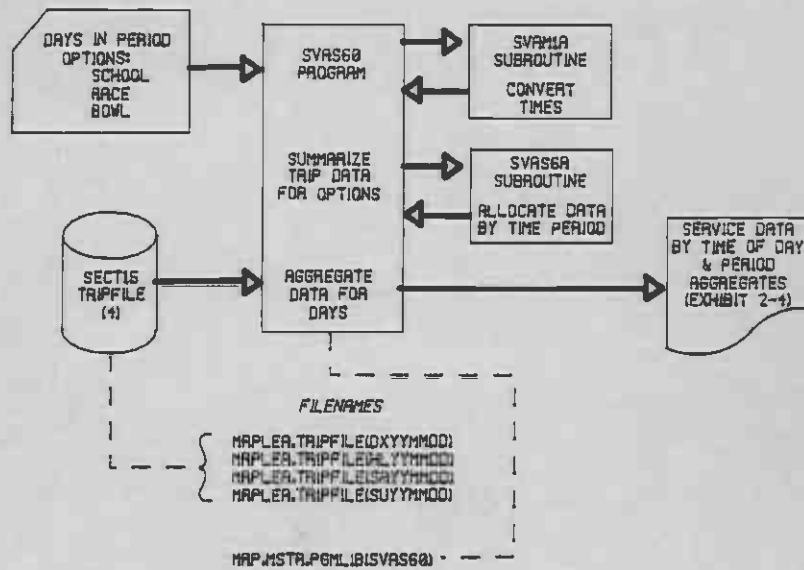


TRANSIT SYSTEM SURVEILLANCE REPORT

VOLUME 1

RIDE CHECK PROCESSING SYSTEM



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JANUARY, 1987

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TRANSIT SYSTEM SURVEILLANCE REPORT

VOLUME 1

RIDE CHECK PROCESSING SYSTEM

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
PLANNING DEPARTMENT
PLANNING SYSTEMS SECTION
SERVICE ANALYSIS GROUP

January, 1987

FORWARD

Since the writing of this report, significant changes in the ride check data collection methodologies have taken place. Starting around June 1986, the ride check data are being collected using hand-held data collection devices (HHD) instead of paper and pencil method. This has somewhat altered the coding and keypunching phase of the ride check processing.

In the near future, a revised edition of this report will be issued which will highlight the changes brought about by HHD procedures. The revised edition will also describe a new software package that has been developed to analyze the Consolidated Transit Service Policies (CTSP) using the ride check database.

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EXECUTIVE SUMMARY

Limitations on funding and growing demands for transit necessitate that transit operators utilize a service evaluation system that can accurately measure service performance. Transit operators are being held more accountable for their performance, thus, an increased interest in and awareness of service evaluation methods has evolved. Also, UMTA Section 15 reporting requirements have further encouraged transit properties to collect the data necessary to evaluate transit services.

For the reasons stated above, increasing numbers of transit operators are utilizing systematic evaluation procedures to collect and evaluate data. There is a pressing need for the availability of pertinent data related to service performance due to the uncertainty of present and future funding constraints (i.e., the recent end of the Proposition A Fare Reduction Program or the impact of the Federal Budget on Transit). The quality of transportation planning and decision making is highly dependent upon the availability and adequacy of statistical data. The availability of a comprehensive database allows transit operators to answer questions such as:

- How many vehicles are deployed during the various periods of the day?
- How many vehicle hours of service are provided each day?
- How many vehicle miles does the fleet travel daily?
- How much revenue is generated per day?
- How much does it cost to operate the system each day?
- What is the patronage on the system and individual transit lines?
- Which are the most productive and least productive lines?
- Which lines are overcrowded?
- What would be the impact of service modification, or fare change or both on the system ridership?
- Is the service provided equitable?

The SCRTD Planning Department maintains a comprehensive database and a set of computer programs to address these issues. The database is utilized to carry out day-to-day planning and scheduling activities and to provide the necessary input to satisfy the local, state and federal reporting requirements.

This report describes the various data collection, data processing and analytical procedures employed by the Planning Department to maintain this database.

The report consists of three volumes, namely:

VOLUME 1: Ride Check Processing System

VOLUME 2: Ride Check Technical Appendices

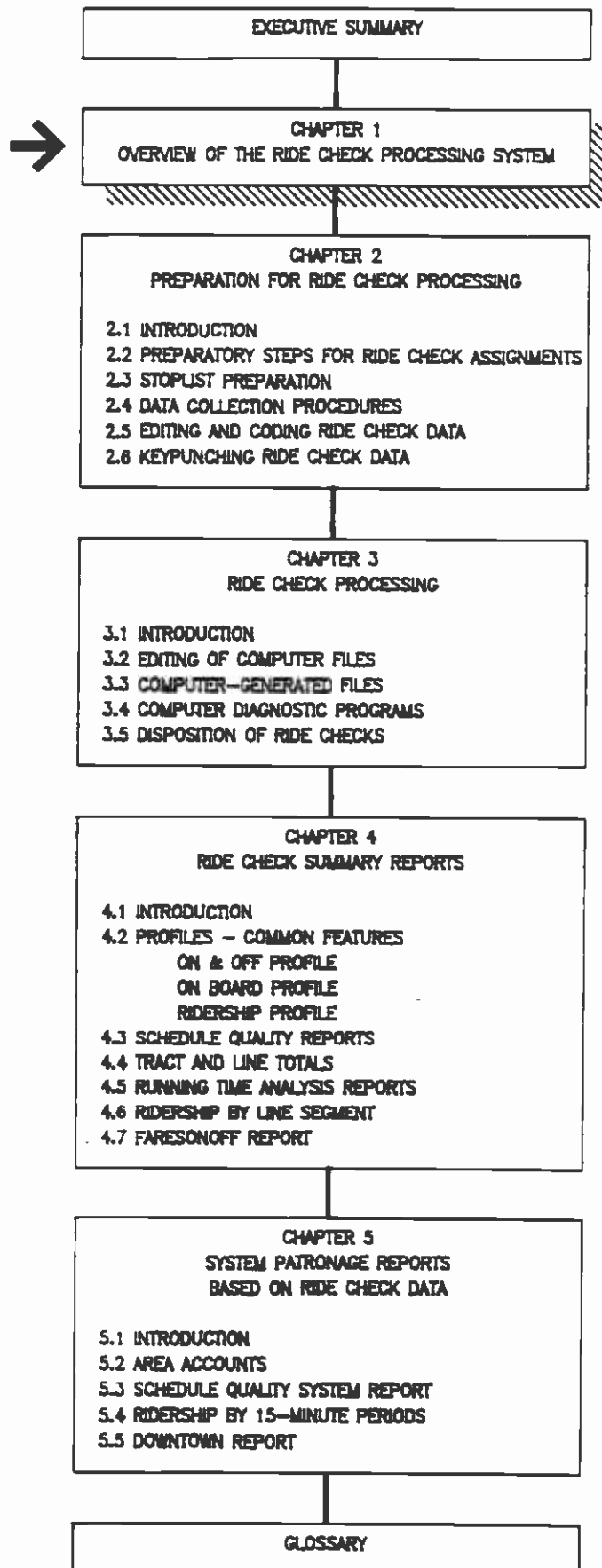
VOLUME 3: Ride Check Database Applications

Volume 1 is a narrative report intended to provide a basic description of the ride check system. Chapter 1 of this volume provides a general overview of the ride check processing system. It describes its origin, the primary departments involved in collecting, processing and analyzing the ride check data and its general operation. Chapter 2 of this volume describes the preparatory steps undertaken prior to conducting a ride check, data collection procedures, and editing, coding and keypunching of ride check data. Chapter 3 of this volume describes the sequence of steps that are undertaken in editing and processing the raw ride check data. A brief description of computer generated data files is also included. Chapter 4 provides a description of summary reports that are produced as the ride check data are processed. These reports are essentially line-level reports; that is, they provide information about the operating characteristics of a specific line. Data contained within these reports pertain to riding characteristics, such as, passengers on/off on-board by stop, types of fares paid by stop, boarding characteristics aggregated to the tract level, etc. A report is also generated reflecting how well the line adheres to printed schedules. Chapter 5 describes the systemwide reports generated using the ride check database. Unlike reports described in Chapter 4 which pertain to a specific line, reports in this chapter present systemwide riding characteristics. Some of these reports pertain to riding characteristics summarized at various levels of geographic aggregation, for example, Planning Sectors, Cities, Supervisorial Districts, Councilman Districts, etc; while other reports summarize riding characteristics by 15 minute time intervals. A report reflecting the efficiency of service provided (Schedule Quality System Report) is also generated. This report presents load factors and standee ratios by time-of-day. A Glossary is included at the end which describes various technical terms used throughout this volume.

Volume 2 provides technical support for the entire document. This volume will be of use to data processing professionals who wish to develop special application software which uses the ride check database. Chapter 1 of this volume provides detailed flowcharts of the steps involved in preparing, processing, and creating summary reports for each ride check. Chapter 2 provides instructions on command procedures (CLIST) used to execute various computer programs that are used for ride check processing. Data Entry Panels and instructions on data entry are provided. Descriptions of the input file and parameters, output files and reports are also included in this chapter. Chapter 3 provides detailed file descriptions and record layouts for all permanent files created or used by the ride check processing system.

Volume 3 is a compendium of technical papers, originally prepared by the firm of Megadyne to document the procedures used in preparing the Section 15 Non-Financial Data, Title VI, and Line Performance Trends Reporting. These reports are generated using the ride check database described in Volume 2. To the extent feasible, the original style and contents of these technical papers have been retained. Minor revisions to these reports have been made to accommodate the current processing activities on the IBM computing system. Part 1 of this volume describes the methodologies used in the preparation of Service Supplied Statistics as reported on lines 1 through 7 of Form 406. The discussion primarily focuses on methodologies used in estimating the number of buses in operation, and total actual and scheduled vehicle miles and vehicle hours of service provided on an average weekday, Saturday and Sunday. Part 2 of this volume describes the methodologies used in estimating Service Consumed Statistics. These numbers are reported on lines 12 and 13 of Form 406. Fare Sampling Technique in use at the District to estimate Unlinked Passenger Trips and Passengers Miles on an average weekday, Saturday and Sunday is described in detail in this part. Also included in this part is a description of the methodology used in completing Forms 005, 006 and 403 for Section 15 Reporting. The Form 005 is used for reporting the characteristics of Fixed Guideway Segments. The Form 006 is used for reporting Section 9 Statistics Summary where data pertaining to Directional Route Miles, Actual Vehicle Revenue Miles, Passenger Miles and Operating Expenses are provided for Fixed and Non-Fixed Guideway Segments. The Form 403 is used for reporting Transit Way Mileage Schedule. Part 3 of this volume provides a narrative on methodologies and data sources used in completing other Section 15 Non-Financial Data Items, such as, Maximum Service Vehicles Summary Schedule (Form 003), Transit System Service Period Schedule (Form 401), Revenue Vehicle Maintenance Performance and Energy Consumption Schedule (Form 402), Transit System Employee Count Schedule (Form 404), Transit System Accidents Schedule (Form 405), Service Personnel and Service Operated Schedule (Form 406) and Revenue Vehicle Inventory Schedule (Form 408). Part 4 of this volume provides a description of the methodologies used in Title VI Reporting. Documentation on the various computer programs that are executed to generate information on SCRTD Equipment Roster, Characteristics of Buses Assigned to Minority vs. Non-Minority Bus Lines, Load Factor Analysis and Equity Issues are included in this part. Finally, part 5 of this volume provides a description of the methodologies used in Line Performance Trends Reporting. These reports are produced using the ride check database described in Volume 2. Some of the information contained in these reports pertains to issues such as Line Operating Cost, Line Usage, Line Revenue and Line Productivity. Documentation on the various computer programs that are utilized for generating these reports is included.

VOLUME I



CHAPTER 1

OVERVIEW OF THE RIDE CHECK PROCESSING SYSTEM

This chapter provides a general overview of the Ride Check Processing System. It describes its origin, the primary departments involved in collecting, processing and analyzing the ride check data, and its general operation. In this and subsequent chapters, technical terms, as they are encountered, have been described as a series of footnotes. A Master Glossary can be found at the end of this volume.

1.1 ORIGIN OF THE SCRTD RIDE CHECK PROCESSING SYSTEM

The Ride Check¹ Processing System was implemented as a part of the Service Evaluation Program that the SCRTD Board of Directors adopted in 1975. The purpose of the Service Evaluation Program was to "maintain the maximum overall effectiveness in the use of public funds by intensifying the examination of its operations on a line-by-line basis -- to find the under-utilized resources which can be shifted to other services offering greater potential."

Subsequent to the adoption of this policy was the creation of a software package with the capability to track and analyze data related to service performance on each bus line that SCRTD operated.

The database² consists of more than 400 currently processed ride checks. Regular updates occur as new ridership data become available.

1.1.1 FUNCTION OF RIDE CHECKS

Ride Checks provide a complete count of boarding and alighting passengers and types of fares paid at every stop on a given transit line. Ride Check information is used to identify overcrowded conditions or the under-utilization of line capacity and to measure schedule adherence. Fare mix data are used in studies of specific bus lines or service sectors.

¹Ride Check - A ride check is a process by which data are collected on actual in-service bus operations. A full ride check is conducted by assigning schedule checkers to every trip on a bus line from start to end of service. The schedule checkers collect information on boardings, alightings, fares paid by type, location of activity, scheduled and actual times at time points, vehicle numbers, seating capacity, weather, and notes about the trip's operation.

Schedule Checker - The schedule checker is an employee who conducts riding checks, point checks, or related work in the Scheduling Department for purpose of determining patronage characteristics and schedule adherence.

Time Point - The time point refers to a bus stop described by headings on the Basic Operating Schedule. Every line has scheduled times that each bus should depart from the bus stops.

²Database - The database is a large collection of data in a computer.

1.1.2 DEPARTMENT RESPONSIBILITIES

At the inception of the ride check program, the Scheduling Department had been the primary focus of service evaluation activities. However, the SCRTD Planning Department has had primary responsibility for service evaluation for the past several years. In addition, the Service Analysis Group was transferred from the Scheduling Department to the Planning Systems Section of the Planning Department in FY 84. This section is responsible for the Ride Check Processing System.

The Planning and Scheduling departments work together, however, to ensure that the database of processed ride checks is current and accurate. The Scheduling Department is responsible for scheduling ride checks, setting priorities for ride checks, and collecting and keypunching³ the ride check data. The Planning Department is responsible for generating the ride check survey form for the lines to be checked, editing the forms after the data are collected, and transferring the data onto the computer after they have been keypunched. After the data have been entered onto the computer, various summary reports can be generated which provide statistics related to service performance. (These department responsibilities are further delineated in subsequent chapters).

1.2 SATISFYING THE DEMAND FOR CURRENT DATA

Service Analysis presently maintains a database of processed ride checks on about 400 current weekday, Saturday and Sunday lines operated by the District. These data are continually aging and, without replacement, will average one month older after each month. Replacement with newer data to maintain the current average age requires a certain level of staff, facilities and computer resources. Maintaining a lower average age would require an increased level of resources.

Recent experience has shown that a 50% reduction in the average age of data requires a 100% increase in staff and computer terminals.

Early in 1983, the District embarked upon a large scale checking program to improve the age of the database. Prior to this program, the average weekday check was about 12 months old. After the end of this program, the average age had fallen to less than six months. This improvement required doubling the staff of schedule checkers, data technicians and data entry personnel. If this level of staffing had been maintained, the average age of the weekday database would have stabilized at approximately 6-7 months. Since then, however, the original pre-1983 level of staffing was resumed and the average age has slowly deteriorated to its previous level of over 12 months.

Other factors also affect the age of ride check data. With a given level of staffing and machine resources, the minimum possible average age would be reached by always following the policy of replacing the oldest line checks with new check data. But this is not generally the most prudent procedure to follow. Instead, data are most frequently collected on those

³Keypunch - keypunch is the process of recording data on a magnetic medium.

lines where new data are needed -- volatile lines, new lines, lines to be rescheduled, etc. Frequent checks are not usually necessary on lines that tend to be very stable and show little change from year to year. Also, a different type of check, the "point check",⁴ can be a very effective and a low cost substitute for the full ride check on demand headway⁵ lines. However, point check data are not added to the ride check database, and thus, do not effect the age of the ride check database.

The age of Saturday and Sunday (weekend) data poses some special problems. First, there are fewer days available for collecting weekend data. There are only 52 days available per year to collect data on Saturday lines compared to the 255 days available for weekday data collection. The problem is further compounded by a smaller schedule checker force available for duty on weekends due to a Union requirement that schedule checkers be offered Saturdays and Sundays as the largest fraction of their available days off. Even if the full regular checking force could be used to do weekend checks, it would take more than a year to collect data on all weekend lines operated by the District.

There are means other than the traditional ones described above to satisfy the increasing demands for current and accurate information.

The first of these is the Automatic Data Collection System (ADCS), which was installed and was operating on the 20-21-22-320-322 line (Wilshire), the 14-37 line (Beverly/Adams), the 200 line (Alvarado) and the 217 line (Fairfax/Hollywood). Collectively, these four lines represented over 100,000 daily boardings or about 7-8% of the system total. On these lines, ADCS collected all the information obtained by an on-board riding check (except type of fare) such as boardings, alightings, location, on-time performance, bus run, vehicle type, time-of-day, passenger miles, passenger hours, etc.

Other than a small staff, occupied part-time for routine maintenance, the data collected by this type of system require no schedule checkers, data technicians, data entry or supervisory staff, thus reducing turnaround time for completed reports to a minimum. As a demonstration project, ADCS has been completed. Its function is being redefined as part of the Transit Radio System (TRS) project, which is currently in the acquisition process.

⁴Point Check - A point check is a survey made of all bus lines operating through a single point, usually a bus stop. Schedule checkers conducting a point check collect data on schedule adherence and passenger activity.

⁵Demand Headway - Headway is the average time scheduled between two or more consecutive trips on a segment of a bus line. Demand headway lines are those lines where headway is determined by the actual demand for service, that is, number of passengers desiring to board that line.

A second means of addressing the current and accurate information objective is the "sample ride check". This technique changes the procedures used in data collection and results in a savings of schedule checker and data entry staff. The technique involves checking a small segment of every bus trip and sampling about 30% of the remaining full length trips on the line. All information that would normally be obtained in a "full ride check" can then be estimated using the "sample ride check".⁶

A third means of addressing the current and accurate information objective is the hand-held data recorder, a device which enables the schedule checker to collect and transmit ride check data directly onto a computer-readable magnetic medium. This eliminates the need for coding and keypunching the data recorded on paper forms. Using these devices, one can expect: (1) faster turnaround time from date of check to completed reports and (2) a reduction in data entry costs.

To summarize: (1) The Service Analysis Section maintains a large ride check database; (2) improving the age of the database with conventional methods requires increased levels of resources; (3) age of the previous ride check is not the sole criterion when scheduling the next ride check on a line; (4) new technology may offer improved data collection capabilities.

⁶The District is currently in the process of undertaking a special study which will examine and evaluate shortcut methods for refreshing the existing ride checks.

⁷Starting around June 1986, the District has been employing hand-held data recorders for ride check data collection.

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CHAPTER 2

PREPARATION FOR RIDE CHECK DATA COLLECTION AND RIDE CHECK DATA PROCESSING

2.0 INTRODUCTION

Preliminary steps must be undertaken by both the Planning and Scheduling Departments prior to the actual ride check data collection and subsequent processing of the ride check data. As mentioned in Chapter 1, these steps include setting priorities for ride checks, scheduling ride checks, preparing stop lists¹, generating ride check forms, collecting the data, preprocessing or coding the data, and keypunching the data.

This chapter describes the aforementioned steps. Expanded flowcharts are included at the beginning of each section in this chapter.

2.1 PREPARATORY STEPS FOR RIDE CHECK ASSIGNMENTS

The sequence of stops involved prior to a ride check is summarized in Exhibit 2-1. The following subsections provide additional details:

2.1.1 DEPARTMENT RESPONSIBILITIES

The Scheduling and Planning departments are responsible for setting priorities for ride checks, scheduling the ride checks, providing manpower to perform the ride checks, and keypunching the ride check data.

2.1.2 SETTING PRIORITIES FOR RIDE CHECKS

To initiate the ride check process, schedule checking supervisors estimate the number of checkers who will be available during the week in which the checks will take place. The pool of manpower includes 33 regular checkers, 9 traffic loaders² and about 50 operators who also serve as extra checkers. Depending upon the number of extra checkers available, the checker force varies in size from day-to-day.

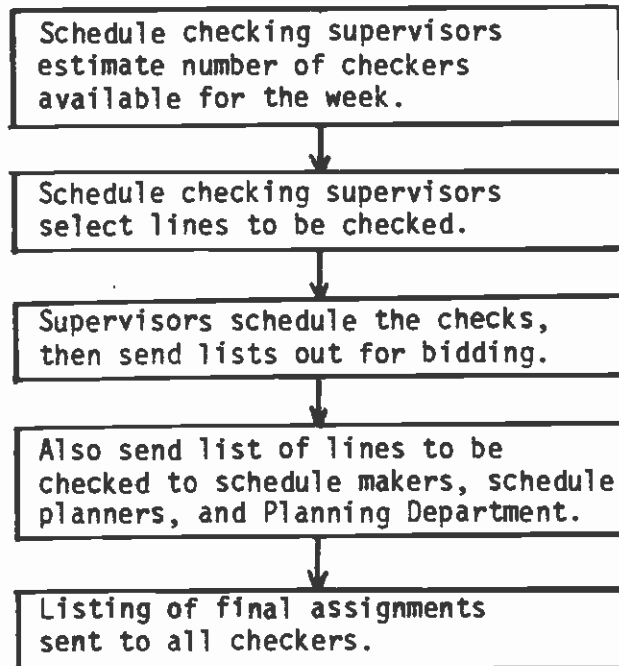
In the absence of special requests from bus planners or schedule makers for ride checks on specific bus lines, the schedule checking supervisors routinely select lines to be checked. They first select those bus lines with the most outdated ride check data. There are various exceptions to this rule -- lines which have experienced recent major schedule changes or

¹Stop List - A stop list is a logical list of bus stops encountered on a line, and any comments associated with it. The stop list is used to generate riding check forms.

²Traffic Loader - Traffic loaders assist passengers at a stop where there is a large number of boardings.

EXHIBIT 2-1

PREPARATORY STEPS FOR RIDE CHECK ASSIGNMENTS



scheduled for imminent changes are not checked until a more appropriate time. Lines with heavy ridership are not checked during unusual weeks, such as the week before Christmas. Lines with school trips are not surveyed during school holidays. Lines with heavy beach patronage are not checked during the summer season. For such lines, point checks are conducted to supplement the data for scheduling purpose.

Weekday, Saturday and Sunday schedules differ substantially on most bus lines. The three schedules are treated as independent categories of bus lines so that a given line's weekday and weekend ride checks might be conducted during different weeks. Traffic loaders and most regular checkers are not available for weekend work. In addition, there are five times as many manhours available on weekdays than on Saturdays or Sundays (i.e., five weekdays for every Saturday or Sunday). As a result, weekday checks are more current than weekend checks. Recently, line regulators³ have been added to the ranks of regular checkers available for weekend checks (there is no regulating on weekends), resulting in a pool of checkers available for a weekend day approximately equal to that for a weekday. Both line regulators and traffic loaders are ex-operators, who for health reasons, could not continue driving a bus. They are recommended by their union and their managers for ride check work. As ex-operators, they have a knowledge of the fare structure and the characteristics of the lines on which they work.

2.1.3 SCHEDULING OF CHECKS

Given the manpower limitations and the priorities discussed above, a list of lines to be checked during a single week is compiled. A schedule checking supervisor (or a checker whom he supervises) cuts the lists into assignments which are sent out for bidding. Assignment cutting takes about four days. Since ride checks often include small pieces of work (such as trippers), cutting assignments can be like fitting a jigsaw puzzle. A well-cut group of assignments minimizes the amount of travel and waiting time for checkers, making the most efficient use of manpower. All assignments must also consider union rules and state laws regarding travel, rest time and overtime. This is especially true for extra checkers who often get the night work not chosen from the bid list. They must have eight hours off between their checking and next driving assignment. In order to maximize processing efficiency, assignments are pre-cut for lines likely to be scheduled. These are revised after the ride checks are scheduled because they must reflect the most current temporary schedule and work run deviations as reported in pink letters⁴.

³Line Regulator - A line regulator monitors the schedule adherence of buses at a designated point on a bus line, and may give bus operators instructions which temporarily override the Basic Operating Schedule. Line regulators report their observations and instructions daily so that regulation techniques may be analyzed for maximum effectiveness.

⁴Pink Letters - A pink letter is a document printed on pink stock which specifies temporary schedule and work run deviations.

There are a few additional constraints in cutting assignments. Park 'n' Ride lines are not usually assigned on Mondays or Fridays, when their ridership tends to be appreciably lower. A check on those days would be less likely to result in an accurate record of conditions. Heavy ridership lines with a large number of bus runs (Lines 20, 30, 204, 420, 424) involve so much manpower that a ride check may take two days to complete (Saturday or Sunday checks for Line 20 must also be done over two consecutive weekends). Two of these heavy lines are almost never checked during the same weekend.

The schedule checker supervisors use the number of assignments on each line and data on schedule changes to make estimates of manpower requirements for a ride check. The assignments are listed on a weekly bid sheet, which is sent to available regular checkers, traffic loaders and line regulators. Members of these groups bid for the assignments on the basis of seniority. Regular checkers are on the top of the list, with intra-departmental seniority determining their exact rank order (as specified by union rules). Traffic loaders and line regulators are next in line.

If a checker calls in sick, the missed assignment is not always rescheduled. If an assignment involves a line with short headways, boardings for each missed trip can be estimated by taking an average of the boardings for the trip's leader and follower. (Because each trip's boardings on short headways are extremely sensitive to its leader, this is deemed as more accurate than checking the line on another day.)

