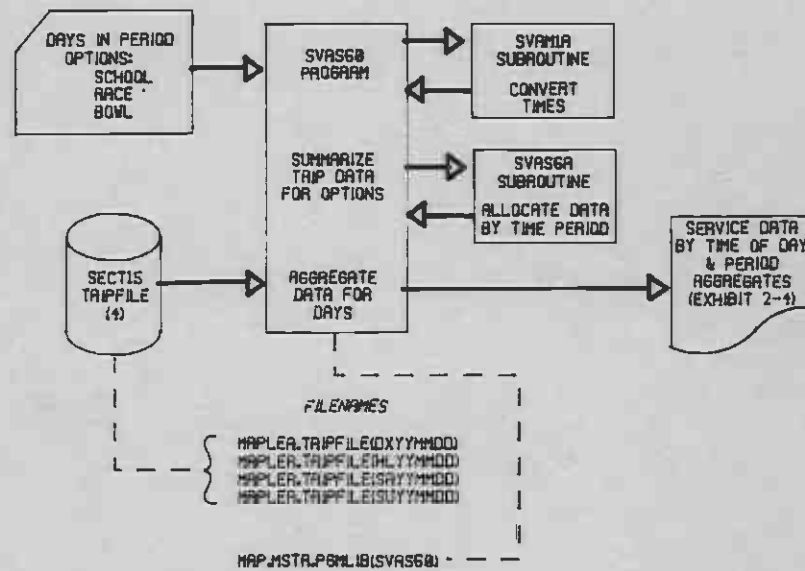


TRANSIT SYSTEM SURVEILLANCE REPORT

VOLUME 2

RIDE CHECK TECHNICAL APPENDICES



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

JANUARY, 1987

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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

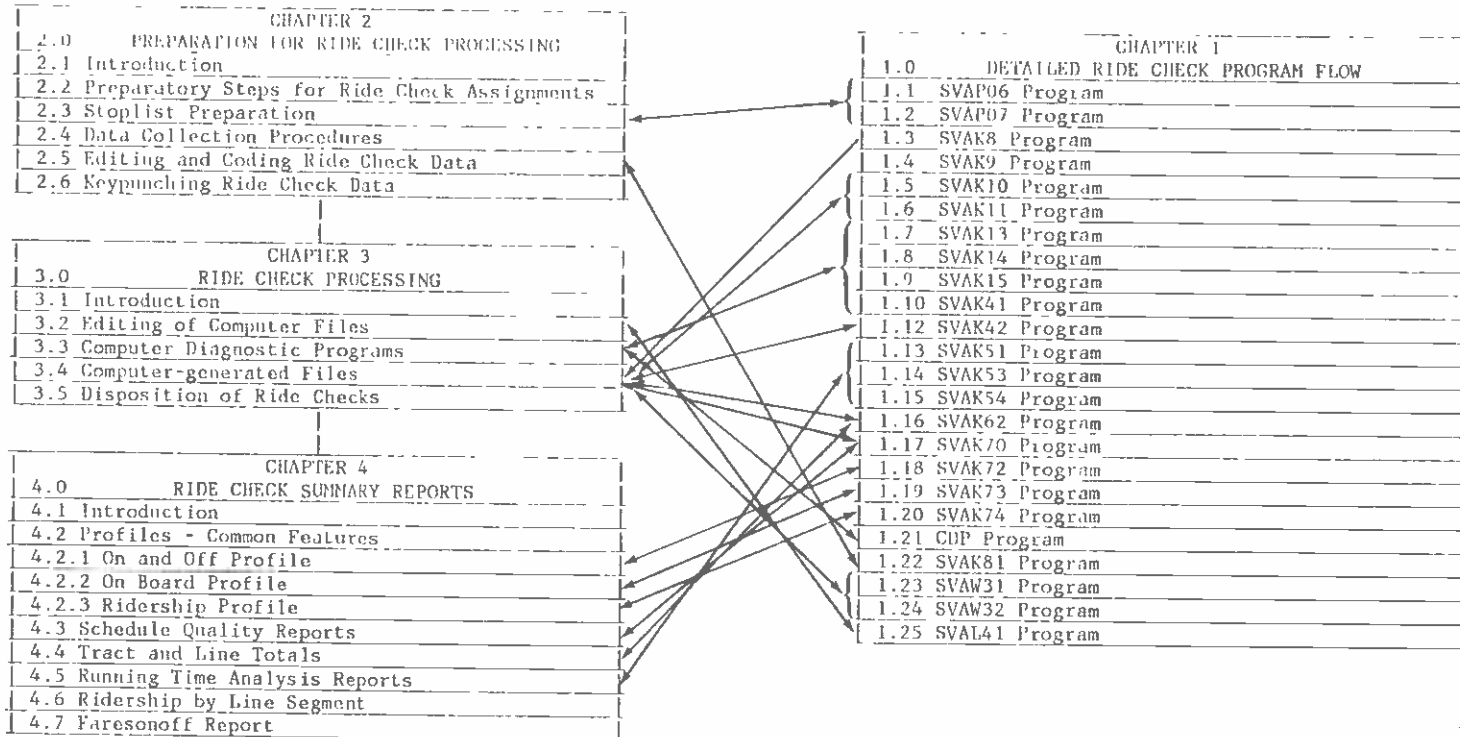
Volume 1 is a narrative report intended to provide a basic description of the ride check system. Chapter 1 of this volume provides a general overview of the ride check processing system. It describes its origin, the primary departments involved in collecting, processing and analyzing the ride check data 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 1

VOLUME 2



CHAPTER 1

DETAILED RIDE CHECK PROGRAM FLOW

1.0 INTRODUCTION

This chapter contains a description of the operations performed by each program followed by a flowchart showing input and output files. IBM system utilities and programs which are not routinely used are not included. Unless otherwise noted, the programs are written in FORTRAN, and are run in batch jobs generated by CLIST, as described in Chapter 2. File layouts for all catalogued files mentioned in this chapter appear in Chapter 3.

1.1 SVAP06 PROGRAM

This program along with the program described in the next section is used for generating the ride check forms.

The List Program (SVAP06) reads a list of line numbers and days-of-the-week for which ride check forms are needed. This information is entered by a Data Technician using a data entry panel which is displayed when the CLIST SVALSTT is executed. The corresponding line numbers and days of the week are found in LNLST and written to S10002 which is used by program SVAP07. The information transferred includes line number, direction, number of fare groups, number of fares per page, fare group names, and beginning stops of fare groups. The input list of line numbers and days must be in line order. If a line is to be checked twice, such as on a weekday and a Saturday, the two requests must be run in separate jobs. Exhibit 1-1 shows the relationship among files.

1.2 SVAP07 PROGRAM

The Form Program (SVAP07) generates the master forms for a paper ride check. It is written in COBOL. The desired line numbers are read from file S10002, which is passed from program SVAP06. All the needed stop lists are assembled in the JCL and read as S10001. All possible fare headings are read from S10000. Based on each control card in S10002, the program determines: (1) whether the line number and direction are found in S10001 or not; (2) whether the fare groups are found in S10000 or not; and (3) how many pages will be written for each direction. The number of pages is affected by (1) the number of stops; (2) the number of fare headings (width of the page); (3) the number of fare groups (each of which forces a page eject); and (4) the logical orientation of the form (vertical or horizontal). Each page is then assembled in S10050 and accumulated in M810020. The final form is written at eight lines per inch with page override, and all leger lines are included. The width-to-length ratio of the necessary part of the printout corresponds to 8.5 by 11 inches, so that copies can be made on a variable-reduction copier. Exhibit 1-2 shows the relationship among various files.

EXHIBIT 1-1
SVAP06 FLOWCHART

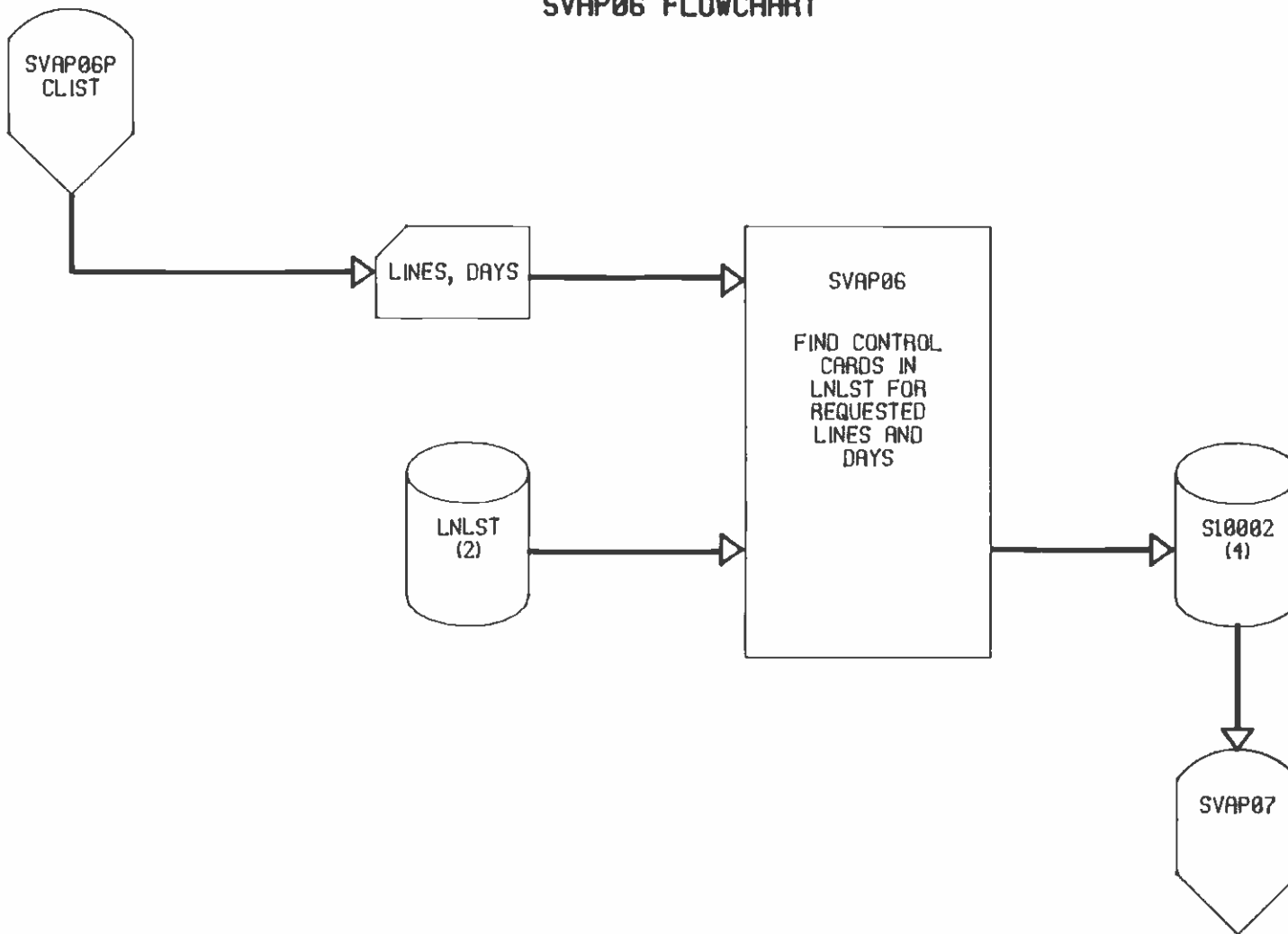
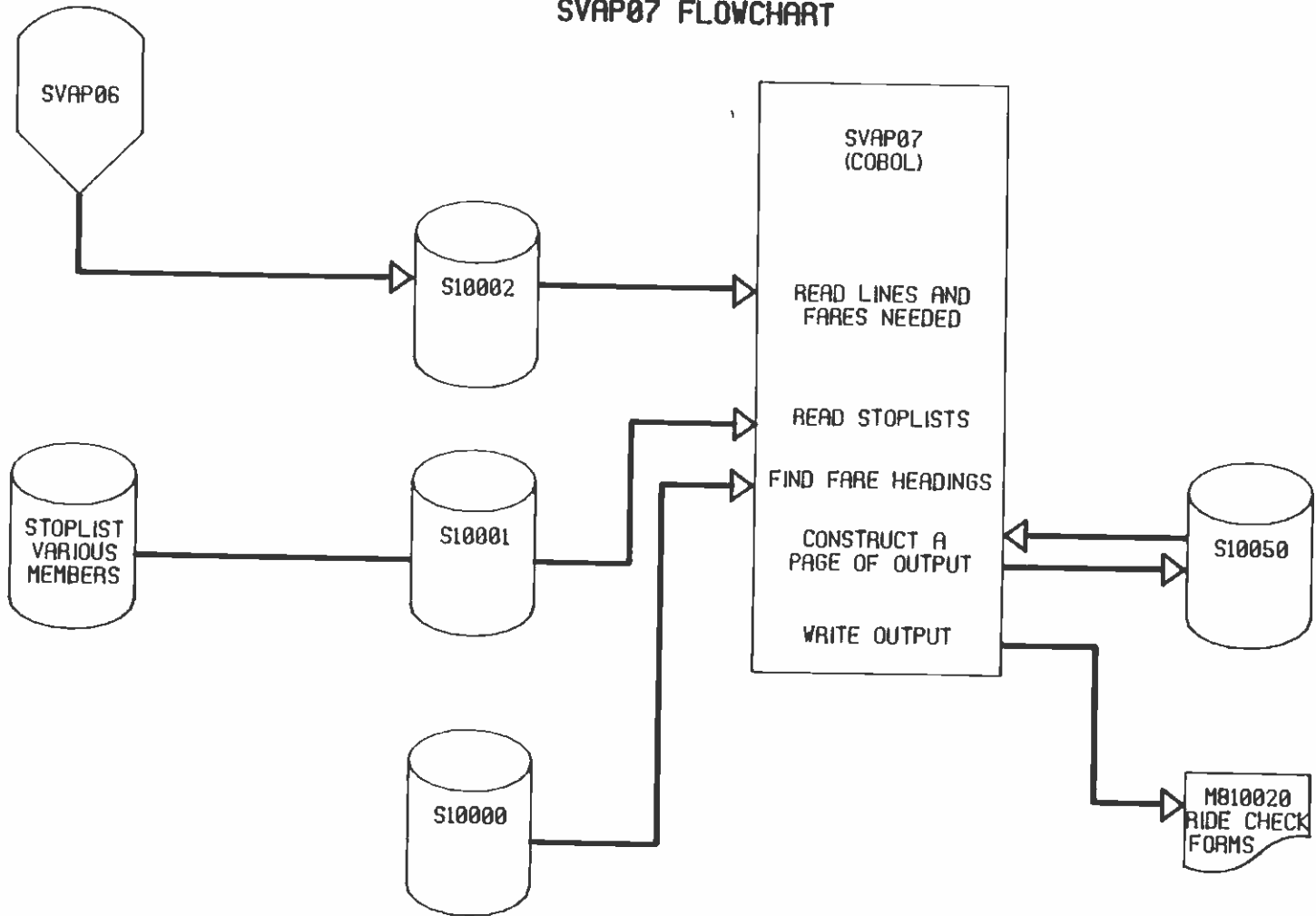


EXHIBIT 1-2
SVAP07 FLOWCHART



1.3 SVAK8 PROGRAM

This program is used for generating the STOP file.

SVAK8 reads the TEMP.STOP file which has been generated by CLIST SVAK10 using STOPLIST, and writes all information except supplementary time point indicators to the catalogued STOP file. Supplementary time points correspond to sub-headers on the Basic Operating Schedule, and are used to capture scheduled times. When they occur in the same columns as regular time points, they must be suppressed in the STOP file to avoid conflict since the Basic column number is used as an array subscript. Exhibit 1-3 shows the relationship among various files.

1.4 SVAK9 PROGRAM

This program is used as a pre-processor for ride check data collected using a handheld device. It is used to merge the time at the control stop in the load card and service number in the data card.

SVAK9 program reads the line, date, and number of fare headings from a card generated by CLIST SVAK10, and computes the day-of-the-week from the date using subroutine SVAM1D. The CNTLPT file is then loaded into an array. As each trip is read from UNSORTED, the control time is added to the lead card, and the service number to every card. The number of fares used on each record is compared to the number permitted. The trip is then written to unit 9, less any variables in disallowed fields. To the extent that CNTLPT and UNSORTED do not list the same trips, messages are generated. At the end of SVAK9, unit 9 is sorted by trip and stop in preparation for SVAK10H. Exhibit 1-4 shows the relationship among files.

1.5 SVAK10H PROGRAM

This program is used to split the ride check data by direction.

The Split Program (SVAK10H) divides the sorted ride check data into two directions, north and south or east and west. This applies to both paper and handheld ride checks, but does not apply to lines with only one direction, roundtrip. In addition, for handheld ride checks, records with duplicate trip and stop numbers are flagged on the printout, and they are combined by adding appropriate variables together before being written to DATA. If there are more than ten fare headings, the output is written to CARD files rather than DATA files. Exhibit 1-5 shows the relationship among files.

1.6 SVAK11 PROGRAM

This program is used to convert CARD file into DATA file.

The Multifare Program (SVAK11) reads the passenger fares recorded in the CARD file, categorizes them according to the fare groups on the parameter card, and writes them to the DATA files according to the standard fare format. The file relationships are shown in Exhibit

