

REFERENCE USE ONLY

REPORT NO. DOT-TSC-UMTA-72-1

OPERATIONAL DIAL - A - RIDE COMPUTER PROGRAM VOLUME 2

Test Scenarios and Test Data

JUAN F. BELLANTONI
TRANSPORTATION SYSTEMS CENTER
55 BROADWAY
CAMBRIDGE, MA. 02142

transpo 
U.S. International Transportation Exposition
Dulles International Airport
Washington, D.C.
May 27-June 4, 1972



SEPTEMBER 1971
TECHNICAL REPORT

Availability is Unlimited. Document may be Released
To the National Technical Information Service,
Springfield, Virginia 22151, for Sale to the Public.

Prepared for
DEPARTMENT OF TRANSPORTATION
URBAN MASS TRANSPORTATION ADMINISTRATION
WASHINGTON, D.C. 20590

The contents of this report reflect the views of the Transportation Systems Center which is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policy of the Department of Transportation. This report does not constitute a standard, specification or regulation.

1. Report No. DOT-TSC-UMTA-72-1	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle OPERATIONAL DIAL-A-RIDE COMPUTER PROGRAM, Test Scenarios And Test Data, VOLUME II		5. Report Date 30 September 1971	6. Performing Organization Code
7. Author(s) Juan F. Bellantoni		8. Performing Organization Report No.	
9. Performing Organization Name and Address Department of Transportation Transportation Systems Center Washington, D.C. 02142		10. Work Unit No. R2718	11. Contract or Grant No. UM202
12. Sponsoring Agency Name and Address Department of Transportation Urban Mass Transportation Admin. Washington D.C. 20590		13. Type of Report and Period Covered Technical Report, FY71-72 Jan-Sept. 1971	
		14. Sponsoring Agency Code	
15. Supplementary Notes This report consists of two volumes. Volume I contains the Test and Evaluation Report.			
16. Abstract This report presents the results of the evaluation of the MIT Urban Systems Laboratory's (USL's) Dial-A-Ride operational computer program. The evaluation was carried out by the Transportation Systems Center (TSC) under PPA UM-02, "Transportation Systems Computer Package", FY'72. The general purpose of the evaluation was to test the Operational Dial-A-Ride (O D-A-R) DOS Program against the work statement of November 24, 1970, for extension of the UMTA Grant MASS-MTD-6.			
17. Key Words Demand Responsive Systems, Dial-A-Ride, Dial-A-Bus, Operational D-A-R, Computer Dispatching		18. Distribution Statement Availability is Unlimited. Document may be Released To the National Technical Information Service, Springfield, Virginia 22151, for Sale to the Public.	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 142	22. Price

TABLE OF CONTENTS VOLUME 2

	Page
ACCEPTANCE TEST SPECIFICATION FOR THE DOS PROGRAM	v
SECTION 1 GENERAL TEST CONDITIONS	1
SECTION 2 ACCEPTANCE TEST SCENARIOS	5
APPENDIX A TEST HARDWARE CONFIGURATION	147
APPENDIX B TEST INPUT FILES	149
APPENDIX C CAMBRIDGE AND GRID FILES	163
APPENDIX D INITIALIZATION PROCEDURES	175
APPENDIX E REFERENCE LETTERS	179
O D-A-R ACCEPTANCE TEST	207
TEST DATA SECTION 1	207
TEST DATA SECTION 2	283
APPENDIX F Transaction File From Scenario I.2.3-A	285
APPENDIX G Transaction File From Scenario I.2.6 (Before Crash)	295
APPENDIX H Transaction File From Scenario I.2.6 (After Crash)	307
APPENDIX I System Status Dump During Scenario I.2.6	321
APPENDIX J The Job Stream Employed for Restart from an Intermediate Term Fail- ure During Scenario I.2.6	327
APPENDIX K Full Statistical Output From Scenario I.2.6	331

TABLE OF CONTENTS VOLUME I

	<u>Page</u>
INTRODUCTION.....	1
SECTION 1 ANALYSIS OF WORK STATEMENT AND DESIGN OF ACCEPTANCE TEST.....	2
1.1 Analysis of Work Statement.....	2
1.2 Design of the Acceptance Test.....	3
SECTION 2 RESULTS OF ACCEPTANCE TESTS.....	5
2.1 Heuristic Efficiency Scenarios.....	5
2.2 Pickup and Delivery Constraints.....	10
SECTION 3 REVIEW OF PROGRAM DOCUMENTATION.....	45
3.1 Acceptance Test Specification.....	52
3.2 User's Manual.....	46
3.3 Program Description.....	47
3.4 Manual Backup System Handbook.....	50
SECTION 4 REVIEW OF BACKUP MODE.....	55
SECTION 5 EVALUATION.....	61
5.1 Summary.....	61
5.2 Additional Observations.....	64
5.3 Conclusions.....	68
APPENDIX A.....	A-1
APPENDIX B.....	B-1
APPENDIX C.....	C-1
APPENDIX D.....	D-1
APPENDIX E.....	E-1
APPENDIX F.....	F-1
APPENDIX G.....	G-1
APPENDIX H.....	H-1

ACCEPTANCE TEST SPECIFICATION

FOR THE

DOS PROGRAM

JULY, 1971

Acceptance Test Specification for The DOS Program

This acceptance test specification documents the tests to be performed on the Operational Dial-A-Ride (ODAR) computer dispatching program developed by MIT to verify that it meets the specifications in the work statement of 24 November 1970 for UMTA MASS-MTD-6. It is organized as follows:

Section 1	General Test Conditions
Section 2	Acceptance Test Scenarios
Appendix A	Test Hardware Configuration
Appendix B	Test Input Files
Appendix C	Street Map Files
Appendix D	Initialization Procedure
Appendix E	Reference Letters

A complete list of all test scenarios is included in the first section.

Section 1: General Test Conditions

1.1 Hardware

Transportation Systems Center (TSC) will provide, subject to MIT approval, the hardware required for the Acceptance Tests; detailed hardware specifications were provided to TSC on January 14, 1971, and a summary only is presented in Appendix A. TSC will select the 360/50 or the 360/67 for each scenario, according to cost and convenience.

1.2 Software

MIT will supply all specially developed software for ODAR while TSC will supply an IBM Disk Operating System generated according to MIT's specifications with the advice and approval of MIT. An ARDS software package will be supplied by ADAGE, through MIT, for the test.

1.3 Personnel

TSC will provide a computer operator and a maximum of nine ODAR terminal operators as required for each of the tests while USL will provide sufficient personnel to perform all other aspects of the tests. The tests will be under the supervision of MIT personnel except that all data collection and verification will be under the supervision of TSC personnel.

1.4 Data Collection

Data to be collected will consist primarily of the printed sheets at the telecommunications terminals and the computer operator's console. Summary statistics and basic billing information on a computer readable medium will also be provided. Graphic output to the ARDS will not be saved in any form unless TSC chooses to photograph the ARDS screen. Diagnostic trace output on the high-speed printer will also be provided in some cases.

1.5 Changes during Test

During the course of the Acceptance Test, there will be no changes in the software except as necessitated by running on a different machine.

1.6 List of Scenarios Relevant to Work Statement

Scenario Number	Name
I.2.1	Incorporated in I.3.7
I.2.2-A	East-West Distribution Problem
I.2.2-1B	East-West Distribution Problem
I.2.2-2A	Clockwise Distribution Problem #1
I.2.2-2B	Clockwise Distribution Problem #1
I.2.2-2C	Clockwise Distribution Problem #1
I.2.2-3	Clockwise Distribution Problem #2
I.2.2-5	Group-Group Distribution
I.2.2-6	Two-Sector Distribution
I.2.2-7	Four-Section, Four-Vehicle Distribution
I.2.2-8	FCFS Collection #1
I.2.2-9	FCFS Collection #2
I.2.2-11	Branch and Circuit Collection
I.2.2-12	Diamond-Star Collection Problem
I.2.2-13	Many-Two Test
I.2.2-14	Simple Many-Many
I.2.2-15	2 - Vehicle Many-to-Many
I.2.3.a	Deliver and Pickup Constraints (Consistency)
I.2.3.b	Deliver and Pickup Constraints (Violation)
I.2.6	Realistic Case (Cambridge)

NOTE: Scenarios Number I.2.2-4, I.2.2-10, I.2.4, and I.2.5 were included in earlier drafts of the acceptance test but have subsequently been either eliminated or included in other scenarios.

- I.3.1.A Restart A - Part of I.2.6
- I.3.1.B Restart B - Part of I.2.6
- I.3.2 Cancellation of Serious Request
- I.3.3 Unexpected Situations
- I.3.4 Vehicle Breakdown Procedures
- I.3.5 Lateness Detection & Correction
- I.3.6 Priority Classes
- I.3.7 Graphics - Part of I.2.6
- I.3.8 Standing Requests - Part of I.2.6
- I.3.9 Automatic Billing - Part of I.2.6
- I.3.10 Hard Copy of Manual Backup - Part of I.2.6

1.7 Acceptance Criteria

Successful completion of the following scenarios, as determined by TSC on the basis of the data collected, is required for acceptance of the ODAR program in accordance with Section 3.7 of the November 24, 1970, Work Statement: I.2.2-1 through I.2.2-15, except I.2.2-4 and I.2.2-10,; I.2.3.a and I.2.3.b; I.3.1, I.3.2, I.3.3, I.3.4, I.3.5, I.3.6, I.3.7, I.3.8, I.3.9, I.3.10. These scenarios meet the requirements of the Acceptance Test Specification called for in Section 3.6.3.3 of the November 24, 1970, Work Statement.

Section 2

Acceptance Test Scenarios

OPERATIONAL DEAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: East-West Distribution Problem Number: I,2,2,-1A

Date of Approval: 2 June 1971 Page 1 of 5

Work Statement References: 3.6.3.3 (page 25) Running Time: 2

Test Conditions: OH MO PM BE SM

Number of Vehicles 2 Vehicle Capacity 8

Max Vehicle Speed 12 (mph) Number of Riders 4

Constraint 1: Waiting Time = 60 (min.)

Travel Time = 1 D + 60 (min.)

Total Time = 1 D + 60 (min.)

Purpose:

To verify that the computer program will minimize the average arrival time by dropping off two passengers who go to a common destination before dropping off the third passenger who goes to an equally distant destination (see diagram).

Description:

Three passengers are at the origin, 50 50 st. Passenger arnie enters a request for delivery to 100 50 st, then bob and charlie enter requests to go to 100 50 st and 0 50 st, respectively. Vehicle checks in at origin (50 50 st) and is dispatched.

Expected Result:

The passengers will be delivered in an efficient manner.

Reference: FT02 File No.: 1 (App B)
 Initialization Procedure: standard (App D)
 Computer Hardware Configuration: (App A)
 Street Map File: GRID (App C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Vehicle and Passenger Console Typeput

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	INFO/OUTPUT
VEHI VEHI		hold 2 local 10 10 ST
		CRS0150 VEH AT ADDRESS
PASS		zero 10 10 ST 50 50 ST
VEHI		CRS0105 VEH 0001 P ZERO 10 10 ST
PASS		CRS0000 ZERO VEH0001 P 0 D 4
VEHI		veh1 CRS0110 VEH 0001 D ZERO 50 50 ST
PASS		arnie 50 50 ST

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: From Start	input/output
	100 50 ST	
	CRS0000	ARNIE VEH 0001 P4 D7
		bob
	50 50 ST	
	100 50 ST	
	CRS0000	BOB VEH 0001 P4 D7
		charlie
	50 50 ST	
	0 50 ST	
	CRS0000	CHARLIE VEH 0001 P4 D12
		vehil
	CRS0105	VEH 0001 P ARNIE 50 50 ST
		vehil
	CRS0105	VEH 0001 P BOB 50 50 ST
		vehil
	CRS0110	VEH 0001 D ARNIE 100 50 ST
		vehil
	CRS0110	VEH 001 D BOB 100 50 ST
		vehil
	CRS0105	VEH 0001 P CHARLIE 50 50 ST
		vehil
	CRS0110	VEH 001 D CHARLIE 0 50 ST

Date Test Run: _____

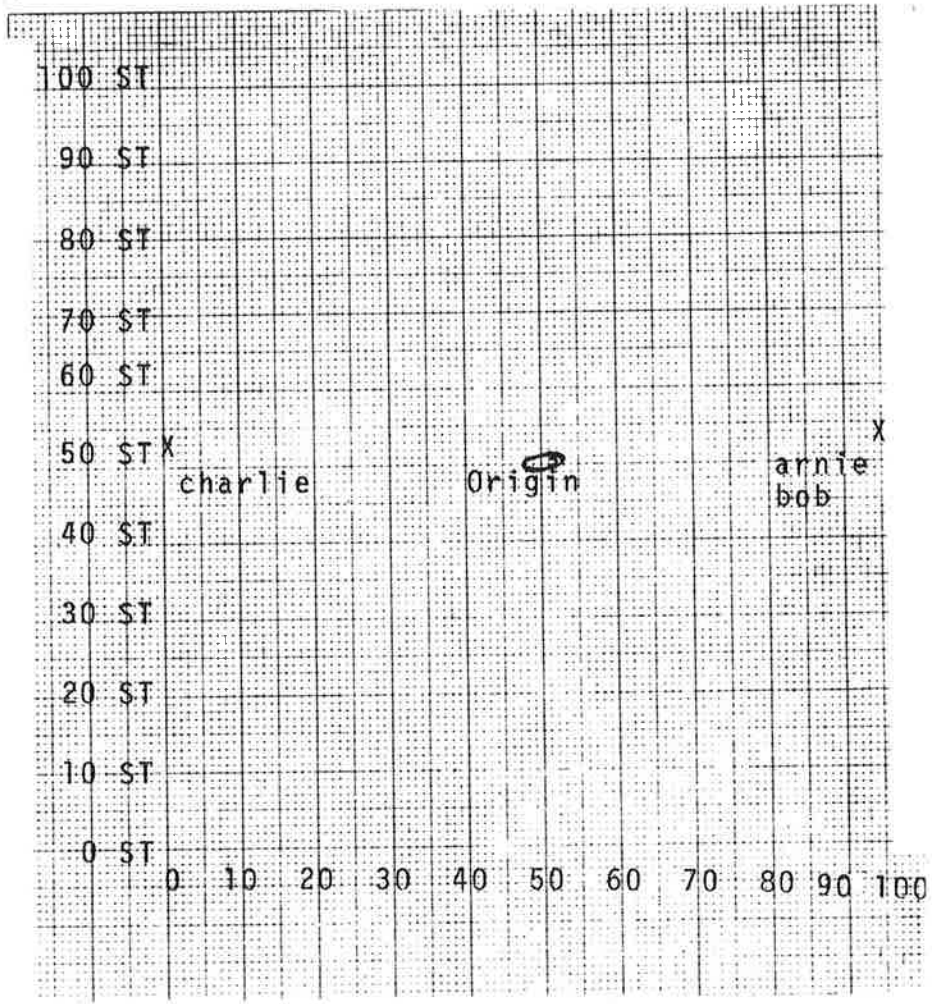
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higson's posture: _____ seated _____ standing _____ prone

Diagram



Rot

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: East-West Distribution Problem Number: I.2.2-1B

Date of Approval: 2 June 1971 Page 1 of 5

Work Statement References: 3.6.3.3 (page 25) Running Time 2

Test Conditions: X OM MO MM MS SM

Number of Vehicles 1 Vehicle Capacity ≥ 3

Mean Vehicle Speed 12 (mph) Number of Riders 3

Constraints: Waiting Time = 60 (min.)

Travel Time = 1 D + 60 (min.)

Total Time = 1 D + 60 (min.)

Purpose:

To verify that the computer program will minimize the average arrival time.

Description:

Three passengers are at the origin, 50 50 st. Passenger arnie enters a request for delivery to 0 50 st, then bob and charlie enter requests to go to 100 50 st. Vehicle checks in at origin (50 50 st) and is dispatched.

Expected Result:

The passengers will be delivered in an efficient manner.

References: FT02 File No.: _____
 Initialization Procedure: _____
 Computer Hardware Configuration: _____
 Street Map File: _____ **Grid** _____

Non-Standard Inputs Required: _____ **None** _____

Personnel Required: _____

Output Types: _____ **Vehicle and Passenger Console Typeput** _____

Display Equipment Required: _____ **None** _____

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR _____ SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
PASS 1	*00:00:00	arnie
		50 50 st
		0 50 st
	00:00:20	bob
		50 50 st
		100 50 st
	00:00:40	charlie
		50 50 st
		100 50 st
VEHI 1	00:01:00	local0 50 st

*Note 1: The following three requests are entered as rapidly as possible; times shown for them are approximate.

Date Test Run: _____

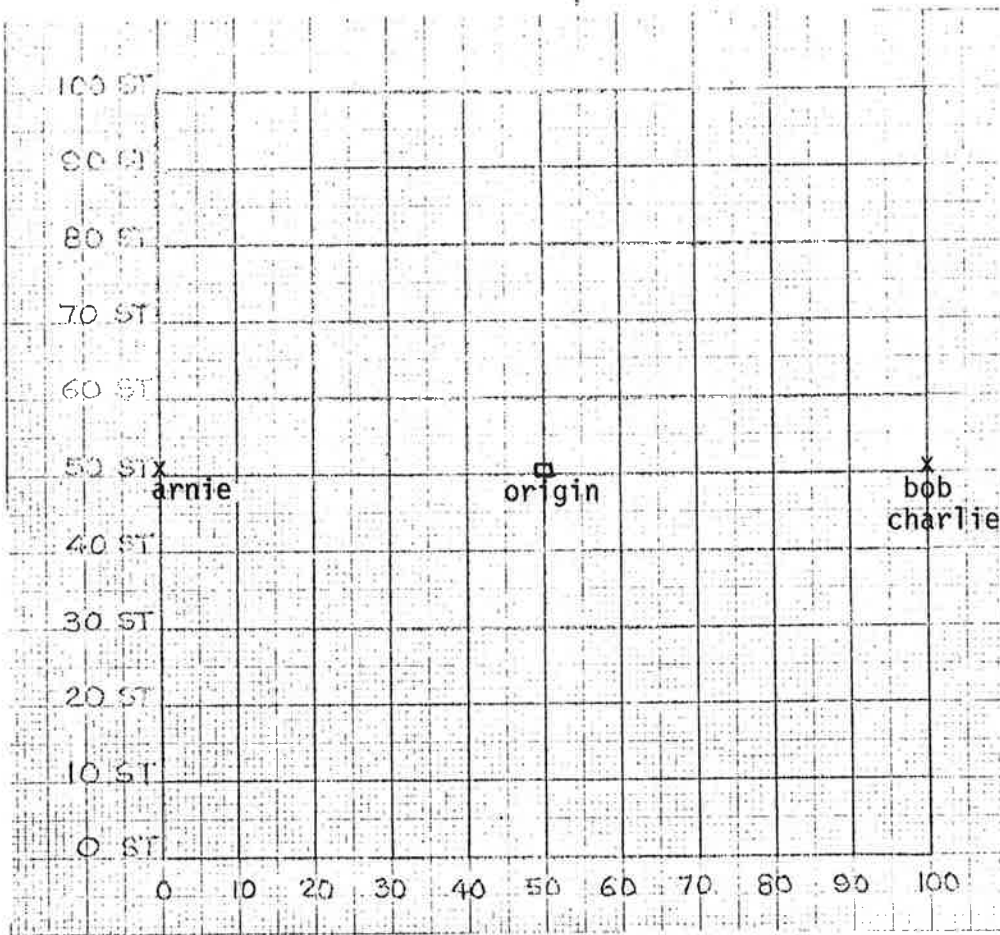
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Clockwise Distribution Problem #1 Number: I.2.2-2A

Date of Approval: 2 June 71 Page 1 of 6

Work Statement References: 3.6.3.3 (page 25) Running Time 6

Test Conditions: OM MO MM MS SM

Number of Vehicles 1 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 7

Constraints: Waiting Time = 60 (min.)
Travel Time = 1 D + 60 (min.)
Total Time = 1 D + 60 (min.)

Purpose:

To verify that the computer program will minimize the average travel time by dropping off as many passengers as possible as soon as possible.

Description:

The delivery requests shown in the diagram are entered in alphabetical order. The single bus is located at 0 0 st. (the other vehicle is made ineligible for assignment by using the 'hold' command)

Expected Result:

The bus will be dispatched to deliver the passengers in an efficient manner.

References: FT02 File No.: #1 (Appendix B)
 Initialization Procedure: standard (Appendix D)
 Computer Hardware Configuration: Appendix A
 Street Map File: Grid (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Vehicle and Passenger Console Sheets

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI	00:00:00	hold 2
VEHI	00:00:00	local 0 0 ST
PASS 1	*00:00:00	arnie
		0 0 st
		100 0 st
	00:00:20	bob
		0 0 st
		0 60 st
	00:00:40	charlie
		0 0 st
		0 100 st
	00:01:00	dan
		0 0 st

Note 1: The following seven requests are entered as rapidly as possible;
 the times shown for them are approximate.

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		0 90 st
	00:01:20	ed
		0 0 st
		0 80 st
	00:01:40	frank
		0 0 st
		0 70 st
	00:02:00	george
		0 0 st
		100 100 st
VEHI 1	00:03:15	XXXXXX VEH 10 P ARNIE 0 0 ST
		etc.
PASS 1	00:04:00	XXXXXX ARNIE V 10 P 01 D 09
		etc.
VEHI 1	00:05:00	XXXXXX VEH 10 D BOB 0 60 ST
		vehilo
		XXXXXX VEH 10 D FRANK 0 70 ST
		vehilo
		XXXXXX VEH 10 D ED 0 80 ST
		vehilo
		XXXXXX VEH 10 D DAN 0 90 ST

Date Test Run: _____

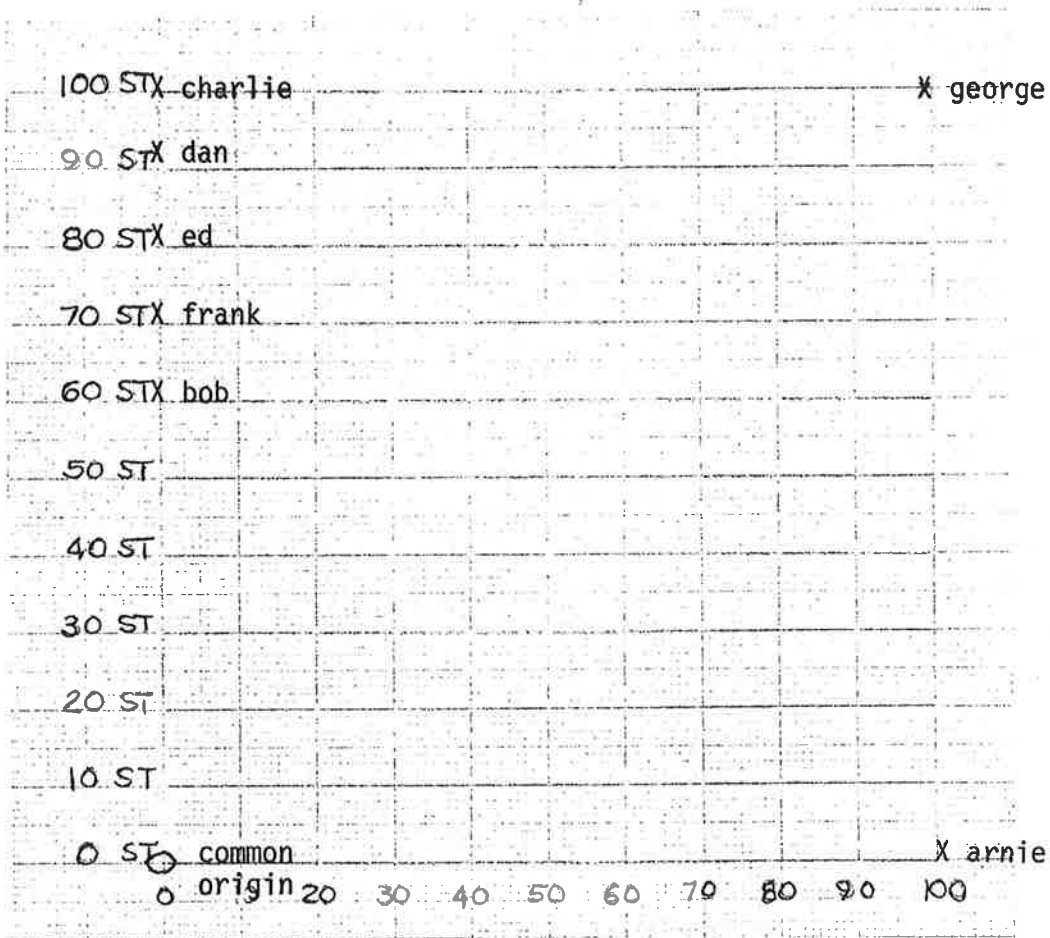
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Clockwise Distribution Problem #1 Number: I.2.2-2B

Date of Approval: 2 June 71 Page 1 of 5

Work Statement References: 3.6.3.3 (page 25) Running Time 6

Test Conditions: OM MO MM MS SM

Number of Vehicles 2 Vehicle Capacity 7

Mean Vehicle Speed 12 (mph) Number of Riders 7

Constraints: Waiting Time = 60 (min.)

Travel Time = 1 D + 60 (min.)

Total Time = 1 D + 60 (min.)

Purpose:

To verify that the computer program will minimize the average travel time by dropping off as many passengers as possible as soon as possible.

Description:

The delivery requests shown in the diagram are entered in alphabetical order.

Expected Result:

The buses will be dispatched to deliver the passengers in an efficient manner.

References: FT02 File No.: 1
 Initialization Procedure: _____
 Computer Hardware Configuration: _____
 Street Map File: Grid

Non-Standard Inputs Required: None

Personnel Required: _____

Output Types: Vehicle and Passenger Console Sheets

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
PASS	*00 . 00. 00	
		arnie
		0 0 st
		100 0 st
	00:00:20	bob
		0 0 st
		100 100 st
	00:00:40	charlie

NOTE: The following seven requests are entered as rapidly as possible;
 the times shown for them are appropriate

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		0 0 st
		0 100 st
	00:01:00	dan
		0 0 st
		0 90 st
	00:01:20	ed
		0 0 st
		0 80 st
	00:01:40	frank
		0 0 st
		0 70 st
	00:02:00	george
		0 0 st
		0 60 st
VEHI 1	00:03:15	XXXXXX VEH 1 P ARNIE 0 0 ST
		etc.
PASS 1	00:04:00	XXXXXX ARNIE V 10 P 01 D 09
		etc.
VEHI 1	00:05:00	XXXXXX VEH 1 D 0 60 ST
		vehil
		XXXXXX VEH 1 D FRANK 0 70 ST

Date Test Run: _____

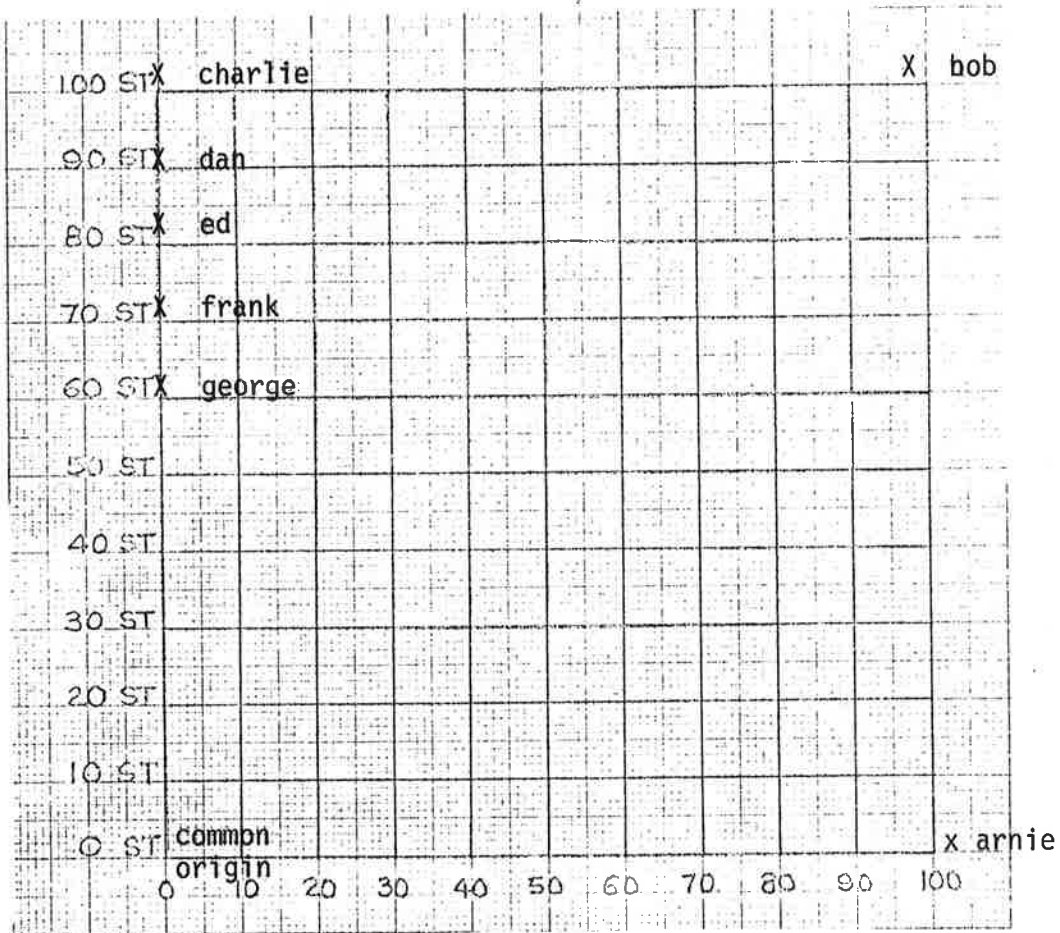
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Clockwise Distribution Problem #1 Number: I.2.2-2C

Date of Approval: 2 June 71 Page 1 of 4

Work Statement References: 3.6.3.3 (page 25) Running Time .6

Test Conditions: X OM NO. MM MC SM

Number of Vehicles 1 Vehicle Capacity 7

Mean Vehicle Speed 12 (mph) Number of Riders 7

Constraints: Waiting Time = 60 (min.)

Travel Time = 1 D + 60 (min.)

Total Time = 1 D + 60 (min.)

Purpose:

To verify that the computer program will minimize the average travel time by dropping off as many passengers as possible as soon as possible.

Description:

The delivery requests shown in the diagram are entered in alphabetical order. Vehicle two will be held.

Expected Result:

The bus will be dispatched to deliver the passengers in an efficient manner. Bus will then be unassigned.

References: FT02 File No.: #1 (Appendix B)

Initialization Procedure: _____

Computer Hardware Configuration: _____

Street Map File: Grid

Non-Standard Inputs Required: None

Personnel Required: _____

Output Types: Vehicle and Passenger Console Sheets

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
<u>PASS 1</u>	<u>*00 : 00: 00</u>	
<u>VEHI</u>		<u>loca 001 0 0 ST</u>
		<u>hold0002</u>
<u>PASS</u>		<u>arnie</u>
		<u>0 0 st</u>
		<u>100 0 st</u>
	<u>00:00:20</u>	<u>bob</u>
		<u>0 0 st</u>
		<u>100 100 st</u>
	<u>00:00:40</u>	<u>charlie</u>

NOTE: The following seven requests are entered as rapidly as possible; the times shown for them are appropriate.

Date Test Run: _____

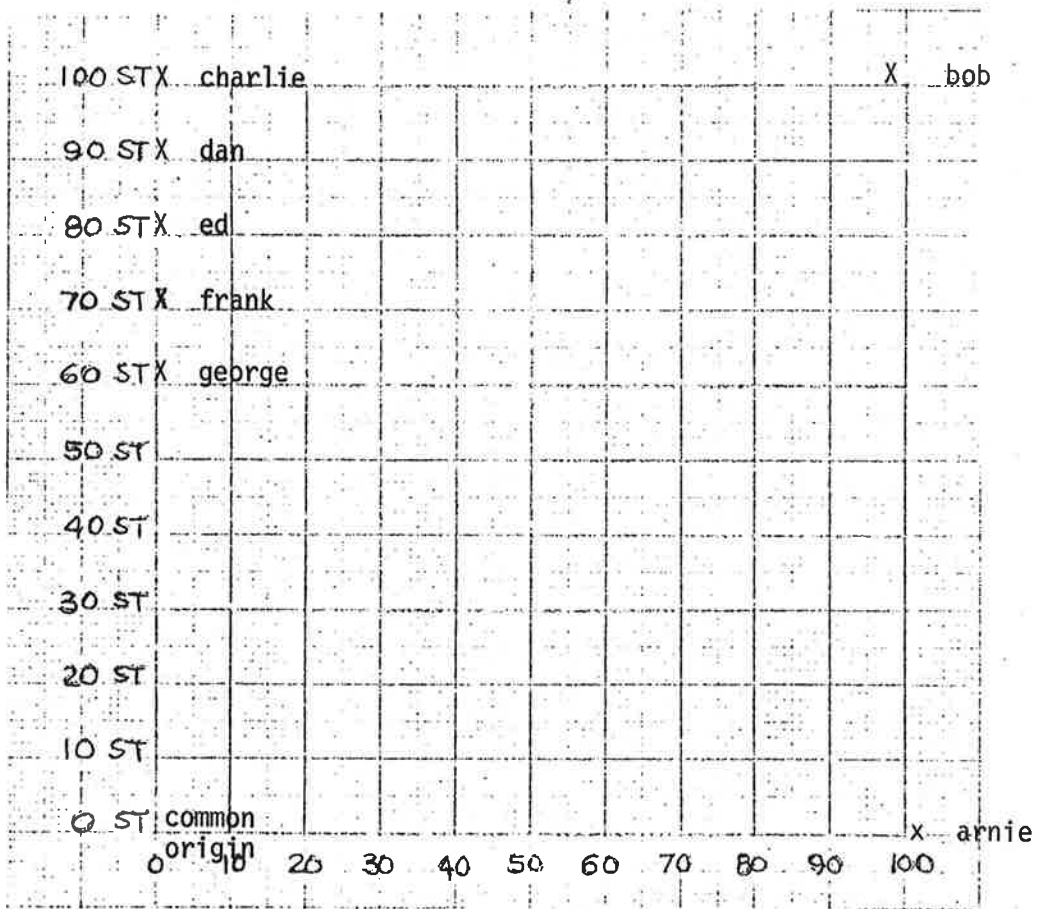
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone*

Diagrams:



Notes:

OPERATIONAL DEAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Clockwise Distribution Problem #2 Number: I.2.2-3

Date of Approval: 2 June 71 Page 1 of 6

Work Statement References: 3.6.3.3 (page 25) Running Time 6

Test Conditions: OM MO MM MC SM

Number of Vehicles 1 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 7

Constraints: Waiting Time = 60 (min.)

Travel Time = 1 D + 60 (min.)

Total Time = 1 D + 60 (min.)

Purpose:

To determine that the computer program will deliver three passengers nearby before delivering two others to more distant destinations; and that it will react sensibly when origin and destination are coincident.

Description:

All origins are at 0 0 st. Passengers bob, charlie, dan, ed and frank have destinations remote from 0 0 st, as shown in the diagram, while passengers arnie and george request destinations at 0 0 st. Requests are entered in alphabetical order. Vehicle 2 is held so that only one vehicle is available for assignment.

Expected Result:

The bus will immediately deliver arnie and george, then tour to deliver bob, ed, dan, charlie and frank in that order.

References: FT02 File No.: 1, App. B
 Initialization Procedure: Standard (App. D)
 Computer Hardware Configuration: _____
 Street Map File: Grid (App. C)

Non-Standard Inputs Required: Minimum Trip of 0.0 Miles

Personnel Required: Standard

Output Types: typewritten, on passenger and vehicle consoles

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	Input/OUTPUT
VEHI	00:00:00	hold 2
VEHI	00:00:00	local 0 0 ST
PASS 1	*00:00:00	arnie
		0 0 st
		0 0 st
	00:00:20	bob
		0 0 st
		0 100 st
	00:00:40	charlie
		0 0 st
		100 100 st
	00:01:00	dan
		0 0 st

Note 1: The following seven requests are entered as rapidly as possible; times shown for them are approximate.

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		0 100 st
	00:01:20	ed
		0 0 st
		0 100 st
	00:01:40	frank
		0 0 st
		100 0 st
	00:02:00	george
		0 0 st
		0 0 st
		XXXXXX VEH 00001 P ARNIE 0 0 ST
		XXXXXX VEH 00001 P BOB 0 0 ST
		XXXXXX VEH 00001 P CHARLIE 0 0 ST
		XXXXXX VEH 00001 P DAN 0 0 ST
		XXXXXX VEH 00001 P ED 0 0 ST
		XXXXXX VEH 00001 P FRANK 0 0 ST
		XXXXXX VEH 00001 P GEORGE 0 0 ST
		XXXXXX VEH 00001 D ARNIE 0 0 ST
		XXXXXX VEH 00001 D GEORGE 0 0 ST
		XXXXXX VEH 00001 D BOB 0 100 ST
		XXXXXX VEH 00001 D ED 0 100 ST

Date Test Run: _____

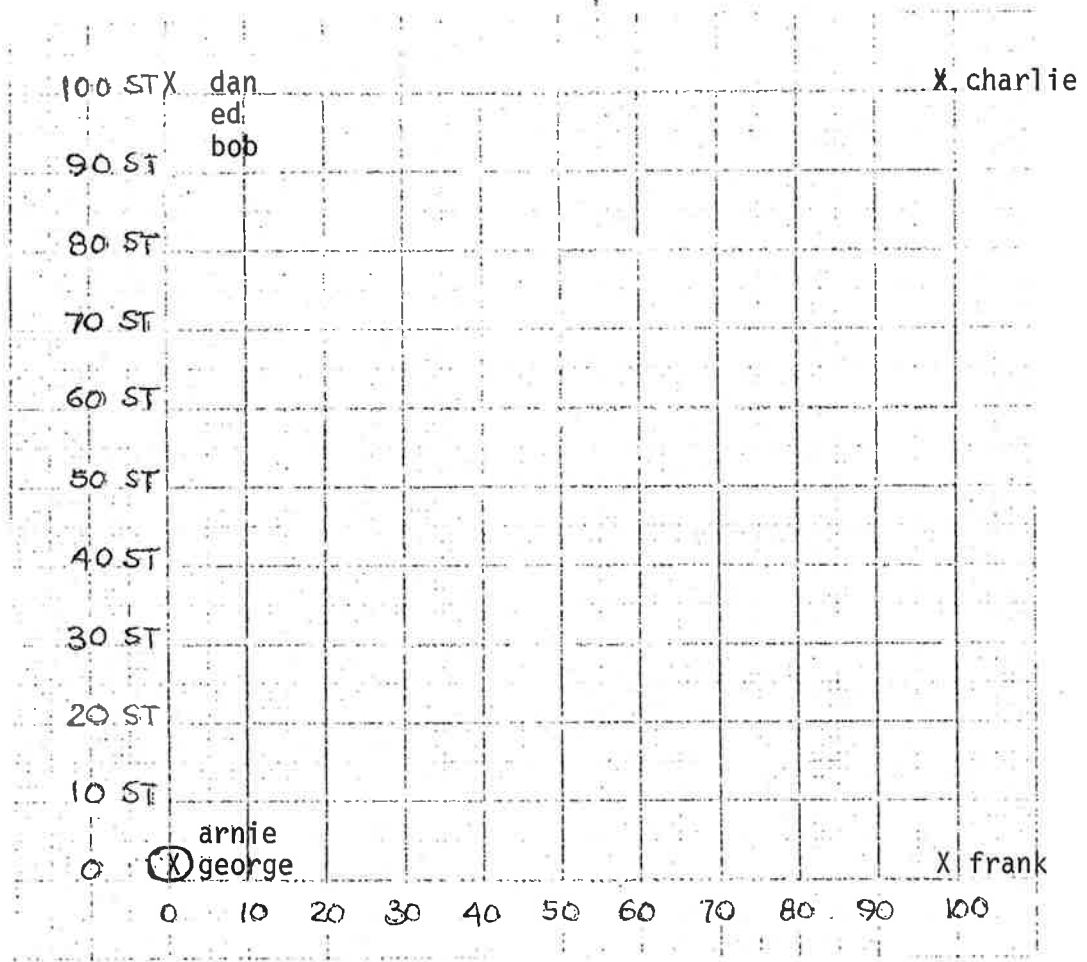
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone*

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

Initialization Procedure: (Appendix D)
 Computer Hardware Configuration: Appendix A
 Street Map File: Grid (App C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Typewritten, from vehicle and passenger consoles.

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI	00:00:00	hold 2
PASS 1	*00:00:00	arnie
		0 10 st
		40 80 st
	00:00:20	bob
		0 10 st
		60 80 st
	00:00:40	charlie
		0 10 st
		70 80 st
	00:01:00	dan
		0 10 st
		70 10 st

*Note 1: The following eight requests are entered as rapidly as possible; the times shown for them are approximate.

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hour: Minute: Second: From Start	Input/OUTPUT
	00:01:20	ed
		0 10 st
		60 10 st
	00:01:40	frank
		0 10 st
		70 0 st
	00:02:00	george
		0 10 st
		70 90 st
	00:02:20	henry
		0 10 st
		60 0 st
VEHI	00:05:00	local 0 10 st

Date Test Run: _____

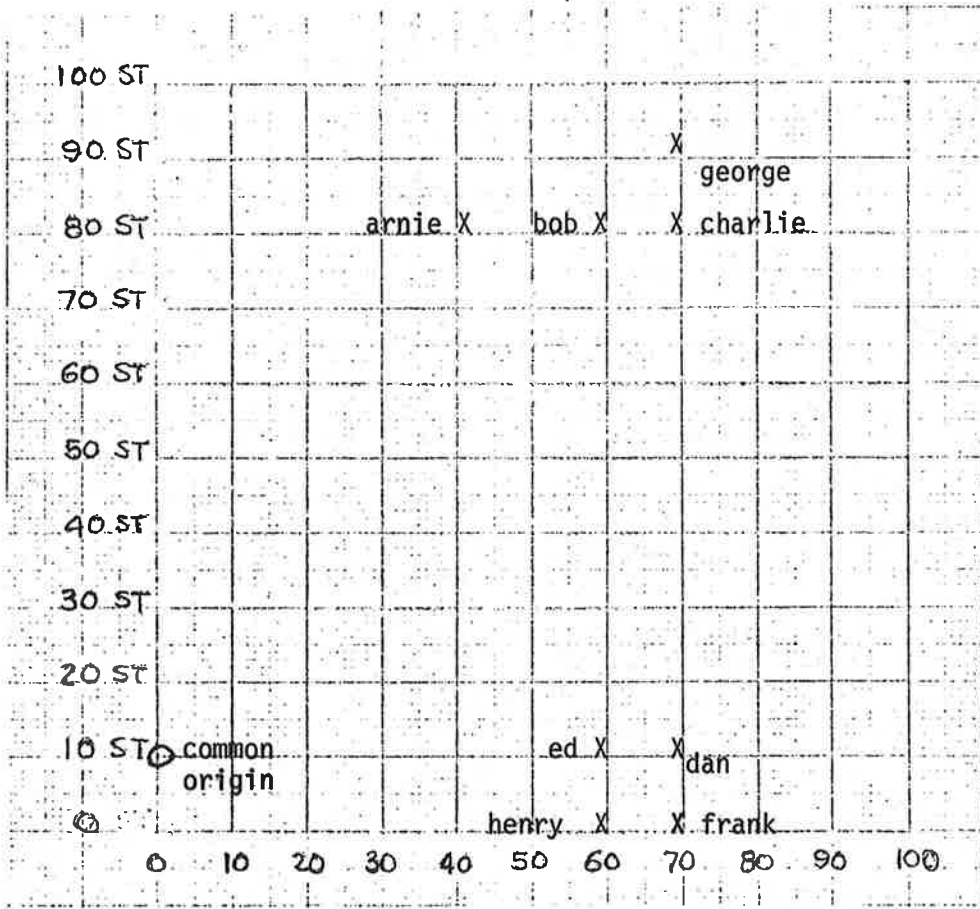
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. ligament's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Two-Sector Distribution Number: J.2.2-6

Date of Approval: 2 June 71 Page 1 of 5

Work Statement References: 3.6.3.3 (page 25) Running Time 8

Test Conditions: X OM MO MM MS SM

Number of Vehicles 2 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 8

Constraints: Waiting Time = 60 (min.)

Travel Time = 1 D + 60 (min.)

Total Time = 1 D + 60 (min.)

Purpose:

To determine that the computer will assign one bus to deliver a group to the northeast, and another bus to deliver a similar group to the southwest.

Description:

(a) The two vehicles check in at the depot (50 50 st). Then the deliveries shown in the diagram are entered in alphabetical order.

(b) Same as a) except the vehicles are located at 70 80 st and 90 80 st before the requests.

Expected Result:

One vehicle delivers to the northeast, the other to the southwest.

PT02 File No.:

#1 (Appendix B)

Initialization Procedure: standard (Appendix D)

Computer Hardware Configuration: Appendix A

Street Map File: Grid (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Typewritten, from vehicle and passenger consoles

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
a) VEHI 1	00:00:00	local 50 50 st
		loca2 50 50 st
PASS 1	*00:01:00	arnie
		50 50 st
		100 100 st
	00:01:20	bob
		50 50 st
		100 90 st
	00:01:40	charlie
		50 50 st
		10 0 st

*Note 1: The following 8 requests entered as rapidly as possible; times shown for them are approximate.

dan
50 50 st
50 0 st
ed
50 50 st
50 100 st

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
	00:02:40	frank
		50 50 st
		0 10 st
	00:03:00	george
		50 50 st
		0 0 st
	00:03:20	hank
		50 50 st
		90 100 st

Note 2: The vehicles will now be dispatched by the computer.

b) PASS 1	00:00:00	arnie
		50 50 st
		same as a)
		hank
		50 50 st
		90 100 st
VEHI 1	00:04:00	loca1 50 50 st
		loca2 50 50 st

Note 3: The vehicles will now be dispatched by the computer.

Date Test Run: _____

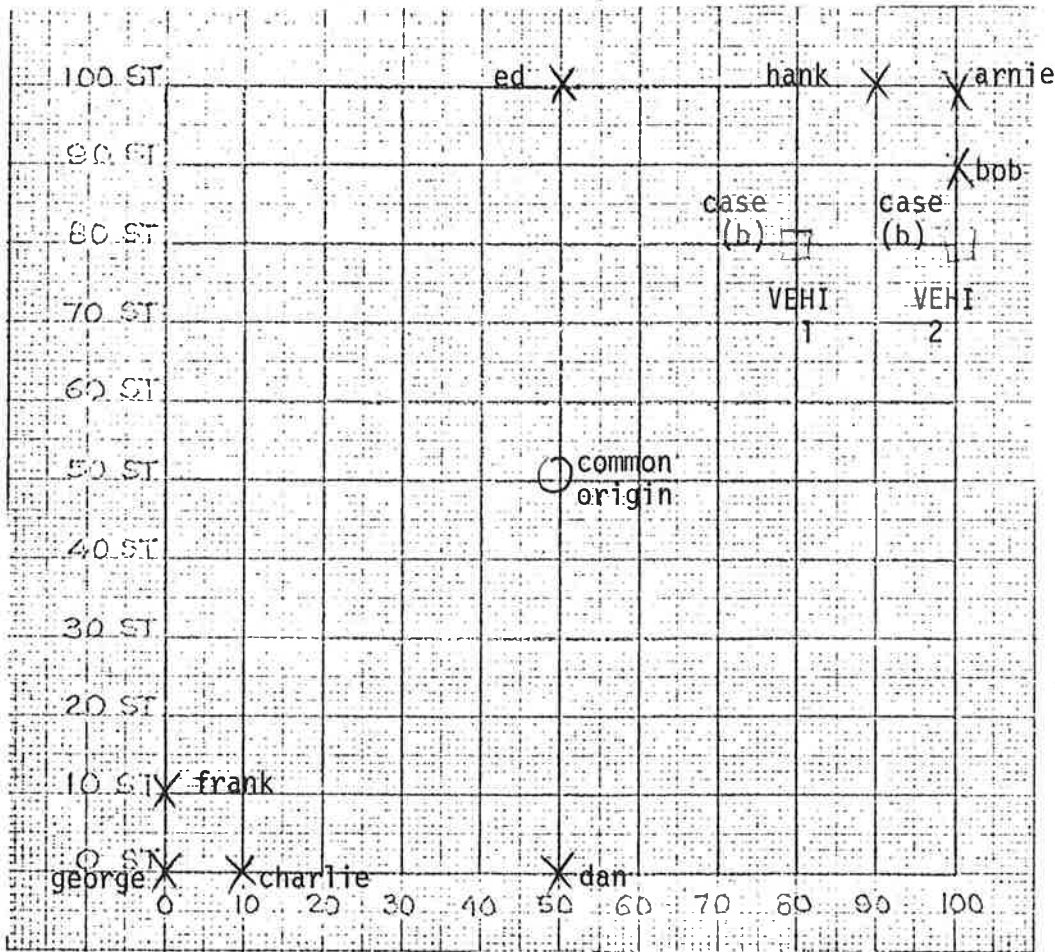
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: 4 Sector, 4 vehicle Distribution Number: I.2.2-7
 Date of Approval: 2 June 71 Page 1 of 5
 Work Statement References: 3.6.3.3 (page 25) Running Time 15
 Test Conditions: CM MO MM ME SM
 Number of Vehicles 4 Vehicle Capacity 8
 Mean Vehicle Speed 12 (mph) Number of Riders 10
 Constraints: Waiting Time = 60 (min.)
 Travel Time = 1 D + 60 (min.)
 Total Time = 1 D + 60 (min.)

Purpose:

To ascertain that, when four vehicles are available, each will be assigned to deliver one of four groups of passengers.

Description:

Passenger requests as shown in the diagram will be entered in alphabetical order and then the vehicles located at the depot (50 50 st).

Expected Result:

One bus will be dispatched to deliver each of the four groups of passengers.

Initialization Procedure: _____ (Appendix D)

Computer Hardware Configuration: Appendix A

Street Map File: Grid (Appendix C)

Non-Standard Inputs Required: _____

Personnel Required: 3

Output Type: Console typeout

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR 1 SUPERVISOR

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI	: :	loca1 50 50 st
		loca2 50 50 st
		loca3 50 50 st
		loca4 50 50 st
PASS 1	*00:00:00	arnie
		50 50 st
		100 100 st
	00:00:20	bob
		50 50 st
		100 0 st
	00:00:40	charlie

Note 1: The following ten requests are entered as rapidly as possible;
times shown for them are approximate.

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		50 50 st
		0 0 st
	<u>00:01:00</u>	dan
		50 50 st
		100 10 st
	<u>00:01:20</u>	ed
		50 50 st
		0 100 st
	<u>00:01:40</u>	frank
		50 50 st
		30 70 st
	<u>00:02:00</u>	george
		50 50 st
		0 10 st
	<u>00:02:20</u>	hank
		50 50 st
		90 100 st
	<u>00:02:40</u>	ira
		50 50 st
		0 30 st
	<u>00:03:00</u>	joe
		50 50 st
		90 0 st

Date Test Run: _____

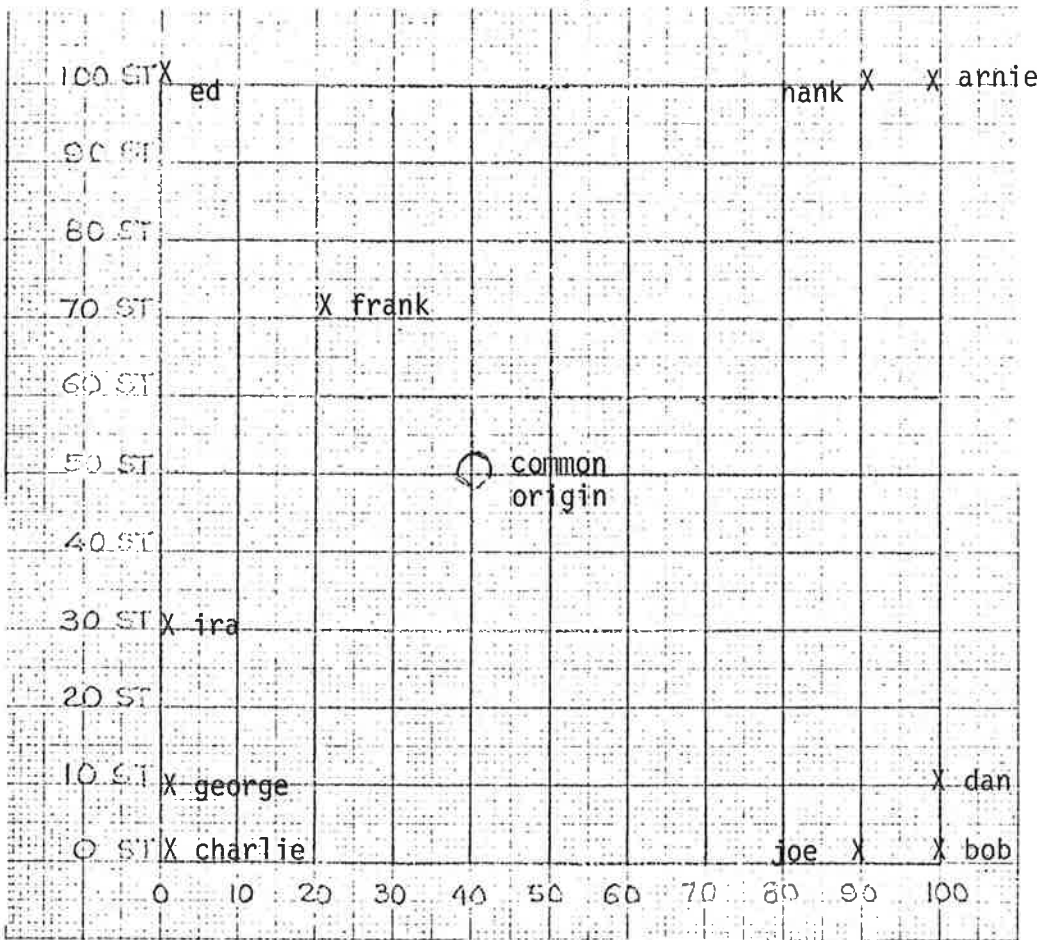
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. ligonnet"s posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Case Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: FCFS Collection #1 Number: I.2.2-8

Date of Approval: 2 June 1971 Page 1 of 5

Work Statement References: 3.6.3.3 (page 25) Running Time 7

Test Conditions: OM X MO MM MS SM

Number of Vehicles 1 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 2

Constraints: Waiting Time = 60 (min.)

