	49- 48				NO DATA FOR THIS LINE	
A	R-44	N	48- 47				NO DATA FOR THIS LINE	
A	R-44	N	47- 46	81.0	14.0	92.5	92.5	0.0
A	R-44	N	46- 45	81.5	23.0	95.1	97.6	0.0
A	R-44	N	45- 44	85.5	9.0	92.5	98.5	0.0
A	R-44	N	44- 43	84.0	20.0	98.5	98.5	0.0
A	R-44	N	43- 42	83.0	26.5	97.2	99.8	0.0
A	R-44	N	42- 41	83.0	30.5	97.8	130.2	0.0
A	R-44	N	41- 40	83.5	32.5	98.6	98.6	0.0
A	R-44	N	40- 39	82.0	29.0	96.0	99.3	0.0
A	R-44	N	39- 38	83.5	44.3	99.9	99.9	0.0
A	R-44	N	38- 37	82.5	44.5	99.2	99.2	0.0
A	R-44	N	37- 36	86.0	14.0	97.5	100.4	0.0
A	R-44	N	36- 35	87.0	38.0	97.8	97.8	0.0
A	R-44	N	35- 34	85.0	43.0	101.3	101.3	0.0
A	R-44	N	34- 33	85.3	34.5	100.9	130.9	0.0
A	R-44	N	33- 32	85.0	21.0	98.2	99.9	0.0
A	R-44	N	32- 31				NO DATA FOR THIS LINE	
A	R-44	N	29- 28	79.0	31.0	93.9	93.9	0.0
A	R-44	N	28- 27	81.0	23.0	94.6	94.6	0.0
A	R-44	N	27- 25	82.0	34.0	97.3	100.1	0.0
A	R-44	N	25- 24	83.3	46.0	99.6	99.6	0.0
A	R-44	N	24- 22	78.0	44.0	94.4	96.5	0.0
A	R-44	N	22- 21	81.0	42.0	97.2	97.2	0.0
A	R-44	N	21- 19	83.0	39.0	98.9	100.4	0.0
A	R-44	N	19- 11	82.6	41.0	98.1	106.3	0.0
A	R-44	N	11- 9				NO DATA FOR THIS LINE	
A	R-44	N	9- 6	83.0	42.0	99.2	102.9	0.0
A	R-44	N	6- 5	80.5	13.0	91.6	96.3	0.0
A	R-44	N	5- 4	85.0	14.3	97.6	97.6	0.0
A	R-44	N	4- 3	86.5	32.0	101.3	101.3	0.0
A	R-44	N	3- 2	84.0	25.0	97.0	99.1	0.0
A	R-44	N	2- 1	82.0	29.0	96.6	96.6	0.0

LA FOR THE ROUTE IS 110.5

ENERGY-WEIGHTED LA FOR THE ROUTE IS 87.4

NAE FOR ROUTE IS 0.00

TABLE D-4

IN-TRAIN DATA FOR THE A ROUTE ON THE R-44

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LC AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
A	R-44	S	1- 2	80.0	10.0	90.0	90.0	0.0
A	R-44	S	2- 3	81.0	10.0	91.0	95.2	0.0
A	R-44	S	3- 4	76.0	65.0	94.1	94.1	0.0
A	R-44	S	4- 5	81.0	10.0	91.0	91.0	0.0
A	R-44	S	5- 6	78.0	27.0	92.3	94.7	0.0
A	R-44	S	6- 9	75.0	18.0	90.8	90.8	0.0
A	R-44	S	9- 11	80.0	3.0	84.8	95.0	0.0
A	R-44	S	11- 19	77.0	16.0	89.0	96.0	0.0
A	R-44	S	19- 21	81.0	18.5	93.7	96.3	0.0
A	R-44	S	21- 22	74.0	29.5	92.6	90.6	0.0
A	R-44	S	22- 24	83.0	3.0	87.8	95.3	0.0
A	R-44	S	24- 25				NO DATA FOR THIS LINE	
A	R-44	S	25- 27	74.5	64.0	94.6	94.6	0.0
A	R-44	S	27- 28	78.5	10.5	88.7	94.1	0.0
A	R-44	S	28- 29	76.5	39.0	92.4	92.4	0.0
A	R-44	S	29- 30	78.0	91.0	97.6	94.7	0.0
A	R-44	S	30- 31	79.0	19.0	90.8	94.9	0.0
A	R-44	S	31- 32	79.0	4.0	85.0	93.0	0.0
A	R-44	S	32- 33	76.5	42.0	92.7	97.7	0.0
A	R-44	S	33- 34	74.0	34.0	91.6	91.6	0.0
A	R-44	S	34- 35	76.0	49.0	92.9	92.9	0.0
A	R-44	S	35- 36	74.5	39.0	92.4	97.4	0.0
A	R-44	S	36- 37	76.5	49.0	93.4	93.4	0.0
A	R-44	S	37- 38	78.0	54.0	95.3	95.3	0.0
A	R-44	S	38- 39	79.0	72.0	97.6	97.6	0.0
A	R-44	S	39- 40				NO DATA FOR THIS LINE	
A	R-44	S	40- 41	75.5	42.5	91.8	91.8	0.0
A	R-44	S	41- 42	80.5	18.0	93.2	93.1	0.0
A	R-44	S	42- 43	83.0	10.0	93.0	93.0	0.0
A	R-44	S	43- 44	79.0	51.5	96.1	96.1	0.0
A	R-44	S	44- 45	80.0	26.0	96.1	94.1	0.0
A	R-44	S	45- 46	78.0	49.0	96.4	96.4	0.0
A	R-44	S	46- 47				NO DATA FOR THIS LINE	
A	R-44	S	47- 48	79.0	151.0	95.1	95.1	0.0
A	R-44	S	48- 49	79.0	27.0	92.4	94.7	0.0
A	R-44	S	49- 53	75.5	13.5	86.8	92.1	0.0
A	R-44	S	53- 54	75.0	94.0	92.5	97.5	0.0
A	R-44	S	54- 55	93.0	51.0	100.1	104.5	0.0
A	R-44	S	55- 56	85.5	39.0	100.9	106.9	0.0
A	R-44	S	56- 57	88.5	26.5	102.7	102.7	0.0
A	R-44	S	57- 58	90.0	41.0	102.1	102.1	0.0
A	R-44	S	58- 59	85.5	44.0	102.1	102.1	0.0
A	R-44	S	59- 60	86.5	37.5	101.6	101.6	0.0
A	R-44	S	60- 61	81.0	40.0	98.8	98.8	0.0

LP FOR THE ROUTE IS 113.9

ENERGY-WEIGHTED LA FOR THE ROUTE IS 82.2

NAE FOR ROUTE IS 0.0

TABLE D-5

IN-TRAIN DATA FOR THE A ROUTE ON THE R-10

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
A	R-10	N	52- 51	88.0	17.0	100.3	130.3	0.0
A	R-10	N	51- 50	92.0	26.0	106.1	106.1	0.000
A	R-10	N	50- 49	88.0	38.0	103.8	103.8	0.0
A	R-10	N	49- 48	89.0	37.0	104.7	104.7	0.0
A	R-10	N	48- 47	89.0	39.0	104.9	104.9	0.0
A	R-10	N	47- 46	91.0	14.0	107.5	102.5	0.000
A	R-10	N	46- 45	91.0	18.0	103.6	105.9	0.000
A	R-10	N	45- 44	94.0	33.0	108.8	108.8	0.001
A	R-10	N	44- 43	95.0	47.0	111.7	111.7	0.002
A	R-10	N	43- 42	97.0	43.0	108.3	108.3	0.001
A	R-10	N	42- 41	96.0	29.0	106.6	112.7	0.002
A	R-10	N	41- 40	93.0	30.0	107.8	107.8	0.001
A	R-10	N	40- 39	94.0	20.3	107.0	109.6	0.001
A	R-10	N	39- 38	93.0	47.0	109.7	109.7	0.001
A	R-10	N	38- 37	92.0	65.0	108.5	108.5	0.001
A	R-10	N	37- 36				NO DATA FOR THIS LINK	
A	R-10	N	36- 35				NO DATA FOR THIS LINK	
A	R-10	N	35- 34	98.0	42.0	114.2	114.2	0.004
A	R-10	N	34- 33	98.0	35.0	113.4	113.4	0.004
A	R-10	N	33- 32	100.0	18.0	112.6	114.4	0.004
A	R-10	N	32- 31	93.0	23.0	106.6	106.6	0.001
A	R-10	N	31- 30	102.0	24.0	116.5	116.5	0.006
A	R-10	N	30- 29	106.0	94.0	123.7	126.1	0.020
A	R-10	N	29- 28	99.0	23.0	108.0	110.2	0.001
A	R-10	N	28- 27	96.0	42.0	112.2	112.2	0.003
A	R-10	N	27- 25	99.0	38.0	114.0	114.8	0.005
A	R-10	N	25- 24	99.0	44.0	115.4	115.4	0.005
A	R-10	N	24- 22	95.0	49.0	111.9	113.9	0.004
A	R-10	N	22- 21	95.0	39.0	110.9	110.9	0.002
A	R-10	N	21- 18				NO DATA FOR THIS LINK	
A	R-10	N	18- 11	98.0	322.0	129.1	129.1	0.033
A	R-10	N	11- 9	97.0	81.0	118.1	116.9	0.008
A	R-10	N	9- 6	100.0	43.5	110.4	120.0	0.015
A	R-10	N	6- 5	97.0	24.0	110.8	116.8	0.002
A	R-10	N	5- 4	99.0	28.0	113.5	113.5	0.003
A	R-10	N	4- 3	104.0	25.5	118.1	118.1	0.008
A	R-10	N	3- 2	97.5	35.0	112.9	114.8	0.005
A	R-10	N	2- 1	96.0	33.5	111.3	111.3	0.002

LA FOR THE ROUTE IS 130.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 98.5

NAE FOR ROUTE IS 0.15

TABLE D-6

IN-TRAIN DATA FOR THE A ROUTE ON THE R-10

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
A	R-10	S	1- 2	98.0	31.0	112.9	112.9	0.003
A	R-10	S	2- 3	130.0	64.0	118.2	118.2	0.010
A	R-10	S	3- 4	102.0	23.0	119.6	118.1	0.009
A	R-10	S	4- 5	98.0	31.0	112.9	112.9	0.003
A	R-10	S	5- 6	102.0	24.0	119.8	115.8	0.005
A	R-10	S	6- 9	133.0	25.5	117.0	120.7	0.017
A	R-10	S	9- 11	100.0	35.5	119.6	117.4	0.009
A	R-10	S	11- 19	102.0	175.0	124.6	125.9	0.054
A	R-10	S	19- 21	104.0	49.0	120.9	120.9	0.015
A	R-10	S	21- 22				NO DATA FOR THIS LINE	
A	R-10	S	22- 24	102.0	39.0	117.9	120.1	0.014
A	R-10	S	24- 25	103.0	27.0	117.3	117.7	0.008
A	R-10	S	25- 27	134.0	17.0	116.3	119.4	0.012
A	R-10	S	27- 28	136.0	31.0	114.9	116.9	0.005
A	R-10	S	28- 29	97.5	26.0	111.6	113.0	0.003
A	R-10	S	29- 30	110.5	47.0	127.2	127.2	0.036
A	R-10	S	30- 31	109.0	59.0	120.9	120.9	0.014
A	R-10	S	31- 32	98.0	43.0	114.3	114.3	0.004
A	R-10	S	32- 33	103.0	11.5	113.6	118.4	0.010
A	R-10	S	33- 34	135.0	34.0	120.3	120.3	0.012
A	R-10	S	34- 35	125.5	19.0	123.9	120.9	0.013
A	R-10	S	35- 36				NO DATA FOR THIS LINE	
A	R-10	S	36- 37				NO DATA FOR THIS LINE	
A	R-10	S	37- 38	99.0	40.0	115.0	115.0	0.009
A	R-10	S	38- 39	98.0	38.0	113.8	113.8	0.004
A	R-10	S	39- 40	95.5	40.0	112.3	112.3	0.003
A	R-10	S	40- 41	97.0	29.0	111.6	111.6	0.002
A	R-10	S	41- 42	97.0	25.0	111.0	112.9	0.003
A	R-10	S	42- 43	102.5	25.3	115.5	115.5	0.005
A	R-10	S	43- 44	102.0	38.0	117.8	117.8	0.008
A	R-10	S	44- 45	101.0	26.0	115.1	115.1	0.009
A	R-10	S	45- 46	94.0	13.0	105.1	109.5	0.001
A	R-10	S	46- 47	90.0	53.0	107.2	107.2	0.0
A	R-10	S	47- 48	94.0	23.0	107.6	107.6	0.001
A	R-10	S	48- 49	92.0	36.0	107.6	107.6	0.001
A	R-10	S	49- 50	92.0	19.0	104.8	104.8	0.000
A	R-10	S	50- 51	94.0	33.0	108.8	108.8	0.001
A	R-10	S	51- 52	90.0	25.0	104.0	104.0	0.0

LA FOR THE ROUTE IS 133.9

ENERGY-WEIGHTED LA FOR THE ROUTE IS 102.6

NAE FOR ROUTE IS 0.29

TABLE D-7

IN-TRAIN DATA FOR THE AA ROUTE ON THE R-32

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
AA	R-32	N	405- 27	96.0	45.0	112.5	112.5	0.003
AA	R-32	N	27- 26	95.0	36.0	110.6	110.6	0.007
AA	R-32	N	26- 25	93.5	12.0	104.3	104.3	0.000
AA	R-32	N	25- 24	97.0	33.5	112.3	112.3	0.003
AA	R-32	N	24- 23	95.0	40.0	111.0	111.0	0.002
AA	R-32	N	23- 22	96.0	42.0	112.2	112.2	0.003
AA	R-32	N	22- 21	98.0	18.0	110.6	110.6	0.007
AA	R-32	N	21- 20	91.0	36.0	104.6	104.6	0.001
AA	R-32	N	20- 19	94.0	29.5	108.7	108.7	0.001
AA	R-32	N	19- 18	96.0	45.0	112.5	112.5	0.003
AA	R-32	N	18- 17	94.5	43.0	110.8	110.8	0.002
AA	R-32	N	17- 16				NO DATA	FOR THIS LINE
AA	R-32	N	16- 15				NO DATA	FOR THIS LINE
AA	R-32	N	15- 14	97.0	31.0	111.9	111.9	0.003
AA	R-32	N	14- 13	94.5	39.0	109.9	109.9	0.002
AA	R-32	N	13- 12	94.5	34.0	110.1	110.1	0.002
AA	R-32	N	12- 11	95.0	29.5	109.7	109.7	0.001
AA	R-32	N	11- 10	97.0	18.0	109.6	113.9	0.004
AA	R-32	N	10- 9	96.0	43.0	112.3	112.3	0.003
AA	R-32	N	9- 8	93.0	46.0	109.6	109.6	0.001
AA	R-32	N	8- 7	96.0	37.0	111.7	111.7	0.002
AA	R-32	N	7- 6	94.0	30.5	108.8	108.8	0.001

LA FOR THE ROUTE IS 124.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 95.6

NAE FOR ROUTE IS 0.04

TABLE D-8

IN-TRAIN DATA FOR THE AA ROUTE ON THE R-32

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM (ESTIMATE)(NAE)
AA	R-32	S	6- 7	101.0	18.0	113.6	113.6	0.003
AA	R-32	S	7- 8	102.5	22.3	115.9	115.9	0.005
AA	R-32	S	8- 9	98.0	17.5	110.4	114.3	0.004
AA	R-32	S	9- 10	107.5	19.0	114.3	116.2	0.006
AA	R-32	S	10- 11	96.5	67.0	114.4	114.9	0.005
AA	R-32	S	11- 12	102.0	19.0	113.8	115.8	0.006
AA	R-32	S	12- 13	130.5	26.0	114.6	114.6	0.004
AA	R-32	S	13- 14	99.5	30.5	114.3	114.3	0.004
AA	R-32	S	14- 15	99.0	37.5	114.1	114.1	0.004
AA	R-32	S	15- 16	132.0	31.2	116.9	116.9	0.007
AA	R-32	S	16- 17	102.0	26.0	116.1	116.1	0.006
AA	R-32	S	17- 18	100.0	40.5	118.0	116.0	0.006
AA	R-32	S	18- 19	124.0	27.0	118.3	119.1	0.010
AA	R-32	S	19- 20	101.0	29.5	115.7	115.7	0.005
AA	R-32	S	20- 21	101.0	21.0	114.2	115.0	0.005
AA	R-32	S	21- 22	97.0	28.5	111.5	111.5	0.002
AA	R-32	S	22- 23	102.0	28.0	116.5	116.5	0.006
AA	R-32	S	23- 24	100.6	30.3	114.8	114.8	0.004
AA	R-32	S	24- 25	103.0	24.0	116.8	116.8	0.006
AA	R-32	S	25- 26				NO DATA FOR THIS LINK	
AA	R-32	S	26- 27	96.3	36.0	111.6	111.6	0.002
AA	R-32	S	27-485	97.0	60.0	114.8	114.8	0.005

LA FOR THE ROUTE IS 128.7

ENERGY-WEIGHTED LA FOR THE ROUTE IS 101.3

NAE FOR ROUTE IS 0.11

TABLE D-9

IN-TRAIN DATA FOR THE AA ROUTE ON THE R-42

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
AA	R-42	N	485- 27	99.0	26.0	113.1	113.1	0.003
AA	R-42	N	27- 26	94.0	31.0	108.9	108.9	0.001
AA	R-42	N	26- 25	92.0	19.5	104.9	108.1	0.001
AA	R-42	N	25- 24	99.0	37.0	114.1	114.1	0.004
AA	R-42	N	24- 23	96.0	31.5	111.0	111.0	0.002
AA	R-42	N	23- 22	95.0	46.0	111.6	111.6	0.002
AA	R-42	N	22- 21	96.0	39.5	112.0	112.0	0.003
AA	R-42	N	21- 20	93.0	35.0	108.4	109.9	0.001
AA	R-42	N	20- 19	94.0	33.0	109.2	109.2	0.001
AA	R-42	N	19- 18	96.5	51.0	113.7	113.7	0.004
AA	R-42	N	18- 17	95.5	41.0	111.6	111.6	0.002
AA	R-42	N	17- 16				NO DATA FOR THIS LINK	
AA	R-42	N	16- 15	99.0	24.0	112.8	112.8	0.003
AA	R-42	N	15- 14	96.5	28.5	111.0	111.0	0.002
AA	R-42	N	14- 13	98.0	24.5	111.9	111.9	0.002
AA	R-42	N	13- 12	95.5	30.0	110.3	110.3	0.002
AA	R-42	N	12- 11	96.0	41.0	112.1	112.1	0.003
AA	R-42	N	11- 10	96.0	28.0	110.5	110.5	0.002
AA	R-42	N	10- 9	94.5	49.0	111.4	111.4	0.002
AA	R-42	N	9- 8	94.5	43.5	110.9	110.9	0.002
AA	R-42	N	8- 7	95.0	47.0	111.2	111.2	0.002
AA	R-42	N	7- 6	93.0	12.5	103.8	107.1	0.000

LA FOR THE ROUTE IS 124.6

ENERGY-WEIGHTED LA FOR THE ROUTE IS 96.3

NAE FOR ROUTE IS 0.04

TABLE D-10

IN-TRAIN DATA FOR THE AA ROUTE ON THE R-42

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
AA	R-42	S	6- 7	88.0	29.0	102.6	102.6	0.0
AA	R-42	S	7- 8	92.0	23.5	105.7	105.7	0.003
AA	R-42	S	8- 9	90.0	13.5	101.3	104.8	0.0
AA	R-42	S	9- 10	91.0	35.5	106.5	106.5	0.000
AA	R-42	S	10- 11	91.0	38.0	106.8	106.8	0.000
AA	R-42	S	11- 12	94.0	12.0	104.8	107.9	0.001
AA	R-42	S	12- 13				NO DATA FOR THIS LINK	
AA	R-42	S	13- 14	86.0	29.0	100.6	100.6	0.3
AA	R-42	S	14- 15	87.5	38.5	103.4	103.4	0.0
AA	R-42	S	15- 16	88.0	44.0	104.4	104.4	3.3
AA	R-42	S	16- 17	87.0	40.0	103.0	103.0	0.0
AA	R-42	S	17- 18	89.0	45.0	105.5	105.9	0.0
AA	R-42	S	18- 19	89.5	53.0	106.5	106.9	0.0
AA	R-42	S	19- 20	88.5	41.0	104.6	104.6	0.0
AA	R-42	S	20- 21	90.0	27.0	104.3	104.3	0.3
AA	R-42	S	21- 22	87.0	41.0	103.1	103.1	0.0
AA	R-42	S	22- 23	89.0	47.0	105.2	105.2	0.0
AA	R-42	S	23- 24	91.0	33.0	106.2	106.2	0.003
AA	R-42	S	24- 25				NO DATA FOR THIS LINK	
AA	R-42	S	25- 26	85.0	53.0	107.2	104.2	0.0
AA	R-42	S	26- 27	88.5	34.0	103.8	103.8	0.0
AA	R-42	S	27-405	90.0	29.0	104.6	104.6	0.3

LA FOR THE ROUTE IS 110.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 93.1

NAE FOR ROUTE IS 0.00

TABLE D-11

IN-TRAIN DATA FOR THE B ROUTE ON THE R-32

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
B	R-32	N	130-129	83.0	43.3	99.3	99.3	0.0
B	R-32	N	129-128	88.5	29.0	103.1	104.9	0.0
B	R-32	N	128-127	90.5	26.0	104.6	104.6	0.000
B	R-32	N	127-126	95.0	29.0	109.6	109.6	0.001
B	R-32	N	126-125	88.0	41.0	104.1	105.5	0.0
B	R-32	N	125-124	94.0	29.3	108.6	108.6	0.331
B	R-32	N	124-123	93.5	26.0	107.6	107.6	0.001
B	R-32	N	123-122	95.0	26.0	109.1	109.1	0.001
B	R-32	N	122-121	94.0	28.3	108.5	108.5	0.001
B	R-32	N	121-120	97.0	30.0	106.8	106.8	0.000
B	R-32	N	120-119	93.0	26.0	107.1	107.1	0.001
B	R-32	N	119-118	89.0	14.0	104.3	106.9	0.0
B	R-32	N	118-117				NO DATA FOR THIS LINK	
B	R-32	N	117-112	98.0	55.0	115.4	118.9	0.012
B	R-32	N	112- 91	89.0	34.5	104.4	104.4	0.0
B	R-32	N	91- 90	93.0	13.0	104.1	117.0	0.001
B	R-32	N	90- 89	96.0	7.0	124.5	109.0	0.001
B	R-32	N	89- 88	97.5	26.0	111.6	113.6	0.004
B	R-32	N	88-200	96.5	35.0	111.9	111.9	0.033
B	R-32	N	233-199	96.0	32.0	111.1	111.1	0.062
B	R-32	N	199- 87				NO DATA FOR THIS LINK	
B	R-32	N	87- 86	95.5	21.3	108.7	110.9	0.032
B	R-32	N	86- 85	99.0	26.3	111.1	113.1	0.003
B	R-32	N	85-111	97.0	13.5	108.3	110.2	0.002

LA FOR THE ROUTE IS 124.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 96.3

NAE FOR ROUTE IS 0.34

TABLE D-12

IN-TRAIN DATA FOR THE B ROUTE ON THE R-32

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
B	R-32	S	111- 85	92.0	19.0	104.8	107.5	0.000
B	R-32	S	85- 86	130.0	22.0	113.4	113.4	0.003
B	R-32	S	86- 87	98.0	14.0	109.5	111.1	0.002
B	R-32	S	87-199	99.0	34.5	114.4	114.4	0.004
B	R-32	S	199-200	99.0	23.0	112.6	112.4	0.003
B	R-32	S	200- 88	92.0	64.0	110.1	110.1	0.001
B	R-32	S	88- 89	97.0	69.0	115.4	115.4	0.006
B	R-32	S	89- 90	94.0	24.3	107.8	110.6	0.031
B	R-32	S	90- 91	94.0	10.0	104.0	111.0	0.001
B	R-32	S	91-112	87.5	43.0	103.8	107.5	0.0
B	R-32	S	112-117	97.5	65.3	115.6	114.7	0.012
B	R-32	S	117-118	94.5	30.5	109.3	109.8	0.301
B	R-32	S	118-119	84.5	28.0	99.0	107.0	0.0
B	R-32	S	119-120	91.5	19.5	104.4	104.4	0.000
B	R-32	S	120-121	90.5	22.5	104.0	104.0	0.000
B	R-32	S	121-122	89.5	28.0	104.0	104.0	0.0
B	R-32	S	122-123	90.5	37.5	104.2	104.7	0.000
B	R-32	S	123-124	91.0	24.5	104.9	104.9	0.000
B	R-32	S	124-125	83.5	34.0	98.8	131.3	0.0
B	R-32	S	125-126	87.5	21.0	101.1	101.1	0.0
B	R-32	S	126-127				NO DATA FOR THIS LINK	
B	R-32	S	127-128				NO DATA FOR THIS LINK	
B	R-32	S	128-129	89.5	47.0	105.7	109.7	0.0
B	R-32	S	129-110	85.5	42.0	101.7	125.0	0.0

LA FOR THE ROUTE IS 124.3

ENERGY-WEIGHTED LA FOR THE ROUTE IS 95.5

NAE FOR ROUTE IS 0.04

TABLE D-13

IN-TRAIN DATA FOR THE B ROUTE ON THE R-42

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
B	R-42	N	110-129	89.0	18.0	101.6	105.5	0.0
B	R-42	N	129-128	93.0	31.0	137.9	108.9	0.001
B	R-42	N	128-127	88.5	37.0	104.2	104.2	0.0
B	R-42	N	127-126	88.5	37.0	104.2	104.2	0.0
B	R-42	N	126-125	87.5	21.5	130.8	104.6	0.0
B	R-42	N	125-124	92.0	35.0	107.2	107.2	0.001
B	R-42	N	124-123	92.0	36.0	107.6	107.4	0.001
B	R-42	N	123-122	92.0	44.0	108.4	108.4	0.001
B	R-42	N	122-121	90.0	51.0	104.9	104.9	0.0
B	R-42	N	121-120	96.0	51.0	104.9	104.9	0.0
B	R-42	N	120-119	89.0	37.0	104.7	104.7	0.0
B	R-42	N	119-118	87.0	35.0	107.4	105.3	0.0
B	R-42	N	118-117	96.0	38.2	105.8	105.8	0.0
B	R-42	N	117-112	95.0	15.0	106.8	114.7	0.004
B	R-42	N	112- 91	88.0	47.0	104.7	104.7	0.0
B	R-42	N	91- 90	89.0	14.0	100.5	109.0	0.0
B	R-42	N	90- 89	97.0	19.0	104.8	105.8	0.000
B	R-42	N	89- 88	93.0	17.0	101.8	110.0	0.001
B	R-42	N	88-200	95.0	32.0	110.1	113.1	0.002
B	R-42	N	200-199	94.0	35.0	109.4	109.4	0.001
B	R-42	N	199- 87	94.0	35.0	109.4	109.4	0.001
B	R-42	N	87- 86	98.0	27.0	112.3	112.3	0.003
B	R-42	N	86- 85	92.0	28.0	104.5	104.5	0.000
B	R-42	N	85-111				NO DATA FOR THIS LINE	

LR FOR THE ROUTE IS 122.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 93.4

NAE FOR ROUTE IS 0.02

TABLE D-14

IN-TRAIN DATA FOR THE B ROUTE ON THE R-42

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIRTC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
B	R-42	S	111- 85	84.0	38.0	101.8	101.0	0.0
B	R-42	S	85- 86	93.5	23.0	107.1	107.1	0.001
B	R-42	S	86- 87				NO DATA FOR THIS LINE	
B	R-42	S	87-199	96.5	46.0	107.1	107.1	0.300
B	R-42	S	199-200	90.0	32.0	109.1	105.1	0.0
B	R-42	S	200- 88	86.5	33.0	101.7	101.7	0.0
B	R-42	S	88- 89	88.0	96.0	107.8	107.8	0.0
B	R-42	S	89- 90	87.5	30.0	102.3	102.3	0.0
B	R-42	S	90- 91	87.0	31.5	102.0	100.0	0.0
B	R-42	S	91-112	87.0	31.5	102.0	102.0	0.0
B	R-42	S	112-117	91.0	26.0	105.1	106.5	0.300
B	R-42	S	117-118	87.0	28.0	101.5	101.5	0.0
B	R-42	S	118-119	84.0	16.5	96.2	98.9	0.0
B	R-42	S	119-120	85.5	27.0	99.8	99.8	0.0
B	R-42	S	120-121	95.5	31.0	100.4	103.4	0.0
B	R-42	S	121-122	84.5	30.0	99.3	99.3	0.0
B	R-42	S	122-123	89.0	9.0	98.5	102.7	0.0
B	R-42	S	123-124	82.5	55.0	99.9	99.9	0.0
B	R-42	S	124-125	83.0	14.0	94.5	94.5	0.0
B	R-42	S	125-126	81.5	35.0	96.9	96.9	0.0
B	R-42	S	126-127	84.0	35.5	99.5	99.5	0.0
B	R-42	S	127-128	87.5	36.0	103.1	103.1	0.0
B	R-42	S	128-129				NO DATA FOR THIS LINE	
B	R-42	S	129-110				NO DATA FOR THIS LINE	

LA FOR THE ROUTE IS 116.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 88.5

NAE FOR ROUTE IS 0.00

TABLE D-15

IN-TRAIN DATA FOR THE D ROUTE ON THE R-32

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
D	R-32	N	107-106	93.0	22.0	104.4	106.4	0.001
D	R-32	N	106-103	92.0	53.5	109.3	111.7	0.001
D	R-32	N	103- 99	93.0	99.0	113.0	113.0	0.003
D	R-32	N	99- 96	92.0	64.0	110.1	110.1	0.001
D	R-32	N	96- 94	89.0	21.0	102.2	105.7	0.0
D	R-32	N	92- 91	88.5	32.0	103.6	106.0	0.0
D	R-32	N	91- 90	90.0	14.0	101.5	101.5	0.0
D	R-32	N	93- 89	95.0	21.0	124.2	111.3	0.001
D	R-32	N	89- 88	98.5	19.0	111.3	114.3	0.004
D	R-32	N	88- 87	102.5	29.0	117.1	114.6	0.010
D	R-32	N	87- 86	94.0	33.5	134.0	104.8	0.001
D	R-32	N	86- 85	130.0	27.0	111.4	113.4	0.003
D	R-32	N	85- 84	94.0	36.5	109.6	109.6	0.001
D	R-32	N	84- 19	97.0	40.0	119.0	113.0	0.003
D	R-32	N	19- 11	102.0	184.0	174.4	125.2	0.045
D	R-32	N	11- 9				NO DATA FOR THIS LINE	
D	R-32	N	9- 83	97.0	40.5	113.1	115.3	0.005
D	R-32	N	83- 82	104.5	45.0	121.0	121.0	0.015
D	R-32	N	82- 81	102.5	43.3	114.8	119.8	0.013
D	R-32	N	81- 80	107.0	36.3	117.6	117.6	0.008
D	R-32	N	80- 79	102.0	38.0	117.8	117.8	0.068
D	R-32	N	79- 78	102.0	30.0	116.8	116.8	0.006
D	R-32	N	78- 77	103.0	31.5	114.0	118.0	0.028
D	R-32	N	77- 76	124.0	25.0	118.0	119.0	0.037
D	R-32	N	76- 75	102.0	39.5	119.0	118.0	0.008
D	R-32	N	75- 74	99.5	21.0	112.7	116.2	0.006
D	R-32	N	74- 73	133.5	23.0	117.1	117.1	0.006

LA FOR THE ROUTE IS 131.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 103.9

NAE FOR ROUTE IS 0.17

TABLE D-16

IN-TRAIN DATA FOR THE D ROUTE ON THE R-32

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
D	R-32	S	73- 74	99.0	60.0	117.3	117.3	0.008
D	R-32	S	74- 75	103.0	32.0	118.1	118.2	0.008
D	R-32	S	75- 76	106.0	26.0	120.1	120.1	0.011
D	R-32	S	76- 77	131.0	26.0	117.1	117.1	0.007
D	R-32	S	77- 78	103.0	29.0	117.6	117.6	0.007
D	R-32	S	78- 79	101.0	29.3	119.6	119.6	0.335
D	R-32	S	79- 80	103.0	33.0	118.2	118.2	0.008
D	R-32	S	80- 81	130.0	40.0	116.0	116.0	0.006
D	R-32	S	81- 82	99.0	23.0	112.6	116.8	0.038
D	R-32	S	82- 83	107.0	24.0	119.8	117.7	0.008
D	R-32	S	83- 9	99.0	40.0	119.8	119.8	0.006
D	R-32	S	9- 11	99.5	26.0	113.6	114.2	0.006
D	R-32	S	11- 19	91.5	26.0	107.6	109.8	0.001
D	R-32	S	19- 84	95.0	52.0	112.2	113.0	0.303
D	R-32	S	84- 85	98.0	14.0	107.5	110.9	0.001
D	R-32	S	85- 86	131.0	29.0	119.5	119.5	0.009
D	R-32	S	86- 87	94.0	39.5	109.9	109.9	0.331
D	R-32	S	87- 88	109.0	41.0	121.1	121.4	0.027
D	R-32	S	88- 89	133.0	31.0	117.9	119.9	0.013
D	R-32	S	89- 90	98.0	17.5	110.4	119.8	0.006
D	R-32	S	90- 91	99.0	33.0	114.2	118.0	0.010
D	R-32	S	91- 92	96.5	26.3	110.6	113.6	0.004
D	R-32	S	94- 96	91.0	27.0	109.3	107.7	0.000
D	R-32	S	96- 99	91.0	53.0	108.2	108.4	0.000
D	R-32	S	99-103	95.0	64.0	113.1	113.5	0.323
D	R-32	S	103-106	94.5	92.0	114.1	114.1	0.004
D	R-32	S	106-107	91.0	10.0	101.0	109.5	0.000

LA FOR THE ROUTE IS 131.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 101.6

NAE FOR ROUTE IS 0.17

TABLE D-17

IN-TRAIN DATA FOR THE D ROUTE ON THE R-44

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LP AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
D	R-44	N	107-106	79.0	31.5	93.0	93.0	0.0
D	R-44	N	106-103	80.0	17.5	92.4	96.0	0.0
D	R-44	N	103- 99	80.5	80.0	99.5	99.7	0.0
D	R-44	N	99- 96	83.0	76.5	98.0	98.8	0.0
D	R-44	N	96- 94	80.0	15.0	91.8	95.7	0.0
D	R-44	N	92- 91				NO DATA FOR THIS LINK	
D	R-44	N	91- 90	80.0	44.0	96.4	100.2	0.0
D	R-44	N	90- 89	84.0	10.0	94.0	97.8	0.0
D	R-44	N	89- 88	92.0	7.0	13C.5	104.6	0.000
D	R-44	N	88- 87	94.0	12.5	109.0	109.7	0.000
D	R-44	N	87- 86	87.0	35.0	97.4	97.4	0.0
D	R-44	N	86- 85	85.C	21.3	98.2	98.2	3.0
D	R-44	N	85- 84	79.5	29.0	94.1	94.1	0.0
D	R-44	N	84- 19	79.0	27.0	93.3	93.3	0.0
D	R-44	N	19- 11	81.0	336.0	106.3	106.3	0.0
D	R-44	N	11- 9	80.0	30.0	94.8	97.8	0.0
D	R-44	N	9- 83	82.0	15.0	93.8	96.1	0.0
D	R-44	N	83- 82	84.0	49.0	100.9	100.9	0.0
D	R-44	N	82- 81	79.0	80.0	98.0	98.0	0.0
D	R-44	N	81- 80	85.0	23.0	98.6	99.6	0.0
D	R-44	N	80- 79				NO DATA FOR THIS LINK	
D	R-44	N	79- 78	84.0	25.0	98.0	98.0	0.0
D	R-44	N	78- 77	85.0	35.0	100.4	100.4	0.0
D	R-44	N	77- 76	85.0	26.0	99.1	99.1	0.0
D	R-44	N	76- 75	87.0	45.3	98.5	98.5	0.0
D	R-44	N	75- 74	86.0	15.0	97.8	109.0	0.0
D	R-44	N	74- 73	85.0	57.5	102.6	102.6	0.0

LA FOR THE ROUTE IS 114.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 87.0

NAE FOR ROUTE IS 0.00

TABLE D-18

IN-TRAIN DATA FOR THE D ROUTE ON THE R-44

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
D	R-44	S	73- 74	83.0	29.0	97.0	99.5	0.0
D	R-44	S	74- 75	81.0	30.0	96.8	97.5	0.0
D	R-44	S	75- 76	82.0	36.5	97.6	97.6	0.0
D	R-44	S	76- 77	80.0	42.0	96.2	96.2	0.0
D	R-44	S	77- 78	80.5	30.0	95.3	95.3	0.0
D	R-44	S	78- 79	87.0	7.0	90.5	99.8	0.0
D	R-44	S	79- 80	80.0	25.0	94.0	96.0	0.0
D	R-44	S	80- 81	81.5	15.0	93.3	93.3	0.0
D	R-44	S	81- 82	79.5	32.0	94.6	96.6	0.0
D	R-44	S	82- 83	75.0	115.3	95.6	95.4	0.0
D	R-44	S	83- 9	77.0	19.5	89.9	89.9	0.0
D	R-44	S	9- 11	79.5	33.0	96.7	97.8	0.0
D	R-44	S	11- 19	81.0	30.5	96.9	102.0	0.0
D	R-44	S	19- 84	83.0	14.0	94.5	95.9	0.0
D	R-44	S	84- 85	77.5	39.0	93.6	93.6	0.0
D	R-44	S	85- 86	79.0	37.0	94.7	96.7	0.0
D	R-44	S	86- 87	84.0	27.0	97.4	97.6	0.0
D	R-44	S	87- 88	85.0	97.9	104.9	104.9	0.0
D	R-44	S	88- 89				NO DATA FOR THIS LINE	
D	R-44	S	89- 90	77.0	110.0	97.7	97.7	0.0
D	R-44	S	90- 91	77.0	93.0	96.7	100.2	0.0
D	R-44	S	91- 92	76.5	29.0	91.1	95.6	0.0
D	R-44	S	94- 96	77.0	39.0	92.9	95.3	0.0
D	R-44	S	96- 99	69.0	34.0	84.3	90.3	0.0
D	R-44	S	99-103	70.5	49.0	87.4	91.1	0.0
D	R-44	S	103-106	86.0	39.0	101.9	103.0	0.0
D	R-44	S	106-107	76.0	20.0	89.0	92.7	0.0

LA FOR THE ROUTE IS 112.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 82.1

NAE FOR ROUTE IS 0.0

TABLE D-19

IN-TRAIN DATA FOR THE E ROUTE ON THE R-40

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
E	R-40	N	405- 27				NO DATA FOR THIS LINE	
E	R-40	N	27- 26	93.0	37.0	100.7	100.7	0.001
E	R-40	N	26- 25	89.0	16.0	101.0	106.5	0.0
E	R-40	N	25- 24	92.0	43.0	108.3	110.6	0.001
E	R-40	N	24- 23	92.0	49.0	108.0	108.9	0.001
E	R-40	N	23- 22	93.0	43.0	109.3	109.3	0.001
E	R-40	N	22- 21	94.0	37.0	109.7	109.7	0.001
E	R-40	N	21- 20	90.0	26.0	104.1	106.5	0.0
E	R-40	N	20- 84	91.0	40.0	107.0	107.0	0.000
E	R-40	N	84-198	94.0	30.0	108.0	108.0	0.001
E	R-40	N	198-197	95.0	26.0	109.1	109.1	0.001
E	R-40	N	197-196	98.0	83.0	117.2	117.2	0.008
E	R-40	N	196-195	99.0	50.0	116.0	116.0	0.006
E	R-40	N	195-189				NO DATA FOR THIS LINE	
E	R-40	N	189-183	95.5	27.0	109.0	117.5	0.009
E	R-40	N	183-182	90.0	26.0	104.1	124.1	0.0
E	R-40	N	182-181	92.0	30.0	107.0	107.0	0.001
E	R-40	N	181-180	95.0	23.0	108.6	110.0	0.001
E	R-40	N	180-179	95.0	29.0	109.6	109.6	0.001
E	R-40	N	179-178	93.5	32.0	108.6	108.6	0.001
E	R-40	N	178-177	93.0	43.0	109.3	109.3	0.001
E	R-40	N	177-176	95.0	38.0	110.0	110.0	0.002

