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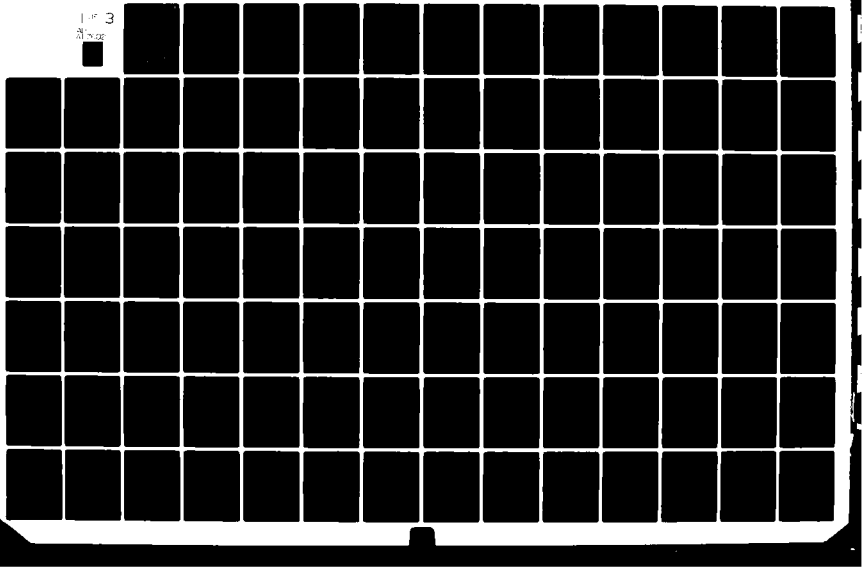

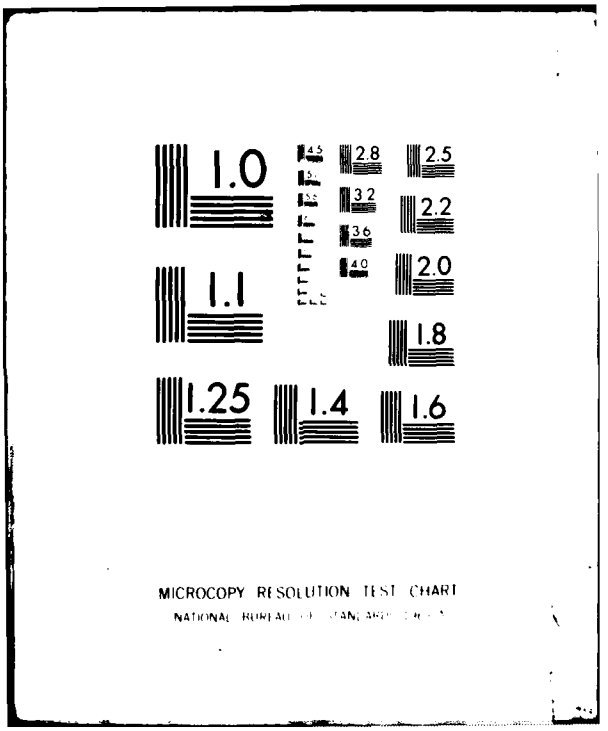
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1.1
1.25
1.4
1.6
1.8
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3.2
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4.0
MICROCOPY RESOLUTION TEST CHART

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Airport Landside

Volume IV: Appendix A ALSIM AUXILIARY and MAIN Programs

L. McCabe
M. Gorstein

Transportation Systems Center
Cambridge MA 02142

June 1982
Final Report

U.S. Department of Transportation
Federal Aviation Administration

Office of Systems Engineering and Management
Washington DC 20591

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16. Abstract

This Appendix describes the Program Logic of the Airport Landside Simulation Model (ALSIM) AUXILIARY and MAIN Programs. Both programs are written in GPSS-V. The AUXILIARY program is operated prior to the MAIN Program to create GPSS transactions representing Enplaning Passenger groups from the input flight schedule. The transactions are written on a JOBTAPE file for subsequent use by the MAIN program. The MAIN Program creates greeter and deplaning passenger transactions and enacts the movements of all passengers and visitors through the landiside.

Details of program logic and flow charts at the GPSS block level are provided. A listing of both programs is included.

Other volumes of the Airport Landside report are: Volume I: Planning Guide; Volume II: ALSIM Description and User's Guide; Volume III: ALSIM Calibration and Validation; and, Volume V: Appendix B ALSIM Subroutines.

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SUMMARY

This document provides a detailed description of the MAIN and AUXILIARY programs of the Airport Landside Simulation Model (ALSIM). Both programs are written in GPSS-V. The MAIN program simulates the movement of enplaning and deplaning passengers through the landside. Statistics are obtainable from this program for every simulated facility. These include queue length averages and maxima, queueing time averages and distributions, and service characteristics of the facility.

The AUXILIARY program is operated prior to the MAIN program to generate and store transactions representing enplaning passengers. These transactions are fed into the MAIN program as the simulation clock advances to the time of arrival on the landside by the simulated passenger.

This document describes the general structure, input variables and matrices used by each program. The use of passenger transaction parameters and a detailed description of program logic are also contained in this document. Flowcharts and listings for each program are exhibited.

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
	inches	2.5	centimeters	
	feet	30	centimeters	
	yards	0.9	meters	
	miles	1.6	kilometers	
	AREA			
	square inches	6.5	square centimeters	
	square feet	0.09	square meters	
	square yards	0.8	square meters	
	square miles	2.6	square kilometers	
	acres	0.4	hectares	
	MASS (weight)			
	ounces	28	grams	
	pounds	0.45	kilograms	
	short tons (2000 lb)	0.9	tonnes	
	VOLUME			
	teaspoons	5	milliliters	
	tablespoons	15	milliliters	
	fluid ounces	30	milliliters	
	cups	0.24	liters	
	pints	0.47	liters	
	quarts	0.95	liters	
	gallons	3.8	liters	
	cubic feet	0.03	cubic meters	
	cubic yards	0.76	cubic meters	
	TEMPERATURE (exact)			
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
	millimeters	0.04	inches	
	centimeters	0.4	inches	
	meters	3.3	feet	
	meters	1.1	yards	
	kilometers	0.6	miles	
	AREA			
	square centimeters	0.16	square inches	
	square meters	1.2	square yards	
	square kilometers	0.4	square miles	
	hectares (10,000 m²)	2.5	acres	
	MASS (weight)			
	grams	0.035	ounces	
	kilograms	2.2	pounds	
	tonnes (1000 kg)	1.1	short tons	
	VOLUME			
	milliliters	0.03	fluid ounces	
	liters	2.1	pints	
	liters	1.06	quarts	
	liters	0.26	gallons	
	cubic meters	35	cubic feet	
	cubic meters	1.3	cubic yards	
	TEMPERATURE (exact)			
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F

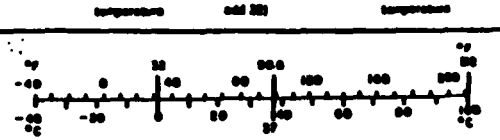


TABLE OF CONTENTS

VOLUME IV

APPENDIX A-1

ALSIM DOCUMENTATION-GPSS-V AUXILIARY AND MAIN PROGRAMS

L. McCABE AND R. WALKER

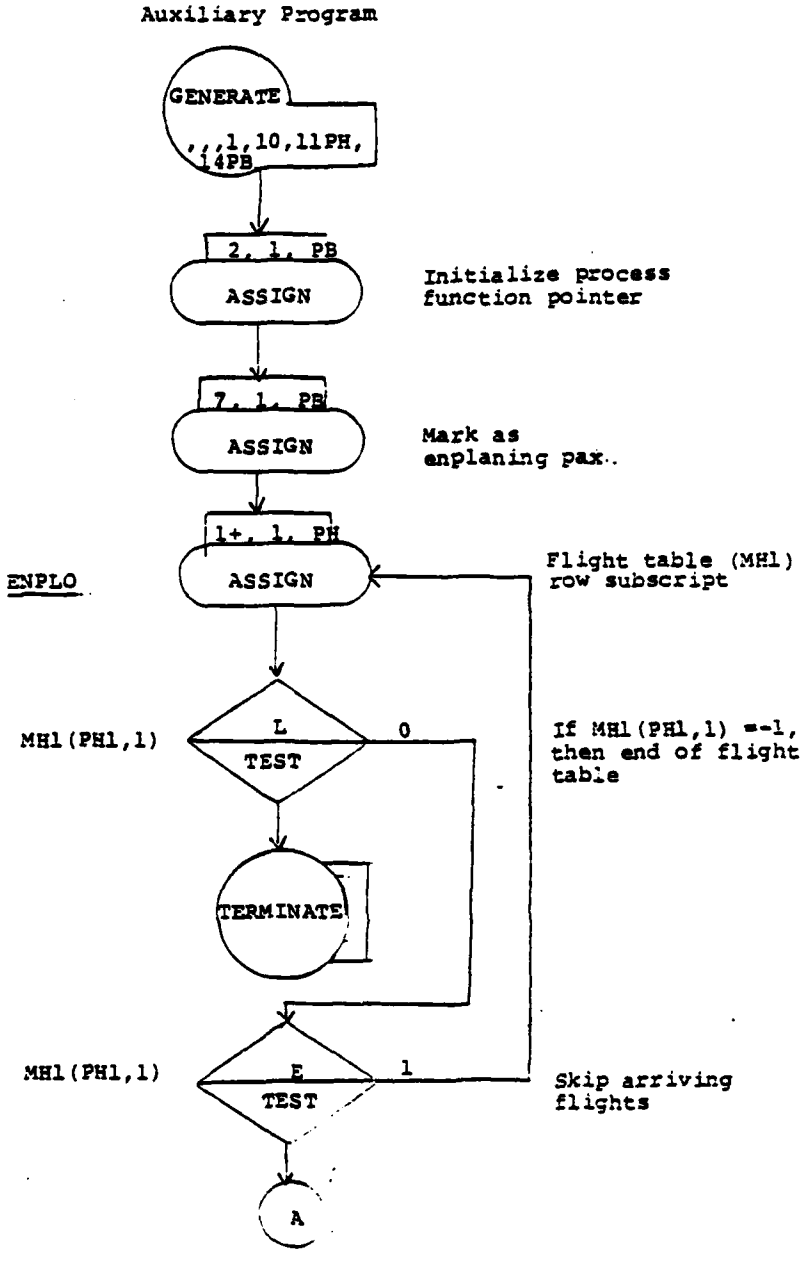
AUXILIARY PROGRAM

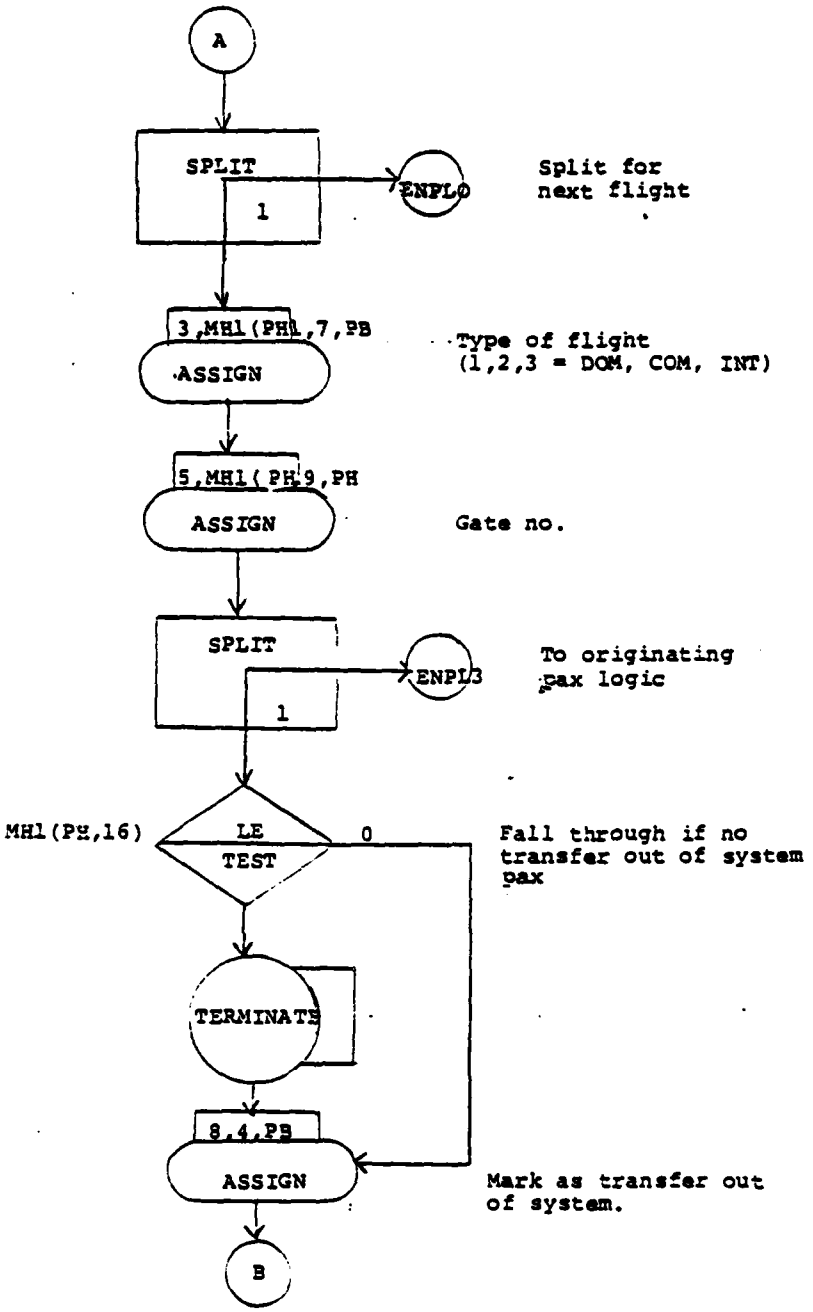
General Description

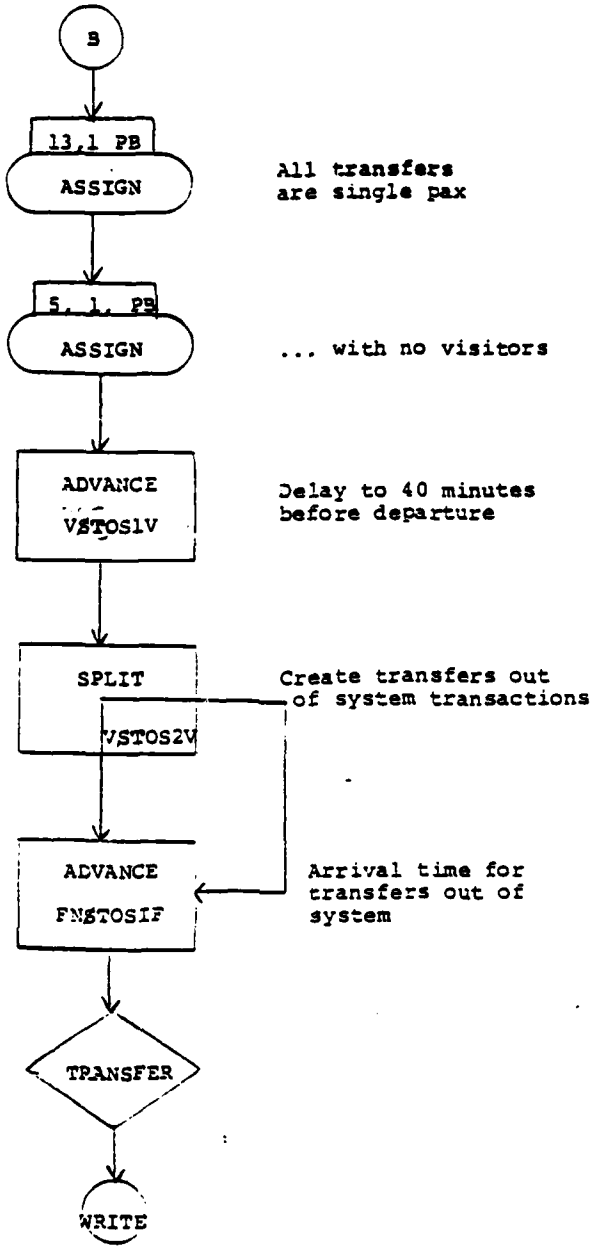
The Auxiliary Program shown in Figure A-1 generates transactions representing enplaning passenger groups. These are stored on a JOBTAPE and utilized by the main simulation program when required. This program assigns attributes to the transaction parameters for representing ground transportation modal choice, ticketed or non-ticketed status, passenger group size and number of accompanying well wishers. The program contains three sections, (1) A Program Definition Statements Section, (2) Enplaning Passenger Creation Section and, (3) A Program Control Section. The Program Definition Statements Section defines matrix sizes, cumulative distribution functions and simulation variables. The Enplaning Passenger Creation Section generates enplaning passenger transactions and assigns well wisher numbers and transaction attributes. The program control section initiates linkage programs between the GPSS Auxiliary Program and the FORTRAN supporting subprogram FORTM. It also creates dummy transactions to begin and end the JOBTAPE.

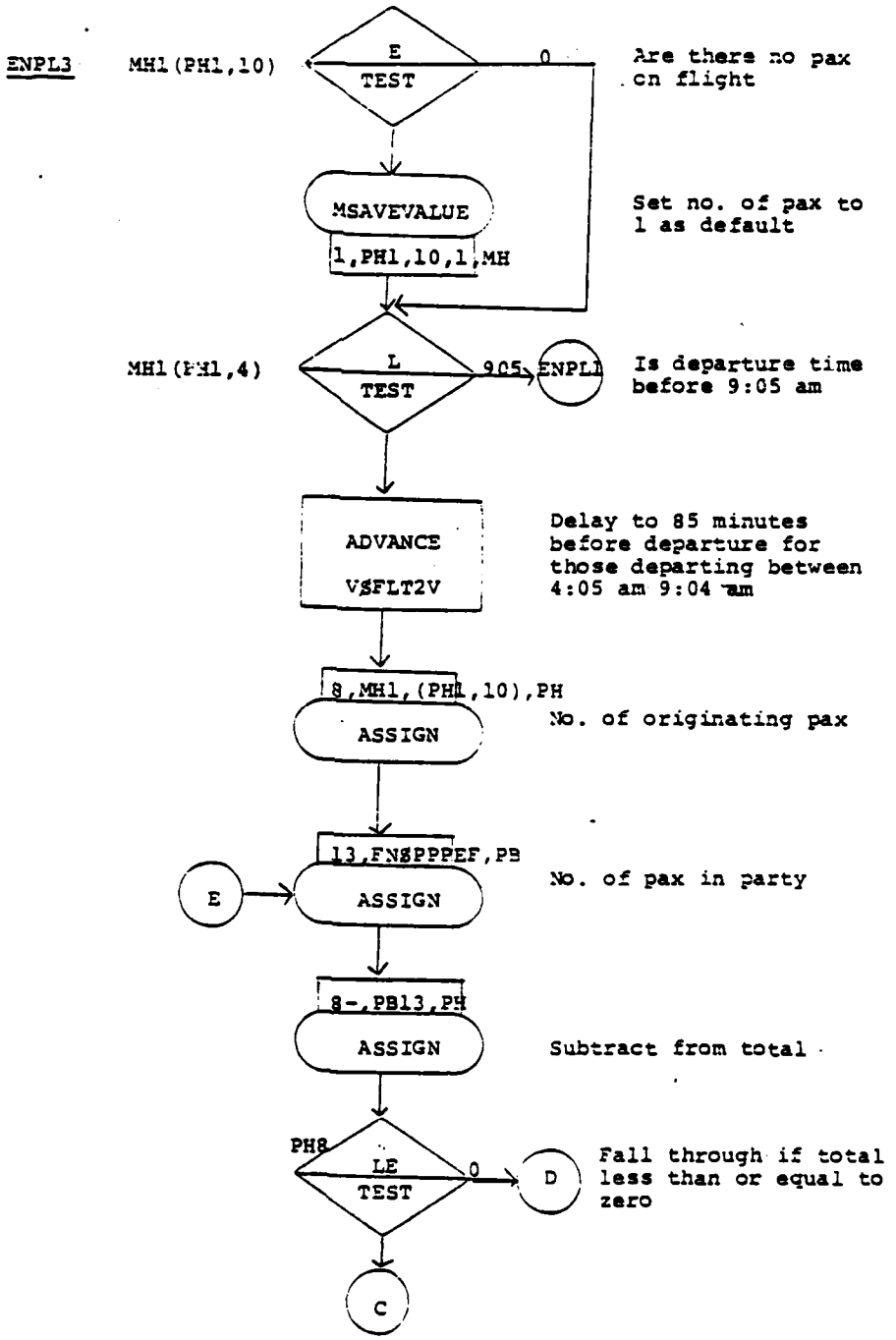
Program Definition Statement Section

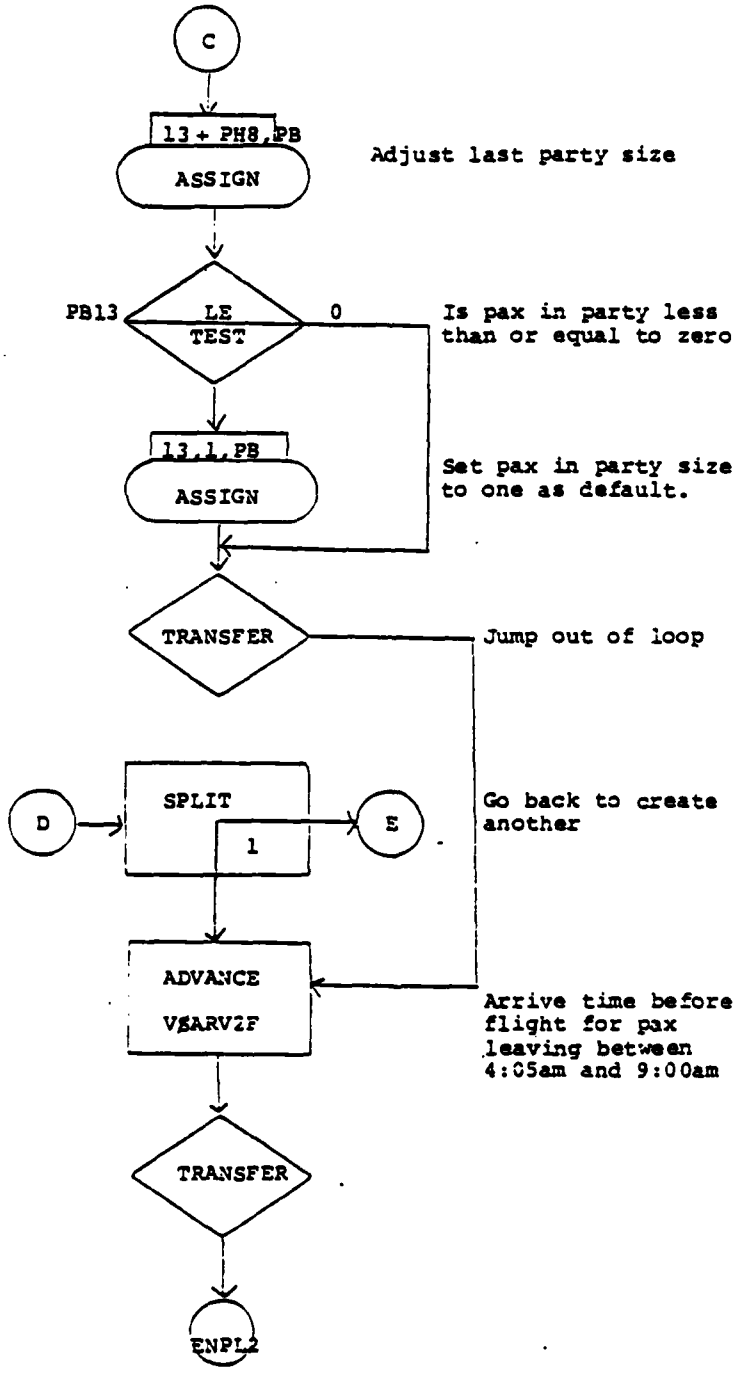
The section begins with an R MULT statement to specify starting numbers for random number generator multipliers. The subrouting FORTM is kept resident in core during the operation of this simulation by a LOAD block. Halfword save value 1 is defined as CLKXH by an EQU statement.

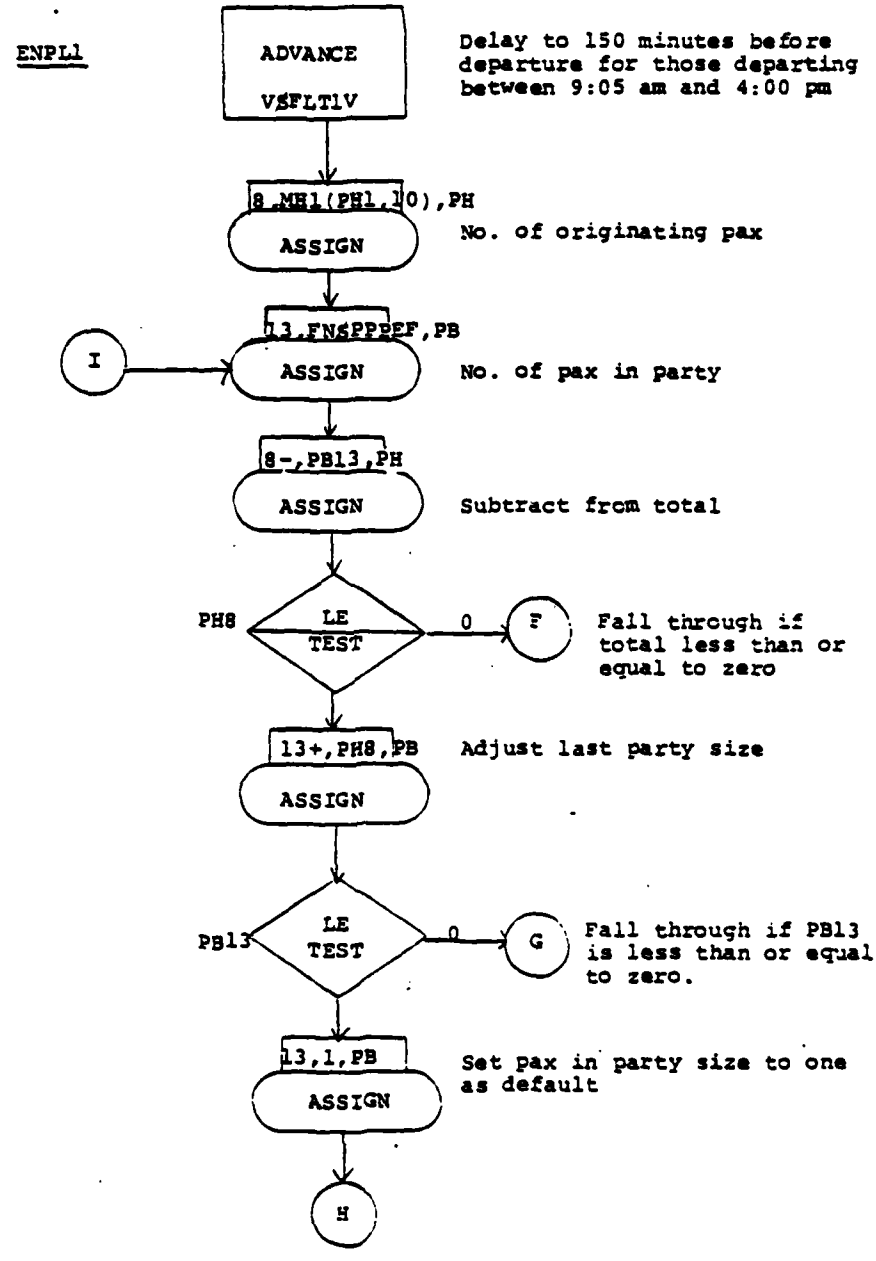

Auxiliary Program
GENERATE
,,,1,10,11PH,
,4PB
2, 1, PB
ASSIGN
Initialize process function pointer
7, 1, PB
ASSIGN
Mark as enplaning pax.
1+, 1, PH
ENPLO
ASSIGN
Flight table (MH1) row subscript
MH1(PH1,1)
L
TEST
0
If MH1(PH1,1) =-1, then end of flight table
TERMINATE
MH1(PH1,1)
E
TEST
1
Skip arriving flights
A

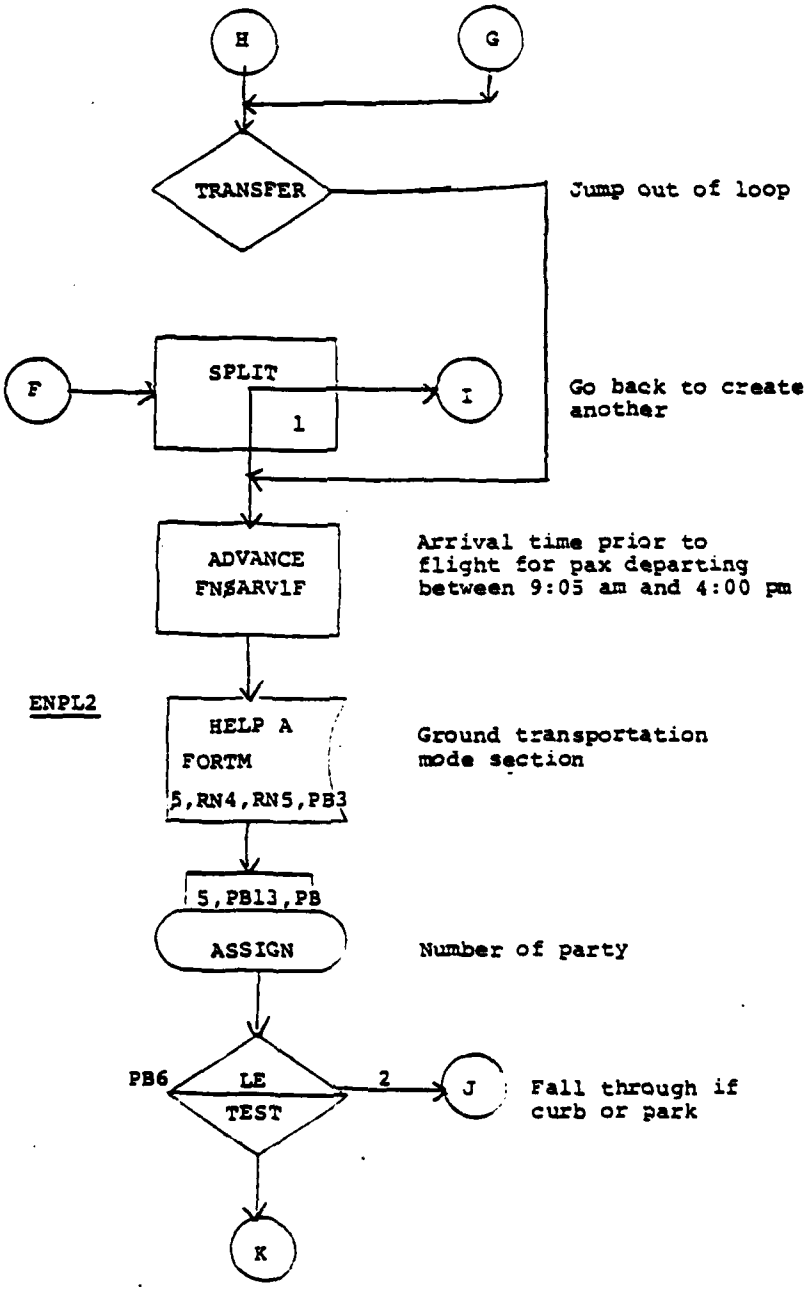

A
SPLIT
1
ENPL0
Split for next flight
3,MH1(PH),7,PB
ASSIGN
Type of flight (1,2,3 = DOM, COM, INT)
5,MH1(PH),9,PH
ASSIGN
Gate no.
SPLIT
1
ENPL3
To originating pax logic
MH1(PH,16)
LE
TEST
0
Fall through if no transfer out of system pax
TERMINATE
8,4,PB
ASSIGN
Mark as transfer out of system.
B

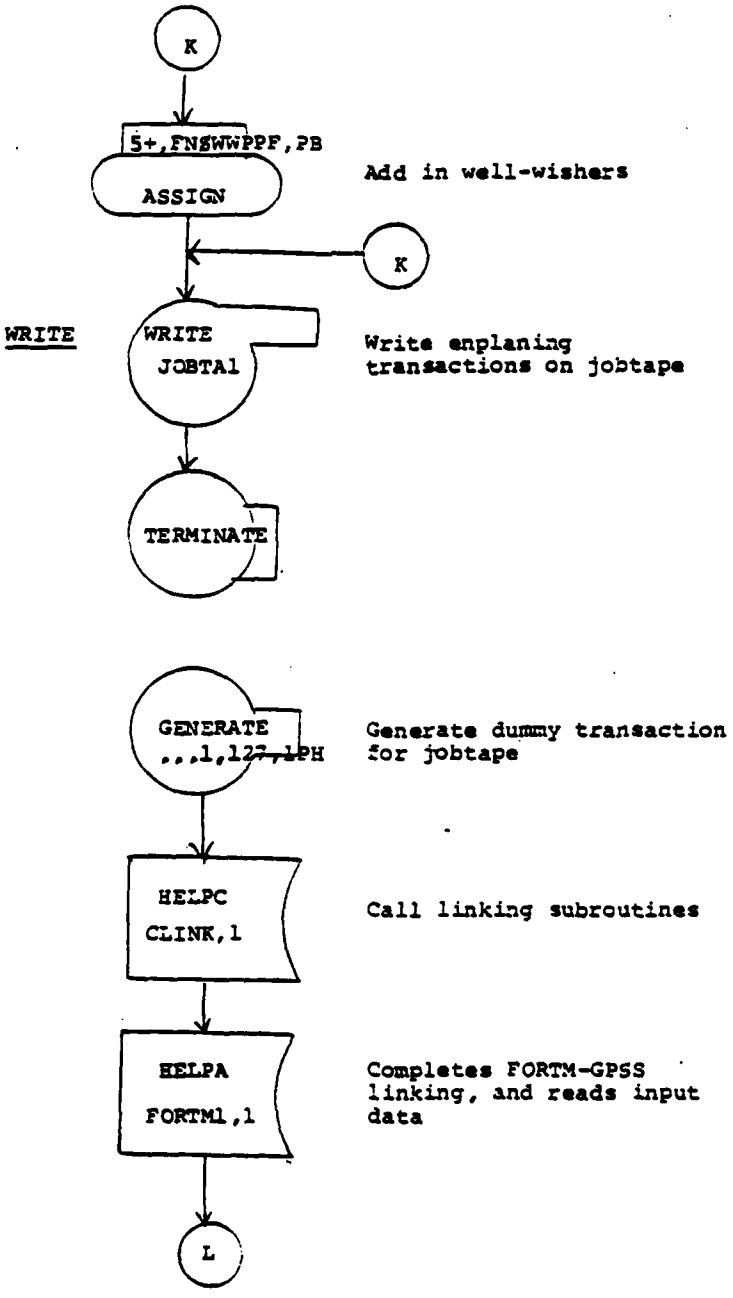

B
13,1 PB
ASSIGN
All transfers are single pax
5, 1, PB
ASSIGN
... with no visitors
ADVANCE
VSTOS1V
Delay to 40 minutes before departure
SPLIT
VSTOS2V
Create transfers out of system transactions
ADVANCE
FNSTOSIF
Arrival time for transfers out of system
TRANSFER
WRITE

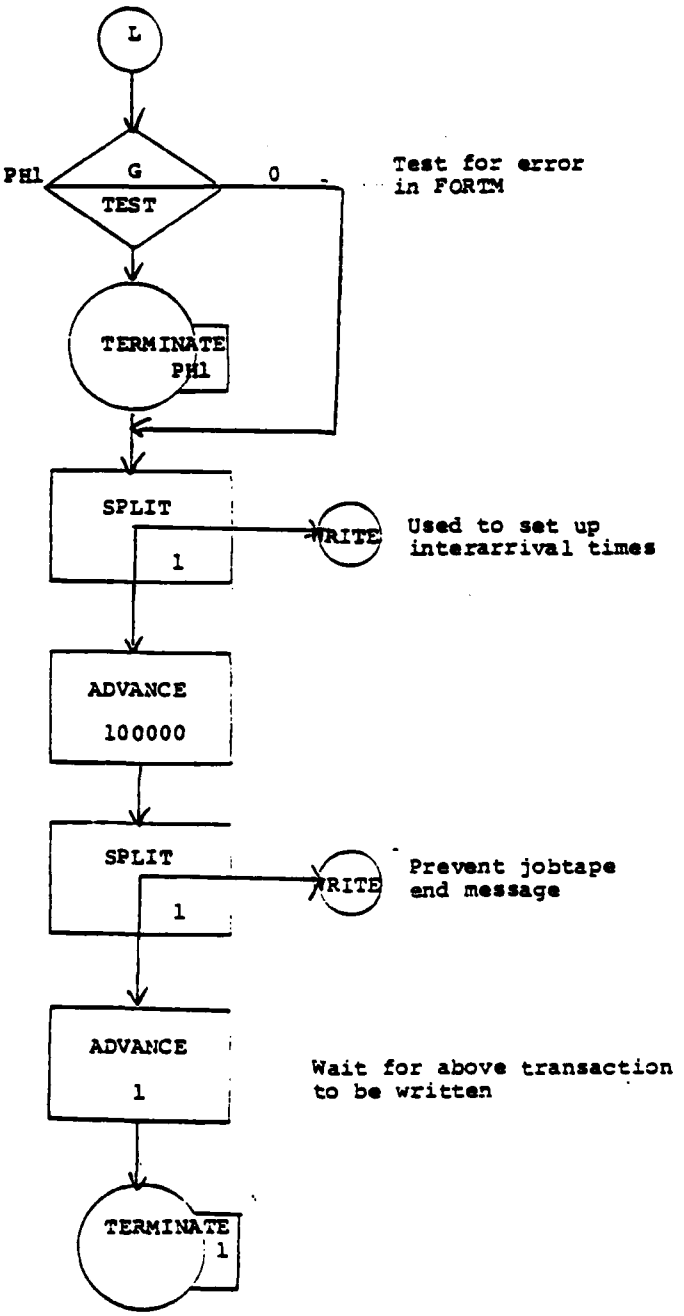

ENPL3
MH1(PH1,10)
E
TEST
0
Are there no pax on flight
MSAVEVALUE
1,PH1,10,1,MH
Set no. of pax to 1 as default
MH1(PH1,4)
L
TEST
905
ENPL1
Is departure time before 9:05 am
ADVANCE
V$FLT2V
Delay to 85 minutes before departure for those departing between 4:05 am 9:04 am
8,MH1,(PH1,10),PH
ASSIGN
No. of originating pax
13,FN$PPPEF,PB
E
ASSIGN
No. of pax in party
8-,PB13,PH
ASSIGN
Subtract from total
PH8
LE
TEST
0
D
Fall through if total less than or equal to zero
C


C
13 + PH8,PB
ASSIGN
Adjust last party size
PB13
LE
TEST
0
Is pax in party less than or equal to zero
13,1,PB
ASSIGN
Set pax in party size to one as default.
TRANSFER
Jump out of loop
D
SPLIT
1
E
Go back to create another
ADVANCE
V$ARV2F
Arrive time before flight for pax leaving between 4:05am and 9:00am
TRANSFER
ENPL2


ENPL1
ADVANCE
V$FLT1V
Delay to 150 minutes before departure for those departing between 9:05 am and 4:00 pm
8,MH1(PH1,10),PH
ASSIGN
No. of originating pax
I
13,FN$PPREF,PB
ASSIGN
No. of pax in party
8-,PB13,PH
ASSIGN
Subtract from total
PH8
LE
TEST
0
F
Fall through if total less than or equal to zero
13+,PH8,PB
ASSIGN
Adjust last party size
PB13
LE
TEST
0
G
Fall through if PB13 is less than or equal to zero.
13,1,PB
ASSIGN
Set pax in party size to one as default
H


H
G
TRANSFER
Jump out of loop
F
SPLIT
1
I
Go back to create another
ADVANCE
FN$ARV1F
Arrival time prior to flight for pax departing between 9:05 am and 4:00 pm
ENPL2
HELP A
FORTM
5,RN4,RN5,PB3
Ground transportation mode section
5,PB13,PB
ASSIGN
Number of party
PB6
LE
TEST
2
J
Fall through if curb or park
K


K
5+,FNSWWPPF,PB
ASSIGN
Add in well-wishers
K
WRITE
WRITE
JOBTA1
Write enplaning transactions on jobtape
TERMINATE
GENERATE
,,,1,1
Generate dummy transaction for jobtape
HELPC
CLINK,1
Call linking subroutines
HELPA
FORTM1,1
Completes FORTM-GPSS linking, and reads input data
L


L
PH1
G
TEST
0
Test for error in FORTM
TERMINATE
PH1
SPLIT
1
RITE
Used to set up interarrival times
ADVANCE
100000
SPLIT
1
RITE
Prevent jobtape end message
ADVANCE
1
Wait for above transaction to be written
TERMINATE
1

Data required for Auxiliary Program execution is contained in three matrices and five functions. Matrices used are: halfword matrix MH1, the flight schedule; halfword matrix MH4, the percent of enplaned passengers preticketed; and, floating point matrix ML2, ground transaction modal choice percentages. Information contained in these matrices is provided by input data read and placed in the matrix elements by FORTM.

The numbers of columns of MH1, MH4, and ML2 are represented by the entity symbols CMHO1, CMHO4 and CMLO2 respectively. These are assigned numerical values by SYN statements. These values will be transferred to FORTM by the use of a mnemonic link function which appears in the program control section and the assembler subprogram MNLINK called by FORTM

Matrix type and dimensions of MH1, MH4, and ML2 are specified by matrix definition statements. The column numbers used must agree with preceding SYN statements. Tables 1 and 2 describe matrix contents.

Functions used by this program are: ARV1F and ARV2F, arrival times at the airport landside of originating passengers PPEF, passengers per enplaning group; WWPPF, well wishers per enplaning group and TOS1F, the arrival times of transfer passengers at a concourse.

Because of a time dependence in arrival rates, two cumulative distribution functions are used to specify the

Auxiliary Program

Table 1

Contents of Flight Table Matrix MH1

Column	Usage	FORTRAN Data Item
1	Designates arriving or departing flight. Indicates completion of aircraft bag unloading for arrival flights. 0 = Arriving Flight 1 = Departing Flight 2 = Bag unloading complete -1 = End of table	ARRV DEPT
2	Flight number.	FLTNO
3	Airline number.	AIRLIN
4	Scheduled arrival or departure time.	TIME
5	Number of deplaning passengers met by private car.	
6	Flight arrival or departure time in minutes relative to simulation start time.	
7	Domestic, commuter, or international flight. Domestic is default value.	DOM = 1 INT = 1 COM = 1
8	Aircraft type.	AC
9	Gate number.	GATE
10	Numbers of orignating or terminating passengers.	PAX - TPAX
11	Transfer passengers.	TPAX(1)
12	(a) Bag claim area for arriving flight.	(a) BAG
	(b) Number of enplaning passengers waiting at departure lounge for boarding.	(b) No input data.

Table 1 (cont.)

Column		FORTRAN Data Item
13	Number of through passengers on flight using terminal facilities.	TPAX(2)
14	Total terminating bags on arriving flight.	
15	Total transfer bags on arriving flight.	
16	Number of passengers originating from or proceeding to flights outside of simulated system.	TPAX(3)

Table 2.

Contents of Matrices MH4 and ML2

MH4 Element	Usage	FORTRAN Input % Preticketed Card
1,1	Percent of enplaning passengers preticketed for domestic flights.	DOM
1,2	Percent of preticketed enplaning domestic passengers proceeding from terminal entrance directly to security.	DOMDIR
2,1	Same as 1,1 for commuter flights.	COM
2,2	Same as 1,2 for commuter flights.	COMDIR
3,1	Same as 1,1 for international flights.	INT
3,2	Same as 1,2 for international flights	INTDIR

ML2 Element	n = 1/2/3 DOM/COM/INT	FORTRAN Input
n,1	Percent of enplaning passengers using auto mode	PVTCAR
n,2	Percent of enplaning passengers using rental car.	CRENT
n,3	Percent of enplaning passengers using bus or limousine.	BUS
n,4	Percent of enplaning passengers using taxi.	TAXI

starting times of transactions representing originating passengers. ARV1F is the distribution of arrival times prior to flight of passengers on flight departing between 0905 and 2400 hours. ARV2F is the distribution used for all other departure times.

The arrival time distribution, TOS1F, is used for simulation of transfer passengers when the system modeled does not include all concourses of an airport under study. The transfer passengers in this case originate outside the system. This function provides a starting time for transactions representing this passenger type.

Variable FLT1V and FLT2V delay the entry of a transaction into the simulation until 150 and 85 minutes respectively. FLT1V is used for transactions representing orignating passengers of flights departing between 0905 and 2400. FLT2V is applied to all other originating passenger transactions representing transfers outside the system until 40 minutes before flight departure. A fourth variable, TOS2V is equated to MH1(PH1,16)-1. This is the number of passengers orignating outside the system, minus one.

Enplaning Passenger Creation Section

A single transaction representing all departing flights is generated. This has a priority level 10 and contains 11 halfword parameters and 14 byte parameters. This transaction will later be split to represent each flight and subsequently split to represent individual passenger groups. Table 3 lists

Table 3.

Passenger Transaction Parameters

Halfword Parameters

PH	1	Flight table row number
	2	Current location, point number
	3	a. Maximum random number from subroutine BAGS for deplaning passengers. b. Passenger storage number in deplaning curb logic.
	4	Address parameter.
	5	Scratch parameter. Initially contains gate number for deplaning passenger. Used to designate GPSS storage and queue numbers during passenger processing.
	6	a. User chain number for bag claim simulation. b. Storage number of deplaning curb.
	7	Facility matrix, MH9, row number for current processing operation.
	8	Scratch.
	9	Cumulative walking time.
	10	Transaction sequence number for passenger and greeter matching.
	11	Cumulative passenger waiting time.

Byte Parameters

PB	1	GPSS number of processing function assigned to this transaction.
	2	Pointer indicating current step of processing function.
	3	Flag indicating type of flight (1 = Domestic, 2 = Commuter, 3 = International).
	4	Number of bags.
	5	Number of passengers and visitors in party
	6	Mode of ground transportation (PVTCAR CURB=1, PVTCAR PARK=2, RENTAL=3, BUS or LIMO=4, TAXI=5)

Table 3 (cont.)

PB 7 Flag indicating deplaning or enplaning passenger.

0 = Deplaning 1 = Enplaning

8 Flag indicating category of deplaning passenger.

1 = Terminating 2 = Transfer
3 = Transmit 4 = Transfer out of system

9 Flag to designate ticketed or non-ticketed status.

10 Car rental agency number.

11 Number of facility type currently entered by transaction.

12 Flag to designate meeting location of deplaning passenger and greeter.

Gate = 1
Bag Claim = 2
Ticketing = 3

13 Passengers in party.

14 a. GPSS number of bag per passenger distribution function.
b. Parking lot number.

the information contained in the transaction parameters describing the passenger group.

Byte parameters 2 and 7 are assigned a value of 1, to respectively initialize the process function pointer and mark the transaction as a representation of an enplaning passenger. At block ENPLO, PH1 is first initialized to a value of 1 and on successive passes is incremented by one to represent the flight table row subscript.

A loop beginning at ENPLO and ending with the block SPLIT 1, ENPLO creates a transaction for each departing flight. The element PH1,1 of MH1 is tested for a negative value contained in the row following the last flight. The last transaction is terminated for this condition. All previous transactions are tested for a value of 1 in MH1(PH1,1) to determine if the row represents an arriving or departing flight. Arriving flights are ignored in the Auxiliary Program and a branch back to ENPLO is executed. Departing flight transactions continue to the SPLIT 1, ENPLO block. The parent transaction proceeds to the next block and the copy transaction to ENPLO for the next flight.

Flight type and gate number are assigned to PB3 and PH5 from columns 7 and 9 of MH1, respectively. A split block to generate two types of enplaning passengers sends one copy to ENPL3. The first category consists of transfer passengers originating outside of the system. The model tests MH1(PH1,16)

for values less than or equal to zero to determine if any passengers of this class were input to the flight schedule. If none, the parent transaction is terminated. For positive values, PB8 is assigned a value of 4 to mark this transaction as a transfer out of the system and PB13 and PB5 are set to one to indicate a single passenger with no visitors. The time of entry into the simulation is first calculated as 40 minutes before flight departure time by the variable TOS1V. A SPLIT block creates all of the transactions to fill the number, TOS2V, of transfers out of the system for this flight and directs them to the next block. Individual transactions are further assigned a simulation entry time between 20 and 40 minutes before flight time by delaying them a time randomly selected from the function TOS1F. When the simulation clock advances to this entry time, they are transferred to the WRITE block for writing onto the JOBTAPE.

At ENPL3, transactions representing originating passengers test MH1(PH1,10), for a zero value for this occurence, a default value of 1 is placed in the element. Otherwise, the program branches to a test of the flight departure time in MH1(PH1,10), to determine if it occurs between 0000 and 0905. For departures outside this interval, the program branches to ENPL1. Flights inside the interval proceed to the next block which holds the transaction until 85 minutes before departure. Transaction parameter PH8 is made equal to the number of originating passengers. The number of passengers in a party is assigned to PB13

by a random draw of function PPPEF. These are subtracted from the total in PH8. A test is performed to determine if PH8 is zero or negative. A positive value, indicating that more passenger group transactions will be required, transfers the transaction down to a SPLIT block. This creates a copy transaction to represent another passenger group and transfers it back to assign PPPEF to PB13. A zero or negative value of PH8 allows the transaction to drop through to the next block where the value in this parameter is added to PB13 to adjust the last party size. If PB13 becomes negative, the value of this parameter is made equal to 1. The transaction transfers out of the loop to an ADVANCE block which further delays the transaction activity by an amount obtained from a random draw on function ARV2F.

Flights departing between 0905 and 2400 are routed to ENPL1. The creation of passenger group transactions is performed exactly as before except that these are delayed by variable FLT1V and a random draw on function ARV1F.

After delays, all transactions proceed to ENPL2 for a HELPA call to subroutine FORTM. Random numbers produced by generators 4 and 5 and flight type in PB3 are used as operands. The subroutine assigns a preticketed status and ground transportation modal choice to PB9 and PB6, respectively.

The number of passengers in the party is assigned to PB5. If PB6 is 1 or 2, indicating a private vehicle proceeding to curbside or parking lot, well wishers are added to PB5, based upon a random draw on function WWPPF.

All transactions are written in time sequence on JOBTA1 at location WRITE. These transactions are then terminated.

Program Control Section

A single transaction with priority level 127 and one halfword parameter is generated to initiate and, subsequently, to terminate the activity of the Auxiliary Program. A HELPA call to subroutine CLINK initiates linking of this program and the supporting FORTRAN subroutine FORTM. The next block is a HELPA call to FORTM which completes the linking. After execution of this statement, any HELPA call to FORTM appearing in the Auxiliary Program will operate with two-way communication between the two programs. FORTM also reads input data and places the information in matrices MH1, MH4, and ML2. Any errors detected by FORTM are indicated by setting PH1 of this transaction to a value greater than zero. Upon return from FORTM, PH1 is tested for a value greater than zero. For this condition, the transaction is terminated with a termination count equal to PH1 and the simulation stops.

A zero value of PH1, when no errors are indicated, transfers the transaction to a SPLIT block. The copy is sent to the program location WRITE to become the first transaction on the JOBTAPE. This is performed to provide an initial time, coincident with the start of the simulation to which all succeeding transaction arrival times are referenced on the JOBTAPE.

The first dummy transaction is terminated immediately after entry into the main program from the JOBTAPE.

The original transaction is delayed 100,000 seconds, a time far exceeding a normal simulation time length. Following this delay, the transaction is again split and the second copy is written as the last transaction on the JOBTAPE. This writing prevents an END OF JOBTAPE message during main program execution.

The original transaction is delayed 1 second to permit the WRITE block to execute before the final terminate block is executed. When this occurs the termination count is incremented by 1.

List function number 1 is used to transmit values between the main program and FORTM. Mnemonics are used as Y values of this function. These mnemonics have been previously assigned numerical values by the program. Corresponding mnemonics are used in the FORTRAN subroutine FORTM after calling subroutine MNLINK. Values represented by these mnenomics may be passed in either direction. The entity symbols CMH01, CMH04, CMLO2 and CLKXH were previously assigned values by SYN statements and are passed to FORTM. This list is placed in this program location for potential expansion for future requirements. Any GPSS entity symbolically represented may be used in this function.

A START statement with a run termination count 1 starts the program and normally stops it after the control transaction is written on the JOBTAPE. This block will also cease program operation if errors are determined in the subroutine FORTM.

MAIN PROGRAM

General Description

The Airport Landside Simulation main program enacts the movement of passengers and visitors through the terminal area. This program generates deplaning passenger and greeter transactions, merges them with enplaning passenger and well-wisher transactions generated by the auxiliary program and models their flow through a sequence of simulated landside processing facilities. Flow, waiting time, queue length and occupancy data are produced for analysis.

The main program contains the following sections: program definitions area, deplaning and enplaning logic sections, facility modules, control section, timer section, transfer flight schedule area, and facility server reallocation section. This document describes those sections in detail and provides a flow chart of GPSS blocks used.

PROGRAM DEFINITIONS AREA

This section contains a description by statements defining limits of GPSS entity numbers, system instructions, SYN and EQU statements to identify facilities, matrix definition statements, function and variable definitions and table definition statements.

Limits on GPSS entity numbers are established by REALLOCATE statements. This program requires entity limits differing from those provided by default values. The program listing contains the values currently used for this simulation model.

System instructions includes an RMULT statement to provide different random number sequences by changing random number generator multipliers. A LOAD statement retains the FORTRAN subroutine, FORTM, and the assembler subroutine BAGS, in core during program execution. The GPSS output module, DAGO6, and an assembler program XACNO, are also kept resident. A JOBTAPE statement defines JOBTA1 as the file of enplaning passenger transactions created by the auxiliary program, and ENPLO as their entry block.

SYN statements are used to pass argument values symbolically to the FORTRAN subroutine, FORTM. A list function in the timer section contains the entity symbols used in the SYN statements as Y values. A HELPA call to FORTM provides a call to the assembler program MNLINK. The arguments of the FORTRAN CALL statement contain variable names which are positionally identified with the list function Y values after NMLINK is executed. The absolute values of the symbols are assigned by the SYN statements of this section

and are passed to FORTM. These values specify the first entity numbers assigned by EQU statements used to reserve a sequenced set of GPSS entities. The sequential set is used for simulation of all landside facilities of a given type, for example, all security stations. The types of GPSS entities specified are logic switches, user chains, queues and storages. When the program is executed, the number contained in the EQU sequential set size field for a given facility type must equal or exceed the input parameter FACNO for that type.

SYN statements are also used to transfer the number of colums contained in matrices to FORTM. Halfword matrices 1 through 4, 6 through 9, and floating point matrix 2, utilize this feature.

Matrix definition statements specify matrix numbers type and size. Numbers of columns must agree with preceding SYN statements. Contents of halfword matrices 2, 3, five, 6, and 7 are listed in Table 4. Information for halfword matrix 8 is in Table 5 and matrix 9 in Table 6. Matrices MH 11 and MH 12 are one column matrices used to accumulate counts of persons entering and leaving concourses.

Floating point matrix, ML1, is a single row, 127 column matrix used as a table of floating point random numbers ranging from 0.0 to 1.0. This matrix is filled with random numbers by a group of blocks in the timer section.

TABLE 4

CONTENTS OF MATRICES 2, 3, 5, 6, 7

MH2 - Airline Information Table

1 row per carrier

Column	FORTRAN Input Variable
1 - Enplaning curb facility no.	Epcurb
2 - Per cent preticketed pax using express check-in (0 = No Express Check-in	Expchk
3 - Enplaning curb point for bus stop (If different from column 1)	Bustop

MH3 - Table of Points

1 row per carrier

Column	FORTRAN Input Variable
1 - X - coordinate	POINTX or XY(1)
2 - Y - coordinate	POINTY or XY(2)
3 - Nearest exit point no.	
4 - Nearest entrance point no.	

MH5 - Transfer Flight Table

Contains MH1 row of departing flights taking transfer passengers

MH6 - Walking time between points.

MH7 - Used as work area by bag claim routines

1 row for each possible random number, 1-64, generated by "BAGS"

TABLE 5

MH8 - Used to access facility data in MH9 (contains same information as FORTRAN 'NFASCM' array)

	Number of Facilities in Type	Index Number of Facility Type (one less than number of first facility in type in MH9)
Gate	1,1	1,2
Check-in	2,1	2,2
Security	3,1	3,2
Bagclaim	4,1	4,2
Customs	5,1	5,2
Entrance	6,1	6,2
Exit	7,1	7,2
Enplaning curb	8,1	8,2
Transfer (stairs, etc.)	9,1	9,2
Parking	10,1	10,2
Rentacar	11,1	11,2
Deplaning curb	12,1	12,2
Immigration	13,1	13,2
Tickets & check-in	14,1	14,2

TABLE 6

MH9 - Facility Table
1 Row per actual or dummy facility

Column

1 Facility type
2 Facility number within type
3 Location (point Number)
4-6 *Used to identify a facility with other model components*

Facility(1)	Column No.	Facility(2)	FORTRAN Input Variable
Bagclaim	4	Deplaning curb	NDELPC
Customs	4	Deplaning curb	NDELPC
Gate	4	Security	NSECUR
Gate	5	Immigration area	NIMMI
Immigration	4	Customs	NCUST
Rentacar	4	Agency code	AGENCY
Rentacar	5	Parking	NPARKL
Tickets & Check-in	4	Airline Code	AIRLIN
Concession	4	Security	NSECUR

The halfword matrices 1 and 4, and floating point matrix 2 have been described previously in Tables 1 and 2 of the Auxiliary Program Description Section.

Functions defined in this section of the program are used for three purposes: (1) retention of program locations representing processing facilities encountered by passenger and visitor transactions, (2) selection of functions containing these locations by random numbers draw; and (3) provision of random variable values to the program by describing cumulative distributions subject to random draw during program operation.

The first group are lists of numerical-valued functions containing symbolic program locations required to be accessed by all transactions of a class. For example, the deplaning domestic passenger is assigned the function DDP1F. Processing of this passenger requires routines to the concourse exit, CNCRO; a rental car counter, RCARO; bag claim, BAGCO; terminal building exit, EXITO; and a ground transportation facility, CGTRO at each of these locations, a transaction parameter is examined to determine if further processing is required. When no processing is simulated the transaction is directed to the next location contained in the function. Otherwise, processing is completed and the transaction is directed to the next program location. The program presently uses 22 functions of this type to describe movement of passengers, well-wishers and greeters through the landside.

Selection functions are either entity functions or discrete attribute-valued functions. Entity functions are used by transfer or transit passenger transactions to select routing functions based upon a random number draw. The X values are treated as arguments of discrete numerical valued functions. The argument values are supplied by a random number generator. Y values are function names.

The other type of selection function used selects ticket counter processing time based upon the airline number of the transaction currently being processed. A discrete attribute valued function performs this task. A list of the selection functions is contained in Table 7.

Cumulative distribution functions used by this program are continuous or discrete. Continuous functions describe landside facility service times, unloading times or empty vehicle parking times. Discrete distributions are used to assign quantities to transaction parameters. For example, passenger and visitor group sizes or number of bags are assigned by random selection from this function type. A list of numerical valued functions is contained in Table 8.

Arithmetic variables are used for assignment of service times to facilities. Values of functions representing the service time distribution are multiplied by the halfword representing the scale factor SCLXH. When service times are applicable to individuals instead of passenger groups, the service time is determined by multiplying the value from the distribution, the scale factor and PB13, then number of passengers

TABLE 7

Functions Used for Selection

TADF - Transfer passenger, long-stay/different concourse

TDLSF - Transfer passenger, long-stay/same concourse

TDLSF - Transfer passenger, short-stay/different concourse

TDSSF - Transfer passenger, short-stay/same concourse

TDPXF - Transit passenger

ATKIF - Choose airline ticket/check-in variable

BUNIF - Baggage unload entity function (aircraft type)

TABLE 8

Cumulative Distribution Functions

Continuous Functions

BUN2F to BUN3F	-	Baggage time to claim area by aircraft type
CHK1F to CHK4F	-	Ticket check-in time by airline
GAT3F to GAT4F	-	Gates process time by airline
IMM1F	-	Immigration process time
CUS1F	-	Customs process time
PAR1F	-	Parking lot exit service time
RCA1F	-	Car rental processing time
SEC1F	-	Security service time per person
CSCKF	-	Curbside checkin process time

Discrete Functions

PPPDF	-	Passengers per party deplaning
GRPPF	-	Greeters per party (parties with greeters only)
DBAGF	-	No. of bags - domestic flight
RCAZF	-	Car rental agency selection

plus visitors in the group. A list of service time variables is given in Table 9.

Other arithmetic variables are used to calculate aircraft and vehicle unloading times, numbers of transactions assigned to ground transportation modes, starting times relative to flight departures and GPSS storage numbers for deplaning and enplaning curb, double parking and storage areas. Two arithmetic functions are used for random number generation.

Boolean variables are used for testing conditions at curbside to determine if congestion due to double parking will cause queueing of traffic attempting to bypass a section. Other Boolean variables test passenger transaction parameters for transfer passengers status and preticketed status.

TABLE 9

Service Time Variables

CHK1V - CHK4V	-	Ticket and check-in time by airline
CUS1V	-	Customs time
GAT3V to GAT4V	-	Gate service time by airline
IMM1V	-	Immigration
PAR1V	-	Parking lot service time
RCA1V	-	Car rental checkout time
SEC1V	-	Security service time (party)
CIRCV	-	Vehicle recirculation time

Control Section

This section provides a method of routing transactions from one program logic section to another. Routing functions are assigned the byte parameter 1 by other program sections such as the enplaning and deplaning passenger logic. The transaction is transferred to the control section which, in turn, transfers it to the next program location.

The first statement of the control section at CTRLO assigns the value of the function contained in PB1 to PH4. The argument of the function is contained in PB2. Byte parameter 2 is assigned a value 1 when the transaction is created. After the transaction is routed through CTRLO, the second block of this section increments PB2 by 1. This will make PB2 point to the next value of the routing function if the transaction is later returned to CTRLO. The third block of this section CTRL1 transfers the transaction to the program location contained in PH4. This location is normally the current value of the routing function in PB1.

When a transaction is directed to a location outside the routing function, the transfer is performed without incrementing PB2. Under this condition, the program logic section specifying the transfer, places the name of the next program location in PH4 and directs the transaction to CTRL1. An example of this operation is in the enplaning curb logic. A vehicle transaction unable to locate a parking space has the

address of the recirculation road logic placed in PH4 and is transferred to CTRL2 to effect this routing. After simulating the recirculation process the vehicle is directly transferred to the enplaning curb logic. Successful use of the simulated curbside will then provide a transfer to CTRLO to continue transaction routing according to the PB1 function.

A special purpose block at CTRL8 transfers deplaning passenger transactions using the parking lot from the ground transportation module to the location PARKO. This location is the starting block of a module representing the parking facility payment booth. The transfer is unconditional for transactions entering the CTRL8 block.

Secondary functions of the control section are, (a) the provision of ground transportation facility program locations to represent buses and (b) provision of locations for transaction terminations after simulation of landside processing is completed.

For transactions representing terminating deplaning passengers, the selection function CTR1F routes the transaction to the deplaning curb, parking facility, or rental car parking facility. The mode selection defined in PB6 determines the facility. Program locations to represent these facilities are placed in PH4 at CGTRO and the transfer is executed in the next block. Originating enplaning passenger transactions use the function CTR2F to select the enplaning curb parking facility or rental car return location. Transfers are performed by the value in PH4.

Transactions representing buses are generated at intervals specified by input data. The time between creation of transactions is ABUXH for buses proceeding to the enplaning curb and DBUXH for buses departing the deplaning curb. These are rotated to program locations ENPC6 and DPLC6 respectively.

The section providing transaction termination begins at the block DEP99. The total walking time PAXWT, accumulated on the landside is recorded by a TABULATE block for each transaction routed to DEP99, END99, or TRX99.

This section also tabulates the total simulated waiting time spent on the landside by transactions. A new table is produced for each simulated hour. The hour is designated by the value of the byte savevalue PXTBN. The transaction is entered into the table by a second TABULATE block and then terminated.

In general, deplaning passenger transactions are routed to DEP99, enplaning passenger transactions to ENP99 and transfer passenger transactions to TRX99.

DEPLANING PASSENGER LOGIC

This section of the program generates transactions representing individual flights. It then creates greeter and deplaning passenger transactions through the use of SPLIT blocks. Attributes assigned to transaction parameters by this section include: number of bags, meeting location, modal choice, sequence numbers for passenger-greeter matching, process function, party size, and parking lot number. The deplaning passenger logic simulates the discharge of passengers from the aircraft and performs the matching of those deplaning passenger and greeter transactions assigned to meet at the airplane gate.

An initial GENERATE block provides one transaction of priority level 10. This transaction contains 11 halfword parameters and 14 byte parameters which are available for attribute assignment. The process function pointer, PB2, is initialized to 1. A copy of this transaction is sent to program location XFLTO to initialize a table of transfer flights in halfword matrix five. An ADVANCE block delays the original transaction by one second to permit the transfer table initialization before flight and passenger transaction creation.

Byte parameter 11 is assigned the value 1 to indicate that the transaction begins activity at the gate. A loop beginning at program location DEPL0 creates a transaction for each arriving and departing flight. At DEPL0 the MH1 row counter, PH1, is incremented by 1 each time a transaction passes through the block. Column 1 of each row of MH1 is tested for a negative value. The row after the last flight in

the schedule contains the value -1 in this position and the last transaction is terminated when this is reached. Rows representing flights cause the transaction to branch around the terminate block to an ADVANCE block. At this location, the transaction is delayed until the difference between MH1 (PH1,6), the flight arrival or departure time relative to simulation start, and the absolute clock time is one hour. A SPLIT block completes the loop by sending the flight transaction to the next block and the copy back to DEPLO.

The flight transaction proceeds to a TEST block to determine if an arriving or departing flight is represented. Departing flights proceed to program location GATE9, where the boarding process is simulated. Arriving flights transfer to DEPL5. At this location, the value 1,2, or 3 is assigned to PB3 to indicate if the flight is a domestic, commuter or international type, respectively.

Byte parameter 3 is tested for a value of 1. Non-domestic flight transactions are transferred to DEPL1. Domestic flight transactions are assigned DDP1F, the routing function for domestic passengers to PB1, and DBAGF, the bag distribution function for domestic passengers, to PB14. These transactions are then transferred to DEPL3.

At DEPL1, PB3 is tested for a value of 2. Commuter flight transactions proceed to the next block where the commuter passenger routing function, DCP1F, is assigned to PB1. The commuter bag distribution function, CBAGF, is assigned to PB14 and the transaction transfers to DEPL3.

International flight transactions are transferred from DEPL1 to DEPL2. At DEPL2, the international deplaning passenger routing function DIP1F, is assigned to PB1. Byte parameter 14 is assigned IBAGF, the international passenger bag distribution function. This type of transaction proceeds to the next block at location DEPL3.

At DEPL3, the halfword savevalue SEQ1H, used for assigning sequence numbers to transactions, is tested for a value equalling or exceeding 32,000. Under these conditions, SEQ1H is reset to zero, then the transaction proceeds to the first of three consecutive SPLIT blocks. Otherwise, the transaction is transferred directly to the first SPLIT block.

Three program locations, DEP25, DEP15 and DEP17 are the destinations of the copy transactions from the SPLIT blocks. At DEP25, the transaction is initiated which will represent greeters using both the parking facility and the curbside after meeting passengers inside the terminal building. Greeter transactions to be created for merging with terminating passenger transactions after meeting inside the terminal building and departing the airport directly from the parking facility are started at DEP15. Program location DEP17 is the starting point for transactions to be generated representing greeters meeting passengers at curbside.

The flight transaction proceeds to DEPL7 where the creation of deplaning passenger transactions is initiated. A percentage of these passenger transactions will be matched

later with greeter transactions at locations specified by the logic of both the following sections and the sections creating deplaning passengers.

The first copy transaction proceeds to DEP25 where PB6 is given a value of 1 to indicate that the curbside will be used after parking. The number of greeters in this category for this arriving flight is determined by the variable FLT2V. This number is assigned to PH8. The transaction transfers to location DEP16 to Test PH8 for the existence of this greeter type on this flight. If PH8 is zero, this copy transaction is terminated. For non-zero values of PH8, the transaction bypasses the TERMINATE block and adds the number in PH8 to MH1 (PH1,5).

The random number table in ML1 is used as the argument of functions which will assign the numbers of passengers per party and bags per party to be transacted. The MH1 row number, PH1, is used to assign the starting column of ML1. Variable DPL3V is PH1, modulo125 and is assigned to PB10 to designate starting the ML1 column number for this flight. At DEP 12, PB10 is incremented by one, then tested for a value in excess of 124. When PB10 is greater than 124, it is reset to 1.

The value of the function PPPDF; the number of passengers per deplaning party, is subtracted from the total on the flight. PB10 is increased by 1, then the number of bags drawn from the function contained in PB14 by using ML1 (1,PB10) as the argument value, is assigned to PB4. The

pointer PB10 is again incremented by 1 and then the random number drawn from ML1(1, PB10) is tested for a value less than or equal to GRGXL, the percentage of passengers meeting greeters at the gate. When this condition occurs, the transaction is marked for gate meeting by assigning the function GREGF to PB1 and the value 1 to PB12. This transaction type is then transferred to DEP14.

Greeter transactions not meeting at the gate are transferred to a TEST block to determine if the passenger to be greeted will have checked bags. The number of bags is contained in PB4 and is tested for zero.

For the zero value, the function GRELF is assigned to PB1. This function routes the greeter to the enplaning level for meeting the deplaning passenger in the ticket lobby.

Greeter transactions with a non-zero value in PB4 are assigned the function GREBF. This directs all remaining greeters proceeding inside the terminal building to the bag claim area for meeting.

Halfword parameter 8 is tested for a value greater than zero to determine if another greeter transaction is required. When PH8 is greater than zero, a copy transaction is sent back to DEP12 by a SPLIT block to become the next greeter transaction. The parent transaction from the SPLIT block is assigned the parking lot number in PB14 and the number of greeters in PB5 from the distribution function GRPPF. The sequence counter, SEQ1H, is incremented by 1 and the current value is assigned to PH10.

The transaction is held at an ADVANCE block for a time duration drawn from the function DCA2F, the distribution of arrival times at the landside for greeters. The times of greeter arrival are between one hour prior to flight arrival and 10 minutes after. After departure from this block, the transaction proceeds to CTRLO to begin simulation activity with routines prescribed by the function assigned to PB1.

The second copy transaction proceeds to DEP15. Byte parameter 6 is assigned a value of 2. This indicates that only this parking facility will be used by the greeter vehicle. After greeter and terminating passengers are matched inside the terminal building the group departs the landside directly after leaving the parking facility. The numbers of greeters from this category is calculated from the variable FLT3V and assigned to PH8. At the next block, DEP16, the test is performed for the existence of this greeter type in PH8. All further processing of this transaction is identical to that of the first copy transaction.

The third copy is routed to DEP17. The value 1 is assigned to PB6 to indicate curb usage. This transaction will represent greeters meeting their assigned passengers at this curbside. The number of passengers of this category is determined by the variable FLT4V and is assigned to PH8. A test is made to determine if PH8 is zero. The absence of this greeter type terminates this copy. When greeters of this type

are to be simulated, the number of these is added to the total of terminating passengers with greeters. This number is contained in MH1 (PH1,5). The starting column number of the random number table in MLI is placed in PB10 as before. Halfword parameter 4 is given the program location DCARO as the first and only destination for this transaction.

The table pointer is incremented as before and the party size is drawn at random from PPPDF and subtracted from PH8. The number of bags is also determined and assigned to PB4. A test determines if PH8 is greater than zero. When true, indicating more greeter transactions are required, a copy is sent back to DEP13 to represent the next greeter group. The parent transaction has zero assigned to PB14, GRPPF to PB5 and a sequence number, SEQ14, assigned to PH10. The transaction transfers to CTRLI which will affect the transfer to DCARO. The greeter arrival time function DCA2F, is located at DCARO.

The original flight transaction is transferred to DEPL7 and will be used to generate all deplaning passengers for the flight. At DEPL7 the transaction is held until flight arrival time by an ADVANCE block, which delays further processing for 3600 seconds. A GATE block holds back succeeding aircraft until this baggage unloading logic, following location BUNLO, resets logic switch DPL1G. This allows deplaning passenger transactions for this flight to execute the assembler subroutine BAGS without interference from a simultaneously arriving flight. After the GATE block is passed, DPL1G is placed in a

set condition by this transaction. The gate number of the flight in MH1 (PH1,9) is assigned to PH5 and also to PH7. The point number of the gate is assigned to PH2.

The maximum passenger unloading time ACUNL is calculated by multiplying the total number of passengers by 3 seconds and adding 90 seconds. A SELECTLR block places the number of the first chain between the limits CHA1B and CHA2B in a reset condition into PH6. Numerical values of these limits were previously set by EQU statements. A LOGICS statement places this chain in a set condition. The chain represents a bag claim device which will hold the passenger transactions in the bag claim logic until all bags are delivered from the flight.

Three split blocks route copy transactions to DEPL4, DEPL6 and DEP10 to initialize the generation of transactions representing terminating, transit and transfer out of system passengers, respectively. The parent transaction proceeds to a TEST block to determine if a flight is available in the MH5 (1,1) element of the transfer flight table for accepting transfer passengers. If no flights are available, the number of transfer passengers on the flight represented by this transaction is added to the halfword save value XFRXH and this transaction to represent transfer passengers is terminated.

When MH5(1,1) indicates a flight is available, the transaction proceeds to DEPL8 where MH1(PH1,11) is tested to

determine if the arriving flight has any transfer passengers. If none, the flight transaction is terminated. When transfer passengers are to be simulated for this flight, PB8 is assigned a value 2, as an indicator of a transfer passenger and byte parameters 5 and 13 are assigned the value 1. This assumes all transfer passengers are travelling singly, rather than in a group.

A split block creates the number of transactions required to simulate transfer passengers on the flight. This number is obtained from MH1 (PH1,11). These transactions are tested to determine if the arrival flight is international. When this occurs, the international transfer passenger routing function, TIP1F, is assigned to PB1. A HELPA call to FORTM is used to assign the next flight by random number draw. Transactions not representing international arriving flights are routed directly to this HELPA block. The departing flight MH1 row number is assigned to PH1 at this time. The flight table matrix element MH1 (PH1,7) is tested for a value 3 to determine if the flight is international. When this occurs, the transaction is given a routing function TDP5F. This transaction is then transferred to DEP11.

The non-international transfer passenger is transferred to a SAVE VALUE block, where the gate of the departing flight is retained as the save value SAVXH. The time difference between the departing flight time and the current clock time is tested to determine if the duration exceeds 45 minutes.

Those time differences exceeding this value are categorized as long term waiting times and the transaction is transferred six blocks to the next test. Transactions with a short stay, less than 45 minutes, test the value of the MH9 matrix elements in column 4 for the gate numbers of the arrival and departure gates to determine if both are on the same concourse. When this occurs, the selection function TDSSF is assigned to PB1 and the transaction proceeds to DEP11. Transfer passenger transactions with a short stay and with arrival and departure rates on different concourses are assigned selector function TDSDF and transfer to DEP11.

The passengers with a greater duration than 45 minutes between current absolute clock and departure times are assigned selection functions TDLSF and TDLDF for the same or different concourses, respectively. The selector functions assign routine functions to PB1 based upon input percentages and the current value of a random number generator. All transactions proceed to DEP11 which executes a transfer based upon the address assigned to PH8 by FORTM.

The transit passenger transactions, represent continuing passengers who exit an aircraft, circulate within the terminal building and return to the same flight. These are marked as transit passengers by assigning 3 to PB8 and designated as single passengers with no visitors, by assigning 1 to PB5 and PB13.

Transit passenger transactions are created by a SPLIT block using MH1(PH1,13) to specify the numbers of copies. The parent transaction is terminated after the SPLIT block. An ADVANCE block simulates the deplaning process by delaying the entry of each transactions by an amount ACU2V, the random variable specifying service times. A HELPA block calls FORTM to assign the MH1 row number of the next flight at the same gate. A process function is selected by assigning TDPXF to PB1. The function chosen by this selection function routes the transit passenger through selected landside facilities. If a process function cannot be selected, PB1 equals zero and the transaction is terminated. When PB1 is non-zero, the function executes the assigned routing function and proceeds to CTRLO to begin landside processing.