Travel Time = 1 D + 60 (min.)

Total Time = 1 D + 60 (min.)

Purpose:

To determine whether, if two pick-ups are located equally distant from the bus, the one that submitted his request first will be serviced first.

Description:

The pick-up request by arnie is entered. Five minutes later that by bob is entered. They are situated as shown in the diagram (page 6). After bob's request is entered the bus reports to the collection point and is dispatched. Vehicle 2 is excluded from assignment during the test by use of the 'hold' command.

Expected Result:

Because he called in first, arnie should be picked up and delivered to the collection point; then bob is serviced.

References: FT02 File No.: 1 (Appendix B)
 Initialization Procedure: standard (Appendix D)
 Computer Hardware Configuration: Appendix A
 Street Map File: GRID (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Vehicle and passenger terminal typeout

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEH 1		hold 2
PASS 1	00:00:00	arnie
		0 50 st
		50 50 st
	00:05:00	bob
		100 50 st
		50 50 st
VEHI 1	00:06:00	local 50 50 st

Note 1: The vehicle dispatching occurs now.

Date Test Run: _____

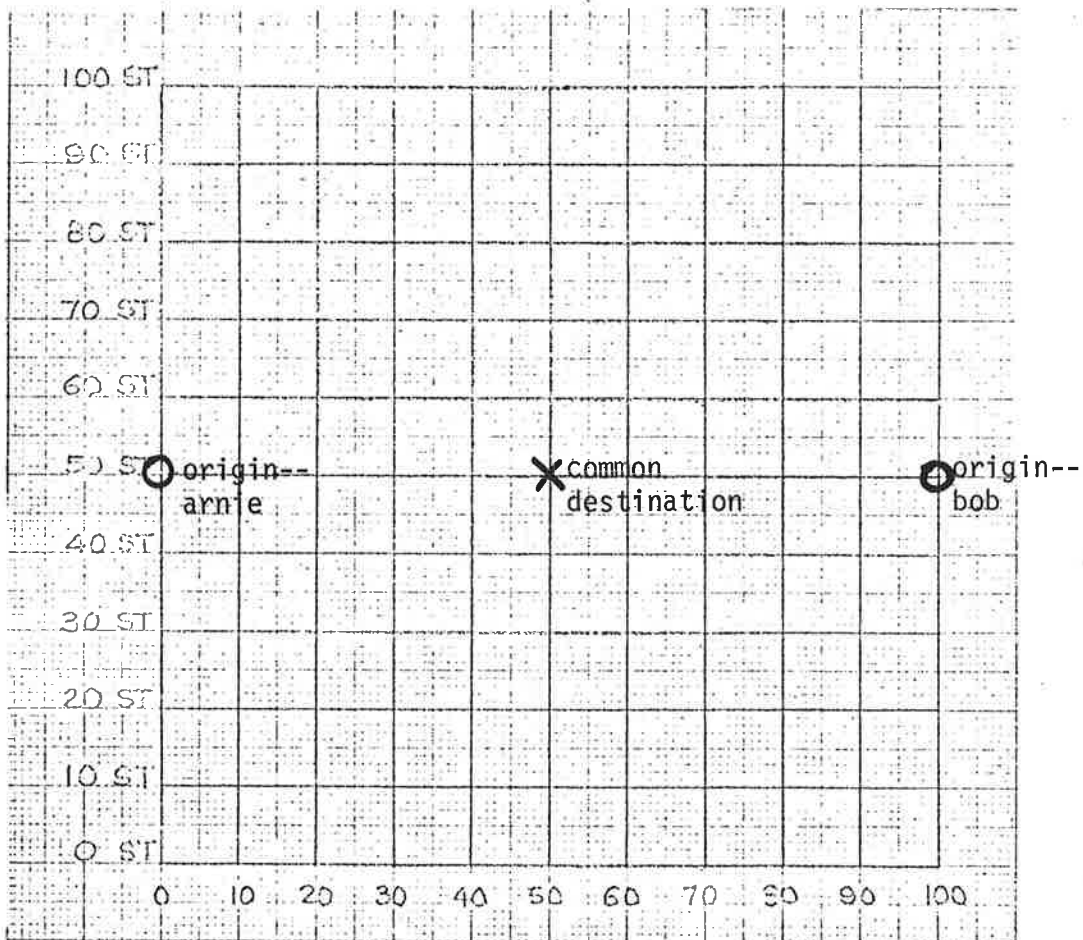
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: FCFS Collection #2 Number: I.2.2-9

Date of Approval: 2 June 71 Page 1 of 5

Work Statement References: 3.6.3.3 (page 25) Running Time 8

Test Conditions: OM X MO MM MS SM

Number of Vehicles 1 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 4

Constraints: Waiting Time = 60 (min.)

Travel Time = 1 D + 60 (min.)

Total Time = 1 D + 60 (min.)

Purpose:

To determine whether customers who have been waiting longer will be collected first, all other things being equal.

Description:

This scenario is a slight generalization of I.2.2-8. Customers arnie and charlie call in their requests sooner, on the average, than bob and dan. Hence, the bus should pick them up first. See diagram. Vehicle 2 is excluded from assignment during the test by use of the 'hold' command.

Expected Result:

The bus will be dispatched to pick up charlie and arnie, deliver them to 50 50 st, and then to collect dan and bob.

References: FT02 File No.: #1 (Appendix B) Page 2 of 5
 Initialization Procedure: standard (Appendix D)
 Computer Hardware Configuration: Appendix A
 Street Map File: GRID (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Vehicle and passenger terminal typeout

Display Equipment Required: none

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEH 1	00 :00: 00	hold 2
PASS 1	00 :00: 00	arnie
		0 50 st
		50 50 st
	00:02:00	bob
		100 50 st
		50 50 st
	00:04:00	charlie
		20 50 st
		50 50 st
	00:06:00	dan
		80 50 st
		50 50 st
VEHI 1	00:07:00	local 50 50 st
Note 1:	00:08:00	Vehicle dispatching now occurs.

Date Test Run: _____

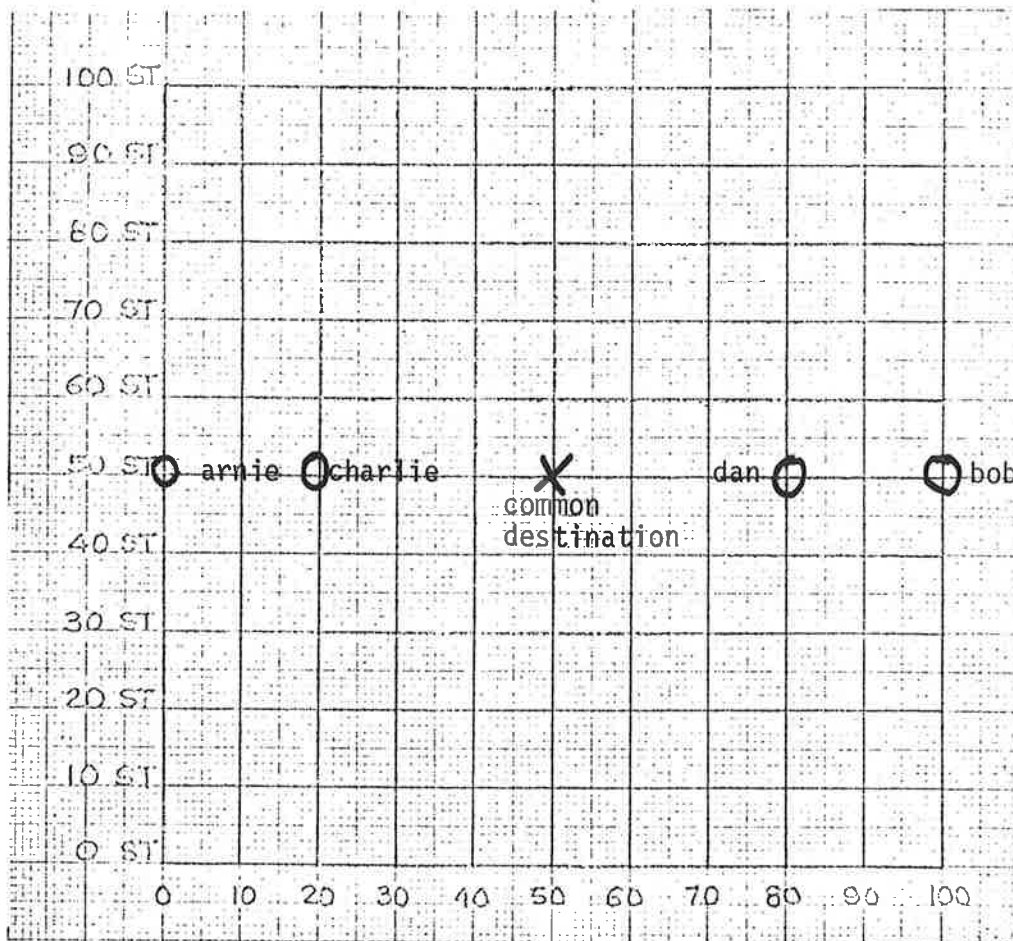
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonnet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Branch and Circuit Collection Number: I.2.2-11

Date of Approval: 2 June 71 Page 1 of 5

Work Statement References: 3.6.3.3 (page 25) Running Time 30

Test Conditions: OM X MO MM MS SM

Number of Vehicles 1 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 3

Constraints: Waiting Time = 60 (min.)

 Travel Time = 1 D + 60 (min.)

 Total Time = 1 D + 60 (min.)

Purpose:

To determine that the heuristic produces a circuitous tour or branching tour, depending on which minimizes the criterion (tour time plus total of delivery times) for a two-passenger collection problem.

Description:

Arnie and bob request pick-up and delivery from different origins to 20 0 st. The bus is located at 20 0 st, dispatched, and collection completed. The test is repeated using different origins for bob, as shown by the letters (a) through (n) in the diagram, page 4. Vehicle 2 is excluded from assignment during the test by use of the hold command.

Expected Result:

The results will be tours that minimize the criterion, allowing 30 seconds each stop for boarding and disembarking of passengers.

Reference: FT02 File No.: 1 (Appendix B) Page 2 of 5
 Initialization Procedure: standard (Appendix D)
 Computer Hardware Configuration: Appendix A
 Street Map File: GRID (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Vehicle and passenger terminal typeout

Display Equipment Required: none

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
(a) VEHI 1	00:00:00	local 0 0 st
VEHI 1	00:00:05	hold 2
PASS 1	00:00:10	dummy
		0 0 st
		20 0 st
VEHI 1	00:00:15	XXXXXX CRS0105 VEH 0001 P DUMMY 0 0 ST
VEHI PASS 1	00:00:30	XXXXXX CRS0110 VEH 0001 D DUMMY 20 0 ST VEHI 1 arnie
		40 0 st
		20 0 st

Note 1: The following request is entered immediately after arnie's

PASS 1 bob
 20 30 st
 20 0 st

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
------------------------------	--	--------------

Note 2: The vehicle dispatches occur here and all requests are cleared.

(b) The input/output sequence of (a) is repeated 13 times, each time with a
thru different origin for bob. The following lines replace the line following
(n) the entry "bob" in (a):

(b)	30 30 st
(c)	40 30 st
(d)	50 30 st
(e)	60 30 st
(f)	70 30 st
(g)	80 30 st
(h)	40 20 st
(i)	70 20 st
(j)	10 10 st
(k)	20 10 st
(l)	70 10 st
(m)	80 10 st
(n)	90 10 st

Date Test Run: _____

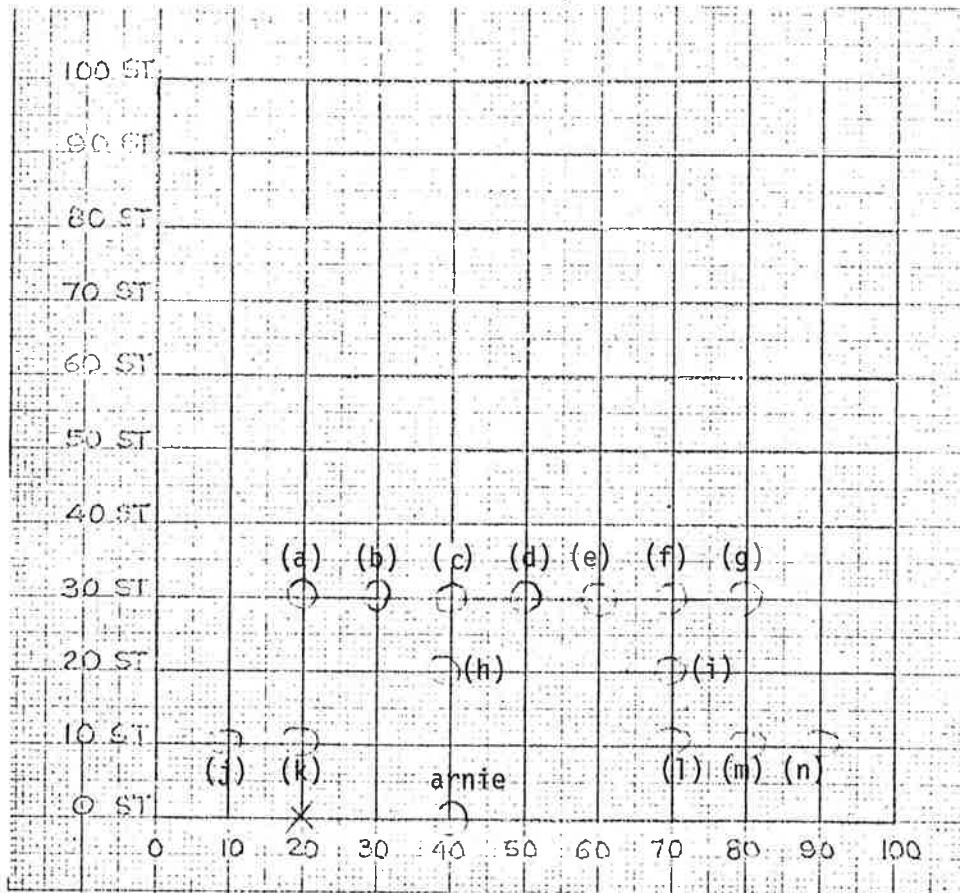
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

also Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Diamond-Star Collection Problem Number: I.2.2-12
 Date of Approval: 2 June 71 Page 1 of 5
 Work Statement References: 3.6.3.3 (page 25) Running Time 5
 Test Conditions: OM X MO MM MS SM
 Number of Vehicles 1 Vehicle Capacity 8
 Mean Vehicle Speed 12 (mph) Number of Riders 4
 Constraints: Waiting Time = 60 (min.)
 Travel Time = 1 D + 60 (min.)
 Total Time = 1 D + 60 (min.)

Purpose:

To check that the heuristic will route the one vehicle to perform four collections in the most efficient manner, when the collections are situated north, east, west and south.

Description:

Almost simultaneous collection requests to a common point come in from customers situated to the north, east, west and south of the collection point (see diagram). A single vehicle starts from the center and collects all. Vehicle 2 is excluded from assignment by use of "hold" command.

Expected Result:

The vehicle will pick up and deliver the passengers one at a time; first arnie, then charlie, then bob, then dan. Interchanging arnie and charlie and/or bob and dan will not change the value of the objective function. The resultant star pattern is superior to any other, including the diamond shaped tour: arnie, bob, charlie, dan.

References: FT02 File No.: #1 (Appendix B)
 Initialization Procedure: standard (Appendix B)
 Computer Hardware Configuration: Appendix A
 Street Map File: GRID (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Vehicle and passenger terminal typeout

Display Equipment Required: none

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEH 1	00:00:00	hold 2 local 1 50 50 st
PASS 1	00:00:00	arnie
		70 50 st
		50 50 st
		bob
		50 90 st
		50 50 st
		charlie
		30 50 st
		50 50 st
		dan
		50 10 st
		50 50 st

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
------------------------------	--	--------------

~~Note: 1 The above requests are entered in rapid succession~~

Note 2: The vehicle will be dispatched now.

Date Test Run: _____

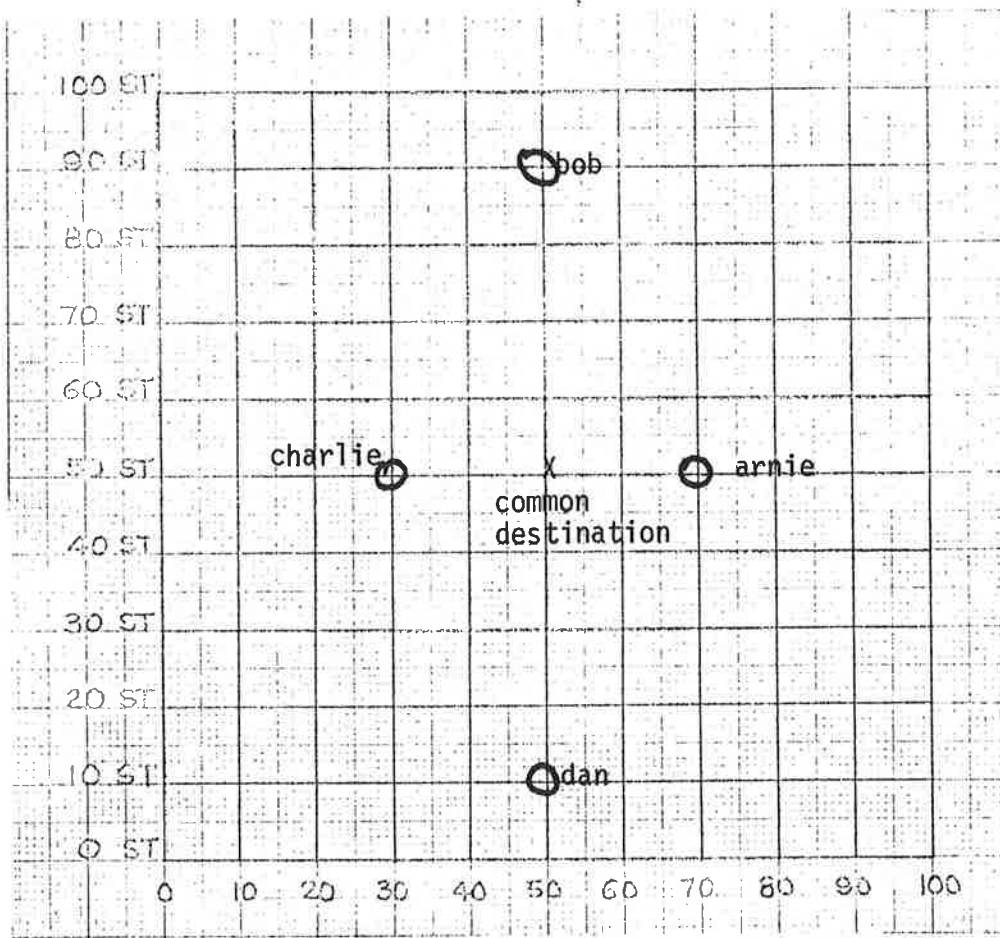
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. ligomet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Many-Two Test Number: I.2.2-13

Date of Approval: 2 June 71 Page 1 of 5

Work Statement References: _____ Running Time 8

Test Conditions: OM MO MM XMS SM

Number of Vehicles 2 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 7

Constraints: Waiting Time = 60 (min.)
 Travel Time = 1 D + 60 (min.)
 Total Time = 1 D + 60 (min.)

Purpose:

To determine that the heuristic can sort out many requests into a group that goes to one destination, and another group going to another destination, and assign two buses appropriately. See diagram.

Description:

- (a) The two vehicles are located equidistantly from 50 50 st. Seven requests with origins near 50 50 st are entered as shown in the diagram. Destinations either to the north (50 100 st) or south (50 0 st). The vehicles are then dispatched.
- (b) The test is repeated with the 50 100 st destination changed to 100 100 st, and the 50 0 st destination changed to 0 100 st.

Expected Result:

One bus will pick up arnie, bob, frank and george and deliver them to (a) 50 100 st or (b) 100 100 st. The other bus will pick up charlie, dan and ed and deliver them to (a) 50 0 st or (b) 0 100 st.

References: FT02 File No.: #1 (Appendix B)
 Initialization Procedure: standard (Appendix D)
 Computer Hardware Configuration: Appendix A
 Street Map File: Grid (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Vehicle and Passenger Terminal Typeout

Display Equipment Required: none

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
(a) VEHI 1	00:00:00	local 0 50 st
		loca2 100 50 st
	00:00:20	arnie
		50 50 st
		50 100 st
		bob
		60 50 st
		50 100 st
		charlie
		70 50 st
		50 0 st

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		dan
		60 60 st
		50 0 st
		ed
		50 60 st
		50 0 st
		frank
		40 60 st
		50 100 st
		george
		50 40 st
		50 100 st

Note 1: The vehicles are dispatched.

(b) The test is repeated with 50 100 st changed to 100 100 st, and 50 0 st changed to 0 100 st.

Date Test Run: _____

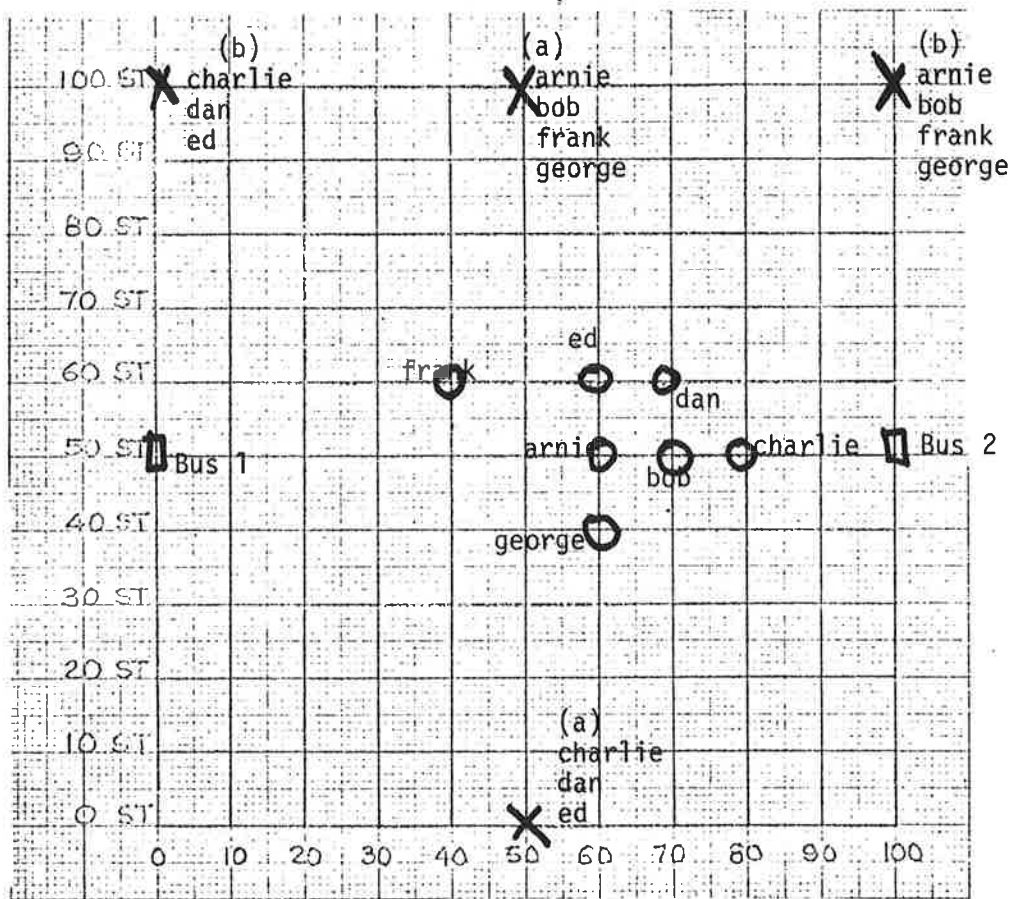
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonnet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Simple Many-Many Number: I.2.2-14

Date of Approval: 2 June 71 Page 1 of 5

Work Statement References: _____ Running Time 1

Test Conditions: OM MO X MM MS SM

Number of Vehicles 1 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 3

Constraints: Waiting Time = 60 (min.)

Travel Time = 1 D + 60 (min.)

Total Time = 1 D + 60 (min.)

Purpose:

To verify that the heuristic will select the minimum cost tour to service two requests by one bus, given a simple configuration for the origins and destinations.

Description:

The two requests shown in the diagram are entered. The bus reports in to 0 0 st and is dispatched. Vehicle 2 is excluded from assignment during the test by use of the 'hold' command.

Expected Result:

The minimum cost tour (criterion 4) is pick up bob, deliver bob, pick up arnie, deliver arnie.

References:

FT02 File No.: #1 (Appendix B)

Initialization Procedure: standard (Appendix D)

Computer Hardware Configuration: Appendix A

Street Map File: Grid (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Console printout

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI 1	00:00:00	hold 2
PASS 1	00:00:00	dummy
		0 10 st
		0 0 st
VEHI 1	00:00:10	vehil
		XXXXXX VEH 0001 D DUMMY 0 0 ST
PASS 1	00:00:30	arnie
		60 0 st
		60 40 st
		bob
		40 0 st
		20 0 st

* Note 1: The vehicle is now located at 0 0 st and dispatched.
VEHI 1 00:00:40 vehil

Date Test Run: _____

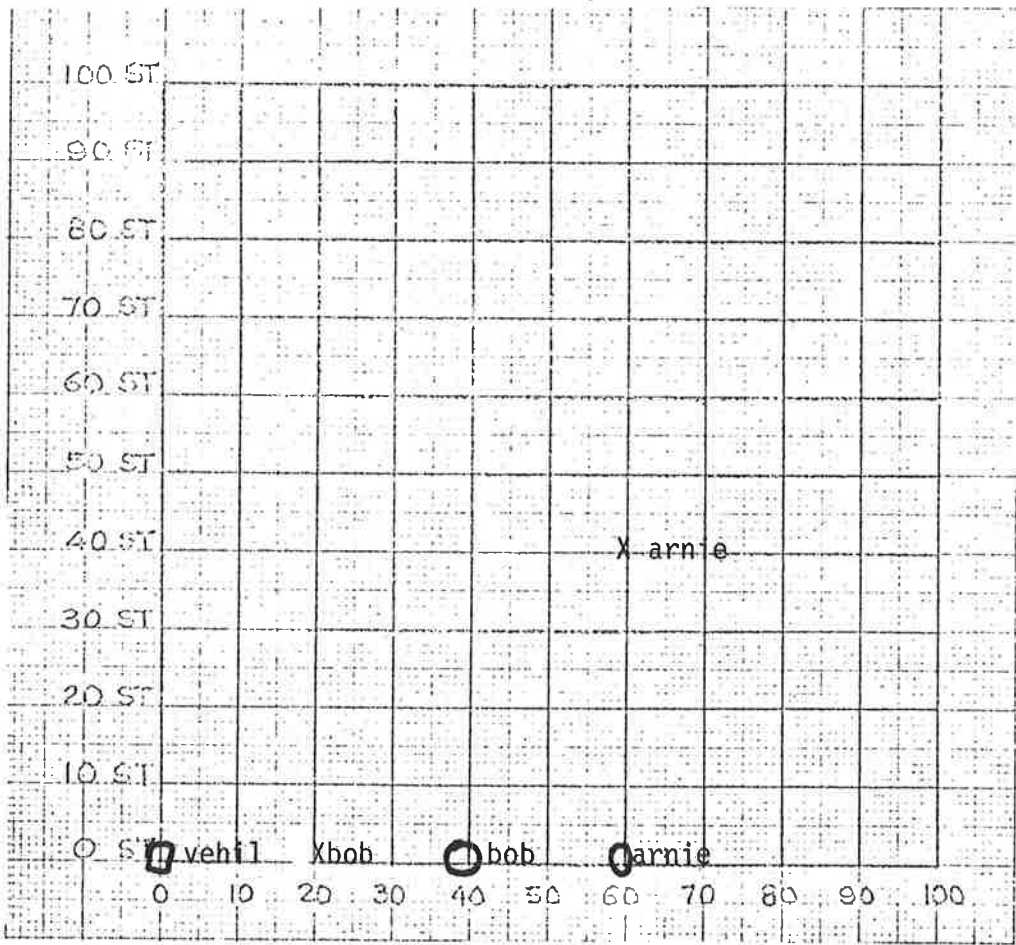
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: 2-Vehicle Many/Many Number: I.2.2-15

Date of Approval: 2 June 71 Page 1 of 5

Work Statement References: 3.6.3.3 (page 25) Running Time 16

Test Conditions: OM MO x MM MS SM

Number of Vehicles 2 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 8

Constraints: Waiting Time = 60 (min.)
 Travel Time = 1 D + 60 (min.)
 Total Time = 1 D + 60 (min.)

Purpose:

To verify that one vehicle will be dispatched to service a group of O-D's in the northeast, and the other to service a group in the southwest, when only two vehicles are available.

Description:

(a) The two vehicles are located at 50 50 st and then the requests shown in the diagram are entered in alphabetical order.

(b) The requests are entered before the vehicles complete prior tours which leave them at 50 50 st.

Expected Result:

One vehicle will be dispatched to service charlie, dan, ed, george; the other will service arnie, bob, frank, hank.

References: FT02 File No.: _____
 Initialization Procedure: standard
 Computer Hardware Configuration: Appendix A
 Street Map File: Grid

Non-Standard Inputs Required: None

Personnel Required: standard

Output Types: Console printouts

Display Equipment Required: none

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
(a) VEHI 1	00:00:00	local 50 50 st
		loca2 50 50 st
PASS 1	00:00:10	arnie
		50 50 st
		10 0 st
		bob
		10 10 st
		50 50 st
		charlie
		100 90 st
		50 50 st

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		dan
		50 50 st
		70 90 st
		ed
		50 50 st
		90 100 st
		frank
		0 10 st
		50 50 st
		george
		100 100 st
		90 90 st
		hank
		0 0 st
		50 50 st
(b) VEHI 1	00:00:00	loca1 40 50 st
		loca2 60 50 st
PASS 1	00:00:20	dummy1
		40 50 st
		50 50 st
		dummy2
		60 50 st
		50 50 st

cont'd on next page. bottom

Date Test Run: _____

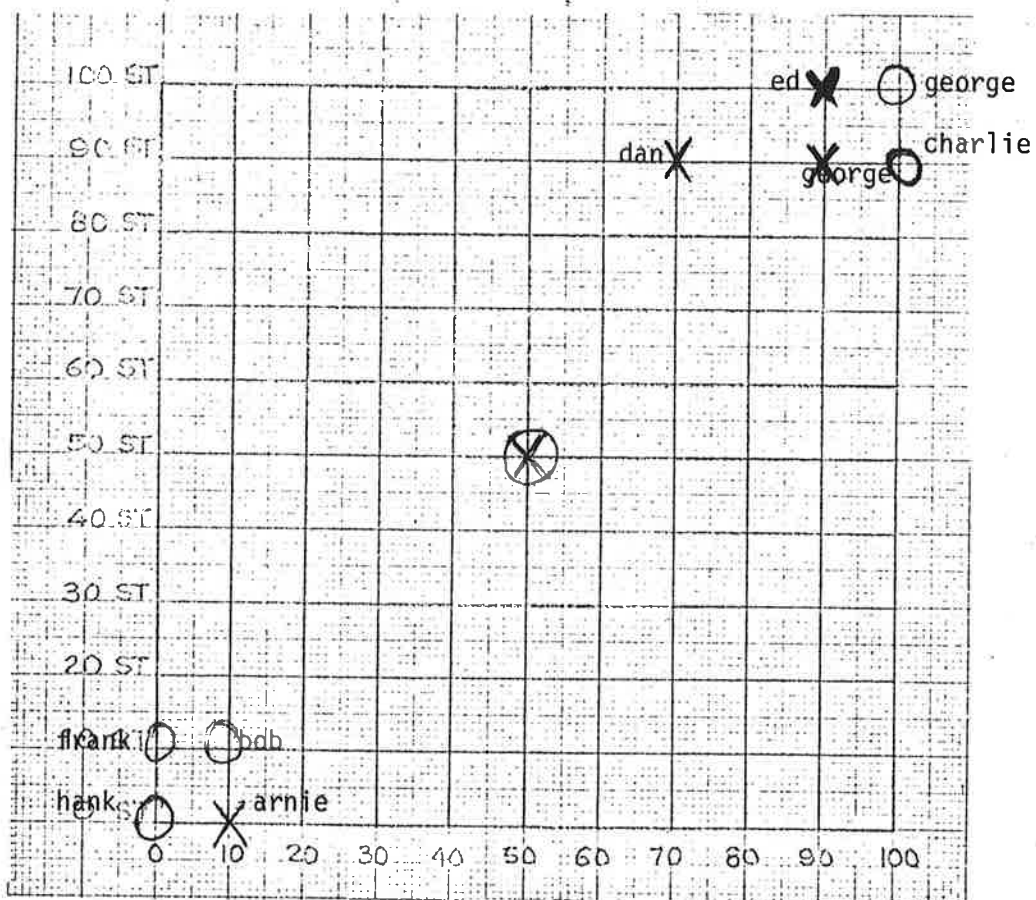
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes: (cont'd)

Note 1: The vehicles are dispatched to deliver the dummies. Then the requests of arnie through hank are entered into PASS 1 as above. Then the following is entered on the vehicle console.

```
VEHI 1 00:10:00 .veh1
                    vehi2
```

Note 2: At this point the vehicles are dispatched by the computer.

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

DELIVERY & PICKUP CONSTRAINTS

Scenario Name: (CONSISTENCY) Number: I.2.3a

Date of Approval: 2 June 71 Page 1 of 12

Work Statement References: 3.6.3.3 (page 25) Running Time 68

Test Conditions: OM MO X MM MS SM

Number of Vehicles 2 Vehicle Capacity 8

Mean Vehicle Speed 15 (mph) Number of Riders 20

Constraints: Waiting Time = 30 (min.)

Travel Time = 1.5 D + 25 (min.)

Total Time = 1.5 D + 30 (min.)

Purpose:

To demonstrate using real travel-time data that the pickup and delivery times calculated by the algorithm are reasonably accurate.

Description:

Twenty demands are input at various times. For each vehicle, the various link times are known from actual travel times measured on Cambridge streets, as given in the reference 1 below. Using this information, comparison between the real and calculated times can be made. Vehi commands are given according to actual driving times, plus 30 seconds for each pickup and 30 seconds for each delivery. |

Expected Result:

Whether the algorithm calculates times that are close to those determined by actual driving will be determined as follows: The predicted pickup and delivery times will be determined from the print out time of CRS0000. These will be compared to the actual pickup and delivery times as determined from the time of entry of the corresponding vehi command. The differences will be tabulated and a histogram (10 second increments) drawn up. Conformance to the range stated in Reference 1 will be determined. The trend in time will be determined by grouping the data into 15 minute blocks and repeating the process on each block of data.

Reference 1 - Letter to Mr. Juan Bellantoni from Mr. E. M. Porter, Jr. dated July 23, 1971.

Initialization Procedure: Standard (Appendix D)

Computer Hardware Configuration: 360/67 (Appendix A)

Street Map File: Cambridge (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 3

Output Types: Console

Display Equipment Required: No

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI	00 :00:00	local CARS
		CRS0105 VEH AT CARS
		local CITY HALL
		CRS0105 VEH AT CITY HALL
PASS	00:00:00	arnie
		20 PUTNAM AV
		200 VASSAR ST
VEHI		CRS0105 V 0002 P ARNIE 20 PUTNAM AV
		CRS0000 ARNIE V 0002 B D
PASS	00:00:20	bob
		cars

Note: The exact time of entry of the vehi commands will be recorded as part of the test data. In this scenario vehi commands without input times are to be input immediately after the preceding input time.

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		77 mass av
		CRS0000 BOB V0001 P D
VEHI		CRS0105 V 0001 P BOB CARS
PASS	00:00:40	dan
		77 mass av
		post office
		CRS0000 DAN V 001 P D
VEHI	00:00:50	vehi
		CRS0110 V 0001 D BOB 77 MASS AV
PASS	00:01:30	charlie
		100 plympton st
		705 memorial dr
		CRS0000 CHARLIE V 0002 P D
VEHI	00:02:00	vehi2
		CRS0105 V 0002 P CHARLIE 100 PLYMPTON
PASS	00:02:00	ed
		425 mass av
		550 green st
		CRS0000 ED V 0001 P D
VEHI	00:03:00	vehi1
		CRS0105 V 0001 P DAN 77 MASS AV

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
	00:03:10	veh1 CRS0105 V 0001 P ED 425 MASS AVE
PASS	00:03:30	george 300 western av 200 vassar st CRS0000 GEORGE V 0002 P D
VEHI	00:04:30	veh2 CRS0105 V 0002 P GEORGE 300 WESTERN
PASS	00:05:00	frank central sq. harvard sq. CRS0000 FRANK V 0001 P D
VEHI	00:06:10	veh1 CRS0105 V 0001 P FRANK CENTRAL SQ.
PASS	00:06:50	harry 200 allston st 77 mass av CRS0000 HARRY V 002 P D
VEHI	00:09:00	veh1 CRS0105 V 0001 D DAN POST OFFICE
	00:10:00	veh2

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		CRS0105 V 0002 D CHARLIE 705 MEMORIAL DR.
	00:10:30	veh1
		CRS0110 V 0001 D ED 550 GREEN ST
PASS	00:11:00	ingrid
		77 mass av
		CARS
		CRS0000 INGRID V0002 P D
	00:12:50	veh1
		CRS0110 V0001 D FRANK HARVARD SQ
VEHI	00:13:00	veh2
		CRS0110 V 0002 P HARRY 200 ALLSTON ST
PASS	00:14:00	judy
		harvard sq.
		1045 mass ave
		CRS0000 JUDY V 0001 P D
VEHI	00:16:00	veh2
		CRS0110 V 0002 D ARNIE 200 VASSAR ST
PASS	00:17:00	kathy
		city hall
		20 lopez st
		CRS000 KATHY V 0001 P D

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI	00:19:30	vehi2
		CRS0110 V 0002 D GEORGE 200 VASAR ST
		vehi2
		CRS0110 V 0002 D HARRY 77 MASS AV
	00:20:30	vehi1
		CRS0105 V 001 P JUDY HARVARD SQ.
		vehi1
		CRS0110 V 0001 D JUDY 1045 MASS AVE.
VEHI	00:21:30	vehi2
		CRS0105 V 0002 P INGRID 77 MASS AVE
	00:22:00	vehi2
		CRS0110 V 0002 D INGRID CARS
PASS	00:22:00	olivia
		morse school
		77 mass av
		CRS0000 OLIVIA V 0001 P D
PASS	00:23:00	linda
		CARS
		JOYCE CHEN
		CRS0000 LINDA V 0002 P D
VEHI	00:24:30	vehi2

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

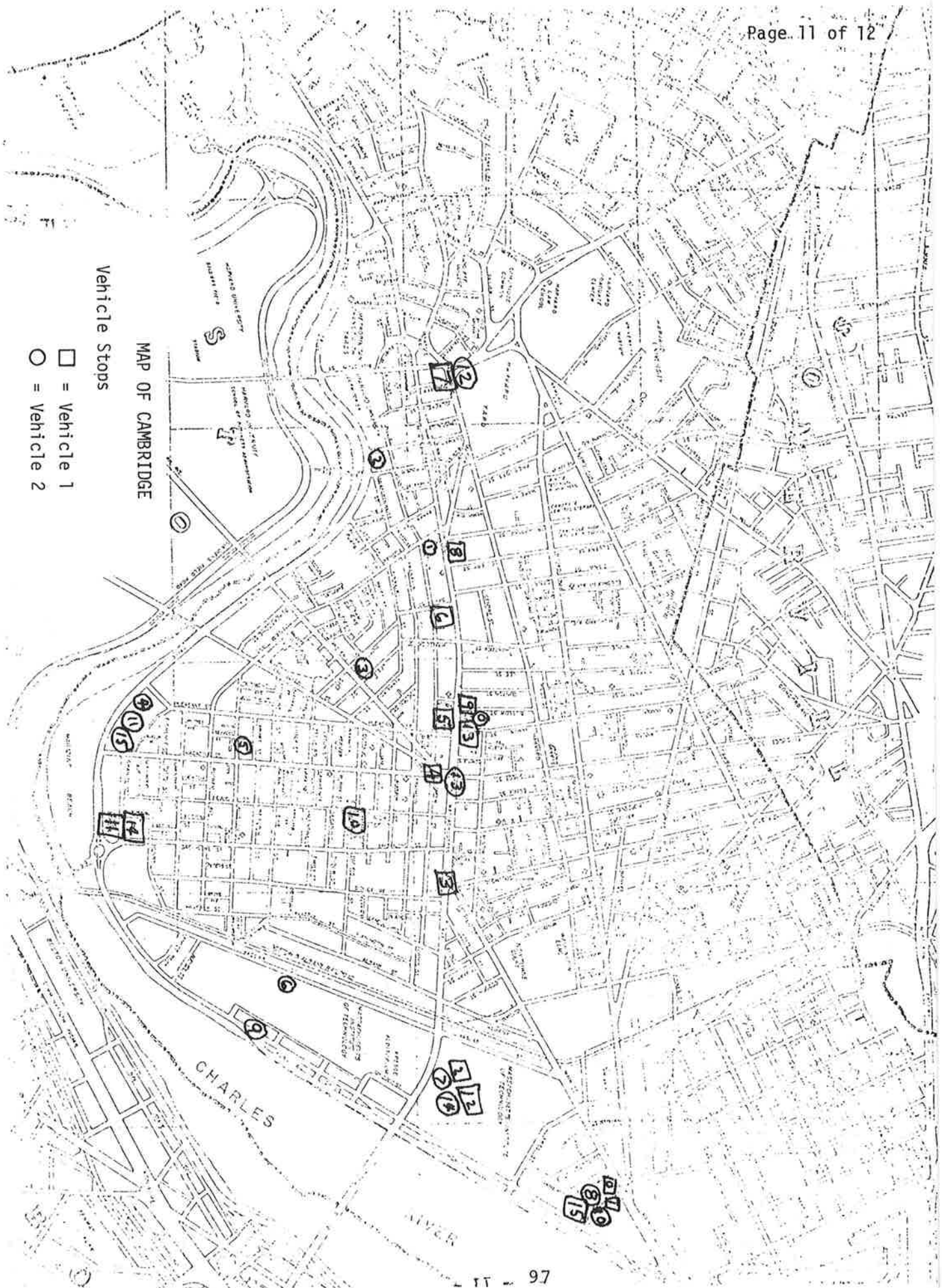
Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		CRS0110 V 0002 P LINDA CARS
		vehi2
		CRS0110 V 0002 D LINDA JOYCE CHEN
PASS	00:25:00	martha
		cars
		harvard sq
		CRS0000 MARTHA V 0002 P D
	00:26:30	nora
		705 memorial dr
		harvard sq
		CRS00000 NORA V 0002 P D
VEHI	00:27:00	vehi1
		CRS0105 V 0001 P KATHY CITY HALL
	00:27:40	vehi2
		CRS0105 V 0002 P MARTHA CARS
	00:31:10	vehi2
		CRS0110 V0002 P NORA 705 MEMORIAL DR
	00:34:00	vehi2
		CRS0110 V 0002 D MARTHA HARVARD SQ
PASS	00:34:00	paula
		77 mass av

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		city hall
		CRSO PAULA V 0001 P D
VEHI	00:34:00	vehil
		CRS0110 V 0001 D KATHY 20 LOPEZ ST
	00:37:30	vehil
		CRS0105 V 0001 P OLIVIA MORSE SCHOOL
	00:39:00	vehil
		CRS0110 V 0001 D OLIVIA 77 MASS AVE
	00:44:50	vehil
		CRS0105 V 0001 P PAULA 77 MASS AVE
		vehil
		CRS0110 V 0001 D PAULA CITY HALL
PASS	00:45:00	quentin
		harvard sq
		central sq
		CRS0000 QUENTIN V 0002 P D
	00:45:30	rachel
		harvard sq
		mit
		CRS0000 RACHEL V 0002 P D
	00:46:30	susan
		mit

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		705 memorial dr
		CRS0000 SUSAN V 0002 P D
	00:47:00	tricia
		morse school
		cars
		CRS0000 TRICIA V 0001 P D
VEHI	00:47:30	veh2
		CRS0110 V 0002 D NORA HARVARD SQ
		veh2
		CRS0105 V 0002 P QUENTIN HARVARD SQ
		veh2
		CRS0105 V 002 P RACHEL HARVARD SQ
		veh2
		CRS0110 V 002 D QUENTIN CENTRAL SQ
	00:50:00	veh1
		CRS0105 V 0001 P TRICIA MORSE SCHOOL
	00:55:30	veh1
		CRS0110 V 0001 D TRICIA CARS
	00:60:00	veh1
		CRS0115 V 0001 NOW UNASSIGNED
	00:60:00	veh2



Vehicle Stops

MAP OF CAMBRIDGE

- = Vehicle 1
- = Vehicle 2

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Delivery and Pick-up Constraints Number: I.2.3.b
 (Violation)
 Date of Approval: 2 June 71 Page 1 of 5
 Work Statement References: 3.6.3.3 (page 25) Running Time .30
 Test Conditions: OM MO X MM MS SM
 Number of Vehicles 2 Vehicle Capacity 8
 Mean Vehicle Speed 12 (mph) Number of Riders 2
 Constraints: Waiting Time = 4 (min.)
 Travel Time = 1.5 D + 3 (min.)
 Total Time = 1.5 D + 7 (min.)

Purpose:

To demonstrate that the program will make assignments without violating the inputted waiting and travel time constraints, given enough vehicles.

Description:

The two vehicles are located as in the diagram, arnie's request (a) is entered and assignment to vehicle 1 occurs. Then bob's request is entered and assigned. The test is performed for three different locations (a), (b) and (c) of bob's request and for a more remote location (d) of vehicle 1.

Expected Result:

The vehicle speed is 2 boxes per minute and 30 seconds is allowed for pickup and for delivery. Therefore, vehicle 1 can detour to service bob in case (a) but not in case (c) for which the 4 minute waiting time constraint is violated; vehicle 2 must service bob. Case (b) is marginal but should require use of vehicle 2 when boarding time is considered. Finally, vehicle 1 cannot service bob in case (d) because of the waiting time constraint.

References: FT02 File No.: 8
 Initialization Procedure: _____
 Computer Hardware Configuration: Appendix A
 Street Map File: Grid
 Non-Standard Inputs Required: None
 Personnel Required: Standard
 Output Types: Console Printouts
 Display Equipment Required: None
 Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR _____ SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	Input/OUTPUT
a) VEHI	00:00:00	local 10 30 st
		CRS0150 VEH AT ADDRESS
		loca2 40 30 st
	00:00:10	CRS0150 VEH AT ADDRESS
PASS		arnie
		10 60 st
		90 60 st
VEHI	00:00:20	CRS0105 V 1 P ARNIE 10 50 ST
PASS	00:00:20	CRS0000 ARNIE V 1 P 1 D 5
		bob
		40 80 st
		60 80 st
	00:00:30	CRS0000 BOB V 1 P 3 D 4

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI	00:01:00	vehil
	00:01:00	CRS0105 V 1 P BOB 40 80 ST
	00:03:00	vehil
	00:03:00	CRS0110 V 1 D BOB 60 80 ST
	00:04:00	vehil
	00:04:00	CRS0110 VEH 1 D ARNIE 90 50 ST
	00:06:00	vehil
	00:06:00	CRS0115 V 1 NOW UNASSIGNED

(b) and (c) ~~The sequence for (a) is repeated up to the request for~~
~~bob, which is entered as~~

PASS		bob
		40 90 st
		60 90 st
		in case (b), and as
		bob
		40 100 st
		60 100 st

in case (c). Then vehicle 2 is assigned to pick up bob.

(d) The first entry of case (a) is changed to

VEHI 1	00:00:00	local 10 0 st
--------	----------	---------------

and then the scenario proceeds as in case (a)
down to the bottom of page 2, at which point
vehicle 2 will be assigned to pick up bob.

Date Test Run: _____

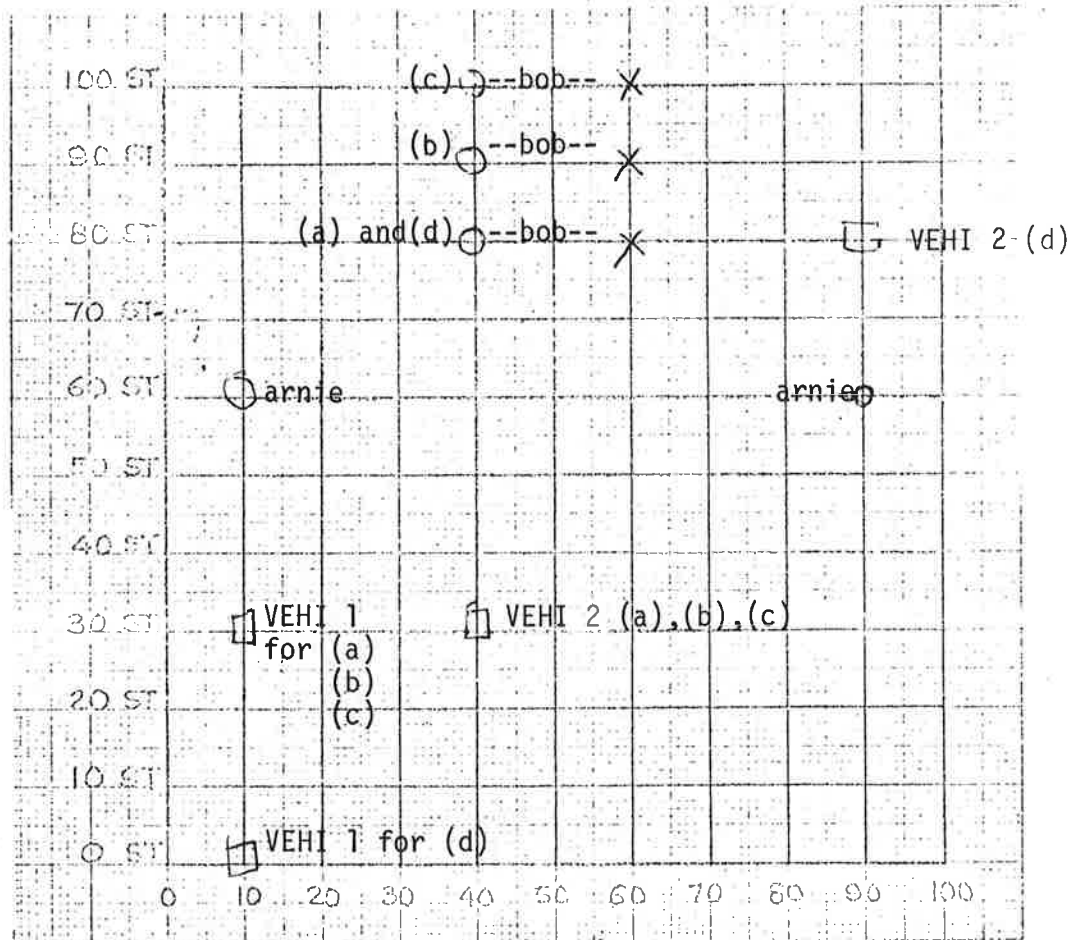
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonnet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Realistic Case (Cambridge) Number: 126

Date of Approval: 2 June 71 Page 1 of 11

Work Statement References: Pages 21, 22, & 23 Running Time 60

Test Conditions: OM MO MM MS SM

Number of Vehicles 6 Vehicle Capacity 10

Mean Vehicle Speed 15 (mph) Number of Riders about 60

Constraints: Waiting Time = 15(10)(min.) priority 1

Travel Time = 1.5(1.3)D + 5(3) (min.) (priority 2)

Total Time = 1.5(1.3) + 5(3) (min.)

Purpose:

To verify proper operation of graphics, restart, cancellation of requests, unexpected situations, vehicle breakdown, lateness detection, priority classes, standing requests, automatic billing, hard copy for manual backup, as well as general program operation, in a situation such as might occur between 8:00 a.m. and 9:00 a.m. in Cambridge, Mass.