LA FOR THE ROUTE IS 124.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 94.9

NAE FOR ROUTE IS 0.04

TABLE D-20

IN-TRAIN DATA FOR THE E ROUTE ON THE R-40

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
E	R-40	S	176-177	90.0	44.0	106.4	106.4	0.0
E	R-40	S	177-178	91.0	53.0	108.2	108.2	0.000
E	R-40	S	178-179	92.0	31.0	106.9	106.9	0.000
E	R-40	S	179-180	96.0	27.0	113.3	110.3	0.302
E	R-40	S	180-181	92.5	42.0	109.7	109.7	0.001
E	R-40	S	181-182	91.0	54.0	106.6	106.6	0.000
E	R-40	S	182-183	87.0	33.3	107.2	102.2	0.3
E	R-40	S	183-187	93.0	77.0	111.9	119.3	0.004
E	R-40	S	187-195				NO DATA FOR THIS LINK	
E	R-40	S	195-196	90.0	36.0	135.6	105.6	0.0
E	R-40	S	196-197	94.0	62.0	111.9	112.7	0.307
E	R-40	S	197-198	88.0	38.0	103.0	123.0	0.0
E	R-40	S	198- 86	89.0	34.0	104.3	104.3	0.0
E	R-40	S	86- 20	85.0	*46.0	101.6	101.6	0.0
E	R-40	S	23- 21	89.0	29.3	133.6	104.6	0.3
E	R-40	S	21- 22	88.0	34.0	103.3	103.3	0.0
E	R-40	S	22- 23	92.0	37.0	107.7	107.7	0.001
E	R-40	S	23- 24	89.0	34.0	104.3	104.3	0.0
E	R-40	S	24- 25	92.0	39.0	107.4	108.6	0.001
E	R-40	S	25- 26	88.0	56.0	105.5	105.5	0.0
E	R-40	S	26- 27	90.0	31.0	104.9	104.9	0.0
E	R-40	S	27-405	89.0	37.0	104.7	104.7	0.0

LA FOR THE ROUTE IS 121.3

ENERGY-WEIGHTED LA FOR THE ROUTE IS 91.8

NAE FOR ROUTE IS 0.31

TABLE D-21

IN-TRAIN DATA FOR THE E ROUTE ON THE R-40

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
E	R-40	N	485- 27				NO DATA FOR THIS LINK	
E	R-40	N	27- 26				NO DATA FOR THIS LINK	
E	R-40	N	26- 25	88.0	24.0	101.8	109.1	0.3
E	R-40	N	25- 24	91.0	71.0	109.5	109.5	0.001
E	R-40	N	24- 23	91.0	37.0	106.7	106.7	0.000
E	R-40	N	23- 22	91.0	22.5	104.4	104.4	0.000
E	R-40	N	22- 21	92.0	39.0	107.4	107.4	0.001
E	R-40	N	21- 20	88.0	30.0	102.8	105.2	0.0
E	R-40	N	20- 84	91.0	30.0	105.8	105.8	0.000
E	R-40	N	84-198	91.0	38.0	106.8	106.8	0.000
E	R-40	N	198-197	92.6	33.3	106.8	106.8	0.363
E	R-40	N	197-196	96.0	82.0	119.1	119.1	0.005
E	R-40	N	196-195	95.0	21.0	108.2	108.2	0.001
E	R-40	N	195-189	93.0	104.0	113.2	113.2	0.003
E	R-40	N	189-183	93.0	198.0	116.0	116.0	0.305
E	R-40	N	183-182	87.0	37.0	102.7	102.7	0.0
E	R-40	N	182-181	90.0	39.0	105.9	105.9	0.0
E	R-40	N	181-180	91.0	43.0	107.3	104.5	0.000
E	R-40	N	180-179	91.0	98.0	108.6	108.6	0.330
E	R-40	N	179-178	92.0	34.0	107.3	107.3	0.001
E	R-40	N	178-177	92.0	46.0	108.6	108.6	0.301
E	R-40	N	177-176	94.0	43.0	110.3	110.3	0.002

LP FOR THE ROUTE IS 122.7

ENERGY-WEIGHTED LA FOR THE ROUTE IS 92.2

NAE FOR ROUTE IS 0.32

TABLE D-22

IN-TRAIN DATA FOR THE E ROUTE ON THE R-40

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
E	R-40	S	176-177	91.0	46.0	107.6	107.6	0.000
E	R-40	S	177-178	97.0	51.0	114.1	114.1	0.004
E	R-40	S	178-179	96.0	35.0	111.2	111.2	0.002
E	R-40	S	179-180	98.0	44.0	114.4	114.4	0.004
E	R-40	S	180-181	97.0	51.0	114.1	114.1	0.004
E	R-40	S	181-182	96.0	32.0	111.1	111.1	0.002
E	R-40	S	182-183	94.0	34.0	109.3	109.3	0.001
E	R-40	S	183-189	97.0	77.0	115.9	119.3	0.014
E	R-40	S	189-195	91.5	66.0	109.7	109.7	0.001
E	R-40	S	195-196	88.0	62.0	104.9	105.9	0.0
E	R-40	S	196-197	96.0	59.0	113.4	113.4	0.004
E	R-40	S	197-198	91.0	37.0	106.7	104.7	0.000
E	R-40	S	198- 84	92.0	31.5	107.0	107.0	0.001
E	R-40	S	84- 20	90.0	37.5	105.7	105.7	0.0
E	R-40	S	20- 21	95.5	17.3	107.8	107.8	0.001
E	R-40	S	21- 22	91.5	20.0	106.0	106.0	0.000
E	R-40	S	22- 23	95.0	23.0	108.6	108.6	0.001
E	R-40	S	23- 24				NO DATA FOR THIS LINE	
E	R-40	S	24- 25	94.5	20.0	109.0	109.0	0.001
E	R-40	S	25- 26	93.5	34.0	108.8	108.8	0.001
E	R-40	S	26- 27	94.5	29.0	109.1	109.1	0.001
E	R-40	S	27-485				NO DATA FOR THIS LINE	

LA FOR THE ROUTE IS 124.7

ENERGY-WEIGHTED LA FOR THE ROUTE IS 95.3

NAE FOR ROUTE IS 0.04

TABLE D-23

IN-TRAIN DATA FOR THE EE ROUTE ON THE R-38

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
EE	R-38	N	161-160	83.0	11.5	93.6	97.4	0.0
EE	R-38	N	160-159	90.5	19.0	103.3	103.3	0.000
EE	R-38	N	159-158	85.0	16.0	97.0	97.0	0.0
EE	R-38	N	158-157	89.0	23.0	102.0	102.0	0.0
EE	R-38	N	157-156	89.5	38.0	109.3	109.3	0.0
EE	R-38	N	156-155	90.0	49.0	104.9	106.9	0.0
EE	R-38	N	155-154	86.0	13.5	97.3	99.0	0.0
EE	R-38	N	154-153	97.0	14.5	108.6	112.9	0.003
EE	R-38	N	153-152	98.5	19.5	111.4	111.4	0.002
EE	R-38	N	152-151	96.5	29.5	111.0	111.0	0.002
EE	R-38	N	151-150	94.0	50.0	111.0	111.0	0.002
EE	R-38	N	150-149	97.0	32.0	117.1	112.1	0.003
EE	R-38	N	149-148	90.0	14.5	101.6	106.6	0.0
EE	R-38	N	148-147	101.0	14.5	112.6	112.6	0.003
EE	R-38	N	147-146	97.0	37.3	112.7	112.7	0.003
EE	R-38	N	146-195	101.5	127.0	122.5	122.8	0.027
EE	R-38	N	195-194	103.0	40.0	119.0	119.0	0.010
EE	R-38	N	194-193	102.0	35.0	117.4	117.4	0.007
EE	R-38	N	193-192				NO DATA FOR THIS LINK	
EE	R-38	N	192-191				NO DATA FOR THIS LINK	
EE	R-38	N	191-190	105.5	37.0	121.2	121.2	0.014
EE	R-38	N	190-189	102.0	42.5	118.3	118.3	0.009
EE	R-38	N	189-188	104.0	53.5	121.0	121.0	0.015
EE	R-38	N	188-187	103.0	47.0	119.7	119.7	0.012
EE	R-38	N	187-186	105.3	43.0	121.3	121.3	0.015
EE	R-38	N	186-185	105.0	39.0	120.9	120.9	0.014
EE	R-38	N	185-184	103.0	29.0	117.6	119.9	0.013
EE	R-38	N	184-183	103.0	45.3	119.5	119.5	0.011

LA FOR THE ROUTE IS 131.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 101.0

NAE FOR ROUTE IS 0.16

TABLE D-24

IN-TRAIN DATA FOR THE EE ROUTE ON THE R-38

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
EE	R-38	S	183-184	105.0	36.0	120.6	120.6	0.011
EE	R-38	S	184-185	104.0	41.5	120.2	120.2	0.012
EE	R-38	S	185-186	122.0	42.0	118.2	118.2	0.009
EE	R-38	S	186-187	103.5	40.5	119.6	119.6	0.011
EE	R-38	S	187-188	104.5	19.0	117.3	119.4	0.010
EE	R-38	S	188-189	104.6	47.3	120.7	120.7	0.014
EE	R-38	S	189-190	107.0	29.0	121.0	121.0	0.012
EE	R-38	S	190-191	105.0	35.0	120.4	120.4	0.012
EE	R-38	S	191-192				NO DATA	FOR THIS LINE
EE	R-38	S	192-193	107.0	18.0	114.6	117.3	0.008
EE	R-38	S	193-194	125.0	24.0	118.0	119.6	0.011
EE	R-38	S	194-195	167.0	43.0	118.3	118.3	0.009
EE	R-38	S	195-146	105.0	66.5	123.2	124.2	0.012
EE	R-38	S	146-147	95.0	24.5	108.0	110.4	0.002
EE	R-38	S	147-148	99.0	20.5	112.1	113.5	0.003
EE	R-38	S	148-149	100.0	23.0	113.6	113.6	0.003
EE	R-38	S	149-150	97.0	24.5	110.9	111.9	0.003
EE	R-38	S	150-151	96.5	41.5	112.7	112.7	0.003
EE	R-38	S	151-152	98.0	26.0	112.1	112.1	0.003
EE	R-38	S	152-153	98.0	24.0	112.1	112.1	0.003
EE	R-38	S	153-154	93.0	18.0	105.6	109.8	0.001
EE	R-38	S	154-155	99.0	20.3	113.5	113.5	0.003
EE	R-38	S	155-156				NO DATA	FOR THIS LINE
EE	R-38	S	156-157	93.0	52.0	110.2	110.2	0.001
EE	R-38	S	157-158	90.0	21.0	103.2	104.8	0.0
EE	R-38	S	158-159	92.0	11.3	107.4	101.9	0.000
EE	R-38	S	159-160	92.3	22.3	105.4	105.4	0.000
EE	R-38	S	160-161	85.0	17.0	95.8	98.7	0.0

LA FOR THE ROUTE IS 131.7

ENERGY-WEIGHTED LA FOR THE ROUTE IS 102.5

NAE FOR ROUTE IS 0.18

TABLE D-25

IN-TRAIN DATA FOR THE EE ROUTE ON THE R-40

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
EE	R-40	N	161-160	86.5	13.5	97.8	97.8	0.0
EE	R-40	N	160-159	96.0	37.0	111.1	111.1	0.002
EE	R-40	N	159-158	91.0	23.0	104.0	104.0	0.003
EE	R-40	N	158-157				NO DATA FOR THIS LINK	
EE	R-40	N	157-156	92.0	44.0	109.4	108.4	0.001
EE	R-40	N	156-155	93.0	46.5	109.7	109.7	0.001
EE	R-40	N	155-154	91.0	46.5	107.7	107.7	0.000
EE	R-40	N	154-153	92.0	36.5	107.6	107.6	0.001
EE	R-40	N	153-152	91.0	30.0	105.8	105.8	0.000
EE	R-40	N	152-151	93.0	16.5	105.2	105.2	0.000
EE	R-40	N	151-150	90.0	43.0	106.3	106.3	0.0
EE	R-40	N	150-149	92.0	34.0	107.3	107.3	0.001
EE	R-40	N	149-148	90.5	33.0	105.7	105.7	0.000
EE	R-40	N	148-147	95.0	13.0	106.1	106.1	0.001
EE	R-40	N	147-146	92.0	28.5	106.5	106.5	0.000
EE	R-40	N	146-195	93.0	69.0	111.4	113.2	0.002
EE	R-40	N	195-194				NO DATA FOR THIS LINK	
EE	R-40	N	194-193	94.0	38.5	109.9	111.4	0.002
EE	R-40	N	193-192	94.0	32.0	109.1	109.1	0.001
EE	R-40	N	192-191	96.0	31.5	111.0	111.0	0.002
EE	R-40	N	191-190	97.0	29.0	111.6	111.6	0.002
EE	R-40	N	190-189	91.0	47.0	107.7	107.7	0.000
EE	R-40	N	189-188	98.0	28.0	112.5	112.5	0.003
EE	R-40	N	188-187	96.0	35.0	111.4	111.4	0.002
EE	R-40	N	187-186	96.5	31.0	111.4	111.4	0.002
EE	R-40	N	186-185	93.0	47.0	109.7	109.2	0.001
EE	R-40	N	185-184	91.5	59.0	109.2	109.2	0.001
EE	R-40	N	184-183	95.0	25.5	109.1	109.1	0.001

LA FOR THE ROUTE IS 129.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 94.0

NAE FOR ROUTE IS 0.03

TABLE D-26

IN-TRAIN DATA FOR THE EE ROUTE ON THE R-40

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
EE	R-40	S	133-134	91.0	40.5	107.9	107.9	0.000
EE	R-40	S	134-135	95.0	27.5	109.3	109.3	0.001
EE	R-40	S	135-136	94.0	30.0	108.8	108.8	0.001
EE	R-40	S	136-137	90.0	49.5	106.9	106.9	0.0
EE	R-40	S	137-138				NO DATA FOR THIS LINK	
EE	R-40	S	138-139				NO DATA FOR THIS LINK	
EE	R-40	S	139-140	93.0	22.5	106.5	106.5	0.001
EE	R-40	S	140-141	94.0	36.0	109.6	109.6	0.001
EE	R-40	S	141-142	93.0	37.5	108.7	108.7	0.001
EE	R-40	S	142-143	93.0	43.0	109.3	109.3	0.001
EE	R-40	S	143-144	92.0	54.5	109.4	109.4	0.001
EE	R-40	S	144-145	91.0	52.5	108.2	108.2	0.000
EE	R-40	S	145-146	92.5	65.3	110.6	113.2	0.001
EE	R-40	S	146-147	87.0	29.0	101.1	101.1	0.0
EE	R-40	S	147-148	90.0	19.0	102.8	102.8	0.0
EE	R-40	S	148-149	87.0	48.0	103.8	103.8	0.0
EE	R-40	S	149-150	87.0	43.0	103.3	103.5	0.0
EE	R-40	S	150-151				NO DATA FOR THIS LINK	
EE	R-40	S	151-152	86.0	37.0	101.7	101.7	0.0
EE	R-40	S	152-153	87.0	30.0	101.8	101.8	0.0
EE	R-40	S	153-154	84.0	71.5	102.5	103.5	0.0
EE	R-40	S	154-155	86.0	59.0	103.4	103.4	0.0
EE	R-40	S	155-156	87.5	49.0	104.4	104.4	0.0
EE	R-40	S	156-157	87.5	47.0	103.7	103.7	0.0
EE	R-40	S	157-158				NO DATA FOR THIS LINK	
EE	R-40	S	158-159	93.0	19.0	104.8	104.8	0.300
EE	R-40	S	159-160	88.5	24.0	102.3	102.3	0.0
EE	R-40	S	160-161	82.0	206.0	105.1	105.1	0.0

LA FOR THE ROUTE IS 120.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 91.0

NAE FOR ROUTE IS 3.01

TABLE D-27

IN-TRAIN DATA FOR THE F ROUTE ON THE R-40

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
F	R-40	N	110-109				NO DATA FOR THIS LINK	
F	R-40	N	109-222				NO DATA FOR THIS LINK	
F	R-40	N	222-221	90.0	46.0	106.6	106.6	0.0
F	R-40	N	221-220	87.0	48.5	103.9	103.9	0.0
F	R-40	N	220-219	88.0	28.5	102.5	102.5	0.0
F	R-40	N	219-218	87.0	38.0	102.8	102.8	0.0
F	R-40	N	218-217	88.0	39.0	103.9	103.9	0.0
F	R-40	N	217-216	87.0	38.0	102.8	102.8	0.0
F	R-40	N	216-215				NO DATA FOR THIS LINK	
F	R-40	N	215-214				NO DATA FOR THIS LINK	
F	R-40	N	214-213	86.0	31.5	101.0	101.0	0.0
F	R-40	N	213-212	94.0	23.3	107.0	107.0	0.001
F	R-40	N	212-211	91.0	26.5	105.2	105.2	0.000
F	R-40	N	211-210	96.0	22.0	109.4	109.4	0.001
F	R-40	N	210-209	95.0	38.0	110.8	110.8	0.002
F	R-40	N	209-208	93.0	15.0	104.8	104.8	0.000
F	R-40	N	208-207				NO DATA FOR THIS LINK	
F	R-40	N	207-206	89.0	17.0	101.3	101.3	0.0
F	R-40	N	206-205	96.0	24.0	109.8	109.8	0.002
F	R-40	N	205- 31	87.0	33.3	101.8	101.8	0.0
F	R-40	N	31-204	100.0	20.0	113.0	113.0	0.003
F	R-40	N	204-203	99.0	49.0	115.9	114.6	0.007
F	R-40	N	203-202	95.0	23.5	108.7	108.7	0.001
F	R-40	N	202-201	95.0	40.0	111.0	111.0	0.007
F	R-40	N	201- 89	92.0	12.0	102.8	103.8	0.000
F	R-40	N	89- 88	91.0	24.5	104.9	106.9	0.000
F	R-40	N	88-260	92.0	18.5	104.7	104.7	0.000
F	R-40	N	260-199	92.0	33.0	106.8	104.8	0.000
F	R-40	N	199- 87				NO DATA FOR THIS LINK	
F	R-40	N	87- 86				NO DATA FOR THIS LINK	
F	R-40	N	86- 85				NO DATA FOR THIS LINK	
F	R-40	N	85-198	84.0	57.5	101.6	101.6	0.0
F	R-40	N	198-197	91.0	29.0	105.6	105.6	0.000
F	R-40	N	197-196	95.0	84.0	114.2	114.2	0.004
F	R-40	N	196-195	90.0	33.0	105.2	105.2	0.0
F	R-40	N	195-189	92.5	84.0	111.7	115.3	0.334
F	R-40	N	189-183	95.0	43.0	111.3	117.5	0.008
F	R-40	N	183-181	93.0	62.0	110.9	110.9	0.002
F	R-40	N	181-178	94.0	140.0	115.5	115.5	0.009
F	R-40	N	178-177	90.5	24.5	104.4	104.4	0.000
F	R-40	N	177-176	97.0	23.0	110.4	111.4	0.002

LR FOR THE ROUTE IS 129.5

ENERGY-WEIGHTED LA FOR THE ROUTE IS 94.3

NAE FOR ROUTE IS 0.05

TABLE D-28

IN-TRAIN DATA FOR THE F ROUTE ON THE R-40

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
F	R-40	S	176-178	98.5	45.0	115.0	116.2	0.006
F	R-40	S	178-181	99.0	19.0	111.0	117.4	0.009
F	R-40	S	181-183	95.0	64.0	113.1	113.1	0.003
F	R-40	S	183-189	97.0	44.5	113.4	118.6	0.312
F	R-40	S	189-195	99.0	42.5	116.2	118.5	0.011
F	R-40	S	195-196	94.0	19.0	106.8	109.9	0.001
F	R-40	S	196-197	99.5	62.5	117.4	118.4	0.311
F	R-40	S	197-198	93.0	31.5	108.0	108.0	0.301
F	R-40	S	198- 85	85.5	31.5	100.5	100.5	0.3
F	R-40	S	85- 86	97.0	21.0	110.6	110.0	0.002
F	R-40	S	86- 87	94.0	23.0	107.0	107.0	0.001
F	R-40	S	87-199	97.0	35.0	112.4	112.4	0.333
F	R-40	S	199-200	96.0	24.0	104.8	109.8	0.007
F	R-40	S	200- 88	93.5	16.0	105.5	109.1	0.001
F	R-40	S	88- 89	95.5	21.3	106.7	112.3	0.332
F	R-40	S	89-201	93.5	17.0	109.8	108.1	0.301
F	R-40	S	201-202	97.0	15.5	109.9	110.9	0.002
F	R-40	S	202-203	97.0	29.0	111.0	111.0	0.002
F	R-40	S	203-204	101.0	40.5	117.1	119.5	0.013
F	R-40	S	204- 31	94.0	11.3	109.4	113.9	0.334
F	R-40	S	31-205	89.0	41.0	105.1	107.3	0.0
F	R-40	S	205-206	97.0	37.0	112.7	112.7	0.003
F	R-40	S	206-207	89.0	8.3	98.0	131.4	3.3
F	R-40	S	207-208	88.5	16.5	100.7	103.7	0.3
F	R-40	S	208-209	96.0	41.0	112.1	112.1	0.003
F	R-40	S	209-210	98.9	26.0	112.6	114.0	0.004
F	R-40	S	210-211				NO DATA FOR THIS LINE	
F	R-40	S	211-212	97.0	17.0	109.3	109.3	0.001
F	R-40	S	212-213	92.0	34.0	107.3	107.5	0.001
F	R-40	S	213-214	90.0	29.0	104.6	109.5	0.3
F	R-40	S	214-215	89.0	29.3	103.6	103.6	0.0
F	R-40	S	215-216	89.0	29.5	101.7	103.7	0.0
F	R-40	S	216-217	89.5	37.0	104.6	104.6	0.0
F	R-40	S	217-218	90.0	35.3	105.4	105.6	0.0
F	R-40	S	218-219	89.0	23.0	102.6	104.6	0.0
F	R-40	S	219-220	91.0	29.0	105.0	105.0	0.000
F	R-40	S	220-221	85.5	51.0	102.7	102.7	0.0
F	R-40	S	221-222	89.0	44.0	105.4	109.4	0.0
F	R-40	S	222-109	87.0	26.3	101.1	101.1	0.3
F	R-40	S	109-110	84.0	37.0	99.1	99.1	0.0

LA FOR THE ROUTE IS 120.3

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.1

NAE FOR ROUTE IS 0.10

TABLE D-29

IN-TRAIN DATA FOR THE F ROUTE ON THE R-44

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
F	R-44	N	110-109	86.0	16.0	92.0	92.0	0.0
F	R-44	N	139-222	79.0	20.0	91.0	93.7	0.0
F	R-44	N	222-221	80.5	25.0	94.5	98.3	0.0
F	R-44	N	221-220	83.0	41.0	99.1	99.1	0.0
F	R-44	N	220-219	81.0	37.0	96.7	97.9	0.0
F	R-44	N	219-218	83.0	32.0	98.1	98.1	0.0
F	R-44	N	218-217	78.5	53.0	95.5	95.5	0.0
F	R-44	N	217-216	80.5	39.0	96.4	96.4	0.0
F	R-44	N	216-215	78.5	40.0	94.5	94.5	0.0
F	R-44	N	215-214	79.0	46.0	95.6	95.6	0.0
F	R-44	N	214-213	81.0	37.0	96.7	96.7	0.0
F	R-44	N	213-212				NO DATA FOR THIS LINK	
F	R-44	N	212-211				NO DATA FOR THIS LINK	
F	R-44	N	211-210	83.5	33.0	98.7	101.7	0.0
F	R-44	N	210-209	89.0	41.0	101.1	101.1	0.0
F	R-44	N	209-208	84.0	24.0	97.8	97.8	0.0
F	R-44	N	208-207	83.0	24.0	96.8	96.8	0.0
F	R-44	N	207-206	77.0	88.0	96.4	96.4	0.0
F	R-44	N	206-205	87.0	55.0	99.4	99.4	0.0
F	R-44	N	205-31	81.0	24.0	94.8	97.6	0.0
F	R-44	N	31-204	87.0	38.0	102.8	102.8	0.0
F	R-44	N	204-203	89.0	54.0	105.3	105.3	0.0
F	R-44	N	203-202	84.0	34.0	99.3	99.3	0.0
F	R-44	N	202-201	84.5	23.0	98.1	98.1	0.0
F	R-44	N	201-89	81.0	40.0	99.0	99.0	0.0
F	R-44	N	89-88				NO DATA FOR THIS LINK	
F	R-44	N	88-200	81.0	52.0	98.2	98.2	0.0
F	R-44	N	200-199	80.0	42.0	96.2	96.2	0.0
F	R-44	N	199-87	83.0	36.0	98.6	98.6	0.0
F	R-44	N	87-86	85.0	26.0	99.1	99.1	0.0
F	R-44	N	86-85	80.0	33.0	94.8	94.8	0.0
F	R-44	N	85-198	76.0	39.0	91.9	94.3	0.0
F	R-44	N	198-197	80.0	29.0	94.6	94.6	0.0
F	R-44	N	197-196	78.5	99.0	98.5	100.1	0.0
F	R-44	N	196-195	78.0	53.0	95.2	95.2	0.0
F	R-44	N	195-189	78.0	21.0	91.2	100.7	0.0
F	R-44	N	189-183	80.0	22.0	93.4	99.7	0.0
F	R-44	N	183-182	77.0	37.0	92.7	92.7	0.0
F	R-44	N	182-181	76.0	53.5	93.3	93.3	0.0
F	R-44	N	181-180	78.5	11.5	89.1	96.3	0.0
F	R-44	N	180-179	78.0	20.0	91.0	96.5	0.0
F	R-44	N	179-178	83.0	23.5	93.7	93.7	0.0
F	R-44	N	178-177	78.0	28.0	92.5	95.4	0.0
F	R-44	N	177-176	81.0	8.0	90.0	95.4	0.0

LA FOR THE ROUTE IS 114.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 82.6

NAE FOR ROUTE IS 0.0

TABLE D-30

IN-TRAIN DATA FOR THE F ROUTE ON THE R-44

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
F	R-44	S	176-177	81.0	52.0	98.2	98.2	0.0
F	R-44	S	177-178	85.5	26.0	99.6	99.6	0.0
F	R-44	S	178-179	81.0	42.0	97.2	97.2	0.0
F	R-44	S	179-180	81.5	37.0	97.2	99.5	0.0
F	R-44	S	180-181	82.0	33.0	97.2	99.7	0.0
F	R-44	S	181-182	81.0	43.0	97.0	97.0	0.0
F	R-44	S	182-183	80.0	26.0	94.1	95.4	0.0
F	R-44	S	183-189	82.0	55.0	99.6	104.6	0.0
F	R-44	S	189-195	82.0	20.0	95.0	103.4	0.0
F	R-44	S	195-196	82.0	28.0	96.5	96.5	0.0
F	R-44	S	196-197	84.0	67.5	102.3	102.3	0.0
F	R-44	S	197-198	80.0	45.0	96.5	96.5	0.0
F	R-44	S	198- 85	80.0	18.5	92.7	93.9	0.0
F	R-44	S	85- 86	84.0	22.0	97.0	97.0	0.0
F	R-44	S	86- 87	81.0	31.5	96.0	96.0	0.0
F	R-44	S	87-199	81.0	39.5	97.0	97.0	0.0
F	R-44	S	199-200	81.0	27.5	95.4	95.4	0.0
F	R-44	S	200- 88	79.0	27.0	93.3	95.3	0.0
F	R-44	S	88- 89	79.0	43.0	95.3	96.5	0.0
F	R-44	S	89-201	81.0	22.0	94.4	94.4	0.0
F	R-44	S	201-202	84.0	14.0	95.5	98.3	0.0
F	R-44	S	202-203	82.0	33.0	96.8	96.8	0.0
F	R-44	S	203-204	85.0	30.0	100.6	101.8	0.0
F	R-44	S	204- 31	82.0	14.5	93.6	95.0	0.0
F	R-44	S	31-205				NO DATA FOR THIS LINK	
F	R-44	S	205-206				NO DATA FOR THIS LINK	
F	R-44	S	206-207	83.0	41.0	99.1	100.4	0.0
F	R-44	S	207-208	78.0	17.0	90.3	93.1	0.0
F	R-44	S	208-209	81.0	53.0	98.2	98.2	0.0
F	R-44	S	209-210	82.0	53.0	98.2	99.2	0.0
F	R-44	S	210-211	86.0	23.0	99.6	101.6	0.0
F	R-44	S	211-212	85.0	25.0	99.0	100.7	0.0
F	R-44	S	212-213	82.5	29.0	97.1	98.1	0.0
F	R-44	S	213-214	79.0	27.0	92.4	95.0	0.0
F	R-44	S	214-215	79.0	22.0	92.4	94.2	0.0
F	R-44	S	215-216	77.0	48.0	93.8	93.8	0.0
F	R-44	S	216-217	78.0	44.0	94.4	94.4	0.0
F	R-44	S	217-218	77.0	57.0	94.6	94.6	0.0
F	R-44	S	218-219	79.0	43.0	95.3	95.3	0.0
F	R-44	S	219-220	82.0	44.0	98.4	99.4	0.0
F	R-44	S	220-221	82.0	26.0	96.1	96.1	0.0
F	R-44	S	221-222				NO DATA FOR THIS LINK	
F	R-44	S	222-109				NO DATA FOR THIS LINK	
F	R-44	S	109-110	84.0	19.0	96.8	96.8	0.0

LR FOR THE ROUTE IS 114.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 83.2

NAE FOR ROUTE IS 0.0

TABLE D-31

IN-TRAIN DATA FOR THE GG ROUTE ON THE R-16

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
GG	R-16	N	207-206				NO DATA FOR THIS LINE	
GG	R-16	N	206-205	105.0	27.0	119.3	119.3	0.009
GG	R-16	N	205- 32	99.5	25.0	113.5	115.4	0.305
GG	R-16	N	32-234	103.0	31.0	117.9	117.9	0.008
GG	R-16	N	234-233	97.0	49.5	113.9	113.9	0.004
GG	R-16	N	233-232	130.0	23.0	117.6	113.6	0.003
GG	R-16	N	232-231	100.0	29.3	114.0	114.0	0.004
GG	R-16	N	231-230	100.0	34.0	115.6	116.4	0.007
GG	R-16	N	230-229	102.0	27.0	116.3	116.3	0.006
GG	R-16	N	229-228	100.5	32.0	119.6	115.6	0.309
GG	R-16	N	228-227	101.0	36.0	116.6	116.6	0.006
GG	R-16	N	227-226	101.5	33.0	116.7	119.6	0.013
GG	R-16	N	226-225	100.0	43.0	116.0	116.0	0.006
GG	R-16	N	225-224	101.0	47.0	118.2	119.7	0.014
GG	R-16	N	224-223	96.0	30.0	110.8	110.8	0.302
GG	R-16	N	223-195	79.0	27.5	113.4	113.4	0.003
GG	R-16	N	195-194	97.0	33.0	112.2	112.2	0.003
GG	R-16	N	194-193	130.0	44.0	116.4	116.4	0.007
GG	R-16	N	193-192	99.0	22.0	112.4	112.4	0.003
GG	R-16	N	192-191	100.0	34.0	115.3	115.3	0.005
GG	R-16	N	191-190	99.0	37.0	114.7	114.7	0.005
GG	R-16	N	190-189	98.0	33.0	113.2	113.2	0.003
GG	R-16	N	189-188	102.0	26.9	116.2	116.2	0.306
GG	R-16	N	188-187	100.0	18.0	112.6	112.6	0.003
GG	R-16	N	187-186	99.0	30.0	113.8	113.8	0.004
GG	R-16	N	186-185	98.0	41.5	114.1	114.1	0.304
GG	R-16	N	185-184	95.0	22.5	108.5	108.5	0.301
GG	R-16	N	184-183	103.0	22.0	116.4	116.4	0.006

LA FOR THE ROUTE IS 130.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 100.0

NAE FOR ROUTE IS 0.14

TABLE D-32

IN-TRAIN DATA FOR THE GG ROUTE ON THE R-16

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LP OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
GG	R-16	S	183-184	96.0	68.0	112.0	112.0	0.003
GG	R-16	S	184-185	101.0	25.5	115.1	115.1	0.005
GG	R-16	S	185-186	101.0	27.0	115.3	115.3	0.005
GG	R-16	S	186-187				NO DATA FOR THIS LINE	
GG	R-16	S	187-188				NO DATA FOR THIS LINE	
GG	R-16	S	188-189	95.0	50.0	112.6	112.6	0.003
GG	R-16	S	189-190	99.0	24.0	112.8	112.8	0.003
GG	R-16	S	190-191	97.0	57.0	112.7	112.7	0.003
GG	R-16	S	191-192	97.0	56.0	112.6	112.6	0.003
GG	R-16	S	192-193	101.5	20.0	114.5	114.5	0.004
GG	R-16	S	193-194	130.0	35.5	115.5	115.5	0.005
GG	R-16	S	194-195	96.0	29.0	110.5	110.5	0.002
GG	R-16	S	195-223	96.0	20.0	110.5	110.5	0.002
GG	R-16	S	223-224	96.0	24.0	110.1	110.1	0.002
GG	R-16	S	224-225	99.5	12.0	110.3	114.1	0.003
GG	R-16	S	225-226	99.0	25.5	113.1	113.1	0.003
GG	R-16	S	226-227	102.0	47.0	110.7	110.7	0.010
GG	R-16	S	227-228	97.5	31.0	112.4	112.4	0.003
GG	R-16	S	228-229	99.0	23.5	112.7	112.7	0.003
GG	R-16	S	229-230	96.5	30.5	112.4	112.4	0.003
GG	R-16	S	230-231	98.0	46.0	114.6	114.6	0.005
GG	R-16	S	231-232	96.0	18.0	108.6	110.1	0.002
GG	R-16	S	232-233	97.0	27.0	111.3	111.3	0.002
GG	R-16	S	233-234	130.0	29.0	114.6	114.6	0.004
GG	R-16	S	234- 92	103.0	22.0	116.4	116.4	0.006
GG	R-16	S	92-205	98.5	20.0	111.5	114.5	0.004
GG	R-16	S	205-236	97.5	41.5	113.7	113.7	0.004
GG	R-16	S	236-207	89.0	11.0	100.1	102.7	0.3

LP FOR THE ROUTE IS 127.8

ENERGY-WEIGHTED LA FOR THE ROUTE IS 99.0

NAE FOR ROUTE IS 0.09

TABLE D-33

IN-TRAIN DATA FOR THE GG ROUTE ON THE R-40

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
GG	R-40	N	207-206	88.0	20.3	101.0	101.0	0.3
GG	R-40	N	206-205	99.5	24.0	113.6	113.9	0.004
GG	R-40	N	205- 32	97.0	50.0	109.0	109.0	0.001
GG	R-40	N	32-234	95.0	47.0	111.2	111.2	0.002
GG	R-40	N	234-233	93.5	44.0	109.9	109.9	0.001
GG	R-40	N	233-232	95.0	25.0	109.0	109.0	0.001
GG	R-40	N	232-231	95.0	23.5	108.7	108.7	0.001
GG	R-40	N	231-230	93.0	46.0	109.4	109.6	0.001
GG	R-40	N	230-229	97.0	23.5	110.7	110.7	0.002
GG	R-40	N	229-228	94.0	37.0	109.1	109.1	0.001
GG	R-40	N	228-227	94.0	36.0	109.6	109.6	0.001
GG	R-40	N	227-226	93.0	43.5	109.4	111.5	0.002
GG	R-40	N	226-225	93.5	40.0	109.5	109.5	0.001
GG	R-40	N	225-224	95.5	65.5	113.7	113.9	0.004
GG	R-40	N	224-223	91.0	31.0	105.9	105.9	0.000
GG	R-40	N	223-195				NO DATA FOR THIS LINK	
GG	R-40	N	195-194	94.0	41.5	110.2	110.2	0.002
GG	R-40	N	194-193	95.0	39.0	110.9	110.9	0.002
GG	R-40	N	193-192	94.5	32.0	109.6	109.6	0.001
GG	R-40	N	192-191	96.0	38.0	111.8	111.8	0.002
GG	R-40	N	191-190	97.0	31.0	111.9	111.9	0.003
GG	R-40	N	190-189	92.0	22.5	105.5	107.3	0.000
GG	R-40	N	189-188	99.0	23.5	112.7	115.0	0.004
GG	R-40	N	188-187	97.5	35.0	112.9	112.9	0.003
GG	R-40	N	187-186	97.0	23.0	110.6	110.6	0.002
GG	R-40	N	186-185	89.0	17.0	101.3	104.8	0.0
GG	R-40	N	185-184	93.5	53.0	110.7	110.7	0.002
GG	R-40	N	184-183	99.0	38.3	113.8	113.8	0.004

LA FOR THE ROUTE IS 129.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 95.7

NAE FOR ROUTE IS 0.05

TABLE D-34

IN-TRAIN DATA FOR THE GG ROUTE ON THE R-40

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
GG	R-40	S	183-184	93.0	48.0	109.8	109.8	0.001
GG	R-40	S	184-185	94.0	27.0	110.3	110.3	0.002
GG	R-40	S	185-186	95.5	31.0	110.4	110.4	0.002
GG	R-40	S	186-187	93.0	44.5	109.5	109.5	0.001
GG	R-40	S	187-188	93.0	41.0	109.1	109.1	0.001
GG	R-40	S	188-189	92.0	58.5	109.7	109.7	0.001
GG	R-40	S	189-190	95.5	24.0	109.3	109.3	0.001
GG	R-40	S	190-191	94.0	56.0	109.6	109.6	0.001
GG	R-40	S	191-192	93.0	30.0	108.8	108.8	0.001
GG	R-40	S	192-193	94.0	24.5	107.8	107.8	0.001
GG	R-40	S	193-194	94.0	33.0	109.2	109.2	0.001
GG	R-40	S	194-195	89.0	50.0	106.6	106.6	0.0
GG	R-40	S	195-223	94.0	26.5	108.2	108.2	0.001
GG	R-40	S	223-224	93.0	23.0	106.6	106.6	0.001
GG	R-40	S	224-225	98.0	68.0	114.3	115.3	0.005
GG	R-40	S	225-226	95.0	30.0	109.8	109.8	0.001
GG	R-40	S	226-227				NO DATA FOR THIS LINE	
GG	R-40	S	227-228	94.0	23.0	107.6	107.6	0.001
GG	R-40	S	228-229	92.5	34.0	107.8	107.8	0.001
GG	R-40	S	229-230	91.5	40.0	107.5	107.5	0.000
GG	R-40	S	230-231	92.0	31.0	106.9	106.7	0.001
GG	R-40	S	231-232	90.5	32.5	105.6	105.6	0.000
GG	R-40	S	232-233	91.5	53.0	106.3	106.3	0.000
GG	R-40	S	233-234	93.5	35.0	108.9	108.9	0.001
GG	R-40	S	234- 32	96.0	21.0	109.2	109.2	0.001
GG	R-40	S	32-205	101.0	9.0	110.5	111.2	0.002
GG	R-40	S	205-206	91.0	21.0	104.2	107.0	0.000
GG	R-40	S	206-207	89.0	21.0	107.2	102.2	0.0