A list of lines chosen for ride and point checks is sent to the schedule makers, schedule planners and selected personnel in Planning and other departments (see Exhibit 2-2) about two weeks before the checks take place. In very rare instances, feedback from recipients will cause the cancellation or substitution of a check (e.g., a check is cancelled because the line's schedule is due for a change).

On Thursday before the week in which the checks are to take place, a listing of each checker's assignment is sent to every available checker (see Exhibit 2-3). The listing allows the checkers themselves to confirm that seniority rules were followed. It also repeats where and when the assignments are to start and end, and what connections, if any, are to be made between buses. Ride check sheets for the checker's own assignments accompany the list. Extra checkers and line regulators are also sent paddles⁵ for the bus runs⁶ they are to ride. Regular checkers and traffic

⁵Paddles - A paddle is the printed schedule of a specific bus run.

⁶Bus Run - A bus run is the assignment for one vehicle for one day. It is a two-digit number associated with one line number. A bus run may provide service on a second, or foreign, line for part of the day. Two or more operators may be assigned to one bus run at different times of the day, just as one operator may be assigned to two bus runs at different times.

EXHIBIT 2-2
SCHEDULE CHECKING PROGRAM

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

SCHEDULING CHECKING PROGRAM FOR WEEK COMMENCING SUNDAY 8-10-86

1 OF 5

DAY & DATE	LINE NO.	TYPE OF	CHECKING POINT	HOURS	
				FROM	TO
<u>SUNDAY</u> <u>8-10-86</u>					
10247	ALL	TIME CHECK	BROADWAY - FIRST NORTH & SOUTH BROADWAY - OLYMPIC NORTH & SOUTH	9:00A	8:00P
	210	RIDING	PASS-ON-OFF-TIME FARES & R/T NOTES	PARTIAL NIGHTS	
<u>MONDAY</u> <u>8-11-86</u>					
	146	RIDING	PASS-ON-OFF-TIME FARES & R/T NOTES	OPEN	CLOSE
	176	RIDING	PASS-ON-OFF-TIME FARES & R/T NOTES	OPEN	CLOSE
10248	40	POINT	KING & VERMONT	EAST WEST	6:00A 2:00P 11:00A 6:20P
10249	40-45-46	POINT	BROADWAY & JEFFERSON	NORTH SOUTH	6:00A 2:00P 11:00A 6:00P
10250	40-45-56	POINT	BROADWAY & WASHINGTON	SOUTH	6:00A 12:00P 9:00A 6:00P
10251	81	POINT	FIGUEROA & WASHINGTON	NORTH SOUTH	6:00A 2:00P 11:00A 6:20P
10252	81-84-85	POINT	FIGUEROA & AVE. 26	SOUTH NORTH	6:00A 2:00P 11:00A 6:20P
10253	90-91-94	POINT	SAN FERNANDO RD. & FLETCHER	WEST EAST	5:25A 6:00A 7:00P 11:00A 2:00P 6:00P
10254	94	POINT	SAN FERNANDO RD. & LOS FELIZ		2:00P 7:00P
10255	83	POINT	D&LY & BROADWAY	SOUTH NORTH	6:00A 2:00P 11:00A 6:40P

**EXHIBIT 2-3
SCHEDULE CHECKER ASSIGNMENTS**

DAY SUNDAY Record All Pull-Outs & Pull-In Time & DIH Off Route Travel Time DATE 12/30/84

TRAVEL	REG	Assign. No.	Line No.	Sign On	Sign Off	B. R. No.	LOCATION	Type of Check
46.6		1	560	6:20 _A	2:19 _P	3	ON ELDRIDGE - TERRABELLA 6:20A OFF SAME	PASS. ON-OFF TIMES ARES-R.T. NOTES
39.4		2	560	6:47 _A	3:56 _P	4	ON DIV 15 7:02A OFF VANNUYS - GLENDAKS 3:50P DIH CEA TO DIV 15	"
46.6		3	560	6:40 _A	2:32 _P	6	ON ELDRIDGE - TERRABELLA 6:50A OFF SAME	"
2.5	43.0	4	560	7:07 _A	12:47 _P	10	ON DIV 15 7:22A OFF ELDRIDGE - TERRABELLA 12:40P DIH CEA TO DIV 15	"
			560	2:20 _P	5:17 _P	3	ON ELDRIDGE - TERRABELLA 2:30P OFF SAME	"
46.6		5	560	7:20 _A	4:17 _P	1	ON ELDRIDGE - TERRABELLA 7:30A OFF SAME	"
39.4		6	560	7:27 _A	2:03 _P	8	ON DIV 15 7:42A OFF VANNUYS - GLENDAKS 1:57P DIH CEA TO DIV 15	"
39.4		7	560	7:27 _A	2:52 _P	5	ON DIV 15 7:42A OFF VANNUYS - GLENDAKS 2:46P DIH CEA TO DIV 15	"
193.2		8	560	7:40 _A	11:32 _A	9	ON ELDRIDGE - TERRABELLA 7:50A OFF SAME	"
			560	2:40 _P	6:37 _P	6	ON ELDRIDGE - TERRABELLA 2:50P OFF SAME	"
139.4		9	560	7:47 _A	4:56 _P	7	ON DIV 15 8:02A OFF VANNUYS - GLENDAKS 4:50P DIH CEA TO DIV 15	"
132.4		10	560	8:18 _A	1:19 _P	2	ON VENTURA - SEPULVEDA 8:28A (E) OFF SAME	"
→			150 422	4:26 _P	6:20 _P	—	VENTURA + SEPULVEDA SN EAST	ARK PAS. EAST COMP CASH WEST

loaders do not need the information provided on the paddles since they routinely receive and file line summary updates for each bus line in the system.

2.2 STOP LIST PREPARATION

The sequence of steps involved in stop list preparation is shown in Exhibit 2-4. The following narrative provides additional details:

The Planning Department is responsible for preparing stop lists for the lines to be checked, generating ride check forms for the schedule checkers, editing and coding the ride check data, and entering the data into the computer. The Service Analysis Group in the Planning Department maintains a computerized ride check tracking system called SASCONTROL⁷. Shortly before the list of ride and point checks is distributed, an informal list of the ride checks is sent to the Planning Department's Service Analysis group. The Data Technicians within the Service Analysis Group generate stop lists printouts of the lines to be checked. They also compare the stop lists with various sources to ensure accuracy. These sources are: Basic Operating Schedule⁸ (BOS), Pink Letters, Service Numbers⁹, Point-to-Point Mileage¹⁰, Fare Structure¹¹, and Bus Stops by Census Tract¹².

After the corrections to the stop list have been entered via the computer and a job¹³ is executed that uses the stop list as an input file and outputs a ride check stop list for each direction of the line being checked.

⁷SASCONTROL - SASCONTROL is a computer file which contains a record of every riding check ever made, and is used to monitor processing activities and to make historical comparisons.

⁸Basic Operating Schedule - Basic Operating Schedule is a document produced by the Scheduling Department which shows all departures, arrivals, time points, and off-route operations for every trip on a bus line.

⁹Service Numbers - Different service patterns occurring on a line are numbered from 1-20 in each direction.

¹⁰Mileage Point - A mileage point is a stop which is a known distance from the beginning of the line, as determined by the Mileage Section and supplementary measurements. Mileage points are established such that intermediate stops are approximately equidistant.

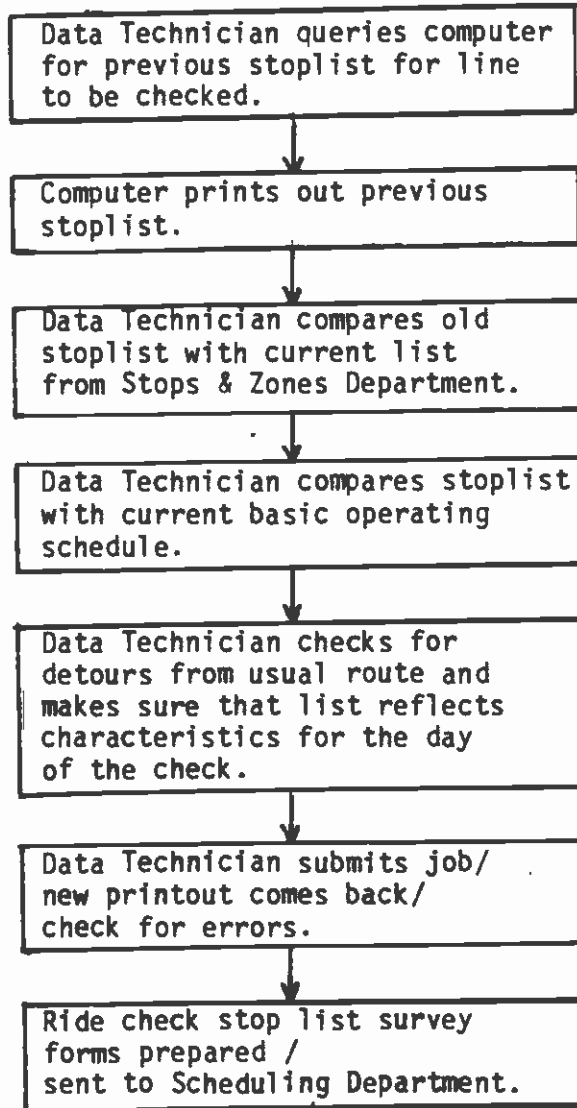
¹¹Fare Structure - The set of applicable fares for various rider classes, types of service, operating areas and bus lines.

¹²Bus Stops by Census Tract - Every bus stop is assigned to a census tract, as established for the 1980 Census and delineated in the Thomas Brother Street Atlases. The Stops & Zones Department has a list of every bus stop on a line according to census tract.

¹³Job - An independent unit of work to be performed by computer.

EXHIBIT 2-4

STOPLISTS PREPARATION



After reviewing the output for errors, Data Technicians send the ride check stop lists to the Schedule Checking Section where it is photocopied for distribution to the checkers.

2.3 DATA COLLECTION PROCEDURES

The sequence of steps involved in data collection is shown in Exhibit 2-5. The following narrative provides additional details:

In conducting a ride check, schedule checkers must ride every bus trip on the line being studied. Because the number of bus trips on a line depends on the length of the route and the headway between buses, a full ride check may require as few as seven checker hours, or as many as 1,000. A ride check of a large line is logistically complicated; manpower requirements necessitate that the entire pool of approximately 50 checkers ride the line over two days. Even after data have been collected, editing the data requires considerable effort.

Each checker receives a ride check stop list for the line to be checked. (See Exhibit 2-6). There are usually two ride check Stop Lists, one for each direction of travel on a given line. The stops are listed for routes and alternate routes of a line. Next to each stop are several columns in which the Checker enters information. These items of information are: scheduled and actual time of arrival at specific stops, the number of passengers boarding and alighting at each stop, and the types of fares paid. Because bus lines that cross county boundaries can have many fare categories which are applicable to different segments, the fare headings may vary from page to page. The example in Exhibit 2-6 has only one set of fare headings, as is the case with most lines.

At the beginning of each trip, the checker attaches the stop list on a clipboard and fills out his or her name, the weather condition, bus run number, vehicle number, day, date, the number of seats on the bus, and, with a red pencil or a pen, the scheduled times at which the bus is supposed to pass selected Time Points¹⁴. The other information on the top of each sheet is filled out by a Data Technician at a later time. While conducting the ride check, the checker enters the actual time as each time point is encountered. At every stop, he also records the number of boarding and alighting passengers, a running total of those on-board, and the type of fare paid by each boarding passenger. The checker also notes the number of minutes the bus is running ahead of or behind schedule after

¹⁴Time Point - A time point refers to a bus stop described by headings on the Basic Operating Schedule. Time points are numbered 1-20 according to the columns on the BOS. A time point may or may not be used by all trips which operate through the stop. Supplementary time points are described on the BOS elsewhere than in the headings and apply only to the trip(s) immediately following.

EXHIBIT 2-5

DATA COLLECTION PROCEDURES

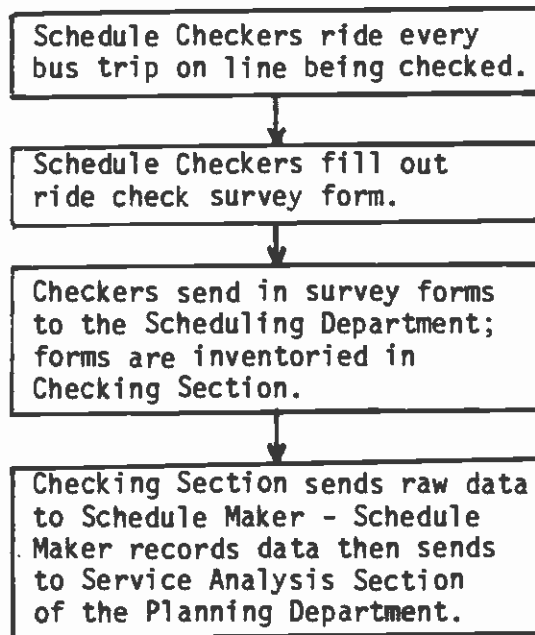


EXHIBIT 2-6 PART 1
RIDE CHECK STOPLIST

048	01	0010	D2	*SAN PEDRO	MANCHESTER
048	01	0020		SAN PEDRO	83RD ST
048	01	0030		SAN PEDRO	81ST ST
048	01	0040		SAN PEDRO	79TH ST
048	01	0050		SAN PEDRO	78TH ST
048	01	0060		SAN PEDRO	76TH ST
048	01	0070	05	*SAN PEDRO	FLORENCE
048	01	0080		SAN PEDRO	69TH ST
048	01	0085		SAN PEDRO	67TH ST
048	01	0090		SAN PEDRO	65TH ST
048	01	0100		GAGE	SAN PEDRO
048	01	0110		GAGE	MAIN
048	01	0120		MAIN	61ST ST
048	01	0130		MAIN	59TH PL
048	01	0140		MAIN	SLAUSON
048	01	0150		MAIN	55TH ST
048	01	0160		MAIN	54TH ST
048	01	0170		MAIN	53RD ST
048	01	0180		MAIN	51ST ST
048	01	0190		MAIN	49TH ST
048	01	0200		MAIN	47TH ST
048	01	0210		MAIN	SAN PEDRO
048	01	0220	08	*MAIN	VERNON
048	01	0230		MAIN	43RD ST
048	01	0240		MAIN	41ST PL
048	01	0250		MAIN	KING
048	01	0260		WOODLAWN	KING
048	01	0270		MAPLE	38TH ST
048	01	0280		MAPLE	37TH ST
048	01	0290		MAPLE	JEFFERSON
048	01	0300		MAPLE	30TH ST
048	01	0310		MAPLE	28TH ST
048	01	0320		MAPLE	ADAMS
048	01	0330		MAPLE	23RD ST
048	01	0340		MAPLE	22ND ST
048	01	0350		MAPLE	WASHINGTON
048	01	0360		MAPLE	16TH ST
048	01	0370	12	*MAPLE	PICO
048	01	0380		MAPLE	12TH ST
048	01	0390		MAPLE	11TH ST
048	01	0400		MAPLE	OLYMPIC
048	01	0410		MAPLE	9TH ST
048	01	0421		MAPLE	8TH ST
048	01	0431		MAPLE	7TH ST
048	01	0441		MAPLE	7TH-6TH ST
048	01	0451		5TH ST	LOS ANGLS
048	01	0460	15	*5TH ST	SPRING
048	01	0470		5TH ST	HILL
048	01	0480		5TH ST	GRAND
048	01	0490		5TH ST	FLOWER
048	01	0496		FIGUEROA	4TH ST
048	01	0501		FIGUEROA	3RD ST
048	01	0521		FIGUEROA	2ND ST
048	01	0531	19	@FREMONT	TEMPLE
048	03	0501	03	*FREMONT	TEMPLE
048	03	0511		TEMPLE	FIGUEROA
048	03	0521		HOPE	TEMP & 1ST
048	03	0531		HOPE	1ST ST
048	03	0541		FLOWER	3RD ST
048	03	0551		FIGUEROA	4TH ST
048	03	0561	06	*6TH ST	HOPE & GRAN
048	03	0581		6TH ST	HOPE-GRAND
048	03	0591		6TH ST	GRAND
048	03	0601		6TH ST	HILL
048	03	0614		6TH ST	BROADWAY
048	03	0621		6TH ST	SPRING
048	03	0631		6TH ST	MAIN
048	03	0641		MAPLE	6TH ST
048	03	0651		MAPLE	7TH ST
048	03	0661		MAPLE	8TH ST
048	03	0671		MAPLE	9TH ST
048	03	0680		MAPLE	OLYMPIC
048	03	0690		MAPLE	11TH ST
048	03	0700		MAPLE	12TH ST

**EXHIBIT 2-6 PART 2
RIDE CHECK STOPLIST**

048	03	0710	09	*MAPLE	PICO
048	03	0720		MAPLE	16TH ST
048	03	0730		MAPLE	WASHINGTON
048	03	0740		MAPLE	21ST ST
048	03	0750		MAPLE	23RD ST
048	03	0760		MAPLE	ADAMS
048	03	0770		MAPLE	28TH ST
048	03	0780		MAPLE	30TH ST
048	03	0790		MAPLE	JEFFERSON
048	03	0800		MAPLE	37TH ST
048	03	0810		MAPLE	38TH ST
048	03	0820		WOODLAWN	KING
048	03	0830		MAIN	KING
048	03	0840		MAIN	41ST PL
048	03	0850		MAIN	43RD ST
048	03	0860	12	*MAIN	VERNON
048	03	0870		MAIN	46TH ST
048	03	0880		MAIN	47TH PL
048	03	0890		MAIN	49TH ST
048	03	0900		MAIN	51ST ST
048	03	0910		MAIN	53RD ST
048	03	0920		MAIN	54TH ST
048	03	0930		MAIN	55TH ST
048	03	0940		MAIN	SLAUSON
048	03	0950		MAIN	59TH PL
048	03	0960		MAIN	61ST ST
048	03	0970		GAGE	MAIN
048	03	0980		GAGE	SAN PEDRO
048	03	0990		SAN PEDRO	65TH ST
048	03	1000		SAN PEDRO	67TH ST
048	03	1010		SAN PEDRO	69TH ST
048	03	1020	15	*SAN PEDRO	FLORENCE
048	03	1030		SAN PEDRO	76TH ST
048	03	1040		SAN PEDRO	77TH ST
048	03	1050		SAN PEDRO	79TH ST
048	03	1060		SAN PEDRO	82ND ST
048	03	1070		SAN PEDRO	83RD ST
048	03	1090	18	MANCHESTER	SAN PEDRO

each time point (i.e., 'RT = 2' means the bus may need two more minutes running time¹⁵.) This information is later utilized to analyze whether operators are adhering to scheduled times or not. Since most lines have more stops than can fit on a single page, the Checker must provide a subtotal for each category at the end of each page, as well as a grand total at the end of the list. The checker circles with a red pencil or a pen the point at which the largest number of passengers are on-board (the 'peak point'¹⁶) and also appends notes about delays or unusual incidents that occurred on the trip. New sheets are used for each trip.

The recommended practice is that the checker sit immediately behind the driver in order to see both the fare box transaction and the rear door alightings. There are exceptions, however. It might be necessary for the checker to sit at a different vantage point, for example, when relieving another checker in the middle of a trip. In some circumstances, such as during heavy boardings periods, the checker may ask the driver to call out the fares collected.

2.3.1 INVENTORY OF CHECK/CHECK STATUS

Checkers are supposed to send in their completed ride check data sheets to the Checking Section of the Scheduling Department on the day of the check. Because they are also supposed to review their sheets to make sure they are complete, a small minority often delays posting them for several days. As the data are received, they are logged in by assignment and by line. If an assignment is not received by the third day after the check, the checker is called. After the assignments for a whole line are received, they are arranged by trip time and direction. Each trip is reviewed for missing sheets and each sheet for both missing data and errors. If the check proves to be incomplete, missing trips might be rescheduled for another check or some other remedy might be sought. After this first screening process is complete, the sheets are sent to the schedule making group in charge of the line checked. This transaction is logged, once again, within the Checking Section.

The check will remain on the schedule maker's¹⁷ desk for only a few days if it does not relate to a schedule being rebuilt. The schedule maker examines the raw data, records on the Basic Operating Schedule the running times and passenger loads at the peak point, and then returns the check to the Checking Section.

¹⁵Running Time - Running time is the elapsed time, either scheduled or actual, between time points on a trip.

¹⁶Peak Point - The peak point is the stop or group of stops at which the maximum number of passengers is on-board for a trip or group of trips in one direction on a bus line.

¹⁷Schedule Maker - The schedule maker is an employee in the Scheduling Department who develops transit schedules.

If the line schedule is being rebuilt and the ride check processing backlog prevents timely receipt of processed data, the schedule maker may keep the Raw Ride Check Sheets¹⁸ for several weeks, using the information as a basis for revising the schedule. The processed data would be far more convenient, but they are usually unavailable for several months after the check was taken. When the schedule maker is finished with the raw ride check, it is returned to the Checking Section. The raw ride check data and the Basic Operating Schedule are then logged out to the Service Analysis Section (SAS) of the Planning Department. The Service Analysis Section turns the raw data into statistical information at various levels of aggregation through a complex process of computer data entry, editing, and verification. Various summary reports are produced which are used to evaluate service performance. Subsequent chapters will highlight the data processing activities and reports generated using the ride check data.

2.4 EDITING AND CODING THE DATA AFTER THE RIDE CHECK

The sequence of steps involved in editing and coding the ride check data is shown in Exhibit 2-7. The following narrative provides additional details:

After the schedule checkers perform the ride checks, the ride check sheets are sent back to the Service Analysis Section.

The ride checks are filed until a Data Technician requests a new check for coding. The staff member in charge of SASCONTROL assigns the check and enters the assignee's initial into SASCONTROL. Checks are usually assigned in the order received, although requests for priority processing of checks from other departments are accommodated.

The Data Technician who takes the check peruses each sheet and corrects obvious errors. For example, missing time points can be filled in from the Basic Operating Schedule, or if there were passengers on-board after the penultimate stop, they will be listed as alighting at the last stop, even if the checker had not recorded it.

If a trip was not run, the Data Technician fills in the time points for the missing trip. The Checking Section does not average in boardings or reassign missing trips due to disabled buses, cancellations, operator sick-outs or other reasons causing a bus not to show up for service. Most passengers will board the bus following the missed one. As a result, reassignment or averaging would cause an overcount of system patronage. Nevertheless, the Data Technician needs to input the time points so that scheduled mileage can be calculated by appropriate computer programs.

¹⁸Raw Ride Check - Raw ride check consists of the data that were collected and entered onto the survey form but have not yet been processed by the computer.

EXHIBIT 2-7

EDITING AND CODING RIDE CHECK DATA

Data Technician checks survey forms for errors such as missing time point, passengers alighting at the last stop, etc.

Data Technician labels timepoints for A-AM, N-Noon, PM-evening and Q-after midnight / make sure times are properly coded.

Data Technician prepares data (codes). After coding is completed, coordinator sends data to the Scheduling Department (Data Entry Facility) so that ride check data can be keypunched.

If the Data Technician determines that a trip was run but passenger data was not recorded (i.e., a checker missed the trip, and the Checking Section neither averaged in data nor re-surveyed the trip) historical data can be used to input counts from the last check run on that trip.

The Data Technician labels the timepoints as 'A', 'N', 'P', or 'Q' for 'A.M.' Noon', 'P.M.' and after midnight, respectively. Another task is to make sure the times are fully written out (e.g., '7:00' rather '7:') to facilitate speedy keypunching. The two topmost lines of the first ride check sheet of each trip are filled out (please see Exhibit 2-8). As stated before, some of the information is already filled out by the checkers. The Data Technician refers to the Basic Operating Schedule to fill in the schedule number, card number, service number, control time and basic column number. The schedule number represents the version of the Basic Operating Schedule current at the time of the check. The card number on the BOS identifies each individual trip.

Service numbers between 1 and 20 are assigned to each unique pattern of service on a bus line, whether shortline, alternate route, or limited stop service. For example, a "1" might be assigned to the regular route, a "2" to an alternate, and so forth. The use of supplementary timepoints, mid-line layovers, or scheduled coach changes for refueling do not make a service pattern unique. Before assigning the service numbers, the Data Technician checks the pattern numbers from a previous ride check on the same line, and may assign the same service numbers if the service patterns on the line have not been changed.

The control time is the time the trip is scheduled to pass a stop chosen by the technician. The stop selected is usually the one served by all or nearly all trips. The control time for a trip that does not pass through this stop is calculated by extrapolation. The basic column number simply indicates where on the BOS these times may be found. Coding usually takes several hours to complete but may take as many as four days on a complex line.