Transfers out of the system are routed to location DEP10. The number of transactions to be generated is specified by MH1(PH1,16). After departing the aircraft, these are assigned the routing function TOSDF, and transferred to CTRLO to begin processing.

Terminating passengers are routed to DEPL4 where PB8 is assigned the value 1 to designate the transaction as representing the deplaning terminating passenger.

Transaction sequence counter SEQ2H is tested for a value equal to or greater than 32,000. When this condition exists, the value is reset to zero. Otherwise, the transaction is

directed to a series of SPLIT blocks. Copies are directed to DEP18, DEP19, DEP22 and DEP26 to generate passenger groups using private vehicles and to assign sequence numbers for passenger greeter matching. A copy is also directed to a section generating transactions for simulation of passengers using public modes of transportation. The flight transaction is transferred to BUNLO to initiate simulation of the baggage unloading process.

The first copy is directed to DEP18 where PB6 is assigned the value 1 to indicate that the curbside will be used after the greeter-passenger meeting and removal of the vehicle from the parking garage is simulated. The number of transactions from this category is calculated by FLT2V and assigned to PH8. The procedure for determining party size is identical to that previously described for greeters. The random number selections are drawn from the table ML1, using the PH1 row number, modulus 125, as the pointer.

Using the same sequence of numbers for the passenger transaction as for the greeter, a transaction is created for each passenger group from the distribution function PPDF. The number of passengers in the group is assigned to PB13 and subtracted from PH8 as before. This is repeated until PH8 becomes zero or negative. When negative, the last party size is adjusted to force a zero value in PH8.

Subroutine BAGS is called by the passenger transaction and uses the argument FN*PB14 to determine the number of bags

to be assigned to the passenger group transaction in PB4. This is identical to the usage of the bag function performed by the greeter transaction and the same random number from ML1 is used by both transactions. For each terminating passenger transaction, subroutine BAGS also selects one random number for each bag specified in PB4 using one of the GPSS random number generators. The largest random number generated for the transaction is assigned to PH3. This value will be used later in the baggage unloading logic to release the passenger from the chain representing the bag claim device.

Sequence numbers, SEQ1H and SEQ2H assigned to PH10 in greeter and passenger transactions, respectively, are identical for the pair to be matched later. The numbers of greeter and passenger transactions proceeding to the gate, bag claim or lobby for meeting are determined identically. The major differences in the two paired transactions are; (1) assignment of different processing functions to PB1, (2) assignment of passenger group size number to PB13 of the passenger transaction and zero to the same parameter of the greeter transaction, (3) assignment of the greeter group size to PB5 of the greeeter transaction, and assignment of passenger group size to PB5 of the passenger transaction.

The second copy is directed to DEP19 where PB6 is assigned the value 2 and the number of transactions needed to proceed directly out of the airport from the parking facility after meeting is calculated from VFLT3V and assigned to PH8. The

same processing as the transaction processing to DEP18 is executed.

The third copy proceeds to DEP22 where the transactions representing terminating passenger groups greeted at the curb are generated. A value of 1 is assigned to PB6. The number of transactions required is determined from FLT4V and assigned to PH8.

All of the transactions generated from the three above copies are transferred to DEP24 where the deplaning and gate meeting processes are simulated.

The fourth copy, routed to DEP26, assigns a value of 2 to PB6 and calculates the number of transactions required to represent passengers without greeters using private auto. The numbers of passengers per party is drawn from the function PPPDR, using the random number table in ML1 as a source for argument values of the function. Subroutine BAGS is also executed with a number from ML1 as the argument of the bag per passenger function in PB14. If the number of bags is zero, the function DLP1F is assigned to the transaction representing this passenger group. These transactions proceed directly to DEP24 for deplanement.

The final SPLIT block directs a copy transaction to areas creating transactions representing terminating passengers using taxi, limousine or bus for ground transportation. The number of passengers on the flight utilizing ground transpor-

tation modes other than private auto is provided by FLT6V and is assigned to PH8. The function PPPDF is also used to determine party size and is assigned to PB13. A loop determining PH8 by each party size until depletion, creates the required number of transactions. Each transaction executes a HELPA block and is assigned a mode by FORTM using random number selection. The subroutine BAGS is also executed. For passengers other than those using car rental, the number of bags, PB4 is tested for zero. When this condition occurs, the function DLP1F is assigned to PB1. All BAGS transactions are transferred to DEP 24.

AT DEP24, all terminating deplaning passenger transactions are delayed by the value ACU2V a random unloading time from a uniform distribution. Byte parameter 12 is tested for a value of 1, to determine if the passenger transaction will attempt to match the corresponding greeter transaction. Those passenger transactions with PB12 not equal to 1 are transferred to CTRL0 to begin landside routine. Those with a value 1 in PB12 are transferred to an UNLINK block to examine this user chain GREGC. The parameter PH10 of the passenger transaction is compared to the same parameter of all the greeter transactions waiting on the chain. When transactions match, the greeter transaction is removed from the chain and transferred to CTRL1. The passenger transaction proceeds to the next block at DEP29. At this location, the

transaction is held until the logic switch PAS3L is placed in a set condition by the greeter transaction. This setting is performed in the gate logic section by the greeter transaction after transfer from CTRL1. The number of greeters is assigned to the savevalue PAS32 and the parking lot number to PAS33. These are obtained from PB5 and PB14 of the greeter transaction respectively in the gate logic section. After PAS3L is set, the number of greeters, PAS32, is added to PB5 of the passenger transaction. The parking lot number, PAS33, is placed in a reset condition for use by the next passenger transaction finding a matching greeter. The active transaction proceeds to CTRLO to continue landside routing.

When the terminating passenger transaction marked for gate meeting does not unlink a greeter, the transaction is transferred to DEP28. An ASSIGN block places the program location DEP29 into PH4 and transaction is linked to GREGC. This will transfer the passenger transaction to this location when unlinked later by the greeter transaction in the gate logic.

Enplaning Passenger Logic

The first block in this section is at location ENPLO. Because this is the B operand of the JOBTAPE statement in the program definition statement section, all transactions created by the Auxiliary Program and written on the JOBTAPE are routed to this block. The first transaction does not represent an enplaning passenger group, but was written on the JOBTAPE to provide an initial time coincident with the start of the simulation to reference the entry times of all originating enplaning passenger transactions. This first dummy transaction is transferred to ENPL9, where a CHANGE block referencing CHNGO redefines the operation performed by the block at ENPLO. All succeeding transactions will transfer to program locations in the enplaning passenger logic based upon the selection function ENPlF. The dummy transaction is then terminated.

Function ENPlF will route the JOBTAPE transactions to ENPL1, ENPL2 or ENPL3 based upon respective values of 1, 2 or 3 in PB3. The parameter was assigned these values in the Auxiliary Program to represent domestic, commuter or international passengers, respectively.

Transactions representing transfers out of the system are arbitrarily assigned a value 1 as the point number designator in PH2 and the routing function TOSEF is assigned to PBl. This transaction is transferred to CTRLO to begin

landside processing.

The originating enplaning domestic passenger transaction is assigned the function EDPIF in PB1 and a random number from the variable RND2U in PB10. The latter serves as an argument to DBAGF, the function used in the next block to assign the number of bags to PB4. This transaction then transfers to CTRLO.

Enplaning commuter passenger transactions are assigned their processing function, ECP1F, to PB1 at location ENPL2. The number of bags assigned to PB4 from function CBAGF and the transaction is transferred to CTRLO.

International enplaning passengers transfer to ENPL3 from ENPLO. The routing function assigned to PB1 is EIP1F and PB4 obtains the number of bags from the function IBAGF.

Facility Modules Section

This section describes the program logic of 17 modules used to simulate landside processing facilities. These operate independently, with few direct linkages from one module to another. Transactions are generally routed from one of these modules to another through the use of the routing function and a transfer to CTRLO of the Control Module or the assignment of the address of another module to PH4 and a transfer to CTRLI, also in the control module.

Two modules, Baggage Unloading Logic and Deplaning Curb (Cars) simulate landside activities not performed by passengers. All others involve passenger simulation.

1. Bag Claim

This module begins at location BAGCO, when a test is performed on PB4 of the entering transaction to determine if the number of simulated bags associated with this transaction is zero. If PB4 is zero, the transaction returns immediately to CTRLO. All other transactions proceed to a HELPA block and return from FORTM with the point number of the bag claim facility assigned to PH2; the value 4 to PB11 and the landside facility number to PH7. The transaction is then advanced by TRUXH, the walking time from the last facility.

Byte parameter 13 is tested for a zero value. When this occurs, indicating that a greeter transaction is being processed, the transaction attempts to unlink the corresponding

passenger transaction from the chain GREBC by matching PH10 of both transactions. If successful, the greeter transaction proceeds to a GATE LR block at BAG 3. Since logic switch PAS4L is normally in a reset condition, the greeter transaction continues and assigns the number of greeters in PB5 to PAS42 and the parking lot number PAS43. Logic switch PAS4L is set to allow the passenger transaction to obtain these two values. If the vehicle used by the greeter was assigned to proceed to the curb, then the greeter transaction is routed to GRTY3 to simulate removal from the parking facility. Otherwise, the greeter transaction is terminated. A greeter transaction unable to unlink a passenger transaction is transferred to BAGC2 where it places BAGC3 in P4 and then links this transaction on the user chain GREBC.

Passenger transactions are routed to BAGC1. A savevalue recording the occupancy at the point where the bagclaim facility is located is incremented by PB5, the number of passengers in the party. Matrix element MH1(PH1,1) is tested for a value of zero, to determine if all bags have been delivered to the bagclaim for the flight. When this occurs, no time for bag delivery or pickup is simulated. The passenger transaction parameter byte 12 is tested for a value 2, to determine if the simulated greeter and passenger matching process will occur at bagclaim. For PG12 not equal to 2, the passenger transaction proceeds to BAGC4 for a transfer to CTRLO.

When PB12 is 2, the passenger transaction attempts to unlink a matching greeter transaction from chain GREBC. If successful, the passenger transaction waits for the unlinked greeter transaction to set PAS4L. The values PAS42 and PAS43 are subsequently assigned to PB5 and PB14, respectively, and logic switch PAS4L is reset. The passenger transaction transfers to BAGC4 for immediate transfer to CTRLO.

Passenger transactions unsuccessful at unlinking greeter transactions are sent to BAGC5, and BAGC6 is assigned to PH4 and the passenger transaction is placed on the chain GREDC.

When bag delivery from the aircraft is incomplete, the address BAGC7 is placed in PH4 and the passenger transaction is placed on the chain assigned to PH6 by the deplaning passengers logic. The unlinking from this chain occurs in the Baggage Unloading Logic Module. Upon return from BAGC7, after unlinking from the PH6 baggage chain, the test for greeter matching and subsequent activity described above is performed.

2. Baggage Unloading Logic

This module is accessed by arriving flight transactions generated by the Deplaning Passenger Logic. The first block of this module, at BUNCO, changes the priority of the entering flight transaction from 10 to 5, and, through use of the BUFFER operand, places it below the passenger transactions on the current events chain and restarts the chain. This operation allows the passenger transaction to execute the

assemble subroutine BAGS before the baggage unloading logic operates.

The number of halfword and byte parameters of the flight transaction are changed to 9 and 40 respectively. A HELPA block is enacted to assign MH7 row numbers to transaction parameter bytes. Each element of MH7 represents a count of simulated passenger bags placed in the array by subroutine BAGS. Subprogram FORTM extracts each element beginning with the lowest numbered and computes the cumulative sum of the elements. At the same time FORTM examines the cumulative sum after each element is added. Each time the sum exceeds an integral multiple of the C-operand, it places the MH7 row number in a parameter byte, starting with number 40 and decremeeting to number 1, and then increases the C-operand multiplier by one.

An ADVANCE block simulates the aircraft unloading time based upon a random draw from a distribution. Bag delivery is simulated by unlinking all passenger transactions from the PH6 bag claim chain. This process is performed in a loop, with the flight transaction byte counter decremented from 40 to 1. The PH3 value assigned by BAGS to the passenger transaction is compared to the MH7 row number in the byte parameter of the flight transaction. All transactions with PH3 less than or equal to the value in the byte parameter are unlinked. The flight transaction time is advanced 30 seconds between each

decrement, simulating a large wait for passenger transaction with high PB3 values than those with low. Passenger transactions are routed to BAGC7 by a transfer to CTRL1.

The PH6 chain is released by a LOGIC R block. Matrix savevalue MH1 (PH1,1) is assigned a value 2, indicating that the delivery of all bags is complete. The flight transaction is then terminated.

3. Ticketing and Check-In

This module is entered by enplaning and some deplaning and transfer passenger transactions. Greeter transactions, routed to simulate the meeting of greeters and deplaning passengers without baggage, also utilize this program section.

At CHEKO, the first program location of this module, the Boolean variable CHK1B is used to test transaction parameters PB7 and PB9 and the value produced by random number generation RN7. The test simultaneously determines if PB7 equals 1, indicating an enplaning passenger transaction; if PB9 is zero, indicating a preticketed status; and, if PB7 is less than the input percentage of preticketed passengers proceeding directly to the gate. When CHK1B is true, the transaction bypasses the ticketing and check-in procedure and is routed directly to CTRLO, for transfer to the Security Module.

Transactions requiring processing by the module execute a HELPA block. They are assigned the following parameter

values by FORTM: point number is PH2; program location CHEK2 or CHEK3 is PH4; the GPSS storage or queue number for the check-in facility of the MH1(PH1,3) airline is PH5; the landside facility number is MH9 in PH7; and the process code number 2 or 14 in PB11, to indicate express or full service check-in.

An ADVANCE block simulates the walking time from the previous facility. Byte parameter 13 is tested for a zero value. When PB13 is zero, indicating a greeter transaction, a set of logical operations simulating the greeting process and identical to those performed at Bagclaim, is executed.

Passenger transactions are transferred to CHECK9 and PB12 is tested for a value of 3, the flag indicating a deplaning passenger transaction to be greeted at the enplaning level lobby. These deplaning passenger transactions also simulate the greeting process using program logic identical to that in the Bagclaim Module.

Transactions with PB12 not equal to 3, transfer to CHEK6. At this location another test is performed, this time on PB8, to determine if the transaction represents a terminating passenger. This transaction type is transferred to CTRLO. All other transactions increment the occupancy PH2 savevalue by the value in PB5.

The passenger transaction requiring a simulation of the check-in process joins a queue at the PH5 facility and

the time of entry is marked. When the transaction is ready to enter the service process simulation, the waiting time deviation is placed in PH11 and the transaction transfers to CHEK2 for a preticketed passenger check-in, or to CHEK3 for full service. Service time for each facility is drawn from the applicable service time distribution. For the preticketed passenger transaction only one distribution is used. However, for simulation of full service ticketing, the selection function ATK1F will choose the service time from the distribution applicable to the airline number represented in MH1(PH1,3). Halfword savevalue CHKXH is assigned the value of the airline number and is used as the argument for the function ATK1F. Upon completion of the simulated ticketing and check-in process, the occupancy count is decremented by PB5. The flow count in MH13 is incremented, and the transaction transfers to CTRLO.

4. Immigration

This module is entered by deplaning international passenger transactions. At IMMIO, a HELPA call to FORTM results in the following parameter assignments: point number of the facility is PH2; GPSS queue and storage number is PH5; landside facility number is PH7 and PH8; and the value 13 in PB11 to denote immigration processing.

The walking time from the previous facility, TPVXH, is simulated by an ADVANCE block. The PH2 occupancy count is incremented by PB5. The transaction enters a QUEUE block if

the storage is full or begins simulated service if it is not full. The simulated service time is obtained from the variable FMM1V. After leaving the PH5 storage, the transaction decrements the occupancy count by PB5 and increments the immigration flo count IMIG by the same value. The module is exited by a transfer to CTRLO.

5. Customs

This module is also entered by international deplaning passenger transactions. The HELPA block at CUSTO returns with the same type of information in PH2, PH5, and PH7 as in the immigration module. PB11 is assigned a value 5 to signify customs processing.

All simulation processing is identical to that performed in the immigration module. The service time is provided by the variable CUS1V.

6. Concourse Exit

This module provides a program location for accumulating the count, in MH11, of simulated passengers and visitors exiting concourses and entering the terminal lobby. At CNCRO the HELPA block assigns the point number of the exit to PH2 and the FACNO numbers of the security station for this concourse to PH5. The walking time from the gate to this exit is simulated. After incrementing the matrix element MH11 (PH1, PH5) by the value PB5, to increase the passenger-visitor concourse count, the transaction is transferred to CTRLO.

7. Deplaning Curb (Cars)

In this module, vehicles proceeding to the curb to greet terminating passengers are simulated. Assignments to curbside or double parking are made by this module, based upon current space availability. A limited queue at each curbside section is established if storage representing curbside or double parking is filled. Congestion of vehicular traffic resulting from lane blockage due to double parking and queueing is simulated. The program logic inspects only the curbside section assigned to the bagclaim area of the terminating passenger for space availability. When no space is available the vehicle transaction simulates a recirculating process.

Vehicle transactions routed to DCARO represent greeters arriving at the airport for simulation of passenger-greeter meetings at the curbside. These are delayed by a random draw of the function DCA1F which represents the distribution of times of arrival of greeters at the airport landside. These vehicle transactions are joined at DCAR1 by those representing vehicles removed from the parking lot by the greeter transaction after simulation of their matching process within the terminal building. Vehicular counts on the entry road and deplaning curbside approach section are incremented by 1 at DCAR1 and the next block, respectively.

A HELPA call to FORTM assigns a GPSS storage number to the transaction in PH6 and the value 1, 2, or 3 is assigned to PH10 to indicate curbside parking, double or queuing, respectively. If no available space is located, a simulated recirculation of the vehicle will be performed. PH6 is then assigned a value zero and PB10 is 4.

The byte parameter 4, as operand in the HELPA block, determines if the vehicle will proceed to the enplaning or deplaning curb. When PB4 is zero, indicating that the passenger and greeter transactions are without simulated bags and the greeting process will take place at the enplaning level lobby, FORTM assigns a storage number to PH6 corresponding to enplaning curbside parking, double parking or queuing. When PB4 is non-zero, the assignment is made to a deplaning curb storage. Recirculation is provided for either PB4 condition when required.

Upon return to GPSS, a test on PB4 for a non-zero value is performed. Transactions with PB4 zero values are transferred to DCARO. Because the simulated vehicle may pass other curbside sections to arrive at the assigned section, the program must determine if lane blockage occurs at this section to be bypassed. The first deplaning curb storage number minus 1 is placed on PH8 and PH4 and the first deplaning double parking storage number minus one is PH5.

A variable DEPLS is established and assigned in PH8 for the purpose of comparison with PH6. This will determine if the GPSS storage number of the curbside parking, double parking or queue, contained within the curb section where the transaction is currently located, matches the destination storage of the transaction. Because the value of DEPLS depends upon PB10, comparison of PH8 with PH6 will only be between storage numbers representing identical facility types. Recirculating vehicle transactions do not calculate the value of DEPLS for assignment in PH8. These transactions transfer to DCARB and are joined by the transactions with DEPLS assigned to PH8.

Vehicle transactions transferred to DCARD are assigned a value of 1 less than numbers of the RPSS storages representing the curbside at the first enplaning curb section in PH4 and the double parking area at the first enplaning curbside section in PH5. The variable ENPLS performs the same function as DEPLS but operates on enplaning curb storage and is assigned to PH8. All transactions proceed to DCARB.

The loop for simulating lane blockage and delay is begun at DCARB. PH8 is incremented by 1 each time this block is passed. Non-recirculating vehicle transactions test PH8 against PH6 to determine if the current curbside facility is the destination. When PH8 equals PH6, the transaction proceeds to DCARA to simulate parking. Otherwise, PH4 and PH5 are each incremented by 1. A Boolean variable LNFLD determines if

all lanes are blocked in the current curb section, and holds the vehicles at the TEST block if this occurs. Otherwise, the PH5 storage is tested to determine if any vehicles are double parked. When no double parking occurs, the land delay, LNDLY, is zero and the transaction performs a test to determine if the current curb section transfers to DCARA for the last section or DLARB for passing the next curb section.

When lane blockage occurs, the maximum number of lanes available is decremented by one and assigned to NOLAN. The delay for each vehicle is calculated as 2x3/NOLAN and placed in the variable LNDLY. Each transaction passing the current curb section is delayed by an ADVANCE V8LNDLY block. The same test and routing to DLARA ar DCARB is performed.

At DCARA, the count of vehicles as the deplaning curb is incremented by 1 and the entry time into this section is marked in PH8. Byte parameter 10 is tested for values 1, 2, or 3. The value 1 routes the transaction to DCAR5; 2 to DCAR4; and 3 enters the vehicle in the storage representing queuing at the destination curb section. Recirculating vehicle transactions have CIRCO assigned to PH4 and transfer to CTRL1.

Queuing vehicle transactions enter storage PH6, change their priority level to 12, then link on a chain numbered PH6. These will be released when corresponding greeter vehicle and passenger transactions are matched in the deplaning curb

passenger logic. A transaction is released from DPL1C and routed to DCAR2, when the simulated matching takes place between the passenger and a vehicle at curbside. At the section following DCAR2, the transaction representing a previously double parked vehicle will move into the storage representing the curbside, reset its priority level to 10, relink itself on chain DPL1C and remove one transaction from the queue chain, and route the transaction to DCAR3. Vehicle transactions released from DPC1C by the deplaning curb passenger logic, representing double parked vehicles, release one transaction from the queue and transfer it to DCAR3.

At the program location DCAR3, PB7 is tested for a value zero. A non-zero value indicates that the transaction is a greeter vehicle using the enplaning curb and transfers it to ENPC8. Deplaning curb vehicle transactions continue to the next block and leave the PH6 storage entered above by queueing vehicle transaction. The number of the double parking storage associated with the queue previously departed is placed in PH6. Byte parameter 10 is assigned a value 2, signifying double parking. The transaction proceeds to the next block at DCAR4.

All double parking vehicle transactions proceed through DCAR4, where the priority level is set at 11. These transactions, and the transactions representing vehicles to be parked at curbside, enter the PH6 curb or double parking storage

at DCAR5.

An attempt to unlink waiting passengers from the chain DPL2C by matching equal values of PH10 in the vehicle and greeter transactions results, if successful, in a transfer to DPLC9. If unsuccessful, the vehicle transaction is linked on chain DPL10.

The model generates a transaction to perform a policing function. This transaction will remove vehicle transactions remaining in double parking or queuing longer than a prescribed time limit. The length of time allowed in these two facilities is specified in an ADVANCE block in DLAR6. After passing DCAR6, the transaction unlinks all transactions representing double parked vehicles on the chain DPL1C if the absolute clock time is greater than the entry time into these two facilities plus 300 seconds. These vehicle transactions are transferred to DCAR8.

The policing transaction places the total number of all curb sections, enplaning and deplaning, in PH1. The APSS storage number, DPQCS, of the first deplaning curb queue is placed in PH2. At DCAR7, the program unlinks the vehicles from the PH2 chain if they have been in the queue longer than 30 seconds. This chain has the same number as the storage representing a queue at a curb section. The program increments PH2 by one and loops back to DCAR7. Because the storage and chains representing queues at curb sections were numbered continuously for deplaning and enplaning curbs by SYN statements, executing this loop PH1 times will remove all queued

vehicle transactions and transfer them to DCAR9. The policing transaction is transferred back to DCAR6 to await the next enforcement time.

Double parked vehicle transactions forced to leave the chain DPL1C and transferred to DCAR8, unlink one vehicle transaction from the queue chain corresponding to the storage representing double parking. The unlinked transaction is routed to DCAR3. The previously double parked vehicle transaction proceeds to the next block DCAR9.

At DCAR9, previously queued and double parked vehicle transactions leave the PH6 storage. The priority level is dropped to 10. For vehicle transactions assigned to enplaning curb sections, the waiting time spent queued or at double parking is added to PH11. This addition is performed for this type of vehicle transaction because only queued vehicle transactions are forced to leave the enplaning curb. Double parked vehicle transactions remain at this curbside without a simulated enforcement process. Furthermore, the vehicle using the deplaning curb has a waiting time dependent upon time of arrival at the landside. Simulated waiting time for this transaction type is not entirely dependent upon landside service processes and is not entered into wating-time tables.

Vehicle transactions leaving the deplaning curb area are assigned to program location CIRCO to simulate a recirculation process. Vehicles directed away from the enplaning curb area begin recirculation at CIRC1.

8. Deplaning Curb (Pax)

The terminating deplaning passenger transactions are routed to DPLCO for subsequent matching with greeter vehicle transactions, loading into taxis or loading into buses or limos. A HELPA call to FORTM by the transaction returns with the point number of the deplaning curbside section in PH2, the landside facility number in PH7, and the value 12 in PB11. The transaction is advanced by TRUXH, the walking time from the last facility utilized. Using the selection function DPL1F, a branch to DPLC3, DPLC4 or DPLC5 is executed for transactions assigned to private vehicle, taxi, or bus/limo modes, respectively.

Transactions transferred to DPLC3 attempt to unlink waiting vehicle transactions from the chain DPL1C, even if previous matching between greeter and passenger transactions has taken place within the terminal building. This is because simulated vehicles removed from the parking facility after the terminal building greeting process and subsequent routing to the curbside, perform the same logical operations as greeter vehicle transactions proceeding directly to curbside from the airport boundary. The unlinked vehicle transaction is transferred to DPLC9 and the passenger transaction transfers to DPLC1. Unsuccessful passenger transactions are transferred to a second UNLINK block to attempt unlinking transactions representing greeters before vehicles have recirculated and parked: these are located on chain DPL3C.

Greeter transactions are transferred to DPCG2 and passenger transactions go to DPCG1. Passenger transactions unsuccessful in removing transactions from DPL3C are transferred to DPLC2.

The passenger transactions unlinking a greeter vehicle from DPL1C are held by a GATE block at DPLC1 until the vehicle transaction places the storage number of the curb section half-word savevalue PASS1, the PB10 flag in byte savevalue PASS2 and sets the logic switch PASSL. The passenger then proceeds and places PASS1 in PH6 and PASS2 in PB10. The passenger transaction resets PASSL and simulates the vehicle loading time by advancing the value DPL1V. Byte parameter 10 is tested for a value 1 to determine if the greeter vehicle will leave from the curbside. When this occurs, the storage number of the curbside is placed in TMPXF for calculating a random pull-out time using variable DPL2V. This time value is retained in PH11 for entry in the table of waiting times. The passenger transaction leaves storage PH6 and unlinks one vehicle transaction from DPL1C when the double parking storage adjacent to the curbside area just departed, matches PH6. The unlinked vehicle transaction is routed to DCAR2. The passenger transaction transfers to DPLC8.

Greeter transactions with PB10 not equal to 1, transfer to DPLC7 and leave the PH6 double parking storage. They unlink one vehicle transaction from the queue chain for vehicles awaiting entry to the double parking storage just departed.

These greeter transactions proceed to DPLC8 where they join the passenger transactions from the curbside and increment the count of vehicles on the departing road. All transactions transfer to CTRLO.

At DPLC2, those passenger transactions unsuccessful at unlinking greeter transactions from DPLC1 and DPL3C are assigned the address DPLC1 in PH4 and are linked on the chain DPL2C to await unlinking by which transactions in the deplaning curb (cars) logic.

Greeter vehicle transactions unlinked from DPL1C are transferred to DPLC9. These are held at a GATE block if PASSL has not been placed in a reset condition by a passenger transaction. When able to proceed, the vehicle transaction places the value of PH6 in PASS1 and PB10 in PASS2 to provide information to the matching passenger transaction. The transaction sets logic switch PASSL, to allow the passenger transaction at DPLC1 to proceed and is then terminated.

Transactions using the bus/limo or taxi are transferred to blocks DPLC4 or DPLC5, respectively by the function DPLC1F. At DPLC4, the count of deplaning passengers waiting for a bus or limo, DPCXH, is incremented by 1. At DPLC5, the loading time of the taxi, PDL1V, is simulated by an ADVANCE block. The taxi increments the count of vehicles on the roadway departing the airport by 1. All transactions entering these two sections are transferred to CTRLO.

A transaction representing a bus or limo is generated in the Control Section and transferred to DPLC6. At this and

subsequent blocks, the vehicle transaction increments the count of vehicles on both the arriving and departing roadways. It also removes the passengers waiting for a bus or limo by assigning the halfword savevalue DPCXH a value of zero. This transaction is then terminated.

The last three areas of the Deplaning Curb Section (Pax) simulate activities of greeters intending to meet passenger at curbside but forced to recirculate and park because of congestion at the curb. At location DPCGO the greeter transaction excutes a HELPA block. The E-operand is used as a flag to indicate that this transaction represents a greeter acting as a pedestrian and has a value 1.

The transaction assigns the point number of the curb to PH2. The landside facility number of the curbside is placed in PH7 and the value 12 is assigned to PB11. The transaction is advanced by TRVXH, the walking time from garage to curb. The greeter transaction attempts to unlink a passenger transaction from the chain DPL2C. If successful, the passenger transaction transfers to DPLG1 and the greeter transfers to DPCG2. Unsuccessful greeter transactions are placed on chain DPL3C for subsequent unlinking by passenger transactions.

At DPCG1, the passenger transactions are held by a GATE block until switch PAS5L is placed in a set condition by the greeter transaction. The greeter transaction passes through the GATE block at DPCG2; then places the number of greeters in byte savevalue PAS52 and the parking lot number in PAS53. The

greeter transaction places PAS5L in a set condition and is then terminated.

After the passenger transaction proceeds past the GATE block, PAS52 is added to PB5 and PAS53 is assigned PB14. The passenger transaction resets PAS5L. A value 2 is assigned to PB6 to indicate a parking mode. The process function pointer, PB2, is reset to 1 and routing function GRCPF is assigned to PB1. This routes the passenger transaction to the parking facility. The transaction transfers to CTRLO.

9. Enplaning Curb

This program section represents the activities of the originating passenger from the vehicular approach to the enplaning curbside, through the parking and unloading process to entry into the terminal building. Private vehicles and taxis departing the curbside after separation from the passenger groups are simulated. Arrivals of buses or limos at the enplaning curb are also represented. This module contains a section to simulate recirculation of vehicles from either enplaning or deplaning curbsides.

Transactions representing originating passengers are routed to ENPCO if the simulated mode of arrival at the airport is private car or taxi, or to ENPC2 if the mode is bus or limo. At ENPCO and the next block, the count of vehicles, ARDXH, on the airport entrance road and the count of vehicles, ENPXH, proceeding to the enplaning curbside, are both incremented by 1. A HELPA call to FORTM is executed, using the airline number and the PB6 mode operates.

For the private car or taxi mode, subprogram FORTM searches for a curbside or double parking space. The curbside associated with the airline specified by the B operand is examined first, and, if necessary, all other curbside sections are inspected in a prespecified order with adjacent sections first and remote sections last. If a space is located, the [illegible] storage number is assigned to PH6. The value 1 or 2 [illegible] PB10 to designate curbside or double parking, [illegible] space is available at the two above

facility types, the queue associated with the B-operand airline curb section is inspected for a space. An available space results in the assignment of the storage number representing the queue in PH6 and 3 in PB10.

Transactions representing vehicles parked at curbside or in a double parking location or in the queue are assigned the point number of the facility to PH2 and the landside facility number to PH7. Vehicle transactions unable to locate any space are forced to recirculate. These are assigned a value zero to PH5 and PH6 and a value 4 is assigned to PB10.

After returning from FORTM, the model performs logical operations to model congestion due to lane blockage. The operations performed are identical to those in the deplaning curb logic with two exceptions. First, the number of bags in PB4 is not inspected because only the enplaning curb congestion is modeled by this section. Secondly, the time spent passing through the congestion is recorded in PH11 for enplaning curb vehicle transactions but not those using the deplaning curb.

When the vehicle transaction is at the section containing the storage designated by PH6, the transaction is transferred to ENPC1. Recirculating vehicle transactions completing simulated passage of all curbside sections are also directed to ENPC1.

The subsequent logical operations of this curbside section closely parallel the Deplaning Curb (Cars) Section. Transactions

representing double parked vehicles are routed to ENPC4, where their priority level is made 11, as before, and directly enter the PH6 storage curbside vehicle transaction. Queuing vehicles enter their PH6 storage, change their priority level to 12, as before, and link on the PH6 chain. Recirculating vehicle transactions are transferred to CIRC1.

Vehicles transactions in curbside or double parking storage simulate the unloading time by an ADVANCE block which holds the transaction by the amount ENP1V. A SPLIT block separates the vehicle transaction from the originating passenger transactions. The passenger transaction is tested for a preticketed status. If PB9 is zero, indicating this condition, a percentage of these transactions, defined by halfword savevalue CRBXH, enter an ADVANCE block to simulate curbside check-in. All transactions, including those representing non-preticketed and non-curbside check-in passengers are transferred to CTRLO.

The vehicle transactions are transferred to an ADVANCE block to delay the transaction for simulating empty-car parking time. The vehicle transaction with PB10 equal to 1, simulates a random pull-out time from curbside and then leaves the PH6 storage. This transaction unlinks a vehicle transaction from the queue corresponding to the departed curbside, and transfers it to ENPC8. The parked vehicle transaction is transferred to ENPC9.

Double parked vehicle transactions transfer to ENPC7 and immediately leave the PH6 storage. These also unlink one vehicle transaction from the queue adjacent to the double parking storage, transfer it to ENPC8 and proceed to ENCP9.

At ENPC9, the count of vehicles on the departing road is incremented by 1. If no well-wishers are simulated to enter the terminal building, PB5 equals PB13 and the vehicle transaction is terminated. When PB5 and PB13 are unequal, the vehicle transaction executes a HELPA call to FORTM to determine the parking facility number to be entered. It then increments the entry count of the parking facility and is terminated.

Queued vehicle transactions released from the PH6 chain by previously parked vehicle transactions and routed to ENPC8, test PB7 for a value of 1 to determine if they represent vehicles using the deplaning curbside. Deplaning curb vehicle transactions ar. transferred to DCAR3. The enplaning curb-side vehicle transactions proceed to the next block and add the waiting time spent in queueing to PH11. These transactions leave the PH6 storage which represented the queue, and assign the storage number of the curbside in the same curb section to PH6 and assign one to PB10. The PH6 curbside storage is tested for occupancy and, if not full, the vehicle transaction enters it at ENPC5. When the curbside storage is full, the corres-ponding double parking storage number is assigned to PH6.

Byte parameter 10 is assigned the value 2, the priority level of the transaction is changed to 11 and the transaction enters the PH6 storage at ENPC5. The vehicle transaction is then terminated. Enplaning passenger transactions assigned to the bus/limo mode are routed to ENPC2. A HELPA call to FORTM returns with the loadside facility number of the bus stop for the airline designated by the B-operand placed in PH6 and the point number of the facility is PH2. The transaction has the program address ENPC3 assigned to PH4 and is linked on the chain EBUSC to await arrival of the simulated bus/limo at the enplaning curbside. After unlinking by the bus/limo transaction, the enplaning passenger transaction is transferred to CTRLO.

The transaction generated by the Control Section representing the bus/limo is routed to ENPC6. At this location the transaction increments the halfword savevalue ARDXH, the count of vehicles on the approach roadway. An ADVANCE block simulates the unloading time of the passengers from the vehicle. This transaction unlinks all passenger transactions placed on EBUSC by the instructions following ENPC2 and transfers them to CTRL1. The count of vehicles on the departing road, DRDXH, is incremented by 1 and the bus/limo transaction is terminated.

The recirculation roadway logic is also contained in this section. Vehicle transactions assigned to the Deplaning Curb (Cars) logic are transferred to CIRCO for recirculation.

An ADVANCE block simulates the vehicle recirculation time and the count of vehicles proceeding from the deplaning curb to the recirculation roadway, RCDXH, is incremented by 1. A test of PB12 for zero, determines if the transaction was routed to perform the matching process with the terminating passenger transaction only at the curbside. A percentage of these transactions specified by halfword savevalue CPKXH are selected to enter the parking facility. The PB6 mode is assigned a value 2 and the routing function GRECF is assigned to this transaction. The transaction is then transferred to CTRLO.

All other deplaning curb recirculating transactions, those with PB12 non-zero and those not parking, are routed to DCAR1 to repeat the deplaning curb logic instructions. Recirculating vehicle transactions transferred from the enplaning curb logic to CIRC1 are advanced by the value CIRCV to simulate recirculation time. The count of these transactions, RCEXH, is incremented by 1 and the transactions then transferred to ENPCR to return to the enplaning road logic.

10. Entrance

Originating enplaning transactions and greeter transactions with non-zero PB12 values are routed to ENTRO to simulate entry into the terminal building. A HELPA call to FORTM returns with the point number in P42, of the entrance nearest to the facility immediately departed by the transaction. The transaction advances TRVXH, the amount of walking time from the last point to the entrance. The Boolean variable DPDIN is tested for a value of 1 to determine if the transaction will increment the terminal entry count on the deplaning level. When this occurs, the transaction represents a greeter proceeding to bag claim. The halfword savevalue DPLIN is incremented by the value in PB5. The transaction is transferred to increment the total count of all entrances in halfword savevalue ENDUR and is then transferred to CTRLO.

All other transactions are assumed to enter on the enplaning level. These increment the halfword savevalue ENDIN by the amount of PB5 and also increment ENDOR. These transactions also transfer to CTRLO.

11. Exit

This module begins at program location EXITO. A HELPA call to FORTM at this location returns with the point number in PH2, to the exit nearest the facility immediately departed from. The walking time from the last facility to the exit is simulated by an ADVANCE block.

The Boolean variable DDOUT is used to determine if this transaction represents a domestic, international or commuter passenger group with baggage. These transactions increment the halfword savevalue DPOUT, the count of passengers and visitors exiting the terminal from the deplaning level, by the value in PB5. This transaction type also increments EXDOR by the value in PB5.

All other transactions are assumed to represent passengers or visitors exiting through the enplaning level. These increment the count EPOUT, for this level, and increment the total exit count, EXDOR, both by the value in PB5. All transactions entering this section transfer to CTRLO.

12. Gate (Enplaning pax)

This module simulates the processing of enplaning passengers at gate counters, matching of greeters with passengers and separation of well-wishers from passengers. A subsection simulates the aircraft boarding process.

Passenger and greeter transactions first enter this section at GATEO. At this location, a HELPA block is executed. This results in assignment of the point number of the gate facility to PH2 and the GPSS storage number of the gate to PH5. The landside facility number, identical to the gate number, is assigned to PH7 and PB11 is given a value of 1.

The walking time from the last facility utilized is simulated by an ADVANCE block. Byte parameter 13 is tested for a value zero, to determine if the transaction represents a greeter. Non-greeters are transferred to GATE7. Greeter transactions attempt to unlink a passenger transaction from the chain GREGC. The transaction removed is routed to DEP29 in the Deplaning Passenger Logic Section. The greeter transaction proceeds to GATE8, and, after passing a GATE block, assigns the number of greeters in PB5 to byte savevalue PAS32 and the parking facility number is PB14 to byte switch PAS3L in a set condition. PB6 is tested for a value 1, to determine if the greeter transaction is required to simulate removal of the vehicle from the parking facility and perform a

subsequent pickup of the terminating passenger transaction at curbside. A value of 1 in PB6, indicating the routing of passengers and greeters to the parking garage, requires only the use of the passenger group transaction, and the greeter transaction is terminated.

Greeter transactions with PB6 unequal to 1 have zero assigned to PB5 and GRTO3 assigned to PH4. These transfers to CTRL1 to proceed to the parking facility. Greeter transactions unable to unlink a passenger transaction from GREGC are transferred to GAT10. At this location, they are assigned the address GATE8 in PH4 and link on the chain GREGC for later release by a deplaning passenger transaction in the Deplaning Passenger Logic Section.

At GATE7, enplaning passenger transactions enter a TEST block to determine if well-wishers are included in the simulated passenger group. Transactions without well-wishers represent transfer to GATE3. Those transactions including a representation of well-wishers enter a SPLIT block assign the value is PB13 to PB5 and transfer to GATE3. The copy transaction simulates the well-wishers. The number of passengers in PB13 of this transaction is simulated from PB5 and PB13 is made equal to zero. A well-wisher routing function, WWG1F, is assigned to PB1. The pointer PB2 is reset to 1 and the transaction transfers to CTRLO to begin the routing process out of terminal area.

Passenger transactions performing the gate check-in operations proceed from GATE3 to GATE1 when they enter a QUEUE block. The total number of passengers to reach gate counters, represented by halfword savevalue GATXH, is incremented by PB13. The simulated waiting time in a gate queue is recorded in PH11. The transaction enters the PH5 storage, simulates the service time by an ADVANCE block then leaves the PH5 storage.

A GATE block directs transactions to GATE2 unless the flight transaction has placed the logic switch PH5 in a SET position. This setting operation is performed at the start of the simulated boarding time. Transactions transferred to GATE2 increment MH1(PH1,12) by PB13, then transfer to CTRLO for subsequent termination. Those transactions arriving at the GATE block after boarding time decrement the occupancy count at the point number and then transfer to CTRLO for termination.

Flight transactions for departing flights generated in the Deplaning Passenger Logic Section are transferred to GATE9 to simulate the boarding process. Each flight transaction is generated when the absolute clock time is one hour before the scheduled departure time. At GATE9, the transaction is held until absolute clock time equals the flight time minus a boarding interval, BDTXH. The GPSS storage number of the gate is assigned to PH5 and the PH5 logic switch is placed

in a set position, allowing passenger transactions executing the LEAVE block at GATE6 to proceed directly to CTRLO for termination.

The flight transaction is held at an ADVANCE block until the absolute clock equals flight time. The transaction then resets the PH5 logic switch and resets MH1(PH1,12) to zero, allowing this element to record the numbers of simulated passengers missing the flight. The flight transaction is then terminated.

13. Ground Transportation (Misc.)

This module is accessed by passenger and visitor transactions. Self-driver, deplaning passenger transactions are routed to GRTOO; enplaning passengers proceed to GRTOl. Greeter transactions simulating initial entry to the terminal area proceed to GRTO2. The greeter transaction designated to proceed from parking to curbside after matching respective passenger transactions at gate, bag claim, security or lobby, transfer to GRTO3. Well-wishers, separated from the passenger group at the gate or security, are routed to GRTOO.

Deplaning passenger transactions routed to GRTOO execute a HELPA call to FORTM. For this transaction type, the parking facility number assigned in GPSS to PBl4 is used to obtain other parameter values. The values assigned by FORTM are the point number of the parking facility in PH2, the storage number in PH5, the landside facility number in PH7, and the value 10 in PBll. The transaction is advanced by the amount TRUXH, the walking time from the last facility to the parking facility. Following this delay, the transaction transfers to CTRL8 for direct routing to the parking garage exit.

Enplaning passenger transactions entering the terminal area for parking are routed to GRTOl. At this program location, a HELPA call to FORTM is executed and returns with the assignments made to the same parameters as deplaning passenger transactions at GRTO.

Greeter transactions entering the terminal area for entrance to parking facilities are routed to GRTO2. At this block, and the three following blocks, the assignment to parameters and incrementing of counts are exactly the same as those of the enplaning passenger at the subsection starting at GRTO1.

Greeter transactions assigned to remove vehicles from the parking facility after passenger matching for proceeding to curbside are routed from gate, bagclaim, security or lobby to GRTO3. At this program location these transactions execute a HELPA call to FORTM. All parameter assignments are identical to those described for transactions entering GRTOO.

After return from FORTM, an ADVANCE block simulates the walking time from the last facility to the parking facility. The greeter transaction then simulates a vehicle and enters the PH5 queue, if necessary, at the parking lot exit. The service time at the parking facility payment booth is simulated. The parking lot inventory is decremented by 1 and the count of vehicles proceeding from parking lot to curbside is incremented by 1. The car is routed to the Deplaning Curb Logic Section by assigning DCAR1 to PH4 and transferring the transaction to CTRL1.

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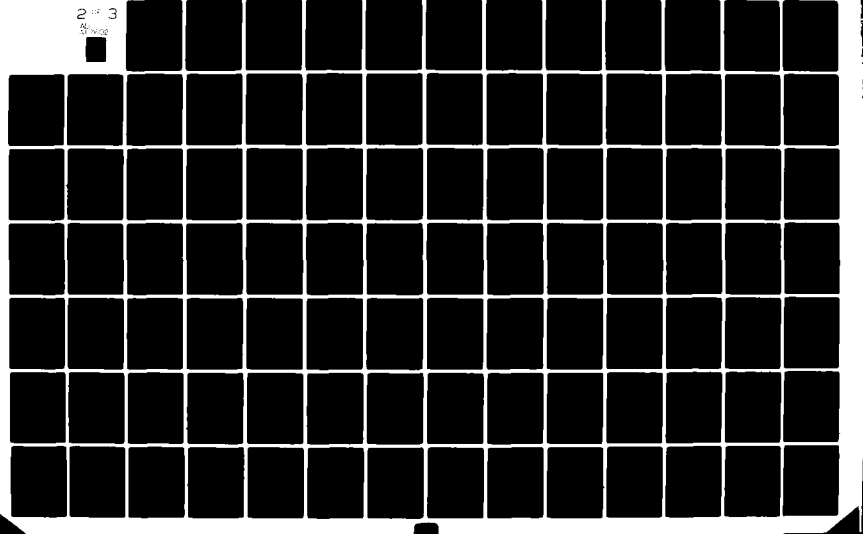

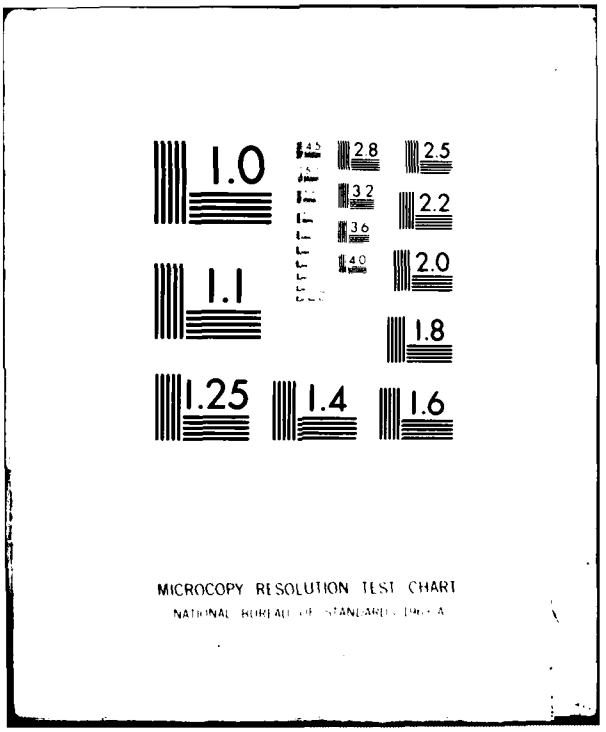
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14. Parking (Dept. Pax-Cars)

The deplaning passengers transactions previously routed to GRTOO are routed to PARKO, the first program location of this section. At this point, the PH5 queue is entered and the time of entrance is recorded. After departing the queue to enter service at the vehicle parking payment booth, the time spent queuing is recorded in PH11. The service time at the booth is simulated, then the vehicle inventory in the facility is decremented by 1 and the count of vehicles on the departing road is incremented by 1. The transaction is transferred to CTRLO.

15. Rent-A-Car

Deplaning passengers transactions selected for the car rental mode are transferred to RCARO to begin the simulation of processing performed at the car rental counter. Byte parameter 6 is tested for a value 3, a flag designating usage of this mode. Transactions not utilizing car rental are immediately transferred to CTRLO. Transactions proceeding to the next block select a car rental agency from the selection function RCA2F and assign the agency number to PB10. A HELPA call to FORTM determines the agency counter nearest to the facility immediately departed by the passenger transaction. FORTM returns with the point number of this counter in PH2, the storage number in PH5, the landside facility number in PH7 and the value 11 in PB11. The walking time from the last point to the car rental counter is simulated by TRVXH. The transaction enters a QUEUE block, and subsequently the PH5 storage. The waiting time is recorded in PH11 and the processing time is simulated by RCA1V. This transaction proceeds to CTRLO for further processing.

Deplaning passenger transactions using the car rental mode are assigned to RCAR9 by the ground transportation selection function CTR1F. These simulate passengers who have completed processing inside the terminal building and are proceeding to a location to obtain the vehicle. This logic assumes that the passenger picks up the vehicle at an agency

parking facility.

At RCAR9, a HELPA block is executed. FORTM determines the number of the agency facility and returns with the point number of this facility in PH2, the storage number of the facility in PH5, the landside facility number in PH7 and the value 10 in PB11. The travel time to this facility is advanced. The transaction then increments the count of vehicles on the departing road by 1 and transfers to CTRLO.

Enplaning passenger transactions arriving at the airport landside who are proceeding to return rental vehicles are routed to RCAR8. The HELPA call to FORTM returns with the same assignments as for transactions using RCAR9. The arriving roadway count, ARDXH, is incremented by 1, then the transaction is transferred to CTRLO.

16. Security

All transactions simulating entry to concourses and subsequent movement to gate facilities pass through the Security Module. At SECUO, a HELPA call is made to determine the security facility for the destination gate. FORTM returns with the security point number assigned to PH2, the storage number in PH5, the landside facility number in PH7 and the value three in PB12. The transactions are advanced by the travel time between security and the last facility used. A test comparing PB5, the number in the party, with PB13, the number of passengers in the party, determines if the transaction represents any simulated well-wishers. When PB5 equals PB13 there are no well-wishers, and the transaction is transferred to SECU3. When PB5 does not equal PB13 well-wishers are present, and the transaction continues to the next sequential statement. A statistical transfer is made, using halfword savevalue WWXGH. If the result of the statistical transfer requires separation of well-wishers and passengers at security, the transaction goes to the next sequential block. Otherwise the transaction is transferred to SECU3. At the next sequential block, the transaction is split once. The copy transaction, representing well-wishers, is transferred to the third sequential block. For the parent transaction, PB5, the number in the party, is made equal to PB13, the number of passengers in the group, thereby removing

well-wishers from the party count. The passenger transaction is then transferred to SECU3.

The well-wisher transaction removes the number of passengers in PB5 by subtracting the number in PB13 from it, then assigns the value zero to PB13. PB1 is assigned WWS1F, the well-wisher leaving from security process function. The process function pointing PB2 is reset to 1, and the well-wisher copy transaction is transferred to CTRLO.

At SECU3, the PH2 halfword savevalue, representing occupancy at the security point, is increased by PB5, the number in the party. At SECU1 the PH5 queue is entered with an entry count of PB5, then the transaction is marked to record waiting time. The PH5 storage representing security service is entered and the waiting time is added to PH11. At SECU2 the passenger transaction is advanced by V$SEC1V, the security check time.

The occupancy count at the point, which is kept in the halfword savevalue whose number is PH2, is decremented by PB5, the number in the party. The matrix savevalue, MH12(SECNN,1) is incremented by PB5. This matrix is the count of simulated passengers and visitors processed through the security facility. SECNN is the number of the security facility.

17. Concessions

A number of simulated transfer and transit passengers, selected by random draw in the Deplaning Passenger Logic, are sent to their section to spend part of the waiting time for their departing flight.

Concessions are located in the lobby and on the concourses, and the routing to either facility is also specified during the selection process. Transactions are routed to LOBCO for lobby concessions and to CONCO for concourse concessions. Program Logic for both facilities is identical.

At LOBCO or CONCO a HELPA FORTM call is made, with a flag set for lobby or concourse concession, respectively. The FORTM subprogram calculates the travel time to the concession and assigns the time spent at concession to PH5. The transaction is advanced by TRUXH, the travel time from the last facility. The savevalue whose number is the same as the point number of the concession is increased by PB5, the number in the party. The transaction is next advanced by PH5, the simulated time spent at the concession. The savevalue, which keeps a count of the congestion at their point, is decremented by PB5 to indicate the transaction has left the concession, and the transaction is then transferred to CTRLO.

Transfer Flights

This module establishes and maintains a table in MH5 containing the MH1 row number of simulated departing flights able to accept transfer passenger transactions. The variable TPAX of the input flight schedule specifies the initial number of transfer passenger transactions accepted by the flight. During the operation of the simulation, the number of transactions is decremented by the transfer passenger logic in FORTM. Flights are added to or deleted from the MH5 table as simulation time progresses. If an insufficient number of transfer passenger transactions were assigned to the flight prior to deletion from the transfer flight table, this module generates transactions to complete the assigned number of transfers.

A single transaction is split from the initial transaction generated by the Deplaning Passenger Logic Section and transferred to XFLTO. At XFLTO the domestic transfer process function, TDP1F, is assigned to PB1. Byte parameter 2, the process function pointer; is assigned a value 2 to place these transfer passengers at security; Byte parameters 5, the total number in this passenger groups; and 13, the number of passengers in the group, are assigned the value 1. A HELPA FORTM call is made, with a zero value D-operand used as a flag, to initialize the transfer flight table in MH5. At this initial pass, FORTM arranges the MH1 row numbers of simulated departing flights accepting transfer passenger transactions in MH5,

in chronological order. The simulated departure times of these flights must be between 30 minutes and 2 hours, or between the FORTRAN input limits DELETE and ADD respectively, after the simulation start time. FORTM returns with the MH1 row number of the first flight departing after the ADD or two hour time limit in PH1. If the last row of the flight table matrix was reached during this initialization process, the number of the next succeeding row of MH1 is assigned to PH1.

The next block tests MH1(PH1, 1) for a value less than zero. If the end of the flight table matrix was reached in FORTM, the MH1 (PH1,1) value is minus 1. When this occurs, the transaction proceeds to the next block to determine if any flight accepting transfers was located by FORTM with subsequent placement of the MH1 row numbers in MH5. The MH5 (1,1) element is tested for a zero value to determine if an MH1 row number is present. When MH5 (1,1) is zero, the transaction is terminated If MH5(1,1) is non-zero, the transaction transfers to XFLT3 to delete flight numbers from the transfer flight table as simulated time progresses.

When the returning value of PH1 does not indicate that the last row of MH1 was reached, the transfer flight transaction transfers to a SPLIT block. The parent transaction proceeds to the next succeeding block to attempt to add the PH1 value to the MH5 flight table. The copy transaction transfers to

XFLT3 to attempt to delete the MH5(1,1) element.

When adding the current PH1 and subsequent MH1 row number values to MH5, an initial test is made of MH1 (PH1,11) for a value greater than zero to determine if simulated transfer passengers were input for the flight. The transaction proceeds to the next block, at location XFLT1, when MH1(PH1,11) is greater than zero, otherwise it is transferred to XFLT2. An ADVANCE block at XFLT1 delays movement of the transaction until absolute clock time equals flight time minus the ADD time. Following this delay, HELPA FORTM call is executed with a flag value of 2 to implement addition to PH1 to the MH5 table. Upon return from FORTM, PH1 is incremented by 1 at XFLT2 and the test of MH1(PH1,1) for the end of the table is again performed. If the test indicates the end of the table, the transaction is terminated, otherwise it is transferred to XFLT5. At this location, the Boolean variable XFL1B is tested to determine if the MH1 row number represents a departing flight and has been assigned to accept transfer passenger transactions. When XFL1B is true the transaction proceeds to the next block for transfer back to XFLT1. If it is false, the transaction transfers immediately to XFLT2.

The deletion process begins at program location XFLT3. The MH5(1,1) element is tested for a value greater than zero. If transfer flights are available, as indicated by a non-zero value of MH5(1,1) the value of this element is assigned to PH1,

otherwise the transaction is transferred to XFLT9. After the above assignment to PH1 is performed, an ADVANCE block at XFLT7 delays the transaction until the absolute clock time equals flight time minus DELETE time. The gate number of the flight is assigned from MH1(PH1,9) to PH5 and flight type from MH1(PH1,7) to PB3. A HELPA call to FORTM with a flag value 3 is executed to determine the point number of the ticket counter corresponding to the airline number in MH1(PH1,3) of the flight. Transactions are then generated to create remaining transfer passenger assignments if the flight was not filled by the Deplaning Passenger Logic Section. The number of transactions required to fill the flight is contained in MH1(PH1,11). A SPLIT block creates these transfer passenger transactions and transfers them to XFLT8 immediately before deletion of the row number from MH5.

A HELPA call with a flag value of 1, deletes the MH1 row number contained in PH1 from MH5. Upon return from FORTM, the PH1 value is incremented by one at XFLT4. The next block, located at XFLT9, tests MH1(PH1,1) for a negative value to determine if the end of the flight schedule matrix has been reached. The negative value terminates the transaction, otherwise the transaction transfers to XFLT6.

At XFLT6 the Boolean variable XFL1B is again tested. If XFL1B is true the transaction proceeds to the next block for transfers to XFLT7. If false, the transaction transfers to XFLT4 to increment PH1.

Transfer passenger transactions routed to XFLT8 are advanced a random delay time between 0 and 15 minutes before proceeding to the next block. After this delay, they transfer to CTRLO to proceed from ticket counter point to security.

Change Card Reader

A single transaction, used to perform storage capacity changes is generated, with a priority level of 120. At CHGOO, this transaction performs a HELPA call to FORTM. The initial call by this transaction reads the first change card and assigns the time difference between the current clock and time of the first service change to halfword savevalue CHGXF.

The transaction tests the halfword savevalue NSCXH, the number of storage changes designated by the CHANGE data card, for a value greater than zero. For the initial pass, NSCXH is zero, and the transaction transfers to an ADVANCE block. When the clock time equals the change time, the transaction proceeds to the next block and tests NSCXH for zero. Again, at the initial pass NSCXH is zero and the transaction transfers to CHGOO.

The second and subsequent HELPA calls to FORTM at CHGOO assign GPSS storage numbers to MH7(I+30,1). Subscript I refers to the Ith storage designated for a capacity change on the CHANGE input data card. The total number of storage to be changed is assigned to NSCXH. This information is transferred from the data card read on the previous HELPA call. Thus, the data from the initial FORTM call is assigned on the second call. FORTM then reads the next input CHANGE card, assigns the time interval between the current time

and the next change to CHGXF and returns to the GPSS main program.

The TEST block examines NSCXH for a value greater than zero and the transaction proceeds to the next block for this condition. PH1 is assigned a value of minus 1. The transaction is then split NSCXH times and each copy transaction is sent to block CHG01. Sequence numbers of these transactions are assigned to PH1. When the transaction is split, the value of PH1 is incremented by 1, producing the value zero in PH1 of the parent transaction and sequence numbers beginning with 1 in PH1 of the copy transactions. These sequence numbers will be used to address elements in MH7.

The parent transaction proceeds to the next block where it is delayed by the value CHGXF. This block is also the destination of the transaction if NSCXH is zero before the splitting process. After leaving the ADVANCE block, a TEST block holds the transaction until NSCXH is decremented to zero by the copy transactions. Thus, if NSCXH is greater than zero, matrix MH7 is still used by transactions generated by the previous change, and the parent transaction is held at the TEST block until MH7 is available. The parent transaction then returns to CHGOO to process the next change.

At CHG01, the destination of the sequenced copy transactions, PH2 is assigned the value in PH1. The halfword savevalue SAVXH is assigned the value of the sequence number

in PH1 in order to save the pointer to the MH7 row. Halfword parameter 2 has the value 30 added to its current contents. The number of the storage to be changed and the storage capacity information are next assigned to PH1 and PH2 respectively, from MH7(PH1,1) and MH7(PH1+30,1). Using the halfword savevalue SAVXH, the pointer to the storage number in MH7, the MH7(SAVXH,1) element, is reset to zero. The capacity information element at MH7(SAVXH+30,1) is also assigned the value zero. Halfword savevalue NSCXH is next decremented by one to indicate that the number of transactions using MH7 has decreased by 1. When the new capacity of the PH1 storage equals or exceeds the current contents, PH2 contains the value zero. PH2 is tested for zero and the transaction continues to the next block for this condition. Because the remaining capacity of the PH1 storage has been reset in FORTM, to the difference between the new capacity and current contents, the storage may change status from full to not full. Transactions waiting to enter a storage which was full before the FORTM reset are on a delay chain not scanned by GPSS until a transaction in that storage executes a LEAVE block. In order to activate these waiting transactions immediately, the transaction performing this change will attempt to enter and leave the storage. A GATE SNF block allows the transaction to enter the storage if it is not full. It will then execute a LEAVE block for the PH1

storage and be terminated. If the storage is full, transactions will undergo the normal wait, and the changing transaction will be terminated immediately. If the storage is entered, FORTM adjusts the count of transactions to discount the changing transaction. When PH2 is not zero, the new storage capacity is below the current contents and must be lowered. The TEST block transfers the transaction to CHGO2.

At the block labeled CHGO2, the location that the change transaction is transferred to if the storage capacity is to be lowered below the current contents, the change transaction is held at a GATE SNF block until another transaction has left the PH1 storage, and therefore the storage is no longer full. After passing the GATE block, a HELPA FORTM, call is made to lower the storage capacity to the current contents. If the new capacity specified on the data card equals the current contents, the FORTRAN program sets a halfword savevalue SLCXH, used as a flag, to 1. The value one is SLCXH is next tested for in the GPSS program. If SLCXH is 1 the storage lowering is complete. The flag SLCXH will be reset to zero and the transaction is terminated. If the current contents exceed the new capacity, the number of available units of storage is set to zero and SLCXH remains zero. Because the flag SLCXH is not set to 1, more lowering of the storage capacity is needed. The change

transaction is transferred back to CHGO2 to wait until another transaction leaves the storage.

Timer Section

A single transaction with priority level 127 and one halfword parameter is generated to initiate and, subsequently, to terminate the activity of the Main Program. An advance of XH$CLKXH is done to define CLKXH as a halfword savevalue. XH$CLKXH has the value zero at simulation start, and consequently no actual advance of the simulation time is done. The clock increment savevalue, INCXH, is set to 60 to represent 60 seconds of simulation time. A HELPC call to subroutine CLINK initiates linking of this program and the supporting FORTRAN subroutine FORTM. The next block is a HELPA call to FORTM which completes the linking. After execution of these statements, any HELPA call to FORTM appearing in the Main Program will operate with two way communication between the two programs. FORTM also reads the input data and places the information in GPSS main program matrices. Any errors detected by FORTM during the initalization and input phase are indicated by setting PH1 of this transaction to a value greater than zero. Upon return from FORTM, PH1 is tested for a value greater than zero. For this condition, the transaction splits repeatedly and goes to a TERMINATE PH1 block in order to guarantee termination.

When PH1 is zero, the transaction is transferred to a SPLIT block. The parent transaction is held at a GATE LS block to provide a method of terminating activity when errors accumulated by FORTM exceed a specified number. If this

should occur, logic switch JOBLS is placed in a set condition and this transaction proceeds to a SPLIT block at STOP1. Repeated copies activate a TERMINATE 100 block to force simulation termination.

The copy generated before the GATE LS block is again split. This parent is advanced by the variable V$INC1V, which is one less than XH$INCXH, the clock increment time. This compensates for the GPSS simulation starting time which is 1 instead of zero. A HELPA call to FORTM is performed to update the clock time in the FORTRAN subprogram by the amount INCXH. The clock time, CLKXH, is kept in a 24-hour format showing hours and minutes. After an advance by the clock increment XH$INCXH, the transaction is transferred back to the HELPA FORTM, 21 block to again update CLKXH. This procedure of advancing by XH$INCXH and then making a HELPA FORTM, 21 call is continued until the simulation ends.

Halfword PH1 of the copy transaction is assigned the value of 127 which will be used as a loop counter. The function RANDF is used to place a random number between zero and 1 in the matrix element ML1(1,PH1). PH1 is then decremented by 1 by the LOOP block and the next location in the ML1 matrix is filled with a random number. This process is continued until all 127 locations in ML1 are filled with random numbers.

The priority of this timer transaction is set to 126, which is 1 less than the priority of the transaction

updating the clock. This will allow the clock to be updated at the last time increment before the run is terminated. The timer transaction is then advanced to the end of run time, and an HELPA FORTM,20 call provides the printing of FORTRAN formatted summary reports. A selected list of the regular GPSS output is also printed out. A TERMINATE block with an A-operand of 1 causes the simulation run to be terminated.

Another single transaction is generated 11,700 seconds after the simulation has started. This transaction entry block is HELPA FORTM,22 to print-out flow and queue length information. The transaction is then advanced by 300 seconds and transfers back to the HELPA FORTM,22 block. This activity is continued for the rest of the simulation so that information is printed out every five minutes of simulated time.

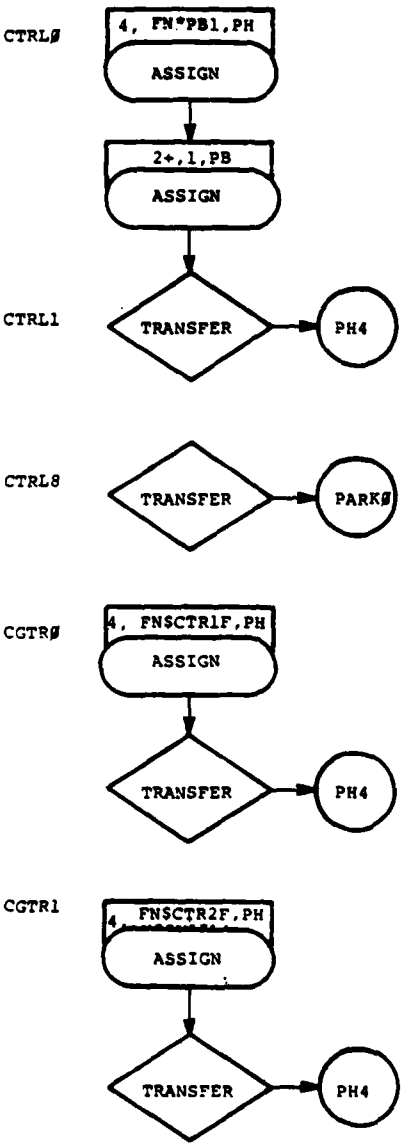
Another GENERATE block generates one transaction 3 hours and 25 minutes after the start of the simulation. This transaction then encounters a TERMINATE 1 block and stops the simulation. This procedure is used in conjunction with the RESET command in order to clear out the simulation statistics accumulated during the start up time. If this feature is not wanted then both the GENERATE block and the RESET block should be commented out.

The final GENERATE block produces a single transaction which increments the value of byte savevalue PXTBN by 1. PXTBH will be used as the number of the table providing hourly frequency distributions of simulated landside waiting time. The time is advanced one hour by an ADVANCE block, and the transaction is transferred back to the block that increments byte savevalue PXTBN by 1. This procedure is continued until the end of the simulation.