LA FOR THE ROUTE IS 123.5

ENERGY-WEIGHTED LA FOR THE ROUTE IS 94.6

NAE FOR ROUTE IS 0.03

TABLE D-35

IN-TRAIN DATA FOR THE J ROUTE ON THE R-27

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LB OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
J	R-27	N	267-266				NO DATA FOR THIS LINK	
J	R-27	N	266-265	96.0	35.0	111.4	111.4	0.322
J	R-27	N	265-264	93.0	11.0	103.4	107.2	0.000
J	R-27	N	264-263	97.0	19.0	109.8	112.2	0.003
J	R-27	N	263-262	96.0	17.0	108.3	112.2	0.003
J	R-27	N	262-261	90.0	126.0	111.0	117.4	0.0
J	R-27	N	261-260	91.0	24.0	104.8	104.8	0.000
J	R-27	N	260-259	91.0	44.0	107.4	107.4	0.000
J	R-27	N	259-258	91.0	43.5	107.4	107.4	0.000
J	R-27	N	258-257	89.5	30.0	104.3	109.9	0.0
J	R-27	N	257-256	91.5	44.0	107.9	107.9	0.001
J	R-27	N	256-255	95.0	37.0	110.1	110.1	0.002
J	R-27	N	255-254	93.0	33.5	108.3	108.3	0.001
J	R-27	N	254-253	91.5	39.0	107.4	107.4	0.000
J	R-27	N	253-252				NO DATA FOR THIS LINK	
J	R-27	N	252-251				NO DATA FOR THIS LINK	
J	R-27	N	251-250	93.5	28.5	108.0	108.0	0.001
J	R-27	N	250-249	91.0	23.5	104.7	106.2	0.000
J	R-27	N	249-248	91.0	26.5	105.7	105.2	0.000
J	R-27	N	248-247	89.5	19.0	102.3	102.3	0.0
J	R-27	N	247-246	84.5	10.5	97.2	103.9	0.0
J	R-27	N	246-245	87.5	23.0	101.1	102.4	0.0
J	R-27	N	245-244	89.5	44.0	109.9	109.9	0.0
J	R-27	N	244-243	91.0	25.5	109.1	107.7	0.000
J	R-27	N	243-242	89.0	41.0	109.1	109.1	0.0
J	R-27	N	242-241	90.0	58.5	107.7	107.7	0.0
J	R-27	N	241-240	90.0	45.0	106.5	106.5	0.0
J	R-27	N	240-239	88.5	63.0	106.5	106.9	0.0
J	R-27	N	239-238	86.5	49.5	103.4	103.4	0.0
J	R-27	N	238-237	85.5	55.5	102.9	102.9	0.0
J	R-27	N	237-236	88.0	27.5	107.4	105.2	0.0
J	R-27	N	236-235				NO DATA FOR THIS LINK	

LB FOR THE ROUTE IS 122.3

ENERGY-WEIGHTED LA FOR THE ROUTE IS 93.2

NAE FOR ROUTE IS 0.01

TABLE D-36

IN-TRAIN DATA FOR THE J ROUTE ON THE R-27

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
J	R-27	S	235-236	87.0	30.0	101.0	101.0	0.0
J	R-27	S	236-237	85.5	37.5	101.2	101.2	0.0
J	R-27	S	237-238	84.5	41.5	100.7	100.7	0.0
J	R-27	S	238-239	83.0	41.0	99.1	99.1	0.0
J	R-27	S	239-240	85.0	44.5	101.5	101.5	0.0
J	R-27	S	240-241	86.5	27.5	100.9	100.9	0.0
J	R-27	S	241-242	87.0	29.5	101.7	101.7	0.0
J	R-27	S	242-243	86.0	29.0	100.6	100.6	0.0
J	R-27	S	243-244	86.0	37.0	101.7	101.7	0.0
J	R-27	S	244-245	85.0	39.0	100.9	100.9	0.0
J	R-27	S	245-246	80.0	32.0	95.1	95.1	0.0
J	R-27	S	246-247	77.5	38.5	95.4	95.7	0.0
J	R-27	S	247-248	84.0	34.5	99.4	99.4	0.0
J	R-27	S	248-249	85.0	28.5	99.5	99.5	0.0
J	R-27	S	249-250	86.0	37.0	101.7	101.7	0.0
J	R-27	S	250-251	81.0	29.0	99.0	97.2	0.0
J	R-27	S	251-252				NO DATA FOR THIS LINE	
J	R-27	S	252-253	83.5	43.0	99.8	99.8	0.0
J	R-27	S	253-254	86.0	43.0	102.0	102.0	0.0
J	R-27	S	254-255	84.5	35.0	99.9	99.9	0.0
J	R-27	S	255-256	84.5	42.0	100.7	100.7	0.0
J	R-27	S	256-257	84.0	54.0	101.3	101.3	0.0
J	R-27	S	257-258	84.0	37.0	99.7	99.7	0.0
J	R-27	S	258-259	85.0	37.0	102.7	102.7	0.0
J	R-27	S	259-260	83.0	14.0	94.5	97.7	0.0
J	R-27	S	260-261	81.0	33.0	95.8	95.8	0.0
J	R-27	S	261-262	84.0	60.0	102.3	106.0	0.0
J	R-27	S	262-263	86.5	40.0	102.5	102.5	0.0
J	R-27	S	263-264	90.0	44.0	106.8	106.8	0.0
J	R-27	S	264-265	89.5	40.0	105.5	105.5	0.0
J	R-27	S	265-266	87.0	17.0	99.3	100.4	0.0
J	R-27	S	266-267	84.5	13.0	94.5	94.5	0.0

LA FOR THE ROUTE IS 116.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 85.7

NAE FOR ROUTE IS 0.0

TABLE D-37

IN-TRAIN DATA FOR THE J ROUTE ON THE R-42

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
J	R-42	N	267-266	91.0	29.0	105.6	107.4	0.000
J	R-42	N	266-265	87.0	13.0	98.1	102.5	0.0
J	R-42	N	265-264	85.5	24.9	99.3	100.0	0.0
J	R-42	N	264-263	83.0	42.5	99.3	100.7	0.0
J	R-42	N	263-262	85.0	45.0	101.5	101.5	0.0
J	R-42	N	262-261	83.0	96.5	102.0	104.0	0.0
J	R-42	N	261-260	83.0	13.3	94.1	94.1	0.0
J	R-42	N	260-259	86.0	31.0	101.2	101.7	0.0
J	R-42	N	259-258	83.0	43.5	99.4	99.4	0.0
J	R-42	N	258-257	91.0	43.0	107.0	107.0	0.000
J	R-42	N	257-256	85.0	29.0	99.6	99.6	0.0
J	R-42	N	256-255	86.0	34.0	101.3	101.3	0.0
J	R-42	N	255-254	85.0	33.0	100.2	100.2	0.0
J	R-42	N	254-253				NO DATA FOR THIS LINK	
J	R-42	N	253-252	85.0	21.0	98.2	98.2	0.0
J	R-42	N	252-251	87.5	24.9	96.4	97.7	0.0
J	R-42	N	251-250	85.5	28.5	100.0	100.0	0.0
J	R-42	N	250-249	83.0	22.5	96.5	98.7	0.0
J	R-42	N	249-248	84.0	31.5	99.0	99.0	0.0
J	R-42	N	248-247	82.5	27.5	96.9	98.0	0.0
J	R-42	N	247-246	84.0	15.0	95.8	98.9	0.0
J	R-42	N	246-245	87.0	27.0	95.4	96.8	0.0
J	R-42	N	245-244	85.0	27.5	99.4	101.1	0.0
J	R-42	N	244-243	85.5	40.0	101.5	101.5	0.0
J	R-42	N	243-242	83.5	47.0	94.7	99.7	0.0
J	R-42	N	242-241	81.0	32.5	96.1	99.6	0.0
J	R-42	N	241-240	83.0	61.5	100.9	100.9	0.0
J	R-42	N	240-239	85.0	43.5	101.4	101.4	0.0
J	R-42	N	239-238	84.0	34.0	99.3	99.9	0.0
J	R-42	N	238-237	86.0	28.0	100.5	130.5	0.0
J	R-42	N	237-236	79.0	25.5	93.1	93.1	0.0
J	R-42	N	236-235				NO DATA FOR THIS LINK	

LR FOR THE ROUTE IS 116.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 86.3

NAE FOR ROUTE IS 0.00

TABLE D-38

IN-TRAIN DATA FOR THE J ROUTE ON THE R-42

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
J	R-42	S	235-236	88.0	18.5	100.7	100.7	0.0
J	R-42	S	236-237	88.5	34.0	103.8	103.8	0.3
J	R-42	S	237-238	88.0	31.5	103.0	103.0	0.0
J	R-42	S	238-239	87.6	39.5	102.5	102.9	0.0
J	R-42	S	239-240	88.5	24.0	102.6	104.1	0.0
J	R-42	S	240-241	90.0	24.0	103.8	109.0	0.0
J	R-42	S	241-242	89.0	43.0	105.3	109.3	0.0
J	R-42	S	242-243	87.5	35.0	102.9	107.9	0.0
J	R-42	S	243-244	88.0	30.0	102.0	104.5	0.3
J	R-42	S	244-245	88.0	34.0	103.3	103.3	0.0
J	R-42	S	245-246	83.0	19.0	99.6	97.6	0.3
J	R-42	S	246-247	79.0	43.0	99.3	99.1	0.0
J	R-42	S	247-248	92.0	33.3	107.2	107.2	0.001
J	R-42	S	248-249	87.0	27.0	101.3	101.3	0.0
J	R-42	S	249-250	88.0	23.0	101.6	101.6	0.3
J	R-42	S	250-251	85.0	17.0	97.3	100.8	0.0
J	R-42	S	251-252	84.5	21.5	97.8	97.8	0.0
J	R-42	S	252-253				NO DATA FOR THIS LINK	
J	R-42	S	253-254	85.0	48.0	101.8	101.8	0.3
J	R-42	S	254-255	86.0	39.0	101.9	101.9	0.3
J	R-42	S	255-256	86.5	41.0	102.6	102.6	0.0
J	R-42	S	256-257	83.5	22.5	97.0	99.1	0.3
J	R-42	S	257-258	87.0	33.5	102.3	102.3	0.0
J	R-42	S	258-259	88.0	32.0	103.1	103.1	0.0
J	R-42	S	259-260	86.5	28.0	101.0	102.2	0.0
J	R-42	S	260-261	81.0	47.5	97.8	97.8	0.0
J	R-42	S	261-262	90.0	35.5	105.5	107.8	0.0
J	R-42	S	262-263	90.5	10.0	100.5	104.6	0.000
J	R-42	S	263-264	90.0	19.5	102.9	104.3	0.0
J	R-42	S	264-265	84.0	60.0	101.8	101.8	0.0
J	R-42	S	265-266				NO DATA FOR THIS LINK	
J	R-42	S	266-267				NO DATA FOR THIS LINK	

LA FOR THE ROUTE IS 117.7

ENERGY-WEIGHTED LA FOR THE ROUTE IS 88.6

NAE FOR ROUTE IS 0.00

TABLE D-39

IN-TRAIN DATA FOR THE LL ROUTE ON THE R-9

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
LL	R- 9	N	290-289	89.0	4.0	95.0	101.1	0.0
LL	R- 9	N	289-288	86.0	73.0	104.5	104.5	0.0
LL	R- 9	N	288-287	92.0	34.0	107.3	107.3	0.001
LL	R- 9	N	287-286	91.0	34.5	106.4	106.4	0.309
LL	R- 9	N	286-285	98.0	37.0	103.7	101.7	0.0
LL	R- 9	N	285-252	89.0	13.0	100.1	101.9	0.0
LL	R- 9	N	252-284	99.5	12.0	113.3	113.3	0.302
LL	R- 9	N	284-283	102.5	30.0	117.3	117.3	0.307
LL	R- 9	N	283-282	102.0	30.0	116.8	116.7	0.010
LL	R- 9	N	282-281	131.0	24.3	114.8	114.6	0.007
LL	R- 9	N	281-280	101.0	31.5	116.0	116.0	0.306
LL	R- 9	N	280-279	98.0	30.0	112.8	112.8	0.335
LL	R- 9	N	279-278	124.0	22.5	117.9	119.1	0.310
LL	R- 9	N	278-277	100.0	24.0	113.0	115.2	0.005
LL	R- 9	N	277-276	98.5	19.0	110.3	113.0	0.003
LL	R- 9	N	276-275				NO DATA FOR THIS LINK	
LL	R- 9	N	275-274	99.0	14.5	110.6	110.6	0.302
LL	R- 9	N	274-273	98.0	24.0	117.1	117.1	0.003
LL	R- 9	N	273-272	97.0	174.0	119.4	119.4	0.314
LL	R- 9	N	272-271	91.0	25.0	105.0	106.6	0.000
LL	R- 9	N	271-270	92.5	18.0	105.1	106.9	0.000
LL	R- 9	N	270-269	98.0	26.0	112.1	117.1	0.003
LL	R- 9	N	269-268	94.0	25.5	107.1	108.4	0.301

LA FOR THE ROUTE IS 127.3

ENERGY-WEIGHTED LA FOR THE ROUTE IS 99.8

NAE FOR ROUTE IS 0.08

TABLE D-40

IN-TRAIN DATA FOR THE LL ROUTE ON THE R-9

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
LL	R- 9	S	268-269	91.0	11.0	101.4	106.5	C.000
LL	R- 9	S	269-270	89.0	39.0	104.9	104.9	0.0
LL	R- 9	S	270-271	89.0	30.0	103.8	103.8	0.0
LL	R- 9	S	271-272	90.0	24.9	103.9	103.9	0.0
LL	R- 9	S	272-273	90.0	216.0	113.3	111.3	0.0
LL	R- 9	S	273-274	91.0	18.0	103.6	109.6	0.000
LL	R- 9	S	274-275	87.0	42.3	103.2	101.2	0.0
LL	R- 9	S	275-276				NO DATA FOR THIS LINE	
LL	R- 9	S	276-277				NO DATA FOR THIS LINE	
LL	R- 9	S	277-278	93.0	49.0	109.9	109.9	0.001
LL	R- 9	S	278-279	94.0	24.5	107.9	139.7	0.001
LL	R- 9	S	279-280	98.0	48.5	104.9	104.9	0.0
LL	R- 9	S	280-281	97.0	43.0	108.3	104.3	0.001
LL	R- 9	S	281-282	92.0	50.0	109.0	109.0	0.001
LL	R- 9	S	282-283	94.0	33.5	108.8	109.4	0.001
LL	R- 9	S	283-284	95.0	13.5	106.3	107.5	0.001
LL	R- 9	S	284-252	90.0	21.0	101.2	101.2	0.0
LL	R- 9	S	252-285	84.0	11.0	94.4	94.4	0.0
LL	R- 9	S	285-286	83.0	18.0	95.6	95.6	0.0
LL	R- 9	S	286-287	88.5	19.5	98.4	98.6	0.0
LL	R- 9	S	287-288	89.0	13.0	100.1	100.1	0.0
LL	R- 9	S	288-289	80.0	35.0	95.4	98.9	0.0
LL	R- 9	S	289-290	80.0	17.0	92.3	92.3	0.0

LA FOR THE ROUTE IS 119.8

ENERGY-WEIGHTED LA FOR THE ROUTE IS 91.6

NAE FOR ROUTE IS 0.01

TABLE D-41

IN-TRAIN DATA FOR THE LL ROUTE ON THE R-42

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
LL	R-42	N	290-289	76.0	88.0	95.4	95.4	0.0
LL	R-42	N	289-288	89.0	9.0	96.0	101.5	0.0
LL	R-42	N	288-287	87.0	31.0	101.9	101.9	0.0
LL	R-42	N	287-286	85.0	43.5	101.4	101.4	0.0
LL	R-42	N	286-285	89.0	5.0	91.8	99.6	0.0
LL	R-42	N	285-252	84.5	18.0	97.1	97.9	0.0
LL	R-42	N	252-284	88.5	19.0	101.1	101.1	0.0
LL	R-42	N	284-283	94.5	23.0	108.1	104.1	0.001
LL	R-42	N	283-282	93.0	15.0	104.8	104.8	0.000
LL	R-42	N	282-281	93.0	23.0	106.6	108.7	0.001
LL	R-42	N	281-280	92.0	44.0	109.4	108.4	0.001
LL	R-42	N	280-279	88.5	31.5	101.8	103.8	0.0
LL	R-42	N	279-278	94.5	22.0	107.9	109.1	0.001
LL	R-42	N	278-277	89.5	22.5	103.0	103.0	0.0
LL	R-42	N	277-276	88.0	31.5	103.0	103.0	0.0
LL	R-42	N	276-275	87.0	9.0	96.9	96.9	0.0
LL	R-42	N	275-274	87.5	20.0	100.5	100.5	0.0
LL	R-42	N	274-273	99.0	39.0	104.9	104.9	0.0
LL	R-42	N	273-272	91.0	88.0	113.4	110.4	0.001
LL	R-42	N	272-271	87.0	26.0	101.1	101.1	0.0
LL	R-42	N	271-270	85.0	20.9	98.0	98.0	0.0
LL	R-42	N	270-269	90.0	31.0	104.9	104.9	0.0
LL	R-42	N	269-268	85.0	20.0	98.0	98.0	0.0

LA FOR THE ROUTE IS 110.3

ENERGY-WEIGHTED LA FOR THE ROUTE IS 90.5

NAE FOR ROUTE IS 0.00

TABLE D-42

IN-TRAIN DATA FOR THE LL ROUTE ON THE R-42

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
LL	R-42	S	268-269	87.5	12.0	98.3	103.0	0.0
LL	R-42	S	269-270	92.0	13.3	102.0	104.4	0.000
LL	R-42	S	270-271	86.5	78.0	101.0	101.0	0.0
LL	R-42	S	271-272	87.0	28.0	101.5	101.9	0.0
LL	R-42	S	272-273	92.0	26.3	106.1	110.7	0.300
LL	R-42	S	273-274	98.0	25.0	107.0	104.7	0.0
LL	R-42	S	274-275	88.0	7.0	96.5	101.7	0.0
LL	R-42	S	275-276	86.5	24.5	100.4	101.9	0.0
LL	R-42	S	276-277	87.0	30.0	101.8	101.8	0.0
LL	R-42	S	277-278	91.5	27.5	125.9	104.8	0.330
LL	R-42	S	278-279	91.0	24.0	104.8	104.8	0.000
LL	R-42	S	279-280	87.0	35.0	102.4	102.4	0.0
LL	R-42	S	280-281	91.0	33.0	106.2	104.7	0.300
LL	R-42	S	281-282	92.0	46.0	108.6	109.6	0.301
LL	R-42	S	282-283	91.0	54.0	106.5	106.5	0.000
LL	R-42	S	283-284				NO DATA FOR THIS LINK	
LL	R-42	S	284-252				NO DATA FOR THIS LINK	
LL	R-42	S	252-285				NO DATA FOR THIS LINK	
LL	R-42	S	285-286	82.0	26.0	96.1	98.9	0.0
LL	R-42	S	286-287	86.5	28.0	101.0	101.0	0.0
LL	R-42	S	287-288	87.5	15.0	99.3	99.3	0.0
LL	R-42	S	288-289	80.0	46.5	96.7	98.8	0.0
LL	R-42	S	289-290	76.0	70.0	94.5	94.5	0.0

LA FOR THE ROUTE IS 117.6

ENERGY-WEIGHTED LA FOR THE ROUTE IS 90.3

NAE FOR ROUTE IS 0.00

TABLE D-43

IN-TRAIN DATA FOR THE M ROUTE ON THE R-27

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
M	R-27	N	110-109	87.0	16.0	94.0	94.0	0.0
M	R-27	N	109-108	84.0	31.5	99.0	99.0	0.0
M	R-27	N	108-137	89.0	38.5	100.9	133.9	0.0
M	R-27	N	107-106	90.0	20.5	101.1	101.1	0.0
M	R-27	N	106-105	81.0	35.0	96.4	96.4	0.0
M	R-27	N	135-104	90.0	26.5	94.2	94.2	0.0
M	R-27	N	104-103	88.0	14.5	97.6	97.6	0.0
M	R-27	N	103-102	81.5	35.0	96.9	96.9	0.0
M	R-27	N	102-101	83.0	6.0	90.8	90.8	0.0
M	R-27	N	131-100	78.0	34.0	93.3	93.3	0.0
M	R-27	N	133- 99	82.0	24.0	95.8	95.8	0.0
M	R-27	N	99- 98				NO DATA FOR THIS LINE	
M	R-27	N	98- 97				NO DATA FOR THIS LINE	
M	R-27	N	97- 96	88.0	11.0	96.4	99.2	0.0
M	R-27	N	96- 95	87.0	38.0	97.8	97.8	0.0
M	R-27	N	95- 94	88.3	8.0	95.0	96.4	0.0
M	R-27	N	94- 93	87.5	101.0	107.5	107.5	0.0
M	R-27	N	93- 92	85.0	16.0	97.0	100.5	0.0
M	R-27	N	92- 91	81.0	45.0	97.5	98.0	0.0
M	R-27	N	91-163	86.0	12.0	96.8	135.1	0.0
M	R-27	N	163-162	84.5	15.0	96.3	100.7	0.0
M	R-27	N	162-267				NO DATA FOR THIS LINE	
M	R-27	N	267-266	89.0	24.0	101.1	103.8	0.0
M	R-27	N	266-265	88.0	14.0	97.5	99.1	0.0
M	R-27	N	265-264	81.0	14.0	94.5	96.5	0.0
M	R-27	N	264-263	87.0	9.0	96.5	100.9	0.0
M	R-27	N	263-262	85.0	13.5	96.3	99.0	0.0
M	R-27	N	262-261	84.0	101.0	104.0	104.6	0.0
M	R-27	N	261-260	86.0	23.5	99.7	99.7	0.0
M	R-27	N	260-259	87.0	31.3	101.9	101.9	0.0
M	R-27	N	259-258	84.0	45.0	100.3	100.3	0.0
M	R-27	N	258-257				NO DATA FOR THIS LINE	
M	R-27	N	257- 72	86.0	30.0	100.8	100.8	0.0
M	R-27	N	72- 71	88.5	31.0	103.4	103.4	0.0
M	R-27	N	71- 73	85.5	38.5	101.4	101.4	0.0
M	R-27	N	73- 69	90.0	27.0	100.3	100.3	0.0
M	R-27	N	69- 68	85.0	21.5	98.3	99.6	0.0
M	R-27	N	68- 67	88.5	34.3	102.1	102.1	0.0
M	R-27	N	67- 66	84.5	17.3	96.0	96.0	0.0

LR FOR THE ROUTE IS 115.9

ENERGY-WEIGHTED LA FOR THE ROUTE IS 86.2

NAE FOR ROUTE IS 0.0

TABLE D-44

IN-TRAIN DATA FOR THE M ROUTE ON THE R-27

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
M	R-27	S	66- 67	90.0	9.0	99.5	101.3	0.0
M	R-27	S	67- 68	90.0	28.0	104.5	104.5	0.0
M	R-27	S	68- 69	83.5	11.5	94.1	99.2	0.0
M	R-27	S	69- 70	82.5	32.5	97.6	99.6	0.0
M	R-27	S	70- 71	83.0	45.0	99.6	100.4	0.0
M	R-27	S	71- 72	89.0	36.0	104.6	104.6	0.0
M	R-27	S	72-257	82.5	8.0	91.5	98.3	0.0
M	R-27	S	257-258	80.0	43.5	98.6	97.9	0.0
M	R-27	S	258-259	85.0	37.0	100.7	100.7	0.0
M	R-27	S	259-260				NO DATA FOR THIS LINK	
M	R-27	S	260-261	78.0	29.0	92.0	93.1	0.0
M	R-27	S	261-262	90.0	33.5	105.3	107.9	0.0
M	R-27	S	262-263	90.0	24.3	103.8	103.8	0.0
M	R-27	S	263-264	91.0	26.0	105.1	107.1	0.000
M	R-27	S	264-265	87.5	19.5	100.4	103.0	0.0
M	R-27	S	265-266	92.5	14.5	104.1	105.8	0.000
M	R-27	S	266-267	85.0	33.0	100.7	102.1	0.0
M	R-27	S	267-162	95.0	41.0	114.7	115.0	0.095
M	R-27	S	162-163	89.0	8.5	96.3	103.4	0.0
M	R-27	S	163- 91				NO DATA FOR THIS LINK	
M	R-27	S	91- 92	85.5	18.3	98.1	104.3	0.3
M	R-27	S	92- 93	87.0	69.0	105.3	105.3	0.3
M	R-27	S	93- 94	91.5	73.0	110.1	110.7	0.001
M	R-27	S	94- 95	83.0	23.0	96.0	98.7	0.0
M	R-27	S	95- 96	90.0	76.0	104.1	104.1	0.0
M	R-27	S	96- 97	83.5	73.0	97.1	98.4	0.3
M	R-27	S	97- 98	83.0	24.0	96.8	96.8	0.0
M	R-27	S	98- 99	89.5	30.0	104.3	104.3	0.0
M	R-27	S	99-100	83.0	34.0	98.3	98.3	0.0
M	R-27	S	100-101	80.0	34.0	95.3	95.3	0.0
M	R-27	S	101-102	82.5	31.0	97.4	99.5	0.0
M	R-27	S	102-103	83.5	53.0	103.5	100.5	0.0
M	R-27	S	103-104	86.0	18.0	98.6	103.1	0.0
M	R-27	S	104-105	79.5	32.0	94.6	94.6	0.0
M	R-27	S	105-106	81.0	44.0	97.4	97.4	0.0
M	R-27	S	106-107				NO DATA FOR THIS LINK	
M	R-27	S	107-108	89.0	31.5	104.0	104.0	0.3
M	R-27	S	108-109	86.0	31.0	100.9	100.9	0.3
M	R-27	S	109-110	83.0	10.0	93.0	96.5	0.0

LA FOR THE ROUTE IS 120.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 89.1

NAE FOR ROUTE IS 0.01

TABLE D-45

IN-TRAIN DATA FOR THE M ROUTE ON THE R-42

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
M	R-42	N	110-109	85.0	16.5	97.2	99.2	0.0
M	R-42	N	109-108	85.5	30.0	100.3	101.4	0.0
M	R-42	N	108-107	86.5	33.5	101.8	101.8	0.0
M	R-42	N	107-106	90.0	17.0	102.3	104.1	0.0
M	R-42	N	106-105	85.0	49.0	101.9	101.9	0.0
M	R-42	N	105-104	83.0	24.3	97.1	97.1	0.0
M	R-42	N	104-103	87.0	43.5	103.4	103.4	0.0
M	R-42	N	103-102	87.0	48.5	103.9	103.9	0.0
M	R-42	N	102-101	84.0	49.0	100.8	100.8	0.0
M	R-42	N	101-100	82.5	27.0	96.8	96.8	0.0
M	R-42	N	100- 99	81.5	37.5	97.2	99.3	0.0
M	R-42	N	99- 98	85.5	36.5	101.4	101.4	0.0
M	R-42	N	98- 97	81.0	21.0	94.2	94.2	0.0
M	R-42	N	97- 96	89.0	29.0	103.6	103.6	0.0
M	R-42	N	96- 95				NO DATA FOR THIS LINE	
M	R-42	N	95- 94	81.0	22.0	94.4	97.1	0.0
M	R-42	N	94- 93	90.0	94.5	109.7	109.7	0.0
M	R-42	N	93- 92	86.0	20.0	99.0	101.0	0.0
M	R-42	N	92- 91	86.0	18.5	98.7	102.1	0.0
M	R-42	N	91-163	86.5	18.5	99.2	103.2	0.0
M	R-42	N	163-162	89.5	30.0	104.3	105.3	0.0
M	R-42	N	162-267	92.0	21.0	105.2	107.7	0.300
M	R-42	N	267-266	91.0	23.5	104.7	104.7	0.000
M	R-42	N	266-265	86.0	8.5	95.3	99.4	0.0
M	R-42	N	265-264	79.0	44.0	95.4	97.8	0.0
M	R-42	N	264-263	85.5	12.0	94.3	120.4	0.0
M	R-42	N	263-262	86.0	12.5	97.0	120.5	0.0
M	R-42	N	262-261	83.0	94.0	102.7	104.1	0.0
M	R-42	N	261-260	83.5	23.5	97.2	97.2	0.0
M	R-42	N	260-259	86.0	26.5	100.2	100.2	0.0
M	R-42	N	259-258				NO DATA FOR THIS LINE	
M	R-42	N	258-257				NO DATA FOR THIS LINE	
M	R-42	N	257- 72	87.0	29.0	100.0	101.5	0.0
M	R-42	N	72- 71	88.0	33.0	103.7	121.2	0.0
M	R-42	N	71- 70	86.0	35.0	101.4	101.4	0.0
M	R-42	N	70- 69	84.0	14.5	95.6	98.8	0.0
M	R-42	N	69- 68	84.0	21.0	97.2	97.2	0.0
M	R-42	N	68- 67	87.0	30.3	101.8	101.8	0.0
M	R-42	N	67- 66	83.0	28.5	97.5	97.5	0.0

LR FOR THE ROUTE IS 110.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 87.7

NAE FOR ROUTE IS 0.00

TABLE D-46

IN-TRAIN DATA FOR THE M ROUTE ON THE R-42

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
M	R-42	S	66- 67	89.0	25.0	103.0	109.0	0.0
M	R-42	S	67- 68	85.0	34.0	103.3	103.3	0.0
M	R-42	S	68- 69	95.0	12.5	96.0	96.0	0.0
M	R-42	S	69- 70	92.0	18.0	94.6	99.1	0.0
M	R-42	S	70- 71	84.5	30.5	100.1	101.0	0.0
M	R-42	S	71- 72	87.0	40.0	103.0	109.0	0.0
M	R-42	S	72-257	88.0	7.0	96.5	108.1	0.0
M	R-42	S	257-258	89.0	30.0	103.8	103.8	0.0
M	R-42	S	258-259				NO DATA FOR THIS LINE	
M	R-42	S	259-260				NO DATA FOR THIS LINE	
M	R-42	S	260-261	86.0	25.0	102.0	103.0	0.0
M	R-42	S	261-262	87.0	37.0	102.7	104.6	0.0
M	R-42	S	262-263	90.0	33.5	105.3	109.3	0.0
M	R-42	S	263-264	90.0	9.5	99.8	109.6	0.0
M	R-42	S	264-265	90.0	33.5	104.8	104.8	0.0
M	R-42	S	265-266	90.0	12.0	100.8	102.9	0.0
M	R-42	S	266-267	84.0	40.0	100.8	100.8	0.0
M	R-42	S	267-162	96.0	83.5	115.2	115.8	0.009
M	R-42	S	162-163	96.0	10.0	106.0	107.2	0.001
M	R-42	S	163- 91	94.0	9.0	103.5	104.8	0.000
M	R-42	S	91- 92	91.0	16.5	103.2	103.2	0.000
M	R-42	S	92- 93	87.0	71.5	105.5	105.9	0.0
M	R-42	S	93- 94	92.0	71.0	110.5	111.7	0.321
M	R-42	S	94- 95	86.0	18.5	98.7	107.9	0.0
M	R-42	S	95- 96	90.0	12.0	100.8	102.9	0.0
M	R-42	S	96- 97	87.0	13.5	98.3	101.7	0.0
M	R-42	S	97- 98	84.0	22.0	97.4	97.4	0.0
M	R-42	S	98- 99	89.0	32.5	104.1	104.1	0.0
M	R-42	S	99-100	86.0	40.5	102.1	102.1	0.0
M	R-42	S	100-101	84.0	32.5	99.1	99.1	0.0
M	R-42	S	101-102	85.5	46.5	102.2	102.2	0.0
M	R-42	S	102-103	89.0	31.0	101.9	101.9	0.0
M	R-42	S	103-104	87.5	37.5	103.2	104.4	0.0
M	R-42	S	104-105	82.0	32.3	97.1	97.1	0.0
M	R-42	S	105-106	87.0	26.5	101.2	103.4	0.0
M	R-42	S	106-107	83.0	40.0	102.5	103.2	0.0
M	R-42	S	107-108				NO DATA FOR THIS LINE	
M	R-42	S	108-109				NO DATA FOR THIS LINE	
M	R-42	S	109-110	87.0	30.0	102.8	102.8	0.0

LR FOR THE ROUTE IS 120.9

ENERGY-WEIGHTED LA FOR THE ROUTE IS 93.6

NAE FOR ROUTE IS 0.01

TABLE D-47

IN-TRAIN DATA FOR THE N ROUTE ON THE R-38

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
N	R-38	N	110-175	87.0	20.0	100.0	104.1	0.0
N	R-38	N	175-174	94.0	15.0	105.8	105.8	0.301
N	R-38	N	174-173	95.5	22.5	109.0	109.0	0.001
N	R-38	N	173-172	94.0	15.0	105.8	109.2	0.301
N	R-38	N	172-171	94.5	17.3	105.3	108.2	0.001
N	R-38	N	171-170	93.5	7.5	102.3	107.1	0.000
N	R-38	N	170-169	86.5	14.5	98.7	104.0	0.0
N	R-38	N	169-168	93.0	13.0	104.1	107.5	0.000
N	R-38	N	168-167	88.0	140.0	107.5	107.5	0.0
N	R-38	N	167-166	93.0	24.0	104.8	110.5	0.301
N	R-38	N	166-117	95.5	64.0	113.7	114.3	0.004
N	R-38	N	117-112				NO DATA FOR THIS LINE	
N	R-38	N	112- 91	88.0	22.0	101.4	107.2	0.0
N	R-38	N	91-486	94.5	31.0	109.4	114.6	0.303
N	R-38	N	486-154	93.0	50.0	110.9	112.6	0.002
N	R-38	N	154-151	98.0	16.5	113.6	112.7	0.007
N	R-38	N	151-150	96.0	29.5	110.1	110.1	0.007
N	R-38	N	153-148	95.5	30.0	110.3	112.5	0.303

LR FOR THE ROUTE IS 122.6

ENERGY-WEIGHTED LA FOR THE ROUTE IS 95.9

NAE FOR ROUTE IS 0.02

TABLE D-48

IN-TRAIN DATA FOR THE N ROUTE ON THE R-38 MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
N	R-38	S	148-150	94.0	26.0	108.1	109.2	0.001
N	R-38	S	150-151	95.0	19.5	107.9	108.8	0.001
N	R-38	S	151-156	94.0	53.0	111.2	111.2	0.002
N	R-38	S	156-406	94.0	26.0	108.1	110.7	0.001
N	R-38	S	406- 91	92.0	32.3	106.8	110.6	0.001
N	R-38	S	91-112	87.0	47.0	105.7	109.5	0.0
N	R-38	S	112-117	89.0	31.0	103.9	103.9	0.0
N	R-38	S	117-166	91.5	69.0	109.9	111.5	0.001
N	R-38	S	166-167	88.5	27.0	101.9	104.1	0.0
N	R-38	S	167-168	89.0	35.0	104.4	104.4	0.0
N	R-38	S	168-169	96.0	14.0	107.5	107.5	0.001
N	R-38	S	169-170	89.0	36.0	104.6	104.6	0.0
N	R-38	S	170-171	90.0	23.0	113.6	104.1	0.0
N	R-38	S	171-172	93.0	34.0	108.3	108.3	0.001
N	R-38	S	172-173	92.0	27.0	106.3	110.2	0.001
N	R-38	S	173-174				NO DATA FOR THIS LINE	
N	R-38	S	174-175	90.0	30.5	104.8	104.9	0.0
N	R-38	S	175-113	85.5	17.0	97.8	102.4	0.0

LA FOR THE ROUTE IS 120.5

ENERGY-WEIGHTED LA FOR THE ROUTE IS 93.8

NAE FOR ROUTE IS 0.01

TABLE D-49

IN-TRAIN DATA FOR THE N ROUTE ON THE R-42

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
N	R-42	N	110-175	85.0	44.0	101.4	109.1	0.0
N	R-42	N	175-174	87.0	31.0	101.9	101.9	0.0
N	R-42	N	174-173	88.0	34.0	103.3	103.3	0.0
N	R-42	N	173-172	87.0	37.0	102.1	103.6	0.0
N	R-42	N	172-171	88.0	41.0	104.1	104.1	0.0
N	R-42	N	171-170	84.0	24.0	97.8	100.5	0.0
N	R-42	N	170-169				NO DATA FOR THIS LINK	
N	R-42	N	169-168	87.5	15.0	99.3	104.5	0.0
N	R-42	N	168-167	85.5	57.0	101.1	101.1	0.0
N	R-42	N	167-166	84.5	25.0	98.5	104.3	0.0
N	R-42	N	166-117	88.5	59.0	106.2	106.9	0.0
N	R-42	N	117-112	93.0	57.5	110.4	111.9	0.002
N	R-42	N	112-486	88.0	33.0	102.8	108.9	0.0
N	R-42	N	486-156	88.0	40.5	104.9	106.2	0.0
N	R-42	N	156-151	90.0	31.0	109.2	107.1	0.0
N	R-42	N	151-150	86.0	43.3	127.0	107.0	0.0
N	R-42	N	150-148	86.0	37.0	101.1	103.8	0.0

LA FOR THE ROUTE IS 117.9

ENERGY-WEIGHTED LA FOR THE ROUTE IS 89.8

NAE FOR ROUTE IS 0.00

TABLE D-50

IN-TRAIN DATA FOR THE N ROUTE ON THE R-42

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
N	R-42	S	148-150				NO DATA FOR THIS LINK.	
N	R-42	S	150-151	85.0	39.0	100.9	130.9	0.0
N	R-42	S	151-154	87.0	18.0	131.6	101.6	0.3
N	R-42	S	154-486	84.0	50.0	101.6	104.4	0.0
N	R-42	S	486-112	86.5	40.0	102.5	105.3	0.0
N	R-42	S	112-117	92.0	54.0	107.3	139.4	0.0
N	R-42	S	117-166	83.5	57.0	99.2	99.7	0.0
N	R-42	S	166-167	83.0	32.0	98.1	98.1	0.3
N	R-42	S	167-168	83.5	41.5	99.7	99.7	0.0
N	R-42	S	168-169	86.0	75.0	103.0	100.0	0.0
N	R-42	S	169-170				NO DATA FOR THIS LINK	
N	R-42	S	170-171	86.0	26.0	102.1	102.1	0.0
N	R-42	S	171-172	89.0	31.0	103.9	103.9	0.0
N	R-42	S	172-173	90.0	20.0	104.5	104.5	0.0
N	R-42	S	173-174	88.0	41.0	104.1	104.1	0.0
N	R-42	S	174-175	88.5	44.0	104.9	104.9	0.0
N	R-42	S	175-110	81.0	230.0	104.8	104.8	0.0

LA FOR THE ROUTE IS 115.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 88.3

NAE FOR ROUTE IS 0.0

TABLE D-51

IN-TRAIN DATA FOR THE RR ROUTE ON THE R-27

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
RR	R-27	N	133-132	98.0	27.5	112.4	112.4	0.003
RR	R-27	N	132-131	98.0	38.0	113.8	113.8	0.004
RR	R-27	N	131-130	98.0	27.5	112.4	112.4	0.003
RR	R-27	N	130-166	94.0	43.0	110.0	111.1	0.001
RR	R-27	N	166-165	96.0	21.5	109.3	109.3	0.001
RR	R-27	N	165-164	98.0	21.5	111.3	111.5	0.002
RR	R-27	N	164-117	96.0	22.0	109.4	111.5	0.002
RR	R-27	N	117-116	101.0	10.0	111.0	111.0	0.002
RR	R-27	N	116-115	95.0	57.0	110.7	110.7	0.002
RR	R-27	N	115-114	98.0	29.0	112.0	112.0	0.003
RR	R-27	N	114-113	98.5	43.5	114.1	114.1	0.004
RR	R-27	N	113-112	95.0	32.5	110.1	113.9	0.002
RR	R-27	N	112- 91	96.0	8.5	105.0	108.2	0.001
RR	R-27	N	91-163	97.0	9.0	106.5	109.7	0.001
RR	R-27	N	163-162	96.0	16.5	108.2	113.2	0.007
RR	R-27	N	162-161	104.0	17.5	119.0	117.8	0.038
RR	R-27	N	161-160	98.0	6.0	109.8	110.2	0.002
RR	R-27	N	160-159	97.5	20.0	110.5	110.5	0.002
RR	R-27	N	159-158	103.0	12.0	113.8	114.3	0.004
RR	R-27	N	158-157	95.5	7.5	124.3	111.7	0.002
RR	R-27	N	157-156	96.5	41.0	112.6	112.6	0.003
RR	R-27	N	156-155	98.0	34.0	113.3	113.3	0.003
RR	R-27	N	155-154	96.0	11.0	106.4	111.5	0.002
RR	R-27	N	154-153	97.0	21.0	110.2	111.8	0.002
RR	R-27	N	153-152	99.0	19.5	111.9	111.9	0.002
RR	R-27	N	152-151	96.0	21.0	109.2	109.2	0.001
RR	R-27	N	151-150	95.0	29.0	109.6	110.6	0.002
RR	R-27	N	150-149	96.5	26.5	110.7	113.7	0.002
RR	R-27	N	149-148	93.0	19.0	109.8	109.9	0.001
RR	R-27	N	148-147	102.0	13.0	113.1	113.5	0.003
RR	R-27	N	147-146	99.0	49.0	115.9	115.9	0.006
RR	R-27	N	146-145	99.0	49.0	115.9	115.9	0.006
RR	R-27	N	145-144	90.0	25.5	104.1	104.1	0.0
RR	R-27	N	144-143	97.0	27.5	105.5	105.5	0.000
RR	R-27	N	143-142	93.0	35.0	104.4	108.4	0.001
RR	R-27	N	142-141	93.0	29.0	107.6	107.6	0.001
RR	R-27	N	141-140	91.5	21.0	104.6	104.6	0.000
RR	R-27	N	140-139	87.0	21.0	100.2	100.2	0.3