Upon completion of the coding the ride check's status in SASCONTROL is changed from a '1' to a '2', and the Data Technician fills out a Management Information System Request form requesting allocation of a new catalogued computer file. The new file name always includes the line number and the date of the check. The MIS form, the BOS, and the Ride Check sheets are turned over to the coordinator in charge of SASCONTROL, who sends batches of line data to the Data Entry Facility in the Scheduling Department. A yellow carbon of the MIS form and the BOS are kept on file. Other copies of the MIS form are attached to each ride check that is sent to the Data Entry along with a Keypunch Verification Form. This form simply states whether or not the ride check data are to be machine-verified after keypunching. In recent months, verification has not been requested because the keypunch error diagnostic program has minimized error from that source. At times, when the Data Entry Section is overloaded with work (or whenever MIS has available manpower) ride checks are diverted to Management Information Systems Department's Data Entry Section. Entered data are

EXHIBIT 2-8 RIDE CHECK SHEET

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
RIDING CHECK - TIME, FARES, AND PASSENGERS

PAGE 01 OF 05

LINE SCHEDULE 1967
 340 03 SOUTHBOUND 0000 SERVICE DAY WED 8/16/74 PRINTED 050604
 MILES 1967
 03 SOUTHBOUND 0000 SERVICE DAY WED 8/16/74 RUN 3319
 WEATHER CL=CLEAR CY=LOUDY SEATS 13 CENTRAL TIME BASIC COL WIDE FARE 8312
RA=RAIN FG=FOG
Team 255 366 OFF 11.7 Per. of Rite

DEP	ARR	ARR	DEP	PASSENGERS	CASH	LASH	CASH	CASH	CASH	SEN	STU	PASS	TRAN	TICK	TRAN	REVENUE	EXP	
TERM	DIV	SCHED	ACTUAL	BOARDING	REG	EXP	EXP	STUD	SENR	ION	DENT	FREE	SFER	TOK	SFER	RESS	PFSS	
STCPS					0.50	0.75	1.00	0.20	0.20	PASS	PASS	FREE	RECD	RECD	0.10	0.25	0.50	
0005	ELDRICE	KAGEL CYN	9:11	372														
0010	ELDRICE	CLMS-TABEL																
0020	TERRA BELL	FENTON																
0030	TERRA BELL	PRAGER		1														
0040	TERRA BELL	FOOTHILL		1														
0050	FOOTHILL	PERCE																
0060	VAN NUYS	FOOTHILL	9:12	1														
0070	VAN NUYS	DORNFIELD		2														
0080	VAN NUYS	BORDEN		2														
0090	VAN NUYS	CALENOAKS		7														
0100	VAN NUYS	HERRICK																
0110	VAN NUYS	MORRIS		2														
0120	VAN NUYS	BRADLEY		1														
0130	VAN NUYS	RALSTON		3														
0140	VAN NUYS	SN FERNANDO	9:12	372														
0150	VAN NUYS	EL DORADO		2														
0160	VAN NUYS	TELFAIR		2														
0170	VAN NUYS	MEHEN		2														
0180	VAN NUYS	MADDOON	9:13	2														
0190	VAN NUYS	LAMREL CYN		10														
0200	VAN NUYS	WENA																
0210	VAN NUYS	ARLETA																
0220	VAN NUYS	BEACHY																
0230	VAN NUYS	CANTERBURY		1														
0240	VAN NUYS	MIDDMAN																
0250	VAN NUYS	NOVICE																
0260	VAN NUYS	PLUMMER	04:13	372														
SUB-TOTAL				97	17													

always verified by MIS Data Entry as a matter of policy. The status of any ride check sent to keypunch is changed from '2' to '3' in SASCONTROL to indicate that Data Entry has the check.

2.5 KEYPUNCHING RIDE CHECK DATA

Upon receiving the coded ride checks, a keypunch operator in Data Entry logs them in and fills out the Keypunch Verification Form. Each check is then broken down into batches for the rest of the keypunch operators. For each batch, a batch ticket is written which specifies the line number, the date of check, the type of format to be used, and the batch number. The type of format used is determined by the number of fare category columns needed to report all fares for the line being processed (e.g., an express line will have more fare categories than a local line and an inter-county line may have more categories than an express line). The batch number is arbitrary, and is used to keep track of the job. All batches are logged by line and batch number and then distributed to keypunch operators, who work with a Nixdorf Key-to-Disc Computer System. They key in two types of records for each trip. The first type of record, called a lead card, lists the information applicable to the entire trip, such as the date, bus number, and number of seats. The next type of record lists schedule and boarding information at all relevant stops and fares paid at these stops. Each stop that has information to be keyed in is counted as a record. (For more detailed information see Volume 2, Chapter 3).

As the data are keyed in, several diagnostic programs search for appropriateness and completeness of entry. For example, the numerical representation of the month of the ride check should be '1' to '12' otherwise the data can be assumed to contain an error.

After the data are keyed onto the disk, the batch is returned to the keypunch operator in charge of assignments. The operator logs in the ride check and notes how many records were keyed. After all batches from one ride check are returned to the operator, the Management Information Request form and the job log are sent to the MIS Department's Data Entry Section. The supervising data entry operator in MIS uses a job to tie all the key punching jobs for a riding check into a file; the data from the Nixdorf Disk are copied onto an IBM Tape.

The supervising data entry operator then records the number of linked records within the file (i.e., boardings, alightings, passengers on-board, fare and other information for each stop on each trip constitute a linked record) and its blocksize on the job log. A photostat of the job log and the pink copy of the MIS request form are filed. The original of the job log is sent to the Scheduling Department's Data Entry Section, if the keypunching originated there.

The MIS request form is a request to mount the tape and copy its content to a newly created file. The tape is then returned to MIS Data Entry, which copies the data onto a backup tape, and deletes the data from the Nixdorf Disk.

When Data Entry releases the coded ride check sheets to Service Analysis, the SASCONTROL coordinator changes the ride check status to '4' in SASCONTROL and distributes the ride checks and their Basic Operating Schedules to the technicians who coded them.

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CHAPTER 3

RIDE CHECK PROCESSING

3.1 INTRODUCTION

This chapter describes how ride check data are processed on the IBM computer. Although there is necessarily some chronological order in the processing steps, variations in individual style and in the specific data modifications required for a particular check would render a rigid chronology impracticable. Therefore, the steps have been grouped into logical associations which apply to all ride checks unless otherwise noted. Editing of computer files involves continuous interaction between the Data technician and the computer to accomplish corrections and updating. Computer diagnostic programs are those written by RTD programmers to provide messages and selected information to the Data Technician, who then ascertains appropriate corrections. (Diagnostic programs which have the additional function of writing summary reports are described in Chapter IV.) Computer-generated files are based on pre-existing files which are analyzed and manipulated or summarized by programs that have been developed at the District; their origin and contents are described briefly here. Disposition of ride checks involves the storage of documents, reports, and computer files for current use in scheduling and planning, and for future use as historical records. IBM utilities involved in file manipulation and programs which are not routinely encountered by the Data Technician are not covered in this report. Technical details pertaining to this chapter comprise Volume 2 of this report, and are intended for use in applications programming.

3.2 EDITING OF COMPUTER FILES

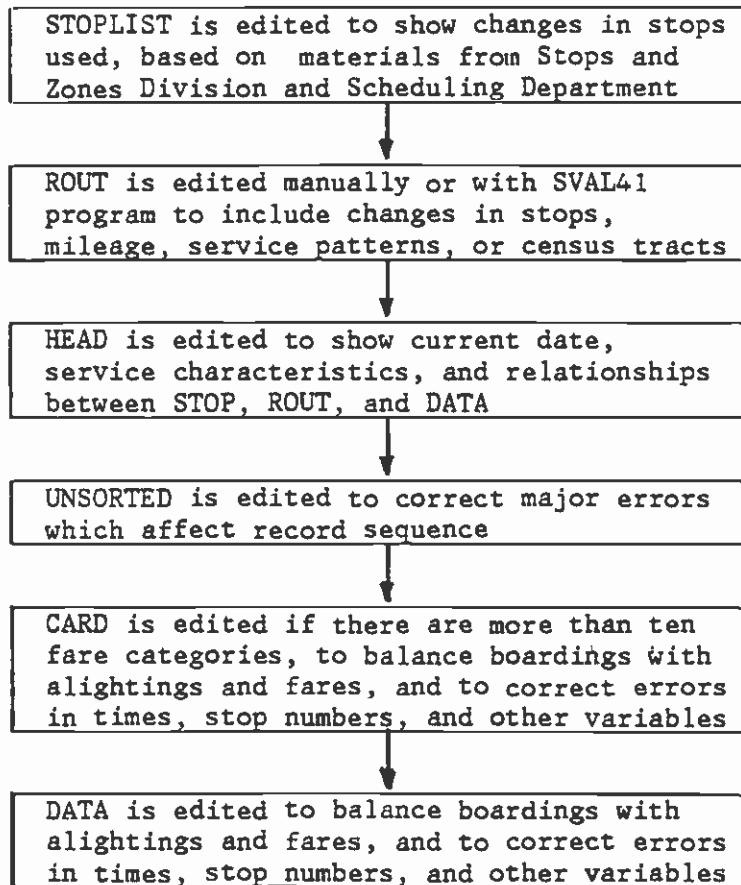
The sequence of steps involved in editing of computer files is summarized in Exhibit 3-1. The following narrative provides additional details. File names have been indicated in UPPERCASE letters.

STOPLIST is updated before the ride check is made, based on the latest stop and route information available from the Stops and Zones Division and the Scheduling Department; this ensures that the schedule checkers will have a correct and complete form on which to record passenger activity. When there are alternate branches and off-route terminals, the stops must be arranged in an order which is compatible with the logic used in the various computer programs. Special codes are given to timepoints and to informational records.

ROUT contains cumulative mileage and census tract information for every stop on every service. Updated mileage at some stops is supplied by the Scheduling Department, and census tract locations of stops are found in Special Edition Thomas Guides. Changes may be entered with the editor¹; if the changes are extensive, they may be entered using the SVAL41 program on-line according to the instructions provided to the Data Technicians.

¹Editor - The IBM Computing System provides an interactive on-line editing program for creating and modifying the data files.

EXHIBIT 3-1
EDITING OF COMPUTER FILES



HEAD may be created with the editor, or copied from another line or date and changed to show current line, date, service characteristics, notes of unusual conditions, and information about logical relationships between STOP, ROUT, and DATA needed by various programs.

UNSORTED file, which contains the actual ride check data, is edited only under unusual circumstances such as repetitive data entry or coding errors which affect the sorting sequence, or incomplete trip data at the time of data entry.

CARD file is created only when more than ten fare categories are applicable to a line. Corrections commonly involve modifying fields, such as, boardings, alightings, fares paid, scheduled and actual times, and stop numbers which indicate location of passenger activity.

DATA file, which gets created by the first series of ride check processing programs², is edited to correct boardings, alightings, fares paid, scheduled and actual times, and stop numbers. If CARD is present, DATA is corrected after CARD, based on errors detected by subsequent programs. DATA and CARD contain the same information in slightly different formats due to design limitations in certain programs. Editing DATA usually consumes more of the Data Technician's time than any other step. The majority of errors can be traced to schedule checkers and data entry, but the Data Technician and anyone else responsible for supplying the correct information may be responsible.

3.3 COMPUTER-GENERATED FILES

The sequence of computer programs utilized and data files created is summarized in Exhibit 3-2. The following narrative provides additional details. Computer Program and File Names are shown in UPPERCASE letters.

STOP is generated by SVAK8, which splits STOPLIST into two directions and suppresses supplementary timepoints which cannot be accommodated by some programs.

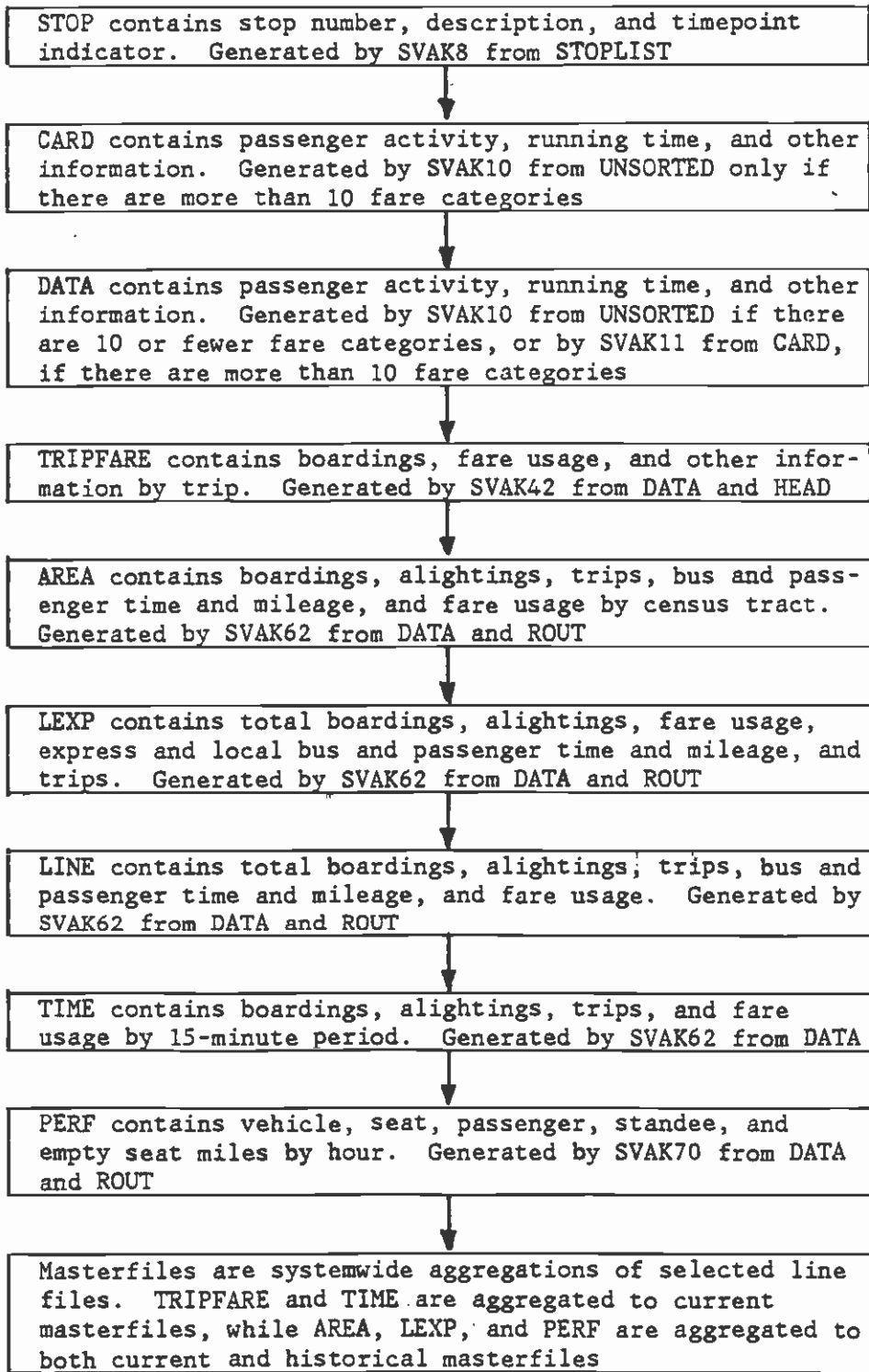
CARD is generated by SVAK10 if there are more than ten fare categories. It contains all the passenger data, time, and trip information for one direction, obtained by splitting UNSORTED.

DATA is generated by SVAK10 if there are ten or fewer fare categories. It contains all the passenger data, time, and trip information for one direction, obtained by splitting UNSORTED. If there are more than ten fare categories, DATA is generated by SVAK11 from CARD, and the fares paid are reformatted.

TRIPFARE is generated by SVAK42, which aggregates boardings and fares and copies other trip-specific information from DATA, and derives service type from HEAD.

²Processing Programs - The sequence of computer programs utilized and computer files generated is discussed in the next section.

EXHIBIT 3-2
COMPUTER-GENERATED FILES



AREA is generated SVAK62, which aggregates boardings, alightings, trips, bus and passenger time and mileage, and fare usage from DATA into census tracts as found in ROUT.

LEXP is generated by SVAK62, which aggregates boardings, alightings, trips, bus and passenger time and mileage, and fare usage from DATA into local and express segments as defined in ROUT.

LINE is generated by SVAK62, which aggregates boardings, alightings, trips, bus and passenger time and mileage, and fare usage from DATA into line totals by direction.

TIME is generated by SVAK62, which aggregates boardings, alightings, trips, and fare usage into 15-minute periods from DATA.

PERF is generated by SVAK70, which computes bus miles, seat miles, empty seat miles, passenger miles, and standee miles by one-hour periods, utilizing DATA and ROUT.

Masterfiles are of two forms: current and historical, each representing aggregations of the above files. Current masterfiles contain the most recent information on all lines in the system, and are updated as each ride check is processed by removing any previous data for the line before adding the new data. Historical masterfiles accumulate the data from ride checks of various dates on each line. The TIME files are aggregated into DAY.TIME (current) by SVAW31. The AREA files are aggregated into DAY.TRACT (current) and DAY.TOTAL (historical) by SVAW32. The LEXP files are aggregated into DAY.LEXP (current) and DAY.TLEXP (historical) by SVAW32. The PERF files are aggregated into DAY.PERF (current) and DAY.TPERF (historical) by SVAW32. The TRIPFARE files are aggregated into DAY.FARES (current) by SVAW32. Data which are not for weekdays are aggregated into SAT or SUN masterfiles in lieu of DAY.

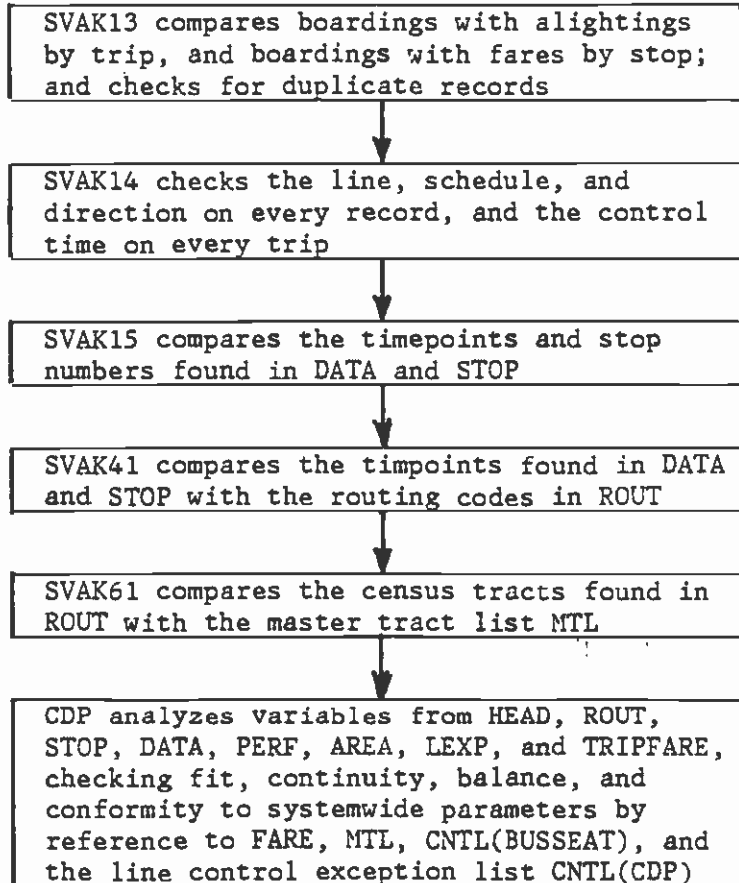
3.4 COMPUTER DIAGNOSTIC PROGRAMS

The sequence of steps involved in running Computer Diagnostic Programs is shown in Exhibit 3-3. The following narrative provides additional details. Computer Program and File Names are shown in UPPERCASE LETTERS.

SVAK13 reads DATA and prints messages if records have the same trip and stop number, if boardings do not equal fares paid at a stop, if boardings do not equal alightings for a trip, if the previous control time is improperly coded, or if there are characters which do not fit the format of the file. Total boardings and alightings are also printed for each trip. SVAK14 reads DATA and prints out general information for each trip. Messages are printed for any record which does not have the same line number, schedule, or direction as the previous one, any data record which does not have the same service number as the lead record for the trip, and any trip which has an inconsistency in the control time.

SVAK15 reads STOP and DATA, printing messages whenever a record in DATA does not have a corresponding record in STOP. It also prints the number of occurrences in DATA of each corresponding record in STOP, and the scheduled times found in DATA to the extent that they are represented in STOP.

EXHIBIT 3-3
COMPUTER DIAGNOSTIC PROGRAMS



SVAK41 reads DATA, STOP, ROUT, and HEAD. It prints messages if times are not present in DATA for each timepoint shown in STOP provided that the trip in question serves that stop, times out of order within a trip or between trips, and scheduled time at a regular timepoint not served by that trip.

SVAK61 reads ROUT and compares the census tracts found with those in a master list of census tracts.

CDP reads and analyzes the following variables: line, direction, day, and date from the menu; line, day, direction, and eight exception parameters from the current control file; the master tract list MTL; the fare categories from FARE; line, direction, day, date, route numbers, service types, number of stops, number of services, control stop, time intervals, and mileage columns used for HEAD; stop numbers, direction, line, cumulative mileage, census tract, routing codes, and county from ROUT; line, direction, stop numbers, Basic columns for timepoints, and stop names from STOP; line, direction, trip, stop number, service number, date, bus run, control time, Basic column, scheduled and actual times, boardings, alightings, and fares paid from DATA; line, date, direction, total trips, bus miles, seat miles, empty seat miles, passenger miles, and standee miles from PERF; line, date, direction, county, census tract, and 38 service and patronage variables from AREA; line, date, direction, and 72 service and patronage variables from LEXP; line, date, direction, service type, trip number, first and last scheduled times, weather, fares paid, vehicle number, and seats from TRIPFARE; and the master list of seats by vehicle number from BUSSEAT. An index and user's guide to the diagnostic messages are provided to Data Technicians.

3.5 DISPOSITION OF RIDE CHECKS

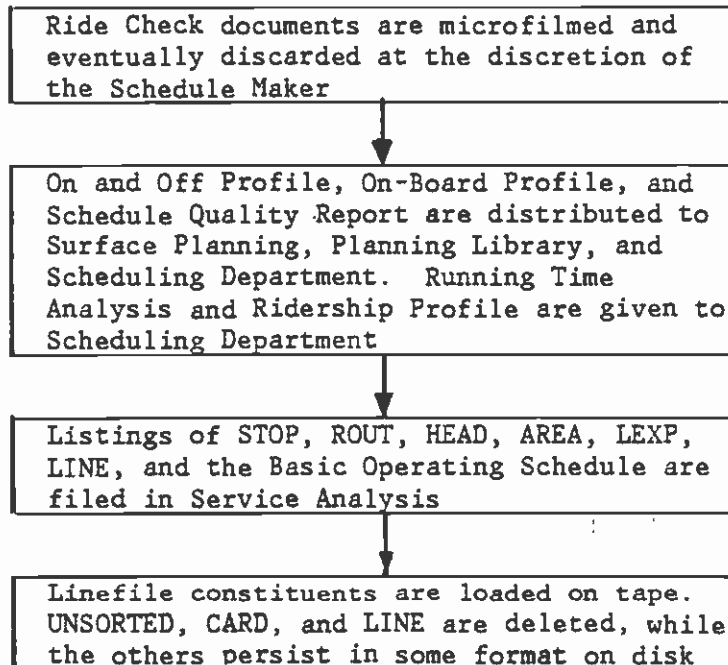
The sequence of steps involved in disseminating the reports and disposing of ride check documents is shown in Exhibit 3-4. The following narrative provides additional details:

The ride check documents are delivered by the Data Technician to the word processor operator in the Scheduling Department for microfilming. After microfilming the documents are given to the Schedule Maker for use in scheduling activities. Hard copies may be regenerated from microfilm.

Large-format (11 x 14.875 inches) copies of the On and Off Profile, On Board Profile, Schedule Quality Report, Ridership Profile, and Running Time Analysis are delivered to the Mileage Calculator in the Scheduling Department for filing, and an extra copy of the Running Time Analysis is included for forwarding to the Schedule Maker. Large-format copies of the On and Off Profile, and Schedule Quality Report are delivered to the Planning Assistant in the Surface Planning Section for filing, and small-format (8.5 x 11 inches) of the same reports are filed in the Information Center by the Secretary of the Information System Section. The contents of these reports are described in the next chapter.

Listings representing the contents of STOP, ROUT, HEAD, AREA, LEXP, AND LINE files are filed in the Area Accounts books by the Data Technician, and the Basic Operating Schedules are filed in a drawer in Information Systems.

EXHIBIT 3-4
DISPOSITION OF RIDE CHECKS



All files associated with a ride check except for Basic Operating Schedule and Control Point files are copied onto a tape. STOP, ROUT, and HEAD files are moved to partitioned data sets to reduce the disk overhead, and DATA files are reformatted into RBLS members in such a way as to save space on Direct Access Storage Devices (DASD). The remaining files are deleted once they are stored on tape to save DASD space. Given the magnitude of the ride check processing system, disk space is always a critical resource.

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CHAPTER 4

RIDE CHECK SUMMARY REPORTS

4.1 INTRODUCTION

Computer reports which reflect activity on one bus line for one day are described in this chapter. These are highly detailed technical reports of interest primarily to schedule makers and Surface Planning staff. All reports except the last two are standardized line total reports produced by Data Technicians as part of Ride Check Processing, and kept on file in Planning or Scheduling. Ridership by Line Segment and Faresonoff Reports are generated by Planning staff as needed. A sample of each report follows the narrative. Flowcharts and descriptions of the FORTRAN and COBOL programs used are included in Volume 2. The following programs produce reports discussed in this chapter:

SVAK72	On and Off Profile
SVAK73	On Board Profile
SVAK74	Ridership Profile
SVAK70	Schedule Quality Reports
SVAK62	Tract and Line Totals
SVAK54	Running Time Analysis Reports
RBLS	Ridership by Line Segment
SVAR13	Faresonoff Report

The reports can be divided into three groups beginning with those which provide stop-by-stop and trip-by-trip analysis. The On and Off Profile shows boardings and alightings; the On-Board Profile shows passengers on board; and the Ridership Profile shows boardings, alightings, passengers on board, and time at timepoints. The second group of reports use criteria other than trips and stops. The Schedule Quality Report shows seat mile utilization by hour. Tract and Line Totals show service and passenger data by census tract and the data for the whole day are reported by direction. Running Time Analysis reports are a diverse group dealing primarily with time points, showing elapsed running time, passengers on board, and headways. The last group are non-standard reports whose parameters are specified by the user to provide microcosmic or macrocosmic analysis of a line within the time-space continuum. Ridership by Line Segment is a menu-driven online program for retrieving the number of passengers on board, while the Faresonoff Report is a menu-driven batch job for the retrieval of passenger activity and fares.