**EXHIBIT 1-3
SVAK8 FLOWCHART**

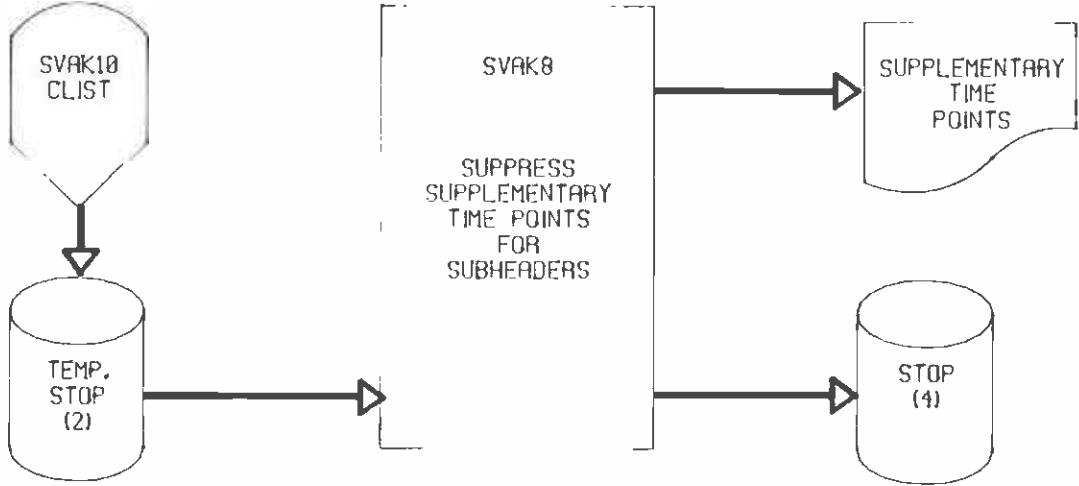


EXHIBIT 1-4
SVAK9 FLOWCHART

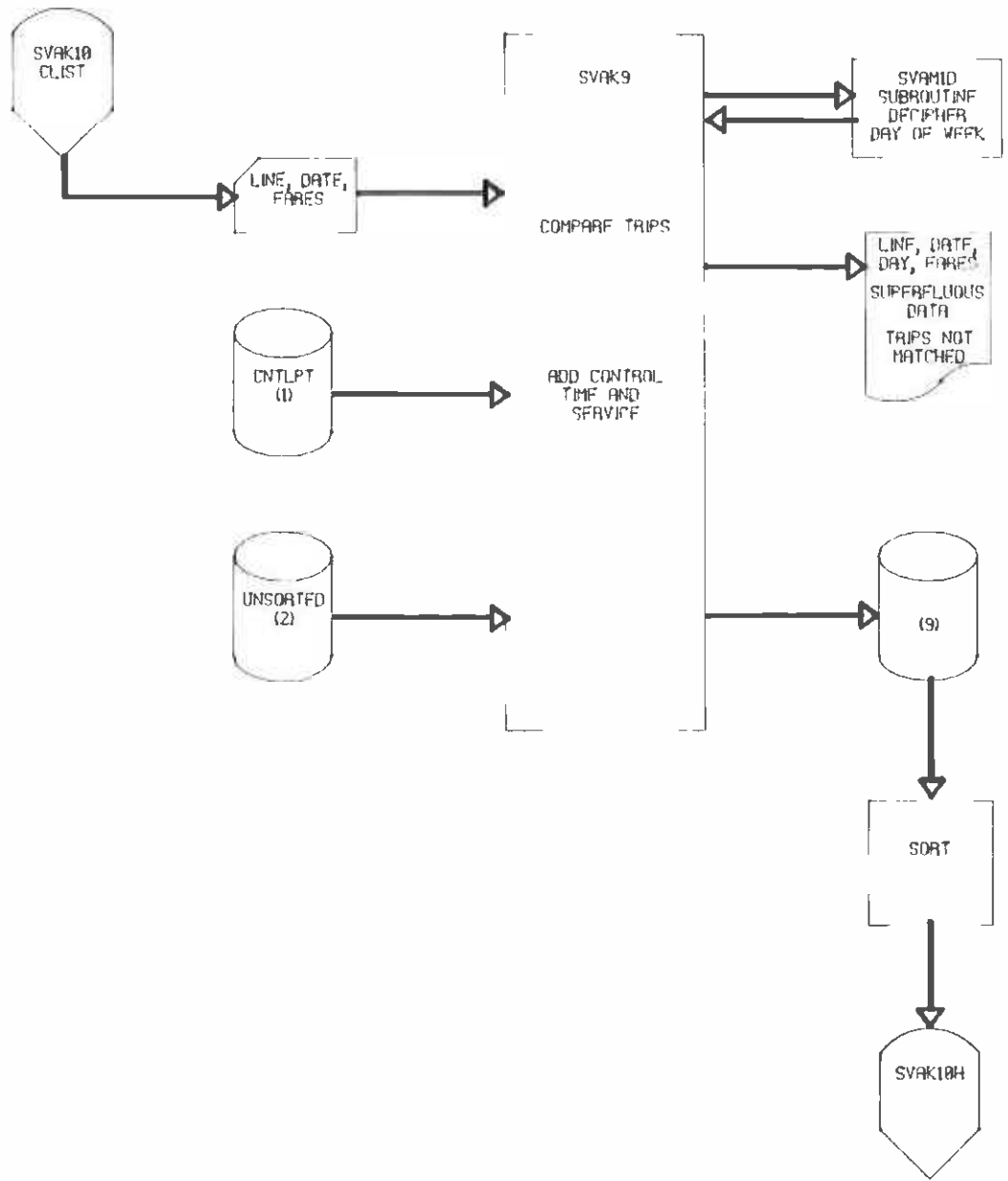


EXHIBIT 1-5
SVAK10H FLOWCHART

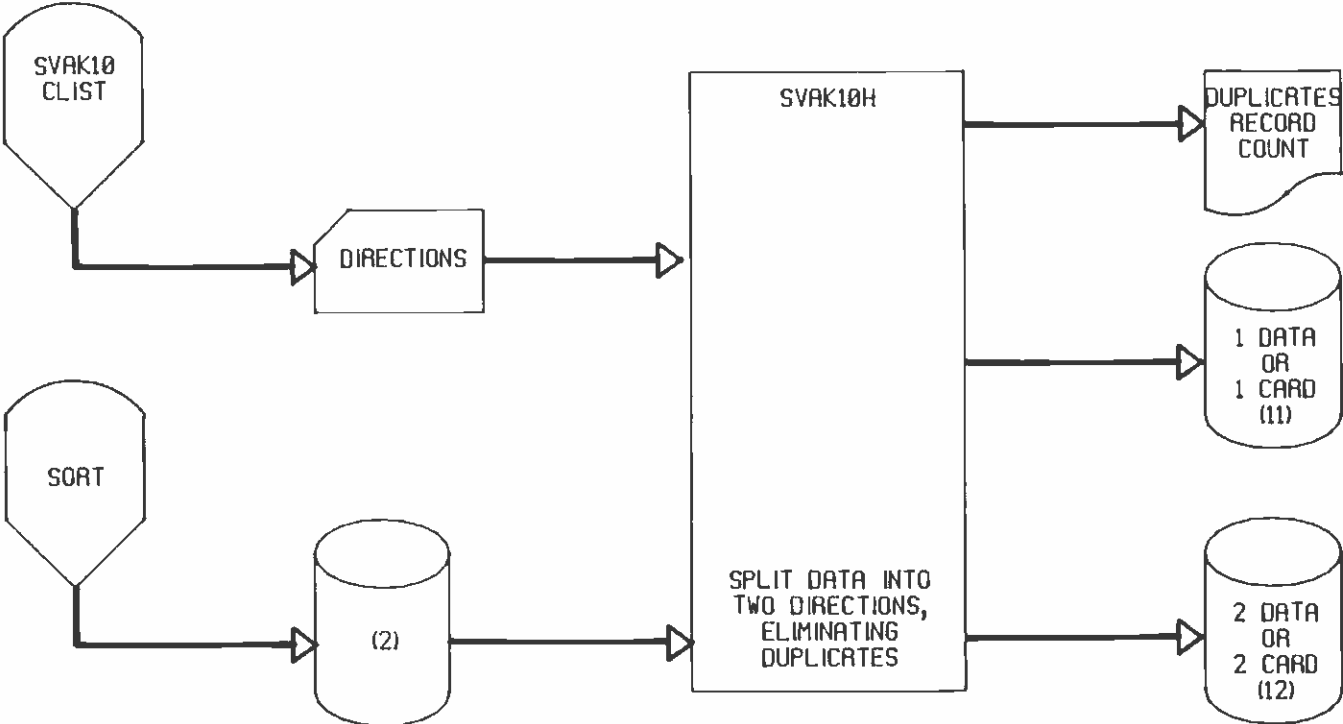
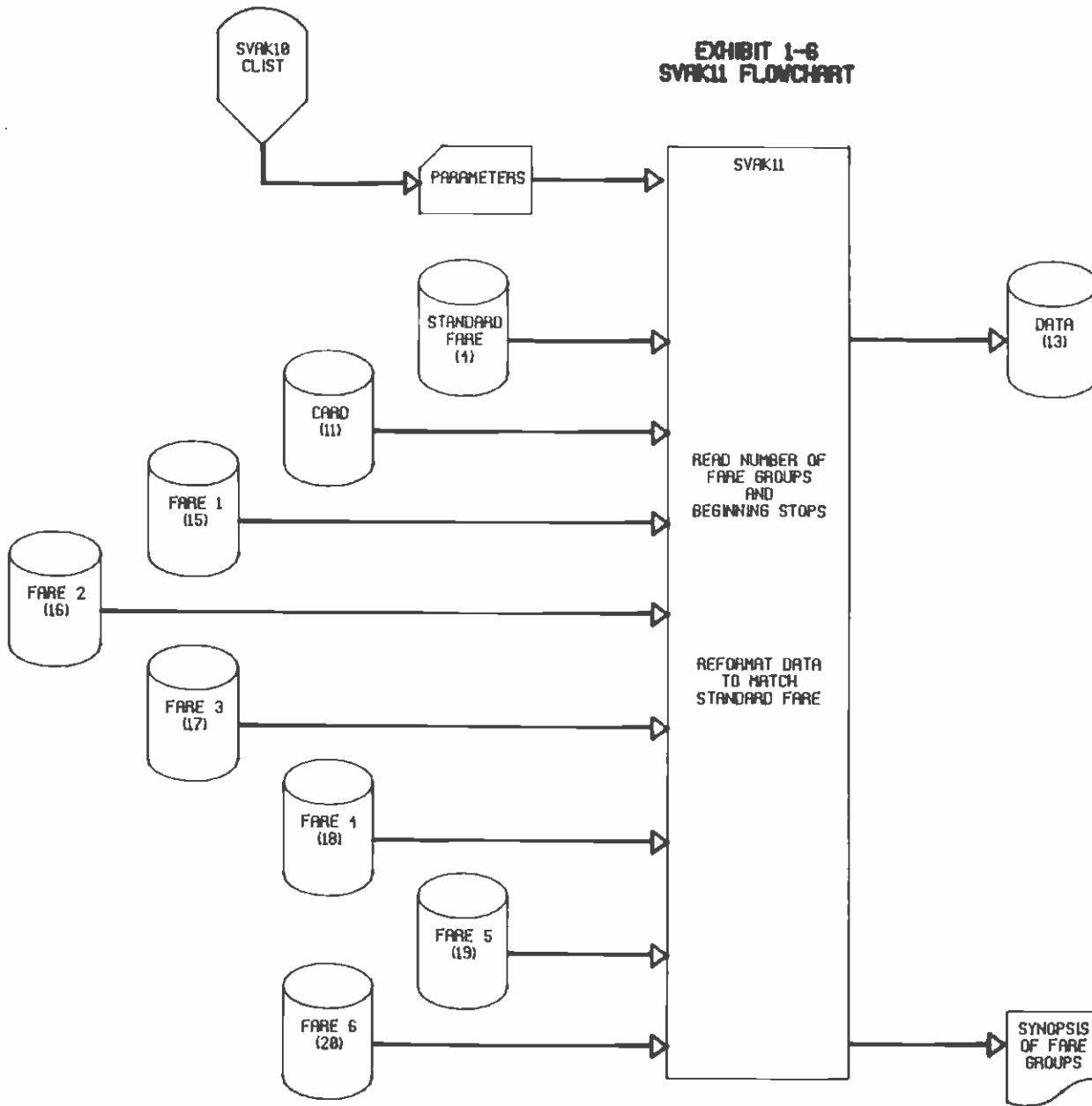


EXHIBIT 1-6
SVAK11 FLOWCHART



1-6. The parameter card has been placed in the JCL by the CLIST, based on LNLST. It contains the number of different fare groups, called line fares, their names, and the beginning stop for each line fare. Between 1 and 6 line fares may be specified, and the corresponding FRCARD members are read from units 15 through 20. SVAK11 will attempt to read only as many files between 15 and 20 as there are line fares specified on the parameter card. As a constituent of the line file, the standard fare file is called FARE, and is the basis for all subsequent fare analysis. The components of the line fares are all represented in the standard fare, so the program matches each recorded fare usage to a standard fare and writes the record to DATA with the fares reformatted according to the standard fare. Combination fares are broken down, and the cash value of miscellaneous fares is aggregated, so that value by incidence can no longer be determined for certain fare categories. Of the following FRCARD members, those marked with * are used only as line fares. F86STD is the current standard fare member. Any line which uses another fare exclusively will not be subject to SVAK11.

SVP.SVA.FRCARD members

F81M1
* F84S02
* F86F1
* F86GR0
* F86GR1
* F86GR2
* F86GR3
* F86GR4
* F86G01
* F86G02
* F86G03
* F86G04
* F86G05
* F86G10
* F86G11
* F86G20
* F86G21
* F86G22
* F86G23
* F86G30
* F86G32
* F86G33
* F86PG4
* F86PS5
F86P4
F86P5
* F86SR0
* F86SR1
* F86SR2
* F86SR3
* F86SR4
* F86SR5
* F86SR6

- * F86STD
- * F86ST2
- * F86S01
- * F86S30
- * F86S31
- * F86T1
- * F86T2
- F86X0
- F86X1
- * F86X12
- * F86X15
- F86X2
- * F86X23
- F86X3
- F86X4
- F86X5

1.7 SVAK13 PROGRAM

This is a diagnostic program to determine whether the number of boardings at a stop add up to boardings by fare type or not and whether total boardings and alightings are in balance at the end of a trip.

The CheckBA Program (SVAK13) reads FARE and DATA, and checks that the fares paid are appropriate to the boardings recorded at each stop, that the boardings and alightings are in balance by the end of each trip, and that there are no duplicate records. The summary of boardings and alightings by trip is then printed out. SVAK13 also writes the line number, schedule number, direction, and alignment stop to unit 7 for use by SVAK14. Exhibit 1-7 shows the relationship among various files.

1.8 SVAK14 PROGRAM

This also is a diagnostic program used to check the validity of various fields in the DATA file.

The Checkdata program (SVAK14) reads the line number, schedule number, direction, and alignment stop from unit 7, and the DATA file from unit 11. Any record or trip which does not match the parameters is listed as an error in the printout. Trips are also checked for consistent service number. The lead card is listed for every trip so that a visual check may be made for errors not easily diagnosed by algorithms. Exhibit 1-8 shows the relationship among various files.

1.9 SVAK15 PROGRAM

This program provides additional diagnostics on trip data.

The Checktime Program (SVAK15) reads STOP and DATA, printing out the number of trips using each stop, trip data which lacks a corresponding stop, and the scheduled times found for timepoints. The time summary should approximate the Basic Operating Schedule. Exhibit 1-9 shows the relationship among various files.

EXHIBIT 1-7
SVAK13 FLOWCHART

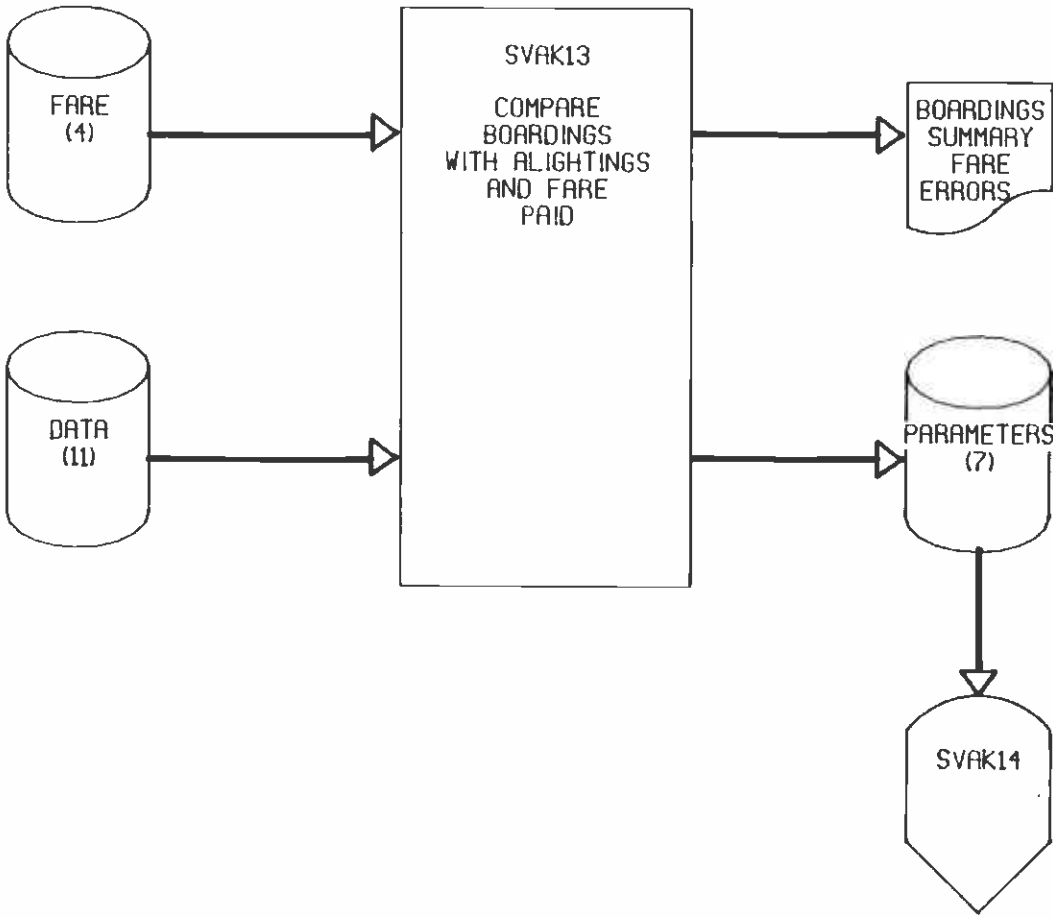


EXHIBIT 1-8
SVAK14 FLOWCHART

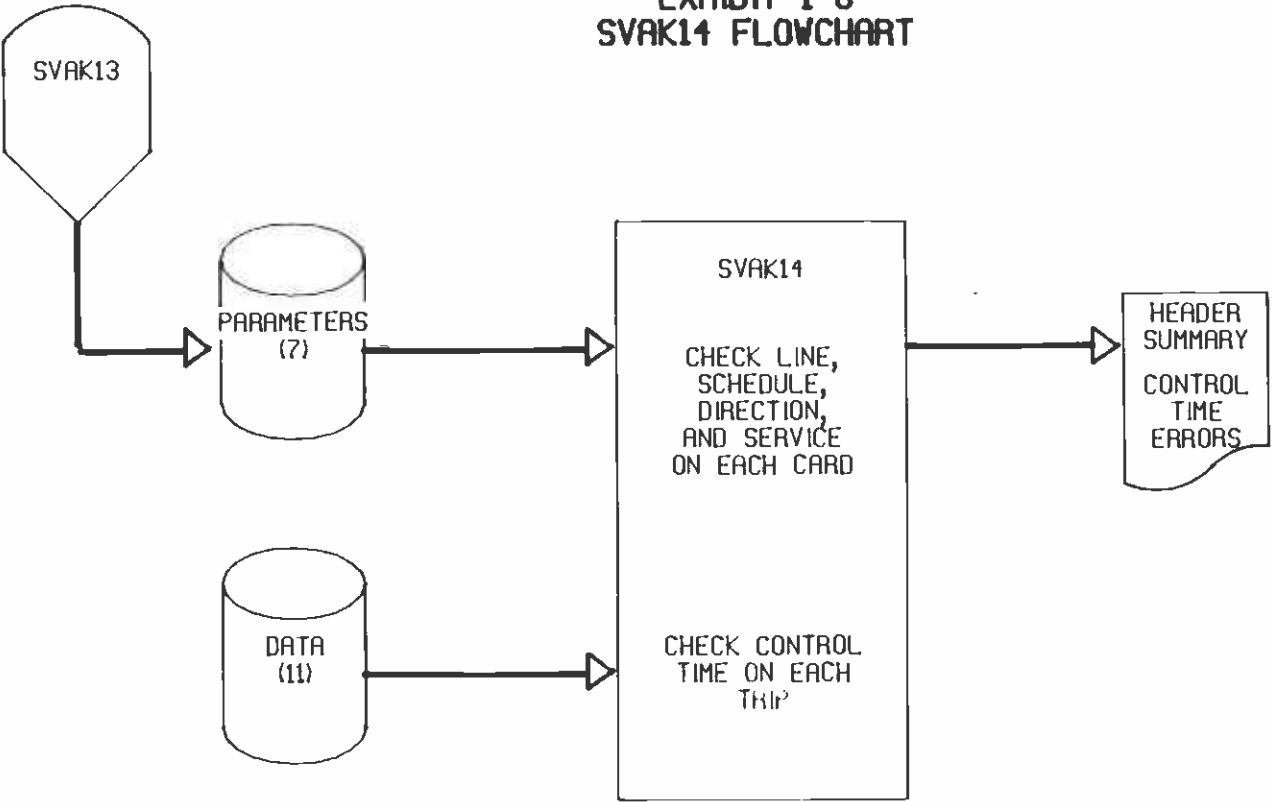
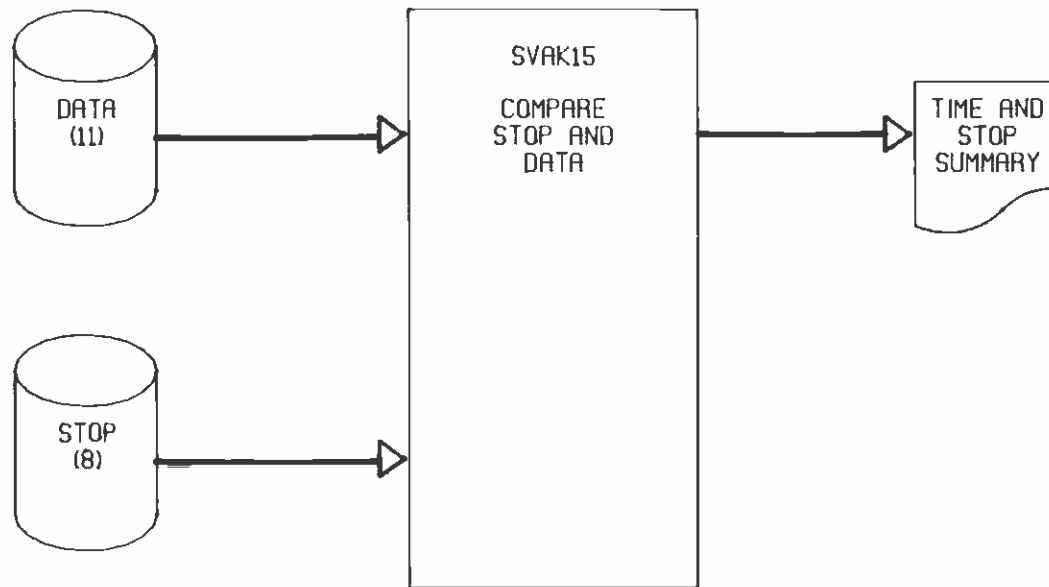


EXHIBIT 1-9
SVAK15 FLOWCHART



1.10 SVAK41 PROGRAM

The Area1A Program (SVAK41) is used to diagnose errors in scheduled and actual times.

As shown in Exhibit 1-10, the main program uses procedures to read the HEAD, STOP, and ROUT files, putting the contents into arrays. The DATA file is then read and a check is made that there is a scheduled time for each time point passed by each trip. The sequence of times within each trip and between trips is checked to determine if times are always increasing. The scheduled times are then printed out for each trip, and the trip's service number is shown. Any time recorded at a stop where a trip is not scheduled to go is flagged.

1.11 SVAK42 PROGRAM

The Area1B Program (SVAK42) summarizes fare data by trip.

As shown in Exhibit 1-11, both directions of data are read with one execution, using different units and the RDDATA subroutine which distinguishes lead cards and writes the desired information to unit 8. The FARE file is read and used to allocate the fares according to a fixed pattern. Subroutine READ8 reads unit 8, summarizing the fares and writing the results to TRIPFARE and the printer. Additional information recorded for each trip includes trip number, service type, first and last scheduled times, bus run, weather, vehicle number, seats, total boardings, and maximum load. The service types card is generated by a preprocessor in the JCL utilizing the HEAD file and CLIST. Subroutines HEAD and HEAD2 generate headings for the printout.

1.12 SVAK51 PROGRAM

The Stansched Program (SVAK51) is used to reformat DATA files which have more than ten fare categories.

As shown in Exhibit 1-12, using subroutine SVAK5A, this program reads the FARE file and stores the contents in array TABLE. FARE is also printed with a message to verify that it is a standard fare as opposed to a line fare. Using subroutine SVAK5B, the first direction HEAD file is read, and the line number and direction are saved. SVAK5B is called again to read the second direction HEAD file. Units 1, 10, and 11 are then rewound for use as temporary output files. The first direction DATA file is read by subroutine SVAK5C, which verifies the line number and direction of each record. If the record is a lead card or a data card without fares, it is written unchanged to unit 10. Cards with fares are rearranged according to a ten-fare format and written to unit 10. SVAK5C is again called to process the second direction DATA file, writing to unit 11. As both directions are read SVAK5C accumulates common totals for each input fare type. Using these totals and the fare values stored in array TABLE, SVAK51 computes the average cash value of each output fare type and writes a synthetic FARE file to unit 7. Any read error diagnostics are printed.