Description:

About 15 standing requests are entered for approximately 8:05 - 8:15 a.m. pickup with destination at Harvard Sq. Another 10 standing requests are entered for approximately 8:25 - 8:35 pickup with destination at Harvard Sq. Another group of 10 are entered for pickup between 8:00 - 8:30 with destination at Morse School. About 28 other requests will be entered during this hour with varied trips. A vehicle traveling to Morse School breaks down at 8:20; the computer breaks down at 8:25 and is restarted at 8:35. Graphic outputs are recorded at 8:10, 8:20, 8:30, 8:40, and 8:50. A high priority request is entered at 8:28. Two of the 8:15 standing requests fail to show. More than the expected number for one demand show up to go to Morse School.

Expected Result:

Cancellation of two standing requests will be reflected on the automatic billing cards; the standing requests will be serviced in an efficient manner. The graphic outputs will correspond to the terminal sheets and indicate system status. The anomaly to Morse school will be serviced; the system will recover and the manual data will be incorporated to it. Mr. Bang will receive rapid assignment and the 0-mtours laid out efficiently. The demands for the broken down vehicle will be reassigned efficiently.

¹ A description of the priority class constraints is provided in a letter dated 22 July 1971 - E. H. Porter, Jr./MIT to J. Bellantoni/TSC.

Initialization Procedure: Standard (Appendix D)

Computer Hardware Configuration: Appendix A

Street Map File: Cambridge (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 4

Output Types: terminal sheets, line printer, billing cards

Display Equipment Required: ARDS

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR 1 ~~SUPERVISOR~~ BACKUP

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
------------------------------	--	--------------

NOTE: 35 standing requests will have been entered prior to start of test and are not shown here (see attachment 1)

NOTE: No dispatch messages are shown

PASS 8:01:00 acct 1020365 prir 2 ralph nader

harvard sq

city hall

PASS 8:01:30 acct 1234567 mr. phoney

MIT

city hall

PASS 8:02:00 acct 1020365 0003 raiders

harvard sq

city hall

PASS 8:03:00 cnc1 sra 1

8:03:30 cnc1 sra 6

NOTE: Continuous output will appear on the Backup terminal. The output messages are not listed in what follows.

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
PASS	8:04:00	nurse duckett
		27 cross st
		10 grant st
PASS	8:05:00	major major
		280 franklin st
		morse school
NOTE:	The following request is automatically billed	
PASS	8:10:00	acct 1000124 roger williams
		20 ames st
		morse school
ARDS	8:10:00	ERAS
		VEHI ALL*
		ERAS
		ASSN major major
		HIST 6
		PASP sral0*
*NOTE:	The ARDS screen is now recorded	
PASS	8:15:00	herman
		60 wadsworth st
		morse school
VEHI	8:15:30	anom x 3
	8:15:40	3 AT NEXT STOP FOR x
VEHI	8:16:00	vehix
VEHI	8:20:00	breax

vehicle x is assigned to herman

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI	8:20:10	ENTER LOCATION OF BREAKDOWN
	8:20:30	10 perry st
	8:20:50	VEH yy P name address
	etc.	etc.
	8:21:00	nn DEMANDS REASSIGNED FOR VEHICLE 0002
ARDS	8:23:00	ERAS HIST XX ERAS VEHI XX
		VEHI 6.* ERAS VEHI ALL *
* NOTE:	The ARDS screen is now recorded.	
PASS	8:24:00	prir 2 mr. bang 10 erie st kendall sq
OPER	8:25:00	The operator now crashes the system. The manual backup system is employed until restart occurs.
MANUAL	8:28:00	joe 10 perry st kendall sq
MANUAL	8:30:00	pattie harvard sq lafayette sq.

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
MANUAL	8:31:00	laverne 100 mass av 11 dunster st
NOTE:	8:35:00	The system is restarted and a status dump taken.
PASS	8:35:10	romona 100 memorial dr ymca
	8:35:20	acct 1020036 mrs uhau1 4 grant st post office
VEHI	8:37:00	vehi xx
NOTE:		The number xx corresponds to the vehicle that was assigned. to pick up laverne.
PASS	8:40:30	yossarian police dept 2 erie st
VEHI	8:37:30	anom xx 5
ARDS	8:40:00	VEHI 6 * ERAS VEHI ALL *
* NOTE:		The ARDS screen is now recorded.

1
CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
PASS	8:45:00	maid 1
		harvard sq
		60 wadsworth st
		maid 2
		harvard sq
		10 front st
		acct 1020141 maid 3
		harvard sq
		7 lansdowne st
		maid 4
		harvard sq
		12 cottage st
		maid 5
		harvard sq
		1 hayward st
		maid 6
		harvard sq
		sub shop
		maid 7
		harvard sq
		57 allston st

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		maid 8
		harvard sq
		10 decatur st
		maid 9
		harvard sq,
		72 pleasant st
		maid 10
		harvard sq
		312 pearl st
		maid 11
		harvard sq
		222 river st
		acct 1020253 maid 12
		harvard sq
		11 valentine st
		maid 13
		harvard sq
		kendall sq'
ARDS	8:50:00	W8TD 2
		ERAS
		WAIT 5 *

Date Test Run: _____
Date Test Started: _____ Time Test Ended: _____

Date Test Ended: _____

To Diagram the posture: _____ seated _____ standing _____ prone

Diagrams:

Notes:

1. No automatic billing except where specified.
2. Standing request list on attachment 1.
3. Times shown may be incremented or decremented by integral hours to make them correspond to the actual time at which the test is contacted.

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

Attachment 1 to Scenario I.2.6-2

Standing requests, entered into FT02F001 file before test:

<u>PASS</u> <u>NAME</u>	<u>ORIGIN</u>	<u>DESTINATION</u>	<u>PICKUP</u> <u>TIME</u>
SRA 1	1 FRONT ST	HARVARD SQ.	8:08
SRA 2	15 AMES ST	HARVARD SQ.	8:08
SRA 3	10 ALBANY ST	HARVARD SQ.	8:08
SRA 4	64 STATE ST	HARVARD SQ.	8:08
SRA 5	30 GRANITE ST	HARVARD SQ.	8:08
SRA 6	29 CROSS ST	HARVARD SQ.	8:08
SRA 7	1 FRANKLIN ST	HARVARD SQ.	8:10
SRA 8	1 CENTRAL SQ	HARVARD SQ.	8:10
SRA 9	30 RIVER ST	HARVARD SQ.	8:10
SRA 10	700 MEMORIAL DR	HARVARD SQ.	8:10
SRA 11	11 PUTNAM AV	HARVARD SQ.	8:15
SRA 12	70 PUTNAM AV	HARVARD SQ.	8:15
SRA 13	50 RIVER ST	HARVARD SQ.	8:15
SRA 14	4 GRANT ST	HARVARD SQ.	8:15
SRA 15	370 GREEN ST	HARVARD SQ.	8:15
SR 1	10 SMART ST	HARVARD SQ.	8:25
SR 2	20 AUDREY ST	HARVARD SQ.	8:25
SR 3	MIT	HARVARD SQ.	8:25
SR 4	35 SIDNEY ST	HARVARD SQ.	8:30
SR 5	100 AUBURN ST	HARVARD SQ.	8:30
SR 6	79 FRANKLIN ST	HARVARD SQ.	8:30
SR 7	58 ALLSTON ST	HARVARD SQ.	8:30
SR 8	100 MEMORIAL DR	HARVARD SQ.	8:35
SR 9	600 MEMORIAL DR	HARVARD SQ.	8:35
SR 10	9 KINNAIRD ST	HARVARD SQ.	8:35
SMA 1	MIT	MORSE SCHOOL	8:05
SMA 2	HARVARD SQ	MORSE SCHOOL	8:05
SMA 3	5 WADSWORTH ST	MORSE SCHOOL	8:05
SMA 4	2 FRONT ST	MORSE SCHOOL	8:10
SMA 5	700 GREEN ST	MORSE SCHOOL	8:10
SMA 6	10 COWPERTHWAITTE ST	MORSE SCHOOL	8:15
SMA 7	100 AUBURN ST	MORSE SCHOOL	8:15
SMA 8	10 COTTAGE ST	MORSE SCHOOL	8:20
SMA 9	CENTRAL SQ	MORSE SCHOOL	8:25
SMA 10	50 LOPEZ ST	MORSE SCHOOL	8:30

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Restart Number: I.3.1.A & B

Date of Approval: 21 June 71 Page 1 of 1

Work Statement References: 3.4.1 (page 21) Running Time

Test Conditions: OM MO MM MS SM

Number of Vehicles 6 Vehicle Capacity 10

Mean Vehicle Speed 15 (mph) Number of Riders About 60

Constraints: Waiting Time = (min.)

Travel Time = D + (min.)

Total Time = D + (min.)

Purpose:

To verify that the ODAR program restart capability will properly function.

Description:

During the execution of the Realistic Case (Cambridge) Scenario (I.2.6), the computer system will be shut down and then started up again to simulate a computer system malfunction.

Expected Result:

The restart capability will enable the computer system to come back into operation and satisfactorily schedule vehicles.

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: CANCELLATION OF SERVICE REQUESTS Number: I.3.2
Date of Approval: 2 June 71 Page 1 of 5
Work Statement References: _____ Running Time 6 min
Test Conditions: OM MO x MM MS SM
Number of Vehicles 20 Vehicle Capacity 10
Mean Vehicle Speed 15 (mph) Number of Riders 2
Constraints: Waiting Time = 30 (min.)
 Travel Time = 1.5 D + 10 (min.)
 Total Time = 1.5 D + 40 (min.)

Purpose:

1) determine effect of cancellation when reassignment due to breakdown occurs

Description:

Assign two demands to the same vehicle, pick-up the first demand a little later, wait several minutes, and break the vehicle down. Immediately cancel both requests.

Expected Result:

The breakdown and cancellations will be handled successfully.

References: FT02 File No.: 3
 Initialization Procedure: standard
 Computer Hardware Configuration: Appendix A
 Street Map File: CAMBRIDGE

Non-Standard Inputs Required: NONE

Personnel Required: standard

Output Types: CONSOLE

Display Equipment Required: NONE

Consoles Required: 1 VEHICLE 1 PASSENGER OPERATOR 1 SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
PASS	00:00:00	first
		kendall sq
		harvard sq
VEHI	00:00:10	CRS0105 VEH 14 FIRST KENDALL SQ
PASS	00:00:10	CRS0000 FIRST V 14 P1 D15
	00:00:20	second
		faculty club
		14 plympton st
	00:00:30	CRS0000 SECOND V 14 P2 D16
VEHI	00:01:30	veh14
	00:01:40	CRS0110 VEH 14 P SECOND FACULTY CLUB

Date Test Run: _____

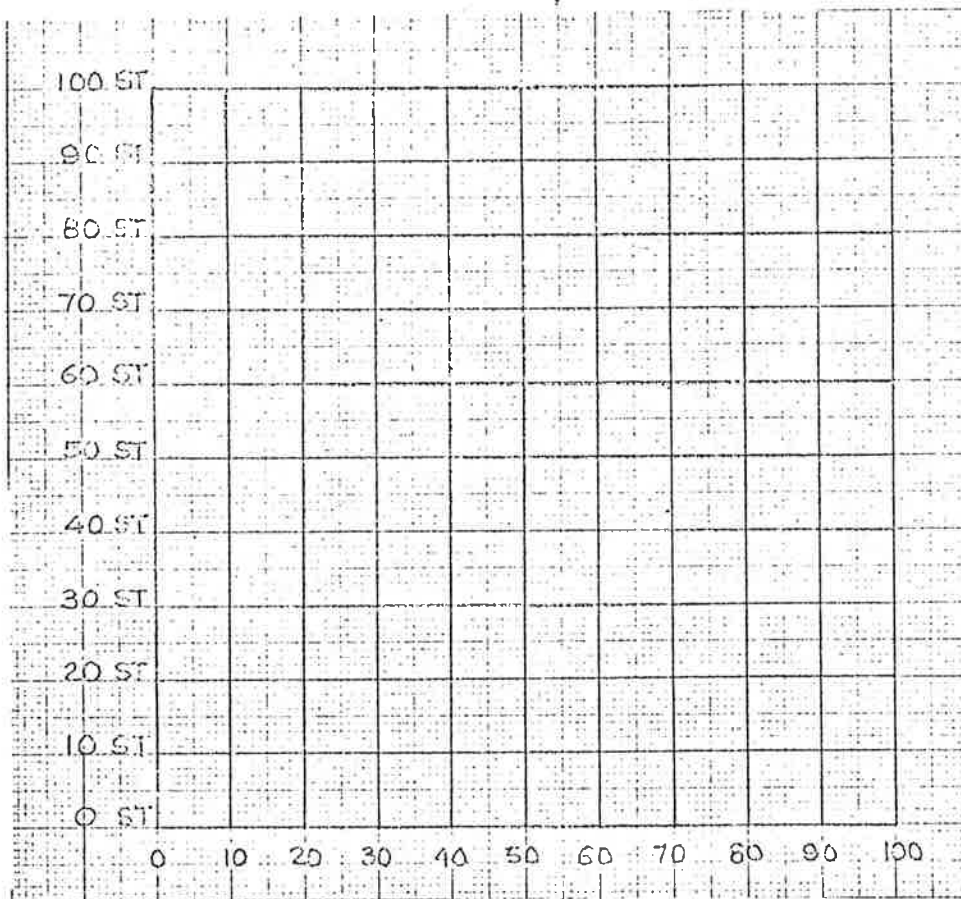
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonnet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Unexpected Situations Number: I.3.3

Date of Approval: 2 June 71 Page 1 of 5

Work Statement References: 3.4.1 (page 22) Running Time .15

Test Conditions: OM MO x MM MS SM

Number of Vehicles 20 Vehicle Capacity 10

Mean Vehicle Speed 15 (mph) Number of Riders 9

Constraints: Waiting Time = 30 (min.)

Travel Time = 1.5 D + 10 (min.)

Total Time = 1.5 D + 40 (min.)

Purpose:

To test that ODAR will handle the situation where the number of passengers appearing at a stop is other than that requested and that ODAR will manage the case where the passenger either does not show up for his pick-up as he requests an immediate delivery while in the vehicle as opposed to proceeding to his destination.

Description:

Assign two demands (one 5 pax., one 3 pax.); indicate that only 2 have showed up for first pickup stop and observe results. Now assign a third demand; wait a short period of time and indicate that he has not showed up at the pick-up stop. Lastly, handle an immediate delivery request for the three passenger demands.

Expected Result:

The algorithm will successfully alter the number of passengers from 5 to 3 for the first demand. Secondly, a no-show situation will be handled successfully as will an immediate delivery.

Reference: F102 File No.: #3 (Appendix B)
 Initialization Procedure: standard (Appendix D)
 Computer Hardware Configuration: Appendix A
 Street Map File: CAMBRIDGE (Appendix C)

Non-Standard Inputs Required: NONE

Personnel Required: 3 Standard People

Output Type: CONSOLE

Display Equipment Required: NONE

Consoles Required: X VEHICLE X PASSENGER X OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	Input/OUTPUT
PASS	00:00:00	5 first
		kendall sq
		harvard sq
VEHI	00:00:10	CRS0105 V 14 P 5 FIRST KENDALL SQ
PASS	00:00:10	CRS0000 5 FIRST V 14 P 1 D 15
	00:00:20	3 second
		kendall sq
		harvard sq.
	00:00:30	CRS0000 3 SECOND V 14 P 1 D 15
VEHI	00:01:00	veh14
	00:01:10	CRS0105 VEHI4 P 3 SECOND KENDALL SQ

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI	00:01:20	anom14 2
		CRS0255 2 AT NEXT STOP FOR 14
		veh14
		CRS110 VEH14 D 5 FIRST HARVARD SQ
PASS	00:05:00	third
		morse school
		city hall
VEHI	00:05:10	CRS0105 V 7 P THIRD MORSE SCHOOL
PASS	00:05:10	CRS0000 THIRD VEH7 P 1 D 9
VEHI	00:06:00	anom14 0
	00:06:10	CRS0260 ERROR - NOT A PICK-UP STOP - MONITOR SWITCHES SET
	00:06:20	CRS0260 anom07 0
	00:06:30	CRS0250 IS THIS A NO-SHOW FOR 07 (ANSWER YES FOR NO-SHOW)
	00:06:40	yes
	00:06:50	CRS0115 VEH7 NOW UNASSIGNED
	00:06:50	CRS0115 0 AT NEXT STOP FOR 07
	00:10:00	cnc1second
	00:10:10	CRS0275 SECOND TIME 0 V 14 KENDALL SQ
	00:10:20	CRS0285 ON VEHICLE - GIVE VEHICLE LOCATION
	00:10:30	800 memorial dr
	00:10:40	VEH 14 AT 800 MEMORIAL DRIVE
	00:10:40	SECOND CANCELLED

Date Test Run: _____

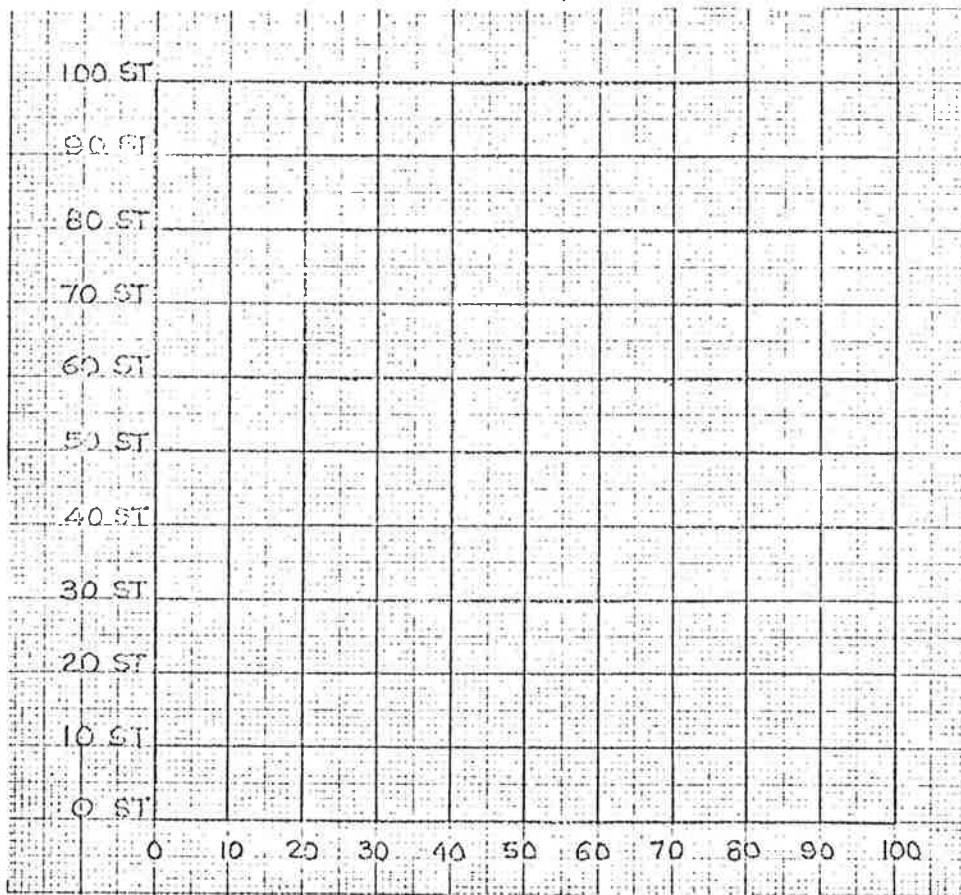
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: VEHICLE BREAKDOWN PROCEDURE Number: 1.3.4

Date of Approval: 2 June 71 Page 1 of 6

Work Statement References: 3.4.1 (page 22) Running Time .15

Test Conditions: OM MO X MM MS SM

Number of Vehicles 20 Vehicle Capacity 8

Mean Vehicle Speed 15 (mph) Number of Riders 3

Constraints: Waiting Time = 10 (min.)

Travel Time = 1.5 D + 30 (min.)

Total Time = 1.5 D + 40 (min.)

Purpose:

Test vehicle breakdown and the resulting waiting times against those of similarly located new demands.

Description:

Two demands will be assigned to different vehicles; the first demand will be picked up and then both vehicles will be broken down in succession. The system will then be brought back to the state prior to test; however, the two vehicles will remain broken down. Again, the two demands will be entered and the assignments observed. This time, however, the first demand will have its origin at the previous break-down point.

Expected Result:

The breakdown of two vehicles and subsequent reassignments will be handled successfully.

Reference: FT02 File No.: #3 (Appendix B) Page 2 of 6
 Initialization Procedure: (Appendix D)
 Computer Hardware Configuration: Appendix A
 Street Map File: CAMBRIDGE (Appendix C)

Non-Standard Inputs Required: NONE

Personnel Required: 3

Output Types: CONSOLE

Display Equipment Required: NONE

Consoles Required: VEHICLE PASSENGER OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
PASS	00:00:00	first
		kendall sq
		harvard sq
VEHI	00:00:10	CRS0105 VEH 14 P FIRST KENDALL SQ
PASS	00:00:10	CRS0000 FIRST V 14 P 1 D 15
PASS	00:00:20	second
		morse school
		city hall
	00:00:30	CRS0000 SECOND V 7 P 1 D 9
VEHI	00:02:30	VEHI14 CRS0110 VEH 14 D FIRST HARVARD SQ
	00:06:00	break

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI	00:06:10	CRS0130 ENTER LOCATION OF BREAK-DOWN
	00:06:20	sub shop
	00:06:30	CRS0105 VEH 0016 P FIRST SUB SHOP
	00:06:30	CRS0134 0001 DEMANDS REASSIGNED FOR VEHICLE 0014
	00:06:40	brea7
	00:06:50	CRS0170 VEH 0007 5 MINS LATE AT MORSE SCHOOL
	00:07:00	CRS0130 ENTER LOCATION OF BREAK-DOWN
	00:07:10	45 green st
	00:07:20	CRS0105 VEH 0018 P SECOND MORSE SCHOOL
	00:07:20	CRS0134 0001 DEMANDS REASSIGNED FOR VEHICLE 0007
PASS	00:07:30	third
		45 green st
		harvard sq
	00:07:40	CRS0000 THIRD V 16 P 1 D 11
VEHI	00:07:40	VEHI 16 CRS0105 VEH 16 P THIRD 45 GREEN ST
	00:08:00	veh16
	00:08:10	CRS0110 VEH 0016 D FIRST HARVARD SQ
	00:11:00	veh16
		VEHI 16 D THIRD HARVARD SQ
		VEHI16
	00:11:10	CRS0115 VEH 0016 DISPATCHED TO STATION 2
	00:11:20	veh18

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEHI	00:11:20	CRS0110 VEH 18 D SECOND CITY HALL
	00:19:00	veh18
	00:19:10	CRS0115 VEH 0018 DISPATCHED TO STATION 2
	00:19:20	local6 front st
	00:19:30	CRS0150 VEH AT FRONT ST
	00:19:40	local8 12 peters st
	00:19:50	CRS0150 VEH AT 12 PETERS ST
PASS	00:20:00	first
		sub shop
		harvard sq
	00:20:10	CRS0000 FIRST V 0016 P 001 D 0012
VEHI	00:20:10	CRS0105 VEH 14 P FIRST SUB SHOP
PASS	00:20:20	second
		morse school
		city hall
	00:20:30	CRS0000 SECOND V 0018 P0002 D0010
VEHI	00:20:40	CRS0105 VEH 18 P SECOND MORSE SCHOOL

Date Test Run: _____

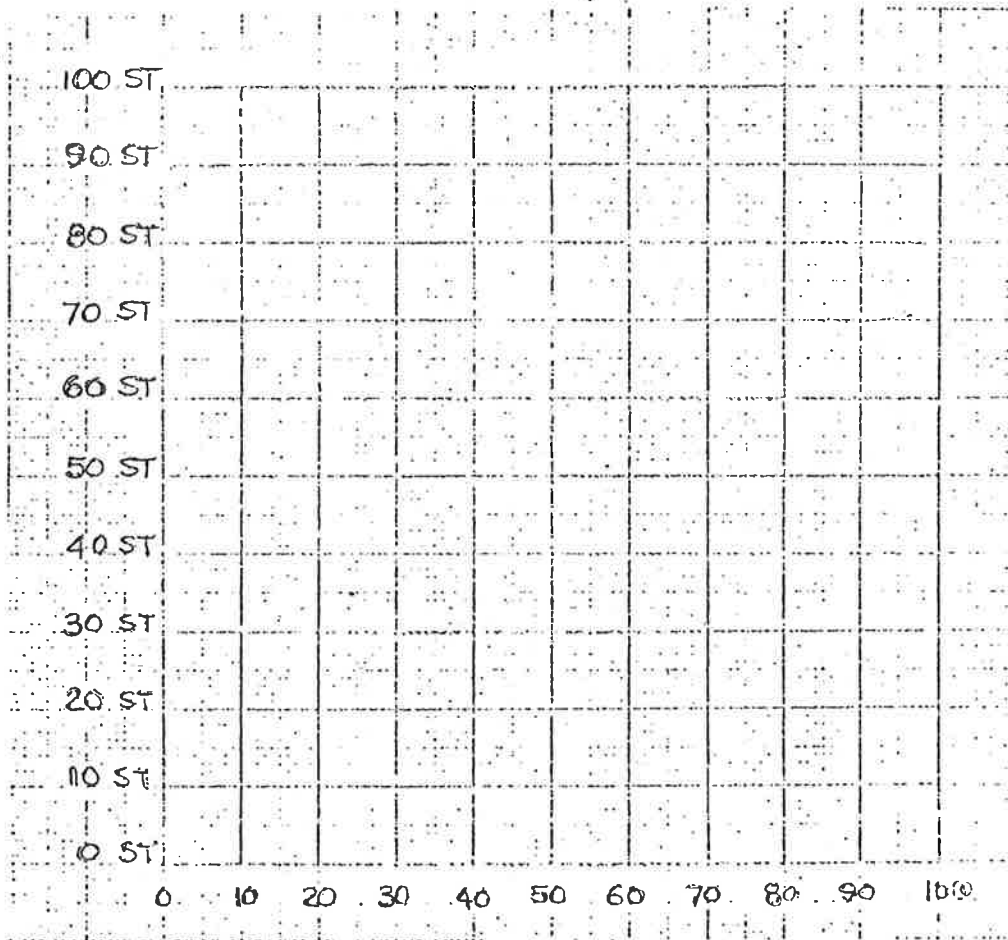
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higomci's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Lateness Detection and Correction Number: 1,3,5

Date of Approval: 2 June 71 Page 1 of 5

Work Statement References: 3.4.1 (page 22) Running Time 10

Test Conditions: OM MO X MM MS SM

Number of Vehicles 2 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 2

Constraints: Waiting Time = 3 (min.)

Travel Time = 1 D + 3 (min.)

Total Time = 1 D + 6 (min.)

Purpose:

To ascertain that the program will detect when a vehicle is excessively late & refrains from making further assignments to such a vehicle.

Description:

(a) Two vehicles are located as shown in the diagram. At time 00:00:00 arnie's request is received and assigned to vehicle 1; 30 seconds later bob's is received and assigned to vehicle 1 on the PASS terminal. Vehicle 1 checks in to 0 40 st at time 00:01:00 and is dispatched to service bob.

(b) Test (a) will be repeated, however, bob will be entered at 00:02:30 before any pick-ups are made.

(c) Test (a) will be repeated; bob will be entered at 00:03:30.

(d) Test (a) is repeated but no pick-ups are made.

Expected Result:

- (a) Vehicle 2 will remain inactive
- (b) Vehicle 2 will remain inactive
- (c) Bob's request will be assigned to Vehicle 2.
- (d) ODAR will detect late vehicles

Note 1: Bob will not be re-assigned in case (a)

Note 2: Further information regarding reassignment is contained in documents transmitted to Mr. J. Bellontoni from Mr. E. H. Porter, Jr. by letter dated 22 July 1971.

References: FT02 File No.: #4 (Appendix B)
 Initialization Procedure: standard (Appendix D)
 Computer Hardware Configuration: Appendix A
 Street Map File: Grid (Appendix C)

Non-Standard Inputs Required: None

Personnel Required: 3 Standard

Output Types: Console typeout

Display Equipment Required: None

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF
 INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
(a) VEHI 1	: : :	local 0 60 st
		loca2 20 0 st
PASS 1	00:00:00	arnie
		0 40 st
		60 40 st
VEHI 1:	00:00:10	XXXXXX VEH 1 P ARNIE 0 40 st
PASS 1	00:00:10	XXXXXX ARNIE V 1 P 1 D 4
	00:00:30	bob
		20 40 st
		40 40 st
	00:00:35	XXXXXX BOB V 1 P 1 D 2

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
VEH1	00:01:00	veh1
		XXXXXX VEH 1 P BOB 20 40 ST
	00:02:00	veh1
		XXXXXX VEH 1 D BOB 40 40 ST
	00:03:00	veh1
	00:04:00	XXXXXX VEH 1 D ARNIE 60 40 ST
	00:04:00	veh1
		XXXXXX VEH 1 NOW UNASSIGNED

(b) through (c) Test (a) is repeated but bob is entered at times 00:02:30
and 00:03:30. No vehi commands are given prior to assignment
of bob.

(d) Test (a) is repeated, but no veh1 entries are made at all. The sub-
sequent dispatching is observed. EOB should be hit at various points
such that message may be written at console.

Date Test Run: _____

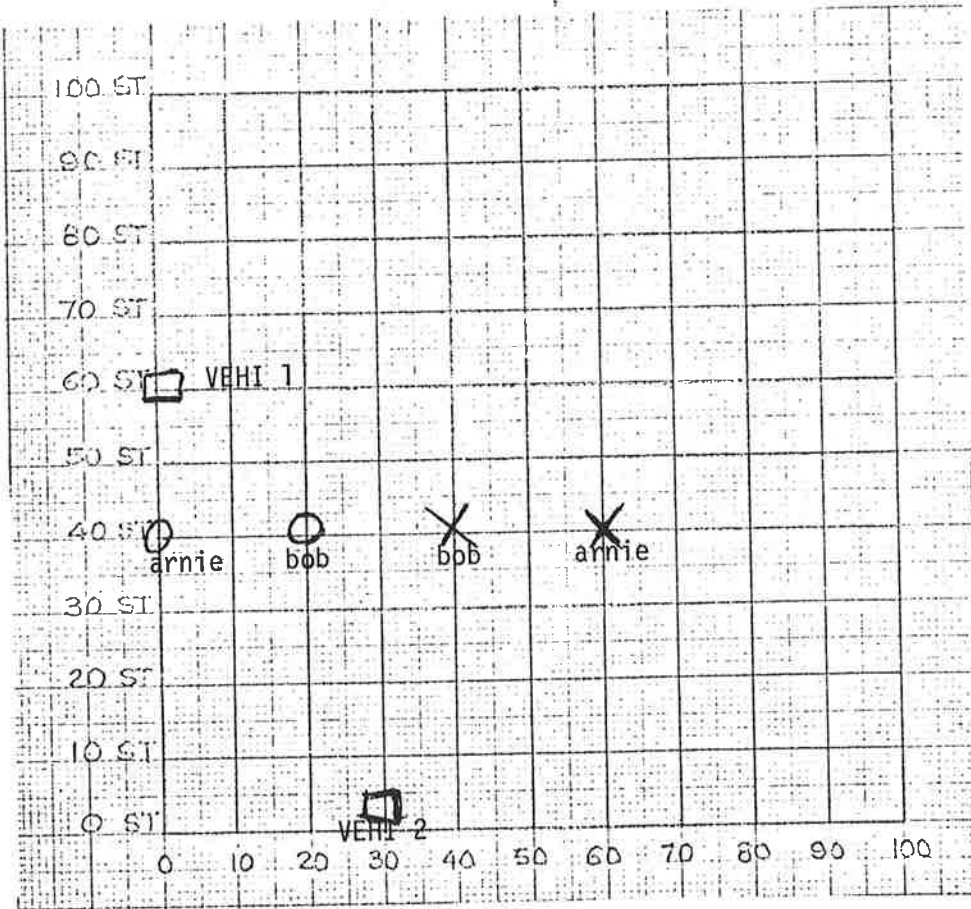
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higonet's posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Priority Classes Number: I.3.6

Date of Approval: 2 June 71 Page 1 of 6

Work Statement References: 3.4.1 (page 22) Running Time

Test Conditions: OM MO X MM MS SM

Number of Vehicles 2 Vehicle Capacity 8

Mean Vehicle Speed 12 (mph) Number of Riders 2

Constraints: Waiting Time = 6 (min.)

Travel Time = 1.5 D + 2 (min.) 1D + 1

Total Time = 1.5 D + 8 (min.) 1D + 3

Purpose:

Measure difference in service rendered to different priority classes with different constraints.

Description:

Two situations are examined. In the first case, both demands are of priority class one. In the second case, one demand (ARNIE) is of priority class 2 and thus has tighter constraints. Two stops for Bob have 30 second times.

Expected Result:

In the first test, vehicle one will be chosen to service both demands. In the second test, vehicle 1 will service only ARNIE due to the tightness of his constraint and allowing for the pickup and delivery stop times for Bob. Here, BOB will be serviced by vehicle 2.

Reference: FT02 File No.: #5-(Appendix B) Page 2 of 6
 Initialization Procedure: standard (Appendix D)
 Computer Hardware Configuration: Appendix A
 Street Map File: GRID (Appendix C)

Non-Standard Inputs Required: TWO PRIORITY CLASSES

Personnel Required: 3 standard

Output Types: CONSOLE

Display Equipment Required: NONE

Consoles Required: 1 VEHICLE 1 PASSENGER 1 OPERATOR SUPERVISOR

CHRONOLOGICAL LIST OF INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
a) VEHI	00 :00:00	local 10 30 st
	00:00:10	CPS0150 VEH AT ADDRESS
	00:00:20	loca2 70 10 st
	00:00:30	CRS0150 VEH AT ADDRESS
PASS	00:00:40	arnie
		10 50 st
		90 50 st
VEHI	00:00:50	CRS0105 V 1 P ARNIE 10 50 ST
PASS	00:00:50	CRS0000 ARNIE V1 P2 D6
	00:01:00	bob
		40 70 st

CHRONOLOGICAL LIST OF
INPUTS AND OUTPUTS

Device Type and Number	Hours: Minutes: Seconds: from Start	input/OUTPUT
		60 70 st
PASS	00:01:10	CRS0000 BOB V1 P4 D5
VEHI	00:01:40	vehil
	00:01:50	CRS0105 V 1 P BOB 40 70 ST
	00:04:00	vehil
	00:04:10	CRS0110 V 1 D BOB 60 70 ST
	00:05:10	vehil
	00:05:20	CRS0110 V 1 D ARNIE 90 50 ST
	00:08:00	vehil
	00:18:10	CRS0115 V 1 NOW UNASSIGNED :

b) The sequence for (a) is repeated up to the request for arnie, which is entered as

PASS	00:00:40	prir2 arnie
		10 50 st
		90 50 st
VEHI	00:00:50	CRS0105 V 1 P ARNIE 10 50 ST
PASS	00:00:50	CRS0000 ARNIE V1 P1 D5
	00:01:00	bob
		40 70 st
		60 70 st

Date Test Run: _____

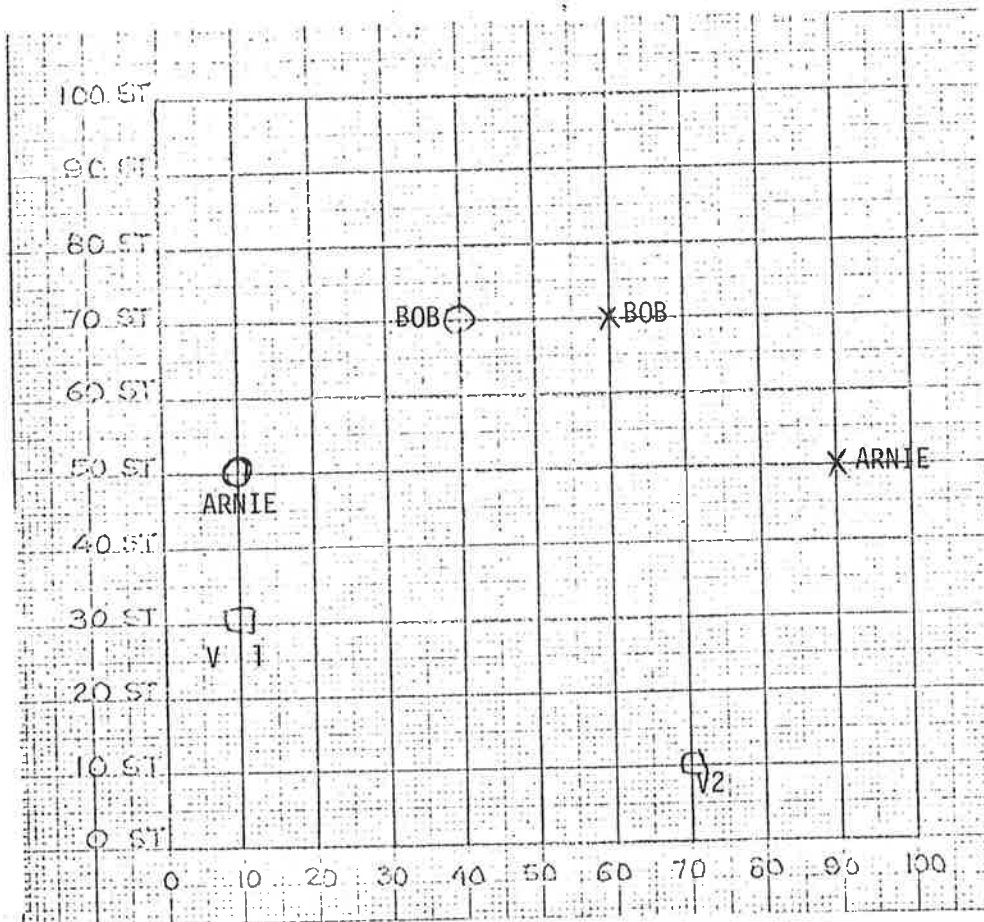
Time Test Started: _____

Time Test Ended: _____

Data Taken by: _____

T. Higomet"s posture: _____ seated _____ standing _____ prone

Diagrams:



Notes:

Test Data:

(Console sheets, Photographs, Diagnostics, Operator remarks, other.)

OPERATIONAL DIAL-A-RIDE PROGRAM
ACCEPTANCE TEST SCENARIO

Scenario Name: GRAPHICS Number: 1.3.7
Date of Approval: 2 June 1971 Page 1 of 1
Work Statement References: 3.4.1 (page 21) Running Time _____
Test Conditions: OM MO MM MS SM
Number of Vehicles 6 Vehicle Capacity 10
Mean Vehicle Speed 15 (mph) Number of Riders about 60
Constraints: Waiting Time = _____ (min.)
Travel Time = _____ D + _____ (min.)
Total Time = _____ D + _____ (min.)

Purpose:

To determine that the graphics display as present in the ODAR, provides the functions described in the reference below..

Description:

During the execution of the Realistic Case (Cambridge) scenario (I.2.6) the ARDS screen will be observed and/or photographed at the points indicated by an asterisk (*) in the chronological listing.

Expected Result:

The first two functions described in the reference will be verified.

Reference: Letter of 31 March, 1971, N. Wilson, MIT/USL to J. Bellanto DOT/TSC.

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Standing Requests Number: I.3.8

Date of Approval: 2 June 71 Page 1 of 1

Work Statement References: 3.4.1 (page 21) Running Time

Test Conditions: OM MO MM MS SM

Number of Vehicles 6 Vehicle Capacity 10

Mean Vehicle Speed 15 (mph) Number of Riders About 60

Constraints: Waiting Time = (min.)

Travel Time = D + (min.)

Total Time = D + (min.)

Purpose:

To demonstrate that the ODAR program will satisfactorily handle standing requests.

Description:

During the execution of the Realistic Case (Cambridge) Scenario (I.2.6), thirty-five standing requests will be entered in the Dial-A-Ride system prior to actual scheduling operation.

Expected Result:

During the scheduling of vehicles during the Realistic Case (Cambridge) Scenarios, the standing requests entered prior to scheduling operation will be properly handled along with all of the passenger requests originating during system operation.

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Automatic Billing Number: I.3.9

Date of Approval: 2 June 71 Page 1 of 1

Work Statement References: 3.4.1 (page 21) Running Time

Test Conditions: OM MO MM MS SM

Number of Vehicles 6 Vehicle Capacity 10

Mean Vehicle Speed 15 (mph) Number of Riders About 60

Constraints: Waiting Time = (min.)

Travel Time = D + (min.)

Total Time = D + (min.)

Purpose:

To demonstrate that the ODAR program will provide data for use in an automatic billing system during Dial-A-Ride operation.

Description:

During the execution of the Realistic Case (Cambridge) Scenario (I.2.6), certain passengers will be designated for automatic billing. In addition, two passengers who are on automatic billing will cancel their standing request trips.

Expected Result:

Data will be supplied for the automatic billing of those passengers who are on the automatic billing list. The cancellation of the standing requests will be reflected on the automatic billing cards.

OPERATIONAL DIAL-A-RIDE PROGRAM

ACCEPTANCE TEST SCENARIO

Scenario Name: Hard Copy of Manual-Backup Number: I.3.10

Date of Approval: 2 June 1971 Page 1 of 1

Work Statement References: 3.4.1 (page 21) Running Time

Test Conditions: OM MO MM MS SM

Number of Vehicles 6 Vehicle Capacity 10

Mean Vehicle Speed 15 (mph) Number of Riders About 60

Constraints: Waiting Time = (min.)

Travel Time = D + (min.)

Total Time = D + (min.)

Purpose:

To demonstrate that the ODAR program will continuously provide hard copy data for use in a manual backup system in the event of a computer system malfunction during DAR operation.

Description:

During the execution of the Realistic Case (Cambridge) Scenario (I.2.6), a backup terminal will be provided for system information during operations.

Expected Result:

During the Realistic Case Scenario operation, the backup terminal will continuously type out all data on system transactions required for manual backup operation.

APPENDIX A

TEST HARDWARE CONFIGURATION

APPENDIX A
TEST HARDWARE CONFIGURATION

The ODAR Acceptance Test will be conducted on either an IBM 360/50 or an IBM 360/67 except as otherwise specified in the scenarios with the following minimal features:

- 256 K bytes of high speed core
- universal instruction set
- high speed printer, card reader, card punch
- 1 2314 disk drive
- 1 2702 telecommunications control unit
- 1 ARDS (Advanced Remote Display Station)
- 8 KSR 33 or 35 telecommunications terminals

APPENDIX B

TEST INPUT FILES

APPENDIX B
TEST INPUT FILES

This appendix contains the eight input parameter files (FT02F001 files) called for in the test scenarios.

The appropriate file for each scenario is specified on page 2 of the scenario sheets, under "References", and is also given in the following table

<u>INPUT FILE</u>	<u>#VEH</u>	<u>GRID/CAMB</u>	<u>TEST</u>
1	2	GRID	I.2.2.-1; I.2.2.-2a,b,c; I.2.2.-3; I.2.2.-5; I.2.2.-6; I.2.2.-8; I.2.2.-9; I.2.2.-11; I.2.2.-12; I.2.2.-13; I.2.2.-14; I.2.2.-15
2	4	GRID	I.2.2.-7
3	20	CAMB	I.2.4; I.3.2; I.3.3; I.3.4.
4	2	GRID	I.3.5
5	2	GRID	I.3.6
6	6	CAMB	I.2.6.-2
7	2	CAMB	I.2.3a
8	8	GRID	I.2.3b

FILE: ONE SYSIN P1

```
// JOB RUN THE CARS SYSTEM (FILE 1)
// ASSGN SYS002,X'00C'
// ASSGN SYS005,X'00F'
// ASSGN SYS006,X'130'
// ASSGN SYS007,X'130'
// DLBL IJSYS06,'PRIMARY GRID DATA FILE',99/350
// EXTENT SYS006,234079,1,,3060,40
// DLBL IJSYS07,'SECONDARY GRID DATA FILE',99/350
// EXTENT SYS007,234079,1,,3100,40
// ASSGN SYS008,X'130'
// DLBL IJSYS08,'GRID DUPS FILE',99/350
// EXTENT SYS008,234079,1,,3940,20
// ASSGN SYS003,X'130'
// ASSGN SYS004,X'130'
// DLBL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3920,60
// DLBL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3980,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02F'
// ASSGN SYS024,X'05F'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SUPR000
COLD
DATA STARTS HERE
01    5    00.0
      10    10    10    10    10    10
ACCEPTANCE TEST INPUT FILE ONE
  2 3    7    000 0 1 0
  0 2 8    5.    .01    0.    009.    00.0
  0.50 1.0    4.0
  1 1.0 0.0 0.0
  60. 1.0 60.    1.0 60.
   0.0 0.0    0.0 0.0
  1 1 1    0.    0.    15.
  0 0 1 1 2.
0 0 ST
0 0 ST
/*
/E
```

FILE: TWO SYSIN P1

```
// JOB RUN THE CARS SYSTEM (FILE 2)
// ASSGN SYS002,X'000'
// ASSGN SYS005,X'005'
// ASSGN SYS006,X'130'
// ASSGN SYS007,X'130'
// DLRL IJSYS06,'PRIMARY GRID DATA FILE',99/350
// EXTENT SYS006,234079,1,,3060,40
// DLRL IJSYS07,'SECONDARY GRID DATA FILE',99/350
// EXTENT SYS007,234079,1,,3100,40
// ASSGN SYS008,X'130'
// DLRL IJSYS08,'GRID DUPLS FILE',99/350
// EXTENT SYS008,234079,1,,3940,20
// ASSGN SYS003,X'130'
// ASSGN SYS004,X'130'
// DLRL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3820,60
// DLRL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3880,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02E'
// ASSGN SYS024,X'0FF'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SUPR000
COLD
DATA STARTS HERE
01    5   00.0
      10   10   10   10   10   10
ACCEPTANCE TEST INPUT FILE TWO
  2 3    7   000 0 1 0
  0 2 8    5. .01    0. 999.   00.0
  0.50 1.0    4.0
  1 1.0 0.0 0.0
      3. 1.0    3.   1.0    6.
      0.0 0.0    0   0.0
  1 1 1    0.    0.    15.
  0 0 1 1    2.
0 60 ST
20 0 ST
/*
/8
```


FILE: THREE SYSIN P1

```
// JOB RUN THE CARS SYSTEM (FILE 3)
// ASSGN SYS002,X'00C'
// ASSGN SYS005,X'00E'
// ASSGN SYS006,X'130'
// ASSGN SYS007,X'130'
// ASSGN SYS008,X'130'
// ASSGN SYS003,X'130'
// ASSGN SYS004,X'130'
// DLBL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3820,60
// DLBL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3880,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02F'
// ASSGN SYS024,X'0FF'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SUPRO00
COLD
DATA STARTS HERE
01    5    00.0
      20    20    20    20    20    20
ACCEPTANCE TEST INPUT FILE THREE
  2 3    7    000 0 0
  0 20 8    4.0 .019 0. 990. 00.0
  0.50 1.20 4.0
  1 1.0
  30. 1.5 10. 1.5 40.
   0.0 0.0 25 0.0
  1 1 1    0.    0.    15.
  2 0 1 1    2.
  3.5 .4    .5
  4.5 .4    .5
```

MIT
12 CENTRAL SQ
CARS
B.U. BRIDGE
14 PLYMPTON ST
365 WESTERN AV
MORSE SCHOOL
700 MEMORIAL DR
600 GREEN ST
23 CENTRAL SQ
83 PLEASANT ST
50 WINTHROP ST
3 MT. AUBURN ST
27 HAYWARD ST
132 ERIE ST
FRONT ST
29 BOW ST
12 PETERS ST
PILGRIM ST
7 LOPEZ ST

D- AQ&AE-/8N O G -;FQ/8N &AE-/8N O G -;FQBT OGGQAK O G -;FQ&AE-/8N
BT OGGQAK O G V+AO-SAQQG&OV*G01 G0BT
/*
/E

FILE: FOUR SYSIN P1

```
// JOB RUN THE CARS SYSTEM
// ASSGN SYS002,X'00C'
// ASSGN SYS005,X'00E'
// ASSGN SYS006,X'130'
// ASSGN SYS007,X'130'
// DLBL IJSYS06,'PRIMARY GRID DATA FILE',99/350
// EXTENT SYS006,234079,1,,3060,40
// DLBL IJSYS07,'SECONDARY GRID DATA FILE',99/350
// EXTENT SYS007,234079,1,,3100,40
// ASSGN SYS008,X'130'
// DLBL IJSYS08,'GRID DUPS FILE',99/350
// EXTENT SYS008,234079,1,,3940,20
// ASSGN SYS003,X'130'
// ASSGN SYS004,X'130'
// DLBL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3820,60
// DLBL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3880,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02F'
// ASSGN SYS024,X'0FF'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SUPR000
COLD
DATA STARTS HERE
01    5   00.0
     10   10   10   10   10   10
ACCEPTANCE TEST INPUT FILE FOUR
  2 3    7   000 0 1 0
  0 4 8    5. .01   0. 000.   00.0
  0.50 1.0    4.0
  1 1.0 0.0 0.0
  3. 1.0    3.   1.0    6.
  0.0 0.0    0   0.0
  1 1 1    0.   0.   15.
  0 0 1 1    2.
50 50 ST
50 50 STA
50 50 ST
50 50 ST
/*
/8
```

FILE: FIVE SYSIN P1

```
// JOB RUN THE CARS SYSTEM
// ASSGN SYS002,X'00C'
// ASSGN SYS005,X'00F'
// ASSGN SYS006,X'130'
// ASSGN SYS007,X'130'
// DLBL IJSYS06,'PRIMARY GRID DATA FILE',99/350
// EXTENT SYS006,234079,1,,3060,40
// DLBL IJSYS07,'SECONDARY GRID DATA FILE',99/350
// EXTENT SYS007,234079,1,,3100,40
// ASSGN SYS008,X'130'
// DLBL IJSYS08,'GRID DUPS FILE',99/350
// EXTENT SYS008,234079,1,,3940,20
// ASSGN SYS003,X'130'
// ASSGN SYS004,X'130'
// DLBL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3820,60
// DLBL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3980,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02F'
// ASSGN SYS024,X'0FF'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SUPR000
COLD
DATA STARTS HERE-
C1    5   00.0
      10   10   10   10   10   10
ACCEPTANCE TEST INPUT FILE FIVE
  2 3    7 000 0 1 0
  0 2 8    5. .01   0. 999. 00.0
  0.50 1.0    4.0
  2 0.5 0.5 0.0
      6. 1.5    2.   1.5    8.
      6. 1.0    1.   1.0    3.
      0.0 0.0    0 0.0
  1 1 1    0.    0.   15.
  0 0 1 1   2.
0 0 ST
0 0 ST
/*
/8
```

FILE: SIX SYSIN P1

```
// JOB RUN THE CARS SYSTEM
// ASSGN SYS002,X'000'
// ASSGN SYS005,X'00F'
// ASSGN SYS006,X'130'
// ASSGN SYS007,X'130'
// ASSGN SYS008,X'130'
// ASSGN SYS003,X'130'
// ASSGN SYS004,X'130'
// DLBL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3820,60
// DLBL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3880,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02F'
// ASSGN SYS024,X'0FF'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SUPR000
```

COLD

DATA STARTS HERE

```
01    5   00.0
      20   20   20   20   20   20
ACCEPTANCE TEST INPUT FILE SIX
  2 3    7   000 1 1 0
  0   6 10   4.0 .019 0.999. 00.0
  0.50 1.20   4.0 4.1   1.0
  3 0.4 0.3 0.3
  15. 1.5    5.   1.5    5.
  10. 1.3    3.   1.3    3.
   5. 1.3    5.   1.3 10.
   0.0 0.0 25 0.0
  1 1 1    0.    0.   15.
  0 0 1 1   2.
```

MIT

```
12 CENTRAL SQ
KENDALL SQ
R.U. BRIDGE
14 PLYMPTON ST
344 RIVER ST
```

DSRA1		1 FRONT ST	- -
? V	IBC	A A A	
DSRA2		15 AMES ST	B 6
? V	ICZ	A A A	
DSRA3		10 ALBANY ST	5 6
? V	ICN	A A A	
DSRA4		64 STATE ST	1 ?
? V	IDF	A A A	
DSRA5		30 GRANITE ST	F 0
? V	ID5	A A A	
DSRA6		29 CROSS ST	Z >
? V	ID;	A A A	
DSRA7		1 FRANKLIN ST	V 7
? V	IE+	A A A-	
DSRA8		1 CENTRAL SQ	> 0
? V	IE=	A A A-	
DSRA9		30 RIVER ST	V M
? V	IEG	A A A-	
DSRA10		700 MEMORIAL DR	F +
? V	IE	A A A-	
DSRA11		11 PUTNAM AV	3 :
? V	IEQ	A A AQ	
DSRA12		70 PUTNAM AV	V :
? V	IGR	A A AQ	
DSRA13		50 RIVER ST	W K
? V	IGI	A A AQ	
DSRA14		4 GRANT ST	7 6
? V	IGQ	A A AQ	
DSRA15		370 GREEN ST	2 M
? V	IHS	A A AQ	
DSR1		10 SMART ST	> ?
? V	IHK	A A BR	
DSR2		20 AUDREY ST	(-
? V	ITB	A A BR	
DSR3		MIT	#
? V	IT.	A A BR	
DSR4		35 SIDNEY ST	Z W
? V	IT#	A A B;	
DSR5		100 AUBURN ST	W :
? V	I 4	A A B;	
DSR6		79 FRANKLIN ST	V 7
? V	I)	A A B;	
DSR7		58 ALLSTON ST	L /
? V	I.(A A B;	
DSR8		100 MEMORIAL DR	9 <
? V	I.'	A A BT	
DSR9		600 MEMORIAL DR	G ,
? V	I.W	A A BT	