4.2 PROFILES - COMMON FEATURES

Since the On and Off Profile, On-Board Profile, and Ridership Profile are all quite lengthy, the portions which they have in common are described only once.

Title Page - Exhibit 4-1. Included on the title page are descriptions of each service (also called branch) and any unusual conditions which affected operations on the day of the check. The time intervals listed at the bottom are the basis for the Interval Data Section of the Ridership Profile.

Branch Arrangement - Exhibit 4-2. This shows the correspondence between each stop and the various service variations, including the cumulative mileage (implied .00). For the example shown in Exhibit 4-2, all services use mileage table 1. Branch 2 is a shortline; it does not use the first eight stops. Those stops indicated as time points (*) have scheduled times on some or all trips. The alignment stop, shown on the title page as 460, can here be identified as Vermont/Adams, timepoint 10.

Distance Table - Exhibit 4-3. The mileage between stops used is implied .00; that is, the distance from stop 20 to stop 25 on branch 1 is one quarter mile.

Trip Summary - Exhibit 4-4. Trip data are presented differently in each Profile but are summarized in the same way for each group of ten trips. Total passengers indicates total boardings, and the extent to which it exceeds maximum on board is a measure of turnover. Distances are in miles. Peak stops are the locations at which the maximum on-board passengers are observed and their physical location can be ascertained by consulting Exhibit 4-2.

Directional Totals - Exhibit 4-5. The totals represent all boardings in a 24-hour peak period for one direction.

4.2.1 ON AND OFF PROFILE

Trip Data - Exhibit 4-6. This is the main part of the On and Off Profile. Across the top are ten trip numbers. The trip numbers, bus run numbers, and control times are drawn from the Basic Operating Schedule. Under each trip are two columns of numbers; the left column shows boardings and the right alightings at each stop. The control time is the time the bus is scheduled to pass the control stop, which in this case happens to be stop 460 (Vermont/Adams). To the extent that the actual time differs from the control time, the bus was not on schedule at that point.

Total at Stop - Exhibit 4-7. The total boardings and alightings at each stop during a 24-hour period are shown following the last trip. The 24-hours are measured from the time the first trip is scheduled to pass the control stop (5:14 a.m., Exhibit 4-6) until the last trip is scheduled to pass the control stop, 4:18 Q (next a.m.). Times after midnight are coded with a "Q" to indicate assignments which started before midnight. On assignments starting after midnight, times are coded with an "A", so that 0:11 A means 12:11. Times from 12 noon to 12:59 are coded with "N". Other times coded with "A" or "P" are conventional a.m. or p.m. times.

LINE 204 NORTH

PROCESSED BY ANDREA

SERVICE ANALYSIS SECTION

DATE 092386

ON AND OFF PROFILE

LINE 204 VERMONT AVENUE, NORTHBOUND

DATE OF CHECK SAT 86/02/08

SERVICE 1 - VERMONT AND 120TH TERMINAL TO HOLLYWOOD AND VERMONT

SERVICE 2 - VERMONT AND CENTURY TO HOLLYWOOD AND VERMONT

COMMENT:

TRIP # 1535 OUT OF SERVICE AT VERMONT AND 54 ST

TRIP # 1790 OUT OF SERVICE AT VERMONT AND 51 ST

TRIP # 2030 B.O.

204 204

00999999999999999999

NUMBER OF COMMENT CARDS

8

NUMBER OF STOPS

78

NUMBER OF BRANCHES

2

ALIGNMENT STOP

460

NUMBER OF INTERVALS

5

START

END

0

3000

500

900

901

1500

1501

1900

1901

2830

OPTION

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

IV-3

EXHIBIT 4-1
PROFILES
TITLE PAGE

EXHIBIT 4-2
PROFILES
BRANCH ARRANGEMENT

LINE 204 NORTH

PROCESSED BY ANDREA

SERVICE ANALYSIS SECTION

DATE 092386

BRANCH ARRANGEMENT

STOP NO.	STOP CODE	STOP ON	STOP AT	TIME POINT	MILEAGE TABLE					BRANCH		
					1	2	3	4	5	1	2	
STOPS USED--0=NO 1=YES												
1	20	VERMONT	120TH ST	• 2	0	0	0	0	0	0	1	0
2	25	VERMONT	117TH ST	0	25	0	0	0	0	0	1	0
3	30	VERMONT	IMPERIALHY	0	50	0	0	0	0	0	1	0
4	40	VERMONT	112TH ST	0	66	0	0	0	0	0	1	0
5	50	VERMONT	110TH ST	0	82	0	0	0	0	0	1	0
6	60	VERMONT	108TH ST	0	98	0	0	0	0	0	1	0
7	70	VERMONT	104TH ST	0	115	0	0	0	0	0	1	0
8	80	VERMONT	103RD ST	0	131	0	0	0	0	0	1	0
9	90	VERMONT	CENTURY	• 3	148	0	0	0	0	0	1	1
10	100	VERMONT	98TH ST	0	162	0	0	0	0	0	1	1
11	110	VERMONT	COLOEN	0	176	0	0	0	0	0	1	1
12	120	VERMONT	94TH ST	0	190	0	0	0	0	0	1	1
13	130	VERMONT	92ND ST	0	205	0	0	0	0	0	1	1
14	140	VERMONT	90TH ST	0	219	0	0	0	0	0	1	1
15	150	VERMONT	88TH ST	0	233	0	0	0	0	0	1	1
16	160	VERMONT	MANCHESTER	• 4	248	0	0	0	0	0	1	1
17	170	VERMONT	83RD ST	0	264	0	0	0	0	0	1	1
18	180	VERMONT	81ST ST	0	281	0	0	0	0	0	1	1
19	190	VERMONT	79TH ST	0	298	0	0	0	0	0	1	1
20	200	VERMONT	76TH ST	0	315	0	0	0	0	0	1	1
21	210	VERMONT	74TH ST	0	332	0	0	0	0	0	1	1
22	220	VERMONT	FLORENCE	0	349	0	0	0	0	0	1	1
23	230	VERMONT	69TH ST	0	365	0	0	0	0	0	1	1
24	240	VERMONT	66TH ST	0	382	0	0	0	0	0	1	1
25	250	VERMONT	GAGE	0	398	0	0	0	0	0	1	1
26	260	VERMONT	60TH ST	0	415	0	0	0	0	0	1	1
27	270	VERMONT	59TH ST	0	432	0	0	0	0	0	1	1
28	280	VERMONT	SLAUSON	0	449	0	0	0	0	0	1	1
29	290	VERMONT	56TH ST	• 0	463	0	0	0	0	0	1	1
30	300	VERMONT	54TH ST	• 6	477	0	0	0	0	0	1	1
31	310	VERMONT	51ST ST	0	495	0	0	0	0	0	1	1
32	320	VERMONT	48TH ST	0	513	0	0	0	0	0	1	1
33	330	VERMONT	46TH ST	0	531	0	0	0	0	0	1	1
34	340	VERMONT	VERNON	• 8	549	0	0	0	0	0	1	1
35	350	VERMONT	42ND ST	0	570	0	0	0	0	0	1	1
36	360	VERMONT	KING BLVO	0	592	0	0	0	0	0	1	1
37	370	VERMONT	LEICHTON	0	609	0	0	0	0	0	1	1
38	380	VERMONT	39TH ST	0	626	0	0	0	0	0	1	1
39	390	VERMONT	EXPOSITION	0	643	0	0	0	0	0	1	1
40	400	VERMONT	37TH PL	0	655	0	0	0	0	0	1	1
41	410	VERMONT	36TH PL	0	668	0	0	0	0	0	1	1
42	420	VERMONT	35TH ST	0	681	0	0	0	0	0	1	1
43	430	VERMONT	JEFFERSON	• 9	694	0	0	0	0	0	1	1
44	440	VERMONT	29TH ST	0	710	0	0	0	0	0	1	1
45	450	VERMONT	27TH ST	0	727	0	0	0	0	0	1	1
46	460	VERMONT	ADAMS	• 10	744	0	0	0	0	0	1	1
47	470	VERMONT	24TH ST	0	760	0	0	0	0	0	1	1
48	480	VERMONT	S MONIC FY	0	777	0	0	0	0	0	1	1
49	490	VERMONT	WASHINGTON	0	794	0	0	0	0	0	1	1
50	500	VERMONT	VENICE	0	819	0	0	0	0	0	1	1
51	510	VERMONT	PICO	• 11	844	0	0	0	0	0	1	1
52	520	VERMONT	11TH ST	0	862	0	0	0	0	0	1	1
53	530	VERMONT	OLYMPIC	0	881	0	0	0	0	0	1	1
54	540	VERMONT	9TH ST	0	906	0	0	0	0	0	1	1
55	550	VERMONT	8TH ST	0	931	0	0	0	0	0	1	1
56	560	VERMONT	7TH ST	0	956	0	0	0	0	0	1	1
57	570	VERMONT	WILSHIRE	• 12	981	0	0	0	0	0	1	1
58	580	VERMONT	6TH ST	• 13	994	0	0	0	0	0	1	1
59	590	VERMONT	5TH ST	0	1006	0	0	0	0	0	1	1
60	600	VERMONT	4TH ST	0	1018	0	0	0	0	0	1	1
61	610	VERMONT	3RD ST	0	1031	0	0	0	0	0	1	1
62	620	VERMONT	1ST ST	0	1050	0	0	0	0	0	1	1
63	630	VERMONT	BEVERLY	0	1069	0	0	0	0	0	1	1
64	640	VERMONT	ROSEWOOD	0	1081	0	0	0	0	0	1	1
65	650	VERMONT	HOLLYWOFWY	0	1094	0	0	0	0	0	1	1
66	660	VERMONT	CLINTON	0	1106	0	0	0	0	0	1	1
67	670	VERMONT	MELROSE	0	1119	0	0	0	0	0	1	1
68	720	VERMONT	MONROE	• 15	1134	0	0	0	0	0	1	1
69	730	VERMONT	NORMAL	0	1145	0	0	0	0	0	1	1
70	740	VERMONT	LOCKWOOD	0	1156	0	0	0	0	0	1	1
71	750	VERMONT	SAN MONICA	0	1167	0	0	0	0	0	1	1
72	760	VERMONT	LEXINGTON	0	1184	0	0	0	0	0	1	1
73	770	VERMONT	FOUNTAIN	0	1201	0	0	0	0	0	1	1
74	775	SUNSET	VERMONT	0	1218	0	0	0	0	0	1	1
75	780	SUNSET	EDGEMONT	0	1236	0	0	0	0	0	1	1
76	785	HOLLYWOOD	EDGEMONT	0	1255	0	0	0	0	0	1	1
77	790	HOLLYWOOD	VERMONT	• 17	1274	0	0	0	0	0	1	1
78	795	VERMONT	HOLY-BARNS	0	1283	0	0	0	0	0	1	1

**EXHIBIT 4-3
PROFILES
DISTANCE TABLE**

LINE 204 NORTH PROCESSED BY ANOREA
LINE 204 VERMONT AVENUE, NORTHBOUND

SERVICE ANALYSIS SECTION

DATE 092386

DISTANCE TABLE---DISTANCE TO NEXT STOP MADE

STOP BRANCH

	1	2
20	25	
25	25	
30	16	
40	16	
50	16	
60	17	
70	16	
80	17	
90	14	14
100	14	14
110	14	14
120	15	15
130	14	14
140	14	14
150	15	15
160	16	16
170	17	17
180	17	17
190	17	17
200	17	17
210	17	17
220	16	16
230	17	17
240	16	16
250	17	17
260	17	17
270	17	17
280	14	14
290	14	14
300	18	18
310	18	18
320	18	18
330	18	18
340	21	21
350	22	22
360	17	17
370	17	17
380	17	17
390	12	12
400	13	13
410	13	13
420	13	13
430	16	16
440	17	17
450	17	17
460	16	16
470	17	17
480	17	17
490	25	25
500	25	25
510	18	18
520	19	19
530	25	25
540	25	25
550	25	25
560	25	25
570	13	13
580	12	12
590	12	12
600	13	13
610	19	19
620	19	19
630	12	12
640	13	13
650	12	12
660	13	13
670	15	15
720	11	11
730	11	11
740	11	11
750	17	17
760	17	17
770	17	17
775	18	18
780	19	19
785	19	19
790	9	9
795		

**EXHIBIT 4-4
PROFILES - TRIP SUMMARY**

LINE 204 NORTH	PROCESSED BY ANDREA	SERVICE ANALYSIS SECTION					DATE 092386	PAGE 12		
LINE 204 VERMONT AVENUE, NORTHBOUND										
TRIP NO.	1010	1030	1050	1070	1090	1110	1150	1170	1190	1210
TOTAL PASSENGERS	60	106	107	153	121	204	88	172	115	143
PASSINGER MILES	232	335	310	406	328	494	198	613	354	410
AVERAGE TRIP LENGTH	3.87	3.16	2.90	2.65	2.71	2.42	2.25	3.56	3.08	2.87
MAXIMUM ON BOARD	30	51	50	65	40	80	39	97	53	64
PEAK STOPS										
	560	490	560	560	620	470	490	510	480	560
								520		

IV-6

**EXHIBIT 4-5
PROFILES - DIRECTIONAL TOTALS**

LINE 204 NORTH	PROCESSED BY ANDREA	SERVICE ANALYSIS SECTION	DATE 092386
LINE 204 VERMONT AVENUE, NORTHBOUND			
TOTAL PASSENGERS	17478		
TOTAL PASSENGER MILES	41389		
AVERAGE TRIP LENGTH	2.37		

LINE 204 NORTH

PROCESSED BY ANDREA

SERVICE ANALYSIS SECTION

DATE 092386

LINE 204 VERMONT AVENUE, NORTHBOUND
 TRIP (CARD) NUMBER 1010 1030 1050 1070 1090 1110 1150 1170 1190 1210
 BUS RUN NUMBER 22 15 12 11 17 9 20 3 22 8
 CONTROL TIME (SCHEDULED) 514A 544A 607A 627A 642A 657A 707A 717A 727A 737A
 ACTUAL TIME (.1 MIN) 514 544 6075 631 642 700 707 719 726 738
 CONTROL STOP (M POINT) 460 460 460 460 460 460 460 460 460 460

LINE	STOP	1010	1030	1050	1070	1090	1110	1150	1170	1190	1210
1	20 VERMONT 120TH ST	4 0	2 0	1 0	1 0	2 0	2 0	0 0	7 0	2 0	0 0
2	25 VERMONT 117TH ST	0 0	0 0	5 0	2 0	1 0	0 0	0 0	0 0	0 0	0 0
3	30 VERMONT IMPERIALHY	2 0	1 0	0 0	1 0	3 0	2 0	2 0	1 0	0 0	1 0
4	40 VERMONT 112TH ST	0 0	0 0	0 0	0 0	2 0	0 0	0 0	1 0	0 0	0 0
5	50 VERMONT 110TH ST	1 0	0 1	1 0	3 0	2 0	1 0	0 0	1 0	0 0	2 0
6	60 VERMONT 108TH ST	1 0	1 0	0 0	0 0	0 0	2 0	0 0	1 0	0 0	0 0
7	70 VERMONT 104TH ST	0 0	0 0	0 0	0 0	2 0	0 0	0 0	1 0	0 0	1 0
8	80 VERMONT 103RD ST	0 0	1 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
9	90 VERMONT CENTURY	4 0	3 0	1 0	3 0	1 1	9 2	0 0	6 1	0 0	5 0
10	100 VERMONT 98TH ST	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2 1	0 0	1 0
11	110 VERMONT COLDEN	0 0	2 0	0 0	4 0	2 0	3 0	1 0	2 0	2 0	0 0
12	120 VERMONT 94TH ST	0 0	0 0	0 0	0 0	3 1	2 1	1 0	0 0	3 0	0 0
13	130 VERMONT 92ND ST	1 0	0 0	1 0	0 0	0 0	4 0	0 0	0 0	0 0	1 0
14	140 VERMONT 90TH ST	0 0	1 0	1 0	0 0	0 0	1 0	0 0	0 0	2 0	0 0
15	150 VERMONT 88TH ST	0 0	0 0	0 0	0 0	0 0	4 0	0 0	0 0	1 0	0 0
16	160 VERMONT MANCHESTER	1 0	2 0	0 0	0 2	2 0	4 1	0 0	9 0	3 2	2 2
17	170 VERMONT 83RD ST	1 0	2 0	0 1	0 0	0 0	0 1	0 0	2 1	4 0	2 0
18	180 VERMONT 81ST ST	1 0	1 1	0 0	4 0	4 0	2 0	0 1	1 0	4 0	3 0
19	190 VERMONT 79TH ST	0 0	3 0	1 0	3 0	0 0	1 0	1 0	1 0	0 0	0 0
20	200 VERMONT 76TH ST	0 0	0 0	0 0	2 0	0 0	1 0	0 0	0 0	0 0	3 0
21	210 VERMONT 74TH ST	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 1	1 0	0 0
22	220 VERMONT FLORENCE	3 0	1 0	0 0	2 0	3 1	2 3	0 0	0 2	1 0	3 1
23	230 VERMONT 69TH ST	1 0	0 0	0 1	0 0	0 1	2 0	3 0	1 0	0 0	0 0
24	240 VERMONT 66TH ST	0 0	0 0	2 0	1 1	1 0	2 1	0 0	1 1	0 0	4 0
25	250 VERMONT GAGE	0 0	1 0	2 0	2 0	1 0	5 1	1 0	1 0	4 0	3 2
26	260 VERMONT 60TH ST	1 0	0 0	0 0	1 0	1 1	3 0	0 0	0 0	0 0	1 0
27	270 VERMONT 59TH ST	0 0	5 0	0 0	0 0	0 0	0 1	0 0	0 0	0 0	0 0
28	280 VERMONT SLAUSON	1 0	2 0	1 0	2 2	1 3	7 1	1 0	3 1	5 0	0 0
29	290 VERMONT 56TH ST	1 0	0 0	1 0	0 0	3 0	4 4	2 0	0 1	0 0	0 0
30	300 VERMONT 54TH ST	1 1	3 0	2 0	1 0	0 0	2 3	1 2	2 0	2 0	0 2
31	310 VERMONT 51ST ST	0 0	1 0	2 0	2 0	1 0	0 3	1 0	2 0	1 2	1 0
32	320 VERMONT 48TH ST	0 0	0 0	1 0	0 0	0 0	3 0	2 0	2 0	0 0	1 0
33	330 VERMONT 46TH ST	0 1	0 0	1 0	3 2	1 0	1 0	1 0	3 0	0 0	0 0
34	340 VERMONT VERNON	1 2	1 1	4 1	4 3	3 1	14 2	4 1	3 0	3 2	5 3
35	350 VERMONT 42ND ST	0 0	1 0	3 0	6 1	1 0	2 0	4 0	3 0	1 0	1 0
36	360 VERMONT KING BLVD	1 6	2 1	3 5	1 3	5 5	16 12	1 3	0 0	7 4	6 7
37	370 VERMONT LEICHTON	0 0	0 0	0 0	0 0	0 0	3 0	1 1	2 0	0 0	1 0
38	380 VERMONT 39TH ST	4 0	1 0	0 0	3 0	3 0	1 1	2 0	5 0	1 0	3 0
39	390 VERMONT EXPOSITION	0 0	2 0	0 0	4 0	4 0	1 0	0 0	0 0	0 0	1 0
40	400 VERMONT 37TH PL	0 0	0 0	0 0	1 0	0 2	0 0	0 0	1 0	0 0	0 0
41	410 VERMONT 36TH PL	1 0	1 0	1 0	2 0	1 0	0 0	1 0	4 0	1 0	0 0
42	420 VERMONT 35TH ST	0 0	0 1	1 0	0 0	0 0	0 0	0 0	4 0	2 3	1 1
43	430 VERMONT JEFFERSON	1 0	1 3	1 0	1 3	1 1	6 2	0 2	0 0	3 1	3 0
44	440 VERMONT 29TH ST	1 0	1 0	4 0	6 0	0 0	2 3	3 0	13 0	3 1	4 0
45	450 VERMONT 27TH ST	0 0	5 0	4 0	1 0	0 0	1 0	0 0	0 0	0 0	1 0
46	460 VERMONT ADAMS	3 2	4 0	10 0	6 3	2 3	14 8	3 0	10 0	7 1	10 3
47	470 VERMONT 24TH ST	1 0	2 0	2 0	5 0	2 0	8 7	1 0	2 1	1 0	4 0
48	480 VERMONT S MONIC FY	1 0	2 0	0 0	0 1	0 2	1 10	2 0	3 1	2 0	3 4
49	490 VERMONT WASHINGTON	0 1	4 0	0 1	2 8	1 4	0 5	11 3	10 0	4 8	3 1
50	500 VERMONT VLNICE	1 1	2 4	2 2	3 9	3 4	6 6	4 13	9 1	4 5	6 8
51	510 VERMONT PICO	2 1	2 6	7 9	12 7	6 12	4 15	6 7	11 8	2 12	8 0
52	520 VERMONT 11TH ST	0 0	0 0	0 1	0 0	2 0	0 0	1 0	1 1	2 2	0 0
53	530 VERMONT OLYMPIC	3 1	1 7	2 6	7 4	2 3	6 6	2 6	3 5	2 2	8 2
54	540 VERMONT 9TH ST	1 0	7 0	7 0	5 0	2 0	5 2	5 2	2 7	0 0	2 0
55	550 VERMONT 8TH ST	4 5	6 2	6 7	10 4	10 5	11 12	5 0	9 4	11 2	5 0

EXHIBIT 4-6
 ON AND OFF PROFILE
 TRIP DATA

EXHIBIT 4-7
ON AND OFF PROFILE
TOTAL AT STOP

LINE 204 NORTH		PROCESSED BY ANOREA		SERVICE ANALYSIS SECTION		DATE 092386		
LINE 204 VERMONT AVENUE, NORTHBOUND								
TRIP (CARO) NUMBER		3330		3350		TOTAL		
BUS RUN NUMBER		1		2		AT		
CONTROL TIME (SCHEDULED)		348Q		418Q		STOP		
ACTUAL TIME (.1 MIN)		351		418				
CONTROL STOP (M POINT)		46D		46D				
1	20 VERMONT	120TH ST	1	0	1	0	414	0
2	25 VERMONT	117TH ST	0	0	0	0	66	0
3	30 VERMONT	IMPERIALHY	0	0	0	0	317	31
4	40 VERMONT	112TH ST	0	0	0	0	83	5
5	50 VERMONT	110TH ST	4	0	0	0	145	12
6	60 VERMONT	108TH ST	3	0	0	0	119	21
7	70 VERMONT	104TH ST	0	0	0	0	80	19
8	80 VERMONT	103RD ST	0	0	0	0	26	20
9	90 VERMONT	CENTURY	1	0	1	0	590	78
10	100 VERMONT	98TH ST	0	0	0	0	117	18
11	110 VERMONT	COLOEN	1	0	0	0	184	41
12	120 VERMONT	94TH ST	0	0	0	0	70	34
13	130 VERMONT	92ND ST	0	0	0	0	153	44
14	140 VERMONT	90TH ST	0	0	0	0	86	21
15	150 VERMONT	88TH ST	0	0	0	0	88	43
16	160 VERMONT	MANCHESTER	1	0	0	0	598	328
17	170 VERMONT	83RD ST	0	0	0	0	246	78
18	180 VERMONT	81ST ST	0	0	0	0	161	41
19	190 VERMONT	79TH ST	0	0	0	0	108	38
20	200 VERMONT	76TH ST	0	0	0	0	98	57
21	210 VERMONT	74TH ST	0	0	0	0	40	53
22	220 VERMONT	FLORENCE	1	0	2	0	448	216
23	230 VERMONT	69TH ST	0	0	0	0	105	52
24	240 VERMONT	66TH ST	0	0	0	0	153	64
25	250 VERMONT	CAGE	0	1	0	0	266	134
26	260 VERMONT	60TH ST	0	1	0	0	109	113
27	270 VERMONT	59TH ST	0	0	1	0	187	354
28	280 VERMONT	SLAUSON	0	0	0	0	506	208
29	290 VERMONT	56TH ST	0	0	0	0	132	76
30	300 VERMONT	54TH ST	0	0	0	0	265	193
31	310 VERMONT	51ST ST	0	0	0	1	119	151
32	320 VERMONT	48TH ST	0	0	1	0	108	100
33	330 VERMONT	46TH ST	0	0	0	0	71	44
34	340 VERMONT	VERNON	1	1	0	0	623	500
35	350 VERMONT	42ND ST	0	0	0	0	225	177
36	360 VERMONT	KING BLVD	2	2	0	1	669	662
37	370 VERMONT	LEIGHTON	0	0	0	1	90	56
38	380 VERMONT	39TH ST	0	0	0	0	178	105
39	390 VERMONT	EXPOSITION	0	0	0	0	169	81
40	400 VERMONT	37TH PL	0	0	0	0	55	80
41	410 VERMONT	36TH PL	0	0	0	0	90	107
42	420 VERMONT	35TH ST	0	0	0	0	38	36
43	430 VERMONT	JEFFERSON	0	1	0	0	277	258
44	440 VERMONT	29TH ST	0	0	0	0	187	114
45	450 VERMONT	27TH ST	0	0	0	0	109	68
46	460 VERMONT	ADAMS	0	0	0	0	566	393
47	470 VERMONT	24TH ST	0	0	0	0	315	104
48	480 VERMONT	S MONIC FY	0	0	0	0	74	53
49	490 VERMONT	WASHINGTON	0	0	0	0	452	298
50	500 VERMONT	VENICE	0	0	0	0	421	306
51	510 VERMONT	PICO	4	0	2	0	904	835
52	520 VERMONT	11TH ST	0	0	0	0	112	77
53	530 VERMONT	OLYMPIC	0	3	0	0	546	401
54	540 VERMONT	9TH ST	0	0	0	0	480	392
55	550 VERMONT	8TH ST	2	1	0	0	596	486

4.2.2 ON-BOARD PROFILE

Trip Data - Exhibit 4-8. This is the main part of the On-Board Profile. The layout is similar to Exhibit 4-6, except that there is only one column of numbers under each trip, representing the passengers on board leaving each stop.