EXHIBIT 1-18
SVAK41 FLOWCHART

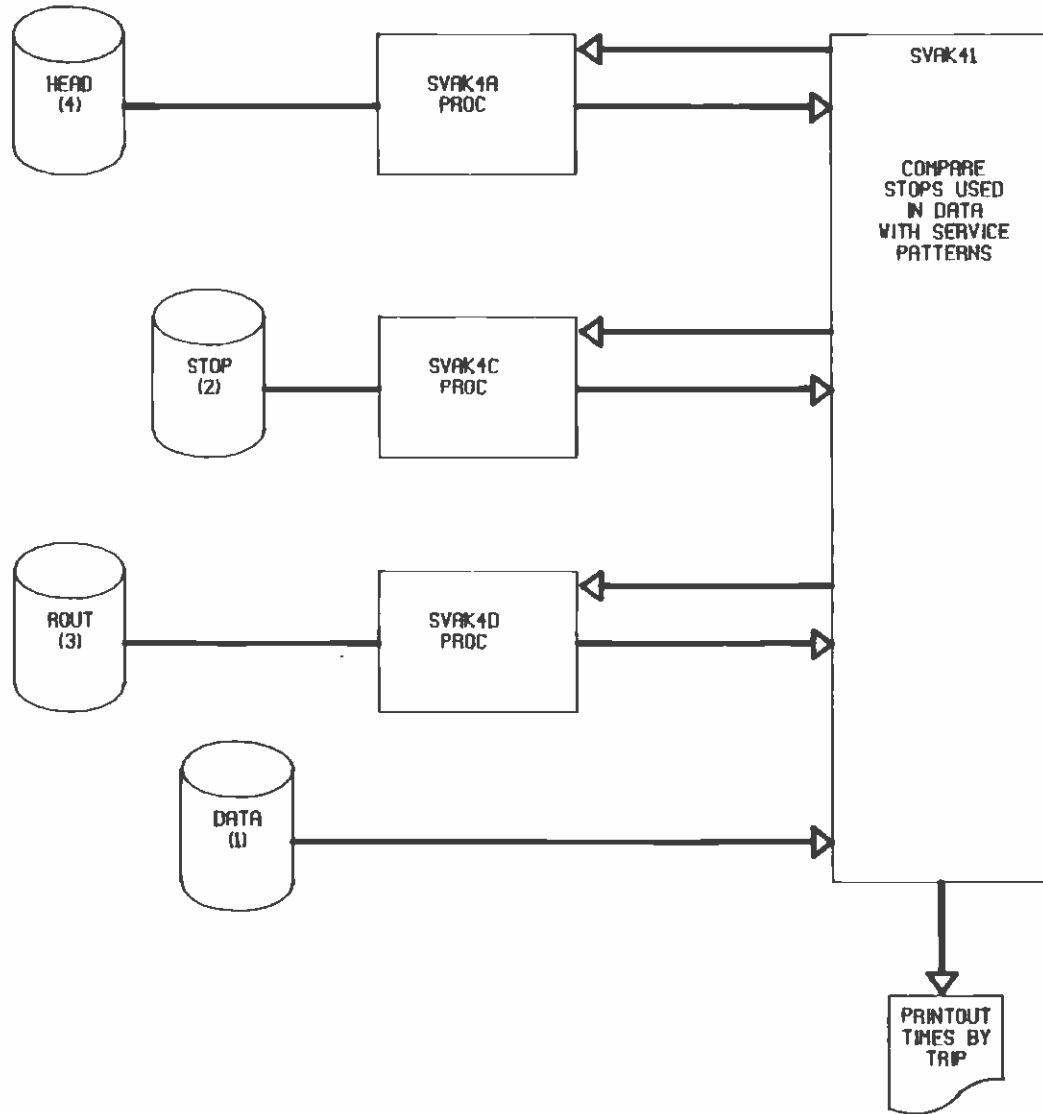


EXHIBIT 1-11
SYRK42 FLOWCHART

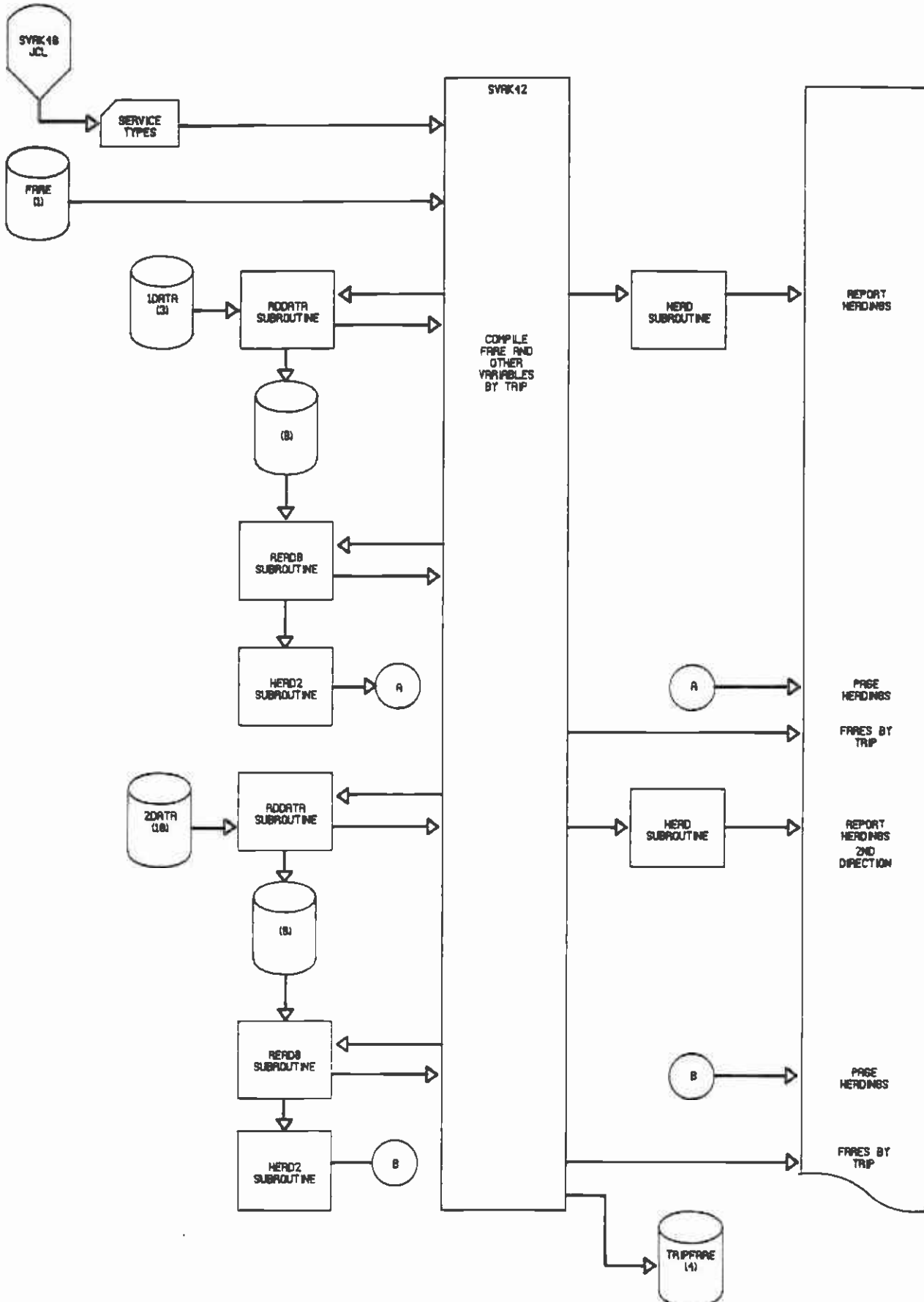
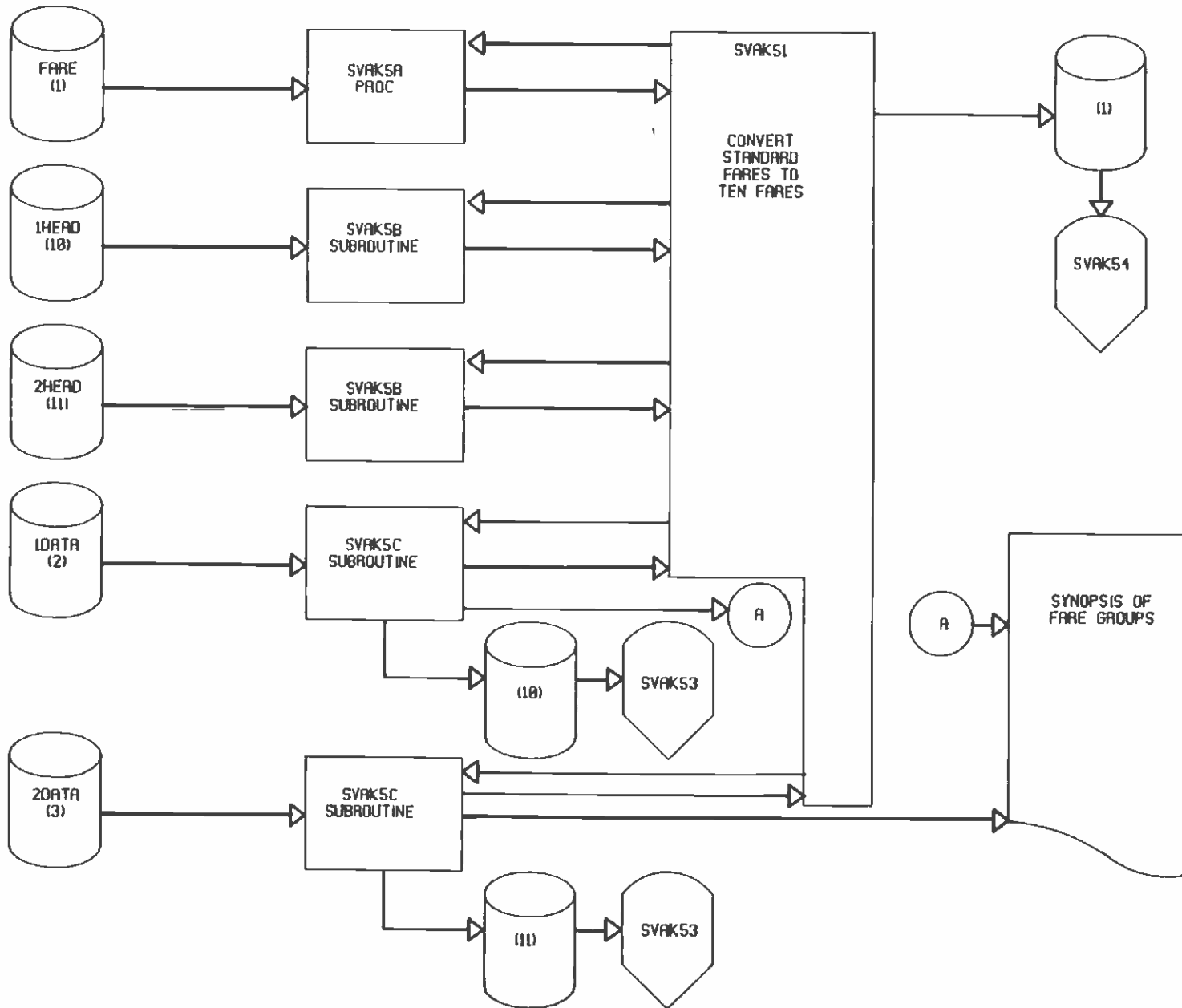


EXHIBIT 1-12
SVAK51 FLOWCHART



1.13 SVAK53 PROGRAM

This program is used to diagnose the presence of scheduled and actual times in DATA file.

The Sched Program (SVAK53) reads and writes DATA files using the unit numbers specified on the parameter card. For the first direction, input is unit 10 and output is unit 12. For the second direction, input is unit 11 and output is unit 13. If there were more than ten fare types in the catalogued DATA file, input is a temporary file generated by program SVAK51. This relationship is shown on Exhibit 1-13 as a broken line. If there were ten or fewer fare types, input is the catalogued DATA file. SVAK53 screens the data for scheduled and actual times to meet format specifications of SVAK54. If only one time is present at a stop, it will be suppressed. The data are written to the appropriate output unit, and any diagnostics are printed.

1.14 SVAK54 PROGRAM

This program is used to generate Running Time Analysis Reports, which are described in Chapter 4 of Volume 1.

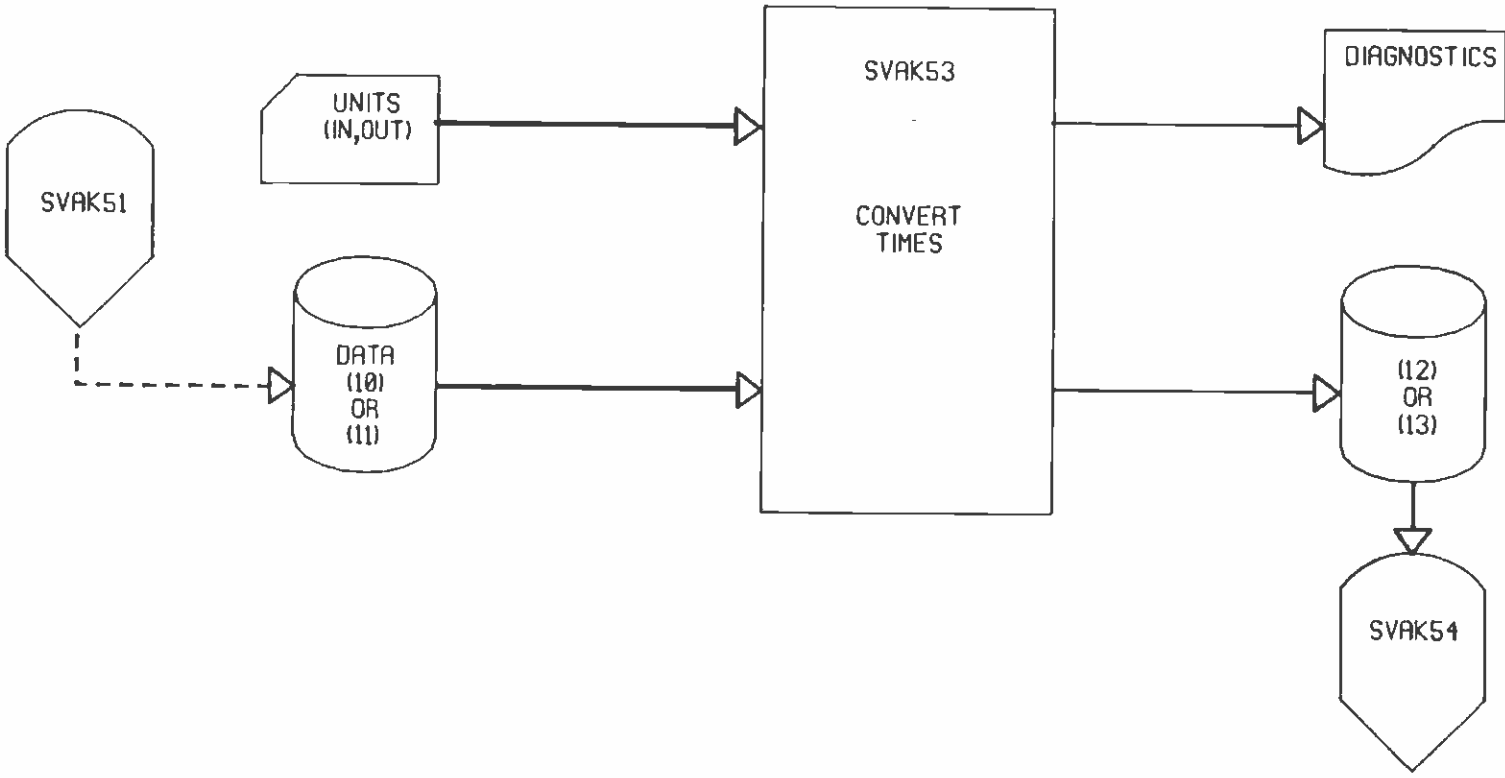
The S80031 Program (SVAK54) reads all input from COMBINEDELTS, into which FARE, first direction STOP, second direction STOP, first direction DATA, and second direction data have been combined. The catalogued FARE file is used if it has ten or fewer fares; otherwise a temporary version is passed from SVAK51. This relationship is shown on Exhibit 1-14 as a broken line. The STOP files are catalogued. The DATA files are temporary versions passed from sequential executions of SVAK53 for the two directions. Three temporary files, CKPOINT, CP-SEQ and TEMP-CP are used for data storage. Diagnostics of data inconsistencies are printed, followed by a group of reports collectively called Running Time Analysis Reports. Report A is written to the FAR-ALT-PRNT temporary file and printed separately from Reports B, C, D, F, G, and H. SVAK54 is written in COBOL.

1.15 SVAK62 PROGRAM

The Area3A Program (SVAK62) summarizes boardings, alightings, service data and fare by census tracts and time-of-day.

As shown in Exhibit 1-15, SVAK62 utilizes subroutines to read the HEAD, STOP, ROUT and FARE files, and store pertinent information in COMMON blocks. Subroutine SVAK6D analyzes the routing codes and mileage column data, and stores the distance from stop to stop for each service. SVAK62 then reads the DATA file and matches each stop to a census tract. The SVAK6E subroutine is used to convert the fares found in the DATA file from the format of the FARE file to a standard format. Times for each stop are interpolated or extrapolated from available time points. Summary information is printed by census tract and directional total, and consists of boardings, alightings, number of trips, average load, bus and

EXHIBIT 1-13
SVAJ53 FLOWCHART



**EXHIBIT 1-14
SVAK54 FLOWCHART**

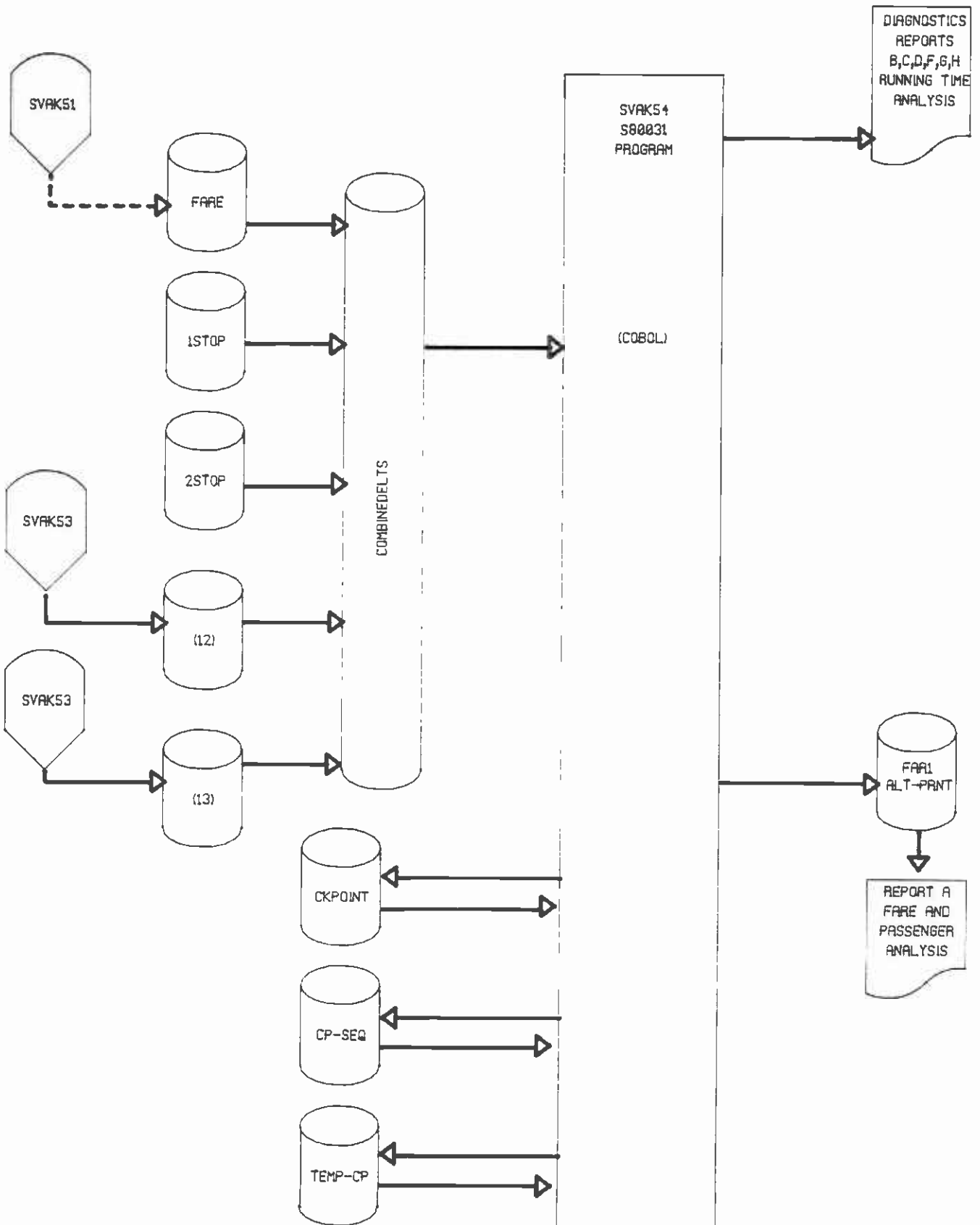
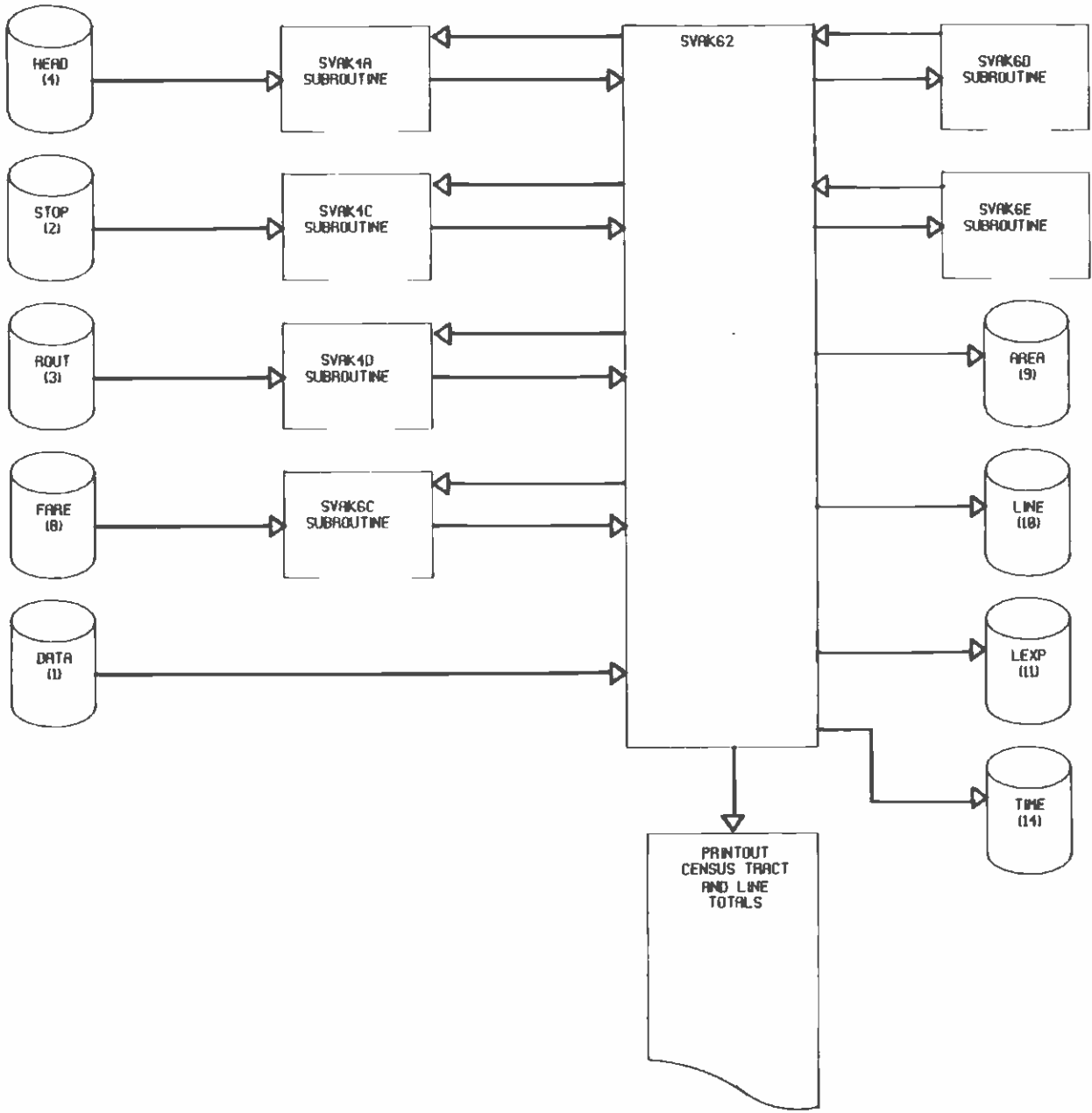


EXHIBIT 1-15
SVAK62 FLOWCHART



passenger time and mileage, and fare usage by type. Time data are then printed, consisting of boardings, alightings, passengers on board and buses in service at end of period, and fare usage by type, for 15-minute periods throughout the day. Census tract data are also written to the AREA file, directional total data to LINE, express and local total data to LEXP, and time data to TIME. In addition to the summary reports mentioned above, SVAK62 also prints diagnostics of errors in time, mileage, stop usage, express usage, and census tracts which relate to individual records of DATA and ROUT.

1.16 SVAK70 PROGRAM

The Schedule Quality Program (SVAK70) analyzes vehicle capacity utilization by providing line level statistics which include in-service miles, seat miles, empty seat miles, passenger miles, standee miles, load factor, and standee ratio. 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 full 24-hour period is obtained by the summation of these 17 periods and constitutes the first period. The raw data to produce the Schedule Quality Reports come from the DATA, STOP, ROUT, and HEAD files. Exhibit 1-16 shows the relationship of these files to various program units. Data validation features, error recovery procedures, and options not used have been omitted from the flowchart. The Schedule Quality Reports were described in Chapter 4 of Volume 1.