DSR10		9 KINNAIRD ST	D
? V	<0	A A RT	
DSMA1		MIT	#
E *	<F	A A A&	
DSMA2		HARVARD SQ	? V
E *	<I	A A A&	
DSMA3		5 WADSWORTH ST	= <
E *	("	A A A&	
DSMA4		2 FRONT ST	- -
E *	("Y	A A A-	
DSMA5		700 GREEN ST	, 9
E *	+/'	A A A-	
DSMA6		10 COWPERTHWAITTE ST	W 6
E *	+J	A A A0	
DSMA7		100 AUBURN ST	W ;
E *	A	A A A0	
DSMA8		10 COTTAGE ST	S 0
E *		A A BM	
DSMA9		CENTRAL SQ	> 0
E *		A A BR	
DSMA10		50 LOPEZ ST	/ 1

E * |& A A B;

/*
/*
/*
/&

FILE: SEVEN SYSIN P1

```
// JOB RUN THE CARS SYSTEM
// ASSGN SYS002,X'00C'
// ASSGN SYS005,X'00E'
// ASSGN SYS006,X'130'
// ASSGN SYS007,X'130'
// ASSGN SYS008,X'130'
// ASSGN SYS003,X'130'
// ASSGN SYS004,X'130'
// DLBL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3820,60
// DLBL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3880,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02F'
// ASSGN SYS024,X'0FF'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SIUPR000
COLD
DATA STARTS HERE
01    5   00.0
      20   20   20   20   20   20
ACCEPTANCE TEST INPUT FILE SEVEN
  2 3    7   000 0 1
  0 02 8   4.0 .019   0. 999.   00.0
  0.50 1.40   4.0
  2 0.5 0.5
  30. 1.5 15.   1.5 30.
   5. 1.3    5.   1.3 10.
   0.0 0.0   25 0.0
  1 1 1    0.   0.   15.
  0 0 1 1   2.
CARS
CITY HALL
/*
/*
/*
/*
```


FILE: FIGHT SYSTN P1

```
// JOB RUN THE CARS SYSTEM
// ASSGN SYS002,X'000'
// ASSGN SYS005,X'00F'
// ASSGN SYS006,X'130'
// ASSGN SYS007,X'130'
// DLBL IJSYS06,'PRIMARY GRID DATA FILE',99/350
// EXTENT SYS006,234079,1,,3060,40
// DLBL IJSYS07,'SECONDARY GRID DATA FILE',99/350
// EXTENT SYS007,234079,1,,3100,40
// ASSGN SYS008,X'130'
// DLBL IJSYS08,'GRID DUPS FILE',99/350
// EXTENT SYS008,234079,1,,3940,20
// ASSGN SYS003,X'130'
// ASSGN SYS004,X'130'
// DLBL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3820,60
// DLBL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3880,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02F'
// ASSGN SYS024,X'0FF'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SUPR000
COLD
DATA STARTS HERE
01    5   00.0
     10   10   10   10   10   10
ACCEPTANCE TEST INPUT FILE FIGHT
  2 3    7   000 0 1 0
  0 2 8    5. .01   0. 999. 00.0
  0.50 1.0    4.0
  1 1.0 0.0 0.0
  4. 1.5    3.   1.5    7.
  0.0 0.0    0 0.0
  1 1 1    0.    0.   15.
  0 0 1 1    2.
0 0 ST
0 0 ST
/*
/E
```


APPENDIX C

CAMBRIDGE AND GRID FILES

File: Cambridge Data P1

BRIDGE	BU	000	999	191	36	
ACORN	ST	6	27	156	14	
ALBANY	ST	10	10	182	53	
ALBANY	ST	50	91	180	47	
ALBANY	ST	115	140	177	42	
ALBANY	ST	143	195	174	36	
ALBANY	ST	224	298	171	27	
ALLSTON	ST	57	99	161	19	
ALLSTON	ST	137	171	156	19	
ALLSTON	ST	198	240	151	19	
AMES	ST	1	5	199	54	
AMES	ST	12	50	182	56	
AMESBURY	ST	000	999	172	11	
ANGLIM	ST	000	999	169	21	
ARROW	ST	1	23	115	47	U
ATHENS	ST	9	31	116	42	U
AUBURN	ST	100	135	158	38	
AUBURN	ST	146	174	153	38	
AUDREY	ST	000	999	173	13	
B SHOP	SH	000	999	175	44	
BANKS	ST	7	49	119	43	n
BANKS	ST	54	68	120	40	n
BANKS	ST	90	118	122	38	n
BANKS	ST	132	208	124	35	
BANKS	ST	216	226	127	30	
BLANCHE	ST	4	4	168	43	
BLANCHE	ST	36	58	168	41	
BLANCHE	ST	77	77	167	38	
BOW	ST	2	12	113	47	U
BOW	ST	14	45	112	45	U
BOW	ST	40	40	100	45	
BROOKLINE	ST	2	21	160	44	
BROOKLINE	ST	23	37	160	42	
BROOKLINE	ST	41	59	160	39	
BROOKLINE	ST	61	91	160	36	
BROOKLINE	ST	93	110	160	34	
BROOKLINE	ST	113	125	160	32	
BROOKLINE	ST	128	160	160	29	
BROOKLINE	ST	162	195	160	26	
BROOKLINE	ST	201	210	150	22	
BROOKLINE	ST	225	239	150	20	
BROOKLINE	ST	246	271	150	17	
BROOKLINE	ST	272	302	158	14	
BROOKLINE	ST	305	322	158	10	
BROOKLINE	ST	343	353	158	7	
CA	YM	000	999	144	47	
CARLETON	ST	1	72	198	60	

CENTRAL	SO	0	999	150	46	
CHESTNUT	ST	19	19	165	12	
CHESTNUT	ST	45	80	160	12	
CHESTNUT	ST	97	142	156	12	
CHESTNUT	ST	152	185	151	12	
COTTAGE	ST	3	24	152	34	
COWPERTHWAITTE	ST	1	16	118	39	
CROSS	ST	25	30	174	41	
CULTY CLUB	FA	000	999	208	65	
DEACON	ST	5	5	196	61	
DECATUR	ST	10	32	157	30	
DEWOLFF	ST	3	8	113	42	U
DEWOLFF	ST	25	28	114	39	U
DOCK	ST	3	32	195	60	
DUNSTER	ST	11	30	103	45	U
DUNSTER	ST	45	54	104	42	D
DUNSTER	ST	60	85	104	40	D
EMILY	ST	000	999	162	28	
ERIE	ST	2	40	166	23	
ERIE	ST	99	103	161	23	
ERIE	ST	131	191	157	24	
ERIE	ST	194	226	152	24	
FRANKLIN	ST	1	80	169	40	
FRANKLIN	ST	87	80	166	40	
FRANKLIN	ST	120	120	163	40	
FRANKLIN	ST	180	206	158	41	
FRANKLIN	ST	216	255	153	41	
FRANKLIN	ST	280	286	148	42	D
FRANKLIN	ST	300	367	143	42	D
FRANKLIN	ST	377	461	137	42	D
FRANKLIN	ST	460	514	132	42	D
FRANKLIN	ST	524	619	127	42	D
FRONT	ST	000	999	173	45	
GLENWOOD	AV	11	38	150	8	
GRANITE	ST	1	11	156	5	
GRANITE	ST	25	25	154	5	
GRANITE	ST	29	59	150	5	
GRANT	ST	4	16	118	41	
GRANT	ST	21	27	115	40	
GREEN	ST	5	38	170	42	
GREEN	ST	54	56	167	42	
GREEN	ST	87	145	163	42	
GREEN	ST	176	223	158	43	
GREEN	ST	340	390	148	44	U
GREEN	ST	410	442	144	44	U
GREEN	ST	444	527	138	44	U
GREEN	ST	536	574	132	44	U
GREEN	ST	581	667	126	44	U
GREEN	ST	694	702	121	43	
GROVE	AV	18	18	165	17	

HAMILTON	ST	66	90	161	21	
HAMILTON	ST	113	162	156	22	
HAMILTON	ST	174	222	152	22	
HARVARD	SO	000	999	101	47	
HASTINGS	SO	1	8	157	10	
HAYWARD	ST	1	51	200	62	
HENRY	ST	38	38	164	10	
HENRY	ST	47	75	160	8	
HENRY	ST	82	122	156	9	
HOLYOKE	ST	2	26	105	46	U
HOLYOKE	ST	30	50	106	42	U
I.T.	M.	000	999	187	42	
KENDALL	SO	000	999	201	66	
KINNAIRD	ST	3	18	132	42	
KINNAIRD	ST	27	53	139	39	U
KINNAIRD	ST	54	87	134	40	U
KINNAIRD	ST	82	126	129	39	U
LAFAYETTE	SO	000	999	163	45	
LANSLOWNE	ST	7	13	172	43	
LANSLOWNE	ST	26	31	171	40	
LANSLOWNE	ST	37	76	169	36	
LAWRENCE	ST	2	35	152	29	
LICE DEPT.	PO	000	999	148	42	
LINDEN	ST	3	17	108	46	U
LOPEZ	ST	6	51	157	33	
MAGAZINE	ST	5	5	151	45	
MAGAZINE	ST	8	11	151	42	
MAGAZINE	ST	12	21	150	40	
MAGAZINE	ST	22	26	150	38	
MAGAZINE	ST	30	35	150	36	
MAGAZINE	ST	39	50	150	33	
MAGAZINE	ST	55	66	150	31	
MAGAZINE	ST	69	75	150	28	
MAGAZINE	ST	77	84	149	26	
MAGAZINE	ST	80	92	149	23	
MAGAZINE	ST	95	112	149	21	
MAGAZINE	ST	114	127	148	18	
MAGAZINE	ST	128	139	148	14	
MAGAZINE	ST	140	152	148	11	
MAGAZINE	ST	153	174	148	9	
MAGAZINE	ST	177	184	148	7	
MAGAZINE	ST	207	207	147	4	
MAIN	ST	1	218	205	69	
MAIN	ST	226	254	200	65	

MAIN	ST	285	310	198	64	
MAIN	ST	321	336	195	63	
MAIN	ST	343	410	193	62	
MAIN	ST	413	491	190	60	
MAIN	ST	600	624	181	55	
MAIN	ST	640	680	177	53	
MAIN	ST	730	770	174	51	
MAIN	ST	781	905	168	48	
MASS	AV	1	116	187	42	
MASS	AV	134	177	180	44	
MASS	AV	180	259	175	44	
MASS	AV	265	334	170	45	
MASS	AV	351	355	167	45	
MASS	AV	360	480	163	45	
MASS	AV	485	560	158	46	
MASS	AV	563	639	153	46	
MASS	AV	647	750	148	46	
MASS	AV	751	830	144	47	
MASS	AV	836	912	138	47	
MASS	AV	921	960	132	47	
MASS	AV	975	1013	132	46	
MASS	AV	1016	1052	124	46	
MASS	AV	1054	1112	120	46	U
MASS	AV	1116	1256	114	48	U
MASS	AV	1268	1290	108	48	U
MASS	AV	1300	1326	106	48	U
MASS	AV	1329	1356	104	47	U
MASS	AV	1374	1390	101	47	U
MASSACHUSETTS	AV	1	116	187	42	
MASSACHUSETTS	AV	134	177	180	44	
MASSACHUSETTS	AV	180	259	175	44	
MASSACHUSETTS	AV	265	334	170	45	
MASSACHUSETTS	AV	351	355	167	45	
MASSACHUSETTS	AV	360	480	163	45	
MASSACHUSETTS	AV	485	560	158	46	
MASSACHUSETTS	AV	563	639	153	46	
MASSACHUSETTS	AV	647	750	148	46	
MASSACHUSETTS	AV	751	830	144	47	
MASSACHUSETTS	AV	836	912	138	47	
MASSACHUSETTS	AV	921	960	132	47	
MASSACHUSETTS	AV	975	1013	132	46	
MASSACHUSETTS	AV	1016	1052	124	46	
MASSACHUSETTS	AV	1054	1112	120	46	U
MASSACHUSETTS	AV	1116	1256	114	48	U
MASSACHUSETTS	AV	1268	1290	108	48	U
MASSACHUSETTS	AV	1300	1326	106	48	U
MASSACHUSETTS	AV	1329	1356	104	47	U
MASSACHUSETTS	AV	1374	1390	101	47	U
MCTERNAN	ST	5	26	152	27	

MEMORIAL	DR	1	50	208	65	
MEMORIAL	DR	70	111	204	57	
MEMORIAL	DR	124	160	197	46	
MEMORIAL	DR	305	320	191	36	
MEMORIAL	DR	350	372	188	31	
MEMORIAL	DR	380	428	185	26	
MEMORIAL	DR	500	550	180	18	
MEMORIAL	DR	560	560	174	10	
MEMORIAL	DR	575	600	171	7	
MEMORIAL	DR	610	640	164	3	
MEMORIAL	DR	727	763	142	6	
MEMORIAL	DR	772	816	136	13	
MEMORIAL	DR	820	846	130	20	
MEMORIAL	DR	889	889	126	27	
MEMORIAL	DR	900	900	122	32	
MEMORIAL	DR	935	935	117	36	
MEMORIAL	DR	950	950	112	37	
MEMORIAL	DR	958	971	106	35	
MERRIAM	ST	000	999	166	25	
MT. AUBURN	ST	3	10	119	45	D
MT. AUBURN	ST	11	22	117	44	D
MT. AUBURN	ST	23	34	114	44	D
MT. AUBURN	ST	45	53	111	44	D
MT. AUBURN	ST	57	63	109	43	D
MT. AUBURN	ST	65	74	107	43	D
MT. AUBURN	ST	75	76	104	43	D
MT. AUBURN	ST	78	91	102	43	D
NEWTON	ST	2	12	151	14	
OSBORN	ST	2	2	178	48	
OSBORN	ST	45	45	176	50	
PACIFIC	ST	20	20	162	33	
PACIFIC	ST	60	61	166	33	
PACIFIC	ST	90	110	170	32	
PEARL	ST	20	24	157	44	
PEARL	ST	30	48	157	42	
PEARL	ST	52	67	157	40	
PEARL	ST	68	88	155	38	
PEARL	ST	92	102	155	35	
PEARL	ST	104	126	155	33	
PEARL	ST	128	148	154	30	
PEARL	ST	150	170	154	28	
PEARL	ST	172	189	154	25	
PEARL	ST	196	209	154	23	
PEARL	ST	214	234	154	20	
PEARL	ST	236	263	154	17	
PEARL	ST	264	291	153	14	
PEARL	ST	295	310	153	11	
PEARL	ST	312	333	153	9	

PER RIGHT	UP	0	999	205	75	
PERRY	ST	5	23	152	36	
PETERS	ST	6	22	161	17	
PILGRIM	ST	000	999	167	35	
PLEASANT	ST	1	6	146	45	U
PLFASANT	ST	10	17	146	43	U
PLEASANT	ST	19	24	145	40	U
PLEASANT	ST	25	44	145	37	D
PLEASANT	ST	45	54	144	33	D
PLEASANT	ST	57	68	144	30	D
PLEASANT	ST	72	82	144	28	D
PLFASANT	ST	83	96	143	25	D
PLEASANT	ST	90	111	143	23	D
PLFASANT	ST	113	126	143	21	D
PLFASANT	ST	130	148	143	18	
PLEASANT	ST	152	164	142	15	
PLFASANT	ST	170	176	142	12	
PLYMPTON	ST	1	30	110	47	D
PLYMPTON	ST	58	103	111	40	D
PORTLAND	ST	33	33	180	52	
PPI VILLAGE	VA	000	999	122	32	
PUTNAM	AV	11	23	122	44	
PUTNAM	AV	27	42	124	42	
PUTNAM	AV	45	71	125	40	
PUTNAM	AV	74	90	126	38	
PUTNAM	AV	120	120	128	36	
PUTNAM	AV	131	151	129	35	
PUTNAM	AV	156	189	130	30	
PUTNAM	AV	201	281	134	25	
PUTNAM	AV	340	386	140	18	
PUTNAM	AV	396	431	150	17	
PUTNAM	AV	456	492	165	16	
PUTNAM	AV	500	549	161	16	
PUTNAM	AV	561	600	156	15	
PUTNAM	AV	602	625	151	15	
RIVER	ST	25	49	148	40	D
RIVER	ST	53	77	146	38	D
RIVER	ST	80	103	145	36	D
RIVER	ST	107	154	144	34	D
RIVER	ST	156	183	141	31	D
RIVER	ST	188	215	140	29	D
RIVER	ST	222	241	140	28	D
RIVER	ST	244	263	139	26	D
RIVER	ST	267	308	138	24	D
RIVER	ST	313	374	135	19	D
ROCKINGHAM	ST	8	34	155	7	
RS	CA	000	999	200	62	
RSE SCHOOL	MO	000	999	156	5	

SALEM	ST	1	15	156	37
SIDNEY	ST	32	36	166	41
SIDNEY	ST	79	84	165	36
SIDNEY	ST	128	128	164	30
SIDNEY	ST	143	171	164	26
SIDNEY	ST	179	179	163	22
SIDNEY	ST	197	210	163	20
SIDNEY	ST	220	240	163	17
SIDNEY	ST	257	265	163	13
SIDNEY	ST	283	300	162	10
SMART	ST	000	999	175	46
SOUTH	ST	17	19	103	39
SPERIDAKIS	TE	1	41	156	26
ST OFFICE	PO	000	999	144	47
STATE	ST	64	64	175	49
T	MI	000	999	187	42
TY HALL	CI	000	999	144	47
TUDOR	ST	15	27	162	31
TUFTS	ST	11	35	150	10
U. BRIDGE	B.	000	999	191	36

U

VALENTINE	ST	11	34	157	28
VASSAR	ST	9	74	185	51
VASSAR	ST	95	301	176	30
VASSAR	ST	304	304	170	14
VASSAR	ST	317	361	168	10
WADSWORTH	ST	5	30	204	62
WADSWORTH	ST	60	60	202	64
WATSON	ST	3	26	158	35
WAVERLY	ST	40	40	167	20
WAVERLY	ST	169	169	167	16
WESTERN	AV	5	27	148	42
WESTERN	AV	44	111	145	40
WESTERN	AV	114	149	142	38
WESTERN	AV	150	179	140	36
WESTERN	AV	189	215	138	34
WESTERN	AV	217	272	136	32
WESTERN	AV	275	310	134	30
WESTERN	AV	316	338	132	29
WESTERN	AV	343	369	130	26
WESTERN	AV	373	381	128	25
WILLIAM	ST	2	25	153	37
WINDSOR	ST	11	37	174	46
WINDSOR	ST	60	60	172	40
WINTHROP	ST	41	41	105	41
WINTHROP	ST	65	75	102	41
WER LEFT	LD	0	999	100	0
YCF CHEN	JD	000	999	180	18

U

U

U

U

U

U

U

U

U

U

U

U

U

-1

FORM

0	ST	0	5	0	0
0	ST	6	15	10	0
0	ST	16	25	20	0
0	ST	26	35	30	0
0	ST	36	45	40	0
0	ST	46	55	50	0
0	ST	56	65	60	0
0	ST	66	75	70	0
0	ST	76	85	80	0
0	ST	86	95	90	0
0	ST	96	100	100	0
10	ST	0	5	0	10
10	ST	6	15	10	10
10	ST	16	25	20	10
10	ST	26	35	30	10
10	ST	36	45	40	10
10	ST	46	55	50	10
10	ST	56	65	60	10
10	ST	66	75	70	10
10	ST	76	85	80	10
10	ST	86	95	90	10
10	ST	96	100	100	10
20	ST	0	5	0	20
20	ST	6	15	10	20
20	ST	16	25	20	20
20	ST	26	35	30	20
20	ST	36	45	40	20
20	ST	46	55	50	20
20	ST	56	65	60	20
20	ST	66	75	70	20
20	ST	76	85	80	20
20	ST	86	95	90	20
20	ST	96	100	100	20
30	ST	0	5	0	30
30	ST	6	15	10	30
30	ST	16	25	20	30
30	ST	26	35	30	30
30	ST	36	45	40	30
30	ST	46	55	50	30
30	ST	56	65	60	30
30	ST	66	75	70	30
30	ST	76	85	80	30
30	ST	86	95	90	30
30	ST	96	100	100	30
40	ST	0	5	0	40
40	ST	6	15	10	40
40	ST	16	25	20	40
40	ST	26	35	30	40
40	ST	36	45	40	40

40	ST	46	55	50	40
40	ST	56	65	60	40
40	ST	66	75	70	40
40	ST	76	85	80	40
40	ST	86	95	90	40
40	ST	96	100	100	40
50	ST	0	5	0	50
50	ST	6	15	10	50
50	ST	16	25	20	50
50	ST	26	35	30	50
50	ST	36	45	40	50
50	ST	46	55	50	50
50	ST	56	65	60	50
50	ST	66	75	70	50
50	ST	76	85	80	50
50	ST	86	95	90	50
50	ST	96	100	100	50
60	ST	0	5	0	60
60	ST	6	15	10	60
60	ST	16	25	20	60
60	ST	26	35	30	60
60	ST	36	45	40	60
60	ST	46	55	50	60
60	ST	56	65	60	60
60	ST	66	75	70	60
60	ST	76	85	80	60
60	ST	86	95	90	60
60	ST	96	100	100	60
70	ST	0	5	0	70
70	ST	6	15	10	70
70	ST	16	25	20	70
70	ST	26	35	30	70
70	ST	36	45	40	70
70	ST	46	55	50	70
70	ST	56	65	60	70
70	ST	66	75	70	70
70	ST	76	85	80	70
70	ST	86	95	90	70
70	ST	96	100	100	70
80	ST	0	5	0	80
80	ST	6	15	10	80
80	ST	16	25	20	80
80	ST	26	35	30	80
80	ST	36	45	40	80
80	ST	46	55	50	80
80	ST	56	65	60	80
80	ST	66	75	70	80
80	ST	76	85	80	80

80	ST	86	95	90	80
80	ST	96	100	100	80
90	ST	0	5	0	90
90	ST	6	15	10	90
90	ST	16	25	20	90
90	ST	26	35	30	90
90	ST	36	45	40	90
90	ST	46	55	50	90
90	ST	56	65	60	90
90	ST	66	75	70	90
90	ST	76	85	80	90
90	ST	86	95	90	90

90	ST	96	100	100	90
100	ST	0	5	0	100
100	ST	6	15	10	100
100	ST	16	25	20	100
100	ST	26	35	30	100
100	ST	36	45	40	100
100	ST	46	55	50	100
100	ST	56	65	60	100
100	ST	66	75	70	100
100	ST	76	85	80	100
100	ST	86	95	90	100
100	ST	96	100	100	100

APPENDIX D

INITIALIZATION PROCEDURES

APPENDIX D

INITIALIZATION PROCEDURES

The purpose of this appendix is to provide a listing of the documents which describe the procedures that were used in the initialization and conduct of the acceptance tests. The following three documents contain the information required to conduct acceptance testing of the Operational DOS Program:

1. MIT Urban Systems Laboratory Report entitled, "Operational DOS Program User's Manual", dated July, 1971.

This document describes the operating procedures for using the operational Dial-A-Ride program including a complete description of the options available to the operator of the program.

2. MIT Urban Systems Laboratory Report entitled, "A Manual Backup System Handbook for Dial-A-Ride", dated July, 1971.

This document describes a manual backup system for Dial-A-Ride which is to be used in the event of a computer malfunction including a detailed description of the procedures to be used to restart the computer-controlled system from the manual backup mode when the computer comes back into operation.

3. MIT Urban Systems Laboratory Report entitled, "Operational DOS Program Description", (Four Volumes) dated July, 1971.

This set of volumes provides a complete description of the operational DOS program for Dial-A-Ride including documentation of all of the subroutines with complete flow charts.

APPENDIX E

REFERENCE LETTERS

APPENDIX E

REFERENCE LETTERS

The purpose of this appendix is to provide a copy of all of the letters containing additional information which are referenced in the various acceptance test scenarios.

This appendix specifically includes the following letters which are referenced in the scenarios indicated:

1. Letter to Mr. Juan Bellantoni from Mr. E. H. Porter, Jr., dated July 23, 1971, which transmitted data used for consistency calculations and which provided a recommended criteria for the consistency tests.

This letter is referenced in Scenario 1.2.3a, entitled, "Delivery and Pickup Restraints (Consistency)".

2. Letter to Mr. Juan Bellantoni from Mr. E. H. Porter, Jr., dated July 22, 1971, which transmitted documents and suggested references pertaining to the passenger re-assignment capability of the Dial-A-Ride system.

This letter is referenced in Scenario 1.3.5, entitled, "Lateness Detection and Correction".

3. Letter to Mr. Juan Bellantoni from Mr. E. H. Porter, Jr., dated July 22, 1971, which provided additional information on the priority class feature of the Dial-A-Ride system.

This letter is referenced in Scenario 1.3.6, entitled "Priority Classes".

4. Letter to Mr. Juan Bellantoni from Prof. Nigel Wilson dated March 31, 1971, which provided additional information on the graphics display capability of the Dial-A-Ride system.

This letter is referenced in Scenario 1.3.7, entitled, "Graphics".



URBAN SYSTEMS LABORATORY
OFFICE OF THE DIRECTOR

CAMBRIDGE, MASSACHUSETTS 02139
BUILDING E-40

23 July 1971

Mr. Juan Bellantoni
Transportation Systems Center
Department of Transportation
55 Broadway
Cambridge, Massachusetts 02142

Dear Mr. Bellantoni:

Attached for your information is a copy of the data taken from actual driving tests in Cambridge, Massachusetts, which we used in the calculations required in Scenario I.2.3a and b. The enclosed data were extracted from student project reports completed in the fall of 1970.

The criteria we recommend for the consistency test is as follows:

a. For passenger pickup:

90% of the passengers will be picked up within ± 6 min of the stated pickup time and 75% will be picked up within ± 3 min of the stated time.

b. For passenger delivery:

95% of the passengers will be delivered within ± 8 min of the stated delivery time and 75% will be delivered within ± 5 min of the stated time.

Should you have any questions on the above, please contact me.

Sincerely yours,

Edwin H. Porter, Jr.
Manager, Project CARS

EHP/rf
Enclosures
cc: C. Broxmeyer/UMTA
D. Roos
N. Wilson
M. Solomita

MORNING RUSH HOURS

TIMES	STATION	OBSERVATION					
		1	2	3	4	5	6
DECATUR	(D)	2.16	1.83	2.00	2.16	1.91	2.16
M.E.I.	(D)	2.25	1.83	1.93	2.08	1.25	2.33
MAYFIELD	(D)	0.50	1.58	0.50	0.58	0.41	0.50
MAYFIELD	(D)	1.83	0.83	2.41	1.66	1.66	1.58
CHURCH ST	(D)	1.75	1.25	1.58	2.25	1.50	1.66
GREENWAY	(D)	5.41	4.50	4.75	2.41	4.16	4.16
HARVARD CTR	(A)	2.66	2.53	2.66	1.83	2.75	4.25
HOLYoke CTR	(A)	2.25	2.16	2.75	1.83	2.75	4.25
1033 MASS AV	(D)	4.08	4.66	2.83	2.66	3.58	12.66
INMAN SQ	(B)	3.33	3.25	3.08	2.66	2.66	2.83
MARJLY ST	(D)	4.25	3.41	3.33	3.33	3.00	3.41
PRESR/PRIESTL	(D)	4.33	4.00	3.33	4.58	3.83	4.08
THIRD/SPRING	(D)	2.08	2.53	2.00	1.83	2.33	1.83
N.A.S.A.	(G)	2.08	1.91	1.08	0.91	1.25	1.66
TECH SQ	(D)	3.00	2.83	2.73	2.25	2.33	2.08
KENDALL ST	(G)						

MID MORNING

		1	2	3	4	5
...	(...)	2.75	2.15	2.16	1.81	2.08
...	(...)	1.75	0.83	2.06	1.03	1.41
...	(...)	1.08	0.50	0.41	0.50	0.50
...	(...)	2.33	2.15	2.79	2.83	1.91
...	(...)	1.41	1.00	1.41	1.25	1.58
...	(...)	5.16	4.25	4.75	6.58	5.66
...	(...)	2.33	2.25	2.03	4.50	4.50
...	(...)	2.66	1.91	2.23	2.75	3.50
...	(...)	3.58	2.91	3.03	2.00	4.50
...	(...)	1.83	4.66	2.25	5.75	3.41
...	(...)	2.01	1.25	3.50	2.08	2.33
...	(...)	5.66	4.00	3.66	5.25	3.50
...	(...)	1.83	1.75	1.01	1.83	2.16
...	(...)	1.33	0.91	0.01	1.58	0.83
...	(...)	1.58	1.50	1.75	2.41	1.83

LUNCH

	1	2	3	4	5
...	2.28	2.31	1.93	2.00	2.00
...	1.75	1.41	2.00	2.00	1.33
...	1.66	1.20	2.50	1.00	1.00
...	1.55	2.23	2.50	2.66	2.82
...	1.91	1.93	1.75	1.50	1.50
...	5.91	5.91	5.41	6.50	7.50
...	5.00	5.25	4.73	5.16	4.50
...	2.50	4.50	2.93	4.66	3.25
...	2.13	2.83	3.00	4.41	3.66
...	3.50	3.83	2.23	2.83	4.25
...	3.58	2.83	3.25	4.16	2.00
...	5.50	4.41	2.66	5.25	5.25
...	5.83	2.58	2.08	1.66	2.25
...	0.00	1.08	1.16	0.91	1.00
...	3.00	1.55	1.93	2.00	1.83

1112 11 11 11 11 11 11 11 11 11 11

MID AFTERNOON

		OBSERVATION									
		1	2	3	4	5	6	7	8	9	10
	(G)	3.08	2.28	3.00	2.33	2.75	2.23	2.40	1.58	2.81	2.81
	(G)	2.41	1.85	0.75	1.75	1.66	1.33	0.86	2.76	1.55	1.0
	(G)	0.61	0.81	1.05	0.66	0.75	2.00	0.76	1.28	0.81	0.61
	(G)	2.00	2.23	1.76	2.83	2.25	2.48	3.06	2.43	3.23	2.30
	(G)	1.95	1.31	1.76	1.25	1.41	1.06	1.61	1.58	1.73	1.5
	(G)	5.28	5.46	3.46	5.33	11.00	6.75	6.78	6.98	6.91	8.7
	(G)	3.41	4.30	4.71	10.08	4.41	4.33	3.63	6.86	5.21	3.6
	(G)	3.91	3.03	2.01	2.33	1.75	2.10	2.48	1.75	2.73	1.9
	(G)	3.50	2.91	3.91	5.00	3.66	3.53	4.76	4.10	5.60	2.3
	(G)	3.75	3.35	3.76	2.41	3.25	4.16	4.86	1.45	3.21	2.9
	(G)	2.36	3.53	2.28	2.75	2.91	3.16	2.76	2.13	2.71	3.0
	(G)	3.83	4.55	4.16	4.00	7.25	6.08	6.41	5.25	4.31	4.0
	(G)	2.00	1.58	1.73	1.83	1.83	1.53	1.98	2.31	1.60	1.9
	(G)	1.33	1.41	1.08	1.66	1.08	1.43	1.36	1.51	0.00	1.4
	(G)	1.41	2.66	1.00	1.58	1.75	2.36	1.90	1.41	1.45	1.0

LATE AFTERNOON

		OBSERVATIONS				
		1	2	3	4	5
...	(C)	4.00	3.33	2.33	2.50	2.50
P.I.T.	(C)	2.23	3.41	2.75	2.25	3.50
PAID/...	(C)	0.75	0.50	1.75	1.16	0.66
PAID/...	(C)	2.33	2.00	1.01	5.33	3.66
GEORGE...	(C)	1.50	2.08	1.58	0.41	1.41
GREEN/...	(C)	0.66	5.08	7.25	24.50	6.41
HAYMA...	(C)	4.00	3.33	5.58	11.58	4.66
HOLLY...	(C)	7.09	3.25	6.00	5.08	4.33
1033 MASS...	(C)	2.41	2.41	4.00	2.41	2.83
IRVAN...	(C)	4.01	3.00	3.41	2.08	2.75
MARNEY ST	(C)	3.08	3.08	3.50	2.16	2.58
BARKER/BRISTL	(C)	6.25	3.58	5.58	2.66	8.91
THIRD/SPRING	(F)	2.82	3.08	3.50	1.83	2.41
N.A.S.A.	(G)	1.75	1.16	1.41	1.33	1.33
TREN SO.	(C)	2.58	2.33	3.00	2.00	1.83
KENDALL SC	(G)					

TIMES OBSERVED WERE

DESCRIPTION	OBSERVATION					
	1	2	3	4	5	
KENDALL SQ (G)	2.28	3.00	2.33	2.75	2.24	
M.I.T. (G)	1.95	0.95	1.75	1.66	1.33	77 MASS
MAIN/WINDSOR (D)	0.81	1.05	0.66	0.75	2.00	
MAIN/MASS (D)	2.23	1.76	3.03	2.25	2.48	425 MASS
CENTRAL SQ (E)	1.31	1.76	1.75	1.41	1.06	CENTRAL SQ
GREEN/BAY (C)	5.46	8.46	9.33	11.00	6.75	
HARVARD COOP (A)	4.30	4.41	10.08	4.41	4.33	
HOLYOKE CNTR (A)	3.03	2.01	3.33	1.75	2.10	
1033 MASS AV (B)	2.91	3.81	5.00	3.66	3.53	
INMAN SQ (B)	3.35	3.36	3.41	3.25	4.16	
MARNEY ST (D)	3.53	2.38	2.75	2.91	3.16	
BRKSR/BRISTL (D)	4.55	4.16	4.00	7.25	6.08	
THIRD/SPRING (F)	1.58	1.33	1.93	1.83	1.53	
N.A.S.A. (G)	1.41	1.08	1.66	1.08	1.43	
TECH SQ (D)	2.66	1.90	1.58	1.75	2.36	
KENDALL SQ (G)	2.40	1.58	2.78	2.81	2.88	
M.I.T. (G)	0.86	2.76	1.15	1.55	1.93	
MAIN/WINDSOR (D)	0.76	1.28	0.61	0.81	0.68	
MAIN/MASS (D)	3.06	2.43	1.48	3.23	2.30	
CENTRAL SQ (B)	1.61	1.58	1.53	1.73	1.58	
GREEN/BAY (C)	6.78	6.98	7.05	6.81	9.73	
HARVARD COOP (A)	3.63	6.86	5.21	5.21	3.63	
HOLYOKE CNTR (A)	2.48	1.75	1.98	2.73	1.93	
1033 MASS AV (B)	4.76	4.10	2.71	5.60	3.38	
INMAN SQ (B)	4.86	1.45	0.00	3.21	2.95	
MARNEY ST (D)	2.76	2.13	0.00	2.71	3.06	
BRKSR/BRISTL (D)	6.41	5.25	0.00	4.31	4.03	
THIRD/SPRING (F)	1.98	2.31	0.00	1.60	1.98	

N.A.S.A. (B)	1.36	1.51	0.00	0.00	1.45
TECH SQ (D)	1.00	1.41	0.00	1.45	1.61
KENDALL SQ (C)	0.00	0.00	0.00	0.00	0.00
✓ BUNTON LOT (B)	5.66	3.33	0.00	0.00	0.00
✓ THIRD/HURLEY (F)	9.00	9.41	0.00	0.00	0.00
× BROADWAY/LEE (C)	7.00	6.66	0.00	0.00	0.00
✓ PACIFIC/LAND (E)	2.66	6.00	0.00	0.00	0.00
○ WESTRN/HOARD (C)	10.91	4.41	0.00	0.00	0.00
○ HARVARD SQ. (A)	10.25	4.16	0.00	0.00	0.00
○ WESTRN/DODGE (C)	6.25	0.00	0.00	0.00	0.00
× HARVARD/PINE (D)	5.00	0.00	0.00	0.00	0.00
○ MCTERN/PEARL (E)	2.50	0.00	0.00	0.00	0.00
✓ STOP & SHOP (E)	15.05	0.00	0.00	0.00	0.00
✓ HARVARD SQ. (A)	1.65	0.00	0.00	0.00	0.00
○ WBSTR/SECKEL (D)	4.38	0.00	0.00	0.00	0.00
○ LECHMERE'S (F)	5.66	0.00	0.00	0.00	0.00
○ FIFTH/POTTER (F)	11.45	0.00	0.00	0.00	0.00
○ BURNS PLGND (C)	5.21	0.00	0.00	0.00	0.00
○ FUZZ STATION (C)	6.41	0.00	0.00	0.00	0.00
○ MIT/77 MA AV (G)	1.83	0.00	0.00	0.00	0.00
○ JOYCE CHEN (G)	2.25	0.00	0.00	0.00	0.00
○ EMILY/BRKLINE (E)	7.83	0.00	0.00	0.00	0.00
× SIXTH/SPRING (F)	7.25	0.00	0.00	0.00	0.00
× RINDGE TECH (B)	7.58	0.00	0.00	0.00	0.00
○ MIT/77 MA AV (G)	5.58	0.00	0.00	0.00	0.00
○ H TRUST C SQ (B)	11.58	0.00	0.00	0.00	0.00
○ MTAUB/HOLYCK (A)	9.41	0.00	0.00	0.00	0.00
× JAMES/MASON (A)	7.00	0.00	0.00	0.00	0.00
○ BREWY/COLUMB (D)	2.00	0.00	0.00	0.00	0.00
○ PORTLAND/MAIN (D)					

Rest of previous

BURTON LOT (G)	3.58	0.00	0.00	0.00	0.00
PORTLAND/MAIN (D)	5.66	0.00	0.00	0.00	0.00
BROADWAY/COLUMBIA (E)	1.46	0.00	0.00	0.00	0.00
JAMES/MASCO (A)	7.76	0.00	0.00	0.00	0.00
MTAUB/HOLYOCK (A)	2.65	0.00	0.00	0.00	0.00
H TRUST C SQ (B)	4.78	0.00	0.00	0.00	0.00
MIT/77 MA AV (G)	3.90	0.00	0.00	0.00	0.00
RINDGE TECH (H)	7.83	0.00	0.00	0.00	0.00
SIXTH/SPRING (F)	6.01	0.00	0.00	0.00	0.00
EMILY/BRKLINE (E)	8.60	0.00	0.00	0.00	0.00
JOYCE CHEN (G)	4.01	0.00	0.00	0.00	0.00
MIT/77 MA AV (G)	3.16	0.00	0.00	0.00	0.00
FUZZ STATION (C)	4.16	0.00	0.00	0.00	0.00
BURNS PLGRND (C)	3.16	0.00	0.00	0.00	0.00
FIFTH/POTTER (F)	13.08	0.00	0.00	0.00	0.00
LECHMERE'S (F)	2.08	0.00	0.00	0.00	0.00
WBSTR/SECKEL (D)	5.66	0.00	0.00	0.00	0.00
HARVARD SQ. (A)	11.00	0.00	0.00	0.00	0.00
STOP & SHOP (E)	6.75	0.00	0.00	0.00	0.00
MCTERN/PEARL (E)	1.91	0.00	0.00	0.00	0.00
HARVARD/PINE (D)	4.91	0.00	0.00	0.00	0.00
WESTRN/DODGE (C)	5.83	0.00	0.00	0.00	0.00
HARVARD SQ. (A)	4.33	2.76	0.00	0.00	0.00
WESTRN/HOVRD (C)	6.83	7.46	0.00	0.00	0.00
PACIFIC/LAND (E)	5.66	5.25	0.00	0.00	0.00
BROADWAY/LEE (B)	7.75	4.86	0.00	0.00	0.00
THIRD/HURLEY (F)	7.00	7.55	0.00	0.00	0.00
BURTON LOT (G)	3.08	4.16	0.00	0.00	0.00
VASSAR/MASS (G)	3.00	0.00	0.00	0.00	0.00
	2.96	2.16	0.00	0.00	0.00

end of source

SAILING PRV (G)	0.71	0.66	0.00	0.00	0.00
✓ KENDALL SQ (G)	0.41	0.68	0.00	0.00	0.00
✓ NASA BLDG (G)	4.41	3.75	0.00	0.00	0.00
× LECHMERE MTA (F)	4.00	2.66	0.00	0.00	0.00
× BENT & SIXTH (F)	2.58	3.10	0.00	0.00	0.00
✓ TECH SQUAD (D)	2.08	1.48	0.00	0.00	0.00
× HAVVAD/CLARK (I)	2.41	2.16	0.00	0.00	0.00
✓ MAIN/WINDSOR (D)	3.25	4.46	0.00	0.00	0.00
✓ SIMEONE'S (E)	2.83	2.65	0.00	0.00	0.00
✓ CITY HALL (E)	1.83	2.15	0.00	0.00	0.00
✓ FUZZ STATION (C)	3.08	2.11	0.00	0.00	0.00
✓ VALTNE/PEARL (E)	0.41	1.55	0.00	0.00	0.00
✓ BELL COURT (E)	4.83	5.30	0.00	0.00	0.00
✓ WESTGATE (G)	2.50	2.60	0.00	0.00	0.00
✓ STOP & SHOP (E)	2.25	1.85	0.00	0.00	0.00
✓ KENWD/ALSTON (E)	2.83	3.20	0.00	0.00	0.00
✓ CALNDR/MAGEE (C)	2.91	3.21	0.00	0.00	0.00
✓ DUNSTER HSE (C)	2.08	1.95	0.00	0.00	0.00
✓ PUTNAM/GREEN (C)	3.41	3.63	0.00	0.00	0.00
✓ CAMB LIBRARY (B)	1.41	1.33	0.00	0.00	0.00
✓ H G HOSPITAL (B)	0.75	1.96	0.00	0.00	0.00
× MEMORIAL HLL (A)	2.50	3.70	0.00	0.00	0.00
× BRATL CINEMA (A)	5.50	3.00	0.00	0.00	0.00
✓ LOWELL HOUSE (A)	2.50	1.58	0.00	0.00	0.00
✓ ATHENS/GRANT (C)	3.16	1.88	0.00	0.00	0.00
× ELIERY/HAVRD (B)	1.33	2.28	0.00	0.00	0.00
✓ LINGFELW SCH (B)	2.33	1.08	0.00	0.00	0.00
× ST. MARY'S (D)	4.16	2.91	0.00	0.00	0.00
✓ FUZZ STATION (C)	2.83	1.45	0.00	0.00	0.00
✓ LOPEZ/PEARL (E)					

✓ CAMB YWCA (B)	3.50	4.80	0.00	0.00	0.00
✓ SENNOTT PARK (D)	3.33	3.71	0.00	0.00	0.00
✓ NEWTOWNE CRT (D)	0.83	1.41	0.00	0.00	0.00
✓ TECH COOP (G)	2.33	3.63	0.00	0.00	0.00
✓ ALBANY/CROSS (E)	2.25	1.90	0.00	0.00	0.00
✓ BINNEY/FULKE (F)	5.41	6.05	0.00	0.00	0.00
✓ FIFTH/SPRING (F)	2.66	1.91	0.00	0.00	0.00
✓ LECHMERE'S (F)	0.83	1.53	0.00	0.00	0.00
✓ E40-SLOANLOT (G)	1.66	2.00	0.00	0.00	0.00
✓ LECHMERE'S (F)	2.91	2.73	0.00	0.00	0.00
✓ FIFTH/SPRING (F)	1.58	1.43	0.00	0.00	0.00
✓ BINNEY/FULKE (F)	1.75	2.11	0.00	0.00	0.00
✓ ALBANY/CROSS (E)	2.91	4.66	0.00	0.00	0.00
✓ TECH COOP (G)	1.58	2.90	0.00	0.00	0.00
✓ NEWTOWNE CRT (D)	3.00	1.90	0.00	0.00	0.00
✓ SENNOTT PARK (D)	2.91	2.50	0.00	0.00	0.00
✓ CAMB YWCA (B)	1.91	2.80	0.00	0.00	0.00
✓ LOPEZ/PEARL (E)	3.41	2.01	0.00	0.00	0.00
✓ FUZZ STATION (C)	2.50	2.53	0.00	0.00	0.00
✓ ST. MARY'S (D)	2.66	2.50	0.00	0.00	0.00
✓ LINGFELLOW SCH (B)	1.83	2.25	0.00	0.00	0.00
✓ BELLERY/HAVRD (B)	0.50	1.36	0.00	0.00	0.00
✓ ATHENS/GRANT (C)	6.00	3.63	0.00	0.00	0.00
✓ LOWELL HOUSE (A)	6.58	6.11	0.00	0.00	0.00
✓ BRATL CINEMA (A)	4.58	3.25	0.00	0.00	0.00
✓ MEMORIAL HLL (A)	4.91	3.35	0.00	0.00	0.00
✓ H G HOSPITAL (D)	1.08	1.50	0.00	0.00	0.00
✓ CAMB LIBRARY (B)	1.33	1.28	0.00	0.00	0.00
✓ PUTNAM/GREEN (C)	3.66	4.75	0.00	0.00	0.00
	1.66	1.26	0.00	0.00	0.00

✓ DUNSTER HSE (C)	4.16	4.21	0.00	0.00	0.00
✓ BALNDR/MAGRE (C)	2.66	2.65	0.00	0.00	0.00
✓ KENWD/ALSTON (E)	1.58	1.76	0.00	0.00	0.00
✓ STOP & SHOP (E)	2.86	3.08	0.00	0.00	0.00
✓ WESTGATE (D)	4.41	3.35	0.00	0.00	0.00
✓ BELL COURT (E)	2.58	1.86	0.00	0.00	0.00
✓ VALTNE/PEARL (E)	5.41	3.31	0.00	0.00	0.00
✓ FUZZ STATION (C)	2.41	2.30	0.00	0.00	0.00
✓ CITY HALL (B)	4.25	4.60	0.00	0.00	0.00
✓ SIMEONE'S (E)	2.00	2.00	0.00	0.00	0.00
✓ MAIN/WINDSCR (D)	0.83	1.11	0.00	0.00	0.00
✓ HAHVAD/CLARK (D)	1.83	2.00	0.00	0.00	0.00
✓ TECH SQUARE (D)	3.08	3.91	0.00	0.00	0.00
✓ BENT & SIXTH (F)	3.16	3.01	0.00	0.00	0.00
✓ LECHMERE MTA (F)	2.83	2.61	0.00	0.00	0.00
✓ NASA BLDG (G)	1.41	1.36	0.00	0.00	0.00
✓ KENDALL SQ (G)	1.58	0.80	0.00	0.00	0.00
✓ SAILING PAV (G)	2.00	2.78	0.00	0.00	0.00
✓ VASSAR/MASS (G)					

DATA SHEET 1.10.3.1

Date 9/24/70 Driver Pete S. Wachs, Fair & Cl

Stop (Zone)	Time	Miles	Δ Time
urton Let (B)	3:15:00	380.8	0:00
rd & Warley (A)	3:18:20	382.5	3:20
roadway & Lee (B)	3:27:45	383.9	9:25
acific & Landsdowne (D)	3:34:25	385.35	6:40
estern & Howard (C)	3:40:25	386.3	6:00
erward Sq. (A)	3:44:50	387.15	4:25
estern & Dodge (C)	3:49:00	388.1	4:10
erward & Pine (D)			
lennan & Pearl (E)			
op & Shep (E)			
erward Sq. (A)			
rn & Sackel (B)			
chase Sales (F)			
n & Potter (F)			
ms Playground (C)			
lice Sta. Central Sq. (C)			
2 (G)			
ros Chen (G)	2:05:45	369.0	0:00
ly & Brookline (E)	2:08:00	370.0	2:15
& Spring (F)	2:15:50	371.7	7:50
dge Tech (B)	2:23:05	373.35	7:15
(G)	2:30:40	375.15	7:35
v. rd Trust Centrl Sq. (B)	2:36:15	376.1	5:35
aburn & Klyoko (A)	2:47:50	377.2	11:45
son (A)	2:57:15	377.7	9:25
way & Columbia (D)	3:04:15	379.3	8:00
land & Main (B)	3:06:15	379.8	2:00
rd Let (C)	3:09:50	380.5	3:35

Stop (Zone)	Time	Miles	Δ Time
ton Lot (G)	2:13:00		0:00
& Hurley (F)	2:18:40		5:40
edney & Lee (E)	2:27:40		9:00
iffic & Landscapes (E)	2:34:40	53.10	7:00
tern & Harvard (G)	2:37:20	54.05	2:40
vard Sq. (A)	2:48:15	54.95	10:55
tern & Dodge (C)	2:58:30	55.95	10:15
yard & Pine (D)	3:04:45	57.25	6:15
erson & Pearl (E)	3:09:45	58.30	5:00
p & Shop (E)	3:12:15	58.95	2:30
vard Sq. (A)	3:27:20	60.45	15:05
rn & Sackel (D)	3:29:00	62.15	1:40
bers Sales (F)	3:33:20	63.65	4:20
& Dotter (F)	3:39:00	64.75	5:40
ns Playground (C)	3:50:25	67.05	11:25
ice Sta. Central Sq. (C)	3:55:40	68.10	5:15
(G)	4:02:05	68.90	6:25
ea Onan (G)	4:03:55	69.50	1:50
ly & Brookline (E)			
& Sociog (F)			
dge Tech (B)			
(G)			
vard front Centrl Sq. (B)			
Auburn & Klyoke (A)			
son (A)			
duay & Columbia (D)			
lland & Main (D)			
ton Lot (G)			

Stop (Zone)	Time	Miles	Δ Time
Winton Lot (G)	3:48:45	441.45	3:05
rd & Hurley (F)	3:45:40	440.1	7:00
roadway & Leo (E)	3:38:40	438.5	7:45
acific & Sandstone (E)	3:30:55	437.1	5:40
estern & Howard (G)	3:25:15	435.8	6:50
Harvard Sq. (A)	3:18:25	433.9	4:20
estern & Dodge (G)	3:14:05	432.8	5:50
Harvard & Pine (D)	3:08:15	431.8	4:55
ofarnan & Pearl (E)	3:03:20	430.4	1:55
ton & Shop (E)	3:01:25	430.2	6:45
Harvard Sq. (A)	2:54:40	428.7	11:00
ro & Sackel (D)	2:43:20	426.9	5:40
schmers Salzs (F)	2:37:40	425.7	2:05
th & Potter (F)	2:35:35	425.0	13:05
ans Playground (G)	2:22:30	422.1	3:10
olice Sta. Central Sq. (G)	2:19:20	421.3	4:10
IT (G)	2:15:10	420.5	3:10
oyce Chen (G)	2:12:00	419.9	0:00
illy & Brookline (E)			
en & Spring (F)			
idge Tech (B)			
IT (G)			
Harvard Trust Centrl Sq. (E)			
. Auburn & Wlyoke (A)			
. nson (A)			
adway & Columbia (D)			
lland & Rein (D)			
rtgn Lot (E)			

Stop (Zone)	Time	Miles	Δ Time
Lot (G)	2:46:10	23.15	0:00
Harley (F)	2:42:00	20.45	4:10
Way & Lee (B)	2:34:25	19.80	7:35
ic & Landscaping (F)	2:29:35	18.60	4:50
rd & Howard (G)	2:22:50	17.05	5:15
ed Sq. (A)	2:15:20	15.10	7:30
rn & Judge (G)	2:12:35	13.90	2:45
ed & Pine (B)			
on & Pearl (B)			
Shop (B)			
ed Sq. (A)			
rn & Sackel (D)			
ore Sales (F)			
etter (F)			
Playground (C)			
Sta. Central Sq. (G)			
B)			
Onen (G)	3:38:50	36.00	4:00
& Brookline (E)	3:34:50	34.55	8:35
Soeing (F)	3:26:15	32.70	6:00
Tech (B)	3:20:15	30.95	7:50
B)	3:12:25	28.85	3:55
ed Trust Centrl Sq. (B)	3:08:30	28.10	4:45
uburn & W. Lyoko (A)	3:03:45	27.20	2:40
erson (A)	3:01:05	26.50	7:45
ay & Columbia (D)	2:53:20	24.85	1:30
nd & Main (D)	2:51:50	24.30	5:40
Lot (G)	2:46:10 197	23.15	4:10