Total at Stop - Exhibit 4-9. The total passengers on all buses leaving each stop is shown in a format similar to Exhibit 4-7.

4.2.3 RIDERSHIP PROFILE

Trip Data Explanation - Exhibit 4-10. This sheet explains the six possible data items at each stop on each trip in Exhibit 4-11.

Trip Data - Exhibit 4-11. This is the main part of the Ridership Profile. In addition to the explanations in Exhibit 4-9, it should be noted that scheduled and actual times will be shown as zero unless the stop is a time point. In this exhibit, only the first and last pages pertaining to these ten trips are included. The boarding, alighting, and on-board figures at each stop on each trip correspond to the same figures in the more compact On and Off Profile and On-Board Profile.

Interval Data Explanation - Exhibit 4-12. This sheet explains the eight data items at each stop for all trips on each branch during each time period in Exhibit 4-13. Unlike the On and Off Profile and On-Board Profile, the Ridership Profile does not have a Total at Stop report but the total for each branch in the first time period (0.00 to 30:00).

Interval Data - Exhibit 4-13. This is explained in Exhibit 4-12. There is no column for a branch if it does not operate during a given interval. If a branch does not use a certain stop, the data are shown as blanks. This exhibit includes only the first and the last pages pertaining to this group of eight interval and branch combinations.

Interval Data Summary - Exhibit 4-14. Aggregate boardings and passenger miles are shown for all trips on each branch during each interval, along with average passenger trip length in miles and average maximum on-board each trip. The intervals and branches (services) are defined in Exhibit 4-1 and the names of the peak stops are shown in Exhibit 4-2.

4.3 SCHEDULE QUALITY REPORTS

The Schedule Quality Reports present vehicle capacity utilization by measuring seat miles, empty seat miles, passenger miles, and standee miles. These data are accumulated into 18 time period cells. There are 16 hourly periods from 5 a.m. to 9 p.m. and one eight-hour period from 9 p.m. to 5 a.m. The data are drawn from trips or parts of trips operating in each period. The 24-hour total is included as the first time period. Two ratios are calculated which are the measures of schedule quality. The load factor is passenger miles divided by available seat miles; a high load

LINE 204 NORTH VERMONT AVENUE, NORTHBOUND
 TRIP (CAID) NUMBER 1010
 OUS RUN NUMBER 22
 CONTROL TIME (SCHEDULED) 510A
 ACTUAL TIME (.1 MIN) 514
 CONTROL STOP (M POINT) 460

1030
 544A
 546
 460

SERVICE ANALYSIS SECTION
 1050 1070 1090
 607A 627A 642A
 6075 631 642
 460 460 460

DATE 0186
 1110 1150 1170 1190 1210
 9 20 3 22 8
 657A 707A 717A 727A 737A
 700 707 719 728 738
 460 460 460 460 460

LINE	STREET	1010	1030	1050	1070	1090	1110	1150	1170	1190	1210
1	20 VERMONT	4	2	1	1	2	2	0	7	2	0
2	25 VERMONT	4	2	6	3	3	2	0	7	4	0
3	30 VERMONT	6	3	6	4	6	4	2	8	4	1
4	40 VERMONT	6	3	6	4	8	4	2	9	4	2
5	50 VERMONT	7	2	7	7	10	5	2	10	4	4
6	60 VERMONT	8	3	7	7	10	7	2	11	4	4
7	70 VERMONT	8	3	7	7	12	7	2	12	4	5
8	80 VERMONT	8	4	7	7	12	7	2	12	4	5
9	90 VERMONT	12	7	8	10	12	14	2	17	3	10
10	100 VERMONT	12	7	8	10	12	14	2	18	3	11
11	110 VERMONT	12	9	8	14	14	17	3	20	5	13
12	120 VERMONT	12	9	8	14	16	18	4	20	8	13
13	130 VERMONT	13	9	9	14	16	22	4	20	8	14
14	140 VERMONT	13	10	10	14	16	23	4	20	10	14
15	150 VERMONT	13	10	10	14	16	27	4	20	11	14
16	160 VERMONT	14	12	10	12	18	30	4	29	12	15
17	170 VERMONT	15	14	9	12	18	29	4	30	16	17
18	180 VERMONT	16	14	9	16	22	31	3	31	20	20
19	190 VERMONT	16	17	10	19	22	32	4	32	20	21
20	200 VERMONT	16	17	10	21	22	33	4	32	20	24
21	210 VERMONT	16	17	10	21	22	33	4	31	21	24
22	220 VERMONT	19	18	10	23	24	32	4	29	22	26
23	230 VERMONT	20	18	9	23	23	34	7	30	22	26
24	240 VERMONT	20	18	11	23	24	35	7	30	23	30
25	250 VERMONT	20	19	13	25	25	39	8	31	27	31
26	260 VERMONT	21	19	13	26	25	42	8	31	27	32
27	270 VERMONT	21	24	13	26	25	41	8	31	26	32
28	280 VERMONT	22	26	14	26	23	47	9	33	31	32
29	290 VERMONT	23	26	15	26	26	47	11	33	31	32
30	300 VERMONT	23	29	17	27	26	46	10	32	33	30
31	310 VERMONT	23	30	19	29	27	43	11	34	32	31
32	320 VERMONT	23	30	20	29	27	46	13	36	32	31
33	330 VERMONT	22	30	21	30	28	47	14	39	32	31
34	340 VERMONT	21	30	24	31	30	59	17	42	33	33
35	350 VERMONT	21	31	27	36	31	61	21	45	34	34
36	360 VERMONT	16	32	25	34	31	65	19	45	37	33
37	370 VERMONT	16	32	25	34	31	68	19	45	38	33
38	380 VERMONT	20	33	25	37	34	68	21	45	40	34
39	390 VERMONT	20	35	25	41	38	69	23	50	41	37
40	400 VERMONT	20	35	25	42	36	69	23	53	41	38
41	410 VERMONT	21	36	26	44	37	69	23	46	41	38
42	420 VERMONT	21	35	27	44	37	69	24	46	42	38
43	430 VERMONT	22	33	28	42	37	73	22	50	41	38
44	440 VERMONT	23	34	32	48	37	72	25	63	43	40
45	450 VERMONT	23	39	36	49	37	73	25	63	44	44
46	460 VERMONT	24	43	46	52	36	79	28	73	50	51
47	470 VERMONT	25	45	48	57	38	80	29	75	51	52
48	480 VERMONT	26	47	48	56	36	71	31	76	53	54
49	490 VERMONT	25	51	47	50	33	66	39	86	49	53
50	500 VERMONT	25	49	47	44	32	66	30	94	47	50
51	510 VERMONT	26	45	45	49	26	55	29	97	37	50
52	520 VERMONT	26	45	44	49	28	55	30	97	37	50
53	530 VERMONT	28	39	40	52	27	55	26	95	37	54
54	540 VERMONT	29	46	47	57	33	58	29	90	37	54
55	550 VERMONT	28	50	46	63	38	57	34	95	46	59
56	560 VERMONT	30	48	50	65	39	57	33	94	47	64

EXHIBIT 4-8
 ON BOARD PROFILE
 TRIP DATA

EXHIBIT 4-9
ON BOARD PROFILE
TOTAL AT STOP

LINE 204 NORTH		PROCESSED BY ANDREA	SERVICE ANALYSIS SECTION		DATE 0186
LINE 204 VERMONT AVENUE, NORTHBOUND					
TRIP (CARD) NUMBER		3330	3350	TOTAL	
BUS RUN NUMBER		1	2	AT	
CONTROL TIME (SCHEDULED)		3480	4180	STOP	
ACTUAL TIME (.1 MIN)		351	418		
CONTROL STOP (M POINT)		460	460		
1	20 VERMONT	120TH ST	1	1	414
2	25 VERMONT	117TH ST	1	1	480
3	30 VERMONT	IMPERIALHY	1	1	766
4	40 VERMONT	112TH ST	1	1	844
5	50 VERMONT	110TH ST	5	1	977
6	60 VERMONT	108TH ST	8	1	1075
7	70 VERMONT	104TH ST	8	1	1136
8	80 VERMONT	103RD ST	8	1	1142
9	90 VERMONT	CENTURY	9	2	1654
10	100 VERMONT	98TH ST	9	2	1753
11	110 VERMONT	COLOEN	10	2	1896
12	120 VERMONT	94TH ST	10	2	1932
13	130 VERMONT	92ND ST	10	2	2041
14	140 VERMONT	90TH ST	10	2	2106
15	150 VERMONT	88TH ST	10	2	2151
16	160 VERMONT	MANCHESTER	11	2	2421
17	170 VERMONT	83RD ST	11	2	2589
18	180 VERMONT	81ST ST	11	2	2709
19	190 VERMONT	79TH ST	11	2	2779
20	200 VERMONT	76TH ST	11	2	2820
21	210 VERMONT	74TH ST	11	2	2807
22	220 VERMONT	FLORENCE	12	4	3039
23	230 VERMONT	69TH ST	12	4	3092
24	240 VERMONT	66TH ST	12	4	3181
25	250 VERMONT	GAGE	11	4	3313
26	260 VERMONT	60TH ST	10	4	3309
27	270 VERMONT	59TH ST	10	5	3142
28	280 VERMONT	SLAUSON	10	5	3440
29	290 VERMONT	56TH ST	10	5	3496
30	300 VERMONT	54TH ST	10	5	3568
31	310 VERMONT	51ST ST	10	4	3536
32	320 VERMONT	48TH ST	10	5	3544
33	330 VERMONT	46TH ST	10	5	3571
34	340 VERMONT	VERNON	10	5	3694
35	350 VERMONT	42ND ST	10	5	3742
36	360 VERMONT	KING BLVD	10	4	3749
37	370 VERMONT	LEIGHTON	10	3	3783
38	380 VERMONT	39TH ST	10	3	3856
39	390 VERMONT	EXPOSITION	10	3	3944
40	400 VERMONT	37TH PL	10	3	3919
41	410 VERMONT	36TH PL	10	3	3902
42	420 VERMONT	35TH ST	10	3	3904
43	430 VERMONT	JEFFERSON	9	3	3923
44	440 VERMONT	29TH ST	9	3	3996
45	450 VERMONT	27TH ST	9	3	4037
46	460 VERMONT	ADAMS	9	3	4210
47	470 VERMONT	24TH ST	9	3	4421
48	480 VERMONT	5 MONIC FY	9	3	4442
49	490 VERMONT	WASHINGTON	9	3	4596
50	500 VERMONT	VENICE	9	3	4711
51	510 VERMONT	PICO	13	5	4780
52	520 VERMONT	11TH ST	13	5	4815
53	530 VERMONT	OLYMPIC	10	5	4960
54	540 VERMONT	9TH ST	10	5	5048
55	550 VERMONT	8TH ST	11	5	5158
56	560 VERMONT	7TH ST	10	3	5177

LINE 204 NORTH

PROCESSED BY ANDREA

SERVICE ANALYSIS SECTION

DATE 092386

PAGE 1

TRIP DATA
 THE FOLLOWING REPORT PROVIDES DATA ON EACH TRIP DURING THE DAY. THE STOPS ARE
 LISTED ON THE LEFT EDGE OF THE PAPER. UP TO TEN TRIPS ARE LISTED AT ONE TIME.
 BASIC DATA ABOUT THE TRIP IS PROVIDED ON THE FIRST PAGE. IF MULTIPLE PAGES ARE
 NEEDED, THE TRIP NUMBER IS REPEATED. A TYPICAL PRINTOUT FOR ONE STOP ON ONE TRIP
 WOULD BE:

PEOPLE BOARDING AT THIS STOP	3	2	PEOPLE ALIGHTING AT THIS STOP
BOARDINGS SINCE START OF TRIP	14	8	ALIGHTINGS SINCE START OF TRIP
	1310		SCHEDULED TIME
	1311		ACTUAL TIME
	6		PEOPLE ON BOARD LEAVING STOP

TIMES USE A 24 HOUR CLOCK. TIMES ABOVE 2400 ARE NEXT AM.

EXHIBIT 4-10
 RIDERSHIP PROFILE
 TRIP DATA EXPLANATION

LINE 204 NORTH			PROCESSED BY ANDREA			SERVICE ANALYSIS SECTION			DATE 092386		PAGE 2	
LINE 204 VERMONT AVENUE, NORTHBOUND												
LINE NO.	204	204	204	204	204	204	204	204	204	204	204	204
SCHEDULE NO.	85170	85170	85170	85170	85170	85170	85170	85170	85170	85170	85170	85170
DIRECTION NO.	1	1	1	1	1	1	1	1	1	1	1	1
TRIP NO.	1010	1030	1050	1070	1090	1110	1150	1170	1190	1210	1230	1250
ROUTE OR BRANCH NO.	1	1	1	1	1	1	1	1	1	1	1	1
DATE-YEAR, MONTH, DAY	860208	860208	860208	860208	860208	860208	860208	860208	860208	860215	860208	860208
BUS RUN NO.	22	15	12	11	17	9	20	3	22	8	0	0
VEHICLE NO.	8455	8441	8472	8575	8448	8411	8521	8483	8455	8485	0	0
PEAK GROUP CODE	0	0	0	0	0	0	0	0	0	0	0	0
CONTROL TIME	514	544	607	627	642	657	707	717	727	737	0	0
CONTROL STOP	10	10	10	10	10	10	10	10	10	10	0	0
DAY OF THE WEEK	SAT	SAT	SAT	SAT	SAT	SAT	SAT	SAT	SAT	SAT	0	0
UNISERVER	BR00	NUMT	BO01	PRIC	YOUN	JOB1	SUN1	CHAP	BR00	SQUA	0	0
WEATHER	RA	CY	RA	CY	CY	CY	CY	CY	RA	CL	0	0
SEATS	043	043	043	043	043	043	043	043	043	043	0	0
PERIOD OF DAY - A,N,P,Q	A	A	A	A	A	A	A	A	A	A	0	0
1	20 VERMONT	120TH ST	4 0	2 0	1 0	1 0	2 0	2 0	0 0	7 0	2 0	0 0
			4 0	2 0	1 0	1 0	2 0	2 0	0 0	7 0	2 0	0 0
			445	515	535	555	610	625	635	645	655	705
			445	516	535	556	610	627	635	645	655	705
			4	2	1	1	2	2	0	7	2	0
2	25 VERMONT	117TH ST	0 0	0 0	5 0	2 0	1 0	0 0	0 0	0 0	2 0	0 0
			4 0	2 0	6 0	3 0	3 0	2 0	0 0	7 0	4 0	0 0
			0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	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	2	6	3	3	2	0	7	4	0
3	30 VERMONT	IMPERIALHY	2 0	1 0	0 0	1 0	3 0	2 0	2 0	1 0	0 0	1 0
			6 0	3 0	6 0	4 0	6 0	4 0	2 0	8 0	4 0	1 0
			0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	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	3	6	4	6	4	2	8	4	1
4	40 VERMONT	112TH ST	0 0	0 0	0 0	0 0	2 0	0 0	0 0	1 0	0 0	1 0
			6 0	3 0	6 0	4 0	8 0	4 0	2 0	9 0	4 0	2 0
			0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	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	3	6	4	8	4	2	9	4	2
5	50 VERMONT	110TH ST	1 0	0 1	1 0	3 0	2 0	1 0	0 0	1 0	0 0	2 0
			7 0	3 1	7 0	7 0	10 0	5 0	2 0	10 0	4 0	7 0
			0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	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	2	7	7	10	5	2	10	4	7
6	60 VERMONT	108TH ST	1 0	1 0	0 0	0 0	0 0	2 0	0 0	1 0	0 0	0 0
			8 0	4 1	7 0	7 0	10 0	7 0	2 0	11 0	4 0	7 0
			0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	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	3	7	7	10	7	2	11	4	7

EXHIBIT 4-11 PART 1
RIDERSHIP PROFILE
TRIP DATA

IV-13

IV-14

LINE 204 NORTH		PROCESSED BY ANDREA		SERVICE ANALYSIS SECTION								DATE 092386		PAGE 11	
LINE 204 VERMONT AVENUE, NORTHBOUND				1010	1030	1050	1070	1090	1110	1150	1170	1190	1210		
TRIP NO.															
71	750 VERMONT	SAN MONICA	0 3 4 14 59 45 105 86 0 0 0 0 14 19	2 6 0 11 104 72 152 125 0 0 0 0 32 27	1 12 119 95 0 0 0 0 24	2 15 204 193 0 0 0 0 11	0 2 88 75 0 0 0 0 13	1 21 170 127 0 0 0 0 43	0 12 114 93 0 0 0 0 21	2 12 143 112 0 0 0 0 31					
72	760 VERMONT	LEXINGTON	0 0 0 0 59 45 105 86 0 0 0 0 14 19	0 0 0 0 104 72 152 125 0 0 0 0 32 27	1 1 120 96 0 0 0 0 24	0 0 204 193 0 0 0 0 11	0 0 88 75 0 0 0 0 13	0 5 170 132 0 0 0 0 38	0 2 114 95 0 0 0 0 19	0 2 143 114 0 0 0 0 29					
73	770 VERMONT	FOUNTAIN	1 0 0 0 60 45 105 86 0 0 0 0 15 19	1 3 0 4 105 75 152 129 0 0 0 0 30 23	0 1 120 97 0 0 0 0 23	0 3 204 196 0 0 0 0 8	0 0 88 75 0 0 0 0 13	1 2 171 134 0 0 0 0 37	1 2 115 97 0 0 0 0 18	0 1 143 115 0 0 0 0 28					
74	775 SUNSET	VERMONT	0 5 0 10 60 50 105 96 0 0 0 0 10 9	0 18 1 12 105 93 153 141 0 0 0 0 12 12	1 6 121 103 0 0 0 0 18	0 0 204 196 0 0 0 0 8	0 8 88 81 0 0 0 0 5	0 5 171 139 0 0 0 0 32	0 8 115 105 0 0 0 0 10	0 11 143 126 0 0 0 0 17					
75	780 SUNSET	EDGE MONT	0 2 1 4 60 52 106 100 0 0 0 0 8 6	2 12 0 5 107 105 153 146 0 0 0 0 2 7	0 5 121 108 0 0 0 0 13	0 3 204 199 0 0 0 0 5	0 1 88 84 0 0 0 0 4	0 6 171 145 0 0 0 26 9	0 1 115 106 0 0 0 0 9	0 4 143 130 0 0 0 0 13					
76	785 HOLLYWOOD	EDGE MONT	0 7 0 6 60 59 106 106 0 0 0 0 1 0	0 0 0 7 107 105 153 153 0 0 0 0 2 0	0 11 121 119 0 0 0 0 2	0 0 204 199 0 0 0 0 5	0 2 88 86 0 0 0 0 2	1 25 172 170 0 0 0 0 2	0 7 115 113 0 0 0 0 2	0 4 143 134 0 0 0 0 9					
77	790 HOLLYWOOD	VERMONT	0 1 0 0 60 60 106 106 539 609 541 611 0 0	0 0 0 0 107 105 153 153 632 652 632 659 2 0	0 0 121 121 707 722 710 1932 0 0	0 5 204 204 722 722 1932 1932 0 0	0 2 88 88 732 747 731 750 0 0	0 2 172 172 747 752 754 806 0 0	0 2 115 115 752 752 754 806 0 0	0 9 143 143 802 802 806 806 0 0					
78	795 VERMONT	HOLY-BARNS	0 0 0 0 60 60 106 106 0 0 0 0 0 0	0 2 0 0 107 107 153 153 0 0 0 0 0 0	0 0 121 121 0 0 0 0 0 0	0 0 204 204 0 0 0 0 0 0	0 0 88 88 0 0 0 0 0 0	0 0 172 172 0 0 0 0 0 0	0 0 115 115 0 0 0 0 0 0	0 0 143 143 0 0 0 0 0 0					

EXHIBIT 4-11 PART 2
RIDERSHIP PROFILE
TRIP DATA

RIDERSHIP PROFILE

INTERVAL DATA EXPLANATION

LINE 204 NORTH

PROCESSED BY ANDREA

SERVICE ANALYSIS SECTION

DATE 092386

PAGE 157

INTERVAL DATA
 THE FOLLOWING REPORT PROVIDES DATA ON DIFFERENT TIME PERIODS DURING THE DAY.
 EACH INTERVAL LISTS DATA FOR ALL TRIPS DURING THE INTERVAL. EACH BRANCH IS
 LISTED SEPARATELY. (SHORT TURN TRIPS ARE TREATED AS BRANCHES). UP TO 8 COLUMNS
 OF DATA ARE SHOWN AT ONE TIME. IF MULTIPLE PAGES ARE NEEDED, THE COLUMN NUMBER
 IS REPEATED. A TYPICAL ENTRY WOULD BE:

PEOPLE BOARDING AT THIS STOP	48	50	PEOPLE ALIGHTING AT THIS STOP
BOARDINGS SINCE START OF BRANCH	112	90	ALIGHTINGS SINCE START OF BRANCH
AVERAGE BOARDINGS PER TRIP	37	30	AVERAGE ALIGHTINGS PER TRIP
		21	PASSENGER MILES TO NEXT STOP
		7	AVERAGE PERSONS ON BOARD

EXHIBIT 4-13 PART 1
RIDERSHIP PROFILE
INTERVAL DATA

LINE	204 NORTH	PROCESSED BY ANDREA	SERVICE ANALYSIS SECTION				DATE 092386	PAGE 158				
LINE	204 VERMONT AVENUE, NORTHBOUND		1	2	3	3	4	4	5			
	INTERVAL NUMBER		1	2	3	3	4	4	5			
	TIME INTERVAL BEGINS		0	500	901	901	1501	1501	1901			
	TIME INTERVAL ENDS	3000	3000	900	1500	1500	1900	1900	2830			
	BRANCH NO.	1	2	1	1	2	1	2	1			
	NUMBER OF TRIPS	92	40	18	29	21	18	17	27			
1	20 VERMONT	120TH ST	414 414 4 103 4	0 0 0 12 2	49 49 2 12 2	0 0 5 38 5	152 152 0 0 5	0 0 0 0 0	145 145 8 36 8	0 0 0 0 0	68 68 2 17 2	0 0 0 17 2
2	25 VERMONT	117TH ST	66 480 5 120 5	0 0 0 0 5	17 66 3 16 3	0 0 6 45 6	29 181 0 0 6	0 0 0 0 0	16 161 8 40 8	0 0 0 0 0	4 72 2 18 2	0 0 0 18 2
3	30 VERMONT	IMPERIALHWY	317 797 8 122 8	31 31 0 0 8	43 109 6 16 5	3 3 0 45 9	121 302 10 0 9	15 15 0 0 9	98 259 14 40 13	9 9 0 0 13	55 127 4 19 4	4 4 0 19 4
4	40 VERMONT	112TH ST	83 880 9 135 9	5 36 0 0 9	8 117 6 18 6	0 3 0 11 6	31 333 11 50 10	0 15 0 0 10	39 298 16 45 15	5 14 0 0 15	5 132 4 20 4	0 4 0 20 4
5	50 VERMONT	110TH ST	145 1025 11 156 10	12 48 0 0 10	16 133 7 20 7	1 4 0 13 7	68 401 13 0 13	4 19 0 0 13	45 343 19 51 17	7 21 1 1 17	16 148 5 23 5	0 4 0 23 5
6	60 VERMONT	108TH ST	119 1144 12 182 11	21 69 0 0 11	19 152 8 24 8	1 5 0 15 8	54 455 0 73 14	6 25 0 0 14	33 376 20 58 19	10 31 1 1 19	13 161 5 26 5	4 8 0 26 5
7	70 VERMONT	104TH ST	80 1224 13 181 12	19 88 0 0 12	8 160 8 24 8	1 6 0 16 8	36 491 16 72 15	12 37 1 1 15	24 401 22 58 20	3 34 1 1 20	12 173 6 25 6	3 11 0 25 6
8	80 VERMONT	103RD ST	26 1250 13 194 12	20 108 1 1 12	3 163 9 26 8	2 8 0 17 8	15 506 17 78 16	5 42 1 1 16	7 407 22 62 20	8 42 2 2 20	1 174 6 26 5	5 16 0 26 5

EXHIBIT 4-13 PART 2
RIDERSHIP PROFILE
INTERVAL DATA

LINE 204 NORTH	PROCESSED BY ANDREA	SERVICE ANALYSIS SECTION										DATE 092386	PAGE 166				
LINE 204 VERMONT AVENUE, NORTHBOUND		1		2		3		3		4		4		5			
INTERVAL NUMBER		1		2		1		1		1		2		1			
BRANCH NUMBER		1		2		1		1		1		2		1			
72	760 VERMONT LEXINGTON	34 140	20 54	4 31	21 52	12 19	6 30	8 32	3 27	1197410266	5310 4521	2631 2202	4547 3892	2920 2465	2865 2534	2164 1871	1931 1638
		130 111	132 113	146 122	156 134	139 117	159 140	127 110	71 60	290	134	72	111	77	56	49	49
		18	19	23	22	21	18	17	10								
73	770 VERMONT FOUNTAIN	32 211	8 68	11 58	13 64	7 34	3 40	1 31	5 49	1200610477	5318 4589	2642 2260	4560 3956	2927 2499	2868 2574	2165 1902	1936 1687
		130 113	132 114	146 125	157 136	139 119	159 143	127 111	71 62	259	123	64	102	72	49	44	42
		16	18	21	20	20	16	15	9								
74	775 SUNSET VERMONT	23 498	10 214	3 142	13 204	7 135	7 89	3 79	0 63	1202910975	5328 4803	2645 2402	4573 4160	2934 2634	2875 2663	2168 1981	1936 1750
		130 119	133 120	146 133	157 143	139 125	159 147	127 116	71 64	189	94	43	74	54	38	33	31
		11	13	13	14	14	11	11	6								
75	780 SUNSET EDGEWONT	36 223	16 94	6 65	24 91	9 74	4 32	6 16	2 35	1206511198	5344 4897	2651 2467	4597 4251	2943 2708	2879 2695	2174 1997	1938 1785
		131 121	133 122	147 137	158 146	140 128	159 149	127 117	71 66	164	84	34	65	44	34	33	29
		9	11	10	11	11	10	10	5								
76	785 HOLLYWOOD EDGEWONT	40 523	22 296	15 140	22 176	13 149	2 117	9 120	1 90	1210511721	5366 5193	2666 2607	4619 4427	2956 2857	2881 2812	2183 2117	1939 1875
		131 127	134 129	148 144	159 152	140 136	160 156	128 124	71 69	72	32	11	36	18	13	12	12
		4	4	3	6	4	3	3	2								
77	790 HOLLYWOOD VERMONT	4 322	3 155	3 55	1 142	1 87	0 63	2 60	0 62	1210912043	5369 5348	2669 2662	4620 4569	2957 2944	2881 2875	2185 2177	1939 1937
		131 130	134 133	148 147	159 157	140 140	160 159	128 128	71 71	5	1	0	4	1	0	0	0
		0	0	0	1	1	0	0	0								
78	795 VERMONT HOLY-BARNS	0 66	0 21	0 7	0 51	0 13	0 6	0 8	0 2	1210912109	5369 5369	2669 2669	4620 4620	2957 2957	2881 2881	2185 2185	1939 1939
		131 131	134 134	148 148	159 159	140 140	160 160	128 128	71 71	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0								

IV-17

LINE 204 NORTH	PROCESSED BY ANDREA	SERVICE ANALYSIS SECTION					DATE 092386	PAGE 167
LINE 204 VERMONT AVENUE, NORTHBOND								
INTERVAL NUMBER	1	1	2	3	3	4	4	5
BRANCH NO.	1	2	1	1	2	1	2	1
TOTAL PASSENGERS	12109	5369	2669	4620	2957	2881	2185	1939
PASSENGER MILES	29879	11510	7228	10781	6187	6641	4832	5229
AVERAGE TRIP LENGTH	2.47	2.14	2.71	2.33	2.09	2.31	2.21	2.70
MAXIMUM ON BOARD	39	42	57	43	41	42	43	24
PLAK STOPS								
	560	570	560	580	570	570	570	530
		580		590	580	580	580	
					590	590	590	

EXHIBIT 4-14
 RIDERSHIP PROFILE
 INTERVAL DATA SUMMARY

factor is desirable from an operator's point of view. The standee ratio is standee miles divided by passenger miles; a low standee ratio is desirable from the passenger's point of view. The Schedule Quality Summary, Exhibit 4-15, shows hourly totals for one direction for one line. Schedule Quality by Stop, Exhibit 4-16, shows stop-by-stop data. A related report, Schedule Quality System Summary, is discussed in the next chapter. Appended to the Schedule Quality Summary are Title VI data. Under Title VI of the Civil Rights Act of 1964, public agencies are required to show proof of service equity. The variables shown reflect the maximum aggregate passenger load during any one-hour portion of a peak period. A complete explanation of Title VI reporting may be found in Volume 3.