LR FOR THE ROUTE IS 127.6

ENERGY-WEIGHTED LA FOR THE ROUTE IS 98.7

NAE FOR ROUTE IS 0.09

TABLE D-52

IN-TRAIN DATA FOR THE RR ROUTE ON THE R-27

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
RR	R-27	S	139-140	96.0	23.0	107.0	107.0	0.001
RR	R-27	S	140-141	97.0	23.5	110.7	110.7	0.002
RR	R-27	S	141-142	97.0	31.0	111.9	111.9	0.003
RR	R-27	S	142-143	98.0	34.5	113.4	113.4	0.004
RR	R-27	S	143-144	97.0	25.0	110.6	110.6	0.002
RR	R-27	S	144-145	95.0	11.5	109.4	109.4	0.001
RR	R-27	S	145-146	100.0	137.0	121.4	121.4	0.071
RR	R-27	S	146-147	94.0	34.0	109.3	109.3	0.001
RR	R-27	S	147-148	99.0	23.5	112.1	112.1	0.003
RR	R-27	S	148-149	98.0	14.0	107.5	111.1	0.002
RR	R-27	S	149-150	99.5	15.0	111.3	113.0	0.003
RR	R-27	S	150-151	98.5	24.5	113.0	113.0	0.003
RR	R-27	S	151-152	100.0	29.0	113.6	113.6	0.003
RR	R-27	S	152-153	98.0	23.0	111.0	111.0	0.002
RR	R-27	S	153-154	94.5	30.0	110.3	110.3	0.002
RR	R-27	S	154-155	95.0	31.0	109.9	109.9	0.002
RR	R-27	S	155-156	98.0	37.5	113.7	113.7	0.004
RR	R-27	S	156-157	99.0	27.0	113.3	113.3	0.003
RR	R-27	S	157-158	97.0	26.0	110.8	112.4	0.003
RR	R-27	S	158-159	101.0	7.0	109.5	109.5	0.001
RR	R-27	S	159-160	97.0	25.0	110.6	110.6	0.002
RR	R-27	S	160-161	93.0	22.5	106.5	106.5	0.001
RR	R-27	S	161-162	103.0	117.0	123.7	123.7	0.030
RR	R-27	S	162-163	98.0	5.5	105.4	108.5	0.001
RR	R-27	S	163- 91	[illegible]	23.0	109.0	113.5	0.001
RR	R-27	S	91-112	93.0	23.0	106.6	106.6	0.001
RR	R-27	S	112-113	98.5	39.0	114.4	114.4	0.004
RR	R-27	S	113-114	100.5	47.0	117.2	117.2	0.008
RR	R-27	S	114-115	98.5	40.0	115.3	115.3	0.005
RR	R-27	S	115-116	99.0	34.5	114.4	114.4	0.004
RR	R-27	S	116-117	100.0	27.0	113.4	113.4	0.003
RR	R-27	S	117-164	95.5	38.0	111.3	111.3	0.002
RR	R-27	S	164-165	97.0	33.0	111.8	111.8	0.002
RR	R-27	S	165-166	93.5	12.5	106.5	109.0	0.001
RR	R-27	S	166-130	98.5	35.0	113.9	113.9	0.004
RR	R-27	S	130-131	99.0	32.5	113.8	113.9	0.003
RR	R-27	S	131-132	98.0	23.0	111.6	112.4	0.003
RR	R-27	S	132-133	97.5	21.5	111.1	112.3	0.003

LA FOR THE ROUTE IS 129.9

ENERGY-WEIGHTED LA FOR THE ROUTE IS 98.5

NAE FOR ROUTE IS 0.14

TABLE D-53

IN-TRAIN DATA FOR THE RR ROUTE ON THE R-42

MODEL NORTHBOUND

ROUTE No.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
RR	R-42	N	133-132	94.0	26.0	108.1	109.0	0.351
RR	R-42	N	132-131	96.0	26.0	110.1	110.1	0.002
RR	R-42	N	131-130	96.0	25.0	110.0	110.0	0.002
RR	R-42	N	130-166	95.0	41.0	111.1	111.1	0.002
RR	R-42	N	166-165	94.5	29.0	109.1	109.1	0.001
RR	R-42	N	165-164	94.0	29.5	109.5	108.5	0.001
RR	R-42	N	164-117	91.0	37.5	106.1	109.0	0.300
RR	R-42	N	117-116	97.5	11.5	109.1	109.9	0.301
RR	R-42	N	116-115	94.5	46.0	111.1	111.1	0.002
RR	R-42	N	115-114	96.0	39.0	111.9	111.9	0.003
RR	R-42	N	114-113	96.0	39.0	111.9	111.9	0.003
RR	R-42	N	113-112	97.0	90.0	114.0	114.0	0.004
RR	R-42	N	112- 91	95.0	13.0	106.1	113.3	0.003
RR	R-42	N	91-163	87.0	16.0	99.0	105.6	0.0
RR	R-42	N	163-162				NO DATA FOR THIS LINK	
RR	R-42	N	162-161	95.0	33.0	113.2	114.2	0.003
RR	R-42	N	161-160	84.5	36.0	100.1	130.1	0.0
RR	R-42	N	160-159	92.5	26.0	106.6	107.2	0.001
RR	R-42	N	159-158	89.5	25.0	103.5	105.2	0.0
RR	R-42	N	158-157	88.5	19.0	101.3	101.3	0.0
RR	R-42	N	157-156	93.0	39.0	108.9	108.9	0.001
RR	R-42	N	156-155	92.5	26.0	106.6	106.6	0.001
RR	R-42	N	155-154	90.0	19.0	107.8	105.6	0.0
RR	R-42	N	154-153	89.5	24.5	103.4	135.6	0.0
RR	R-42	N	153-152	90.0	26.5	104.2	104.2	0.0
RR	R-42	N	152-151	90.0	26.0	104.1	104.1	0.0
RR	R-42	N	151-150	90.0	29.0	134.6	105.7	0.0
RR	R-42	N	150-149	90.5	36.5	106.1	106.1	0.000
RR	R-42	N	149-148	90.0	30.0	104.8	139.4	0.0
RR	R-42	N	148-147	93.5	15.5	105.4	106.0	0.000
RR	R-42	N	147-146	94.5	31.0	109.4	109.4	0.001
RR	R-42	N	146-145	96.0	79.5	115.0	110.1	0.009
RR	R-42	N	145-144	85.0	27.0	99.3	99.3	0.0
RR	R-42	N	144-143	92.0	26.0	106.1	106.1	0.000
RR	R-42	N	143-142	93.0	37.0	108.7	108.7	0.001
RR	R-42	N	142-141	97.0	33.0	107.2	107.2	0.001
RR	R-42	N	141-140	86.0	49.0	102.9	102.9	0.0
RR	R-42	N	140-139	88.0	23.5	101.7	102.8	0.0

LA FOR THE ROUTE IS 125.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 94.2

NAE FOR ROUTE IS 0.04

TABLE D-54

IN-TRAIN DATA FOR THE RR ROUTE ON THE R-42

MODEL SOUTHBOUND

ROUTE No.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LP OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
RR	R-42	S	139-140	91.0	21.5	104.3	105.4	0.000
RR	R-42	S	140-141	87.0	32.5	102.1	102.1	0.0
RR	R-42	S	141-142	87.0	41.0	103.1	103.1	0.0
RR	R-42	S	142-143	87.0	38.0	102.8	102.9	0.0
RR	R-42	S	143-144	89.0	27.5	100.4	100.4	0.0
RR	R-42	S	144-145	89.0	14.0	96.5	100.8	0.0
RR	R-42	S	145-146	91.0	33.0	106.2	106.8	0.000
RR	R-42	S	146-147	85.0	20.0	98.0	100.8	0.0
RR	R-42	S	147-148				NO DATA FOR THIS LINK	
RR	R-42	S	148-149	87.5	24.3	100.8	103.5	0.0
RR	R-42	S	149-150	86.0	23.0	99.6	101.2	0.0
RR	R-42	S	150-151	91.0	30.0	105.8	105.8	0.000
RR	R-42	S	151-152	87.0	28.0	101.5	101.5	0.0
RR	R-42	S	152-153	91.0	22.5	104.5	104.5	0.000
RR	R-42	S	153-154	91.0	37.5	106.7	106.7	0.000
RR	R-42	S	154-155	91.0	30.5	105.8	105.8	0.000
RR	R-42	S	155-156	91.0	41.0	107.1	107.1	0.000
RR	R-42	S	156-157	94.0	23.5	107.7	107.7	0.001
RR	R-42	S	157-158	89.0	31.0	103.9	104.8	0.0
RR	R-42	S	158-159	100.0	5.5	107.4	110.7	0.002
RR	R-42	S	159-160	91.0	16.0	103.0	104.7	0.000
RR	R-42	S	160-161	89.0	19.0	103.8	103.7	0.0
RR	R-42	S	161-162				NO DATA FOR THIS LINK	
RR	R-42	S	162-163	90.0	16.0	102.0	104.6	0.0
RR	R-42	S	163- 91	88.0	13.5	99.1	102.1	0.0
RR	R-42	S	91-112	93.0	5.0	103.0	104.9	0.000
RR	R-42	S	112-113	90.0	30.5	104.8	104.8	0.0
RR	R-42	S	113-114	94.0	40.0	110.0	110.0	0.001
RR	R-42	S	114-115	92.0	39.0	107.9	107.9	0.001
RR	R-42	S	115-116	92.0	35.0	107.4	107.4	0.001
RR	R-42	S	116-117	94.0	21.5	107.3	107.3	0.001
RR	R-42	S	117-164	87.0	27.0	101.3	101.3	0.0
RR	R-42	S	164-165	91.0	26.0	105.1	105.1	0.000
RR	R-42	S	165-166	88.0	43.0	102.3	102.5	0.0
RR	R-42	S	166-130	93.0	31.0	107.9	109.4	0.001
RR	R-42	S	130-131	93.0	30.5	107.8	107.8	0.001
RR	R-42	S	131-132	92.5	8.0	101.5	106.4	0.000
RR	R-42	S	132-133				NO DATA FOR THIS LINK	

LA FOR THE ROUTE IS 121.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 92.5

NAE FOR ROUTE IS 0.01

TABLE D-55

IN-TRAIN DATA FOR THE SI ROUTE ON THE R-44

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
SI	R-44	N	463-464	84.0	15.0	95.8	95.8	0.3
SI	R-44	N	464-465	82.0	20.0	95.0	95.0	0.3
SI	R-44	N	465-466	82.5	38.0	98.3	98.3	0.0
SI	R-44	N	466-467	81.5	24.0	95.3	97.5	0.0
SI	R-44	N	467-468	82.0	54.3	99.3	99.3	0.3
SI	R-44	N	468-469	80.0	83.0	99.0	99.0	0.3
SI	R-44	N	469-470	81.0	41.5	97.2	99.6	0.0
SI	R-44	N	470-471	83.5	11.0	93.9	93.9	0.0
SI	R-44	N	471-472	83.5	10.5	93.7	93.7	0.0
SI	R-44	N	472-473	82.0	12.3	92.8	92.8	0.3
SI	R-44	N	473-474	82.0	14.0	93.5	95.9	0.3
SI	R-44	N	474-475	79.0	41.0	95.1	95.1	0.0
SI	R-44	N	475-476	77.0	49.0	93.9	93.9	0.3
SI	R-44	N	476-477	77.0	43.0	93.3	93.3	0.0
SI	R-44	N	477-478	NO DATA FOR THIS LINK				
SI	R-44	N	478-479	77.0	55.3	94.4	94.4	0.0
SI	R-44	N	479-480	73.0	64.0	91.1	91.1	0.0
SI	R-44	N	480-481	82.0	12.0	92.8	99.3	0.3
SI	R-44	N	481-482	78.0	35.5	91.5	91.5	0.0
SI	R-44	N	482-483	81.0	15.5	92.9	97.0	0.0
SI	R-44	N	483-484	78.0	12.5	88.8	98.8	0.3

LA FOR THE ROUTE IS 109.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 82.1

NAE FOR ROUTE IS 0.0

TABLE D-56

IN-TRAIN DATA FOR THE SI ROUTE ON THE R-44

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
SI	R-44	S	484-483	78.5	69.0	95.4	95.4	0.0
SI	R-44	S	483-482	80.0	14.5	91.6	95.7	0.0
SI	R-44	S	482-481	78.0	18.0	90.6	94.8	0.0
SI	R-44	S	481-480	76.0	171.0	98.3	98.3	0.0
SI	R-44	S	480-479	80.0	16.3	92.0	92.0	0.0
SI	R-44	S	479-478	76.0	67.0	94.3	94.3	0.0
SI	R-44	S	478-477	74.0	66.0	92.7	92.7	0.0
SI	R-44	S	477-476	73.0	63.3	91.0	91.0	0.0
SI	R-44	S	476-475	74.0	35.0	89.4	89.4	0.0
SI	R-44	S	475-474	73.0	58.0	90.6	90.6	0.0
SI	R-44	S	474-473	73.0	79.0	92.0	92.0	0.0
SI	R-44	S	473-472	78.0	55.0	95.4	95.4	0.0
SI	R-44	S	472-471				NO DATA FOR THIS LINE	
SI	R-44	S	471-470	76.0	59.0	95.7	95.7	0.0
SI	R-44	S	470-469	78.0	56.0	95.3	95.3	0.0
SI	R-44	S	469-468	80.0	21.0	93.2	93.2	0.0
SI	R-44	S	468-467	80.0	49.0	96.9	96.9	0.0
SI	R-44	S	467-466	78.0	45.0	94.5	94.5	0.0
SI	R-44	S	466-465	80.3	29.3	94.5	94.5	0.0
SI	R-44	S	465-464	75.0	71.0	93.5	93.5	0.0
SI	R-44	S	464-463	75.0	78.0	91.9	91.9	0.0

LR FOR THE ROUTE IS 107.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 77.8

NAE FOR ROUTE IS 0.0

TABLE D-57

IN-TRAIN DATA FOR THE SI ROUTE ON THE R-44

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
SI	R-44	N	463-464	77.0	30.0	91.0	91.0	0.0
SI	R-44	N	464-465				NO DATA FOR THIS LINK	
SI	R-44	N	465-466				NO DATA FOR THIS LINK.	
SI	R-44	N	466-467	81.5	35.0	96.9	98.4	0.3
SI	R-44	N	467-468	78.5	67.0	96.8	96.8	0.0
SI	R-44	N	468-469	79.0	49.0	95.9	95.9	0.0
SI	R-44	N	469-470	79.5	43.3	95.5	97.9	0.3
SI	R-44	N	470-471	80.5	29.0	95.0	95.0	0.0
SI	R-44	N	471-472	79.0	52.0	96.2	96.2	0.0
SI	R-44	N	472-473	80.0	12.0	90.8	94.5	0.0
SI	R-44	N	473-474	78.0	45.0	94.5	94.5	0.0
SI	R-44	N	474-475	75.0	60.0	92.8	92.8	0.3
SI	R-44	N	475-476				NO DATA FOR THIS LINK	
SI	R-44	N	476-477	72.0	81.0	91.1	91.1	0.0
SI	R-44	N	477-478	72.5	84.0	91.7	91.7	0.3
SI	R-44	N	478-479	75.0	77.0	93.6	93.6	0.0
SI	R-44	N	479-480	74.0	45.0	90.5	90.5	0.0
SI	R-44	N	480-481	77.0	64.3	95.1	96.7	0.0
SI	R-44	N	481-482	73.5	52.5	90.7	90.7	0.0
SI	R-44	N	482-483	79.0	17.0	91.3	94.2	0.0
SI	R-44	N	483-484	78.0	177.0	100.5	100.5	0.0

LA FOR THE ROUTE IS 100.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 78.8

NAE FOR ROUTE IS 0.0

TABLE D-58

IN-TRAIN DATA FOR THE SI ROUTE ON THE R-44

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM (ESTIMATE)(NOT)
SI	R-44	S	484-483				NO DATA FOR THIS LINE	
SI	R-44	S	483-482	78.0	13.0	89.1	91.9	0.0
SI	R-44	S	482-481	77.0	12.5	88.0	92.1	0.0
SI	R-44	S	481-480	77.0	28.5	91.5	96.5	0.0
SI	R-44	S	480-479	79.0	21.0	92.2	92.7	0.0
SI	R-44	S	479-478	77.0	45.5	91.6	93.6	0.0
SI	R-44	S	478-477	71.0	63.5	89.0	89.0	0.0
SI	R-44	S	477-476	75.0	26.0	89.1	89.1	0.0
SI	R-44	S	476-475	69.0	81.0	89.1	88.1	0.0
SI	R-44	S	475-474	71.0	91.5	90.4	90.6	0.0
SI	R-44	S	474-473	71.0	100.5	91.0	91.0	0.0
SI	R-44	S	473-472	78.0	34.5	93.6	93.6	0.0
SI	R-44	S	472-471				NO DATA FOR THIS LINE	
SI	R-44	S	471-470	78.5	21.5	91.8	94.9	0.0
SI	R-44	S	470-469	74.5	42.0	94.1	94.1	0.0
SI	R-44	S	469-468	78.0	20.0	91.0	91.0	0.0
SI	R-44	S	468-467	79.5	43.0	95.8	95.8	0.0
SI	R-44	S	467-466	77.0	37.5	92.7	92.7	0.0
SI	R-44	S	466-465				NO DATA FOR THIS LINE	
SI	R-44	S	465-464	78.0	32.0	93.1	96.0	0.0
SI	R-44	S	464-463	74.5	43.3	90.5	90.5	0.0

LR FOR THE ROUTE IS 105.6

ENERGY-WEIGHTED LA FOR THE ROUTE IS 77.8

NAE FOR ROUTE IS 0.0

TABLE D-59

IN-TRAIN DATA FOR THE IRT 1 ROUTE ON THE R-12

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
1	R-12	N	328-327	99.0	11.0	109.4	113.8	0.004
1	R-12	N	327-326	99.5	31.5	114.5	114.5	0.004
1	R-12	N	326-325	98.0	33.0	113.2	113.2	0.003
1	R-12	N	325-324	NO DATA FOR THIS LINK				
1	R-12	N	324-323	99.0	22.0	117.4	117.4	0.005
1	R-12	N	323-322	99.0	35.0	114.4	114.4	0.004
1	R-12	N	322-321	99.0	41.0	115.1	115.1	0.005
1	R-12	N	321-320	130.0	29.3	114.6	114.6	0.004
1	R-12	N	320-319	107.0	18.0	114.6	114.6	0.004
1	R-12	N	319-318	97.0	21.0	110.2	110.2	0.002
1	R-12	N	318-317	99.0	20.0	117.0	117.0	0.002
1	R-12	N	317-316	96.0	25.0	110.0	110.0	0.002
1	R-12	N	316-315	99.5	26.0	113.6	113.6	0.004
1	R-12	N	315-314	100.0	32.0	115.1	115.1	0.005
1	R-12	N	314-313	99.0	36.5	114.6	114.6	0.005
1	R-12	N	313-312	102.0	21.5	115.3	115.3	0.005
1	R-12	N	312-311	100.0	15.3	111.8	113.2	0.003
1	R-12	N	311-310	98.0	36.5	113.6	113.6	0.004
1	R-12	N	310-309	98.0	43.0	114.3	114.3	0.004
1	R-12	N	309-308	98.3	39.3	113.9	113.9	0.004
1	R-12	N	308-307	102.0	36.0	117.6	117.6	0.008
1	R-12	N	307-306	98.0	29.0	112.6	112.6	0.003
1	R-12	N	306-305	98.0	27.0	112.3	112.3	0.003
1	R-12	N	305-304	85.0	20.0	98.0	100.6	0.0
1	R-12	N	304-303	97.5	13.3	100.6	100.4	0.031
1	R-12	N	303-302	93.5	20.5	106.6	107.2	0.001
1	R-12	N	302-301	131.0	39.0	116.4	117.9	0.009
1	R-12	N	301-300	130.0	34.5	115.4	115.4	0.005
1	R-12	N	300-299	97.0	67.0	115.3	115.3	0.005
1	R-12	N	299-298	98.5	31.0	113.4	113.4	0.003
1	R-12	N	298-297	94.5	27.0	108.8	110.2	0.001
1	R-12	N	297-296	92.0	36.0	107.6	107.6	0.001
1	R-12	N	296-295	97.0	41.3	108.1	108.1	0.001
1	R-12	N	295-294	90.0	26.0	104.1	104.1	0.0
1	R-12	N	294-293	94.0	18.0	106.6	108.6	0.001
1	R-12	N	293-292	97.0	44.3	108.4	108.4	0.001
1	R-12	N	292-291	96.0	27.0	110.3	110.3	0.002

LA FOR THE ROUTE IS 120.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 98.8

NAE FOR ROUTE IS 0.11

TABLE D-60

IN-TRAIN DATA FOR THE IRT 1 ROUTE ON THE R-12 MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
1	R-12	S	291-292	93.0	22.0	106.4	106.4	0.001
1	R-12	S	292-293	96.0	37.0	111.7	111.7	0.002
1	R-12	S	293-294	96.0	32.0	111.1	111.1	0.002
1	R-12	S	294-295	92.5	29.5	105.5	107.7	0.000
1	R-12	S	295-296	97.0	41.0	108.3	108.3	0.001
1	R-12	S	296-297	95.5	32.0	110.6	110.6	0.002
1	R-12	S	297-298	105.5	31.0	120.4	120.4	0.012
1	R-12	S	298-299	107.0	37.0	117.7	117.7	0.008
1	R-12	S	299-300	133.0	64.3	121.1	121.1	0.016
1	R-12	S	300-301	100.0	41.5	116.7	116.9	0.007
1	R-12	S	301-302	104.0	30.5	119.9	120.6	0.015
1	R-12	S	302-303	130.5	22.5	114.0	119.0	0.009
1	R-12	S	303-304	92.0	22.0	105.4	107.1	0.000
1	R-12	S	304-305	99.0	37.0	114.7	114.7	0.005
1	R-12	S	305-306	103.0	19.0	115.8	115.8	0.005
1	R-12	S	306-307	103.0	14.0	114.5	114.5	0.004
1	R-12	S	307-308	98.0	22.3	111.4	113.2	0.003
1	R-12	S	308-309	101.0	19.5	113.9	115.6	0.005
1	R-12	S	309-310	103.0	20.0	117.9	117.9	0.007
1	R-12	S	310-311	97.0	22.3	110.4	113.3	0.006
1	R-12	S	311-312	136.0	20.0	114.5	114.5	0.004
1	R-12	S	312-313	100.5	31.5	111.1	113.7	0.004
1	R-12	S	313-314	103.0	31.5	118.0	118.0	0.008
1	R-12	S	314-315	104.5	37.0	120.7	120.2	0.012
1	R-12	S	315-316	130.0	30.5	115.8	115.8	0.006
1	R-12	S	316-317	96.5	31.0	111.4	111.4	0.002
1	R-12	S	317-318	100.0	22.0	113.4	113.4	0.003
1	R-12	S	318-319	99.5	21.0	112.7	112.7	0.003
1	R-12	S	319-320	100.0	7.0	108.5	114.4	0.004
1	R-12	S	320-321	99.0	30.0	113.8	113.8	0.004
1	R-12	S	321-322	101.0	30.0	115.8	115.8	0.009
1	R-12	S	322-323	102.5	29.0	114.5	116.5	0.006
1	R-12	S	323-324	99.0	24.3	112.8	112.8	0.003
1	R-12	S	324-325	100.0	29.5	114.1	114.1	0.004
1	R-12	S	325-326	96.0	37.0	111.1	111.1	0.002
1	R-12	S	326-327	100.0	20.3	114.5	114.5	0.004
1	R-12	S	327-328	95.5	6.0	101.3	112.1	0.005

LA FOR THE ROUTE IS 131.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 101.1

NAE FOR ROUTE IS 0.18

TABLE D-61

IN-TRAIN DATA FOR THE IRT 1 ROUTE ON THE R-36

MODEL NORTHBOUND

ROUTE No.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
1	R-36	N	328-327	94.5	23.0	108.1	110.3	0.001
1	R-36	N	327-326	89.5	55.0	106.9	106.9	0.0
1	R-36	N	326-325	90.0	17.0	102.3	102.3	0.0
1	R-36	N	325-324	97.0	26.3	111.1	111.1	0.002
1	R-36	N	324-323	95.0	23.0	108.6	108.6	0.001
1	R-36	N	323-322	95.0	34.5	110.4	110.4	0.002
1	R-36	N	322-321	95.0	36.5	110.6	110.6	0.002
1	R-36	N	321-320	95.5	30.0	110.3	110.3	0.002
1	R-36	N	320-319	96.0	20.0	109.0	109.0	0.001
1	R-36	N	319-318	94.0	19.0	106.0	106.0	0.001
1	R-36	N	318-317	93.0	23.0	106.6	104.4	0.001
1	R-36	N	317-316	91.0	29.0	105.5	105.5	0.000
1	R-36	N	316-315	94.0	31.0	108.9	108.9	0.001
1	R-36	N	315-314	96.0	26.0	108.1	109.0	0.001
1	R-36	N	314-313	94.0	39.3	109.9	109.9	0.001
1	R-36	N	313-312	98.0	27.5	111.5	111.5	0.002
1	R-36	N	312-311	94.5	15.0	106.3	106.3	0.001
1	R-36	N	311-310	97.5	12.0	108.3	108.3	0.001
1	R-36	N	310-309	94.5	38.0	110.3	110.3	0.002
1	R-36	N	309-308	94.0	38.0	109.8	109.8	0.001
1	R-36	N	308-307	97.0	19.0	109.8	109.8	0.002
1	R-36	N	307-306	94.0	28.5	108.5	108.5	0.001
1	R-36	N	306-305	93.0	27.0	107.3	107.3	0.001
1	R-36	N	305-304				NO DATA FOR THIS LINK	
1	R-36	N	304-303	90.0	21.0	103.2	106.0	0.3
1	R-36	N	303-302	96.5	38.5	112.4	112.4	0.003
1	R-36	N	302-301	102.0	14.5	117.6	117.3	0.007
1	R-36	N	301-300	100.0	39.0	115.4	119.4	0.005
1	R-36	N	300-299	103.0	23.0	116.6	119.3	0.012
1	R-36	N	299-298	100.0	34.0	115.3	115.3	0.005
1	R-36	N	298-297	101.5	27.5	115.8	115.8	0.005
1	R-36	N	297-296	92.0	39.0	107.9	107.9	0.001
1	R-36	N	296-295	88.0	52.5	105.2	105.2	0.3
1	R-36	N	295-294	89.0	10.0	99.0	101.1	0.0
1	R-36	N	294-293	93.5	21.0	106.7	108.6	0.001
1	R-36	N	293-292	91.5	40.3	107.5	107.5	0.000
1	R-36	N	292-291				NO DATA FOR THIS LINK	

LA FOR THE ROUTE IS 126.8

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.1

NAE FOR ROUTE IS 0.07

TABLE D-62

IN TRAIN DATA FOR THE IRT 1 ROUTE ON THE R-36

MODEL SOUTHBOUND

ROUTE No.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
1	R-36	S	291-292	95.5	9.5	102.9	105.3	0.000
1	R-36	S	292-293	93.5	36.0	109.1	109.1	0.001
1	R-36	S	293-294	92.5	30.0	107.3	107.3	0.001
1	R-36	S	294-295	90.3	27.0	104.3	104.3	0.3
1	R-36	S	295-296	86.0	53.0	103.7	103.7	0.0
1	R-36	S	296-297	91.5	35.0	106.9	106.9	0.000
1	R-36	S	297-298	98.0	35.0	113.4	113.4	0.004
1	R-36	S	298-299	97.0	38.5	117.9	112.9	0.003
1	R-36	S	299-300	98.0	58.0	115.4	115.6	0.006
1	R-36	S	300-301	94.5	45.0	110.8	111.9	0.002
1	R-36	S	301-302	96.5	44.0	113.3	113.5	0.004
1	R-36	S	302-303	95.5	7.3	104.0	109.6	0.001
1	R-36	S	303-304	89.5	20.0	102.5	102.5	0.0
1	R-36	S	304-305	94.0	23.0	107.6	107.6	0.001
1	R-36	S	305-306	98.0	17.3	110.3	110.3	0.002
1	R-36	S	306-307	98.0	27.0	111.4	111.4	0.002
1	R-36	S	307-308	96.0	25.0	110.0	111.3	0.002
1	R-36	S	308-309	98.5	9.0	105.5	110.7	0.002
1	R-36	S	309-310	97.5	16.5	110.2	113.0	0.003
1	R-36	S	310-311	95.5	21.0	108.7	113.5	0.002
1	R-36	S	311-312	96.0	21.0	109.2	110.7	0.002
1	R-36	S	312-313	98.0	10.0	108.0	109.6	0.001
1	R-36	S	313-314	97.5	21.3	113.7	113.0	0.003
1	R-36	S	314-315	98.0	22.0	111.4	112.2	0.002
1	R-36	S	315-316	95.5	52.0	110.7	111.1	0.002
1	R-36	S	316-317	96.0	25.0	110.0	110.0	0.002
1	R-36	S	317-318	100.0	19.0	111.8	111.8	0.002
1	R-36	S	318-319	96.0	19.0	108.8	108.8	0.001
1	R-36	S	319-320	99.5	14.0	117.3	117.5	0.003
1	R-36	S	320-321	94.0	34.0	109.3	109.5	0.001
1	R-36	S	321-322	96.0	31.3	110.9	110.9	0.002
1	R-36	S	322-323	100.0	14.0	111.5	113.1	0.003
1	R-36	S	323-324	96.0	21.5	109.3	109.3	0.001
1	R-36	S	324-325				NO DATA FOR THIS LINK	
1	R-36	S	325-326	85.5	13.0	96.6	100.0	0.0
1	R-36	S	326-327	95.0	27.5	109.4	109.4	0.001
1	R-36	S	327-328	94.0	25.0	108.0	108.0	0.001

LA FOR THE ROUTE IS 126.3

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.3

NAE FOR ROUTE IS 0.06

TABLE D-63

IN-TRAIN DATA FOR THE IRT 2 ROUTE ON THE R-15

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
2	R-15	N	350-349	90.5	26.5	104.7	104.7	0.000
2	R-15	N	349-348	91.0	29.0	135.0	105.0	0.000
2	R-15	N	348-347	89.5	44.0	105.9	105.9	0.0
2	R-15	N	347-346	91.5	27.0	105.8	105.9	0.303
2	R-15	N	346-345	92.0	29.0	106.6	106.6	0.000
2	R-15	N	345-344	88.0	20.0	101.0	102.7	0.0
2	R-15	N	344-343	99.5	29.0	113.5	114.6	0.334
2	R-15	N	343-342	96.5	15.0	108.3	108.3	0.001
2	R-15	N	342-341	97.5	33.5	107.8	107.8	0.001
2	R-15	N	341-340	91.0	26.5	134.9	137.2	0.000
2	R-15	N	340-339	83.0	53.5	133.3	130.3	0.0
2	R-15	N	339-338	98.0	13.5	109.3	109.3	3.001
2	R-15	N	338-337	92.5	33.0	107.3	107.3	0.001
2	R-15	N	337-336	95.5	23.0	109.1	109.1	0.001
2	R-15	N	336-335	96.5	23.5	113.2	113.2	0.002
2	R-15	N	335-334	97.0	20.0	110.0	110.0	0.002
2	R-15	N	334-333	94.0	7.0	102.5	107.7	0.001
2	R-15	N	333-332	96.3	17.0	108.3	111.9	0.002
2	R-15	N	332-331	94.0	60.0	111.8	111.8	0.002
2	R-15	N	331-330	92.0	26.0	104.1	104.1	0.200
2	R-15	N	330-329	94.0	33.0	109.2	109.2	0.001
2	R-15	N	329-325	130.0	6.0	107.8	107.8	0.001
2	R-15	N	325-323	99.0	8.0	130.0	112.0	0.002
2	R-15	N	323-316	92.0	106.0	117.3	117.3	0.002
2	R-15	N	316-315	91.0	35.0	104.4	104.4	0.000
2	R-15	N	315-311	95.0	52.0	112.2	112.2	0.003
2	R-15	N	311-308	97.5	69.0	110.9	113.7	0.002
2	R-15	N	308-382	100.5	26.5	114.7	115.4	0.005
2	R-15	N	382-381	130.0	11.5	110.6	110.6	0.002
2	R-15	N	381-380	130.0	24.0	115.8	115.2	0.005
2	R-15	N	380-379	130.0	31.3	114.9	114.9	0.005
2	R-15	N	379-378	98.5	17.0	110.8	115.6	0.003
2	R-15	N	378-377	101.0	44.0	117.4	117.4	0.008
2	R-15	N	377-376	90.0	53.0	107.2	107.2	0.0
2	R-15	N	376-375	91.5	35.0	106.9	106.9	0.003
2	R-15	N	375-374	91.0	26.0	105.1	105.1	0.000
2	R-15	N	374-373	90.0	27.0	103.4	103.4	0.0
2	R-15	N	373-372	93.0	29.0	107.0	107.0	0.001
2	R-15	N	372-371	93.0	46.5	109.7	109.7	0.001
2	R-15	N	371-370	91.0	45.0	107.5	107.5	0.000
2	R-15	N	370-369	89.0	34.0	104.6	104.6	0.0
2	R-15	N	369-368	90.0	18.5	[illegible]	102.7	0.0
2	R-15	N	368-367	91.0	[illegible]	[illegible]	108.6	0.000
2	R-15	N	367-366	90.0	67.0	[illegible]	108.3	0.0
2	R-15	N	366-365	92.0	37.5	10[illegible]	107.7	0.001
2	R-15	N	365-364	93.5	38.0	109.[illegible]	139.3	0.001
2	R-15	N	364-363	92.0	22.3	109.6	107.2	0.300
2	R-15	N	363-362	90.0	34.0	[illegible].3	105.3	0.3
2	R-15	N	362-361	90.0	45.0	106.5	106.5	0.0
2	R-15	N	361-360	91.5	38.3	107.3	107.3	0.000
2	R-15	N	360-359	82.0	15.0	93.8	99.2	0.0

LA FOR THE ROUTE IS 127.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 95.9

NAE FOR ROUTE IS 0.06

TABLE D-64

IN-TRAIN DATA FOR THE IRT 2 ROUTE ON THE R-21

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIR.	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LE AT MAXIMUM	LE OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
2	R-21	S	359-360	90.5	38.5	106.4	106.4	0.000
2	R-21	S	360-361	91.0	38.3	104.8	106.8	0.000
2	R-21	S	361-362	94.5	28.5	109.0	109.0	0.001
2	R-21	S	362-363	93.5	21.5	107.7	107.2	0.331
2	R-21	S	363-364	91.0	50.0	108.0	108.0	0.000
2	R-21	S	364-365	95.0	39.0	109.6	109.4	0.001
2	R-21	S	365-366				NO DATA FOR THIS LINK	
2	R-21	S	366-367	93.0	36.0	108.6	110.0	0.001
2	R-21	S	367-368	92.0	38.5	107.9	107.9	0.001
2	R-21	S	368-369	87.0	23.0	103.6	104.6	0.0
2	R-21	S	369-370	88.0	17.3	103.3	104.1	0.0
2	R-21	S	370-371	91.0	21.0	104.2	105.6	0.000
2	R-21	S	371-372	93.0	41.0	109.1	109.1	0.001
2	R-21	S	372-373	87.5	28.0	107.0	102.0	0.0
2	R-21	S	373-374	93.0	16.3	105.0	105.0	0.303
2	R-21	S	374-375	91.0	29.5	105.5	105.5	0.333
2	R-21	S	375-376	92.0	30.0	104.8	106.8	0.000
2	R-21	S	376-377	93.0	16.3	104.5	107.3	0.001
2	R-21	S	377-378	99.5	38.0	115.3	115.3	0.005
2	R-21	S	378-379	99.0	20.0	112.0	114.8	0.005
2	R-21	S	379-380				NO DATA FOR THIS LINK	
2	R-21	S	380-381	98.0	27.5	112.4	112.4	0.001
2	R-21	S	381-382	96.5	28.3	111.0	111.0	0.002
2	R-21	S	382-310	100.0	38.0	119.8	119.6	0.016
2	R-21	S	310-311	99.0	51.5	116.1	117.2	0.008
2	R-21	S	311-315	99.0	44.3	115.4	118.8	0.011
2	R-21	S	315-316	99.0	29.0	113.6	113.6	0.304
2	R-21	S	316-320	103.0	15.3	114.8	118.2	0.310
2	R-21	S	323-325	99.5	119.0	120.3	120.3	0.016
2	R-21	S	325-329	97.0	23.0	113.0	110.0	0.002
2	R-21	S	329-330	[illegible]	17.3	103.3	101.3	0.030
2	R-21	S	330-331	[illegible]	21.5	108.3	108.3	0.001
2	R-21	S	331-332	[illegible]	29.0	116.8	117.0	0.310
2	R-21	S	332-333	97.0	21.5	113.3	112.0	0.005
2	R-21	S	333-334	[illegible]	24.0	114.0	114.0	0.004
2	R-21	S	334-335	96.0	9.0	103.0	108.7	0.001
2	R-21	S	335-336	95.0	27.5	108.5	110.1	0.002
2	R-21	S	336-337	[illegible]	28.5	108.5	108.5	0.001
2	R-21	S	337-338	97.0	29.0	111.6	112.9	0.003
2	R-21	S	338-339	93.0	42.0	109.2	109.2	0.001
2	R-21	S	339-340	90.5	27.5	106.9	105.8	0.000
2	R-21	S	340-341	[illegible]	23.3	121.0	135.7	0.0
2	R-21	S	341-342	94.0	37.0	109.7	109.7	0.001
2	R-21	S	342-343	97.5	25.0	111.5	111.5	0.002
2	R-21	S	343-344	97.5	30.0	112.3	112.7	0.001
2	R-21	S	344-345				NO DATA FOR THIS LINK	
2	R-21	S	345-346	91.0	37.0	106.7	106.7	0.000
2	R-21	S	346-347	90.5	33.5	105.8	105.8	0.000
2	R-21	S	347-348	94.0	36.5	109.9	109.9	0.001
2	R-21	S	348-349	90.3	21.3	104.6	104.6	0.0
2	R-21	S	349-350	87.5	12.0	96.3	99.8	0.0