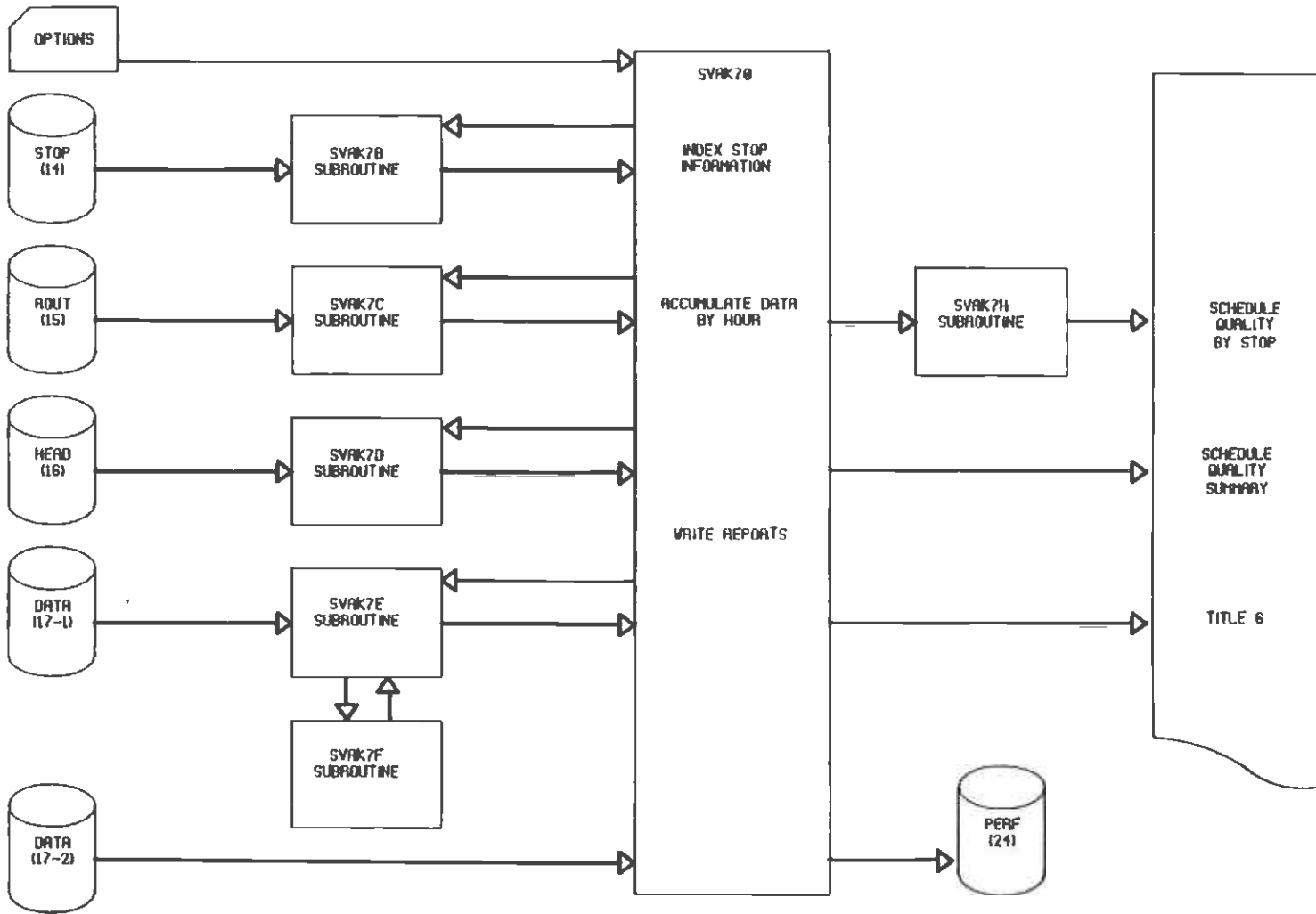
As each DATA file record is processed, the point-to-point mileage obtained from the ROUT file is used to calculate all of the "Miles" data. These data items are: in-service miles, seat miles (equal to the number of seats times the point-to-point mileage), empty seat miles (equal to the excess of seats over the number of passengers on board times point-to-point mileage), and standee miles (equal to the excess of passengers on board over the total seats available times the point-to-point mileage).

Two other statistics calculated from the foregoing are the load factor and the standee ratio. The load factor is the fraction of seat miles provided which are consumed, and it is calculated by dividing total passenger miles by total seat miles. The standee ratio is a measure of passenger miles which are spent standing and is calculated by dividing standee miles by total passenger miles. Both the load factor and standee ratio are expressed as percentages.

All of the above-mentioned statistics are put into the appropriate time slots as the program works through all of the trips for the day. The choice of which time slot to accumulate these statistics into is determined by the most recent actual time encountered while reading through the DATA file. For example, a trip starting at 5:50 a.m. with intermediate actual times at 6:10, 6:30, 6:50, and 7:10 and reaching the far terminal at 7:20 a.m. would accumulate data in the 5:00 - 5:59, 6:00 - 6:59, and 7:00 - 7:59 am. time slots.

The option card is the first unit read by SVAK70. The options are fixed in the JCL so that the Schedule Quality by Stop Report and the Schedule Quality Summary Report (including Title 6) are always produced.

EXHIBIT 1-16
SIMPLIFIED SVAK70 FLOWCHART



Subroutine SVAK7B is used to read the STDP file and index the information in arrays. The four-digit stop number is used as a subscript in an array dimensioned 9999 which points to the ordinal position of each stop, with a maximum of 300. The stop number, Basic column number, and stop name are stored in ordinally-subscripted arrays.

Subroutine SVAK7C reads the ROUT file and stores the cumulative mileages and service patterns in ordinally subscripted arrays using the indexing system set up by SVAK7B. A cross-reference of mileage columns to service numbers is obtained from the HEAD file by subroutine SVAK7D.

Subroutine SVAK7E is used to read the DATA file and conduct most of the calculations involving passenger data. First, the lead card of a trip is read and the line number, direction, service number, vehicle number and seating capacity are noted. Following the lead card is a series of data cards, one for each bus stop with a boarding, alighting, or time point on this trip. To facilitate internal calculations and the accessing of arrays, scheduled and actual times are converted from conventionally written hours and minutes, a.m. or p.m., to absolute minutes by subroutine SVAK7F. For example, 6:00 a.m. equals 360 absolute minutes; 12:00 noon equals 720; 12:00 midnight equals 1440. Times after midnight, coded as "q.m.", are interpreted as a.m.

From the boarding and alighting information, subroutine SVAK7E keeps a running tally of passengers on board each trip. At each new card for a trip, the distance from the stop on the previous card is calculated, giving point-to-point mileage. The number of seats on the vehicle times the point-to-point mileage yields the seat miles for this segment of this trip. Similarly, the number of passengers on board leaving the prior stop is multiplied by the point-to-point mileage to give the passenger miles for the segment. The passenger miles and seat miles are then compared. If seat miles exceed passenger miles, the excess is empty seat miles. If passenger miles exceed seat miles, the excess is standee miles. These variables, representing a segment of one trip, are then assigned to one of the hourly or eight-hour time periods discussed above for each stop that was passed on the segment, and are stored in a large array in named common.

Subroutine SVAK7H is called when specified on the option card to write the Schedule Quality by Stop Report. All necessary information is passed through named common, which includes the passenger data array and the stop name array. The report shows information for every stop in each of the 18 time periods, whether or not used.

SVAK70 prints the Schedule Quality Summary Report for all stops combined by summarizing data in common. This information is also written as the first six records of the PERF file. Then the DATA file is completely reread for Title 6 calculations. 39 overlapping hourly time periods are defined to cover the two peak periods at 12-minute intervals. As in subroutine SVAK7E, the number of seats is

noted from the lead card, a running total of passengers on board is calculated from boardings and alightings, and time periods are assigned according to the last time point passed. In this case, data for one stop may apply to as many as five time periods instead of just one, or it may apply to none. For example, if the last time was 6:50 a.m., the data will apply to the one-hour periods beginning at 6:00, 6:12, 6:24, 6:36, and 6:48 a.m. If the last time was 8:15 p.m., the data will not apply to any peak-hour period. The data are stored in three arrays subscripted by time period and ordinal stop position: seats available, as read from the lead card; passengers on board, as calculated; and trips, as incremented by one. After the DATA file has been completely read, the maximum gross passenger load is determined by cycling through the passengers on board array, and the number of seats available and trips are pulled from the corresponding cells in those arrays. The stop number is pulled from the stop number index, and the load ratio is calculated by dividing seats by passengers. The Title 6 variables are then appended to the Schedule Quality Summary Report and to the PERF file as record 7. A summary of weather types (clear, cloudy, rain, and fog) encountered on the different trips is also included on record 7 of PERF.

1.17 SVAK72 PROGRAM

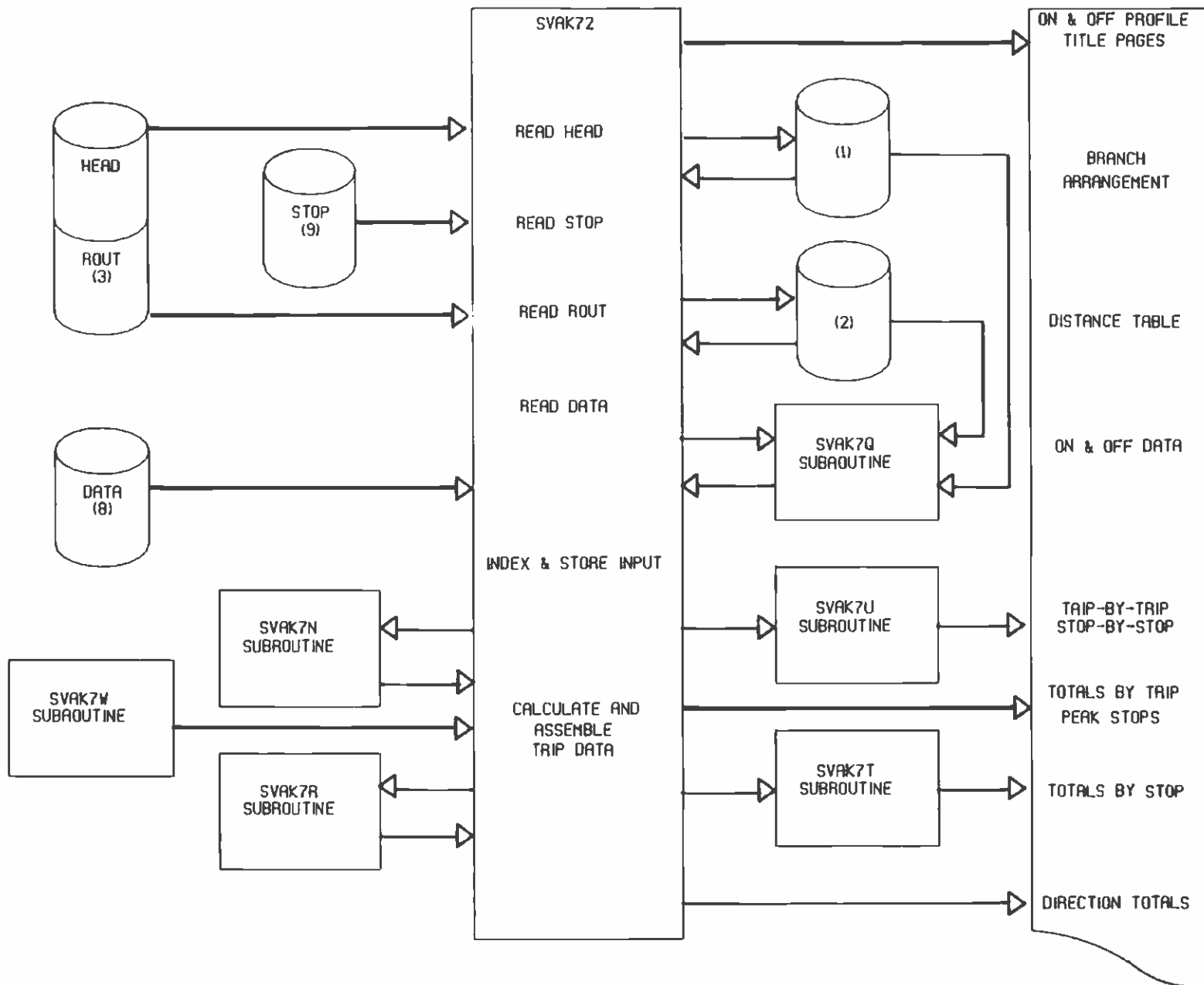
The Profonoff Program (SVAK72) produces the On and Off Profile, which includes a listing of boardings and alightings at every stop on every trip. The report contains a considerable amount of prefatory information derived from the HEAD, STOP, and ROUT files which is common to the On Board Profile (produced by SVAK73) and the Ridership Profile (produced by SVAK74). The following descriptions of HEAD, STOP, and ROUT file processing apply equally to all three programs. Sample On and Off Profile Report was included in Chapter 4 of Volume 1.

The HEAD file is read, except for the last record, and all the information on the title page is printed out. The number of stops, number of branches (services), alignment stop, and the time intervals are retained for further use in the program. Options other than zero are not used and are not described in this document.

The STOP file is read and the stop numbers, timepoint indicators, and stop names are stored in arrays subscripted by the ordinal position of the stop, with a maximum of 300 stops. It is necessary that the number of stops listed in the HEAD file accurately reflect the number of cards in both the STOP and ROUT files in order that they may be properly read.

The ROUT file is read after the final record of the HEAD file, which shows the mileage column applicable to each service. The HEAD and ROUT files are actually concatenated as one file on unit 3. The five cumulative mileage columns and twenty routing codes applicable to each stop are saved in arrays, and printed out as the Branch Arrangement, which includes stop names, timepoint indicators, four-digit stop numbers, and ordinal positions of stops. Based on the mileage table used by each branch, the point-to-point mileage is

EXHIBIT 1-17
SVAK72 FLOWCHART



calculated, saved in an array and printed as the Distance Table. The mileage is implied two-place decimal. The program treats all mileage as integer unless explicitly declared otherwise.

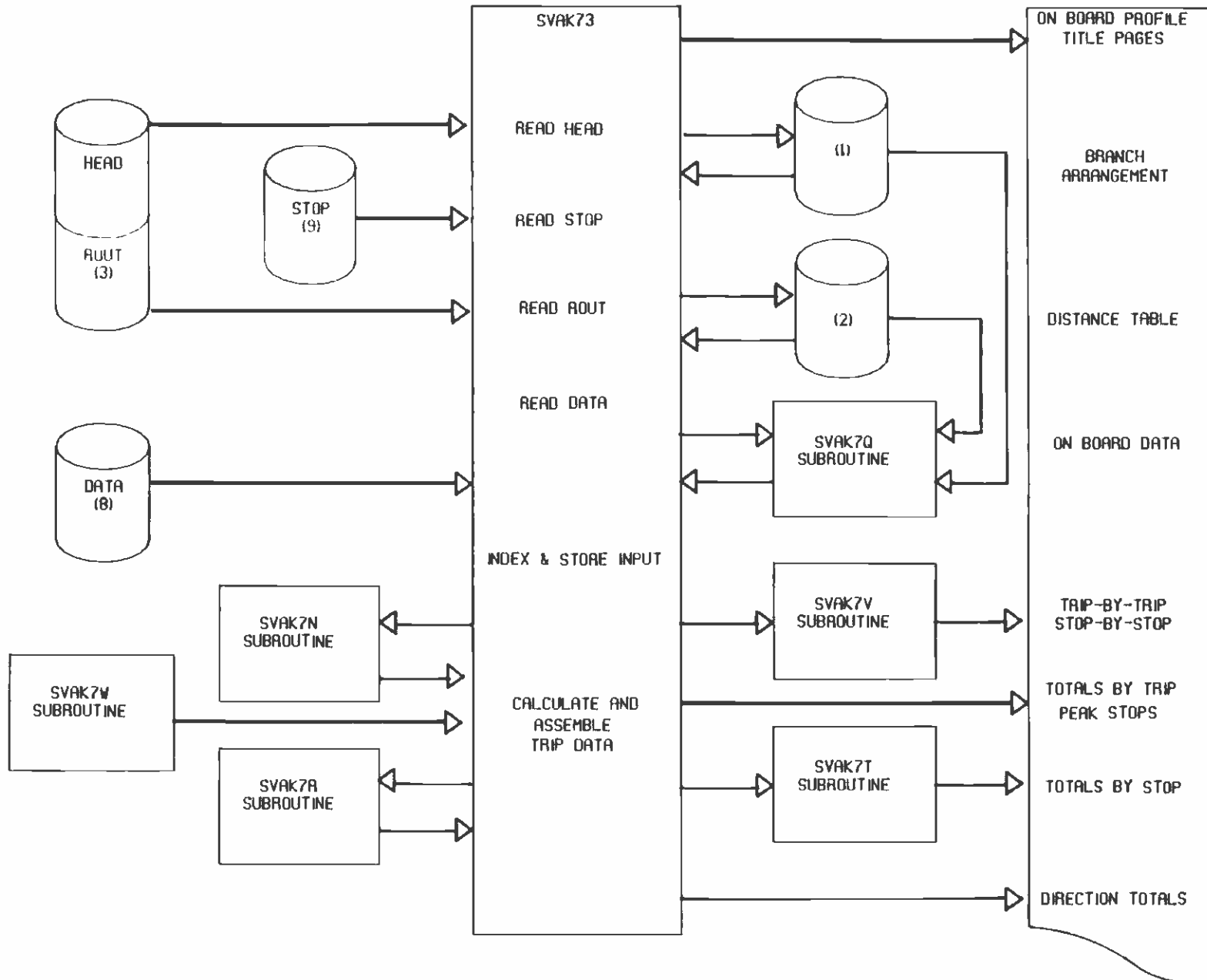
The DATA file is read and the trip numbers are indexed in an ordinaly subscripted array. The data cards are written to unit 2, and when the data card for the alignment stop is encountered, the actual time is noted and written with the lead card to unit 1. If the alignment stop card is not found or the time is missing, an error message is written. Subroutine SVAK7N is used to convert times from conventional to 30-hour notation. Times after midnight until 6 a.m. next day are converted to 2401 to 3000 hours. Units 1 and 2 are rewound and read so that trips may be analyzed in groups of ten and printed out. Subroutine SVAK7Q is used in conjunction with the trip index to position units 1 and 2. Subroutine SVAK7R is used to find the ordinal position of the stop number on each record of unit 2 by means of a halving algorithm. Times for all time points are converted to 30-hour notation by Subroutine SVAK7N. A large common array is filled which includes boardings, alightings, and passenger miles to next stop for each stop on the ten trips. Small arrays accumulate total boardings and passenger miles by trip, which are used to calculate average trip length. When the ten trips have been read, page and trip headings are written using block data from Subroutine SVAK7W. Subroutine SVAK7U is called to print the matrix of trip and stop data from common. SVAK72 then prints total passengers, passenger miles, and average trip length. Subroutine SVAK7T analyzes the common data and prints out the peak stops by trip. At this point the next group of ten trips is analyzed and reported. Total boardings, alightings, and passenger miles for all trips by stop are accumulated throughout the successive analyses of groups of ten. When the trip index shows that the last group of nine or fewer trips is being analyzed, the total data for all trips is positioned as a final trip and is printed as such by Subroutine SVAK7U. Then SVAK72 divides total passenger miles by total passengers to yield average trip length and prints the three figures as directional totals. Exhibit 1-17 shows the relationship among the files discussed.

1.18 SVAK73 PROGRAM

The Profonboard Program (SVAK73) produces the On Board Profile, which includes a listing of passengers on board leaving every stop on every trip. The report contains a considerable amount of prefatory information derived from the HEAD, STOP, and ROUT files which is common to the On and Off Profile (produced by SVAK72) and is discussed fully in the previous section. The remainder of SVAK73 also closely parallels SVAK72.

The DATA file is read and the trip numbers are indexed in an ordinaly subscripted array. The data cards are written to unit 2, and when the data card for the alignment stop is encountered, the actual time is noted and written with the lead card to unit 1. If the alignment stop card is not found or the time is missing, an error message is written. Subroutine SVAK7N is used to convert times from

EXHIBIT 1-18
SVAK73 FLOWCHART



conventional to 30-hour notation. Times after midnight until 6 a.m. the next day are converted to 2401 to 3000 hours. Units 1 and 2 are rewound and read so that trips may be analyzed in groups of ten and printed out. Subroutine SVAK7R is used to find the ordinal position of the stop number on each record of unit 2 by means of a halving algorithm. Times for all time points are converted to 30-hour notation by Subroutine SVAK7N. A large common array is filled which includes passengers on board and passenger miles to next stop for each stop on the ten trips. Small arrays accumulate total boardings and passenger miles by trip, which are used to calculate average trip length. When the ten trips have been read, page and trip headings are written using block data from Subroutine SVAK7W. Subroutine SVAK7V is called to print the matrix of trip and stop data from common. SVAK73 then prints total passengers, passenger miles, and average trip length. Subroutine SVAK7T analyzes the common data and prints out the peak stops by trip. At this point the next group of ten trips is analyzed and reported. Total boardings, on board, and passenger miles for all trips by stop are accumulated throughout the successive analyses of groups of ten. When the trip index shows that the last group of nine or fewer trips is being analyzed, the total data for all trips is positioned as a final trip and is printed as such by Subroutine SVAK7V. Then SVAK73 divides total passenger miles by total passengers to yield average trip length and prints the three figures as directional totals. Exhibit 1-18 shows the relationship among the units discussed.

1.19 SVAK74 PROGRAM

The Prof10 Program (SVAK74) produces the Ridership Profile, which lists the following variables for every stop on every trip: boardings, alightings, cumulative boardings and alightings from start of trip, scheduled and actual times (if a time point), and passengers on board leaving the stop. The second part of the Ridership Profile aggregates trips of like service number into time intervals and reports the following for every stop: gross boardings and alightings, cumulative gross boardings and alightings from start of service, average cumulative boardings and alightings since start of service, and average passengers on board leaving the stop. Summary data are also presented at both trip and interval levels.

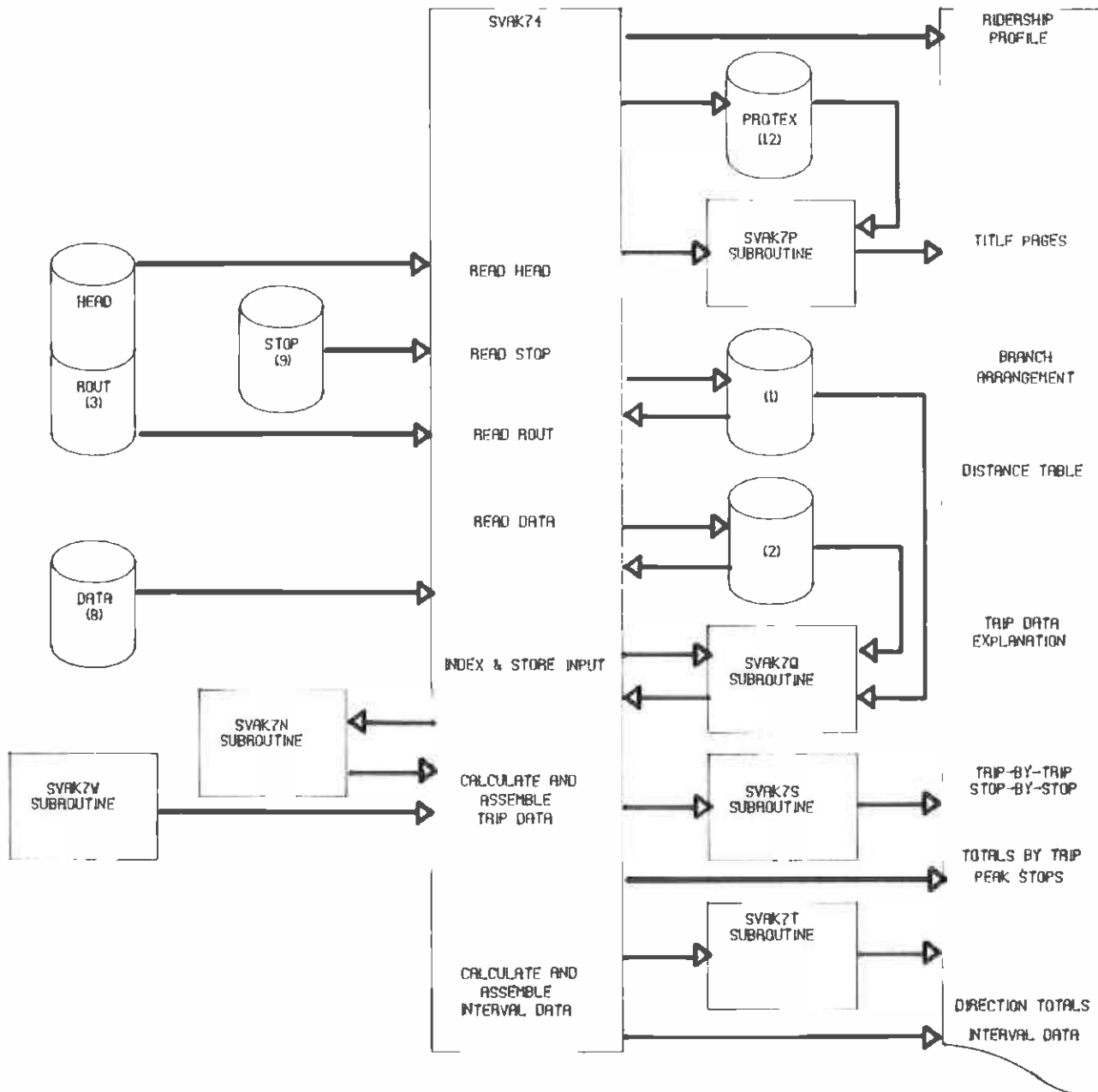
The report contains a considerable amount of prefatory information derived from the HEAD, STOP, and ROUT files which is common to the On and Off Profile (produced by SVAK72) and is discussed fully in section 1.17 above. After the title page, branch arrangement, and distance table are written, subroutine SVAK7P is called to read a portion of PROTEX and write the Trip Data Explanation.