Stop	Time	Mileage	Δ time
Wadsworth & Amherst	2:21:30	654.3	0:00
1st & Spring	2:24:25	655.3	2:55
5th & Spring	2:26:00	655.6	1:35
Binzey & Bulkeron	2:27:45	656.0	1:45
Albany & Cross	2:30:40	656.8	2:55
Stud Center	2:32:15	657.2	1:35
Windsor & School	2:35:15	657.6	3:00
Broadway & Norfolk	2:38:10	658.05	2:55
YMCA	2:40:05	658.5	1:55
Pearl & Lopez	2:43:30	659.0	3:25
Police Sta.	2:46:00	659.55	2:30
Harvard & Norfolk	2:48:40	660.05	2:40
Longfellow School	2:50:30	660.5	1:50
Harvard &allery	2:51:00	661.0	0:30
Athens & Grant	2:57:00	661.5	6:00
Lowell House	3:03:35	662.35	6:35
Brattle & Church	3:08:10	662.9	4:35
Memorial Hall	3:13:05	663.6	4:55
Cambridge & Hovey	3:14:10	664.0	1:05
Broadway & Trowbridge	3:15:30	664.4	1:20
Green & Putnam	3:19:10	665.4	3:40
Plympton & Memorial	3:20:50	665.8	1:40
Callender & MaGee	3:25:00	666.6	4:10
Allston & Kenwood	3:27:40	667.2	2:40
Stop & Shop	3:29:15	667.8	1:35
Westgate	3:32:20	668.65	3:05
Allston & Grove	3:36:45	669.7	4:25
Valentine & Pearl	3:39:20	670.1	2:35
Police Sta.	3:44:45	671.1	5:25
City Hall	3:47:10	671.5	2:25
Brookline & Green	3:51:25	672.35	4:15
Main & Windsor	3:53:25	672.6	2:00
Clark & Harvard	3:54:15	672.95	0:50
Tech Sq. Polaroid	3:56:05	673.25	1:50
Bent & 6th	3:59:10	674.25	3:05
Lechmere MBTA!	4:02:20	674.9	3:10
NASA (DoT)	4:05:10	675.9	2:50
Main & Wadsworth	4:06:35	676.3	1:25
Yacht club	4:08:10	676.55	1:35
Vassar & Mass. Ave.	4:10:10	677.2	2:00

1.10 Data Sheet Date 10/6/70 Driver Rich R. Weather Fair & Clear

Stop	Time	Mileage	Δ time
Wadsworth & Amherst	3:50:10	22.00	0:00
1st & Spring	3:48:10	21.10	2:00
5th & Spring	3:46:40	20.80	1:30
Binney & Fulkerson	3:44:45	20.35	1:55
Albany & Cross	3:38:40	19.25	3:05
stud center	3:36:45	19.05	1:55
Windsor & School	3:33:10	18.45	3:35
Broadway & Norfolk	3:31:45	18.00	1:25
YWCA	3:28:00	17.70	3:45
Pearl & Lopez	3:23:10	16.85	4:50
Police Sta.	3:21:45	16.50	1:25
Harvard & Norfolk	3:18:50	16.00	2:55
Longfellow School	3:17:45	15.60	1:05
Harvard & Ellery	3:15:30	15.20	2:15
Athens & Grant	3:13:35	14.75	1:55
Lowell House	3:12:00	14.50	1:35
Brattle & Church	3:09:00	14.05	3:00
Memorial Hall	3:05:20	13.45	3:40
Cambridge & Hovey	3:03:20	13.10	2:00
Broadway & Trowbridge	3:02:00	12.75	1:20
Green & Putnam	2:58:20	12.05	3:40
Plympton & Memorial	2:56:25	11.65	1:55
Callender & MaGee	2:53:10	10.85	3:15
Allston & Kenwood	2:50:00	10.05	3:10
Stop & Shop	2:48:10	9.55	1:50
Westgate	2:45:35	8.65	2:35
Allston & Grove	-----	-----	5:20
Valentine & Pearl	2:40:15	7.35	1:35
Police Sta.	2:38:40	6.95	2:05
City Hall	2:36:35	6.55	2:10
Brookline & Green	2:34:25	6.00	2:40
Main & Windsor	2:31:45	5.60	4:30
Clark & Harvard	2:25:10	4.50	2:10
Tech Sq. Polaroid	2:22:50	3.80	1:30
Bent & 6th	2:19:40	3.10	3:05
Lechmere MBTA!	2:17:00	2.35	2:40
NASA (DoT)	2:13:05	1.15	3:55
Main & wadsworth	2:12:25	1.00	0:40
Yacht club	2:11:40	0.75	0:45
Vassar & Mass. Ave.	2:08:45	99.95	2:55

Stop	Time	Mileage	Δ time
Wadsworth & Amherst	3:17:40	625.4	0:00
1st & Spring	3:16:00	624.3	1:40
5th & Spring	3:15:10	624.1	0:50
Binney & Bulmeron	3:17:50	623.45	2:40
Albany & Cross	3:07:05	622.1	5:25
Stud Center	3:04:50	621.9	2:15
Windsor & School	3:02:00	621.5	2:50
Broadway & Norfolk	3:01:10	621.1	0:50
YWCA	2:57:20	620.4	3:50
Pearl & Lopez	2:53:50	619.75	3:30
Police Sta.	2:106/2471	619.4/618.8	2:50
Harvard & Norfolk	2:43:30	618.3	4:10
Longfellow School	2:41:10	617.9	2:20
Harvard &allery	2:39:50	617.5	1:20
Athens & Grant	2:36:40	617.1	3:10
Lowell House	2:34:10	616.8	2:30
Brattle & Church	2:28:40	616.2	5:30
Memorial Hall	2:26:10	615.65	2:30
Cambridge & Hovey	2:25:25	615.3	0:45
Broadway & Trowbridge	2:24:00	614.95	1:25
Green & Putnam	2:20:35	614.3	3:25
Plympton & Memorial	2:18:30	613.85	2:05
Callender & MaGee	2:15:35	613.1	2:55
Allston & Kenwood	2:12:45	612.4	2:50
Stop & Shop	21030/402306	611.8/636.1	2:15
Westgate	4:00:00	635.25	2:30
Allston & Grove	3:55:10	634.0	4:50
Valentine & Pearl	3:54:45	633.6	0:25
Police Sta.	3:51:40	633.2	3:05
City Hall	3:49:50	632.7	1:50
Brookline & Green	3:47:00	632.25	2:50
Main & Windsor	3:43:45	631.3	3:15
Clark & Harvard	3:41:20	630.9	2:25
Tech Sq. Polaroid	3:39:15	630.25	2:05
Bent & 6th	3:36:40	629.5	2:35
Lechmere MBTA!	3:32:40	628.7	4:00
NASA (DoT)	3:28:15	627.5	4:25
Main & Wadsworth	3:27:50	627.4	0:25
Yacht club	3:27:10	627.2	0:40
Vassar & Mass. Ave.	3:25:00	626.45	2:10

1.10 Data Sheet Date 10/8/70 Driver Rich R. Weather Fair

Stop	Time	Mileage	Δ time
Wadsworth & Amherst	2:57:30	37.70	0:00
1st & Spring	3:00:15	38.55	2:45
5th & Spring	3:01:40	38.60	1:25
Binney & Callerson	3:05:05	39.50	2:05
Albany & Cross	3:08:25	40.25	4:40
Stud Center	3:11:20	40.65	2:55
Windsor & School	3:13:15	41.05	1:55
Broadway & Norfolk	3:15:45	41.55	2:30
YWCA	3:25:05	43.45	2:50
Pearl & Lopez	3:27:05	44.05	2:00
Police Sta.	3:29:35	44.55	2:30
Harvard & Norfolk	3:32:05	45.05	2:30
Longfellow School	3:34:20	45.70	2:15
Harvard & Gallery	3:35:45	46.10	1:20
Athens & Grant	3:39:20	46.70	3:40
Lowell House	3:45:30	47.55	6:10
Brattle & Church	3:48:45	48.05	3:15
Memorial Hall	3:52:05	48.80	3:20
Cambridge & Hovey	3:53:35	49.15	1:30
Broadway & Trowbridge	3:54:50	49.60	1:15
Green & Putnam	3:59:35	50.65	4:45
Plympton & Memorial	4:00:52	51.05	1:15
Callender & MaGee	4:05:35	51.95	4:15
Allston & Kenwood	4:08:15	52.55	2:40
Stop & Shop	2:17:10	27.55	1:45
Westgate	2:20:00	28.45	2:50
Allston & Grove	2:23:25	28.45	3:20
Valentine & Pearl	2:25:15	28.95	1:50
Police Sta.	2:28:35	29.65	3:20
City Hall	2:30:50	31.10	2:20
Brookline & Green	2:35:30	31.90	4:40
Main & Windsor	2:37:30	32.30	2:00
Clark & Harvard	2:38:35	32.55	1:05
Tech Sq. Polaroid	2:40:35	32.90	2:00
Bent & 6th	2:44:30	33.90	3:55
Lechmere MBTA!	2:47:30	34.65	3:00
NASA (DOT)	2:50:10	35.70	2:40
Main & Wadsworth	2:51:30	36.05	1:20
Yacht club	2:52:20	36.30	0:50
Vassar & Mass. Ave.	2:55:05	36.95	2:45

Times recorded in road vehicle along route

Weather sunny and clear for all runs except cloudy for # 5

	1	2	3	4	5	6	7	8	9	10
Dendall Sq	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
I T	02:17	03:00	02:20	02:45	02:14	02:24	01:35	02:23	02:49	02:53
ain/Windsor	04:08	03:57	04:05	04:25	03:34	03:16	04:21	03:32	04:22	04:49
ain/Mass	04:57	05:00	04:45	05:10	05:34	04:02	05:38	04:09	05:11	05:30
entral Sq	07:11	06:46	08:35	07:25	08:03	07:06	08:04	05:38	08:25	07:48
reen/Bay	08:30	08:32	09:50	08:50	09:07	08:43	09:39	07:10	10:09	09:23
arvard Coop	13:58	17:00	19:10	19:50	15:52	15:30	16:38	14:13	16:58	18:07
olycke Ctr	18:16	21:25	29:15	24:15	20:12	19:08	23:31	19:26	22:11	21:45
033 Mass Ave	21:18	23:26	32:35	26:00	22:18	21:37	25:16	21:25	24:55	23:41
nman Sq	24:13	27:15	37:35	29:40	25:50	26:23	29:22	24:08	30:31	27:04
arney St	27:34	30:37	40:55	32:55	30:00	31:15	31:49	-----	33:44	31:01
hr/Bristol	31:06	33:00	43:40	35:50	33:10	34:01	33:57	-----	36:27	34:05
hird/Spring	35:37	37:10	47:40	43:05	39:15	37:26	38:12	-----	40:46	38:07
A S A	37:12	38:30	49:30	44:55	40:47	39:25	40:31	-----	42:22	40:06
ech Sq	38:37	39:35	51:10	46:00	42:13	40:47	42:02	-----	42:22 [#]	41:33
Dendall Sq	41:17	41:29	52:45	47:45	44:35	42:41	43:27	-----	43:49	43:10

#-Neglected to start watch after N A S A stop



URBAN SYSTEMS LABORATORY
OFFICE OF THE DIRECTOR

CAMBRIDGE, MASSACHUSETTS 02139
BUILDING E-40

22 July 1971

Mr. Juan Bellantoni
Transportation Systems Center
Department of Transportation
55 Broadway
Cambridge, Massachusetts 02142

Dear Mr. Bellantoni:

Forwarded for your information are the following documents:

1. CARS Memo AL-40, Subject: Reassignment, dated November 5, 1969, by Mr. H. Weinblatt.
2. Mr. J. D. Kennedy's Master of Science Thesis Entitled, "Utility Maximization Algorithms for Dynamic Routing".

The above two references should provide you with the information you desired in regard to the reassignment feature of our Dial-A-Ride computer programs.

The information on reassignment is also summarized in Section 5.2.5 of our report, USL-TR-70-13, "Scheduling Algorithms for A Dial-A-Ride System", dated March, 1971. Said document is part of our final report documentation on Project CARS.

Should you have any additional questions, please contact me.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Edwin H. Porter, Jr.", written in dark ink.

Edwin H. Porter, Jr.
Manager, Project CARS

EhP/rf
Enclosures
cc: C. Broxmeyer/UMTA
D. Roos
N. Wilson
M. Solomita



URBAN SYSTEMS LABORATORY
OFFICE OF THE DIRECTOR

CAMBRIDGE, MASSACHUSETTS 02139
BUILDING E-40

22 July 1971

Mr. Juan Bellantoni
Transportation Systems Center
Department of Transportation
55 Broadway
Cambridge, Massachusetts 02142

Dear Mr. Bellantoni:

For your information, the following is a brief description of the priority class feature of DAR and how it operates.

Different qualities of service can be offered (presumably at different fares) to users simultaneously on the DAR system. The algorithmic mechanism for this is through the setting of constraints and through the selection criterion. The selection criterion weights the delay experienced by a passenger by his priority class so that better service will be offered to a passenger if he requests a higher class of service. This is done automatically by the computer program and no special input is necessary. The improved quality service for a certain priority class may also be supplemented by lowering the service constraints for the better class of service. In setting these service constraints, care must be taken not to make them so stringent as to render feasible assignments impossible. A full discussion of the impact of service constraints on service times is provided in the report, "Scheduling Algorithms for a Dial-A-Ride System", USL-TR-70-13, in Section 5.2.2. When using priority classes, it is appropriate to obtain optimal settings for the constraints by running simulations of the system beforehand. In the Acceptance Test, the constraints are set as a result of simulation tests to provide the desired service.

Should you have any additional questions, please contact me or Prof. Nigel Wilson.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Edwin H. Porter, Jr.", is written over a horizontal line.

Edwin H. Porter, Jr.
Manager, Project CARS

EHP/rf

cc: C. Broxmeyer/UMTA
D. Roos
M. Solomita
N. Wilson

DEPARTMENT OF CIVIL ENGINEERING
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASSACHUSETTS 02139

1-153

March 31, 1971

Juan F. Bellantoni
Chief, Analysis and Computation Branch
Transportation Systems Center
55 Broadway
Cambridge, Mass. 02142

Dear Mr. Bellantoni,

In response to your letter of March 19, I send you the following functional description of the ODAR graphics display.

The graphics display (ARDS) as present in the ODAR, serves three main functions:

1. Fast graphical display of any vehicle's commitments or activities to monitor system operation and verify correct operation of the computer programs.
2. Demonstrate aspects of current system operation to visitors - an educational aid.
3. Display of vehicle routes to be used in modification of the current algorithm.

It is important for the supervisor of the system operation to be able to monitor aspects of the current state such as vehicle routes; passenger origin-destination desire lines; vehicle positions. With this ability, the supervisor may detect at an early stage unexpected occurrences which may warrant corrective action. Using this aid, he could assist in handling queries of an unusual nature from either drivers or passengers.

During the past two years, MIT has found the graphic display capability most helpful in explaining the Dial-A-Ride concept and answering questions about its actual operation. In an implementation of the system, this capability would continue to be important for these reasons, particularly because of the high visibility desired for such a demonstration. A graphical display exposes the current and evolving system state, and focuses the visitor on important components of the service.

Finally, the display is invaluable in evaluating new algorithms or modifications to the existing algorithm. It is anticipated that new algorithms might be implemented in specific situations and the display would be used as an aid in the design process.

I hope that this will help clarify the aims of the graphics capability. If you have any questions, I'd be glad to go into this further.

Yours sincerely,



Nigel Wilson
Assistant Professor

NW:mln

cc: E. Porter
D. Roos
M. V. Solomita

O D-A-R ACCEPTANCE TEST

TEST DATA

SECTION I

This section contains reproductions of the teletype console sheets obtained during the tests of 27 May through 24 June, 1971.

1.2.2-1A

zero					
10 10 st					
50 50 st					
154200 CRS0000	ZERO	V	0001 P	0001 D	0006
arnie					
50 50 st					
100 50 st					
154225 CRS0000	ARNIE	V	0001 P	0004 D	0009
bob					
50 50 st					
100 50 st					
154243 CRS0000	BOB	V	0001 P	0004 D	0010
charlie					
50 50 st					
0 50 st					
154309 CRS0000	CHARLIE	V	0001 P	0010 D	0015

1.2.2-1B

arnie					
50 50 st					
0 50 st					
154550 CRS0000	ARNIE	V	0001 P	0004 D	0009
bob					
50 50 st					
100 50 st					
154605 CRS0000	BOB	V	0001 P	0010 D	0015
charlie					
50 50 st					
100 50 st					
154622 CRS0000	CHARLIE	V	0001 P	0010 D	0015

I.2.2-1A

LOCA000110 10 ST
154141 CRS0150 VEH0001 AT 10 10 ST
[CARS:
154200 CRS0105 VEH 0001 P ZERO 10 10 ST
[CARS:VEHI1
154215 CRS0110 VEH 0001 D ZERO 50 50 ST
[CARS:VEHI1
154323 CRS0105 VEH 0001 P ARNIE 50 50 ST
[CARS:VEHI1
154334 CRS0105 VEH 0001 P BOB 50 50 ST
[CARS:VEHI1
154344 CRS0110 VEH 0001 D ARNIE 100 50 ST
[CARS:VEHI1
154355 CRS0110 VEH 0001 D BOB 100 50 ST
[CARS:VEHI1
154405 CRS0105 VEH 0001 P CHARLIE 50 50 ST
[CARS:VEHI1
154417 CRS0110 VEH 0001 D CHARLIE 0 50 ST
[CARS:VEHI1
154430 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

I.2.2-1B

LOCA00010 0 ST
154529 CRS0150 VEH0001 AT 0 0 ST
[CARS:
154549 CRS0105 VEH 0001 P ARNIE 50 50 ST
[CARS:VEHI1
154630 CRS0110 VEH 0001 D ARNIE 0 50 ST
[CARS:VEHI1
154640 CRS0105 VEH 0001 P BOB 50 50 ST
[CARS:VEHI1
154651 CRS0105 VEH 0001 P CHARLIE 50 50 ST
[CARS:VEHI1
154701 CRS0110 VEH 0001 D BOB 100 50 ST
[CARS:VEHI1
154712 CRS0110 VEH 0001 D CHARLIE 100 50 ST
[CARS:VEHI1
154723 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

I.2.2-2B

160407	CRS0400	01	005	005							
160407	CRS0410	005	01		50	50	ST		0	50	ST
160407	CRS0400	01	005	005							
160427	CRS0410	006	01		50	50	ST		100	50	ST
160427	CRS0400	01	005	005	006	006					
160450	CRS0410	007	01		50	50	ST		100	50	ST
160450	CRS0400	01	005	005	006	007	007	006			
160500	CRS0400	01	005	006	007	007	006				
160511	CRS0400	01	006	007	007	006					
160521	CRS0400	01	007	007	006						
160532	CRS0400	01	007	006							
160544	CRS0400	01	006								

@arnie

0 0 st

100 0 st

154811 CRS0000 ARNIE V 0001 P 0001 D 0008

bob

0 0 st

0 60 st

154825 CRS0000 BOB V 0001 P 0002 D 0007

charlie

0 0 st

0 100 st

154857 CRS0000 CHARLIE V 0001 P 0002 D 0010

dan

0 0 st

0 90 st

154914 CRS0000 DAN V 0001 P 0003 D 0010

ed

0 0 st

0 80 st

154926 CRS0000 ED V 0001 P 0003 D 0010

frank

0 0 st

0 70 st

154940 CRS0000 FRANK V 0001 P 0003 D 0010

george

0 0 st

100 100 st

154956 CRS0000 GEORGE V 0001 P 0004 D 0019

1.2.2-2B

arnie							
0 0 st							
100 0 st							
155353 CRS0000	ARNIE	V	0002	P	0001	D	0008
bob							
0 0 st							
100 100 st							
155410 CRS0000	BOB	V	0001	P	0001	D	0010
charlie							
0 0 st							
0 100 st							
155425 CRS0000	CHARLIE	V	0001	P	0002	D	0009
dan							
0 0 st							
0 90 st							
155437 CRS0000	DAN	V	0001	P	0002	D	0009
3d@ed							
0 0 st							
0 80 st							
155453 CRS0000	ED	V	0001	P	0003	D	0009
frank							
0 0 st							
0 70 st							
155506 CRS0000	FRANK	V	0001	P	0003	D	0009
george							
0 0 st							
0 60 st							
155518 CRS0000	GEORGE	V	0001	P	0004	D	0009

1.2.2-2C

@arnie				
0 0 st				
100 0 st				
155854 CRS0000 ARNIE	V	0001 P	0001 D	0008
bob				
0 0 st				
100 100 st				
155908 CRS0000 BOB	V	0001 P	0002 D	0014
charlie				
0 0 st				
0 100 st				
155922 CRS0000 CHARLIE	V	0001 P	0002 D	0020
dan				
0 0 st				
0 90 st				
155938 CRS0000 DAN	V	0001 P	0003 D	0022
ed				
0 0 st				
0 80 st				
155951 CRS0000 ED	V	0001 P	0003 D	0023
frank				
0 0 st				
0 70 st				
160005 CRS0000 FRANK	V	0001 P	0004 D	0025
george				
0 0 st				
0 60 st				
160017 CRS0000 GEORGE	V	0001 P	0004 D	0026

I.2.2-2A

LOCA00010 0 ST
154753 CRS0150 VEH0001 AT 0 0 ST
[CARS:
154811 CRS0105 VEH 0001 P ARNIE 0 0 ST
[CARS:VEHI1
155000 CRS0105 VEH 0001 P BOB 0 0 ST
[CARS:VEHI1
155011 CRS0105 VEH 0001 P CHARLIE 0 0 ST
[CARS:VEHI1
155022 CRS0105 VEH 0001 P DAN 0 0 ST
[CARS:VEHI1
155034 CRS0105 VEH 0001 P ED 0 0 ST
[CARS:VEHI1
155045 CRS0105 VEH 0001 P FRANK 0 0 ST
[CARS:VEHI1
155057 CRS0105 VEH 0001 P GEORGE 0 0 ST
[CARS:VEHI1
155109 CRS0110 VEH 0001 D BOB 0 60 ST
[CARS:VEHI1
155123 CRS0110 VEH 0001 D FRANK 0 70 ST
[CARS:VEHI1
155136 CRS0110 VEH 0001 D ED 0 80 ST
[CARS:VEHI1
155149 CRS0110 VEH 0001 D DAN 0 90 ST
[CARS:VEHI1
155203 CRS0110 VEH 0001 D CHARLIE 0 100 ST
[CARS:VEHI1
155217 CRS0110 VEH 0001 D GEORGE 100 100 ST
[CARS:VEHI1
155230 CRS0110 VEH 0001 D ARNIE 100 0 ST
[CARS:VEHI1
155243 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

RST02 1.2.2-28

155320 CRS0240 ENTER VEHICLE LOCATION
 [CARS:0 0 ST

155330 CRS0246 VEHICLE 0002 RESTORED
 [CARS:LOCA00010 0 ST

155346 CRS0150 VEH0001 AT 0 0 ST
 [CARS:

155353 CRS0105 VEH 0002 P ARNIE 0 0 ST
 [CARS:VEHI1

155410 CRS0105 VEH 0001 P BOB 0 0 ST
 155524 CRS0105 VEH 0001 P CHARLIE 0 0 ST
 [CARS:VEHI1

155546 CRS0105 VEH 0001 P DAN 0 0 ST
 [CARS:VEHI1

155556 CRS0105 VEH 0001 P ED 0 0 ST
 [CARS:VR#EHI1

155610 CRS0105 VEH 0001 P FRANK 0 0 ST
 [CARS:VEHI1

155619 CRS0105 VEH 0001 P GEORGE 0 0 ST
 [CARS:VEHI1

155629 CRS0110 VEH 0001 D GEORGE 0 60 ST
 [CARS:VEHI1

155639 CRS0110 VEH 0001 D FRANK 0 70 ST
 [CARS:VEHI1

155649 CRS0110 VEH 0001 D ED 0 80 ST
 [CARS:VEHI1

155658 CRS0110 VEH 0001 D DAN 0 90 ST
 [CARS:VEHI1

155710 CRS0110 VEH 0001 D CHARLIE 0 100 ST
 [CARS:VEHI1

155722 CRS0110 VEH 0001 D BOB 100 100 ST
 [CARS:VEHI1

155733 CRS0115 VEH 0001 NOW UNASSIGNED
 [CARS:VEHI1#2

155744 CRS0110 VEH 0002 D ARNIE 100 0 ST
 [CARS:VEHI2

155754 CRS0115 VEH 0002 NOW UNASSIGNED
 [CARS:VEHI2

155802 CRS0125 2 NOT SCHEDULED
 [CARS:

1. 2. 2 - 2 C

HOLD2

155819 CRS0330 EXPECTED AT 0000 AT
[CARS:LOCA001 0 0 ST
155846 CRS0150 VEH0001 AT 0 0 ST
[CARS:
155854 CRS0105 VEH 0001 P ARNIE 0 0 ST
[CARS:VEHI1
160029 CRS0105 VEH 0001 P BOB 0 0 ST
[CARS:VEHI1
160040 CRS0105 VEH 0001 P CHARLIE 0 0 ST
[CARS:VEHI1
160050 CRS0105 VEH 0001 P DAN 0 0 ST
[CARS:VEHI1
160059 CRS0105 VEH 0001 P ED 0 0 ST
[CARS:VEHI1
160109 CRS0105 VEH 0001 P FRANK 0 0 ST
[CARS:VEHI1
160118 CRS0105 VEH 0001 P GEORGE 0 0 ST
[CARS:VEHI1
160128 CRS0110 VEH 0001 D ARNIE 100 0 ST
[CARS:VEHI1
160137 CRS0110 VEH 0001 D BOB 100 100 ST
[CARS:VEHI1
160148 CRS0110 VEH 0001 D CHARLIE 0 100 ST
[CARS:VEHI1
160157 CRS0110 VEH 0001 D DAN 0 90 ST
[CARS:VEHI1
160208 CRS0110 VEH 0001 D ED 0 80 ST
[CARS:VEI#HI1
160221 CRS0110 VEH 0001 D FRANK 0 70 ST
[CARS:VEHI1
160231 CRS0110 VEH 0001 D GEORGE 0 60 ST
[CARS:VEHI1
160242 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

1.2.2-3

arnie
0 0 st
0 0 st
153654 CRS0002 ZERO TRIP LENGTH - TRY NEW DESTINATION
quit

@quit

153725 CRS0003 REQUEST IGNORED ENTER NEW DEMAND

bob

0 0 st

0 100 st

153737 CRS0000 BOB V 0001 P 0001 D 0008

charlie

0 0 st

100 100 st

153751 CRS0000 CHARLIE V 0001 P 0002 D 0014

dan

0 0 st

0 100 st

153811 CRS0000 DAN V 0001 P 0002 D 0010

ed

0 0 st

0 100 st

153828 CRS0000 ED V 0001 P 0003 D 0011

frank

0 0 st

100 0 st

153845 CRS0000 FRANK V 0001 P 0003 D 0022

@george

0 0 st

0 0 st

153938 CRS0002 ZERO TRIP LENGTH - TRY NEW DESTINATION

quit

153947 CRS0003 REQUEST IGNORED ENTER NEW DEMAND

1.2.2-5

arnie							
0 10 st							
40 80 st							
161134 CRS0000	ARNIE	V	0001 P	0001 D	0008		
bob							
0 10 st							
60 80 st							
161153 CRS0000	BOB	V	0001 P	0001 D	0009		
charlie							
0 10 st							
70 80 st							
161211 CRS0000	CHARLIE	V	0001 P	0002 D	0011		
dan							
0 10 st							
70 10 st							
161225 CRS0000	DAN	V	0001 P	0003 D	0016		
ed							
0 10 st							
60 10 st							
161243 CRS0000	ED	V	0001 P	0003 D	0017		
frank							
0 10 st							
70 0 st							
161259 CRS0000	FRANK	V	0001 P	0004 D	0019		
george							
0 10 st							
70 90 st							
161315 CRS0000	GEORGE	V	0001 P	0004 D	0013		
henry							
0 10 st							
60 0 st							
161332 CRS0000	HENRY	V	0001 P	0005 D	0021		

I.2.2-5

LOCAO 0@LOCA001 0 0 ST
161113 CRS0150 VEH0001 AT 0 0 ST
[CARS:
161134 CRS0105 VEH 0001 P ARNIE 0 10 ST
[CARS:VEHI1
161344 CRS0105 VEH 0001 P BOB 0 10 ST
[CARS:VEHI1
161406 CRS0105 VEH 0001 P CHARLIE 0 10 ST
VEHI [CARS:VEHI1
161433 CRS0105 VEH 0001 P DAN 0 10 ST
[CARS:VEHI1
161445 CRS0105 VEH 0001 P ED 0 10 ST
[CARS:VEHI1
161501 CRS0105 VEH 0001 P FRANK 0 10 ST
[CARS:VEHI1
161513 CRS0105 VEH 0001 P GEORGE 0 10 ST
[CARS:VEHI1
161527 CRS0105 VEH 0001 P HENRY 0 10 ST
[CARS:VEHI1
161539 CRS0110 VEH 0001 D ARNIE 40 80 ST
[CARS:VEHI1
161555 CRS0110 VEH 0001 D BOB 60 80 ST
[CARS:VEHI1
161607 CRS0110 VEH 0001 D GEORGE 70 90 ST
[CARS:VEHI1
161622 CRS0110 VEH 0001 D CHARLIE 70 80 ST
[CARS:VEHI1
161636 CRS0110 VEH 0001 D DAN 70 10 ST
[CARS:VEHI1
161649 CRS0110 VEH 0001 D ED 60 10 ST
[CARS:VEHI1
161701 CRS0110 VEH 0001 D HENRY 60 0 ST
[CARS:VEHI1
161713 CRS0110 VEH 0001 D FRANK 70 0 ST
[CARS:VEHI1
161728 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

1.2.2-6

arnie							
50 50 st							
100 100 st							
162923 CRS0000	ARNIE	V	0002	P	0001	D	0007
bob							
50 50 st							
100 90 st							
162942 CRS0000	BOB	V	0002	P	0002	D	0007
charlie							
50 50 st							
10 0 st							
163000 CRS0000	CHARLIE	V	0001	P	0001	D	0006
dan							
50 50 st							
50 0 st							
163018 CRS0000	DAN	V	0001	P	0002	D	0006
ed							
50 50 st							
50 100 st							
163037 CRS0000	ED	V	0002	P	0002	D	0007
frank							
50 50 st							
10 10 st							
163052 CRS0000	FRANK	V	0001	P	0002	D	0011
george							
50 50 st							
0 0 st							
163108 CRS0000	GEORGE	V	0001	P	0003	D	0011
hank							
50 50 st							
90 100 st							
163124 CRS0000	HANK	V	0002	P	0003	D	0010

I.2.2-6 Continued

arnie

50 50 st

100 100 st

163737 CRS0000 ARNIE

V 0001 P 0002 D 0008

bob

50 50 st

100 90 st

163755 CRS0000 BOB

V 0001 P 0003 D 0008

charlie

50 50 st

10 0 st

163820 CRS0000 CHARLIE

V 0002 P 0003 D 0009

dan

50 50 st

50 0 st

163837 CRS0000 DAN

V 0002 P 0003 D 0008

ed

50 50 st

50 100 st

163911 CRS0000 ED

V 0001 P 0002 D 0007

frank

50 50 st

0 10 st

163925 CRS0000 FRANK

V 0002 P 0003 D 0012

george

50 50 st

0 0 st

163939 CRS0000 GEORGE

V 0002 P 0003 D 0012

hank

50 50 st

90 100 st

164007 CRS0000 HANK

V 0001 P 0003 D 0010

I 2.2-6

LOCA1 50 50 ST
162826 CRS0150 VEH0001 AT 50 50 ST
[CARS:LOCA2 50 50 ST
162911 CRS0150 VEH0002 AT 50 50 ST
[CARS:
162923 CRS0105 VEH 0002 P ARNIE 50 50 ST
[CARS:
163000 CRS0105 VEH 0001 P CHARLIE 50 50 ST
[CARS:VEHI1
163134 CRS0105 VEH 0001 P DAN 50 50 ST
[CARS:VEHI1
163145 CRS0105 VEH 0001 P FRANK 50 50 ST
[CARS:VEHI1
163157 CRS0105 VEH 0001 P GEORGE 50 50 ST
[CARS:VEHI1
163210 CRS0110 VEH 0001 D DAN 50 0 ST
[CARS:VEHI1
163227 CRS0110 VEH 0001 D CHARLIE 10 0 ST
[CARS:VEHI1
163243 CRS0110 VEH 0001 D GEORGE 0 0 ST
[CARS:VEHI1
163258 CRS0110 VEH 0001 D FRANK 0 10 ST
[CARS:VEHI1
163312 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:VEHI2
163324 CRS0105 VEH 0002 P BOB 50 50 ST
[CARS:VEHI2
163337 CRS0105 VEH 0002 P ED 50 50 ST
[CARS:VEHI2
163350 CRS0105 VEH 0002 P HANK 50 50 ST
[CARS:VEHI2
163405 CRS0110 VEH 0002 D ED 50 100 ST
[CARS:VEHI2S#
163425 CRS0110 VEH 0002 D HANK 90 100 ST
[CARS:VEHI2
163439 CRS0110 VEH 0002 D BOB 100 90 ST
[CARS:VEHI2
163453 CRS0110 VEH 0002 D ARNIE 100 100 ST
[CARS:VEHI2
163508 CRS0115 VEH 0002 NOW UNASSIGNED
[CARS:

1-2-6

LOCAL 70 80 ST
163552 CRS0150 VEH0001 AT 0 80 ST
[CARS:LOCA001 70 80 ST
163612 CRS0150 VEH0001 AT 70 80 ST
[CARS:LOCA002 90 80 ST
163650 CRS0120 002 INVALID
[CARS:LOCA002 90 80 ST
163729 CRS0150 VEH0002 AT 90 80 ST
[CARS:
163737 CRS0105 VEH 0001 P ARNIE 50 50 ST
[CARS:
163820 CRS0105 VEH 0002 P CHARLIE 50 50 ST
[CARS:VEH1
164018 CRS0105 VEH 0001 P BOB 50 50 ST
[CARS:VEH1
164029 CRS0105 VEH 0001 P ED 50 50 ST
[CARS:VEH1
164042 CRS0105 VEH 0001 P HANK 50 50 ST
[CARS:VEH1
164055 CRS0110 VEH 0001 D ED 50 100 ST
[CARS:VEH1
164122 CRS0110 VEH 0001 D HANK 90 100 ST
[CARS:VEH1
164140 CRS0110 VEH 0001 D BOB 100 90 ST
[CARS:VEH1
164154 CRS0110 VEH 0001 D ARNIE 100 100 ST
[CARS:VEH1
164206 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:VEH2
164215 CRS0105 VEH 0002 P DAN 50 50 ST
[CARS:VEH2
164226 CRS0105 VEH 0002 P FRANK 50 50 ST
[CARS:VEH2
164241 CRS0105 VEH 0002 P GEORGE 50 50 ST
[CARS:VEH2
164252 CRS0110 VEH 0002 D DAN 50 0 ST
[CARS:VEH2
164303 CRS0110 VEH 0002 D CHARLIE 10 0 ST
[CARS:VEH2
164315 CRS0110 VEH 0002 D GEORGE 0 0 ST
[CARS:VEH2
164327 CRS0110 VEH 0002 D FRANK 0 10 ST
[CARS:VEH2
164342 CRS0115 VEH 0002 NOW UNASSIGNED
[CARS:

1.2.2 ->

pass					
arnie					
50 50 st					
100 100 st					
095425 CRS0000 ARNIE	V	0004	P	0001	D 0007
bob					
50 50 st					
100 0 st					
095438 CRS0000 BOB	V	0003	P	0001	D 0007
charlie					
50 50 st					
0 0 st					
095454 CRS0000 CHARLIE	V	0002	P	0001	D 0007
dan					
50 50 st					
100 10 st					
095508 CRS0000 DAN	V	0003	P	0002	D 0007
ed					
50 50 st					
0 100 st					
095522 CRS0000 ED	V	0001	P	0001	D 0007
frank					
50 50 st					
30 70 st					
095535 CRS0000 FRANK	V	0001	P	0002	D 0005
george					
50 50 st					
0 10 st					
095549 CRS0000 GEORGE	V	0002	P	0002	D 0007
hank					
50 50 st					
90 100 st					
095610 CRS0000 HANK	V	0004	P	0002	D 0007
ira					
50 50 st					
0 30 st					
095624 CRS0000 IRA	V	0002	P	0002	D 0007
joe					
50 50 st					
0@90 0 st					
095638 CRS0000 JOE	V	0003	P	0002	D 0010

1.2.2-8

@arnie

0 50 st

50 50 st

164529 CRS0000 ARNIE

V 0001 P 0003 D 0008

bob

100 50 st

50 50 st

164548 CRS0000 BOB

V 0001 P 0009 D 0014

HOLD 2

164433 CRS0330 EXPECTED AT 0000 AT

[CARS:LOCA001 0 0 ST

164513 CRS0150 VEH0001 AT 0 0 ST

[CARS:

164529 CRS0105 VEH 0001 P ARNIE

0 50 ST

[CARS:VEHI1

164704 CRS0110 VEH 0001 D ARNIE

50 50 ST

[CARS:VEHI1

164717 CRS0105 VEH 0001 P BOB

100 50 ST

[CARS:VEHI1

164731 CRS0110 VEH 0001 D BOB

50 50 ST

[CARS:VEHI1

164747 CRS0115 VEH 0001 NOW UNASSIGNED

[CARS:

VEHI2

164757 CRS0125 2 NOT SCHEDULED

[CARS:

[[[[[[[[[[[[[[[[[CARS:VEHI[CARS:
[CARS:

1.2.2-9

[[[[[[[[[[[[[[[[[CARS:VEHI[CARS:
[CARS:HOLD2
085013 CRS0330 EXPECTED AT 0000 AT
[CARS:
085101 CRS0105 VEH 0001 P ARNIE 0 50 ST
[CARS:VEHI1
085150 CRS0105 VEH 0001 P CHARLIE 20 50 ST
[CARS:VEHI1
085205 CRS0110 VEH 0001 D ARNIE 50 50 ST
[CARS:VEHI1
085214 CRS0110 VEH 0001 D CHARLIE 50 50 ST
[CARS:VEHI1
085224 CRS0105 VEH 0001 P BOB 100 50 ST
[CARS:VEHI1
085233 CRS0105 VEH 0001 P DAN 80 50 ST
[CARS:VEHI1
085242 CRS0110 VEH 0001 D BOB 50 50 ST
[CARS:VEHI1
085252 CRS0110 VEH 0001 D DAN 50 50 ST
[CARS:VEHI1
085301 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

11 2.2 -11

A

dummy
0 0 st
20 0 st
085351 CRS0000 DUMMY V 0001 P 0001 D 0004
arnie
40 0 st
20 0 st
085414 CRS0000 ARNIE V 0001 P 0003 D 0007
bob
20 03@20 30 st
20 0 st
085429 CRS0000 BOB V 0001 P 0007 D 0011

B

dummy
0@20 0 st
quit
085522 CRS0003 REQUEST IGNORED ENTER NEW DEMAND
dummy
0 0 st
20 0 st
085550 CRS0000 DUMMY V 0001 P 0001 D 0005
arnie
40 0 st
20 0 st
085613 CRS0000 ARNIE V 0001 P 0003 D 0007
bob
30 30 st
20 0 st
085629 CRS0000 BOB V 0001 P 0007 D 0011

C

dummt#y
0 0 st
20 0 st
085730 CRS0000 DUMMY V 0001 P 0001 D 0005
arnie
40 0 st
20 0 st
085753 CRS0000 ARNIE V 0001 P 0004 D 0008
bob
40 30 st
20 0 st
085842 CRS0000 BOB V 0001 P 0007 D 0011

dummy
 0 0 st
 20 0 st
 085948 CRS0000 DUMMY V 0001 P 0001 D 0005
 arnie
 40 0 st
 20 0 st
 090013 CRS0000 ARNIE V 0001 P 0003 D 0007
 bob
 40 30 st
 20 0 st
 090025 CRS0000 BOB V 0001 P 0007 D 0011

1.2.2-11

dummy
 0 0 st
 20 0 st
 090137 CRS0000 DUMMY V 0001 P 0001 D 0005
 arnie
 40 0 st
 20 0 st
 090154 CRS0000 ARNIE V 0001 P 0003 D 0007
 bob
 50 30 st
 20 0 st
 090210 CRS0000 BOB V 0001 P 0007 D 0012

dummy
 0 0 st
 20 0 st
 090312 CRS0000 DUMMY V 0001 P 0001 D 0005
 arnie
 40 0 st
 20 0 st
 090338 CRS0000 ARNIE V 0001 P 0003 D 0007
 bob
 60 30 st
 20 0 st
 090351 CRS0000 BOB V 0001 P 0008 D 0013

dummy
 0 0 st
 20 0 st
 090456 CRS0000 DUMMY V 0001 P 0001 D 0005
 F arnie
 40 0 st
 20 0 st
 090522 CRS0000 ARNIE V 0001 P 0003 D 0007
 bob
 70 30 st
 20 0 st
 090534 CRS0000 BOB V 0001 P 0008 D 0013

dummy
 0 0 st
 20 0 st
 090630 CRS0000 DUMMY V 0001 P 0001 D 0005
 G arnie
 40 0 st
 20 0 st
 090641 CRS0000 ARNIE V 0001 P 0003 D 0007
 bob
 80 30 st
 20 0 st
 090657 CRS0000 BOB V 0001 P 0008 D 0014

1.2.2-1)

dummy
 0 0 st
 20 0 st
 090750 CRS0000 DUMMY V 0001 P 0001 D 0005
 vehil@arnie
 40 0 st
 20 0 st
 090807 CRS0000 ARNIE V 0001 P 0003 D 0007
 h bob
 40 20 st
 20 0 st
 090818 CRS0000 BOB V 0001 P 0005 D 0008

dummy
0 0 st
20 0 st
090911 CRS0000 DUMMY
arnie
40 0 st
20 0 st
I 090924 CRS0000 ARNIE
bob
70 20 st
20 0 st
090937 CRS0000 BOB

V 0001 P 0001 D 0005
V 0001 P 0003 D 0007
V 0001 P 0008 D 0013

dummy
0 0 st
20 0 st
J 091031 CRS0000 DUMMY
arnie
40 0 st
20 0 st
091047 CRS0000 ARNIE
bob
10 10 st
20 0 st
091059 CRS0000 BOB

V 0001 P 0001 D 0005
V 0001 P 0003 D 0007
V 0001 P 0003 D 0006

pass

pass
dummy
0 0 st
20 0 st
101352 CRS0000 DUMMY
arnie
k 40 0 st
20 0 st
101419 CRS0000 ARNIE
bob
20 10 st
20 0 st
101436 CRS0000 BOB

V 0001 P 0001 D 0004
V 0001 P 0003 D 0007
V 0001 P 0002 D 0005

dummy
 0 0 st
 20 0 st
 101532 CRS0000 DUMMY V 0001 P 0001 D 0005
 L arnie
 40 0 st
 20 0 st
 101548 CRS0000 ARNIE V 0001 P 0003 D 0007
 bob
 70 10 st
 20 0 st
 101603 CRS0000 BOB V 0001 P 0008 D 0013

dummy
 0 0 st
 20 0 st
 101702 CRS0000 DUMMY V 0001 P 0001 D 0005
 M arnie
 40 0 st
 20 0 st
 101715 CRS0000 ARNIE V 0001 P 0003 D 0007
 bob
 80 10 st
 20 0 st
 101734 CRS0000 BOB V 0001 P 0008 D 0014

dummy
 0 0 st
 20 0 st
 101831 CRS0000 DUMMY V 0001 P 0001 D 0005
 n arnie
 40 0 st
 20 0 st
 101849 CRS0000 ARNIE V 0001 P 0003 D 0007
 bob
 n 90 10 st
 20 0 st
 101906 CRS0000 BOB V 0001 P 0009 D 0015

1.2.2-11
A

LOCA001 0 0 ST
085328 CRS0150 VEH0001 AT 0 0 ST
[CARS:
085351 CRS0105 VEH 0001 P DUMMY 0 0 ST
[CARS:VEHI1
085406 CRS0110 VEH 0001 D DUMMY 20 0 ST
[CARS:VEHI1
085438 CRS0105 VEH 0001 P ARNIE 40 0 ST
[CARS:VEHI1
085447 CRS0110 VEH 0001 D ARNIE 20 0 ST
[CARS:VEHI1
085458 CRS0105 VEH 0001 P BOB 20 30 ST
[CARS:VEHI1
085508 CRS0110 VEH 0001 D BOB 20 0 ST
[CARS:VEHI1
085521 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:LOC
085543 CRS0120 INVALID B
[CARS:
085550 CRS0105 VEH 0001 P DUMMY 0 0 ST
[CARS:VEHI1
085603 CRS0110 VEH 0001 D DUMMY 20 0 ST
[CARS:VEHI1
085632 CRS0105 VEH 0001 P ARNIE 40 0 ST
[CARS:VEHI1
085641 CRS0110 VEH 0001 D ARNIE 20 0 ST
[CARS:VEHI1
085650 CRS0105 VEH 0001 P BOB 30 30 ST
[CARS:VEHI1
085658 CRS0110 VEH 0001 D BOB 20 0 ST
[CARS:VEHI1
085709 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

1.2.2-11

C

085739	CRS0105	VEH 0001	P	DUMMY	0 0	ST	
[CARS:VEHI1							
085821	CRS0110	VEH 0001	D	DUMMY	20 0	ST	
[CARS:VEHI1							
085850	CRS0105	VEH 0001	P	ARNIE	40 0	ST	
[CARS:VEHI1							
085901	CRS0110	VEH 0001	D	ARNIE	20 0	ST	
[CARS:VEHI1							
085913	CRS0105	VEH 0001	P	BOB	40 30	ST	
[CARS:VEHI1							
085922	CRS0110	VEH 0001	D	BOB	20 0	ST	
[CARS:VEHI1							
085939	CRS0115	VEH 0001	NOW UNASSIGNED				
[CARS:							
085948	CRS0105	VEH 0001	P	DUMMY	0 0	ST	
[CARS:VEHI1							
090000	CRS0110	VEH 0001	D	DUMMY	20 0	ST	
[CARS:VEHI1							
090030	CRS0105	VEH 0001	P	ARNIE	40 0	ST	
[CARS:VEHI1							
090040	CRS0110	VEH 0001	D	ARNIE	20 0	ST	
[CARS:VEHI1							
090054	CRS0105	VEH 0001	P	BOB	40 30	ST	
[CARS:VEHI1							
090104	CRS0110	VEH 0001	D	BOB	20 0	ST	
[CARS:VEHI1							
090128	CRS0115	VEH 0001	NOW UNASSIGNED				
[CARS:							

1.2.2-11

D

090137	CRS0105	VEH 0001	P	DUMMY	0 0	ST	
[CARS:VEHI1							
090152	CRS0110	VEH 0001	D	DUMMY	20 0	ST	
[CARS:VEHI1							
090212	CRS0105	VEH 0001	P	ARNIE	40 0	ST	
[CARS:VEHI1							
090222	CRS0110	VEH 0001	D	ARNIE	20 0	ST	
[CARS:VEHI1							
090231	CRS0105	VEH 0001	P	BOB	50 30	ST	
[CARS:VEHI1							
090242	CRS0110	VEH 0001	D	BOB	20 0	ST	
[CARS:VEHI1							
090303	CRS0115	VEH 0001	NOW UNASSIGNED				
[CARS:							

E

VEHI1
090312 CRS0105 VEH 0001 P DUMMY 0 0 ST
090325 CRS0110 VEH 0001 D DUMMY 20 0 ST
[CARS:VEHI1
090401 CRS0105 VEH 0001 P ARNIE 40 0 ST
[CARS:VEHI1
090411 CRS0110 VEH 0001 D ARNIE 20 0 ST
[CARS:VEHI1
090420 CRS0105 VEH 0001 P BOB 60 30 ST
[CARS:VEHI1
090430 CRS0110 VEH 0001 D BOB 20 0 ST
[CARS:VEHI1
090440 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

1.2.2-11 F

VEHI1
090456 CRS0105 VEH 0001 P DUMMY 0 0 ST
090512 CRS0110 VEH 0001 D DUMMY 20 0 ST
[CARS:VEHI1
090537 CRS0105 VEH 0001 P ARNIE 40 0 ST
[CARS:VEHI1
090555 CRS0110 VEH 0001 D ARNIE 20 0 ST
[CARS:VEHI1
090605 CRS0105 VEH 0001 P BOB 70 30 ST
[CARS:VEHI1
090614 CRS0110 VEH 0001 D BOB 20 0 ST
[CARS:VEHI1
090624 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

G

VEHI1
090630 CRS0105 VEH 0001 P DUMMY 0 0 ST
090633 CRS0110 VEH 0001 D DUMMY 20 0 ST
[CARS:VEHI1
090705 CRS0105 VEH 0001 P ARNIE 40 0 ST
[CARS:VEHI1
090714 CRS0110 VEH 0001 D ARNIE 20 0 ST
[CARS:VEHI1
090724 CRS0105 VEH 0001 P BOB 80 30 ST
[CARS:VEHI1
090733 CRS0110 VEH 0001 D BOB 20 0 ST
[CARS:VEHI1
090744 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

H

090750	CRS0105	VEH 0001	P	DUMMY	0 0	ST
090753	CRS0110	VEH 0001	D	DUMMY	20 0	ST
[CARS:VEHI]						
090822	CRS0105	VEH 0001	P	ARNIE	40 0	ST
[CARS:VEHI]						
090832	CRS0105	VEH 0001	P	BOB	40 20	ST
[CARS:VEHI]						
090844	CRS0110	VEH 0001	D	BOB	20 0	ST
[CARS:VEHI]						
090854	CRS0110	VEH 0001	D	ARNIE	20 0	ST
[CARS:VEHI]						
090905	CRS0115	VEH 0001	NOW	UNASSIGNED		
[CARS:						

I

090911	CRS0105	VEH 0001	P	DUMMY	0 0	ST
090913	CRS0110	VEH 0001	D	DUMMY	20 0	ST
[CARS:VEHI]						
090942	CRS0105	VEH 0001	P	ARNIE	40 0	ST
[CARS:VEHI]						
090951	CRS0110	VEH 0001	D	ARNIE	20 0	ST
[CARS:VEG#HI]						
091005	CRS0105	VEH 0001	P	BOB	70 20	ST
[CARS:VEHI]						
091015	CRS0110	VEH 0001	D	BOB	20 0	ST
[CARS:VEHI]						
091025	CRS0115	VEH 0001	NOW	UNASSIGNED		
[CARS:VEHI]						

J

091031	CRS0105	VEH 0001	P	DUMMY	0 0	ST
091038	CRS0110	VEH 0001	D	DUMMY	20 0	ST
[CARS:VEHI]						
091102	CRS0105	VEH 0001	P	BOB	10 10	ST
[CARS:VEHI]						
091112	CRS0110	VEH 0001	D	BOB	20 0	ST
[CARS:VEHI]						
091122	CRS0105	VEH 0001	P	ARNIE	40 0	ST
[CARS:VEHI]						
091131	CRS0110	VEH 0001	D	ARNIE	20 0	ST
V[CARS:VEHI]						
091142	CRS0115	VEH 0001	NOW	UNASSIGNED		
[CARS:						

[CARS: [CARS:VEHI[CARS:
 [CARS: I.12 - 11
 K

[CARS:VEHI[CARS:
 [CARS:HOLD2
 101314 CRS0330 EXPECTED AT 0000 AT
 [CARS:LOCA
 101345 CRS0120 INVALID
 [CARS:VEHI
 101352 CRS0105 VEH 0001 P DUMMY 0 0 ST
 101401 CRS0110 VEH 0001 D DUMMY 20 0 ST
 [CARS:
 [CARS:VEHI
 101445 CRS0105 VEH 0001 P BOB 20 10 ST
 [CARS:VEHI
 101456 CRS0110 VEH 0001 D BOB 20 0 ST
 [CARS:VEHI
 101505 CRS0105 VEH 0001 P ARNIE 40 0 ST
 [CARS:VEHI
 101515 CRS0110 VEH 0001 D ARNIE 20 0 ST
 [CARS:VEHI
 101525 CRS0115 VEH 0001 NOW UNASSIGNED
 [CARS:

L

VEHI
 101532 CRS0105 VEH 0001 P DUMMY 0 0 ST
 101539 CRS0110 VEH 0001 D DUMMY 20 0 ST
 [CARS:VEHI
 101606 CRS0105 VEH 0001 P ARNIE 40 0 ST
 [CARS:VEHI
 101619 CRS0110 VEH 0001 D ARNIE 20 0 ST
 [CARS:VEHI
 101628 CRS0105 VEH 0001 P BOB 70 10 ST
 [CARS:VEHI
 101640 CRS0110 VEH 0001 D BOB 20 0 ST
 [CARS:VEHI
 101653 CRS0115 VEH 0001 NOW UNASSIGNED
 [CARS:

M

VEHI1					
101701	CRS0105	VEH 0001	P	DUMMY	0 0 ST
101705	CRS0110	VEH 0001	D	DUMMY	20 0 ST
[CARS:VEHI1					
101735	CRS0105	VEH 0001	P	ARNIE	40 0 ST
[CARS:VEHI1					
101752	CRS0110	VEH 0001	D	ARNIE	20 0 ST
[CARS:VEHI1					
101801	CRS0105	VEH 0001	P	BOB	80 10 ST
[CARS:VEHI1					
101812	CRS0110	VEH 0001	D	BOB	20 0 ST
[CARS:VEHI1					
101824	CRS0115	VEH 0001		NOW UNASSIGNED	
[CARS:					

N

VEHI1					
101831	CRS0105	VEH 0001	P	DUMMY	0 0 ST
101837	CRS0110	VEH 0001	D	DUMMY	20 0 ST
[CARS:VEHI1					
101909	CRS0105	VEH 0001	P	ARNIE	40 0 ST
[CARS:VEHI1					
101921	CRS0110	VEH 0001	D	ARNIE	20 0 ST
[CARS:VEHI1					
101932	CRS0105	VEH 0001	P	BOB	90 10 ST
[CARS:VEHI1					
101943	CRS0110	VEH 0001	D	BOB	20 0 ST
[CARS:VEHI1					
101954	CRS0115	VEH 0001		NOW UNASSIGNED	