LA FOR THE ROUTE IS 129.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.3

NAE FOR ROUTE IS 0.12

TABLE D-65

IN-TRAIN DATA FOR THE IRT 2 ROUTE ON THE R-22

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
2	R-22	N	350-349	90.0	34.0	109.3	109.3	0.0
2	R-22	N	349-348	92.0	25.0	106.0	106.0	0.000
2	R-22	N	348-347	90.0	47.0	106.7	106.7	0.0
2	R-22	N	347-346	92.0	31.0	106.9	106.9	0.000
2	R-22	N	346-345	92.5	34.0	107.8	107.8	0.001
2	R-22	N	345-344	90.0	45.0	106.5	106.5	0.0
2	R-22	N	344-343	130.5	32.5	115.6	115.6	0.335
2	R-22	N	343-342				NO DATA FOR THIS LINK	
2	R-22	N	342-341	95.5	33.5	110.8	110.8	0.002
2	R-22	N	341-340	98.0	7.0	106.5	111.4	0.002
2	R-22	N	340-339	94.0	47.0	110.7	110.7	0.002
2	R-22	N	339-338	94.0	24.5	107.9	109.2	0.001
2	R-22	N	338-337	95.0	19.0	107.8	110.2	0.001
2	R-22	N	337-336	97.0	14.0	109.6	110.4	0.002
2	R-22	N	336-335	98.0	21.0	111.2	111.2	0.002
2	R-22	N	335-334	96.0	9.0	103.0	110.4	0.001
2	R-22	N	334-333	94.0	33.5	108.8	110.8	0.002
2	R-22	N	333-332	94.5	14.0	106.0	107.9	0.001
2	R-22	N	332-331	96.0	88.0	115.4	117.7	0.008
2	R-22	N	331-330	95.5	21.0	108.7	108.7	0.001
2	R-22	N	330-329	100.0	22.0	113.4	114.8	0.005
2	R-22	N	329-325	102.0	9.0	106.4	106.8	0.001
2	R-22	N	325-320	98.0	117.0	118.7	118.7	0.012
2	R-22	N	320-316	96.5	87.0	115.9	115.9	0.006
2	R-22	N	316-315	96.0	37.0	109.7	109.7	0.001
2	R-22	N	315-311	130.5	29.0	119.1	118.5	0.011
2	R-22	N	311-308	96.5	93.0	116.0	116.0	0.007
2	R-22	N	308-382	100.0	27.0	114.3	117.9	0.009
2	R-22	N	382-381	98.0	17.0	110.3	113.1	0.002
2	R-22	N	381-380	99.0	25.5	113.1	113.9	0.004
2	R-22	N	380-379	99.0	35.0	114.4	114.4	0.004
2	R-22	N	379-378	98.0	29.5	111.0	114.4	0.004
2	R-22	N	378-377	101.0	39.0	114.9	114.9	0.007
2	R-22	N	377-376	91.0	72.0	109.6	109.6	0.001
2	R-22	N	376-375	91.0	39.0	106.9	106.9	0.000
2	R-22	N	375-374	92.0	26.0	106.1	106.1	0.000
2	R-22	N	374-373	90.0	27.0	103.4	103.4	0.0
2	R-22	N	373-372	94.5	36.0	110.1	110.1	0.002
2	R-22	N	372-371	92.0	16.0	104.0	109.3	0.001
2	R-22	N	371-370	88.0	24.0	101.8	105.3	0.0
2	R-22	N	370-369	89.0	21.0	102.2	104.7	0.0
2	R-22	N	369-368	92.0	11.5	102.6	107.5	0.000
2	R-22	N	368-367	93.0	55.0	113.4	110.4	0.001
2	R-22	N	367-366	92.0	41.0	108.3	109.3	0.001
2	R-22	N	366-365	93.0	32.0	108.1	108.1	0.001
2	R-22	N	365-364				NO DATA FOR THIS LINK	
2	R-22	N	364-363				NO DATA FOR THIS LINK	
2	R-22	N	363-362	90.0	37.0	109.7	109.7	0.0
2	R-22	N	362-361	91.0	49.0	107.8	107.8	0.000
2	R-22	N	361-360	91.5	41.0	107.8	107.8	0.000
2	R-22	N	360-359	86.0	46.0	102.6	102.6	0.0

LR FOR THE ROUTE IS 129.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.4

NAE FOR ROUTE IS 9.11

TABLE D-66

IN-TRAIN DATA FOR THE IRT 2 ROUTE ON THE R-29

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIRAC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
2	R-29	S	359-360	93.0	30.0	107.8	108.4	0.001
2	R-29	S	360-361	96.5	42.5	112.8	112.8	0.003
2	R-29	S	361-362	101.0	26.0	115.1	115.1	0.005
2	R-29	S	362-363	99.0	25.0	113.0	113.0	0.003
2	R-29	S	363-364	87.0	30.5	112.9	113.8	0.004
2	R-29	S	364-365	99.0	37.3	114.7	114.7	0.005
2	R-29	S	365-366	97.5	37.3	113.2	113.2	0.003
2	R-29	S	366-367	99.5	43.0	115.8	115.8	0.006
2	R-29	S	367-368	110.0	41.5	116.2	116.2	0.006
2	R-29	S	368-369	93.0	43.3	109.0	110.7	0.001
2	R-29	S	369-370	93.0	25.0	104.6	104.6	0.001
2	R-29	S	370-371				NO DATA FOR THIS LINK	
2	R-29	S	371-372				NO DATA FOR THIS LINK	
2	R-29	S	372-373	96.6	17.0	108.3	111.4	0.002
2	R-29	S	373-374	97.0	21.3	113.2	110.2	0.002
2	R-29	S	374-375	96.5	31.0	111.4	111.4	0.002
2	R-29	S	375-376	98.0	30.0	112.8	112.8	0.003
2	R-29	S	376-377	98.5	16.5	110.7	113.7	0.002
2	R-29	S	377-378	108.0	40.0	124.0	124.0	0.077
2	R-29	S	378-379	106.0	26.0	120.1	122.1	0.017
2	R-29	S	379-380	107.5	39.5	123.5	123.5	0.020
2	R-29	S	380-381	107.0	29.5	121.7	121.7	0.014
2	R-29	S	381-382	103.5	17.3	115.8	117.4	0.007
2	R-29	S	382-390	107.5	30.5	122.3	120.0	0.041
2	R-29	S	390-311				NO DATA FOR THIS LINK	
2	R-29	S	311-315	122.0	143.3	121.5	123.5	0.030
2	R-29	S	315-316	108.0	21.5	119.3	119.3	0.009
2	R-29	S	316-320	113.5	71.0	122.0	122.0	0.020
2	R-29	S	320-325	105.5	56.5	123.0	126.3	0.048
2	R-29	S	325-329	95.0	14.0	104.5	130.7	0.001
2	R-29	S	329-330	97.0	11.0	127.4	111.4	0.002
2	R-29	S	330-331	101.0	14.0	112.5	114.3	0.004
2	R-29	S	331-332	106.0	39.5	122.0	129.4	0.039
2	R-29	S	332-333	104.0	22.5	117.4	117.4	0.007
2	R-29	S	333-334	103.5	25.0	117.5	117.5	0.007
2	R-29	S	334-335	102.0	14.0	114.6	114.6	0.004
2	R-29	S	335-336	102.5	15.0	114.3	114.3	0.003
2	R-29	S	336-337	101.0	29.0	115.6	115.6	0.005
2	R-29	S	337-338	104.5	23.0	118.1	110.1	0.007
2	R-29	S	338-339	103.5	7.5	117.3	116.9	0.007
2	R-29	S	339-340				NO DATA FOR THIS LINK	
2	R-29	S	340-341	99.0	16.5	111.2	115.9	0.004
2	R-29	S	341-342	104.0	36.3	119.6	119.6	0.011
2	R-29	S	342-343	102.0	44.0	119.6	118.6	0.010
2	R-29	S	343-344	107.0	28.5	121.5	121.5	0.014
2	R-29	S	344-345	95.0	34.5	110.4	111.7	0.002
2	R-29	S	345-346	97.0	31.0	111.9	111.9	0.003
2	R-29	S	346-347	96.5	31.0	109.4	109.4	0.001
2	R-29	S	347-348	98.0	35.0	113.2	113.2	0.003
2	R-29	S	348-349	93.5	34.3	108.8	108.8	0.001
2	R-29	S	349-350	93.0	27.3	107.3	107.3	0.001

LA FOR THE ROUTE IS 135.5

ENERGY-WEIGHTED LA FOR THE ROUTE IS 103.6

NAE FOR ROUTE IS 0.41

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TABLE D-67

IN-TRAIN DATA FOR THE IRT 3 ROUTE ON THE R-12

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
3	R-12	N	358-357	94.5	92.0	111.7	119.8	0.003
3	R-12	N	357-356	98.0	13.5	109.3	111.2	0.007
3	R-12	N	356-355	100.0	33.0	115.2	115.2	0.005
3	R-12	N	355-354	120.0	36.5	115.6	115.6	0.009
3	R-12	N	354-353	102.0	26.0	116.1	116.1	0.006
3	R-12	N	353-352	97.0	37.5	112.7	112.7	0.003
3	R-12	N	352-340	96.0	21.0	109.2	112.9	0.003
3	R-12	N	340-339				NO DATA FOR THIS LINE	
3	R-12	N	339-338	96.5	19.3	109.3	111.4	0.007
3	R-12	N	338-337	96.0	27.0	109.4	112.4	0.003
3	R-12	N	337-336	101.0	10.5	113.7	113.7	0.003
3	R-12	N	336-335	101.0	4.5	110.3	113.0	0.003
3	R-12	N	335-334	103.0	11.5	113.6	115.5	0.005
3	R-12	N	334-333	101.0	22.3	114.4	114.4	0.004
3	R-12	N	333-332	99.5	29.0	114.1	114.4	0.007
3	R-12	N	332-331	120.0	34.5	115.4	119.8	0.012
3	R-12	N	331-330	97.0	21.5	113.7	113.2	0.002
3	R-12	N	330-329	97.0	14.0	104.5	112.2	0.003
3	R-12	N	329-325	98.0	19.0	113.6	110.6	0.002
3	R-12	N	325-320	120.5	109.0	120.9	121.4	0.020
3	R-12	N	320-316	120.5	44.5	117.0	119.2	0.012
3	R-12	N	316-315	97.5	29.3	112.0	112.0	0.003
3	R-12	N	315-311	99.0	135.5	123.3	120.3	0.017
3	R-12	N	311-308	100.0	58.0	117.6	119.3	0.013
3	R-12	N	308-302	101.0	12.3	111.8	117.5	0.008
3	R-12	N	302-301	102.0	12.0	112.8	117.8	0.003
3	R-12	N	301-300	105.0	24.0	114.8	120.2	0.012
3	R-12	N	383-379	104.0	32.0	119.1	119.1	0.010
3	R-12	N	379-467	104.0	15.0	115.8	119.1	0.008
3	R-12	N	467-351	97.0	19.5	108.9	113.4	0.002

LA FOR THE ROUTE IS 131.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 131.9

NAE FOR ROUTE IS 0.18

TABLE D-68

IN-TRAIN DATA FOR THE IRT 3 ROUTE ON THE R-12

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
3	R-12	S	351-407	97.0	21.0	110.2	110.2	0.002
3	R-12	S	407-379	103.0	32.5	110.1	119.0	0.010
3	R-12	S	379-380	106.0	34.0	121.3	121.3	0.314
3	R-12	S	380-381	104.5	27.0	117.9	119.1	0.310
3	R-12	S	381-382	103.0	19.0	119.0	119.0	0.009
3	R-12	S	382-308	104.0	29.0	110.5	122.9	0.376
3	R-12	S	308-311	102.0	81.5	121.1	121.1	0.317
3	R-12	S	311-315	101.5	113.5	122.0	127.0	0.077
3	R-12	S	315-316				NO DATA FOR THIS LINK	
3	R-12	S	316-320	127.0	19.0	118.0	122.7	0.320
3	R-12	S	320-325	105.5	47.0	122.2	129.0	0.038
3	R-12	S	325-329	101.0	13.0	111.0	112.1	0.307
3	R-12	S	329-330	100.5	9.5	107.9	113.0	0.003
3	R-12	S	330-331	98.0	15.0	109.0	109.0	0.002
3	R-12	S	331-332	103.0	76.5	121.0	122.7	0.375
3	R-12	S	332-333	102.0	18.0	114.6	118.2	0.009
3	R-12	S	333-334	100.0	9.0	109.5	113.0	0.334
3	R-12	S	334-335	94.5	21.5	137.0	109.3	0.001
3	R-12	S	335-336	130.0	29.0	114.6	114.6	0.304
3	R-12	S	336-337	99.0	22.5	112.5	112.5	0.303
3	R-12	S	337-338	102.0	28.0	116.5	117.1	0.007
3	R-12	S	338-339	98.5	44.0	115.3	115.3	0.009
3	R-12	S	339-340	97.0	17.3	139.3	109.3	0.301
3	R-12	S	340-352	94.5	30.0	109.3	109.3	0.001
3	R-12	S	352-353	109.0	16.0	117.0	117.0	0.006
3	R-12	S	353-354	132.0	27.0	116.3	116.3	0.006
3	R-12	S	354-355	103.0	29.0	116.6	116.6	0.006
3	R-12	S	355-356	103.0	24.0	116.0	114.0	0.306
3	R-12	S	356-357	99.5	20.0	114.0	115.2	0.005
3	R-12	S	357-358	98.0	29.0	117.4	115.7	0.006

LA FOR THE ROUTE IS 133.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 103.6

NAE FOR ROUTE IS 3.27

TABLE D-69

IN-TRAIN DATA FOR THE IRT 3 ROUTE ON THE R-29 MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
3	R-29	N	358-357	94.0	41.0	110.1	111.8	0.002
3	R-29	N	357-356	92.0	34.0	107.3	109.2	0.001
3	R-29	N	356-355	98.5	34.0	113.8	113.8	0.004
3	R-29	N	355-354	98.0	38.0	113.8	113.8	0.004
3	R-29	N	354-353	98.5	37.0	113.6	113.6	0.004
3	R-29	N	353-352	95.0	41.0	111.3	111.3	0.007
3	R-29	N	352-340	96.0	22.0	109.4	112.1	0.002
3	R-29	N	340-339	95.0	18.0	107.6	110.9	0.007
3	R-29	N	339-338	93.5	26.0	107.6	107.6	0.001
3	R-29	N	338-337	98.0	20.0	111.0	113.4	0.004
3	R-29	N	337-336	97.5	22.0	110.9	110.9	0.002
3	R-29	N	336-335	102.0	6.0	109.8	109.8	0.001
3	R-29	N	335-334	100.0	13.0	113.0	112.3	0.003
3	R-29	N	334-333	98.5	21.5	111.8	113.8	0.004
3	R-29	N	333-332	98.0	23.0	111.6	114.3	0.004
3	R-29	N	332-331	97.0	27.5	111.4	111.4	0.007
3	R-29	N	331-330	96.5	12.5	107.5	109.6	0.001
3	R-29	N	330-329	98.0	15.5	109.9	111.4	0.002
3	R-29	N	329-325	98.0	12.0	109.8	108.8	0.001
3	R-29	N	325-320	99.5	24.0	113.3	120.0	0.016
3	R-29	N	320-316	99.0	24.0	112.8	114.3	0.007
3	R-29	N	316-315	94.0	26.5	108.2	108.2	0.001
3	R-29	N	315-311	97.0	89.0	114.5	117.4	0.009
3	R-29	N	311-310	96.0	94.0	115.7	115.7	0.006
3	R-29	N	310-302	102.0	37.0	117.1	120.8	0.017
3	R-29	N	302-301	100.5	14.3	112.0	112.0	0.002
3	R-29	N	301-380	NO DATA FOR THIS LINK				
3	R-29	N	380-379	101.5	35.0	116.9	116.9	0.007
3	R-29	N	379-407	102.0	19.5	114.9	117.0	0.007
3	R-29	N	407-551	95.0	17.5	107.4	107.4	0.001

LA FOR THE ROUTE IS 128.9

ENERGY-WEIGHTED LA FOR THE ROUTE IS 130.0

NAE FOR ROUTE IS 0.12

TABLE D-70

IN-TRAIN DATA FOR THE IRT 3 ROUTE ON THE R-29

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
3	R-29	S	351-407	95.5	22.0	108.7	130.9	0.001
3	R-29	S	407-379	99.5	20.0	112.9	114.0	0.339
3	R-29	S	379-380	103.0	34.5	118.6	118.6	0.009
3	R-29	S	380-381	98.5	24.5	117.3	114.4	0.004
3	R-29	S	381-382	130.0	24.0	115.8	123.6	0.004
3	R-29	S	382-308	106.0	41.0	123.9	124.7	0.339
3	R-29	S	308-311	130.0	74.5	118.7	118.7	0.011
3	R-29	S	311-315				NO DATA FOR THIS LINE	
3	R-29	S	315-316	132.0	38.3	117.8	117.8	0.008
3	R-29	S	316-320	104.0	18.0	116.6	120.1	0.014
3	R-29	S	323-325	102.0	117.0	122.7	122.7	0.025
3	R-29	S	325-329	96.5	13.3	106.9	109.1	0.001
3	R-29	S	329-330	99.0	7.0	107.5	113.7	0.002
3	R-29	S	330-331	99.0	16.5	111.2	111.2	0.002
3	R-29	S	331-332	99.5	35.5	115.0	119.1	0.013
3	R-29	S	332-333	99.0	33.0	113.8	115.3	0.005
3	R-29	S	333-334	98.0	20.5	112.5	112.9	0.003
3	R-29	S	334-335	98.0	6.0	105.8	110.0	0.002
3	R-29	S	335-336	97.0	31.0	106.9	107.5	0.000
3	R-29	S	336-337	93.0	34.5	108.4	108.4	0.001
3	R-29	S	337-338	96.5	29.5	111.1	112.7	0.003
3	R-29	S	338-339	94.0	49.0	110.9	110.9	0.002
3	R-29	S	339-343	91.0	21.0	104.2	107.0	0.000
3	R-29	S	343-352	95.0	25.5	109.1	110.0	0.001
3	R-29	S	352-353	89.0	19.3	101.8	103.1	0.0
3	R-29	S	353-354	95.0	42.0	111.2	111.2	0.002
3	R-29	S	354-355	97.0	35.0	112.4	112.4	0.003
3	R-29	S	355-356	96.0	43.3	112.0	112.0	0.003
3	R-29	S	356-357	97.0	22.0	110.4	111.6	0.002
3	R-29	S	357-358				NO DATA FOR THIS LINE	

LA FOR THE ROUTE IS 130.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 100.4

NAE FOR ROUTE IS 0.16

TABLE D-71

IN-TRAIN DATA FOR THE IRT 4 ROUTE ON THE R-21

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LE AT MAXIMUM	LE OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
4	R-21	N	336-339				NO DATA FOR THIS LINK	
4	R-21	N	339-409	97.0	27.0	111.3	111.3	0.002
4	R-21	N	409-417	102.0	58.5	119.7	121.6	0.021
4	R-21	N	437-436	95.0	23.0	108.0	108.0	0.001
4	R-21	N	436-435	98.0	16.0	110.0	110.0	0.002
4	R-21	N	435-434	93.5	9.0	103.0	127.6	0.001
4	R-21	N	434-429	96.0	33.0	111.2	116.0	0.005
4	R-21	N	429-425	94.0	118.0	114.7	114.7	0.004
4	R-21	N	425-423	99.0	37.5	114.7	114.7	0.005
4	R-21	N	423-420	97.0	119.0	117.0	117.0	0.010
4	R-21	N	420-415	105.0	37.0	120.1	121.2	0.016
4	R-21	N	415-396	130.0	43.5	116.4	117.0	0.008
4	R-21	N	396-395	96.5	32.5	111.6	112.3	0.003
4	R-21	N	395-394	103.0	8.5	112.3	116.9	0.006
4	R-21	N	394-393	89.0	64.0	107.1	107.1	0.0
4	R-21	N	393-392	91.0	12.0	101.8	104.0	0.000
4	R-21	N	392-391	92.0	27.0	104.3	104.3	0.000
4	R-21	N	391-390	86.0	28.5	100.5	102.5	0.0
4	R-21	N	390-389	89.5	42.0	105.7	105.7	0.0
4	R-21	N	389-388	89.0	44.0	105.6	105.6	0.0
4	R-21	N	388-387	91.0	36.0	106.6	106.6	0.000
4	R-21	N	387-386	92.5	29.5	107.2	107.2	0.001
4	R-21	N	386-385	91.0	37.0	106.1	107.4	0.000
4	R-21	N	385-384				NO DATA FOR THIS LINK	
4	R-21	N	384-383	91.5	29.0	106.1	108.0	0.000

LE FOR THE ROUTE IS 120.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 99.0

NAE FOR ROUTE IS 0.09

TABLE D-72

IN-TRAIN DATA FOR THE IRT 4 ROUTE ON THE R-21 MODEL SOUTHBOUND

ROUTE No.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
4	R-21	S	387-388	94.0	26.0	104.1	104.1	0.001
4	R-21	S	388-389	88.0	32.3	105.1	105.0	0.0
4	R-21	S	389-390	90.0	50.0	107.0	107.0	0.0
4	R-21	S	390-391	91.0	21.5	104.3	104.3	0.300
4	R-21	S	391-392	90.0	34.0	105.3	105.3	0.3
4	R-21	S	392-393	90.5	24.0	104.3	104.5	0.000
4	R-21	S	393-394	91.0	49.0	107.9	107.9	0.000
4	R-21	S	394-395	102.5	23.0	115.5	115.5	0.005
4	R-21	S	395-396	94.0	23.0	107.0	107.0	0.001
4	R-21	S	396-415	130.0	61.0	118.0	118.0	0.009
4	R-21	S	415-420	95.5	44.5	117.0	117.0	0.003
4	R-21	S	420-423	99.0	67.0	116.0	118.0	0.010
4	R-21	S	423-425	96.0	71.3	114.6	114.0	0.005
4	R-21	S	425-429	97.5	64.0	115.7	117.1	0.008
4	R-21	S	429-434	99.5	38.0	115.4	118.9	0.012
4	R-21	S	434-435	95.5	9.0	102.5	106.0	0.000
4	R-21	S	435-436	97.0	23.0	110.0	110.0	0.002
4	R-21	S	436-437	99.5	15.3	111.3	111.3	0.332
4	R-21	S	437-449	104.5	69.0	127.9	123.8	0.029
4	R-21	S	449-335				NO DATA FOR THIS LINK	
4	R-21	S	335-336				NO DATA FOR THIS LINK	

LA FOR THE ROUTE IS 128.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 99.3

NAE FOR ROUTE IS 0.09

TABLE D-73

IN-TRAIN DATA FOR THE IRT 4 ROUTE ON THE R-26 MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
4	R-26	N	336-335	91.0	10.0	101.0	101.0	0.000
4	R-26	N	335-409	97.0	34.0	112.3	112.3	0.003
4	R-26	N	409-437	123.0	39.0	118.9	119.9	0.013
4	R-26	N	437-436	96.0	19.5	108.9	108.9	0.001
4	R-26	N	436-435	98.5	14.0	110.0	110.0	0.002
4	R-26	N	435-434	91.0	49.0	107.0	107.0	0.000
4	R-26	N	434-429	96.0	45.0	112.5	116.2	0.006
4	R-26	N	429-425	94.0	109.0	114.4	114.4	0.004
4	R-26	N	425-423	99.0	40.0	115.0	115.0	0.005
4	R-26	N	423-420				NO DATA FOR THIS LINE	
4	R-26	N	423-415	103.0	37.3	118.7	118.7	0.009
4	R-26	N	415-396	130.0	32.0	115.1	115.1	0.005
4	R-26	N	396-395	97.0	39.0	112.9	112.9	0.003
4	R-26	N	395-394	130.5	14.0	112.0	112.0	0.002
4	R-26	N	394-393	89.0	36.0	104.6	104.6	0.0
4	R-26	N	393-392	89.5	38.0	105.3	105.3	0.0
4	R-26	N	392-391	91.0	23.0	104.6	104.6	0.000
4	R-26	N	391-390	90.0	29.0	104.5	104.5	0.0
4	R-26	N	390-389	88.0	42.5	104.1	104.1	0.0
4	R-26	N	389-388	98.0	49.0	104.9	104.9	0.0
4	R-26	N	388-387	89.5	39.0	105.4	105.4	0.0
4	R-26	N	387-386	91.0	32.0	106.1	106.1	0.000
4	R-26	N	386-385	90.0	37.0	105.7	105.7	0.0
4	R-26	N	385-384				NO DATA FOR THIS LINE	
4	R-26	N	384-383				NO DATA FOR THIS LINE	

LA FOR THE ROUTE IS 126.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.6

NAE FOR ROUTE IS 0.05

TABLE D-74

IN-TRAIN DATA FOR THE IRT 4 ROUTE ON THE R-29

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
4	R-29	S	387-388	90.0	39.0	105.9	105.9	0.0
4	R-29	S	388-389	88.0	33.5	107.3	104.6	0.0
4	R-29	S	389-390	92.0	35.0	107.4	107.4	0.001
4	R-29	S	390-391	89.0	41.0	104.1	104.1	0.0
4	R-29	S	391-392	90.0	39.0	105.9	105.9	0.0
4	R-29	S	392-393	87.0	45.0	103.5	103.5	0.0
4	R-29	S	393-394	89.0	39.0	104.9	104.9	0.0
4	R-29	S	394-395	98.0	26.0	112.1	112.1	0.003
4	R-29	S	395-396	93.5	21.0	106.7	106.7	0.001
4	R-29	S	396-415				NO DATA FOR THIS LINE	
4	R-29	S	415-420	100.0	25.0	114.0	119.5	0.014
4	R-29	S	420-423	99.0	65.0	117.1	118.6	0.012
4	R-29	S	423-425	95.0	73.0	113.6	113.0	0.004
4	R-29	S	425-429	99.0	63.0	116.0	118.1	0.010
4	R-29	S	429-434	96.5	45.5	113.1	117.6	0.009
4	R-29	S	434-435	91.5	16.0	103.5	105.7	0.000
4	R-29	S	435-436	96.5	21.0	109.7	109.7	0.002
4	R-29	S	436-437	98.5	22.0	111.9	111.9	0.007
4	R-29	S	437-409				NO DATA FOR THIS LINE	
4	R-29	S	409-335	95.5	35.0	110.9	110.9	0.302
4	R-29	S	335-336	93.5	35.5	109.0	109.0	0.001

LA FOR THE ROUTE IS 126.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.6

NAE FOR ROUTE IS 0.06

TABLE D-75

IN-TRAIN DATA FOR THE IRT 5 ROUTE ON THE R-17

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LR OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
5	R-17	N	336-335	94.0	19.5	105.9	110.3	0.001
5	R-17	N	335-409	96.0	48.0	112.0	112.0	0.009
5	R-17	N	409-437	101.5	99.0	119.2	119.9	0.014
5	R-17	N	437-436	93.5	21.5	106.0	106.0	0.001
5	R-17	N	436-435	95.0	24.0	108.0	108.0	0.001
5	R-17	N	435-434	85.0	39.0	103.9	107.6	0.0
5	R-17	N	434-429	95.0	30.0	109.0	113.7	0.009
5	R-17	N	429-425	97.0	95.0	111.0	117.4	0.002
5	R-17	N	425-423				NO DATA FOR THIS LINE	
5	R-17	N	423-420	98.0	112.0	116.5	116.9	0.007
5	R-17	N	420-415	94.0	53.0	116.2	119.2	0.015
5	R-17	N	415-396	89.0	35.0	114.4	114.4	0.004
5	R-17	N	396-378	97.0	23.5	110.0	110.0	0.007
5	R-17	N	378-377	100.5	46.0	117.1	117.1	0.008
5	R-17	N	377-376	89.0	20.0	102.0	109.3	0.0
5	R-17	N	376-375	89.0	34.0	104.3	104.3	0.0
5	R-17	N	375-374	89.0	79.0	103.6	103.6	0.0
5	R-17	N	374-373	89.0	27.5	102.4	102.4	0.0
5	R-17	N	373-372	91.5	21.5	104.8	104.8	0.000
5	R-17	N	372-371	91.0	53.0	108.2	108.2	0.000
5	R-17	N	371-370				NO DATA FOR THIS LINE	
5	R-17	N	370-369	86.5	18.0	99.1	101.9	0.0
5	R-17	N	369-442	89.0	39.0	104.9	[illegible]	0.0
5	R-17	N	442-441	96.0	45.0	106.0	106.0	0.0
5	R-17	N	441-440	92.0	28.5	106.5	108.5	0.001
5	R-17	N	440-459	94.0	28.0	110.5	113.1	0.001
5	R-17	N	459-458	93.5	38.5	109.4	109.4	0.001

LA FOR THE ROUTE IS 126.6

ENERGY-WEIGHTED LA FOR THE ROUTE IS 96.3

NAE FOR ROUTE IS 0.06

TABLE D-76

IN-TRAIN DATA FOR THE IRT 5 ROUTE ON THE R-17

MODEL SOUTHBOUND

ROUTE No.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
5	R-17	S	458-459	93.0	51.0	110.1	109.7	0.001
5	R-17	S	459-460	94.0	44.0	110.6	111.0	0.002
5	R-17	S	460-461	97.0	35.0	112.4	112.4	0.003
5	R-17	S	461-462	96.5	32.3	111.3	111.3	0.002
5	R-17	S	462-369	90.0	41.0	109.6	109.6	0.0
5	R-17	S	369-370	89.0	15.0	100.8	104.4	0.0
5	R-17	S	370-371	92.0	31.0	106.9	107.9	0.000
5	R-17	S	371-372	96.0	41.5	112.2	112.2	0.003
5	R-17	S	372-373	90.0	36.0	135.6	104.9	0.0
5	R-17	S	373-374	91.5	20.5	104.6	104.6	0.001
5	R-17	S	374-375	91.5	32.0	104.6	104.4	0.000
5	R-17	S	375-376	94.5	27.3	128.8	108.8	0.001
5	R-17	S	376-377	96.5	14.5	108.1	109.4	0.001
5	R-17	S	377-378	103.5	36.5	119.1	119.1	0.010
5	R-17	S	378-396	97.0	27.0	110.4	115.0	0.005
5	R-17	S	396-415	131.5	53.0	118.7	119.9	0.016
5	R-17	S	415-420				NO DATA FOR THIS LINK	
5	R-17	S	420-423	101.5	87.0	120.9	120.9	0.017
5	R-17	S	423-425	99.0	43.0	117.0	117.0	0.008
5	R-17	S	425-429	102.6	62.3	119.8	119.8	0.013
5	R-17	S	429-434	101.5	20.0	114.5	121.8	0.023
5	R-17	S	434-435	92.5	15.0	104.3	106.8	0.000
5	R-17	S	435-436	99.5	21.0	112.7	112.7	0.003
5	R-17	S	436-437	97.5	23.0	111.1	111.1	0.002
5	R-17	S	437-449	107.5	63.5	129.5	129.5	0.033
5	R-17	S	449-335	95.0	51.0	109.9	111.0	0.007
5	R-17	S	335-336				NO DATA FOR THIS LINK	

LR FOR THE ROUTE IS 130.6

ENERGY-WEIGHTED LA FOR THE ROUTE IS 100.0

NAE FOR ROUTE IS 0.14

TABLE D-77

IN-TRAIN DATA FOR THE IRT 5 ROUTE ON THE R-17

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LB AT MAXIMUM	LB OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
5	R-17	N	336-335				NO DATA FOR THIS LINK	
5	R-17	N	335-409	91.0	60.0	108.8	108.8	0.000
5	R-17	N	409-437	96.0	128.0	115.1	116.8	0.006
5	R-17	N	437-436	91.0	21.0	104.2	104.2	0.000
5	R-17	N	436-435	93.0	23.0	106.6	106.6	0.331
5	R-17	N	435-434	93.0	6.0	100.4	105.4	0.000
5	R-17	N	434-429	95.0	96.5	114.8	114.8	0.005
5	R-17	N	429-425	96.0	32.0	109.1	109.5	0.001
5	R-17	N	425-423	97.0	45.0	113.5	113.5	0.004
5	R-17	N	423-420				NO DATA FOR THIS LINK	
5	R-17	N	423-415	130.0	34.3	119.3	116.5	0.007
5	R-17	N	415-396	95.0	38.5	110.9	117.6	0.003
5	R-17	N	396-378	97.5	9.0	107.0	107.0	0.001
5	R-17	N	378-377	98.0	38.0	113.8	[illegible]	0.004
5	R-17	N	377-376	90.0	11.0	100.4	[illegible]	0.0
5	R-17	N	376-375	87.0	55.0	104.4	[illegible]	0.0
5	R-17	N	375-374	87.0	32.0	107.1	107.1	0.0
5	R-17	N	374-373	86.5	33.5	101.8	101.8	0.0
5	R-17	N	373-372				NO DATA FOR THIS LINK	
5	R-17	N	372-371	89.5	58.5	107.2	107.2	0.0
5	R-17	N	371-370	88.5	90.5	105.5	105.5	0.0
5	R-17	N	370-369	90.0	10.0	100.0	102.3	0.0
5	R-17	N	369-462	90.5	14.0	107.0	100.1	0.000
5	R-17	N	462-461	88.5	93.0	105.5	105.5	0.0
5	R-17	N	461-460	93.0	37.0	105.7	105.7	0.0
5	R-17	N	460-459	93.0	6.0	100.8	103.4	0.000
5	R-17	N	459-458	91.0	5.0	100.0	130.0	0.000

LB FOR THE ROUTE IS 124.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 95.9

NAE FOR ROUTE IS 0.03

TABLE D-78

IN-TRAIN DATA FOR THE IRT 5 ROUTE ON THE R-21

MODEL SOUTHBOUND

ROUTE No.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(HAE)
5	R-21	S	458-459	90.0	31.5	105.0	106.4	0.0
5	R-21	S	459-460	95.0	9.0	107.0	107.9	0.001
5	R-21	S	460-461				NO DATA FOR THIS LINE	
5	R-21	S	461-462				NO DATA FOR THIS LINE	
5	R-21	S	462-369	96.0	15.0	105.1	106.9	0.301
5	R-21	S	369-370	89.0	13.3	102.1	133.8	0.0
5	R-21	S	370-371	88.5	21.5	101.7	101.7	0.0
5	R-21	S	371-372	93.0	49.0	109.9	109.[illegible]	0.0[illegible]
5	R-21	S	372-374	87.5	41.0	103.6	105.6	0.0
5	R-21	S	373-374	91.5	19.0	104.8	104.3	0.000
5	R-21	S	374-375	92.0	33.5	106.6	106.8	0.000
5	R-21	S	375-376	92.5	33.0	107.7	107.7	0.001
5	R-21	S	376-377	95.0	21.0	106.2	107.5	0.001
5	R-21	S	377-373	1[illegible].5	39.0	116.4	116.9	0.336
5	R-21	S	[illegible]-396	93.5	19.0	106.3	108.[illegible]	0.001
5	R-21	S	396-425	102.5	35.0	115.9	117.[illegible]	0.009
5	R-21	S	425-400	95.5	35.0	114.9	119.2	0.019
5	R-21	S	472-473	98.0	64.3	116.5	116.5	0.007
5	R-21	S	475-479	96.0	49.0	113.5	113.6	0.005
5	R-21	S	429-424	96.0	74.0	114.7	114.2	0.005
5	R-21	S	[illegible]-434	96.0	64.0	114.2	114.2	0.006
5	R-21	S	434-435				NO DATA FOR THIS LINE	
5	R-21	S	435-436	96.0	19.0	110.8	108.4	0.0[illegible]
5	R-21	S	436-437	99.0	17.0	111.3	111.[illegible]	0.000
5	R-21	S	482-489	98.0	132.0	119.1	120.6	0.0[illegible]
5	R-21	S	409-335	95.5	36.5	111.4	111.9	0.102
5	R-21	S	335-336	99.0	33.0	104.2	104.2	0.0

LA FOR THE ROUTE IS 127.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.6

NAE FOR ROUTE IS 0.[illegible]

TABLE D-79

IN-TRAIN DATA FOR THE IRT 6 ROUTE ON THE R-17

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
6	R-17	N	434-433	100.0	21.0	113.2	113.2	0.003
6	R-17	N	433-432	97.0	28.5	111.9	111.5	0.002
6	R-17	N	432-431	97.0	28.5	111.9	111.9	0.002
6	R-17	N	431-430	98.0	22.5	111.9	111.9	0.007
6	R-17	N	430-429	96.0	23.5	109.7	109.7	0.002
6	R-17	N	429-428	94.0	34.5	109.4	109.4	0.001
6	R-17	N	428-427	91.0	21.0	104.6	104.6	0.000
6	R-17	N	427-426	90.0	22.5	103.4	103.4	0.0
6	R-17	N	426-425	93.0	30.0	107.8	107.8	0.001
6	R-17	N	425-424	94.0	27.0	107.4	107.4	0.001
6	R-17	N	424-423	96.0	31.3	110.9	110.9	0.002
6	R-17	N	423-422	93.0	40.0	109.0	109.0	0.001
6	R-17	N	422-421	100.0	29.0	114.6	114.6	0.004
6	R-17	N	421-420	96.0	34.5	111.9	111.9	0.007
6	R-17	N	420-419	96.5	26.0	110.6	110.6	0.002
6	R-17	N	419-418				NO DATA FOR THIS LINK	
6	R-17	N	418-417	93.0	31.0	107.9	107.9	0.001
6	R-17	N	417-416	98.0	16.0	110.6	110.6	0.002
6	R-17	N	416-415	97.0	45.0	113.5	113.5	0.004
6	R-17	N	415-414	100.0	34.0	115.6	114.6	0.007
6	R-17	N	414-413	99.5	20.5	112.6	112.6	0.003
6	R-17	N	413-412	98.0	29.0	112.0	112.0	0.003
6	R-17	N	412-411	101.0	35.0	116.4	116.4	0.006
6	R-17	N	411-410	93.5	21.0	106.7	106.7	0.001
6	R-17	N	410-409	102.0	36.5	117.6	117.6	0.008
6	R-17	N	409-408	101.0	29.0	115.8	115.8	0.005
6	R-17	N	408-407	98.0	21.3	111.2	111.2	0.002
6	R-17	N	407-406	91.5	29.0	106.1	106.0	0.000
6	R-17	N	406-405	89.0	18.0	101.6	103.5	0.0
6	R-17	N	405-404	92.0	35.0	107.4	107.4	0.001
6	R-17	N	404-403	90.0	38.0	105.8	105.8	0.0

LA FOR THE ROUTE IS 126.7

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.4

NAE FOR ROUTE IS 0.07

TABLE D-80

IN-TRAIN DATA FOR THE IRT 6 ROUTE ON THE R-17

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
6	R-17	S	403-404	92.0	33.3	106.8	106.8	0.000
6	R-17	S	404-405	94.0	25.0	108.0	108.0	0.001
6	R-17	S	405-406	91.0	15.0	107.8	102.8	0.000
6	R-17	S	406-407				NO DATA FOR THIS LINK	
6	R-17	S	407-408	92.0	20.0	105.0	105.0	0.000
6	R-17	S	408-409	100.5	17.0	112.8	114.0	0.004
6	R-17	S	409-410	98.0	27.0	117.3	113.6	0.004
6	R-17	S	410-411	97.0	28.5	111.5	111.5	0.002
6	R-17	S	411-412	98.0	23.3	111.0	111.0	0.007
6	R-17	S	412-413	98.0	13.0	104.1	109.9	0.007
6	R-17	S	413-414	98.0	28.0	112.5	113.2	0.003
6	R-17	S	414-415	102.0	37.0	117.7	117.7	0.008
6	R-17	S	415-416	96.0	24.0	109.8	111.1	0.007
6	R-17	S	416-417	91.0	20.0	104.0	104.9	0.000
6	R-17	S	417-418	95.0	24.0	108.8	106.8	0.001
6	R-17	S	418-419	96.0	27.6	109.4	111.1	0.002
6	R-17	S	419-420	96.0	25.3	113.0	112.9	0.003
6	R-17	S	420-421	99.0	31.5	114.0	114.0	0.004
6	R-17	S	421-422				NO DATA FOR THIS LINK	
6	R-17	S	422-423	92.0	58.0	109.6	109.6	0.001
6	R-17	S	423-424	91.0	19.0	103.0	107.5	0.000
6	R-17	S	424-425	94.0	12.0	104.0	108.1	0.001
6	R-17	S	425-426	94.0	26.0	109.1	110.9	0.002
6	R-17	S	426-427	93.0	21.0	106.2	106.2	0.001
6	R-17	S	427-428	93.0	11.5	103.6	103.6	0.000
6	R-17	S	428-429	91.0	15.0	107.0	105.6	0.000
6	R-17	S	429-430	95.0	25.5	108.7	108.7	0.001
6	R-17	S	430-431	95.0	8.5	104.3	108.0	0.001
6	R-17	S	431-432	96.0	33.0	110.8	110.8	0.007
6	R-17	S	432-433	97.5	19.5	110.2	110.2	0.002
6	R-17	S	433-434	98.0	37.0	113.7	114.7	0.005