4.4 TRACT AND LINE TOTALS

Tract Totals - Exhibit 4-17. All-day totals for each census tract are presented. Tract numbers are in implied two-place decimal format. In the downtown area, each bus stop is given a unique number by means of suffixing a decimal value to the integer tract number; otherwise, all tract numbers are as defined by the Bureau of the Census. Bus minutes are estimated by interpolating scheduled running time on each trip, carrying fractional minutes forward. The fare headings may include some categories which may not be applicable to all the lines. On some lines, additional fares are shown on a second page. Tract data are aggregated for all lines into larger geographic areas to produce the Area Accounts reports, described in the next chapter.

Line Totals - Exhibit 4-18. These data represent all-day totals and averages for the direction indicated, which is defined in Exhibit 4-17. (Direction 3 = South). Express Service data, if present, are limited to trips, minutes, and miles. All boardings, alightings, and fares are attributed to local service. Line total data are accumulated for the purpose of systemwide ranking and historical comparisons in the Line Performance Trends Reports, described in Volume 3.

4.5 RUNNING TIME ANALYSIS REPORTS

This is a series of seven reports produced by a single program and lettered A through H (E is omitted). The letter is printed at the top of each page after the COBOL program name S8003121.

Report A - Exhibit 4-19. The number of passengers paying each type of fare and the cash value are shown by direction. If there are more than ten types of fares applicable on a line, some of them are combined. The average cash fare per passenger does not take into account revenue from pass sales. Transfers issued and other add-on fares are not counted as a percentage of total boardings.

Report B - Exhibit 4-20. The data shown by direction in Exhibit 4-19 are summed to present line totals in this report.

TRIPS, IN SERVICE MILES, TOTAL SEAT MILES, EMPTY SEAT MILES, TOTAL PASSENGER MILES AND STANDEE MILES BY TIME OF DAY FOR LINE 211 CHECKED ON JUN 04, 1984 AND OPERATING IN A NORTHBOUND DIRECTION.

TIME PERIOD	TRIPS	IN SERVICE MILES	AVAILABLE SEAT MILES	EMPTY SEAT MILES	PASSENGER MILES	STANDEE MILES	LOAD FACTOR	STANDEE RATIO
A L L D A Y	23	157	6754	5015	1774	34	26.3%	1.94%
05:00-05:59		1	38	33	5	0	12.6%	0.00%
06:00-06:59		13	546	435	110	0	20.2%	0.00%
07:00-07:59		9	372	224	154	7	41.4%	4.29%
08:00-08:59		12	529	431	98	0	18.6%	0.00%
09:00-09:59		9	380	324	57	0	14.9%	0.00%
10:00-10:59		12	520	439	81	0	15.6%	0.00%
11:00-11:59		9	380	337	43	0	11.3%	0.00%
12:00-12:59		12	520	412	109	0	20.9%	0.00%
13:00-13:59		9	372	320	52	0	13.9%	0.00%
14:00-14:59		14	607	292	336	21	55.4%	6.35%
15:00-15:59		10	445	251	200	6	45.0%	3.22%
16:00-16:59		11	456	221	235	0	51.5%	0.00%
17:00-17:59		9	373	239	134	0	36.0%	0.00%
18:00-18:59		12	527	400	127	0	24.1%	0.00%
19:00-19:59		9	390	380	10	0	2.5%	0.00%
20:00-20:59		7	300	277	23	0	7.6%	0.00%
21:00-04:59		0	0	0	0	0	0.0%	0.00%
TITLE 6 PEAK HOUR 14:12-15:12	1	STOP 135	SEATS 43		PSCRs 62		144.2%	

DATE OF RIDING CHECK: JUN 4, 1984

(AVERAGE) LOCATION	10:00-10:59---			11:00-11:59---			12:00-12:59---			13:00-13:59---			14:00-14:59---			15:00-15:59---		
	TRIPS	FACTOR	RATIO	TRIPS	FACTOR	RATIO	TRIPS	FACTOR	RATIO	TRIPS	FACTOR	RATIO	TRIPS	FACTOR	RATIO	TRIPS	FACTOR	RATIO
(AVERAGE)	{	15.6%	0.00%	{	11.3%	0.00%	{	20.9%	0.00%	{	13.9%	0.00%	{	55.4%	6.35%	{	45.0%	3.22%
ARTISTIA																		
BIAMTIONNE	1	0.0%	0.00%	2	0.0%	0.00%	1	0.0%	0.00%	2	0.0%	0.00%	1	0.0%	0.00%	2	0.0%	0.00%
ARTISTIA																		
AMIE	1	9.3%	0.00%	2	7.0%	0.00%	1	9.3%	0.00%	2	9.3%	0.00%	1	7.0%	0.00%	2	14.0%	0.00%
PRAIRIE																		
ARTISTIA	1	9.3%	0.00%	2	7.0%	0.00%	1	9.3%	0.00%	2	9.3%	0.00%	1	7.0%	0.00%	2	14.0%	0.00%
PRAIRIE																		
RI BUNDO B	1	9.3%	0.00%	2	8.1%	0.00%	1	9.3%	0.00%	2	11.6%	0.00%	1	14.0%	0.00%	2	20.9%	0.00%
PRAIRIE																		
167TH ST	1	14.0%	0.00%	2	8.1%	0.00%	1	9.3%	0.00%	2	12.8%	0.00%	1	14.0%	0.00%	2	22.1%	0.00%
PRAIRIE																		
164TH ST	1	14.0%	0.00%	2	8.1%	0.00%	1	9.3%	0.00%	2	12.8%	0.00%	1	14.0%	0.00%	2	22.1%	0.00%
PRAIRIE																		
161ST ST	1	14.0%	0.00%	2	7.0%	0.00%	1	11.6%	0.00%	2	12.8%	0.00%	1	18.6%	0.00%	2	22.1%	0.00%
PRAIRIE																		
MANHATTAN	1	14.0%	0.00%	2	7.0%	0.00%	1	11.6%	0.00%	1	9.3%	0.00%	2	17.4%	0.00%	1	7.0%	0.00%
PRAIRIE																		
154TH ST	2	10.5%	0.00%	1	9.3%	0.00%	2	10.5%	0.00%	1	11.6%	0.00%	2	23.3%	0.00%	1	14.0%	0.00%
PRAIRIE																		
CUMPTON	2	11.6%	0.00%	1	9.3%	0.00%	2	9.3%	0.00%	1	11.6%	0.00%	2	22.1%	0.00%	1	18.6%	0.00%
PRAIRIE																		
147TH ST	2	15.1%	0.00%	1	9.3%	0.00%	2	11.6%	0.00%	1	14.0%	0.00%	2	26.7%	0.00%	1	44.2%	0.00%
PRAIRIE																		
ROSECHANS	2	14.0%	0.00%	1	9.3%	0.00%	2	14.0%	0.00%	1	11.6%	0.00%	2	45.3%	0.00%	1	53.5%	0.00%
PRAIRIE																		
137TH ST	2	9.3%	0.00%	1	11.6%	0.00%	2	20.9%	0.00%	1	16.3%	0.00%	3	94.9%	8.46%	1	72.1%	0.00%
PRAIRIE																		
135TH ST	2	11.6%	0.00%	1	11.6%	0.00%	2	20.9%	0.00%	1	14.0%	0.00%	3	96.4%	10.61%	1	72.1%	0.00%
PRAIRIE																		
132ND ST	2	11.6%	0.00%	1	14.0%	0.00%	2	22.1%	0.00%	1	14.0%	0.00%	3	96.4%	11.36%	1	79.1%	0.00%
PRAIRIE																		
11 SECOND	2	12.8%	0.00%	1	11.6%	0.00%	2	23.3%	0.00%	1	14.0%	0.00%	3	103.6%	17.61%	1	79.1%	0.00%
PRAIRIE																		
NORTHROP	2	17.4%	0.00%	1	11.6%	0.00%	2	25.6%	0.00%	1	14.0%	0.00%	3	88.3%	7.44%	1	86.0%	0.00%
PRAIRIE																		
120TH ST	2	17.4%	0.00%	1	11.6%	0.00%	2	27.9%	0.00%	1	14.0%	0.00%	3	86.9%	6.72%	1	90.7%	0.00%
PRAIRIE																		
118TH ST	2	17.4%	0.00%	1	11.6%	0.00%	2	26.7%	0.00%	1	18.6%	0.00%	3	80.3%	4.55%	1	90.7%	0.00%
PRAIRIE																		
IMPERIAL	2	16.3%	0.00%	1	11.6%	0.00%	2	24.4%	0.00%	1	18.6%	0.00%	3	71.5%	0.00%	1	86.0%	0.00%
PRAIRIE																		
111TH ST	2	14.0%	0.00%	1	11.6%	0.00%	2	27.9%	0.00%	1	18.6%	0.00%	3	53.3%	0.00%	1	62.8%	0.00%
PRAIRIE																		
108TH ST	2	17.4%	0.00%	1	11.6%	0.00%	2	30.2%	0.00%	1	18.6%	0.00%	3	48.2%	0.00%	1	51.2%	0.00%
PRAIRIE																		
104TH ST	2	22.1%	0.00%	1	11.6%	0.00%	2	29.1%	0.00%	1	18.6%	0.00%	2	36.2%	0.00%	2	51.2%	0.00%
PRAIRIE																		
CINFORV	2	20.9%	0.00%	1	18.6%	0.00%	2	26.7%	0.00%	1	14.0%	0.00%	2	24.5%	0.00%	2	53.5%	0.00%
PRAIRIE																		
NARDY	2	20.9%	0.00%	1	25.6%	0.00%	2	32.6%	0.00%	1	18.6%	0.00%	1	25.6%	0.00%	2	44.2%	0.00%

LI NE R	D I R	DATE	C O	TRACT	ON	OFF	AV ON BO	TR- IPS	BUS MIN	BUS MILES	PASS MIN	PASS MILES	CASH REG	----- SEN	STU	PASSE- REG	----- SEN	STU	TRN REG	TIC KET	TRANSF REG	DIS
56	3	860815	0	206131	1	0	0	50	29	8	0	0	0	0	0	1	0	0	0	0	0	0
56	3	860815	0	206132	36	0	0	50	50	8	37	6	21	0	0	13	0	0	2	0	10	0
56	3	860815	0	207232	148	0	3	50	50	8	185	30	12	0	0	79	16	4	37	0	8	0
56	3	860815	0	207236	251	3	8	50	50	9	433	74	26	0	0	128	19	9	69	0	10	0
56	3	860815	0	207336	27	3	9	50	57	10	524	87	6	0	0	12	0	1	7	1	2	0
56	3	860815	0	207337	65	8	10	50	50	10	514	103	19	0	0	27	5	5	9	0	10	0
56	3	860815	0	207339	215	39	13	50	70	10	974	138	54	1	0	89	13	4	54	0	19	0
56	3	860815	0	207831	303	48	18	50	66	10	1339	189	63	1	0	126	16	7	89	1	24	0
56	3	860815	0	207835	508	68	27	50	50	10	1385	277	118	2	0	200	24	29	133	2	36	0
56	3	860815	0	207836	83	34	28	50	52	8	1537	229	23	0	0	34	4	1	21	0	4	0
56	3	860815	0	207936	75	15	29	50	65	9	1915	254	11	0	0	25	6	4	28	1	4	0
56	3	860815	0	207937	40	11	30	50	46	9	1479	259	12	0	0	13	0	3	12	0	4	0
56	3	860815	0	207904	129	22	32	50	50	9	1630	277	21	0	0	67	2	1	38	0	8	0
56	3	860815	0	207928	99	59	33	50	48	9	1680	284	56	0	0	20	0	7	16	0	25	0
56	3	860815	0	226227	27	19	33	50	50	9	1678	302	8	0	0	12	0	0	7	0	4	0
56	3	860815	0	226228	50	123	32	50	50	9	1605	289	32	0	0	14	2	1	1	0	13	0
56	3	860815	0	226229	16	42	31	50	92	9	3004	284	9	0	0	5	0	1	1	0	2	0
56	3	860815	0	226200	51	30	32	50	0	9	0	288	21	0	0	19	3	0	8	0	12	0
56	3	860815	0	226100	105	152	31	50	217	53	6892	1665	50	0	0	30	0	3	22	0	24	0
56	3	860815	0	226600	19	52	30	50	50	9	1520	258	7	0	0	9	0	1	1	1	4	0
56	3	860815	0	228100	41	113	29	50	150	34	4414	1004	28	0	0	11	0	1	1	0	17	0
56	3	860815	0	228800	135	215	28	50	98	34	2787	954	52	0	0	33	5	13	31	1	36	0
56	3	860815	0	228900	131	140	26	50	125	30	3605	796	42	0	0	43	3	18	24	1	24	0
56	3	860815	0	532700	94	148	26	50	100	28	2663	738	48	1	0	26	1	1	17	0	26	0
56	3	860815	0	533000	130	288	23	50	157	40	3973	945	32	0	0	37	3	7	51	0	11	0
56	3	860815	0	535000	10	20	22	50	50	13	1137	296	5	0	0	1	0	2	2	0	1	0
56	3	860815	0	535101	29	93	21	50	94	26	2090	555	20	0	0	3	0	2	4	0	11	0
56	3	860815	0	535102	122	106	21	50	95	26	2095	559	21	0	0	38	16	13	34	0	10	0
56	3	860815	0	242300	30	120	20	50	91	26	1870	530	17	1	0	7	2	1	2	0	9	0
56	3	860815	0	242200	49	86	19	50	80	21	1631	417	30	1	0	7	6	5	0	0	9	0
56	3	860815	0	242700	210	323	19	50	159	43	3096	813	91	1	0	40	6	13	59	0	43	0
56	3	860815	0	540700	285	218	18	50	186	43	3457	786	70	2	0	65	12	10	119	7	45	0
56	3	860815	0	540800	10	25	19	50	0	8	0	153	7	0	0	2	0	1	0	0	5	0
56	3	860815	0	541300	96	179	18	47	191	50	3558	906	65	1	0	12	3	10	5	0	41	0
56	3	860815	0	542700	61	139	15	47	69	20	1085	320	15	1	0	14	1	5	24	1	4	0
56	3	860815	0	542500	73	135	14	47	89	20	1343	296	26	0	0	9	3	9	25	1	8	0
56	3	860815	0	543200	73	220	12	47	141	52	1841	651	29	0	0	12	1	6	25	0	12	0
56	3	860815	0	543321	8	38	10	47	73	24	807	264	8	0	0	0	0	0	0	0	5	0
56	3	860815	0	543301	21	149	8	47	198	84	1721	749	8	0	0	2	0	10	0	1	8	0
56	3	860815	0	543303	4	35	7	47	37	15	335	116	4	0	0	0	0	0	0	0	3	0
56	3	860815	0	543322	13	147	5	47	131	44	809	263	6	0	0	3	1	3	0	0	6	0
56	3	860815	0	543400	1	209	1	47	47	15	84	27	0	1	0	0	0	0	0	0	0	0

EXHIBIT 4-17
TRACT TOTALS

D=DIRECTION: 01=NORTH 02=EAST 03=SOUTH 04=WEST
DATE OF CHECK: YYMMDD
C=COUNTY CODE: 0=LOS ANGELES 1=ORANGE 2=RIVERSIDE 3=SAN BERNARDINO 4=VENTURA

LINE 70
4-12-84

SUMMARY OF PASSENGERS BY DIRECTION AND REVENUE COMPONENTS

EASTBOUND

TYPES OF FARES			NUMBER OF PASSENGERS	PERCENT TO TOTAL	FAREBOX REVENUE
CASH	0.50	.50	2,497	23.1%	\$ 1,248.50
STUD	0.20	.20	55	.5%	11.00
SENR	0.20	.20	101	.9%	20.20
SENR	PASS		900	8.3%	
STUD	PASS		1,587	14.7%	
PASS & FREE			3,614	33.4%	
TRANSFRRECD			1,973	18.3%	
TICKET RECD			86	.8%	
TRANSFRO.10	744 X	.10		.0%	74.40
				.0%	

TOTAL EASTBOUND 10,813 100.0% \$ 1,354.10

AVERAGE CASH FARE PER PASSENGER \$.125

LINE 70
4-12-84

SUMMARY OF PASSENGERS BY DIRECTION AND REVENUE COMPONENTS

WESTBOUND

TYPES OF FARES			NUMBER OF PASSENGERS	PERCENT TO TOTAL	FAREBOX REVENUE
CASH	0.50	.50	3,422	34.4%	\$ 1,711.00
STUD	0.20	.20	48	.5%	9.60
SENR	0.20	.20	138	1.4%	27.60
SENR	PASS		778	7.8%	
STUD	PASS		1,592	16.0%	
PASS & FREE			2,916	29.4%	
TRANSFRRECD			946	9.5%	
TICKET RECD			96	1.0%	
TRANSFRO.10	1,741 X	.10		.0%	174.10
				.0%	

TOTAL WESTBOUND 9,936 100.0% \$ 1,922.30

AVERAGE CASH FARE PER PASSENGER \$.193

IV-24

EXHIBIT 4-19
REPORT A

S8003121-B

PRINTED 850612

SCRTD

LINE 70
4-12-84

SUMMARY OF TOTAL PASSENGERS AND REVENUE COMPONENTS

TYPES OF FARES		NUMBER OF PASSENGERS	PERCENT TO TOTAL	FAREBOX REVENUE
CASH	D.50	5,919	28.5%	\$ 2,959.50
STUD	0.20	103	.5%	20.60
SENR	0.20	239	1.1%	47.80
SENR	PASS	1,678	8.1%	
STUD	PASS	3,179	15.3%	
PASS & FREE		6,530	31.5%	
TRANSFRRECD		2,919	14.1%	
TICKET RECD		182	.9%	
TRANSFRO.10	2,485 X .10		.0%	248.50
			.0%	
TOTAL		20,749	100.0%	\$ 3,276.40
		AVERAGE CASH FARE PER PASSENGER \$.158		

IV-25

EXHIBIT 4-20
REPORT B

Report C - Exhibit 4-21. Actual running times between time points are presented for each trip. The trip number, bus run number, and scheduled start time correspond to the Basic Operating Schedule. The location number corresponds to one of the time points at the top; in this case, 11th Street/Georgia. The schedule maker compares this data to the running time classes for the line.

Report D - Exhibit 4-22. Passengers on board at each time point for each trip are presented in a format similar to Report C.

Report F - Exhibit 4-23. Boardings, alightings, fares, and maximum on board are presented by trip. The location of the maximum can be determined by reference to any of the Profiles.

Report G - Exhibit 4-24. Aggregate passengers on board at each time point are recorded by 20 and 60-minute periods to the extent that times were recorded.

Report H - Exhibit 4-25. At the specified location, passenger and headway data are presented by 20 and 60-minute periods. An asterisk indicates that the policy load factor has been exceeded. There is a separate page for each time period.

4.6 RIDERSHIP BY LINE SEGMENT

The Ridership by Line Segment Software package (RBLS) allows a user to query the database for information on any line for which a ride check has been processed. The user specifies the line number, date, day of the week, ride check direction, stops, services, and time period. The computer responds with the boardings, alightings, passengers on-board and number of buses serving each stop within the specified segment. The user may review the available stops, services, and trip data which were used in generating the desired report. Exhibit 4-26 shows a sample of the segment ridership report produced using the RBLS package. A User's Guide and Technical Documentation are available in the Planning Systems Section of the Planning Department¹.

4.7 FARESOFF REPORT

The Faresonoff Report is generated according to user specifications to show boardings, alightings, and fares on any portion of a line. The user inputs the following parameters when setting up the job on the computer:

- All trips or specific trips
- All stops or specific stops
- Trip-by-trip or summary of trips
- Stop-by-stop or summary of stops

¹Ridership by Line Segment (RBLS), Version 1.1, User's Guide, October, 1986.