1.2.2-12

arnie
70 50 dy##st
50 50 st
102058 CRS0000 ARNIE V 0001 P 0001 D 0005
bob
50 90 st
50 50 st
102123 CRS0000 BOB V 0001 P 0005 D 0010
charlie
30 50 st
50 50 st
102139 CRS0000 CHARLIE V 0001 P 0004 D 0007
dan
50 10 st
50 50 st
102200 CRS0000 DAN V 0001 P 0013 D 0017

I.2.2-12

[
CARS:LOCA000150 50 ST
102025 CRS0150 VEH0001 AT 50 50 ST
[CARS:
102057 CRS0105 VEH 0001 P ARNIE 70 50 ST
[CARS:VEHI1
102208 CRS0110 VEH 0001 D ARNIE 50 50 ST
[CARS:VEHI1
102220 CRS0105 VEH 0001 P CHARLIE 30 50 ST
[CARS:VEHI1
102232 CRS0110 VEH 0001 D CHARLIE 50 50 ST
[CARS:VEHI1
102244 CRS0105 VEH 0001 P BOB 50 90 ST
[CARS:VEHI1
102256 CRS0110 VEH 0001 D BOB 50 50 ST
[CARS:VEHI1
102307 CRS0105 VEH 0001 P DAN 50 10 ST
[CARS:VEHI1
102326 CRS0110 VEH 0001 D DAN 50 50 ST
[CARS:VEHI1
102338 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

1.2.2 - 15

A

arnie	
50 50 st	
50 100 st	
102534 CRS0000 ARNIE	V 0002 P 0003 D 0008
bob	
60 50 st	
50 100 st	
102553 CRS0000 BOB	V 0002 P 0004 D 0009
charlie	
70 50 st	
50 0 st	
102607 CRS0000 CHARLIE	V 0001 P 0004 D 0009
dan	
60 60 st	
50 0 st	
102622 CRS0000 DAN	V 0001 P 0005 D 0011
ed	
50 60 st	
50 0 st	
102636 CRS0000 ED	V 0001 P 0006 D 0011
frank	
40 60 st	
50 100 st	
102650 CRS0000 FRANK	V 0002 P 0004 D 0009
george	
50 40 st	
50 100 st	
102706 CRS0000 GEORGE	V 0002 P 0004 D 0011

B

arnie	
50 50 st	
100 100 st	
103050 CRS0000 ARNIE	V 0002 P 0003 D 0009
bob	
60 50 st	
100 100 st	
103108 CRS0000 BOB	V 0002 P 0004 D 0009
charlie	
70 50 st	
0 100 st	
103123 CRS0000 CHARLIE	V 0001 P 0004 D 0011
dan	
60 50 st	
0 100 st	
103138 CRS0000 DAN	V 0001 P 0005 D 0011

ed
 50 60 st
 0 100 st
 103202 CRS0000 ED V 0001 P 0006 D 0011
 Frank
 40 60 st
 100 100 st
 103220 CRS0000 FRANK V 0002 P 0003 D 0011
 george
 50 40 st
 100 100 st
 103240 CRS0000 GEORGE V 0002 P 0004 D 0012

1.2.2-13 A

LOCAL 0 50 ST
 102418 CRS0010 0 50 ST NOT IN SERVICE AREA
 102418 CRS0155 VEH0001 NOTMOVE
 [CARS:LOCA00010 50 ST
 102449 CRS0150 VEH0001 AT 0 50 ST
 [CARS:RST02
 102459 CRS0240 ENTER VEHICLE LOCATION
 [CARS:100 50 ST
 102512 CRS0246 VEHICLE 0002 RESTORED
 [CARS:
 102534 CRS0105 VEH 0002 P ARNIE 50 50 ST
 [CARS:
 102607 CRS0105 VEH 0001 P CHARLIE 70 50 ST
 [CARS:VEH1
 102708 CRS0105 VEH 0001 P DAN 60 60 ST
 [CARS:VEH1
 102718 CRS0105 VEH 0001 P ED 50 60 ST
 [CARS:VEH1
 102729 CRS0110 VEH 0001 D ED 50 0 ST
 [CARS:VEH1
 102740 CRS0110 VEH 0001 D DAN 50 0 ST
 [CARS:VEH1
 102751 CRS0110 VEH 0001 D CHARLIE 50 0 ST
 [CARS:VEH1
 102804 CRS0115 VEH 0001 NOW UNASSIGNED
 [CARS:VEH2
 102814 CRS0105 VEH 0002 P BOB 60 50 ST
 [CARS:VEH2
 102825 CRS0105 VEH 0002 P GEORGE 50 40 ST
 [CARS:VEH2
 102836 CRS0105 VEH 0002 P FRANK 40 60 ST
 [CARS:VEH2
 102848 CRS0110 VEH 0002 D FRANK 50 100 ST
 [CARS:VEH2
 102900 CRS0110 VEH 0002 D ARNIE 50 100 ST

[CARS:VEHI2
 102911 CRS0110 VEH 0002 D BOB 50 100 ST
 V[CARS:REPE2
 102947 CRS0110 VEH 0002 D BOB 50 100 ST
 [CARS:VEHI2
 102959 CRS0110 VEH 0002 D GEORGE 50 100 ST
 [CARS:VEHI2
 103011 CRS0115 VEH 0002 NOW UNASSIGNED
 [CARS:

W2.2-13 B

LOCA00010 50 ST
 103030 CRS0150 VEH0001 AT 0 50 ST
 [CARS:LOCA0002100 50 ST
 103044 CRS0150 VEH0002 AT 100 50 ST
 [CARS:
 103050 CRS0105 VEH 0002 P ARNIE 50 50 ST
 [CARS:
 103123 CRS0105 VEH 0001 P CHARLIE 70 50 ST
 [CARS:VEHI ALL
 103159 CRS0120 ALL INVALID
 [CARS:VEHI1
 103254 CRS0105 VEH 0001 P DAN 60 60 ST
 [CARS:VEHI1
 103304 CRS0105 VEH 0001 P ED 50 60 ST
 [CARS:VEHI1
 103314 CRS0110 VEH 0001 D ED 0 100 ST
 [CARS:VEHI1
 103324 CRS0110 VEH 0001 D DAN 0 100 ST
 [CARS:VEHI1
 103335 CRS0110 VEH 0001 D CHARLIE 0 100 ST
 [CARS:VEHI1
 103345 CRS0115 VEH 0001 NOW UNASSIGNED
 [CARS:VEHI2
 103354 CRS0105 VEH 0002 P FRANK 40 60 ST
 [CARS:VEHI2
 103405 CRS0105 VEH 0002 P GEORGE 50 40 ST
 [CARS:VEHI2
 103415 CRS0105 VEH 0002 P BOB 60 50 ST
 [CARS:VEHI2
 103425 CRS0110 VEH 0002 D BOB 100 100 ST
 [CARS:VEHI2
 103436 CRS0110 VEH 0002 D ARNIE 100 100 ST
 [CARS:VEHI2
 103446 CRS0110 VEH 0002 D FRANK 100 100 ST
 [CARS:VEHI2
 103457 CRS0110 VEH 0002 D GEORGE 100 100 ST
 [CARS:VEHI2
 103508 CRS0115 VEH 0002 NOW UNASSIGNED
 [CARS:

1.2.2.14

dummy

0 10 st

0 0 st

103543 CRS0000 DUMMY

V 0001 P 0005 D 0008

arnie

60 0 st

60 40 st

103615 CRS0000 ARNIE

V 0001 P 0005 D 0009

bob

40 0 st

20 0 st

103630 CRS0000 BOB

V 0001 P 0004 D 0007

1.2.3-14

HOLD2

103522 CRS0330 EXPECTED AT 0000 AT

[CARS:VEH1

103543 CRS0105 VEH 0001 P DUMMY

0 10 ST

103601 CRS0110 VEH 0001 D DUMMY

0 0 ST

[CARS:VEH1

103636 CRS0105 VEH 0001 P BOB

40 0 ST

[CARS:VEH1

103648 CRS0110 VEH 0001 D BOB

20 0 ST

[CARS:VEJ#HI

103702 CRS0105 VEH 0001 P ARNIE

60 0 ST

[CARS:VEH1

103733 CRS0110 VEH 0001 D ARNIE

60 40 ST

[CARS:VEH1

103748 CRS0115 VEH 0001 NOW UNASSIGNED

[CARS:

1.2.2-15

arnie
50 50 st
10 0 st
104037 CRS0000 ARNIE V 0002 P 0001 D 0006
bob
10 10 st
50 50 st
104052 CRS0000 BOB V 0001 P 0003 D 0009
charlie
100 90 st
50 50 st
104110 CRS0000 CHARLIE V 0001 P 0010 D 0016
dan
50 50 st
70 90 st
104126 CRS0000 DAN V 0001 P 0007 D 0011
ed
50 50 st
90 100 st
104141 CRS0000 ED V 0001 P 0007 D 0013
frank
0 10 st
50 50 st
104204 CRS0000 FRANK V 0002 P 0006 D 0012
george
100 100 st
90 90 st
104218 CRS0000 GEORGE V 0001 P 0012 D 0016
hank
0 0 st
50 50 st
104231 CRS0000 HANK V 0002 P 0006 D 0013

v1

dummy1
 40 50 st
 50 50 st
 104540 CRS0000 DUMMY1 V 0001 P 0002 D 0005
 dummy #2
 60 50 st
 50 50 st
 104558 CRS0000 DUMMY2 V 0002 P 0001 D 0003
 arnie
 50 50 st
 10 0 st
 104650 CRS0000 ARNIE V 0001 P 0002 D 0007
 bob
 10 10 st
 50 50 st
 104703 CRS0000 BOB V 0001 P 0006 D 0012
 charlie
 100 90 st
 50 50 st
 104717 CRS0000 CHARLIE V 0002 P 0005 D 0010
 dan
 50 50 st
 70 90 st
 104730 CRS0000 DAN V 0002 P 0002 D 0006
 ed
 50 50 st
 90 100 st
 104742 CRS0000 ED V 0002 P 0002 D 0008
 frank

0 10 st
 50 50 st
 104754 CRS0000 FRANK V 0001 P 0006 D 0013
 george
 100 1000 st@100 100 st
 90 90 st
 104830 CRS0000 GEORGE V 0002 P 0007 D 0011
 hank
 0 0 st
 50 50 st
 104845 CRS0000 HANK V 0001 P 0006 D 0015

I.2.2-15a

RST02
103828 CRS0240 ENTER VEHICLE LOCATION
[CARS:50 50 ST
103907 CRS0246 VEHICLE 0002 RESTORED
[CARS:LOCA000150 50 ST
103959 CRS0150 VEH0001 AT 50 50 ST
[CARS:
104037 CRS0105 VEH 0002 P ARNIE 50 50 ST
104052 CRS0105 VEH 0001 P BOB 10 10 ST
[CARS:VEH1
104233 CRS0110 VEH 0001 D BOB 50 50 ST
[CARS:VEH1
104243 CRS0105 VEH 0001 P DAN 50 50 ST
[CARS:VEH1
104252 CRS0105 VEH 0001 P ED 50 50 ST
[CARS:VEH1
104302 CRS0110 VEH 0001 D DAN 70 90 ST
[CARS:VEH1
104312 CRS0110 VEH 0001 D ED 90 100 ST
[CARS:VEH1
104322 CRS0105 VEH 0001 P GEORGE 100 100 ST
[CARS:VEH1
104334 CRS0105 VEH 0001 P CHARLIE 100 90 ST
[CARS:VEH1
104344 CRS0110 VEH 0001 D GEORGE 90 90 ST
[CARS:VEH1
104354 CRS0110 VEH 0001 D CHARLIE 50 50 ST
[CARS:VEH2
104403 CRS0110 VEH 0002 D ARNIE 10 0 ST
[CARS:VEH2
104414 CRS0105 VEH 0002 P HANK 0 0 ST
[CARS:VEH2
104425 CRS0105 VEH 0002 P FRANK 0 10 ST
[CARS:VEH2
104435 CRS0110 VEH 0002 D FRANK 50 50 ST
[CARS:VEH2
104445 CRS0110 VEH 0002 D HANK 50 50 ST
[CARS:VEH2
104455 CRS0115 VEH 0002 NOW UNASSIGNED
[CARS:

I.2.2 -15
B

LOCA001 5#40

104512 CRS0150 VEH0001 AT 40 50 ST

[CARS:LOCA002 60 40 ###50 ST

104527 CRS0150 VEH0002 AT 60 50 ST

[CARS:

[CARS:

104557 CRS0105 VEH 0002 P DUMMY2 60 50 ST

[CARS:VEHI1

104613 CRS0105 VEH 0001 P DUMMY1 40 50 ST

[CARS:VEHI1

104622 CRS0110 VEH 0001 D DUMMY1 50 50 ST

[CARS:VEHI2

104631 CRS0110 VEH 0002 D DUMMY2 50 50 ST

[CARS:VEHI1

104846 CRS0105 VEH 0001 P ARNIE 50 50 ST

[CARS:VEHI1

104859 CRS0110 VEH 0001 D ARNIE 10 0 ST

[CARS:VEHI1

104909 CRS0105 VEH 0001 P HANK 0 0 ST

[CARS:VEHI1

104918 CRS0105 VEH 0001 P FRANK 0 10 ST

[CARS:VEHI1

104927 CRS0105 VEH 0001 P BOB 10 10 ST

[CARS:VEHI1

104936 CRS0110 VEH 0001 D BOB 50 50 ST

[CARS:VEHI1

104946 CRS0110 VEH 0001 D FRANK 50 50 ST

[CARS:VEHI1

105000 CRS0110 VEH 0001 D HANK 50 50 ST

[CARS:VEHI1

105010 CRS0115 VEH 0001 NOW UNASSIGNED

[CARS:VEHI2

105017 CRS0105 VEH 0002 P DAN 50 50 ST

[CARS:VEHI2

105026 CRS0105 VEH 0002 P ED 50 50 ST

[CARS:VEHI2

105038 CRS0110 VEH 0002 D DAN 70 90 ST

[CARS:VEHI2

105046 CRS0110 VEH 0002 D ED 90 100 ST

[CARS:VEHI2

105056 CRS0105 VEH 0002 P GEORGE 100 100 ST

[CARS:VEHI2

105106 CRS0105 VEH 0002 P CHARLIE 100 90 ST

[CARS:VEHI2

105115 CRS0110 VEH 0002 D GEORGE 90 90 ST

[CARS:VEHI2

105125 CRS0110 VEH 0002 D CHARLIE 50 50 ST

[CARS:VEHI2

105135 CRS0115 VEH 0002 NOW UNASSIGNED

[CARS:

1.7-2-15-8

closio punch on
R; T=0.01/0.07 16.08.17

I. 2.3 A

cp log x
SHIFT CONNECTTOTAL ;" 1 0:07:31 "LOGOUT AT 16.12.05 ON 06/21/71

cp/67 version 2.0-33 03/26/71

l@d cars10
.. connected ..
pass

arnie 20 putnam av 200 vassar st 161549 CRS0000 ARNIE bob	V 0002 P 0003 D 0011
cars 77 mass av 161615 CRS0000 BOB dan	V 0001 P 0001 D 0006
77 mass av post office 161640 CRS0000 DAN charlie	V 0001 P 0005 D 0012
100 plympton st 705 memorial dr 161719 CRS0000 CHARLIE ed	V 0002 P 0003 D 0011
425 mass av 550 green st 161753 CRS0000 ED george	V 0001 P 0006 D 0012
300 western av 200 vassar st 161920 CRS0000 GEORGE frank	V 0002 P 0004 D 0015
central sq hr@harvard sq 162050 CRS0000 FRANK harry	V 0001 P 0004 D 0012
200 allston st 77 mass av 162239 CRS0000 HARRY ingrid	V 0002 P 0007 D 0015
77 mass av	

cars					
162648 CRS0000 INGRID	V	0002	P	0012	D 0017
judy					
harvard sq					
1045 mass av					
162951 CRS0000 JUDY	V	0001	P	0004	D 0009
kathy					
city hall					
20 lopez st					
163249 CRS0000 KATHY	V	0001	P	0007	D 0012
olivia					
morse school					
77 mass av					
163747 CRS0000 OLIVIA	V	0001	P	0011	D 0018
linda					
cars					
joyce chen					
163935 CRS0000 LINDA	V	0002	P	0002	D 0010
martha					
cars					
harvard sq					
164048 CRS0000 MARTHA	V	0002	P	0011	D 0025
nora					
705 memorial dr					
harvard sq					
164216 CRS0000 NORA	V	0002	P	0019	D 0028
paula					
77 mass av					
city hall					
164952 CRS0000 PAULA	V	0001	P	0013	D 0020
quentin					
harvard sq					
central sq					
170052 CRS0000 QUENTIN	V	0002	P	0002	D 0010
rachel					
harvard sq					
mit					
170117 CRS0000 RACHEL	V	0002	P	0003	D 0015
susan					
mit					
705 memorial dr					
170215 CRS0000 SUSAN	V	0002	P	0013	D 0022
tricia					
morse school					
cars					
170247 CRS0000 TRICIA	V	0001	P	0009	D 0019
@					

12.3A

I . 2 . 7 A

d cars10
.. connected ..
vehi

161548	CRS0105	VEH 0002	P	ARNIE	20 PUTNAM AV
161615	CRS0105	VEH 0001	P	BOB	CARS
vehi1					
161643	CRS0110	VEH 0001	D	BOB	77 MASS AV
vehi2					
161751	CRS0105	VEH 0002	P	CHARLIE	100 PLYMPTON ST
vehi1					
161848	CRS0105	VEH 0001	P	DAN	77 MASS AV
vehi1					
161856	CRS0105	VEH 0001	P	ED	425 MASS AV
vehi2					
162018	CRS0105	VEH 0002	P	GEORGE	300 WESTERN AV
vehi1					
162153	CRS0105	VEH 0001	P	FRANK	CENTRAL SQ
vehi1					
162449	CRS0110	VEH 0001	D	DAN	POST OFFICE
vehi2					
162548	CRS0110	VEH 0002	D	CHARLIE	705 MEMORIAL DR
vehi1					
162617	CRS0110	VEH 0001	D	ED	550 GREEN ST
vehi1					
162839	CRS0110	VEH 0001	D	FRANK	HARVARD SQ
vehi2					
162848	CRS0105	VEH 0002	P	HARRY	200 ALLSTON ST
vehi2					
163150	CRS0110	VEH 0002	D	ARNIE	200 VASSAR ST
vehi2					
163517	CRS0110	VEH 0002	D	GEORGE	200 VASSAR ST
vehi2					
163527	CRS0110	VEH 0002	D	HARRY	77 MASS AV
vehi1					
163619	CRS0105	VEH 0001	P	JUDY	HARVARD SQ
vehi1					
163630	CRS0110	VEH 0001	D	JUDY	1045 MASS AV
vehi2					
163717	CRS0105	VEH 0002	P	INGRID	77 MASS AV

veh i2	163745	CRS0110	VEH 0002	D	INGRID	CARS	
veh i2	164015	CRS0105	VEH 0002	P	LINDA	CARS	
veh i2	164024	CRS0110	VEH 0002	D	LINDA	JOYCE CHEN	
veh i1	@vh@veh i1	164259	CRS0105	VEH 0001	P	KATHY	CITY HALL
veh i2	164327	CRS0105	VEH 0002	P	MARTHA	CARS	
veh i2	164657	CRS0105	VEH 0002	P	NORA	705 MEMORIAL DR	
veh i2	164948	CRS0110	VEH 0002	D	MARTHA	HARVARD SQ	
veh i1	164958	CRS0110	VEH 0001	D	KATHY	<i>12.3 A</i> 20 LOPEZ ST	
veh i1	165323	CRS0105	VEH 0001	P	OLIVIA	MORSE SCHOOL	
veh i1	165448	CRS0110	VEH 0001	D	OLIVIA	77 MASS AV	
veh i1	170035	CRS0105	VEH 0001	P	PAULA	77 MASS AV	
veh i1	170043	CRS0110	VEH 0001	D	PAULA	CITY HALL	
veh i2	170100	CRS0170	VEH 0002	5	MINS OVERDUE	HARVARD SQ	
veh i2	0316	CRS0110	VEH10002	D	NORA	HARVARD SQ	
veh i2	170331	CRS0105	VEH 0002	P	QUENTIN	HARVARD SQ	
veh i2	170341	CRS0105	VEH 0002	P	RACHEL	HARVARD SQ	
veh i2	170349	CRS0110	VEH 0002	D	QUENTIN	CENTRAL SQ	
veh i1	170546	CRS0105	VEH 0001	P	TRICIA	MORSE SCHOOL	
veh i1 @veh i1	171116	CRS0110	VEH 0001	D	TRICIA	CARS	
veh i1	171546	CRS0170	VEH 0002	5	MINS OVERDUE	CENTRAL SQ	
veh i1	1547	CRS0115	VEH 0001	NOW	UNASSIGNED		
veh i2	171603	CRS0110	VEH 0002	D	RACHEL	MIT	
veh i2	171946	CRS0105	VEH 0002	P	SUSAN	MIT	
veh i2	171956	CRS0110	VEH 0002	D	SUSAN	705 MEMORIAL DR	
veh i2	172354	CRS0115	VEH 0002	NOW	UNASSIGNED		

1,2,3 b

A
ar@arnie
10 60 st
90 60 st
094340 CRS0000 ARNIE V 0001 P 0002 D 0008
bob
40 80 st
60 80 st
094352 CRS0000 BOB V 0001 P 0004 D 0008

B
arnie
10 60 st
90 60 st
094530 CRS0000 ARNIE V 0001 P 0002 D 0008
bob
40 100@40 90 st
60 0#90 st
094554 CRS0000 BOB V 0002 P 0003 D 0007

C
arnie
094616 CRS0008 NAME ALREADY KNOWN TO SYSTEM - TRY AGAIN
arnie
10 60 st
90 60 st
094711 CRS0000 ARNIE V 0001 P 0002 D 0008
bob
40 100 st
60 100 st
094723 CRS0000 BOB V 0002 P 0004 D 0007

D
arnie
094748 CRS0008 NAME ALREADY KNOWN TO SYSTEM - TRY AGAIN
arnie
10 60 st
90 60 st
094858 CRS0000 ARNIE V 0001 P 0003 D 0010
bob
40 80 st
60 80 st
094915 CRS0000 BOB V 0002 P 0003 D 0006

T.2.3B
A

LOCAL1 10 30 ST
094318 CRS0150 VEH0001 AT 10 30 ST
[CARS:LOCA2 40 30 ST
094331 CRS0150 VEH0002 AT 40 30 ST
[CARS:
094340 CRS0105 VEH 0001 P ARNIE 10 60 ST
[CARS:
[CARS:VEHI1
094404 CRS0105 VEH 0001 P BOB 40 80 ST
[CARS:VEHI1
094413 CRS0110 VEH 0001 D BOB 60 80 ST
[CARS:VEHI1
094423 CRS0110 VEH 0001 D ARNIE 90 60 ST
[CARS:VEHI1
094434 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

3

LOCAL1 10 30 ST
094513 CRS0150 VEH0001 AT 10 30 ST
[CARS:
094530 CRS0105 VEH 0001 P ARNIE 10 60 ST
[CARS:VEHI1@
094554 CRS0105 VEH 0002 P BOB 40 90 ST
[CARS:VEHI1
094615 CRS0110 VEH 0001 D ARNIE 90 60 ST
[CARS:VEHI1
094625 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:VEHI2
094632 CRS0110 VEH 0002 D BOB 60 90 ST
[CARS:VEHI2
094643 CRS0115 VEH 0002 NOW UNASSIGNED
[CARS:

1.2.36

c

LOCA1 10 30 ST
094655 CRS0150 VEH0001 AT 10 30 ST
[CARS:LOCA2 40 30 ST
094707 CRS0150 VEH0002 AT 40 30 ST
[CARS:
094711 CRS0105 VEH 0001 P ARNIE 10 60 ST
094723 CRS0105 VEH 0002 P BOB 40 100 ST
[CARS:VEHI1
094745 CRS0110 VEH 0001 D ARNIE 90 60 ST
[C RS:VEHI1
094755 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:VEHI2
094803 CRS0110 VEH 0002 D BOB 60 100 ST
[CARS:VEHI2
094812 CRS0115 VEH 0002 NOW UNASSIGNED — D
[CARS:LOCA1 10 0 ST
094829 CRS0150 VEH0001 AT 10 0 ST
[CARS:LOCA2 90 80 ST
094851 CRS0150 VEH0002 AT 90 80 ST
[CARS:
094857 CRS0105 VEH 0001 P ARNIE 10 60 ST
094915 CRS0105 VEH 0002 P BOB 40 80 ST
[CARS:VEHI1
094936 CRS0110 VEH 0001 D ARNIE 90 60 ST
[CARS:VEHI1
094952 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:VEHI2
094959 CRS0110 VEH 0002 D BOB 60 80 ST
[CARS:VEHI2
095009 CRS0115 VEH 0002 NOW UNASSIGNED
[CARS:

1.2.6-2

PASS

pass
acct1020365 prir0002ralph nader
harvard sq
city hall
135043 CRS0000 RALPH NADER V 0002 P 0005 D 0011
acct1234567 mr. phoney
135058 CRS0007 INVALID ACCOUNT NUMBER -TRY AGAIN
acct1030365 0003raiders
135114 CRS0007 INVALID ACCOUNT NUMBER -TRY AGAIN
acct1020365 0003raiders
harvard sq
city hall
135131 CRS0000 RAIDERS V 0002 P 0004 D 0011
cnclsr1
135143 CRS0290 SRA1 NOT FOUND
cnclsr1
135441 CRS0275 SRA1 TIME 0003 V 0003 1 FRONT ST
yes
135449 CRS0300 SRA1 CANCELLED
cnclsr6
135508 CRS0275 SRA6 TIME 0003 V 0002 29 CROSS ST
cancel
135517 CRS0300 SRA6 CANCELLED
nurse duckett
27 cross st
10 grant st
135611 CRS0000 NURSE DUCKETT V 0003 P 0004 D 0012
major major
280 franklin st
morse school
135713 CRS0000 MAJOR MAJOR V 0004 P 0004 D 0019
acct1000124 roger williams
20 ames st
morse school
135830 CRS0000 ROGER WILLIAMS V 0005 P 0006 D 0013
herman
60 wadsworth st
morse school
140709 CRS0000 HERMAN V 0005 P 0015 D 0024
prir0002mr. bang
10 erie st
kendall sq@kendall sq
142151 CRS0000 MR. BANG V 0004 P 0011 D 0030

IDC Ready- OVX Nupvi.

1 tscent2

PASSWORD:

XXXXXXXXXX

14.24.49 ET 06/16/71

ES..VERSION 25A - 05/20/71

offline read first trans#edit card one

TSCENT2 LOGGED IN.

R; T=1.13

DEFAULT TABS SET.

EDIT:

f cold

0010

1.2.6-2

PASS

2

romona					
100 memorial dr					
ymca					
150107 CRS0000 ROMONA	V	0002	P	0007	D 0015
acct1020036 mrs uhaul					
4 grant st					
post office					
150151 CRS0000 MRS UHAUL	V	0003	P	0008	D 0013
yossarian					
police dept.					
2 erie st					
150712 CRS0000 YOSSARIAN	V	0003	P	0003	D 0008
maid 1					
harvard sq					
60 wadsworth st					
151125 CRS0000 MAID 1	V	0001	P	0001	D 0012
maid 2					
harvard sq					
10 front st					
151154 CRS0000 MAID 2	V	0004	P	0002	D 0011
acct #1020141 maid 3					
harvard sq					
7 lansdowne st					
151237 CRS0000 MAID 3	V	0002	P	0004	D 0013
maid 4					
harvard sq					
12 cottage st					
151256 CRS0000 MAID 4	V	0002	P	0005	D 0012
maid 5					
harvard sq					
1 hayward st					
151318 CRS0000 MAID 5	V	0002	P	0004	D 0017
maid 6					
harvard sq					
sub shop					
151337 CRS0000 MAID 6	V	0002	P	0004	D 0014

maid /					
harvard sq					
57 allston st					
151455 CRS0000 MAID 7	V	0002	P	0002	D 0011
maid 8					
harvard sq					
10 decatur st					
151538 CRS0000 MAID 8	V	0005	P	0005	D 0013
maid 9					
harvard sq					
72 pleasant st					
151625 CRS0000 MAID 9	V	0005	P	0005	D 0012
maid 10					
harb@harvard sq					
312 pearl st					
151700 CRS0000 MAID 10	V	0005	P	0005	D 0016
miad@maid 11					
harvard sq					
222 river st					
151726 CRS0000 MAID 11	V	0003	P	0007	D 0013
acct1020253 miad###aid 12					
harvard sq					
11 valentine st					
151753 CRS0000 MAID 12	V	0005	P	0002	D 0011
maid 13					
harvard sq					
kendall sq					
151810 CRS0000 MAID 13	V	0005	P	0003	D 0021
mr irigquois					
harvard sq					
@3 kinnaird st					
152357 CRS0000 MR IRIGQUOIS	V	0003	P	0005	D 0011
mr sou@mr sioux					
j@harvard sq					
10 green st					
152440 CRS0000 MR SIOUX	V	0003	P	0005	D 0014

1.2 .0-2

2 [CARS:
 [CARS:
 [CARS: 1,2,6-2
 [CARS:VEHI1
 140608 CRS0105 VEH 0001 P SRA15 370 GREEN ST
 [CARS:VEHI6
 140618 CRS0105 VEH 0006 P SRA10 700 MEMORIAL DR
 [CARS:VEHI4
 140630 CRS0105 VEH 0004 P SRA9 30 RIVER ST
 [CARS:VEHI3
 140641 CRS0105 VEH 0003 P NURSE DUCKETT 27 CROSS ST
 [CARS:VEHI2
 140652 CRS0110 VEH 0002 D SMA2 MORSE SCHOOL
 [CARS:VEHI5
 140702 CRS0105 VEH 0005 P SMA7 100 AUBURN ST
 [CARS:VEHI2
 140723 CRS0110 VEH 0002 D SMA4 MORSE SCHOOL
 [CARS:VEHI2
 140734 CRS0105 VEH 0002 P SMA8 10 COTTAGE ST
 [CARS:VEHI6
 140746 CRS0110 VEH 0006 D SRA5 HARVARD SQ
 [CARS:VEHI4
 140759 CRS0105 VEH 0004 P SRA12 70 PUTNAM AV
 [CARS:VEHI3
 140809 CRS0105 VEH 0003 P SRA7 1 FRANKLIN ST
 [CARS:VEHI6
 140832 CRS0110 VEH 0006 D SRA10 HARVARD SQ
 [CARS:VEHI6
 140842 CRS0115 VEH 0006 NOW UNASSIGNED
 [CARS:VEHI4
 140850 CRS0105 VEH 0004 P SMA6 10 COWPERTHWAITTE ST
 [CARS:VEHI3
 140903 CRS0110 VEH 0003 D NURSE DUCKETT 10 GRANT ST
 [CARS:VEHI5
 140915 CRS0110 VEH 0005 D SMA7 MORSE SCHOOL
 [CARS:VEHI5
 140925 CRS0110 VEH 0005 D ROGER WILLIAMS MORSE SCHOOL
 [CARS:VEHI4
 140936 CRS0105 VEH 0004 P SRA14 4 GRANT ST
 [CARS:VEHI4
 140948 CRS0110 VEH 0004 D SRA8 HARVARD SQ
 [CARS:VEHI5
 141001 CRS0105 VEH 0005 P HERMAN 60 WADSWORTH ST
 [CARS:VEHI1
 141023 CRS0105 VEH 0001 P SRA13 50 RIVER ST
 [CARS:VEHI3
 141041 CRS0110 VEH 0003 D SRA2 HARVARD SQ
 [CARS:ANOM005 3
 141056 CRS0255 3 AT NEXT STOP FOR 005
 [CARS:VEHI5
 141058 CRS0105 VEH 0006 P SMA9 CENTRAL SQ
 141105 CRS0110 VEH 0005 D HERMAN MORSE SCHOOL
 [CARS:

1.2.6-2

3

[CARS:VEHI2
 141234 CRS0105 VEH 0002 P SR2 20 AUDREY ST
 [CARS:VEHI4
 141243 CRS0110 VEH 0004 D MAJOR MAJOR MORSE SCHOOL
 [CARS:VEHI1
 141304 CRS0105 VEH 0001 P SRA11 11 PUTNAM AV
 [CARS:VEHI3
 141314 CRS0110 VEH 0003 D SRA4 HARVARD SQ
 [CARS:VEHI3
 141324 CRS0110 VEH 0003 D SRA3 HARVARD SQ
 [CARS:VEHI6
 141334 CRS0110 VEH 0006 D SMA9 MORSE SCHOOL
 [CARS:VEHI3
 141344 CRS0110 VEH 0003 D SRA7 HARVARD SQ
 [CARS:VEHI3
 141355 CRS0115 VEH 0003 NOW UNASSIGNED
 [CARS:BREA5
 141407 CRS0130 ENTER LOCATION OF BREAK-DOWN
 [CARS:10 PERRY ST
 141420 CRS0134 0001 DEMANDS REASSIGNED FOR VEHICLE 0005
 [CARS:VEHI4
 141517 CRS0110 VEH 0004 D SMA6 MORSE SCHOOL
 [CARS:VEHI4
 141527 CRS0115 VEH 0004 NOW UNASSIGNED
 [CARS:VEHI2
 [CARS:4 CRS0105 VEH 0002 P HERMAN 10 PERRY ST 0003

VEHI6

141554 CRS0115 VEH 0006 NOW UNASSIGNED
 [CARS:
 141601 CRS0105 VEH 0006 P SR4 35 SIDNEY ST
 141607 CRS0105 VEH 0003 P SR7 58 ALLSTON ST
 [CARS:
 [CARS:
 [CARS:
 [CARS:
 [CARS:GIKDFT
 141956 CRS0120 FT INVALID
 [CARS:
 142029 CRS0170 VEH 0001 5 MINS OVERDUE 11 PUTNAM AV
 [CARS:
 142103 CRS0105 VEH 0004 P SR8 100 MEMORIAL DR
 [CARS:
 [CARS:HDRWJOGI
 142145 CRS0120 JOGI INVALID
 [CARS:
 [CARS:
 [CARS:

← crash

1.26-2

4

[[[[[[[[[[[[[[[[[[CARS:VEHI[CARS:

[CARS:
[CARS:VEHI1
150121 CRS0105 VEH 0001 P 0200 LAFAYETTE SQ
[CARS:VEHI2
150152 CRS0105 VEH 0002 P SR1 10 SMART ST
[CARS:VEHI3
150203 CRS0110 VEH 0003 D 0204 54 PUTNAM AV
[CARS:VEHI4
150223 CRS0110 VEH 0004 D 0201 30 MT.AUBURN ST
[CARS:VEHI5
150237 CRS0128 VEHICLE IS BROKEN DOWN
[CARS:VEHI6
150245 CRS0105 VEH 0006 P SR5 100 AUBURN ST
[CARS:VEHI1
150255 CRS0110 VEH 0001 D SR9 HARVARD SQ
[CARS:VEHI1
150307 CRS0110 VEH 0001 D 0200 HARVARD SQ
[CARS:VEHI1
150317 CRS0110 VEH 0001 D 0199 HARVARD SQ
[CARS:VEHI1
150329 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:VEHI2
150346 CRS0105 VEH 0002 P ROMONA 100 MEMORIAL DR
[CARS:VEHI3
150414 CRS0105 VEH 0003 P MRS UHAUL 4 GRANT ST
[CARS:VEHI4
150426 CRS0115 VEH 0004 NOW UNASSIGNED
[CARS:VEHI6
150434 CRS0110 VEH 0006 D SR5 HARVARD SQ
[CARS:VEHI2
150448 CRS0110 VEH 0002 D ROMONA YMCA
[CARS:VEHI2
150513 CRS0110 VEH 0002 D 0500 11 DUNSTER ST
[CARS:VEHI3
150540 CRS0110 VEH 0003 D MRS UHAUL POST OFFICE
[CARS:VEHI6
150615 CRS0110 VEH 0006 D SR4 HARVARD SQ
[CARS:VEHI6
150630 CRS0110 VEH 0006 D SR6 HARVARD SQ
[CARS:VEHI6
150641 CRS0110 VEH 0006 D SMA10 MORSE SCHOOL
[CARS:
[CARS:VEHI3
150720 CRS0105 VEH 0003 P YOSSARIAN POLICE DEPT.
[CARS:ANOM003 5
150733 CRS0255 5 AT NEXT STOP FOR 003

[CARS:VEHI6
 151725 CRS0105 VEH 0003 P MAID 11 HARVARD SQ
 151728 CRS0115 VEH 0006 NOW UNASSIGNED
 [CARS:VEHI5
 151743 CRS0105 VEH 0005 P MAID 9 HARVARD SQ
 [CARS:VEHI4
 151753 CRS0115 VEH 0004 NOW UNASSIGNED
 [CARS:VEHI3
 151807 CRS0110 VEH 0003 D MAID 11 222 RIVER ST
 [CARS:
 [CARS:
 152245 CRS0170 VEH 0005 5 MINS OVERDUE HARVARD SQ
 [CARS:VEHI5
 152332 CRS0105 VEH 0005 P MAID 10 HARVARD SQ
 [CARS:VEHI2
 152351 CRS0110 VEH 0002 D MAID 7 57 ALLSTON ST
 [CARS:VEHI3
 152407 CRS0105 VEH 0003 P MR IRIGQUOIS HARVARD SQ
 [CARS:VEHI5
 152429 CRS0105 VEH 0005 P MAID 12 HARVARD SQ
 [CARS:VEHI4
 152718 CRS0125 4 NOT SCHEDULED
 [CARS:

back

135002 CRS0400 06 001 001
35003 CRS0410 001 01 MIT MORSE SCHOOL
030 CRS0400 06 001 001 1
35003 CRS0400 02 002 002
135003 CRS0410 002 01 HARVARD SQ MORSE SCHOOL
135003 CRS0400 02 002 002
135004 CRS0400 05 003 003
35004 CRS0410 003 01 5 WADSWORTH ST MORSE SCHOOL
35004 CRS0400 05 003 003
135043 CRS0410 004 01 HARVARD SQ CITY HALL
135043 CRS0400 02 002 004 004 002
135130 CRS0410 005 03 HARVARD SQ CITY HALL
135131 CRS0400 02 002 005 004 005 004 002
135154 CRS0400 02 005 004 005 004 002
135206 CRS0400 02 004 005 004 002
135215 CRS0400 02 005 004 002
135300 CRS0400 06 001
135402 CRS0400 03 006 006
135402 CRS0410 006 01 1 FRONT ST HARVARD SQ
02 CRS0400 03 5006 006 3 1
135403 CRS0410 007 01 15 AMES ST HARVARD SQ
135403 CRS0400 03 006 007 006 007
135404 CRS0410 008 01 10 ALBANY ST HARVARD SQ
0 CRS0400 03 0065008 007 006 007 002
5404 CRS0410 009101 64 STATE ST HARVARD SQ
354041 CRS0400 03 006 009 008 007 006 007 009 008
405 CRS0410 010 01 1 30 GRANITE ST HARVARD SQ
3405 CRS0400 06 001 010 010
135406 CRS0410 011 01 29 CROSS ST HARVARD SQ
3406 CRS0400 02 005 004 002 011 011
135414 CRS0400 05 003
135451 CRS0400 03 009 008 007 007 009 008
135517 CRS0400 02 005 004 002
135542 CRS0400 02 004 002
135555 CRS0400 03 008 007 007 009 008
135602 CRS0410 012 01 2 FRONT ST MORSE SCHOOL
0 CRS0400 02 004 012 002 012 1
135602 CRS0400 01 013 013
135603 CRS0410 013 01 700 GREEN ST MORSE SCHOOL

03 CRS0400 01 013 013 3 1
 135603 CRS0410 014 01 1 FRANKLIN ST HARVARD SQ
 03 CRS0400 03 008 007 0143 007 009 008 014
 504 CRS0400 04 0151015
 135604 CRS0410 015 01 1 CENTRAL SQ HARVARD SQ
 04 CRS0400 04 015 015 3 1
 / 35605 CRS0410 016 01 30 RIVER ST HARVARD SQ
 135605 CRS0400 04 015 016 015 016
 3605 CRS0410 017 01 700 MEMORIAL DR HARVARD SQ
 05 CRS0400 06 5001 010 017 010 017
 5610 CRS0410 018 01 27 CROSS ST 10 GRANT ST
 5611 CRS0400 031 008 007 018 014 018 007 009 008 014
 05 CRS0400 02 012 002 012 1
 35647 CRS0400 06 010 017 010 017
 135713 CRS0410 019 01 280 FRANKLIN ST MORSE SCHOOL
 135713 CRS0400 04 015 019 016 015 016 019
 135725 CRS0400 01 013
 135746 CRS0400 04 019 016 015 016 019
 135804 CRS0400 03 007 018 014 018 007 009 008 014
 135830 CRS0400 05 020 020
 35830 CRS0410 020 01 20 AMES ST MORSE SCHOOL
 135830 CRS0400 05 020 020
 140108 CRS0410 021 01 11 PUTNAM AV HARVARD SQ
 2 108 CRS0400 01 4013 021 021
 40109 CRS0410 022 01 70 PUTNAM AV HARVARD SQ
 140109 CRS0400 04 019 016 022 015 016 022 019
 01104 CRS0410 023 01 50 RIVER ST HARVARD SQ
 10 CRS0400 010 013 0234021 021 023
 140111 CRS0410 024 01 4 GRANT ST HARVARD SQ
 11 CRS0400 04 019 016 022 024 015 016 022 024 019
 111 CRS0410 025 01 370 GREEN ST HARVARD SQ
 111 CRS0400 01 013 025 023 021 021 023 025
 012 CRS0410 026 01 1 10 COWPERTHWAITTE ST MORSE SCHOOL
 12 CRS0400 00 019 0164 022 026 024 015 016 022 024 019 026
 0113 CRS0410 027 01 100 AUBURN ST MORSE SCHOOL
 113 CRS0400 05 0204027 027 020
 140608 CRS0410 028 01 10 COTTAGE ST MORSE SCHOOL
 140608 CRS0400 02 012 002 012 028 028
 40608 CRS0400 01 025 023 021 021 023 025
 0618 CRS0400 06 0171 010 017
 140630 CRS0400 04 016 022 026 024 015 016 022 024 019 026
 140642 CRS0400 03 018 014 018 007 009 008 014
 140652 CRS0400 02 002 012 028 028
 140702 CRS0400 05 027 027 020
 140709 CRS0410 029 01 60 WADSWORTH ST MORSE SCHOOL
 140709 CRS0400 05 027 027 020 029 029
 140723 CRS0400 02 012 028 028
 140734 CRS0400 02 028 028
 140746 CRS0400 06 010 017
 140759 CRS0400 04 022 026 024 015 016 022 024 019 026
 140809 CRS0400 03 014 018 007 009 008 014
 140832 CRS0400 06 017
 140850 CRS0400 04 026 024 015 016 022 024 019 026
 140903 CRS0400 03 018 007 009 008 014

140915 CRS0400 05 027 020 029 029
140926 CRS0400 05 020 029 029
140936 CRS0400 04 024 015 016 022 024 019 026
140948 CRS0400 04 015 016 022 024 019 026
141001 CRS0400 05 029 029
141023 CRS0400 01 023 021 021 023 025
141041 CRS0400 03 007 009 008 014
141058 CRS0400 06 030 030
141059 CRS0410 030 01 CENTRAL SQ MORSE SCHOOL
59 CRS0400 06 030 030 4 1
141100 CRS0410 031 01 10 SMART ST HARVARD SQ
1100 CRS0400 02 028 028 031 031
41100 CRS0410 032 01 20 AUDREY ST HARVARD SQ
01 CRS0400 02 1028 028 032 031 031 032
141103 CRS0410 033 01 MIT HARVARD SQ
141103 CRS0400 02 028 028 032 033 031 031 032 033
105 CRS0400 05 0294 1
141148 CRS0400 02 028 032 033 031 031 032 033
141202 CRS0400 04 016 022 024 019 026
141212 CRS0400 04 022 024 019 026
141224 CRS0400 04 024 019 026
141234 CRS0400 02 032 033 031 031 032 033
141243 CRS0400 04 019 026
141304 CRS0400 01 021 021 023 025
141314 CRS0400 03 009 008 014
141324 CRS0400 03 008 014
141334 CRS0400 06 030
141344 CRS0400 03 014
141419 CRS0410 029 03 10 PERRY ST MORSE SCHOOL
141419 CRS0400 02 032 029 029 033 031 031 032 033
141517 CRS0400 04 026
141534 CRS0400 02 029 029 033 031 031 032 033
141601 CRS0400 06 034 034
141602 CRS0410 034 01 35 SIDNEY ST HARVARD SQ
141602 CRS0400 06 034 034
141604 CRS0410 035 01 100 AUBURN ST HARVARD SQ
141605 CRS0400 06 034 035 035 034
1607 CRS0410 036 01 79 FRANKLIN ST HARVARD SQ
07 CRS0400 06 034 036 035 035 034 036
1607 CRS0400 03 037 037
41608 CRS0410 037 01 58 ALLSTON ST HARVARD SQ
08 CRS0400 03 1037 037 4 1
141612 CRS0410 038 01 50 LOPEZ ST MORSE SCHOOL
1612 CRS0400 06 034 036 038 035 035 034 036 038
142103 CRS0400 04 039 039
142104 CRS0410 039 01 100 MEMORIAL DR HARVARD SQ
04 CRS0400 042 039 039 4 1
142105 CRS0410 040 01 600 MEMORIAL DR HARVARD SQ
142105 CRS0400 01 021 021 023 025 040 040
142106 CRS0410 041 01 9 KILNAIRD ST HARVARD SQ
142106 CRS0400 03 037 041 041 037
142151 CRS0410 042 01 10 ERIE ST KENDALL SQ
142151 CRS0400 04 039 042 039 042

2

3

CRASH

back

150107	CRS0410	049	01		100	MEMORIAL DR		YMCA
150107	CRS0400	02	500	031	049	049	500	031 032 033
150121	CRS0400	01	200	040	200	199		
150151	CRS0410	050	01		4	GRANT ST		POST OFFICE
51	CRS0400	03	204	204	050	050		1
150153	CRS0400	02	031	049	049	500	031	032 033
150203	CRS0400	03	204	050	050			
150223	CRS0400	04	201					
150245	CRS0400	06	035	035	034	036	038	315
150255	CRS0400	01	040	200	199			
150307	CRS0400	01	200	199				
150317	CRS0400	01	199					
150346	CRS0400	02	049	049	500	031	032	033
150414	CRS0400	03	050	050				
150435	CRS0400	06	035	034	036	038	315	
150448	CRS0400	02	049	500	031	032	033	
150513	CRS0400	02	500	031	032	033		
150540	CRS0400	03	050					
150615	CRS0400	06	034	036	038	315		
150630	CRS0400	06	036	038	315			
150641	CRS0400	06	038	315				
150712	CRS0410	051	01			POLICE DEPT.		2 ERIE ST
0712	CRS0400	103	050	051	051			
150720	CRS0400	03	051	051				
151123	CRS0400	01	052	052				
151124	CRS0410	052	01			HARVARD SQ		60 WADSWORTH ST
52	CRS0400	01	052	052		5		1
11125	CRS0400	01	052					
151142	CRS0400	03	051					
151152	CRS0400	02	031	032	033			
511531	CRS0400	04	053	053				
151154	CRS0410	053	01			HARVARD SQ		10 FRONT ST
11154	CRS0400	04	053	053				
151204	CRS0400	04	053					

4

151237	CRS0410	054	01		HARVARD SQ					7 LANSLOWNE ST
151237	CRS0400	02	031	032	033	054	054			
151248	CRS0400	06	315							
151256	CRS0410	055	01		HARVARD SQ					12 COTTAGE ST
51256	CRS0400	02	031	032	033	054	055	055	054	
151310	CRS0400	02	032	033	054	055	055	054		
151318	CRS0410	056	01		HARVARD SQ					1 HAYWARD ST
151318	CRS0400	02	032	033	054	055	056	055	054	056
513231	CRS0400	02	033	054	055	056	055	054	056	
151336	CRS0410	057	01		HARVARD SQ					SUB SHOP
151336	CRS0400	02	033	054	055	056	057	055	054	057 056
151340	CRS0400	02	054	055	056	057	055	054	057	056
151417	CRS0400	02	055	056	057	055	054	057	056	
151452	CRS0400	02	056	057	055	054	057	056		
155	CRS0410	058	011		HARVARD SQ					57 ALLSTON ST
151455	CRS0400	02	056	057	058	055	058	054	057	056
151517	CRS0400	02	057	058	055	058	054	057	056	
151537	CRS0400	05	059	059						
51538	CRS0410	059	01		HARVARD SQ					10 DECATUR ST
151538	CRS0400	05	059	059						
151556	CRS0400	02	058	055	058	054	057	056		
151625	CRS0410	060	01		HARVARD SQ					72 PLEASANT ST
6251	CRS0400	05	059	060	060	059				
151630	CRS0400	02	055	058	054	057	056			
151700	CRS0410	061	01		HARVARD SQ					312 PEARL ST
151700	CRS0400	05	059	060	061	060	059	061		
151725	CRS0400	03	062	062						
51728	CRS0410	062	01		HARVARD SQ					222 RIVER ST
276	CRS0400	103	062	062	1					
151743	CRS0400	05	060	061	060	059	061			
151753	CRS0410	063	01		HARVARD SQ					11 VALENTINE ST
151753	CRS0400	05	060	061	063	060	059	063	061	
151807	CRS0400	03	062							
151810	CRS0410	064	01		HARVARD SQ					KENDALL SQ
151810	CRS0400	05	060	061	063	064	060	059	063	061 064
152332	CRS0400	05	061	063	064	060	059	063	061	064
152351	CRS0400	02	058	054	057	056				
152357	CRS0410	065	01		HARVARD SQ					3 KINNAIRD ST
152357	CRS0400	03	062	065	065					
152407	CRS0400	03	065	065						
152429	CRS0400	05	063	064	060	059	063	061	064	
152440	CRS0410	066	01		HARVARD SQ					10 GREEN ST
152440	CRS0400	03	065	066	065	066				

1.3 B

pass
john smith@005 first
kendall sq
harvard sq
083146 CRS0000 FIRST V 0014 P 0001 D 0013
003 second
kendall sq
harvard sq
083215 CRS0000 SECOND V 0014 P 0002 D 0014
third
morse school
city hall
083333 CRS0000 THIRD V 0007 P 0001 D 0007
fail1
cars
mir
083732 CRS0010 MIR NOT IN SERVICE AREA
mit@@mit
083741 CRS0000 FAIL1 V 0003 P 0001 D 0005
fail2
cars@cnc1fail1
083804 CRS0275 FAIL1 TIME 0008 V 0003 CARS
cancel
083814 CRS0300 FAIL1 CANCELLED
fail2
cars
mit
083858 CRS0000 FAIL2 V 0003 P 0001 D 0006
fail3
sub shop
lafayette sq
083916 CRS0000 FAIL3 V 0016 P 0001 D 0004
fail4
lafayette sq
city hall
083935 CRS0000 FAIL4 V 0019 P 0001 D 0006
fail5
mit
city hall
083951 CRS0000 FAIL5 V 0001 P 0001 D 0007
fail6
mit
lafat#yette sq
084031 CRS0000 FAIL6 V 0001 P 0002 D 0006
cnc1fail3
084051 CRS0275 FAIL3 TIME 0010 V 0016 SUB SHOP
1 CRS0285 5ON VEHICLE - GIVE VEHICLE LOCATION 0
city hall
084105 CRS0150 VEH0016 AT CITY HALL
4105 CRS0300 FAIL03 CANCELLED

vehl
hoojaa
082850 CRS0120 AA INVALID

vehl
082950 CRS0120 INVALID

133

vehl
082956 CRS0125 1 NOT SCHEDULED
hoojaa
083108 CRS0120 AA INVALID

083146 CRS0105 VEH 0014 P FIRST KENDALL SQ 0005

vehl14
083240 CRS0105 VEH 0014 P SECOND KENDALL SQ 0003
anom00142

083302 CRS0255 2 AT NEXT STOP FOR 0014

vehl14
083319 CRS0110 VEH 0014 D FIRST HARVARD SQ

083333 CRS0105 VEH 0007 P THIRD MORSE SCHOOL
anom00140000

083401 CRS0260 ERROR -- NOT A PICK-UP STOP - MONITOR SWITCHES SET
anom00070

083424 CRS0250 IS THIS A NO SHOW FOR 0007 (ANSWER YES FOR NO-SHOW)
yes

083436 CRS0117 VEH 0007 DISPATCHED TO STATION 0002
36 CRS0255 3 AT NEXT STOP FOR 0007

cnclsecond
083507 CRS0275 SECOND TIME 0003 V 0014 KENDALL SQ
CRS0285 ON VEHICLE - GIVE VEHICLE LOCATION 0

yes@800 memorial
083536 CRS0010 800 MEMORIAL NOT IN SERVICE AREA

63 CRS0155 VEH0014 NOTMOVE 8 0
3536 CRS0300 TRY NEW ADDRESS OR QUIT

800 memorial dr
083554 CRS0150 VEH0014 AT 800 MEMORIAL DR

554 C 3 8 0
RS0300 SECOND CANCELLED

554 C 3 8 0
RS0110 VEH 0014 D FIRST HARVARD SQ

vehl14
083632 CRS0117 VEH 0014 DISPATCHED TO STATION 0002

vehl14
083641 CRS0115 VEH 0014 NOW UNASSIGNED

ven#h17
083657 CRS0115 VEH 0007 NOW UNASSIGNED

vehi 1.3.4

072906 CRS0105 VEH 0014 P FIRST KENDALL SQ
072950 CRS0105 VEH 0007 P SECOND MORSE SCHOOL
vehi14
073032 CRS0110 VEH 0014 D FIRST HARVARD SQ
brea14
073050 CRS0130 ENTER LOCATION OF BREAK-DOWN
sub shop
073059 CRS0105 VEH 0016 P FIRST SUB SHOP
59 CRS0134 0001 DEMANDS REASSIGNED FOR VEHICLE 0014

n
073246 CRS0120 INVALID

073453 CRS0170 VEH 0007 5 MINS OVERDUE MORSE SCHOOL
brea7
073615 CRS0170 VEH 0016 5 MINS OVERDUE SUB SHOP
073615 CRS0130 ENTER LOCATION OF BREAK-DOWN
45 green st
073632 CRS0105 VEH 0018 P SECOND MORSE SCHOOL
23 CRS0134 0001 DEMANDS REASSIGNED FOR VEHICLE 0007

vehi16
073936 CRS0105 VEH 0016 P THIRD 45 GREEN ST
vehi16
073948 CRS0110 VEH 0016 D FIRST HARVARD SQ
vehi16
074021 CRS0110 VEH 0016 D THIRD HARVARD SQ
vehi16
074030 CRS0117 VEH 0016 DISPATCHED TO STATION 0002
vehi18
074044 CRS0110 VEH 0018 D SECOND CITY HALL

vehi18
074303 CRS0117 VEH 0018 DISPATCHED TO STATION 0002
loca0016 front st
074323 CRS0150 VEH0016 AT FRONT ST
loca001812 peters st
074343 CRS0150 VEH0018 AT 12 PETERS ST

074403 CRS0105 VEH 0016 P FIRST SUB SHOP
074423 CRS0105 VEH 0008 P SECOND MORSE SCHOOL

1.3.5

a

```

pass
arnie
0 40 st
60 40 st
105852 CRS0000 ARNIE          V 0001 P 0001 D 0007
bo #b
20 40 st
40#0 40 st
105925 CRS0000 BOB          V 0001 P 0002 D 0006
a

```

b

```

  rnie
0 40 st
60 40 st
110039 CRS0000 ARNIE          V 0001 P 0001 D 0007
bob
20 40 st
40 40 st
110309 CRS0000 BOB          V 0001 P 0002 D 0006

```

c

```

arnie
0 40 st
60 40 st
110504 CRS0000 ARNIE          V 0001 P 0001 D 0007
bob
20 40 st
40 40 st
110835 CRS0000 BOB          V 0001 P 0002 D 0006
arnie
110904 CRS0008 NAME ALREADY KNOWN TO SYSTEM - TRY AGAIN

```

C(2)

arnie
0 40 st
60 40 st
111003 CRS0000 ARNIE

V 0001 P 0001 D 0007

bob
20 40 st
40 40 st
111401 CRS0000 BOB
cnclbob

V 0001 P 0002 D 0006

111417 CRS0275 BOB
yes
111425 CRS0300 BOB
bob

TIME 0016 V 0001 20 40 ST
CANCELLED

20 40 st
40 40 st
111439 CRS0000 BOB
arnie

V 0002 P 0002 D 0006

d

0 40 st
60 40 st
111630 CRS0000 ARNIE
bob

V 0001 P 0001 D 0007

20 40 st
40 40 st
111649 CRS0000 BOB

V 0001 P 0003 D 0006

1.3.5

C

LOCA00010 60 ST
110409 CRS0150 VEH0001 AT 0 60 ST
[CARS:
110504 CRS0105 VEH 0001 P ARNIE 0 40 ST
[CARS:
[CARS:VEHI1
110844 CRS0105 VEH 0001 P BOB 20 40 ST
[CARS:VEHI1
110854 CRS0110 VEH 0001 D BOB 40 40 ST
[CARS:VEHI1S
110905 CRS0110 VEH 0001 D ARNIE 60 40 ST
[CARS:VEHI1
110916 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:

C.2

LOCA001 0 60 ST
110931 CRS0150 VEH0001 AT 0 60 ST
[CARS:
111002 CRS0105 VEH 0001 P ARNIE 0 40 ST
[CARS:GGGG
111121 CRS0120 INVALID
[CARS:GGG
111225 CRS0120 INVALID
[CARS:GGG
111351 CRS0120 INVALID
[CARS:VEHI1S
111439 CRS0105 VEH 0002 P BOB 20 40 ST
111453 CRS0110 VEH 0001 D ARNIE 60 40 ST
[CARS:VEHI1S
111510 CRS0115 VEH 0001 NOW UNASSIGNED
[CARS:VEHI2
111518 CRS0110 VEH 0002 D BOB 40 40 ST
[CARS:VEHI2
111527 CRS0115 VEH 0002 NOW UNASSIGNED
[CARS:

1.3.5 D

LOCA001 0 60 ST
111541 CRS0150 VEH0001 AT 0 60 ST
[CARS:LOCA002 20 0 ST
111558 CRS0150 VEH0002 AT 20 0 ST
[CARS:
111630 CRS0105 VEH 0001 P ARNIE 0 40 ST
[CARS:
[CARS:
[CARS:
[CARS:S
112234 CRS0170 VEH 0001 5 MINS OVERDUE 0 40 ST
112234 CRS0120 INVALID
[CARS:TIME
112457 CRS0120 INVALID
[CARS:TIME
112543 CRS0120 INVALID
[CARS:TIME
112611 CRS0120 INVALID
[CARS:TIME
112622 CRS0120 INVALID
[CARS:TIME
112633 CRS0120 INVALID
[CARS:TIME
112642 CRS0120 INVALID
[CARS:TIME
112650 CRS0120 INVALID
[CARS:
[CARS:
112729 CRS0175 VEH 0001 10 INS OVERDUE 0 40 ST
[CARS:

.. CONNECTED ..