APPENDIX A-2

FLOW CHARTS

CONTROL



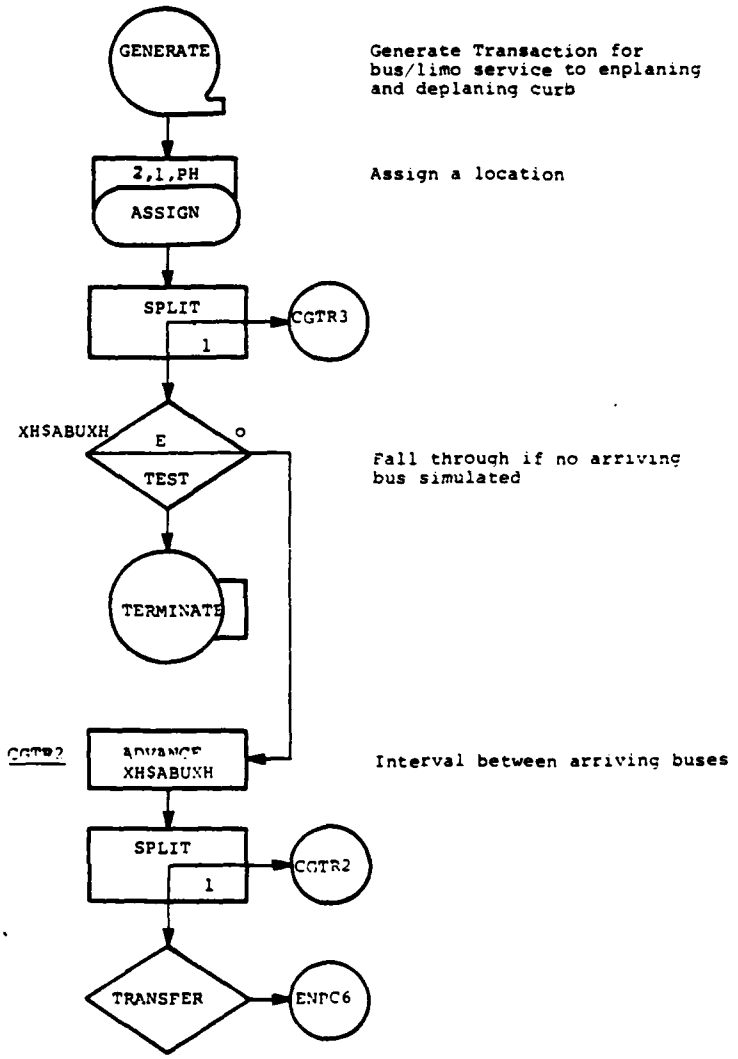
Address of next operation

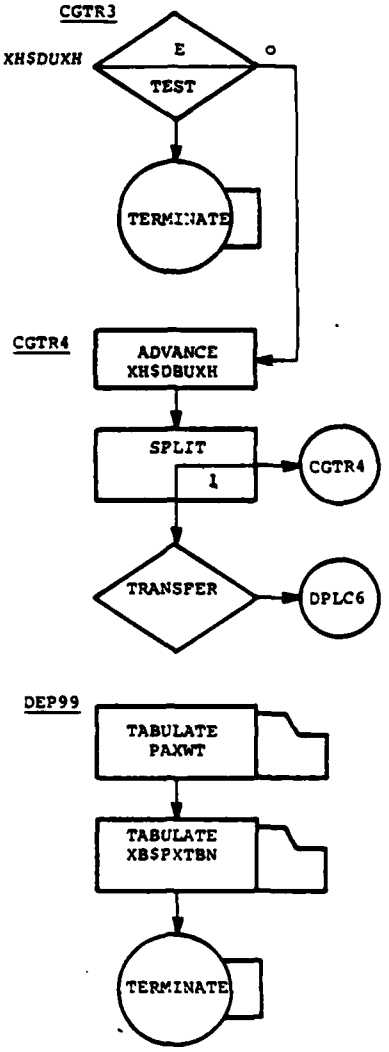
Increment process function pointer

Handles routing of deplaning pax to parking lots

Route deplaning pax by ground transportation mode

Route enplaning pax by ground transportation mode

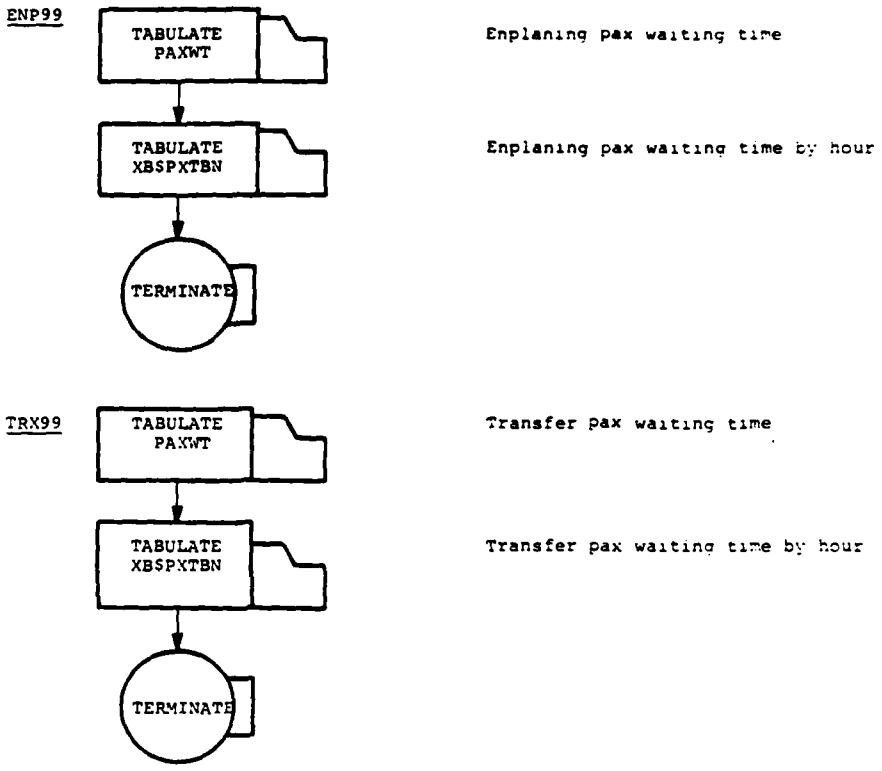

GENERATE
Generate Transaction for bus/limo service to enplaning and deplaning curb
2,1,PH
ASSIGN
Assign a location
SPLIT
1
CGTR3
XH$ABUXH
E
O
TEST
Fall through if no arriving bus simulated
TERMINATE
CGTR2
ADVANCE
XH$ABUXH
Interval between arriving buses
SPLIT
1
CGTR2
TRANSFER
ENPC6



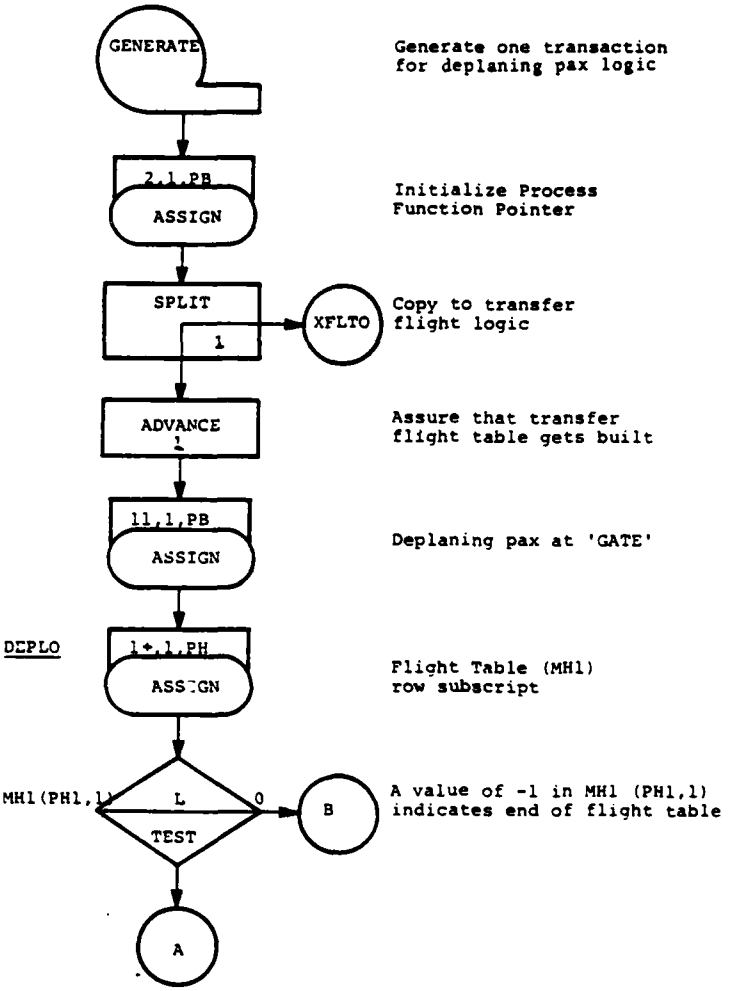
Fall through if no deplaning bus simulated

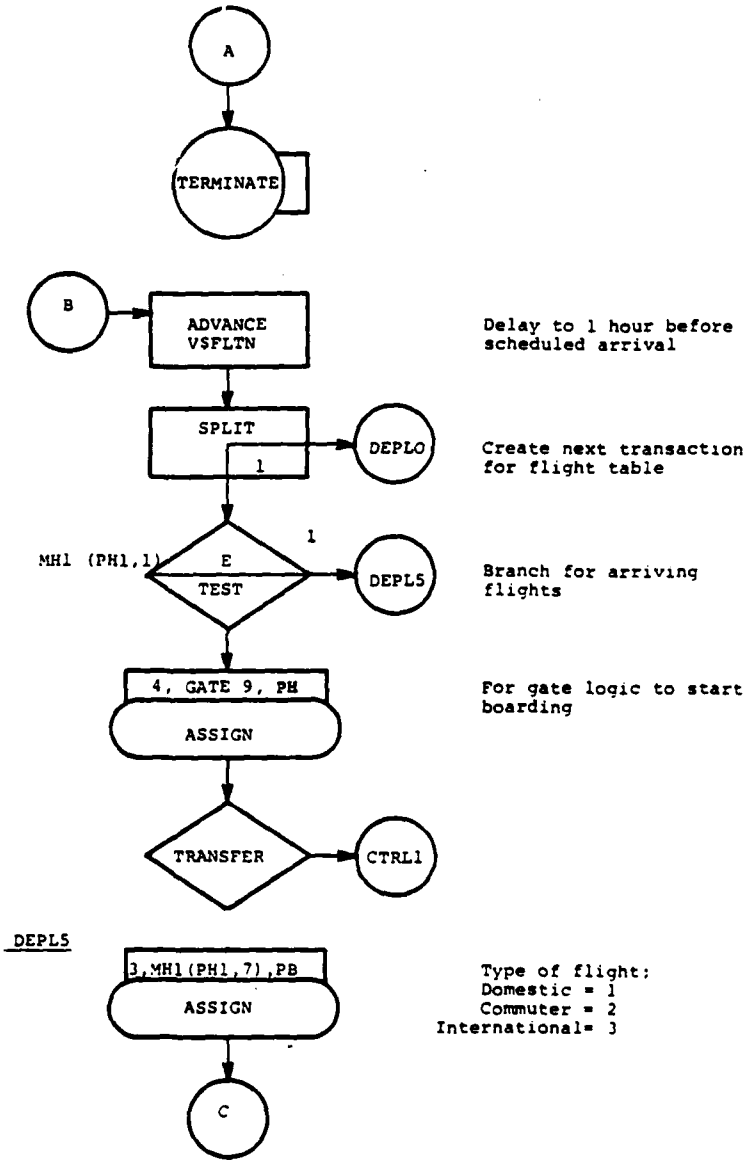
Interval between departing buses

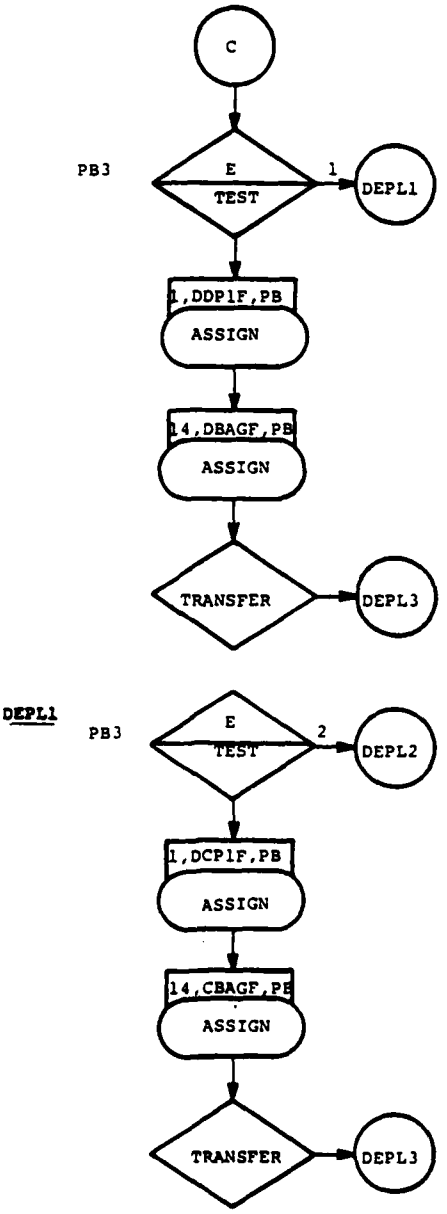
Deplaning pax waiting time


ENP99
TABULATE
PAXWT
Enplaning pax waiting time
TABULATE
XBSPXTBN
Enplaning pax waiting time by hour
TERMINATE
TRX99
TABULATE
PAXWT
Transfer pax waiting time
TABULATE
XBSPXTBN
Transfer pax waiting time by hour
TERMINATE

DEPLANING PASSENGER LOGIC




A
TERMINATE
B
ADVANCE
V$FLTN
Delay to 1 hour before scheduled arrival
SPLIT
1
DEPLO
Create next transaction for flight table
MH1 (PH1,1)
E
TEST
1
DEPL5
Branch for arriving flights
4, GATE 9, PH
ASSIGN
For gate logic to start boarding
TRANSFER
CTRL1
DEPL5
3,MH1(PH1,7),PB
ASSIGN
Type of flight:
Domestic = 1
Commuter = 2
International= 3
C



Tests for domestic flight

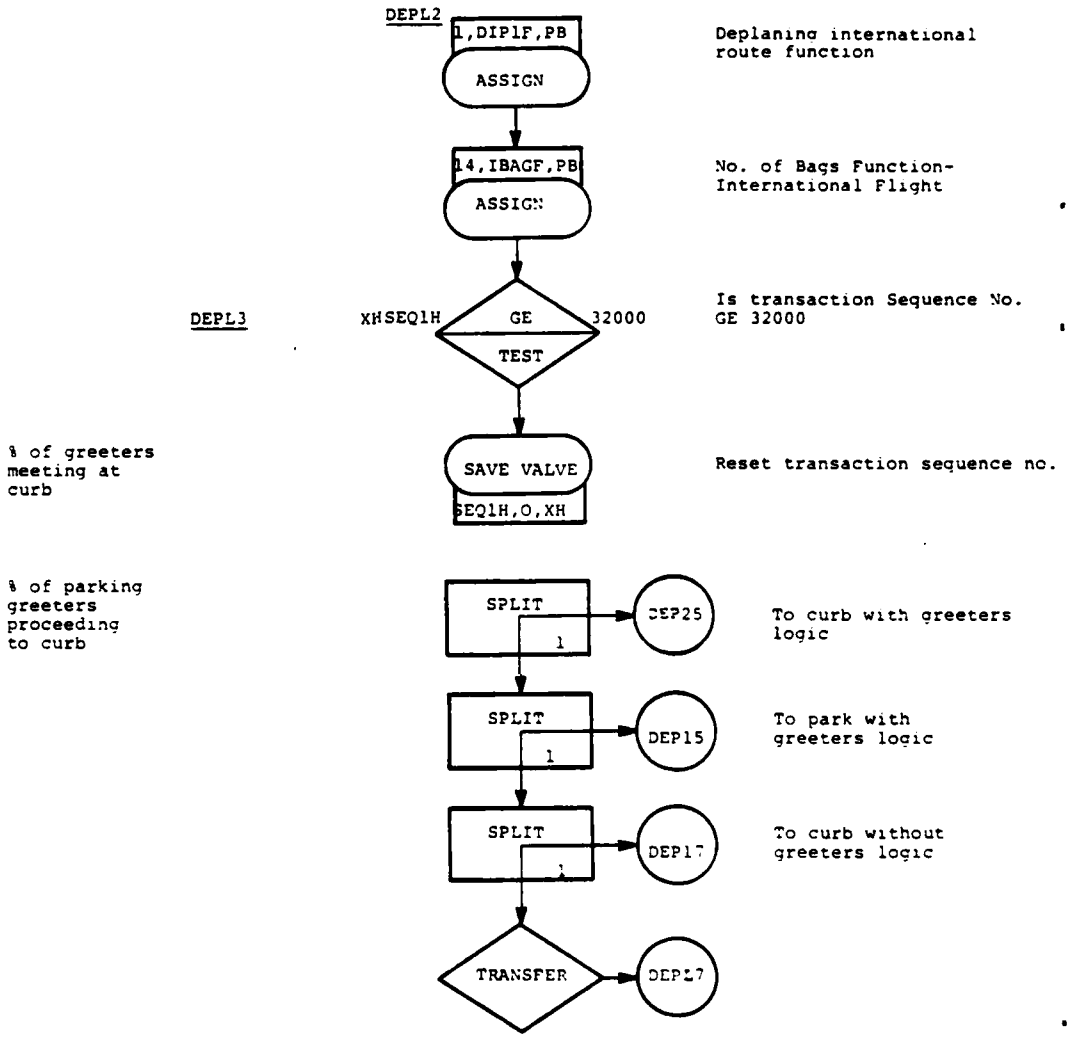
Deplaning domestic route function

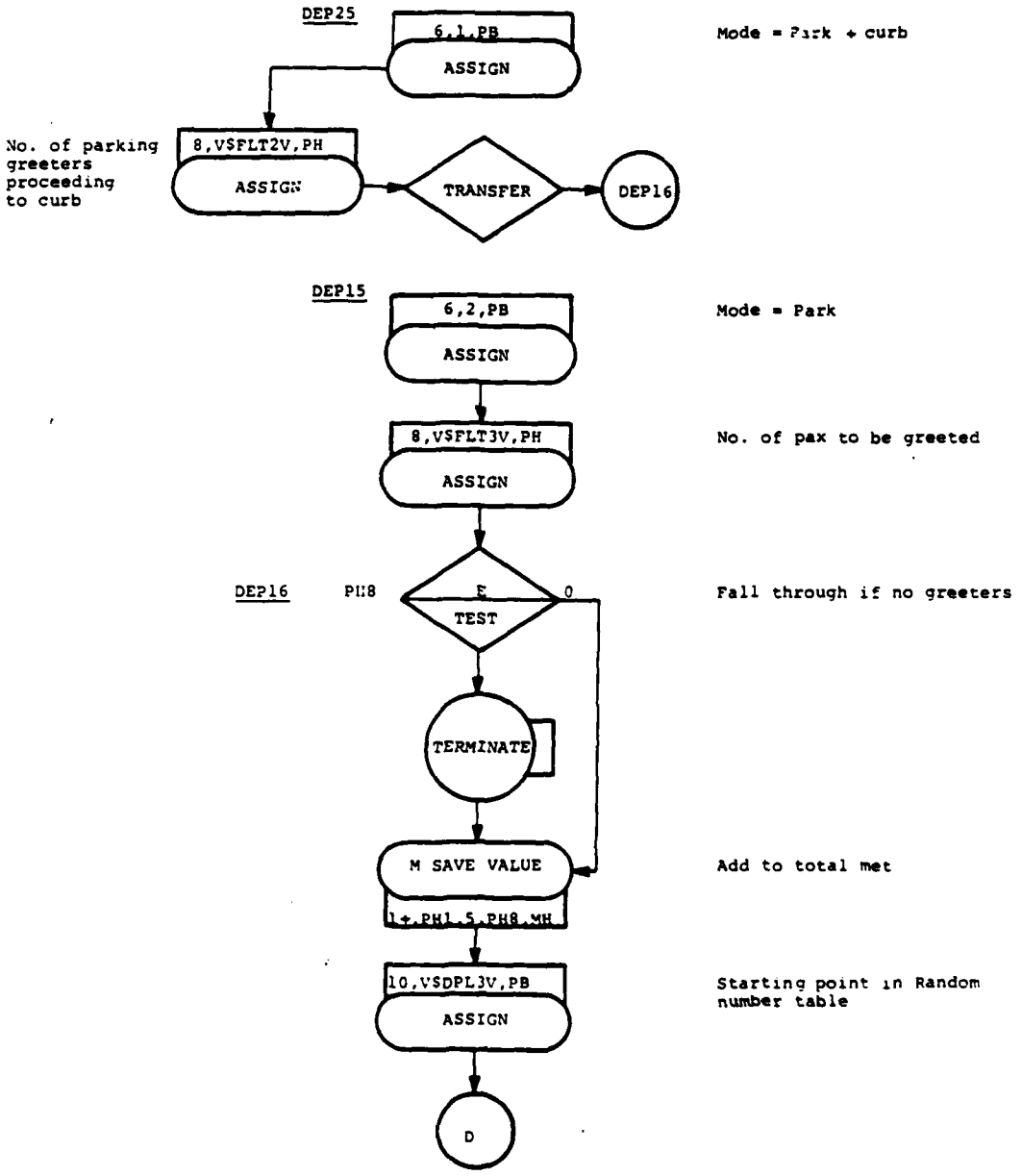
No. of BAGS function-Domestic flight

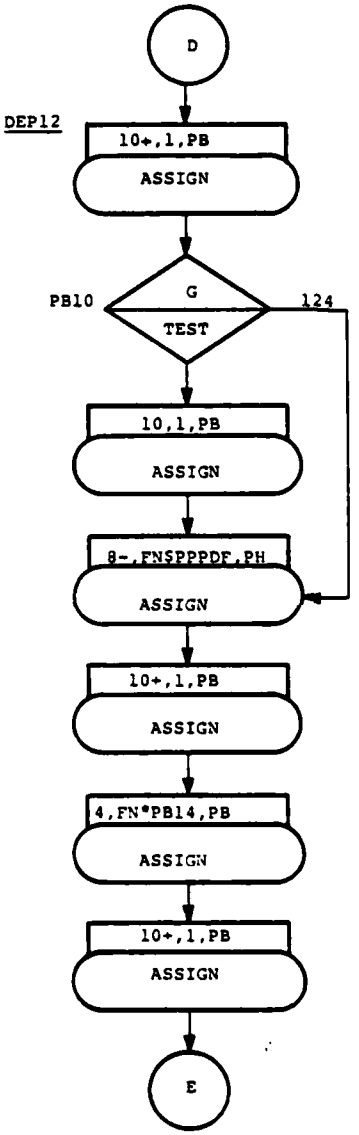
Test for commuter flight

Deplaning commuter route function

No. of Bags Function-Commuter flight


DEPL2
1,DIP1F,PB
ASSIGN
Deplaning international route function
14,IBAGF,PB
ASSIGN
No. of Bags Function-International Flight
DEPL3
XH,SEQ1H
GE
32000
TEST
Is transaction Sequence No. GE 32000
SAVE VALVE
SEQ1H,O,XH
Reset transaction sequence no.
% of greeters meeting at curb
% of parking greeters proceeding to curb
SPLIT
1
DEP25
To curb with greeters logic
SPLIT
1
DEP15
To park with greeters logic
SPLIT
1
DEP17
To curb without greeters logic
TRANSFER
DEPL7


DEP25
6,1,PB
ASSIGN
Mode = Park + curb
No. of parking greeters proceeding to curb
8,VSFLT2V,PH
ASSIGN
TRANSFER
DEP16
DEP15
6,2,PB
ASSIGN
Mode = Park
8,VSFLT3V,PH
ASSIGN
No. of pax to be greeted
DEP16
PH8
E
0
TEST
Fall through if no greeters
TERMINATE
M SAVE VALUE
1+,PH1,5,PH8,MH
Add to total met
10,VSDPL3V,PB
ASSIGN
Starting point in Random number table
D



Increment random number table pointer

Is pointer at end of table

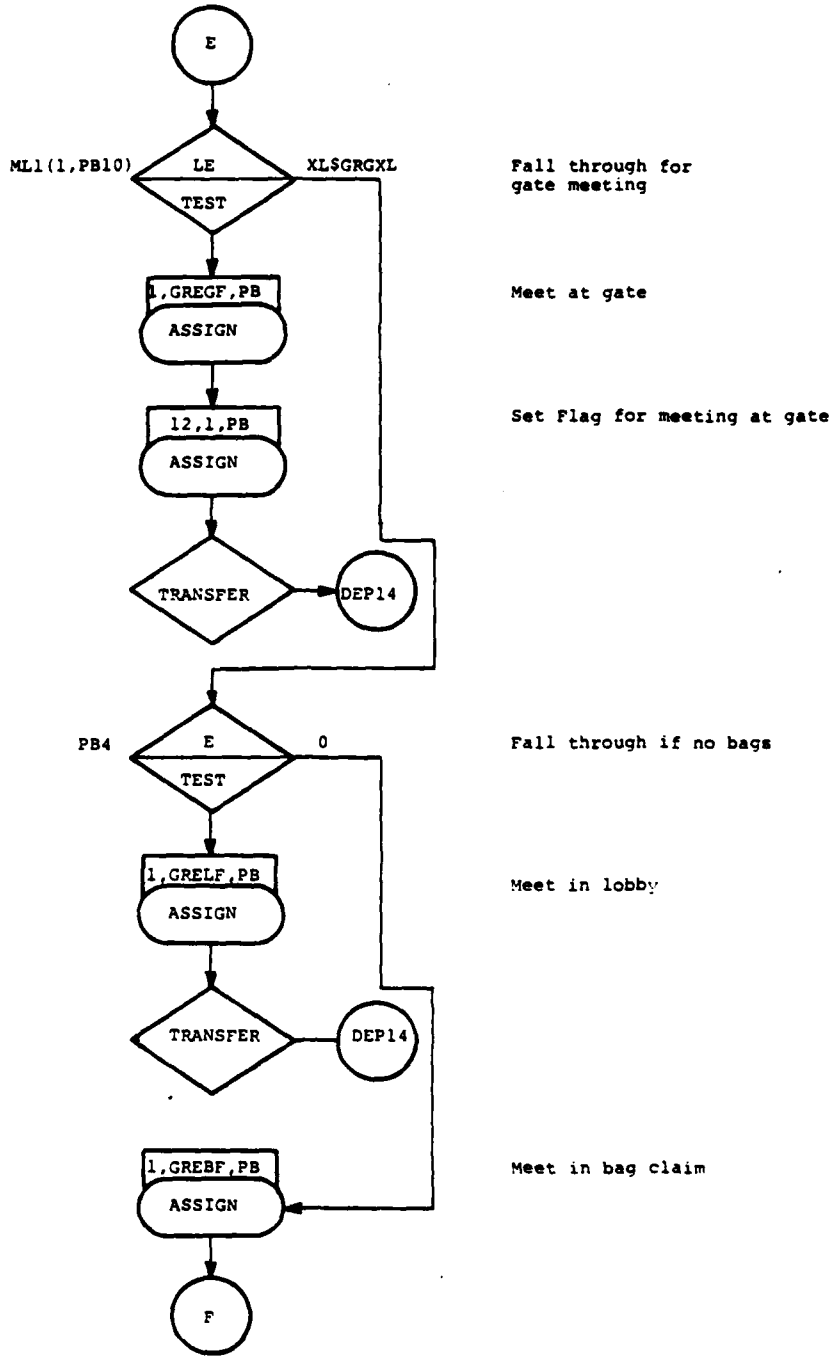
Reset pointer to one

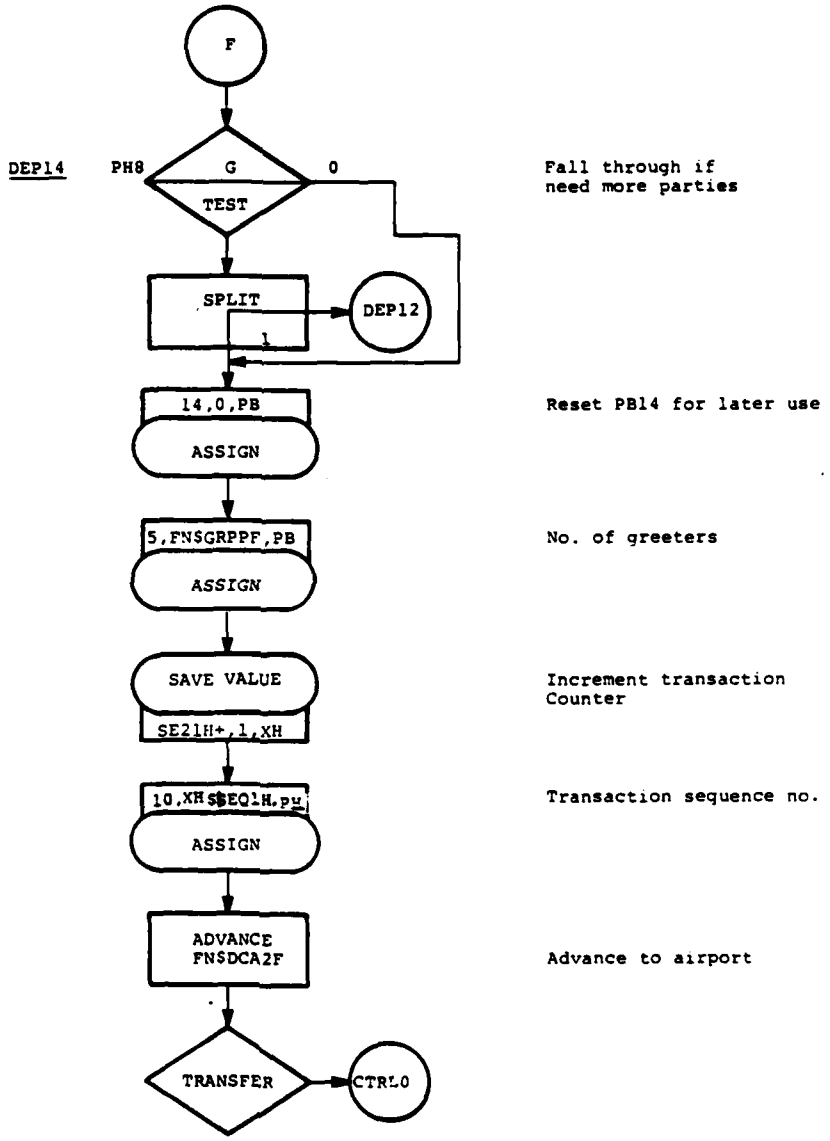
Subtract no. of pax from total

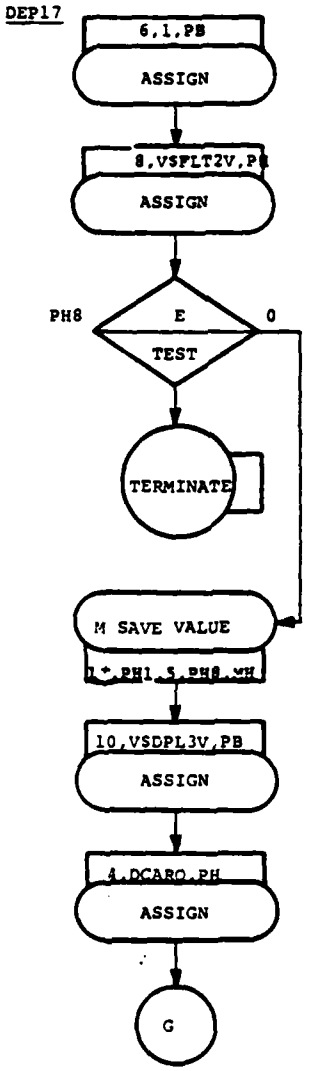
Increment pointer

Compute no. of bags

Increment pointer


E
ML1(1,PB10)
LE
TEST
XL$GRGXL
Fall through for gate meeting
1,GREGF,PB
ASSIGN
Meet at gate
12,1,PB
ASSIGN
Set Flag for meeting at gate
TRANSFER
DEP14
PB4
E
TEST
0
Fall through if no bags
1,GRELF,PB
ASSIGN
Meet in lobby
TRANSFER
DEP14
1,GREBF,PB
ASSIGN
Meet in bag claim
F


F
DEP14
PH8
G
TEST
0
Fall through if need more parties
SPLIT
1
DEP12
14,0,PB
ASSIGN
Reset PB14 for later use
5,FN$GRPPF,PB
ASSIGN
No. of greeters
SAVE VALUE
SE21H+,1,XH
Increment transaction Counter
10,XH$EQ1H,pu
ASSIGN
Transaction sequence no.
ADVANCE
FN$DCA2F
Advance to airport
TRANSFER
CTRL0



Mode = Curb

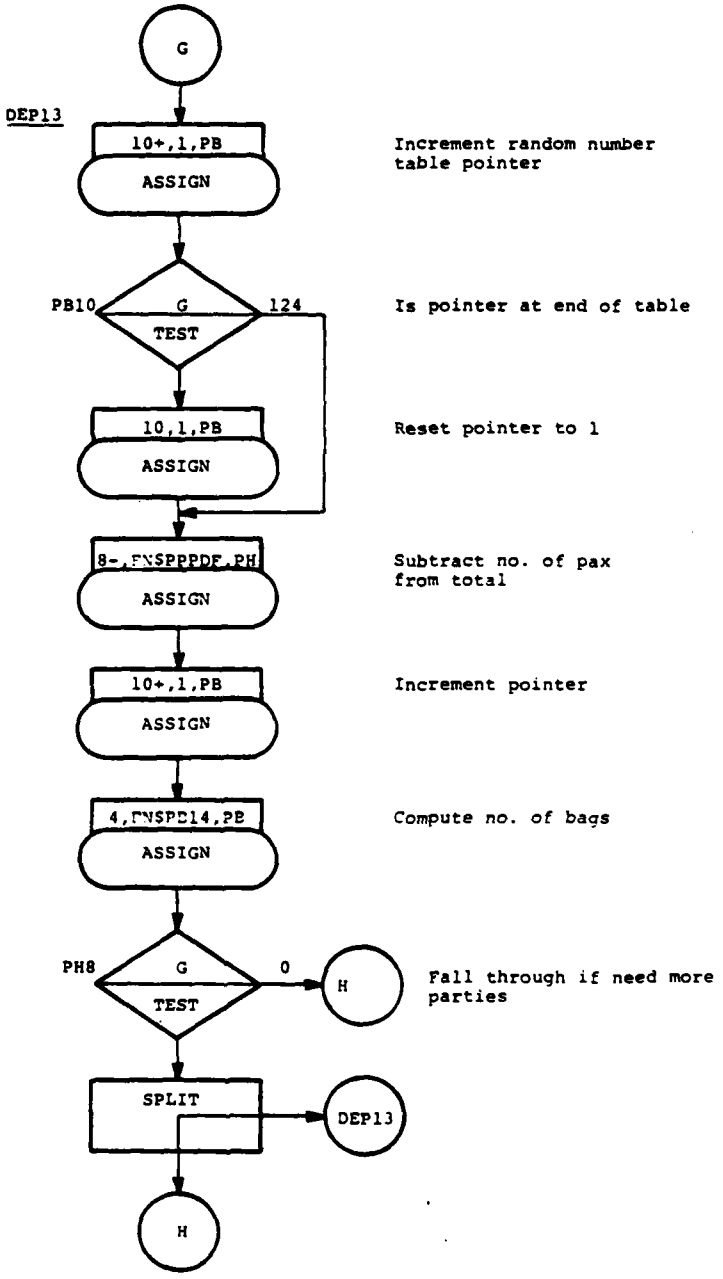
No. of pax to be met

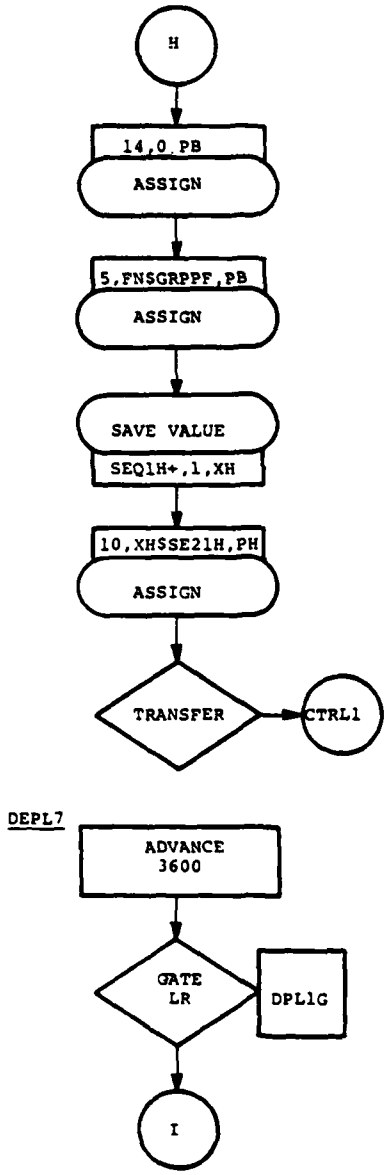
Fall through if none

Add to total met

Starting point in random number table

Will go to curb


G
DEP13
10+,1,PB
ASSIGN
Increment random number table pointer
PB10
G
TEST
124
Is pointer at end of table
10,1,PB
ASSIGN
Reset pointer to 1
8-,FNSPPPDF,PH
ASSIGN
Subtract no. of pax from total
10+,1,PB
ASSIGN
Increment pointer
4,FNSPD14,PB
ASSIGN
Compute no. of bags
PH8
G
TEST
0
H
Fall through if need more parties
SPLIT
DEP13
H



Reset PB14 for later use

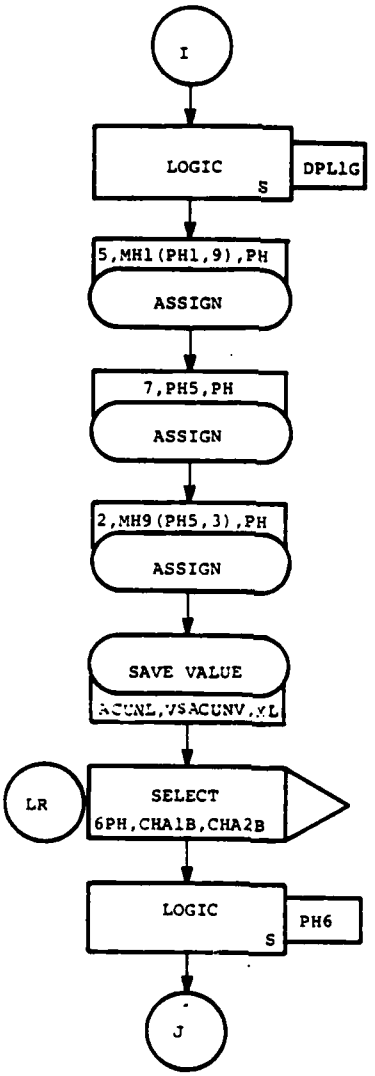
Greeters per party;
not used unless recirculating
and parking

Increment transaction
Counter

Transaction sequence no.

Advance deplaning pax to
time of arrival

Guard 'BAGS' from the
simultaneous arrival
of aircraft



set switch that one flight is being processed

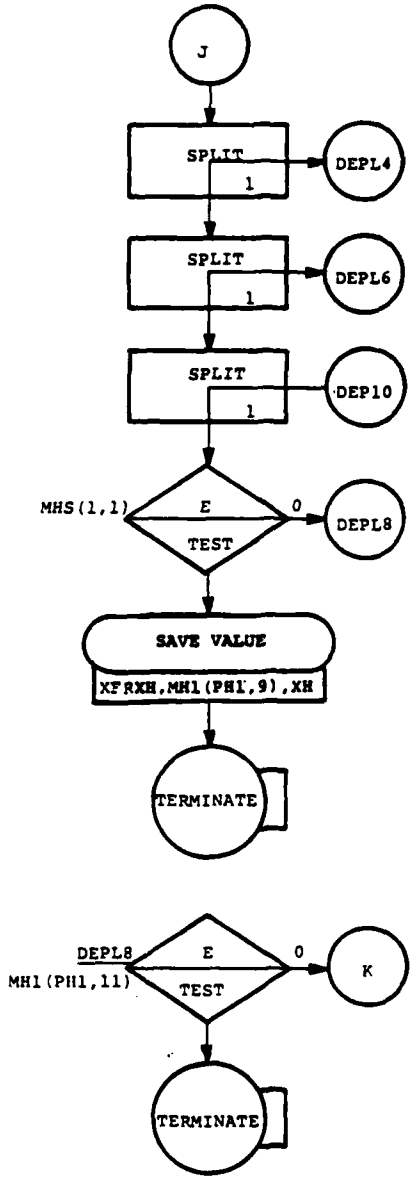
Gate number

Last MH9 row

Point no. of gate

Maximum pax unloading time

Pick free bag claim chain and switch



Copy to terminating pax

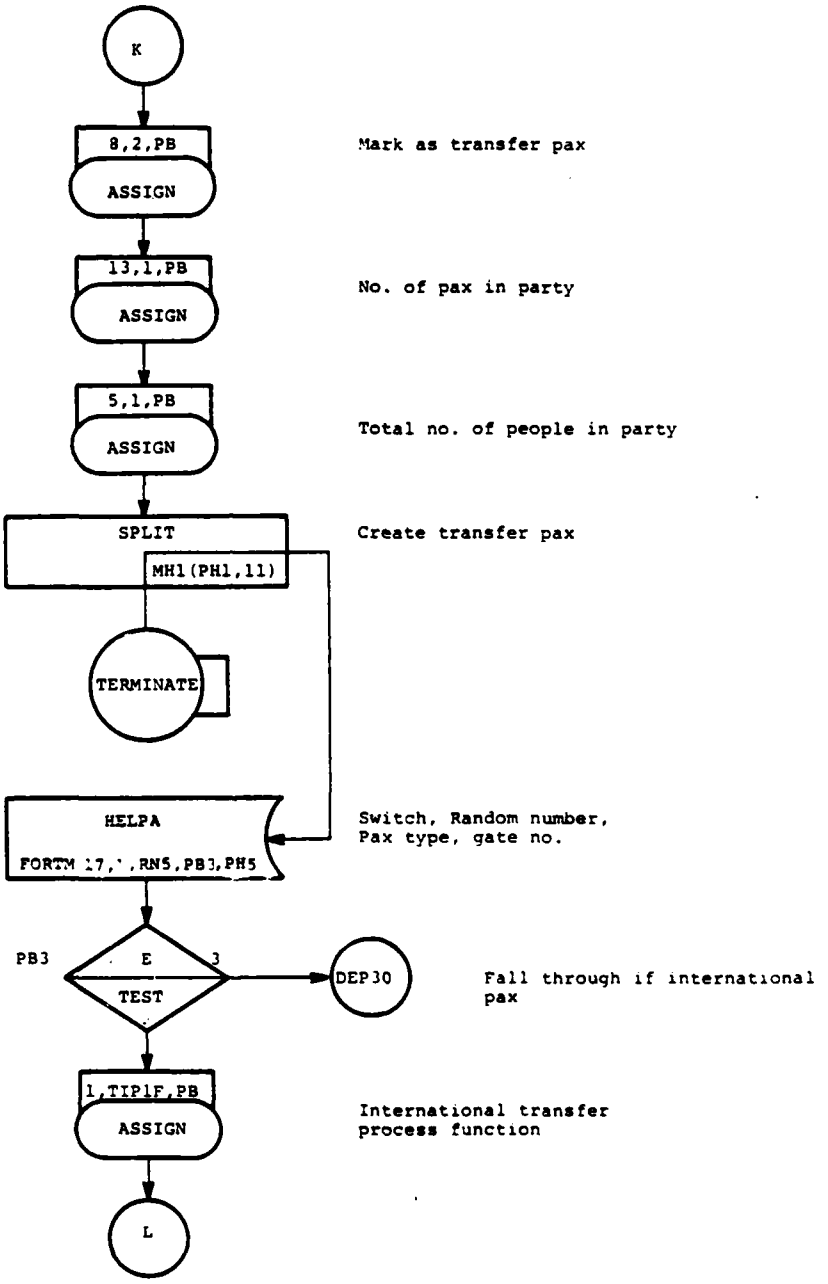
Copy to transit pax

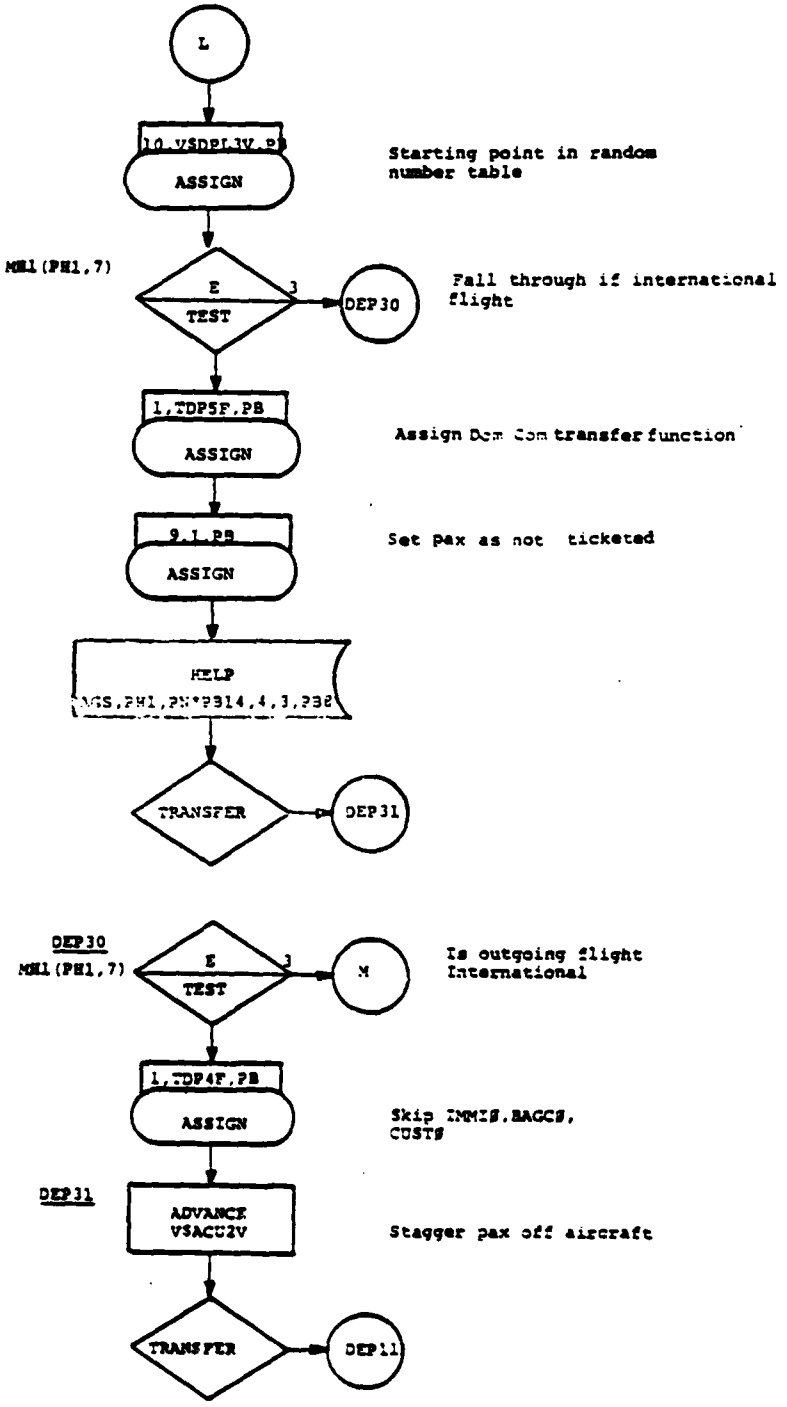
Copy to transfer out-of-system

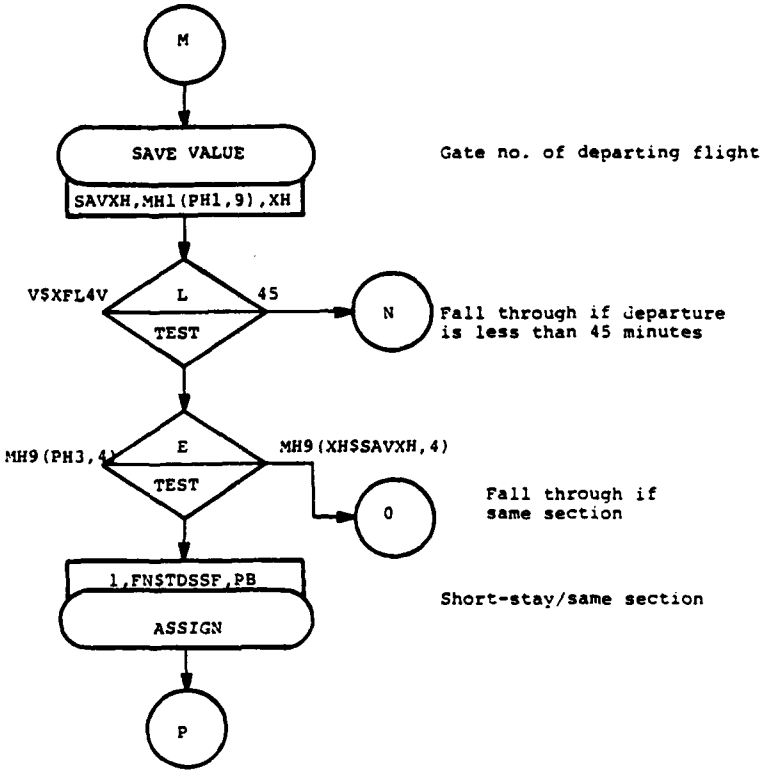
Fall through if no departing flights in transfer table

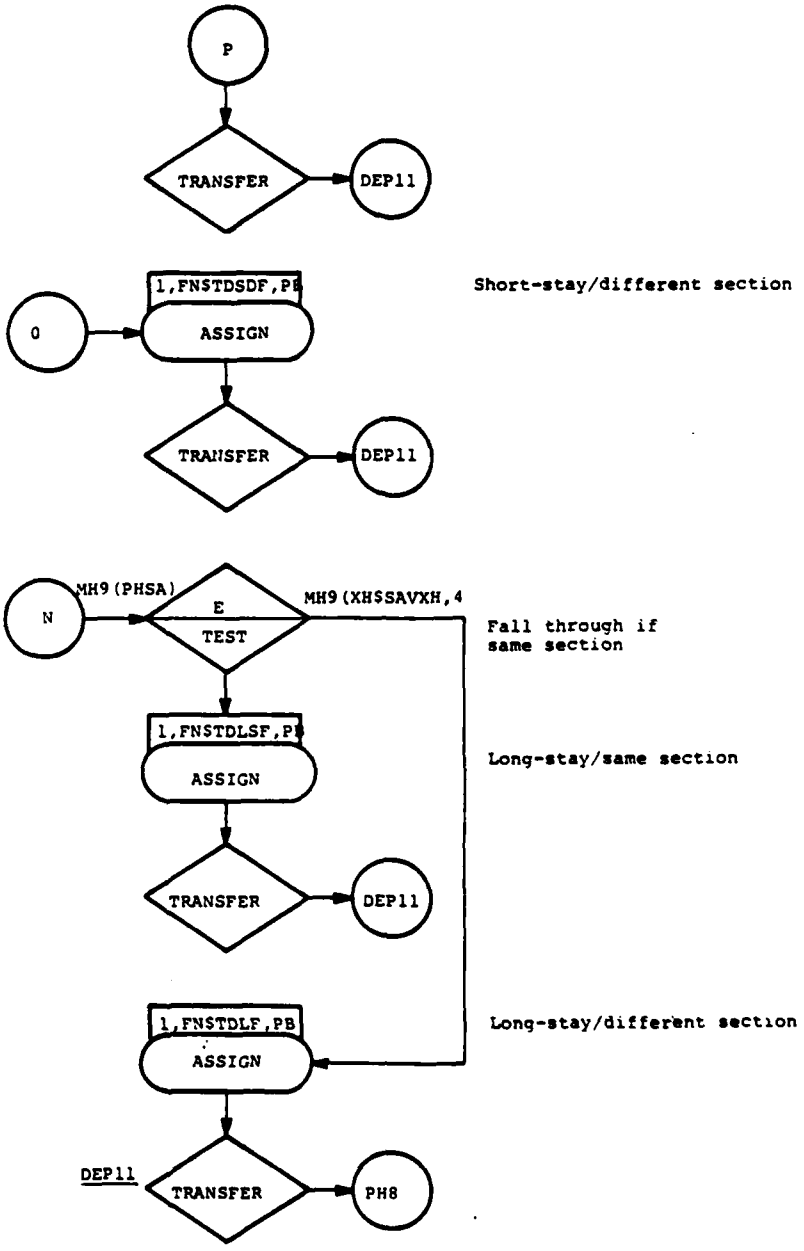
Add transfer pax to holding save value

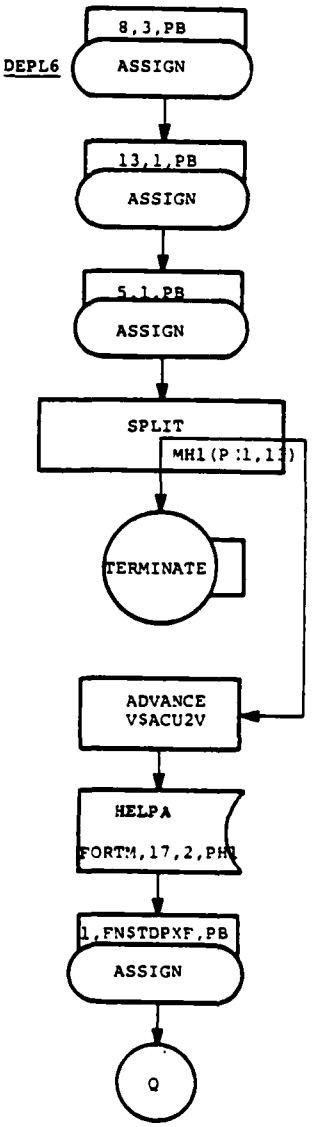
Fall through if no transfer pax


K
8,2,PB
ASSIGN
Mark as transfer pax
13,1,PB
ASSIGN
No. of pax in party
5,1,PB
ASSIGN
Total no. of people in party
SPLIT
MH1(PH1,11)
Create transfer pax
TERMINATE
HELPA
FORTM 17,',RN5,PB3,PH5
Switch, Random number,
Pax type, gate no.
PB3
E
3
TEST
DEP30
Fall through if international
pax
1,TIP1F,PB
ASSIGN
International transfer
process function
L


L
10,VSDPL3V,PB
ASSIGN
Starting point in random number table
MB1(PB1,7)
E
TEST
3
DEP30
Fall through if international flight
1,TDP5F,PB
ASSIGN
Assign Dom Com transfer function
9.1,PB
ASSIGN
Set pax as not ticketed
HELP
VGS,PB1,PB*PB14,4,3,PB8
TRANSFER
DEP31
DEP30
MB1(PB1,7)
E
TEST
3
M
Is outgoing flight International
1,TDP4F,PB
ASSIGN
Skip IMMIG,BAGGG, CUSTG
DEP31
ADVANCE
VSACU2V
Stagger pax off aircraft
TRANSFER
DEP11


M
SAVE VALUE
SAVXH,MH1(PH1,9),XH
Gate no. of departing flight
V$XFL4V
L
TEST
45
N
Fall through if departure is less than 45 minutes
MH9(PH3,4)
E
TEST
MH9(XH$SAVXH,4)
0
Fall through if same section
1,FN$TDSSF,PB
ASSIGN
Short-stay/same section
P


P
TRANSFER
DEP11
1,FNSTDSDF,PB
0
ASSIGN
TRANSFER
DEP11
Short-stay/different section
MH9(PHSA)
N
E
TEST
MH9(XHSSAVXH,4
Fall through if same section
1,FNSTDLSF,PB
ASSIGN
Long-stay/same section
TRANSFER
DEP11
1,FNSTDLF,PB
ASSIGN
Long-stay/different section
DEP11
TRANSFER
PH8



Mark as transit

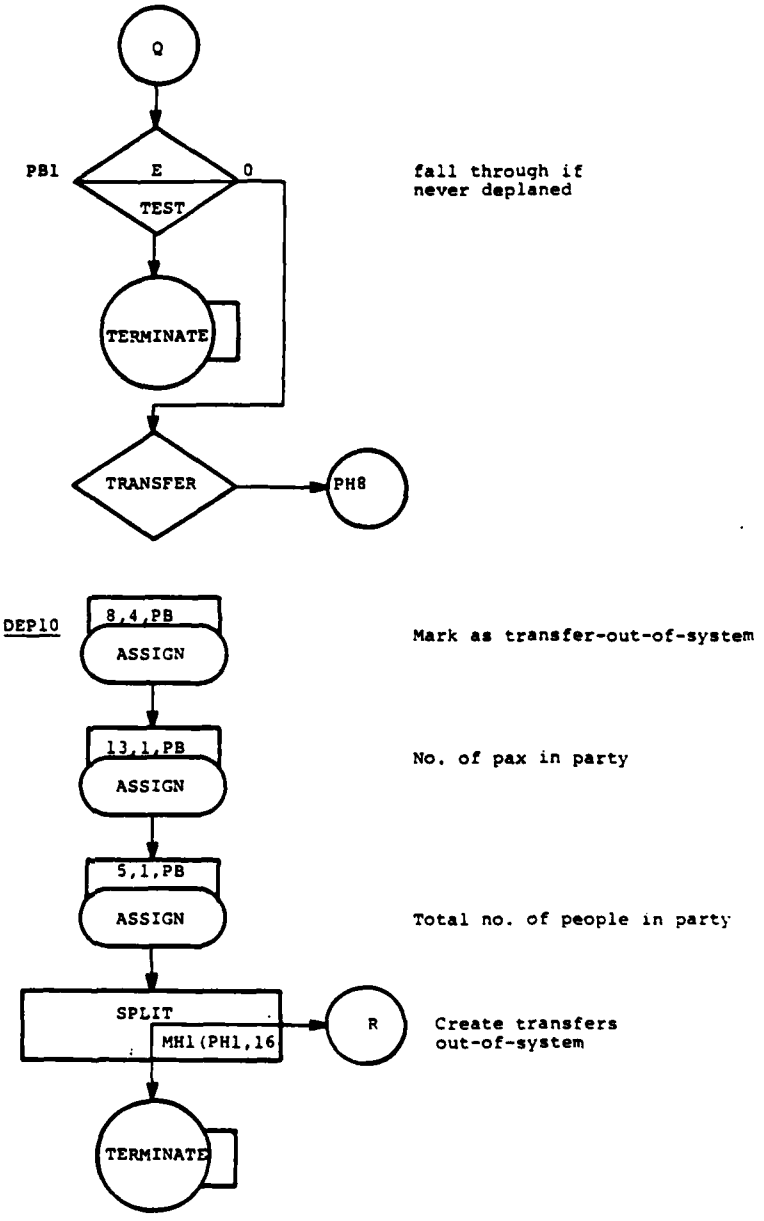
No. of pax in party

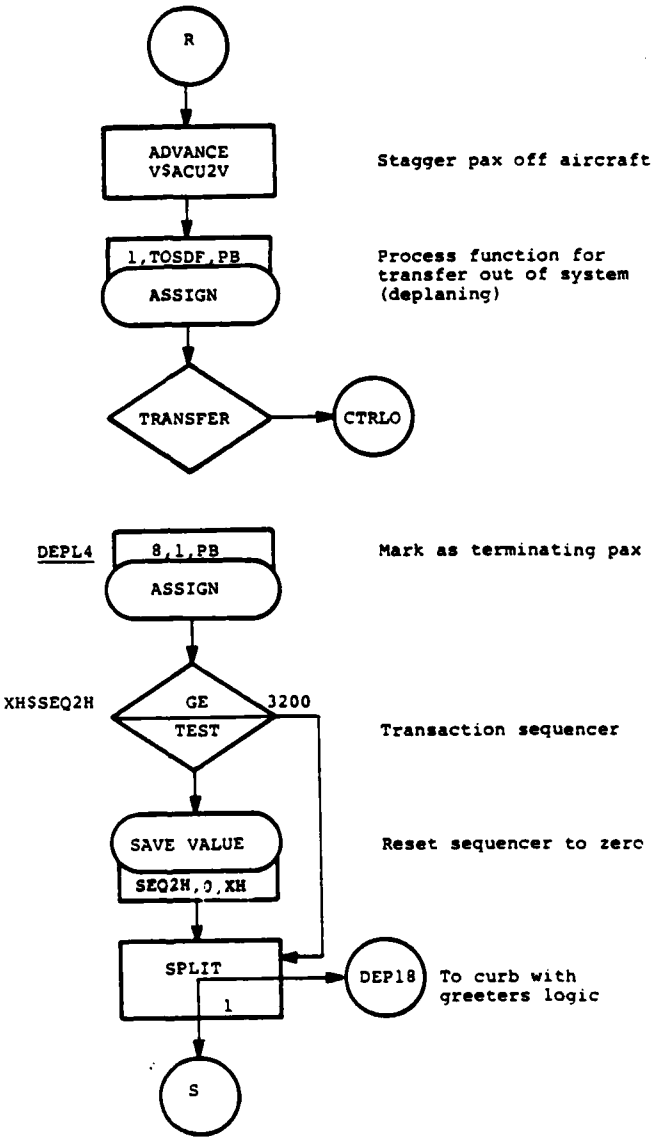
Total no. of people in party

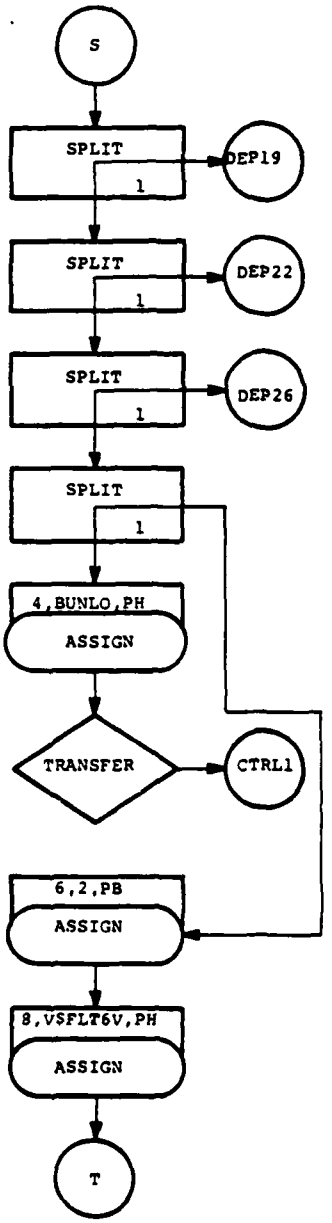
Stagger pax off aircraft

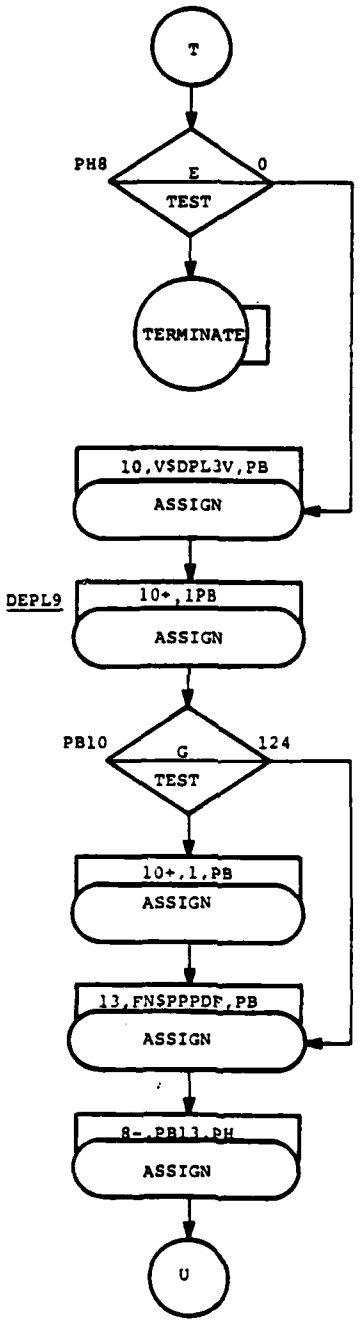
Transfer pax section switch, arriving flight

Select a process fucntion


Q
PB1
E
0
TEST
fall through if never deplaned
TERMINATE
TRANSFER
PH8
DEP10
8,4,PB
ASSIGN
Mark as transfer-out-of-system
13,1,PB
ASSIGN
No. of pax in party
5,1,PB
ASSIGN
Total no. of people in party
SPLIT
MH1(PH1,16
R
Create transfers out-of-system
TERMINATE


R
ADVANCE
V$ACU2V
Stagger pax off aircraft
1,TOSDF,PB
ASSIGN
Process function for transfer out of system (deplaning)
TRANSFER
CTRLO
DEPL4
8,1,PB
ASSIGN
Mark as terminating pax
XHSSEQ2H
GE
TEST
3200
Transaction sequencer
SAVE VALUE
SEQ2H,0,XH
Reset sequencer to zero
SPLIT
1
DEP18
To curb with greeters logic
S


S
SPLIT
1
DEP19
To park with greeters logic
SPLIT
1
DEP22
To curb without greeters logic
SPLIT
1
DEP26
To park without greeters logic
SPLIT
1
To all other modes
4,BUNLO,PH
ASSIGN
Assign address parameter
TRANSFER
CTRL1
6,2,PB
ASSIGN
For following assign only
8,VSFLT6V,PH
ASSIGN
No. of pax in modes other than curb/park
T



Fall through if none

Starting point in random number table

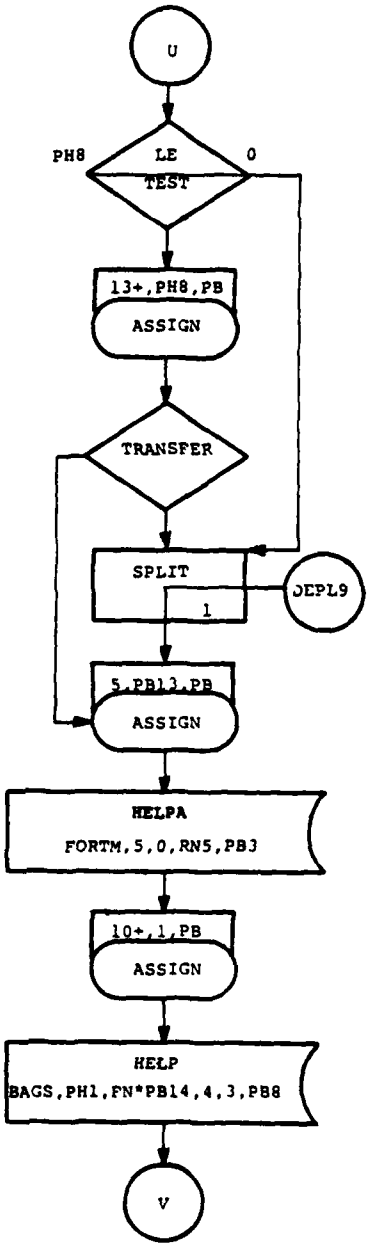
Increment random number table pointer

Is pointer at end of table

Reset pointer to one

No. of Pax in party

Subtract from total



Fall through if total less than or equal to zero

Adjust last party size

Transfer out of loop

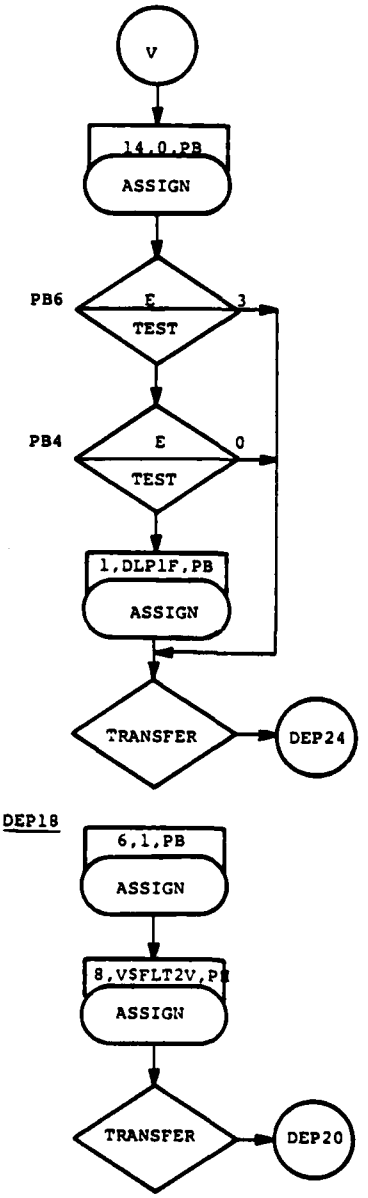
Go back to create another

Total no. of people in party

Park ground transportation mode

Increment pointer

Generate no. of bags, maximum random no.



Reset PB14 for later use

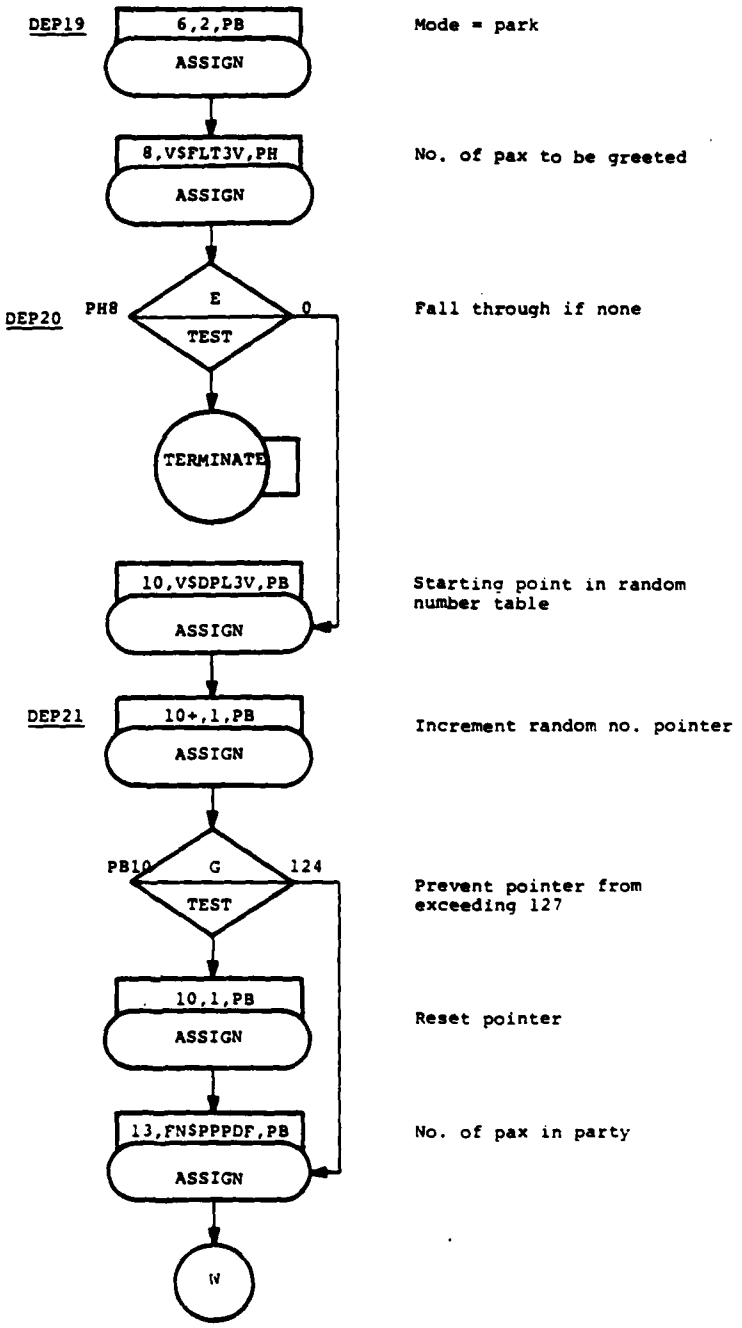
If rent-a-car, use DDP1F

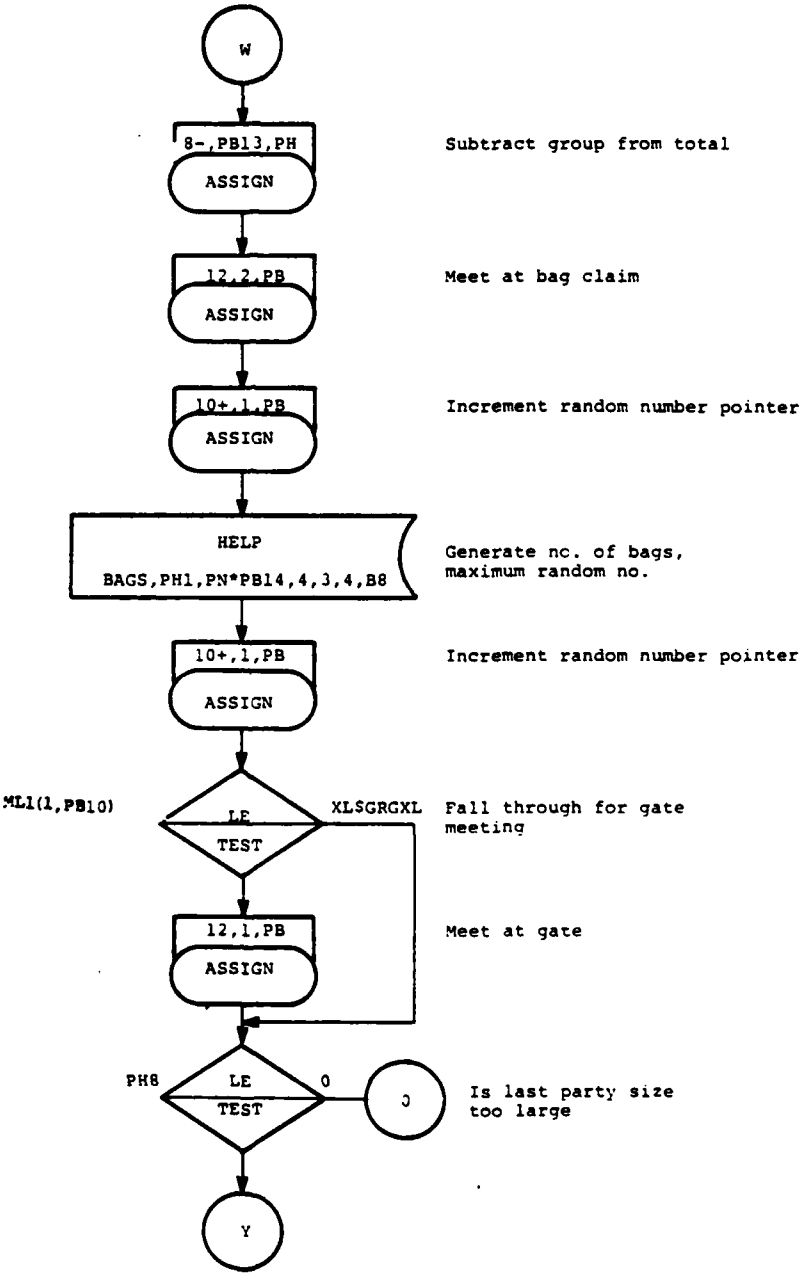
Fall through if no bags

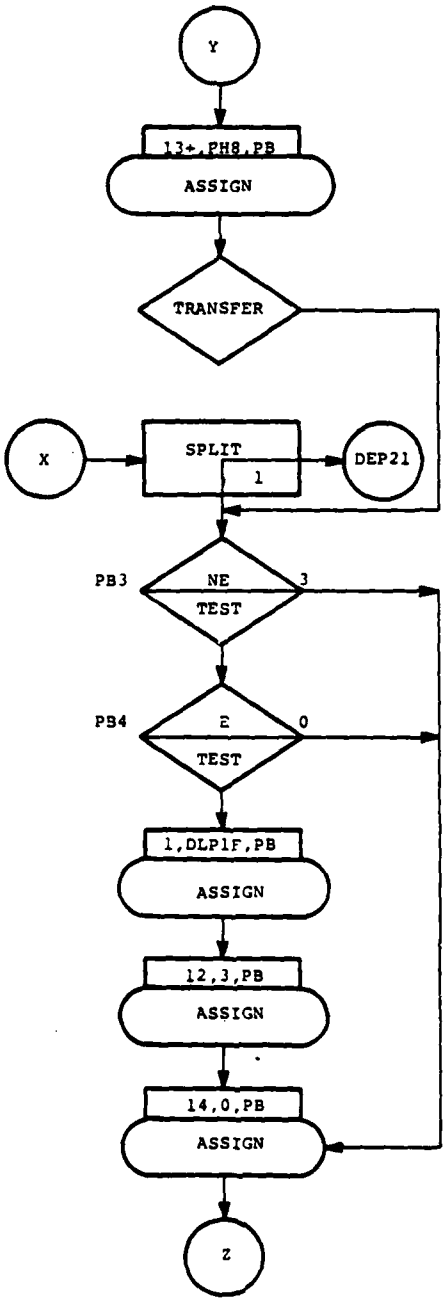
Change to lobby process function

Mode = curb

No. of parki g greeters proceeding to curb


DEP19
6,2,PB
ASSIGN
Mode = park
8,VSFLT3V,PH
ASSIGN
No. of pax to be greeted
DEP20
PH8
E
0
TEST
Fall through if none
TERMINATE
10,VSDPL3V,PB
ASSIGN
Starting point in random number table
DEP21
10+,1,PB
ASSIGN
Increment random no. pointer
PB10
G
124
TEST
Prevent pointer from exceeding 127
10,1,PB
ASSIGN
Reset pointer
13,FNSPPPDF,PB
ASSIGN
No. of pax in party
W


W
8-,PB13,PH
ASSIGN
Subtract group from total
12,2,PB
ASSIGN
Meet at bag claim
10+,1,PB
ASSIGN
Increment random number pointer
HELP
BAGS,PH1,PN*PB14,4,3,4,B8
Generate nc. of bags, maximum random no.
10+,1,PB
ASSIGN
Increment random number pointer
ML1(1,PB10)
LE
TEST
XLSGRGXL
Fall through for gate meeting
12,1,PB
ASSIGN
Meet at gate
PH8
LE
TEST
0
J
Is last party size too large
Y



Adjust last party size

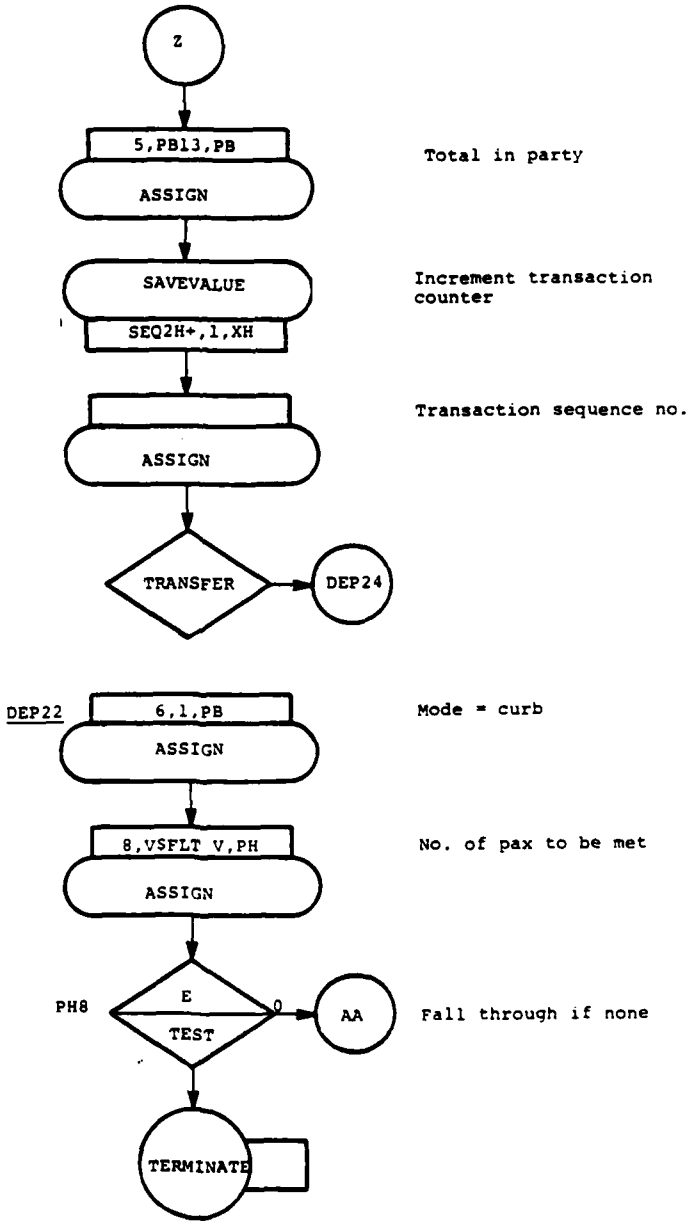
Fall through if not international

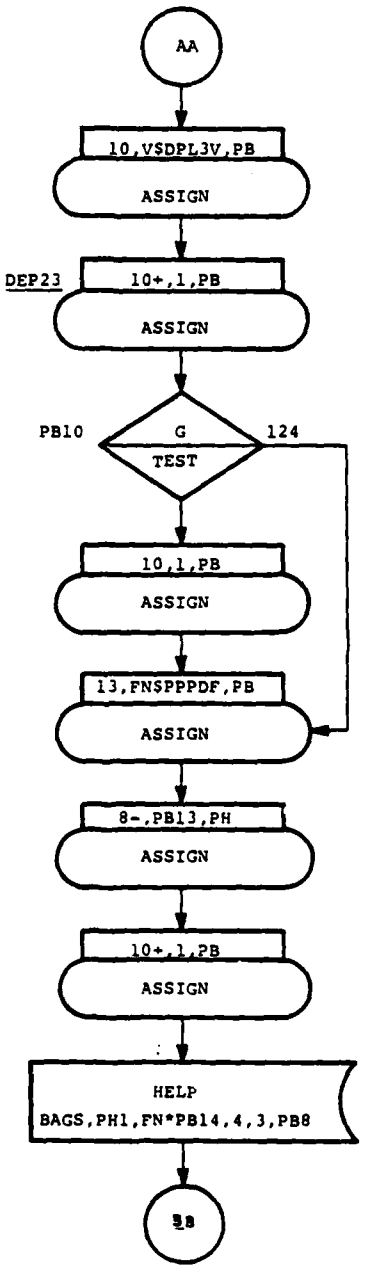
Fall through if no bags

Change to lobby process function

Meet at ticketing

Reset PB14 for later use


Z
5,PB13,PB
ASSIGN
Total in party
SAVEVALUE
SEQ2H+,1,XH
Increment transaction counter
ASSIGN
Transaction sequence no.
TRANSFER
DEP24
DEP22
6,1,PB
ASSIGN
Mode = curb
8,VSFLT V,PH
ASSIGN
No. of pax to be met
PH8
E
TEST
0
AA
Fall through if none
TERMINATE



Starting point in random number table

Increment random number pointer

Prevent pointer from exceeding 127

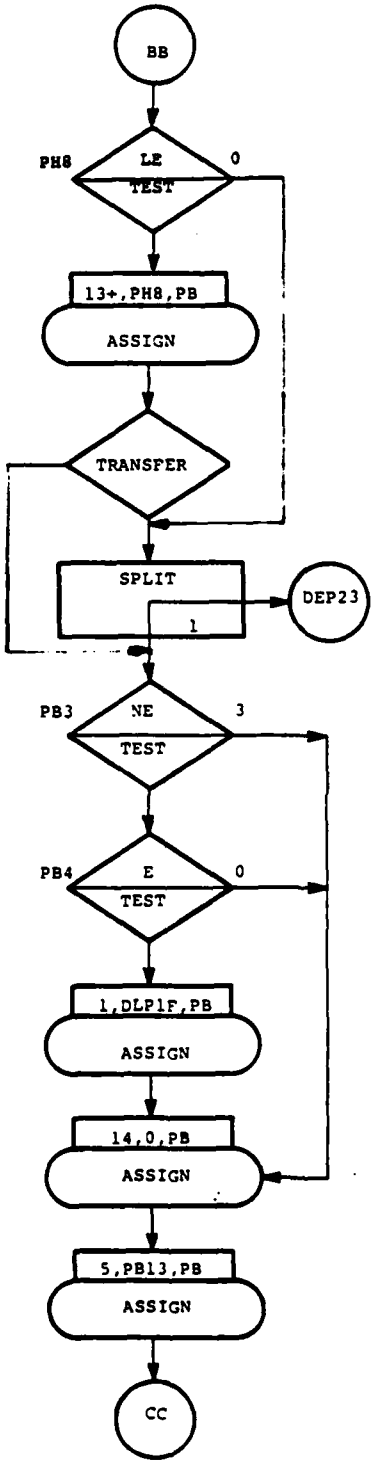
Reset pointer

Pax in party

Subtract group from total

Increment random number pointer

Generate no. of bags, maximum random no.