The DATA file is read and the trip numbers are indexed in an ordinally subscripted array. The data cards are written to unit 2, and when the data card for the alignment stop is encountered, the actual time is written with the lead card to unit 1, and is used to determine which time period from HEAD applies to the trip. This time period is then written to another cell of the trip number array. If the alignment stop card is not found or the time is missing, an

error message is written. Subroutine SVAK7N is used to convert times from conventional to 30-hour notation. Times after midnight until 6 a.m. next day are converted to 2401 to 3000 hours. Units 1 and 2 are rewound and read so that trips may be analyzed in groups of ten and printed out. Subroutine SVAK7Q is used in conjunction with the trip index to position units 1 and 2. As each data card is read from unit 2, the ordinal position of the stop is taken from a 9999 array subscripted by stop numbers. Times for all time points are converted to 30-hour notation by Subroutine SVAK7N. Boardings, alightings, and converted scheduled and actual times are deposited in a large common array subscripted by the ordinal position of the stop and the ordinal position of the trip within the group of ten. Running totals of passengers on board and cumulative boardings and alightings are calculated from the boardings and alightings and stored in the same array. Passengers on board is multiplied by the mileage to next stop (obtained from the point-to-point mileage array constructed when the ROUT file was read), yielding passenger miles to next stop, which is also stored in the common array. All the information on the lead cards is stored in block data arrays from Subroutine SVAK7W. When ten trips have been read, these and other block data arrays containing fixed titles are printed as page and trip headings. Subroutine SVAK7S is called to print the matrix of trip and stop data from common. SVAK74 then prints total passengers, passenger miles, and average trip length. Subroutine SVAK7T analyzes the common data and prints out the peak stops by trip. Subsequent groups of ten trips are analyzed and reported in the same way. When all the trip data are printed, SVAK74 divides total passenger miles by total passengers to yield average trip length and prints the three figures as directional totals.

The Interval Data Explanation is printed by Subroutine SVAK7P, which reads a portion of PROTEX. Units 1 and 2 are rewound, and the common data array is emptied. The trip number index is analyzed to determine the number of nonempty combinations of branches and intervals. These branch-intervals are analyzed in groups of eight by accumulating data for all applicable trips into the large common array. Subroutine SVAK7Q is again used to position units 1 and 2. As each trip is read, it may fit in none, one, or two of the current eight branch-intervals. (An all-day interval is normally defined, which includes all other sequential intervals.) If the trip fits, boardings and alightings are accumulated. When the trip index indicates that the last applicable trip has been read, cumulative boardings and alightings since start of service are calculated from boardings and alightings by stop and stored in the common array. Average boardings and alightings by stop are derived from gross boardings and alightings divided by the number of trips applicable to each branch-period and stored in the same array. The cumulative alightings are subtracted from cumulative boardings to yield gross on board, which is multiplied by the mileage to the next stop for this service (obtained from the point-to-point mileage matrix derived from the ROUT file) to yield gross passenger miles to next stop, which is also stored in the array. Average passengers on board are obtained by dividing gross on board by applicable trips and stored in the array. At this point the common array contains eight variables for

EXHIBIT 1-19
SVAK74 FLOWCHART



each stop for eight branch-intervals. SVAK74 writes page headings describing the branch-intervals and number of applicable trips. Then Subroutine SVAK7S is called to print all the data from the common array. SVAK74 calculates and prints gross boardings, passenger miles and average trip length. Subroutine SVAK7T analyzes the common array to determine the peak load stops for each branch-interval, and prints the average load at the peaks and the peak stop numbers. The remaining branch-intervals, if any, are likewise analyzed in groups of eight. Exhibit 1-19 shows the relationships among the various units of SVAK74.

1.20 CDP PROGRAM

The Comprehensive Diagnostic Program (CDP) is designed to analyze the relationships among various constituents of the line file after a Data Technician has responded to all other diagnostic messages. After reading the line number, data, weekday, and directions from a data entry panel displayed using CLIST SVAK80, and deciphering the day-of-week using subroutine SVAM1D, the program reads the catalogued files and compares each with previous files read. About 135 different error messages can be generated from about 170 junctures in the program. Continuity messages are printed periodically to show location in the program and large files. If any error is found, a condition code is set which prevents the execution of subsequent programs SVAK81, SVAW31, SVAW32. A user guide to messages is available. The files are analyzed in the following order:

CNTL File

Find line and day. Variables listed or defaults will determine acceptable ranges of subsequent data.

MTL and EXPSTOP Files

Read list of all permitted census tracts using RTRACT subroutine and save in array.

FARE File

Read using subroutine FARE. Compare fares to CNTL parameters.

HEAD File

Check line, direction, date, day-of-week. Check quantity and logic of intervals, services, mileage columns. Compare service types to route numbers, fare type from CNTL. If second direction, compare service types to first direction, check exception list.

ROUT File

Compare line, direction, number of stops to HEAD. Check mileage by service, maximum one skip in a row. Check express mileage, compare to service types. Compare census tracts to master list, downtown tracts suffixed, using subrouting FTRACT. Compare census tracts to routing codes, maximum 3 dummies in a row. If second direction, compare express and total mileage, check exception list.

STOP File

Compare line, direction, number of stops to HEAD. Compare standard dummy stops to routing codes. Check stop number order and use of protected fields.

DATA File

Check service, bus run, vehicle, seats, and weather on lead card. Check stop number order, compare to routing code and express county. Compare boardings with fares and alightings, check for negative on board. Compare control stop time to lead card and interval card, at end determine interval fit. Check scheduled and actual time order, compare to mileage for speed < 60. Subroutine TIME is used to convert conventional times to absolute minutes for computation.

PERF File

Compare line, direction, date to HEAD. Check relationship of data by time period.

AREA File

Compare line, direction, date to HEAD. Compare census tracts to master list using subroutine FTRACT. Check express tract data, compare to express tract list and LNLST.

Repeat analysis for second direction of HEAD, ROUT, STOP, DATA, PERF, and AREA files.

LEXP Files (both directions)

Compare line, direction, date to HEAD. Compare boardings and alightings, check list of lines on which ride around is permitted. Check express speed and load, compare to service types. If second direction, compare bus minutes and miles, check exception list; balance ride arounds.

BUSSEAT File

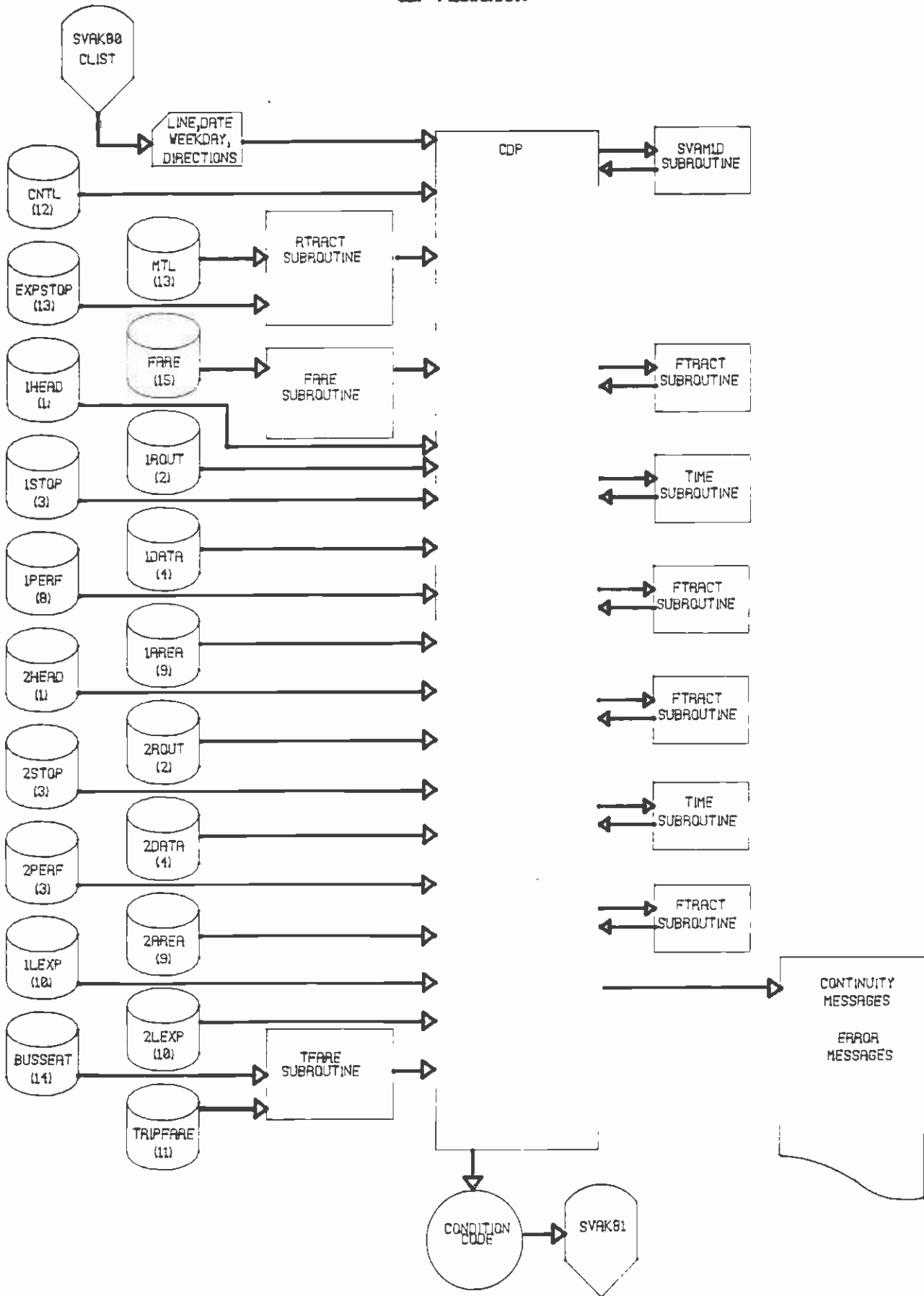
Read list of bus groups with seating capacity using subroutine TFARE and store in array.

TRIPFARE File (directions combined)

Read using subroutine TFARE. Compare line, direction, date to HEAD (both directions combined). Check vehicle, seats, weather. Compare service type to fares used.

Exhibit 1-20 shows the relationship between all files and program units in the sequence used. File names prefixed with a 1 or 2 contain data for the first or second direction. Continuity messages are written throughout CDP. Error messages may be written by CDP and by all subroutines except TIME.

**EXHIBIT 1-28
CDP FLOWCHART**



1.21 SVAK81 PROGRAM

The SVAK81 program updates the SASCONTL file when processing has been completed. The weekday, line number, and date are read from the card supplied by CLIST SVAK80, and the corresponding record is found in SASCONTL. The status code is changed to 9 (completed) and the boardings and passenger miles are added from the LINE files and also printed out. The updated SASCONTL file is a new generation. Exhibit 1-21 shows the relationship among various files.

1.22 SVAW31 PROGRAM

The Area4B Program (SVAW31) updates the DAY.TIME file with information from the TIME files generated by a ride check. The line number and date are read from the card supplied by CLIST SVAK80. The current generation of DAY.TIME is read and data for other lines are written to a new generation. Data for the same line are read and ignored, unless the date is newer, in which case the program is stopped. After reading the input DAY.TIME, SVAW31 reads the two TIME files for the ride check and adds them to the new generation of DAY.TIME. If the ride check is for a Saturday or Sunday, then SAT.TIME or SUN.TIME is used. Exhibit 1-22 shows the relationship among various files.

1.23 SVAW32 PROGRAM

The Area 4A Program (SVAW32) updates various masterfiles with data from constituents of a line file. The line number, date, and type of file are read from the card supplied by CLIST SVAK80. The masterfile begins with the name DAY, SAT, or SUN, depending on the day of the week. The line file constituents begin with N, S, E, W, or R, depending on the direction, except TRIPFARE, which contains both directions. When a current masterfile is updated, previous information for the same line is deleted. When a historical masterfile is updated, existing data for the same line are retained if they do not have the same date. The type code tells SVAW32 whether the masterfile is current or historical, and which formats to use for input and output.

<u>Type</u>	<u>Masterfile</u>	<u>Curr/Hist</u>	<u>Line File Constituents</u>
1	DAY.TRACT	Current	1AREA, 2AREA
2	DAY.PERF	Current	1PERF, 2PERF
3	DAY.LEXP	Current	1LEXP, 2LEXP
4	DAY.FARES	Current	TRIPFARE
5	DAY.TOTAL	Historical	1PERF, 2PERF
6	DAY.TPERF	Historical	1PERF, 2PERF
7	DAY.TLEXP	Historical	1LEXP, 2LEXP

The line file prefixes 1 and 2 indicate direction. On roundtrip lines, there is only one direction. As shown in Exhibit 1-23, SVAW32 reads the parameter card, calls subroutine SVAM5A to write a title page, and calls subroutine AREA4S to process all the input and output of catalogued files.

EXHIBIT 1-21 SVAK81 FLOWCHART

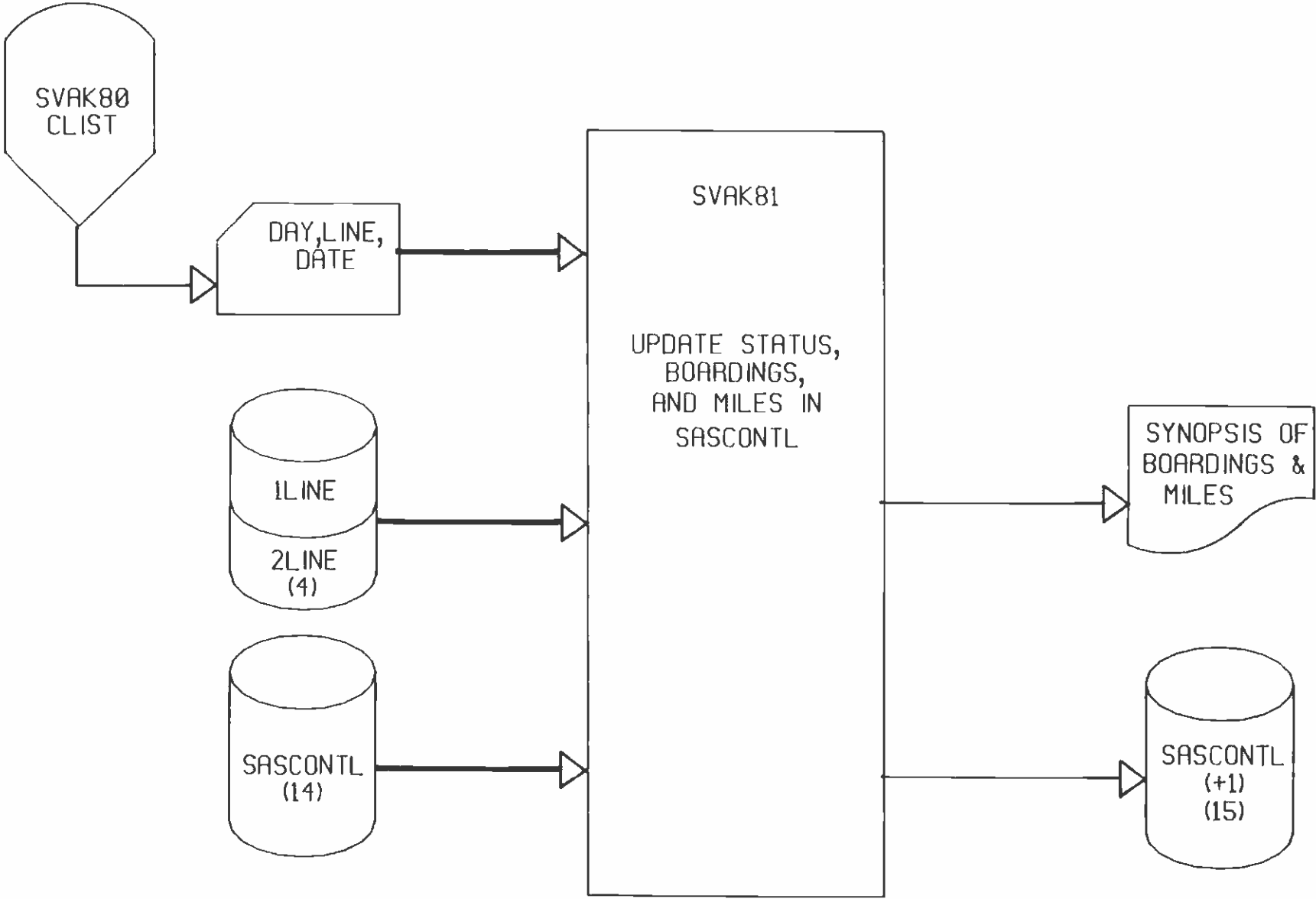


EXHIBIT 1-22 SVAW31 FLOWCHART

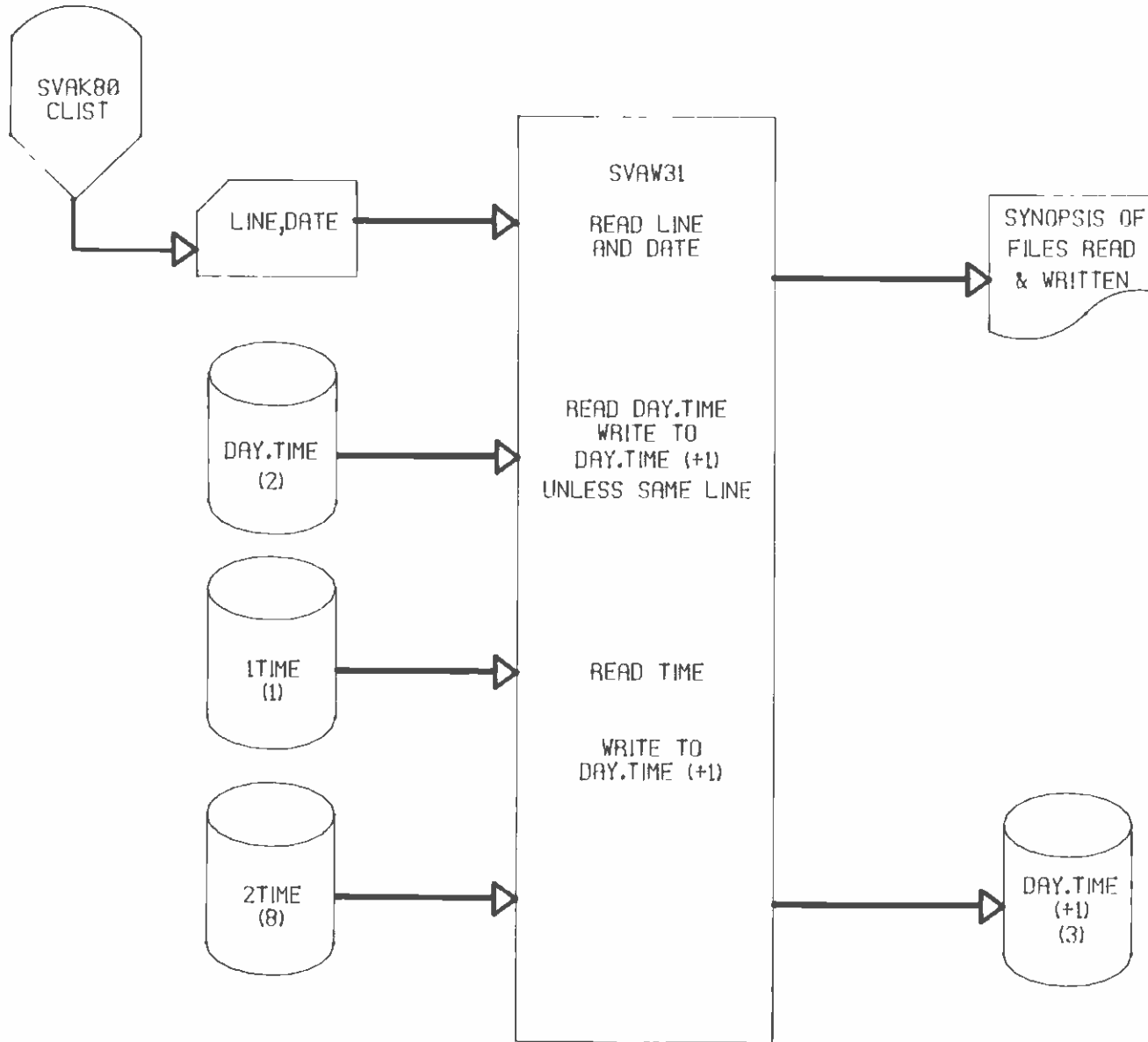
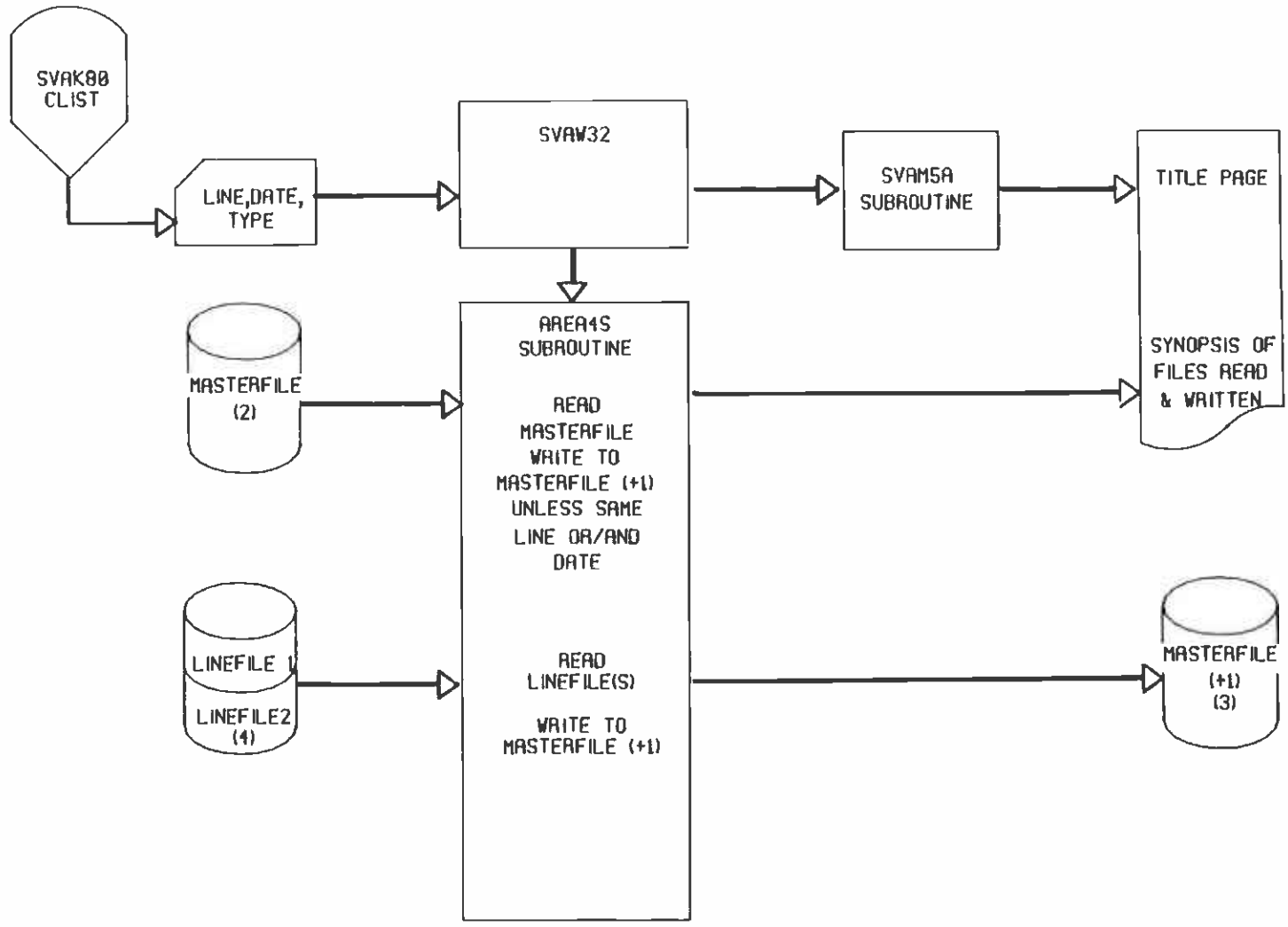