XCARS:VEHICARS:

CARS:LOCA110 30 ST

143257 CRS0120 110 INVALID

CARS:LOCA110 30 ST

143314 CRS0120 110 INVALID

CARS:LOCA000110 30 ST

143335 CRS0150 VEH0001 AT 10 30 ST

CARS:LOCA000270 10 ST

143355 CRS0150 VEH0002 AT 70 10 ST

CARS:

143431 CRS0105 VEH 0001 P ARNIE

10 50 ST

CARS:VEHI1

143553 CRS0105 VEH 0001 P BOB

40 70 ST

CARS:VEHI1

143616 CRS0110 VEH 0001 D BOB

60 70 ST

CARS:VEHI1

143630 CRS0110 VEH 0001 D ARNIE

90 50 ST

CARS:VEHI1

143647 CRS0115 VEH 0001 NOW UNASSIGNED

CARS:

LOCA000110 30 ST

143715 CRS0150 VEH0001 AT 10 30 ST

CARS:

143837 CRS0105 VEH 0001 P ARNIE

10 50 ST

CARS:

144003 CRS0105 VEH 0002 P BOB

40 70 ST

CARS:VEHI1

144033 CRS0110 VEH 0001 D ARNIE

90 50 ST

CARS:VEHI2

144052 CRS0110 VEH 0002 D BOB

60 70 ST

CARS:VEHI1

144134 CRS0115 VEH 0001 NOW UNASSIGNED

CARS:VEHI2

144156 CRS0115 VEH 0002 NOW UNASSIGNED

CARS:

I.3.6

d cars10
.. connected ..
pass

I. 3.6

arnie
10 50 st
90 50 st
143431 CRS0000 ARNIE V 0001 P 0001 D 0008
bob
40 70 st
60 70 st
143512 CRS0000 BOB V 0001 P 0003 D 0007
p#

prir0002arnie
10 50 st
90 50 st
143837 CRS0000 ARNIE V 0001 P 0001 D 0008
bob
40 70 st
60 70 st
144007 CRS0000 BOB V 0002 P 0004 D 0007

O D-A-R ACCEPTANCE TEST

TEST DATA

SECTION 2

This section contains reproductions of the light speed printer output resulting from the tests of 27 May through 24 June, 1971.

APPENDIX F

TRANSACTION FILE FROM SCENARIO I.2.3-A

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME BOE
 ORIGIN TIME 3.95
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 1
 TRIP NO. 0
 PICKUP ADDRESS CAFS
 PICKUP COORDINATES (200, 62)
 PICKUP ZONE 0
 EXPECTED TIME 3.95
 PICKUP TIME 4.55
 DELIVERY ADDRESS 77 MASS AV
 DELIVERY COORDINATES (187, 42)
 DELIVERY ZONE 0
 EXPECTED TIME 6.99
 DELIVERY TIME 6.65

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME DAN
 ORIGIN TIME 4.47
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 1
 TRIP NO. 0
 PICKUP ADDRESS 77 MASS AV
 PICKUP COORDINATES (187, 42)
 PICKUP ZONE 0
 EXPECTED TIME 8.50
 PICKUP TIME 6.78
 DELIVERY ADDRESS POST OFFICE
 DELIVERY COORDINATES (144, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 13.61
 DELIVERY TIME 14.13

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME ED
 ORIGIN TIME 5.72
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 1
 TRIP NO. 0
 PICKUP ADDRESS 425 MASS AV

PICKUP COORDINATES (163, 45)
PICKUP ZONE 0
EXPECTED TIME 11.16
PICKUP TIME 9.72
DELIVERY ADDRESS 550 GREEN ST
DELIVERY COORDINATES (132, 44)
DELIVERY ZONE 0
EXPECTED TIME 15.51
DELIVERY TIME 16.50

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME CHARLIE
ORIGIN TIME 5.13
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 0
PICKUP ADDRESS 100 PLYMPTON ST
PICKUP COORDINATES (111, 40)
PICKUP ZONE 0
EXPECTED TIME 7.74
PICKUP TIME 8.15
DELIVERY ADDRESS 705 MEMORIAL DR
DELIVERY COORDINATES (142, 6)
DELIVERY ZONE 0
EXPECTED TIME 13.14
DELIVERY TIME 16.65

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME ARNIE
ORIGIN TIME 3.63
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 0
PICKUP ADDRESS 20 PUTNAM AV
PICKUP COORDINATES (122, 44)
PICKUP ZONE 0
EXPECTED TIME 6.00
PICKUP TIME 5.70
DELIVERY ADDRESS 200 VASSAR ST
DELIVERY COORDINATES (176, 30)
DELIVERY ZONE 0
EXPECTED TIME 12.43
DELIVERY TIME 23.12

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME GEORGE
 ORIGIN TIME 7.17
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 2
 TRIP NO. 0
 PICKUP ADDRESS 300 WESTERN AV
 PICKUP COORDINATES (134, 30)
 PICKUP ZONE 0
 EXPECTED TIME 10.84
 PICKUP TIME 13.65
 DELIVERY ADDRESS 200 VASSAR ST
 DELIVERY COORDINATES (176, 30)
 DELIVERY ZONE 0
 EXPECTED TIME 19.45
 DELIVERY TIME 23.30

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME FRANK
 ORIGIN TIME 8.65
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 1
 TRIP NO. 0
 PICKUP ADDRESS CENTRAL SQ
 PICKUP COORDINATES (150, 46)
 PICKUP ZONE 0
 EXPECTED TIME 11.74
 PICKUP TIME 12.65
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 18.52
 DELIVERY TIME 24.13

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME HARRY
 ORIGIN TIME 10.48
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 2
 TRIP NO. 0
 PICKUP ADDRESS 200 ALLSTON ST
 PICKUP COORDINATES (151, 19)
 PICKUP ZONE 0
 EXPECTED TIME 16.69

PICKUP TIME 19.68
DELIVERY ADDRESS 77 MASS AV
DELIVERY COORDINATES (187, 42)
DELIVERY ZONE 0
EXPECTED TIME 22.83
DELIVERY TIME 25.13

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME INGFIID
ORIGIN TIME 14.63
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 0
PICKUP ADDRESS 77 MASS AV
PICKUP COORDINATES (187, 42)
PICKUP ZONE 0
EXPECTED TIME 25.66
PICKUP TIME 25.60
DELIVERY ADDRESS CAES
DELIVERY COORDINATES (200, 62)
DELIVERY ZONE 0
EXPECTED TIME 28.70
DELIVERY TIME 28.10

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME JULY
ORIGIN TIME 17.65
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 1
TRIP NO. 0
PICKUP ADDRESS HARVARD SQ
PICKUP COORDINATES (101, 47)
PICKUP ZONE 0
EXPECTED TIME 20.81
PICKUP TIME 24.33
DELIVERY ADDRESS 1045 MASS AV
DELIVERY COORDINATES (124, 46)
DELIVERY ZONE 0
EXPECTED TIME 23.76
DELIVERY TIME 30.82

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME LINDA
ORIGIN TIME 27.42

ACCOUNT NO.	0
PRIORITY CLASS	1
NO. PASSENGERS	1
VEHICLE NO.	2
TRIP NO.	0
PICKUP ADDRESS	CAPS
PICKUP COORDINATES	(200, 62)
PICKUP ZONE	0
EXPECTED TIME	29.14
PICKUP TIME	28.25
DELIVERY ADDRESS	JOYCE CHEN
DELIVERY COORDINATES	(180, 18)
DELIVERY ZONE	0
EXPECTED TIME	34.78
DELIVERY TIME	31.29

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME	KATHY
ORIGIN TIME	20.65
ACCOUNT NO.	0
PRIORITY CLASS	1
NO. PASSENGERS	1
VEHICLE NO.	1
TRIP NO.	0
PICKUP ADDRESS	CITY HALL
PICKUP COORDINATES	(144, 47)
PICKUP ZONE	0
EXPECTED TIME	27.23
PICKUP TIME	37.80
DELIVERY ADDRESS	20 LOPEZ ST
DELIVERY COORDINATES	(157, 33)
DELIVERY ZONE	0
EXPECTED TIME	29.76
DELIVERY TIME	41.22

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME	CLIVIA
ORIGIN TIME	25.63
ACCOUNT NO.	0
PRIORITY CLASS	1
NO. PASSENGERS	1
VEHICLE NO.	1
TRIP NO.	0
PICKUP ADDRESS	MOISE SCHOOL
PICKUP COORDINATES	(156, 5)
PICKUP ZONE	0
EXPECTED TIME	35.93
PICKUP TIME	42.65
DELIVERY ADDRESS	77 MASS AV
DELIVERY COORDINATES	(187, 42)
DELIVERY ZONE	0

6.7.

EXPECTED TIME 41.56 6.9
DELIVERY TIME 48.43

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME MAPTHA
ORIGIN TIME 28.62
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 0
PICKUP ADDRESS CAPS
PICKUP COORDINATES (200, 62)
PICKUP ZONE 0
EXPECTED TIME 39.53
PICKUP TIME 34.78
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 50.69
DELIVERY TIME 51.12

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME NORA
ORIGIN TIME 30.10
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 0
PICKUP ADDRESS 705 MEMORIAL DR
PICKUP COORDINATES (142, 6)
PICKUP ZONE 0
EXPECTED TIME 48.61
PICKUP TIME 37.63
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 55.78
DELIVERY TIME 51.37

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME PAULA
ORIGIN TIME 37.67
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 1
TRIP NO. 0
PICKUP ADDRESS 77 MASS AV
PICKUP COORDINATES (187, 42)

PICKUP ZONE 0
 EXPECTED TIME 50.32
 PICKUP TIME 48.57
 DELIVERY ADDRESS CITY HALL
 DELIVERY COORDINATES (144, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 55.42
 DELIVERY TIME 53.60

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME TRICIA
 ORIGIN TIME 50.63
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 1
 TRIP NO. 0
 PICKUP ADDRESS MORSE SCHOOL
 PICKUP COORDINATES (156, 5)
 PICKUP ZONE 0
 EXPECTED TIME 58.82
 PICKUP TIME 59.12
 DELIVERY ADDRESS CARS
 DELIVERY COORDINATES (200, 62)
 DELIVERY ZONE 0
 EXPECTED TIME 66.98
 DELIVERY TIME 63.62

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME QUENTIN
 ORIGIN TIME 48.70
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 2
 TRIP NO. 0
 PICKUP ADDRESS HARVARD SQ
 PICKUP COORDINATES (101, 47)
 PICKUP ZONE 0
 EXPECTED TIME 50.20
 PICKUP TIME 51.53
 DELIVERY ADDRESS CENTRAL SQ
 DELIVERY COORDINATES (150, 46)
 DELIVERY ZONE 0
 EXPECTED TIME 55.91
 DELIVERY TIME 63.90

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME RACHEL
 ORIGIN TIME 49.13
 ACCOUNT NO. 0

PRIORITY CLASS	1
NO. PASSENGERS	1
VEHICLE NO.	2
TRIP NO.	0
PICKUP ADDRESS	HARVARD SQ
PICKUP COORDINATES	(101, 47)
PICKUP ZONE	0
EXPECTED TIME	51.13
PICKUP TIME	51.67
DELIVERY ADDRESS	MIT
DELIVERY COORDINATES	(187, 42)
DELIVERY ZONE	0
EXPECTED TIME	61.31
DELIVERY TIME	67.62

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME	SUSAN
ORIGIN TIME	50.10
ACCOUNT NO.	0
PRIORITY CLASS	1
NO. PASSENGERS	1
VEHICLE NO.	2
TRIP NO.	0
PICKUP ADDRESS	MIT
PICKUP COORDINATES	(187, 42)
PICKUP ZONE	0
EXPECTED TIME	62.77
PICKUP TIME	67.78
DELIVERY ADDRESS	705 MEMORIAL DR
DELIVERY COORDINATES	(142, 6)
DELIVERY ZONE	0
EXPECTED TIME	69.41
DELIVERY TIME	71.73

STATISTICS TAKEN ON 20 OF 20 TOTAL TRANSACTIONS

LEVEL OF SERVICE STATISTICS

MEAN	6.37
VARIANCE	13.71
MINIMUM	1.43
MAXIMUM	19.22

LATENESS

MEAN	4.06
VARIANCE	11.63

EARLINESS

MEAN	2.57
VARIANCE	7.63

COMBINED

MEAN	-1.74
------	-------

APPENDIX G

TRANSACTION FILE FOR SCENARIO I.2.6 (BEFORE CRASH)

USERID: TSCENT2

ACCT: 1481

OUTPUT GENERATED: 09/11/71 AT 11.56.36

OUTPUT PRINTED: 09/11/71 AT 11.56.44 ON 00E

TRANSACTION INFORMATION FOR CANCELLED TRIP FOLLOWS:

NAME SRA1
ORIGIN TIME 3.98
ACCOUNT NO. 1000012
PRIORITY CLASS 1
NO. PASSENGERS 0
VEHICLE NO. 3
TRIP NO. 1098907648
PICKUP ADDRESS 1 FRONT ST
PICKUP COORDINATES (193, 60)
PICKUP ZONE 0
EXPECTED TIME 7.18
PICKUP TIME 0.0
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 14.24
DELIVERY TIME 4.78

TRANSACTION INFORMATION FOR CANCELLED TRIP FOLLOWS:

NAME SRA6
ORIGIN TIME 3.98
ACCOUNT NO. 1000670
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 1098907648
PICKUP ADDRESS 29 CROSS ST
PICKUP COORDINATES (174, 41)
PICKUP ZONE 0
EXPECTED TIME 15.79
PICKUP TIME 0.0
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 22.97
DELIVERY TIME 5.23

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME RAIDERS
ORIGIN TIME 1.47
ACCOUNT NO. 1020365
PRIORITY CLASS 1

NO. PASSENGERS 3
VEHICLE NO. 2
TRIP NO. 0
PICKUP ADDRESS HARVARD SQ
PICKUP COORDINATES (101, 47)
PICKUP ZONE 0
EXPECTED TIME 4.97
PICKUP TIME 2.05
DELIVERY ADDRESS CITY HALL
DELIVERY COORDINATES (144, 47)
DELIVERY ZONE 0
EXPECTED TIME 9.89
DELIVERY TIME 5.67

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME RALPH NADER
ORIGIN TIME 0.65
ACCOUNT NO. 1020365
PRIORITY CLASS 2
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 0
PICKUP ADDRESS HARVARD SQ
PICKUP COORDINATES (101, 47)
PICKUP ZONE 0
EXPECTED TIME 4.97
PICKUP TIME 2.22
DELIVERY ADDRESS CITY HALL
DELIVERY COORDINATES (144, 47)
DELIVERY ZONE 0
EXPECTED TIME 9.39
DELIVERY TIME 6.22

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SMAI
ORIGIN TIME 0.0
ACCOUNT NO. 1002694
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 6
TRIP NO. 1095761920
PICKUP ADDRESS MIT
PICKUP COORDINATES (187, 42)
PICKUP ZONE 0
EXPECTED TIME 5.19
PICKUP TIME 2.97
DELIVERY ADDRESS MORSE SCHOOL
DELIVERY COORDINATES (156, 5)
DELIVERY ZONE 0
EXPECTED TIME 10.09
DELIVERY TIME 6.75

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SMA3
 ORIGIN TIME 0.0
 ACCOUNT NO. 1002815
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 5
 TRIP NO. 1095761920
 PICKUP ADDRESS 5 WADSWORTH ST
 PICKUP COORDINATES (204, 62)
 PICKUP ZONE 0
 EXPECTED TIME 8.68
 PICKUP TIME 4.20
 DELIVERY ADDRESS MORSE SCHOOL
 DELIVERY COORDINATES (156, 5)
 DELIVERY ZONE 0
 EXPECTED TIME 15.98
 DELIVERY TIME 8.25

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SMA5
 ORIGIN TIME 5.98
 ACCOUNT NO. 1003041
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 1
 TRIP NO. 1101004800
 PICKUP ADDRESS 700 GREEN ST
 PICKUP COORDINATES (121, 43)
 PICKUP ZONE 0
 EXPECTED TIME 12.00
 PICKUP TIME 7.38
 DELIVERY ADDRESS MORSE SCHOOL
 DELIVERY COORDINATES (156, 5)
 DELIVERY ZONE 0
 EXPECTED TIME 17.21
 DELIVERY TIME 16.08

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SMA2
 ORIGIN TIME 0.0
 ACCOUNT NO. 1002703
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 2
 TRIP NO. 1095761920
 PICKUP ADDRESS HARVARD SQ
 PICKUP COORDINATES (101, 47)
 PICKUP ZONE 0
 EXPECTED TIME 4.47

PICKUP TIME 1.85
DELIVERY ADDRESS MORSE SCHOOL
DELIVERY COORDINATES (156, 5)
DELIVERY ZONE 0
EXPECTED TIME 11.28
DELIVERY TIME 17.33

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SMA4
ORIGIN TIME 5.98
ACCOUNT NO. 1002920
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 1101004800
PICKUP ADDRESS 2 FRONT ST
PICKUP COORDINATES (173, 45)
PICKUP ZONE 0
EXPECTED TIME 9.63
PICKUP TIME 16.82

FILE: FILE FT08F001 P1

DELIVERY ADDRESS MORSE SCHOOL
DELIVERY COORDINATES (156, 5)
DELIVERY ZONE 0
EXPECTED TIME 14.60
DELIVERY TIME 17.52

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SRA5
ORIGIN TIME 3.98
ACCOUNT NO. 1000565
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 6
TRIP NO. 1098907648
PICKUP ADDRESS 30 GRANITE ST
PICKUP COORDINATES (150, 5)
PICKUP ZONE 0
EXPECTED TIME 8.92
PICKUP TIME 16.27
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 15.30
DELIVERY TIME 18.50

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOW

NAME SRA10
 ORIGIN TIME 5.98
 ACCOUNT NO. 1001024
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 6
 TRIP NO. 1101004800
 PICKUP ADDRESS 700 MEMORIAL DR
 PICKUP COORDINATES (142, 6)
 PICKUP ZONE 0
 EXPECTED TIME 10.15
 PICKUP TIME 17.72
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 16.44
 DELIVERY TIME 18.67

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOW

NAME SMA7
 ORIGIN TIME 11.08
 ACCOUNT NO. 1003265
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 5
 TRIP NO. 1106247680
 PICKUP ADDRESS 100 AUBURN ST
 PICKUP COORDINATES (158, 38)
 PICKUP ZONE 0
 EXPECTED TIME 16.92
 PICKUP TIME 19.22
 DELIVERY ADDRESS MORSE SCHOOL
 DELIVERY COORDINATES (156, 5)
 DELIVERY ZONE 0
 EXPECTED TIME 20.44
 DELIVERY TIME 19.38

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS

NAME ROGER WILLIAMS
 ORIGIN TIME 8.47
 ACCOUNT NO. 1000124
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 5
 TRIP NO. 0
 PICKUP ADDRESS 20 AMES ST
 PICKUP COORDINATES (182, 56)
 PICKUP ZONE 0
 EXPECTED TIME 13.69

PICKUP TIME 16.98
DELIVERY ADDRESS MORSE SCHOOL
DELIVERY COORDINATES (156, 5)
DELIVERY ZONE 0
EXPECTED TIME 19.41
DELIVERY TIME 19.98

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME NURSE DUCKETT
ORIGIN TIME 6.12
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 3
TRIP NO. 0
PICKUP ADDRESS 27 CROSS ST
PICKUP COORDINATES (174, 41)
PICKUP ZONE 0
EXPECTED TIME 9.94
PICKUP TIME 18.12
DELIVERY ADDRESS 10 GRANT ST
DELIVERY COORDINATES (118, 41)
DELIVERY ZONE 0
EXPECTED TIME 16.06
DELIVERY TIME 20.65

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SRAB
ORIGIN TIME 5.98
ACCOUNT NO. 1000894
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 4
TRIP NO. 1101004800
PICKUP ADDRESS 1 CENTRAL SQ
PICKUP COORDINATES (150, 46)
PICKUP ZONE 0
EXPECTED TIME 9.83
PICKUP TIME 7.73
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 14.80
DELIVERY TIME 22.00

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SRA9
ORIGIN TIME 5.98
ACCOUNT NO. 1000903
PRIORITY CLASS 1
NO. PASSENGERS 1

VEHICLE NO. 4
TRIP NO. 1101004800
PICKUP ADDRESS 30 RIVER ST
PICKUP COORDINATES (148, 40)
PICKUP ZONE 0
EXPECTED TIME 10.91
PICKUP TIME 17.95
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 16.24
DELIVERY TIME 22.17

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SRA12
ORIGIN TIME 11.08
ACCOUNT NO. 1001241
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 4
TRIP NO. 1106247680
PICKUP ADDRESS 70 PUTNAM AV
PICKUP COORDINATES (125, 40)
PICKUP ZONE 0
EXPECTED TIME 14.86
PICKUP TIME 18.80
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 18.64
DELIVERY TIME 22.35

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SMA8
ORIGIN TIME 16.08
ACCOUNT NO. 1003370
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 1108606976
PICKUP ADDRESS 10 COTTAGE ST
PICKUP COORDINATES (152, 34)
PICKUP ZONE 0
EXPECTED TIME 24.72
PICKUP TIME 21.77
DELIVERY ADDRESS MORSE SCHOOL
DELIVERY COORDINATES (156, 5)
DELIVERY ZONE 0
EXPECTED TIME 27.89
DELIVERY TIME 22.52

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SRA14
 ORIGIN TIME 11.08
 ACCOUNT NO. 1001465
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 4
 TRIP NO. 1106247680
 PICKUP ADDRESS 4 GRANT ST
 PICKUP COORDINATES (118, 41)
 PICKUP ZONE 0
 EXPECTED TIME 16.01
 PICKUP TIME 19.75
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 19.65
 DELIVERY TIME 22.68

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SRA2
 ORIGIN TIME 3.98
 ACCOUNT NO. 1000236
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 3
 TRIP NO. 1098907648
 PICKUP ADDRESS 15 AMES ST
 PICKUP COORDINATES (182, 56)
 PICKUP ZONE 0
 EXPECTED TIME 8.97
 PICKUP TIME 16.65
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 17.40
 DELIVERY TIME 23.20

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SRA4
 ORIGIN TIME 3.98
 ACCOUNT NO. 1000453
 PRIORITY CLASS 1

NO. PASSENGERS 1
 VEHICLE NO. 3
 TRIP NO. 1098907648
 PICKUP ADDRESS 64 STATE ST
 PICKUP COORDINATES (175, 49)
 PICKUP ZONE 0
 EXPECTED TIME 8.08
 PICKUP TIME 5.88
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 19.02
 DELIVERY TIME 23.37

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SRA3
 ORIGIN TIME 3.98
 ACCOUNT NO. 1000341
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 3
 TRIP NO. 1098907648
 PICKUP ADDRESS 10 ALBANY ST
 PICKUP COORDINATES (182, 53)
 PICKUP ZONE 0
 EXPECTED TIME 8.77
 PICKUP TIME 8.03
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 18.48
 DELIVERY TIME 23.70

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SRA7
 ORIGIN TIME 5.98
 ACCOUNT NO. 1000782
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 3
 TRIP NO. 1101004800
 PICKUP ADDRESS 1 FRANKLIN ST
 PICKUP COORDINATES (169, 40)
 PICKUP ZONE 0
 EXPECTED TIME 10.27
 PICKUP TIME 19.02
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 18.51
 DELIVERY TIME 23.87

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME MAJOR MAJOR
ORIGIN TIME 7.15
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 4
TRIP NO. 0
PICKUP ADDRESS 280 FRANKLIN ST
PICKUP COORDINATES (148, 42)
PICKUP ZONE 0
EXPECTED TIME 10.74
PICKUP TIME 16.47
DELIVERY ADDRESS MORSE SCHOOL
DELIVERY COORDINATES (156, 5)
DELIVERY ZONE 0
EXPECTED TIME 23.57
DELIVERY TIME 25.25

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SMA6
ORIGIN TIME 11.08
ACCOUNT NO. 1003153
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 4
TRIP NO. 1106247680
PICKUP ADDRESS 10 COWPERTHWAITTE ST
PICKUP COORDINATES (118, 38)
PICKUP ZONE 0
EXPECTED TIME 16.03
PICKUP TIME 19.57
DELIVERY ADDRESS MORSE SCHOOL
DELIVERY COORDINATES (156, 5)
DELIVERY ZONE 0
EXPECTED TIME 27.76
DELIVERY TIME 25.40

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SMA9
ORIGIN TIME 20.92
ACCOUNT NO. 1003482
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 6
TRIP NO. 1108934656
PICKUP ADDRESS CENTRAL SQ
PICKUP COORDINATES (150, 46)
PICKUP ZONE 0
EXPECTED TIME 25.39

PICKUP TIME	23.53
DELIVERY ADDRESS	MORSE SCHOOL
DELIVERY COORDINATES	(156, 5)
DELIVERY ZONE	0
EXPECTED TIME	29.67
DELIVERY TIME	25.85

STATISTICS TAKEN ON 26 OF 26 TOTAL TRANSACTIONS

LEVEL OF SERVICE STATISTICS

MEAN	0.05
VARIANCE	0.00
MINIMUM	0.00
MAXIMUM	0.13

LATENESS

MEAN	4.93
VARIANCE	4.55

EARLINESS

MEAN	4.66
VARIANCE	17.73

COMBINED

MEAN	-0.51
------	-------

APPENDIX H

TRANSACTION FILE FOR SCENARIO I.2.6 (AFTER CRASH)

USERID: TSCENT2

ACCT: 14R1

OUTPUT GENERATED: 09/11/71 AT 11.58.33
OUTPUT PRINTED: 09/11/71 AT 11.58.39 ON 00F

BILLED CUSTOMER DROPPED DURING MANUAL OPERATION

NAME SRA11
ORIGIN TIME 11.08
ACCOUNT NO. 1001136
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 1
TRIP NO. 1106247680
PICKUP ADDRESS 11 PUTNAM AV
PICKUP COORDINATES (122, 44)
PICKUP ZONE 0
EXPECTED TIME 17.81
PICKUP TIME 41.77
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 20.25
DELIVERY TIME 41.77

BILLED CUSTOMER DROPPED DURING MANUAL OPERATION

NAME SRA13
ORIGIN TIME 11.09
ACCOUNT NO. 1001353
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 1
TRIP NO. 1106247680
PICKUP ADDRESS 50 RIVER ST
PICKUP COORDINATES (146, 38)
PICKUP ZONE 0
EXPECTED TIME 16.24
PICKUP TIME 23.03
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 21.93
DELIVERY TIME 41.77

BILLED CUSTOMER DROPPED DURING MANUAL OPERATION

NAME SRA15
ORIGIN TIME 11.08
ACCOUNT NO. 1001570
PRIORITY CLASS 1

EXPECTED TIME 39.23
DELIVERY TIME 41.77

BILLED CUSTOMER DROPPED DURING MANUAL OPERATION

NAME SR7
ORIGIN TIME 25.95
ACCOUNT NO. 1002253
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 3
TRIP NO. 1109262336
PICKUP ADDRESS 58 ALLSTON ST
PICKUP COORDINATES (161, 19)
PICKUP ZONE 0
EXPECTED TIME 31.99
PICKUP TIME 41.77
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)

DELIVERY ZONE 0
EXPECTED TIME 38.53
DELIVERY TIME 41.77

BILLED CUSTOMER DROPPED DURING MANUAL OPERATION

NAME SR8
ORIGIN TIME 31.00
ACCOUNT NO. 1002365
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 4
TRIP NO. 1109590016
PICKUP ADDRESS 100 MEMORIAL DR
PICKUP COORDINATES (204, 57)
PICKUP ZONE 0
EXPECTED TIME 37.45
PICKUP TIME 41.77
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 47.39
DELIVERY TIME 41.77

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME MR. BANG
ORIGIN TIME 31.77
ACCOUNT NO. 0
PRIORITY CLASS 2
NO. PASSENGERS 1
VEHICLE NO. 4
TRIP NO.

0
 PICKUP ADDRESS 10 ERIE ST
 PICKUP COORDINATES (166, 23)
 PICKUP ZONE 0
 EXPECTED TIME 42.60
 PICKUP TIME 41.77
 NO. PASSENGERS 1
 VEHICLE NO. 1
 TRIP NO. 1106247680
 PICKUP ADDRESS 370 GREEN ST
 PICKUP COORDINATES (148, 44)
 PICKUP ZONE 0
 EXPECTED TIME 16.73
 PICKUP TIME 20.33
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 23.99
 DELIVERY TIME 41.77

NON-BILLED CUSTOMER DROPPED DURING MANUAL OPERATION

NAME HERMAN
 ORIGIN TIME 17.05
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 3
 VEHICLE NO. 2
 TRIP NO. 0
 PICKUP ADDRESS 10 PERRY ST
 PICKUP COORDINATES (152, 36)
 PICKUP ZONE 0
 EXPECTED TIME 28.09
 PICKUP TIME 41.77
 DELIVERY ADDRESS MORSE SCHOOL
 DELIVERY COORDINATES (156, 5)
 DELIVERY ZONE 0
 EXPECTED TIME 31.44
 DELIVERY TIME 41.77

BILLED CUSTOMER DROPPED DURING MANUAL OPERATION

NAME SR10
 ORIGIN TIME 31.00
 ACCOUNT NO. 1002582
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 3
 TRIP NO. 1109590016
 PICKUP ADDRESS 9 KINNAIRD ST
 PICKUP COORDINATES (132, 42)
 PICKUP ZONE 0
 EXPECTED TIME 35.86

PICKUP TIME 41.77
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 DELIVERY ADDRESS KENDALL SQ
 DELIVERY COORDINATES (201, 66)
 DELIVERY ZONE 0
 EXPECTED TIME 59.21
 DELIVERY TIME 43.52

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SR9
 ORIGIN TIME 31.00
 ACCOUNT NO. 1002470
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 1
 TRIP NO. 1109590016
 PICKUP ADDRESS 600 MEMORIAL DR
 PICKUP COORDINATES (171, 7)
 PICKUP ZONE 0
 EXPECTED TIME 42.79
 PICKUP TIME 42.47

STATISTICS TAKEN ON 29 OF 29 TOTAL TRANSACTIONS

LEVEL OF SERVICE STATISTICS

MEAN 0.07
 VARIANCE 0.00
 MINIMUM 0.01
 MAXIMUM 0.30

LATENESS

MEAN 10.91
 VARIANCE 155.07

FARLINESS

MEAN 5.17
 VARIANCE 25.05

COMBINED

MEAN -2.87

NAME MAID 2
 ORIGIN TIME 53.02
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 4
 TRIP NO. 0
 PICKUP ADDRESS HARVARD SQ

PICKUP COORDINATES (101, 47)
PICKUP ZONE 0
EXPECTED TIME 54.23
PICKUP TIME 53.20
DELIVERY ADDRESS 10 FRONT ST
DELIVERY COORDINATES (173, 45)
DELIVERY ZONE 0
EXPECTED TIME 61.30
DELIVERY TIME 59.02

ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 5
VEHICLE NO. 3

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME MAID 4
ORIGIN TIME 54.05
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 0
PICKUP ADDRESS HARVARD SQ
PICKUP COORDINATES (101, 47)
PICKUP ZONE 0
EXPECTED TIME 58.05
PICKUP TIME 56.00
DELIVERY ADDRESS 12 COTTAGE ST
DELIVERY COORDINATES (152, 34)
DELIVERY ZONE 0
EXPECTED TIME 63.35
DELIVERY TIME 64.97

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME MAID 11
ORIGIN TIME 58.55
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 3
TRIP NO. 0
PICKUP ADDRESS HARVARD SQ
PICKUP COORDINATES (101, 47)
PICKUP ZONE 0
EXPECTED TIME 64.87
PICKUP TIME 59.25
DELIVERY ADDRESS 222 RIVER ST
DELIVERY COORDINATES (140, 28)
DELIVERY ZONE 0

EXPECTED TIME 69.32
 DELIVERY TIME 65.25
 TRIP NO. 0
 PICKUP ADDRESS POLICE DEPT.
 PICKUP COORDINATES (148, 42)
 PICKUP ZONE 0
 EXPECTED TIME 50.82
 PICKUP TIME 52.83
 DELIVERY ADDRESS 2 FRIE ST
 DELIVERY COORDINATES (166, 23)
 DELIVERY ZONE 0
 EXPECTED TIME 53.70
 DELIVERY TIME 58.13

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME MAID 1
 ORIGIN TIME 52.52
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 1
 TRIP NO. 0
 PICKUP ADDRESS HARVARD SQ
 PICKUP COORDINATES (101, 47)
 PICKUP ZONE 0
 EXPECTED TIME 52.52
 PICKUP TIME 52.55
 DELIVERY ADDRESS 60 WADSWORTH ST
 DELIVERY COORDINATES (202, 64)
 DELIVERY ZONE 0
 EXPECTED TIME 62.36
 DELIVERY TIME 58.47

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME 0315
 ORIGIN TIME 41.77
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 6
 TRIP NO. 0
 PICKUP ADDRESS
 PICKUP COORDINATES (0, 0)
 PICKUP ZONE 0
 EXPECTED TIME 0.0
 PICKUP TIME 41.77
 DELIVERY ADDRESS CARS
 DELIVERY COORDINATES (200, 62)
 DELIVERY ZONE 0
 EXPECTED TIME 67.37

DELIVERY TIME 58.60

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 1108934656
PICKUP ADDRESS 10 SMART ST
PICKUP COORDINATES (175, 46)
PICKUP ZONE 0
EXPECTED TIME 44.92
PICKUP TIME 44.90
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 53.74
DELIVERY TIME 54.28

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SR2
ORIGIN TIME 20.92
ACCOUNT NO. 1001794
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 1108934656
PICKUP ADDRESS 20 AUDREY ST
PICKUP COORDINATES (173, 13)
PICKUP ZONE 0
EXPECTED TIME 26.80
PICKUP TIME 25.53
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 54.74
DELIVERY TIME 54.52

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SR3
ORIGIN TIME 20.92
ACCOUNT NO. 1001803
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 1108934656
PICKUP ADDRESS MIT
PICKUP COORDINATES (187, 42)
PICKUP ZONE 0
EXPECTED TIME 30.24
PICKUP TIME 41.77

DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 55.74
DELIVERY TIME 54.78

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME YOSSARIAN
ORIGIN TIME 48.32

TRIP NO. 0
PICKUP ADDRESS 4 GRANT ST
PICKUP COORDINATES (118, 41)
PICKUP ZONE 0
EXPECTED TIME 50.17
PICKUP TIME 46.80
DELIVERY ADDRESS POST OFFICE
DELIVERY COORDINATES (144, 47)
DELIVERY ZONE 0
EXPECTED TIME 53.10
DELIVERY TIME 48.47

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME 0500
ORIGIN TIME 41.77
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 2
TRIP NO. 0
PICKUP ADDRESS 100 MASS AV
PICKUP COORDINATES (187, 42)
PICKUP ZONE 0
EXPECTED TIME 42.77
PICKUP TIME 43.00
DELIVERY ADDRESS 11 DUNSTER ST
DELIVERY COORDINATES (103, 45)
DELIVERY ZONE 0
EXPECTED TIME 52.49
DELIVERY TIME 52.98

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SMA10
ORIGIN TIME 25.95
ACCOUNT NO. 1003594
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 6
TRIP NO. 1109262336
PICKUP ADDRESS 50 LOPEZ ST

PICKUP COORDINATES (157, 33)
PICKUP ZONE 0
EXPECTED TIME 42.77
PICKUP TIME 43.88
DELIVERY ADDRESS MORSE SCHOOL
DELIVERY COORDINATES (156, 5)
DELIVERY ZONE 0
EXPECTED TIME 59.81
DELIVERY TIME 53.93

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SR1
ORIGIN TIME 20.92
ACCOUNT NO. 1001682
PRIORITY CLASS 1

PICKUP COORDINATES (158, 38)
PICKUP ZONE 0
EXPECTED TIME 44.23
PICKUP TIME 45.70
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 50.49
DELIVERY TIME 47.37

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SR4
ORIGIN TIME 25.95
ACCOUNT NO. 1001915
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 6
TRIP NO. 1109262336
PICKUP ADDRESS 35 SIDNEY ST
PICKUP COORDINATES (166, 41)
PICKUP ZONE 0
EXPECTED TIME 29.36
PICKUP TIME 41.77
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 51.49
DELIVERY TIME 47.63

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SR6
ORIGIN TIME 25.95
ACCOUNT NO. 1002141
PRIORITY CLASS

	1
NO. PASSENGERS	1
VEHICLE NO.	6
TRIP NO.	1109262336
PICKUP ADDRESS	79 FRANKLIN ST
PICKUP COORDINATES	(169, 40)
PICKUP ZONE	0
EXPECTED TIME	30.15
PICKUP TIME	41.77
DELIVERY ADDRESS	HARVARD SQ
DELIVERY COORDINATES	(101, 47)
DELIVERY ZONE	0
EXPECTED TIME	52.49
DELIVERY TIME	47.80

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME	MRS UHAUL
ORIGIN TIME	42.92
ACCOUNT NO.	1020036
PRIORITY CLASS	1
NO. PASSENGERS	1
VEHICLE NO.	3
EXPECTED TIME	42.77
PICKUP TIME	43.18
DELIVERY ADDRESS	54 PUTNAM AV
DELIVERY COORDINATES	(125, 40)
DELIVERY ZONE	0
EXPECTED TIME	47.87
DELIVERY TIME	45.37

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME	0201
ORIGIN TIME	41.77
ACCOUNT NO.	0
PRIORITY CLASS	1
NO. PASSENGERS	1
VEHICLE NO.	4
TRIP NO.	0
PICKUP ADDRESS	
PICKUP COORDINATES	(0, 0)
PICKUP ZONE	0
EXPECTED TIME	0.0
PICKUP TIME	41.77
DELIVERY ADDRESS	30 MT.AUBURN ST
DELIVERY COORDINATES	(114, 44)
DELIVERY ZONE	0
EXPECTED TIME	68.39
DELIVERY TIME	45.55

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME	ROMONA
------	--------

ORIGIN TIME 42.18
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 2
 TRIP NO. 0
 PICKUP ADDRESS 100 MEMORIAL DR
 PICKUP COORDINATES (204, 57)
 PICKUP ZONE 0
 EXPECTED TIME 48.75
 PICKUP TIME 45.93
 DELIVERY ADDRESS YMCA
 DELIVERY COORDINATES (144, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 54.80
 DELIVERY TIME 46.35

TRANSACTION INFORMATION FOR AUTOMATICALLY BILLED COMPLETE TRIP FOLLOWS:

NAME SR5
 ORIGIN TIME 25.95
 ACCOUNT NO. 1002036
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 6
 TRIP NO. 1109262336
 PICKUP ADDRESS 100 AUBURN ST
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 53.99
 DELIVERY TIME 44.23

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME 0200
 ORIGIN TIME 41.77
 ACCOUNT NO. 0
 PRIORITY CLASS 1
 NO. PASSENGERS 1
 VEHICLE NO. 1
 TRIP NO. 0
 PICKUP ADDRESS LAFAYETTE SQ
 PICKUP COORDINATES (163, 45)
 PICKUP ZONE 0
 EXPECTED TIME 47.33
 PICKUP TIME 44.05
 DELIVERY ADDRESS HARVARD SQ
 DELIVERY COORDINATES (101, 47)
 DELIVERY ZONE 0
 EXPECTED TIME 54.99
 DELIVERY TIME 44.42

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME 0199
ORIGIN TIME 41.77
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 2
VEHICLE NO. 1
TRIP NO. 0
PICKUP ADDRESS
PICKUP COORDINATES (0, 0)
PICKUP ZONE 0
EXPECTED TIME 0.0
PICKUP TIME 41.77
DELIVERY ADDRESS HARVARD SQ
DELIVERY COORDINATES (101, 47)
DELIVERY ZONE 0
EXPECTED TIME 55.99
DELIVERY TIME 44.60

TRANSACTION INFORMATION FOR COMPLETED TRIP FOLLOWS:

NAME 0204
ORIGIN TIME 41.77
ACCOUNT NO. 0
PRIORITY CLASS 1
NO. PASSENGERS 1
VEHICLE NO. 3
TRIP NO. 0
PICKUP ADDRESS 23 GREEN ST
PICKUP COORDINATES (170, 42)
PICKUP ZONE 0

APPENDIX I

System Status Dump
During Scenario I. 2.6

SYSTEM STATUS AT TIME 32.433 FOR RUN 1

DN	ACTIVE DEMAND LIST NAME	NUM	PRTY	ORGTIME	PICTIME	VEH
21	SRA11 11 PUTNAM AV	1	1	11.083	0.0 HARVARD SQ	1 (101, 47)
23	SRA13 50 RIVER ST	1	1	11.083	23.033 HARVARD SQ	1 (101, 47)
25	SRA15 370 GREEN ST	1	1	11.083	20.333 HARVARD SQ	1 (101, 47)
40	SR9 600 MEMORIAL DR	1	1	30.999	0.0 HARVARD SQ	1 (101, 47)
31	SR1 10 SMART ST	1	1	20.916	0.0 HARVARD SQ	2 (101, 47)
32	SR2 20 AUDREY ST	1	1	20.916	25.533 HARVARD SQ	2 (101, 47)
33	SR3 MIT	1	1	20.916	0.0 HARVARD SQ	2 (101, 47)
29	HERMAN 10 PERRY ST	3	1	17.050	21.050 MORSE SCHOOL	2 (156, 5)
37	SR7 58 ALLSTON ST	1	1	25.950	0.0 HARVARD SQ	3 (101, 47)
41	SR10 9 KINNAIRD ST	1	1	30.999	0.0 HARVARD SQ	3 (101, 47)
39	SR8 100 MEMORIAL DR	1	1	30.999	0.0 HARVARD SQ	4 (101, 47)
42	MR. BANG 10 ERIE ST	1	2	31.766	0.0 KENDALL SQ	4 (201, 66)
34	SR4 35 SIDNEY ST	1	1	25.950	0.0 HARVARD SQ	6 (101, 47)
35	SR5 100 AUBURN ST	1	1	25.950	0.0 HARVARD SQ	6 (101, 47)
36	SR6 79 FRANKLIN ST	1	1	25.950	0.0 HARVARD SQ	6 (101, 47)
38	SMA10 50 LOPEZ ST	1	1	25.950	0.0 MORSE SCHOOL	6 (156, 5)

VEHICLES AND TOUR LISTS.