Adjust last party size

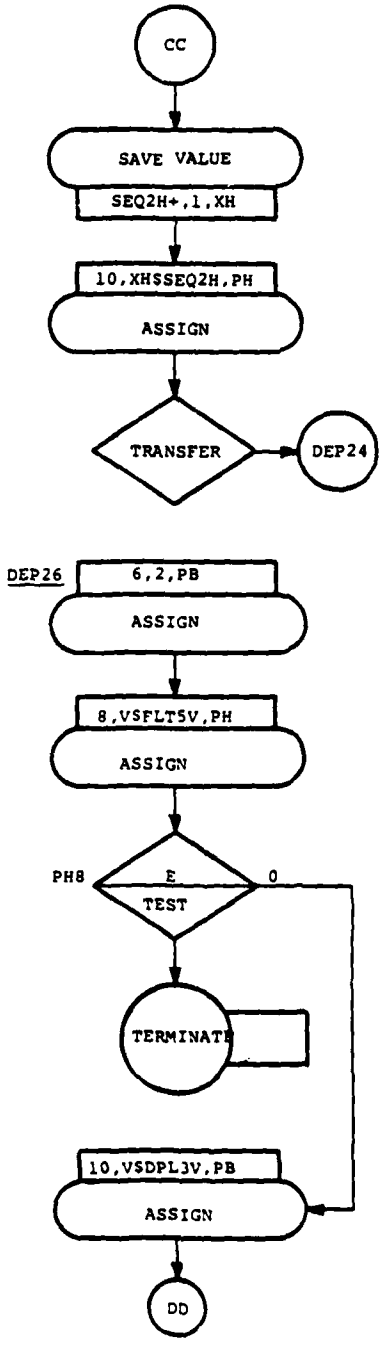
Fall through if not international

Fall through if no bags

Change to lobby process function

Reset PB14 for later use

Total in party



Increment transaction counter

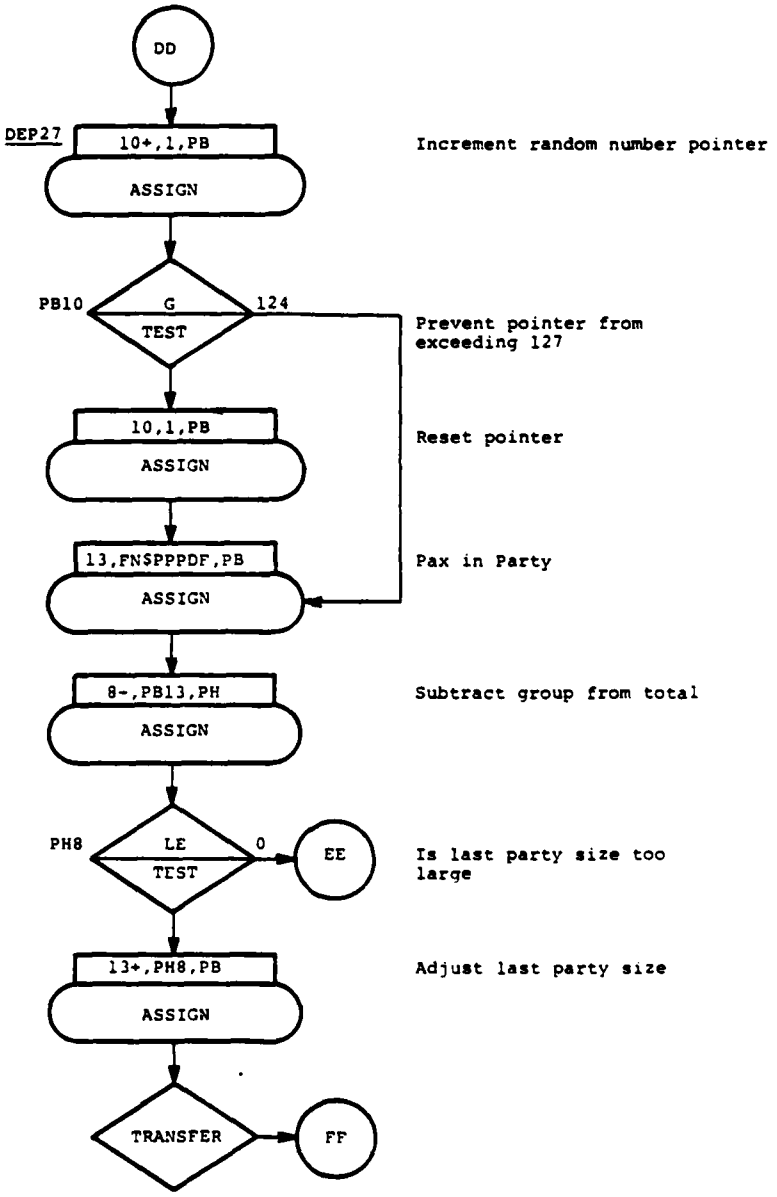
Transaction sequence no.

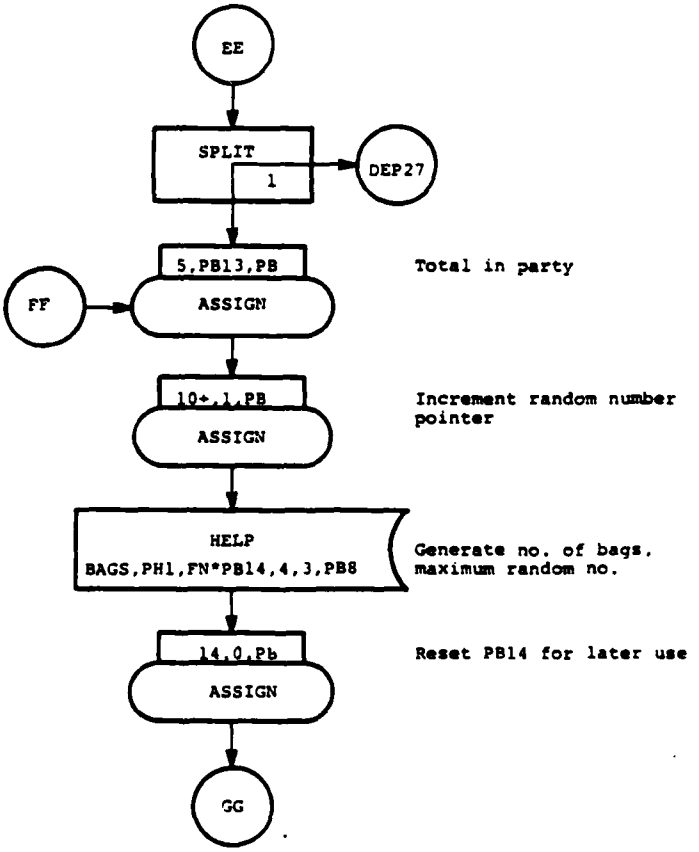
Mode = park

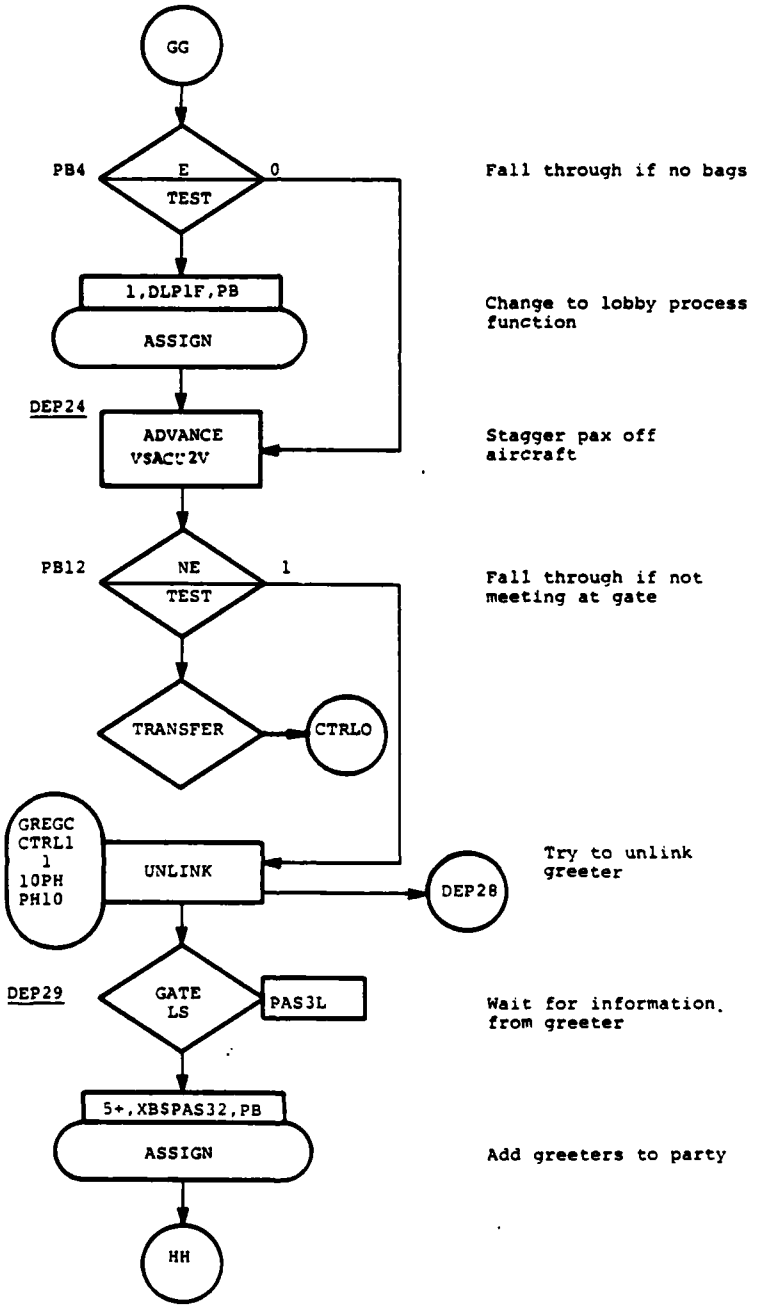
No. of pax to be created

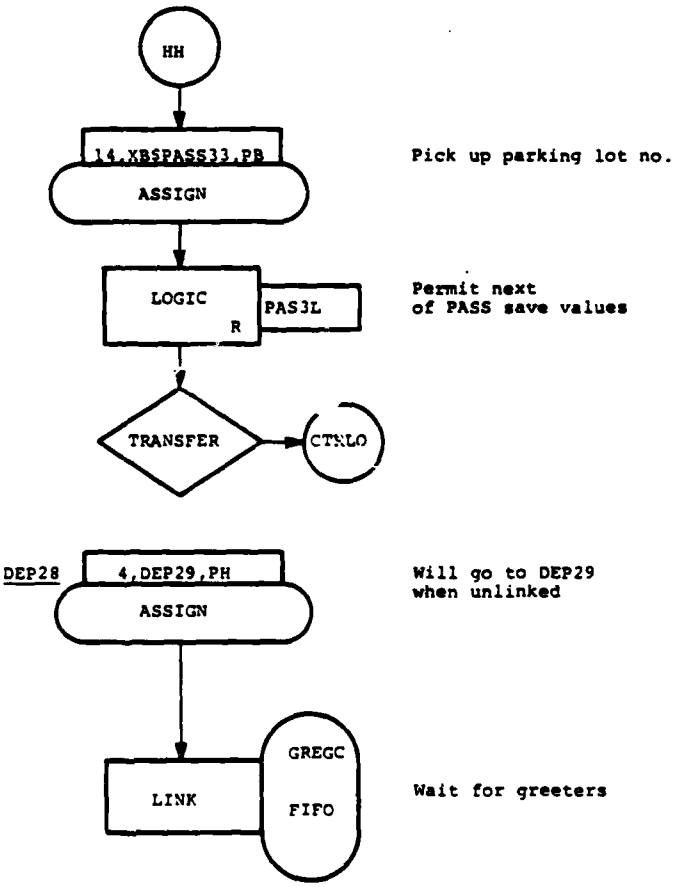
Fall through if none

Starting point in random number table

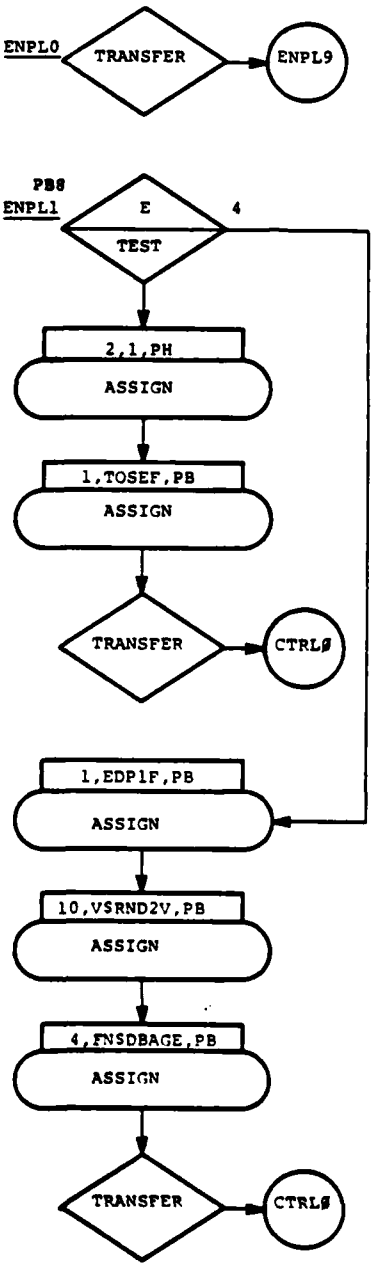

DD
DEP27
10+,1,PB
ASSIGN
Increment random number pointer
PB10
G
TEST
124
Prevent pointer from exceeding 127
10,1,PB
ASSIGN
Reset pointer
13,FN$PPPDF,PB
ASSIGN
Pax in Party
8-,PB13,PH
ASSIGN
Subtract group from total
PH8
LE
TEST
0
EE
Is last party size too large
13+,PH8,PB
ASSIGN
Adjust last party size
TRANSFER
FF


EE
SPLIT
1
DEP27
5,PB13,PB
ASSIGN
FF
Total in party
10+,1,PB
ASSIGN
Increment random number pointer
HELP
BAGS,PH1,FN*PB14,4,3,PB8
Generate no. of bags, maximum random no.
14,0,Pb
ASSIGN
Reset PB14 for later use
GG


GG
PB4
E
TEST
0
Fall through if no bags
1,DLP1F,PB
ASSIGN
Change to lobby process function
DEP24
ADVANCE
VSAC:2V
Stagger pax off aircraft
PB12
NE
TEST
1
Fall through if not meeting at gate
TRANSFER
CTRLO
GREGC
CTRL1
1
10PH
PH10
UNLINK
DEP28
Try to unlink greeter
DEP29
GATE
LS
PAS3L
Wait for information from greeter
5+,XBSPAS32,PB
ASSIGN
Add greeters to party
HH


HH
14,XBSPASS33,PB
ASSIGN
Pick up parking lot no.
LOGIC
R
PAS3L
Permit next
of PASS save values
TRANSFER
CTRLO
DEP28
4,DEP29,PH
ASSIGN
Will go to DEP29
when unlinked
LINK
GREGC
FIFO
Wait for greeters

ENPLANING PASSENGER LOGIC



First transaction on JOBTAPE which is a dummy, is sent here

Fall through if transfer from out of system

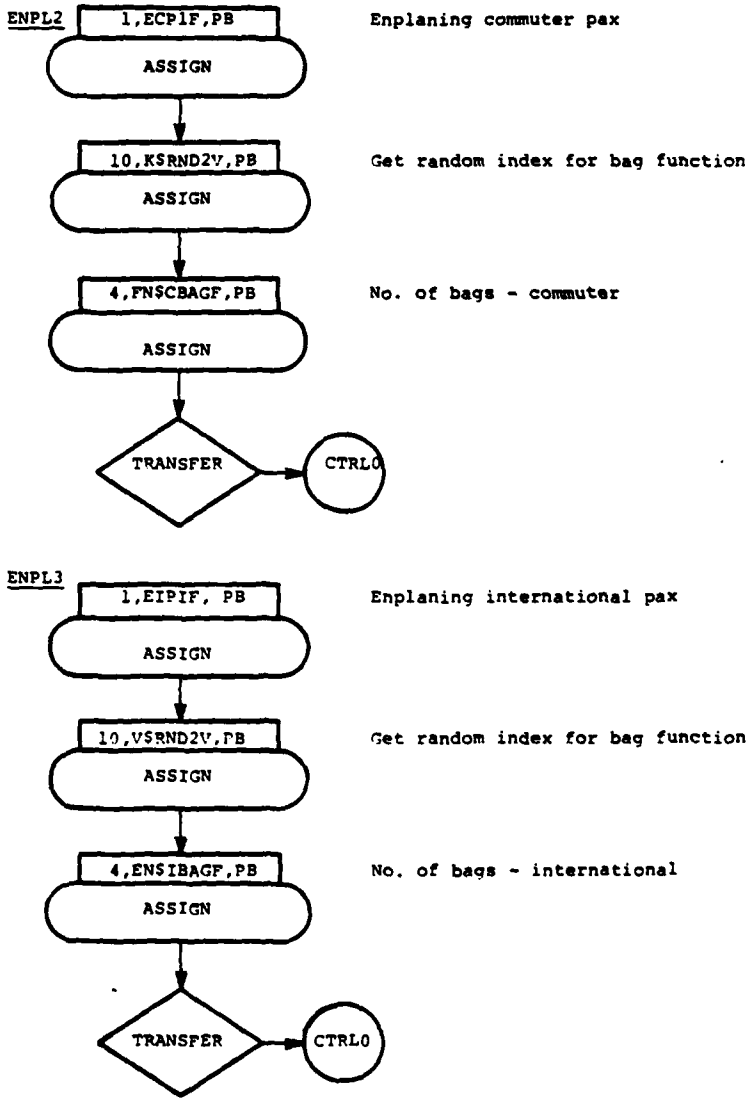
Entrance facility for out of system transfers

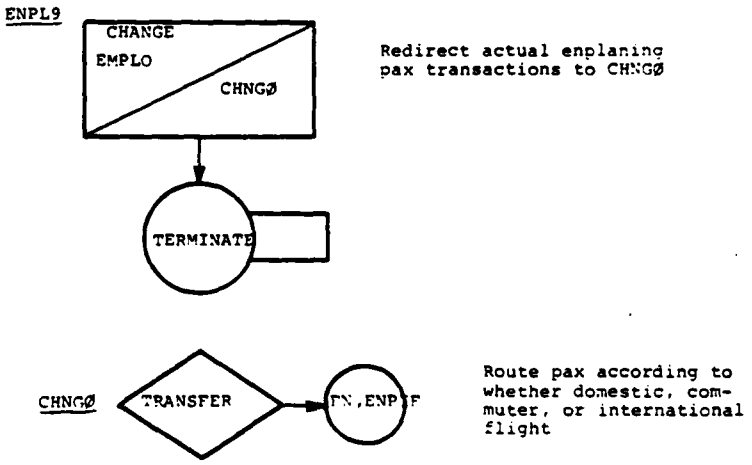
Process function number

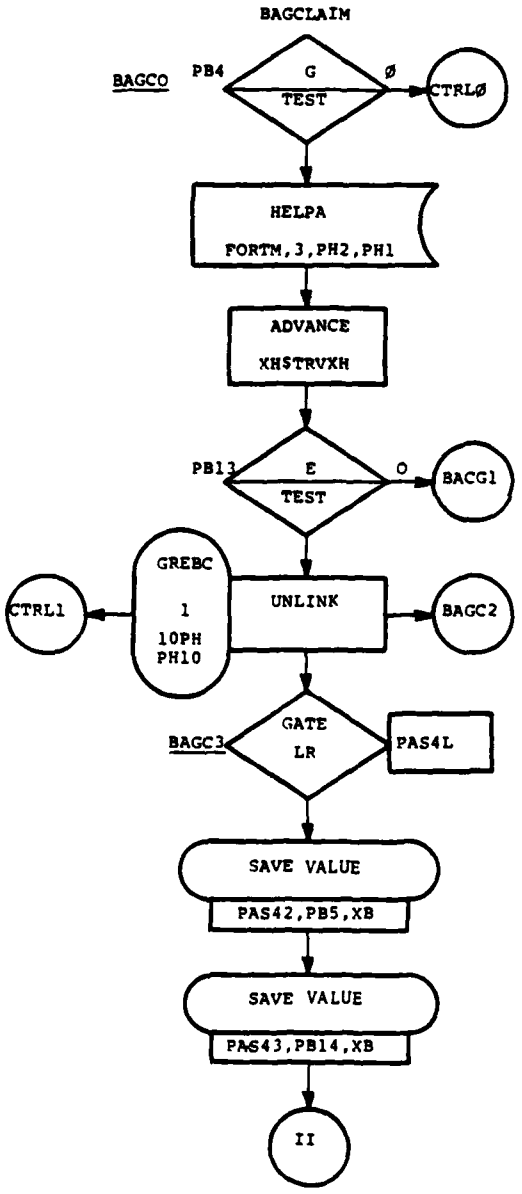
Enplaning domestic pax

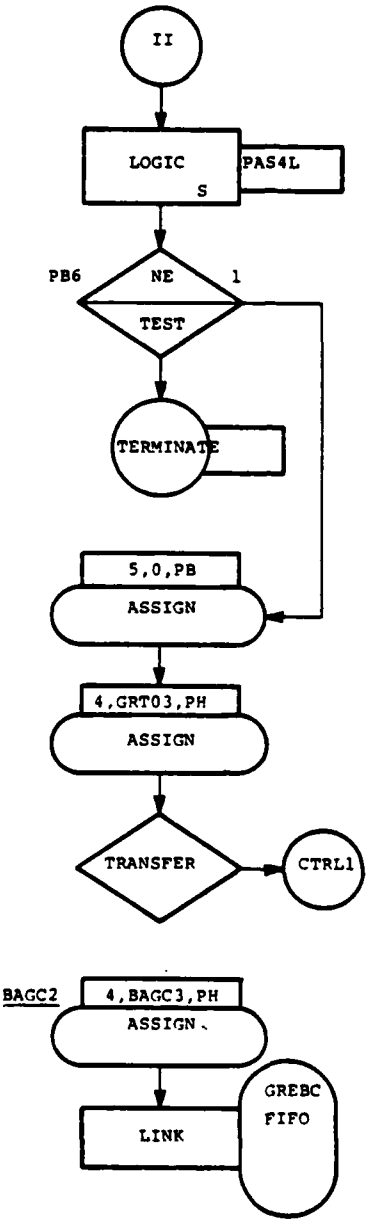
Get random index for bag function

No. of bags - domestic


ENPL2
1,ECP1F,PB
ASSIGN
Enplaning commuter pax
10,KSRND2V,PB
ASSIGN
Get random index for bag function
4,FN$CBAGF,PB
ASSIGN
No. of bags - commuter
TRANSFER
CTRL0
ENPL3
1,EIPIF, PB
ASSIGN
Enplaning international pax
10,VSRND2V,PB
ASSIGN
Get random index for bag function
4,EN$IBAGF,PB
ASSIGN
No. of bags - international
TRANSFER
CTRL0


ENPL9
CHANGE
EMPLO
CHNGØ
Redirect actual enplaning pax transactions to CHNGØ
TERMINATE
CHNGØ
TRANSFER
Route pax according to whether domestic, commuter, or international flight


BAGCLAIM
BAGCO
PB4
G
TEST
Ø
CTRLØ
Return to control if no bags
HELPA
FORTM,3,PH2,PH1
Location MH1 Row
ADVANCE
XH$TRVXH
Travel time to bag claim area
PB13
E
TEST
O
BACG1
Fall through if greeter
GREBC
1
10PH
PH10
CTRL1
UNLINK
BAGC2
Try to unlink pax
BAGC3
GATE
LR
PAS4L
Only one at a time
SAVE VALUE
PAS42,PB5,XB
Number of greeters
SAVE VALUE
PAS43,PB14,XB
Parking lot number
II



Let pax pick up information

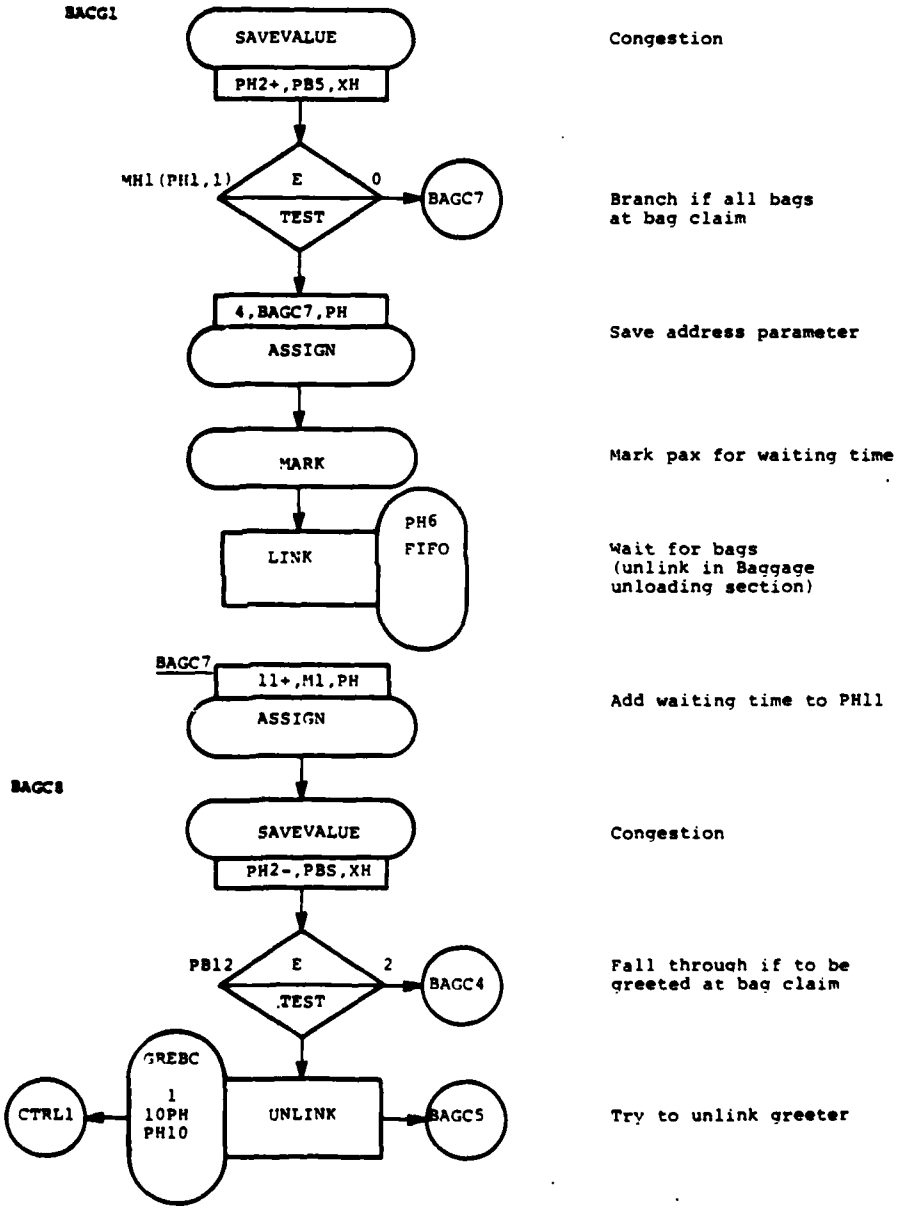
Branch if mode is curb

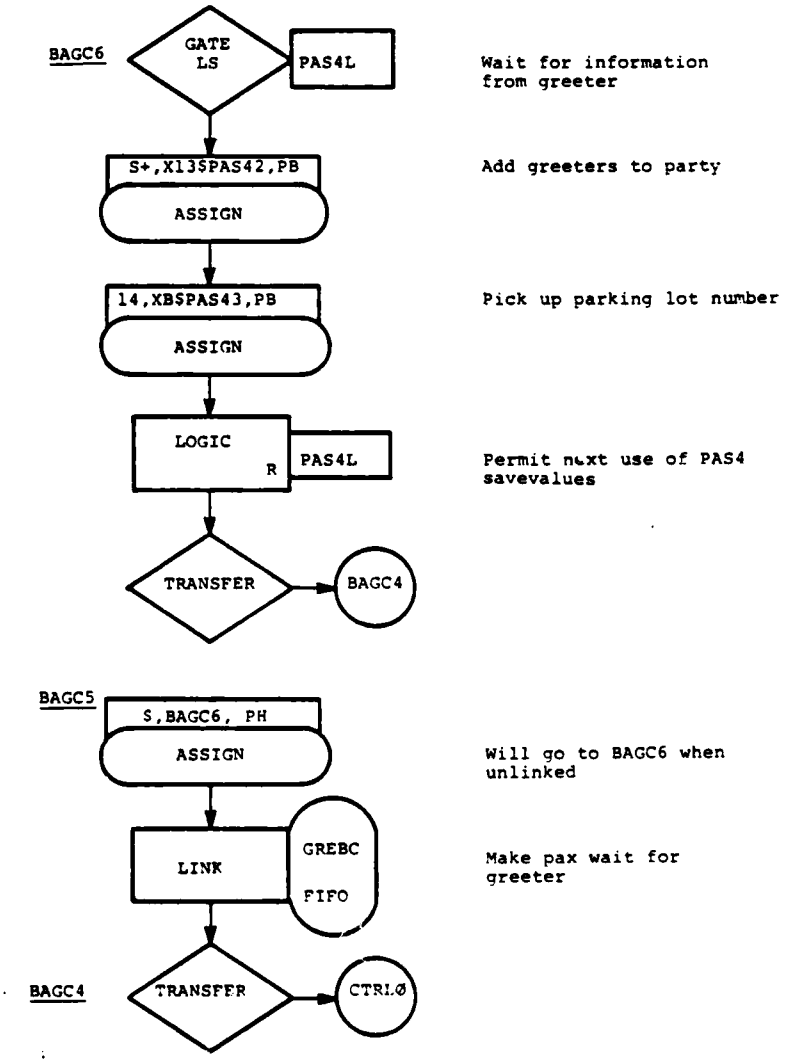
No one in party

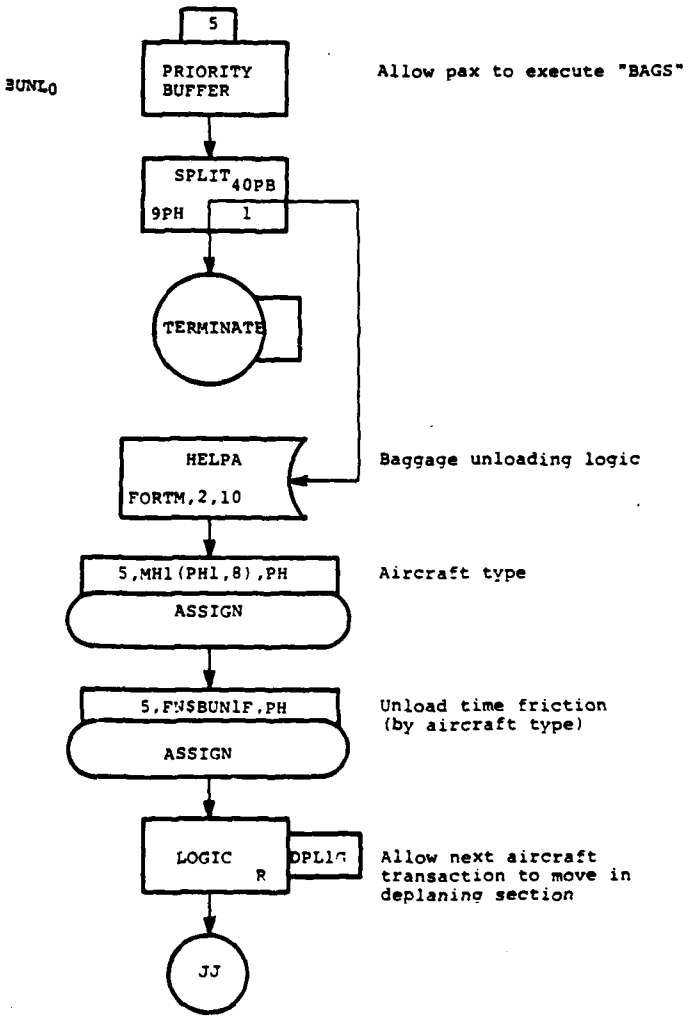
Route to greeter leaving parking

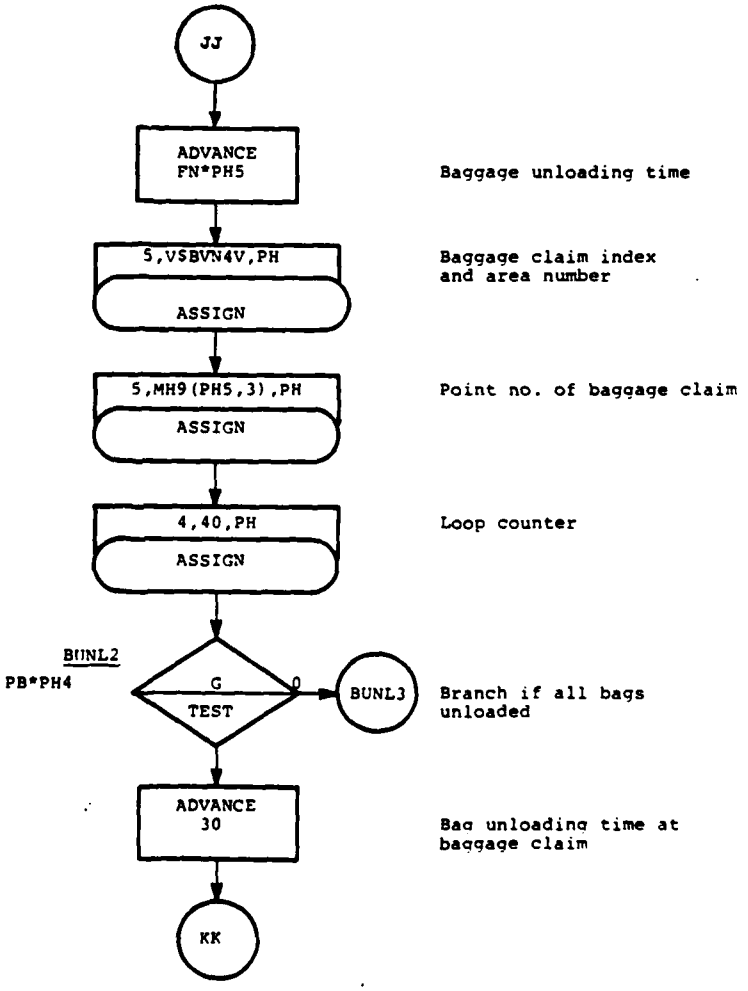
Will go to BAGC3 when unlinked

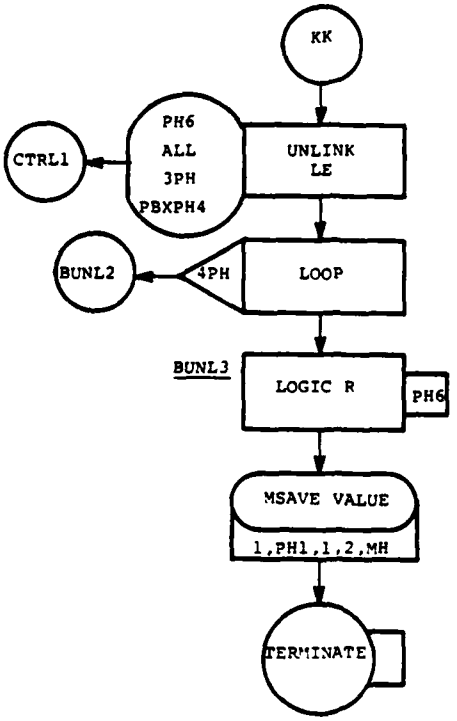
Make greeter wait for passenger


BACG1
SAVEVALUE
PH2+,PB5,XH
MH1(PH1,1)
E
0
TEST
BAGC7
4,BAGC7,PH
ASSIGN
MARK
LINK
PH6
FIFO
BAGC7
11+,M1,PH
ASSIGN
BAGC8
SAVEVALUE
PH2-,PB5,XH
PB12
E
2
TEST
BAGC4
GREBC
1
10PH
PH10
CTRL1
UNLINK
BAGC5
Congestion
Branch if all bags at bag claim
Save address parameter
Mark pax for waiting time
Wait for bags (unlink in Baggage unloading section)
Add waiting time to PH11
Congestion
Fall through if to be greeted at bag claim
Try to unlink greeter

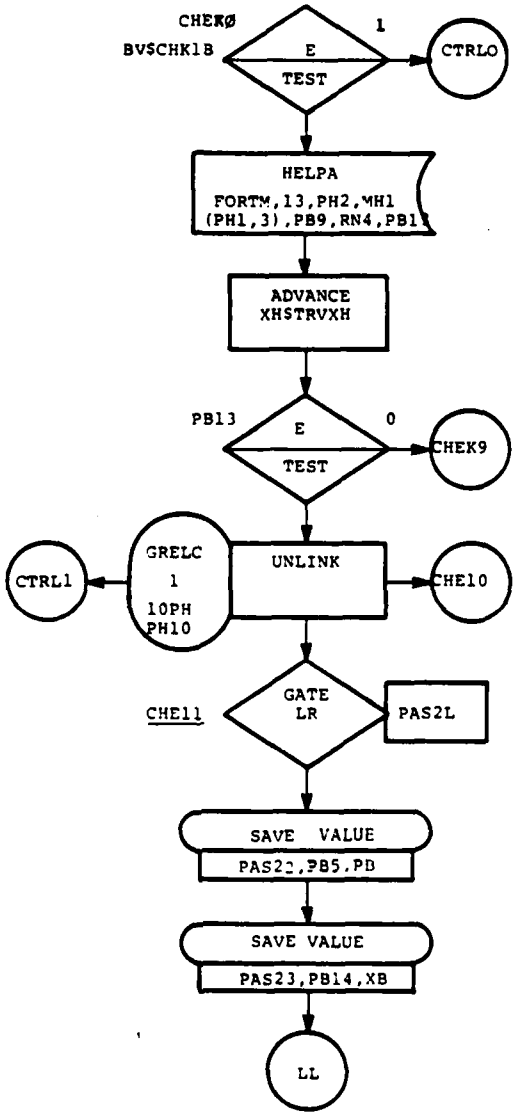

BAGC6
GATE LS
PAS4L
Wait for information from greeter
S+,X13$PAS42,PB
ASSIGN
Add greeters to party
14,XB$PAS43,PB
ASSIGN
Pick up parking lot number
LOGIC R
PAS4L
Permit next use of PAS4 savevalues
TRANSFER
BAGC4
BAGC5
S,BAGC6, PH
ASSIGN
Will go to BAGC6 when unlinked
LINK
GREBC FIFO
Make pax wait for greeter
BAGC4
TRANSFER
CTRL Ø


BUNL0
5
PRIORITY BUFFER
Allow pax to execute "BAGS"
SPLIT 40PB
9PH
1
TERMINATE
HELPA
FORTM,2,10
Baggage unloading logic
5,MH1(PH1,8),PH
ASSIGN
Aircraft type
5,FNSBUN1F,PH
ASSIGN
Unload time friction (by aircraft type)
LOGIC R
DPL1
Allow next aircraft transaction to move in deplaning section
JJ


JJ
ADVANCE
FN*PH5
Baggage unloading time
5,VSBVN4V,PH
ASSIGN
Baggage claim index
and area number
5,MH9(PH5,3),PH
ASSIGN
Point no. of baggage claim
4,40,PH
ASSIGN
Loop counter
BUNL2
PB*PH4
G
TEST
0
BUNL3
Branch if all bags
unloaded
ADVANCE
30
Bag unloading time at
baggage claim
KK


KK
PH6
ALL
3PH
PBXPH4
CTRL1
UNLINK
LE
Bags to waiting pax
BUNL2
4PH
LOOP
Loop for next group of bags
BUNL3
LOGIC R
PH6
Free chain/switch pair
MSAVE VALUE
1,PH1,1,2,MH
Mark all bags at claim area
TERMINATE

TICKETING AND CHECKIN



Branch if enplaning ticketed, and direct

Location, airline, ticketed, express check random no. of pax

Walking time to ticketing and checkin

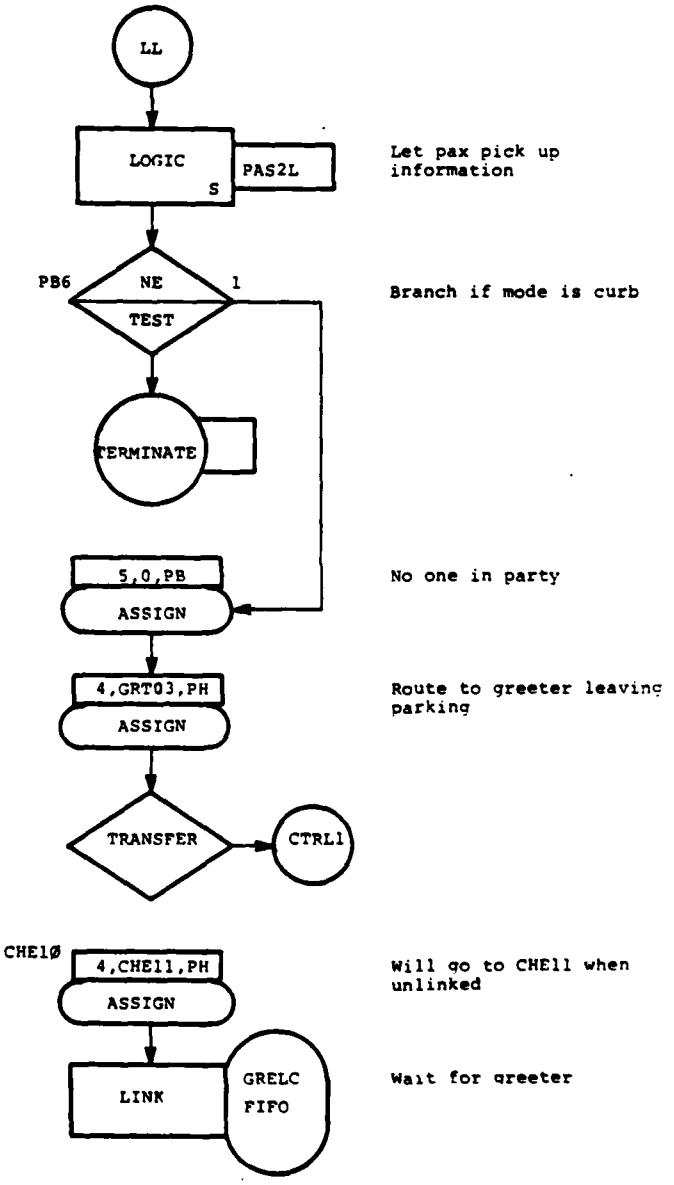
Fall through if greeter

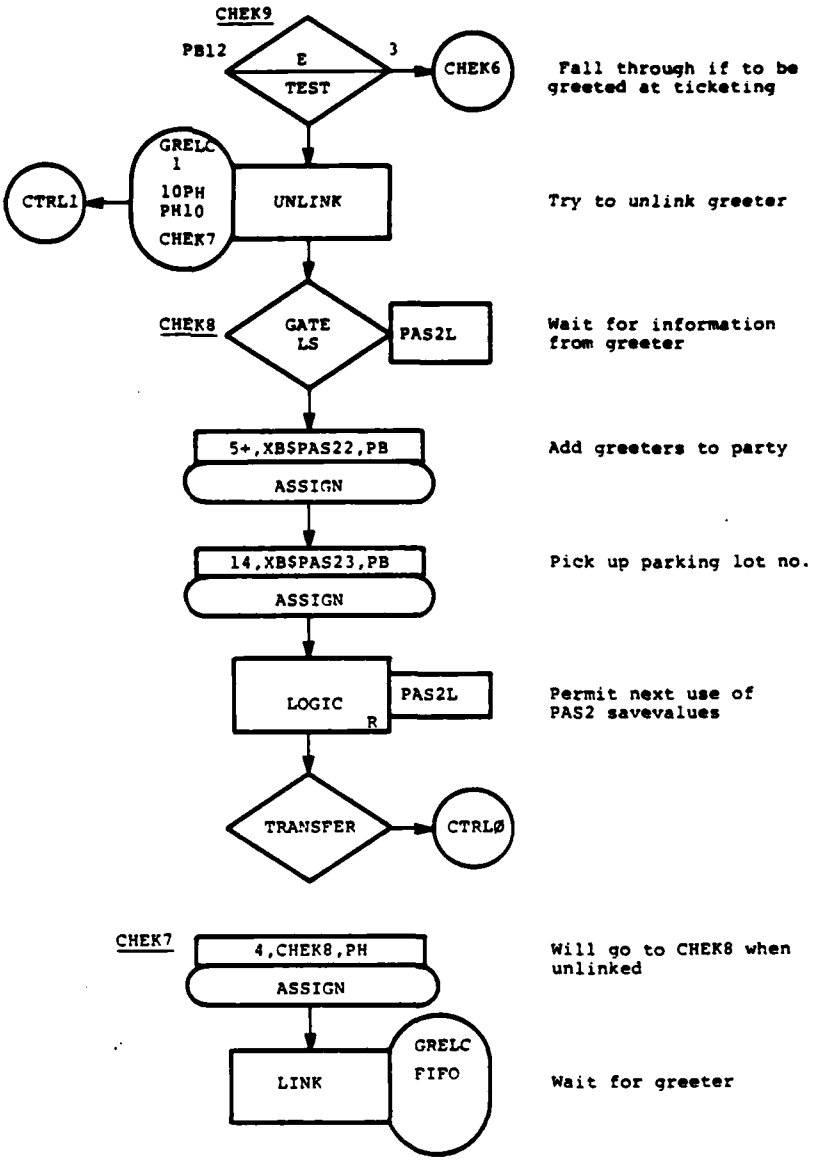
Try to unlink pax

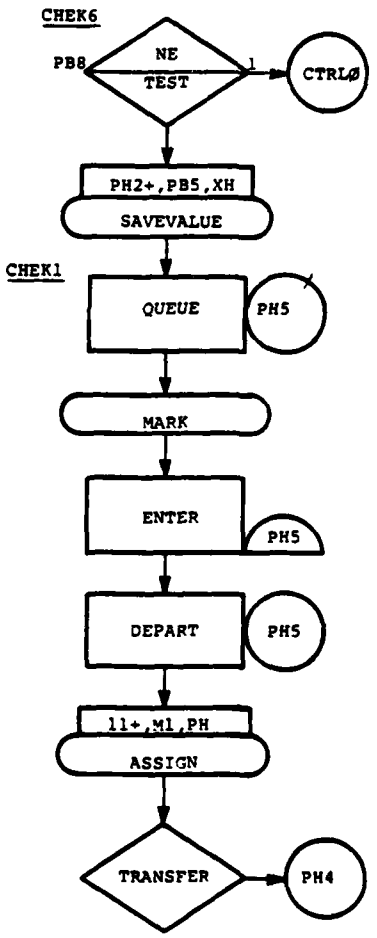
Only one at a time

Number of greeters

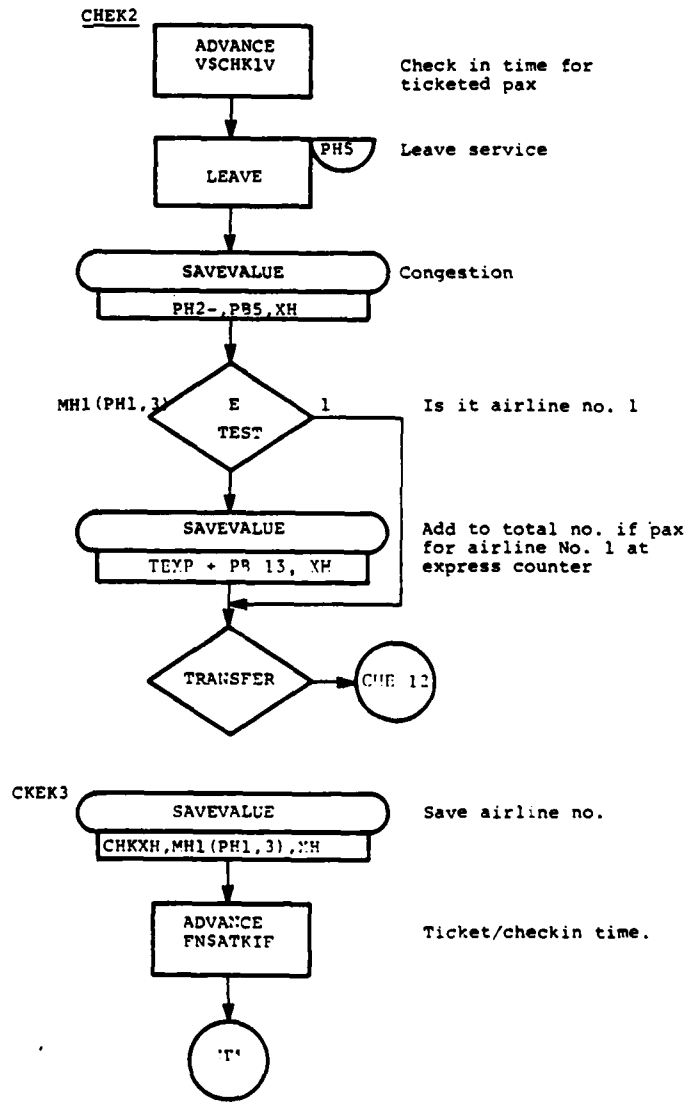
Parking lot number


LL
LOGIC
S
PAS2L
Let pax pick up information
PB6
NE
TEST
1
Branch if mode is curb
TERMINATE
5,0,PB
ASSIGN
No one in party
4,GRT03,PH
ASSIGN
Route to greeter leaving parking
TRANSFER
CTRL1
CHE1Ø
4,CHE11,PH
ASSIGN
Will go to CHE11 when unlinked
LINK
GRELC
FIFO
Wait for greeter

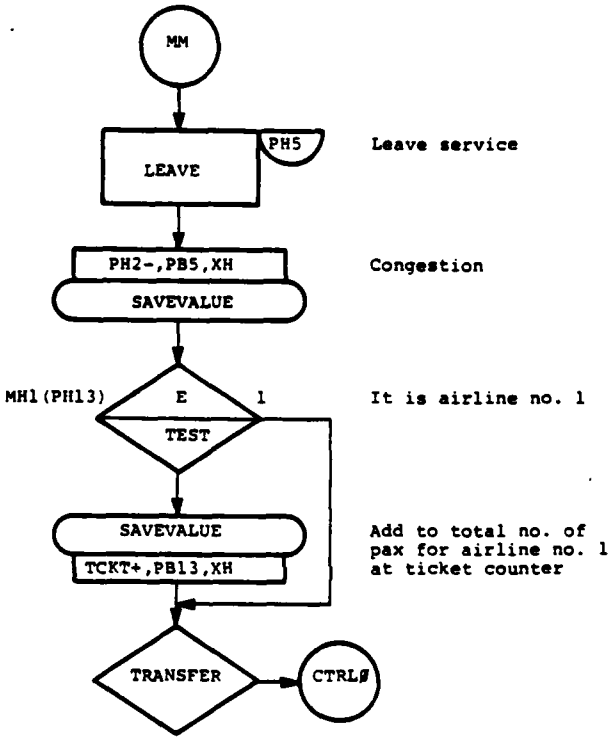

CHEK9
PB12
E
TEST
3
CHEK6
Fall through if to be greeted at ticketing
GRELC
1
10PH
PH10
CHEK7
CTRL1
UNLINK
Try to unlink greeter
CHEK8
GATE
LS
PAS2L
Wait for information from greeter
5+,XBSPAS22,PB
ASSIGN
Add greeters to party
14,XBSPAS23,PB
ASSIGN
Pick up parking lot no.
LOGIC
R
PAS2L
Permit next use of PAS2 savevalues
TRANSFER
CTRLØ
CHEK7
4,CHEK8,PH
ASSIGN
Will go to CHEK8 when unlinked
LINK
GRELC
FIFO
Wait for greeter

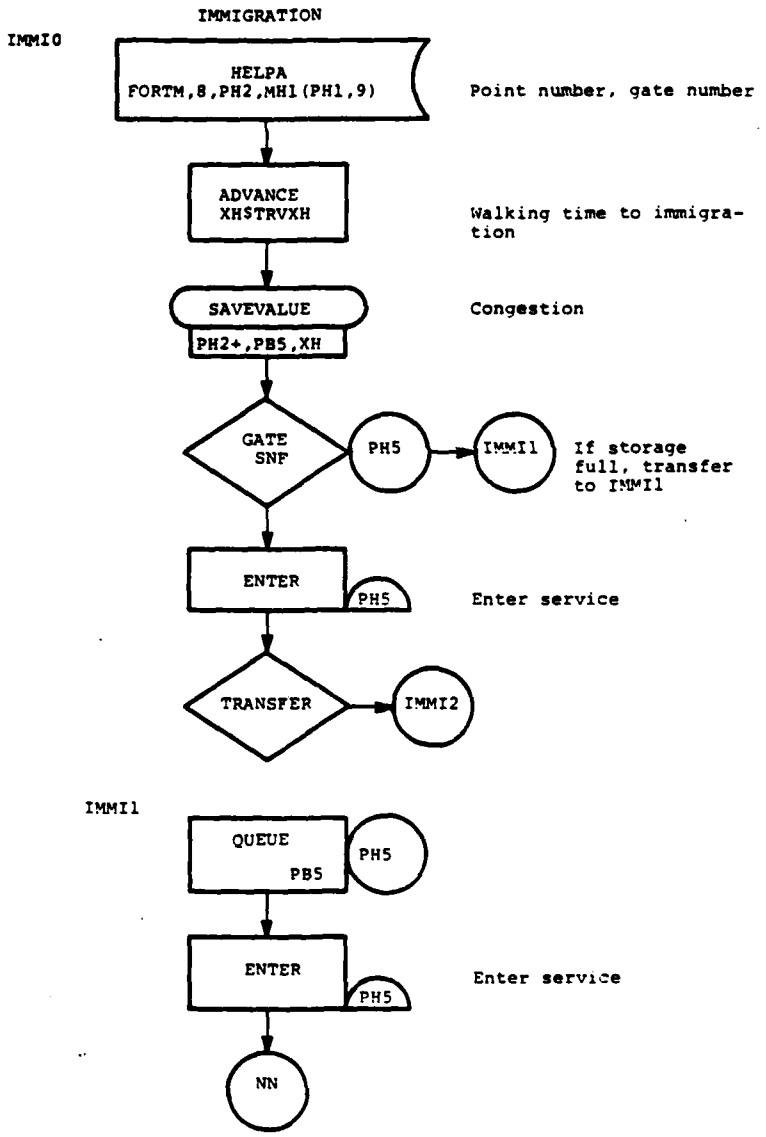

CHEK6
PB8
NE
TEST
1
CTRLØ
Branch if terminating
PH2+,PB5,XH
SAVEVALUE
Congestion
CHEK1
QUEUE
PH5
Wait for free server
MARK
Mark pax for waiting time
ENTER
PH5
Service
DEPART
PH5
11+,M1,PH
ASSIGN
Add waiting time to PH11
TRANSFER
PH4
Branch to CHEK2 or
CHEA3. Set in FORTM

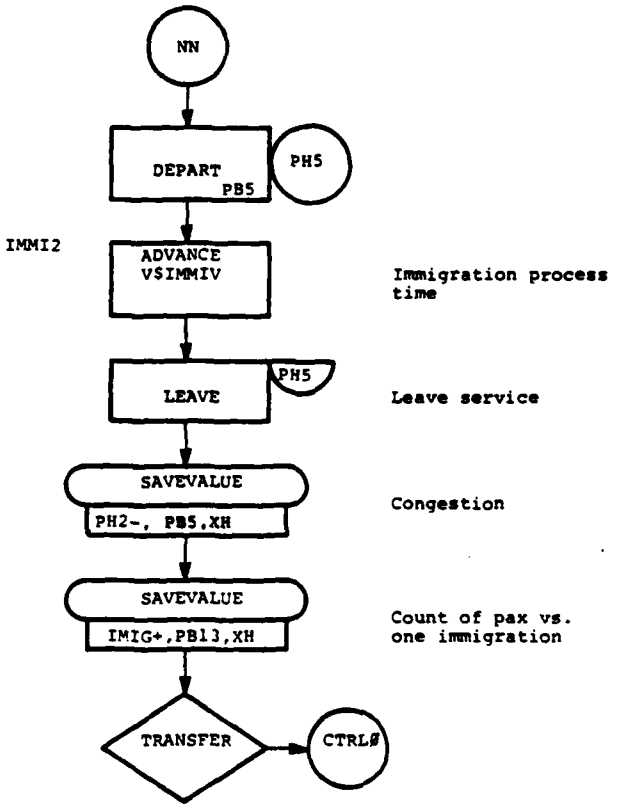
Note: Halfword SAVEVALUEs may be inserted here to record flow through Express Check-In

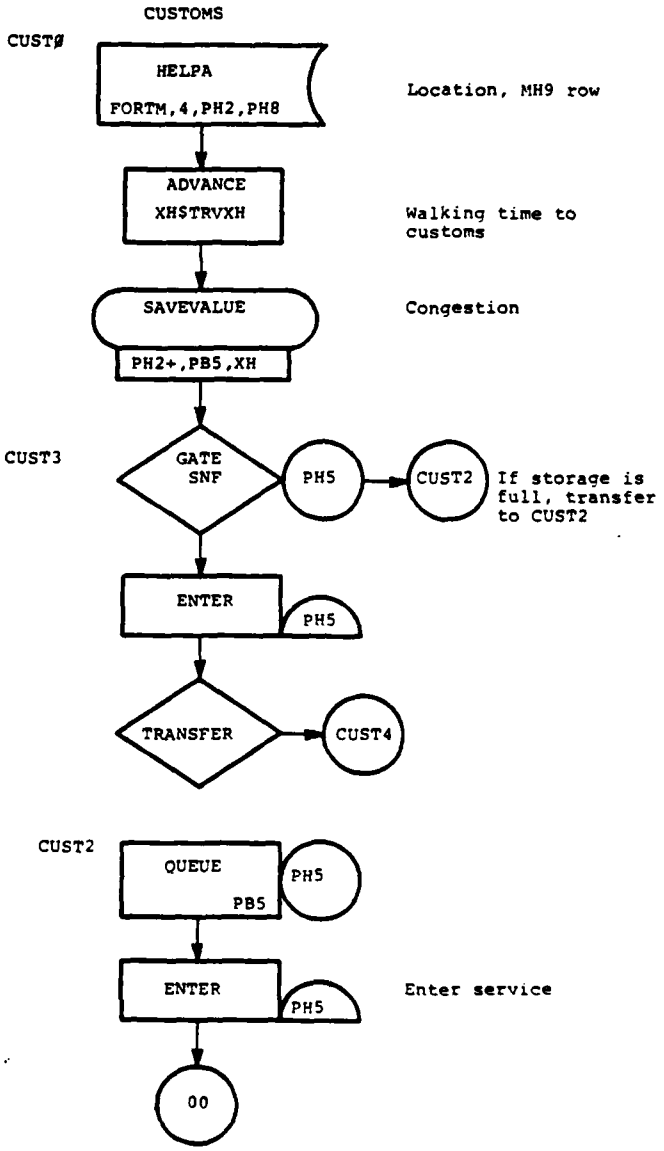


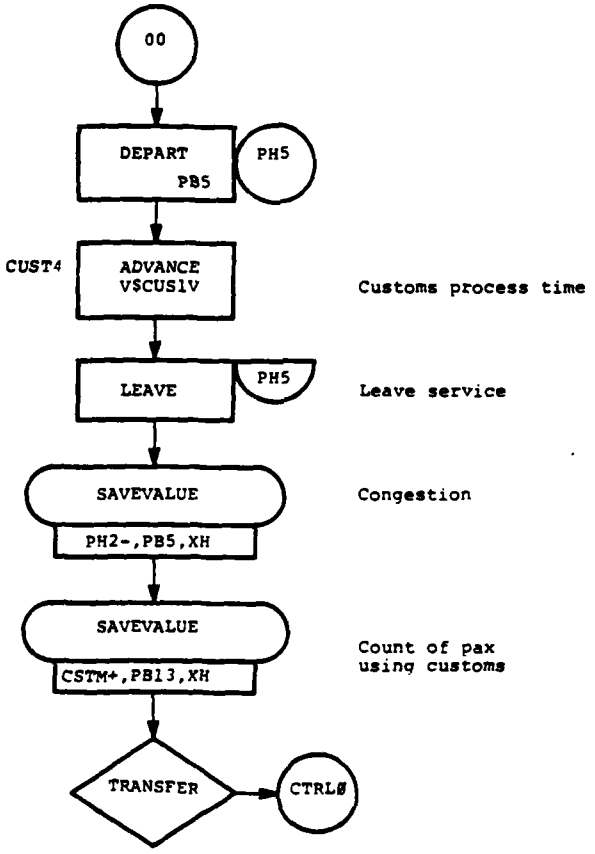
Note: Airline full service counter flow values may be recorded in MH13



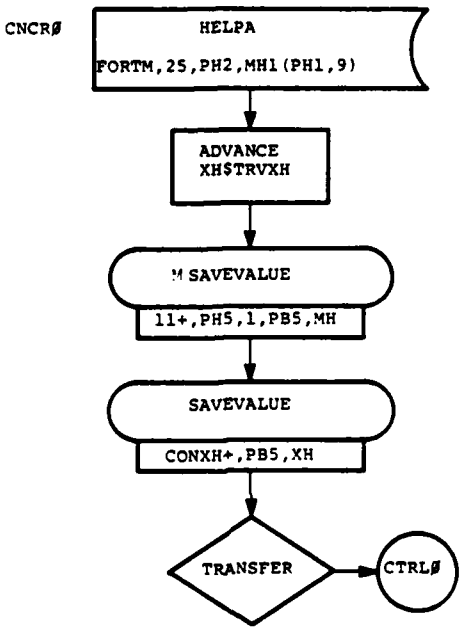

IMMIGRATION
IMMI0
HELPA
FORTM,8,PH2,MH1(PH1,9)
Point number, gate number
ADVANCE
XH$TRVXH
Walking time to immigration
SAVEVALUE
PH2+,PB5,XH
Congestion
GATE
SNF
PH5
IMMI1
If storage full, transfer to IMMI1
ENTER
PH5
Enter service
TRANSFER
IMMI2
IMMI1
QUEUE
PB5
PH5
ENTER
PH5
Enter service
NN


NN
DEPART
PB5
PH5
IMMI2
ADVANCE
V$IMMIV
Immigration process time
LEAVE
PH5
Leave service
SAVEVALUE
PH2-, PB5,XH
Congestion
SAVEVALUE
IMIG+,PB13,XH
Count of pax vs. one immigration
TRANSFER
CTRL#


CUSTOMS
CUST#
HELPA
FORTM,4,PH2,PH8
Location, MH9 row
ADVANCE
XH$TRVXH
Walking time to customs
SAVEVALUE
PH2+,PB5,XH
Congestion
CUST3
GATE SNF
PH5
CUST2
If storage is full, transfer to CUST2
ENTER
PH5
TRANSFER
CUST4
CUST2
QUEUE
PB5
PH5
ENTER
PH5
Enter service
00


00
DEPART
PB5
PH5
CUST4
ADVANCE
V$CUS1V
Customs process time
LEAVE
PH5
Leave service
SAVEVALUE
PH2-,PB5,XH
Congestion
SAVEVALUE
CSTM+,PB13,XH
Count of pax
using customs
TRANSFER
CTRLØ

CONCOURSE EXIT - TERMINATING PAX



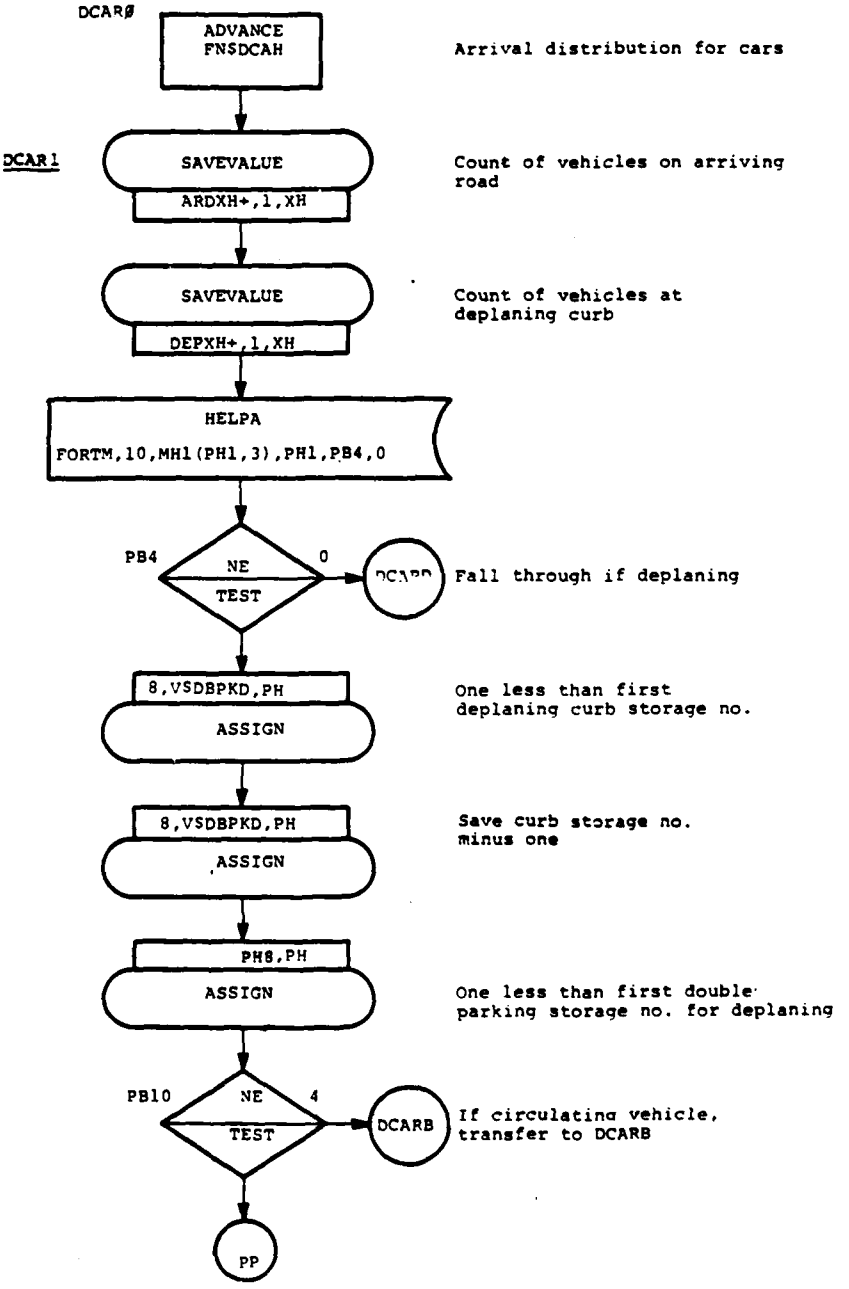
Location, gate

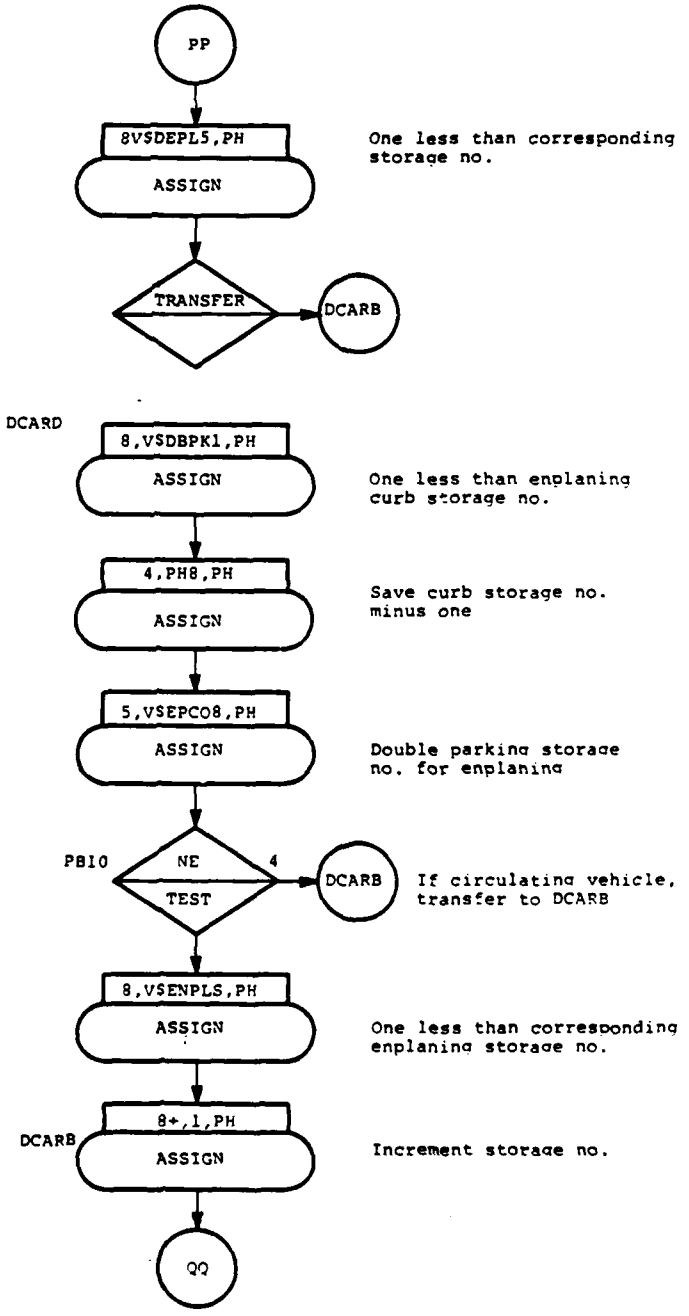
Walking time to concourse from gate

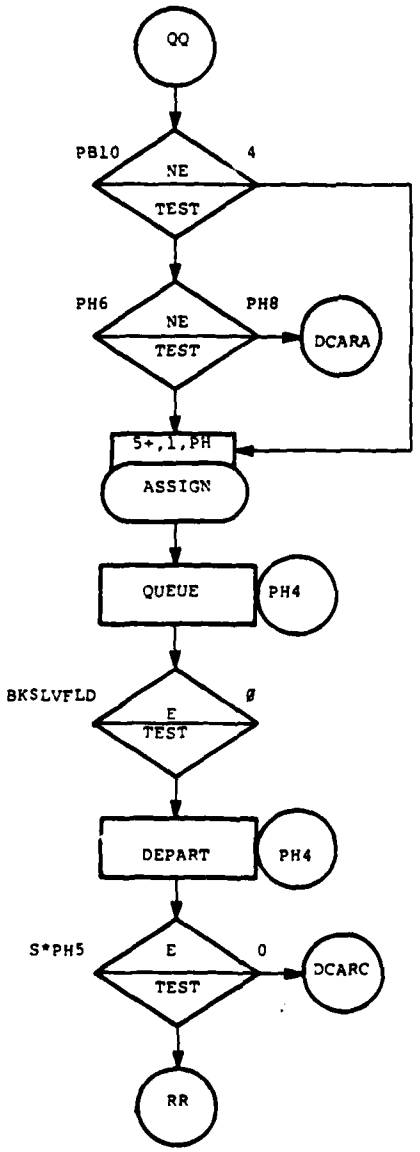
No. of pax leaving concourse

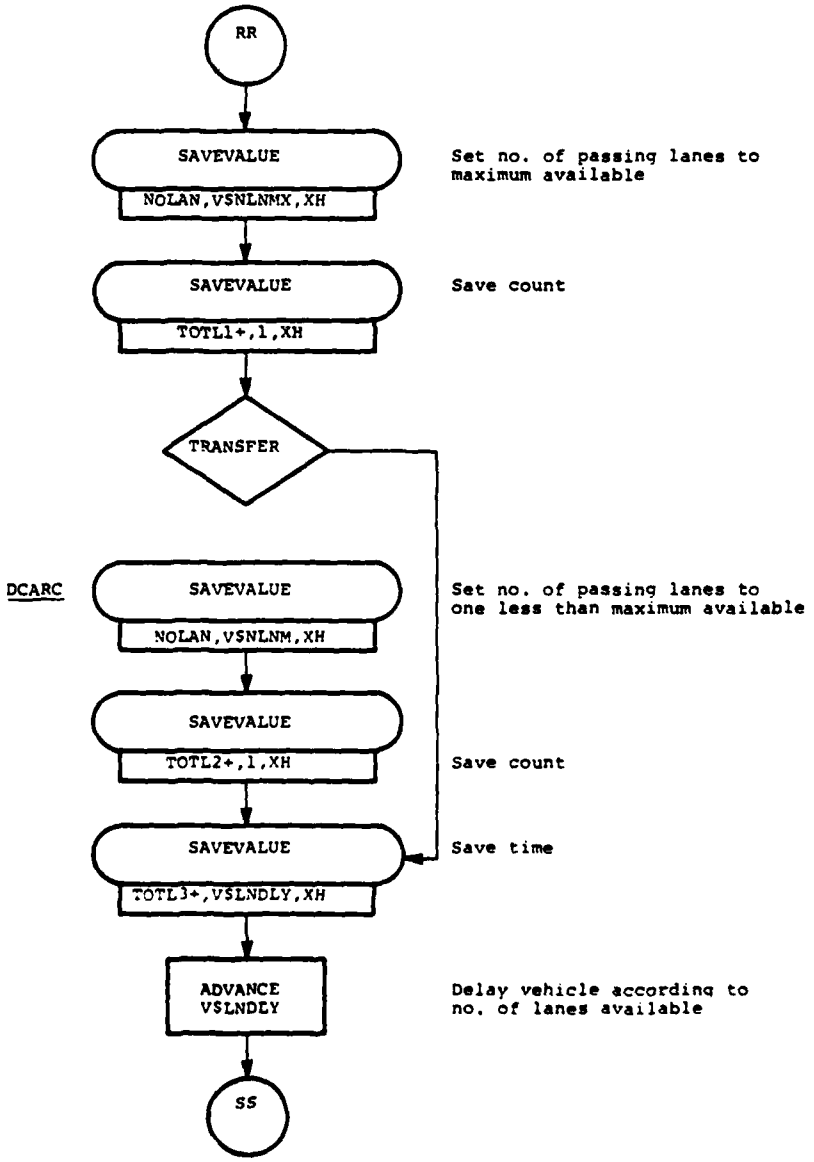
Dummy to keep function 1 for MNLINK hoppy

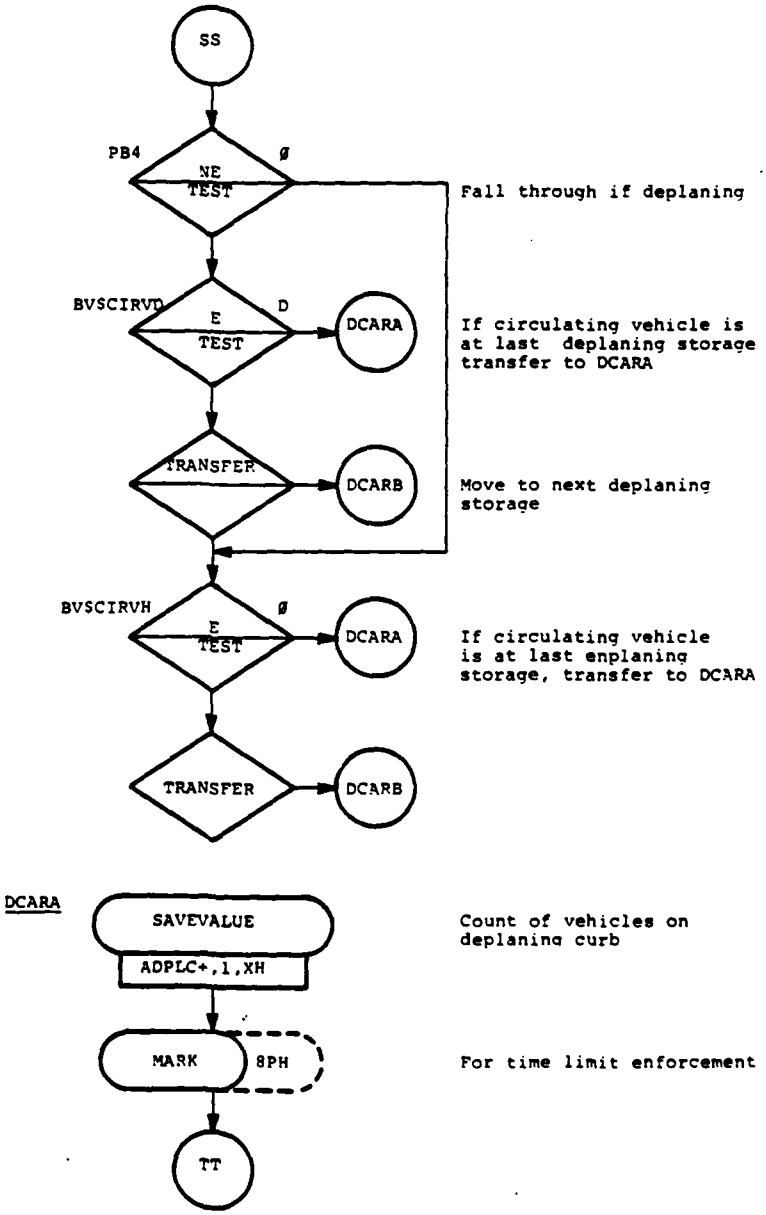
DEPLANING CURB (CARS)

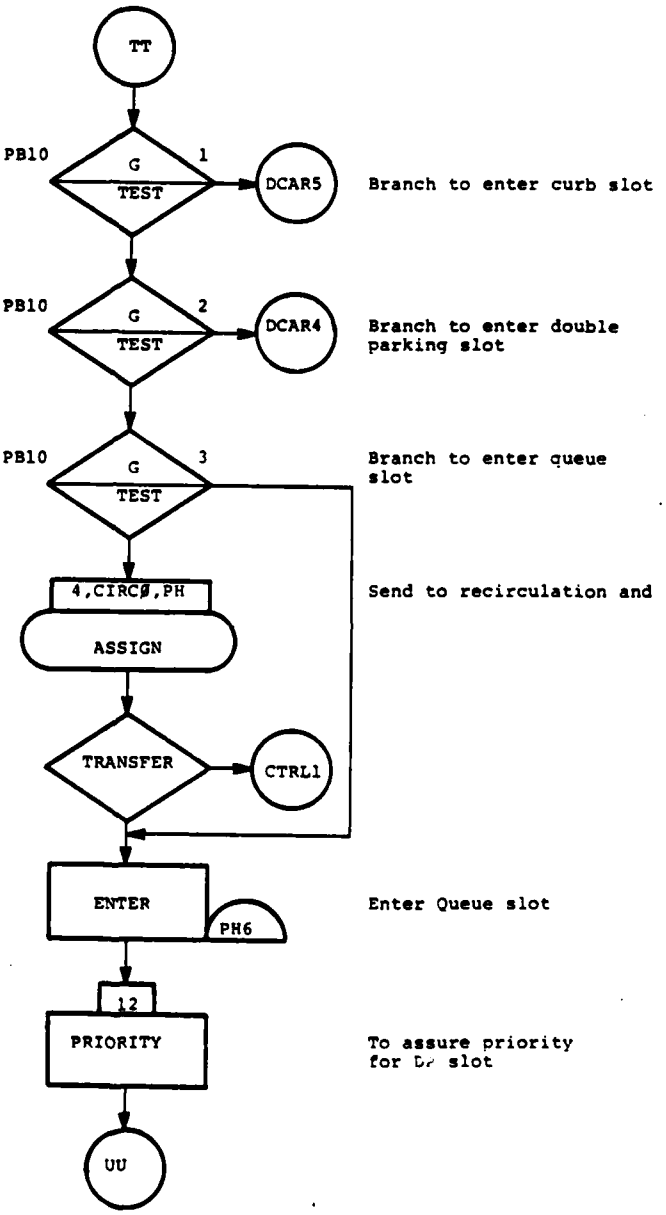


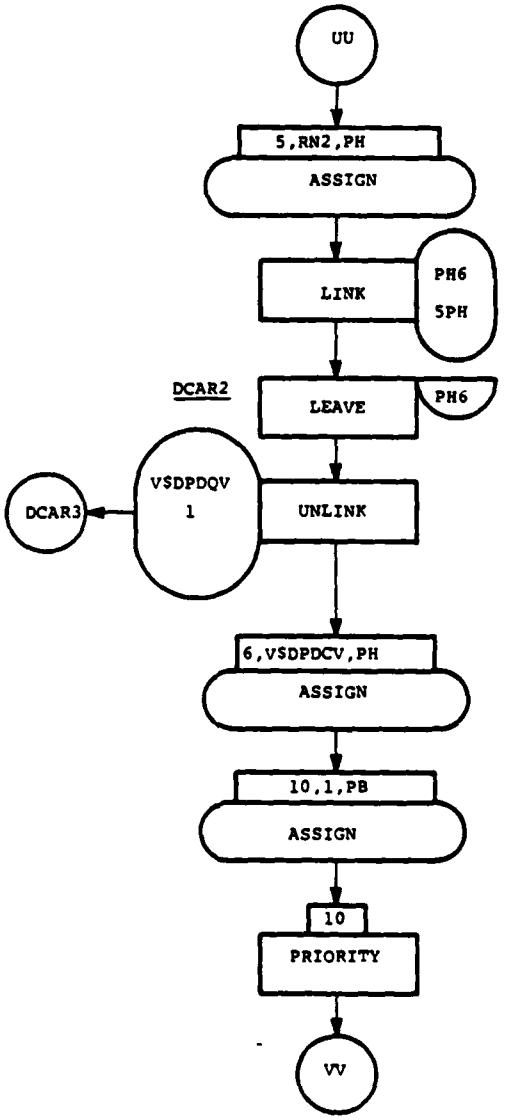

PP
8V$DEPL5,PH
ASSIGN
One less than corresponding storage no.
TRANSFER
DCARB
DCARD
8,V$DBPK1,PH
ASSIGN
One less than enplaning curb storage no.
4,PH8,PH
ASSIGN
Save curb storage no. minus one
5,V$EPCO8,PH
ASSIGN
Double parking storage no. for enplaning
PB10
NE
4
TEST
DCARB
If circulating vehicle, transfer to DCARB
8,V$ENPLS,PH
ASSIGN
One less than corresponding enplaning storage no.
8+,1,PH
DCARB
ASSIGN
Increment storage no.
QQ

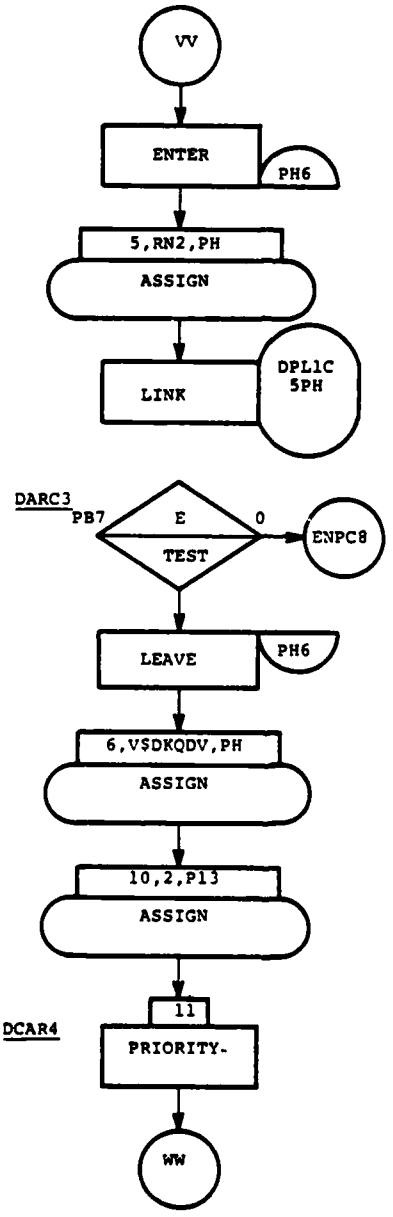

QQ
PB10
4
NE
TEST
If circulating vehicle skip next test
PH6
PH8
NE
TEST
DCARA
If storage number same as destination storage number, go to DCARA
5+,1,PH
ASSIGN
Increment double parking storage number
QUEUE
PH4
Enter queue for blocked lane
BKSLVFLD
Ø
E
TEST
Stop traffic if double parking and no. of passing lanes available is one
DEPART
PH4
Depart queue for blocked lane
S*PH5
E
0
TEST
DCARC
Fall through if current contents of double park storage is zero
RR


RR
SAVEVALUE
NOLAN,V$NLNMX,XH
Set no. of passing lanes to maximum available
SAVEVALUE
TOTL1+,1,XH
Save count
TRANSFER
DCARC
SAVEVALUE
NOLAN,V$NLNM,XH
Set no. of passing lanes to one less than maximum available
SAVEVALUE
TOTL2+,1,XH
Save count
SAVEVALUE
TOTL3+,V$LNDLY,XH
Save time
ADVANCE
V$LNDLY
Delay vehicle according to no. of lanes available
SS


SS
PB4
NE
TEST
Ø
Fall through if deplaning
BVSCIRVD
E
TEST
D
DCARA
If circulating vehicle is at last deplaning storage transfer to DCARA
TRANSFER
DCARB
Move to next deplaning storage
BVSCIRVH
E
TEST
Ø
DCARA
If circulating vehicle is at last enplaning storage, transfer to DCARA
TRANSFER
DCARB
DCARA
SAVEVALUE
ADPLC+,1,XH
Count of vehicles on deplaning curb
MARK
8PH
For time limit enforcement
TT


TT
PB10
G
TEST
1
DCAR5
Branch to enter curb slot
PB10
G
TEST
2
DCAR4
Branch to enter double parking slot
PB10
G
TEST
3
Branch to enter queue slot
4,CIRCØ,PH
ASSIGN
Send to recirculation and
TRANSFER
CTRL1
ENTER
PH6
Enter Queue slot
12
PRIORITY
To assure priority for D slot
UU


UU
5,RN2,PH
ASSIGN
Get random no.
LINK
PH6
5PH
Link on queue in random order
DCAR2
LEAVE
PH6
Leave double parking storage
DCAR3
V$DPDQV
1
UNLINK
Unlink one from corresponding queue chain
6,V$DPDCV,PH
ASSIGN
Change PH6 to curb storage no.
10,1,PB
ASSIGN
Now at curb
10
PRIORITY
Drop to normal priority
VV



Enter curb storage

Get random no.