EXHIBIT 1-23
SVAW32 FLOWCHART



1.24 SVAL41 PROGRAM

The Appmile Program (SVAL41) creates new ROUT files and updates existing ROUT files. It is an online program executed through CLIST SVAL41. Files are assigned according to the panel input. A valid STOP file must pre-exist. The user must have the needed ROUT information readily available, and then respond to a series of prompts to transfer the information to the ROUT file in the proper format. Subroutines and entry points are used to handle individual tasks. Subroutine SVAL4F is called automatically by SVAL41 to load the STOP file into a stop number array. Subroutine SVAL4D is also called automatically, to load the existing ROUT file (if any) into a series of arrays. The user then calls one or more subroutines through the use of command responses to prompts. The order of commands is not fixed, but the user must be aware of the consequences of the order chosen. A user guide is provided. In addition to the subroutines described below, there are automatic recovery and file manipulation features which are transparent to the user and are not discussed here. Exhibit 1-24 shows the relationship among the files documented.

Subroutine SVAL4H reconciles the stop numbers in the ROUT file to those in the STOP file. If new stops are found, subroutine SVAL4X is called to initialize ROUT variables with zeroes. If existing stops are moved, subroutine SVAL4W is called to reposition the ROUT arrays and change the index pointers. SVAL4H may only be called when there is a pre-existing ROUT file.

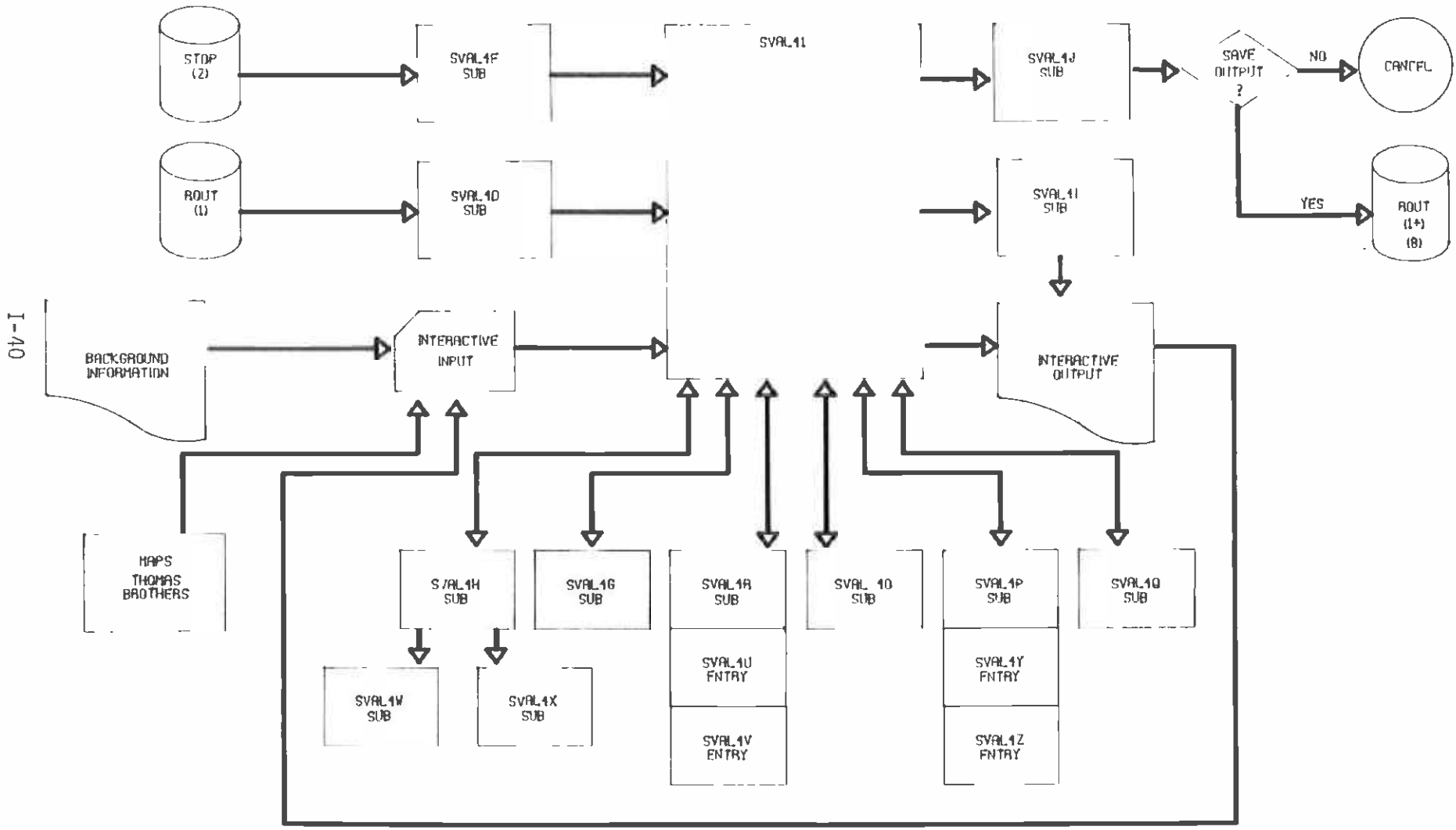
Subroutine SVAL4G sets up new ROUT arrays with zero values, based on the stop numbers found in the STOP file. This is normally done when there is no pre-existing ROUT file, in which case SVAL4G must be called before other commands. Calling SVAL4G when there is a pre-existing ROUT file has the effect of erasing all the original data.

Subroutine SVAL4R inserts a mileage point indicator with specified cumulative mileage on a mileage column for a stop. Entry SVAL4U inserts a mileage skip indicator on a mileage column for a stop. The effect is that the cumulative mileage will be the same as the previous stop, and the usual application is for dummy stops and alternate branches not used. SVAL4U may be used with a range of stops. Entry SVAL4V removes mileage point and skip indicators for a stop or range of stops, either to correct an error or as preparation for reassignment of mileages.

Subroutine SVAL4O interpolates mileages for nonskipped stops between mileage points on a specified mileage column. Skipped stops are given the same mileage as the previous stop.

Subroutine SVAL4D duplicates mileage column data from one column to another for a specified range of stops. This reduces the need to enter mileage data twice when multiple mileage columns are used.

**EXHIBIT 1-24
SIMPLIFIED SVAL41 FLOWCHART**



Entry SVAL4Y enters a census tract and county number for one or more stops. Entry SVAL4Z removes the census tract number, and is used on dummy stops.

Subroutine SVAL4Q inserts routing codes for one or more stops. Pre-existing routing codes may be selectively left intact or erased.

Subroutine SVAL4I prints ROUT data on the terminal for a specified stop, a relative range of stops, or all stops.

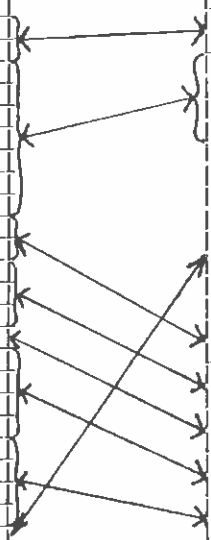
Subroutine SVAL4J exits the program and prepares the output ROUT file. CLIST gives the user a choice of keeping the output, which will be catalogued as a new generation, or omitting the output and keeping the original ROUT file. Subroutine SVAL4J is necessarily the last subroutine called during an execution of Subroutine SVAL4I.

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CHAPTER 2

IBM RIDE CHECK PROCESSING SYSTEM

2.0 INTRODUCTION

This chapter provides instructions on executing command procedures (CLIST) used to submit various computer jobs related to ride check processing. The contents of this chapter are organized as follows: Each section provides instructions on setting up a specific job. Instructions are preceded by a narrative which explains the reasons(s) for executing a specific CLIST and initial file preparation, if any.

2.1 SVALSTT 6 JOB

Purpose - This job is used for printing the forms on which the schedule checker records the ride check data.

Input File Preparation - Prior to submitting this job, a Data Technician must create a STOPLIST file for the line to be checked and verify the validity of stops along the line. This is accomplished by copying an existing STOPLIST from a previous ride check on the same line into the newly created file for the scheduled check. This is done using ISPF 2 (Edit Option) by:

- a) specifying the new job: 'SVP.SVA.STOPLSy (Lnnmmdd)' where yy=year, mm=month, dd=day represent the date of the new ride check and nnn=line number; and pressing the enter key.
- b) typing the word COPY on the command line and pressing the enter key.
- c) specifying the previous STOPLIST file name 'SVP.SVA.STOPLSy (Lnnmmdd)' where yymmdd represent the date of the old ride check on the same line; and pressing the enter key.

In the new stoplist, the Data Technician compares the stops with the list provided by the Stops & Zones Department and makes additions or deletions as needed. He also checks the Basic Operating Schedule in the Scheduling Department for changes in timepoints or Basic Column Numbers. When the stoplist update is completed the Data Technician saves the file by pressing the PF3 key.

If the line has been recently added or has undergone a fare change, the Data Technician consults with the management staff to ensure that appropriate entries exist in the LNLST file and fare headings exist in the S10000 file.

Executing the Command Procedure - After receiving the READY prompt in the TSO mode, type EX 'SVP.SVA.MSTR.CLIST(SVALSTT)' and press the enter key. The LINE STATUS/PREPARATION PANEL will appear (see Exhibit 2-1). The user should enter a 6 at the designated location

SERVICE ANALYSIS
- LINE STATUS/PREPARATION -

OPTION ==> _

6 - PRINT PAPER CHECK MASTER FROM STOPLIST

T - DISPLAY INFORMATION ABOUT THIS APPLICATION

X - EXIT

EXHIBIT 2-1
LINE STATUS/PREPARATION PANEL #1

and press the enter key. The GENERATE PAPER CHECK MASTER FROM STOPLIST PANEL will appear (see Exhibit 2-2). Up to 16 ride check forms can be generated through the use of this panel. The user enters the three-digit line number, a numeric code for the day of the week (5=weekday, 6=Saturday, 7=Sunday), and the six-digit date of the ride check. A given line number must not appear twice in the same job even if the day and dates are different. The enter key is then pressed to submit the job. Submitting the job executes the SVAP06 and the SVAP07 programs using the updated stoplists and the LNLST and S10000 files as inputs. The forms generated are printed on unlined paper in the STD8 format.

2.2 SVALINE 1;1;1 JOB

Purpose - This job is used for the purpose of creating STOP, FARE, CARD (if applicable) and DATA files.

Input File Preparation - Prior to submitting this job, the UNSORTED file must have been properly copied from NIXDORF tape to IBM direct access device. The file copy is accomplished using IBM Utility IEBGENER. The job control language to execute this utility is stored in the following setups: For lines with East-West Orientation the setup is stored in MRPAKK.TS05.CNTL(NIX24), for lines with North-South Orientation the setup is stored in MRPAKK.TS05.CNTL(NIX13), and lines with Roundtrip Orientation the setup is stored in MRPAKK.ST05.CNTL(NIX5).

The Data Technician should also ensure that an appropriate STOPLIST file exists for the ride check to be profiled and, if the line has been recently added or has undergone a fare change, appropriate entries exist in the LNLST and FRCARD files.

Executing the Command Procedure - After receiving the READY prompt in the TSO mode, type EX 'SVP.SVA.MSTR.CLIST(SVALINE)' and press the enter key. The LINE CHECKS PANEL will appear (see Exhibit 2-3). The user should enter a 1 at the designated location and press the enter key. The LINE CHECK PROCESSING PANEL will appear (see Exhibit 2-4). The user should select option 1 on this panel and press the enter key. The PROF-WIDE-MULT PANEL #1 will appear (see Exhibit 2-5). Depending upon whether the ride check data collected using hand-held device or paper forms option 0 or 1 should be specified and the enter key should be pressed. The PROF-WIDE-MULT PANEL #2 will appear (See Exhibit 2-6). On this data entry panel, the user specifies day-of-the-week, bus line number and date of the check. The enter key is then pressed to submit the job. Submitting the job executes programs SVAK8, SVAK9 (hand-held device ride checks only), SVAK10H, SVAK11 (applicable for ride checks with more than ten fare categories), SVAK13, SVAK14, and SVAK15.

2.3 SVALINE 1;1;2 JOB

Purpose - This job is used for the purpose of debugging and fixing the errors in the CARD (if applicable) or DATA files). This job should be used after SVALINE 1;1;1 job has been successfully executed.

LINE STATUS/PREPARATION
GENERATE PAPER CHECK MASTER FROM STOPLIST

ENTER LINE NO: XXX DAY CODE (5,6,OR 7) AND STOPLIST DATE (YYMMDD)

LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____
LINE NO: _____	DAY: -	DATE: _____

PRESS 'ENTER' TO SUBMIT JOB

PRESS 'PF3' TO RETURN TO MENU

EXHIBIT 2-2

GENERATE PAPER CHECK MASTER FROM STOPLIST PANEL

SERVICE ANALYSIS
LINE CHECKS

OPTION ==>_

- 1 - LINE CHECK PROCESSING
- 2 - MISCELLANEOUS LINE FILE PROGRAMS
- T - DISPLAY LINE CHECK & LINE FILE EDIT INFORMATION
- X - EXIT TO TSO

EXHIBIT 2-3
LINE CHECKS PANEL

SERVICE ANALYSIS
LINE CHECK PROCESSING

OPTION ==>_

- 1 - PROF-WIDE-MULT - PRODUCE DATA ELEMENTS, DIAGNOSTIC REPORTS
 - 2 - EDIT - MANUAL EDIT OF LINE FILE ELEMENTS
 - 3 - AREA 0 - LIST STOP, ROUT, HEAD ELEMENTS
 - 4 - AREA 1 - PRODUCE TRIPFARE ELEMENT
 - 5 - NARROW/WIDE SCHED - NARROW AND WIDE SCHEDULE JOBS
 - 6 - AREA 3 - PRODUCE AREA, LINE, LEXP, TIME ELEMENTS
 - 7 - PROF 50 - PRODUCE RIDERSHIP & OTHER REPORTS
 - 8 - AREA 4 - UPDATE MASTER RIDERSHIP FILES
 - 9 - FILE COPY UTILITY - GENERATION DATA GROUP COPY UTILITY
- L - LINE FILE EDITING MENU
T - DISPLAY INFORMATION ABOUT LINE CHECK PROCESSING
X - EXIT

EXHIBIT 2-4
LINE CHECK PROCESSING PANEL #1

SERVICE ANALYSIS
PROF-WIDE-MULT

OPTION ==> _

- 0 - TO RUN HHD-FORMAT JOB FOR THE FIRST TIME (PROF 1-5)
- 1 - TO RUN OLD-FORMAT JOB FOR THE FIRST TIME (PROF 1-5)
- 2 - TO RUN JOB AFTER MANUAL EDIT (PROF 3-5)

- X - EXIT TO LINE CHECK PROCESSING MENU

EXHIBIT 2-5
PROF-WIDE-MULT PANEL #1

SERVICE ANALYSIS
PROF-WIDE-MULT

SELECT THE DAY OF THE WEEK:

XX ==> __

ENTER: DX FOR DAILY
SA FOR SATURDAY
SU FOR SUNDAY

SELECT THE LINE CHECK FILE:

BUS LINE ==> __

LINE (1-999)

YEAR ==> __

YEAR (2 DIGITS)

MONTH ==> __

MONTH (1-12)

DAY ==> __

DAY (1-31)

PRESS 'ENTER' TO SUBMIT JOB

PRESS 'PF3' TO RETURN TO MENU

EXHIBIT 2-6
PROF-WIDE-MULT PANEL #2

Input File Preparation - Prior to submitting this job, errors identified by SVALINE 1;1;1 job or a previous run of SVALINE 1;1;2 job should be fixed in either the CARD or DATA files.

Executing the Command Procedure - The instructions for submitting this job are identical to those for job SVALINE 1;1;1. The only exception is that on PROF-WIDE-MULT PANEL #1 (Exhibit 2-5) option 2 should be selected instead of option 1. Submitting this job executes programs SVAK11 (if applicable), SVAK13, SVAK14 and SVAK15.

2.4 SVALINE 1;2 JOB

Purpose - This job is used for the purpose of editing various data elements associated with a ride check. This job essentially puts the user in ISPF edit mode where desired elements can be edited.

Input File Preparation - Prior to running this job, the Data Technician should ensure that data element to be edited does exist.

Executing The Command Procedure - The user should follow the instructions outlined earlier for invoking the SVALINE 1;1;1 job until LINE CHECK PROCESSING PANEL #4 (Exhibit 2-4) appears. The user should specify option 2 on this panel and press the enter key. The MANUAL EDIT OF LINE FILE PANEL will appear (see Exhibit 2-7). On this panel, the user will specify the line number, the date of ride check and the element name. Valid elements job selection are limited to the UNSORTED, dCARD, dDATA, dSTOP, dROUT or dHEAD, where the d represents the directions N, E, W, S or R. Enter key should then be pressed to edit the desired element. After editing has been completed, the PF3 key should be pressed.

2.5 SVALINE 1;9 JOB

Purpose - This job is used to copy HEAD and ROUT elements from a previous ride check into HEAD and ROUT elements for the current ride check. To conserve direct access storage, old HEAD and ROUT elements are stored as members of a partitioned data set (PDS) rather than as individual sequential generation data group (GDG) files. The copy utility invoked by SVALINE 1;9 job was originally designed to copy one GDG file into another. In order to load a member of a PDS into a GDG file, a two step process is used. First, any existing HEAD and ROUT elements for any line in the GDG file format are copied into the HEAD and ROUT GDG base established for the line to be profiled. Next, using ISPF edit, all entries in the HEAD and ROUT elements for the line to be profiled are deleted and appropriate members from previous ride check on the same line copied from the PDS. Steps involved in this process are similar to those described in section 2.1.

Input File Preparation - The user should follow the instructions outlined earlier for invoking the SVALINE 1;1;1 job until LINE CHECK PROCESSING PANEL #1 (Exhibit 2-4) appears. The user should specify option 9 on this panel and press the enter key. The GENERATION DATA GROUP COPY UTILITY PANEL will appear (see Exhibit 2-8). On this

LINE CHECK PROCESSING
MANUAL EDIT OF LINE FILE

SELECT THE LINE FILE:

LINE ==> _____

ENTER: LINE (1-999)

YEAR ==> _____

YEAR (2 DIGITS)

MONTH ==> _____

MONTH (1-12)

DAY ==> _____

DAY (1-31)

SELECT ELEMENT ==> _____

PRESS 'ENTER' TO EDIT

PRESS 'PF3' TO RETURN TO MENU

EXHIBIT 2-7
MANUAL EDIT OF LINE FILE PANEL

SERVICE ANALYSIS
GENERATION DATA GROUP COPY UTILITY

DESTINATION VOLUME ID ==> _DISK

SAMPLE ==> SVP.SVA.MSTR.L 496 . D830510 . E ROUT

	LINE	DATE	DIR	ELEMENT
	----	-----	----	-----
OLD FILE ==>	SVP.SVA.MSTR.L_L1	._DATE1	._	_ELT1
NEW FILE ==>	SVP.SVA.MSTR.L_L2	._DATE2	._	

PRESS 'ENTER' TO SUBMIT JOB

PRESS 'PF3' TO EXIT

EXHIBIT 2-8
GENERATION DATA GROUP COPY UTILITY PANEL

panel, on the row labeled OLD FILE, the user will specify the line number, date of check, direction and element name for any existing ROUT and HEAD element in the GDG organization and on the row labeled NEW FILE the user will type the line number, date of check, and direction for the ride check currently being profiled. The element name for the NEW FILE is assumed to be the same as that specified for the OLD FILE. After completing this panel the enter key should be pressed. After this job runs successfully, the ROUT or the HEAD element created in the GDG organization should be modified using ISPF edit commands, as outlined earlier.

2.6 SVALINE 2;4 JOB

Purpose - This job is used to update the ROUT element, using an interactive on-line program SVAL41(APPMILE), for the line to be profiled.

Input File Preparation - Prior to submitting this job, the Data Technician must have created a valid STOP element for the line to be profiled. If a previous ride check exists for the same line, the ROUT element must have been copied using the procedure described in Section 2.5. The Data Technician should be well versed in the usage of APPMILE program and be able to respond to a series of prompts presented by this program. A User's Guide for executing this program can be obtained from the Service Analysis staff¹.