LR FOR THE ROUTE IS 125.7

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.4

NAE FOR ROUTE IS 0.05

TABLE D-81

IN-TRAIN DATA FOR THE IRT 6 ROUTE ON THE R-29

MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE [illegible]
6	R-29	N	434-433				NO DATA FOR THIS LINK	
6	R-29	N	433-432	98.0	23.0	111.6	111.6	0.002
6	R-29	N	432-431	98.0	22.0	111.4	111.6	0.002
6	R-29	N	431-430	99.0	23.0	112.6	112.6	0.025
6	R-29	N	430-429	98.0	8.0	107.0	110.9	0.007
6	R-29	N	429-428	96.0	24.0	109.8	109.8	0.003
6	R-29	N	428-427	94.0	22.0	107.4	107.4	0.031
6	R-29	N	427-426	95.0	9.5	104.8	104.5	0.033
6	R-29	N	426-425	97.0	28.0	111.5	111.5	0.032
6	R-29	N	425-424	95.0	27.3	139.3	109.3	0.001
6	R-29	N	424-423	97.0	33.0	117.2	117.2	0.005
6	R-29	N	423-422	95.0	39.0	110.9	110.9	0.002
6	R-29	N	422-421	131.0	22.3	114.5	114.4	0.034
6	R-29	N	421-420	95.0	44.0	111.4	111.4	0.002
6	R-29	N	420-419	97.0	39.0	112.9	112.9	0.003
6	R-29	N	419-418	100.0	31.0	114.9	114.9	0.009
6	R-29	N	418-417	94.0	30.0	108.8	109.8	0.011
6	R-29	N	417-416				NO DATA FOR THIS LINK	
6	R-29	N	416-415	130.5	19.0	113.1	114.8	0.034
6	R-29	N	415-414	100.0	51.0	117.1	119.4	0.013
6	R-29	N	414-413	99.5	33.0	114.7	114.7	0.005
6	R-29	N	413-412	99.0	26.0	113.1	113.1	0.003
6	R-29	N	412-411	89.0	108.0	109.1	109.3	0.0
6	R-29	N	411-410	92.0	9.5	101.8	105.7	0.000
6	R-29	N	410-409	99.0	35.0	114.4	114.5	0.007
6	R-29	N	409-408	131.0	28.3	115.5	115.8	0.005
6	R-29	N	408-407	97.0	15.0	108.8	110.8	0.007
6	R-29	N	407-406	95.0	20.0	108.0	110.8	0.001
6	R-29	N	406-405	96.0	22.5	109.5	109.5	0.001
6	R-29	N	405-404	95.0	47.0	111.7	111.7	0.007
6	R-29	N	404-403	95.0	38.5	110.9	110.9	0.002
6	R-29	N	403-402	98.0	14.5	109.6	113.6	0.004
6	R-29	N	402-401				NO DATA FOR THIS LINK	
6	R-29	N	401-400				NO DATA FOR THIS LINK	
6	R-29	N	400-399				NO DATA FOR THIS LINK	
6	R-29	N	399-398				NO DATA FOR THIS LINK	
6	R-29	N	398-397				NO DATA FOR THIS LINK	

LA FOR THE ROUTE IS 127.6

ENERGY-WEIGHTED LA FOR THE ROUTE IS 98.6

NAE FOR ROUTE IS 0.09

TABLE D-82

IN-TRAIN DATA FOR THE IRT 6 ROUTE ON THE R-29

MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LX OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
6	R-29	S	397-398	95.0	29.5	109.7	110.1	0.001
6	R-29	S	398-399	97.0	23.0	110.6	110.6	0.002
6	R-29	S	399-400	96.0	28.5	110.5	112.0	0.003
6	R-29	S	400-401	99.0	29.5	113.1	115.1	0.003
6	R-29	S	401-402	96.0	14.5	107.6	109.2	0.001
6	R-29	S	402-403	97.0	45.0	113.5	113.5	0.004
6	R-29	S	403-404	97.0	50.5	111.8	111.8	0.007
6	R-29	S	404-405	98.0	33.5	112.8	112.8	0.003
6	R-29	S	405-406	95.5	14.0	107.0	109.7	0.001
6	R-29	S	406-407	95.5	24.5	109.4	112.3	0.009
6	R-29	S	407-408	106.0	19.5	118.9	119.0	0.011
6	R-29	S	408-409	106.5	19.0	119.3	121.6	0.016
6	R-29	S	409-410	101.5	51.5	118.6	118.6	0.010
6	R-29	S	410-411	102.0	51.5	117.0	117.0	0.007
6	R-29	S	411-412	107.0	44.0	118.4	118.4	0.009
6	R-29	S	412-413	99.0	14.5	110.6	111.9	0.002
6	R-29	S	413-414				NO DATA FOR THIS LINK	
6	R-29	S	414-415				NO DATA FOR THIS LINK	
6	R-29	S	415-416	130.0	32.0	115.1	116.8	0.007
6	R-29	S	416-417	99.0	25.0	113.0	111.7	0.004
6	R-29	S	417-418	100.5	29.0	115.1	115.1	0.005
6	R-29	S	418-419	102.0	19.0	114.8	117.5	0.008
6	R-29	S	419-420	130.0	57.0	117.6	117.6	0.009
6	R-29	S	420-421	124.0	32.5	119.1	119.1	0.010
6	R-29	S	421-422	130.9	47.0	116.7	116.7	0.007
6	R-29	S	422-423	101.0	34.0	116.3	116.3	0.004
6	R-29	S	423-424	131.0	34.5	116.9	116.9	0.007
6	R-29	S	424-425	96.0	16.0	108.0	111.0	0.002
6	R-29	S	425-426	99.0	34.5	114.4	115.8	0.006
6	R-29	S	426-427	98.0	16.0	110.0	110.0	0.002
6	R-29	S	427-428	100.0	13.0	111.1	113.0	0.005
6	R-29	S	428-429	96.5	23.0	109.5	112.4	0.005
6	R-29	S	429-430	98.0	30.5	112.8	112.8	0.005
6	R-29	S	430-431				NO DATA FOR THIS LINK	
6	R-29	S	431-432				NO DATA FOR THIS LINK	
6	R-29	S	432-433				NO DATA FOR THIS LINK	
6	R-29	S	433-434				NO DATA FOR THIS LINK	

LA FOR THE ROUTE IS 130.6

ENERGY-WEIGHTED LA FOR THE ROUTE IS 101.4

NAE FOR ROUTE IS 0.16

TABLE D-83

IN-TRAIN DATA FOR THE IRT 7 ROUTE ON THE R-36

MODEL EASTBOUND

ROUTE NO.	MODEL TYPE	DIRTC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(FINAL)
7	R-36	E	454-453	87.0	10.0	97.0	103.5	0.0
7	R-36	E	453-455	87.5	53.2	102.3	102.3	0.0
7	R-36	E	455-452	85.5	41.0	101.6	102.4	0.0
7	R-36	E	452-451	84.0	38.0	99.8	99.8	0.0
7	R-36	E	451-450	86.5	18.5	99.2	103.0	0.0
7	R-36	E	450-449	86.5	35.3	101.9	101.9	0.0
7	R-36	E	449-448	88.0	36.5	103.6	104.7	0.0
7	R-36	E	448-447	88.0	30.0	102.8	107.8	0.0
7	R-36	E	447-446	85.0	34.0	100.3	100.3	0.0
7	R-36	E	446-445	87.5	37.5	103.2	103.2	0.0
7	R-36	E	445-444	90.5	27.5	104.9	104.9	0.000
7	R-36	E	444-443	88.5	34.0	103.8	103.8	0.0
7	R-36	E	443-442	85.5	25.0	99.5	101.1	0.0
7	R-36	E	442-441	88.5	34.5	103.9	105.9	0.0
7	R-36	E	441-440	87.0	23.0	104.6	107.9	0.0
7	R-36	E	440-439	90.0	24.0	103.8	106.9	0.0

LA FOR THE ROUTE IS 115.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 88.7

NAE FOR ROUTE IS 0.00

TABLE D-84

IN-TRAIN DATA FOR THE IRT 7 ROUTE ON THE R-36

MODEL WESTBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM. ESTIMATE(NAE)
7	R-36	W	439-440	95.0	23.0	108.6	108.6	0.001
7	R-36	W	440-441	88.5	47.0	104.7	104.7	0.0
7	R-36	W	441-442	87.5	33.0	102.3	102.3	0.0
7	R-36	W	442-443	86.0	15.0	101.4	101.4	0.0
7	R-36	W	443-444				NO DATA FOR THIS LINK	
7	R-36	W	444-445	87.5	27.0	101.8	101.8	0.0
7	R-36	W	445-446	87.0	31.0	101.9	101.9	0.0
7	R-36	W	446-447	85.0	25.0	99.0	99.0	0.0
7	R-36	W	447-448	86.0	33.5	103.8	103.8	0.0
7	R-36	W	448-449	88.0	45.0	104.0	104.0	0.0
7	R-36	W	449-450	85.5	17.0	97.8	97.8	0.0
7	R-36	W	450-451	82.0	23.9	96.6	96.6	0.0
7	R-36	W	451-452	85.0	21.5	98.7	98.7	0.0
7	R-36	W	452-165	84.0	23.3	97.0	101.4	0.0
7	R-36	W	165-453	88.0	14.0	99.5	102.8	0.0
7	R-36	W	453-454	86.0	16.0	96.0	101.0	0.0
7	R-36	W	454-455	91.5	24.0	105.3	105.3	0.000
7	R-36	W	455-456	92.5	79.0	111.5	113.5	0.002
7	R-36	W	456-457	96.0	32.0	111.1	111.1	0.502
7	R-36	W	457-490	95.5	8.5	101.4	106.4	0.000

LR FOR THE ROUTE IS 118.5

ENERGY-WEIGHTED LA FOR THE ROUTE IS 90.9

NAE FOR ROUTE IS 0.01

TABLE D-85

IN-TRAIN DATA FOR THE IRT 7 ROUTE ON THE R-36

MODEL EASTBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
7	R-36	E	490-457	91.0	8.5	100.3	106.5	0.000
7	R-36	E	457-456	90.5	53.0	107.7	107.7	0.000
7	R-36	E	456-455	95.0	80.5	114.5	116.0	0.006
7	R-36	E	455-454	94.0	26.5	108.2	108.2	0.001
7	R-36	E	454-453	84.0	17.0	94.8	100.3	0.0
7	R-36	E	453-145	90.0	19.0	102.6	103.9	0.0
7	R-36	E	145-452	89.0	83.5	108.0	108.0	0.0
7	R-36	E	452-451	79.0	54.0	96.3	96.3	0.0
7	R-36	E	451-450	81.0	34.5	96.4	96.4	0.0
7	R-36	E	450-449	82.0	39.5	96.0	98.0	0.0
7	R-36	E	449-448	84.0	55.0	101.4	101.4	0.0
7	R-36	E	448-447	88.0	17.0	100.3	100.3	0.0
7	R-36	E	447-446	81.0	37.5	96.7	96.7	0.0
7	R-36	E	446-445	86.0	34.0	101.3	101.3	0.0
7	R-36	E	445-444	88.0	24.5	101.9	101.9	0.0
7	R-36	E	444-443	85.0	39.5	101.0	101.0	0.0
7	R-36	E	443-442	85.0	33.0	100.2	100.2	0.0
7	R-36	E	442-441	87.0	34.5	102.6	102.6	0.0
7	R-36	E	441-440	81.0	89.5	100.5	100.5	0.0
7	R-36	E	440-439	87.5	21.5	103.8	101.7	0.0

LA FOR THE ROUTE IS 119.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 90.4

NAE FOR ROUTE IS 0.01

TABLE D-86

IN-TRAIN DATA FOR THE IRT 7 ROUTE ON THE R-36

MODEL WESTBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM (STIPKAHETIONA)
7	R-36	W	439-440	92.0	28.0	106.5	105.7	.000
7	R-36	W	440-441	90.0	57.0	107.6	[illegible]	[illegible]
7	R-36	W	441-442	91.0	39.0	106.9	[illegible]	[illegible]
7	R-36	W	442-443	88.0	41.0	104.1	104.2	[illegible]
7	R-36	W	443-444	94.0	26.5	108.2	108.2	[illegible]
7	R-36	W	444-445	90.0	33.5	105.3	105.3	[illegible]
7	R-36	W	445-446	89.0	38.5	104.9	104.9	[illegible]
7	R-36	W	446-447	89.0	29.0	103.5	103.5	0.0
7	R-36	W	447-448	88.0	41.0	104.1	104.1	0.0
7	R-36	W	448-449	87.5	63.5	105.5	105.5	0.0
7	R-36	W	449-450	87.5	37.0	103.2	103.2	0.0
7	R-36	W	450-451	85.5	37.5	101.2	101.2	0.0
7	R-36	W	451-452	89.0	31.0	103.9	103.9	0.0
7	R-36	W	452-145	88.0	22.5	101.5	105.5	0.0
7	R-36	W	145-453				NO DATA FOR THIS LINK	
7	R-36	W	453-454	84.0	35.0	99.4	99.4	0.0
7	R-36	W	454-455	91.0	34.0	106.3	106.3	0.000
7	R-36	W	455-456	94.5	58.5	112.2	116.5	0.007
7	R-36	W	456-457	92.0	45.0	108.5	108.5	0.001
7	R-36	W	457-490	95.5	13.5	106.8	106.8	0.001

LR FOR THE ROUTE IS 120.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 92.0

NAE FOR ROUTE IS 0.01

TABLE D-87

IN-TRAIN DATA FOR THE FRANKLIN AVE. SHUTTLE ROUTE

ON THE R-32 MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(PAS)
SS	R-32	N	94-136	90.0	8.0	99.0	104.1	0.0
SS	R-32	N	136-137	87.5	22.0	103.5	101.4	[illegible]
SS	R-32	N	137-135	78.0	14.5	89.6	93.6	0.0
SS	R-32	N	136-400	84.0	8.5	93.5	93.5	0.0

LR FOR THE ROUTE IS 106.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 88.8

NAE FOR ROUTE IS 0.0

TABLE D-88

IN-TRAIN DATA FOR THE FRANKLIN AVE. SHUTTLE ROUTE

ON THE R-32 MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIR'C	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
55	R-32	S	488-136	80.0	17.0	92.3	92.3	0.0
55	R-32	S	136-137	84.5	4.0	93.5	93.5	0.0
55	R-32	S	137-138	86.0	33.0	101.2	101.2	0.0
55	R-32	S	138- 96	97.0	4.0	103.0	105.5	0.000

LR FOR THE ROUTE IS 107.2

ENERGY-WEIGHTED LA FOR THE ROUTE IS 92.2

NAE FOR ROUTE IS 0.00

TABLE D-89

IN-TRAIN DATA FOR THE FRANKLIN AVE. SHUTTLE ROUTE

ON THE R-11 MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
SS	R-11	N	94-138	92.0	6.5	100.1	105.3	0.000
SS	R-11	N	138-137	89.0	33.0	104.2	104.2	0.0
SS	R-11	N	137-136	81.0	14.0	92.5	92.5	0.0
SS	R-11	N	136-46R	79.0	42.0	95.2	95.2	0.0

LR FOR THE ROUTE IS 100.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 91.3

NAE FOR ROUTE IS 0.00

TABLE D-90

IN-TRAIN DATA FOR THE FRANKLIN AVE. SHUTTLE ROUTE

ON THE R-11 MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
SS	R-11	S	408-136	83.0	22.0	96.4	96.4	0.0
SS	R-11	S	136-127	85.5	7.0	94.0	95.7	0.0
SS	R-11	S	137-130	93.5	5.0	100.5	100.3	0.000
SS	R-11	S	130- 96	91.5	7.0	100.0	101.3	0.000

LA FOR TH ROUTE IS 129.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 90.7

NAE FOR ROUTE IS 0.00

TABLE D-91

IN-TRAIN DATA FOR THE SO. FERRY SHUTTLE ROUTE

ON THE R-12 MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
SS	R-12	N	438-437	95.5	15.9	107.4	109.4	0.001

LR FOR THE ROUTE IS 109.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 98.1

NAE FOR ROUTE IS 0.00

TABLE D-92

IN-TRAIN DATA FOR THE SO. FERRY SHUTTLE ROUTE

ON THE R-12 MODEL SOUTHBOUND

ROUTE NO.	MODEL TYPE	DIREC. #	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
SS	R-12	5	437-438	99.5	9.0	109.0	100.1	0.001

LA FOR THE ROUTE IS 100.1

ENERGY-WEIGHTED LA FOR THE ROUTE IS 99.0

NAE FOR ROUTE IS 0.00

TABLE D-93

IN-TRAIN DATA FOR THE SO. FERRY SHUTTLE ROUTE

ON THE R-12 MODEL NORTHBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
55	R-12	N	438-437	96.5	10.0	106.5	109.4	0.001

LA FOR THE ROUTE IS 109.4

ENERGY-WEIGHTED LA FOR THE ROUTE IS 98.1

NAE FOR ROUTE IS 3.00

TABLE D-94

IN-TRAIN DATA FOR THE GRAND CENTRAL SHUTTLE ROUTE

ON THE R-17 MODEL EASTBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
95	R-17	E	492-491	98.0	250	111.6	111.6	0.002

LR FOR THE ROUTE IS 111.6

ENERGY-WEIGHTED LA FOR THE ROUTE IS 98.0

NAE FOR ROUTE IS 0.00

TABLE D-95

IN-TRAIN DATA FOR THE GRAND CENTRAL SHUTTLE ROUTE

ON THE R-17 MODEL WESTBOUND

NUMBER TAG	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINK	NOISE ACCUM ESTIMATE(NAE)
48	R-17	W	491-492	97.5	33.5	112.0	112.0	0.003

LA FOR THE ROUTE IS 112.0

ENERGY-WEIGHTED LA FOR THE ROUTE IS 97.5

NAE FOR ROUTE IS 0.70

TABLE D-96

IN-TRAIN DATA FOR THE GRAND CENTRAL SHUTTLE ROUTE

ON THE R-17 MODEL EASTBOUND

ROUTE NO.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LA AT MAXIMUM	LA OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
55	R-17	E	492-491	95.0	37.0	110.7	110.7	0.002

LA FOR THE ROUTE IS 110.7

ENERGY-WEIGHTED LA FOR THE ROUTE IS 95.0

NAE FOR ROUTE IS 0.00

TABLE D-97

IN-TRAIN DATA FOR THE GRAND CENTRAL SHUTTLE ROUTE

ON THE R-17 MODEL WESTBOUND

ROUTE No.	MODEL TYPE	DIREC	STATIONS FROM-TO	MAXIMUM LA	DURATION (SECS)	LR AT MAXIMUM	LR OF THIS LINE	NOISE ACCUM ESTIMATE(NAE)
SS	R-17	W	441-442	99.5	10.0	114.3	114.3	0.00%

LR FOR THE ROUTE IS 114.3

ENERGY-WEIGHTED LA FOR THE ROUTE IS 99.5

NAE FOR ROUTE IS 0.00

APPENDIX E

LISTING OF STATION NAMES

AND CODE NUMBERS

The following is a list of code numbers and names of each station in the New York City Transit Authority and SIRTOA systems (Routes are shown in parenthesis).

1. 207 St. (A)
2. Dyckman - 200 St. (A)
3. 190 St. (A)
4. 191 St. (A)
5. 175 St. (A)
6. 168 St. (A,AA,B)
7. 163 St. (AA,B)
8. 155 St. (AA,B)
9. 145 St. (A,AA,B,CC,D)
10. 135 St. (AA,B,CC)
11. 125 St. (A,AA,B,CC,D)
12. 116 St. (AA,B,CC)
13. Cathedral Pkway-110 St. (AA,B,CC)
14. 103 St. (AA,B,CC)
15. 96 St. (AA,B,CC)
16. 86 St. (AA,B,CC)
17. 81 St. - Mus. of Natural History (AA,B,CC)
18. 72 St. (AA,B,CC)
19. 59 St.-Columbus Circle (A,AA,B,CC,D)
20. 50 St. (AA,CC,E)
21. 42 St. (A,AA,CC,E)
22. 34 St.-Penn Sta. (A,AA,CC,E)
23. 23 St. (AA,CC,E)
24. 14 St. (A,AA,CC,E)
25. W. 4 St. (A,AA,CC,F)
26. Spring St. (AA,CC,E)
27. Canal St.-Holland Tunnel (A,E,CC,AA)
28. Chambers St. (A,E)
485. Hudson Terminal (AA,CC,E)
29. Broadway-Nassau St. (A,E)
30. High St.-Bklyn Bridge (A,E)
31. Jay St.-Boro Hall (A,E,F)
32. Hoyt-Schermerhorn St. (A,E,GG)
33. Lafayette Ave. (A,E)
34. Clinton-Wash. Ave. (A,E)
35. Franklin Ave. (A,E)
36. Nostrand Ave. (A,E)
37. Kingston-Throop Ave. (A,E)
38. Utica Ave. (A,E)
39. Ralph Ave. (A,E)
40. Rockaway Ave. (A,E)
41. Broadway-East N.Y. (A,E)
42. Liberty Ave. (A,E)
43. Van Siclen Ave. (A,E)
44. Shepherd Ave. (A,E)
45. Euclid Ave. (A,E)
46. Grant Ave. (A,E)
47. 80 St.-Hudson St. (A,E)
48. 88 St.-Boyd Ave. (A,E)
49. Rockaway Blvd. (A,E)
50. 104 St.-Oxford Ave. (A)
51. 111 St.-Greenwood Ave. (A)
52. Lefferts Blvd. (A)
53. Aqueduct (A,E)
54. Howard Beach (A,E)
55. Broad Channel (A,E)
56. Beach 67 St.-Gaston Ave. (A)
57. Beach 60 St.-Straiton Ave. (A)
58. Beach 44 St.-Frank Ave. (A)
59. Beach 36 St.-Edgemere (A)

60. Beach 25 St. - Wavecrest (A)
61. Far Rockaway-Mott Ave. (A)
62. Beach 90 St.-Holland (A,E)
63. Beach 98 St.-Playland (A,E)
64. Beach 105 St.-Seaside (A,E)
65. Rockaway Park - Beach 116 St. (A,E)
66. Metropolitan Ave. (M)
67. Fresh Pond Road (M)
68. Forest Ave. (M)
69. Seneca Ave. (M)
70. Wyckoff Ave. (M)
71. Knickerbocker Ave. (M)
72. Central Ave. (M)
73. 205 St. (D)
74. Bedford Pk. Blvd. (D,CC)
75. Kingsbridge Rd. (D,CC)
76. Fordham Road (D,CC)
77. 182-183 St. (D,CC)
78. Tremont Ave. (D,CC)
79. 174-175 St. (D,CC)
80. 170 St. (D,CC)
81. 167 St. (D,CC)
82. 161 St.-River Ave. (D,CC)
    (Yankee Stadium)
83. 155 St. - 8 Ave. (D,CC)
84. 7 Ave. (E,D)
85. 47-50 St.-Rkfellen Ctr. (B,D,F,K)
86. 42 St. (B,D,F,K)
87. 34 St. (B,D,F,K)
88. West 4 St. (B,D,F,K)
89. Grand St. (B,D)
90. Grand St. (B,D)
91. DeKalb Ave. (B,D,N,RR,QB,M)
92. Atlantic Ave. (D,QB,M)
93. 7 Ave. (D,QB,M)
94. Prospect Pk. (D,QB,M,SS)
95. Parkside Ave. (D,QB,M)
96. Church Ave. (D,QB,M)
97. Beverley Road (D,QB,M)
98. Cortelyou Road (D,QB,M)
99. New Kirk Ave. (D,QB,M)
100. Avenue H (D,QB,M)
101. Avenue J (D,QB,M)
102. Avenue M (D,QB,M)
103. Kings H'way (D,QB,M)
104. Avenue U (D,QB,M)
105. Neck Road (D,QB,M)
106. Sheepshead Bay (D,QB,M)
107. Brighton Beach (D,QB,M)
108. Ocean Pkway. (D,QB,M)
109. West 8 St. (D,QB,M)
110. Coney Island-Stillwell Ave. (D,QB,M,N,B,F)
111. 57 St. (B,K)
112. Pacific St. (N,B,RR)
113. Union St. (D,B,RR)
114. 9 St. (N,B,RR)
115. Prospect Ave. (N,B,RR)
116. 25 St. (N,B,RR)
117. 36 Street (N,B,RR)
118. 9 Ave. (B)
119. Ft. Hamilton Pkwy. (B)
120. 50 St. (B)
121. 55 St. (B)
122. 62 St. (B)
123. 71 St. (B)
124. 79 St. (B)
125. 18 Ave. (B)
126. 20 Ave. (B)
127. Bay Pkwy. (B)
128. 25 Ave. (B)
129. Bay 50 St. (B)
130. Bay Ridge Ave. (RR)
131. 77 St. (RR)
132. 86 St. (RR)
133. 95 St. - Ft. Hamilton (RR)

134. Ft. Hamilton Pkway. (SS)
135. 13 Ave. (SS)
488. Franklin Ave. (SS)
136. Dean St. (SS)
137. Park Place (SS)
138. Botanic Gdn-Eastern Pkwy (SS)
139. Ditmars Blvd.-Astoria (RR)
140. Astoria Blvd.-Hoyt Ave. (RR)
141. 30 Ave.-Grand Ave. (RR)
142. Broadway (RR)
143. 36 Ave.-Washington Ave. (RR)
144. 39 Ave. - Beebe Ave. (RR)
145. Queensboro Plaza (RR,7)
146. Lexington Ave. (RR,EE)
147. 5 Ave. (RR,EE)
148. 57 St. - 7 Ave. (RR,EE,N,QB)
149. 49 Street (EE,RR)
150. Times Sq. - 42 St. (EE,RR,N,QB)
151. 34 Street (EE,RR,N,QB)
152. 28 Street (EE,RR)
153. 23 Street (EE,RR)
154. 14 St.-Union Sq. (EE,RR,N,QB)
155. 8 Street (EE,RR)
156. Prince Street (EE,RR)
157. Canal Street (EE,RR)
486. Canal Street (N,QB)
158. City Hall (EE,RR)
159. Cortlandt St. (EE,RR)
160. Rector St. (EE,RR)
161. Whitehall St. (EE,RR)
162. Court St. - Boro Hall (RR,M)
163. Lawrence St. (RR,M)
164. 45 Street (RR)
165. 53 Street (RR)
166. 59 Street (RR,N)
167. 8 Ave. (N)
168. Ft. Hamilton Pkwy. (N)
169. New Utrecht Ave. (N)
170. 18 Ave. (N)
171. 20 Ave. (N)
172. Bay Pkwy. (N)
173. Kings Hway. (N)
174. Avenue U (N)
175. 86 Street (N)
176. 179 St.-Jamaica (E,F)
177. 169 Street (E,F)
178. Parsons Blvd. (E,F)
179. Sutphin Blvd. (E,F)
180. Van Wyck Blvd. (E,F)
181. Union Tpke-Kew Gardens (E,F)
182. 75 Ave. (E,F)
183. 71-Continental Ave- Forest Hills (E,F,GG,EE)
184. 67 Ave. (GG,EE)
185. 63 Drive (GG,EE)
186. Woodhaven Blvd-Slattery Plaza (GG,EE)
187. Grand Ave. (GG,EE)
188. Elmhurst Ave. (GG,EE)
189. Roosevelt Ave. - Jackson Hts. (GG,EE,E,F)
190. 65 Street (GG,EE)
191. Northern Blvd. (GG,EE)
192. 46 Street (GG,EE)
193. Steinway Street (GG,EE)
194. 36 Street (GG,EE)
195. Queens Plaza (GG,EE,E,F)
196. 23 St.-Ely Ave. (E,F)
197. Lex. Ave.-3 Ave. (E,F)
198. 5 Ave. (E,F)
199. 23 Street (F,B,K)
200. 14 Street (F,B,K)
201. 2 Ave. (F)
202. Delancey St. (F,K)
203. East Broadway (F)
204. York Street (F)
205. Bergen Street (F,GG)

206. Carroll Street (F,GG)
207. Smith - 9 Street (F,GG)
208. 4 Ave. (F,GG)
209. 7 Ave. (F,GG)
210. 15 St.-Prospect Pk. (F,GG)
211. Ft. Hamilton Pkwy. (F,GG)
212. Church Ave. (F,GG)
213. Ditmas Ave. (F,SS)
214. 18 Ave. (F)
215. Avenue I (F)
216. Bay Pkwy.-22 Ave. (F)
217. Avenue N (F)
218. Avenue P (F)
219. Kings Hway. (F)
220. Avenue U (F)
221. Avenue X (F)
222. Neptune Ave.-Van Sicklen (F)
223. Court Square (GG)
224. Van Alst-21 St. (GG)
225. Greenpoint Ave. (GG)
226. Nassau Ave. (GG)
227. Metropolitan Ave.-Grand St. (GG)
228. Broadway (GG)
229. Flushing Ave. (GG)
230. Myrtle-Willoughby Ave. (GG)
231. Bedford-Nostrand Ave. (GG)
232. Classon Ave. (GG)
233. Clinton-Washington Ave. (GG)
234. Fulton Street (GG)
235. 168 St.-Jamaica (J)
236. 160 Street (J)
237. Sutphin Blvd. (J)
238. Queens Blvd. (J)
239 Metropolitan Ave. (J)
240. 121 Street (J)
241. 111 Street (J)
242. 102 Street (J)
243. Woodhaven Blvd. (J)
244. Forest Pkwy. (J)
245. Elderts Lane (J)
246. Cypress Hills (J)
247. Crescent Street (J)
248. Norwood Ave. (J)
249. Cleveland St. (J)
250. Van Siclen Ave. (J)
251. Alabama Ave. (J)
252. Eastn. Pky.- Broadway Jct. (J,K,LL)
253. Chauncey Street (J,K)
254. Halsey Street (J,K)
255. Gates Ave. (J,K)
256. Kosciusko Street (J,K)
257. Myrtle Ave.-Broadway (J,K,M)
258. Flushing Ave. (J,K,M)
259. Lorimer Street (J,K,M)
260. Hewes Street (J,K,M)
261. Marcy Ave. (J,K,M)
262. Essex Street (J,K,M)
263. Bowery (J,M)
264. Canal Street (J,M)
265. Chambers St. (J,M)
266. Fulton St. (J,M)
267. Broad Street (J,M)
268. 8 Avenue (LL)
269. 6 Avenue (LL)
270. Union Square (LL)
271. 3 Avenue (LL)
272. 1 Avenue (LL)
273. Bedford Ave. (LL)
274. Lorimer Street (LL)
275. Graham Avenue (LL)

276. Grand Street (LL)
277. Montrose Avenue (LL)
278. Morgan Avenue (LL)
279. Jefferson Street (LL)
280. DeKalb Avenue (LL)
281. Myrtle Avenue (LL)
282. Halsey Street (LL)
283. Wilson Avenue (LL)
284. Bushwick Ave.-Aberdeen St. (LL)
285. Atlantic Ave. (LL)
286. Sutter Avenue (LL)
287. Livonia Avenue (LL)
288. New Lots Avenue (LL)
289. E. 105 Street (LL)
290. Rockaway Parkway (LL)
291. Van Cortlandt Pk. - 242 St. (1)
292. 238 St. (1)
293. 231 St. (1)
294. 225 St. (1)
295. 215 St. (1)
296. 207 St. (1)
297. Dyckman Street (1)
298. 191 St. (1)
299. 181 St. (1)
300. 168 St. (1)
301. 157 St. (1)
302. 145 St. (1)
303. 137 St.-City College (1)
304. 125 St. (1)
305. Columbia Univ.-116 St. (1)
306. Cathedral Pkwy. - 110 St. (1)
307. 103 Street (1)
308. 96 Street (1,2,3)
309. 86 Street (1)
310. 79 Street (1)
311. 72 Street (1,2,3)
312. 66 Street (1)
313. 59 St.-Columbus Circle (1)
314. 50 Street (1)
315. Times Sq.-42 Street (1,2,3)
316. Penn Sta. - 34 Street (1,2,3)
317. 28 Street (1)
318. 23 Street (1)
319. 18 Street (1)
320. 14 Street (1,2,3)
321. Christopher St.-Sheridan Sq. (1)
322. Houston Street (1)
323. Canal Street (1)
324. Franklin Street (1)
325. Chambers Street (1,2,3)
326. Cortlandt Street (1)
327. Rector Street (1)
328. South Ferry (1)
329. Park Place (2,3)
330. Fulton Street (2,3)
331. Wall Street (2,3)
332. Clark St.-B'klyn Hts. (2,3)
333. Borough Hall (2,3)
334. Hoyt Street (2,3)
335. Nevins Street (2,3,4,5)
336. Atlantic Avenue (2,3,4,5)
337. Bergen Street (2,3,4)
338. Grand Army Plaza-Prospect Pk. (2,3,4)
339. Estn. Pky.-Bklyn. Museum (2,3,4)
340. Franklin Avenue (2,3,4,5)
341. Nostrand Avenue (2)
342. Kingston Avenue (2)
343. Utica Avenue (2,4,5)
344. Sutter Ave.-Rutland Road (2)
345. Saratoga Ave. (2)
346. Rockaway Ave. (2)
347. Junius Street (2)

348. Pennsylvania Ave. (2)
349. Van Siclen Ave. (2)
350. New Lots Ave. (2)
351. Lenox Term.-148 St. (3)
352. President Street (3,4)
353. Sterling Street (3,4)
354. Winthrop Street (3,4)
355. Church Avenue (3,4)
356. Beverly Road (3,4)
357. Newkirk Avenue (3,4)
358. Flatbush Ave. (3,4)
359. 241 Street (2,5)
360. Nereid Ave. - 238 St. (2,5)
487. 145 Street - Lenox (3)
361. 233 Street (2,5)
362. 225 Street (2,5)
363. 219 Street (2,5)
364. Gun Hill Road (2,5)
365. Burke Avenue (2,5)
366. Allerton Ave. (2,5)
367. Pelham Pkway.(2,5)
368. Bronx Pk. East (2,5)
369. E. 180 Street (2,5)
370. E. Tremont Avenue-177 St. (2,5)
371. 174 Street (2,5)
372. Freeman Street (2,5)
373. Simpson Street (2,5)
374. Intervale Ave. -163 St. (2,5)
375. Prospect Ave. (2,5)
376. Jackson Avenue (2,5)
377. 149 St.-3 Ave. (2,5)
378. 149 St.-Grand Concourse (2,5)
379. 135 Street (2,3)
380. 125 Street (2,3)
381. 116 Street (2,3)
382. 110 Street (2,3)
383. Woodlawn (4)
384. Mosholu Parkway (4)
385. Bedford Pk. Blvd.-200 St. (4)
386. Kingsbridge Road (4)
387. Fordham Road (4)
388. 183 Street (4)
389. N.Y. Univ-Burnside Ave. (4)
390. 176 Street (4)
391. Mt. Eden Ave. (4)
392. 170 Street (4)
393. 167 Street (4)
394. 161 Street (4)
395. 149 St.-Grand Concourse
396. 138 St.-Grand Concourse
397. Pelham Bay Park (6)
398. Buhre Avenue (6)
399. Middletown Road (6)
400. Westchester Sq.-E. Tremont Ave. (6)
401. Zerega Ave. (6)
402. Castle Hill Ave. (6)
403. E. 177 St. Parkchester (6)
404. St. Lawrence Ave. (6)
405. Morrison Ave.-Sound View Ave. (6)
406. Elder Avenue (6)
407. Whitlock Avenue (6)
408. Hunts Point Ave. (6)
409. Longwood Avenue (6)
410. E. 149 Street (6)
411. St. Mary's St.-E. 143 St. (6)
412. Cypress Ave. (6)
413. Brook Avenue (6)
414. 3 Ave.-138 Street (6)
415. 125 Street (4,5,6)
416. 116 Street (6)
417. 110 Street (6)
418. 103 Street (6)
419. 96 Street (6)
420. 86 Street (4,5,6)
421. 77 Street (6)
422. 68 St.-Hunter College (6)

423. 59 Street (4,5,6)
424. 51 Street (6)
425. Grand Central - 42 St. (4,5,6)
426. 33 Street (6)
427. 28 Street (6)
428. 23 Street (6)
429. 14 Street (4,5,6)
430. Astor Place (6)
431. Bleecker Street (6)
432. Spring Street (6)
433. Canal Street (6)
434. Bklyn Bridge-Worth St. (4,5,6)
435. Fulton Street (4,5,6)
491. Times Square (SS)
492. Grand Central (SS)
436. Wall Street (4,5,6)
437. Bowling Green (4,5,6)
438. South Ferry (5,6,SS)
489. Boro Hall (4,5)
439. Main Street (7)
440. Willets Pt.-Shea Stadium (7)
441. 111 Street (7)
442. 103 St. Corona Plaza (7)
443. Junction Boulevard (7)
444. 90 Street-Elmhurst (7)
445. 82 Street-Jackson Hts. (7)
446. 74 Street-Broadway (7)
447. 69 Street-Fisk Ave. (7)
448. 61 Street-Woodside (7)
449. 52 Street-Lincoln Ave. (7)
450. 46 Street-Bliss Ave. (7)
451. 40 Street-Lowery Street (7)
452. 33 Street-Rawson Street (7)
453. 45 Road-Court House Square (7)
454. Hunters Point Avenue (7)
455. Vernon-Jackson Ave. (7)
456. Grand Central - 42 Street (7)
457. 5 Avenue (7)
490. Times Square (7)
458. Dyer Avenue (5)
459. Baychester Avenue (5)
460. Gun Hill Road (5)
461. Pelham Parkway (5)
462. Morris Park (5)

SIRTOA Stations

463. Tottenville (S.I.)
464. Atlantic (S.I.)
465. Nassau (S.I.)
466. Richmond Valley (S.I.)
467. Pleasant Plains (S. I.)
468. Princess Bay (S. I.)
469. Huguenot (S. I.)
470. Annadale (S.I.)
471. Eltingville (S. I.)
472. Great Kills (S. I.)
473. Bay Terrace (S. I.)
474. Oakwood Hts. (S. I.)
475. New Dorp (S. I.)
476. Grant City (S.I.)
477. Jefferson Ave. (S.I.)
478. Dongan Hills (S. I.)
479. Old Town (S.I.)
480. Grasmere (S. I.)
481. Clifton (S. I.)
482. Stapleton (S. I.)
483. Tomkinsville (S. I.)
484. St. George Terminal (S.I.)

APPENDIX F
TABLES FOR IN-STATION DATA

This Appendix contains tables for the following in-station data:

Type	TABLES Arrivals	Departures	Through
Number of in-station data samples	F.1	F.7	F.13
Average L_A(MAX) for the data samples	F.2	F.8	F.14
Maximum L_A(MAX) for the data samples	F.3	F.9	F.15
Range of L_A(MAX) for the data samples	F.4	F.10	F.16
Average L_R for the data samples	F.5	F.11	F.17
Average NAE for the data samples	F.6	F.12	F.18

TABLE F.1
IN-STATION DATA:
NUMBER OF SAMPLES FOR
ARRIVALS OF TRAINS THAT STOP

		R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
206	14TH ST	3.	1.	1.	2.	4.	0.	0.	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	19.
326	S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	1.	6.	0.	0.	0.	10.
16	86TH ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	81ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
49	B'WAY-LAF.	1.	3.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.
202	DELANCEY ST	5.	0.	8.	1.	0.	0.	0.	0.	0.	5.	0.	0.	0.	0.	0.	0.	0.	19.
204	YORK ST	11.	2.	10.	4.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	28.
272	1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423	59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	9.	2.	6.	6.	1.	0.	25.
76	FORDHAM RD	4.	4.	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10.
232	CLASSON AVE.	0.	0.	2.	5.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	13.
405	HUDSON TERM.	2.	1.	0.	0.	0.	0.	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	0.	7.
19	COLUMBUS CIR	3.	4.	0.	0.	4.	0.	0.	0.	7.	0.	0.	0.	0.	0.	0.	0.	0.	18.
85	47-50TH ST.	2.	4.	3.	0.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	14.
46	WEST 4TH ST	7.	7.	3.	1.	10.	0.	0.	0.	0.	3.	0.	0.	0.	0.	0.	0.	0.	31.
149	49TH 7TH AVE	0.	3.	2.	3.	0.	6.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	19.
152	28TH ST.	0.	0.	2.	0.	0.	8.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	16.
153	23RD BWAY	0.	4.	2.	6.	0.	16.	14.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	44.
185	63RD DRIVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
166	WOODHAVEN BL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
336	ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.	0.	6.	7.	1.	0.	22.
429	34TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	3.	1.	0.	0.	5.
431	BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	0.	0.	6.	0.	0.	10.
57	BEACH 60TH	1.	2.	0.	0.	0.	0.	0.	0.	7.	0.	0.	0.	0.	0.	0.	0.	0.	10.
61	MOTT AVE	1.	0.	0.	0.	0.	0.	0.	0.	8.	0.	0.	0.	0.	0.	0.	0.	0.	9.
222	VAN SICLEN	4.	2.	9.	2.	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.	19.
216	NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290	ROCKAWAY PKY	0.	1.	0.	0.	0.	0.	0.	0.	0.	9.	0.	0.	0.	0.	0.	0.	0.	10.
128	25TH AVE.	0.	0.	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.
129	BAY 50TH ST.	0.	0.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.
219	KINGS HWY F	3.	1.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.
220	AVE U	2.	0.	3.	1.	0.	0.	0.	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	10.
258	FLUSHING AVE	0.	4.	0.	0.	2.	8.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	14.
94	HOWARD BCH	2.	4.	0.	0.	0.	0.	0.	0.	19.	5.	0.	0.	0.	0.	0.	0.	0.	29.
95	PARKSIDE AVE	0.	2.	0.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.
96	CHURCH AVE	5.	4.	0.	0.	9.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	18.
97	BEVERLEY RD.	0.	0.	0.	0.	0.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.
130	AVE H	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
102	AVE M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
103	KINGS HWY D	3.	2.	0.	0.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10.
107	BRIGHTON BCH	4.	1.	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.
208	4TH AVE.	3.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.
110	CONEY ISLAND	8.	5.	6.	9.	16.	5.	0.	0.	0.	3.	0.	0.	0.	0.	0.	0.	0.	57.
969		74.	63.	61.	35.	74.	54.	31.	0.	45.	36.	1.	25.	3.	21.	20.	2.	0.	547.