Relink in random order

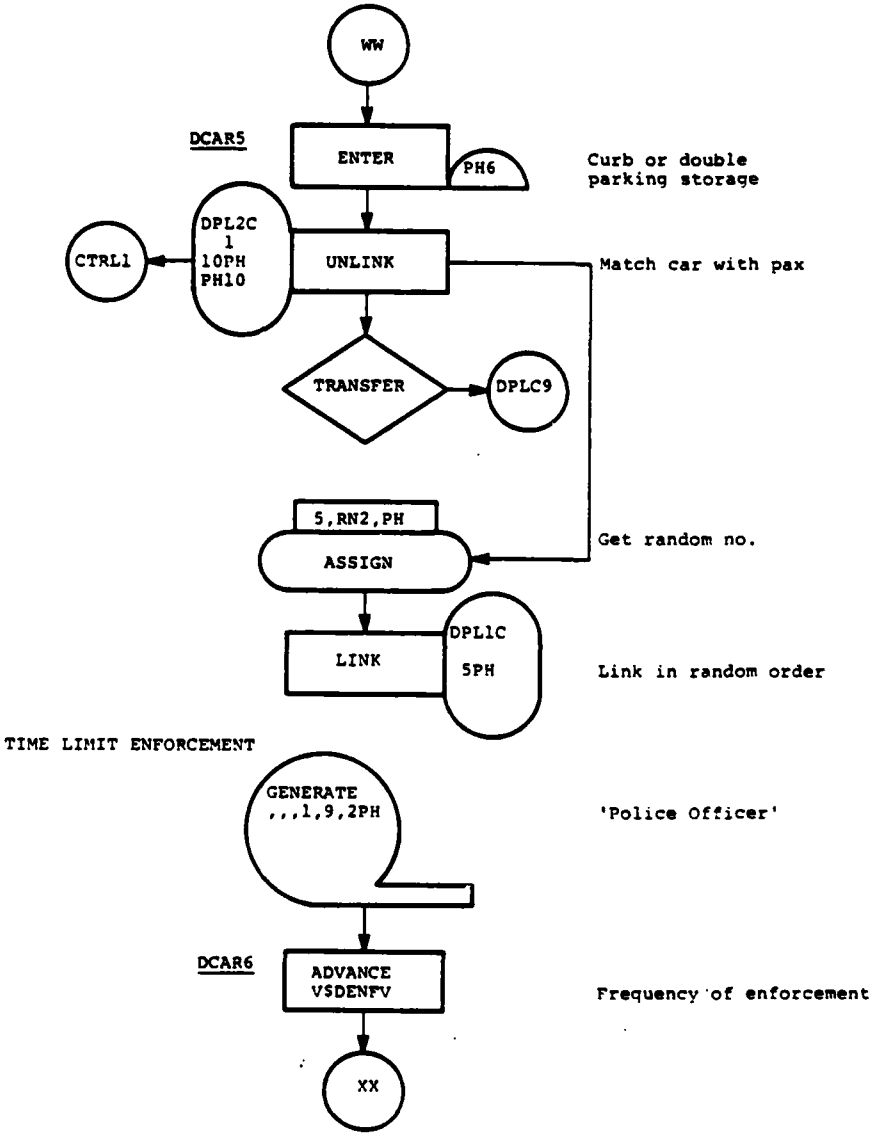
Branch if vehicle unlinked is enplaning

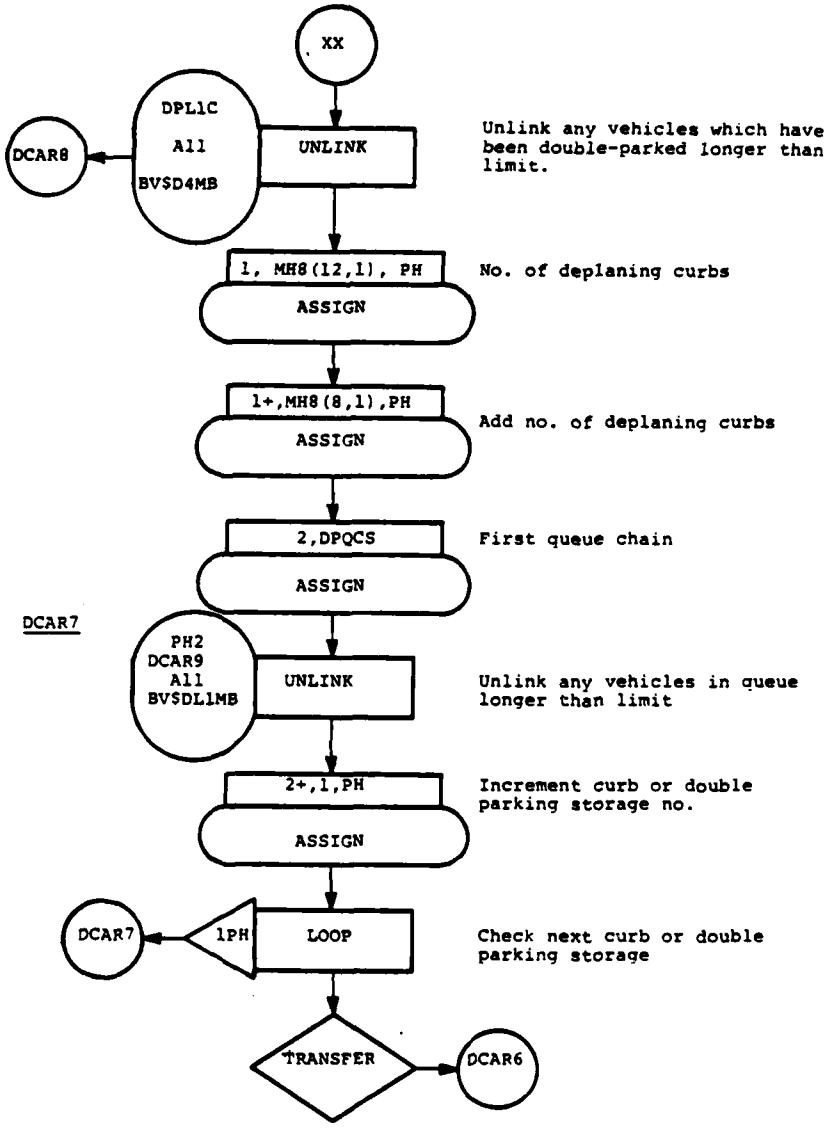
Leave queue storage

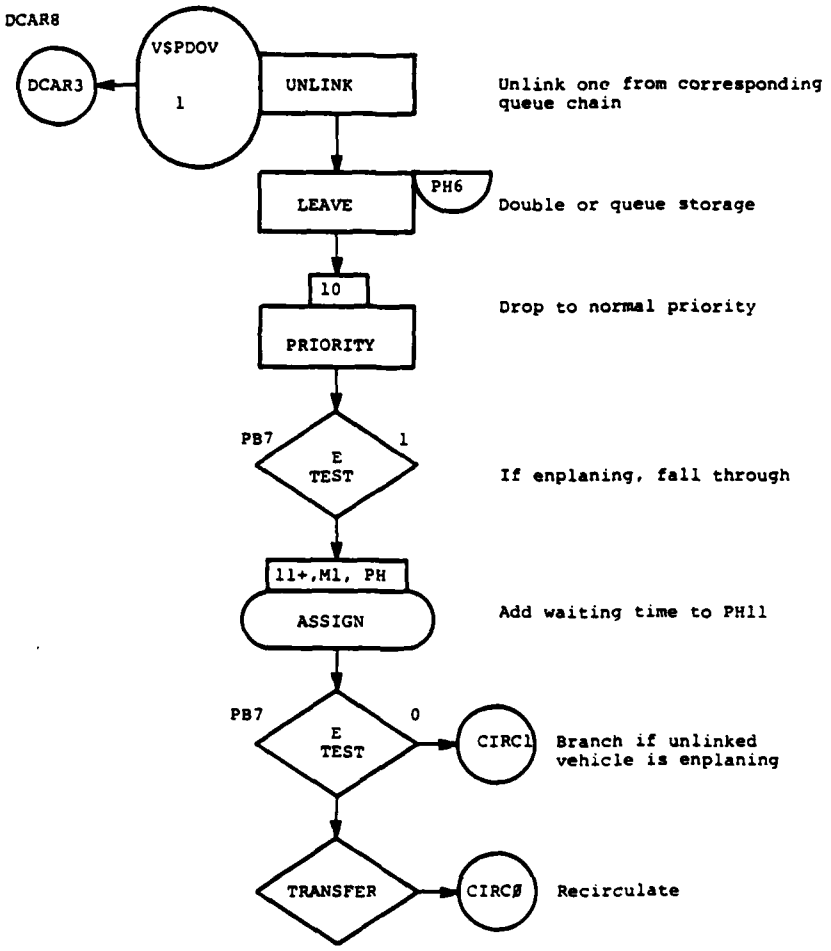
Change PH6 to Double parking storage no.

Now using double parking

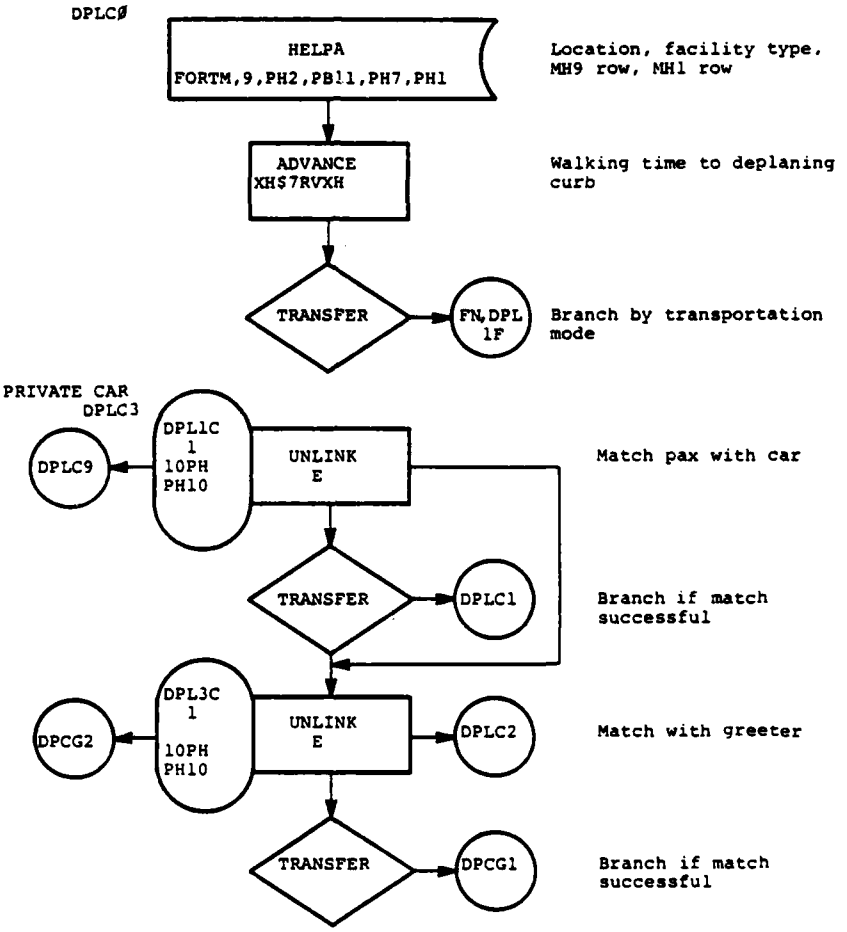
Set double parking priority

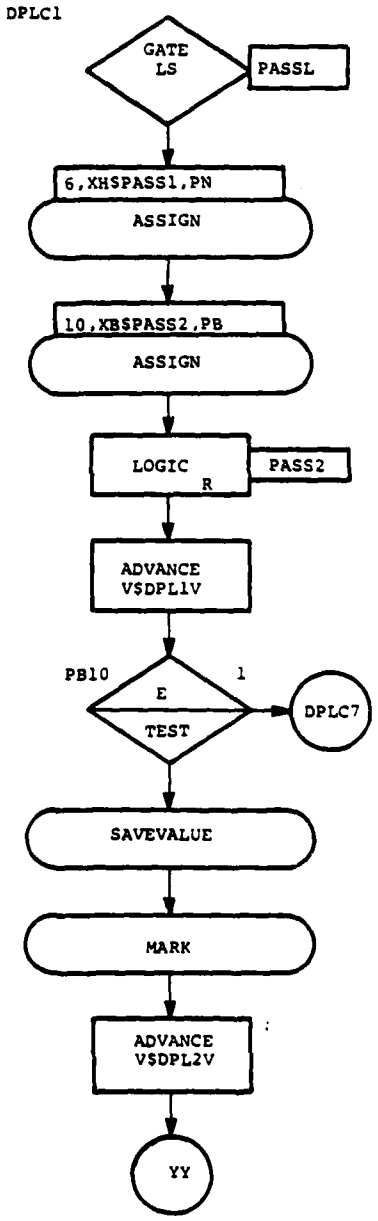

WW
DCAR5
ENTER
PH6
Curb or double parking storage
DPL2C
1
10PH
PH10
CTRL1
UNLINK
Match car with pax
TRANSFER
DPLC9
5,RN2,PH
ASSIGN
Get random no.
DPL1C
LINK
5PH
Link in random order
TIME LIMIT ENFORCEMENT
GENERATE
,,,1,9,2PH
'Police Officer'
DCAR6
ADVANCE
V$DENFV
Frequency of enforcement
XX


XX
DPL1C
All
BV$D4MB
DCAR8
UNLINK
Unlink any vehicles which have been double-parked longer than limit.
1, MH8(12,1), PH
ASSIGN
No. of deplaning curbs
1+,MH8(8,1),PH
ASSIGN
Add no. of deplaning curbs
2,DPQCS
ASSIGN
First queue chain
DCAR7
PH2
DCAR9
All
BV$DL1MB
UNLINK
Unlink any vehicles in queue longer than limit
2+,1,PH
ASSIGN
Increment curb or double parking storage no.
DCAR7
1PH
LOOP
Check next curb or double parking storage
TRANSFER
DCAR6


DCAR8
V$PDOV
DCAR3
1
UNLINK
Unlink one from corresponding queue chain
LEAVE
PH6
Double or queue storage
10
PRIORITY
Drop to normal priority
PB7
E
TEST
1
If enplaning, fall through
11+,M1, PH
ASSIGN
Add waiting time to PH11
PB7
E
TEST
0
CIRC1
Branch if unlinked vehicle is enplaning
TRANSFER
CIRCØ
Recirculate

DEPLANING CURB (PAX)





Wait for car location information

Pickup

Car location information

Reset logic switch

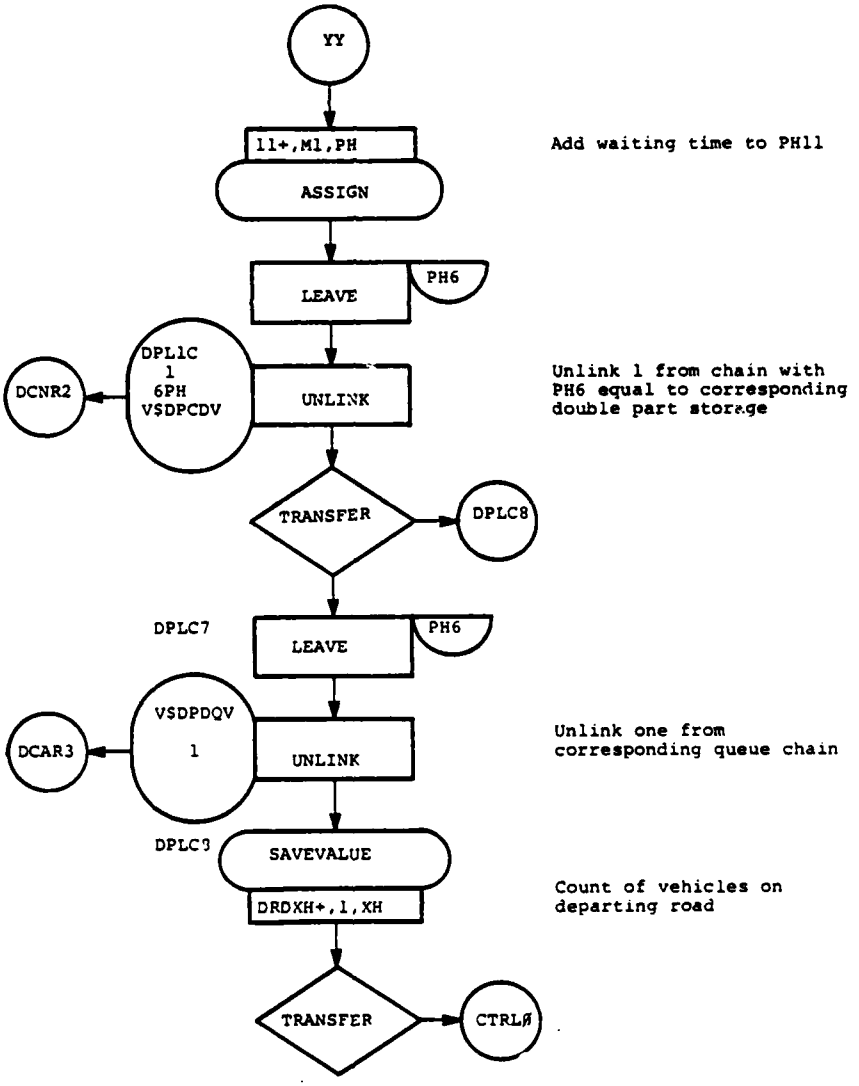
Loading time

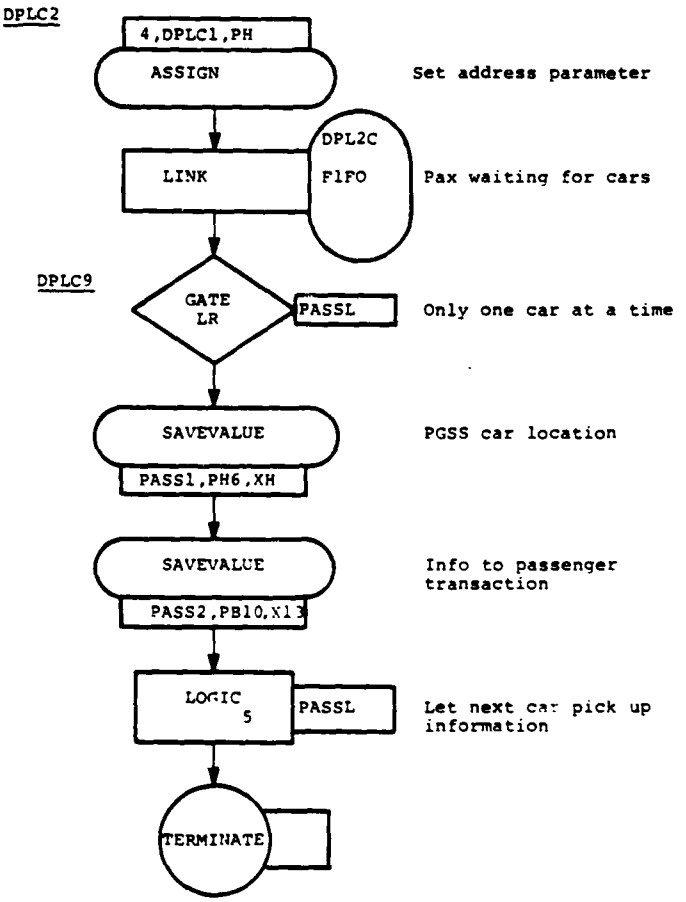
Fall through if leaving curb

Indirect addressing using variable

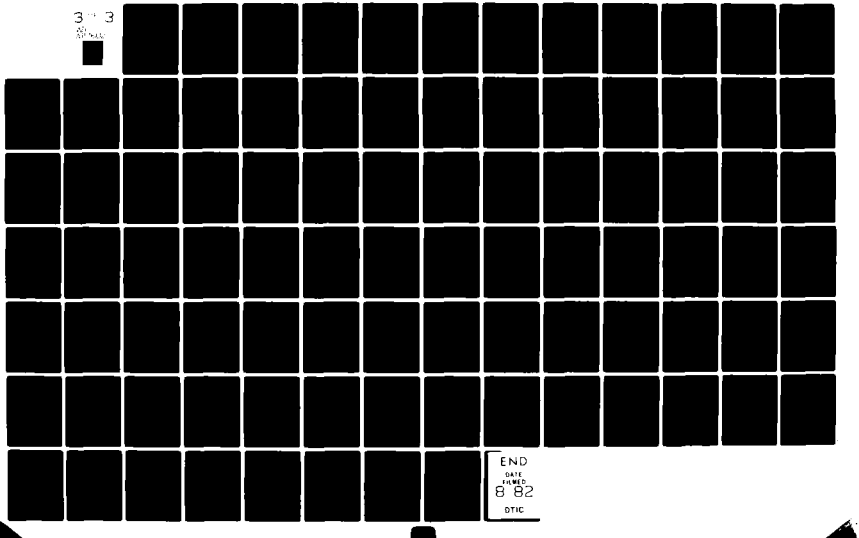
Mark pax for waiting time

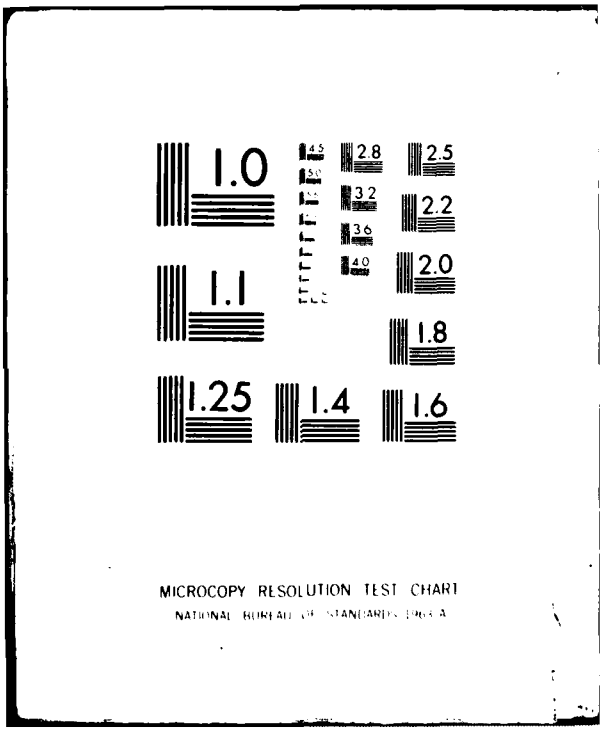
Random pullout delay


YY
11+,M1,PH
ASSIGN
Add waiting time to PH11
LEAVE
PH6
DPL1C
1
6PH
V$DPCDV
DCNR2
UNLINK
Unlink 1 from chain with PH6 equal to corresponding double part storage
TRANSFER
DPLC8
DPLC7
LEAVE
PH6
V$DPDQV
1
DCAR3
UNLINK
Unlink one from corresponding queue chain
DPLC9
SAVEVALUE
DRDXH+,1,XH
Count of vehicles on departing road
TRANSFER
CTRLØ

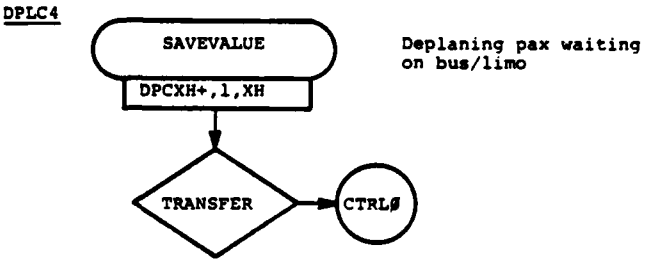

DPLC2
4,DPLC1,PH
ASSIGN
Set address parameter
DPL2C
LINK
FIFO
Pax waiting for cars
DPLC9
GATE
LR
PASSL
Only one car at a time
SAVEVALUE
PASS1,PH6,XH
PGSS car location
SAVEVALUE
PASS2,PB10,X13
Info to passenger transaction
LOGIC
5
PASSL
Let next car pick up information
TERMINATE

AD-A117 602 TRANSPORTATION SYSTEMS CENTER CAMBRIDGE MA F/G 1/5
AIRPORT LANDSIDE. VOLUME IV. APPENDIX A. ALSIM AUXILIARY AND MA--ETC(U)
JUN 82 L MCCABE, M GORSTEIN
UNCLASSIFIED DOT-TSC-FAA-82-4-4 FAA-EM-80-8-4 NL

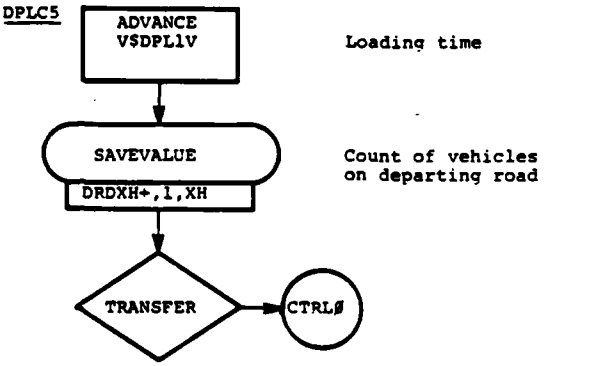



1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

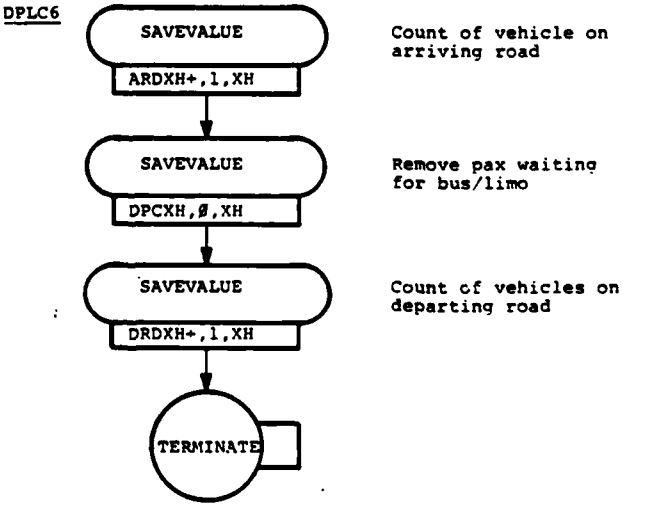
BUS/LIMO - PAX



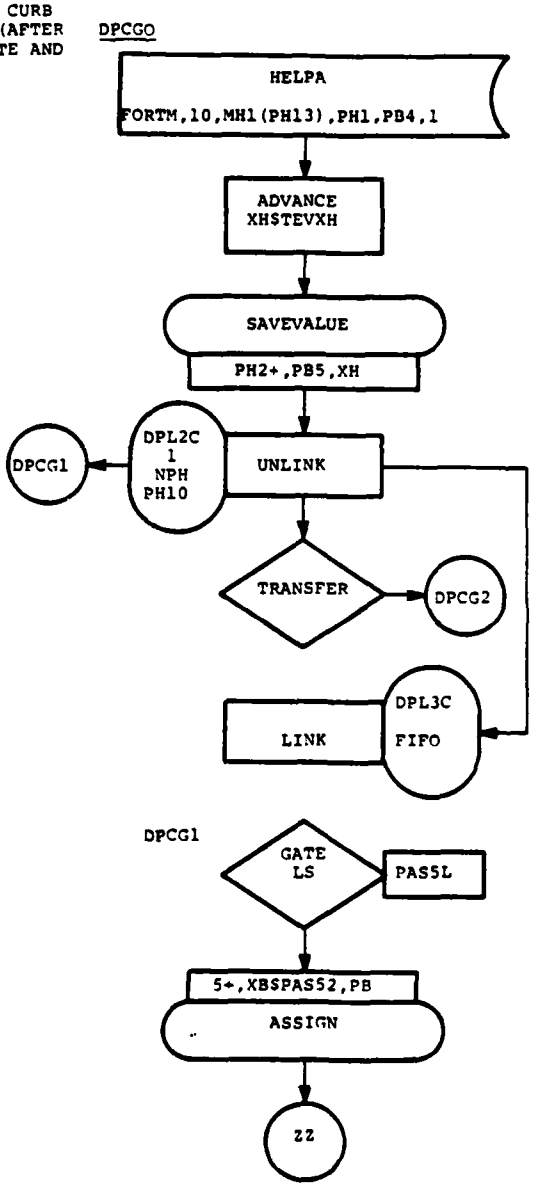
TAXI

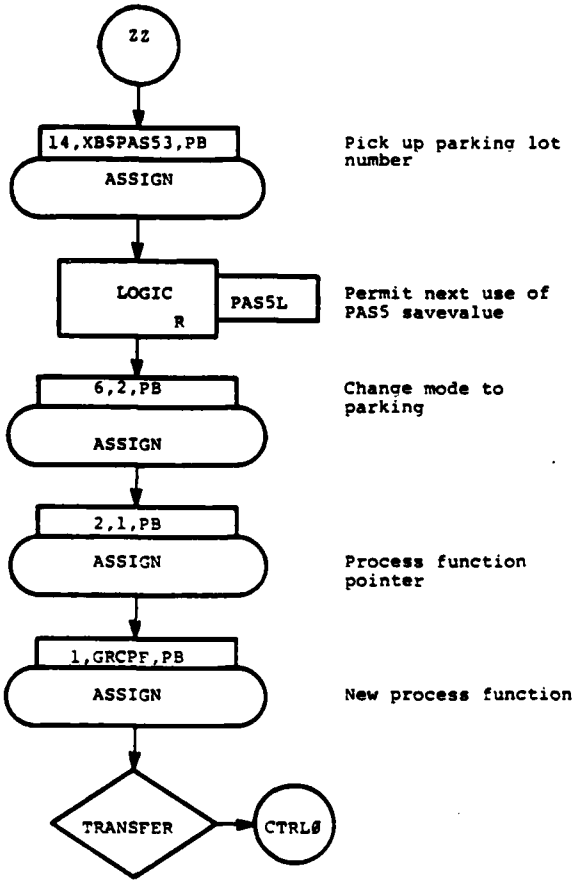


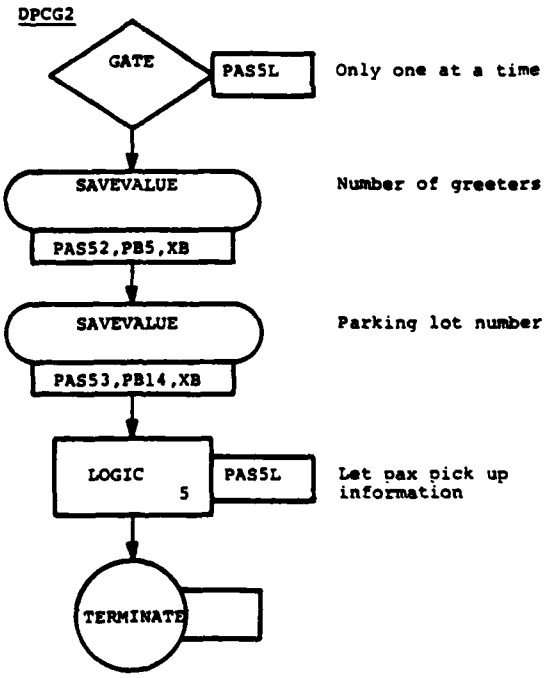
BUS/LIMO-VEHICLE

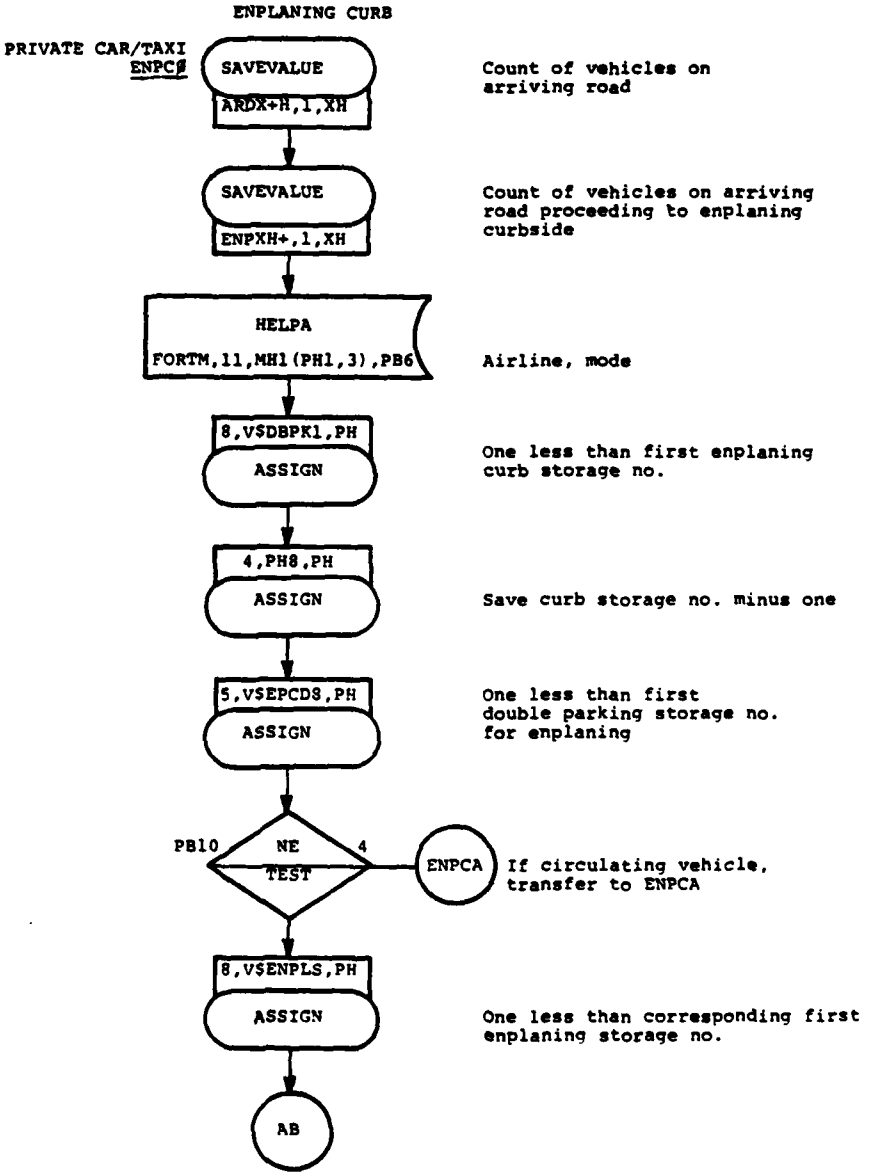


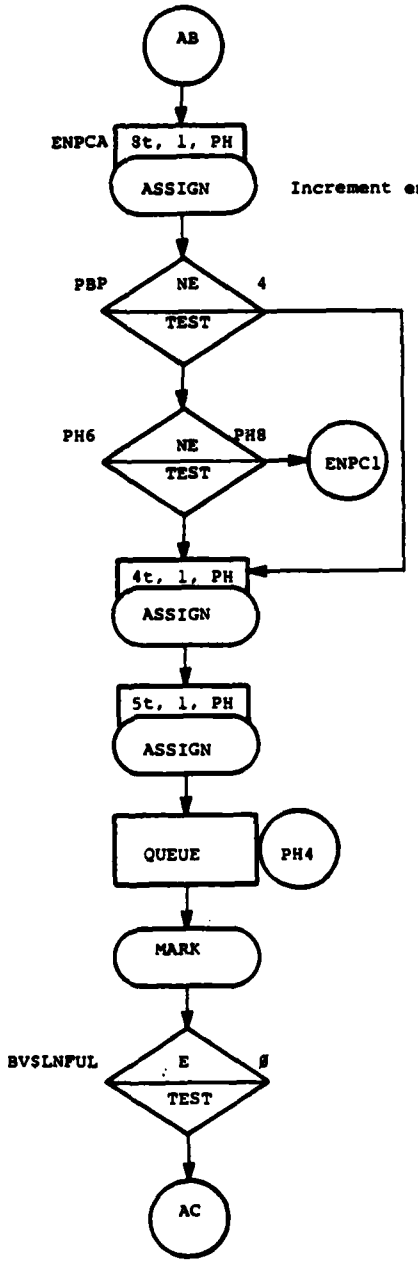
DEPLANING CURB GREETERS (AFTER RECIRCULATE AND PARK)

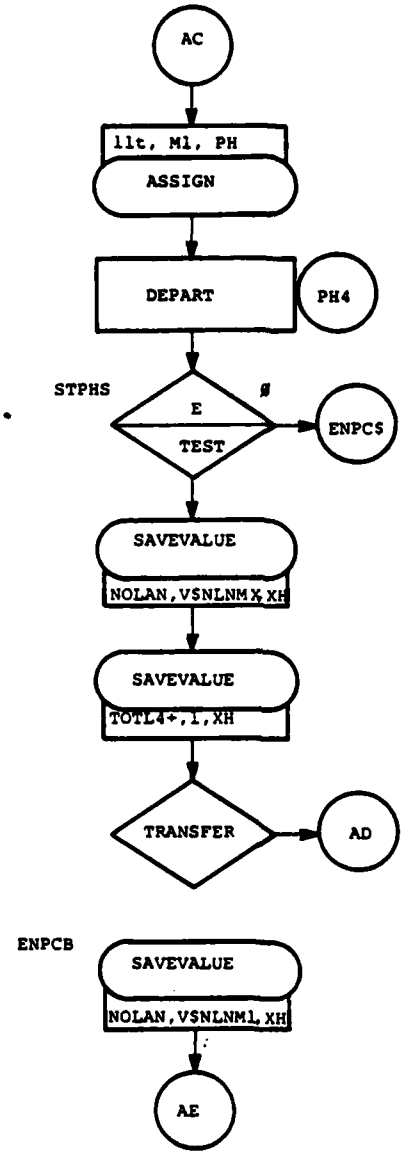



ZZ
14,XBSPAS53,PB
ASSIGN
Pick up parking lot number
LOGIC
R
PAS5L
Permit next use of PAS5 savevalue
6,2,PB
ASSIGN
Change mode to parking
2,1,PB
ASSIGN
Process function pointer
1,GRCPF,PB
ASSIGN
New process function
TRANSFER
CTRLØ


DPCG2
GATE
PAS5L
Only one at a time
SAVEVALUE
Number of greeters
PAS52,PB5,XB
SAVEVALUE
Parking lot number
PAS53,PB14,XB
LOGIC
5
PAS5L
Let pax pick up information
TERMINATE


ENPLANING CURB
PRIVATE CAR/TAXI
ENPCØ
SAVEVALUE
ARDX+H,1,XH
Count of vehicles on arriving road
SAVEVALUE
ENPXH+,1,XH
Count of vehicles on arriving road proceeding to enplaning curbside
HELPA
FORTM,11,MH1(PH1,3),PB6
Airline, mode
8,V$DBPK1,PH
ASSIGN
One less than first enplaning curb storage no.
4,PH8,PH
ASSIGN
Save curb storage no. minus one
5,V$EPCD8,PH
ASSIGN
One less than first double parking storage no. for enplaning
PB10
NE
4
TEST
ENPCA
If circulating vehicle, transfer to ENPCA
8,V$ENPLS,PH
ASSIGN
One less than corresponding first enplaning storage no.
AB


AB
ENPCA
8t, 1, PH
ASSIGN
Increment enplanning storage no.
PBP
NE
4
TEST
If circulating vehicle, skip next test
PH6
NE
PH8
TEST
ENPC1
Is enplanning storage no. same as destination storage no.
4t, 1, PH
ASSIGN
Increment enplaning curb storage no.
5t, 1, PH
ASSIGN
Increment enplaning double parking storage no.
QUEUE
PH4
Enter queue for blocked lane
MARK
Mark pax for waiting time
BV$LNFUL
E
0
TEST
Stop traffic if double parking and no. of passing lanes available is one.
AC



Add waiting time to PH11

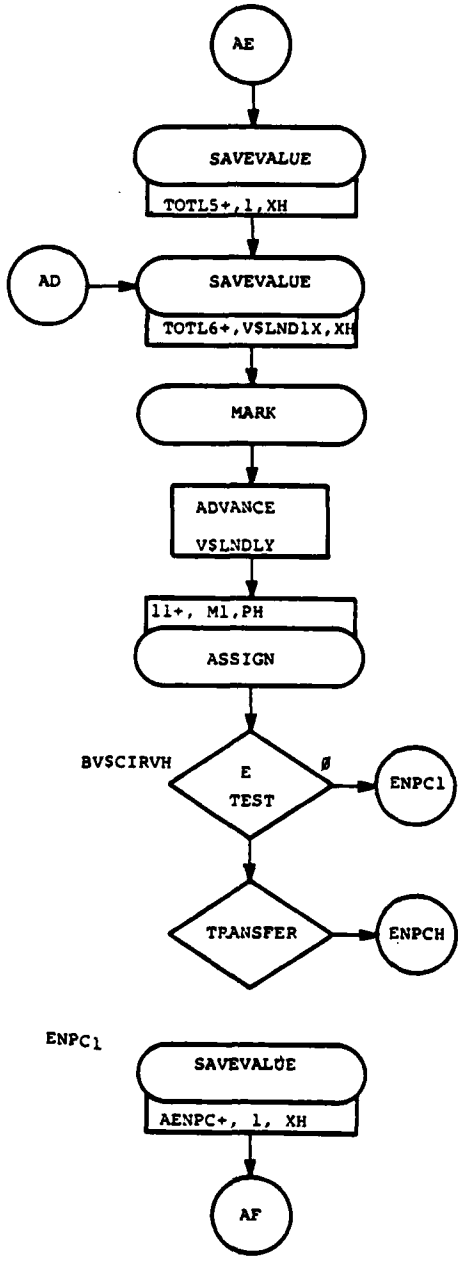
Leave queue for blocked lane

If current contents of double parking storage is fall through through

Set no. of passing lanes to maximum available.

Save count

Set no. of passing lanes to one less than maximum available.



Save Count

Save time

Mark pax for waiting time

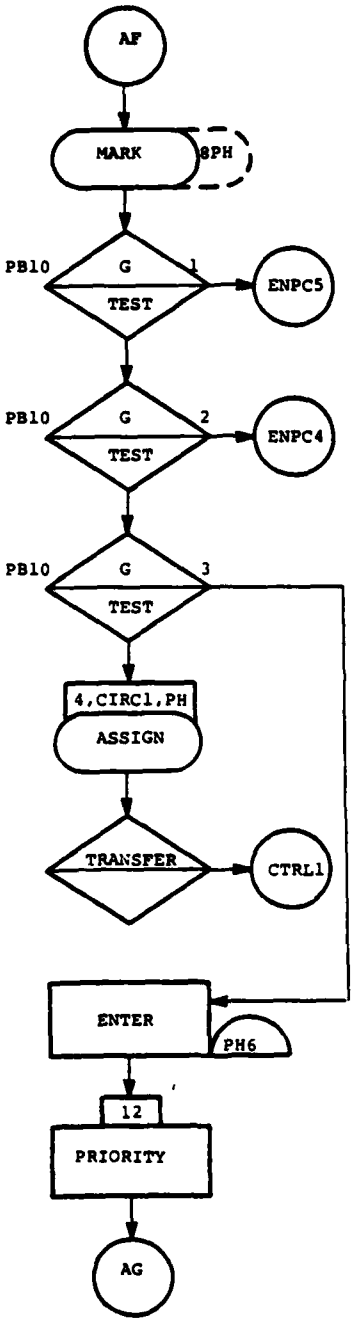
Delay vehicle according to no. of lanes available

Add waiting time to PH11

If calculating vehicle is at last enplaning curb storage, transfer to ENPC1

Move to next enplaning storage no.

Count of vehicles on enplaning curb



For time limit enforcement

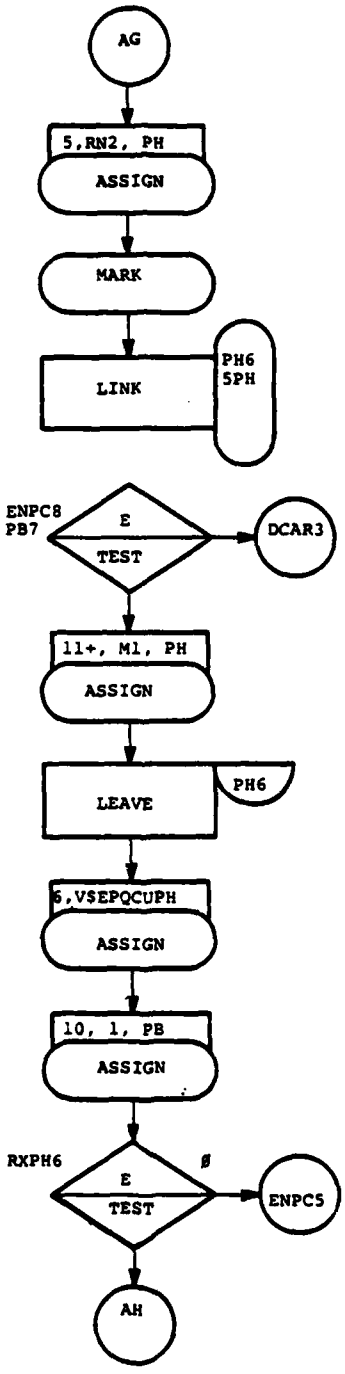
Branch to enter curb slot

Branch to enter double parking slot

Branch to enter queue slot

Sent to recirculation road

To assure priority for double parking slot



Get random number

Mark pax for waiting time

Link on queue in random order

Branch if vehicle unlinked is deplaning

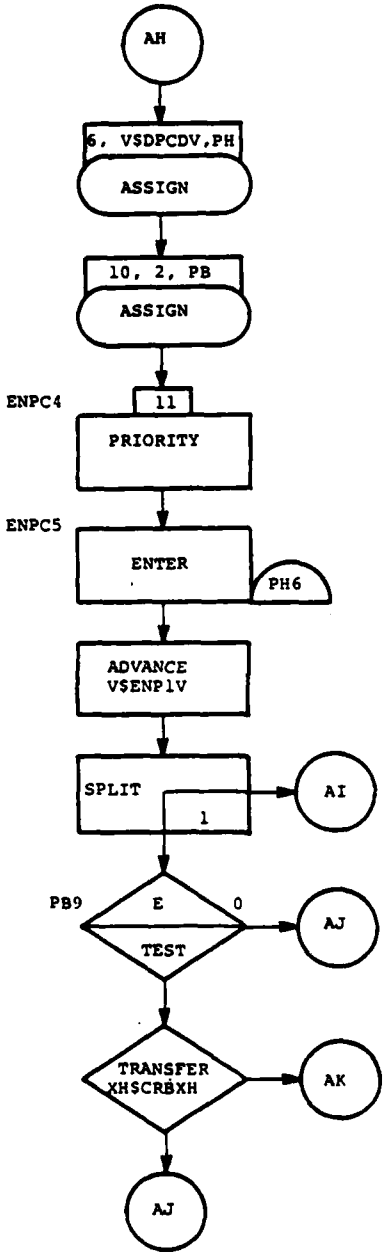
Add waiting time to PH11

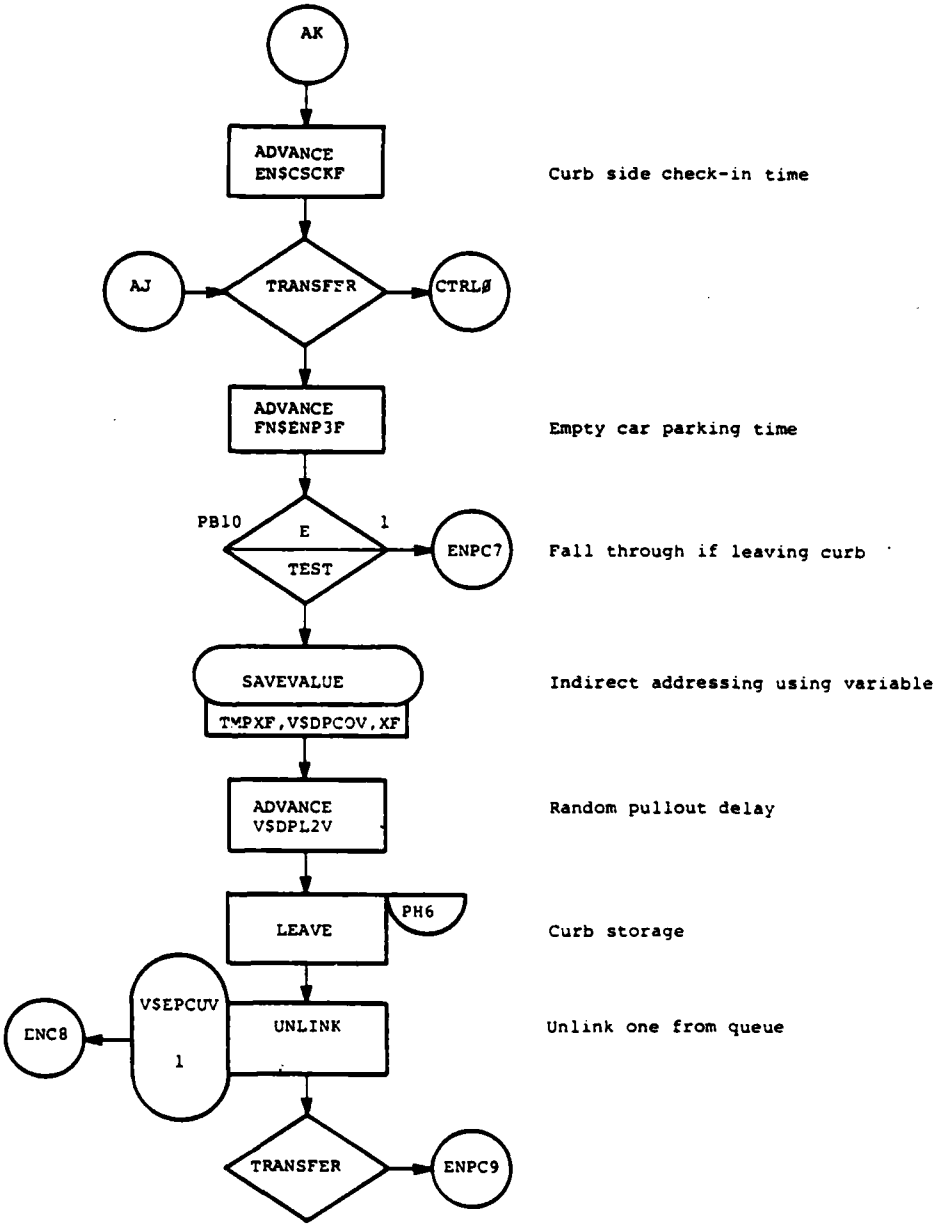
Leave queue storage

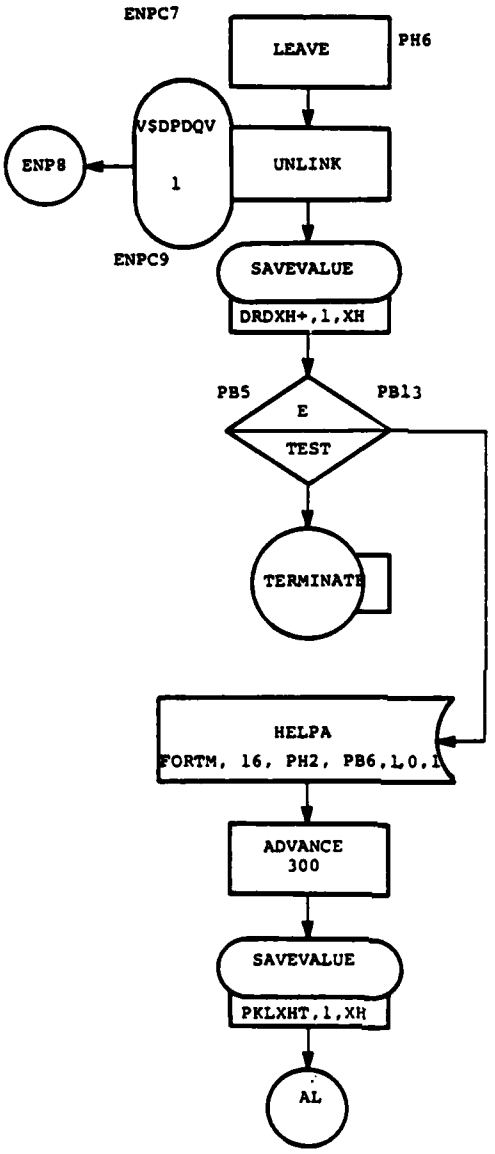
Change PH6 to curb storage no.

Using curb

Fall through if storage filled


AH
6, V$DPCDV,PH
ASSIGN
Change PH6 to double parking storage
10, 2, PB
ASSIGN
Using double parking
ENPC4
11
PRIORITY
Double parking priority
ENPC5
ENTER
PH6
ADVANCE
V$ENP1V
Enplaning curb unload time - car/taxi
SPLIT
1
AI
PB9
E
0
TEST
AJ
Fall through if preticketed
TRANSFER
XH$CRBXH
AK
Fall through if using curb side check-in
AJ


AK
ADVANCE
EN$CSCKF
Curb side check-in time
AJ
TRANSFER
CTRLØ
ADVANCE
FN$ENP3F
Empty car parking time
PB10
E
1
TEST
ENPC7
Fall through if leaving curb
SAVEVALUE
TMPXF,V$DPCOV,XF
Indirect addressing using variable
ADVANCE
V$DPL2V
Random pullout delay
LEAVE
PH6
Curb storage
V$EPCUV
ENC8
UNLINK
1
Unlink one from queue
TRANSFER
ENPC9



Double parking storage

Unlink one from queue

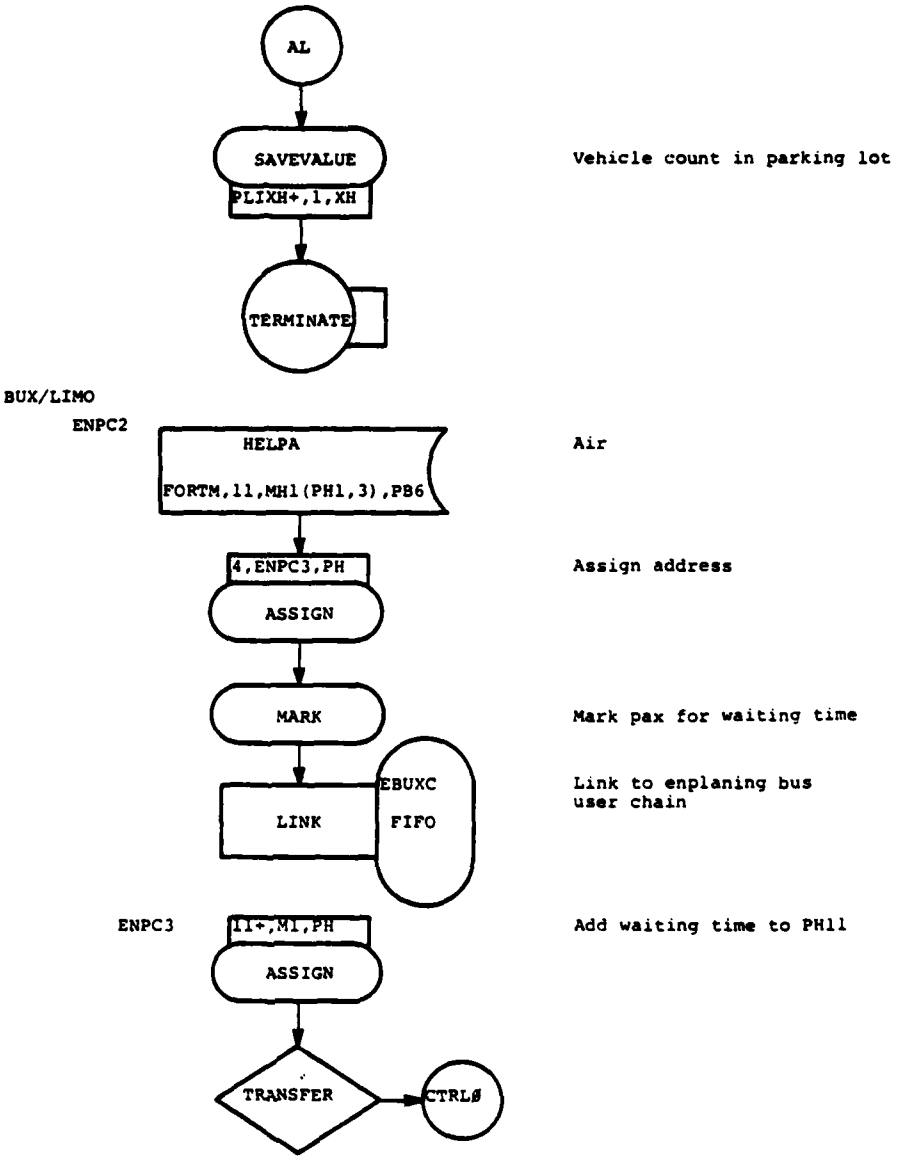
Count of vehicles on departing road

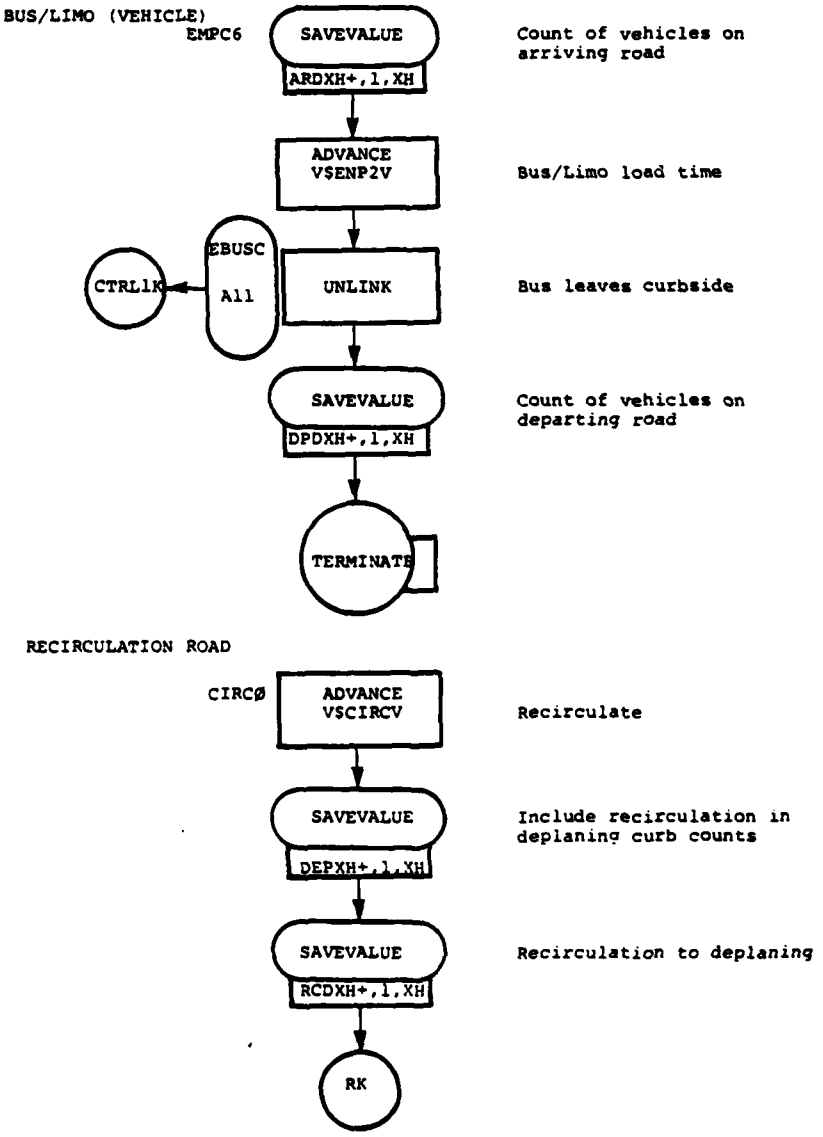
Fall through if no well-wishers

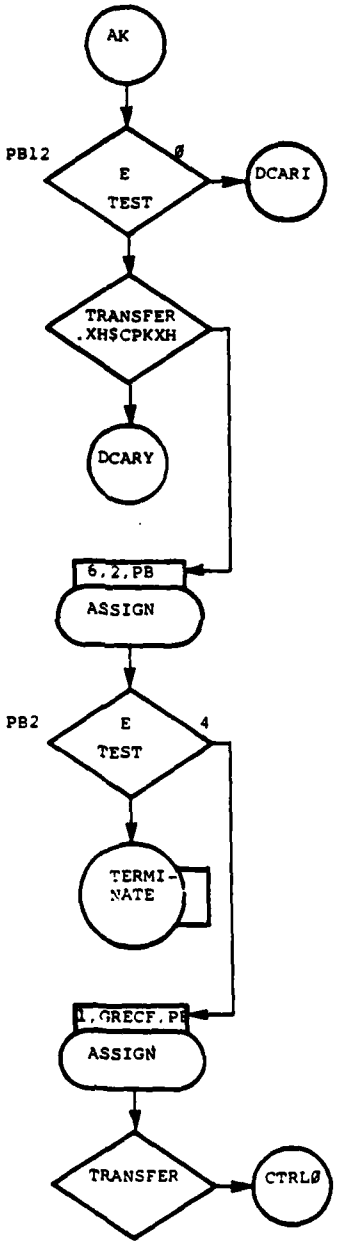
Location, mode, enplaning, zero, Lot no. only

Vehicle to lot

Enter car in parking lot


AL
SAVEVALUE
PLIXH+,1,XH
Vehicle count in parking lot
TERMINATE
BUX/LIMO
ENPC2
HELPA
FORTM,11,MH1(PH1,3),PB6
Air
4,ENPC3,PH
ASSIGN
Assign address
MARK
Mark pax for waiting time
LINK
EBUXC
FIFO
Link to enplaning bus user chain
ENPC3
11+,M1,PH
ASSIGN
Add waiting time to PH11
TRANSFER
CTRLØ


BUS/LIMO (VEHICLE)
EMPC6
SAVEVALUE
ARDXH+,1,XH
Count of vehicles on arriving road
ADVANCE
V$ENP2V
Bus/Limo load time
EBUSC
All
CTRL1K
UNLINK
Bus leaves curbside
SAVEVALUE
DPDXH+,1,XH
Count of vehicles on departing road
TERMINATE
RECIRCULATION ROAD
CIRCØ
ADVANCE
V$CIRCV
Recirculate
SAVEVALUE
DEPXH+,1,XH
Include recirculation in deplaning curb counts
SAVEVALUE
RCDXH+,1,XH
Recirculation to deplaning
RK

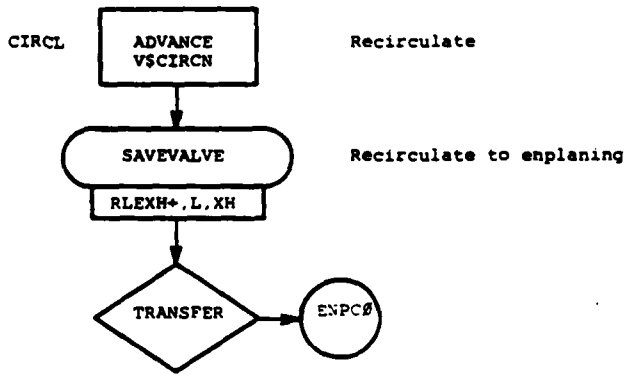


Branch N greater
who has all ready met

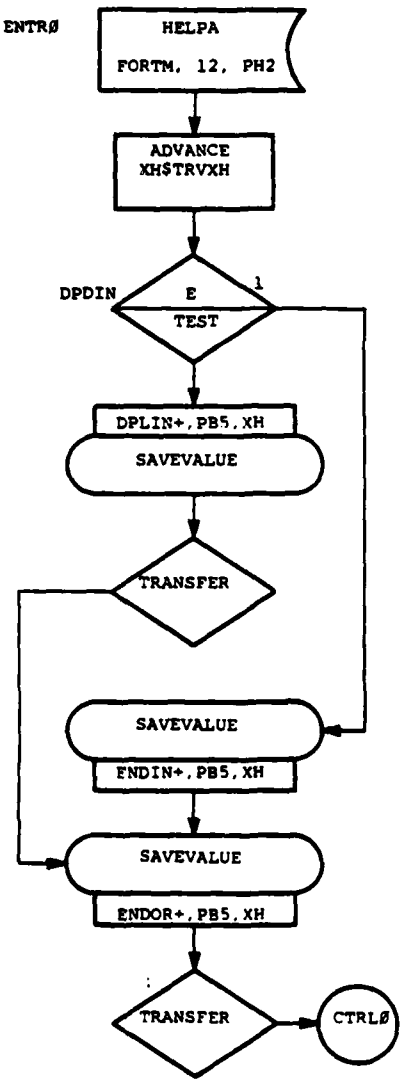
Fall through to enter park
or branch to deplaning road

Change mode to parking

Process function to curb


CIRCL
ADVANCE
V$CIRCN
Recirculate
SAVEVALVE
Recirculate to enplaning
RLEXH+,L,XH
TRANSFER
ENPCØ

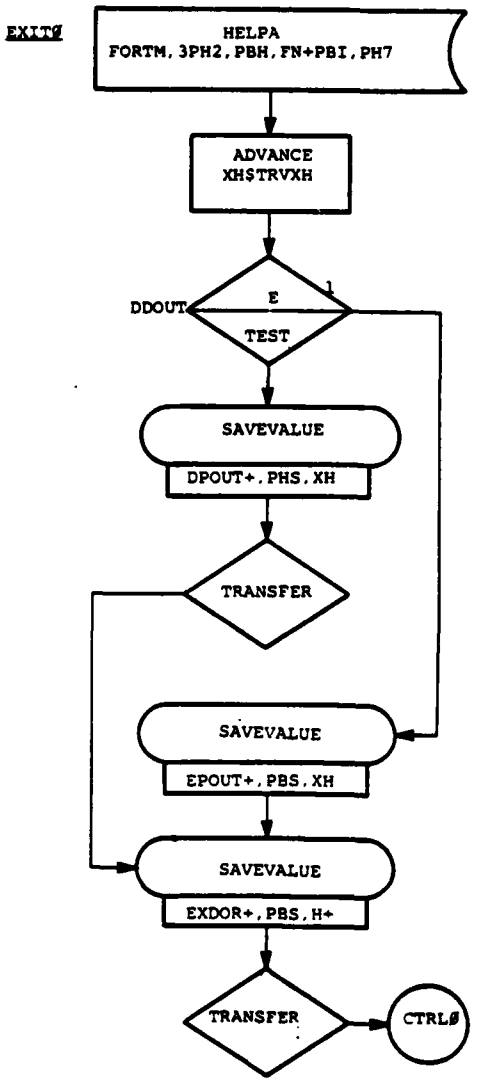
ENTRANCE



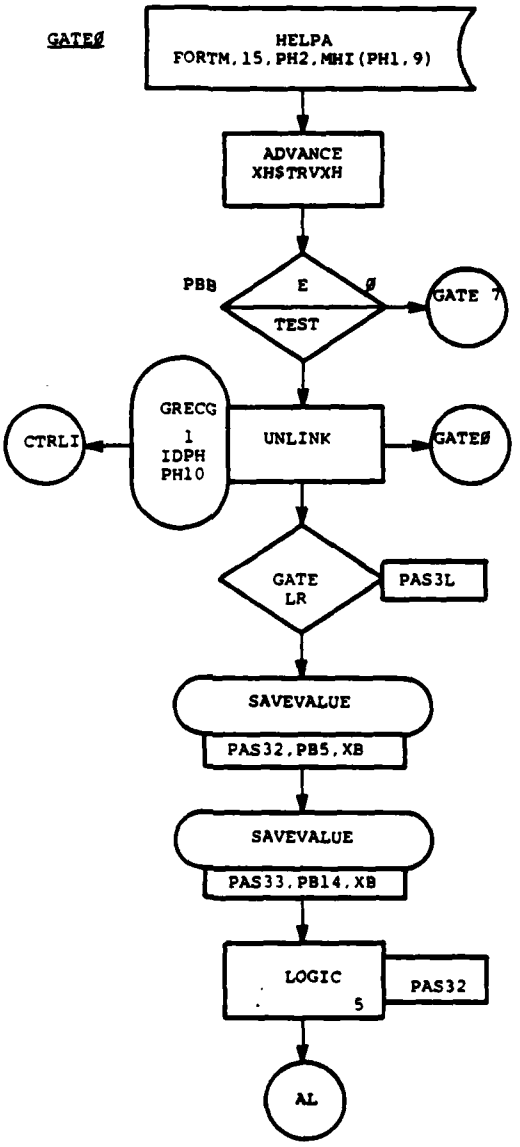
Location

Waiting time to entrance

EXIT


EXIT∅
HELPA
FORTM, 3PH2, PBH, FN+PBI, PH7
Location, current process, next address, MH9 Row
ADVANCE
XH$TRVXH
Walking time to exit
DDOUT
E
1
TEST
SAVEVALUE
DPOUT+, PHS, XH
TRANSFER
SAVEVALUE
EPOUT+, PBS, XH
SAVEVALUE
EXDOR+, PBS, H+
TRANSFER
CTRL∅

GATE (ENPLANING PAX)



Location, gate

Walking time to gate

Fall through if no pax

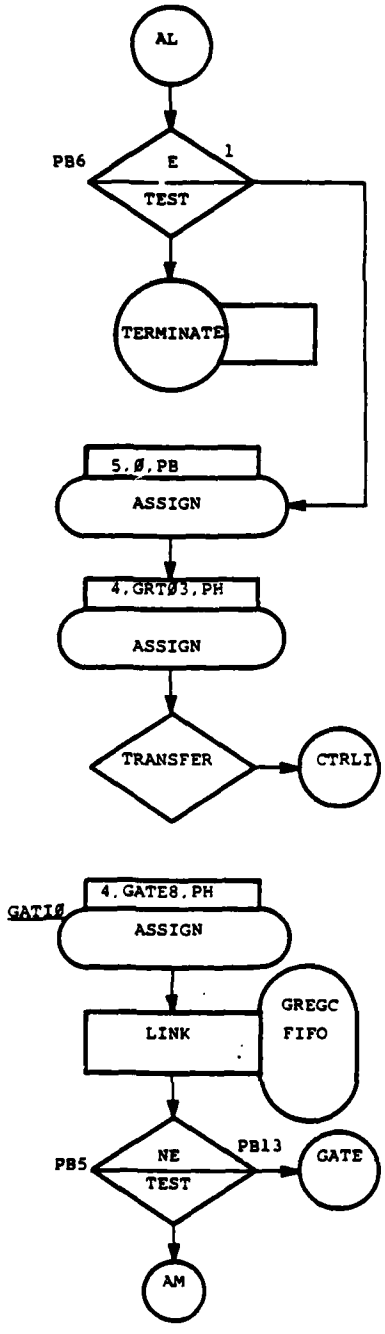
Match with pax

Only one at a time

Number of greeters

Parking lot number

Let pax park up information



Branch H mode is curb

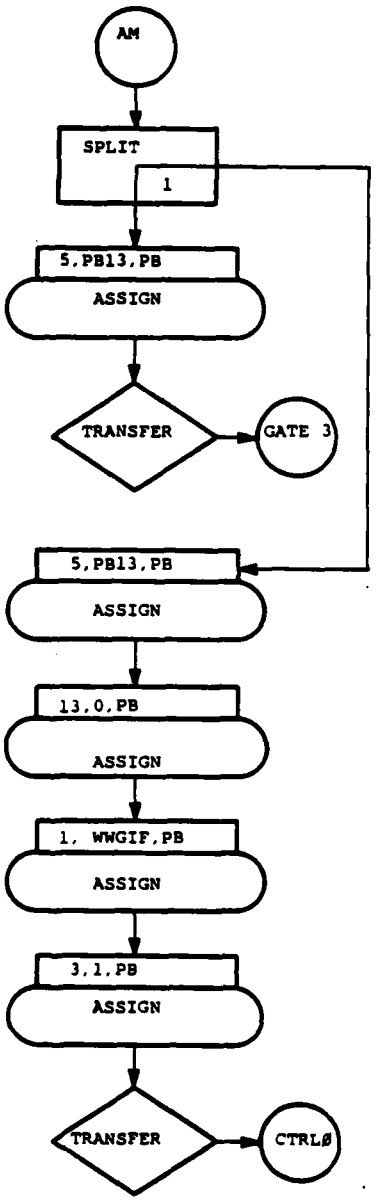
No one in party

Rate to greeter leaving parking

Will go to GATE when unlinked

Wait to meet greeter

Fall through if have well-wishers.