Executing The Command Procedure - Follow the instruction given for executing SVALINE 1;1;1 job until LINE CHECKS PANEL appears (Exhibit 2-3). On this panel specify option 2 and press the enter key. Now MISCELLANEOUS LINE FILE PROGRAMS PANEL will appear (see Exhibit 2-9). On this panel specify option 4 and press the enter key. MISCELLANEOUS LINE FILE PROGRAMS - APPMILE PANEL #1 will now appear (see Exhibit 2-10). On this panel enter the information for STOP and ROUT elements as follows: three digits for the line number, six-digits for the file date (yymmdd), and one character for the direction (north, south, east, west, or roundtrip). The response to the question whether the user wishes to edit the rout element is specified as Y (yes) or N (no). After entering the relevant information, enter key should be pressed. The interactive on-line APPMILE program is now invoked. The following display will be observed on the screen:

```
SVA.MSTR.APPMILE.USERID
0000:
CSSSSCVVVVV
```

Under the first 'C' the Data Technician enters a 'U', the command for 'update'. This reconciles the copied ROUT element to the STOP element by deleting from ROUT those records not in STOP, and by adding to ROUT stops that are found in STOP. APPMILE is also used for calculating intermediate distances between stops with known mileages. Other modifications of the ROUT element, such as entering known mileages or census tract numbers, are more easily accomplished using ISPF 2. To exit APPMILE one places an 'E' (exit) under the

¹APPMILE User's Guide, SCRTD, July, 1981.

SERVICE ANALYSIS
MISCELLANEOUS LINE FILE PROGRAMS

OPTION ==>_

- 1 - PULLTRIP - ADD MISSING TRIPS
- 2 - PROF6 - SPECIFIED UPDATES TO DATA ELEMENTS
- 3 - AREA2 - ADD SCHEDULED TIMES
- 4 - APPMILE - CREATE OR MODIFY ROUT
- 5 - CHBASCOL - CHANGE BASIC COLUMN NUMBER
- 6 - ADDBASCOL - ADD BASIC COLUMN NUMBER
- 7 - RENUMXSRD - RENUMBER STOPS IN ROUT AND DATA
- 8 - ADDFARE - TOTAL PASSENGER AND FARE COUNT
- 9 - ONTIME - ONTIME PERFORMANCE

- L - LINE CHECK PROCESSING MENU
- T - DISPLAY INFORMATION ON LINE FILE EDITING
- X - EXIT

EXHIBIT 2-9
MISCELLANEOUS LINE FILE PROGRAMS PANEL

MISCELLANEOUS LINE FILE PROGRAMS
APPMILE

SELECT THE STOP ELEMENT:

LINE NUMBER	==>	___	ENTER:	000-999
FILE DATE	==>	_____		YYMMDD
DIRECTION	==>	_		N, S, E, W, OR R

SELECT THE ROUT ELEMENT:

LINE NUMBER	==>	___		000-999
FILE DATE	==>	_____		YYMMDD
DIRECTION	==>	_		N, S, E, W, OR R

DO YOU WISH TO EDIT THE ROUT ELEMENT? ==> _ Y OR N

PRESS 'ENTER' TO EXECUTE APPMILE OR EDIT ROUT PRESS 'PF3' TO RETURN TO MENU

EXHIBIT 2-10
APPMILE PANEL #1

first 'C' and presses the enter key. MISCELLANEOUS LINE FILE PROGRAMS - APPMILE PANEL #2 will now appear (see Exhibit 2-11). If the user wants to save the modifications made to the ROUT element, he enters 'Y'; 'N' will cancel any updates made to the ROUT. The Data Technician can enter APPMILE as often as necessary to ensure that the ROUT element contains all the current information necessary. After making appropriate data entry, enter key should be pressed.

2.7 SVALINE 1;3 JOB

Purpose - This job is used for generating a hard copy (listing) of the STOP, ROUT, and HEAD elements.

Input File Preparation - Prior to submitting this job, the Data Technician must have created valid STOP, ROUT, and HEAD elements.

Executing The Command Procedure - Follow the instructions given for executing SVALINE 1;1;1 job until LINE CHECK PROCESSING PANEL #1 (Exhibit 2-4) appears. On this panel, specify option 3 and press the enter key. Next LINE CHECK PROCESSING PANEL will appear (see Exhibit 2-12). On this panel specify line directions, line number, date of ride check in YYMMDD format, and user name. After completing the panel entries, enter key should be pressed. This job executes a program SVAM4 which produces a listing of the STOP, HEAD, and ROUT elements for use as a reference when making modifications.

2.8 SVALINE 1;4 JOB

Purpose - This job is executed to produce TRIPFARE element for the line being profiled. The tripfare element provides a summary of passenger fares paid for each trip and other information such as weather, bus run, vehicle number, seats on vehicle, first and last scheduled times, and maximum passengers on-board for each trip.

Input File Preparation - Prior to executing this job, the Data Technician must have prepared valid STOP, FARE, DATA, HEAD and ROUT elements.

Executing the Command Procedure - Follow the instruction given for executing SVALINE 1;1;1 job until LINE CHECK PROCESSING PANEL #1 (Exhibit 2-4) appears. On this panel, specify option 4 and press the enter key. Now LINE CHECK PROCESSING - AREA 1 PANEL will appear (see Exhibit 2-13). On this panel specify line directions, line number, date of ride check in YYMMDD format, and user name. After completing the panel entries enter key should be pressed. This job executes programs SVAK41 and SVAK42.

2.9 SVALINE 1;5 JOB

Purpose - This job is executed to produce PERF element and various reports of interest to the Scheduling Department, such as 'Running Time Analysis', 'Schedule Quality', etc. These reports are described in Volume 1, Sections 4.3 and 4.5 of this report.

MISCELLANEOUS LINE FILE PROGRAMS
APPMILE

DO YOU WISH TO SAVE YOUR OUTPUT FILE ==> _

ENTER: Y OR N

PRESS 'ENTER' TO SAVE FILE

PRESS 'PF3' TO RETURN TO MENU

EXHIBIT 2-11
APPMILE PANEL #2

SERVICE ANALYSIS
LINE CHECK PROCESSING

SELECT DIRECTION ==> ___

ENTER: NS, EW, RT

SELECT THE LINE FILE:

LINE ==> ___

LINE (1-999)

YEAR ==> ___

YEAR (2 DIGIT S)

MONTH ==> ___

MONTH (1-12)

DAY ==> ___

DAY (1-31)

ENTER YOUR NAME ==> _____

(MAX 13 CHARA CTERS)

PRESS 'ENTER' TO SUBMIT JOB

PRESS 'PF3' TO RETURN TO MENU

EXHIBIT 2-12
LINE CHECK PROCESSING PANEL #2

LINE CHECK PROCESSING
AREA 1

SELECT DIRECTION ==> __

ENTER: NS, EW, RT

SELECT THE LINE FILE:

LINE ==> ___
YEAR ==> ___
MONTH ==> ___
DAY ==> ___

LINE (1-999)
YEAR (2 DIGIT S)
MONTH (1-12)
DAY (1-31)

ENTER YOUR NAME ==> _____

(MAX 12 CHARA CTERS)

PRESS 'ENTER' TO SUBMIT JOB

PRESS 'PF3' TO RETURN TO MENU

EXHIBIT 2-13
AREA1 PANEL

Input File Preparation - Prior to executing this job, the Data Technician must have prepared valid FARE, STOP, HEAD, DATA, and ROUT elements.

Executing the Command Procedure - Follow the instructions given for executing SVALINE 1;1;1 job until LINE CHECK PROCESSING PANEL #1 (Exhibit 2-4) appears. On this panel, specify option 5 and press the enter key. Now LINE CHECK PROCESSING - NARROW & WIDE SCHEDULE JOBS PANEL (See Exhibit 2-14) will appear. On this panel, specify line direction, line number, and ride check date in YYMMDD format. After completing the data entry in this panel, enter key should be pressed. This job executes programs SVAK51, (STANSCHED), SVAK53 (SCHED), SVAK54 (S80031), and SVAK70 (SCHEDULE QUALITY).

2.10 SVALINE 1;6 JOB

Purpose - This job is executed to produce AREA, LINE, LEXP, and Time elements.

Input File Preparation - Prior to executing this job, the Data Technician must have prepared valid FARE, STOP, HEAD, DATA, and ROUT elements.

Executing the Command Procedure - Follow the instructions given for executing SVALINE 1;1;1 job until LINE CHECK PROCESSING PANEL #1 (Exhibit 2-4) appears. On this panel, specify option 6 and press the enter key. Now SERVICE ANALYSIS - LINE CHECK PROCESSING PANEL #2 will appear (see Exhibit 2-12). On this panel, specify line directions, line number, date of ride checks in YYMMDD format, and the user name. After completing the panel entries, enter key should be pressed. This job executes the program SVAK; (AREA3A which produces AREA, LINE, LEXP, and TIME elements.

2.11 SVALINE 1;7 JOB

Purpose - This job is executed to produce the On and Off Profile, On-Board Profile, and the Ridership Profile; these reports present a picture of passenger activity at each stop on every trip. The contents of these reports (PROF50, PROF10) were discussed in Volume 1, Section 4.2.

Input File Preparation - Prior to executing this job, the Data Technician must have prepared valid FARE, STOP, HEAD, DATA, and ROUT elements.

Executing the Command Procedure - Follow the instructions given for executing SVALINE 1;1;1 job until LINE CHECK PROCESSING PANEL #1 (Exhibit 2-4) appears. On this panel, specify option 7 and press the enter key. Now LINE CHECK PROCESSING - PROF50 JOBS PANEL will appear (see Exhibit 2-15). On this panel, specify a line direction, line number, date of ride check in YYMMDD format, CPU time class, and the user name. Please note that the default value of CPU time Class B which is appropriate for processing many of the ride checks. For lines with relatively fewer trips, Class A can be specified and for

LINE CHECK PROCESSING
NARROW & WIDE SCHEDULE JOBS

SELECT DIRECTION ==> ___

ENTER: NS, EW, RT

SELECT THE LINE FILE:

LINE ==> ___

LINE (1-999)

YEAR ==> ___

YEAR (2 DIGITS)

MONTH ==> ___

MONTH (1-12)

DAY ==> ___

DAY (1-31)

PRESS 'ENTER' TO SUBMIT JOB

PRESS 'PF3' TO RETURN TO MENU

EXHIBIT 2-14
NARROW & WIDE SCHEDULE JOBS PANEL

LINE CHECK PROCESSING
PROF 50 JOBS

SELECT SINGLE DIRECTION ==> _

ENTER: N, S, E, W, R

SELECT THE LINE FILE:

LINE ==> ___
YEAR ==> ___
MONTH ==> ___
DAY ==> ___

LINE (1-999)
YEAR (2 DIGITS)
MONTH (1-12)
DAY (1-31)

SELECT CPU TIME CLASS ==> _

A=SMALL,
B=MEDIUM,
C=LARGE

ENTER YOUR NAME ==> _____

(MAX 13 CHARACTE RS)

PRESS 'ENTER' TO SUBMIT JOB

PRESS 'PF3' TO RETURN TO MENU

EXHIBIT 2-15
PROF 50 JOBS PANEL

lines with many trips, Class C should be specified. After completing the panel entries, enter key should be pressed. This job executes programs SVAK 72 (PROFONOFF), SVAK73 (PROFONBOARD), and SVAK74 (PROF10). As explained earlier, outputs of these programs are various ridership reports.

2.12 SVALINE 1;8 JOB

Purpose - This job is executed to update both current and historical master files, such as DAY.TRACT, DAY.PERF, DAY.LEXP, DAY.FARES, DAY.TOTAL, DAY.TPERF, DAY.TLEXP, and SASCONTL. Prior to updating the master files, the validity of various elements and logical inter-relationships among various line elements are ascertained using a comprehensive diagnostic computer program (CDP).

Input File Preparation - Prior to executing this job, the Data Technician must have prepared valid FARE, STOP, HEAD, DATA, and ROUT, TRIPFARE, LINE, PERF, LEXP, AREA, and TIME elements.

Executing the Command Procedure - Follow the instructions given for executing SVALINE 1;1;1 job until LINE CHECK PROCESSING PANEL (Exhibit 2-4) appears. On this panel, specify Option 8 and press the enter key. Now LINE CHECK PROCESSING - AREA4 PANEL will appear (see Exhibit 2-16). On this panel, specify line directions, line number, ride check date and day of the week (that is, weekday, Saturday or Sunday). After making appropriate entries, enter key should be pressed. Depending upon the severity of errors detected by the CDP program, the Data Technician may have to run this job several times, after making appropriate data corrections. This job executes programs CDP, SVAW31 (AREA4B), SVAW32 (AREA 4A) and SVAK81.

LINE CHECK PROCESSING
AREA 4

SELECT DIRECTION ==> __

ENTER: NS, EW, RT

SELECT THE LINE FILE:

LINE ==> __

LINE (1-999)

YEAR ==> __

YEAR (2 DIGIT S)

MONTH ==> __

MONTH (1-12)

DAY ==> __

DAY (1-31)

SELECT WEEKDAY ==> __

DX, SA, SU

PRESS 'ENTER' TO SUBMIT JOB

PRESS 'PF3' TO RETURN TO MENU

EXHIBIT 2-16
AREA4 PANEL

CHAPTER 3

RIDE CHECK FILE LAYOUTS

3.0 INTRODUCTION

This chapter contains file layouts for catalogued files discussed in Chapters 1, 2, 3 and 4 of Volume 1. File types are as follows:

GDG	Generation Data Group
PDS	Partitioned Data Set
SEQ	Sequential Data Set

Formats used are compatible with FORTRAN. File names and those used on IBM Processing System. For line number, year, month and day of check, and line direction, the following naming conventions have been used:

nnn	= Line Number
yy	= Year of Check
mm	= Month of Check
dd	= Day of Check
d	= Direction of Line

3.1 LNLST

File Name: SVP.SVA.MSTR.LNLST.Dyymmdd

File Type: SEQ

Record Length: 80

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	I1	Day blank=all, 5=M-F, 6=Sat, 7=Sun
5	2I1	Directions
7	I2	Fare headings per page
9	I1	Fare groups blank=1
10	1X	Blank
11	A5	First fare group
16	I4	Beginning stop of second fare group
20	A5	Second fare group
25	I4	Beginning stop of third fare group
29	A5	Third fare group
34	I4	Beginning stop of fourth fare group
38	A5	Fourth fare group
43	I4	Beginning stop of fifth fare group
47	A5	Fifth fare group
52	I4	Beginning stop of sixth fare group
56	A5	Sixth fare group

3.2 S10000

File Name: SVP.SVA.MSTR.S10000.N00

File Type: SEQ

Record Length: 110

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	A5	Fare group name
6	I1	Record number =1-7
7	A74	Fare and page headings

3.3 STOPLIST

File Name: SVP.SVA.STOPLSy(Lnnnmdd)

File Type: PDS

Record Length: 50

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	5X	Blanks
9	I2	Direction
11	1X	Blank
12	I4	Stop number
16	1X	Blank
17	I2	Basic column number
19	1X	Blank
20	A1	Identifier *=Leave, @=Arrive, &=Dummy
21	A10	Street name on
31	10X	Blank
41	A10	Street name at

3.4 UNSORTED

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.UNSORTED(0)

File Type: GDG

Record Length: 80

There are two types of records: the lead card and the data card. The lead card contains general information about the trip, and the data card contains specific information about each stop used.

Lead Card Layout - All Variables Required:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	I5	Schedule number
9	I2	Direction number
11	I4	Trip number
15	I4	0000
19	2X	Blanks
21	I2	Service number
23	A3	Day of week
26	2X	Blanks
28	I6	Date this trip was checked: yymmdd
34	I3	Bus run number
37	I4	Vehicle number
41	A4	Schedule Checker's name or badge
45	A2	Weather CL=clear, CY=cloudy, RA=rain, FG=fog
47	I3	Seats on bus
50	3X	Blanks
53	I4	Control time (implied HH:mm = Hours:minutes)
57	A1	Control time period = A, N, P, Q
58	I2	Control Basic column number

Data Card Layout - All Variables After Column 20 Included as Needed:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	I5	Schedule number
9	I2	Direction
11	I4	Trip number
15	I4	Stop number
19	I2	Service number
21	I2	Basic column number
23	I4	Scheduled time (implied :00)
27	A1	Scheduled time period - A, N, P, Q
28	A1	Identifier *=leave, @=Arrive
29	I5	Actual time (implied :00.0)
34	A1	Actual time period - A, N, P, Q
35	I2	Boardings
37	I3	Alightings
40	I3	Passengers on board
43	15I2	Fare usage by type printed on check sheet

3.5 CARD

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.dCARD(0)

File Type: GDG

Record Length: 80

There are two types of records: the lead card and the data card. The lead card contains general information about the trip, and the data card contains specific information about each stop used. CARD files do not exist if the ride check contains ten or fewer fare types.

Lead Card Layout - All Variables Required:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	I5	Schedule number
9	I2	Direction
11	I4	Trip number
15	I4	0000
19	2X	Blanks
21	I2	Service number
23	A3	Day of week
26	2X	Blanks
28	I6	Date this trip was checked: yymmdd
34	I3	Bus run number
37	I4	Vehicle number
41	A4	Schedule Checker's name or badge
45	A2	Weather CL=clear, CY=cloudy, RA=rain, FG=fog
47	I3	Seats on bus
50	3X	Blanks
53	I4	Control time (implied HH:mm - Hours:minutes)
57	A1	Control time period = A, N, P, Q
58	I2	Control Basic column number

Data Card Layout - All Variables After Column 20 Included as Needed:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	I5	Schedule number
9	I2	Direction
11	I4	Trip number
15	I4	Stop Number
19	I2	Service number
21	I2	Basic column number
23	I4	Scheduled time (implied :00)
27	A1	Scheduled time period = A, N, P, Q
28	A1	Identifier *=Leave, @=Arrive
29	I5	Actual time (implied :00.0)
34	A1	Actual time period = A, N, P, Q
35	I2	Boardings
37	I3	Alightings
40	I3	Passengers on board
43	15I2	Fare usage by type printed on check sheet

3.6 DATA

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.dDATA(0)

File Type: GDG

Record Length: 110

There are two types of records: the lead card and the data card. The lead card contains general information about the trip, and the data card contains specific information about each stop used.

Lead Card Layout - All Variables Required:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	I5	Schedule number
9	I2	Direction
11	I4	Trip number
15	I4	0000
19	2X	Blanks
21	I2	Service number
23	A3	Day of week
26	2X	Blanks
28	I6	Date this trip was checked: yymmdd
34	I3	Bus run number
37	I4	Vehicle number
41	A4	Schedule Checker's name or badge
45	A2	Weather CL=clear, CY=cloudy, RA=rain, FG=fog
47	I3	Seats on bus
50	3X	Blanks
53	I4	Control time (implied HH:mm - Hours:minutes)
57	A1	Control time period = A, N, P, Q
58	I2	Control Basic column number

Data Card Layout - All Variables After Column 20 Included as Needed:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	I5	Schedule number
9	I2	Direction
11	I4	Trip number
15	I4	Stop number
19	I2	Service number
21	I2	Basic column number
23	I4	Scheduled time (implied :00)
27	A1	Scheduled time period = A, N, P, Q
28	A1	Identifier *=Leave, @=Arrive
29	I5	Actual time (implied :00.0)
34	A1	Actual time period = A, N, P, Q
35	I2	Boardings
37	I3	Alightings
40	I3	Passengers on board
43	10I2	Fare usage by type in FARE file
63	4I2	Fare usage: Standard fares 11-14
71	I5	Fare amount: Standard fare 15
76	I2	Fare usage: Standard fare 16
78	I5	Fare amount: Standard fare 17
83	13I2	Fare usage: Standard fares 18-30

3.7 STOP

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.dSTOP(0)

File Type: GDG

Record Length: 50

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	5X	Blanks
9	I2	Direction
11	1X	Blank
12	I4	Stop number
16	1X	Blank
17	I2	Basic column number
19	1X	Blank
20	A1	Identifier *=Leave, @=Arrive, &=Dummy
21	A10	Street name on
31	10X	Blanks
41	A10	Street name at

3.8 ROUT

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.dROUT

File Type: GDG

Record Length: 81

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	1X	Blank
2	I4	Stop number
6	I2	Direction
8	I3	Line number
11	5A1	Mileage point indicators, mileage columns 1-5
16	5I5	Mileages, mileage columns 1-5 (implied .00)
41	I6	Census tract implied .00)
47	I7	North coordinate (not implemented)
53	I7	East coordinate (not implemented)
61	20I1	Routing codes, services 1-20
81	I1	County code =0-9

3.9 HEAD

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.dHEAD(0)

File Type: GDG

Record Length: 81

Record Layout:

The HEAD file contains cards in the following order:

Title Card
Service Description Cards(s)
Comment Card(s)
Route Number Card
Service Type Card
Parameter Card
Time Interval Quantity Card
Time Intervals Card
Option Card
Mileage Columns Card

Title Card Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	1X	Blank
2	I3	Line number
5	I2	Direction
7	4X	Blanks
11	A60	Descriptive line name and direction
71	A3	Day of Week =SUN,MON,TUE,WED,THU,FRI,SAT
74	I6	Date of Ride Check: yymmdd
80	A1	Number of comments =1-9, A-U (A=10,U=30) The Service Description, Comment, Route Number, and Service Type Cards are counted in this number.

Service Card Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	A7	SERVICE
8	I2	Service number
10	A51	Description of service. May be continued on subsequent card without repeating other fields.
end	A4	Route number - end of description of service.

Comment Card Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	A8	COMMENTS
9	A52	Description of trips not run, trip data substituted, and other conditions which substantially affected the normalcy of the

data collected. This field may be repeated on subsequent cards without repeating the first field.

Route Number Card Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	20(I3,A1)	Route number and alphabetic suffix for each service.

Service Type Card Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	20I1	Service type for each service: 0=local, 1=limited, 2=local & express, 3=express only, 4=reduced fare, 9=service not used

Parameter Card Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I5	Number of stops, including dummy stops
6	I5	Number of services
11	I5	Control stop number

Time Interval Quantity Card Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I5	Quantity of time intervals (used in Ridership Profile)

Time Intervals Card Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	16I5	Beginning and ending time (military) of up to eight time intervals, as measured at the control stop. The first interval covers the entire service day. The remaining intervals cover peak, base, night, and owl service periods as necessary. The criteria for defining intervals are headways, boardings, and service patterns. The results will uniquely fit each line.

Option Card Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	16I5	Options (zeroes for standard reports)

Mileage Column Card Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	60X	Blanks
61	20I1	Mileage column applicable to each service.

3.10 AREA

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.dAREA

File Type: SEQ

Record Length: 132

The file contains two records for each Census Tract that a line traverses. The second record is a continuation of the first. If the Census Tract is 0, subsequent variables must also be 0.

First Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I7	Date of Ride Check: yymmdd
12	I2	Direction
14	I2	County code
16	I7	Census tract (implied .00)
23	I5	Boardings
28	I5	Alightings
33	I3	Average on board (truncated)
36	I4	Trips
40	I6	Bus minutes
46	I6	Bus miles (implied .00)
52	I6	Passenger minutes
58	I8	Passengers miles (implied .00)
66	10I4	Fare usage: Standard fares 1,2,21,5,3,4,6,7,8,22

Second Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I2	Direction
7	I7	Date of Ride Check: yymmdd
14	I2	County code
16	I7	Census tract (implied .00)
23	11I4	Fare usage: Standard fares 9-13, 23-27, 14
67	I6	Fare amount: Standard fare 15
73	I4	Fare usage: Standard fare 16

77 I6 Fare amount: Standard fare 17
 83 6I4 Fare usage: Standard fares 18-20, 28-30

(Note: "Standard Fares" are discussed in the Glossary of Volume 1.)

3.11 LINE

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.dLINE

File Type: SEQ

Record Length: 132

There are two records per file.

First Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I7	Date of Ride Check: yymmdd
12	I2	Direction
14	2X	Blanks
16	I6	Boardings
22	I6	Alightings
28	I4	Trips
40	I7	Bus minutes
46	I9	Bus miles (implied .00)
52	I8	Passenger minutes
58	I10	Passenger miles (implied .00)
66	I5	Fare usage: Standard fare 1
71	2I4	Fare usage: Standard fares 2, 21
79	I4	Fare usage: Standard fare 5
84	6I4	Fare usage: Standard fares 3,4,6,7,8,22

Second Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	11I4	Fare usage: Standard fares 9-13, 23-27, 14
45	I6	Fare amount: Standard fare 15
51	I4	Fare usage: Standard fare 16
55	I6	Fare amount: Standard fare 17
61	6I4	Fare usage: Standard fares 18-20, 28-30

3.12 LEXP

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.dLEXP

File Type: SEQ

Record Length: 132

There are four records per file.

First and Third Record Layout.

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I7	Date of Ride Check: yymmdd
12	I2	Direction
14	I1	Type 1=local, 2=express
15	1X	Blank
16	I6	Boardings
22	I6	Alightings
28	I4	Trips
40	I7	Bus minutes
46	I9	Bus miles (implied .00)
52	I8	Passenger minutes
58	I10	Passenger miles (implied .00)
66	I5	Fare usage: Standard fare 1
71	2I4	Fare usage: Standard fares 2, 21
79	I4	Fare usage: Standard fare 5
84	6I4	Fare usage: Standard fares 3,4,6,7,8,22

Second and Fourth Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	11I4	Fare usage: Standard fares 9-13, 23-27, 14
45	I6	Fare amount: Standard fare 15
51	I4	Fare usage: Standard fare 16
55	I6	Fare amount: Standard fare 17
61	6I4	Fare usage: Standard fares 18-20, 28-30

3.13 TIME

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.dTIME

File Type: SEQ

Record Length: 132

There are 97 records per file. The first record contains identifiers and the remaining records contain data for each of the 96 time periods.

First Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	14	Line number
5	I2	Direction
7	I7	Date of Ride Check: yymmdd
14	I3	Number of fares

Second through 97th Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I2	15-minute time period 1-96
3	I5	Boardings during period
8	I5	Alightings during period
13	I5	Passengers on board at end of period
18	I3	Buses in service at end of period
21	21I3	Fare usage: Standard fares 1,2,21,5,3,4,6-8,22,9-13,23-27,14
84	I5	Fare amount: Standard fare 15
89	I3	Fare usage: Standard fare 16
92	I5	Fare amount: Standard fare 17
97	3I3	Fare usage: Standard fares 18-20
106	I3	Fare usage: Standard fares 28-30 combined

3.14 PERF

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.dPERF

File Type: SEQ

Record Length: 132

There are seven records per file. The first six records contain data for three time periods each:

<u>RECORD</u>	<u>FIRST PERIOD</u>	<u>SECOND PERIOD</u>	<u>THIRD PERIOD</u>
1	All day	5 to 5:59 AM	6 to 6:59 AM
2	7 to 7:59 AM	8 to 8:59 AM	9 to 9:59 AM
3	10 to 10:59 AM	11 to 11:59 AM	12 to 12:59 Noon
4	1 to 1:59 PM	2 to 2:59 PM	3 to 3:59 PM
5	4 to 4:59 PM	5 to 5:59 PM	6 to 6:59 PM
6	7 to 7:59 PM	8 to 8:59 PM	9 PM to 4:59 AM

First Six Records Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I6	Date of Ride Check: yymmdd
11	I2	Direction
13	I1	Record number =1-6
14	I7	Total trips (blank on lines 2-6)
21	I7	Bus miles (first time period)
28	I7	Seat miles " " "
35	I7	Empty seats miles " " "
42	I7	Passenger miles " " "
49	I7	Standee miles " " "
56	I7	Bus miles (second time period)
63	I7	Seat miles " " "
70	I7	Empty seat miles " " "
77	I7	Passenger miles " " "
84	I7	Standee miles " " "

91	I7	Bus miles	(third time period)
98	I7	Seat miles	" " "
105	I7	Empty seat miles	" " "
112	I7	Passenger miles	" " "
119	I7	Standeer miles	" " "

Seventh Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I6	Date of Ride Check: yymmdd
11	I2	Direction
13	I1	Record number =7
14	7X	Blanks
21	I7	Peak stop number for peak hour
28	I7	Peak hour ending time (military)
35	I7	Peak hour trips at peak stop
42	I7	Peak hour seats at peak stop
49	I7	Peak hour passengers at peak stop
56	I7	Peak load ratio (implied .0%)
63	I7	Clear trips (weather)
70	I7	Cloudy trips
77	I7	Rainy trips
84	I7	Foggy trips
91	I7	Total trips

3.15 TRIPFARE

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.TRIPFARE

File Type: SEQ

Record Length: 80

There are two records per trip. All trips for the first direction are listed, followed by all trips for the second direction.

First Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	1X	Blank
2	I3	Line number
5	I6	Date of Ride Check: yymmdd
11	I2	Direction
13	I1	Service Type
14	I4	Trip number
18	I4	First scheduled time (military)
22	14I3	Fare usage: Standard fares 1-14
64	I3	Fare amount: Standard fare 15
69	I5	Fare usage: Standard fare 16
72	I5	Fare amount: Standard fare 17

Second Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	A1	Continuation character =#
2	I3	Line number
5	I6	Date of Ride Check: yymmdd
11	I2	Bus run
13	I1	Weather: 1=clear, 2=cloudy, 3=rain, 4=fog
14	I4	Trip number
18	I4	Last scheduled time (military)
22	13I3	Fare usage: Standard fares 18-30
61	I3	Maximum passengers on board
64	I5	Vehicle number
69	I3	Seats on vehicle
72	I5	Total boardings

3.16 FARE

File Name: SVP.SVA.MSTR.Lnnn.Dyymmdd.FARE

File Type: SEQ

Record Length: 80

If the FARE file corresponds to a line fare, there will be ten records, and unneeded records will contain blanks after the record number. Otherwise, the FARE file will be the current standard fare member, and record numbers will equal standard fare numbers. Combination fares may only appear in line fares.

File Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	A5	Name of corresponding FRCARD member
6	13X	Blanks
19	I2	Record number =1-30
21	11X	Blanks
32	A7	Descriptive fare name
39	5X	Blanks
44	A4	Descriptive fare name continued
48	10X	Blanks
58	I3	Cents amount
61	6X	Blanks
67	A1	Fare type - P=passenger boarding, M=additional money
68	I2	Standard fare number
70	I2	Supplementary standard fare number for combination fare

3.17 CDP

File Name: MRPLEA.LARRY.CNTL(CDPyymm)

File Type: PDS

Record Length: 80

Required variables are line number and directions. Any other nonblank values represent exceptions to the defaults coded in the CDP program.

File Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	I1	Day of week blank=all, 5=M-F, 6=Sat, 7=Sun
5	2I1	Directions
7	I2	Number of fares used
9	A1	Fare type X=express, P=park/ride, Z=other county
10	I1	Service type override
11	A1	Ridearound permit R=yes
12	I1	Interval mileage override
13	A1	Boarding balance override B=yes
14	I2	Minimum load override
16	I2	Minimum speed override (% of 60 mph)

3.18 MTL

File Name: SVP.SVA.MSTR.AREA3.MTL(0)

File Type: GDG

Record Length: 18

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	County
2	I6	Census Tract (implied .00)

3.19 EXPSTOP

File Name: MRPLEA.LARRY.CNTL(EXPSTOP)

File Type: PDS

Record Length: 80

File Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	County
2	I6	Census Tract (implied .00)
8	A40	Location

3.20 BUSSEAT

File Name: MRPLEA.LARRY.CNTL(BUSSEAT)

File Type: PDS

Record Length: 80

File Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	1X	Blank
2	I4	First vehicle number
6	1X	Blank
7	I4	Last vehicle number
11	1X	Blank
12	I2	Seats per vehicle

3.21 SASCONTL

File Names: SVP.SVA.MSTR.SASCONTL.DAY(0)
 SVP.SVA.MSTR.SASCONTL.SAT(0)
 SVP.SVA.MSTR.SASCONTL.SUN(0)

File Type: GDG

Record Length: 70

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	14X	Obsolete
15	A1	County other than Los Angeles 0=Orange, R=Riverside, S=San Bernardino, V=Ventura, Z=two or more
16	A1	Location code (person or department)
17	I3	Line number
20	A2	Day of week = SU,MO,TU,WE,TH,FR,SA
22	A1	Miscellaneous identifier Z=handheld device
23	I1	Status 0=not received, 1=received, 4=being processed, 9=processing completed
24	I6	Date of check: yymmdd
30	I1	Type of check: 0=Ride Check, 8=partial check
31	I5	Boardings, hand count
36	1X	Blank
37	I2	First direction

39	I6	Boardings, first direction
45	I6	Passenger miles, first direction
51	I2	Second direction
53	I6	Boardings, second direction
59	I6	Passenger miles, second direction

3.22 DAY.TRACT

File Names: SVP.SVA.MSTR.DAY.TRACT(0)
 SVP.SVA.MSTR.SAT.TRACT(0)
 SVP.SVA.MSTR.SUN.TRACT(0)

File Type: GDG

Record Length: 132

There are one or two records for each Census Tract that a line traverses for each direction of that line. If the sequence is 0, there is only one record. If the sequence is 1, this is the first of two records. If the sequence is 2, this is the second of two records.

First Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	Sequence =0,1
2	I3	Line number
5	I6	Date of Ride Check: yymmdd
11	I1	Direction
12	I1	County code
13	I6	Census tract (implied .00)
19	I5	Boardings
24	I5	Alightings
29	I2	Av/trip on board leaving the last stop in the tract
31	I3	Trips
34	I5	Bus minutes
39	I6	Bus miles (implied .00)
45	I6	Passenger minutes
51	I7	Passenger miles (implied .00)
58	I4	Fare usage: Standard fare 1
62	2I3	Fare usage: Standard fares 2, 21
68	6I4	Fare usage: Standard fares 5, 3, 4, 6, 7, 8
92	I3	Fare usage: Standard fare 22
95	7I4	Fare usage: Standard fares 9-13, 23, 24
123	3I3	Fare usage: Standard fares 25-27

Second Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	Sequence =2
2	I3	Line number
5	I6	Date of Ride Check: yymmdd

11	I4	Fare usage: Standard fare 14
15	I6	Fare amount: Standard fare 15
21	I4	Fare usage: Standard fare 16
25	I6	Fare amount: Standard fare 17
31	6I4	Fare usage: Standard fares 18-20, 28-30

3.23 DAY.TOTAL

File Names: SVP.SVA.MSTR.DAY.TOTAL(0)
 SVP.SVA.MSTR.SAT.TOTAL(0)
 SVP.SVA.MSTR.SUN.TOTAL(0)

File Type: GDG

Record Length: 132

There are one or two records for each Census Tract that a line traverses for each direction of that line. If the sequence is 0, there is only one record. If the sequence is 1, this is the first of two records. If the sequence is 2, this is the second of two records.

First Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	Sequence =0,1
2	I3	Line number
5	I6	Date of Ride Check: yymmdd
11	I1	Direction
12	I1	County code
13	I6	Census tract (implied .00)
19	I5	Boardings
24	I5	Alightings
29	I2	Av/trip on board leaving the last stop in the tract
31	I3	Trips
34	I5	Bus minutes
39	I6	Bus miles (implied .00)
45	I6	Passenger minutes
51	I7	Passenger miles (implied .00)
58	I4	Fare usage: Standard fare 1
62	2I3	Fare usage: Standard fares 2, 21
68	6I4	Fare usage: Standard fares 5,3,4,6,7,8
92	I3	Fare usage: Standard fare 22
95	7I4	Fare usage: Standard fares 9-13, 23,24
123	3I3	Fare usage: Standard fares 25-27

Second Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	Sequence =2
2	I3	Line number
5	I6	Date of Ride Check: yymmdd

11	I4	Fare usage: Standard fare 14
15	I6	Fare amount: Standard fare 15
21	I4	Fare usage: Standard fare 16
25	I6	Fare amount: Standard fare 17
31	6I4	Fare usage: Standard fares 18-20, 28-30

3.24 DAY.FARES

File Names: SVP.SVA.MSTR.DAY.FARES(0)
 SVP.SVA.MSTR.SAT.FARES(0)
 SVP.SVA.MSTR.SUN.FARES(0)

File Type: GDG

Record Length: 80

There are two records per trip.

First Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	1X	Blank
2	I3	Line number
5	I6	Date of Ride Check: yymmdd
11	I2	Direction
13	I1	Service Type
14	I4	Trip number
18	I4	First scheduled time (military)
22	14I3	Fare usage: Standard fares 1-14
64	I5	Fare amount: Standard fare 15
69	I3	Fare usage: Standard fare 16
72	I5	Fare amount: Standard fare 17

Second Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	A1	Continuation character =#
2	I3	Line number
5	I6	Date of Ride Check: yymmdd
11	I2	Bus run
13	I1	Weather 1=clear, 2=cloudy, 3=rain, 4=fog
14	I4	Trip number
18	I4	Last scheduled time (military)
22	13I3	Fare usage: Standard fares 18-30
61	I3	Maximum passengers on board
64	I5	Vehicle number
69	I3	Seats on vehicle
72	I5	Total boardings

3.25 DAY.LEXP

File Names: SVP.SVA.MSTR.DAY.LEXP(0)
 SVP.SVA.MSTR.SAT.LEXP(0)
 SVP.SVA.MSTR.SUN.LEXP(0)

File Type: GDG

Record Length: 132

There are one or two records for each direction of each line. If the sequence is 0 there is only one record. If the sequence is 1, this is the first of two records. If the sequence is 2, this is the second of two records. If the type is 2, there is only one record.

First Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	Sequence =0,1
2	I3	Line number
5	I6	Date of Ride Check: yymmdd
11	I1	Direction
12	I1	Type 1=local, 2=express
13	I5	Boardings
18	I5	Alightings
23	I3	Trips
26	I5	Bus minutes
31	I7	Bus miles (implied .00)
38	I7	Passenger minutes
45	I8	Passenger miles (implied .00)
53	I5	Fare usage: Standard fare 1
58	I4	Fare usage: Standard fare 2
62	I3	Fare usage: Standard fare 21
65	4I5	Fare usage: Standard fares 5, 3, 4, 6
85	2I4	Fare usage: Standard fares 7, 8
93	I3	Fare usage: Standard fare 22
96	7I4	Fare usage: Standard fares 9-13, 23, 24
124	3I3	Fare usage: Standard fares 25-27

Second Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	Sequence =2
2	I3	Line number
5	I6	Date of Ride Check: yymmdd
11	I4	Fare usage: Standard fare 14
15	I6	Fare amount: Standard fare 15
21	I4	Fare usage: Standard fare 16
25	I6	Fare amount: Standard fare 17
31	6I4	Fare usage: Standard fares 18-20, 28-30

3.26 DAY.TLEXP

File Names: SVP.SVA.MSTR.DAY.TLEXP(0)
SVP.SVA.MSTR.SAT.TLEXP(0)
SVP.SVA.MSTR.SUN.TLEXP(0)

File Type: GDG

Record Length: 132

There are one or two records for each direction of each line. If the sequence is 0 there is only one record. If the sequence is 1, this is the first of two records. If the sequence is 2, this is the second of two records. If the type is 2, there is only one record.

First Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	Sequence =0,1
2	I3	Line number
5	I6	Date of Ride Check: yymmdd
11	I1	Direction
12	I1	Type 1=local, 2=express
13	I5	Boardings
18	I5	Alightings
23	I3	Trips
26	I5	Bus minutes
31	I7	Bus miles (implied .00)
38	I7	Passenger minutes
45	I8	Passenger miles (implied .00)
53	I5	Fare usage: Standard fare 1
58	I4	Fare usage: Standard fare 2
62	I3	Fare usage: Standard fare 21
65	4I5	Fare usage: Standard fares 5, 3, 4, 6
85	2I4	Fare usage: Standard fares 7, 8
93	I3	Fare usage: Standard fare 22
96	7I4	Fare usage: Standard fares 9-13, 23,24
124	3I3	Fare usage: Standard fares 25-27

Second Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	Sequence =2
2	I3	Line number
5	I6	Date of Ride Check: yymmdd
11	I4	Fare usage: Standard fare 14
15	I6	Fare amount: Standard fare 15
21	I4	Fare usage: Standard fare 16
25	I6	Fare amount: Standard fare 17
31	6I4	Fare usage: Standard fares 18-20, 28-30

3.27 DAY.PERF

File Names: SVP.SVA.MSTR.DAY.PERF(0)
 SVP.SVA.MSTR.SAT.PERF(0)
 SVP.SVA.MSTR.SUN.PERF(0)

File Type: GDG

Record Length: 132

There are seven records per direction per line. The first six records contain data for three time periods each:

<u>RECORD</u>	<u>FIRST PERIOD</u>	<u>SECOND PERIOD</u>	<u>THIRD PERIOD</u>
1	All day	5 to 5:59 AM	6 to 6:59 AM
2	7 to 7:59 AM	8 to 8:59 AM	9 to 9:59 AM
3	10 to 10:59 AM	11 to 11:59 AM	12 to 12:59 Noon
4	1 to 1:59 PM	2 to 2:59 PM	3 to 3:59 PM
5	4 to 4:59 PM	5 to 5:59 PM	6 to 6:59 PM
6	7 to 7:59 PM	8 to 8:59 PM	9 PM to 4:59 AM

First Six Records Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I6	Date of Ride Check: yymmdd
11	I2	Direction
13	I1	Record number =1-6
14	I7	Total trips (blank on records 2-6)
21	I7	Bus miles (first time period)
28	I7	Seat miles " " "
35	I7	Empty seat miles " " "
42	I7	Passenger miles " " "
49	I7	Standee miles " " "
56	I7	Bus miles (second time period)
63	I7	Seat miles " " "
70	I7	Empty seat miles " " "
77	I7	Passenger miles " " "
84	I7	Standee miles " " "
91	I7	Bus miles (third time period)
98	I7	Seat miles " " "
105	I7	Empty seat miles " " "
112	I7	Passenger miles " " "
119	I7	Standee miles " " "

Seventh Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I6	Date of Ride Check: yymmdd
11	I2	Direction

13	I1	Record number =7
14	7X	Blanks
21	I7	Peak stop number for peak hour
28	I7	Peak hour ending time (military)
35	I7	Peak hour trips at peak stop
42	I7	Peak hour seats at peak stop
49	I7	Peak hour passengers at peak stop
56	I7	Peak load ratio (implied .0%)
63	I7	Clear trips (weather)
70	I7	Cloudy trips
77	I7	Rainy trips
84	I7	Foggy trips
91	I7	Total trips

3.28 DAY.TPERF

File Names: SVP.SVA.MSTR.DAY.TPERF(0)
 SVP.SVA.MSTR.SAT.TPERF(0)
 SVP.SVA.MSTR.SUN.TPERF(0)

File Type: GDG

Record Length: 132

There are seven records per direction per line. The first six records contain data for three time periods each:

<u>RECORD</u>	<u>FIRST PERIOD</u>	<u>SECOND PERIOD</u>	<u>THIRD PERIOD</u>
1	All day	5 to 5:59 AM	6 to 6:59 AM
2	7 to 7:59 AM	8 to 8:59 AM	9 to 9:59 AM
3	10 to 10:59 AM	11 to 11:59 AM	12 to 12:59 Noon
4	1 to 1:59 PM	2 to 2:59 PM	3 to 3:59 PM
5	4 to 4:59 PM	5 to 5:59 PM	6 to 6:59 PM
6	7 to 7:59 PM	8 to 8:59 PM	9 PM to 4:59 AM

First Six Records Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I6	Date of Ride Check: yymmdd
11	I2	Direction
13	I1	Record number =1-6
14	I7	Total trips (blank on records 2-6)
21	I7	Bus miles (first time period)
28	I7	Seat miles " " "
35	I7	Empty seat miles " " "
42	I7	Passenger miles " " "
49	I7	Standee miles " " "
56	I7	Bus miles (second time period)
63	I7	Seat miles " " "
70	I7	Empty seat miles " " "
77	I7	Passenger miles " " "

84	I7	Standee miles	"	"	"
91	I7	Bus miles	(third	time	period)
98	I7	Seat miles	"	"	"
105	I7	Empty seat miles	"	"	"
112	I7	Passenger miles	"	"	"
119	I7	Standee miles	"	"	"

Seventh Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I6	Date of Ride Check: yymmdd
11	I2	Direction
13	I1	Record number =7
14	7X	Blanks
21	I7	Peak stop number for peak hour
28	I7	Peak hour ending time (military)
35	I7	Peak hour trips at peak stop
42	I7	Peak hour seats at peak stop
49	I7	Peak hour passengers at peak stop
56	I7	Peak load ratio (implied .0%)
63	I7	Clear trips (weather)
70	I7	Cloudy trips
77	I7	Rainy trips
84	I7	Foggy trips
91	I7	Total trips

3.29 DAY.TIME

File Names: SVP.SVA.MSTR.DAY.TIME(0)
SVP.SVA.MSTR.SAT.TIME(0)
SVP.SVA.MSTR.SUN.TIME(0)

File Type: GDG

Record Length: 132

There are 97 records for each direction for each line. The first record contains identifiers and the remaining records contain data for each of the 96 time periods.

First Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	Line number
5	I2	Direction
7	I7	Date of Ride Check: yymmdd
14	I3	Number of fares

Second through 97th Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I2	15-minute time period 1-96
3	I5	Boardings during period
8	I5	Alightings during period
13	I5	Passengers on board at end of period
18	I3	Buses in service at end of period
21	21I3	Fare usage: Standard fares 1,2,21,5,3,4,6,7,8,22,9-13,23-27,14
84	I5	Fare amount: Standard fare I5
89	I3	Fare usage: Standard fare 16
92	I5	Fare amount: Standard fare 17
97	3I3	Fare usage: Standard fares 18-20
106	I3	Fare usage: Standard fares 28-30 combined

3.30 TRTTABLE

File Name: SVP.SVA.MSTR.TRRTABLE.STD

File Type: SEQ

Record Length: 132

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I4	County blank=Los Angeles, 1=Orange, 2=Riverside, 3=San Bernardino, 4=Ventura
5	I6	Census tract (implied .00)
11	I4	Planning Sector number
15	I4	County number
19	I4	Supervisorial District
23	I4	Assembly District
27	I4	State Senatorial District
31	I4	Congressional District
35	I4	City number
39	I4	Los Angeles City Council District
43	I4	SCRTD Board of Directors District number
47	I4	Special area number (user defined)
51	I4	Special area number (user defined)
55	I4	Corridor number (user defined)
59	I4	County Road Department Area

3.31 CITY.NAMES

File Name: SVP.SVA.MSTR.CITY.NAMES

File Type: SEQ

Record Length: 132

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I2	Report code
3	I3	Area number
6	A50	Area name

3.32 CENSUS80.AREA

File Name: SVP.SVA.MSTR.SASADD.CENSUS80.AREA

File Type: SEQ

Record Length: 132

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I1	County code
2	I6	Census tract (implied .00)
8	I6	Square miles (implied .000)
14	I5	Total population
19	I5	Whites
24	I5	Blacks
29	I5	Indians
34	I5	Asians
39	I5	Other races
44	I5	Hispanics

3.33 LINENAMES

File Names: SVP.SVA.MSTR.LNENAMES.DAY
SVP.SVA.MSTR.LNENAMES.SAT
SVP.SVA.MSTR.LNENAMES.SUN

File Type: SEQ

Record Length: 132

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I3	Line number
4	I5	One-way mileage (implied .0)
9	2X	Blanks
11	A60	Name of line

3.34 DNTNSTOPS

File Name: SVP.SVA.MSTR.SASADD.DNTNSTPS

File Type: SEQ

Record Length: 132

Record Layout:

<u>COLUMN</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	I6	Fictitious census tract assigned by Service Analysis
7	1X	Blank
8	I4	True census tract

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".