TABLE F.2
IN-STATION DATA:
AVERAGE L_A(MAX) FOR

ARRIVALS OF TRAINS THAT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
200 14TH ST	99.	104.	101.	100.	100.	0.	0.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	100.
328 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.	96.	47.	0.	0.	0.	93.
16 86TH ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17 81ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
89 B'WAY-LAF.	91.	93.	96.	99.	93.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.
202 DELANCEY ST	93.	0.	98.	97.	0.	0.	0.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	96.
264 YORK ST	96.	103.	101.	101.	0.	0.	0.	0.	0.	102.	0.	0.	0.	0.	0.	0.	0.	100.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	101.	102.	101.	100.	99.	100.	0.	100.
76 FORDHAM RD	92.	97.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	95.
232 CLASSON AVE.	0.	0.	105.	106.	0.	0.	104.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	104.
485 HUDSON TERM.	93.	94.	0.	0.	0.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	0.	95.
19 COLUMBUS CIR	93.	96.	0.	0.	94.	0.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	96.
85 47-50TH ST.	90.	97.	98.	0.	95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	95.
48 WEST 4TH ST	95.	97.	96.	102.	96.	0.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	96.
149 49TH 7TH AVE	0.	99.	100.	99.	0.	98.	96.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
152 28TH ST.	0.	0.	95.	0.	0.	94.	93.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.
153 23RD B'WAY	0.	103.	102.	99.	0.	97.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
165 63RD DRIVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
166 WOODHAVEN BL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
336 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	100.	0.	99.	99.	97.	0.	99.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.	0.	96.	94.	0.	0.	96.
431 BLEEKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	103.	0.	0.	103.	0.	0.	103.
57 LEACH 80TH	80.	85.	0.	0.	0.	0.	0.	0.	90.	0.	0.	0.	0.	0.	0.	0.	0.	88.
61 MUTT AVE	76.	0.	0.	0.	0.	0.	0.	0.	81.	0.	0.	0.	0.	0.	0.	0.	0.	80.
222 VAN SICLEN	83.	98.	88.	90.	0.	0.	0.	0.	0.	92.	0.	0.	0.	0.	0.	0.	0.	89.
246 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290 ROCKAWAY PKY	0.	81.	0.	0.	0.	0.	0.	0.	0.	82.	0.	0.	0.	0.	0.	0.	0.	87.
128 25TH AVE.	0.	0.	0.	0.	93.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	73.
129 BAY 50TH ST.	0.	0.	0.	0.	91.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	91.
219 KINGS HWY F	87.	103.	90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	90.
226 AVE U	91.	0.	91.	95.	0.	0.	0.	0.	0.	90.	0.	0.	0.	0.	0.	0.	0.	91.
258 FLUSHING AVE	0.	98.	0.	0.	96.	99.	0.	0.	0.	95.	0.	0.	0.	0.	0.	0.	0.	97.
54 HOWARD BCH	93.	93.	0.	0.	0.	0.	0.	0.	95.	0.	0.	0.	0.	0.	0.	0.	0.	94.
95 PARKSIDE AVE	0.	77.	0.	0.	0.	86.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	84.
96 CHURCH AVE	90.	93.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	93.
97 BEVERLEY RD.	0.	0.	0.	0.	0.	88.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	88.
130 AVE H	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
132 AVE M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
103 KINGS HWY D	87.	90.	0.	0.	91.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	90.
107 BRIGHTON BCH	84.	87.	0.	0.	89.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	87.
208 4TH AVE.	86.	0.	92.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	87.
110 CONEY ISLAND	78.	85.	83.	83.	85.	85.	0.	0.	0.	83.	0.	0.	0.	0.	0.	0.	0.	83.
999	90.	95.	95.	96.	92.	94.	98.	0.	92.	93.	101.	100.	99.	97.	100.	98.	0.	94.

TABLE F.3
IN-STATION DATA
MAXIMUM L_A(MAX) FOR
ARRIVALS OF TRAINS THAT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
200 14TH ST	101.	110.	104.	101.	104.	0.	0.	0.	0.	98.	0.	0.	0.	0.	0.	0.	0.	110.
325 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	96.	96.	96.	0.	0.	0.	96.
16 86TH ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17 81ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
89 B'WAY-LAF.	91.	96.	98.	99.	93.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	99.
202 DELANCEY ST	95.	0.	102.	97.	0.	0.	0.	0.	0.	95.	0.	0.	0.	0.	0.	0.	0.	102.
204 YORK ST	101.	105.	107.	104.	0.	0.	0.	0.	0.	102.	0.	0.	0.	0.	0.	0.	0.	107.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	101.	105.	103.	101.	101.	100.	0.	105.
76 FORDHAM RD	95.	98.	0.	0.	98.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
232 CLASSON AVE.	0.	0.	105.	107.	0.	0.	114.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	114.
435 HUDSON TERM.	94.	94.	0.	0.	0.	0.	0.	0.	98.	0.	0.	0.	0.	0.	0.	0.	0.	98.
19 COLUMBUS CIR	97.	94.	0.	0.	101.	0.	0.	0.	105.	0.	0.	0.	0.	0.	0.	0.	0.	105.
85 47-50TH ST.	91.	99.	105.	0.	101.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	105.
96 WEST 4TH ST	100.	103.	98.	102.	102.	0.	0.	0.	0.	98.	0.	0.	0.	0.	0.	0.	0.	103.
149 49TH 7TH AVE	0.	103.	104.	101.	0.	102.	98.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	104.
152 28TH ST.	0.	0.	96.	0.	0.	98.	95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
153 23RD BWAY	0.	104.	102.	103.	0.	101.	104.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	106.
165 63RD DRIVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
166 WOODHAVEN BL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
336 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	104.	0.	104.	102.	97.	0.	106.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.	0.	97.	94.	0.	0.	98.
431 BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	107.	0.	0.	109.	0.	0.	109.
57 BEACH 60TH	80.	85.	0.	0.	0.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	0.	96.
61 MOTT AVE	76.	0.	0.	0.	0.	0.	0.	0.	86.	0.	0.	0.	0.	0.	0.	0.	0.	86.
222 VAN SICLEN	86.	99.	92.	91.	0.	0.	0.	0.	0.	93.	0.	0.	0.	0.	0.	0.	0.	99.
238 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240 ROCKAWAY PKY	0.	81.	0.	0.	0.	0.	0.	0.	0.	85.	0.	0.	0.	0.	0.	0.	0.	85.
128 25TH AVE.	0.	0.	0.	0.	100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	100.
129 BAY 50TH ST.	0.	0.	0.	0.	95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	95.
219 KINGS HWY F	88.	100.	94.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	100.
220 AVE U	97.	0.	92.	95.	0.	0.	0.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	95.
250 FLUSHING AVE	0.	100.	0.	0.	97.	105.	0.	0.	0.	100.	0.	0.	0.	0.	0.	0.	0.	105.
54 HOWARD BCH	95.	94.	0.	0.	0.	0.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	99.
45 PARKSIDE AVE	0.	79.	0.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
96 CHURCH AVE	102.	97.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	102.
97 BEVERLEY RD.	0.	0.	0.	0.	0.	98.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
100 AVE H	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
102 AVE M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
103 KINGS HWY D	90.	93.	0.	0.	93.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	93.
107 BRIGHTON BCH	85.	87.	0.	0.	93.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	93.
208 4TH AVE.	87.	0.	92.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	92.
110 CONEY ISLAND	84.	94.	94.	95.	97.	91.	0.	0.	0.	89.	0.	0.	0.	0.	0.	0.	0.	97.
999	102.	110.	107.	107.	104.	105.	114.	0.	105.	102.	101.	107.	103.	104.	109.	100.	0.	114.

TABLE F.4
IN-STATION DATA
RANGE OF L_A(MAX) FOR
ARRIVALS OF TRAINS THAT STOP

	R44	R42	R40	R38	R32	R27 R35	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
230 14TH ST	2.00	9.00	5.50	1.50	6.00	0.0	0.0	0.0	0.0	2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.50
328 S FERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	3.00	0.0	0.0	0.0	5.00
16 86TH ST CPW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 81ST CPW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89 B'WAY-LAF.	0.0	6.00	3.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.00
242 DELANCEY ST	2.50	0.0	6.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.50
264 YORK ST	5.50	2.50	11.00	6.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.50
272 1ST AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
423 59 LEX AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.50	3.50	3.00	3.50	0.0	0.0	7.00
76 FORDHAM RD	3.50	1.50	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.00
232 CLASSON AVE.	0.0	0.0	0.0	7.50	0.0	0.0	13.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.50
445 HUDSON TERM.	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.00
19 COLUMBUS CIR	6.00	3.50	0.0	0.0	5.50	0.0	0.0	0.0	9.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.50
65 47-50TH ST.	7.00	6.50	13.00	0.0	7.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.00
64 WEST 4TH ST	9.50	10.50	4.00	0.0	12.50	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.50
149 49TH 7TH AVE	0.0	9.50	8.00	5.00	0.0	8.50	4.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.00
152 28TH ST.	0.0	0.0	3.00	0.0	0.0	9.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.00
153 23RD BWAY	0.0	5.00	0.0	6.00	0.0	12.00	10.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.00
185 63RD DRIVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
186 WOODHAVEN BL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
336 ATLANTIC AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.00	0.0	8.50	7.00	0.0	0.0	11.50
429 14TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	0.0	0.0	0.0	4.00
431 BLEEKER ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.50	0.0	0.0	8.00	0.0	0.0	8.50
57 BEACH 60TH	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.00
61 MOTT AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.00
222 VAN SICLEN	5.50	3.00	9.00	1.50	0.0	0.0	0.0	0.0	0.0	0.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.00
238 NEW LOTS AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
296 ROCKAWAY PKY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.50
126 25TH AVE.	0.0	0.0	0.0	0.0	12.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.00
129 BAY 50TH ST.	0.0	0.0	0.0	0.0	8.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.50
219 KINGS HWY F	2.50	0.0	6.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.00
226 AVE U	1.50	0.0	2.50	0.0	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00
258 FLUSHING AVE	0.0	3.50	0.0	0.0	1.00	10.00	0.0	0.0	0.0	7.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.50
54 HOLLAND BCH	2.50	7.50	0.0	0.0	0.0	0.0	0.0	0.0	9.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.00
55 PARKSIDE AVE	0.0	1.50	0.0	0.0	0.0	27.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.50
96 CHURCH AVE	16.00	7.00	0.0	0.0	6.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.00
97 BEVERLEY RD.	0.0	0.0	0.0	0.0	0.0	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.00
130 AVE H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 AVE M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 KINGS HWY D	3.50	0.0	0.0	0.0	7.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.50
107 BRIGHTON BCH	4.00	0.0	0.0	0.0	6.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.50
269 9TH AVE.	1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.00
112 CONEY ISLAND	10.50	13.00	16.00	15.50	18.50	9.50	0.0	0.0	0.0	9.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.50
999	28.50	34.50	29.00	27.50	25.50	31.00	24.00	0.0	28.50	22.50	0.0	14.00	6.50	13.00	15.00	3.00	0.0	40.50

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TABLE F.5
IN-STATION DATA:
AVERAGE L_R FOR
ARRIVALS OF TRAINS THAT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
230 14TH ST	105.	111.	109.	108.	137.	0.	0.	0.	0.	106.	0.	0.	0.	0.	0.	0.	0.	107.
328 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	105.	94.	102.	0.	0.	0.	102.
16 86TH ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17 81ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
49 B'WAY-LAF.	99.	103.	105.	106.	102.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	103.
232 DELANCEY ST	101.	0.	105.	106.	0.	0.	0.	0.	0.	103.	0.	0.	0.	0.	0.	0.	0.	134.
234 YORK ST	106.	111.	110.	110.	0.	0.	0.	0.	0.	111.	0.	0.	0.	0.	0.	0.	0.	108.
270 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	108.	104.	109.	109.	108.	107.	0.	138.
70 FORDHAM RD	102.	[illegible]	0.	0.	100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	104.
232 CLASSON AVE.	0.	0.	112.	113.	0.	0.	114.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	113.
455 HUDSON TERM.	100.	103.	0.	0.	0.	0.	0.	0.	104.	0.	0.	0.	0.	0.	0.	0.	0.	107.
15 COLUMBUS CIR	101.	104.	0.	0.	103.	0.	0.	0.	107.	0.	0.	0.	0.	0.	0.	0.	0.	104.
35 47-50TH ST.	98.	103.	104.	0.	104.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	103.
36 WEST 4TH ST	104.	104.	105.	110.	105.	0.	0.	0.	0.	105.	0.	0.	0.	0.	0.	0.	0.	105.
149 34TH 7TH AVE	0.	106.	107.	105.	0.	104.	103.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	105.
152 28TH ST.	0.	0.	104.	0.	0.	103.	102.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	103.
153 23RD BWAY	0.	103.	139.	106.	0.	105.	104.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	105.
165 63RD DRIVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
166 WOODHAVEN BL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
316 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	109.	0.	107.	107.	105.	0.	107.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	105.	0.	106.	103.	0.	0.	105.
431 BLEEKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	109.	0.	0.	110.	0.	0.	139.
57 BEACH 60TH	88.	93.	0.	0.	0.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	0.	95.
61 MOTT AVE	87.	0.	0.	0.	0.	0.	0.	0.	89.	0.	0.	0.	0.	0.	0.	0.	0.	89.
222 VAN SICLEN	97.	102.	96.	97.	0.	0.	0.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	96.
236 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240 ROCKAWAY PKY	0.	91.	0.	0.	0.	0.	0.	0.	0.	93.	0.	0.	0.	0.	0.	0.	0.	97.
128 25TH AVE.	0.	0.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	99.
129 BAY 50TH ST.	0.	0.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
219 KINGS HWY F	95.	107.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
223 AVE U	97.	0.	94.	101.	0.	0.	0.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	96.
256 FLUSHING AVE	0.	105.	0.	0.	104.	105.	0.	0.	0.	104.	0.	0.	0.	0.	0.	0.	0.	134.
34 HOWARD BCH	130.	102.	0.	0.	0.	0.	0.	0.	103.	0.	0.	0.	0.	0.	0.	0.	0.	107.
95 PARKSIDE AVE	0.	86.	0.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
96 CHURCH AVE	97.	100.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
97 BEVERLEY RD.	0.	0.	0.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.
100 AVE H	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
102 AVE M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
103 KINGS HWY D	94.	97.	0.	0.	98.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
107 BRIGHTON BCH	96.	94.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
206 9TH AVE.	91.	0.	130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.
110 CONEY ISLAND	87.	93.	91.	92.	92.	93.	0.	0.	0.	86.	0.	0.	0.	0.	0.	0.	0.	91.
999	98.	102.	103.	103.	99.	101.	105.	0.	100.	99.	108.	108.	104.	106.	108.	106.	0.	102.

TABLE F.6
IN-STATION DATA: AVERAGE NAE FOR ARRIVALS OF TRAINS THAT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
									0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
230 14TH ST	0.001	0.002	0.001	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.000	0.000	0.0	0.0	0.0	0.000
326 S FERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 86TH ST CPW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 81ST CPW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
89 B'WAY-LAF.	0.000	0.000	0.001	0.001	0.000	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
252 DELANCEY ST	0.000	0.0	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
204 YORK ST	0.001	0.002	0.002	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
272 1ST AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.001	0.001	0.001	0.001	0.001	0.0	0.001
423 59 LEX AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
76 FORDHAM RD	0.000	0.001	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.003
232 CLASSON AVE.	0.0	0.0	0.002	0.003	0.0	0.0	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
445 HUDSON TERM.	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.030	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
19 COLUMBUS CIR	0.000	0.000	0.0	0.0	0.000	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
65 47-50TH ST.	0.000	0.000	0.001	0.0	0.001	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
81 WEST 4TH ST	0.000	0.001	0.001	0.002	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
149 49TH 7TH AVE	0.0	0.001	0.001	0.001	0.0	0.001	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.009
152 28TH ST.	0.0	0.0	0.000	0.0	0.0	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
153 23RD BWAY	0.0	0.001	0.001	0.001	0.0	0.001	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135 63RD DRIVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
146 WOODHAVEN PL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.001	0.001	0.001	0.0	0.001
336 ATLANTIC AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.001	0.000	0.0	0.0	0.001
429 14TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.002	0.0	0.0	0.001
431 BLEECKER ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
57 BEACH 90TH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
61 MOTT AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
222 VAN SICLEN	0.0	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240 NEW LOTS AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
290 ROCKAWAY PKY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
128 25TH AVE.	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
129 BAY 50TH ST.	0.0	0.0	0.0	0.0	0.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
219 KINGS HWY F	0.0	0.001	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
220 AVE U	0.000	0.0	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
258 FLUSHING AVE	0.0	0.001	0.0	0.0	0.000	0.001	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
94 HOWARD BCH	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
95 PARKSIDE AVE	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
96 CHURCH AVE	0.000	0.000	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
97 BEVERLEY RD.	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130 AVE H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132 AVE M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
163 KINGS HWY D	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
167 BRIGHTON BCH	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
248 4TH AVE.	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
110 CONEY ISLAND	0.0	0.000	0.000	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
999.	0.000	0.001	0.001	0.001	0.000	0.001	0.001	0.0	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.0	

TABLE F.7
IN-STATION DATA: NUMBER OF SAMPLES FOR DEPARTURES OF TRAINS THAT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R19	R12 R14	
230 14TH ST	3.	3.	3.	2.	4.	0.	0.	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	19.
328 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	1.	6.	0.	0.	0.	10.
16 86TH ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17 81ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
89 B'WAY-LAF.	1.	3.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.
202 DELANCEY ST	5.	0.	8.	1.	0.	0.	0.	0.	0.	5.	0.	0.	0.	0.	0.	0.	0.	19.
204 YORK ST	11.	2.	10.	4.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	28.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	9.	2.	6.	6.	1.	0.	25.
76 FORDHAM RD	4.	4.	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10.
232 CLASSON AVE.	0.	0.	2.	5.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	13.
465 HUDSON TERM.	2.	1.	0.	0.	0.	0.	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	0.	7.
19 COLUMBUS CIR	3.	4.	0.	0.	4.	0.	0.	0.	7.	0.	0.	0.	0.	0.	0.	0.	0.	18.
85 47-50TH ST.	2.	4.	3.	0.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	14.
86 WEST 4TH ST	7.	7.	3.	1.	10.	0.	0.	0.	0.	3.	0.	0.	0.	0.	0.	0.	0.	31.
149 49TH 7TH AVE	0.	3.	2.	3.	0.	6.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	19.
152 28TH ST.	0.	0.	2.	0.	0.	8.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	16.
153 23RD BWAY	0.	6.	2.	6.	0.	16.	14.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	44.
185 63RD DRIVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
186 WOODHAVEN BL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
336 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.	0.	6.	7.	1.	0.	27.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	3.	1.	0.	0.	5.
431 BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	0.	0.	6.	0.	0.	10.
57 BEACH 60TH	1.	2.	0.	0.	0.	0.	0.	0.	7.	0.	0.	0.	0.	0.	0.	0.	0.	10.
61 MOTT AVE	1.	0.	0.	0.	0.	0.	0.	0.	8.	0.	0.	0.	0.	0.	0.	0.	0.	9.
222 VAN SICLEN	4.	2.	9.	2.	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.	19.
236 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290 ROCKAWAY PKY	0.	1.	0.	0.	0.	0.	0.	0.	0.	9.	0.	0.	0.	0.	0.	0.	0.	10.
128 25TH AVE.	0.	0.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.
129 BAY 50TH ST.	0.	0.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.
219 KINGS HWY F	2.	1.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.
220 AVE U	2.	0.	3.	1.	0.	0.	0.	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	10.
258 FLUSHING AVE	0.	4.	0.	0.	2.	8.	0.	0.	0.	5.	0.	0.	0.	0.	0.	0.	0.	19.
54 HOWARD BCH	2.	4.	0.	0.	0.	0.	0.	0.	19.	0.	0.	0.	0.	0.	0.	0.	0.	25.
95 PARKSIDE AVE	0.	2.	0.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.
96 CHURCH AVE	5.	4.	0.	0.	9.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	18.
97 BEVERLEY RD.	0.	0.	0.	0.	0.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.
130 AVE M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
102 AVE H	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
133 KINGS HWY D	3.	2.	0.	0.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10.
137 BRIGHTON BCH	4.	1.	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.
236 4TH AVE.	3.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.
110 CONEY ISLAND	8.	5.	6.	9.	16.	5.	0.	0.	0.	3.	0.	0.	0.	0.	0.	0.	0.	57.
939	73.	65.	61.	35.	74.	54.	31.	0.	45.	36.	1.	25.	3.	21.	20.	2.	0.	546.

TABLE F.8
IN-STATION DATA:
AVERAGE L_A FOR
DEPARTURES OF TRAINS THAT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
200 14TH ST	95.	97.	100.	102.	98.	0.	0.	0.	0.	98.	0.	0.	0.	0.	0.	0.	0.	99.
326 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	95.	95.	97.	0.	0.	0.	96.
16 86TH ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17 81ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
89 B'WAY-LAF.	95.	89.	96.	97.	91.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	93.
202 DELANCEY ST	93.	0.	95.	95.	0.	0.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	95.
204 YORK ST	97.	103.	99.	101.	0.	0.	0.	0.	0.	103.	0.	0.	0.	0.	0.	0.	0.	99.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	96.	100.	98.	96.	99.	100.	0.	98.
76 FORDHAM RD	93.	93.	0.	0.	98.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	93.
232 CLASSON AVE.	0.	0.	104.	109.	0.	0.	103.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	104.
445 HUDSON TERM.	92.	104.	0.	0.	0.	0.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	0.	97.
19 COLUMBUS CIR	93.	96.	0.	0.	97.	0.	0.	0.	95.	0.	0.	0.	0.	0.	0.	0.	0.	95.
45 47-50TH ST.	93.	94.	96.	0.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	96.
48 WEST 4TH ST	96.	97.	97.	103.	91.	0.	0.	0.	0.	100.	0.	0.	0.	0.	0.	0.	0.	98.
149 49TH 7TH AVE	0.	94.	97.	95.	0.	98.	94.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	96.
152 28TH ST.	0.	0.	89.	0.	0.	94.	94.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	93.
153 23RD BWAY	0.	94.	99.	97.	0.	98.	95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
185 63RD DRIVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
186 WOODHAVEN BL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
336 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.	0.	96.	96.	97.	0.	96.
424 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	91.	0.	93.	96.	0.	0.	93.
431 BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.	0.	0.	99.	0.	0.	99.
57 BEACH 90TH	81.	88.	0.	0.	0.	0.	0.	0.	84.	0.	0.	0.	0.	0.	0.	0.	0.	87.
61 MOTT AVE	83.	0.	0.	0.	0.	0.	0.	0.	85.	0.	0.	0.	0.	0.	0.	0.	0.	85.
222 VAN SICLEN	84.	91.	88.	92.	0.	0.	0.	0.	0.	93.	0.	0.	0.	0.	0.	0.	0.	88.
238 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290 ROCKAWAY PKY	0.	84.	0.	0.	0.	0.	0.	0.	0.	86.	0.	0.	0.	0.	0.	0.	0.	86.
128 25TH AVE.	0.	0.	0.	0.	89.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	89.
129 BAY 50TH ST.	0.	0.	0.	0.	88.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	88.
219 KINGS HWY F	91.	99.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	92.
220 AVE U	87.	0.	91.	96.	0.	0.	0.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	91.
234 FLUSHING AVE	0.	96.	0.	0.	98.	95.	0.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	95.
54 HOWARD BCH	92.	93.	0.	0.	0.	0.	0.	0.	93.	0.	0.	0.	0.	0.	0.	0.	0.	93.
95 PARKSIDE AVE	0.	69.	0.	0.	0.	80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	77.
96 CHURCH AVE	89.	92.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	92.
97 BEVERLEY RD.	0.	0.	0.	0.	0.	91.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	91.
130 AVE H	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
102 AVE M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
103 KINGS HWY D	88.	94.	0.	0.	92.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	91.
107 BRIGHTON BCH	83.	87.	0.	0.	88.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	86.
208 4TH AVE.	92.	0.	91.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	92.
110 CONEY ISLAND	81.	85.	86.	85.	86.	84.	0.	0.	0.	85.	0.	0.	0.	0.	0.	0.	0.	85.
999	91.	93.	94.	95.	92.	93.	96.	0.	91.	92.	96.	98.	97.	95.	98.	98.	0.	93.

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TABLE F.9
IN-STATION DATA:
PEAK L_A FOR
DEPARTURES OF TRAINS THAT STOP

	R44	R42	R43	R38	R32	P27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 P22	R17	A15	R12 R14	
253 14TH ST	96.	100.	101.	105.	99.	0.	0.	0.	0.	101.	0.	0.	0.	0.	0.	0.	0.	105.
328 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	95.	95.	98.	0.	0.	0.	98.
16 86TH ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17 81ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
49 BWAY-LAF.	95.	99.	97.	97.	91.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	99.
232 DELANCEY ST	97.	0.	96.	95.	0.	0.	0.	0.	0.	98.	0.	0.	0.	0.	0.	0.	0.	99.
234 YORK ST	107.	102.	104.	105.	0.	0.	0.	0.	0.	103.	0.	0.	0.	0.	0.	0.	0.	105.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	96.	105.	99.	103.	101.	100.	0.	105.
76 FORDHAM RD	97.	96.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	99.
232 CLASSON AVE.	0.	0.	104.	107.	0.	0.	105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	104.
485 HUDSON TERM.	97.	104.	0.	0.	0.	0.	0.	0.	101.	0.	0.	0.	0.	0.	0.	0.	0.	104.
19 COLUMBUS CIR	101.	100.	0.	0.	98.	0.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	101.
65 47-50TH ST.	96.	97.	101.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	103.
48 WEST 4TH ST	97.	104.	98.	103.	102.	0.	0.	0.	0.	104.	0.	0.	0.	0.	0.	0.	0.	104.
149 49TH 7TH AVE	0.	101.	101.	96.	0.	101.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	131.
152 28TH ST.	0.	0.	89.	0.	0.	97.	98.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
153 23RD BWAY	0.	101.	100.	105.	0.	107.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	105.
165 63RD DRIVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
186 WOODHAVEN BL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
338 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	99.	0.	97.	102.	97.	0.	102.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	91.	0.	94.	98.	0.	0.	96.
431 BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	107.	0.	0.	101.	0.	0.	107.
57 BEACH 60TH	81.	87.	0.	0.	0.	0.	0.	0.	92.	0.	0.	0.	0.	0.	0.	0.	0.	97.
61 NOTT AVE	83.	0.	0.	0.	0.	0.	0.	0.	90.	0.	0.	0.	0.	0.	0.	0.	0.	90.
222 VAN SICLEN	88.	94.	91.	92.	0.	0.	0.	0.	0.	95.	0.	0.	0.	0.	0.	0.	0.	95.
248 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290 ROCKAWAY PKY	0.	88.	0.	0.	0.	0.	0.	0.	0.	89.	0.	0.	0.	0.	0.	0.	0.	89.
128 25TH AVE.	0.	0.	0.	0.	95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	95.
129 BAY 50TH ST.	0.	0.	0.	0.	92.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	92.
219 KINGS HWY F	95.	99.	95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	99.
220 AVE U	87.	0.	93.	96.	0.	0.	0.	0.	0.	100.	0.	0.	0.	0.	0.	0.	0.	103.
258 FLUSHING AVE	0.	103.	0.	0.	99.	99.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	103.
56 HOWARD BCH	93.	94.	0.	0.	0.	0.	0.	0.	100.	0.	0.	0.	0.	0.	0.	0.	0.	100.
95 PARKSIDE AVE	0.	89.	0.	0.	0.	90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	90.
96 CHURCH AVE	95.	96.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
97 BEVERLEY RD.	0.	0.	0.	0.	0.	92.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	92.
100 AVE M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
102 AVE H	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
103 KINGS HWY D	93.	95.	0.	0.	97.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
107 BRIGHTON BCH	86.	87.	0.	0.	92.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	92.
208 4TH AVE.	94.	0.	91.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.
110 CONEY ISLAND	88.	89.	94.	94.	97.	97.	0.	0.	0.	90.	0.	0.	0.	0.	0.	0.	0.	97.
999	107.	104.	104.	107.	102.	102.	108.	0.	101.	104.	96.	105.	99.	103.	102.	100.	0.	104.

TABLE F.10
IN-STATION DATA:
RANGE OF L_A FOR
DEPARTURES OF TRAINS THAT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
200 14TH ST	2.53	2.00	1.00	6.00	3.50	0.0	0.0	0.0	0.0	5.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.50
328 S FERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	3.00	0.0	0.0	0.0	4.00
16 86TH ST CPW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 81ST CPW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
69 B'WAY-LAF.	0.0	17.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.00
332 DELANCEY ST	5.50	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	4.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.00
264 YORK ST	7.50	5.00	7.50	10.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.50
272 1ST AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
423 59 LEX AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.50	1.50	9.50	3.50	0.0	0.0	11.00
76 FORDHAM RD	4.50	6.00	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.50
232 CLASSON AVE.	0.0	0.0	0.0	3.50	0.0	0.0	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00
465 HUDSON TERM.	0.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.50
19 COLUMBUS CIR	11.50	10.30	0.0	0.0	2.50	0.0	0.0	0.0	9.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.50
85 47-50TH ST.	4.50	5.50	13.50	0.0	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.50
48 WEST 4TH ST	2.00	5.00	2.50	0.0	14.00	0.0	0.0	0.0	0.0	6.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.00
149 49TH 7TH AVE	0.0	6.50	8.00	3.00	0.0	5.50	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.50
152 28TH ST.	0.0	0.0	0.50	0.0	0.0	6.00	5.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.50
193 23RD BWAY	0.0	4.00	1.50	11.00	0.0	8.00	5.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.50
105 63RD DRIVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
166 WOODHAVEN BL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
336 ATLANTIC AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.50	0.0	4.00	7.00	0.0	0.0	9.50
429 36TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	0.0	0.0	0.0	5.00
431 BLEECKER ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.50	0.0	0.0	3.50	0.0	0.0	5.50
57 BEACH 60TH	0.0	1.50	0.0	0.0	0.0	0.0	0.0	0.0	9.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.00
91 [illegible] AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00
332 VAN SICLEN	6.00	6.00	5.00	1.30	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.00
208 [illegible] AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
243 ROCKAWAY PKY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00
120 [illegible] AVE.	0.0	0.0	0.0	0.0	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.30
129 BAY 50TH ST.	0.0	0.0	0.0	0.0	8.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.50
219 KINGS HWY F	6.50	0.0	4.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.50
220 AVE U	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	14.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.50
298 FLUSHING AVE	0.0	4.50	0.0	0.0	1.50	7.50	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.50
54 HOWARD BCH	1.00	7.00	0.0	0.0	0.0	0.0	0.0	0.0	15.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.50
95 PARKSIDE AVE	0.0	[illegible]	0.0	0.0	0.0	27.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.00
96 CHURCH AVE	17.50	7.40	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.50
97 BEVERLEY RD.	0.0	0.0	0.0	0.0	0.0	2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.50
130 AVE M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 AVE H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 KINGS HWY D	4.50	3.00	0.0	0.0	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.00
107 BRIGHTON BCH	5.00	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.00
268 9TH AVE.	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00
110 CONEY ISLAND	13.00	6.00	15.50	13.00	17.50	10.00	0.0	0.0	0.0	6.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.50
999	27.00	35.50	25.50	25.50	23.00	34.00	16.50	0.0	19.00	24.50	0.0	13.50	9.50	11.00	7.00	7.50	0.0	40.00

TABLE F. 11
IN-STATION DATA:
AVERAGE L_B FOR
DEPARTURES OF TRAINS THAT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
230 14TH ST	104.	138.	108.	110.	107.	0.	0.	0.	0.	108.	0.	0.	0.	0.	0.	0.	0.	107.
328 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	105.	108.	105.	0.	0.	0.	105.
16 86TH ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17 81ST CPW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
89 B'WAY-LAF.	105.	98.	105.	107.	101.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	107.
242 DELANCEY ST	101.	0.	104.	105.	0.	0.	0.	0.	0.	104.	0.	0.	0.	0.	0.	0.	0.	103.
204 YORK ST	106.	109.	108.	109.	0.	0.	0.	0.	0.	112.	0.	0.	0.	0.	0.	0.	0.	137.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	106.	108.	109.	106.	107.	109.	0.	107.
76 FORDHAM RD	99.	107.	0.	0.	106.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	102.
232 CLASSON AVE.	0.	0.	112.	113.	0.	0.	111.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	112.
485 HUDSON TERM.	100.	111.	0.	0.	0.	0.	0.	0.	105.	0.	0.	0.	0.	0.	0.	0.	0.	134.
19 COLUMBUS CIR	100.	131.	0.	0.	105.	0.	0.	0.	104.	0.	0.	0.	0.	0.	0.	0.	0.	103.
85 47-50TH ST.	101.	101.	105.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	101.
44 WEST 4TH ST	104.	107.	106.	108.	105.	0.	0.	0.	0.	107.	0.	0.	0.	0.	0.	0.	0.	136.
149 4TH 7TH AVE	0.	104.	104.	104.	0.	109.	103.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	104.
152 28TH ST.	0.	0.	98.	0.	0.	102.	102.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	102.
153 23RD BWAY	0.	106.	105.	105.	0.	106.	103.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	105.
165 63RD DRIVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
166 WOODHAVEN BL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
336 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	105.	0.	103.	103.	105.	0.	104.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	100.	0.	102.	103.	0.	0.	102.
431 BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	104.	0.	0.	108.	0.	0.	137.
57 BEACH 60TH	90.	96.	0.	0.	0.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	0.	95.
61 MOTT AVE	84.	0.	0.	0.	0.	0.	0.	0.	93.	0.	0.	0.	0.	0.	0.	0.	0.	92.
222 VAN SICLEN	93.	98.	95.	96.	0.	0.	0.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	95.
218 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290 ROCKAWAY PKY	0.	95.	0.	0.	0.	0.	0.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	94.
126 25TH AVE.	0.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	96.
129 BAY 50TH ST.	0.	0.	0.	0.	94.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.
219 KINGS HWY F	98.	105.	100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	100.
226 AVE U	95.	0.	98.	102.	0.	0.	0.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	98.
258 FLUSHING AVE	0.	104.	0.	0.	105.	104.	0.	0.	0.	102.	0.	0.	0.	0.	0.	0.	0.	104.
54 HOWARD BCH	99.	100.	0.	0.	0.	0.	0.	0.	100.	0.	0.	0.	0.	0.	0.	0.	0.	100.
95 PARKSIDE AVE	0.	90.	0.	0.	0.	89.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	87.
96 CHURCH AVE	95.	96.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
97 BEVERLEY RD.	0.	0.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	96.
100 AVE H	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
102 AVE M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
103 KINGS HWY D	96.	97.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
137 BRIGHTON BCH	96.	91.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
208 4TH AVE.	96.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
110 CONEY ISLAND	89.	93.	96.	92.	93.	94.	0.	0.	0.	90.	0.	0.	0.	0.	0.	0.	0.	92.
999	98.	101.	102.	103.	99.	101.	104.	0.	99.	100.	104.	105.	108.	104.	106.	107.	0.	101.

TABLE F.12
IN-STATION DATA:
AVERAGE NAE FOR
DEPARTURES OF TRAINS THAT STOP

		R44	R42	R40	P38	R32	P27 P30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R27	P17	R15	P12 R14	
230	14TH ST	0.000	0.001	0.001	0.001	0.001	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
328	S FERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.001	0.001	0.0	0.0	0.0	0.001
16	66TH ST CPW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	81ST CPW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89	B'WAY-LAF.	0.001	0.001	0.001	0.001	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
262	DELANCEY ST	0.000	0.0	0.000	0.001	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
204	YORK ST	0.001	0.002	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
272	1ST AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
423	59 LEX AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.001	0.001	0.001	0.001	0.001	0.0	0.001
76	FORDHAM RD	0.000	0.000	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
232	CLASSON AVE.	0.0	0.0	0.002	0.002	0.0	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.007
485	HUDSON TERM.	0.000	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
19	COLUMBUS CIR	0.001	0.000	0.0	0.0	0.001	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
45	47-50TH ST.	0.000	0.000	0.001	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
48	WEST 4TH ST	0.001	0.001	0.001	0.001	0.001	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
149	49TH 7TH AVE	0.0	0.001	0.001	0.000	0.0	0.001	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
152	28TH ST.	0.0	0.0	0.0	0.0	0.0	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
153	23RD BWAY	0.0	0.001	0.001	0.001	0.0	0.001	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
165	63RD DRIVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
166	WOODHAVEN BL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
336	ATLANTIC AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.000	0.000	0.001	0.0	0.000
429	14TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.000	0.000	0.0	0.0	0.000
431	BLEECKER ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.001	0.0	0.0	0.001
57	BEACH 98TH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
61	MOTT AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
222	VAN SICLEN	0.0	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
288	NEW LOTS AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
290	ROCKAWAY PKY	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	25TH AVE.	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
129	BAY 50TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
219	KINGS HWY F	0.000	0.001	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
226	AVE U	0.0	0.0	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
256	FLUSHING AVE	0.0	0.000	0.0	0.0	0.001	0.000	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
54	HOWARD BCH	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
95	PARKSIDE AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	CHURCH AVE	0.000	0.000	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
97	BEVERLEY RD.	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
130	AVE H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	AVE M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	KINGS HWY D	0.000	0.000	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
107	BRIGHTON BCH	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
208	4TH AVE.	0.000	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
110	CONEY ISLAND	0.0	0.0	0.000	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
999		0.000	0.001	0.001	0.001	0.000	0.000	0.001	0.0	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0	0.001

TABLE F.13
IN-STATION DATA:
NUMBER OF SAMPLES FOR
PASS-BYS OF TRAINS THAT DO NOT STOP

	R44	R42	R40	R38	R32	R27 R33	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
206 14TH ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
328 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16 86TH ST CPW	9.	10.	0.	0.	12.	0.	0.	0.	16.	0.	0.	0.	0.	0.	0.	0.	0.	47.
17 81ST CPW	7.	5.	0.	0.	6.	0.	0.	0.	10.	0.	0.	0.	0.	0.	0.	0.	0.	23.
69 ATLAV-LAF.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
202 DELANCEY ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
204 YORK ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
76 FORDHAM RD	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
232 CLASSON AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
465 HUDSON TERM.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19 COLUMBUS CIR	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85 47-50TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
56 WEST 4TH ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
149 49TH 7TH AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
152 28TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
153 23RD BWAY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185 63RD DRIVE	8.	2.	6.	4.	0.	0.	0.	0.	0.	5.	0.	0.	0.	0.	0.	0.	0.	25.
186 WOODHAVEN BL	4.	2.	18.	2.	0.	0.	0.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	32.
336 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431 BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
57 BEACH 60TH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61 MOTT AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
222 VAN SICLEN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
216 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290 ROCKAWAY PKY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
128 25TH AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
129 BAY 50TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
219 KINGS HWY F	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220 AVE U	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
258 FLUSHING AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	0.	0.	0.	0.	0.	0.	0.	3.
54 HOWARD BCH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95 PARKSIDE AVE	7.	5.	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.
96 CHURCH AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
97 BEVERLEY RD.	4.	4.	0.	0.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.
130 AVE M	3.	2.	0.	0.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10.
102 AVE P	4.	2.	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10.
103 KINGS HWY D	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
107 BRIGHTON BCH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
208 4TH AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110 CONEY ISLAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
999	37.	32.	25.	6.	33.	0.	0.	0.	27.	15.	0.	0.	0.	1.	0.	0.	0.	176.