SBU01121-C

CONSUMED TIME ANALYSIS

PRINTED 050612
CHECKED ON

SCRTD
4-12-84

LINE 70 02 - EASTBOUND

TRIP NO.	HR NO.	TERMINAL ACTUAL	START TIMES SCHED	AT-LOC. NO.	R P T E R	02	03	04	05	06	07	08	10	12	14	16	TOTL CON-SUMO TIME
						11TH ST GEOR GIA	SPRI NG 8TH 7TH	MACY ALAM EOA	GFNL HOS CLIN	MARE SOTO	SOTO MARE	SYRI L BR INST ITUT	GARV EY GARF IELO	GARV EY SAN GABR	GARV EY ROSE MEAO	EL M ONTE STAT ION	
1020	006	444.0A	444A	02			15.5			7.5	8.0						31.0
1040	015	456.0	456	02			15.5		7.5			18.0	8.5	3.5	10.0		63.0
1060	001	507.0	507	02			15.0			8.0	8.0						31.0
1080	011	511.0	511	02			15.5		8.0			17.0	6.0	6.5	9.0		62.0
1100	012	523.0	523	02			16.0	8.0	3.0			16.0	5.0	5.0	10.0		63.0
1120	013	533.5	533	02			16.0	6.5		2.0	9.0						33.5
1140	002	535.0	535	02			15.5	7.0	2.5			17.5	6.0	6.0	9.0		63.5
1160	004	547.0	547	02			17.0	7.0	3.5			16.5	7.0	5.0	7.0		63.0
1180	006	556.0	556	02			18.0	7.5		2.0	7.5						35.0
1200	005	601.0	559	02			17.5	7.0	2.0			15.0	6.0	5.5	9.0		62.0
1220	007	611.0	611	02			16.5	7.5	2.5			16.0	7.5	7.0	9.0		66.0
1240	001	616.0	618	02			17.0	8.0		2.0	8.0						35.0
1260	009	624.0	623	02			18.5	7.5	2.5			16.0	7.0	5.5	9.0		66.0
1280	010	635.0	635	02			19.0	8.0	3.0			17.0	8.0	6.0	12.0		73.0
1300	018	651.0	643	02			21.5	8.5		3.0	11.0						44.0
1320	013	653.5	650	02			20.5	6.5	2.5			19.5	9.0	5.5	10.0		73.5
1340	023	701.5	658	02			19.5	8.5		2.5	10.0						40.5
1380	014	709.0	705	02			21.0	8.0	2.0			17.0	7.0	5.0	10.0		70.0
1400	006	713.0	713	02			21.0	7.5		2.0	8.5						39.0
1420	015	720.0	720	02			20.0	8.0	3.5			15.5	7.0	5.5	9.5		69.0
1440	019	729.0	728	02			22.0	11.0		3.0	11.0						47.0
1460	016	735.0	735	02			18.5	8.5	3.0			17.0	7.5	6.5	8.0		69.0
1480	011	743.0	743	02			15.5	8.0		2.0	9.5						35.0

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EXHIBIT 4-21
REPORT C

S80n3121-0

TRIPS AT LOCATIONS LISTING

PRINTED 850612
CHECKED DN

SCRTD
4-12-84

LINE 70 02 - EASTBOUND

TRIP BR.	START ACTUAL	TIMES SCHED.	L O D C	R P T E R	PASSENGERS AT												
					02 11TH ST GFOR GIA	03 SPR1 NG 8TH	04 MACY ALAM EOA	05 GENL HOS O P CLIN	06 MARE NGO SOTO	07 SOTO MARE NGO	08 SYBI L BR INST TUT	10 GARV EY CARF IELO	12 GARV EY SAN GABR	14 GARV EY ROSE MEAD	16 EL M ONTIE STAT ION		
1020 006	444.0A	444A	02														
1040 015	456.0	456	02														
1060 001	507.0	507	02														
1080 011	511.0	511	02														
1100 012	523.0	523	02														
1120 013	533.5	533	02														
1140 002	535.0	535	02														
1160 004	547.0	547	02														
1180 006	556.0	556	02														
1200 005	601.0	559	02														
1220 007	611.0	611	02														
1240 001	616.0	618	02														
1260 009	624.0	623	02														
1280 010	635.0	635	02														
1300 018	651.0	643	02														
1320 013	653.5	650	02														
1340 023	701.5	658	02														
1380 014	709.0	705	02														
1400 006	713.0	713	02														
1420 015	720.0	720	02														
1440 019	729.0	728	02														
1460 016	735.0	735	02														
1480 011	743.0	743	02														
1500 001	748.0	750	02														
1520 012	758.5	758	02														
1540 002	805.0	805	02														
1560 024	813.0	813	02														
1580 003	820.0	820	02														
1600 004	828.5	828	02														
1620 005	836.0	835	02														
1640 006	843.0	843	02														
1660 007	850.0	850	02														
1680 008	902.5	858	02														
1700 009	908.0	905	02														
1720 010	915.0	913	02														

IV-28

EXHIBIT 4-22
REPORT D

S80(1121-F														
LINE	710	SCHEDULE		B3080	02 EASTBOUND									
DATE	4-12-84	-STARTS AT-		PASS.										
		BAS	SCH	DOAR	CASH	STUD	SENR	SENR	STUD	PASS	TRANS	TICKET	TRANS	
TRIP	ON#	COL.	TIME	DING	0.50	0.20	0.20	PASS	PASS	FREE	RECD	RECD	0.10	
1020	6	02	0444A	10	1				2		3	4		
1040	15	02	0456	84	27		1	8	1	38	8	1	11	
1060	1	02	0507	12	1				1		10		1	
1080	11	02	0511	80	22					5	32	21	15	
1100	12	02	0523	112	30				5		48	29	9	
1120	13	02	0533	24	4		1				15	4	1	
1140	2	02	0535	70	17				2	4	37	9	10	
1160	4	02	0547	120	27				1	19	46	27	9	
1180	6	02	0556	27	7					2	12	5	2	
1200	5	02	0559	116	27				4	15	48	20	7	
1220	7	02	0611	147	34	1			9	35	47	20	21	
1240	1	02	0618	37	8					4	17	7	1	
1260	9	02	0623	148	35	2			4	20	64	23	14	
1280	10	02	0635	226	45	5			15	59	64	35	23	
1300	18	02	0643	89	9				3	14	38	14	2	
1320	13	02	0650	174	30	1	1		12	73	38	17	11	
1340	23	02	0658	46	8				1	14	12	8	1	
1380	14	02	0705	115	19				9	28	33	23	6	
1400	6	02	0713	65	7				9	7	23	19	2	
1420	15	02	0720	101	22				9	22	26	19	6	
1440	19	02	0728	70	7				7	16	22	18	4	
1460	16	02	0735	82	18		1		6	16	27	14	10	
1480	11	02	0743	49	2				5	11	14	15	2	
1500	1	02	0750	86	12		1	2	8	45	18		3	

PRINTED 850612

SCRTO

ALI-	-PASSENGER MAXIMUMS-			
TJNG	ON	AT	STOP	NUMBER(S)
	OUS			
10	8	1150	1230	
84	51	1620		
12	10	1140		
80	42	1680	1690	
112	62	1600	1620	1630
24	16	1160	1230	
70	50	1590	1630	
120	64	1610		
27	17	1230		
116	67	1600		
141	59	1630	1700	
37	27	0970	0980	
148	69	1480		
226	74	1690	1700	
89	71	1180		
174	78	1510		
46	37	1140		
115	54	1160		
65	52	1150		
101	49	1180		
70	54	1160		
82	32	1230	1240	
49	33	1230		
86	37	1150	1160	1470

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EXHIBIT 4-23
REPORT F

SB003121-G
 LINE 70 02 - EASTBOUND

PEAK GROUP
 PASSENGERS AT

PRINTED 050612
 CHECKED ON

SCRFD
 4-12-84

CONTROL OR PEAK POINT TIME FROM TO C	O R P T E R	02 11TH ST GEOR GIA	03 SPRI NG 8TH- 7TH	04 MACY ALAM EDA	05 CEML NOS O P CLIN	06 MARE SOTO NGO	07 SOTO MARE NGO	08 SYBI L BR INST ITUT	10 GARV EY GARF LELO	12 GARV EY SAN GABR	14 GARV EY ROSE MLAD	16 EI M ONTE STAT ION
400A 500	02	1		33		25	2		32	46	47	39
500 600	02	3		239	184	167	18	1	247	271	246	139
600 620	02	1		78	55	24	6		41	50	55	51
620 640	02	2		118	90	75			127	113	104	74
640 700	02			155	117	40	30	2	76	71	58	39
700 720	02	1		155	107	37	10	2	45	54	49	30
720 740	02			84	64	17	8	1	16	23	18	18
740 800	02			132	101	20	12	1	16	23	18	10
800 820	02	1		130	94	54	3		54	49	50	55
820 840	02			61	51	19			17	18	14	12
840 900	02			117	90	31	15	2	26	23	14	13
900 920	02	1		86	81	55	2		48	36	36	32
920 940	02	5		69	54	22	5	2	30	25	22	17
940 1000	02			65	53	27	9	4	27	23	25	17
1000 1100	02	3		274	233	114	34	4	107	71	61	55
1100 1200P	02	2		232	201	117	51	6	152	116	96	89
1200P 100	02			231	209	111	46	2	144	125	106	85
100 200	02			240	227	130	91	3	187	166	124	92
200 300	02			343	323	154	214	5	285	212	174	158
300 320	02	1		134	143	79	67	1	86	65	63	44
320 340	02			167	170	113	57	1	114	73	61	20
340 400	02			213	214	90	140	1	147	86	46	32
400 420	02			269	264	122	142		127	79	86	66
420 440	02	1		206	199	71	123		98	69	42	18
440 500	02			246	249	161	90	6	127	65	53	34
500 520	02			238	226	138	82	1	112	60	40	18
520 540	02			226	219	122	86		128	63	34	19
540 600	02			125	124	104	23		74	43	31	22
600 620	02			160	157	116	40		91	58	49	25
620 640	02	1		92	87	44	40	2	27	9	4	2
640 700	02			38	39	40			37	22	21	
700 800	02			154	163	90	81		66	45	35	31
800 900	02			92	9	67	20		49	27	19	8
900 1000	02			54		20	26	8	30	26	18	12
1000 1100	02	3		43		39			35	15	9	3
1100 1200A	02			26		12	7		13	7	5	3
1200A 100	02		5	13		15			10	5	4	3
100 200	02		1	5		5			5	5	3	
200 300	02		5	1		3			3	3	2	2
300 400	02		2									
400 500	02		4									
		26	17	5344	4597	2710	1580	55	3076	2340	1942	1387

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EXHIBIT 4-24
 REPORT 6

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 ----PASSENGER AND HEADWAY ANALYSIS----
 4-12-84

LINE	70	LOCATION	MACY	ALAMEDA	EASTBOUND	T R I P S			H E A D W A Y S		
		VEHICLE	SEATING	CAPACITY		RE-	SCHED	PRO-	RE-	SCHED	PRO-
				43		QUIRED	-ULED	POSED	QUIRED	-ULED	POSED
		LOAD	TOTAL	PASS	PASS						
		FACTOR	TRIPS	PASS	PER TRIP						
TIME	PERIOD										
FROM	TO										
400 A	500 A	43	1	8	8.0	.2	1.0				60.0
500	600	43	6	143	23.8	3.3	6.0		18.1	10.0	
600	620	43	3	121	40.3	2.8	3.0		7.1	6.7	
620	640	60	3	128	42.7	2.1	3.0		9.5	6.7	
640	700	60	2	139	69.5	2.3 *	2.0		8.6	10.0	
700	720	60	2	84	42.0	1.4	2.0		14.2	10.0	
720	740	60	3	155	51.7	2.6	3.0		7.6	6.7	
740	800	60	2	84	42.0	1.4	2.0		14.2	10.0	
800	820	60	3	132	44.0	2.2	3.0		9.0	6.7	
820	840	60	3	130	43.3	2.2	3.0		9.0	6.7	
840	900	60	3	61	20.3	1.0	3.0		20.0	6.7	
900	920	51	3	117	39.0	2.3	3.0		8.6	6.7	
920	940	51	3	86	28.7	1.7	3.0		11.7	6.7	
940	1000	51	2	69	34.5	1.4	2.0		14.2	10.0	
1000	1100	43	8	256	32.0	6.0	8.0		10.0	7.5	
1100	1200 N	43	8	237	29.6	5.5	8.0		10.9	7.5	
1200 N	100 P	43	8	233	29.1	5.4	8.0		11.1	7.5	
100 P	200	43	7	235	33.6	5.5	7.0		10.9	8.6	
200	300	43	10	282	28.2	6.6	10.0		9.0	6.0	
300	320	51	4	162	40.5	3.2	4.0		6.2	5.0	
320	340	51	5	152	30.4	3.0	5.0		6.6	4.0	
340	400	51	3	189	63.0	3.7 *	3.0		5.4	6.7	
400	420	60	4	153	38.3	2.6	4.0		7.6	5.0	
420	440	60	5	269	53.8	4.5	5.0		4.4	4.0	
440	500	60	4	206	51.5	3.4	4.0		5.8	5.0	
500	520	60	5	246	49.2	4.1	5.0		4.8	4.0	
520	540	60	6	296	49.3	4.9	6.0		4.0	3.3	
540	600	60	3	168	56.0	2.8	3.0		7.1	6.7	
600	620	60	3	125	41.7	2.1	3.0		9.5	6.7	
620	640	51	3	160	53.3	3.1 *	3.0		6.4	6.7	
640	700	51	3	92	30.7	1.8	3.0		11.1	6.7	
700	800	51	4	167	41.8	3.3	4.0		18.1	15.0	
800	900	43	4	98	24.5	2.3	4.0		26.0	15.0	
900	1000	43	3	58	19.3	1.3	3.0		46.1	20.0	
1000	1100	43	2	58	29.0	1.3	2.0		46.1	30.0	
1100	1200 Q	43	2	26	13.0	.6	2.0			30.0	
1200 Q	100	43	1	13	13.0	.3	1.0			60.0	
100	200	43	1	5	5.0	.1	1.0			60.0	
200	300	43	1	1	1.0		1.0			60.0	
			146	5344							

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EXHIBIT 4-25
 REPORT H

EXHIBIT 4-26
SEGMENT RIDERSHIP REPORT

PRESS ENTER TO CONTINUE OR PF3/15 TO RETURN TO MAIN MENU

-----RIDERSHIP BY LINE STOP REPORT -----LINE 000001 COL 001 080
 COMMAND ==> SVAR973 SCROLL ==> CUR

STOP NO.	STOP ON	STOP AT	PASSENGERS		ON-BOARD	TRIPS
			ON	OFF		
430	HILL	PICO	1	0	9	8
440	HILL	12TH ST	4	0	13	8
450	HILL	11TH ST	6	0	19	8
460	HILL	OLYMPIC	5	0	24	8
465	HILL	9TH ST	6	0	30	8
470	HILL	8TH ST	33	1	71	9
480	HILL	7TH ST	73	2	142	9
490	HILL	5TH ST	26	0	168	9
500	HILL	4TH ST	16	0	165	8
510	HILL	3RD ST	9	0	174	8
520	HILL	1ST ST	28	0	226	* 9
9999	== TOTAL ON/OFF=>		207	3	0	0

Exhibit 4-27 includes two Faresonoff Reports covering the same portion of a line with different parameters. In both reports, specific trips (1140 to 1500) and specific stops (0300 to 0540) were chosen. In the first report, the trip-by-trip format was chosen, and in the second report, stop-by-stop. The last line of both reports is the same, showing total boardings, alightings, and fares for trips 1140 to 1500 between Arlington at Slauson and Private Right-of-way at Sixth Street. Any combination of parameters may be specified but the user must determine the numbers of specific trips or stops, if desired, from other printed reports or computer files, since the Faresonoff software will not prompt the user with available numbers.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

LINE 209 DIRECTION 01 DATE 860807
TRIP SUMMARY - STOPS 0300 TO 0540

	ON	OFF	FARE TYPES						FRAN	STICK	TRANS	D.10								
			CASH 0.85	SENR 0.40	SENR PASS	STUD PASS	PASS FREE	RECO												
TOTAL FOR TRIP 1140	21	32	9	1	2	2	7	0	0	9	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1160	36	57	13	1	3	2	15	1	1	13	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1180	26	39	6	0	2	4	14	0	0	5	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1200	24	36	5	1	4	2	8	4	0	6	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1240	25	33	7	0	12	1	5	0	0	7	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1260	22	28	5	2	0	2	3	2	0	7	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1280	18	28	11	0	3	2	2	0	0	11	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1300	9	26	3	0	3	0	2	1	0	4	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1320	15	18	3	0	3	2	7	0	0	2	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1340	18	25	7	1	3	3	3	1	0	6	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1360	14	30	0	0	7	1	3	3	0	1	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1380	13	21	0	0	3	0	0	2	0	6	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1400	11	18	4	1	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1420	9	23	2	1	2	1	1	2	0	3	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1460	21	37	0	0	2	2	6	3	0	5	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1480	20	35	0	0	2	1	3	6	0	7	0	0	0	0	0	0	0	0	0	
TOTAL FOR TRIP 1500	17	23	3	0	8	3	2	1	0	4	0	0	0	0	0	0	0	0	0	
TOTAL	319	509	102	0	70	28	84	26	1	99	0	0	0	0	0	0	0	0	0	

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

LINE 209 DIRECTION 01 DATE 860807
STOP SUMMARY - TRIPS 1140 TO 1500

STOP ON	AT	ON	OFF	FARE TYPES						FRAN	STICK	TRANS	D.10							
				CASH 0.85	SENR 0.40	SENR PASS	STUD PASS	PASS FREE	RECO											
0310 ARLINGTON	SLAUSON	16	23	6	0	0	0	8	2	0	4	0	0	0	0	0	0	0	0	0
0310 ARLINGTON	54TH ST	33	34	12	1	0	3	8	1	0	13	0	0	0	0	0	0	0	0	0
0320 ARLINGTON	5112	8	0	3	0	2	0	3	0	0	3	0	0	0	0	0	0	0	0	0
0330 ARLINGTON	48TH ST	20	3	11	0	3	2	3	0	1	10	0	0	0	0	0	0	0	0	0
0340 ARLINGTON	VERNON	13	30	2	1	5	2	2	1	0	3	0	0	0	0	0	0	0	0	0
0350 ARLINGTON	42ND ST	4	5	0	1	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0
0360 ARLINGTON	M L KING	31	29	5	0	3	4	12	7	0	4	0	0	0	0	0	0	0	0	0
0370 ARLINGTON	39TH ST	9	4	3	0	1	1	3	1	0	2	0	0	0	0	0	0	0	0	0
0380 ARLINGTON	RODEO	16	6	8	0	2	1	4	1	0	7	0	0	0	0	0	0	0	0	0
0385 ARLINGTON	37TH PL	11	4	4	0	0	1	4	2	0	2	0	0	0	0	0	0	0	0	0
0390 ARLINGTON	36TH PL	4	1	2	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
0400 ARLINGTON	JEFFERSON	31	27	11	1	9	3	3	4	0	11	0	0	0	0	0	0	0	0	0
0410 ARLINGTON	29TH ST	18	5	8	0	4	2	4	0	0	7	0	0	0	0	0	0	0	0	0
0420 ARLINGTON	ADAMS	19	30	7	1	7	0	2	2	0	8	0	0	0	0	0	0	0	0	0
0430 ARLINGTON	SM FWY	7	5	2	0	0	4	1	0	0	2	0	0	0	0	0	0	0	0	0
0440 ARLINGTON	WASHINGTON	27	34	10	1	4	0	11	1	0	11	0	0	0	0	0	0	0	0	0
0450 ARLINGTON	VENICE	15	30	4	1	4	1	4	1	0	5	0	0	0	0	0	0	0	0	0
0460 ARLINGTON	PICO	23	40	2	1	10	1	6	3	0	3	0	0	0	0	0	0	0	0	0
0470 ARLINGTON	COUNTRY CB	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0480 ARLINGTON	OLYMPIC	7	40	1	0	3	1	2	0	0	1	0	0	0	0	0	0	0	0	0
0490 WILTON PL	9TH ST	4	1	1	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0
0500 WILTON PL	8TH ST	3	12	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0520 WILTON PL	WILSHIRE	0	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0530 WILTON PL	6TH ST	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0540 P.R.O.W.	6TH ST	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL		319	509	102	0	70	28	84	26	1	99	0	0	0	0	0	0	0	0	0

VOLUME I

EXECUTIVE SUMMARY
CHAPTER 1 OVERVIEW OF THE RIDE CHECK PROCESSING SYSTEM
CHAPTER 2 PREPARATION FOR RIDE CHECK PROCESSING 2.1 INTRODUCTION 2.2 PREPARATORY STEPS FOR RIDE CHECK ASSIGNMENTS 2.3 STOPLIST PREPARATION 2.4 DATA COLLECTION PROCEDURES 2.5 EDITING AND CODING RIDE CHECK DATA 2.6 KEYPUNCHING RIDE CHECK DATA
CHAPTER 3 RIDE CHECK PROCESSING 3.1 INTRODUCTION 3.2 EDITING OF COMPUTER FILES 3.3 COMPUTER-GENERATED FILES 3.4 COMPUTER DIAGNOSTIC PROGRAMS 3.5 DISPOSITION OF RIDE CHECKS
CHAPTER 4 RIDE CHECK SUMMARY REPORTS 4.1 INTRODUCTION 4.2 PROFILES - COMMON FEATURES ON & OFF PROFILE ON BOARD PROFILE RIDERSHIP PROFILE 4.3 SCHEDULE QUALITY REPORTS 4.4 TRACT AND LINE TOTALS 4.5 RUNNING TIME ANALYSIS REPORTS 4.6 RIDERSHIP BY LINE SEGMENT 4.7 FARESONOFF REPORT
CHAPTER 5 SYSTEM PATRONAGE REPORTS BASED ON RIDE CHECK DATA 5.1 INTRODUCTION 5.2 AREA ACCOUNTS 5.3 SCHEDULE QUALITY SYSTEM REPORT 5.4 RIDERSHIP BY 15-MINUTE PERIODS 5.5 DOWNTOWN REPORT
GLOSSARY



CHAPTER 5

SYSTEM PATRONAGE REPORTS BASED ON RIDE CHECK DATA

5.1 INTRODUCTION

System patronage reports summarize data from all bus lines to show systemwide aggregates and averages. The Area Accounts reports show data by geographic area. The Schedule Quality Report and Ridership by 15-Minute Periods show data by time of day. The Downtown Report shows data by individual bus stop in the Los Angeles Central Business District. Each report may be produced for weekdays, Saturdays, or Sundays. Since the data for constituent lines have been collected on different days over a period of approximately one year, the system patronage reports represent activity on an average day, rather than any specific day. Major changes in routings, scheduling, or fares will affect the currency of these reports until such time as replacement ride check data have been processed.

5.2 AREA ACCOUNTS

Area Accounts is a systemwide report of bus service and patronage characteristics by geographic area. The areas used are combinations of census tracts as defined for the 1980 Census. Standard areas available are Planning Sectors, Counties, Supervisorial Districts, Congressional Districts, State Senatorial Districts, Assembly Districts, Cities, Los Angeles City Council Districts (1986 version), representation areas of SCRTD Directors, County Road Department areas, and School Districts. Other areas may be defined at the discretion of the Planning Manager -- Planning Systems. Because political apportionment does not follow census tract boundaries as a matter of policy, there will be small errors in the allocation of border census tracts. When districts are supposed to have equal populations, an effort has been made to allocate border tracts to that end; otherwise, they are allocated on the basis of the preponderance of population. Extremely small areas, such as Hidden Hills, and odd-shaped areas, such as City of Industry may have so little correspondence to census tracts that their totals lose validity. Passenger data collected near the border of a geographic area will include some patrons who walked from or to an adjacent area which was the true origin or destination, but this type of error tends to balance out when larger areas are defined.

Exhibit 5-1 is a sample Area Accounts report for a planning sector, West San Gabriel Valley, on an average weekday. All variables read across, with major titles on the left side. "County Total" in this case refers to SCRTD service in Los Angeles County, and does not include service provided by other operators or SCRTD service in other counties. "Boardings per Capita" is based on unlinked trips, and does not represent the percentage of the population who use the bus. "Loading (Time)" and "Loading (Distance)" are two ways of showing average occupancy, computed by dividing passenger hours by bus hours or passenger miles by bus miles. The fares shown represent different cash values to the extent that the ride checks on the constituent lines were performed when different fare structures were in effect. Some of

the fare types have an incidence of 0 because they do not apply to any line in this area, or are obsolete. Express fares show only the incidence of recording cash fares at the five increment levels, and not the number of express trips.

5.3 SCHEDULE QUALITY SYSTEM REPORT

The Schedule Quality System Report measures the efficiency of service provided in terms of load factor (where a high ratio is desired) and standee ratio (where a low ratio is desired). Given the constraints of funding level and peak travel demand, the quality of schedules depends on the availability of accurate ridership reports and the Schedule Makers' ability interpret them.

The Weekday Schedule Quality System Report, Exhibit 5-2, summarizes the data from one weekday ride check on each of 166 lines. All mileage figures are presented in whole miles, but since most bus stops are less than one mile apart, the distances are computed to the nearest hundredth of a mile before aggregation. In-service miles are vehicle miles. Seat miles are in-service miles multiplied by the number of seats on each bus. Empty seat miles accrue whenever the number of seats exceeds the number of passengers on-board leaving a stop. Passenger miles are computed from boardings, alightings, and the distance between stops. Standee miles accrue whenever the number of passengers on board leaving a stop exceeds the number of seats. Standee miles do not reflect the actual number of people standing, nor do empty seat miles reflect the actual number of empty seats. The load factor is passenger miles divided by seat miles, and the standee ratio is standee miles divided by passenger miles. The data are accumulated into the time periods shown, based on last scheduled time recorded without interpolation. The number of trips is recorded only for the all day period, since many trips do not fall entirely into another single time period. Separate reports are also available for Saturdays and Sundays.

5.4 RIDERSHIP BY 15-MINUTE PERIODS

Ridership data are summarized by 15-minute periods, based on scheduled times with interpolation, for the purpose of analyzing peaking characteristics on a systemwide basis. The following reports are available separately for weekdays, Saturdays, and Sundays:

- Boardings
- Alightings
- On-Board
- Buses in Service
- Cash Fares
- Pass Fares
- Regular Fares
- Senior/Handicapped Fares
- Student Fares
- Transfers Received
- Tickets Received
- Express Increments
- Regular Cash Fares
- Regular Pass Fares
- Senior/Handicapped Cash Fares
- Senior/Handicapped Pass Fares
- Student Cash Fares
- Student Pass Fares
- Regular Transfers Sold

WEEKDAY SCHEDULE QUALITY SYSTEM REPORT

DATE 091986

TRIPS, IN SERVICE MILES, TOTAL SEAT MILES, EMPTY SEAT MILES, TOTAL PASSENGER MILES
AND STANDEE MILES BY TIME OF DAY
S Y S T E M S U M M A R Y (TOTAL LINES=166)

TIME OF DAY	NO. OF TRIPS	IN SRVC MILES	SEAT MILES		PASSENGER MILES		LOAD FACTOR	STDE RATIO
			TOTAL	EMPTY	TOTAL	STANDEE		
A L L D A Y	17154	284421	1262248	7305728	5636049	319303	44.7%	5.7%
05:00-05:59		8544	377857	251874	129354	3367	34.2%	2.6%
06:00-06:59		21018	939298	495669	475663	32025	50.6%	6.7%
07:00-07:59		23701	1063648	475844	651999	64189	61.3%	9.8%
08:00-08:59		20445	911998	520810	410762	19567	45.0%	4.8%
09:00-09:59		16139	709905	454156	262760	7013	37.0%	2.7%
10:00-10:59		14209	621848	387490	239382	5018	38.5%	2.1%
11:00-11:59		13943	609069	377154	236155	4237	38.8%	1.8%
12:00-12:59		14022	613871	364267	254919	5326	41.5%	2.1%
13:00-13:59		14674	644236	379492	271080	6337	42.1%	2.3%
14:00-14:59		16598	734740	426870	318184	10312	43.3%	3.2%
15:00-15:59		19328	861500	430855	465758	35115	54.1%	7.5%
16:00-16:59		21282	953653	441997	558605	46954	58.6%	8.4%
17:00-17:59		21486	964412	469892	542872	48335	56.3%	8.9%
18:00-18:59		18377	821502	485812	359341	23657	43.7%	6.6%
19:00-19:59		12275	541719	383715	162766	4765	30.0%	2.9%
20:00-20:59		7660	338373	250696	88442	764	26.1%	0.9%
21:00-04:59		20713	914901	709201	208023	2331	22.7%	1.1%

V-4

EXHIBIT 5-2
SCHEDULE QUALITY SYSTEM REPORT

The fare categories are overlapping to provide flexibility of application to peak pricing models. Three of the reports are included as Exhibit 5-3. These reports present percentage of boardings by 15-minute periods, percentage of on-board by 15-minute periods, and percentage of senior fares by 15-minute periods, respectively. The 96 time periods are presented as ordinal quarters of hours ending as specified. The 1st quarter of the hour ending 0100 covers 00:01 through 00:15 past midnight. The percentages are rounded to the nearest tenth, so that 0.0 means less than 1/20 of one percent rather than an incidence of 0. In the first example, boardings represent unlinked trips. Total boardings reflect the data as found in ride checks database as of the date of the report, rather than actual activity on that day. In the second example, on-board is calculated as passengers aboard during the fifteenth minute of each period divided by total boardings for the day, since the universe of on-board cannot otherwise be expressed discretely. Therefore, the total for on-board is not 100%, unlike the other examples. The third example shows the distribution of senior and handicapped fares, combining cash with monthly passes.