Split well-wishers off

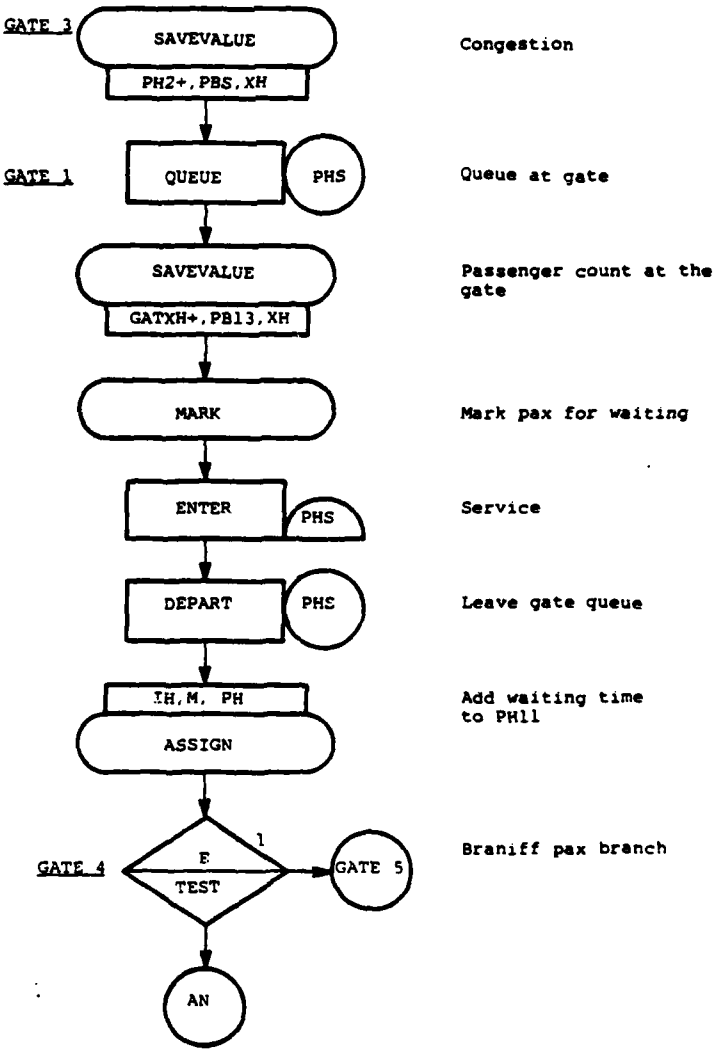
Drop well-wishers

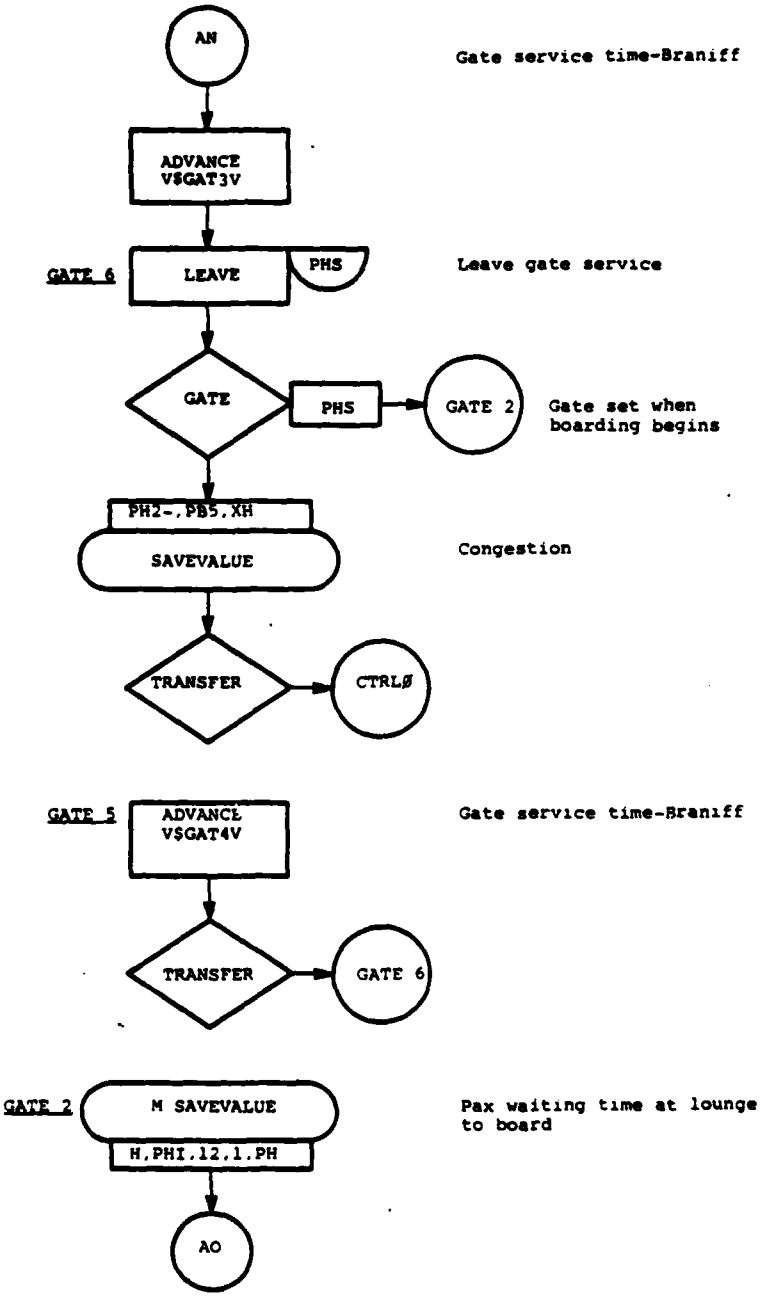
Subtract at Pax

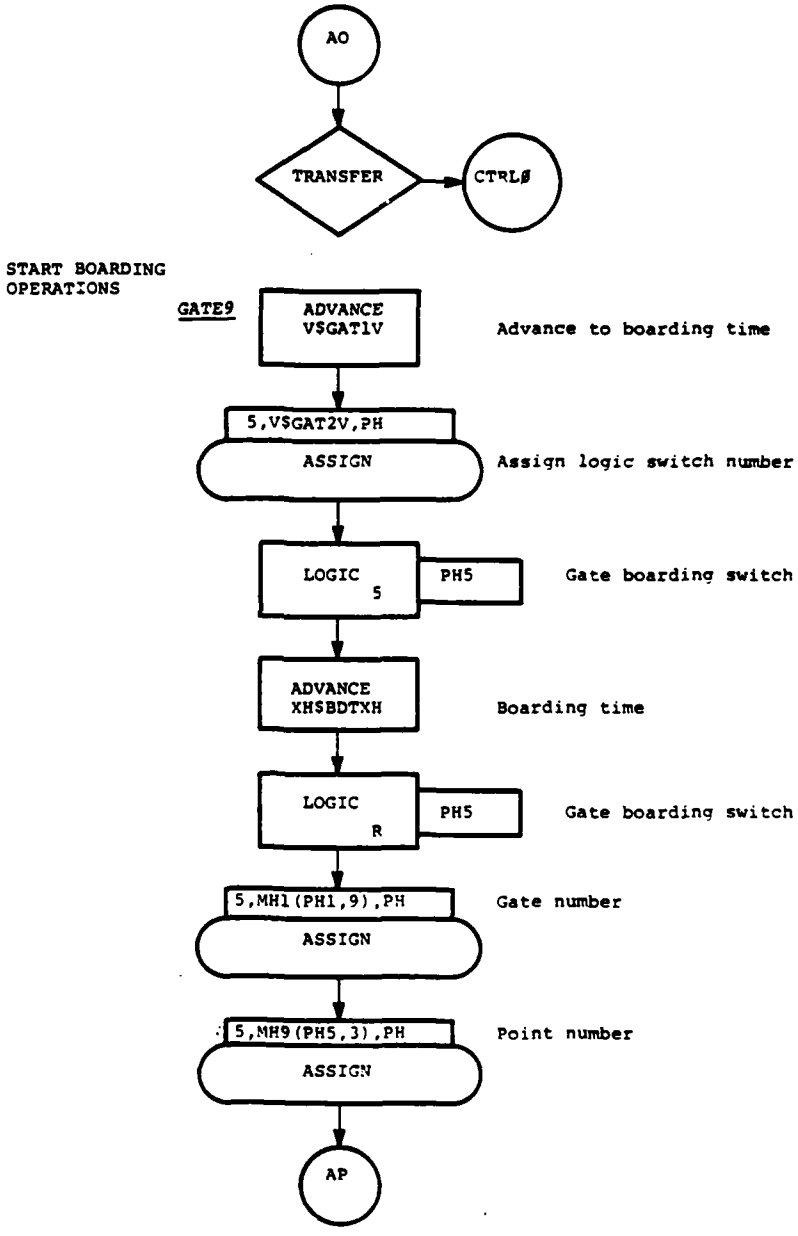
Set pax to zero

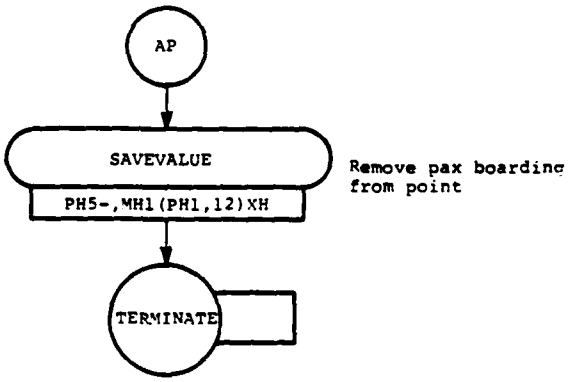
Well-wishers leaving from gate process function

Process function pointer


GATE 3
SAVEVALUE
PH2+,PBS,XH
Congestion
GATE 1
QUEUE
PHS
Queue at gate
SAVEVALUE
GATXH+,PB13,XH
Passenger count at the gate
MARK
Mark pax for waiting
ENTER
PHS
Service
DEPART
PHS
Leave gate queue
IH,M, PH
ASSIGN
Add waiting time to PH11
GATE 4
E
TEST
1
GATE 5
Braniff pax branch
AN

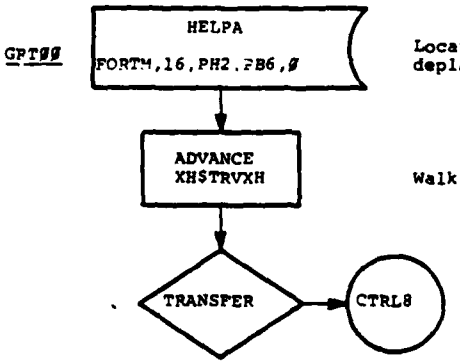

AN
Gate service time-Braniff
ADVANCE
V$GAT3V
GATE 6
LEAVE
PHS
Leave gate service
GATE
PHS
GATE 2
Gate set when
boarding begins
PH2-,PB5,XH
SAVEVALUE
Congestion
TRANSFER
CTRLØ
GATE 5
ADVANCE
V$GAT4V
Gate service time-Braniff
TRANSFER
GATE 6
GATE 2
M SAVEVALUE
H,PHI,12,1,PH
Pax waiting time at lounge
to board
AO


AO
TRANSFER
CTRLØ
START BOARDING OPERATIONS
GATE9
ADVANCE V$GAT1V
Advance to boarding time
5,V$GAT2V,PH
ASSIGN
Assign logic switch number
LOGIC 5
PH5
Gate boarding switch
ADVANCE XH$BDTXH
Boarding time
LOGIC R
PH5
Gate boarding switch
5,MH1(PH1,9),PH
ASSIGN
Gate number
5,MH9(PH5,3),PH
ASSIGN
Point number
AP

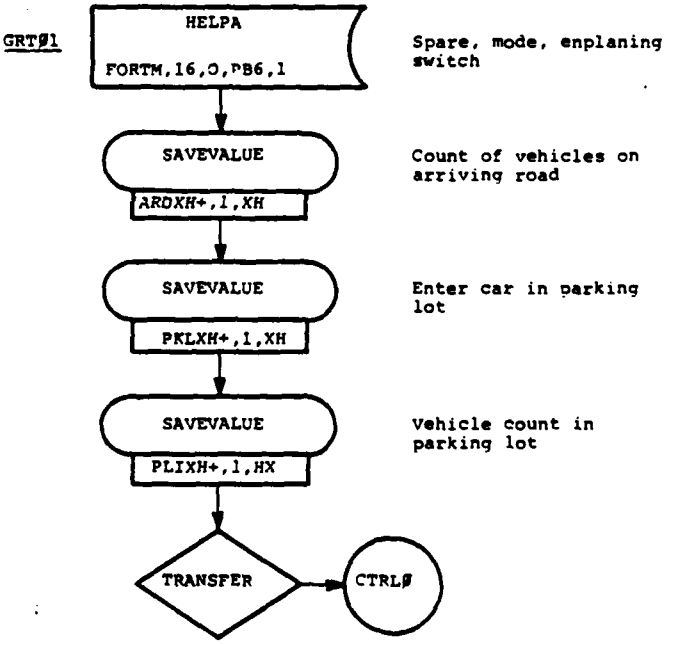

AP
SAVEVALUE
PH5-,MH1(PH1,12)XH
Remove pax boarding from point
TERMINATE

GROUND TRANSPORTATION (MISC)

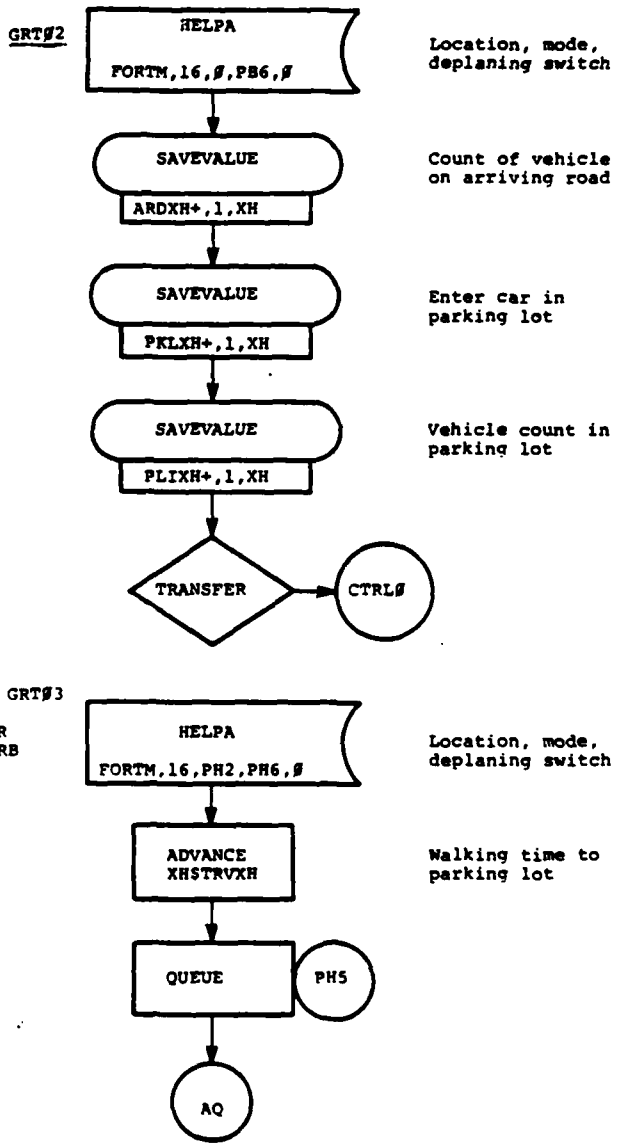
DEPLANING PAX-SELF

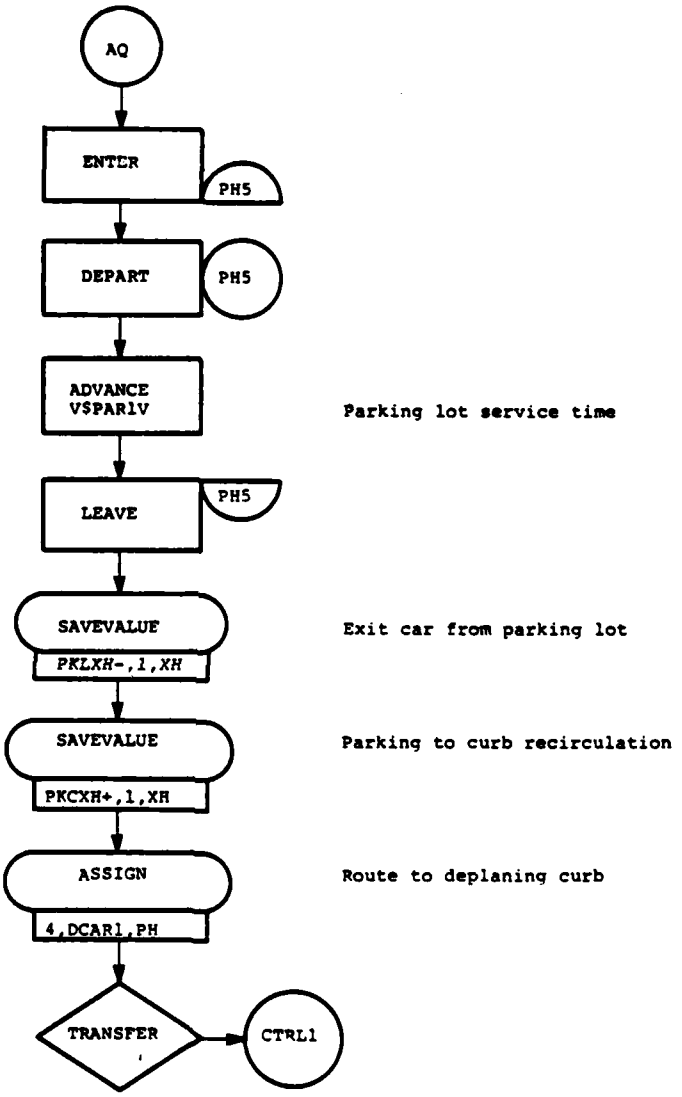


ENPLANING PAX-SELF

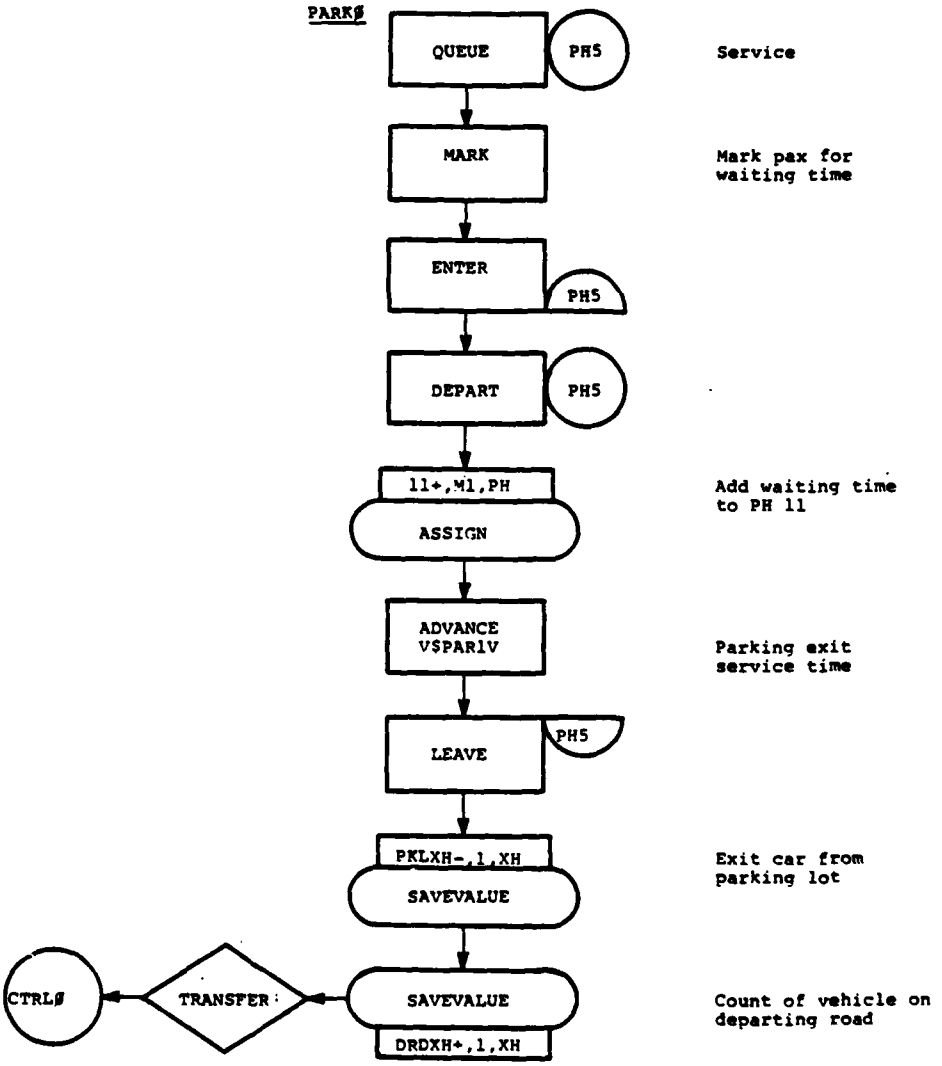


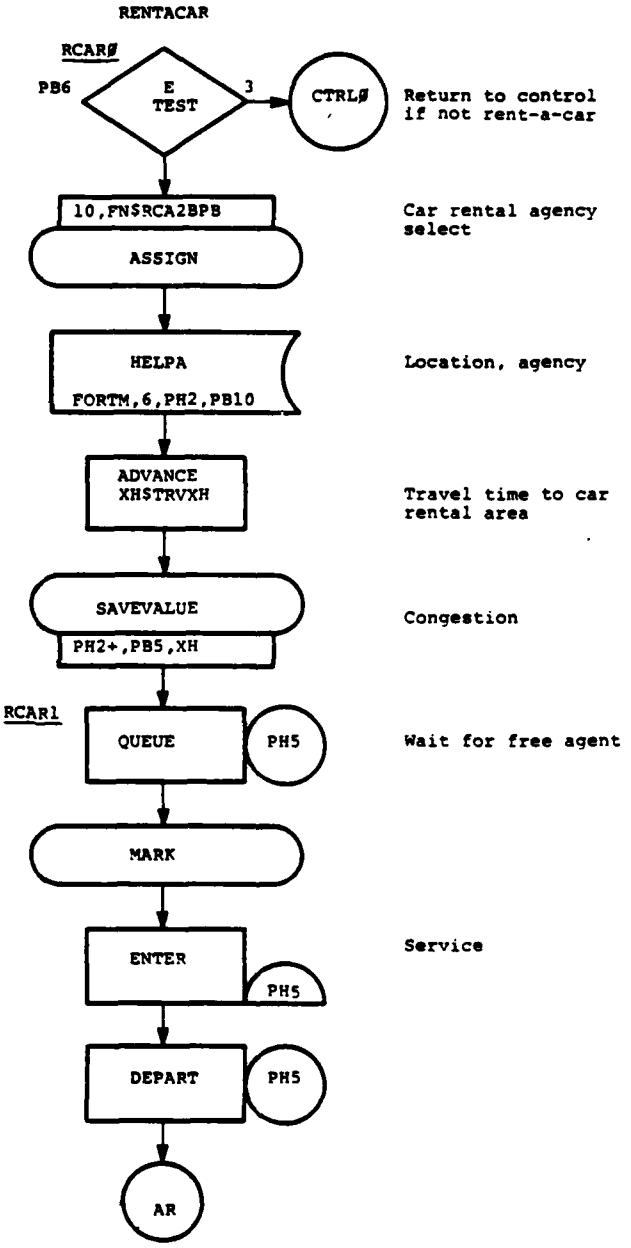
GREETERS

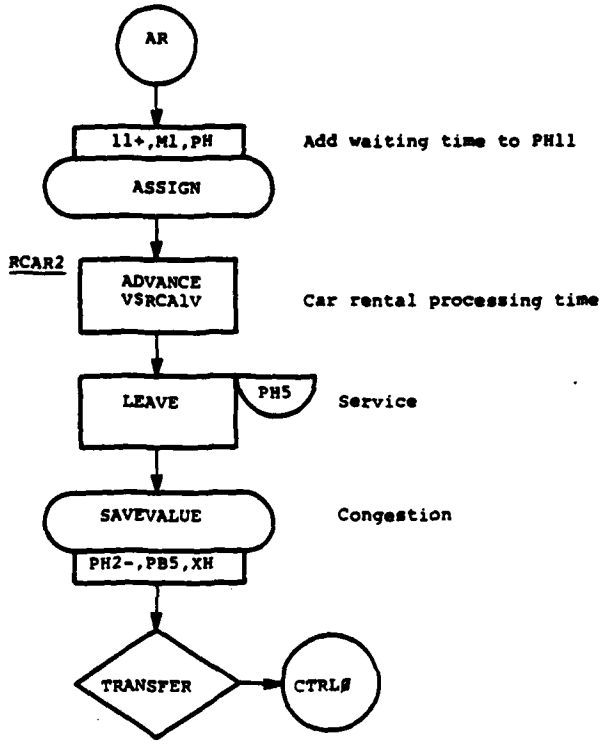

GRTØ2
HELPA
FORTM,16,Ø,PB6,Ø
Location, mode, deplaning switch
SAVEVALUE
ARDXH+,1,XH
Count of vehicle on arriving road
SAVEVALUE
PKLXH+,1,XH
Enter car in parking lot
SAVEVALUE
PLIXH+,1,XH
Vehicle count in parking lot
TRANSFER
CTRLØ
GRTØ3
GREETERS TAKING CAR FROM PARKING TO CURB
HELPA
FORTM,16,PH2,PH6,Ø
Location, mode, deplaning switch
ADVANCE
XHSTRVXH
Walking time to parking lot
QUEUE
PH5
AQ


AQ
ENTER
PH5
DEPART
PH5
ADVANCE
V$PARlV
Parking lot service time
LEAVE
PH5
SAVEVALUE
PKLXH-,1,XH
Exit car from parking lot
SAVEVALUE
PKCXH+,1,XH
Parking to curb recirculation
ASSIGN
4,DCARl,PH
Route to deplaning curb
TRANSFER
CTRL1

PARKING (DEPL PAX + CARS)

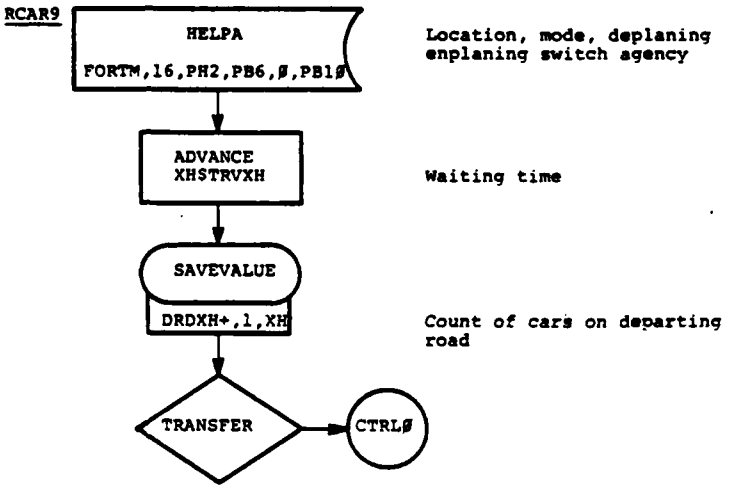



RENTACAR
RCAR$
PB6
E
TEST
3
CTRL$
Return to control if not rent-a-car
10,FN$RCA2BPB
ASSIGN
Car rental agency select
HELPA
FORTM,6,PH2,PB10
Location, agency
ADVANCE
XH$TRVXH
Travel time to car rental area
SAVEVALUE
PH2+,PB5,XH
Congestion
RCAR1
QUEUE
PH5
Wait for free agent
MARK
ENTER
PH5
Service
DEPART
PH5
AR


AR
11+,M1,PH
Add waiting time to PH11
ASSIGN
RCAR2
ADVANCE
VSRCA1V
Car rental processing time
LEAVE
PH5
Service
SAVEVALUE
Congestion
PH2-,PB5,XH
TRANSFER
CTRL@

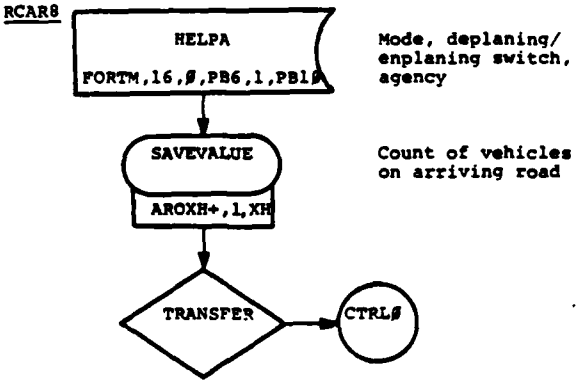
Deplaning pax in ground transport
who have already rented car.

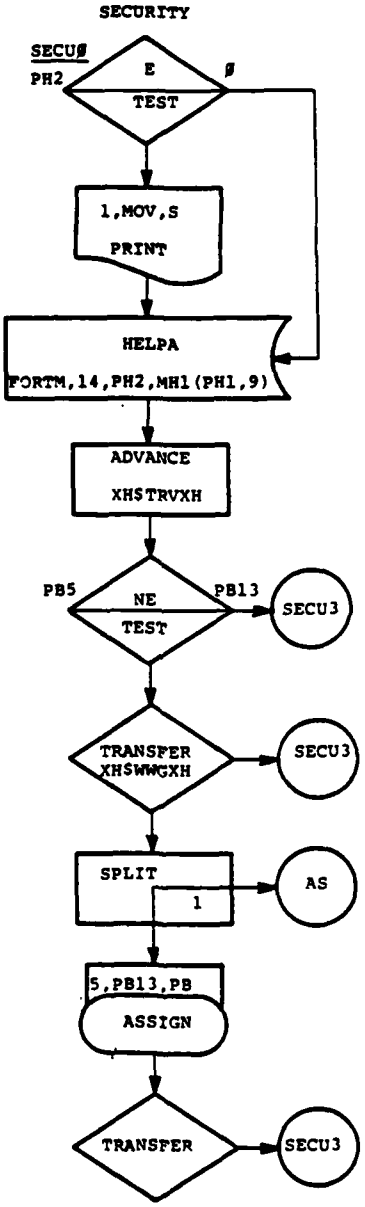
NOTE: Current logic assumes pax
picks up car at agency parking lot.



Enplaning Pax Rent-a-car

NOTE: Current logic assumes rental car is returned to a parking lot (general or agency lot). Processing, if any, is done in the terminal.





If current location is point zero, print current events chain

Location, gate

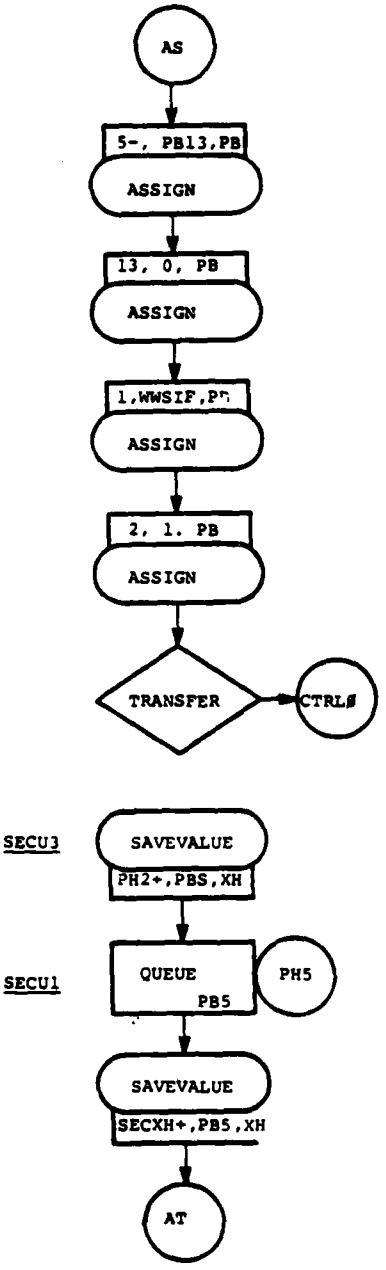
Walking time to security

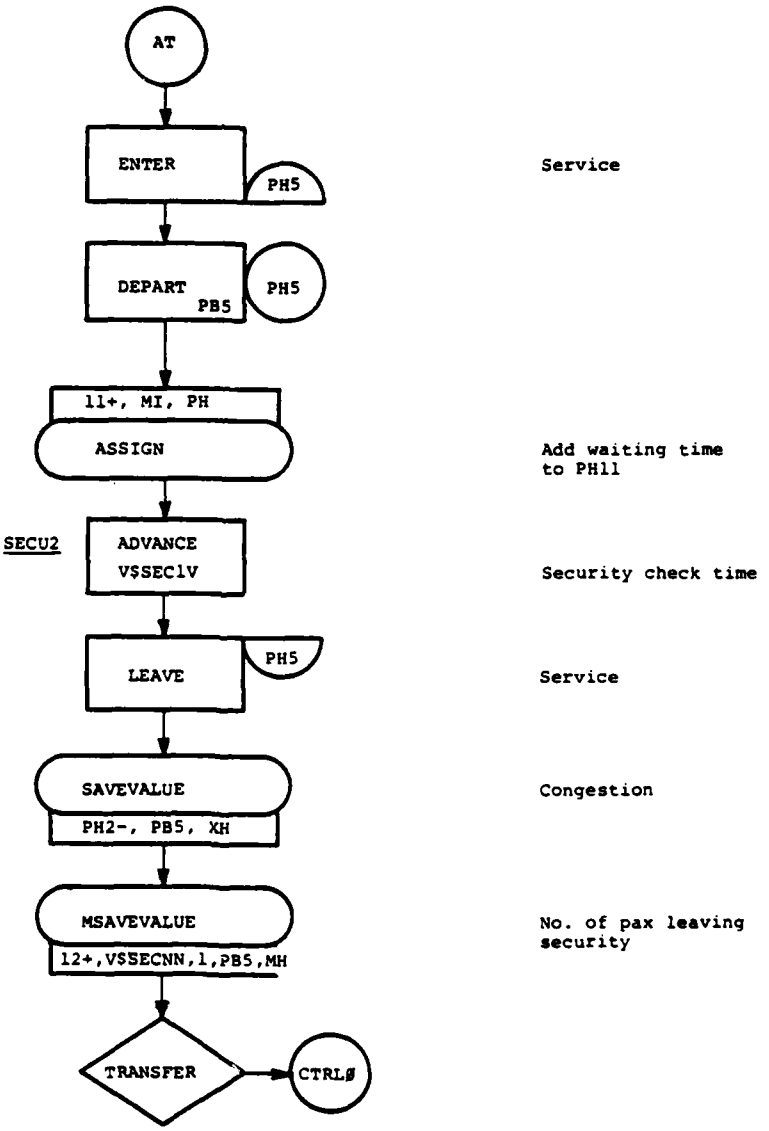
Fall through if have well-wishers

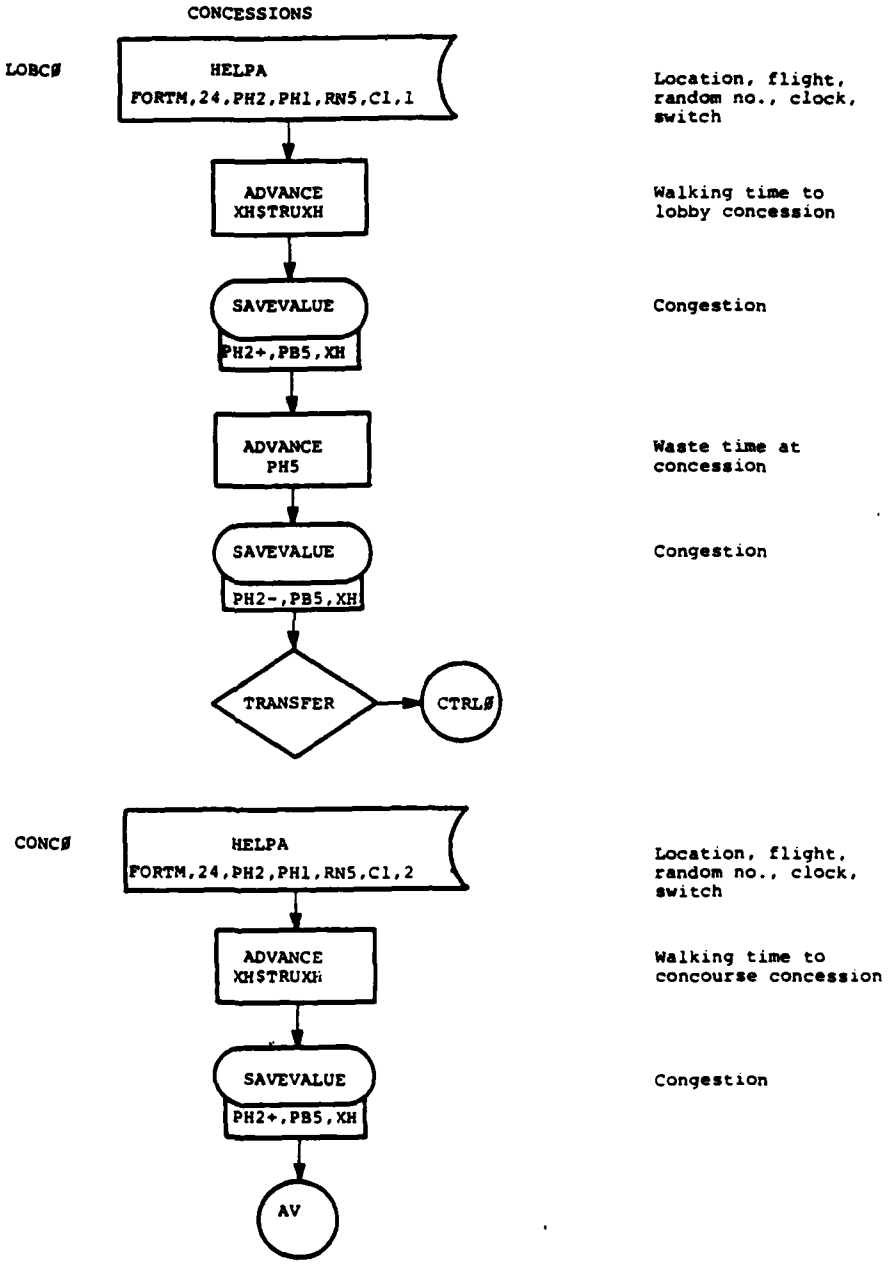
Fall through if leaving well-wisher at security

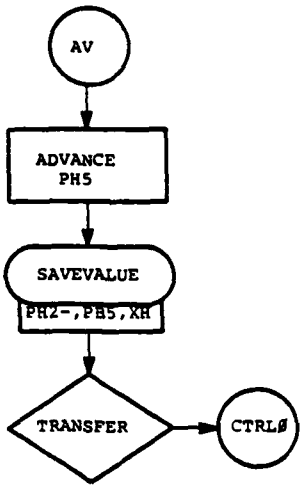
Split well-wishers off

Drop well-wishers


AS
5-, PB13,PB
ASSIGN
Subtract out pax
13, 0, PB
ASSIGN
Set pax to ∅
1,WWSIF,P∅
ASSIGN
Well-wisher leaving from security process function
2, 1, PB
ASSIGN
Process function pointer
TRANSFER
CTRL∅
SECU3
SAVEVALUE
PH2+,PBS,XH
Congestion
SECU1
QUEUE
PB5
PH5
SAVEVALUE
SECXH+,PB5,XH
Passenger count at security
AT

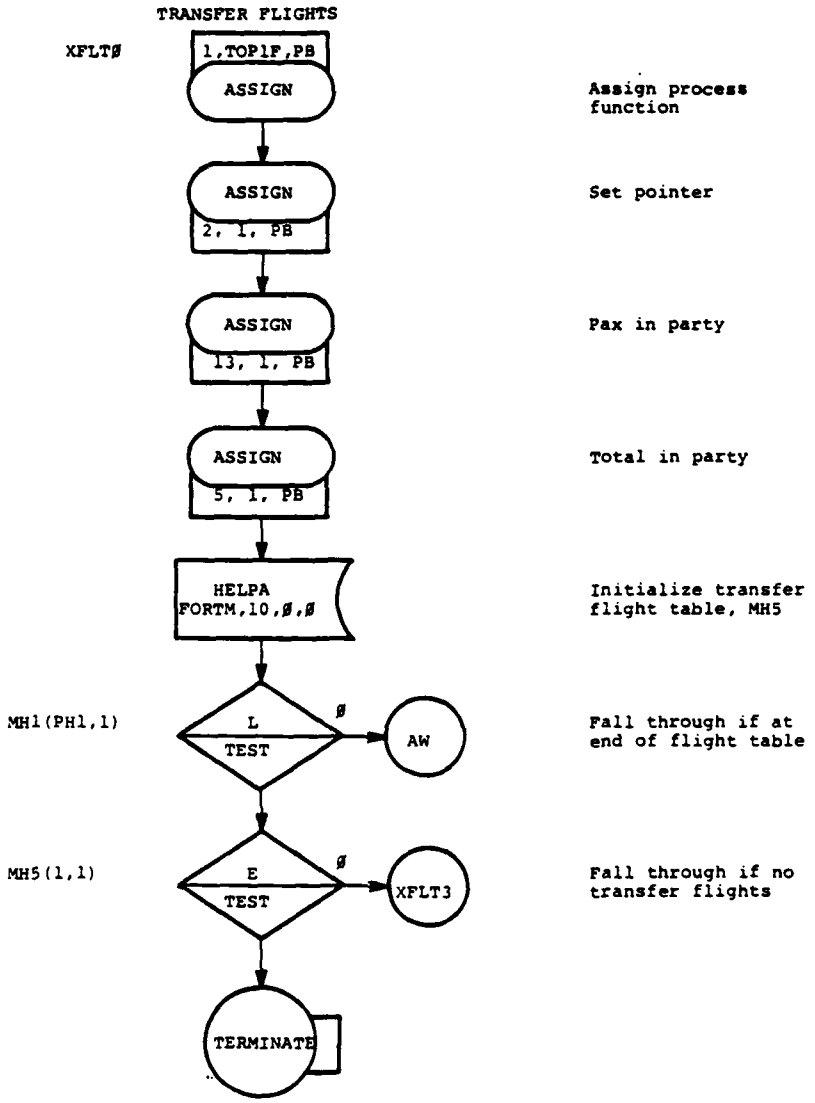

AT
ENTER
PH5
Service
DEPART
PB5
PH5
11+, MI, PH
ASSIGN
Add waiting time to PH11
SECU2
ADVANCE
V$SEC1V
Security check time
LEAVE
PH5
Service
SAVEVALUE
PH2-, PB5, XH
Congestion
MSAVEVALUE
12+,V$SECNN,1,PB5,MH
No. of pax leaving security
TRANSFER
CTRL0

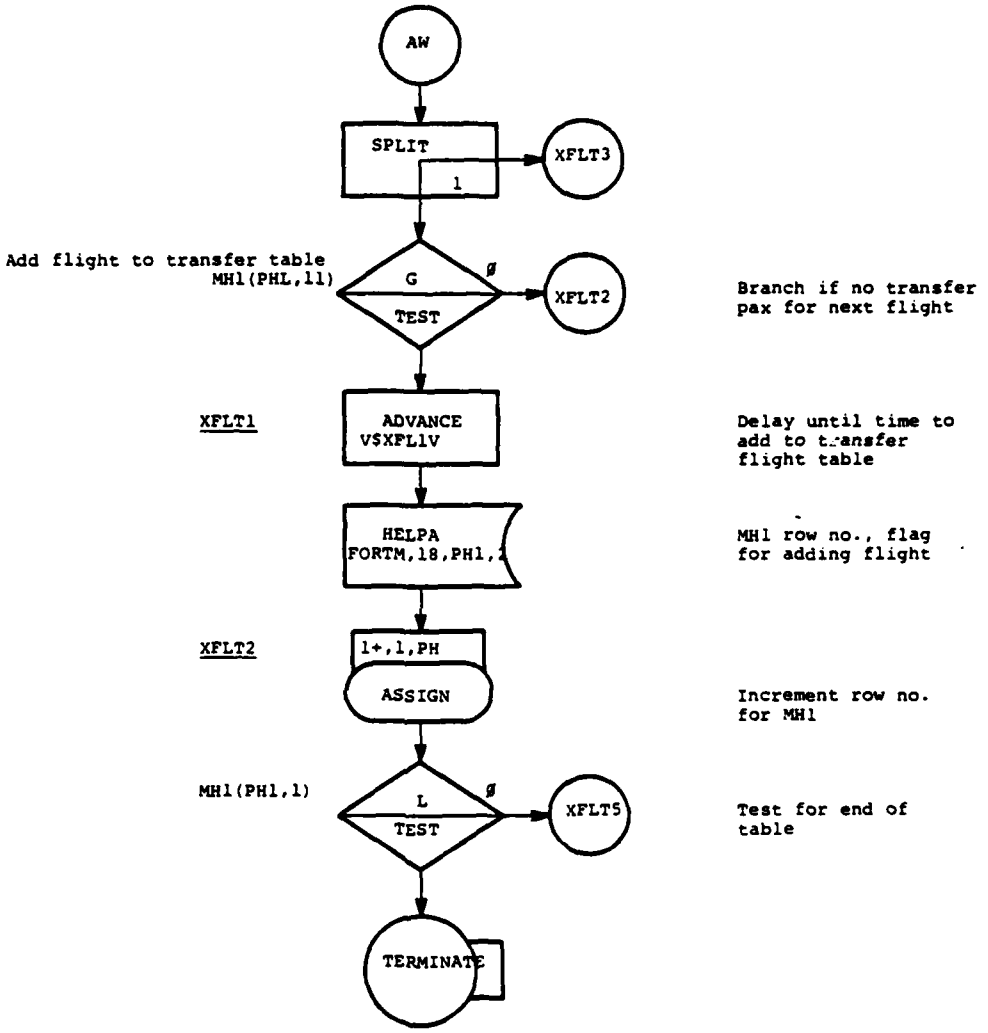

CONCESSIONS
LOBCØ
HELPA
FORTM,24,PH2,PH1,RN5,C1,1
Location, flight, random no., clock, switch
ADVANCE
XH$TRUXH
Walking time to lobby concession
SAVEVALUE
PH2+,PB5,XH
Congestion
ADVANCE
PH5
Waste time at concession
SAVEVALUE
PH2-,PB5,XH
Congestion
TRANSFER
CTRLØ
CONCØ
HELPA
FORTM,24,PH2,PH1,RN5,C1,2
Location, flight, random no., clock, switch
ADVANCE
XH$TRUXH
Walking time to concourse concession
SAVEVALUE
PH2+,PB5,XH
Congestion
AV

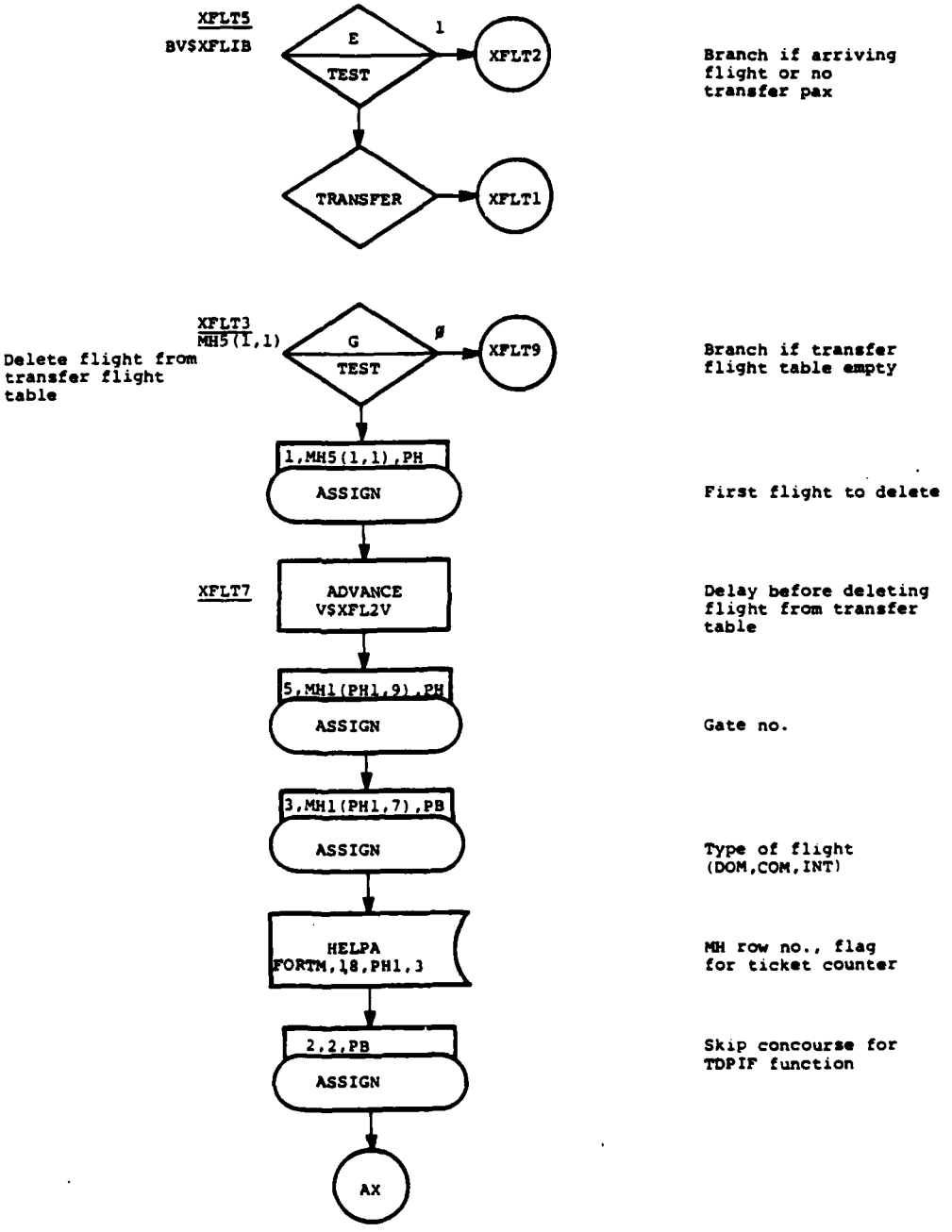


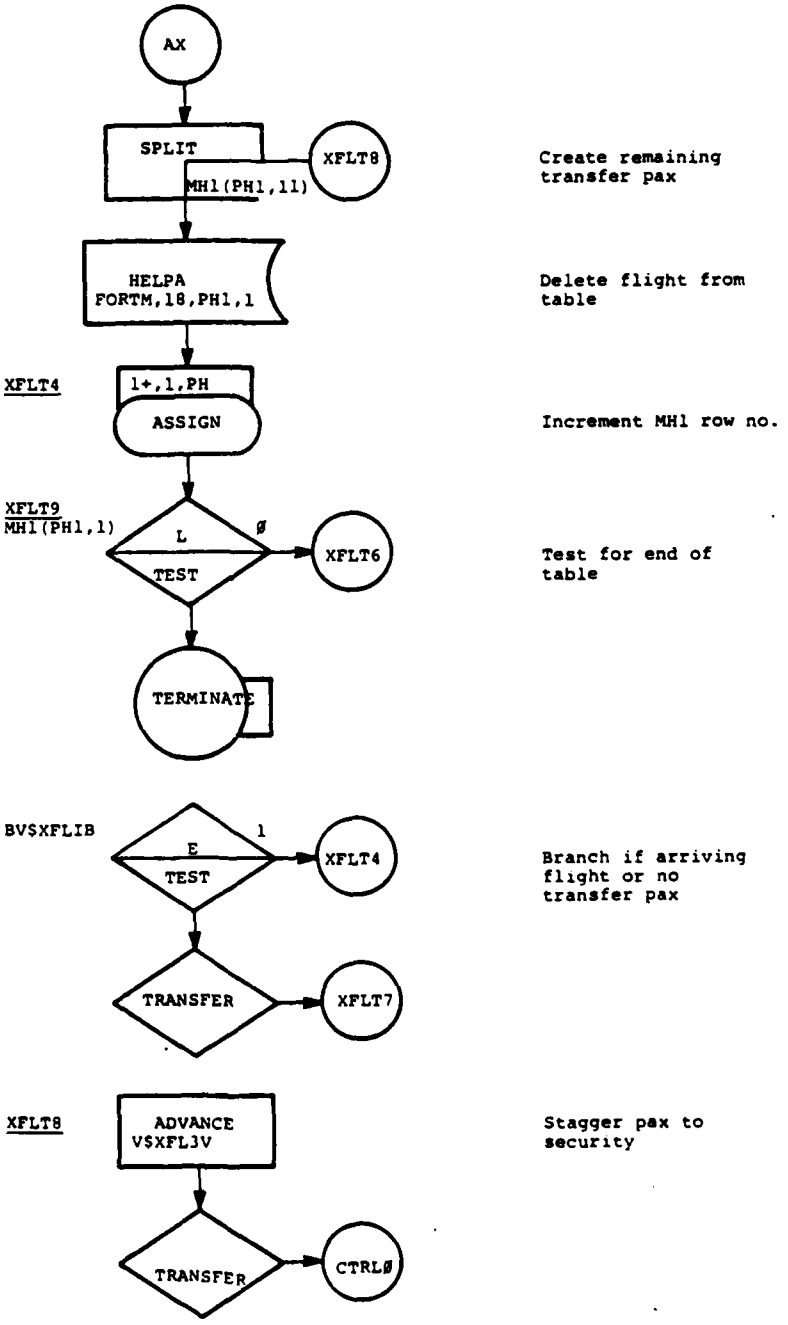
Waste time at concession

Congestion


TRANSFER FLIGHTS
XFLT∅
1,TOP1F,PB
ASSIGN
Assign process function
ASSIGN
2, 1, PB
Set pointer
ASSIGN
13, 1, PB
Pax in party
ASSIGN
5, 1, PB
Total in party
HELPA
FORTM,10,∅,∅
Initialize transfer flight table, MH5
MH1(PH1,1)
L
TEST
∅
AW
Fall through if at end of flight table
MH5(1,1)
E
TEST
∅
XFLT3
Fall through if no transfer flights
TERMINATE


AW
SPLIT
1
XFLT3
Add flight to transfer table MH1(PHL,11)
G
TEST
ø
XFLT2
Branch if no transfer pax for next flight
XFLT1
ADVANCE
V$XFL1V
Delay until time to add to transfer flight table
HELPA
FORTM,18,PH1,
MH1 row no., flag for adding flight
XFLT2
1+,1,PH
ASSIGN
Increment row no. for MH1
MH1(PH1,1)
L
TEST
ø
XFLT5
Test for end of table
TERMINATE

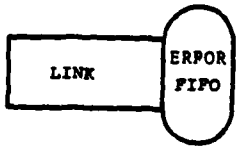

XFLT5
BV$XFLIB
E
TEST
1
XFLT2
Branch if arriving flight or no transfer pax
TRANSFER
XFLT1
XFLT3
MH5(I,1)
Delete flight from transfer flight table
G
TEST
0
XFLT9
Branch if transfer flight table empty
1,MH5(1,1),PH
ASSIGN
First flight to delete
XFLT7
ADVANCE
V$XFL2V
Delay before deleting flight from transfer table
5,MH1(PH1,9),PH
ASSIGN
Gate no.
3,MH1(PH1,7),PB
ASSIGN
Type of flight (DOM,COM,INT)
HELPA
FORTM,18,PH1,3
MH row no., flag for ticket counter
2,2,PB
ASSIGN
Skip concourse for TDPIF function
AX

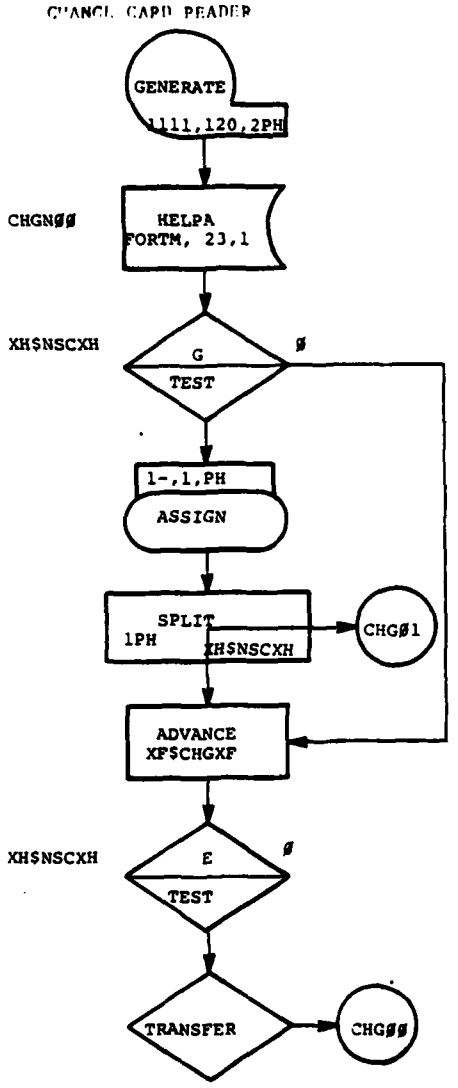

AX
SPLIT
XFLT8
MH1(PH1,11)
HELPA
FORTM,18,PH1,1
XFLT4
1+,1,PH
ASSIGN
XFLT9
MH1(PH1,1)
L
Ø
TEST
XFLT6
TERMINATE
BV$XFLIB
E
1
TEST
XFLT4
TRANSFER
XFLT7
XFLT8
ADVANCE
V$XFL3V
TRANSFER
CTRLØ
Create remaining transfer pax
Delete flight from table
Increment MH1 row no.
Test for end of table
Branch if arriving flight or no transfer pax
Stagger pax to security

ERROR CHAIN

Collects transactions causing selected errors. PH4 will normally give clue to nature of problem

ERROR





Perform previous change card and read next change card

If no storage changes, do not split

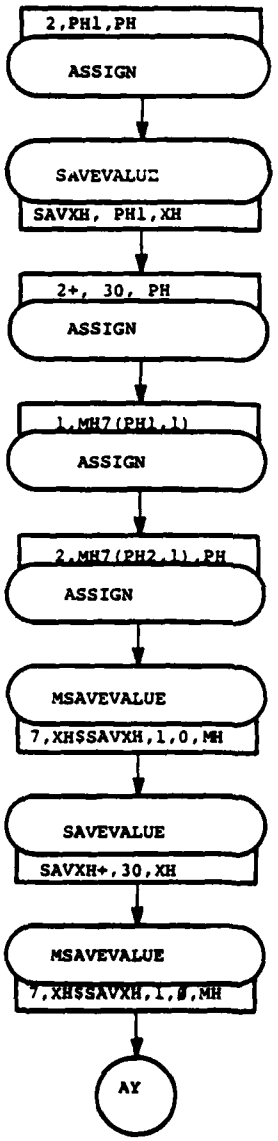
Parent PH1 set to -1

Split 1 transaction to change each storage sequenced in PH1

Wait until next change

If wait was Ø, wait till MH7 used

CHG#1



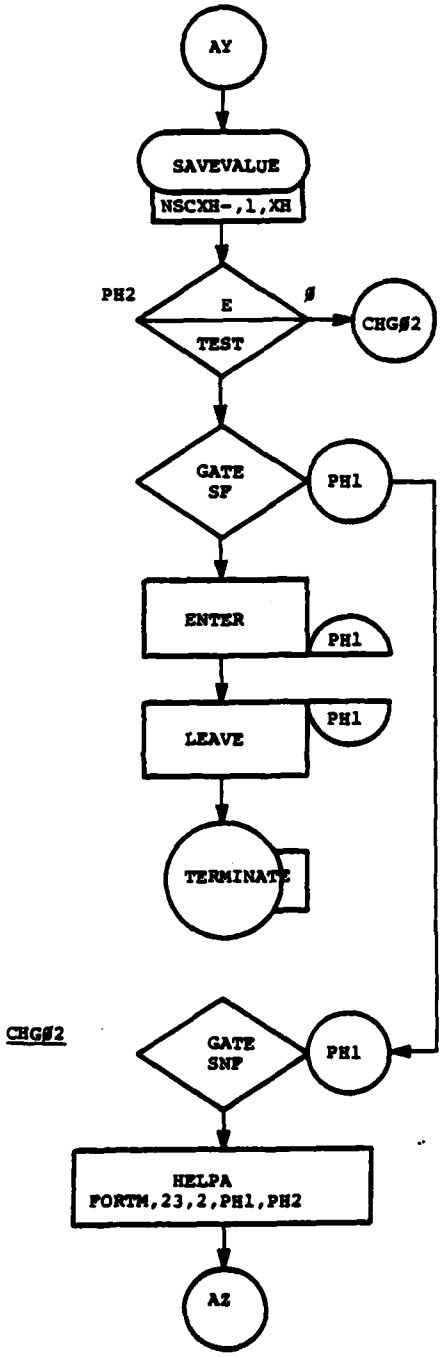
Save MH7 row pointer

PH2 points to second portion of MH7

Change PH1 from MH7 row reference to storage subscript (set in FORTM)

Change PH2 to required storage capacity (set in FORTM)

Zero out MH7



Count down of transactions using MH7

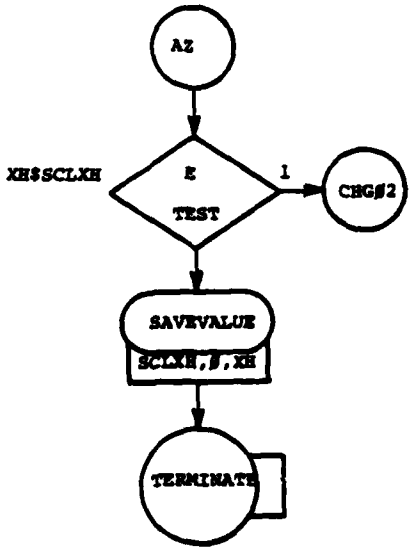
Fall through if no lowering needed

If new capacity higher...

Allow transactions waiting on delay chain to start moving

Wait until someone leaves

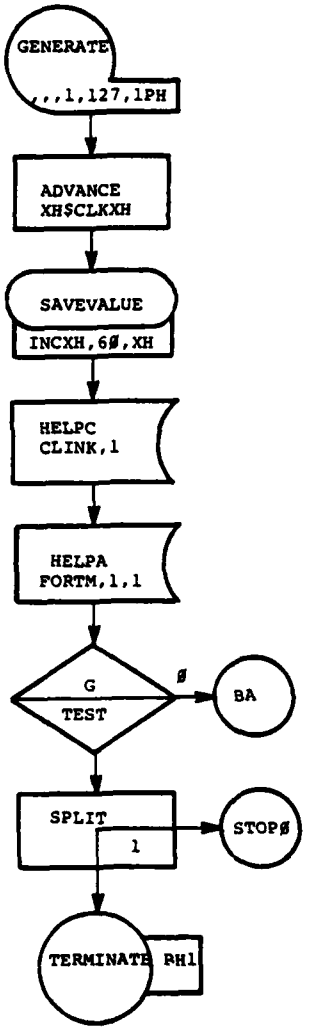
Push storage capacity down to current contents



Storage lowering complete

Reset storage lowering completion flag

TIMER - INITIAL FORTRAN CALL



Initial call to FORTRAN Help block to: read flight schedule and geometry data, initialize matrix base address, execute CLINK and MNLINK.