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TABLE F.14
IN-STATION DATA:
AVERAGE L_A FOR
PASS-BYS OF TRAINS THAT DO NOT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
200 14TH ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
328 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16 86TH ST CPW	106.	112.	0.	0.	113.	0.	0.	0.	112.	0.	0.	0.	0.	0.	0.	0.	0.	111.
17 81ST CPW	108.	114.	0.	0.	112.	0.	0.	0.	109.	0.	0.	0.	0.	0.	0.	0.	0.	111.
49 B'WAY-LAF.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
202 DELANCEY ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
204 YORK ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
76 FORDHAM RD	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
232 CLASSON AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
485 HUDSON TERM.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19 COLUMBUS CIR	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85 47-50TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18 WEST 4TH ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
149 49TH 7TH AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
152 28TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
153 23RD BWAY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165 63RD DRIVE	99.	107.	107.	110.	0.	0.	0.	0.	0.	105.	0.	0.	0.	0.	0.	0.	0.	105.
100 WOODHAVEN BL	99.	108.	110.	115.	0.	0.	0.	0.	0.	105.	0.	0.	0.	0.	0.	0.	0.	108.
336 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431 BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
57 BEACH 60TH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61 MOTT AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
222 VAN SICLEN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
238 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290 ROCKAWAY PKY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
126 25TH AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
129 BAY 50TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
219 KINGS HWY F	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220 AVE U	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
256 FLUSHING AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	96.
54 HOWARD BCH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45 PARKSIDE AVE	87.	89.	0.	0.	90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	89.
96 CHURCH AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
97 BEVERLEY RD.	98.	99.	0.	0.	102.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	99.
130 AVE H	91.	95.	0.	0.	96.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	94.
102 AVE M	100.	107.	0.	0.	106.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	104.
103 KINGS HWY D	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
107 BRIGHTON BCH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
208 4TH AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110 CONEY ISLAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
599	99.	105.	108.	112.	107.	0.	0.	0.	110.	102.	0.	0.	0.	95.	0.	0.	0.	105.

TABLE F.15
IN-STATION DATA:
PEAK L$_A$ FOR
PASS-BYS OF TRAINS THAT DO NOT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
230 14TH ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
328 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16 86TH ST CPW	109.	119.	0.	0.	119.	0.	0.	0.	116.	0.	0.	0.	0.	0.	0.	0.	0.	119.
17 81ST CPW	111.	120.	0.	0.	114.	0.	0.	0.	113.	0.	0.	0.	0.	0.	0.	0.	0.	120.
69 B'WAY-LAF.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
202 DELANCEY ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
204 YORK ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
76 FORDHAM RD	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
232 CLASSON AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
485 HUDSON TERM.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19 COLUMBUS CIR	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85 47-50TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
98 WEST 4TH ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
149 49TH 7TH AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
152 28TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
153 23RD BWAY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165 63RD DRIVE	103.	109.	114.	113.	0.	0.	0.	0.	0.	112.	0.	0.	0.	0.	0.	0.	0.	114.
166 WOODHAVEN BL	105.	109.	114.	117.	0.	0.	0.	0.	0.	109.	0.	0.	0.	0.	0.	0.	0.	117.
336 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431 BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
57 BEACH 60TH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61 MOTT AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
222 VAN SICLEN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
236 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290 ROCKAWAY PKY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
128 25TH AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
129 BAY 50TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
219 KINGS HWY F	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
226 AVE U	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
258 FLUSHING AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.	0.	0.	0.	0.	0.	0.	0.	98.
56 HOWARD BCH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95 PARKSIDE AVE	89.	97.	0.	0.	90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.
96 CHURCH AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
97 BEVERLEY RD.	100.	103.	0.	0.	103.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	103.
130 AVE M	93.	101.	0.	0.	100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	101.
102 AVE P	102.	110.	0.	0.	109.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	110.
103 KINGS HWY D	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
107 BRIGHTON BCH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
208 4TH AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110 CONEY ISLAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
999	111.	122.	114.	117.	119.	0.	0.	0.	116.	112.	0.	0.	0.	95.	0.	0.	0.	120.

TABLE F. 16
IN-STATION DATA:
RANGE OF L_A FOR
PASS-BYS OF TRAINS THAT DO NOT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 R22	R17	R15	R12 R14	
200 14TH ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
328 S FERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 86TH ST CPW	12.00	14.50	0.0	0.0	9.00	0.0	0.0	0.0	13.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.50
17 81ST CPW	6.50	9.50	0.0	0.0	3.50	0.0	0.0	0.0	7.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.50
63 B'WAY-LAF.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
232 DELANCEY ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
204 YORK ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
272 1ST AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
423 59 LEX AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 FORDHAM RD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
237 CLASSON AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
465 HUDSON TERM.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 COLUMBUS CIR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65 47-50TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66 WEST 4TH ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
149 49TH 7TH AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152 28TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
153 23RD BWAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105 63RD DRIVE	10.00	0.50	12.00	5.50	0.0	0.0	0.0	0.0	0.0	11.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.00
186 WOODHAVEN BL	9.00	1.00	10.00	4.50	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.50
336 ATLANTIC AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
429 14TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
431 BLEECKER ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57 BEACH 60TH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
61 HOTT AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
222 VAN SICLEN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
248 NEW LOTS AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
290 ROCKAWAY PKY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128 25TH AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129 BAY 50TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
219 KINGS HWY F	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
220 AVE U	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
258 FLUSHING AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00
54 HOWARD BCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95 PARKSIDE AVE	4.00	12.50	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.50
96 CHURCH AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97 BEVERLEY RD.	2.50	3.50	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.50
130 AVE H	6.00	10.50	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.50
162 AVE M	7.00	6.00	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.50
163 KINGS HWY D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167 BRIGHTON BCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
208 4TH AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110 CONEY ISLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
999	27.00	36.00	21.00	10.00	29.50	0.0	0.0	0.0	38.00	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.00

TABLE F.17
IN-STATION DATA:
AVERAGE L_B FOR
PASS-BYS OF TRAINS THAT DO NOT STOP

	R44	R42	R40	R38	R32	R27 R30	R16	R11	R10	R1-9	R36	R33 R29	R26 R28	R21 P22	R17	R15	R12 R14	
233 14TH ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
328 S FERRY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16 86TH ST CPW	115.	120.	0.	0.	122.	0.	0.	0.	121.	0.	0.	0.	0.	0.	0.	0.	0.	120.
17 81ST CPW	115.	121.	0.	0.	121.	0.	0.	0.	119.	0.	0.	0.	0.	0.	0.	0.	0.	119.
39 B'WAY-LAF.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
202 DELANCEY ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
204 YORK ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
272 1ST AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
423 59 LEX AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
76 FORDHAM RD	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
232 CLASSON AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
405 HUDSON TERM.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19 COLUMBUS CIR	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65 47-50TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
48 WEST 4TH ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
144 49TH 7TH AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
152 28TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
153 2ND BWAY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185 63RD DRIVE	107.	115.	116.	117.	0.	0.	0.	0.	0.	112.	0.	0.	0.	0.	0.	0.	0.	112.
186 WOODHAVEN BL	107.	117.	118.	121.	0.	0.	0.	0.	0.	114.	0.	0.	0.	0.	0.	0.	0.	116.
336 ATLANTIC AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
429 14TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431 BLEECKER ST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
57 BEACH 90TH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61 MOTT AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
222 VAN SICLEN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
288 NEW LOTS AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
296 ROCKAWAY PKY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
126 25TH AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
129 BAY 50TH ST.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
219 KINGS HWY B	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220 AVE U	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
258 FLUSHING AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	106.	0.	0.	0.	0.	0.	0.	0.	106.
54 HOWARD BCH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95 PARKSIDE AVE	98.	97.	0.	0.	99.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	98.
96 CHURCH AVE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
97 BEVERLEY RD.	106.	108.	0.	0.	111.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	108.
100 AVE H	99.	102.	0.	0.	106.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	103.
102 AVE M	110.	112.	0.	0.	114.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	112.
103 KINGS HWY D	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
107 BRIGHTON BCH.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
208 4TH AVE.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110 CONEY ISLAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
999	108.	113.	117.	113.	116.	0.	0.	0.	119.	111.	0.	0.	0.	102.	0.	0.	0.	114.

TABLE F.18
IN-STATION DATA:
AVERAGE NAE FOR
PASS-BYS OF TRAINS THAT DO NOT STOP

	R44	R42	R40	R38	R32	F27 R30	R16	R11	R10	R1-9	R34	R33 R29	F26 R28	F21 R22	R17	R15	R12 R14	
230 14TH ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
328 S FERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 60TH ST CPW	0.005	0.038	0.0	0.0	0.010	0.0	0.0	0.0	0.009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.008
17 81ST CPW	0.003	0.009	0.0	0.0	0.009	0.0	0.0	0.0	0.007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.007
39 PKWY-LAF.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
202 DELANCEY ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
204 YORK ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
272 1ST AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
423 59 LEX AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 FORDHAM RD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
232 CLASSON AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
485 HUDSON TERM.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 COLUMBUS CIR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45 47-50TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 WEST 4TH ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
146 45TH 7TH AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152 60TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
153 23RD BWAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
185 63RD DRIVE	0.001	0.033	0.005	0.004	0.0	0.0	0.0	0.0	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.003
186 WOODHAVEN BL	0.001	0.005	0.005	0.008	0.0	0.0	0.0	0.0	0.0	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.005
336 ATLANTIC AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
429 14TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
431 BLEECKER ST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57 BEACH 90TH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
61 MOTT AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
222 VAN SICLEN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
288 NEW LOTS AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240 ROCKAWAY PKY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128 25TH AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129 BAY 50TH ST.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
219 KINGS HWY F	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
220 AVE U	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
258 FLUSHING AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
54 HOWARD BCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95 PARKSIDE AVE	0.0	0.030	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
96 CHURCH AVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97 BEVERLEY RD.	0.001	0.031	0.0	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
100 AVE H	0.000	0.030	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
132 AVE M	0.002	0.032	0.0	0.0	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.002
133 KINGS HWY D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137 BRIGHTON BCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
206 4TH AVE.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110 CONEY ISLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
999	0.002	0.005	0.005	0.005	0.006	0.0	0.0	0.0	0.008	0.002	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.005

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APPENDIX G

IN-TRAIN HOT SPOTS: SUBWAY TANGENT SECTIONS

This appendix contains tabulations of in-train hot spot analysis on subway tangent sections, cited in Chapter Six. There are thirteen tables.

The primary index of a hot-spot in this context is the quantity Δ: The difference in the L_R of the purported hot-spot link and the average L_R of eight of its neighbors (four upstream and four downstream).

TABLE G .1 - HOT SPOT AT 59th ST. - 125th ST.

Model	DBA	Duration	LR	LR Neighbors	Δ
R10 (A)	102	175	125.9	118.1	+ 7.8
R10 (A)	98	322	123.1	114.6	+ 8.5
R44 (A)	77	16	98.0	93.5	+ 4.5
R44 (D)	82	41	106.3	97	+ 9.3
R44 (D)	81	38.5	102.0	94.9	+ 7.1
R32 (D)	102	184	125.2	114.8	+10.4

TABLE G .2 - HOT SPOT AT 4th ST. - 34th ST.

Model	DBA	Duration	LR	LR Neighbors	Δ
R44 (D)	94	12.5	105.7	97.8	+ 7.9
R44 (D)	85	97.5	104.9	96.3	+ 8.6
R32 (D)	102.5	29.0	118.6	109.2	+ 9.4
R32 (D)	105	41.0	123.4	114.6	+ 8.8

TABLE G .3 - HOT SPOT AT HIGH ST. -B'DWY. NASSAU

Model	DBA	Duration	LR	LR Neighbors	Δ
R10 (A)	110.5	47.0	127.2	118.6	+ 8.5
R10 (A)	106.0	59.0	124.1	112.9	+11.2
R44 (A)	78.0	91.0	98.2	93.5	+ 4.7

TABLE G .4 - HOT SPOT AT 7th AVE. -PROSPECT PK.

Model	DBA	Duration	LR	LR Neighbors	Δ
R44 (D)	82	109.5	102.4	98.1	+ 4.3
R44 (D)	79	50	99.1	95.3	+ 3.8
R32 (D)	97	89	116.5	108	+ 8.5
R27 (M)	87.5	73	110.7	103.3	+ 7.4

TABLE G.5 - HOT SPOT AT WALL ST. - CLARK ST.

Model	DBA	Duration	LR	LR Neighbors	Δ
R21 (2)	97	21.5	112.0	110	+ 2.0
R12 (3)	103	76.5	122.7	114.5	+ 8.2
R12 (3)	100	34.5	118.8	114.2	+ 4.6
R29 (3)	97	27.5	111.4	112.5	- 1.1
R29 (3)	99.5	35.5	119.1	112.5	+ 6.6
R29 (2)	106	39.5	125.4	115.6	+ 9.8
R15 (2)	94	60	111.8	109.4	+ 2.4
R22 (2)	96	88	117.2	111	+ 6.2

TABLE G.6 - HOT SPOT AT 86TH ST. - 125TH ST.

Model	DBA	Duration	LR	LR Neighbors	Δ
R26 (4)	103	37	118.7	111.9	+ 6.8
R29 (4)	100	25	119.5	111.9	+ 7.6
R21 (4)	105	32	121.2	114.6	+ 6.6
R21 (4)	95.5	44.5	112.0	114.7	+ 2.7
R17 (5)	99	53	119.2	113	+ 6.2
R21 (5)	99.5	35	119.2	113.6	+ 5.6
R17 (5)	100	34	116.5	110	+ 6.5

TABLE G .7 - HOT SPOT AT BOWLING GREEN - BORO HALL

Model	DBA	Duration	LR	LR Neighbors	Δ
R17 (4)	94	128	116.8	107	+ 9.8
R21 (4)	98	130	120.6	109	+11.6
R17 (4)	107.5	63.5	125.5	111	+14.5
R17 (4)	101.5	59	119.9	108	+11.9
R21 (4)	104.5	69	123.8	110	+13.8
R21 (4)	102	58.5	121.6	110	+11.6
R26 (5)	103	39	119.9	109	+10.9

TABLE G.8 - HOT SPOT AT JACKSON HEIGHTS - FOREST HILLS

Model	DBA	Duration	LR	LR Neighbors	Δ
R44 (F)	80	22	99.7	96.2	+ 3.5
R44 (F)	82	56	104.4	98.8	+ 5.6
R40 (F)	95	43	117.5	110.6	+ 6.9
R40 (F)	97	44	118.6	114.1	+ 4.5
R40 (E)	93	198	116.0	108.6	+ 7.4
R40 (E)	97	77	119.3	110.6	+ 8.7

TABLE G.9 - HOT SPOT AT W. 4th ST. - B'DWY. LAFAYETTE

Model	DBA	Duration	LR	LR Neighbors	Δ
R42 (B)	88	96	107.8	105.5	+ 2.3
R42 (B)	93	12	110.0	109.4	+ 0.6
R32 (B)	97.5	26	113.6	111.4	+ 1.2
R32 (B)	97	69	115.4	112	+ 3.4
R44 (D)	92	7.0	104.6	99	+ 5.6
R32 (D)	98.5	19.0	114.3	109.2	+ 5.1
R32 (D)	103	31	119.9	115	+ 4.9

TABLE G.10 - HOT SPOT AT JACKSON HEIGHTS - QUEENS PLAZA

Model	DBA	Duration	LR	LR Neighbors	Δ
R44 (F)	78	21	100.7	95.8	+ 4.9
R44 (F)	82	20	103.4	98.2	+ 5.2
R40 (F)	92.5	84	115.3	109.6	+ 5.7
R40 (F)	99	52.5	118.5	112.8	+ 5.7
R40 (E)	93	104	113.2	108.8	+ 4.4
R40 (E)	91.5	66	109.7	110.9	+ 1.2

TABLE G .11 - HOT SPOT AT 23rd ELY - LEXINGTON AVE.

Model	DBA	Duration	LR	LR Neighbors	Δ
R44 (F)	78	99	100.1	96.4	+ 3.7
R44 (F)	84	67	102.3	97.9	+ 4.4
R40 (F)	95	84	114.2	109.4	+ 4.8
R40 (F)	99.5	62	118.4	110.8	+ 7.6
R40 (E)	96	82	115.1	108	+ 7.1
R40 (E)	96	55	113.4	108	+ 5.4

TABLE G .12 - HOT SPOT AT CHAMBERS ST. - 14th ST.

Model	DBA	Duration	LR	LR Neighbors	Δ
R12 (3)	100.5	109	121.4	115.3	+ 6.1
R12 (3)	105.5	47	125.0	118.2	+ 6.8
R29 (3)	99.5	24	120.0	112.3	+ 7.7
R21 (2)	99.5	119	120.3	113.4	+ 6.9
R15 (2)	99	8	112.0	109.9	+ 2.1
R22 (2)	98	117	118.7	113.5	+ 5.2
R29 (2)	105.5	56.5	126.3	118.8	+ 7.5
R29 (3)	102	117	122.7	116.4	+ 5.3

TABLE G .13 - 155th St. - 161st ST.

Model	DBA	Duration	LR	LR Neighbors	Δ
R32 (D)	104.5	45	121.0	116.9	+ 4.1
R44 (D)	84.0	49	100.9	98.6	+ 1.4
R44 (D)	75.0	115	95.6	95.4	+ 0.2
R32 (D)	102.0	24	117.7	115.2	+ 2.5

APPENDIX H

CONTINUATION OF CAR CONDITION OBSERVATIONS RECORDED DURING IN-TRAIN RUNS

Table H.1 shows the various car conditions observed during the in-train runs. It is a continuation of Table 3.4.

TABLE H.1
CAR CONDITIONS FOR IN-TRAIN DATA.
CONTINUED FROM TABLE 3.4

				WINDOWS	DOORS	FANS	AIR CONDITIONER	AVE. NO. OF PASS.
#4	R21	Atlantic Ave.	Woodlawn Rd.	1	1	1		17
	R21	Woodlawn Rd.	Atlantic Ave.	1	1	1		24
	R26	Atlantic Ave.	Woodlawn Rd.	1	1	1		18
	R29	Woodlawn Rd.	Atlantic Ave.	1	1	1		26
#5	R17	Atlantic Ave.	Dyre Ave.	1	1	1		27
	R21	Dyra Ave.	Atlantic Ave.	1	1	1		13
	R17	Atlantic Ave.	Dyre Ave.	1	1	1		16
	R17	Dyre Ave.	Atlantic Ave.	1	1	1		12
#6	R27	Brooklyn Bridge	E. 177 St.	1	1	1		31
	R17	E. 177 St.	Brooklyn Bridge	1	1	1		19
	R29	Brooklyn Bridge	E. 177 St.	1	1	1		NA
	R29	E. 177 St.	Brooklyn Bridge	1	1	1		NA
#7	R36	Times Square	Main St.	1	11 12	1		38
	R36	Main St.	Times Square	1	1	2		14
	R36	Times Square	Main St.	1	1	1		16
	R36	Main St.	Times Square	1	1	1		45
Staten Island	R44	St. George	Tottenville	2	2		1	4
	R44	Tottenville	St. George	2	2		1	4
	R44	St. George	Tottenville	2	2		2	4
	R44	Tottenvill	St. George	2	2		1	4

TABLE H.1 (CONT.)

				WINDOWS	DOORS	FANS	AIR CONDITIONER	AVE. NO. OF PASS.
F	R44	Coney Island	179 St.	2	2		1	NA
	R44	179 St.	Coney Island	2	2		1	NA
EE	R38	Whitehall St.	Forest Hills	1	1	1		16
	R38	Forest Hills	Whitehall St.	1	1	1		10
	R40	Whitehall St.	Forest Hills	2	2		1	13
	R40	Forest Hills	Whitehall St.	2	2		1	13
GG	R16	Smith-9 St.	Forest Hills	1	11 12	1		10
	R16	Forest Hills	Smith-9 St.	1	1	1		14
	R40	Smith-9 St.	Forest Hills	2	1,2		1	17
	R40	Forest Hills	Smith-9 St.	2	1,2		2	10
J	R27	Broad St.	168 St.	2	11 12	1		13
	R27	168 St.	Broad St.	2	2	1		19
	R42	Broad St.	168 St.	2	2		1	10
	R42	168 St.	Broad St.	2	2		1	12
LL	R9	Rockaway Pk.	8th Ave.	1	1	1		18
	R9	8th Ave.	Rockaway Pk.	1	1	1		34
	R42	Rockaway Pk.	8th Ave.	2	2		1	17
	R42	8th Ave.	Rockaway Pk.	2	2		1	12
M	R27	Coney Island	Metropolitan Ave.	2	2	1		14
	R27	Metropolitan	Coney Island	2	2	1		7
	R42	Coney Island	Metropolitan Ave.	2	2		1	13
	R42	Metropolitan	Coney Island	2	2		1	9

TABLE H.1 (CONT.)

				WINDOWS	DOORS	FANS	AIR CONDITIONER	AVE. NO. OF PASS.
N	R38	Coney Island	57 St.	1	11 12		1	36
	R38	57 St.	Coney Island	1	11 12		1	55
	R42	Coney Island	57 St.	2	2		1	14
	R42	57 St.	Coney Island	2	2		1	34
RR	R27	95 St.	Ditmars Blvd.	1	1	1		14
	R27	Ditmars Blvd.	95 St.	1	1	1		17
	R42	95 St.	Ditmars Blvd.	2	2		1	15
	R42	Ditmars Blvd.	95 St.	2	2		1	33
#1	R12	So. Ferry	Van Cortlandt	1	1	1		19
	R12	Van Cortlandt	So. Ferry	2	1	1		25
	R36	So. Ferry	Van Cortlandt	1	1	1		23
	R36	Van Cortlandt	So. Ferry	1	2	1		17
#2	R22	New Lots Ave.	241 St.	1	1	1		17
	R29	241 St.	New Lots Ave.	1	1	1		23
	R15	New Lots Ave.	241 St.	1	1	1		18
	R21	241 St.	New Lots Ave.	1	1	1		25
#3	R29	Lenox TRM	Flatbush Ave.	1	1	1		19
	R29	Flatbush Ave.	Lenox TRM	1	1	1		19
	R12	Lenox TRM	Flatbush Ave.	1	1	1		20
	R12	Flatbush Ave.	Lenox TRM	1	1	1		18

APPENDIX I
DERIVATION OF NOISE ACCUMULATION ESTIMATE (NAE)

The Occupational Safety and Health Act of 1970, as currently administered by the U.S. Department of Labor (OSHA), includes (as an aspect of National fair labor standards) a provision that no employee should be exposed to a steady noise level greater than 90 dBA for an entire eight hour work day. It also provides a tradeoff formula for levels higher than 90 dBA such that each increment of 5 dBA in loudness level requires a reduction of exposure time by half, up to a level of 115 dBA which may not be exceeded for any length of time. The criterion to be satisfied for a varying noise environment can be stated as

$$\sum_{n=1}^{5} \frac{C_n}{T_n} = D \leq 1$$

where

D is the cumulative daily noise dose

C_n is the duration of exposure in the n^{th} band (hours)

T_n is $8/2^{n-1}$ (hours)

and the nth band is (85 + 5n, 90 + 5n).

The currently proposed OSHA criteria permits continuously varying noise to be treated. The expression for dosage becomes

$$D(t)=1/8 \int_0^t 2^{\{L(\tau) - 90\}/5} d\tau \qquad (I.1)$$

where only $L(t) \geq 90$ is considered, $L(t)$ being the time varying A-weighted sound pressure level.

If a noise distribution which is a straight line on a strip chart recording is assumed:

$$L(t) = L_{MAX} - \alpha t \qquad (I.2)$$

and if α is then defined in terms of T_5 (the duration 5 dBA down from the peak), one obtains

$$\alpha = \frac{5}{T_5} \qquad (I.3)$$

The integral in Equation I.1 can then be evaluated, using as the limiting value of t, that value corresponding to $L(t) = 90$:

$$t = \frac{L_{MAX}-90}{\alpha} = \frac{L_{MAX}-90}{5} \times T_5 \qquad (I.4)$$

Then, with a little manipulation, one obtains

$$D = \frac{1.44\ T_5}{28800} \quad [2^{(L_{MAX}-90)/5} - 1] \qquad \text{(I.5.A)}$$

where the denominator 28800 is equal to eight hours expressed in seconds, in order to make use of T_5 in units of seconds.

If one assumes that the L(t) curve is flat at the top, and then drops very steeply at the sides, such as in a plateau configuration, then an alternative result is

$$D = \frac{T_5}{28800} \times 2^{(L_{MAX}-90)/5} \qquad \text{(I.5.B)}$$

Equations I.5.A and I.5.B represent two limiting cases, with values for parabolic shapes falling in between. It should be noted that the two expressions are equal when $L_{(MAX)}$ is equal to about 98 dBA. Above 98 dBA equation I.5.A gives a somewhat larger value, approaching a ratio factor of 1.40 at 115 dBA.

These formulas were used in connection with the L_A(MAX) and T_5 data collected in the course of the project. On most of the data, equation I.5.A was more applicable, so that quantity is shown in the last column of the in-train noise characteristic listings of Appendix D and Table 3.3. Appropriate tables are also contained in Appendix F for the in-station data.

It is recognized that the above procedures for determining exposure are estimates, and are not equivalent to carrying a dosimeter in the relevant exposed noise sites. For this reason the calculated values of D were called "Noise Accumulation Estimates" (NAE). One should note that these estimates are not suitable for regulatory purposes. Despite that shortcoming, they are likely to be quite useful for system assessment and planning purposes.

It is interesting to note that an exposure estimator can also be based on the EPA recommended criteria for "levels of environmental noise requisite to protect public health and welfare with an adequate margin of safety" *. In this case if one adopts 70 dBA as the lower integration limit, and 3 dBA as the increment for doubling or halving exposure time, one obtains the modified definition

$$D = 1/8 \int_0^{t^*} 2^{(L(\tau)-70)/3}\, d\tau \quad ; \quad t^* = t(L>70)$$

For a straightline distribution of L(t), this becomes

$$D = \frac{0.87\ T_5}{28800} \times \quad [2^{(L_{MAX}-70)/3} - 1] \qquad \text{(I.6)}$$

* "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety."U.S. Environmetal Protection Agency-Office of Noise Abatement and Control, March, 1974.

It is seen that equation I.6 results in much larger values of D. On the other hand, the ISO R1999 dosimeter specification with its 90 dBA lower cutoff limit results in the expression

$$D = \frac{0.87\ T_5}{28800} \times [2^{(L_{MAX}-90)/3}-1] \qquad (I.7)$$

which is intermediate in severity between I.5.A and I.6.

APPENDIX J
TRACK MILEAGE DISTRIBUTION OF IN-TRAIN SOUND LEVELS

In Section 3.3.d of the text, it was noted that it would be desirable to consider histogram frequencies in terms of noise level bands versus number of track miles instead of versus number of links. Although the data, as collected, depends on the time, it is possible to make an estimate of the noise levels averaged over the track mileage. This estimation procedure assumes the validity of the experimentally observed relationship between the A-weighted sound pressure level L_A measured in the interior and in the exterior field of a railroad car moving at speed V

$$L_A - L_0 = 10 \log \left(\frac{V}{V_0}\right)^3 \qquad (J.1)$$

where L_0 and V_0 are reference values. This type of dependence is to be seen in the data given by R.R. Lewis.* Equation J.1 is equivalent to

$$\overline{P_A^{\,2}} = P_0^2 \left(\frac{V^3}{V_0^3}\right) \qquad (J.2)$$

where $P_A^{\,2}$ is the A-weighted pressure square, and the bar indicates a short time average such as would be read on a standard sound level meter.

If the variation of V with the traversed distance s is known then one can calculate a mean squared pressure averaged with respect to distance:

$$\left(\overline{P_A^{\,2}}\right)_{AVG} = \frac{P_0^2}{L} \int_0^L \left(\frac{V(s)}{V_0}\right)^3 ds \qquad (J.3)$$

The average value of L_A for the link distance L is then

$$L_A(AVG) = L_A(Ref) + 10 \log \frac{1}{L} \int_0^L \left(\frac{V(s)}{V_0}\right)^3 ds \qquad (J.4)$$

One can relate this equation to the collected data by choosing $L_A(MAX)$ and corresponding V_M as the reference values of L_A and velocity:

$$L_A(AVG) = L_A(MAX) + 10 \log \frac{1}{L} \int_0^L \left(\frac{V(s)}{V_M}\right)^3 ds \qquad (J.5)$$

It might appear at this point that one is no better off than before, because recorded velocity data does not exist. However, one can show that some varied choices of train velocity profiles results in a rather limited

* Lewis, R. R., "Basic Transportation Motor Characteristics and 600 Volt Power Circuits." Presented to the Institute of Electrical and Electronic Engineers (IEEE) New York Section, Land Transportation-Educational Program.

range of variation of the level correction. In addition, note that Equation J.5 is in a very convenient form in that the sought-for average is expressed in terms of the $L_A(MAX)$ data which is available on punch cards, and a correction which is expressible in decibels.

The most extreme type of velocity profile, resulting in the largest correction increment is probably to be obtained by maintaining a constant maximum vehicle acceleration from condition of rest up to maximum velocity, followed by a constant deceleration, a, to rest. One can consider just one leg, because the correction would be the same for each leg. Then one can write for the velocity

$$V(s) = \sqrt{2as} \quad ; V_M = \sqrt{2aL} \tag{J.6}$$

and obtain

$$\left(\frac{V(s)}{V_M}\right)^3 = \left(\frac{s}{L}\right)^{3/2}$$

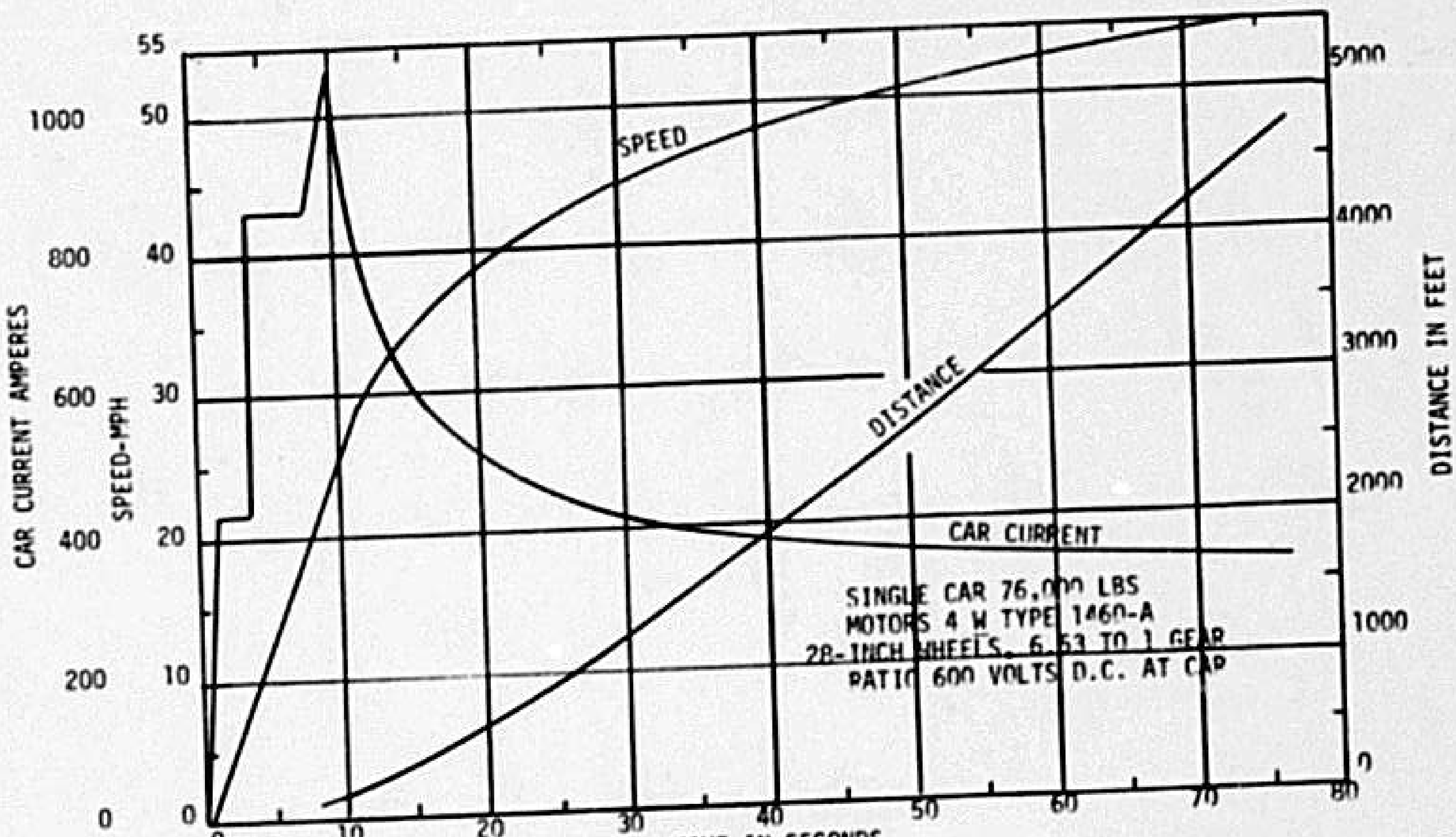
and

$$L_A(AVG) = L_A(MAX) - 4 \text{ dB}$$

A speed profile such as considered to be reasonable by vehicle propulsion system designers is reproduced in Figure J.1. This results in a correction term of less then 2 dB over a 2 mile link.

Long links will be seen to result in flatter velocity curves and hence smaller corrections, whereas short links should tend to produce larger corrections from the maximum. In the NYCTA one may consider as an arbitrary (though reasonable) compromise

$$L_A(AVG) = L_A(MAX) - 3 \text{ dBA} \tag{J.7}$$



SOURCE: REFERENCE 9

FIGURE J.1
A SPEED PROFILE FOR A
RAPID TRANSIT CAR/TRAIN

APPENDIX K

AN ANALYSIS OF VARIABILITY IN NOISE LEVEL: POSITION IN TRAIN OR CAR CONDITION?

Consider that Model W has a characteristic noise level μ_W dBA. However, car condition contributes to some variation from this characteristic level. When a particular car is randomly selected, <u>its</u> characteristic level is a random variable X, with mean μ_W and standard deviation σ_W.

Note that the particular level X is caused by the specific car's condition, which is not observed as part of the selection process. Therefore, X looks random -- and is, for all practical purposes.

If there are two cars selected, the first has a mean characteristic level X_1, and the second has a mean characteristic level X_2. Both are drawn from a population with μ_W and σ_W, and they are drawn independently.

The difference in the two, $D \stackrel{\Delta}{=} X_1 - X_2$, has mean zero and standard deviation $\sigma_D = \sigma_W \sqrt{2}$.

Under the hypothesis that this postulated mechanism is true, consider the 21 difference data points in Figure 3.7, which is addressed in Section 3.3.e of the text. For simplicity, ignore the fact that two car models are involved.

Using the data, one may find

$$\bar{D} = -0.039$$

$$S_D = \hat{\sigma}_D = 2.631$$

and accept a hypothesis that $\mu_D = 0$ by executing a t-test at a level of significance $\alpha = 0.05$.

From this one may say that

- the data does not allow the variation due to position to be uncovered, if such a variation exists; the variation due to car condition would be too large.
- an estimate of the standard deviation due to such car condition is $\sigma_W = \sigma_D / \sqrt{2} = 1.86$ dBA. The estimate is based upon limited data, and has a 95% confidence internal from 1.04 to 1.97 dBA.

Clearly, car condition can be a substantial factor and can mask some other effects -- if they exist. To resolve the question of variability due to position in train, a special train in which comparable car condition is assured by physical inspection would be recommended.

To be precise, "car condition" as used above should really read "variability among cars of the same model, due to cause or causes unknown." However, logic and physical considerations dictate that the primary cause is car condition.

APPENDIX L

A SUMMARY OF THE

IN-COMMUNITY NOISE MEASUREMENTS

This appendix contains a summary of the in-community noise measurements done at 30 sites. Table L.1 is a listing of the sites, with the measurement distance, community type, and route type specified. The vertical microphone positions complied with the specifications in the text of this report. Table L.2 is a summary of the data and includes: the number of samples, type of models observed, mean L_A(MAX) observed, and the range of L_A(MAX) observed.

This data is the basis for the values shown in Table 5.3 of the text. The data was normalized to 50 feet by use of Reference 6, aggregated by land use, checked for logical consistency among route types, and used to generate those estimates. It is recognized that the variabilities in this data make the community noise characterization less precise than that for in-train or in-station. However, it is sufficient for the cost and abatement estimation of the project at hand. A more precise characterization, recognizing subcategories in land use (e.g. building configurations, etc.) and train speed and condition, is discussed in the text.

TABLE L.1

LISTING OF COMMUNITY SITES

FOR NOISE MEASUREMENT

SITE CODE	LOCATION	DISTANCE (METERS)	COMMUNITY TYPE	ROUTE TYPE
1	Caton Ave.& St.Paul's Place	25	A	3
2	Marlborough Rd.& Ditmas Ave.	25	A	3
3	Wellington Ct.& Brighton Line	23	A	4
4	East 16 Bet. Aves. X and Y	25	A	5
5	East 16 and Moore Ave.	25	D	5
6	East 15 Bet. Aves. X and Y	35	A	5
7	Brighton 1st Rd.& Brighton Bch.Ave.	25	B	1
9	McDonald Ave.& Ave. W.	39	C	1
10	64th St. & 6th Ave.	44	C	3
11	62nd St. Bet. Fort Hamilton Pkwy. and 9th Ave.	25	C	3
13	Railroad Ave. & Fingerboard Rd.	25	C	5
14	So. Railroad Ave.& Evergreen Ave.	25	A	5
15	Jefferson St. & Seaver Ave.	25	A	5
16	No. Railroad Ave.& Bancroft Ave.	25	A	3
17	So. Railroad Ave.& Princeton Ave.	25	A	4
18	Bay St.& Swan St.	25	C	4
19	86th St. Bet. 18th & 20th Ave.	7.5	B	1
29	W. 7th St. & Ave. V	3	A	3
30	1752-1854 W. 7th St.	1.5	B	3
31	13th Ave. & 61 St.	45	C	3
32	1248 62nd St.Bet.12 & 13 Ave.	12.5	A	3
33	Opposite Shea Stadium	29	D	1
35	Roosevelt Ave. & Britton Ave.	70	A	1

TABLE L.1 (Cont)

SITE CODE	LOCATION	DISTANCE (METERS)	COMMUNITY TYPE	ROUTE TYPE
36	44th St. & Queens Blvd.	40	B	2
39	Matthews Ave.Bet. Neill and Brady Ave.	20	A	5
40	2572 Bouck Ave.& Dyre Ave.Line	9	B	5
41	1454 Hammerally Ave.Bet. Fenton and Eastchester	20	A	3
42	3152 Kingsland Ave. & Dyre Ave. Line	18	A	3
43	3222 Gunther Ave. & Dyre Ave. Line	40	A	5
44	Boston Ave. & Boller Road Dyre Ave.	15	D	5

COMMUNITY TYPES:

A	Residential
B	Public Spaces
C	Retail
D	Comm/Ind.
E	Other

ROUTE TYPES:

1	Elevated, Steel
2	Elevated, Concrete
3	Open Cut
4	Grade
5	Embankment

TABLE L.2

SUMMARY OF MEASUREMENTS

AT COMMUNITY SITES

SITE	CAR MODELS	NO. OF OBSERV.	MEAN L_A(MAX) (AT 50 FT.)	RANGE L_A(MAX) (dBA)
1	R44	2	84	6
	R42, R32	7	87	8
2	R44	3	77	4
	R42, R32	9	78	8
3	R42, R27	6	90	5
4	R42, R32, R27	8	87	4
5	R42, R32, R27	8	92	4
6	R42, R32, R27	10	88	8
7	R42, R27	6	102	6
9	R44	5	90	9
	R42, R40	3	92	10
10	R42, R38, R32	9	82	6
11	R42, R38, R32	11	76	10
13	R44	5	76	7
14	R44	5	79	2
15	R44	5	75	6
16	R44	5	70	5
17	R44	5	76	2
18	R44	5	82	2
19	R42, R32	6	91	6
29	R32	5	69	1
30	R32	5	68	5

TABLE L.2 (Cont)

SITE	CAR MODELS	NO. OF OBSERV.	MEAN L_A(MAX) (AT 50 FT.)	RANGE L_A(MAX) (dBA)
31	R9, R27, R38, R42	12	87	10
32	R42, R38, R32	9	80	5
33	R36, R11	8	85	16
35	R36, R29	8	87	2
36	R36, R29	11	83	11
39	R29, R22, R17	12	76	12
40	R29, R17	6	88	11
41	R29, R22	6	75	7
42	R29, R22, R9	10	76	7
43	R29, R22, R17	10	84	15
44	R29, R22	7	86	14

*U.S. GOVERNMENT PRINTING OFFICE: 1979—600-700/298