5.5 DOWNTOWN REPORT

The Downtown Report shows boardings, alightings, and fare usage by type for each bus stop in the Los Angeles Central Business District, an area bounded by Figueroa on the west, Alameda on the east, Venice and 16th on the south, and Bernard on the north. The report is useful in market research for pedestrian-oriented businesses, in analysis of bus queueing and dwell time, and in regulation of sidewalk utilization. Separate reports are available for weekdays, Saturdays, and Sundays.

Exhibit 5-4 shows the first page from a weekday Downtown Report. The stop locations are arranged in geographic order, beginning with east-west streets from north to south, followed by north-south streets from east to west. The location names are generally composed of a direction of travel, street on which the bus is traveling, cross street, and corner. For example, "E Macy Alameda SE" means eastbound on Macy at the intersection with Alameda, southeast corner. "MB" means mid-block between the two cross streets names. The absence of a corner designation indicates a grade separation or T-intersection. Off-street terminals are shown with the name commonly used by SCRTD. "Union Station" means the loop on the north side off Macy. The data presented were for the various bus lines on different days over a period of about a year.

EXHIBIT 5-3

RIDERSHIP BY 15- MINUTE PERIODS

DATE 100286

DATE 100286

PERCENTAGE OF BOARDINGS BY 15 MINUTE PERIODS

PERCENTAGE OF ON BOARD BY 15 MINUTE PERIODS

HOUR ENDING	1QTR	2QTR	3QTR	4QTR
0100	0.1	0.1	0.0	0.0
0200	0.1	0.0	0.0	0.0
0300	0.0	0.0	0.0	0.0
0400	0.0	0.0	0.0	0.0
0500	0.0	0.0	0.1	0.1
0600	0.2	0.4	0.7	1.0
0700	1.4	1.8	2.1	2.6
0800	3.1	3.2	2.9	2.2
0900	1.8	1.6	1.4	1.3
1000	1.2	1.2	1.2	1.1
1100	1.2	1.3	1.2	1.2
1200	1.2	1.2	1.3	1.3
1300	1.4	1.4	1.4	1.4
1400	1.4	1.4	1.4	1.4
1500	1.5	1.6	1.8	2.0
1600	2.7	2.8	2.8	2.5
1700	2.7	2.4	2.6	2.3
1800	2.5	2.0	1.8	1.6
1900	1.4	1.2	1.0	0.8
2000	0.7	0.6	0.5	0.4
2100	0.4	0.4	0.3	0.3
2200	0.3	0.3	0.3	0.2
2300	0.2	0.2	0.2	0.1
2400	0.1	0.1	0.1	0.1
TOTAL	100.0%			
TOTAL BOARDINGS		1439867		

HOUR ENDING	1QTR	2QTR	3QTR	4QTR
0100	0.1	0.1	0.1	0.0
0200	0.1	0.0	0.0	0.0
0300	0.0	0.0	0.0	0.0
0400	0.0	0.0	0.0	0.0
0500	0.0	0.0	0.1	0.1
0600	0.3	0.5	0.7	1.1
0700	1.6	2.1	2.4	2.8
0800	3.2	3.3	2.9	2.3
0900	2.1	1.8	1.6	1.4
1000	1.3	1.2	1.2	1.1
1100	1.2	1.2	1.2	1.2
1200	1.2	1.2	1.2	1.2
1300	1.3	1.3	1.4	1.4
1400	1.4	1.4	1.4	1.4
1500	1.5	1.6	1.8	2.0
1600	2.6	2.6	2.7	2.7
1700	2.9	2.9	3.1	3.0
1800	3.0	2.7	2.3	2.0
1900	1.7	1.5	1.2	0.9
2000	0.8	0.6	0.5	0.4
2100	0.4	0.4	0.3	0.3
2200	0.3	0.3	0.3	0.2
2300	0.2	0.2	0.2	0.2
2400	0.1	0.1	0.1	0.1
TOTAL	107.1%			

DATE 100236

PERCENTAGE OF SENIOR FARES BY 15 MINUTE PERIODS

HOUR ENDING	1QTR	2QTR	3QTR	4QTR
0100	0.0	0.0	0.0	0.0
0200	0.0	0.0	0.0	0.0
0300	0.0	0.0	0.0	0.0
0400	0.0	0.0	0.0	0.0
0500	0.0	0.0	0.0	0.1
0600	0.1	0.2	0.3	0.5
0700	0.6	0.7	0.8	1.0
0800	1.1	1.2	1.3	1.3
0900	1.3	1.4	1.6	1.7
1000	1.9	2.1	2.1	2.3
1100	2.4	2.6	2.6	2.4
1200	2.5	2.5	2.5	2.4
1300	2.4	2.5	2.5	2.6
1400	2.4	2.5	2.4	2.3
1500	2.4	2.3	2.3	2.3
1600	2.5	2.4	2.3	2.2
1700	2.2	1.9	1.9	1.7
1800	1.6	1.3	1.1	1.0
1900	0.9	0.7	0.6	0.5
2000	0.4	0.3	0.2	0.2
2100	0.2	0.2	0.2	0.1
2200	0.1	0.1	0.1	0.1
2300	0.1	0.1	0.1	0.0
2400	0.1	0.0	0.0	0.0
TOTAL	100.0%			

VOLUME I

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→ GLOSSARY

GLOSSARY

Active Bus

An active bus is assigned to a Division for regular use on one or more lines. Because of maintenance and repair needs, the number of assigned buses at a Division is slightly greater than the number needed for scheduled service. The excess of active buses over scheduled buses are called spare buses. All active buses together are called the active fleet.

Actual Time

Actual time is the time a bus leaves a time point or arrives at a terminal or layover zone. Actual time may be shown to the 1/2 minute (.5).

Base Period

The base period is the time in the middle of the day (Monday through Friday) when bus service and patronage are generally less than during the peak periods. The specific limits of the base period are defined differently according to the application, but are approximately 9:00 a.m. to 3:00 p.m.

Basic Column

The Basic Operating Schedule has 20 columns for the time point headings exclusive of pull-in and pull-out times.

Basic Operating Schedule

The Basic Operating Schedule is a document produced by the Schedule Department which shows all departures, arrivals, time points, and off-route operations for every trip on a bus line.

Bid

A bid is a ranked assignment list submitted by an operator or schedule checker. The successful bid on an open assignment goes to the most senior qualified person who requested that assignment.

Boarding

A boarding is one person entering a bus for a ride and is usually associated with a date, time, bus line, location, and fare type. One boarding is equal to one unlinked trip.

Bowl Schedule

A bowl schedule includes extra trips which operate only for events at Hollywood Bowl. Lines 651 through 664 operate only on Bowl schedules.

Bus Line

A bus line is an established route along which buses travel for the purpose of transporting revenue passengers. Every bus line may be assigned more than one route number if the bus line has substantially different routes (e.g., bus line 70 has the 70 and 71 routes), or has substantially different service over the same route (e.g., bus line 33 has the 33 (local) and 333 (limited routes)).

Bus Run

A bus run is the assignment for one vehicle for one day. It is a two-digit number associated with one line number. A bus run may provide service on a second, or foreign, line for part of the day. Two or more operators may be assigned to one bus run at different times of the day, just as one operator may be assigned to two bus runs at different times.

Census Tract

Every bus stop is assigned to a census tract, as established for the 1980 census and delineated in the Thomas Brothers Street Atlases. Census tract numbers are six digits with implied two-place decimal. Census tract 3 is written 0003000, while census tract 1113.04 is written 111304. In the downtown area between Figueroa and Alameda, Venice and Bernard, the mantissa is defined by the Service Analysis Section, such that each bus stop is assigned to a unique census tract. Express stops, already on board stops, and remaining on board stops are assigned to the same census tract as the adjacent real stop. Stops which are comments and spacers are not assigned to a census tract.

Check Date

The check date is the date on which a field survey (riding check) is made of the activity on a bus line. If more than one day is required to complete the survey, the date on which most of the work is done is used. Individual trips are identified by the actual day and date they are surveyed, except that assignments which continue after midnight continue to carry the previous day and date. The check date is expressed numerically as a six-digit number: year, month, day (830510 represents May 10, 1983).

Control Stop

A control stop is one listed on the Basic Operating Schedule through which all or most trips pass. A control stop has a Basic column number, taken from the BOS, and a stop number, taken from the STOP element. The control time is the time at which a trip is scheduled to pass the control stop. If a trip is not scheduled to pass through the control stop, a time is extrapolated from the end of the trip nearest to the control stop and assigned to the trip so that it may be queued with other trips.

County Code

The county code is used in conjunction with the census tract to avoid confusion and to identify "express census tracts", imaginary areas to which express service is attributed so that it may be reported separately. The county codes are:

- 0 Los Angeles
- 1 Orange
- 2 Riverside
- 3 San Bernardino
- 4 Ventura

Express census tracts are identified by assigning a value of 9 minus the county code:

- 9 Los Angeles express
- 8 Orange express
- 7 Riverside express
- 6 San Bernardino express
- 5 Ventura express

Direction

Directions are assigned as north-south, east-west, or roundtrip, according to the operating characteristics of a bus line, and may differ from directions used descriptively for the general public. Directions are coded numerically:

- 1 north
- 2 east
- 3 south
- 4 west
- 5 roundtrip

Division

A division is a location where buses are stored and to which operators report for work. Non-operating divisions have no operators assigned, but may have buses which are being stored or repaired.

Extra Board

The extra board is the pool of non-biddable and temporarily vacant assignments at a division. Operators assigned to the extra board fill these assignments on a rotating basis and their days off are bid by seniority choice.

Far Terminal

The far terminal is the last scheduled stop on a bus trip exclusive of pull-in or off-route movement.

Fare

A passenger fare is the payment required for a ride, whether in the form of cash, pass, ticket, or other authority.

Fare Box

The fare box is the device on each bus where money, tokens or tickets submitted as fares are stored.

Fare Box Revenue

Fare box revenue is the money retrieved from all fare boxes each day.

Follower

The follower is the bus next scheduled after a given bus on a given segment of a line.

Foreign County

A foreign county is any county other than Los Angeles County. SCRTD provides service under contract to other transit agencies in Orange, Riverside, and San Bernardino Counties.

Foreign Line Trip

A foreign line trip is part of a bus run which serves a line other than the one to which the bus run is normally assigned in order to optimize bus deployment from a division.

Headway

Headway is the average time scheduled between two or more consecutive trips on a segment of a bus line.

Headway Sheet

A headway sheet is a working document created by a Schedule Maker to analyze the frequency of service needed at a point on a bus line.

Inactive Bus

An inactive bus is either in long-term storage or undergoing major repairs and is not available for use.

In-service Hours

In-service hours are the sum of time spent in revenue service. The total includes terminal to terminal revenue time but excludes all pull-out and pull-in time, layover time, and off-route time.

In-service Miles

In-service miles are the sum of miles travelled in revenue service. The total includes miles travelled from terminal to terminal, but excludes all pull-out, pull-in and off-route mileage.

Instruction Bus

An instructional bus has been specially modified to serve the instructional needs of operators, and is not available for revenue service.

Interlining

Interlining is the process by which trips needed on different lines are matched so that only one bus is used. The additional trips are called foreign line trips.

Layover

A layover is the time between trips when a bus is parked and an operator is still assigned to it. The layover zone is the location authorized for this purpose. If no operator is assigned while the bus is parked, then the bus is at a mid-day storage location.

Leader

The leader is the bus scheduled immediately before a given bus on a given segment of a bus line.

Line Number

A three-digit number is used to identify each bus line. Alphabetic designations are generally ignored in computer processing. Numbers 1-899 are assigned by the Planning Department, and refer to SCRTD service. Line numbers 900-999 are assigned by the County Road Department and refer to municipal service. Each line operates independently of other lines and has a Basic Operating Schedule. Some lines have two or more route numbers which refer to easily distinguishable service variations, such as alternate routes. Since all line numbers have been changed during the period of computerized data analysis, it is necessary to check the date in order to determine the applicability of the data.

Line Regulator

A Line Regulator monitors the schedule adherence of buses at a point on a bus line, and may give operators instructions which temporarily override the Basic Operating Schedule in order to maximize service by responding to current conditions. Line Regulators report their observations and instructions daily so that regulation techniques may be analyzed for maximum effectiveness.

Linked Trips

Linked trips are an estimated number of passenger trips, some of which require transferring to a second or third bus. The factor to convert unlinked trips to linked trips is derived from on-board survey results.

Load Factor

The load factor is the percentage of seat miles supplied which is occupied. The calculation is:

$$\text{LOAD FACTOR} = (\text{PASSENGER MILES} / \text{SEAT MILES}) \times 100$$

If, for example, a bus travels between two points in revenue service, and exactly half the seats are occupied, the load factor is 50% for that trip segment.

Mileage Column

There are five mileage columns in the ROUT element, which accommodate up to five different physical routes on one bus line. Each mileage column shows the cumulative mileage from stop-to-stop over one physical route. Divergent physical routes may be accommodated in the same mileage column if they do not re-unite. Each service is assigned to one mileage column by the HEAD element, and the progression of mileages for the stops used by that service, as shown in the routing codes, must be increasing.

Mileage Point

A mileage point is a stop which is at a known distance from the beginning of a line, as determined by the Mileage Section in the Scheduling Department by supplementary measurements. Mileage points are established such that intermediate stops are approximately equidistant. APPMILE is then used to interpolate mileages for intermediate stops in the ROUT element. Mileage points are indicated by the letter M in ROUT. The letter S indicates that the interpolation routine is to skip that stop, assigning it the same mileage as the previous stop, as for a comment or a stop used by another mileage column.

Near Terminal

The near terminal is the first scheduled stop of a trip, exclusive of pull-out or off-route travel.

Off-route

Off-route travel is the scheduled movement between points on a line, or between lines, when the bus is not in service.

On-board

On-board refers to passengers on a bus or group of buses at a stop.

Operator

An operator operates a bus in revenue service and is assigned to a division.

Operator Sick-out or Miss-out

When an operator becomes sick or otherwise misses part of or all of an assignment, the assignment is usually transferred to the Extra Board.

Owl

Owl trips are late-night trips, from about midnight to 5:00 a.m., which are specially scheduled to connect with trips on many other lines.

Paddle

The paddle is the printed schedule of a specific bus run.

Park/Ride Line

A park/ride line provides express or special service from a parking lot specially designated for bus patrons.

Passenger Miles

Passenger miles are equal to the point-to-point in-service miles times the number of passengers on-board between the same two points. For example, if a bus travels in-service from point A to point B, a distance of 0.7 miles, and has 45 passengers on board, 31.5 passenger miles are accumulated in this A-B segment.

Peak Periods

Peak periods are the times in the morning and afternoon (Monday through Friday) when bus service and patronage are generally greater than during the rest of the day. The specific limits of the peak periods are defined differently according to the application but are approximately 6:00 a.m. to 9:00 a.m. and 3:00 p.m. to 6:00 p.m.

Peak Point

The peak point is the stop or group of stops at which the maximum number of passengers is on-board for a trip or group of trips in one direction on a bus line.

Pink Letter

A pink letter is a document printed on pink stock which specifies temporary schedule and work run deviations.

Point Check

A point check is a survey made by a Schedule Checker of one or more bus lines at a single stop and includes schedule adherence and passenger activity.

Pull-in

The pull-in is that portion of a bus run from the far terminal of the last trip to a division for storage. After a pull-in, the Operator has a different assignment or is off duty.

Pull-out

The pull-out is that portion of a bus run from a division to the near terminal of the first trip.

Race Schedule

A race schedule includes extra trips or modifications to regular trips and is effective only on days when the race track (Santa Anita, Los Alamitos, or Hollywood Park) is operating. Lines 609 through 615 operate only on race schedules.

Regular Schedule

A regular schedule is any schedule which is not specifically designed to accommodate patrons to race tracks, Hollywood Bowl, the county fair, or special events.

Revenue Vehicle Hours

Revenue vehicle hours are equal to the sum of all in-service vehicle time plus layover time. The "4-24 Report" also (currently) includes all off-route time in the revenue vehicle hour calculation, in addition to layover and in-service time, when off-route travel is the scheduled movement between two points on the same line.

Revenue Vehicle Miles

Revenue vehicle miles are equal to the sum of all in-service vehicle miles. The "4-24 Report" also (currently) includes all off-route mileage in the revenue mile calculation, in addition to in-service miles, when off-route travel is the scheduled movement between two points on the same line. Layovers are ignored since layover mileage is equal to zero.

Riding Check

A riding check is a process by which data are collected on actual in-service bus operations. A full riding check is conducted by assigning a Schedule Checker to every trip on a bus line from start to end of service. The Schedule Checker collects information on boardings, alightings, fares paid by type, location of activity, scheduled and actual times at time points, line, bus run, and vehicle numbers, seating capacity, weather, today's date, and notes about the trip's operation.

Route Number

A route number is displayed on each in-service bus to identify where it is going and which stops will be made. One or more route numbers are associated with each line number.

Routing Code

The routing codes in the ROUT element indicate which stops each service uses. A service may not use certain stops because it is a limited or shortline, or because the stops are comments or on a different physical route. The routing codes are:

- 0 Not used by this service
- 1 Used by this service
- 3 Already on board
- 4 Remaining on board

Already on board and remaining on board are dummy stops which are treated as real stops. An express stop gets a routing code of 1 if the service continues on the freeway from that point.

Run Cutting

Run cutting is the process of dividing bus runs into operator or schedule checker assignments so that bus operations are completely covered and work rules are complied with.

Running Time

Running time is the elapsed time, either scheduled or actual, between time points on a trip.

Running Time Sheet

A running time sheet is a compilation of actual running times observed on a group of trips and is used by a schedule maker to evaluate the effectiveness of the Basic Operating Schedule.

SASCONTROL

SASCONTROL is a computer file which contains a record of every riding check ever made and is used to keep track of various phases of ride check processing and to make historical comparisons of boardings and passenger miles by direction.

Schedule Checker

The Schedule Checker is an employee who conducts riding checks, point checks, or related work in the Scheduling Department for the purpose of determining patronage characteristics and schedule adherence.

Schedule Number

Schedule numbers are five-digit numbers assigned by the Scheduling Department. The first two digits are the year the schedule went into effect. Schedule numbers are unique according to line and days of operation: a line which operates every day will have different numbers for weekdays, Saturdays, and Sundays. For each schedule number there is a unique Basic Operating Schedule. Minor revisions of a schedule may cause a new BOS to be issued with the same schedule number, or a pink or white letter may be issued showing the schedule number.

Scheduled Time

Scheduled time is the time shown on the Basic Operating Schedule when a bus is supposed to depart a specified stop or arrive at a terminal or layover.

School Schedule

A school schedule includes extra trips or modifications to regular trips and is effective only when the school is in session. When the school is not in session, a school holiday schedule is used.

Seat Miles

Seat miles are equal to the point-to-point in-service miles times the seating capacity of the vehicle. For example, if a vehicle has a seating capacity of 43 and travels 13.5 in-service miles, then 580.5 seat miles are accumulated. In the current fleet, seating capacity ranges from 27 to 82, depending on vehicle type.

Service Number

Services are numbered 1-20 for each line, according to different patterns of service by trip. Every variation, whether shortline, alternate route, school route, or limited, has a different service number. Trips which have a bus change, breakdown, or temporary detour are assigned the service number of regularly scheduled service.

Service Type

Service types identify the class of service for each service number:

- 0 Local service entire trip
- 1 Limited service (skip stops) part of the trip
- 2 Express service (extra fare) with local fare applicable to part of a trip
- 3 Express service (extra fare) entire trip
- 4 Reduced fare service
- 5 Subscription service (obsolete)
- 6 Special event service (extra fare)

Standard Fare

Standard fares are the means of categorizing a great variety of fares for computer processing. Type P fares represent people boarding with valid cash or non-cash fares. Type M fares represent money collected for incremental or supplementary fares. Fare values shown below have been effective since July 1, 1985; different values or obsolete fares may apply to riding check data before this time period. Future fares represent space reserved in existing programs for as yet undefined fares. Obsolete fares may be redefined in the future:

<u>Number</u>	<u>Type</u>	<u>Value</u>	<u>Description</u>
1	P	.85	Regular cash fare
2	P	.40	Senior/handicapped cash fare
3	P	.00	Senior/handicapped monthly pass
4	P	.00	Student monthly pass
5	P	.00	Regular monthly pass or free
6	P	.00	Transfer received
7	P	.00	Ticket, token, or transit pass received
8	M	.10	Transfer purchased
9	M	.35	Express increment 1
10	M	.70	Express increment 2
11	M	1.05	Express increment 3
12	M	1.40	Express increment 4
13	M	1.75	Express increment 5
14	P	.00	Miscellaneous fares paid (people)
15	M	varies	Cents amount of #14 fares
16	M	.00	Miscellaneous additional fares paid
17	M	varies	Cents amount of #16 fares
18	M	varies	Transfer issued, regulated by another agency
19	P	obsolete	Super Sunday transfer purchased
20	P	obsolete	Super Sunday transfer received
21	P	obsolete	Student cash fare
22	M	obsolete	Discount transfer purchased
23-27	M	obsolete	Discount express increments 1-5
28-30	future		

Standee

A standee is a passenger forced to stand due to lack of seating capacity. A passenger choosing to stand when there is available seating does not constitute a standee.

Standee Factor

The standee factor is the percentage of total passenger miles that is spent as standee miles. The calculation is:

$$\text{STANDEE FACTOR} = (\text{STANDEE MILES} / \text{PASSENGER MILES}) \times 100$$

If, for example a bus with 43 seats travels in-service from point A to point B, a distance of 0.7 miles, and has 45 passengers on board, then 31.5 passenger miles and 1.4 standee miles are accumulated. Therefore the standee factor is 4.44%.

Standee Miles

Standee miles are equal to the point-to-point in-service miles times the number of standees on board between the same two points. For example, if a bus with 43 seats travels in-service from point A to point B, a distance of 0.7 miles, and has 45 passengers on board, 1.4 standee miles are accumulated in this A-B segment.

Stop

A stop is any approved location where passengers may be received or discharged, generally defined as being "on" a street "at" a cross street, or some descriptive designation as in a shopping center or at a terminal. In computer processing, a list of stops may include records which do not describe real stops, but are used as spacers, comments, or express stops. Every stop has a unique four-digit number by line by direction, which is assigned by Service Analysis, and two ten-character descriptive names.

Supervisor's Summary

The Supervisor's Summary is a condensed version of the Basic Operating Schedule which shows all in-service characteristics of trips on a line.

Time Point

A time point refers to a bus stop described by headings on the Basic Operating Schedule. Time points are numbered 1-20 according to the columns on the BOS. A time point may or may not be used by all trips which operate through the stop. Supplementary time points are described on the BOS elsewhere than in the headings and apply only to the trip(s) immediately following. Use of time points is needed to study schedule adherence by operators.

Total Vehicle Hours

Total vehicle hours are the sum of all scheduled time from pull-out to pull-in, specifically including pull-out time, off-route time (between lines), in-service time, layover (or recovery) time and pull-in time.

Total Vehicle Miles

Total vehicle miles are the sum of all scheduled miles from pull-out to pull-in, specifically including pull-out miles, off-route miles (between lines), in-service miles and pull-in miles. Unlike hours, there are no miles accumulated during layover and, therefore, this value is always equal to zero.

Traffic Loader

A traffic loader assists passengers at a stop where the number of boardings is great, and performs other duties for the Scheduling Department.

Trip

A trip is a scheduled revenue operation from a near terminal to a far terminal. Trips are numbered from 1-9999, according to the Basic Operating Schedule card number. If multiple cards are required to describe a single trip, the one which contains the first scheduled departure time is used to determine the trip number.

Tripper

A tripper is an operator assignment other than a regular run (see Work Run). A tripper may be assigned to the Extra Board or to a part-time operator, or it may be open to bidding by a regular operator to work in addition to a regular run.

Unlinked Trips

Unlinked trips are the total of observed boardings summarized by bus line, time of day, or geographic area.

Vehicle Number

Every revenue vehicle has a four-digit number assigned by the Purchasing Department. Since the buses are bought in groups and numbered sequentially, reference to a small correspondence table will yield the type, size, age, equipment, and seats on any bus.

Work Run

All bus schedules are broken up and recombined into scheduled pieces of work, called work runs, for Bus Operators. All operator work runs are either in the class of "Regular Run" or "Tripper", where "Regular Run" contains five days' work per week, eight hours or more pay time per day and two days off within seven consecutive days, and where a "Tripper" work run is any scheduled work which is not a part of and does not fit the definition of a "Regular Run".