Needed to define "CLKXH" halfword

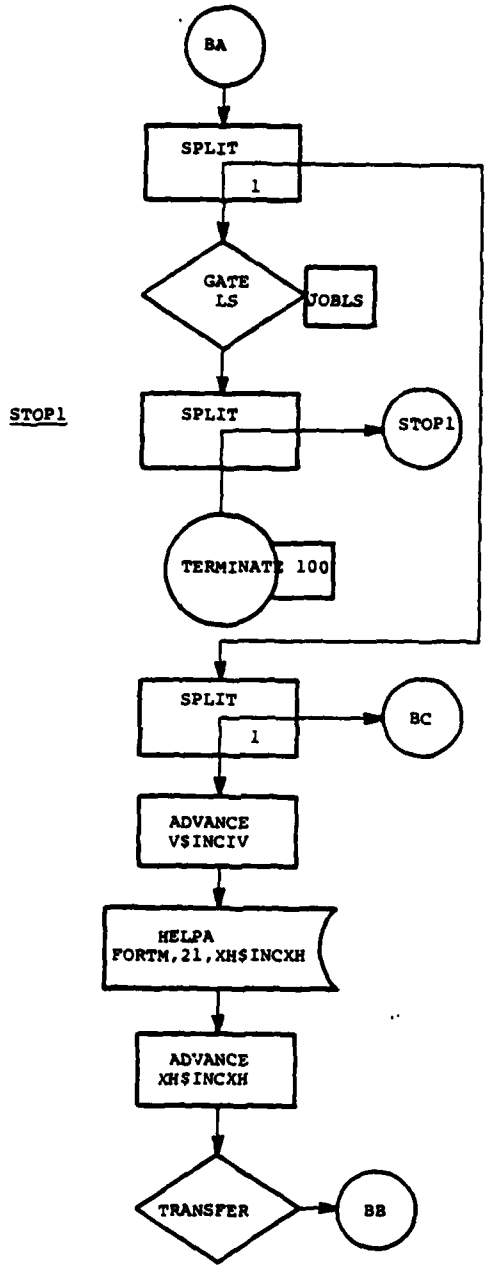
Set "clock" increment

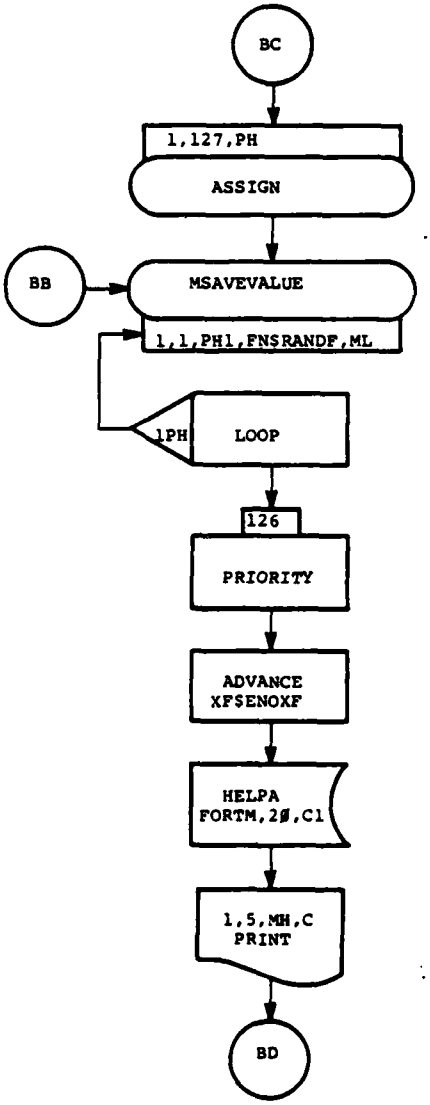
Initiate FORTRAN-GPSS linking

Complete linking and read in input data

Was error detected in FORTM program

Stop simulation


BA
SPLIT
1
GATE
LS
JOBLS
Set if error count
over limit
STOP1
SPLIT
STOP1
TERMINATE 100
SPLIT
1
BC
ADVANCE
V$INCIV
Clock increment
HELPA
FORTM,21,XH$INCXH
Clock update
ADVANCE
XH$INCXH
Clock increment
TRANSFER
BB



Loop counter

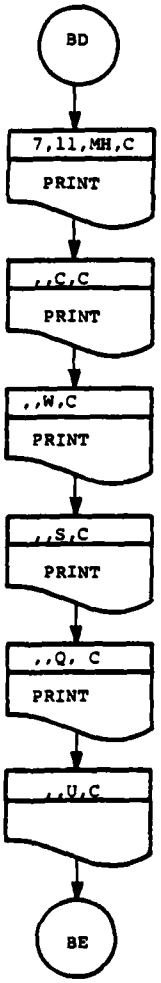
F,11 ML1 with random numbers

Allows clock to occur first

Advance to end of run

Make formatted reports

Print selected output: Halfword matrices 1 to 5



Halfword matrices, 7 to 11

Clock time

Block counts

Storage statistics

Queue statistics

User chain statistics

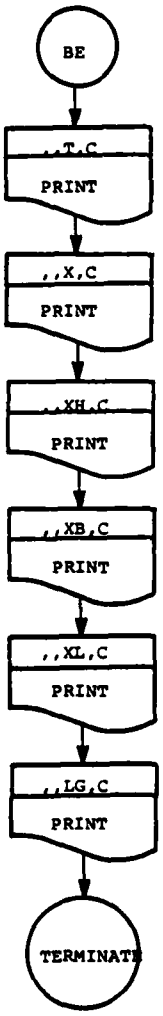


Table statistics

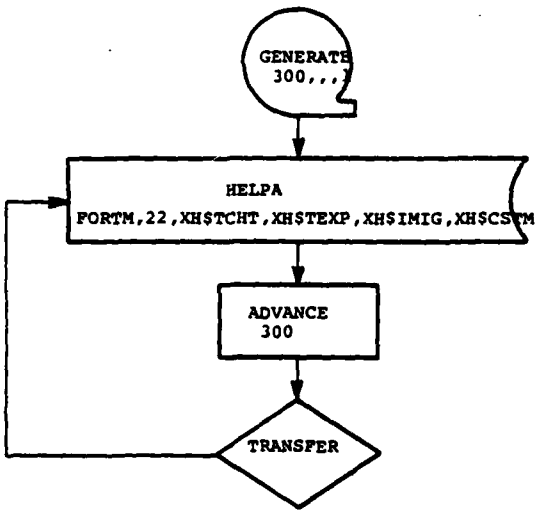
Fullword savevalues

Halfword savevalues

Byte savevalues

Floating point savevalues

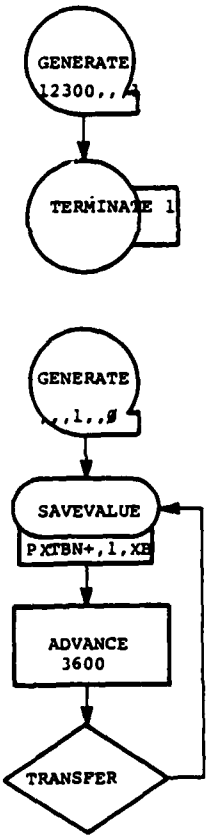
Logic switches



Generate transaction for snapshot reports

Call snapshot section in FORTM

Five minute wait until next snapshot



For reset

Timer for changing hourly table for pax waiting time

Generate timer transaction

Increment number of table

Wait one hour

APPENDIX A-3

PROGRAM LISTING

```
*****************************************************************     00002100
*                                                               *     00002200
*                        AUXILIARY PROGRAM                      *     00002300
*                                                               *     00002400
*****************************************************************     00002500
*         THIS PROGRAM GENERATES TRANSACTIONS REPRESENTING ENPLANING     00002700
*     PASSENGER GROUPS.  THESE TRANSACTION ARE STORED ON A 'JOBTAPE'.    00002800
      RMULT     ,,,743,31,743,31                                        00003000
      SIMULATE 3                                                        00004000
      LOAD      FORTM                                                   00005000
       UNLIST    ABS        ,USED TO LIST THE PROGRAM                  00006000
*                                                                       00007000
*                                                                       00008000
CLKXH EQU        1,XH       C L O C K   -   USED IN MAIN MODEL         00009000
CMH01 SYN        16         NUMBER OF COLUMNS OF MATRIX MH1            00010000
CMH04 SYN        2          NUMBER OF COLUMNS OF MATRIX MH4            00011000
CML02 SYN        10         NUMBER OF COLUMNS OF MATRIX ML2            00012000
*                                                                       00013000
*                                                                       00014000
*   H A L F W O R D   M A T R I C E S                                   00015000
*                                                                       00016000
1     MATRIX     MH,340,16   FLIGHT SCHEDULE                           00017000
*   1 ROW PER FLIGHT PLUS 1 ROW TO TERMINATE DEPL PAX GENERATION        00018000
*   (PAX XAC PH1 POINTS TO MH1 ROW)                                     00019000
*   COL 1 - ARRIVING OR DEPARTING FLIGHT (0 OR 1; -1 ---> END OF TABLE) 00020000
*       2 - FLIGHT NO                                                   00021000
*       3 - AIR LINE                                                    00022000
*       4 - SCHEDULED ARRIVAL/DEPARTURE TIME                            00023000
*       5 - DELP. PAX BEING MET BY PRIVATE CAR                          00024000
*       6 - TIME FROM START (MINUTES)                                   00025000
*       7 - DOMESTIC, COMMUTER OR INTERNATIONAL FLT (1,2,3)             00026000
*       8 - AIRCRAFT TYPE                                               00027000
*       9 - GATE NO                                                     00028000
*      10 - ORIGINATING/TERMINATING PASSENGERS                          00029000
*      11 - TRANSFER PASSENGERS                                         00030000
*      12 - BAG CLAIM AREA (ARV FLT)                                    00031000
*         - PAX WAITING AT LOUNGE TO BOARD (DEPT FLT)                   00032000
*      13 - TRANSIT PASSENGERS                                          00033000
*      14 - TOTAL TERMINATING BAGS (ARV FLT)                            00034000
*      15 - TOTAL TRANSFER BAGS (ARV FLT)                               00035000
*      16 - TRANSFERS OUT OF SYSTEM                                     00036000
*                                                                       00037000
4     MATRIX     MH,3,2      PERCENT ENPLANING PAX TICKETED             00038000
*    ROW  1 - DOMESTIC          COL  1  % PRETICKETED                   00039000
*         2 - COMMUTER                2  % PRETICKETED THAT GO DIRECT  00040000
*         3 - INTERNATIONAL              TO SECURITY                    00041000
*                                                                       00042000
*   F L O A T I N G   M A T R I C E S                                   00043000
*                                                                       00044000
2     MATRIX     ML,3,10     GROUND TRANSACTION MODAL CHOICE %          00045000
*   ROW  1 - DOMESTIC                                                   00046000
*        2 - COMMUTER                                                   00047000
*        3 - INTERNATIONAL                                              00048000
*   COL  1 - PRIVATE CAR (PICKUP, DROP OFF)      PERCENTAGE             00049000
*        2 - DRIVES SELF (PARKING)               CUM PCT - PRIVATE      00050000
*        3 - RENTAL CAR                          CUM PCT - PRIVATE      00051000
*        4 - BUS/LIMOUSINE                       CUM PCT - PRIVATE      00052000
*        5 - TAXI                 ** 1.0 **      CUM PCT - PRIVATE      00053000
*        6 - 10  ** S P A R E **                                        00054000
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*                                                                       00055000
*   F U N C T I O N S                                                   00056000
*                                                                       00057000
 ARV1F FUNCTION   RN7,C6      ARRV TIME PRIOR TO FLT (0905-0400)        00058000
0.,0/.115,3180/.38,5160/.68,6360/.90,7440/1.0,8400                      00059000
 ARV2F FUNCTION   RN7,C6      ARRV TIME PRIOR TO FLT (0405-0900)        00060000
0.,0/.02,720/.16,1680/.425,2760/.93,4080/1.0,4500                       00061000
 TOS1F FUNCTION   RN7,C2      ARRV TIME (TRANSFERS FROM OUT OF SYSTEM)  00062000
0.,0/1.0,1200                                                           00063000
 PPPEF FUNCTION   RN7,D6      PAX/PARTY  ENPLANING                      00064000
0.32,1/0.71,2/0.91,3/0.97,4/0.99,5/1.0,6                                00065000
 WWPPF FUNCTION   RN6,D4      WELL-WISHERS/PARTY  ENPLANING             00066000
0.9,0/0.96,1/0.99,2/1.0,3                                               00067000
*                                                                       00068000
*   V A R I A B L E S                                                   00069000
*                                                                       00070000
 FLT1V VARIABLE   60*MH1(PH1,6)-8700-300  DELAY TO 150 MIN. BEFORE DEPT 00071000
 FLT2V VARIABLE   60*MH1(PH1,6)-4800-300  DELAY TO 85 MIN. BEFORE DEPT  00072000
 TOS1V VARIABLE   60*MH1(PH1,6)-2400    DELAY TO 40 MIN. BEFORE DEPT    00073000
 TOS2V VARIABLE   MH1(PH1,16)-1         CREATE T.O.O.S. TRANSACTIONS    00074000
*                                                                       00075000
*   P A S S E N G E R   T R A N S A C T I O N   P A R A M E T E R S     00076000
*                                                                       00077000
*        HALFWORD:   1 - FLIGHT TABLE ROW NUMBER                        00078000
*                    2 - LOCATION (POINT NUMBER)                        00079000
*                    3 - MAX. BAG RANDOM NUMBER                         00080000
*                        PAX STORAGE NO IN DEPLANING CURB LOGIC         00081000
*                    4 - ADDRESS PARAMETER                              00082000
*                    5 - ** S C R A T C H **                            00083000
*                    6 - USER CHAIN FOR BAG CLAIM (DEPL. PAX ONLY)      00084000
*                        CAR STORAGE NO IN DEPLANING CURB LOGIC         00085000
*                    7 - MH3 ROW FOR LAST FACILITY                      00086000
*                        (NOT IMPLEMENTED IN EXIT LOGIC)                00087000
*                    8 - ** S C R A T C H **                            00088000
*                        FORTM USES AS RETURN FOR ADDR IN XFER PAX LOGIC 00089000
*                    9 - CUMULATIVE WALKING TIME                        00090000
*                    10 - TRANSACTION SEQUENCE NUMBER FOR PASSENGER     00090100
*                         AND GREETER MATCHING                          00090200
*                    11 - CUMULATIVE PASSENGER WAITING TIME             00090300
*        BYTE:       1 - PROCESS FUNCTION NUMBER                        00091000
*                    2 - PROCESS FUNCTION POINTER                       00092000
*                    3 - TYPE OF FLIGHT (1=DOM, 2=COM, 3=INT)           00093000
*                    4 - NUMBER OF BAGS                                 00094000
*                    5 - NUMBER IN PARTY (VISITORS + SELF)              00095000
*                    6 - MODE OF GROUND TRANSPORTATION                  00096000
*                        (SEE MATRIX ML2 FOR CODES)                     00097000
*                    7 - 0=DEPLANING, 1=ENPLANING                       00098000
*                    8 - 1 = TERMINATING, 2 = TRANSFER                  00099000
*                        3 = TRANSIT, 4 = TRANSFER OUT OF SYSTEM        00100000
*                    9 - BAG CLAIM AREA LOG SWITCH (DEPL. PAX ONLY)     00101000
*                      - 0 = TICKETED, 1 = NOT (ENPL. PAX ONLY)         00102000
*                   10 - USED IN DEPLANING FOR BAG FUNCTION             00103000
*                      - RENTACAR AGENCY                                00104000
*                   11 - CURRENT PROCESS CODE                           00105000
*                   13 - PAX IN PARTY                                   00106000
*                   14 - PARKING LOT NUMBER                             00107000
*                                                                       00108000
*   E N P L A N I N G   P A S S E N G E R   C R E A T I O N             00109000
*                                                                       00110000
     GENERATE    ,,,1,10,11PH,14PB                                      00111000
     ASSIGN      2,1,PB              INIT PROCESS FN POINTER            00112000
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        ASSIGN      7,1,PB                  MARK AS ENPLANING PAX                00113000
ENPL0   ASSIGN      1+,1,PH                 FLT TABLE (MH1) ROW SUBSCRIPT        00114000
        TEST L      MH1(PH1,1),0,*+2        MH1(PH1,1)=-1 --> TABLE END (*+2)00115000
        TERMINATE                                                                00116000
        TEST E      MH1(PH1,1),1,ENPL0      SKIP ARRIVING FLIGHTS                00117000
        SPLIT       1,ENPL0                                                      00118000
        ASSIGN      3,MH1(PH1,7),PB         TYPE FLT (1,2,3 = DOM,COM,INT)       00119000
        ASSIGN      5,MH1(PH1,9),PH         GATE NO                              00120000
        SPLIT       1,ENPL3                 TO ORIGINATING PAX LOGIC             00121000
        TEST LE     MH1(PH1,16),0,*+2       FT IF NO T.O.O.S.          (*+2)     00122000
        TERMINATE                                                                00123000
        ASSIGN      8,4,PB                  MARK AS TRANSFER-OUT-OF-SYSTEM       00124000
        ASSIGN      13,1,PB                 ALL TRANSFERS SINGLE PAX             00125000
        ASSIGN      5,1,PB                  ...WITH NO VISITORS                  00126000
        ADVANCE     V$TOS1V                 DELAY TO 40 MIN. BEFOR DEPT          00127000
        SPLIT       V$TOS2V,*+1                                    (*+1)         00128000
        ADVANCE     FN$TOS1F                                                     00129000
        TRANSFER    ,WRITE                  WRITE ON JOBTAPE                     00130000
ENPL3   TEST E      MH1(PH1,10),0,*+2       CHECK FOR PAX                        00131000
        MSAVEVALUE  1,PH1,10,1,MH           IF PAX=0 SET=1                       00131100
        TEST L      MH1(PH1,4),905,ENPL1                                         00131200
        ADVANCE     V$FLT2V                 0405-0904 DEPARTURES                 00132000
        ASSIGN      8,MH1(PH1,10),PH        ORIGINATING PAX                      00133000
        ASSIGN      13,FN$PPPEF,PB          # OF PAX IN PARTY                    00134000
        ASSIGN      8-,PB13,PH              SUBTRACT FROM TOTAL                  00135000
        TEST LE     PH8,0,*+5               FT IF TOTAL <= 0                     00136000
        ASSIGN      13+,PH8,PB              ADJUST LAST PARTY SIZE               00137000
        TEST LE     PB13,0,*+2              FT IF PB13 LE ZERO                   00137100
        ASSIGN      13,1,PB                 SET PB13 TO ONE                      00137200
        TRANSFER    ,*+2                    OUT OF LOOP                (*+2)     00138000
        SPLIT       1,*-7                   GO BACK TO CREATE ANOTHER  (*-7)     00139000
        ADVANCE     FN$ARV2F                ARRV TIME PRIOR TO FLIGHT            00140000
        TRANSFER    ,ENPL2                                                       00141000
ENPL1   ADVANCE     V$FLT1V                 0905-0400 DEPARTURES                 00142000
        ASSIGN      8,MH1(PH1,10),PH        ORIGINATING PAX                      00143000
        ASSIGN      13,FN$PPPEF,PB          # OF PAX IN PARTY                    00144000
        ASSIGN      8-,PB13,PH              SUBTRACT FROM TOTAL                  00145000
        TEST LE     PH8,0,*+5               FT IF TOTAL <= 0                     00146000
        ASSIGN      13+,PH8,PB              ADJUST LAST PARTY SIZE               00147000
        TEST LE     PB13,0,*+2              FT IF PB13 LE ZERO                   00147100
        ASSIGN      13,1,PB                 SET PB13 TO ONE                      00147200
        TRANSFER    ,*+2                    OUT OF LOOP                (*+2)     00148000
        SPLIT       1,*-7                   GO BACK TO CREATE ANOTHER  (*-7)     00149000
        ADVANCE     FN$ARV1F                                                     00150000
ENPL2   HELPA       FORTM,5,RN4,RN5,PB3                                          00151000
        ASSIGN      5,PB13,PB               NO WELL-WISHERS                      00152000
        TEST LE     PB6,2,*+2               FT IF CURB OR PARK         (*+2)     00153000
        ASSIGN      5+,FN$WWPPF,PB          ADD IN WELL-WISHERS                  00154000
WRITE   WRITE       JOBTA1                                                       00155000
        TERMINATE                                                                00156000
*                                                                                00157000
*   C R E A T E   D U M M Y   X A C   F O R   J O B T A P E                      00158000
*                                                                                00159000
        GENERATE    ,,,1,127,1PH                                                 00160000
        HELPC       CLINK,1                 SET UP 2 WAY COMMUNICATION           00161000
        HELPA       FORTM,1,1               READ INPUT DATA                      00162000
        TEST G      PH1,0,*+2               CHECK FOR ERRORS                     00163000
        TERMINATE   PH1                                                          00164000
        SPLIT       1,WRITE                                                      00165000
        ADVANCE     100000                                                       00166000
        SPLIT       1,WRITE                 PREVENT JOBTAPE END MESSAGE          00167000
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        ADVANCE     1                       WAIT FOR ABOVE XAC TO BE WRITTEN 00168000
        TERMINATE   1                                                        00169000
*                                                                            00170000
 1      FUNCTION    PH1,L4      MNEMONIC LINK FUNCTION - SEE FORTRAN CALL    00171000
,CMH01/,CMH04/,CML02/,CLKXH                                                  00172000
        NOXREF                                                               00172900
        START       1,,,1                                                    00173000
        NOXREF                              USED TO CROSS REF. ITEMS         00173040
        REPORT                                                               00173050
 HMS    TITLE       1,FLIGHT SCHEDULE                                        00173100
 HMS    TITLE       4,%ENPLANING PAX TICKETED                                00173200
 LMS    TITLE       2,GROUND TRANSACTION MODAL CHOICE %                      00173300
*       OUTPUT                          REMOVE * TO PROVIDE ALL STATICS      00173400
        END                                                                  00174000
0.468,1/0.833,2/0.917,3/0.967,4/0.987,5/1.0,8                                00278000
        ASSIGN      1,DDP1F,PB                                               00656100
        ASSIGN      1,DDP1F,PB                                               00687100
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      REALLOCATE HMS,13,BLO,980,FAC,0,QUE,212,TAB,14,FUN,63,VAR,67      00001C00
      REALLOCATE FSV,25,CHA,80,FMS,0,LMS,2,STO,212,LOG,185,BMS,0        00002C00
      REALLOCATE LSV,10,BSV,10,HSV,170,BVR,11,XAC,3600,COM,220000       00003C00
*****************************************************************     00003C10
*                                                               *     00003C20
*                          MAIN PROGRAM                         *     00003C30
*                                                               *     00003C40
*****************************************************************     00003C50
*         THIS PROGRAM ENACTS THE MOVEMENT OF PASSENGERS AND VISTORS  00003C60
*      THOUGH THE TERMINAL AREA.  THIS PROGRAM GENERATES DEPLANING PAS- 00003C70
*      SENGER, MERGING THEM WITH THE ENPLANING PASSENGER FROM THE AUX- 00003C80
*      ILIIARY PROGRAM.  THE FLOW OF PASSENGER AND VISTORS IS MODEL    00003C90
*      THROUGH A SEQUENCE OF SIMULATED LANDSIDE PROCESSING FACILITES.  00003C95
       RMULT     ,,,743,743,31,31                                     00003100
      UNLIST     ABS                 USED TO LIST PROGRAM             00004C00
      LOAD       FORTM,BAGS,DAG06,XACNO                               00005C00
      JOBTAPE   JOBTA1,ENPL0                                          00007C00
*                                                                     00008C00
 CHA1B SYN       1                   BAG CLAIM SWITCH-CHAIN           00009C00
 CHA1B EQU       1(54),L,C           BAG CLAIM SWITCH-CHAIN           00010C00
 CHA2B SYN       55                  BAG CLAIM SWITCH-CHAIN           00011C00
 CHA2B EQU       55,L,C              BAG CLAIM SWITCH-CHAIN           00012C00
 CHKQS SYN       1                   EXPRESS CHECKIN QUE-STO          00013C00
 CHKQS EQU       1(18),Q,S            EXPRESS CHECKIN QUE-STO         00014C00
 CUSQS SYN       204                 CUSTOMS QUE-STO                  00015C00
 CUSQS EQU       204,Q,S             CUSTOMS QUE-STO                  00016C00
 CMH01 SYN       16                  NO. OF COL. - MH1                00017C00
 CMH02 SYN       3                   NO. OF COL. - MH2                00018C00
 CMH03 SYN       4                   NO. OF COL. - MH3                00019C00
 CMH04 SYN       2                   NO. OF COL. - MH4                00020C00
 CMH06 SYN       110                  NO. OF COL. - MH6               00021C00
 CMH07 SYN       1                   NO. OF COL. - MH7                00022C00
 CMH08 SYN       2                   NO. OF COL. - MH8                00023C00
 CMH09 SYN       6                   NO. OF COL. - MH9                00024C00
 CML02 SYN       10                  NO. OF COL. - ML2                00025C00
*  CURB, DP, AND QUEUE MUST ALL HAVE SAME NUMBER OF ENTITIES, AND     00026C00
*  ENPL CURB ENTITIES MUST IMMEDIATELY FOLLOW DEPL CURB ENTITIES      00027C00
*                                                                     00027C50
*  INPUT DATA  CARDS MUST SHOW A FACILITY FOR ALL ENPLANING AND       00027100
*  DEPLANING CURB STORAGES ALLOCATED. I. E., THE NUMBER OF FACNO'S OF 00027200
*  ENPLANING AND DEPLANING CURBS MUST MATCH THE NUMBERS IN PARENTHESES 00027300
*  OF THESE CURB STORAGES.                                            00027400
 DPCBS SYN       44                                                   00028C00
 DPCBS EQU       44(4),S             DEPLANING CURB STO               00029C00
 EPCBS SYN       48                                                   00030C00
 EPCBS EQU       48(4),S             ENPLANING CURB STO               00031C00
 DPDPS SYN       52                                                   00032C00
 DPDPS EQU       52(4),S             DEPLANING DOUPLE PARK STO        00033C00
 EPDPS SYN       56                                                   00034C00
 EPDPS EQU       56(4),S             ENPLANING DOUBLE PARK STO        00035C00
 DPQCS SYN       60                                                   00036C00
 DPQCS EQU       60(4),C,S           DEPLANING QUEUE CHAIN-STO        00037C00
 EPQCS SYN       64                                                   00038C00
 EPQCS EQU       64(4),C,S           ENPLANING QUEUE CHAIN-STO        00039C00
 GAQSL SYN       80                   GATE QUE-STO-SWITCH             00040C00
 GAQSL EQU       80(105),Q,S,L       GATE QUE-STO-SWITCH              00041C00
 DEPXH EQU       111,XH              DEP. CURB COUNT                  00041100
 RCDXH EQU       112,XH              RECIRC. TO DEPL.                 00041200
 RCEXH EQU       113,XH              RECIRC. TO ENPL.                 00041300
 RERXH EQU       114,XH              RECIRC. ROADWAY COUNT            00041400
 PLIXH EQU       115,XH              PARKING FACILITY ENTRANCE        00041500
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ARDXH EQU       116,XH              AIRPORT ENTRANCE FLOW
DRDXH EQU       117,XH              AIRPORT EXIT FLOW
EALXH EQU       118,XH              EASTERN EXPRESS FLOW
AMAXH EQU       119,XH              AMERICAN EXPRESS FLOW
UNTXH EQU       120,XH              UNITED EXPRESS FLOW
IMMQS SYN       42                   IMMIGRATION QUE-STO
IMMQS EQU       42,Q,S               IMMIGRATION QUE-STO
PARQS SYN       19                   PARKING LOT EXIT QUE-STO
PARQS EQU       19(8),Q,S            PARKING LOT EXIT QUE-STO
PTNXH EQU       1(110),XH            POINT NO XH'S (CONGESTION)
RCRQS SYN       27                   RENTACAR QUE-STO
RCRQS EQU       27(8),Q,S           RENTACAR QUE-STO
SECQS SYN       36                  SECURITY QUE-STO
SECQS EQU       36(5),Q,S           SECURITY QUE-STO
TICQS SYN       185                  TICKETS&CHECKIN QUE-STO
TICQS EQU       185(18),Q,S          TICKETS&CHECKIN QUE-STO
PAXWT EQU       13,T                TABLE FOR PAX WALKING TIME
*
*
*          D E F I N I T I O N   S T A T E M E N T S
*     USED TO DEFINE MATRIX SIZES, FUNCTIONS, VARIABLES AND TABLES
*
*
*   H A L F W O R D   M A T R I C E S
*
1      MATRIX     MH,330,16    FLIGHT SCHEDULE
*   1 ROW PER FLIGHT PLUS 1 ROW TO TERMINATE DEPL PAX GENERATION
*   (PAX XAC PH1 POINTS TO MH1 ROW)
*   COL 1 -   -1 ---> END OF TABLE
*              0 ---> ARRIVING FLIGHT
*              1 ---> DEPARTING FLIGHT
*              2 ---> INDICATES ALL BAGS FROM ARRIVING FLT AT BAG CLAIM
*       2 - FLIGHT NO
*       3 - AIR LINE
*       4 - SCHEDULED ARRIVAL/DEPARTURE TIME
*       5 - DEPL. PAX BEING MET BY PRIVATE CAR
*       6 - TIME FROM START (MINUTES)
*       7 - DOMESTIC, COMMUTER OR INTERNATIONAL FLT (1,2,3)
*       8 - AIRCRAFT TYPE
*       9 - GATE NO
*      10 - ORIGINATING/TERMINATING PASSENGERS
*      11 - TRANSFER PASSENGERS
*      12 - BAG CLAIM AREA (ARRV FLT)
*         - PAX WAITING AT LOUNGE TO BOARD (DEPT FLT)
*      13 - TRANSIT PASSENGERS
*      14 - TOTAL TERMINATING BAGS (ARRV FLT)
*      15 - TOTAL TRANSFER BAGS (ARRV FLT)
*      16 - TRANSFERS OUT OF SYSTEM
*
2      MATRIX     MH,15,3                AIRLINE INFORMATION TABLE
*   S I Z E   T O   R E Q U I R E M E N T S
*   1 ROW PER CARRIER
*   COL  1 - ENPLANING CURB FAC NO
*        2 - 0/00 PRETICKETED PAX USING EXPRESS CHECKIN (0 = NO EXP CHK)
*        3 - ENPLCURB FAC NO FOR BUS STOP (IF DIFF FROM COL 1)
*
3      MATRIX     MH,110,4     TABLE OF POINTS  *** S I Z E  ***
*   1 ROW PER POINT
*   COL 1 - X-COORDINATE
*       2 - Y-COORDINATE
*       3 - NEAREST EXIT POINT NO
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*       4 - NEAREST ENTRANCE POINT NO                                          00094C00
*                                                                              00095C00
 4     MATRIX      MH,3,2      PERCENT ENPLANING PAX TICKETED/DIRECT            00096C00
*   COL  1 - % PRETICKETED                                                     00097C00
*        2 - % OF PRETICKETED PAX WHO GO DIRECT TO GATES VIA SECURITY          00098C00
*   ROW  1 - DOMESTIC                                                          00099C00
*        2 - COMMUTER                                                          00100C00
*        3 - INTERNATIONAL                                                     00101C00
*                                                                              00102C00
 5     MATRIX      MH,101,1    TRANSFER FLIGHT TABLE                          00103C00
*   CONTAINS MH1 ROW OF DEPARTING FLIGHTS TAKING XFER PAX                      00104C00
*                                                                              00105C00
 6     MATRIX      MH,110,110  WALKING TIME EETWEEN POINTS                    00106C00
*                                                                              00107C00
 7     MATRIX      MH,64,1     USED AS WORK AREA BY BAG CLAIM ROUTINES.       00108C00
*   1 ROW FOR EACH POSSIBLE RANDOM NUMBER 1-64 GENERATED BY "BAGS"             00109C00
*                                                                              00110C00
 8     MATRIX      MH,20,2     USED TO ACCESS FACILITY DATA IN MH9.           00111C00
*   CONTAINS SAME INFORMATION AS FORTRAN "NFACSM" ARRAY.                       00112C00
*   COL  1 - COUNT OF THIS FACILITY TYPE                                       00113C00
*        2 - INDEX NO OF FACILITY TYPE; ADD FAC NO IN TYPE FOR MH9 ROW         00114C00
*   1 ROW PER FACILITY TYPE:                                                   00115C00
*        1 - GATE                        2 - CHECKIN                           00116C00
*        3 - SECURITY                    4 - BAGCLAIM                          00117C00
*        5 - CUSTOMS                     6 - ENTRANCE                          00118C00
*        7 - EXIT                        8 - ENPLCURB (ENPLANING CURB)         00119C00
*        9 - TRANSFER (STAIRS, ETC.)    10 - PARKING                           00120C00
*       11 - RENTACAR                   12 - DEPLCURB (DEPLANING CURB)         00121C00
*       13 - IMMIGRAT (HEALTH, ETC)     14 - TICKETS&CHECKIN                   00122C00
*       15 - 20 ** S P A R E **                                                00123C00
*                                                                              00124C00
 9     MATRIX      MH,230,6    FACILITY TABLE *** SIZE TO NEEDS ***           00125C00
*   1 ROW PER ACTUAL OR DUMMY FACILITY                                         00126C00
*   COL 1 - FACILITY TYPE (SEE MH8 ROW DESCRIPTION FOR CODES)                  00127C00
*       2 - FACILITY NUMBER WITHIN TYPE                                        00128C00
*       3 - LOCATION (POINT NUMBER)                                            00129C00
*       4-6  USED TO IDENTIFY FACILITY WITH OTHER MODEL COMPONENTS             00130C00
*            BAGCLAIM -  4 - DEPLCURB FACNO (ARV FLTS)                         00131C00
*            CUSTOMS  -  4 - DEPLCURB FACNO (ARV FLTS)                         00132C00
*            GATE     -  4 - SECURITY POINT FACNO (DEP FLTS)                   00133C00
*                        5 - IMMIGRATION AREA FACNO (ARV FLTS)                 00134C00
*            IMMIGRAT -  4 - ASSOCIATED CUSTOMS FACNO (ARV FLTS)               00135C00
*            RENTACAR -  4 - AGENCY CODE (SEE FN$RCA2F)                        00136C00
*                        5 - PARKING FACNO(IF OTHER THAN 1, SPECIAL LOT)       00137C00
*            TICK&CKIN-  4 - AIRLINE CODE                                      00137100
*            CONCESSI -  4 - ASSOCIATED SECURITY (=0 FOR LOBBY)                00138C00
*                                                                              00138100
 11    MATRIX      MH,7,1        A COUNTER FOR PAX LEAVING CONCOURSE           00138200
*                                                                              00139C00
 12    MATRIX      MH,7,1      A COUNTER FOR PAX LEAVING SECURITY               00139100
*                                                                              00139200
 13    MATRIX      MH,15,1               FOR AIRLINES                          00139300
*                                                                              00140C00
*   F L O A T I N G   M A T R I C E S                                          00141C00
*                                                                              00142C00
 1     MATRIX      ML,1,127              REUSABLE RANDOM NUMBER TABLE          00143C00
*                                                                              00144C00
 2     MATRIX      ML,3,10           GROUND TRANSACTION MODAL CHOICE           00145C00
*   ROW  1 - DOMESTIC                                                          00146C00
*        2 - COMMUTER                                                          00147C00
*        3 - INTERNATIONAL                                                     00148C00
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*   COL  1 - PRIVATE CAR - CURB AND PARK PERCENTAGE                          00149C00
*                                                                           00150C00
*        2 - RENTAL CAR  CUM. % PRIVATE                                     00151C00
*        3 - BUS/LIMO CUM. % PRIVATE                                        00152C00
*        4 - TAXI CUM. % PRIVATE                                            00153C00
*        5 - 10  ** S P A R E **                                            00154C00
*                                                                           00155C00
*   F U N C T I O N S                                                       00156C00
*                                                                           00157C00
*   DEPLANING PAX PROCESS FUNCTIONS                                         00158C00
*                                                                           00159C00
 DDP1F FUNCTION   PB2,L6     DEPLANING DOMESTIC PROCESS FN 1                00160C00
,CNCR0/,RCAR0/,BAGC0/,EXIT0/,CGTR0/,DEP99                                   00161C00
 DCP1F FUNCTION   PB2,L5     DEPLANING COMMUTTER PROCESS FN 1               00162C00
,CNCR0/,BAGC0/,EXIT0/,CGTR0/,DEP99                                          00163C00
 DIP1F FUNCTION   PB2,L8     DEPLANING INTERNATIONAL PROCESS FN 1           00164C00
,CNCR0/,IMMI0/,BAGC0/,CUST0/,RCAR0/,EXIT0/,CGTR0/,DEP99                     00165C00
 DLP1F FUNCTION   PB2,L4     DEPLANING LOBBY-BOUND PROCESS FN 1             00166C00
,CNCR0/,CHEK0/,CGTR0/,DEP99                                                 00167C00
*                                                                           00168C00
*   ENPLANING PAX PROCESS FUNCTIONS                                         00169C00
*                                                                           00170C00
 EDP1F FUNCTION   PB2,L6     DOMESTIC ENPLANING PAX - PROCESS FN 1          00171C00
,CGTR1/,ENTR0/,CHEK0/,SECU0/,GATE0/,ENP99                                   00172C00
 ECP1F FUNCTION   PB2,L6     COMMUTER ENPLANING PAX - PROCESS FN 1          00173C00
,CGTR1/,ENTR0/,CHEK0/,SECU0/,GATE0/,ENP99                                   00174C00
 EIP1F FUNCTION   PB2,L6     INTERNATIONAL ENPLANING PAX - PROCESS FN 1     00175C00
,CGTR1/,ENTR0/,CHEK0/,SECU0/,GATE0/,ENP99                                   00176C00
*                                                                           00177C00
*                                                                           00178C00
*   TRANSFER PAX PROCESS FUNCTIONS                                          00179C00
*                                                                           00180C00
 TIP1F FUNCTION   PB2,L8     INTERNATIONAL TRANSFER PAX - PROCESS FN 1      00181C00
,CNCR0/,IMMI0/,BAGC0/,CUST0/,CHEK0/,SECU0/,GATE0/,TRX99                     00182C00
 TDP1F FUNCTION   PB2,L4     DOMEST/COMMUTE TRANSFER PAX - PROCESS FN 1     00183C00
,CNCR0/,SECU0/,GATE0/,TRX99                                                 00184C00
 TDP2F FUNCTION   PB2,L5     DOMEST/COMMUTE TRANSFER PAX - PROCESS FN 2     00185C00
,CNCR0/,SECU0/,CONC0/,GATE0/,TRX99                                          00186C00
 TDP3F FUNCTION   PB2,L5     DOMEST/COMMUTE TRANSFER PAX - PROCESS FN 3     00187C00
,CNCR0/,LOBC0/,SECU0/,GATE0/,TRX99                                          00188C00
 TDP4F FUNCTION   PB2,L6     DOMEST/COMMUTE TRANSFER PAX - PROCESS FN 4     00189C00
,CNCR0/,CHEK0/,LOBC0/,SECU0/,GATE0/,TRX99                                   00190C00
 TDP5F FUNCTION   PB2,L5     DOMEST/COMMUTE TRANSFER PAX - PROCESS FN 5     00191C00
,CNCR0/,CHEK0/,SECU0/,GATE0/,TRX99                                          00192C00
 TDP6F FUNCTION   PB2,L2     SAME AS TDP1F FOR SAME-CONCOURSE PAX           00193C00
,GATE0/,TRX99                                                               00194C00
 TDP7F FUNCTION   PB2,L3     SAME AS TDP2F FOR SAME-CONCOURSE PAX           00195C00
,CONC0/,GATE0/,TRX99                                                        00196C00
 TDLDF FUNCTION   RN3,S5,Z   FUNCTION SELECTOR--LONG-STAY/DIFF CONCOURSE    00197C00
.1,TDP1F/.3,TDP2F/.8,TDP3F/.9,TDP4F/1.0,TDP5F                               00198C00
 TDLSF FUNCTION   RN3,S5,Z   FUNCTION SELECTOR--LONG-STAY/SAME CONCOURSE    00199C00
.1,TDP6F/.3,TDP7F/.8,TDP3F/.9,TDP4F/1.0,TDP5F                               00200C00
 TDSDF FUNCTION   RN3,S3,Z   FUNCTION SELECTOR-SHORT-STAY/DIFF CONCOURSE    00201C00
.6,TDP1F/.9,TDP2F/1.0,TDP5F                                                 00202C00
 TDSSF FUNCTION   RN3,S3,Z   FUNCTION SELECTOR-SHORT-STAY/SAME CONCOURSE    00203C00
.6,TDP6F/.9,TDP7F/1.0,TDP5F                                                 00204C00
 TDPXF FUNCTION   RN3,S3,Z   FUNCTION SELECTOR--TRANSIT PAX                 00205C00
.6,TDP6F/.9,TDP7F/1.0,TDP3F                                                 00206C00
 TOSDF FUNCTION   PB2,L2     TRANSFER-OUT-OF-SYSTEM PROCESS FN (DEPL)       00207C00
,CNCR0/,TRX99                                                               00208C00
 TOSEF FUNCTION   PB2,L3     TRANSFER-OUT-OF-SYSTEM PROCESS FN (ENPL)       00209C00
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,SECU0/,GATE0/,TRX99                                                          00210C00
*                                                                             00211C00
*   WELL-WISHER PROCESS FUNCTIONS                                             00212C00
*                                                                             00213C00
 WWS1F FUNCTION   PB2,L3     WELL-WISHERS LEFT AT SECURITY                    00214C00
,EXIT0/,GRT00/,ENP99                                                          00215C00
 WWG1F FUNCTION   PB2,L4     WELL-WISHERS LEFT AT GATE                        00216C00
,CNCR0/,EXIT0/,GRT00/,ENP99                                                   00217C00
*                                                                             00218C00
*   GREETER PROCESS FUNCTIONS                                                 00219C00
*                                                                             00220C00
 GREGF FUNCTION   PB2,L4     GREETERS GOING TO GATE                           00221C00
,GRT02/,ENTR0/,SECU0/,GATE0                                                   00222C00
 GRELF FUNCTION   PB2,L3     GREETERS GOING TO LOBBY                          00223C00
,GRT02/,ENTR0/,CHEK0                                                          00224C00
 GREBF FUNCTION   PB2,L3     GREETERS GOING TO BAG CLAIM                      00225C00
,GRT02/,ENTR0/,BAGC0                                                          00226C00
 GRECF FUNCTION   PB2,L2     GREETERS GOING TO CURB (AFTER RECIRC&PARK)       00227C00
,GRT02/,DPCG0                                                                 00228C00
 GRCPF FUNCTION   PB2,L2     GREETED-AT-CURB PAX                              00229C00
,GRT00/,DEP99                                                                 00230C00
*                                                                             00231C00
*   OTHER ADDRESSING FUNCTIONS                                                00232C00
*                                                                             00233C00
 CTR1F FUNCTION   PB6,L5     ROUTE DEPL PAX BY GROUND TRANSPORT MODE          00234C00
,DPLC0/,GRT00/,RCAR9/,DPLC0/,DPLC0                                            00235C00
 CTR2F FUNCTION   PB6,L5     ROUTE ENPL PAX BY GROUND TRANSPORT MODE          00236C00
,ENPC0/,GRT01/,RCAR8/,ENPC2/,ENPC0                                            00237C00
 DPL1F FUNCTION   PB6,L5     ROUTE DEPLCURB PAX BY GROUND TRANSPORT MODE      00238C00
,DPLC3/,ERROR/,ERROR/,DPLC4/,DPLC5                                            00239C00
 ENP1F FUNCTION   PB3,L3     ROUTE ENPL PAX BY DOM-COM-INT FLT                00240C00
,ENPL1/,ENPL2/,ENPL3                                                          00241C00
*                                                                             00242C00
*   SERVICE TIME FUNCTIONS                                                    00243C00
*                                                                             00244C00
 BUN1F FUNCTION   PH5,S4,Z   BAGGAGE UNLOAD ENTITY FUN F(A/C TYPE)            00245C00
9,BUN3F/10,BUN3F/11,BUN3F/727,BUN2F                                           00246C00
 BUN2F FUNCTION   RN6,C5     BAGGAGE TIME TO CLAIM AREA - 727                 00247C00
0.,440/.135,630/.88,1110/.95,1260/1.0,1770                                    00248C00
 BUN3F FUNCTION   RN6,C5     BAGGAGE TIME TO CLAIM AREA - DC8 DC10            00249C00
0.,260/.065,420/.33,660/.96,930/1.0,1140                                      00250C00
 CHK1F FUNCTION   RN7,C7                EXPRESS CHECKIN TIME                 00251C00
0.0,0/0.11,60/0.54,120/0.71,180/.82,240/.89,300/1.,480                        00252C00
 GAT3F FUNCTION   RN7,C6     GATE PROCESS TIME                                00253C00
0.,0/0.43,60/.81,120/.97,180/.99,240/1.,300                                   00254C00
 CHK2F FUNCTION   RN7,C7                TICKET/CHECKIN TIME                  00257C00
0.,0/0.08,60/0.19,120/0.82,300/0.91,360/.97,420/1.,480                        00258C00
 IMM1F FUNCTION   RN7,C7     IMMIGRATION PROCESS TIME                         00261C00
.0,0/.17,30/.49,60/.81,90/.91,120/.99,180/1.0,240                             00262C00
 CUS1F FUNCTION   RN7,C6     CUSTOMS PROCESS TIME                             00262100
0.0,0/0.106,60/0.480,120/0.750,180/0.93,300/1.0,421                           00262200
 PAR1F FUNCTION   RN7,C7                PARKING LOT EXIT SERVICE TIME        00263C00
0.,0/.41,15/.64,30/.75,45/.85,60/.97,90/1.,180                                00264C00
 RCA1F FUNCTION   RN7,C5                CAR RENTAL PROCESSING TIME           00265C00
0.,0/.39,180/.85,360/.96,540/1.,780                                           00266C00
 SEC1F FUNCTION   RN7,C7     SECURITY SERVICE TIME PER PERSON                 00266100
0.0,0/0.47,15/0.769,30/0.842,60/0.903,120/0.945,240/1.0,480                   00266200
 CSCKF FUNCTION   RN7,C6     CURBSIDE CHECKIN PROCESS TIME                    00266300
0.0,0/0.168,120/0.62,240/0.81,360/0.92,540/1.0,900                            00266400
 ATK1F FUNCTION   XH$CHKXH,E11    CHOSE AIRLINE TICKET/CHECKIN VARIABLE       00266500
1,V$CHK2V/2,V$CHK2V/3,V$CHK2V/4,V$CHK2V/5,V$CHK2V/6,V$CHK2V/7,V$CHK2V         00266600
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8,V$CHK2V/9,V$CHK2V/10,V$CHK2V/11,V$CHK2V                                    00266650
*                                                                            00267000
*     DWELL TIME FUNCTIONS                                                   00268000
*                                                                            00269000
 ENP2F FUNCTION   RN7,C7          VEHICLE UNLOAD TIME - ENPLANING CURB       00270000
0.,0/.54,15/.71,30/.83,45/.88,60/.94,90/1.,150                               00271000
 ENP3F FUNCTION   RN7,C7     EMPTY VEHICLE PARK TIME - ENPLANING CURB        00271100
0.,0/.2,30/.4,4C/.54,60/.72,90/.96,150/1.0,180                               00271200
*                                                                            00272000
*     OTHER FUNCTIONS                                                        00273000
*                                                                            00274000
 PPPDF FUNCTION   V$RANDV,D6           PAX/PARTY - DEPLANING                  00275000
.32,1/.71,2/.91,3/.97,4/.99,5/1.0,6                                          00276000
 GRPPF FUNCTION   RN6,D5     GREETERS/PARTY (PARTIES W/GREETERS ONLY)        00277000
.68,1/.91,2/.95,3/.97,4/1.0,5                                                00278000
 DCA1F FUNCTION   RN7,C6     ARRV. DISTRIBUTIONS-CARS MEETING PAX            00279000
0.,0/.575,1800/.66,2700/.75,3600/.81,4500/1.,6300                            00280000
 DCA2F FUNCTION   RN7,C6     ARRIVAL DISTRIBUTIONS - GREETERS                00281000
0.,0/.575,1800/.66,2700/.75,3600/.81,4500/1.,6300                            00282000
 DBAGF FUNCTION   V$RANDV,D6 NO. OF BAGS - DOMESTIC FLIGHT                   00283000
.37,0/.63,1/.83,2/.92,3/.96,4/1.0,5                                          00284000
 CBAGF FUNCTION   V$RANDV,D7 NO. OF BAGS - COMMUTER FLIGHT                   00285000
.2,0/.52,1/.79,2/.92,3/.96,4/.98,5/1.0,6                                     00286000
 IBAGF FUNCTION   V$RANDV,D9  NO. OF BAGS - INTERNATIONAL FLIGHT             00287000
0.06,0/0.2,1/0.5,2/0.71,3/0.84,4/0.89,5/0.93,6/0.95,7/1.0,8                  00288000
 RCA2F FUNCTION   RN7,D4     CAR RENTAL AGENCY SELECTION                     00289000
.40,1/.75,2/.96,3/1.0,4                                                      00290000
 RANDF FUNCTION   RN6,C2     USED TO GET RN 0-1 INSTEAD OF 0-999             00291000
0.0,0.0/1.0,1.0                                                              00292000
*                                                                            00292200
*                                                                            00293000
*                                                                            00294000
*   V A R I A B L E S                                                        00295000
*                                                                            00296000
*   SERVICE TIME VARIABLES                                                   00297000
*                                                                            00298000
*   NOTE: WHEN PASSENGERS SCALED, MULTIPLY BY XH$SCLXH.                      00299000
*                                                                            00300000
 CHK1V VARIABLE   FN$CHK1F*XH$SCLXH     EXPRESS CHECKIN                      00301000
 CHK2V VARIABLE   FN$CHK2F*XH$SCLXH FULL SERVICE TICKETING TIME              00302000
 CUS1V VARIABLE   FN$CUS1F*XH$SCLXH*PB13  CUSTOMS TIME                       00304000
 GAT3V VARIABLE   FN$GAT3F*XH$SCLXH*PB13 GATE SERVICE TIME                   00305000
 IMM1V VARIABLE   FN$IMM1F*XH$SCLXH*PB13   IMMIGRATION TIME                  00307000
 PAR1V VARIABLE   FN$PAR1F*XH$SCLXH     PARKING LOT SERVICE TIME             00308000
 RCA1V VARIABLE   FN$RCA1F*XH$SCLXH     CAR RENTAL CHECKOUT TIME             00309000
 SCLV0 VARIABLE   XH$SCLXH              DUMMY VAR - DEFINES XH$SCLXH         00310000
 SEC1V VARIABLE   8*XH$SCLXH*PB5        SECURITY SERVICE TIME (PARTY)        00311000
 CIRCV VARIABLE   300                   RECIRCULATION TIME                   00312000
*                                                                            00313000
*   OTHER VARIABLES                                                          00314000
*                                                                            00315000
 ACUNV FVARIABLE  V$ACU1V*3+90                                               00316000
*                                       MAX UNLOADING TIME - PAX             00317000
 ACU1V VARIABLE   MH1(PH1,10)+MH1(PH1,11)+MH1(PH1,13)+MH1(PH1,16)            00318000
*                                       TOTAL PAX ON AIRCRAFT                00319000
 ACU2V FVARIABLE  XL$ACUNL*RN6/1000.+.5   STAGGER PAX OFF A/C                00320000
 BUN4V VARIABLE   MH8(4,2)+MH1(PH1,12) BAGCLAIM INDEX + AREA NO              00321000
 DPL1V VARIABLE   30*PB4+45               DEPLCURB LOAD TIME CARS/TAXI        00322000
 DPL2V VARIABLE   RN3*SR*XF$TMPXF*60/1000000 RANDOM PULLOUT TIME <60 SEC     00323000
 DPL3V VARIABLE   PH1@125               MOD FUNCTION                         00324000
 ENP1V VARIABLE   FN$ENP2F              ENPL CURB VEHICLE DWELL TIME         00325000
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 ENP2V VARIABLE   180                    CURB LOAD/UNLOAD TIME - BUS/LIMO 00326C00
 FLT1V VARIABLE   60*MH1(PH1,6)-AC1-3599 DELAY TO 1 HR BEFORE SCH ARRV  00327C00
 FLT2V FVARIABLE  MH1(PH1,10)*XL$GRTXL*(1.-XL$CGTXL)*XL$PCBXL           00328C00
*                  NO. OF PARKING GREETERS PROCEEDING TO CURB          00328100
*                GRTXL- % GREETED, CGTXL- % GREETED AT CURB            00328200
*                PCBXL- % ACCESSING PARK AND CURB                      00328300
 FLT3V FVARIABLE  MH1(PH1,10)*XL$GRTXL*(1.-XL$CGTXL)*(1.-XL$PCBXL)      00329C00
*                NO. OF GREETERS PROCEEDING TO PARKING FACILITY        00329100
 FLT4V FVARIABLE  MH1(PH1,10)*XL$GRTXL*XL$CGTXL                         00330C00
*                NO. OF GREETERS PROCEEDING TO CURB ONLY               00330C10
 FLT5V FVARIABLE  MH1(PH1,10)*ML2(PB3,1)-MH1(PH1,5)                     00330100
*                  NO. OF TERMINATING PAX, SELF DRIVEN                 00330110
 FLT6V FVARIABLE  MH1(PH1,10)*(1.-ML2(PB3,1))                           00330200
*                  NO. OF TERMINATING PAX USING OTHER MODES            00330210
 GAT1V VARIABLE   3600-XH$BDTXH          START BOARDING PRIOR TO DEPARTURE00331C00
 GAT2V VARIABLE   GAQSL+MH1(PH1,9)-1     GATE BOARDING SWITCH           00332C00
 INC1V VARIABLE   XH$INCXH-1             ALLOW FOR START TIME = 1 - TIMER 00333C00
 XFL1V VARIABLE   60*MH1(PH1,6)-AC1-XH$XFAXH DELAY TO ADD FLT TO XFRFLT 00334C00
 XFL2V VARIABLE   60*MH1(PH1,6)-AC1-XH$XFDXH DELAY TO DLT FLT FM XFRFLT 00335C00
 XFL3V VARIABLE   XH$XFDXH*RN7/2000      STAGGER XFER PAX TO SECURITY    00336C00
 XFL4V VARIABLE   (60*MH1(PH1,6)-AC1)/60  TIME UNTIL FLT (MIN)          00337C00
 DPCDV VARIABLE   PH6-DPCBS+DPDPS        DEPLANING CURB-DOUBLE PARK     00338C00
 DPDCV VARIABLE   PH6-DPDPS+DPCBS        DEPLANING DOUBLE PARK-CURB     00339C00
 DPQDV VARIABLE   PH6-DPQCS+DPDPS        DEPLANING QUEUE-DOUBLE PARK    00340C00
 DPDQV VARIABLE   PH6-DPDPS+DPQCS        DEPLANING DOUBLE PARK-QUEUE    00341C00
*  ABOVE VARIABLES USED FOR ENPLANING CURB ALSO                         00342C00
 EPCQV VARIABLE   PH6-EPCBS+EPQCS        ENPLANING CURB-QUEUE           00343C00
 EPQCV VARIABLE   PH6-EPQCS+EPCBS        ENPLANING QUEUE-CURB           00344C00
 DENFV VARIABLE   300                    DEPL CURB ENFORCEMENT EVERY 5 MIN00345C00
 DLIMV VARIABLE   PH8+300                DEPL CURB TIME LIMIT 5 MIN     00346C00
 RANDV FVARIABLE  ML1(1,PB10)            USED AS ARGUMENT OF FUNCTIONS  00347C00
 RND2V FVARIABLE  FN$RANDF*126.0+1.0     YIELDS RANDOM INDEX FOR ML1    00348C00
 TMODV VARIABLE   AC1@32767              MOD FNUNCTION FOR ABS CLOCK TIME 00348C01
*                                                                       00348C03
*                                                                       00348C06
*                                                                       00348C10
* VARIABLES AND BOOLEAN VAR. FOR ENPLANING AND DEPLANING VEHICLE DELAY  00348C20
*                                                                       00348C30
*                                                                       00348C35
 LNFLD BVARIABLE  (S*PH5'G'0)*(V$NLNMX'E'1)   TRUE IF DBL PARKING &     00348C40
*                                  NO OF PASSING LANES AVAILABLE IS 1   00348C50
 DPCD8 VARIABLE   PH8-DPCBS+DPDPS   DOUBLE PARKING STORAGE NUMBER       00348C60
*                                    GIVEN DEPL CURB STORAGE            00348C70
 CIRVD BVARIABLE  (PB10'E'4)*(PH4'E'V$DBPKD+MH8(12,1))  TR IF CIR VEH &  00348C80
*                                    AT LAST STO NO OF DEPL CURB        00348C85
 DBPKD VARIABLE   DPCBS-1          SET TO 1 LESS THAN FIRST DEPL CURB STO00348100
 CIRVH BVARIABLE  (PB10'E'4)*(PH4'E'V$DBPK1+MH8(8,1))   TR IF CIR VEH &  00348120
*                                    AT LAST STO NO OF ENPL CURB        00348130
 NLNM1 VARIABLE   V$NLNMX-1  ONE LESS THAN MAX NO OF PASSING LANES      00348140
 LNFUL BVARIABLE  (S*PH5'G'0)*(V$NLNMX'E'1)   TRUE IF DBL PARKING &     00348150
*                                  NO OF PASSING LANES AVAILABLE IS 1   00348160
 DBPK1 VARIABLE   EPCBS-1  SET TO 1 LESS THAN 1ST ENPL CURB STO NO      00348170
 EPCD8 VARIABLE   PH8-EPCBS+EPDPS   DOUBLE PARKING STORAGE NUMBER       00348180
*                                    GIVEN ENPL CURB STO NO             00348190
 LNDLY VARIABLE   2*3/XH$NOLAN  DELAY IN SEC DUE TO LOSS OF LANES       00348200
 NLNMX VARIABLE   3          MAX. NO. OF PASSING LANES AVAILABLE        00348210
 DEPLS VARIABLE   PH4+(PB10-1)*2*MH8(12,1)   1 LESS THAN CORR DEPL STO  00348220
*                                    OF DESTINATION                     00348225
 ENPLS VARIABLE   PH4+(PB10-1)*2*MH8(8,1)   1 LESS THAN CORR ENPL STO NO00348230
*                                    OF DESTINATION                     00348235
 EDOUT BVARIABLE  (PB1'E'5+PB1'E'24+PB1'E'25)                           00348240
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 DDOUT BVARIABLE  PB1'E'2                                                    00348045
 ENDIN BVARIABLE  (PB1'E'6+PB1'E'27+PB1'E'26)                                00348050
 DPDIN BVARIABLE  PB1'E'28                                                   00348055
*                                                                           00349000
 SECNN VARIABLE   PH5+1-SECQS          OBTAIN CONCOURSE NUMBER FROM PH5      00349500
 TCKTN VARIABLE   PH5+1-TICQS          OBTAIN A/L NO FROM PH5                00349600
*   B O O L E A N   V A R I A B L E S                                       00350000
*                                                                           00351000
 XFL1B BVARIABLE  (MH1(PH1,1)'E'1)*(MH1(PH1,11)'G'0)  DEPT*AND*TPAX>0        00352000
 CHK1B BVARIABLE  (PB7'NE'1)+(PB9'E'1)+(RN7'GE'MH4(PB3,2))                   00353000
*                       NOT ENPL .OR. NOT TICKETED .OR. NOT DIRECT          00354000
 DLIMB BVARIABLE  (V$TMODV'G'V$DLIMV)*(PB10'G'1) DEPL CURB TIME LIMIT        00355000
*                                                                           00355100
*                                                                           00355200
*                                                                           00355300
*      T A B L E S                                                          00355350
*                                                                           00355400
 HOUR1 TABLE      PH11,100,100,20     HOURLY TABLES FOR PAX WAITING TIME     00355410
 HOUR2 TABLE      PH11,100,100,20                                            00355420
 HOUR3 TABLE      PH11,100,100,20                                            00355430
 HOUR4 TABLE      PH11,100,100,20                                            00355440
 HOUR5 TABLE      PH11,100,100,20                                            00355450
 HOUR6 TABLE      PH11,100,100,20                                            00355460
 HOUR7 TABLE      PH11,100,100,20                                            00355470
 HOUR8 TABLE      PH11,100,100,20                                            00355480
 HOUR9 TABLE      PH11,100,100,20                                            00355490
 HOR10 TABLE      PH11,100,100,20                                            00355495
 HOR11 TABLE      PH11,100,100,20                                            00355496
 HOR12 TABLE      PH11,100,100,20                                            00355497
 PAXWT TABLE      PH9,100,100,20       TABLE FOR PAX WALKING TIME            00355500
*                                                                           00356000
*   P A S S E N G E R   T R A N S A C T I O N   P A R A M E T E R S         00357000
*                                                                           00358000
*        HALFWORD:  1 - FLIGHT TABLE ROW NUMBER                             00359000
*                   2 - LOCATION (POINT NUMBER)                             00360000
*                   3 - MAX. BAG RANDOM NUMBER                              00361000
*                       PAX STORAGE NO IN DEPLANING CURB LOGIC              00362000
*                   4 - ADDRESS PARAMETER                                   00363000
*                   5 - ** S C R A T C H **                                 00364000
*                       INITIALLY CARRIES GATE NO FOR DEPL PAX              00365000
*                       FORTM USES A  RETURN FOR STO, QUE, NOS, ETC.        00366000
*                   6 - USER CHAIN FOR BAG CLAIM (DEPL. PAX ONLY)           00367000
*                       CAR STORAGE NO IN DEPLANING CURB LOGIC              00368000
*                   7 - MH9 ROW FOR LAST FACILITY                           00369000
*                       (NOT IMPLEMENTED IN EXIT LOGIC)                     00370000
*                   8 - ** S C R A T C H **                                 00371000
*                       FORTM USES AS RETURN FOR ADDR IN XFER PAX LOGIC     00372000
*                   9 - CUMULATIVE WALKING TIME                             00373000
*                  10 - XAC SEQUENCE NUMBER FOR DEPL PAX MEETING            00374000
*                  11 - CUMULATIVE PAX WAITING TIME                         00374100
*        BYTE:      1 - PROCESS FUNCTION NUMBER                             00375000
*                   2 - PROCESS FUNCTION POINTER                            00376000
*                   3 - TYPE OF FLIGHT (1=DOM, 2=COM, 3=INT)                00377000
*                   4 - NUMBER OF BAGS                                      00378000
*                   5 - NUMBER IN PARTY (VISITORS + SELF)                   00379000
*                   6 - MODE OF GROUND TRANSPORTATION                       00380000
*                       (SEE MATRIX ML2 FOR CODES)                          00381000
*                   7 - 0=DEPLANING, 1=ENPLANING                            00382000
*                   8 - 1 = TERMINATING, 2 = TRANSFER                       00383000
*                       3 = TRANSIT, 4 = TRANSFER OUT OF SYSTEM             00384000
*                   9 - BAG CLAIM AREA LOG SWITCH (DEPL. PAX ONLY)          00385000
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*                    - 0 = TICKETED, 1 = NOT (ENPL. PAX ONLY)                00386000
*                 10 - USED IN DEPLANING FOR SCRATCH                         00387000
*                    - RENTACAR AGENCY                                       00388000
*                 11 - CURRENT PROCESS CODE                                  00389000
*                      (SEE MH8 FOR CODES)                                   00390000
*                      (NOT IMPLEMENTED IN EXIT LOGIC)                       00391000
*                 12 - =1 FOR MEETING AT GATE (DEPL PAX ONLY)                00392000
*                      =2 FOR MEETING AT BAG CLAIM (DEPL ONLY)               00393000
*                      =3 FOR MEETING AT TICKETING (DEPL ONLY)               00394000
*                 13 - PAX IN PARTY                                          00395000
*                 14 - # OF BAGS FN NUMBER; LATER PARKING LOT NUMBER         00396000
*                                                                            00397000
*...C O N T R O L  ... USED TO ROUTE TRANSACTIONS                            00398000
*   THIS SECTION ROUTES TRANSACTIONS FROM ONE LOGIC SECTION TO ANOTHER       00399000
*                ALSO CONTAINS DGTR* CODE - DEPLANING GROUND TRANSPORT.      00400000
*                                                                            00401000
CTRL0 ASSIGN     4,FN*PB1,PH          ADDRESS OF NEXT OPERATION             00402000
      ASSIGN     2+,1,PB              INCREMENT PROCESS FN POINTER          00403000
CTRL1 TRANSFER   ,PH4                                                       00404000
*                                                                           00405000
*   HANDLES ROUTING OF DEPL PAX TO PARKING LOTS.                            00406000
*                                                                           00407000
CTRL8 TRANSFER   ,PARK0                                                     00408000
*                                                                           00409000
*   THE FOLLOWING SECTIONS OF "CONTROL" HANDLE PAX IN GROUND TRANSPORT.     00410000
*                                                                           00411000
CGTR0 ASSIGN     4,FN$CTR1F,PH        ROUTE DEPL PAX BY GR TX MODE          00412000
      TRANSFER   ,PH4                                                       00413000
CGTR1 ASSIGN     4,FN$CTR2F,PH        ROUTE ENPL PAX BY GR TX MODE          00414000
      TRANSFER   ,PH4                                                       00415000
*                                                                           00416000
*   THIS SECTION OF "CONTROL" GENERATES THE BUS/LIMO SERVICE TO THE         00417000
*   ENPLANING & DEPLANING CURBS.  THE CURRENT MODEL SIMULATES A SINGLE      00418000
*   STOP AT EACH, THOUGH THE ENPLANING CURB LOGIC OF THE FORTRAN ROUTINE    00419000
*   "FORTM" SUPPORTS A MULTIPLE STOP SIMULATION WHEN DESIRED.  COMPLEX      00420000
*   BUS SCHEDULES CURRENTLY REQUIRE INDIVIDUAL PROGRAMMING.                 00421000
*                                                                           00422000
      GENERATE   ,,,1,,2PH                                                  00423000
      ASSIGN     2,1,PH                                                     00424000
      SPLIT      1,CGTR3                                                    00425000
      TEST E     XH$ABUXH,0,*+2       FT IF NO ARV BUS SIMULATED            00426000
      TERMINATE                                                             00427000
CGTR2 ADVANCE    XH$ABUXH             INTERVAL BETWEEN ARRIVING BUSSES      00428000
      SPLIT      1,CGTR2                                                    00429000
      TRANSFER   ,ENPC6                                                     00430000
CGTR3 TEST E     XH$DBUXH,0,*+2       FT IF NO DEP BUS SIMULATED            00431000
      TERMINATE                                                             00432000
CGTR4 ADVANCE    XH$DBUXH             INTERVAL BETWEEN DEPARTING BUSSES     00433000
      SPLIT      1,CGTR4                                                    00434000
      TRANSFER   ,DPLC6                                                     00435000
*                                                                           00436000
*   PASSENGER TERMINATION                                                   00437000
*                                                                           00438000
DEP99 TABULATE   PAXWT                PASSENGER WALKING TIME                00439000
      TABULATE   XB$PXTBN             PASSENGER WAITING TIME                00439100
      TERMINATE                                                             00439200
ENP99 TABULATE   PAXWT                PASSENGER WALKING TIME                00440000
      TABULATE   XB$PXTBN             PASSENGER WAITING TIME                00440100
      TERMINATE                                                             00440200
TRX99 TABULATE   PAXWT                PASSENGER WALKING TIME                00441000
      TABULATE   XB$PXTBN             PASSENGER WAITING TIME                00441100
```