DN	ADDRESS	COORDS	TYPE	TIME	CONST
VEHICLE 1	LAST POSITION X 146, Y 38 AT 23.03, CURRENT CONTENTS 2, LAST STOP MADE AT 23.03, AVERAGE EARLINESS 4.620, AVERAGE LATENESS 2.243, CURRENT TOUR FOLLOWS:				
21	11 PUTNAM AV	(122, 44)	2425	32.93	-16.38
21	HARVARD SQ	(101, 47)	-2	35.37	-16.38
23	HARVARD SQ	(101, 47)	-2	35.87	-13.84
25	HARVARD SQ	(101, 47)	-2	36.37	-13.84
40	600 MEMORIAL DR	(171, 7)	3428	44.22	-5.04

40 HARVARD SQ (101, 47) -2 52.07 -5.04

VEHICLE 2 LAST POSITION X 173, Y 13 AT 25.53, CURRENT CONTENTS 1, LAST STOP MADE AT 25.53 ,
AVERAGE EARLINESS 2.115 , AVERAGE LATENESS 1.705 , CURRENT TOUR FOLLOWS:

29	10 PFERRY ST	(152, 36)	3015	32.93	-14.05
29	MORSE SCHOOL	(156, 5)	-1	36.28	-14.05
33	MIT	(187, 42)	3310	41.19	-14.05
31	10 SMART ST	(175, 46)	3192	42.94	-14.05
31	HARVARD SQ	(101, 47)	-2	50.09	-14.05
32	HARVARD SQ	(101, 47)	-2	50.59	-13.78
33	HARVARD SQ	(101, 47)	-2	51.09	-13.39

VEHICLE 3 LAST POSITION X 101, Y 47 AT 25.95, CURRENT CONTENTS 0, LAST STOP MADE AT 23.87 ,
AVERAGE EARLINESS 1.551 , AVERAGE LATENESS 1.557 , CURRENT TOUR FOLLOWS:

37	58 ALLSTON ST	(161, 19)	1717	32.93	-0.66
41	9 KINNAIRD ST	(132, 42)	3487	36.81	-0.66
41	HARVARD SQ	(101, 47)	-2	40.17	-0.66
37	HARVARD SQ	(101, 47)	-2	40.67	-0.66

VEHICLE 4 LAST POSITION X 156, Y 5 AT 31.00, CURRENT CONTENTS 0, LAST STOP MADE AT 25.40 ,
AVERAGE EARLINESS 1.795 , AVERAGE LATENESS 1.396 , CURRENT TOUR FOLLOWS:

39	100 MEMORIAL DR	(204, 57)	1599	37.45	-14.86
42	10 ERIF ST	(166, 23)	3133	42.60	-14.86
39	HARVARD SQ	(101, 47)	-2	49.42	-14.86
42	KENDALL SQ	(201, 66)	-2	59.71	-14.86

VEHICLE 5 LAST POSITION X 152, Y 36 AT 24.25, CURRENT CONTENTS 0, LAST STOP MADE AT 21.05 ,
AVERAGE EARLINESS 3.267 , AVERAGE LATENESS 1.948 , CURRENT TOUR FOLLOWS:

VEHICLE 6 LAST POSITION X 156, Y 5 AT 25.95, CURRENT CONTENTS 0, LAST STOP MADE AT 25.95 ,
AVERAGE EARLINESS 2.132 , AVERAGE LATENESS 3.284 , CURRENT TOUR FOLLOWS:

34	35 SIDNEY ST	(166, 41)	3369	32.93	-15.24
36	79 FRANKLIN ST	(169, 40)	1481	33.72	-15.24
38	50 LOPEZ ST	(157, 33)	1776	35.49	-15.24
35	100 AUBURN ST	(158, 38)	2248	36.45	-15.24
35	HARVARD SQ	(101, 47)	-2	42.72	-15.24
34	HARVARD SQ	(101, 47)	-2	42.72	-15.24
36	HARVARD SQ	(101, 47)	-2	43.22	-15.24
38	MORSE SCHOOL	(156, 5)	-2	50.03	-15.24

TIME = 32.966

INTERMEDIATE I/O AT TIME = 32.966 FOR RUN 1

COMPOSITE VEHICLE AVERAGE CONTENTS= 0.74 AND PER CENT TIME EMPTY= 33.22, PER CENT TIME UNASSIGNED= 13.25
 42 DEMANDS REPRESENTING 44 PASSENGERS HAVE OCCURRED WITH AN AVERAGE DISTANCE 0.95 BETWEEN ORIGIN & DESTINATION.
 28 PICKUPS AND 24 DELIVERIES HAVE BEEN MADE, WITH 18 DEMANDS (16 OBSERVED) CURRENTLY ON THE SYSTEM.
 THE MEAN OF THE INDIVIDUAL LEVELS OF SERVICE IS 2.81 WITH A VARIANCE OF 1.941
 THE OVERALL WEIGHTED LEVEL OF SERVICE IS 2.63

STATISTICS FOR DEMANDS IN PRIORITY CLASS 1 :

COMPOSITE STATISTICS FOR 20 DEMANDS AND 22 PASSENGERS:
 THE WEIGHTED LEVEL OF SERVICE IS 2.69

	BY DEMAND		BY PASSENGER	
	WAITING TIME	TRAVEL TIME	TOTAL TIME	TOTAL TIME
MEAN	7.667	5.455	13.121	12.310
VARIANCE	17.225	24.630	21.261	25.906
NORMALIZED MEAN	0.511	0.419	1.100	1.035
WEIGHTED NORMALIZED MEAN	0.511	0.439	1.102	1.137
NO. OF CONSTRAINT VIOLATIONS	0	2	13	13
NORMALIZED VIOLATION TIME	0.0	0.014	0.192	0.175
MINIMUM	13.033	17.483	19.716	0.013
NORMALIZED MAXIMUM	0.583	0.167	4.200	
NORMALIZED MINIMUM	0.869	1.169	1.778	
AVERAGE DEVIATION IN PICKUP TIMES	0.039	0.017	0.386	
AVERAGE DEVIATION IN DELIVERY TIMES	4.683	5.943		
THE MEAN TRAVEL RATIO IS 1.139	3.686	3.181		

THE MEAN MEASURE OF SERVICE (WITH ACCESS = 4.00 MIN.) IS 1.43 WITH A MAXIMUM VALUE OF 2.43 , A VARIANCE OF 0.27 ,
 AND AN R.M.S. MEASURE OF SERVICE OF 1.52

STATISTICS BY TRIP LENGTHS (IN MILES)

TRIPS	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-
MEAN LEVEL OF SERVICE (VARIANCE)	3.03 3.0	2.61 0.1	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
MEAN WAITING TIME (VARIANCE)	5.59 16.2	9.52 16.2	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
MEAN TRAVEL RATIO (VARIANCE)	1.22 0.7	1.00 0.7	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0

STATISTICS FOR DEMANDS IN PRIORITY CLASS 2 :

COMPOSITE STATISTICS FOR 1 DEMANDS AND 1 PASSENGERS:
 THE WEIGHTED LEVEL OF SERVICE IS 1.22

	BY DEMAND		BY PASSENGER	
	WAITING TIME	TRAVEL TIME	TOTAL TIME	TOTAL TIME
MEAN	1.567	4.000	5.567	5.567
VARIANCE	-0.0	-0.0	-0.0	-0.0
NORMALIZED MEAN	0.157	0.465	0.687	0.587
WEIGHTED NORMALIZED MEAN	0.157	0.465	0.687	0.465

NO. OF CONSTRAINT VIOLATIONS 0
 NORMALIZED VIOLATION TIME 0.0
 MAXIMUM 1.567
 MINIMUM 1.567
 NORMALIZED MAXIMUM 0.157
 NORMALIZED MINIMUM 0.157
 AVERAGE DEVIATION IN PICKUP TIMES 2.753, VARIANCE -0.0
 AVERAGE DEVIATION IN DELIVERY TIMES 3.175, VARIANCE -0.0
 THE MEAN TRAVEL RATIO IS 1.020

THE MEAN MEASURE OF SERVICE (WITH ACCESS = 4.00 MIN.) IS 0.70 WITH A MAXIMUM VALUE OF 0.70, A VARIANCE OF 0.0, AND AN R.M.S. MEASURE OF SERVICE OF 0.70

STATISTICS BY TRIP LENGTHS (IN MILES)

	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-
TRIPS	1	0	0	0	0	0	0	0	0
MEAN LEVEL OF SERVICE (VARIANCE)	1.42 -0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
MEAN WAITING TIME (VARIANCE)	1.57 -0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
MEAN TRAVEL RATIO (VARIANCE)	1.02 -0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0

STATISTICS FOR DEMANDS IN PRIORITY CLASS 3 :

THE VEHICLE PRODUCTIVITY (PASSENGER-MILE PER VEHICLE-HOUR) IS 13.59
 THE VEHICLE PRODUCTIVITY (PASSENGER TRIPS PER VEHICLE-HOUR) IS 14.26
 THE MAXIMUM AMOUNT OF POOL IN USE AT ONE TIME WAS 3506 WORDS
 18 DEMANDS ON THE SYSTEM
 THE MEAN LEVEL OF SERVICE IS 2.81
 THE WEIGHTED LEVEL OF SERVICE IS 2.63

APPENDIX J

The Job Stream Employed for Restart from
an Intermediate Term Failure
During Scenario I. 2.6

FILE: CARD TWO P1

```
// JOB RUIN THE CARS SYSTEM
// ASSGN SYS002,X'00C'
// ASSGN SYS005,X'00F'
// ASSGN SYS006,X'130'
// ASSGN SYS007,X'130'
// ASSGN SYS008,X'130'
// ASSGN SYS003,X'130'
// ASSGN SYS004,X'130'
// DLBL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3820,60
// DLBL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3880,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02F'
// ASSGN SYS024,X'0FF'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SUPROO0
```

DOWN

TIME 10

1 4

2 3

3 4

4 3

6 2

QUIT

VEHI 1

0199 2P 900 MASS AV

NSTP

0200 1P LAFAYETTE SQ

0200 1D HARVARD SQ

0199 2D HARVARD SQ

VEHI 2

FSTP

0500 1P 100 MASS AV

0500 1D 11 DUNSTER ST

VEHI 3

0202 2D HARVARD SQ

DSTP

0204 1P 23 GREEN ST

0204 1D 54 PUTNAM AV

VEHI 4

NSTP
0201 1D 30 MT.AUBURN ST
VEHI 6
0315 1P HARVARD SQ

NSTP
0315 1D CARS
QUIT

SMA1

MIT

<F

&

SMA2

HARVARD SQ

<

&

FILE: CARD TWO P1

SMA3

5 WADSWORTH ST

(

&

SMA4

2 FRONT ST

(

SMA5

700 GREEN ST

+

SMA6

10 COWPERTHWAITTE ST

+

0

SMA7

100 AUBURN ST

|

0

SMA8

10 COTTAGE ST

|

SMA9

CENTRAL SQ

|

SMA10

50 LOPEZ ST

&

/*
/*
/*
/&

APPENDIX K

Full Statistical Output
From Scenario I. 2.6

```

// JOB RUN THE CARS SYSTEM
// ASSGN SYS002,X'00C'
// ASSGN SYS005,X'00E'
// ASSGN SYS006,X'13C'
// ASSGN SYS007,X'13D'
// ASSGN SYS008,X'13E'
// ASSGN SYS003,X'13D'
// ASSGN SYS004,X'13E'
// DLBL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3820,60
// DLBL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3880,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02F'
// ASSGN SYS024,X'0FF'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SUDPROG

```

```

TABLES R/LET
WARMSTART, COLDSTART OR NEWDATA?
RESTART SUCCESSFUL USING BACKUP FILE 4, THE TIME IS 31.77
DEMAND NUMBER 42 LAST ASSIGNED

```

```

RUN NUMBER 1 WITH 5 BLOCKS OF HISTORY AT TIME 0.0
PLEASE ENTER YOUR NAME

```

```

ACCEPTANCE TEST INPUT FILE SIX
THANK YOU

```

SIMULATION INPUT DATA

VEHICLE CHARACTERISTICS

6 VEHICLES OF CAPACITY 10

SPEED: 4.00 (MINUTES PER MILE)

TRANSACTIONS BEING WRITTEN

THERE ARE 0 DISPATCHING POINTS AND 0 DISTINCT DESTINATIONS

SERVICE CHARACTERISTICS:

0.0 MINUTES PICKUP AND DELIVERY TIME PER PASSENGER
THERE ARE 3 PRIORITIES OF SERVICE

FOR PRIORITY CLASS 1:

15.0 WAITING TIME CONSTRAINT (MINS)
1.5*STRGHT + 5.0 TRAVEL TIME CONSTRAINT (MINS)
1.5*STRGHT + 5.0 TOTAL TIME CONSTRAINT (MINS)
DEMANDS IN THIS PRIORITY CLASS ARE GENERATED 0.400 FRACTION OF THE TIME

FOR PRIORITY CLASS 2:

10.0 WAITING TIME CONSTRAINT (MINS)
1.3*STRGHT + 3.0 TRAVEL TIME CONSTRAINT (MINS)
1.3*STRGHT + 3.0 TOTAL TIME CONSTRAINT (MINS)
DEMANDS IN THIS PRIORITY CLASS ARE GENERATED 0.300 FRACTION OF THE TIME

FOR PRIORITY CLASS 3:

5.0 WAITING TIME CONSTRAINT (MINS)
1.3*STRGHT + 5.0 TRAVEL TIME CONSTRAINT (MINS)
1.3*STRGHT + 10.0 TOTAL TIME CONSTRAINT (MINS)
DEMANDS IN THIS PRIORITY CLASS ARE GENERATED 0.300 FRACTION OF THE TIME
ALGORITHM OPTIONS SPECIFIED:

STATISTICS WILL BE TAKEN FOR DEMANDS ARISING BETWEEN 0. AND 999. (MINS)
MINIMUM TRIP 0.50 MILES
DISTANCE ADJUSTMENT 1.20*STRGHT
MINIMUM ALLOWED VALUE OF LINK FACTOR 0.0 (PER CENT)

25 INITIAL DEMANDS
 ACCESS TIME (IN MINUTES) 4.00
 MILES PER UNIT 0.0190
 OBJECTIVE FUNCTION: 7 REQUESTED AT TIME 0.0
 $ARET = A*(TNDLV(INP)+1)*ALONGP + B*(TNDLV(IND)+1)*ALONGD$
 $OBJECT = ARET + KIRK*DPASSN(IDEM)*GTIM(1)$
 MONITORING: EVENTS 1 DEMANDS 1 VEHICLES 1
 ASSIGNMENT TIME FOR STANDING REQUESTS: 4.100
 MAXIMUM EARLINESS ALLOWED AT TIME OF ASSIGNMENT FOR STANDING REQUESTS: 1.000
 MAXIMUM NUMBERS ALLOWED DURING COURSE OF RUN:

VEHICLES	DISPATCHING POINTS	STATIONS	SEEDS	DISTRIBUTIONS
20	20	20	20	20

THE AMOUNT OF POOL (IN WORDS) USED THUS FAR:

VEHICLES	DISPATCHING POINTS	STATIONS	SEEDS	DISTRIBUTIONS	GEOGRAPHICS
1180	41	61	39	99	0

THIS LEAVES A TOTAL OF 11099 WORDS OUT OF THE ORIGINAL POOL OF 12500

SIMULATION INPUT DATA

VEHICLE CHARACTERISTICS

6 VEHICLES OF CAPACITY 10

INPUT DATA READ AND WRITTEN

VEHICLE 1	INITIALLY AT MIT	WITH COORDINATES X= 127 Y= 42
VEHICLE 2	INITIALLY AT 12 CENTRAL SQ	WITH COORDINATES X= 150 Y= 46
VEHICLE 3	INITIALLY AT KENNALL SQ	WITH COORDINATES X= 201 Y= 66
VEHICLE 4	INITIALLY AT B.U. BRIDGE	WITH COORDINATES X= 191 Y= 36
VEHICLE 5	INITIALLY AT 14 PLYMPTON ST	WITH COORDINATES X= 110 Y= 47
VEHICLE 6	INITIALLY AT 344 RIVER ST	WITH COORDINATES X= 135 Y= 19

INITIALIZATION COMPLETE

SYSTEM STATUS AT TIME 0.0 FOR RUN 1

DN	ACTIVE DEMAND LIST NAME	NUM	PRTY	ORGTIME	PICTIME	VEH
----	-------------------------	-----	------	---------	---------	-----

VEHICLES AND TOUR LISTS.

DN	ADDRESS	COORDS	TYPE	TIME	CONST
VEHICLE 1	LAST POSITION X 187, Y 42 AT	0.0	, CURRENT CONTENTS 0,	LAST STOP MADE AT	0.0
	AVERAGE EARLINESS 0.0 , AVERAGE LATENESS	0.0	, CURRENT TOUR FOLLOWS:		
VEHICLE 2	LAST POSITION X 150, Y 46 AT	0.0	, CURRENT CONTENTS 0,	LAST STOP MADE AT	0.0
	AVERAGE EARLINESS 0.0 , AVERAGE LATENESS	0.0	, CURRENT TOUR FOLLOWS:		
VEHICLE 3	LAST POSITION X 201, Y 66 AT	0.0	, CURRENT CONTENTS 0,	LAST STOP MADE AT	0.0
	AVERAGE EARLINESS 0.0 , AVERAGE LATENESS	0.0	, CURRENT TOUR FOLLOWS:		
VEHICLE 4	LAST POSITION X 191, Y 36 AT	0.0	, CURRENT CONTENTS 0,	LAST STOP MADE AT	0.0
	AVERAGE EARLINESS 0.0 , AVERAGE LATENESS	0.0	, CURRENT TOUR FOLLOWS:		
VEHICLE 5	LAST POSITION X 110, Y 47 AT	0.0	, CURRENT CONTENTS 0,	LAST STOP MADE AT	0.0
	AVERAGE EARLINESS 0.0 , AVERAGE LATENESS	0.0	, CURRENT TOUR FOLLOWS:		
VEHICLE 6	LAST POSITION X 135, Y 19 AT	0.0	, CURRENT CONTENTS 0,	LAST STOP MADE AT	0.0
	AVERAGE EARLINESS 0.0 , AVERAGE LATENESS	0.0	, CURRENT TOUR FOLLOWS:		

TIME = 0.0)
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 0.0
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 1(187, 42) TO (156, 5) ASSIGNED TO VEHICLE 6.
 EXPECTED ARRIVALS 5.2 AND 10.1 OBJ= 0.20710037E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 0.0
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 2(101, 47) TO (156, 5) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 4.5 AND 11.3 OBJ= 0.23343170E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 0.0
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 3(204, 62) TO (156, 5) ASSIGNED TO VEHICLE 5.
 EXPECTED ARRIVALS 8.7 AND 16.0 OBJ= 0.46006287E 02
 DEMAND 4(101, 47) TO (144, 47) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 5.0 AND 9.4 OBJ= 0.39277481E 02
 DEMAND 5(101, 47) TO (144, 47) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 5.0 AND 9.9 OBJ= 0.57372131E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 3.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 6(173, 45) TO (101, 47) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 7.2 AND 14.2 OBJ= 0.25685257E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 3.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 7(182, 56) TO (101, 47) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 9.0 AND 17.4 OBJ= 0.24167831E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 3.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 8(182, 53) TO (101, 47) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 8.8 AND 18.5 OBJ= 0.21304855E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 3.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2

DEMAND 9(175, 49) TO (101, 47) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 8.1 AND 19.0 OBJ= 0.22211365E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 3.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 10(150, 5) TO (101, 47) ASSIGNED TO VEHICLE 6.
 EXPECTED ARRIVALS 8.9 AND 15.3 OBJ= 0.23573990E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 3.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 11(174, 41) TO (101, 47) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 15.8 AND 23.0 OBJ= 0.95048950E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 3.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2

** TIME IS 4.78 AND VEHICLE 3 HAS REACHED A PSEUDO STOP
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 5.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 12(173, 45) TO (156, 5) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 9.6 AND 14.6 OBJ= 0.21494217E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 5.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 13(121, 43) TO (156, 5) ASSIGNED TO VEHICLE 1.
 EXPECTED ARRIVALS 12.0 AND 17.2 OBJ= 0.32959091E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 5.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2
 DEMAND 14(169, 40) TO (101, 47) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 10.3 AND 18.5 OBJ= 0.23809167E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 5.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTM(IDEM) - PTIM(1))**2

DEMAND 15(150, 46) TO (101, 47) ASSIGNED TO VEHICLE 4.
 EXPECTED ARRIVALS 9.8 AND 14.8 OBJ= 0.24148544E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 5.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 16(148, 40) TO (101, 47) ASSIGNED TO VEHICLE 4.
 EXPECTED ARRIVALS 10.9 AND 16.2 OBJ= 0.19450226E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 5.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 17(142, 6) TO (101, 47) ASSIGNED TO VEHICLE 6.
 EXPECTED ARRIVALS 10.2 AND 16.4 OBJ= 0.18237366E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 5.98
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 18(174, 41) TO (118, 41) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 9.9 AND 16.1 OBJ= 0.12090059E 03
 DEMAND 19(148, 42) TO (156, 5) ASSIGNED TO VEHICLE 4.
 EXPECTED ARRIVALS 10.7 AND 23.6 OBJ= 0.14726622E 03

 *** THE TIME IS 8.25 VEHICLE 5 HAS NO PLACE TO GO.
 DEMAND 20(182, 56) TO (156, 5) ASSIGNED TO VEHICLE 5.
 EXPECTED ARRIVALS 13.7 AND 19.4 OBJ= 0.21819427E 03
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 11.08
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 21(122, 44) TO (101, 47) ASSIGNED TO VEHICLE 1.
 EXPECTED ARRIVALS 17.8 AND 20.2 OBJ= 0.35817642E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 11.08
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD

 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 22(125, 40) TO (101, 47) ASSIGNED TO VEHICLE 4.
 EXPECTED ARRIVALS 14.9 AND 18.6 OBJ= 0.21837585E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 11.08
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 23(146, 38) TO (101, 47) ASSIGNED TO VEHICLE 1.
 EXPECTED ARRIVALS 16.2 AND 21.9 OBJ= 0.26331619E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 11.08
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 24(118, 41) TO (101, 47) ASSIGNED TO VEHICLE 4.
 EXPECTED ARRIVALS 16.0 AND 19.7 OBJ= 0.24213715E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 11.08
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 25(148, 44) TO (101, 47) ASSIGNED TO VEHICLE 1.
 EXPECTED ARRIVALS 16.7 AND 24.0 OBJ= 0.32160278E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 11.08
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 26(118, 38) TO (156, 5) ASSIGNED TO VEHICLE 4.
 EXPECTED ARRIVALS 16.0 AND 27.8 OBJ= 0.34067307E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 11.08
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 27(158, 38) TO (156, 5) ASSIGNED TO VEHICLE 5.
 EXPECTED ARRIVALS 16.9 AND 20.4 OBJ= 0.27198624E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 11.08
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 16.08
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 28(152, 34) TO (156, 5) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 24.7 AND 27.9 OBJ= 0.56473495E 02
 OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 16.08
 ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
 OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
 DEMAND 29(202, 64) TO (156, 5) ASSIGNED TO VEHICLE 5.
 EXPECTED ARRIVALS 31.6 AND 39.9 OBJ= 0.10493821E 04

```

*** THE TIME IS 18.67 VEHICLE 6HAS NO PLACE TO GO.
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 20.92
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 30(150, 46)TO (156, 5)ASSIGNED TO VEHICLE 6.
EXPECTED ARRIVALS 25.4AND 29.7 OBJ= 0.39062958E 02
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 20.92
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 31(175, 46)TO (101, 47)ASSIGNED TO VEHICLE 2.
EXPECTED ARRIVALS 29.2AND 36.5 OBJ= 0.66029724E 02
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 20.92
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 32(173, 13)TO (101, 47)ASSIGNED TO VEHICLE 2.
EXPECTED ARRIVALS 26.8AND 38.1 OBJ= 0.44018036E 02
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 20.92
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 33(187, 42)TO (101, 47)ASSIGNED TO VEHICLE 2.
EXPECTED ARRIVALS 30.2AND 40.1 OBJ= 0.72787262E 02
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 20.92
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
ARET = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2

*** THE TIME IS 23.87 VEHICLE 3HAS NO PLACE TO GO.
DEMAND 29(202, 64)TO (156, 5)ASSIGNED TO VEHICLE 2.
EXPECTED ARRIVALS 28.1AND 31.4 OBJ= 0.31440582E 02
VEHICLE 5 BROKEN DOWN; TIME 24.25 LOCATION 152, 36 NO. ACTIVE DEMANDS 1

*** THE TIME IS 25.40 VEHICLE 4HAS NO PLACE TO GO.

*** THE TIME IS 25.85 VEHICLE 6HAS NO PLACE TO GO.
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 25.95
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 34(166, 41)TO (101, 47)ASSIGNED TO VEHICLE 6.
EXPECTED ARRIVALS 29.4AND 35.8 OBJ= 0.46584320E 02
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 25.95
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 35(158, 38)TO (101, 47)ASSIGNED TO VEHICLE 6.
EXPECTED ARRIVALS 30.6AND 36.4 OBJ= 0.38981461E 02
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 25.95
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 36(169, 40)TO (101, 47)ASSIGNED TO VEHICLE 6.
EXPECTED ARRIVALS 30.1AND 38.4 OBJ= 0.42035507E 02
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 25.95
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 37(161, 19)TO (101, 47)ASSIGNED TO VEHICLE 3.
EXPECTED ARRIVALS 32.0AND 38.5 OBJ= 0.55555908E 02
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 25.95
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 38(157, 33)TO (156, 5)ASSIGNED TO VEHICLE 6.
EXPECTED ARRIVALS 31.9AND 46.5 OBJ= 0.61769653E 02
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 25.95
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 31.00
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 39(204, 57)TO (101, 47)ASSIGNED TO VEHICLE 4.
EXPECTED ARRIVALS 37.5AND 47.4 OBJ= 0.70302231E 02
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 31.00
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 40(171, 7)TO (101, 47)ASSIGNED TO VEHICLE 1.
EXPECTED ARRIVALS 42.8AND 50.6 OBJ= 0.12698044E 03
OBJECTIVE FUNCTION: 9 REQUESTED AT TIME 31.00
ARET = A*(TNDELV(INP)+1)*ALONGP + B*(TNDELV(IND)+1)*ALONGD
OBJECT = ARET + DPASSN(IDEM)*GTIM(1) + (DSRTME(IDEM) - PTIM(1))**2
DEMAND 41(132, 42)TO (101, 47)ASSIGNED TO VEHICLE 3.
EXPECTED ARRIVALS 35.9AND 39.2 OBJ= 0.42375015E 02
DEMAND 42(166, 23)TO (201, 66)ASSIGNED TO VEHICLE 4.
EXPECTED ARRIVALS 42.6AND 59.2 OBJ= 0.18881301E 04

```


SYSTEM STATUS AT TIME 31.766 FOR RUN 1

DN	ACTIVE DEMAND LIST NAME	NUM	PRTY	ORGTIME	PICTIME	VEH
21	SRA11 11 PUTNAM AV	1 (122,	1 44)	11.083	0.0 HARVARD SQ	1 (101, 47)
23	SRA13 50 RIVER ST	1 (146,	1 38)	11.083	23.033 HARVARD SQ	1 (101, 47)
25	SRA15 370 GRFEN ST	1 (148,	1 44)	11.083	20.333 HARVARD SQ	1 (101, 47)
40	SR9 600 MEMORIAL DR	1 (171,	1 7)	30.999	0.0 HARVARD SQ	1 (101, 47)
31	SR1 10 SMART ST	1 (175,	1 46)	20.916	0.0 HARVARD SQ	2 (101, 47)
32	SR2 20 AUDREY ST	1 (173,	1 13)	20.916	25.533 HARVARD SQ	2 (101, 47)
33	SR3 MIT	1 (187,	1 42)	20.916	0.0 HARVARD SQ	2 (101, 47)
29	HERMAN 10 PERRY ST	3 (202,	1 64)	17.050	21.050 MORSE SCHOOL	2 (156, 5)
37	SR7 58 ALLSTON ST	1 (161,	1 19)	25.950	0.0 HARVARD SQ	3 (101, 47)
41	SR10 9 KINNAIRD ST	1 (132,	1 42)	30.999	0.0 HARVARD SQ	3 (101, 47)
39	SR8 100 MEMORIAL DR	1 (204,	1 57)	30.999	0.0 HARVARD SQ	4 (101, 47)
42	MR. BANG 10 ERIE ST	1 (166,	2 23)	31.766	0.0 KENDALL SQ	4 (201, 66)
34	SR4 35 SIDNEY ST	1 (166,	1 41)	25.950	0.0 HARVARD SQ	6 (101, 47)
35	SR5 100 AUBURN ST	1 (158,	1 38)	25.950	0.0 HARVARD SQ	6 (101, 47)
36	SR6 79 FRANKLIN ST	1 (169,	1 40)	25.950	0.0 HARVARD SQ	6 (101, 47)
38	SMA10 50 LOPEZ ST	1 (157,	1 33)	25.950	0.0 MORSE SCHOOL	6 (156, 5)

VEHICLES AND TOUR LISTS.

DN	ADDRESS	COORDS	TYPE	TIME	CONST
VEHICLE 1	LAST POSITION X 146, Y 38 AT 23.03,	CURRENT CONTENTS 2,	LAST STOP MADE AT 23.03,		
AVERAGE EARLINESS	4.620, AVERAGE LATENESS 2.243,	CURRENT TOUR FOLLOWS:			
21	11 PUTNAM AV	(122, 44)	1320	31.50	-14.95
21	HARVARD SQ	(101, 47)	-1	33.93	-14.95
23	HARVARD SQ	(101, 47)	-1	34.43	-12.41
25	HARVARD SQ	(101, 47)	-1	34.93	-12.41
40	600 MEMORIAL DR	(171, 7)	1497	42.79	-3.61

```

40 HARVARD SQ ( 101, 47) -1 50.64 -3.61
VEHICLE 2 LAST POSITION X 173, Y 13 AT 25.53, CURRENT CONTENTS 1, LAST STOP MADE AT 25.53 ,
AVERAGE EARLINESS 2.115 , AVERAGE LATENESS 1.705 , CURRENT TOUR FOLLOWS:
29 10 PERRY ST ( 152, 36) 1733 28.87 -9.99
29 MORSE SCHOOL ( 156, 5) -1 32.22 -9.99
33 MIT ( 187, 42) 1674 37.13 -9.99
31 10 SMART ST ( 175, 46) 1556 38.78 -9.99
31 HARVARD SQ ( 101, 47) -1 46.03 -9.99
32 HARVARD SQ ( 101, 47) -1 46.53 -9.72
33 HARVARD SQ ( 101, 47) -1 47.03 -9.33
VEHICLE 3 LAST POSITION X 101, Y 47 AT 25.95, CURRENT CONTENTS 0, LAST STOP MADE AT 23.87 ,
AVERAGE EARLINESS 1.551 , AVERAGE LATENESS 1.557 , CURRENT TOUR FOLLOWS:
37 58 ALLSTON ST ( 161, 19) 1792 31.99 0.28
41 9 KINNAIRD ST ( 132, 42) 1851 35.86 0.28
41 HARVARD SQ ( 101, 47) -1 39.23 0.28
37 HARVARD SQ ( 101, 47) -1 39.73 0.28
VEHICLE 4 LAST POSITION X 156, Y 5 AT 31.00, CURRENT CONTENTS 0, LAST STOP MADE AT 25.40 ,
AVERAGE EARLINESS 1.795 , AVERAGE LATENESS 1.396 , CURRENT TOUR FOLLOWS:
39 100 MEMORIAL DR ( 204, 57) 1910 37.45 -14.86
42 10 FRIF ST ( 166, 23) 1969 42.60 -14.86
39 HARVARD SQ ( 101, 47) -1 49.42 -14.86
42 KENDALL SQ ( 201, 66) -1 59.21 -14.86
VEHICLE 5 LAST POSITION X 152, Y 36 AT 24.25, CURRENT CONTENTS 0, LAST STOP MADE AT 21.05 ,
AVERAGE EARLINESS 3.267 , AVERAGE LATENESS 1.948 , CURRENT TOUR FOLLOWS:
VEHICLE 6 LAST POSITION X 156, Y 5 AT 25.95, CURRENT CONTENTS 0, LAST STOP MADE AT 25.85 ,
AVERAGE EARLINESS 2.132 , AVERAGE LATENESS 3.284 , CURRENT TOUR FOLLOWS:
34 35 SIDNEY ST ( 166, 41) 2028 29.36 -11.67
36 79 FRANKLIN ST ( 169, 40) 2146 30.15 -11.67
38 50 LOPEZ ST ( 157, 33) 2205 31.91 -11.67
35 100 AUBURN ST ( 158, 38) 2087 32.88 -11.67
35 HARVARD SQ ( 101, 47) -1 38.64 -11.67
34 HARVARD SQ ( 101, 47) -1 39.14 -11.67
36 HARVARD SQ ( 101, 47) -1 39.64 -11.67
38 MORSE SCHOOL ( 156, 5) -1 46.45 -11.67
41.77 CPS0065 SUCCESSFUL REPAIR TRANSFER TO SYSDN

```

```

// JOB RUN THE CARS SYSTEM
// ASSGN SYS002,X'00C'
// ASSGN SYS005,X'00E'
// ASSGN SYS006,X'130'
// ASSGN SYS007,X'130'
// ASSGN SYS008,X'130'
// ASSGN SYS003,X'130'
// ASSGN SYS004,X'130'
// DLBL IJSYS03,'CARS DUMPING FILE1',99/365
// EXTENT SYS003,234079,1,,3820,60
// DLBL IJSYS04,'CARS DUMPING FILE2',99/365
// EXTENT SYS004,234079,1,,3880,60
// ASSGN SYS010,X'033'
// ASSGN SYS011,X'034'
// ASSGN SYS012,X'032'
// ASSGN SYS013,X'031'
// ASSGN SYS014,X'02F'
// ASSGN SYS024,X'OFF'
// PAUSE BEFORE RUNNING THE SYSTEM
// EXEC SUPR000

```

```

TABLES BUILT
WARMSTART, COLDSTART OR NEWDATA?

```

SYSTEM STATUS AT TIME 41.766 FOR RUN 1

DN	ACTIVE DEMAND LIST NAME	NUM	PRTY	ORGTIME	PICTIME	VEH
40	SR9 600 MEMORIAL DR	1 (171,	1 7)	30.999	0.0 HARVARD SQ	1 (101, 47)
31	SR1 10 SMART ST	1 (175,	1 46)	20.916	0.0 HARVARD SQ	2 (101, 47)
32	SR2 20 AUDREY ST	1 (173,	1 13)	20.916	25.533 HARVARD SQ	2 (101, 47)
33	SR3 MIT	1 (187,	1 42)	20.916	41.766 HARVARD SQ	2 (101, 47)
42	MR. BANG 10 ERIE ST	1 (166,	2 23)	31.766	41.766 KENDALL SQ	4 (201, 66)
34	SR4 35 SIDNEY ST	1 (166,	1 41)	25.950	41.766 HARVARD SQ	6 (101, 47)
35	SR5 100 AUBURN ST	1 (158,	1 38)	25.950	0.0 HARVARD SQ	6 (101, 47)
36	SR6 79 FRANKLIN ST	1 (169,	1 40)	25.950	41.766 HARVARD SQ	6 (101, 47)
39	SMA10 50 LOPEZ ST	1 (157,	1 33)	25.950	0.0 MORSE SCHOOL	6 (156, 5)

VEHICLES AND TOUR LISTS.

DN	ADDRESS	COORDS	TYPE	TIME	CONST
VEHICLE 1	LAST POSITION X 101, Y 47 AT	41.77,	CURRENT CONTENTS 0,	LAST STOP MADE AT 41.77 ,	
AVERAGE EARLINESS	4.620 , AVERAGE LATENESS 2.243 ,	CURRENT TOUR FOLLOWS:			
40	600 MEMORIAL DR (171, 7)	1497	42.79	-3.61	
40	HARVARD SQ (101, 47)	-1	50.64	-3.61	
VEHICLE 2	LAST POSITION X 187, Y 42 AT	41.77,	CURRENT CONTENTS 2,	LAST STOP MADE AT 41.77 ,	
AVERAGE EARLINESS	2.115 , AVERAGE LATENESS 1.705 ,	CURRENT TOUR FOLLOWS:			
31	10 SMART ST (175, 46)	1556	38.78	-9.99	
31	HARVARD SQ (101, 47)	-1	46.03	-9.99	
32	HARVARD SQ (101, 47)	-1	46.53	-9.72	
33	HARVARD SQ (101, 47)	-1	47.03	-9.33	
VEHICLE 3	LAST POSITION X 101, Y 47 AT	41.77,	CURRENT CONTENTS 0,	LAST STOP MADE AT 41.77 ,	
AVERAGE EARLINESS	1.551 , AVERAGE LATENESS 1.557 ,	CURRENT TOUR FOLLOWS:			
VEHICLE 4	LAST POSITION X 101, Y 47 AT	41.77,	CURRENT CONTENTS 1,	LAST STOP MADE AT 41.77 ,	
AVERAGE EARLINESS	1.795 , AVERAGE LATENESS 1.396 ,	CURRENT TOUR FOLLOWS:			
42	KENDALL SQ (201, 66)	-1	59.21	-14.86	
VEHICLE 5	LAST POSITION X 152, Y 36 AT	24.25,	CURRENT CONTENTS 0,	LAST STOP MADE AT 21.05 ,	
AVERAGE EARLINESS	3.267 , AVERAGE LATENESS 1.948 ,	CURRENT TOUR FOLLOWS:			
VEHICLE 6	LAST POSITION X 169, Y 40 AT	41.77,	CURRENT CONTENTS 2,	LAST STOP MADE AT 41.77 ,	
AVERAGE EARLINESS	2.132 , AVERAGE LATENESS 3.284 ,	CURRENT TOUR FOLLOWS:			
38	50 LOPEZ ST (157, 33)	2205	31.91	-11.67	
35	100 AUBURN ST (158, 38)	2087	32.98	-11.67	
35	HARVARD SQ (101, 47)	-1	38.64	-11.67	
34	HARVARD SQ (101, 47)	-1	39.14	-11.67	

36 HARVARD SQ (101, 47) -1 39.64 -11.67
 38 MORSE SCHOOL (156, 5) -1 46.45 -11.67
 DEMAND 0200 IS ADDED TO THE TOUR
 DEMAND 0199 IS ADDED TO THE TOUR
 TOUR COMPLETE FOR VEHICLE 1
 DEMAND 0500 IS ADDED TO THE TOUR
 TOUR COMPLETE FOR VEHICLE 2
 DEMAND 0204 IS ADDED TO THE TOUR
 TOUR COMPLETE FOR VEHICLE 3
 DEMAND 0201 IS ADDED TO THE TOUR
 TOUR COMPLETE FOR VEHICLE 4
 DEMAND 0315 IS ADDED TO THE TOUR
 TOUR COMPLETE FOR VEHICLE 6
 41.77 CR50084 SYSDN COMPLETE NORMAL OPERATION MAY BEGIN

SYSTEM STATUS AT TIME 41.766 FOR RUN 1

DN	ACTIVE DEMAND LIST NAME	NUM	PRTY	ORGTIME	PICTIME	VEH
40	SR9 600 MEMORIAL DR	1	1	30.999	0.0	1
		(171, 7)			HARVARD SQ	(101, 47)
200	0200 LAFAYETTE SQ	1	1	41.766	0.0	1
		(163, 45)			HARVARD SQ	(101, 47)
199	0199	2	1	41.766	41.766	1
		(0, 0)			HARVARD SQ	(101, 47)
31	SR1 10 SMART ST	1	1	20.916	0.0	2
		(175, 46)			HARVARD SQ	(101, 47)
32	SR2 20 AUDREY ST	1	1	20.916	25.533	2
		(173, 13)			HARVARD SQ	(101, 47)
33	SR3 MIT	1	1	20.916	41.766	2
		(187, 42)			HARVARD SQ	(101, 47)
500	0500 100 MASS AV	1	1	41.766	0.0	2
		(187, 42)			11 DUNSTER ST	(103, 45)
204	0204 73 GREEN ST	1	1	41.766	0.0	3
		(170, 42)			54 PUTNAM AV	(125, 40)
42	MR. BANG 10 FRIF ST	1	2	31.766	41.766	4
		(166, 23)			KENDALL SQ	(201, 66)
201	0201	1	1	41.766	41.766	4
		(0, 0)			30 MT.AUBURN ST	(114, 44)
34	SR4 35 SIDNEY ST	1	1	25.950	41.766	6
		(166, 41)			HARVARD SQ	(101, 47)
35	SR5 100 AUBURN ST	1	1	25.950	0.0	6
		(158, 38)			HARVARD SQ	(101, 47)
36	SR6 79 FRANKLIN ST	1	1	25.950	41.766	6
		(169, 40)			HARVARD SQ	(101, 47)
38	SMA10 50 LOPEZ ST	1	1	25.950	0.0	6
		(157, 33)			MORSE SCHOOL	(156, 5)
315	0315	1	1	41.766	41.766	6
		(0, 0)			CARS	(200, 62)

VEHICLES AND TOUR LISTS.

DN	ADDRESS	COORDS	TYPE	TIME	CONST
VEHICLE 1	LAST POSITION X 144, Y 47 AT	41.77,	CURRENT CONTENTS	2,	LAST STOP MADE AT 41.77
AVERAGE EARLINESS	4.620 , AVERAGE LATENESS	2.243 ,	CURRENT TOUR FOLLOWS:		
40	600 MEMORIAL DR	(171, 7)	1497	42.79	10.00
200	LAFAYETTE SQ	(163, 45)	1910	47.33	10.00
40	HARVARD SQ	(101, 47)	-1	53.99	10.00
200	HARVARD SQ	(101, 47)	-1	54.99	10.00
199	HARVARD SQ	(101, 47)	-1	55.99	10.00
VEHICLE 2	LAST POSITION X 187, Y 42 AT	41.77,	CURRENT CONTENTS	2,	LAST STOP MADE AT 41.77
AVERAGE EARLINESS	2.115 , AVERAGE LATENESS	1.705 ,	CURRENT TOUR FOLLOWS:		

500	100 MASS AV	(187, 42)	1851	42.77	10.00
31	10 SMART ST	(175, 46)	1556	44.92	10.00
500	11 DUNSTER ST	(103, 45)	-1	52.49	10.00
31	HARVARD SQ	(101, 47)	-1	53.74	10.00
32	HARVARD SQ	(101, 47)	-1	54.74	10.00
33	HARVARD SQ	(101, 47)	-1	55.74	10.00

VEHICLE 3 LAST POSITION X 101, Y 47 AT 41.77, CURRENT CONTENTS 0, LAST STOP MADE AT 41.77 ,
 AVERAGE EARLINESS 1.551 , AVERAGE LATENESS 1.557 , CURRENT TOUR FOLLOWS:
 204 23 GREEN ST (170, 42) 1733 42.77 10.00
 204 54 PUTNAM AV (125, 40) -1 47.87 10.00

VEHICLE 4 LAST POSITION X 101, Y 47 AT 41.77, CURRENT CONTENTS 2, LAST STOP MADE AT 41.77 ,
 AVERAGE EARLINESS 1.795 , AVERAGE LATENESS 1.396 , CURRENT TOUR FOLLOWS:
 42 KENDALL SQ (201, 66) -1 59.21 10.00
 201 30 MT.AUBURN ST (114, 44) -1 68.39 10.00

VEHICLE 5 LAST POSITION X 152, Y 36 AT 24.25, CURRENT CONTENTS 0, LAST STOP MADE AT 21.05 ,
 AVERAGE EARLINESS 3.267 , AVERAGE LATENESS 1.948 , CURRENT TOUR FOLLOWS:

VEHICLE 6 LAST POSITION X 101, Y 47 AT 41.77, CURRENT CONTENTS 3, LAST STOP MADE AT 41.77 ,
 AVERAGE EARLINESS 2.132 , AVERAGE LATENESS 3.284 , CURRENT TOUR FOLLOWS:
 38 50 LOPEZ ST (157, 33) 2205 42.77 10.00
 35 100 AUBURN ST (158, 38) 2087 44.23 10.00
 35 HARVARD SQ (101, 47) -1 50.49 10.00
 34 HARVARD SQ (101, 47) -1 51.49 10.00
 36 HARVARD SQ (101, 47) -1 52.49 10.00
 38 MORSE SCHOOL (156, 5) -1 59.81 10.00
 315 CAPS (200, 62) -1 67.37 10.00

DEMAND 49(204, 57) TO (144, 47) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 49.7 AND 54.8 OBJ= 0.87559570E 02
 DEMAND 50(118, 41) TO (144, 47) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 50.2 AND 53.1 OBJ= 0.57180847E 02

*** THE TIME IS 44.60 VEHICLE 1 HAS NO PLACE TO GO.

*** THE TIME IS 45.55 VEHICLE 4 HAS NO PLACE TO GO.

DEMAND 51(148, 42) TO (166, 23) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 50.8 AND 53.7 OBJ= 0.57674469E 02
 DEMAND 52(101, 47) TO (202, 64) ASSIGNED TO VEHICLE 1.
 EXPECTED ARRIVALS 52.5 AND 62.4 OBJ= 0.72697281E 02
 DEMAND 53(101, 47) TO (173, 45) ASSIGNED TO VEHICLE 4.
 EXPECTED ARRIVALS 54.2 AND 61.3 OBJ= 0.70087067E 02
 DEMAND 54(101, 47) TO (172, 43) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 57.2 AND 64.2 OBJ= 0.71686600E 02
 VEHICLE 5 RESTORED; TIME 53.78 LOCATION 152, 36
 DEMAND 55(101, 47) TO (152, 34) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 58.0 AND 63.3 OBJ= 0.65978165E 02
 DEMAND 56(101, 47) TO (200, 62) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 57.9 AND 69.3 OBJ= 0.74387711E 02
 DEMAND 57(101, 47) TO (175, 44) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 57.7 AND 66.3 OBJ= 0.69327835E 02
 DEMAND 59(101, 47) TO (161, 19) ASSIGNED TO VEHICLE 2.
 EXPECTED ARRIVALS 57.5 AND 64.9 OBJ= 0.77439178E 02

DEMAND 59(101, 47) TO (157, 30) ASSIGNED TO VEHICLE 5.
 EXPECTED ARRIVALS 61.5 AND 67.3 OBJ= 0.78423172E 02
 DEMAND 60(101, 47) TO (144, 28) ASSIGNED TO VEHICLE 5.
 EXPECTED ARRIVALS 62.0 AND 66.8 OBJ= 0.69076859E 02
 DEMAND 61(101, 47) TO (153, 9) ASSIGNED TO VEHICLE 5.
 EXPECTED ARRIVALS 62.5 AND 71.4 OBJ= 0.75376511E 02

*** THE TIME IS 58.13 VEHICLE 3 HAS NO PLACE TO GO.

*** THE TIME IS 58.47 VEHICLE 1 HAS NO PLACE TO GO.

DEMAND 62(101, 47) TO (140, 28) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 64.9 AND 69.3 OBJ= 0.80599991E 02

*** THE TIME IS 58.60 VEHICLE 6 HAS NO PLACE TO GO.

DEMAND 63(101, 47) TO (157, 28) ASSIGNED TO VEHICLE 5.
 EXPECTED ARRIVALS 60.5 AND 67.7 OBJ= 0.70675140E 02

*** THE TIME IS 59.02 VEHICLE 4 HAS NO PLACE TO GO.

DEMAND 64(101, 47) TO (201, 66) ASSIGNED TO VEHICLE 5.
 EXPECTED ARRIVALS 61.3 AND 78.0 OBJ= 0.87797592E 02
 DEMAND 65(101, 47) TO (132, 42) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 70.0 AND 73.4 OBJ= 0.81188934E 02
 DEMAND 66(101, 47) TO (170, 42) ASSIGNED TO VEHICLE 3.
 EXPECTED ARRIVALS 70.2 AND 77.5 OBJ= 0.82499954E 02

SYSTEM STATUS AT TIME 66.015 FOR RUN 1

DN	ACTIVE DEMAND LIST NAME	NUM	PRTY	ORGTIME	PICTIME	VEH
54	MAID 3 HARVARD SQ	1 (101, 47)	1	53.716	55.416	2
					7 LANSLOWNE ST	(172, 43)
56	MAID 5 HARVARD SQ	1 (101, 47)	1	54.416	56.399	2
					1 HAYWARD ST	(200, 62)
57	MAID 6 HARVARD SQ	1 (101, 47)	1	54.716	57.066	2
					SUB SHOP	(175, 44)
58	MAID 7 HARVARD SQ	1 (101, 47)	1	56.032	57.632	2
					57 ALLSTON ST	(161, 19)
65	MR TRIGGONIS HARVARD SQ	1 (101, 47)	1	65.049	0.0	3
					3 KINNAIRD ST	(132, 42)
66	MR SINOX HARVARD SQ	1 (101, 47)	1	65.765	0.0	3
					10 GREEN ST	(170, 42)
59	MAID 8 HARVARD SQ	1 (101, 47)	1	56.732	58.849	5
					10 DECATUR ST	(157, 30)
60	MAID 9 HARVARD SQ	1 (101, 47)	1	57.432	64.649	5
					72 PLEASANT ST	(144, 28)
61	MAID 10 HARVARD SQ	1 (101, 47)	1	58.115	65.615	5
					312 PEARL ST	(153, 9)
63	MAID 12 HARVARD SQ	1 (101, 47)	1	58.999	0.0	5
					11 VALENTINE ST	(157, 28)
64	MAID 13 HARVARD SQ	1 (101, 47)	1	59.265	0.0	5
					KENDALL SQ	(201, 66)

VEHICLES AND TOUR LISTS.

VEHICLE	DN	ADDRESS	COORDS	TYPE	TIME	CONST
VEHICLE 1	1	LAST POSITION X 202, Y 64 AT	58.47,	CURRENT CONTENTS	0,	LAST STOP MADE AT
AVERAGE EARLINESS		3.159 , AVERAGE LATENESS	1.188 ,	CURRENT TOUR FOLLOWS:		58.47 ,
VEHICLE 2	2	LAST POSITION X 152, Y 34 AT	64.97,	CURRENT CONTENTS	4,	LAST STOP MADE AT
AVERAGE EARLINESS		2.564 , AVERAGE LATENESS	1.196 ,	CURRENT TOUR FOLLOWS:		64.97 ,
	58	57 ALLSTON ST	(161, 19)	-2	67.06	-1.52
	54	7 LANSLOWNE ST	(172, 43)	-2	69.97	-1.52
	57	SUB SHOP	(175, 44)	-2	70.76	-0.95
	56	1 HAYWARD ST	(200, 62)	-2	74.07	-0.95
VEHICLE 3	3	LAST POSITION X 140, Y 28 AT	65.25,	CURRENT CONTENTS	0,	LAST STOP MADE AT
AVERAGE EARLINESS		2.283 , AVERAGE LATENESS	1.723 ,	CURRENT TOUR FOLLOWS:		65.25 ,
	65	HARVARD SQ	(101, 47)	1733	69.71	0.78
	66	HARVARD SQ	(101, 47)	2834	70.21	0.78
	65	3 KINNAIRD ST	(132, 42)	-2	73.57	0.78
	66	10 GREEN ST	(170, 42)	-2	77.53	2.69
VEHICLE 4	4	LAST POSITION X 173, Y 45 AT	59.02,	CURRENT CONTENTS	0,	LAST STOP MADE AT
AVERAGE EARLINESS		1.851 , AVERAGE LATENESS	1.396 ,	CURRENT TOUR FOLLOWS:		59.02 ,
VEHICLE 5	5	LAST POSITION X 101, Y 47 AT	65.62,	CURRENT CONTENTS	3,	LAST STOP MADE AT
AVERAGE EARLINESS		3.163 , AVERAGE LATENESS	2.666 ,	CURRENT TOUR FOLLOWS:		65.62 ,
	63	HARVARD SQ	(101, 47)	2716	66.52	-5.56
	64	HARVARD SQ	(101, 47)	2775	67.02	-5.56
	60	72 PLEASANT ST	(144, 28)	-2	71.80	-5.56
	59	10 DECATUR ST	(157, 30)	-2	73.50	-5.56
	63	11 VALENTINE ST	(157, 28)	-2	74.18	-5.56
	61	312 PEARL ST	(153, 9)	-2	76.46	-5.56
	64	KENDALL SQ	(201, 66)	-2	83.75	-5.56
VEHICLE 6	6	LAST POSITION X 200, Y 62 AT	58.60,	CURRENT CONTENTS	0,	LAST STOP MADE AT
AVERAGE EARLINESS		2.042 , AVERAGE LATENESS	1.822 ,	CURRENT TOUR FOLLOWS:		58.60 ,

TIME = 66.215

INTERMEDIATE I/O AT TIME = 66.215 FOR RUN 1

COMPOSITE VEHICLE AVERAGE CONTENTS= 0.52 AND PER CENT TIME EMPTY= 32.24, PER CENT TIME UNASSIGNED= 19.55
 66 DEMANDS REPRESENTING 69 PASSENGERS HAVE OCCURRED WITH AN AVERAGE DISTANCE 2.06 BETWEEN ORIGIN & DESTINATION.
 30 PICKUPS AND 26 DELIVERIES HAVE BEEN MADE, WITH 40 DEMANDS (14 OBSERVED) CURRENTLY ON THE SYSTEM.
 THE MEAN OF THE INDIVIDUAL LEVELS OF SERVICE IS 2.91 WITH A VARIANCE OF 4.584
 THE OVERALL WEIGHTED LEVEL OF SERVICE IS 1.32

STATISTICS FOR DEMANDS IN PRIORITY CLASS 1 :

COMPOSITE STATISTICS FOR 21 DEMANDS AND 26 PASSENGERS:
 THE WEIGHTED LEVEL OF SERVICE IS 1.32

	BY DEMAND		BY PASSENGER	
	WAITING TIME	TRAVEL TIME	WAITING TIME	TRAVEL TIME
MEAN	7.151	6.992	6.471	6.572
VARIANCE	64.917	41.670	55.005	34.586
NORMALIZED MEAN	0.477	0.188	0.431	0.237
WEIGHTED NORMALIZED MEAN	0.477	10.707	0.431	12.459
NO. OF CONSTRAINT VIOLATIONS	6	11	6	12
NORMALIZED VIOLATION TIME	0.077	-0.555	0.062	-0.492
MAXIMUM	23.983	28.983		
MINIMUM	0.0	0.367		
NORMALIZED MAXIMUM	1.599	2.903		
NORMALIZED MINIMUM	0.0	-6.608		
AVERAGE DEVIATION IN PICKUP TIMES	8.853	194.547		
AVERAGE DEVIATION IN DELIVERY TIMES	10.511	267.867		
THE MEAN TRAVEL RATIO IS 1.482				

THE MEAN MEASURE OF SERVICE (WITH ACCESS = 4.00 MIN.) IS 1.44 WITH A MAXIMUM VALUE OF 4.27 , A VARIANCE OF 1.00 ,
 AND AN R.M.S. MEASURE OF SERVICE OF 1.75

STATISTICS BY TRIP LENGTHS (IN MILES)

	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	9-
TRIPS	13	13	0	0	0	0	0	0	0
MEAN LEVEL OF SERVICE (VARIANCE)	3.32 (6.6)	2.54 (2.6)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
MEAN WAITING TIME (VARIANCE)	3.73 (20.3)	9.21 (74.6)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
MEAN TRAVEL RATIO (VARIANCE)	1.86 (1.0)	1.10 (1.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

STATISTICS FOR DEMANDS IN PRIORITY CLASS 2 :

COMPOSITE STATISTICS FOR 1 DEMANDS AND 1 PASSENGERS:
 THE WEIGHTED LEVEL OF SERVICE IS 1.19

MEAN WAITING TIME BY DEMAND TOTAL TIME BY PASSENGER TOTAL TIME
 VARIANCE 10.000 TRAVEL TIME 1.750 TRAVEL TIME 11.750
 NORMALIZED MEAN -0.0 -0.0 -0.0
 WEIGHTED NORMALIZED MEAN 1.000 0.126 0.934 1.000 0.126 0.934

NO. OF CONSTRAINT VIOLATIONS 0
 NORMALIZED VIOLATION TIME 0.0
 MAXIMUM 10.000 1.750
 MINIMUM 10.000 1.750
 NORMALIZED MAXIMUM 1.000 0.126
 NORMALIZED MINIMUM 1.000 0.126
 AVERAGE DEVIATION IN PICKUP TIMES 0.838 , VARIANCE -0.0
 AVERAGE DEVIATION IN DELIVERY TIMES 15.690 , VARIANCE -0.0
 THE MEAN TRAVEL RATIO IS 0.346

THE MEAN MEASURE OF SERVICE (WITH ACCESS = 4.00 MIN.) IS 1.30 WITH A MAXIMUM VALUE OF 1.30 , A VARIANCE OF 0.0
 AND AN R.M.S. MEASURE OF SERVICE OF 1.30

STATISTICS BY TRIP LENGTHS (IN MILES)

	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-
TRIPS	0	1	0	0	0	0	0	0	0
MEAN LEVEL OF SERVICE (VARIANCE)	0.0	2.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN WAITING TIME (VARIANCE)	0.0	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN TRAVEL RATIO (VARIANCE)	0.0	0.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0

STATISTICS FOR DEMANDS IN PRIORITY CLASS 3 :

THE VEHICLE PRODUCTIVITY (PASSENGER-MILE PER VEHICLE-HOUR) IS 5.59
 THE VEHICLE PRODUCTIVITY (PASSENGER TRIPS PER VEHICLE-HOUR) IS 2.72
 THE MAXIMUM AMOUNT OF POOL IN USE AT ONE TIME WAS 2853 WORDS
 40 DEMANDS ON THE SYSTEM
 THE MEAN LEVEL OF SERVICE IS 2.91
 THE WEIGHTED LEVEL OF SERVICE IS 1.32