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      TERMINATE                                                          00441C00
*                                                                        00442C00
*...E N D   O F   C O N T R O L                                          00443C00
*                                                                        00444C00
*                                                                        00445C00
*   D E P L A N I N G   P A S S E N G E R   L O G I C                    00446C00
*                                                                        00447C00
      GENERATE   ,,,1,10,11PH,14PB                                       00448C00
      ASSIGN     2,1,PB              INTIIALIZE PROCESS FN POINTER       00449C00
      SPLIT      1,XFLT0             COPY TO TRANSFER FLT LOGIC          00450C00
      ADVANCE    1                   ASSURE XFER FLT TABLE GETS BUILT    00451C00
      ASSIGN     11,1,PB             DEPLANING PAX AT "GATE"             00452C00
DEPL0 ASSIGN     1+,1,PH             FLT TABLE (MH1) ROW SUBSCRIPT       00453C00
      TEST L     MH1(PH1,1),0,*+2    MH1(PH1,1)=-1 --> TABLE END (*+2)   00454C00
      TERMINATE                                                          00455C00
      ADVANCE    V$FLT1V             DELAY TO 1 HR BEFORE SCH ARRV       00456C00
      SPLIT      1,DEPL0                                                 00456100
      TEST E     MH1(PH1,1),1,DEPL5  BR FOR ARRIVING FLIGHTS             00457C00
      ASSIGN     4,GATE9,PH          FOR GATE LOGIC TO START BOARDING    00459C00
      TRANSFER   ,CTRL1                                                  00460C00
DEPL5 ASSIGN     3,MH1(PH1,7),PB     TYPE FLT (1,2,3 = DOM,COM,INT)      00461C00
*                                                                        00462C00
*     CREATE VISITORS HERE      *****                                    00463C00
*                                                                        00464C00
      TEST E     PB3,1,DEPL1         TESTS FOR DOMESTIC FLIGHT           00465C00
      ASSIGN     1,DDP1F,PB          DEPL DOMESTIC ROUTE FN              00466C00
      ASSIGN     14,DBAGF,PB         BAGS - DOMESTIC FLIGHT              00467C00
      TRANSFER   ,DEPL3                                                  00468C00
DEPL1 TEST E     PB3,2,DEPL2         TEST FOR COMMUTER FLIGHT            00469C00
      ASSIGN     1,DCP1F,PB          DEPL COMMUTER ROUTE FN              00470C00
      ASSIGN     14,CBAGF,PB         BAGS - COMMUTER FLIGHT              00471C00
      TRANSFER   ,DEPL3                                                  00472C00
DEPL2 ASSIGN     1,DIP1F,PB          DEPL INTERNAT ROUTE FN              00473C00
      ASSIGN     14,IBAGF,PB         BAGS - INTERNATIONAL FLIGHT         00474C00
DEPL3 TEST GE    XH$SEQ1H,32000,*+2  XAC SEQUENCER              (*+2)    00475C00
      SAVEVALUE  SEQ1H,0,XH                                              00476C00
      SPLIT      1,DEP25             TO CURB W/GREETERS LOGIC            00477C00
      SPLIT      1,DEP15             TO PARK W/GREETERS LOGIC            00478C00
      SPLIT      1,DEP17             TO CURB W/O GREETERS LOGIC          00479C00
      TRANSFER   ,DEPL7                                                  00481C00
*                                                                        00482C00
*  CURB WITH GREETERS LOGIC                                              00483C00
*                                                                        00484C00
DEP25 ASSIGN     6,1,PB              MODE = PARK                         00485C00
      ASSIGN     8,V$FLT2V,PH        NO. OF GREETERS                     00485100
      TRANSFER   ,DEP16                                                  00486C00
*                                                                        00487C00
*  PARK WITH GREETERS LOGIC                                              00488C00
*                                                                        00489C00
DEP15 ASSIGN     6,2,PB              MODE = PARK                         00490C00
      ASSIGN     8,V$FLT3V,PH        NO. OF PAX TO BE GREETED            00491C00
DEP16 TEST E     PH8,0,*+2           FT IF NONE                 (*+2)    00492C00
      TERMINATE                                                          00493C00
      MSAVEVALUE 1+,PH1,5,PH8,MH     ADD TO TOTAL MET                    00494C00
      ASSIGN     10,V$DPL3V,PB       STARTING POINT IN R.N. TABLE        00495C00
DEP12 ASSIGN     10+,1,PB            INCREMENT R.N. TABLE POINTER        00496C00
      TEST G     PB10,124,*+2                                  (*+2)    00497C00
      ASSIGN     10,1,PB             TURN CORNER                         00498C00
      ASSIGN     8-,FN$PPPDF,PH      SUBTRACT # OF PAX FROM TOTAL        00499C00
      ASSIGN     10+,1,PB            INCR POINTER                        00500C00
      ASSIGN     4,FN*PB14,PB        COMPUTE # OF BAGS                   00501C00
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        ASSIGN      10+,1,PB                INCR POINTER                              00502C00
        TEST LE     ML1(1,PB10),XL$GRGXL,*+4 FT FOR GATE MEETING      (*+4)   00503C00
        ASSIGN      1,GREGF,PB              MEET AT GATE                              00504C00
        ASSIGN      12,1,PB                                                           00505C00
        TRANSFER    ,DEP14                                                            00506C00
        TEST E      PB4,0,*+3               FT FOR NO BAGS            (*+3)   00507C00
        ASSIGN      1,GRELF,PB              MEET IN LOBBY                             00508C00
        TRANSFER    ,DEP14                                                            00509C00
        ASSIGN      1,GREBF,PB              MEET IN BAG CLAIM                         00510C00
DEP14   TEST G      PH8,0,*+2               FT IF NEED MORE PARTIES   (*+2)   00511C00
        SPLIT       1,DEP12                                                           00512C00
        ASSIGN      14,0,PB                 RESET PB14 FOR LATER USE                  00513C00
        ASSIGN      5,FN$GRPPF,PB           # OF GREETERS                            00514C00
        SAVEVALUE   SEQ1H+,1,XH             INCR XAC COUNTER                          00515C00
        ASSIGN      10,XH$SEQ1H,PH          XAC SEQUENCE #                            00516C00
        ADVANCE     FN$DCA2F                TO AIRPORT                                00517C00
        TRANSFER    ,CTRL0                                                            00518C00
*                                                                                     00519C00
*  CURB WITH GREETERS LOGIC (MEET AT CURB)                                            00520C00
*                                                                                     00521C00
DEP17   ASSIGN      6,1,PB                  MODE = CURB                               00522C00
        ASSIGN      8,V$FLT4V,PH            NO. OF PAX TO BE MET                      00523C00
        TEST E      PH8,0,*+2               FT IF NONE                                00524C00
        TERMINATE                                                                     00525C00
        MSAVEVALUE  1+,PH1,5,PH8,MH         ADD TO TOTAL MET                          00526C00
        ASSIGN      10,V$DPL3V,PB           STARTING POINT IN R.N. TABLE              00527C00
        ASSIGN      4,DCAR0,PH              WILL GO TO CURB                           00528C00
DEP13   ASSIGN      10+,1,PB                INCREMENT R.N. TABLE POINTER              00529C00
        TEST G      PB10,124,*+2                                      (*+2)00530C00
        ASSIGN      10,1,PB                 TURN CORNER                               00531C00
        ASSIGN      8-,FN$PPPDF,PH          SUBTRACT # OF PAX FROM TOTAL              00532C00
        ASSIGN      10+,1,PB                INCR POINTER                              00533C00
        ASSIGN      4,FN*PB14,PB            COMPUTE # OF BAGS                         00534C00
        TEST G      PH8,0,*+2               FT IF NEED MORE PARTIES   (*+2)   00535C00
        SPLIT       1,DEP13                                                           00536C00
        ASSIGN      14,0,PB                 RESET PB14 FOR LATER USE                  00537C00
        ASSIGN      5,FN$GRPPF,PB           NOT USED UNLESS RECIRC&PARK               00538C00
        SAVEVALUE   SEQ1H+,1,XH             INCR XAC COUNTER                          00539C00
        ASSIGN      10,XH$SEQ1H,PH          XAC SEQUENCE #                            00540C00
        TRANSFER    ,CTRL1                                                            00541C00
*                                                                                     00542C00
*   NOTE: ADVANCE TIME MUST BE DETERMINISTIC                                          00543C00
DEPL7   ADVANCE     3600                                                              00544C00
        GATE LR     DPL1G                   GUARD "BAGS" FM SIMUL ARRV A/C            00546C00
        LOGIC S     DPL1G                                                             00547C00
        ASSIGN      5,MH1(PH1,9),PH         GATE NO                                   00548C00
        ASSIGN      7,PH5,PH                LAST MH9 ROW                              00549C00
        ASSIGN      2,MH9(PH5,3),PH         POINT NO OF GATE                          00550C00
        SAVEVALUE   ACUNL,V$ACUNV,XL        MAX PASSENGER UNLOADING TIME              00551C00
        SELECT LR   6PH,CHA1B,CHA2B         PICK FREE BAG CLAIM CHAIN-SWITCH          00552 00
        LOGIC S     PH6                     MARK THIS CHAIN IN USE                    00553C00
        SPLIT       1,DEPL4                 COPY TO TERMINATING PAX                   00554C00
        SPLIT       1,DEPL6                 COPY TO TRANSIT PAX                       00555C00
        SPLIT       1,DEP10                 COPY TO TRANSFER-OUT-OF-SYSTEM            00556C00
        TEST E      MH5(1,1),0,DEPL8        FALL THRU IF NO DEP FLTS IN XFER          00557C00
        SAVEVALUE   XFRXH+,MH1(PH1,11),XH   ADD XFER PAX TO "HOLDING XH"              00558C00
        TERMINATE                                                                     00559C00
DEPL8   TEST E      MH1(PH1,11),0,*+2       FT IF NO TPAX                     (*+2)00560C00
        TERMINATE                                                                     00561C00
        ASSIGN      8,2,PB                  MARK AS TRANSFER PAX                      00562C00
        ASSIGN      13,1,PB                 PAX IN PARTY                              00563C00
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        ASSIGN    5,1,PB                TOTAL IN PARTY                          00564000
        SPLIT     MH1(PH1,11),*+2       CREATE TRANSFER PAX                     00565000
        TERMINATE                                                               00566000
        HELPA     FORTM,17,1,RN5,PB3,PH5                                        00567000
        TEST E    PB3,3,DEP30           FT IF INTERNATIONAL                     00568000
        ASSIGN    1,TIP1F,PB            INT TRANSFER PROCESS FUNCTION           00569000
        ASSIGN    10,V$DPL3V,PB         STARTING POINT IN R.N. TABLE            00570000
        TEST E    MH1(PH1,7),3,*+5      FT IF INT FLIGHT          (*+5)         00570100
        ASSIGN    1,TDP5F,PB            ASSIGN DOM/COM TRANSFER FUNCTION        00570200
        ASSIGN    9,1,PB                SET PAX AS NOT TICKETED                 00570300
        HELP      BAGS,PH1,FN*PB14,4,3,PB8   GENERATE # OF BAGS, MAX RN        00571000
        TRANSFER  ,DEP31                                                        00572000
DEP30   TEST E    MH1(PH1,7),3,*+4      IS OUT GOING FLIGHT INTERNATIONAL       00572100
        ASSIGN    1,TDP4F,PB            SKIP IMMIO,BAGCO,CUSTO                  00572200
DEP31   ADVANCE   V$ACU2V               STAGGER PAX OFF A/C                     00572300
        TRANSFER  ,DEP11                                                        00573000
        SAVEVALUE SAVXH,MH1(PH1,9),XH   GATE # OF DEP FLT                       00574000
        TEST L    V$XFL4V,45,*+6        FT IF DEP IN <45 MIN      (*+6)         00575000
        TEST E    MH9(PH5,4),MH9(XH$SAVXH,4),*+3 FT IF SAME SEC (*+3)           00576000
        ASSIGN    1,FN$TDSSF,PB         SHORT-STAY/SAME                         00577000
        TRANSFER  ,DEP11                                                        00578000
        ASSIGN    1,FN$TDSDF,PB         SHORT-STAY/DIFF                         00579000
        TRANSFER  ,DEP11                                                        00580000
        TEST E    MH9(PH5,4),MH9(XH$SAVXH,4),*+3 FT IF SAME SEC (*+3)           00581000
        ASSIGN    1,FN$TDLSF,PB         LONG-STAY/SAME                          00582000
        TRANSFER  ,DEP11                                                        00583000
        ASSIGN    1,FN$TDLDF,PB         LONG-STAY/DIFF                          00584000
DEP11   TRANSFER  ,PH8                                                          00585000
*                                                                               00586000
DEPL6   ASSIGN    8,3,PB                MARK AS TRANSIT                         00587000
        ASSIGN    13,1,PB               PAX IN PARTY                            00588000
        ASSIGN    5,1,PB                TOTAL IN PARTY                          00589000
        SPLIT     MH1(PH1,13),*+2       CREATE TRANSIT PAX        (*+2)         00590000
        TERMINATE                                                               00591000
        ADVANCE   V$ACU2V               STAGGER PAX OFF AIRCRAFT                00592000
        HELPA     FORTM,17,2,PH1        SW,ARR FLT                              00593000
        ASSIGN    1,FN$TDPXF,PB         SELECT A PROCESS FUNCTION               00594000
        TEST E    PB1,0,*+2             FT IF NEVER DEPLANED      (*+2)         00595000
        TERMINATE                                                               00596000
        TRANSFER  ,PH8                                                          00597000
*                                                                               00598000
DEP10   ASSIGN    6,4,PB                MARK AS TRANSFER-OUT-OF-SYSTEM          00599000
        ASSIGN    13,1,PB               PAX IN PARTY                            00600000
        ASSIGN    5,1,PB                TOTAL IN PARTY                          00601000
        SPLIT     MH1(PH1,16),*+2       CREATE TRANSFERS O.O.S.       (*+2)     00602000
        TERMINATE                                                               00603000
        ADVANCE   V$ACU2V               STAGGER PAX OFF AIRCRAFT                00604000
        ASSIGN    1,TOSDF,PB            PROCESS FN FOR T.O.O.S. (DEPL)          00605000
        TRANSFER  ,CTRL0                                                        00606000
*                                                                               00607000
DEPL4   ASSIGN    8,1,PB                MARK AS TERMINATING PAX                 00608000
        TEST GE   XH$SEQ2H,32000,*+2    XAC SEQUENCER             (*+2)         00609000
        SAVEVALUE SEQ2H,0,XH                                                    00610000
        SPLIT     1,DEP18               TO CURB W/GREETERS LOGIC                00611000
        SPLIT     1,DEP19               TO PARK W/GREETERS LOGIC                00612000
        SPLIT     1,DEP22               TO CURB W/O GREETERS LOGIC              00613000
        SPLIT     1,DEP26               TO PARK W/O GREETERS LOGIC              00614000
        SPLIT     1,*+3                 TO ALL OTHER MODES        (*+3)         00615000
        ASSIGN    4,BUNL0,PH                                                    00616000
        TRANSFER  ,CTRL1                                                        00617000
*                                                                               00618000
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*  MODES OTHER THAN CURB AND PARK
*
        ASSIGN      6,2,PB                   ASSIGN MODE
        ASSIGN      8,V$FLT6V,PH  NO. OF PAX IN MODES OTHER THAN CURB/PARK
        TEST E      PH8,0,*+2                FT IF NONE
        TERMINATE
        ASSIGN      10,V$DPL3V,PB            STARTING POINT IN R.N. TABLE
 DEPL9  ASSIGN      10+,1,PB                 INCREMENT R.N. TABLE POINTER
        TEST G      PB10,124,*+2                                        (*+2)
        ASSIGN      10,1,PB                  TURN CORNER
        ASSIGN      13,FN$PPPDF,PB           PAX IN PARTY
        ASSIGN      8-,PB13,PH               SUBTRACT FROM TOTAL
        TEST LE     PH8,0,*+3                FT IF TOTAL <= 0
        ASSIGN      13+,PH8,PB               ADJUST LAST PARTY SIZE
        TRANSFER    ,*+2                     OUT OF LOOP               (*+2)
        SPLIT       1,DEPL9                  GO BACK TO CREATE ANOTHER
        ASSIGN      5,PB13,PB                TOTAL IN PARTY
        HELPA       FORTM,5,0,RN5,PB3        PICK GROUND TRANSP. MODE
        ASSIGN      10+,1,PB                 INCR POINTER
        HELP        BAGS,PH1,FN*PB14,4,3,PB8  GEN # OF BAGS, MAX RN
        ASSIGN      14,0,PB                  RESET PB14 FOR LATER USE
        TEST E      PB6,3,*+3                IF RENT-A-CAR USE DDP1F  (*+3)
        TEST E      PB4,0,*+2                FT IF NO BAGS             (*+2)
        ASSIGN      1,DLP1F,PB               CHANGE TO LOBBY PROC FN
        TRANSFER    ,DEP24
*
*  CURB WITH GREETERS
*
 DEP18  ASSIGN      6,1,PB                   MODE = CURB
        ASSIGN      8,V$FLT2V,PH NO. OF PRKING GREETERS PROCEEDING TO CURB
        TRANSFER    ,DEP20
*
*  PARK WITH GREETERS
*
 DEP19  ASSIGN      6,2,PB                   MODE = PARK
        ASSIGN      8,V$FLT3V,PH             NO. OF PAX TO BE GREETED
 DEP20  TEST E      PH8,0,*+2                FT IF NONE
        TERMINATE
        ASSIGN      10,V$DPL3V,PB            STARTING POINT IN R.N. TABLE
 DEP21  ASSIGN      10+,1,PB                 INCREMENT R.N. POINTER
        TEST G      PB10,124,*+2     PREVENT POINTER FROM EXCEEDING 127(*+2)
        ASSIGN      10,1,PB                  RESET POINTER
        ASSIGN      13,FN$PPPDF,PB           PAX IN PARTY
        ASSIGN      8-,PB13,PH               SUBTRACT GROUP FROM TOTAL
        ASSIGN      12,2,PB                  MEET AT BAGCLAIM
        ASSIGN      10+,1,PB                 INCREMENT R.N. POINTER
        HELP        BAGS,PH1,FN*PB14,4,3,PB8  GEN # OF BAGS, MAX RN
        ASSIGN      10+,1,PB                 INCREMENT R.N. POINTER
        TEST LE     ML1(1,PB10),XL$GRGXL,*+2 FT FOR GATE MEETING   (*+2)
        ASSIGN      12,1,PB                  MEET AT GATE
        TEST LE     PH8,0,*+3                IS LAST PARTY SIZE TOO LARGE(*+3)
        ASSIGN      13+,PH8,PB               ADJUST LAST PARTY SIZE
        TRANSFER    ,*+2                                               (*+2)
        SPLIT       1,DEP21
        TEST NE     PB3,3,*+4                FT IF NOT INTERNATIONAL   (*+4)
        TEST E      PB4,0,*+3                FT IF NO BAGS            (*+3)
        ASSIGN      1,DLP1F,PB               CHANGE TO LOBBY PROC FN
        ASSIGN      12,3,PB                  MEET AT TICKETING
        ASSIGN      14,0,PB                  RESET PB14 FOR LATER USE
        ASSIGN      5,PB13,PB                TOTAL IN PARTY
        SAVEVALUE   SEQ2H+,1,XH              INCR XAC COUNTER
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         ASSIGN     10,XH$SEQ2H,PH        XAC SEQUENCE #                          00677C00
         TRANSFER   ,DEP24                                                        00678C00
*                                                                                 00679C00
*  CURB WITHOUT GREETERS                                                         00680C00
*                                                                                 00681C00
DEP22    ASSIGN     6,1,PB                MODE = CURB                             00682C00
         ASSIGN     8,V$FLT4V,PH          NO. OF PAX TO BE MET                    00683C00
         TEST E     PH8,0,*+2             FT IF NONE                              00684C00
         TERMINATE                                                               00685C00
         ASSIGN     10,V$DPL3V,PB         STARTING POINT IN R.N. TABLE            00686C00
DEP23    ASSIGN     10+,1,PB              INCREMENT R.N. POINTER                  00687C00
         TEST G     PB10,124,*+2   PREVENT POINTER FROM EXCEEDING 127(*+2)00688C00
         ASSIGN     10,1,PB               RESET POINTER                           00689C00
         ASSIGN     13,FN$PPPDF,PB        PAX IN PARTY                            00690C00
         ASSIGN     8-,PB13,PH            SUBTRACT GROUP FROM TOTAL               00691C00
         ASSIGN     10+,1,PB              INCREMENT R.N. POINTER                  00692C00
         HELP       BAGS,PH1,FN*PB14,4,3,PB8  GEN # OF BAGS, MAX RN               00693C00
         TEST LE    PH8,0,*+3             IS LAST PARTY SIZE TOO LARGE(*+3)00696C00
         ASSIGN     13+,PH8,PB            ADJUST LAST PARTY SIZE                  00697C00
         TRANSFER   ,*+2                                                         00698C00
         SPLIT      1,DEP23                                                      00699C00
         ASSIGN     14,0,PB               RESET PB14 FOR LATER USE                00700C00
         ASSIGN     5,PB13,PB             TOTAL IN PARTY                          00701C00
         SAVEVALUE  SEQ2H+,1,XH           INCR XAC COUNTER                        00702C00
         ASSIGN     10,XH$SEQ2H,PH        XAC SEQUENCE #                          00703C00
         TRANSFER   ,DEP24                                                       00704C00
*                                                                                 00705C00
*  PARK WITHOUT GREETERS                                                         00706C00
*                                                                                 00707C00
DEP26    ASSIGN     6,2,PB                MODE = PARK                             00708C00
         ASSIGN     8,V$FLT5V,PH          NO. OF PAX TO BE CREATED                00709C00
         TEST E     PH8,0,*+2             FT IF NONE                              00710C00
         TERMINATE                                                               00711C00
         ASSIGN     10,V$DPL3V,PB         STARTING POINT IN R.N. TABLE            00712C00
DEP27    ASSIGN     10+,1,PB              INCREMENT R.N. POINTER                  00713C00
         TEST G     PB10,124,*+2   PREVENT POINTER FROM EXCEEDING 127(*+2)00714C00
         ASSIGN     10,1,PB               RESET POINTER                           00715C00
         ASSIGN     13,FN$PPPDF,PB        PAX IN PARTY                            00716C00
         ASSIGN     8-,PB13,PH            SUBTRACT GROUP FROM TOTAL               00717C00
         TEST LE    PH8,0,*+3             IS LAST PARTY SIZE TOO LARGE(*+3)00718C00
         ASSIGN     13+,PH8,PB            ADJUST LAST PARTY SIZE                  00719C00
         TRANSFER   ,*+2                                        (*+2)  00720C00
         SPLIT      1,DEP27                                                      00721C00
         ASSIGN     5,PB13,PB             TOTAL IN PARTY                          00722C00
         ASSIGN     10+,1,PB              INCREMENT R.N. POINTER                  00723C00
         HELP       BAGS,PH1,FN*PB14,4,3,PB8  GEN # OF BAGS, MAX RN               00724C00
         ASSIGN     14,0,PB               RESET PB14 FOR LATER USE                00725C00
         TEST E     PB4,0,*+2             FT IF NO BAGS                 (*+2)  00726C00
         ASSIGN     1,DLPIF,PB            CHANGE TO LOBBY PROC FN                 00727C00
*                                                                                 00728C00
DEP24    ADVANCE    V$ACU2V               STAGGER PAX OFF AIRCRAFT                00729C00
         TEST NE    PB12,1,*+2            FT IF NOT MEETING AT GATE     (*+2)  00730C00
         TRANSFER   ,CTRL0                                                       00731C00
         UNLINK     GREGC,CTRL1,1,10PH,PH10,DEP28 TRY TO UNLINK GREETER          00732C00
DEP29    GATE LS    PAS3L                 WAIT FOR INFO FROM GREETER              00733C00
         ASSIGN     5+,XB$PAS32,PB        ADD GREETERS TO PARTY                   00734C00
         ASSIGN     14,XB$PAS33,PB        PICK UP PARKING LOT NUMBER              00735C00
         LOGIC R    PAS3L                 PERMIT NEXT USE OF PAS3 S'VALUES        00736C00
         TRANSFER   ,CTRL0                                                       00737C00
DEP28    ASSIGN     4,DEP29,PH            WILL GO TO DEP29 WHEN UNLINKED          00738C00
         LINK       GREGC,FIFO            WAIT FOR GREETERS                       00739C00
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*                                                                      00740C00
*                                                                      00741C00
*...E N P L A N I N G   P A S S E N G E R   L O G I C                  00742C00
*                                                                      00743C00
ENPL0  TRANSFER   ,ENPL9                                               00744C00
ENPL1  TEST E     P88,4,*+4          FT IF TRANSFER FROM OUT OF SYS.   00745C00
       ASSIGN     2,1,PH             ETTR.FACIL.FOR OUT OF SYS.TRANSF. 00745100
       ASSIGN     1,TOSEF,PB                                           00746C00
       TRANSFER   ,CTRL0                                               00747C00
       ASSIGN     1,EDP1F,PB         ENPLANING DOMESTIC PASSENGERS     00748C00
       ASSIGN     10,V$RND2V,PB      GET RANDOM INDEX FOR BAG FUNCTION 00749C00
       ASSIGN     4,FN$DBAGF,PB      NO OF BAGS - DOMESTIC             00750C00
       TRANSFER   ,CTRL0                                               00752C00
ENPL2  ASSIGN     1,ECP1F,PB         ENPLANING COMMUTER PAX            00753C00
       ASSIGN     10,V$RND2V,PB      GET RANDOM INDEX FOR BAG FUNCTION 00754C00
       ASSIGN     4,FN$CBAGF,PB      NO OF BAGS - COMMUTER             00755C00
       TRANSFER   ,CTRL0                                               00757C00
ENPL3  ASSIGN     1,EIP1F,PB         ENPLANING INTERNATIONAL PAX       00758C00
       ASSIGN     10,V$RND2V,PB      GET RANDOM INDEX FOR BAG FUNCTION 00759C00
       ASSIGN     4,FN$IBAGF,PB      NO OF BAGS - INTERNATIONAL        00760C00
       TRANSFER   ,CTRL0                                               00762C00
ENPL9  CHANGE     ENPL0,CHNG0                                           00763C00
       TERMINATE                                                       00764C00
CHNG0  TRANSFER   FN,ENP1F                                             00765C00
*                                                                      00766C00
*                                                                      00767C00
*...B A G C L A I M                                                    00768C00
*                                                                      00769C00
BAGC0  TEST G     P84,0,CTRL0        RETURN TO CONTROL IF NO BAGS      00770C00
       HELPA      FORTM,3,PH2,PH1    LOC,MH1 ROW                       00771C00
       ADVANCE    XH$TRVXH           TRAVEL TIME TO BAG CLAIM AREA     00772C00
       TEST E     P813,0,BAGC1       FT IF GREETER                     00773C00
       UNLINK     GREBC,CTRL1,1,10PH,PH10,BAGC2 TRY TO UNLINK PAX      00774C00
BAGC3  GATE LR    PAS4L              ONLY ONE AT A TIME                00775C00
       SAVEVALUE  PAS42,P85,XB       NUMBER OF GREETERS                00776C00
       SAVEVALUE  PAS43,P814,XB      PARKING LOT NUMBER                00777C00
       LOGIC S    PAS4L              LET PAX PICK UP INFO              00778C00
       TEST NE    P86,1,*+2          BR IF MODE IS CURB          (*+2) 00779C00
       TERMINATE                                                       00780C00
       ASSIGN     5,0,PB             NO-ONE IN PARTY                   00781C00
       ASSIGN     4,GRT03,PH         ROUTE TO GREETER LEAVING PARKING  00782C00
       TRANSFER   ,CTRL1                                               00783C00
*                                                                      00784C00
BAGC2  ASSIGN     4,BAGC3,PH         WILL GO TO BAGC3 WHEN UNLINKED    00785C00
       LINK       GREBC,FIFO                                           00786C00
*                                                                      00787C00
BAGC1  SAVEVALUE  PH2+,P85,XH        CONGESTION                        00788C00
       TEST E     MH1(PH1,1),0,BAGC8 BR IF ALL BAGS AT BAGCLAIM        00789C00
       ASSIGN     4,BAGC7,PH                                           00790C00
       MARK                          MARK PAX FOR WAITING TIME         00790100
       LINK       PH6,FIFO           WAIT FOR BAGS (UNLK IN BUNL*)     00791C00
BAGC7  ASSIGN     11+,M1,PH          ADD WAITING TIME TO PH11          00791100
BAGC8  SAVEVALUE  PH2-,P85,XH        CONGESTION                        00792C00
       TEST E     P812,2,BAGC4       FT IF TO BE GREETED AT BAGCLAIM   00793C00
       UNLINK     GREBC,CTRL1,1,10PH,PH10,BAGC5 TRY TO UNLINK GREETER  00794C00
BAGC6  GATE LS    PAS4L              WAIT FOR INFO FROM GREETER        00795C00
       ASSIGN     5+,XB$PAS42,PB     ADD GREETERS TO PARTY             00796C00
       ASSIGN     14,XB$PAS43,PB     PICK UP PARKING LOT NUMBER        00797C00
       LOGIC R    PAS4L              PERMIT NEXT USE OF PAS4 S'VALUES  00798C00
       TRANSFER   ,BAGC4                                               00799C00
*                                                                      00800000
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 BAGC5 ASSIGN     4,BAGC6,PH           WILL GO TO BAGC6 WEN UNLINKED    00801C00
       LINK       GREBC,FIFO                                            00802C00
*                                                                       00803C00
 BAGC4 TRANSFER   ,CTRL0                                                00804C00
*                                                                       00805C00
*                                                                       00806C00
*...B A G G A G E   U N L O A D I N G   L O G I C                       00807C00
*                                                                       00808C00
 BUNL0 PRIORITY   5,BUFFER             ALLOW PAX XAC TO EXECUTE "BAGS"  00809C00
       SPLIT      1,*+2,,9PH,40PB                              (*+2)     00810C00
       TERMINATE                                                        00811C00
       HELPA      FORTM,2,10           BAGGAGE UNLOADING LOGIC          00812C00
       ASSIGN     5,MH1(PH1,6),PH      A/C TYPE                         00813C00
       ASSIGN     5,FN$BUN1F,PH        UNLOAD TIME FUN F(A/C TYPE)      00814C00
       LOGIC R    DPL1G                                                 00815C00
*                                                                       00817C00
       ADVANCE    FN*PH5               BAGGAGE UNLOADING TIME           00819C00
*                                                                       00820C00
       ASSIGN     5,V$BUN4V,PH         BAGCLAIM INDEX + AREA NO         00821C00
       ASSIGN     5,MH9(PH5,3),PH      POINT NO OF BAG CLAIM            00822C00
       ASSIGN     4,40,PH              LOOP COUNTER                     00823C00
 BUNL2 TEST G     PB*PH4,0,BUNL3       BR IF ALL BAGS UNLOADED          00824C00
       ADVANCE    30                   BAG UNLOADING TIME AT BAGCLAIM.  00825C00
       UNLINK LE  PH6,CTRL1,ALL,3PH,PB*PH4   BAGS TO WAITING PAX        00826C00
       LOOP       4PH,BUNL2                                             00827C00
 BUNL3 LOGIC R    PH6                  FREE CHAIN/SWITCH PAIR           00828C00
       MSAVEVALUE 1,PH1,1,2,MH         MARK ALL BAGS AT CLAIM AREA      00829C00
       TERMINATE                                                        00830C00
*                                                                       00831C00
*                                                                       00832C00
*...T I C K E T I N G   &   C H E C K I N                                00833C00
*                                                                       00834C00
 CHEK0 TEST E     BV$CHK1B,1,CTRL0     BR IF ENPL, TICKETED AND DIRECT  00835C00
       HELPA      FORTM,13,PH2,MH1(PH1,3),PB9,RN4,PB13 LOC,AIRLINE,     00836C00
*                                      TICKETED,EXPCHK RN,# PAX         00837C00
       ADVANCE    XH$TRVXH                                              00838C00
       TEST E     PB13,0,CHEK9         FT IF GREETER                    00839C00
       UNLINK     GRELC,CTRL1,1,10PH,PH10,CHE10 TRY TO UNLINK PAX       00840C00
 CHE11 GATE LR    PAS2L                ONLY ONE AT A TIME               00841C00
       SAVEVALUE  PAS22,PB5,XB         NUMBER OF GREETERS               00842C00
       SAVEVALUE  PAS23,PB14,XB        PARKING LOT NUMBER               00843C00
       LOGIC S    PAS2L                LET PAX PICK UP INFO             00844C00
       TEST NE    PB6,1,*+2            BR IF MODE IS CURB       (*+2)   00845C00
       TERMINATE                                                        00846C00
       ASSIGN     5,0,PB               NO-ONE IN PARTY                  00847C00
       ASSIGN     4,GRT03,PH           ROUTE TO GREETER LEAVING PARKING 00848C00
       TRANSFER   ,CTRL1                                                00849C00
*                                                                       00850C00
 CHE10 ASSIGN     4,CHE11,PH           WILL GO TO CHE11 WHEN UNLINKED   00851C00
       LINK       GRELC,FIFO                                            00852C00
*                                                                       00853C00
 CHEK9 TEST E     PB12,3,CHEK8         FT IF TO BE GREETED AT TICKETING 00854C00
       UNLINK     GRELC,CTRL1,1,10PH,PH10,CHEK7 TRY TO UNLINK GREETER   00855C00
 CHEK8 GATE LS    PAS2L                WAIT FOR INFO FROM GREETER       00856C00
       ASSIGN     5+,XB$PAS22,PB       ADD GREETERS TO PARTY            00857C00
       ASSIGN     14,XB$PAS23,PB       PICK UP PARKING LOT NUMBER       00858C00
       LOGIC R    PAS2L                PERMIT NEXT USE OF PAS2 S'VALUES 00859C00
       TRANSFER   ,CTRL0                                                00860C00
*                                                                       00861C00
 CHEK7 ASSIGN     4,CHEK8,PH           WILL GO TO CHEK8 WHEN UNLINKED   00862C00
       LINK       GRELC,FIFO                                            00863C00
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*                                                                      00864000
CHEK6  TEST NE     PB8,1,CTRL0          BR IF TERMINATING              00865000
       SAVEVALUE   PH2+,PB5,XH          CONGESTION                     00866000
*                                                                      00867000
*                                                                      00868000
*                                                                      00869000
CHEK1  QUEUE       PH5,PB5               WAIT FOR FREE SEVER           00870000
       MARK                             MARK PAX FOR WAITING TIME      00870100
       ENTER       PH5                  SERVICE                        00871000
       DEPART      PH5,PB5                                             00872000
       ASSIGN      11+,M1,PH            ADD WAITING TIME TO PH11       00872100
       TRANSFER    ,PH4                 BR TO CHEK2 OR CHEK3;SET IN FORT.00873000
CHEK2  ADVANCE     V$CHK1V              CHECKIN TIME FOR TICKETED PAX  00874000
       LEAVE       PH5                  SERVICE                        00875000
       SAVEVALUE   PH2-,PB5,XH          CONGESTION                     00876000
       TEST E      MH1(PH1,3),1,*+3                                    00876100
       SAVEVALUE   EALXH+,PB13,XH                                      00876200
       TRANSFER    ,CHE12                                              00876300
       TEST E      MH1(PH1,3),8,*+3                                    00876400
       SAVEVALUE   AMAXH+,PB13,XH                                      00876500
       TRANSFER    ,CHE12                                              00876600
       TEST E      MH1(PH1,3),6,*+2                                    00876700
       SAVEVALUE   UNTXH+,PB13,XH                                      00876800
CHE12  TRANSFER    ,CTRL0                                              00877000
CHEK3  SAVEVALUE   CHKXH,MH1(PH1,3),XH                                 00878000
       ADVANCE     FN$ATK1F    TICKET/CHECKIN TIME                    00878100
       LEAVE       PH5                                                 00880000
       SAVEVALUE   PH2-,PB5,XH          CONGESTION                     00881000
       MSAVEVALUE  13+,V$TCKTN,1,PB5,MH                                00881100
       TRANSFER    ,CTRL0                                              00882000
*                                                                      00882020
*...I M M I G R A T I O N                                              00882040
*                                                                      00882060
*IMMI0 HELPA       FORTM,8,PH2,MH1(PH1,9)    PT. NO.,GATE NO.         00882080
       ADVANCE     XH$TRVXH                                            00882100
       SAVEVALUE   PH2+,PB5,XH          CONGESTION                     00882120
       GATE SNF    PH5,IMMI1                                           00882140
       ENTER       PH5                  SERVICE                        00882160
       TRANSFER    ,IMMI2                                              00882180
IMMI1  QUEUE       PH5,PB5              SERVICE                        00882200
       ENTER       PH5                                                 00882220
       DEPART      PH5,PB5                                             00882240
IMMI2  ADVANCE     V$IMM1V              IMMIGRATION PROCESS TIME       00882260
       LEAVE       PH5                                                 00882280
       SAVEVALUE   PH2-,PB5,XH          CONGESTION                     00882300
       SAVEVALUE   IMIG+,PB13,XH                                       00882310
       TRANSFER    ,CTRL0                                              00882320
*                                                                      00882400
*...C U S T O M S                                                      00882420
*                                                                      00882440
*CUST0 HELPA       FORTM,4,PH2,PH8      LOC,MH9 ROW                    00882460
       ADVANCE     XH$TRVXH                                            00882480
       SAVEVALUE   PH2+,PB5,XH          CONGESTION                     00882500
CUST3  GATE SNF    PH5,CUST2                                           00882520
       ENTER       PH5                                                 00882540
       TRANSFER    ,CUST4                                              00882560
CUST2  QUEUE       PH5,PB5                                             00882580
       ENTER       PH5                                                 00882600
       DEPART      PH5,PB5                                             00882620
CUST4  ADVANCE     V$CUS1V              CUSTOMS PROCESS TIME           00882640
       LEAVE       PH5                  SERVICE                        00882660
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      SAVEVALUE  PH2-,PB5,XH          CONGESTION                          00882680
      SAVEVALUE  CSTM+,PB13,XH                                           00882690
      TRANSFER   ,CTRLO                                                  00882700
*                                                                        00885000
*                                                                        00886000
*...C O N C O U R S E   E X I T - T E R M I N A T I N G   P A X         00887000
*                                                                        00888000
 CNCRO HELPA     FORTM,25,PH2,MH*(PH1,9)        LOC, GATE               00889000
       ADVANCE   XH$TRVXH          WALKING TM TO CONCOURSE FROM GATE     00890000
       MSAVEVALUE 11+,PH5,1,PB5,MH     NO OF PAX LEAVING CONCOURSE       00891000
       SAVEVALUE CONXH+,PB5,XH DUMMY TO KEEP FUNCT 1 FOR MNLINK HAPPY    00892000
       TRANSFER  ,CTRLO                                                  00893000
*                                                                        00894000
*                                                                        00895000
*...D E P L A N I N G   C U R B   ( C A R S )                            00896000
*                                                                        00897000
 DCAR0 ADVANCE   FN$DCAIF              ARRIVAL DISTRIBUTION FOR CARS      00898000
       SAVEVALUE ARCXH+,1,XH           COUNT OF VEH ON ARRIVING ROAD      00899000
 DCAR1 SAVEVALUE DEPXH+,1,XH                                              00899100
       HELPA     FORTM,10,MH1(PH1,3),PH1,PB4,0 AIRLINE,FLT,# OF BAGS      00900000
       TEST NE   PB4,0,DCARD           FALL THROUGH IF DEPL               00901000
       ASSIGN    8,V$DBPKD,PH  1 LESS THAN 1ST DEPL CURB STO NO           00901100
       ASSIGN    4,PH8,PH              SAVE CURB STO NO MINUS 1           00901105
       ASSIGN    5,V$DPCD8,PH 1 LESS THN 1ST DBL PRKING STO NO FOR DEPL   00901110
       TEST NE   PB10,4,DCARB   IF CIR VEH, TRANSFER TO DCARB             00901120
       ASSIGN    8,V$DEPLS,PH   1 LESS THAN CORRESPONDING STO NO          00901140
       TRANSFER  ,DCARB                                                   00901150
*                                      GOING TO ENPLANING SECTION        00901155
 DCARD ASSIGN    8,V$DBPK1,PH   1 LESS THAN ENPL CURB STO NO              00901160
       ASSIGN    4,PH8,PH   SAVE CURB STO NO MINUS 1                      00901163
       ASSIGN    5,V$EPCD8,PH          DBL PARKING STO NO FOR ENPL        00901165
       TEST NE   PB10,4,DCARB   IF CIR VEH, TRANSFER TO DCARB             00901170
       ASSIGN    8,V$ENPLS,PH   1 LESS THAN CORRESPONDING ENPL STO NO     00901200
 DCARB ASSIGN    8+,1,PH               INCREMENT STO NO                   00902020
       TEST NE   PB10,4,*+2      IF CIR VEH, SKIP NEXT TEST               00902030
       TEST NE   PH6,PH8,DCARA  IF STO NO SAME AS DESTINATION             00902040
*                                      STO NO, GO TO DCARA               00902050
       ASSIGN    4+,1,PH               INCREMENT CURB STO NO              00902051
       ASSIGN    5+,1,PH               INCREMENT DBL PARKING STO NO       00902055
       QUEUE     PH4                   ENTER QUEUE FOR BLOCKED LANE       00902057
       TEST E    BV$LNFLD,0  STOP TRAFFIC IF DBL PRKING & NO OF PASSING   00902060
*                                      LANES AVAILABLE IS 1               00902070
       DEPART    PH4                   DEPART QUEUE FOR BLOCKED LANE      00902075
       TEST E    S*PH5,0,DCARC   FT IF CURRENT CONTENTS OF DBL PARK       00902080
*                                      STO IS ZERO                       00902090
       SAVEVALUE NOLAN,V$NLNMX,XH  SET NO OF PASSING LANES TO MAX AVAIL   00902100
       SAVEVALUE TOTL1+,1,XH           SAVE COUNT                         00902110
       TRANSFER  ,*+3                                                     00902120
 DCARC SAVEVALUE NOLAN,V$NLNM1,XH  SET NO OF PASSING LANES TO 1 LESS      00902130
*                                      THAN MAX AVAILABLE                00902140
       SAVEVALUE TOTL2+,1,XH           SAVE COUNT                         00902150
       SAVEVALUE TOTL3+,V$LNDLY,XH     SAVE TIME                          00902160
       ADVANCE   V$LNDLY     DELAY VEH ACCORDING TO NO OF LANES AVAIL      00902170
       TEST NE   PB4,0,*+3             FALL THROUGH IF DEPL               00902175
       TEST E    BV$CIRVD,0,DCARA      IF CIR VEH  IS AT LAST             00902180
*                                      DEPL STO, TRANSFER TO DCARA       00902190
       TRANSFER  ,DCARB                MOVE TO NEXT DEPL STO              00902200
       TEST E    BV$CIRVH,0,DCARA      IF CIR VEH IS AT LAST              00902204
*                                      ENPL STO, TRANSFER TO DCARA       00902206
       TRANSFER  ,DCARB                MOVE TO NEXT ENPL STO              00902208
 DCARA SAVEVALUE ADPLC+,1,XH           COUNT OF VEH. ON DEPL. CURB        00902210
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         ASSIGN     8,V$TMODV,PH          FOR TIME LIMIT ENFORCEMENT          00902220
         TEST G     PB10,1,DCAR5          BR TO ENTER CURB SLOT               00903000
         TEST G     PB10,2,DCAR4          BR TO ENTER DP SLOT                 00904000
         TEST G     PB10,3,*+3            BR TO ENTER QUEUE SLOT    (*+3)     00905000
         ASSIGN     4,CIRC0,PH            SEND TO RECIRCULATION ROAD          00906000
         TRANSFER   ,CTRL1                                                    00907000
         ENTER      PH6                                                       00908000
         PRIORITY   12                    TO ASSURE PRIORITY FOR DP SLOT      00909000
         ASSIGN     5,RN2,PH                                                  00910000
         LINK       PH6,5PH               LINK ON QUEUE IN RANDOM ORDER       00911000
*                                                                            00912000
DCAR2    LEAVE      PH6                   LEAVE DP STORAGE                    00913000
         UNLINK     V$DPDQV,DCAR3,1       UNLINK 1 FROM CORR. QUEUE CHAIN     00914000
         ASSIGN     6,V$DPDCV,PH          CHANGE PH6 TO CURB STORE #          00915000
         ASSIGN     10,1,PB               NOW AT CURB                         00916000
         PRIORITY   10                    DROP TO NORMAL PRIORITY             00917000
         ENTER      PH6                   ENTER CURB STORE                    00918000
         ASSIGN     5,RN2,PH                                                  00919000
         LINK       DPL1C,5PH             RELINK IN RANDOM ORDER              00920000
*                                                                            00921000
DCAR3    TEST E     PB7,0,ENPC8           BR IF VEH UNLINKED IS ENPLANING     00922000
         LEAVE      PH6                   LEAVE QUEUE STORAGE                 00923000
         ASSIGN     6,V$DPQDV,PH          CHANGE PH6 TO DP STORE #            00924000
         ASSIGN     10,2,PB               NOW USING DP                        00925000
DCAR4    PRIORITY   11                    SET DP PRIORITY                     00926000
DCAR5    ENTER      PH6                   CURB OR DP STORE                    00927000
         UNLINK E   DPL2C,CTRL1,1,10PH,PH10,*+2   MATCH CAR WITH PAX (*+2)   00928000
         TRANSFER   ,DPLC9                                                    00929000
         ASSIGN     5,RN2,PH                                                  00930000
         LINK       DPL1C,5PH             LINK IN RANDOM ORDER                00931000
*                                                                            00932000
*...TIME LIMIT ENFORCEMENT                                                   00933000
*                                                                            00934000
         GENERATE   ,,,1,9,2PH            "POLICE OFFICER"                    00935000
DCAR6    ADVANCE    V$DENFV               FREQUENCY OF ENFORCEMENT            00936000
         UNLINK     DPL1C,DCAR8,ALL,BV$DLIM8 UNLINK ANY VEHICLES WHICH       00937000
*                                         HAVE BEEN DOUBLE-PARKED LONGER      00938000
*                                         THAN LIMIT                          00939000
         ASSIGN     1,MH8(12,1),PH        # OF DEPLANING CURBS                00940000
         ASSIGN     1+,MH8(8,1),PH        ADD # OF ENPLANING CURBS            00941000
         ASSIGN     2,DPQCS               FIRST QUEUE CHAIN                   00942000
DCAR7    UNLINK     PH2,DCAR9,ALL,BV$DLIM8 UNLINK ANY VEHICLES IN QUEUE       00943000
*                                         LONGER THAN LIMIT                   00944000
         ASSIGN     2+,1,PH                                                   00945000
         LOOP       1PH,DCAR7                                                 00946000
         TRANSFER   ,DCAR6                                                    00947000
DCAR8    UNLINK     V$DPDQV,DCAR3,1       UNLINK 1 FROM CORR. QUEUE CHAIN     00948000
DCAR9    LEAVE      PH6                   DP OR QUEUE STORAGE                 00949000
         PRIORITY   10                    DROP TO NORMAL PRIORITY             00950000
         TEST E     PB7,1,*+2             IF ENPLANING, FALL THROUGH          00950500
         ASSIGN     11+,M1,PH             ADD WAITING TIME TO PH11            00950600
         TEST E     PB7,0,CIRC1           BR IF UNLINKED VEH IS ENPLANING     00951000
         TRANSFER   ,CIRC0                RECIRCULATE                         00952000
*                                                                            00953000
*                                                                            00954000
*...D E P L A N I N G   C U R B   ( P A X )                                  00955000
*                                                                            00956000
DPLC0    HELPA      FORTM,9,PH2,PB11,PH7,PH1   LOC,FACTYP,MH9ROW,MH1ROW     00957000
         ADVANCE    XH$TRVXH                                                  00958000
*        SAVEVALUE  PH2+,PB5,XH           CONGESTION                          00959000
         TRANSFER   FN,DPL1F              BRANCH BY TRANSP MODE               00960000
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*                                                                       00961000
*   PRIVATE CAR                                                         00962000
*                                                                       00963000
DPLC3 UNLINK E    DPL1C,DPLC9,1,10PH,PH10,*+2  MATCH PAX WITH CAR (*+2) 00964000
      TRANSFER    ,DPLC1                 BR IF MATCH SUCCESSFUL         00965000
      UNLINK E    DPL3C,DPCG2,1,10PH,PH10,DPLC2 MATCH WITH GREETER      00966000
      TRANSFER    ,DPCG1                 BR IF MATCH SUCCESSFUL         00967000
DPLC1 GATE LS     PASSL                  WAIT FOR CAR LOCATION INFO     00968000
      ASSIGN      6,XH$PASS1,PH          PICK UP...                     00969000
      ASSIGN      10,XB$PASS2,PB         CAR LOCATION INFO              00970000
      LOGIC R     PASSL                                                 00971000
      ADVANCE     V$DPL1V                LOADING TIME                   00972000
      TEST E      PB10,1,DPLC7           FT IF LEAVING CURB             00973000
      SAVEVALUE   TMPXF,V$DPCDV,XF       INDIRECT ADDR. USING VARIABLE  00974000
      MARK                               MARK PAX FOR WAITING TIME      00974100
      ADVANCE     V$DPL2V                RANDOM PULLOUT DELAY           00975000
      ASSIGN      11+,M1,PH              ADD WAITING TIME TO PH11       00975100
      LEAVE       PH6                                                   00976000
      UNLINK E    DPL1C,DCAR2,1,6PH,V$DPCDV UNLINK 1 FROM CHAIN WITH    00977000
*                                        PH6=CORR. DP STORE             00978000
      TRANSFER    ,DPLC8                                                00979000
*                                                                       00980000
DPLC7 LEAVE       PH6                                                   00981000
      UNLINK      V$DPDQV,DCAR3,1        UNLINK 1 FROM CORR. QUEUE CHAIN 00982000
*     SAVEVALUE   PH2-,PB5,XH            CONGESTION                     00983000
DPLC8 SAVEVALUE   DRDXH+,1,XH            COUNT OF VEH ON DEPARTING ROAD 00984000
      TRANSFER    ,CTRL0                                                00985000
*                                                                       00986000
DPLC2 ASSIGN      4,DPLC1,PH                                            00987000
      LINK        DPL2C,FIFO             PAX WAITING FOR CARS           00988000
*                                                                       00989000
DPLC9 GATE LR     PASSL                  ONLY ONE CAR AT A TIME         00990000
      SAVEVALUE   PASS1,PH6,XH           PASS CAR LOCATION...           00991000
      SAVEVALUE   PASS2,PB10,XB          INFO TO PASSENGER XAC          00992000
      LOGIC S     PASSL                                                 00993000
      TERMINATE                                                         00994000
*                                                                       00995000
*   BUS/LIMO - PAX                                                      00996000
*                                                                       00997000
DPLC4 SAVEVALUE   DPCXH+,1,XH            DEPLANING PAX WAITING ON BUS/LIMO00998000
*     SAVEVALUE   PH2+,PB5,XH            CONGESTION                     00999000
      TRANSFER    ,CTRL0                                                01000000
*                                                                       01001000
*   TAXI                                                                01002000
*                                                                       01003000
DPLC5 ADVANCE     V$DPL1V                LOADING TIME                   01004000
*     SAVEVALUE   PH2-,PB5,XH            CONGESTION                     01005000
      SAVEVALUE   DRDXH+,1,XH            COUNT OF VEH ON DEPARTING ROAD 01006000
      TRANSFER    ,CTRL0                                                01007000
*                                                                       01008000
*   BUS/LIMO - VEHICLE                                                  01009000
*                                                                       01010000
DPLC6 SAVEVALUE   ARDXH+,1,XH            COUNT OF VEH ON ARRIVING ROAD  01011000
*     SAVEVALUE   PH2-,PB5,XH            CONGESTION                     01012000
      SAVEVALUE   DPCXH,0,XH             REMOVE PAX WAITING FOR BUS/LIMO 01013000
      SAVEVALUE   DRDXH+,1,XH            COUNT OF VEH ON DEPARTING ROAD 01014000
      TERMINATE                                                         01015000
*                                                                       01016000
*   DEPLANING CURB GREETERS (AFTER RECIRCULATE AND PARK)                01017000
*                                                                       01018000
DPCG0 HELPA       FORTM,10,MH1(PH1,3),PH1,PB4,1 A/L,FLT,# OF BAGS,GREET 01019000
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         ADVANCE    XH$TRVXH                                                  01020C00
         SAVEVALUE  PH2+,PB5,XH          CONGESTION                           01021C00
         UNLINK E   DPL2C,DPCG1,1,10PH,PH10,*+2 MATCH PAX AT CURB            01022C00
         TRANSFER   ,DPCG2               BR IF SUCCESSFUL                     01023C00
         LINK       DPL3C,FIFO           OTHERWISE LINK TO SPECIAL CHAIN      01024C00
*                                                                             01025C00
DPCG1    GATE LS    PAS5L                WAIT FOR INFO FROM GREETER           01026C00
         ASSIGN     5+,XB$PAS52,PB       ADD GREETERS TO PARTY                01027C00
         ASSIGN     14,XB$PAS53,PB       PICK UP PARKING LOT NUMBER           01028C00
         LOGIC R    PAS5L                PERMIT NEXT USE OF PAS5 S'VALUES     01029C00
         ASSIGN     6,2,PB               CHANGE MODE TO PARKING               01030C00
         ASSIGN     2,1,PB               PROC. FN. POINTER                    01031C00
         ASSIGN     1,GRCPF,PB           NEW PROC. FN.                        01032C00
         TRANSFER   ,CTRL0                                                    01033C00
*                                                                             01034C00
DPCG2    GATE LR    PAS5L                ONLY ONE AT A TIME                   01035C00
         SAVEVALUE  PAS52,PB5,XB         NUMBER OF GREETERS                   01036C00
         SAVEVALUE  PAS53,PB14,XB        PARKING LOT NUMBER                   01037C00
         LOGIC S    PAS5L                LET PAX PICK UP INFO                 01038C00
         TERMINATE                                                           01039C00
*                                                                             01040C00
*                                                                             01041C00
*...E N P L A N I N G   C U R B                                               01042C00
*                                                                             01043C00
*   PVTCAR/TAXI                                                               01044C00
*                                                                             01045C00
ENPC0    SAVEVALUE  ARDXH+,1,XH          COUNT OF VEH ON ARRIVING ROAD        01046C00
ENPCR    SAVEVALUE  ENPXH+,1,XH                                               01046100
         HELPA      FORTM,11,MH1(PH1,3),PB6  AIRLINE,MODE                     01047C00
         ASSIGN     8,V$DBPK1,PH   1 LESS THAN 1ST ENPL CURB STO NO           01047C03
         ASSIGN     4,PH8,PH             SAVE CURB STO NO MINUS 1             01047C04
         ASSIGN     5,V$EPCD8,PH 1 LESS THN 1ST DBL PRKING STO NO FOR ENPL    01047C06
         TEST NE    PB10,4,ENPCA         IF CIR VEH, TRANSFER TO ENPCA        01047C09
         ASSIGN     8,V$ENPLS,PH 1 LESS THN CORR 1ST ENPL STO NO              01047C12
ENPCA    ASSIGN     8+,1,PH              INCREMENT ENPL STO NO                01047C20
         TEST NE    PB10,4,*+2   IF CIR VEH SKIP NEXT TEST                    01047C30
         TEST NE    PH6,PH8,ENPC1 IS ENPL STO NO SAME AS DESTINATION STO NO   01047C40
         ASSIGN     4+,1,PH              INCREMENT ENPL CURB STO NO           01047C43
         ASSIGN     5+,1,PH              INCREMENT ENPL DBL PRKING STO NO     01047C45
         QUEUE      PH4                  ENTER QUEUE FOR BLOCKED LANE         01047C47
         MARK                            MARK PAX FOR WAITING TIME            01047C48
         TEST E     BV$LNFUL,0  STOP TRAFFIC IF DBL PRKING & NO OF PASSING    01047C50
         ASSIGN     11+,M1,PH            ADD WAITING TIME TO PH11             01047C55
*                                        LANES AVAILABLE IS 1                 01047C60
         DEPART     PH4                  LEAVE QUEUE FOR BLOCKED LANE         01047C65
         TEST E     S*PH5,0,ENPCB   IF CURRENT CONTENTS OF DBL PARKING STO    01047C70
*                                        IS ZERO FALL THROUGH                 01047C80
         SAVEVALUE  NOLAN,V$NLNMX,XH SET NO OF PASSING LANES TO MAX AVAIL     01047C90
         SAVEVALUE  TOTL4+,1,XH          SAVE COUNT                           01047100
         TRANSFER   ,*+3                                                      01047110
ENPCB    SAVEVALUE  NOLAN,V$NLNM1,XH  SET NO OF PASSING LANES TO 1 LESS       01047120
*                                        THAN MAX AVAILABLE                   01047130
         SAVEVALUE  TOTL5+,1,XH          SAVE COUNT                           01047140
         SAVEVALUE  TOTL6+,V$LNDLY,XH    SAVE TIME                            01047150
         MARK                            MARK PAX FOR WAITING TIME            01047155
         ADVANCE    V$LNDLY  DELAY VEH ACCORDING TO NO OF LANES AVAILABLE     01047160
         ASSIGN     11+,M1,PH            ADD WAITING TIME TO PH11             01047165
         TEST E     BV$CIRVH,0,ENPC1  IF CIR VEH IS AT LAST ENPL CUR STO      01047170
*                                        TRANSFER TO ENPC1                    01047180
         TRANSFER   ,ENPCA               MOVE TO NEXT ENPL STO NO             01047190
ENPC1    SAVEVALUE  AENPC+,1,XH          COUNT OF VEH ON ENPL CURB            01048C00
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         ASSIGN    8,V$TMODV,PH          FOR TIME LIMIT ENFORCEMENT      01049C00
         TEST G    PB10,1,ENPC5          BR TO ENTER CURB SLOT           01050C00
         TEST G    PB10,2,ENPC4          BR TO ENTER DP SLOT             01051C00
         TEST G    PB10,3,*+3            BR TO ENTER QUEUE SLOT          01052C00
         ASSIGN    4,CIRC1,PH            SEND TO RECIRCULATION ROAD      01053C00
         TRANSFER  ,CTRL1                                                01054C00
         ENTER     PH6                                                   01055C00
         PRIORITY  12                    TO ASSURE PRIORITY FOR DP SLOT  01056C00
         ASSIGN    5,RN2,PH                                              01057C00
         MARK                            MARK PAX FOR WAITING TIME       01057100
         LINK      PH6,5PH               LINK ON QUEUE IN RANDOM ORDER   01058C00
*                                                                        01059C00
ENPC8    TEST E    PB7,1,DCAR3           BR IF VEH UNLINKED IS DEPLANING 01059100
         ASSIGN    11+,M1,PH             ADD WAITING TIME TO PH11        01060C00
         LEAVE     PH6                   LEAVE QUEUE STORAGE             01061C00
         ASSIGN    6,V$EPQCV,PH          CHANGE PH6 TO CURB STORE #      0 062C00
         ASSIGN    10,*,PB               USING CURB                      01063C00
         TEST E    R*PH6,0,ENPC5         FT IF STORAGE FILLED            01064C00
         ASSIGN    6,V$DPCDV,PH          CHANGE PH6 TO DP STORE          01065C00
         ASSIGN    10,2,PB               USING DP                        01066C00
ENPC4    PRIORITY  11                    DP PRIORITY                     01067C00
ENPC5    ENTER     PH6                                                   01068C00
         ADVANCE   V$ENP1V               ENPL CURB UNLOAD TIME--CAR/TAXI 01069C00
         SPLIT     1,*+5                                                 01069100
         TEST E    PB9,0,*+3             FT IF PRETICKETED               01069200
         TRANSFER  .XH$CRBXH,*+2,*+1     FT IF USING CURB SIDE CHECK IN  01069300
         ADVANCE   FN$CSCKF              CURB SIDE CHECK IN TIME         01069400
         TRANSFER  ,CTRL0                                                01069450
         ADVANCE   FN$ENP3F              EMPTY CAR PARKING TIME          01069500
         TEST E    PB10,1,ENPC7          FT IF LEAVING CURB              01070C00
         SAVEVALUE TMPXF,V$DPCDV,XF      INDIRECT ADDR. USING VARIABLE   01071C00
         ADVANCE   V$DPL2V               RANDOM PULLOUT DELAY            01072C00
         LEAVE     PH6                   CURB STORE                      01073C00
         UNLINK    V$EPCQV,ENPC8,1       UNLINK 1 FROM QUEUE             01074C00
         TRANSFER  ,ENPC9                                                01075C00
ENPC7    LEAVE     PH5                   DP STORE                        01076C00
         UNLINK    V$DPDQV,ENPC8,1       UNLINK 1 FROM QUEUE             01077C00
ENPC9    SAVEVALUE DRDXH+,1,XH           COUNT OF VEH ON DEPARTING ROAD  01078C00
         TEST E    PB5,PB13,*+2          FT IF NO WELL-WISHERS      (*+2) 01079C00
         TERMINATE                                                       01080C00
         HELPA     FORTM,16,PH2,PB6,1,0,1 LOC,MODE,ENPL,0,LOTNO ONLY     01081C00
         ADVANCE   300                   VEHICLE TO LOT                  01083C00
         SAVEVALUE RERXH+,1,XH           RECIRC. RDWY COUNT              01083100
         SAVEVALUE PKLXH+,1,XH           ENTER CAR IN PARKING LOT        01084C00
         SAVEVALUE PLIXH+,1,XH           VEH COUNT IN PARKING LOT        01085C00
         TERMINATE                                                       01086C00
*                                                                        01087C00
*   BUS/LIMO                                                            01088C00
*                                                                        01089C00
ENPC2    HELPA     FORTM,11,MH1(PH1,3),PB6   AIRLINE,MODE                01090C00
         ASSIGN    4,ENPC3,PH                                            01091C00
         LINK      EBUSC,FIFO            LINK TO ENPLANING BUS USER CHAIN 01092C00
ENPC3    TRANSFER  ,CTRL0                                                01093C00
*                                                                        01094C00
*   BUS/LIMO (VEHICLE)                                                  01095C00
*                                                                        01096C00
ENPC6    SAVEVALUE ARDXH+,1,XH           COUNT OF VEH ON ARRIVING ROAD   01097C00
         ADVANCE   V$ENP2V               BUS/LIMO LOAD TIME              01098C00
         UNLINK    EBUSC,CTRL1,ALL                                       01099C00
         SAVEVALUE DRDXH+,1,XH           COUNT OF VEH ON DEPARTING ROAD  01100C00
         TERMINATE                                                       01101C00
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*                                                                       01102C00
*...RECIRCULATION ROAD                                                  01103C00
*                                                                       01104C00
 CIRC0 ADVANCE     V$CIRCV             RECIRCULATE                      01105C00
       SAVEVALUE   RCDXH+,1,XH         RECIRCULATION TO DEPLANING       01106C00
       SAVEVALUE   RERXH+,1,XH         RECIRC. ROADWAY COUNT            01106100
       TEST E      PB12,0,DCAR1        BR IF GREETER WHO HAS ALREADY MET01107C00
       TRANSFER    .XH$CPKXH,DCAR1,*+1 FT TO ENTER PK OR BR TO DEPL ROAD01108C00
       ASSIGN      6,2,PB              CHANGE MODE TO PARKING           01109C00
       TEST E      PB2,4,*+2                                            01109100
       TERMINATE                                                        01109200
       ASSIGN      1,GRECF,PB          PROC. FN. TO CURB                01110C00
       TRANSFER    ,CTRL0                                               01111C00
 CIRC1 ADVANCE     V$CIRCV             RECIRCULATE                      01112C00
       SAVEVALUE   RERXH+,1,XH         RECIRC. ROADWAY COUNT            01112100
       SAVEVALUE   RCEXH+,1,XH         RECIRCULATION TO ENPLANING       01113C00
       TRANSFER    ,ENPCR              RETURN TO ENPLANING ROAD         01114C00
*                                                                       01115C00
*                                                                       01116C00
*...E N T R A N C E                                                     01117C00
*                                                                       01118C00
 ENTR0 HELPA       FORTM,12,PH2        LOC                              01119C00
       ADVANCE     XH$TRVXH                                             01120C00
       TEST E      DPDIN,1,*+3                                          01120100
       SAVEVALUE   DPLIN+,PB5,XH                                        01120200
       TRANSFER    ,*+2                                                 01120300
       SAVEVALUE   ENDIN+,PB5,XH                                        01120400
       SAVEVALUE   ENDOR+,PB5,XH                                        01120500
       TRANSFER    ,CTRL0                                               01121C00
*                                                                       01122C00
*                                                                       01123C00
*...E X I T                                                             01124C00
*                                                                       01125C00
 EXIT0 HELPA       FORTM,7,PH2,PB11,FN*PB1,PH7   LOC,CUR PROC,NXTADR,MH9R01126C00
       ADVANCE     XH$TRVXH            TRAVEL TIME TO EXIT              01127C00
       TEST E      DDOUT,1,*+3                                          01127100
       SAVEVALUE   DPOUT+,PB5,XH                                        01127200
       TRANSFER    ,*+2                                                 01127300
       SAVEVALUE   EPOUT+,PB5,XH                                        01127400
       SAVEVALUE   EXDOR+,PB5,XH                                        01127500
       TRANSFER    ,CTRL0                                               01128C00
*                                                                       01129C00
*                                                                       01130C00
*...G A T E   ( E N P L A N I N G   P A X )                             01131C00
*                                                                       01132C00
 GATE0 HELPA       FORTM,15,PH2,MH1(PH1,9)   LOC,GATE                   01133C00
       ADVANCE     XH$TRVXH                                             01134C00
       TEST E      PB13,0,GATE7        FT IF NO PAX                     01135C00
       UNLINK      GREGC,CTRL1,1,10PH,PH10,GAT10 MATCH WITH PAX         01136C00
 GATE8 GATE LR     PAS3L               ONLY ONE AT A TIME               01137C00
       SAVEVALUE   PAS32,PB5,XB        NUMBER OF GREETERS               01138C00
       SAVEVALUE   PAS33,PB14,XB       PARKING LOT NUMBER               01139C00
       LOGIC S     PAS3L               LET PAX PICK UP INFO             01140C00
       TEST NE     PB6,1,*+2           BR IF MODE IS CURB          (*+2)01141C00
       TERMINATE                                                        01142C00
       ASSIGN      5,0,PB              NO-ONE IN PARTY                  01143C00
       ASSIGN      4,GRT03,PH          ROUTE TO GREETER LEAVING PARKING 01144C00
       TRANSFER    ,CTRL1                                               01145C00
 GAT10 ASSIGN      4,GATE8,PH          WILL GO TO GATE8 WHEN UNLINKED   01146C00
       LINK        GREGC,FIFO                                           01147C00
 GATE7 TEST NE     PB5,PB13,GATE3      FT IF HAVE WELL-WISHERS          01148000
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         SPLIT      1,*+3                  SPLIT WW OFF                (*+3)  01149000
         ASSIGN     5,PB13,PB              DROP WW                           01150000
         TRANSFER   ,GATE3                                                   01151000
         ASSIGN     5-,PB13,PB             SUBTRACT OUT PAX                  01152000
         ASSIGN     13,0,PB                SET PAX TO 0                      01153000
         ASSIGN     1,WWG1F,PB             WW LEAVING FROM GATE PROC FN      01154000
         ASSIGN     2,1,PB                 PROC FN POINTER                   01155000
         TRANSFER   ,CTRL0                                                   01156000
GATE3    SAVEVALUE  PH2+,PB5,XH            CONGESTION                        01157000
GATE1    QUEUE      PH5,PB5                                                  01161000
         SAVEVALUE  GATXH+,PB13,XH         PASS. COUNT AT THE GATE           01161100
         MARK                              MARK PAX FOR WAITING TIME         01161110
         ENTER      PH5                    SERVICE                           01162000
         DEPART     PH5,PB5                                                  01163000
         ASSIGN     11+,M1,PH              ADD WAITING TIME TO PH11          01163100
         ADVANCE    V$GAT3V                GATE SERVICE TIME                 01165000
GATE6    LEAVE      PH5                                                      01166000
         GATE LS    PH5,GATE?              GATE SET WHEN BOARDING BEGINS     01167000
         SAVEVALUE  PH2-,PB5,XH            CONGESTION                        01168000
         TRANSFER   ,CTRL0                                                   01169000
GATE2    MSAVEVALUE 1+,PH1,12,PB5,MH       PAX WAITING AT LOUNGE TO BOARD    01172000
         TRANSFER   ,CTRL0                                                   01173000
*                                                                            01174000
*   START BOARDING OPERATIONS                                                01175000
*                                                                            01176000
GATE9    ADVANCE    V$GAT1V                ADVANCE TO BOARDING TIME          01177000
         ASSIGN     5,V$GAT2V,PH                                             01178000
         LOGIC S    PH5                    GATE BOARDING SWITCH              01179000
         ADVANCE    XH$BDTXH                                                 01180000
         LOGIC R    PH5                    GATE BOARDING SWITCH              01181000
         ASSIGN     5,MH1(PH1,9),PH        GATE NO.                          01182000
         ASSIGN     5,MH9(PH5,3),PH        POINT NO                          01183000
         SAVEVALUE  PH5-,MH1(PH1,12),XH    REMOVE PAX BOARDING FROM POINT    01184000
         MSAVEVALUE 1,PH1,12,0,MH          RESET TO ZERO FOR LATE PAX COUNT  01184100
         TERMINATE                                                           01185000
*                                                                            01186000
*                                                                            01187000
*...G R C U N D   T R A N S P O R T A T I C N   ( M I S C . )                01188000
*                                                                            01189000
*                  GRT00 - DEPLANING PAX - SELF                              01190000
*                  GRT01 - ENPLANING PAX - SELF                              01191000
*                                                                            01192000
*   DEPLANING PAX - SELF                                                     01193000
*                                                                            01194000
GRT00    TEST E     MH1(PH1,3),10,*+2      TEST FOR SHUTTLE PAX (*+2)        01195000
         ASSIGN     14,3,PB                ASSIGN TO PARK. FACIL 3           01195100
         HELPA      FORTM,16,PH2,PB6,0     LOC,MODE,DEP                      01195200
         ADVANCE    XH$TRVXH                                                 01196000
         TRANSFER   ,CTRL3                                                   01197000
*                                                                            01198000
*   ENPLANING PAX - SELF                                                     01199000
*                                                                            01200000
GRT01    TEST E     MH1(PH1,3),10,*+2      TEST FOR SHUTTLE PAX (*+2)        01201000
         ASSIGN     14,3,PB                ASSIGN TO PARK. FACIL 3           01201100
         HELPA      FORTM,16,0,PB6,1       *SPARE*,MODE,ENP                  01201200
         SAVEVALUE  ARDXH+,1,XH            COUNT OF VEH ON ARRIVING ROAD     01202000
         SAVEVALUE  PKLXH+,1,XH            ENTER CAR IN PARKING LOT          01203000
         SAVEVALUE  PLIXH+,1,XH            VEH. COUNT IN PARK. LOT           01204000
         TRANSFER   ,CTRL0                                                   01205000
*                                                                            01206000
*   GREETERS                                                                 01207000
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*                                                                       01208C00
 GRT02 TEST E     MH1(PH1,3),10,*+2     TEST FOR SHUTTLE PAX (*+2)     01209C00
       ASSIGN     14,3,PB               ASSIGN TO PARK FACIL 3         01209100
       HELPA      FORTM,16,0,PB6,0      LOC,MODE,DEPL                  01209200
       SAVEVALUE  ARDXH+,1,XH         COUNT OF VEH ON ARRIVING ROAD     01210C00
       SAVEVALUE  PKLXH+,1,XH         ENTER CAR IN PARKING LOT          01211C00
       SAVEVALUE  PLIXH+,1,XH         VEH COUNT IN PARKING LOT          01212C00
       TRANSFER   ,CTRL0                                                01213C00
*                                                                       01214C00
*   GREETERS TAKING CAR FROM PARKING TO CURB                            01215C00
*                                                                       01216C00
 GRT03 HELPA      FORTM,16,PH2,PB8,0    LOC,MODE,DEPL                  01217C00
       ADVANCE    XH$TRVXH                                              01218C00
       QUEUE      PH5                                                   01219C00
       ENTER      PH5                                                   01220C00
       DEPART     PH5                                                   01221C00
       ADVANCE    V$PAR1V                                               01222C00
       LEAVE      PH5                                                   01223C00
       SAVEVALUE  PKLXH-,1,XH         EXIT CAR FROM PARKING LOT         01224C00
       SAVEVALUE  RERXH+,1,XH         RECIRC. ROADWAY COUNT             01224100
       SAVEVALUE  PKCXH+,1,XH         PARKING TO CURB RECIRCULATION     01225C00
       ASSIGN     4,DCAR1,PH          ROUTE TO DEPLANING CURB           01226C00
       TRANSFER   ,CTRL1                                                01227C00
*                                                                       01228C00
*                                                                       01229C00
*...P A R K I N G   ( D E P L   P A X - C A R S )                       01230C00
*                                                                       01231C00
 PARK0 QUEUE      PH5                   SERVICE                        01232C00
       MARK                           MARK PAX FOR WAITING TIME         01232100
       ENTER      PH5                                                   01233C00
       DEPART     PH5                                                   01234C00
       ASSIGN     11+,M1,PH           ADD WAITING TIME TO PH11          01234100
       ADVANCE    V$PAR1V             PARKING EXIT SERVICE TIME         01235C00
       LEAVE      PH5                                                   01236C00
       SAVEVALUE  PKLXH-,1,XH         EXIT CAR FROM PARKING LOT         01237C00
       SAVEVALUE  DRDXH+,1,XH         COUNT OF VEH ON DEPARTING ROAD    01238C00
       TRANSFER   ,CTRL0                                                01239C00
*                                                                       01240C00
*                                                                       01241C00
*...R E N T A C A R                                                     01242C00
*                                                                       01243C00
*   FOLLOWING FOR DEPL PAX RENTING A CAR                                01244C00
*                                                                       01245C00
 RCAR0 TEST E     PB6,3,CTRL0           RETURN TO CONTROL IF NOT RENTACAR01246C00
       ASSIGN     10,FN$RCA2F,PB        CAR RENTAL AGENCY SELECT        01247C00
       HELPA      FORTM,6,PH2,PB10      LOC,AGENCY                      01248C00
       ADVANCE    XH$TRVXH              TRAVEL TIME TO CAR RENTAL AREA  01249C00
       SAVEVALUE  PH2+,PB5,XH           CONGESTION                      01250C00
 RCAR1 QUEUE      PH5,PB5                WAIT FOR FREE AGENT            01254C00
       MARK                           MARK PAX FOR WAITING TIME         01254100
       ENTER      PH5                 SERVICE                           01255C00
       DEPART     PH5,PB5                                               01256C00
       ASSIGN     11+,M1,PH           ADD WAITING TIME TO PH11          01256100
 RCAR2 ADVANCE    V$RCA1V             CAR RENTAL PROCESSING TIME        01257C00
       LEAVE      PH5                 SERVICE                           01258C00
       SAVEVALUE  PH2-,PB5,XH         CONGESTION                        01259C00
       TRANSFER   ,CTRL0                                                01260C00
*                                                                       01261C00
*   DEPL PAX IN GROUND TRANSPORT WHO HAVE ALREADY RENTED CAR.           01262C00
*   NOTE: CURRENT LOGIC ASSUMES PAX PICKS UP CAR AT AGENCY PARKING LOT. 01263000
*                                                                       01264000
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 RCAR9 HELPA       FORTM,16,PH2,PB6,0,PB10   LOC,MODE,DEP/ENP,AGENCY      01265000
       ADVANCE     XH$TRVXH                                               01266000
       SAVEVALUE   DRDXH+,1,XH           COUNT OF CARS ON DEPARTING ROAD  01267000
       TRANSFER    ,CTRL0                                                 01268000
*                                                                         01269000
*   ENPLANING PAX - RENTACAR                                              01270000
*                                                                         01271000
*             NOTE: CURRENT LOGIC ASSUMES RENTAL CAR RETURNED TO A        01272000
*                   PARKING LOT (GENERAL OR AGENCY LOT).   PROCESSING,    01273000
*                   IF ANY, IS DONE IN THE TERMINAL.                      01274000
*                                                                         01275000
 RCAR8 HELPA       FORTM,16,0,PB6,1,PB10   ***,MODE.DEP/ENP,AGENCY       01276000
       SAVEVALUE   ARDXH+,1,XH           COUNT OF VEH ON ARRIVING ROAD    01277000
       TRANSFER    ,CTRL0                                                 01278000
*                                                                         01279000
*                                                                         01280000
*...S E C U R I T Y                                                       01281000
*                                                                         01282000
 SECU0 HELPA       FORTM,14,PH2,MH1(PH1,9)        LOC, GATE              01283000
       ADVANCE     XH$TRVXH                                               01284000
       TEST NE     PB5,PB13,SECU3        FT IF HAVE WW                    01285000
       TRANSFER    .XH$WWGXH,*+1,SECU3   FT IF LEAVING WW AT SECURITY     01286000
       SPLIT       1,*+3                 SPLIT WW OFF               (*+3) 01287000
       ASSIGN      5,PB13,PB             DROP WW                          01288000
       TRANSFER    ,SECU3                                                 01289000
       ASSIGN      5-,PB13,PB            SUBTRACT OUT PAX                 01290000
       ASSIGN      13,0,PB               SET PAX TO 0                     01291000
       ASSIGN      1,WWS1F,PB            WW LEAVING FROM SEC PROC FN      01292000
       ASSIGN      2,1,PB                PROC FN POINTER                  01293000
       TRANSFER    ,CTRL0                                                 01294000
 SECU3 SAVEVALUE   PH2+,PB5,XH           CONGESTION                       01295000
 SECU1 QUEUE       PH5,PB5                                                01299000
       MARK                              MARK PAX FOR WAITING TIME        01299050
       ENTER       PH5                   SERVICE                          01300000
       DEPART      PH5,PB5                                                01301000
       ASSIGN      11+,M1,PH             ADD WAITING TIME TO PH11         01302000
 SECU2 ADVANCE     V$SEC1V               SECURITY CHECK TIME              01303000
       LEAVE       PH5                   SERVICE                          01304000
       SAVEVALUE   PH2-,PB5,XH           CONGESTION                       01305000
       MSAVEVALUE  12+,V$SECNN,1,PB5,MH  NO. OF PAX LEAVING SECURITY      01305100
       TRANSFER    ,CTRL0                                                 01306000
*                                                                         01307000
*                                                                         01308000
*...C O N C E S S I O N S                                                 01309000
*                                                                         01310000
 LOBC0 HELPA       FORTM,24,PH2,PH1,RN5,C1,1 LOC,FLT,RN,CLOCK,SWITCH      01311000
       ADVANCE     XH$TRVXH                                               01312000
       SAVEVALUE   PH2+,PB5,XH           CONGESTION                       01313000
       ADVANCE     PH5                   WASTE TIME AT CONCESSION         01314000
       SAVEVALUE   PH2-,PB5,XH           CONGESTION                       01315000
       TRANSFER    ,CTRL0                                                 01316000
 CONC0 HELPA       FORTM,24,PH2,PH1,RN5,C1,2 LOC,FLT,RN,CLOCK,SWITCH      01317000
       ADVANCE     XH$TRVXH                                               01318000
       SAVEVALUE   PH2+,PB5,XH           CONGESTION                       01319000
       ADVANCE     PH5                   WASTE TIME AT CONCESSION         01320000
       SAVEVALUE   PH2-,PB5,XH           CONGESTION                       01321000
       TRANSFER    ,CTRL0                                                 01322000
*                                                                         01323000
*                                                                         01324000
*...T R A N S F E R   F L I G H T S                                       01325000
*                                                                         01326000
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XFLT0 ASSIGN     1,TDP1F,PB            ASSIGN PROCESS FN                        01327C00
      ASSIGN     2,2,PB      SKIP CONCOURSE FOR TDP1F FUNCTION                  01328C00
      ASSIGN     13,1,PB               PAX IN PARTY                             01329C00
      ASSIGN     5,1,PB                TOTAL IN PARTY                           01330C00
      HELPA      FORTM,18,0,0          INITIALIZE XFER FLT TABLE MH5            01331C00
      TEST L     MH1(PH1,1),0,*+3      FT IF AT END OF FLT TABLE                01332C00
      TEST E     MH5(1,1),0,XFLT3      FT IF NO XFER FLTS                       01333C00
      TERMINATE                                                                 01334C00
      SPLIT      1,XFLT3                                                        01335C00
*                                                                               01336C00
*   ADD FLT TO XFR FLT TABLE                                                    01337C00
*                                                                               01338C00
      TEST G     MH1(PH1,11),0,XFLT2   BR IF NO TPAX FOR NEXT FLT               01339C00
XFLT1 ADVANCE    V$XFL1V                                                        01340C00
      HELPA      FORTM,18,PH1,2                                                 01341C00
XFLT2 ASSIGN     1+,1,PH                                                        01342C00
      TEST L     MH1(PH1,1),0,XFLT5    TEST FOR END OF TABLE                    01343C00
      TERMINATE                                                                 01344C00
XFLT5 TEST E     BV$XFL18,1,XFLT2      BR IF ARRV FLT OR NO TPAX                01345C00
      TRANSFER   ,XFLT1                                                         01346C00
*                                                                               01347C00
*   DELETE FLT FROM XFR FLT TABLE                                               01348C00
*                                                                               01349C00
XFLT3 TEST G     MH5(1,1),0,XFLT9      BR IF XFER FLT TABLE EMPTY               01350C00
      ASSIGN     1,MH5(1,1),PH         FIRST FLT TO DELETE                      01351C00
XFLT7 ADVANCE    V$XFL2V                                                        01352C00
      ASSIGN     5,MH1(PH1,9),PH       GATE NO                                  01353C00
      ASSIGN     3,MH1(PH1,7),PB       TYPE FLT (DOM,COM,INT)                   01354C00
      HELPA      FORTM,18,PH1,3        MH1 ROW NO., FLAG FOR TICK CNTER         01355C00
      SPLIT      MH1(PH1,11),XFLT8     CREATE REMAINING XFER PAX                01356C00
      HELPA      FORTM,18,PH1,1        DELETE FLT FROM TABLE                    01357C00
XFLT4 ASSIGN     1+,1,PH                                                        01358C00
XFLT9 TEST L     MH1(PH1,1),0,XFLT6    TEST FOR END OF TABLE                    01359C00
      TERMINATE                                                                 01360C00
XFLT6 TEST E     BV$XFL18,1,XFLT4      BR IF ARRV FLT OR NO TPAX                01361C00
      TRANSFER   ,XFLT7                                                         01362C00
XFLT8 ADVANCE    V$XFL3V               STAGGER PAX TO SECURITY                  01363C00
      TRANSFER   ,CTRL0                                                         01364C00
*                                                                               01365C00
*                                                                               01366C00
*                                                                               01367C00
*...E R R O R   C H A I N                                                       01368C00
*                                                                               01369C00
*                 COLLECTS XACS CAUSING SELECTED ERRORS.   PH4 WILL            01370C00
*                 NORMALLY GIVE CLUE TO NATURE OF PROBLEM.                      01371C00
*                                                                               01372C00
ERROR LINK       ERRCH,FIFO                                                     01373C00
*                                                                               01374C00
*                                                                               01375C00
*   WHEN REMOVING ANY MODULE, UNCOMMENT ENTRY POINT CARD & OTHERS NOTED:        01376C00
*   NOTE: TO REMOVE "CHECKIN", UNCOMMENT CHEK0, CHEK1, AND CHEK2.               01377C00
*         TO REMOVE "DEPLCURB", UNCOMMENT DPCL0 AND DPCL9.                      01378C00
*         TO REMOVE "GATE (ENPLANING PAX)", UNCOMMENT GATE AND GATE9.           01379C00
*         TO REMOVE "RENTACAR", UNCOMMENT RCAR0, RCAR8 AND RCAR9.               01380C00
*                                                                               01381C00
*CHEK0 TRANSFER   ,CTRL0                                                        01382C00
*CHEK1 TRANSFER   ,CTRL0                                                        01383C00
*CHEK2 TRANSFER   ,CTRL0                                                        01384C00
 CUST0 TRANSFER   ,CTRL0                                                        01385C00
*DCAR0 TRANSFER   ,CTRL0                                                        01386C00
*DPLC0 TRANSFER   ,CTRL0                                                        01387C00
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*DPLC9 TRANSFER    ,CTRLO                                                    01388C00
*ENPC0 TRANSFER    ,CTRLO                                                    01389C00
*EXIT0 TRANSFER    ,CTRLO                                                    01390C00
*GATE0 TRANSFER    ,CTRLO                                                    01391C00
*GATE3 TRANSFER    ,CTRLO                                                    01392C00
*GATE9 TERMINATE                                                             01393C00
 IMMI0 TRANSFER    ,CTRLO                                                    01394C00
*PARK0 TRANSFER    ,CTRLO                                                    01395C00
*RCAR0 TRANSFER    ,CTRLO                                                    01396C00
*RCAR8 TRANSFER    ,CTRLO                                                    01397C00
*RCAR9 TRANSFER    ,CTRLO                                                    01398C00
*SECU0 TRANSFER    ,CTRLO                                                    01399C00
*                                                                            01400C00
*                                                                            01401C00
*...C H A N G E   C A R D   R E A D E R                                      01402C00
*                                                                            01403C00
       GENERATE    ,,,*,120,2PH                                              01404C00
 CHG00 HELPA       FORTM,23,1          PERFORM PREVIOUS AND READ NEXT        01405C00
*                                      CHANGE CARD                           01406C00
       TEST G      XH$NSCXH,0,*+3      IF NO STORAGE CHANGES,     (*+3)      01407C00
*                                      DON'T SPLIT                           01408C00
       ASSIGN      1-,1,PH                                                   01409C00
       SPLIT       XH$NSCXH,CHG01,1PH  SPLIT 1 XAC TO CHANGE EACH            01410C00
*                                      STORAGE, SEQUENCED IN PH1             01411C00
       ADVANCE     XF$CHGXF            WAIT TILL NEXT CHANGE                 01412C00
       TEST E      XH$NSCXH,0          IF WAIT WAS 0, WAIT TILL MH7 USED     01413C00
       TRANSFER    ,CHG00                                                    01414C00
                                                                             01415C00
 CHG01 ASSIGN      2,PH1,PH            SAVE MH7 ROW POINTER                  01416C00
       SAVEVALUE   SAVXH,PH1,XH        PH2 POINTS TO SECOND PORTION          01417C00
       ASSIGN      2+,30,PH            OF MH7                                01418C00
*      ASSIGN      1,MH7(PH1,1),PH     CHANGE PH1 FROM MH7 ROW REFERENCE     01419C00
*                                      TO STORAGE SUBSCRIPT (SET IN FORT     01420C00
*      ASSIGN      2,MH7(PH2,1),PH     CHANGE PH2 TO REQUIRED STORAGE        01421C00
*                                      CAPACITY (SET IN FORTM)               01422C00
       MSAVEVALUE  7,XH$SAVXH,1,0,MH   ZERO OUT MH7                          01423C00
       SAVEVALUE   SAVXH+,30,XH                                              01424C00
       MSAVEVALUE  7,XH$SAVXH,1,0,MH                                         01425C00
       SAVEVALUE   NSCXH-,1,XH         COUNT DOWN OF XACS USING MH7          01426C00
       TEST E      PH2,0,CHG02         FT IF NO LOWERING NEEDED              01427C00
       GATE SNF    PH1,*+3             IF NEW CAPACITY HIGHER ... (*+3)      01428C00
       ENTER       PH1                 ALLOW XACS WAITING ON DELAY           01429C00
       LEAVE       PH1                 CHAIN TO START MOVING                 01430C00
       TERMINATE                                                             01431C00
 CHG02 GATE SNF    PH1                 WAIT TILL SOMEONE LEAVES              01432C00
       HELPA       FORTM,23,2,PH1,PH2  PUSH STORAGE CAPACITY DOWN TO         01433C00
*                                      CURRENT CONTENTS                      01434C00
       TEST E      XH$SLCXH,1,CHG02    STORAGE LOWERING COMPLETE             01435C00
       SAVEVALUE   SLCXH,0,XH                                                01436C00
       TERMINATE                                                             01437C00
*                                                                            01438C00
*                                                                            01439C00
*  T I M E R  -  I N I T I A L  F O R T R A N  C A L L                       01440C00
*                                                                            01441C00
*  INITIAL CALL TO FORTRAN HELP BLOCK TO:                                    01442C00
*                READ FLIGHT SCHEDULE AND GEOMETRY DATA,                     01443C00
*                INITIALIZE MATRIX BASE ADDRESSES,                           01444C00
*               EXECUTE CLINK AND MNLINK.                                    01445C00
*                                                                            01446C00
       GENERATE    ,,,1,127,1PH                                              01447C00
       ADVANCE     XH$CLKXH            NEEDED TO DEFINE "CLKXH" AS XH        01448C00
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        SAVEVALUE  INCXH,60,XH          SET "CLOCK" INCREMENT              01449C00
        HELPC      CLINK,1                                                 01450C00
        HELPA      FORTM,1,1                                               01451C00
        TEST G     PH1,0,*+3                                 (*+3)         01452C00
STOP0   SPLIT      1,STOP0                                                 01453C00
        TERMINATE  PH1                                                     01454C00
        SPLIT      1,*+4                                     (*+4)         01455C00
        GATE LS    JOBLS          SET IF ERROR COUNT OVER LIMIT            01456C00
STOP1   SPLIT      1,STOP1                                                 01457C00
        TERMINATE  100                                                     01458C00
        SPLIT      1,*+5                                     (*+5)         01459C00
        ADVANCE    VSINC1V                 CLOCK INCREMENT                 01460C00
        HELPA      FORTM,21,XH$INCXH                                       01461C00
        ADVANCE    XH$INCXH                CLOCK INCREMENT                 01462C00
        TRANSFER   ,*-2                                      (*-2)         01463C00
        ASSIGN     1,127,PH                LOOP COUNTER                    01464C00
        MSAVEVALUE 1,1,PH1,FN$RANDF,ML     FILL ML1 WITH RANDOM NUMBERS    01465C00
        LOOP       1PH,*-1                                                 01466C00
        PRIORITY   126                     ALLOWS "CLOCK" TO OCCUR 1ST     01467C00
        ADVANCE    XF$ENDXF                ADVANCE TO END OF RUN           01468C00
        HELPA      FORTM,20,C1                                             01469C00
*       PRINT      ,,C,C                   CLOCK TIME                      01469C10
        PRINT      ,,W,C                   BLOCK COUNTS                    01469C20
        PRINT      ,,S,C                   STORAGE STATISTICS              01469C30
        PRINT      ,,Q,C                   QUEUE STATISTICS                01469C40
        PRINT      ,,U,C                   USER CHAIN STATISTICS           01469C60
        PRINT      ,,T,C                   TABLE STATISTICS                01469C70
*       PRINT      ,,X,C                   CONTENTS OF FULLWORD SAVEVALUES 01469C80
*       PRINT      ,,XH,C                  CONTENTS OF HALFWORD SAVEVALUES 01469C90
*       PRINT      ,,XB,C                  CONTENTS OF BYTE SAVEVALUES     01469100
*       PRINT      ,,XL,C                  CONTENTS OF FLOATING POINT SAVE 01469110
*       PRINT      ,,LG,C                  STATUS OF LOGIC SWITCHES        01469160
        TERMINATE  1                                                       01470C00
*                                                                          01471C00
        GENERATE   11700,,,1                                               01472C00
        HELPA      FORTM,22                                                01473C00
        ADVANCE    300                                                     01474C00
        TRANSFER   ,*-2                                                    01475C00
*                                                                          01476C00
*       GENERATE   12300,,,1                                               01477C00
        TERMINATE  1                                                       01478C00
*                                                                          01478100
*             TIMER FOR CHANGING HOURLY TABLE FOR PAX WAITING TIME         01478200
        GENERATE   ,,,1,,0                 GENERATE TIMER TRANSACTION      01478300
        SAVEVALUE  PXTBN+,1,XB             INCREMENT NUMBER OF TABLE       01478400
        ADVANCE    3600                    ADVANCE 1 HOUR                  01478500
        TRANSFER   ,*-2                                                    01478600
*                                                                          01479C00
 1      FUNCTION   PH1,L57       MNEMONIC LINK FUNCTION-SEE FORTRAN CALL   01480C00
,CMH01/,CMH02/,CMH03/,CMH04/,CMH06/,CMH07/,CMH08/,CMH09                    01481C00
,CML02                                                                     01482C00
,ENDXF/,TRVXH/,BDTXH/,ABUXH/,DBUXH/,XFRXH/,XFAXH/,XFDXH/,SCLXH/,CLKXH      01483C00
,CUSQS/,RCRQS/,DPCBS/,EPCBS/,CHKQS/,SECQS/,GAQSL/,PARQS/,IMMQS/,TICQS      01484C00
,RCAR0/,BAGC0/,DPLC0/,CHEK2/,CHEK3/,CGTR0/,ERROR/,SECU0/,CTRL0/,CTRL1      01485C00
,TRX99/,CONXH/,CHGXF/,NSCXH/,SLCXH/,DPDPS/,DPQCS/,WWGXH/,GRGXL/,EPDPS      01486C00
,EPQCS/,GRT00/,GRTXL/,CPKXH/,CRBXH/,CGTXL/,PCBXL                           01487C00
,JOBLS                                                                     01488C00
*                                                                          01489C00
*                                                                          01490C00
        SIMULATE   9                                                       01491C00
*       START      1,NP                                                    01492C00
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*       RESET                                                          01492002
        START       1,NP                                               01492004
         NOXREF                                                        01492010
         REPORT                                                        01492015
*HMS     TITLE       1,FLIGHT SCHEDULE                                 01492020
 HMS     TITLE       2,AIRLINE INFORMATION TABLE                       01492030
*HMS     TITLE       3,TABLE OF POINTS                                 01492040
*HMS     TITLE       4,% ENPLANING PAX TICKETED                        01492050
*HMS     TITLE       5,TRANSFER FLIGHT TABLE                           01492060
 HMS     TITLE       6,WALKING TIME BETWEEN POINTS                     01492070
 HMS     TITLE       7,RANDOM NUMBERS FOR BAGS                         01492080
*HMS     TITLE       8,USED IN MATRIX 9                                01492090
*HMS     TITLE       9,FACILITY TABLE                                  01492100
 HMS     TITLE       11, COUNTER FORPAX LEAVING CONCOURSE              01492110
 HMS     TITLE       12, COUNTER FOR PAX LEAVING SECURITY              01492120
 HMS     TITLE       13, COUNTER FOR PAX LEAVING AIRLINES              01492130
*LMS     TITLE       1,RANDOM NUMBER TABLE                             01492140
*LMS     TITLE       2,GROUND TRANSACTION MODAL CHOICE                 01492150
*        OUTPUT      REMOVE * TO GET ALL STATICS                       01492160
*                                                                      01493000
*                                                                      01494000
        END                                                           01495000
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8