

=====

GENERAL PLANNING CONSULTANT

TECHNICAL MEMORANDUM NO. 88.3.5

U-DRIVE CLIST SIMULATION SOFTWARE
SUMMARY AND USER'S GUIDE

=====

Prepared for:

Southern California Rapid Transit District

Prepared By:

Schimpeler Corradino Associates

April, 1988

MTA LIBRARY

29662881

1.0 INTRODUCTION

The purpose of this Technical Memorandum is to summarize the new and existing CLIST procedures accessed from U-DRIVE on the SCRIB computer. This Technical Memorandum also provides a user's guide to the CLIST procedures and their supporting libraries. CLIST procedures have been developed for the following Job Control Language (JCL) files and programs:

- o BLDCON
- o LMATCH
- o REVENUE
- o UBR111
- o UCHECK
- o UFARE
- o UMATCH

1.1 INTRODUCTION TO THE CLIST PROCEDURES

CLIST procedures are programs written in the TSO command language, CLIST, that execute in the foreground on a mainframe terminal and enter into a real time dialogue with the user at the keyboard. CLIST procedures can request various inputs from the keyboard user and can perform any of the functions normally available in TSO, such as editing files, submitting batch jobs, etc. The primary advantage to using a CLIST procedure is that it allows a user to prepare and submit computer jobs without working directly with the Job Control Language (JCL) or the required input files of a particular program. Instead, a JCL file is prebuilt with dummy names for the data sets and other parameters that must be reset on each execution of the program. Input data files can also be prebuilt and dummy names used for any user-specified values. In each case, the CLIST procedure is then written to ask the keyboard user to input the current names for each of the dummy-named parameters, and these are edited into the JCL and input files during the dialogue session. The resulting edits may or may not be saved, depending on the structure of the CLIST procedure and normal requirements of the batch jobs being run. At the conclusion of all editing, the CLIST procedure can optionally submit the job for running as a batch job.

2.0 USERS GUIDE

2.1 RELEVANT FILES AND LOCATIONS

The CLIST procedures within U-Drive relate to two primary files:

- o MRP.DRIVER.CLIST VB format, 255 record length,
 located on PLAN02, contains U-Drive
 CLIST members.

- o MRP.DRIVER.CNTL VB format, 80 record length, located
 on PLAN02, contains U-Drive JCL
 control file members.

The members in MRP.DRIVER.CLIST access JCL files that are stored in MRP.DRIVER.CNTL, under an identical member name. The members in MRP.DRIVER.CNTL are JCL control files with dummy names for the input data, data sets, and other parameters that must be reset on each execution of the CLIST procedure. Appendix A contains a list of the members in MRP.DRIVER.CLIST and a short description of what each one does and the JCL member in MRP.DRIVER.CNTL that is edited by it.

2.2 OPERATING CONVENTIONS FOR U-DRIVE CLIST PROCEDURES

The U-Drive CLIST files currently operate under two methods. The newly created CLIST procedures are a menu-driven version. The new menu-driven CLIST procedures are more user-friendly than the existing ones. The added friendliness is attributed to a series of nested full-screen menus, from which the user is asked to choose options, with associated numbers/letters and keywords. The user is asked to enter the number/letter or keyword of the desired option and the CLIST procedure continues with the selected option. Only those options chosen by the user are implemented in the procedure. For all other conditions, default values are supplied by the procedure.

The menu-driven CLIST procedures have default settings for inputs, such as data set names that the user can use for job runs. These defaults can be changed to the relevant inputs of the specific transit network the user wishes to simulate. If the user wishes to change the default inputs, this can be handled through keyboard entry.

Most of the menu-driven CLIST procedures use tapes for input and output, for which a job memo is required by the system operator, prior to initiating execution of a job. The CLISTs are set up to edit a job memo data set and print it at the system operator's line printer.

The second method of operation, which is currently being used for existing (vs. the new) CLIST procedures, is a setup that asks the user to enter from the keyboard certain selected pieces of information required to set up and submit a batch job. The user enters a response to each question, and the entry information is substituted into the JCL control file for execution of the job. The CLIST checks to ensure that the input information is correct, such as checking the file catalogues to make sure that the input files exist and that the output files do not exist. In many instances the user is asked to confirm

that the entry made is correct by entering a yes or a no response after the CLIST shows on the terminal the information it just received from the Keyboard. If an output file specified already exists, the user will usually be given the option to replace the file or use a different file name and continue.

All of the CLIST procedures can be exited by using the "PA1" key, which returns control to the calling procedure or the TSO screen, if the procedure was initiated from there. In addition, some of the CLIST procedures will accept "Q" or "Quit" when typed in response to a question in the procedure and will exit upon receiving that response.

3.0 U-Drive Clist Procedures

3.1 NEW U-Drive CLIST PROCEDURES (MENU-DRIVEN)

3.1.1 BLDCON

BLDCON is a FORTRAN program that will construct park-and-ride and kiss-and-ride connectors between zone centroids and a list of transit nodes. The connectors are constructed where park-and-ride and kiss-and-ride are assumed to take place. Walk centroid connectors to the transit network are also constructed. BLDCON will generally build a large number of centroid connectors, because it has no logic in it to control the number. The BLDCON program is currently coded for UNET.

The BLDCON JCL stream input files include the following: a list of authorized park-and-ride nodes with speeds and windows, a list of unauthorized park-and-ride nodes with speeds and windows, a list of kiss-and-ride nodes with speeds and windows, a network coordinate file, and user-specified parameters. To run the program, it is necessary only to execute the BLDCON CLIST procedure from U-Drive. The CLIST procedure will edit the JCL control file with the appropriate files to execute a job for a specific transit network. The relevant BLDCON files are stored in:

- o Source Code - MRP.TRWNET.FORT(BLDCON)
- o CLIST Procedure - MRP.DRIVER.CLIST(BLDCON)
- o JCL Control File - MRP.DRIVER.CNTL(BLDCON)

The BLDCON CLIST allows the user to run a job with the defaults or to change from one to all of the default variables. The defaults consist of the user's account number and the necessary input data and files for executing a BLDCON job.

If the user wishes to submit a BLDCON job, the CLIST will check the file catalogue to make sure that the output file does not currently exist. If it does exist, the user has the option of overwriting the file or exiting the CLIST and renaming the file. Next, the CLIST shows the user on the terminal screen the necessary inputs for a BLDCON job. All of the BLDCON inputs are on disks. If the input files exist, the procedure will submit the job. If they do not, the user is notified to exit the CLIST and prepare the files. Once all the inputs are ready, the CLIST procedure edits the JCL control file and submits the job. BLDCON produces an output file which contains the new auto and walk connectors in UTPS UNET format, for subsequent processing by selection programs, for manual editing, and merging with the link member.

3.1.2 REVENUE

REVENUE is a program that estimates the daily and annual transit revenues for various transit networks. REVENUE estimates are computed by the midday, walk, park-and-ride, and kiss-and-ride access modes. Estimates are computed to a daily and annual revenue for the transit network.

The REVENUE JCL stream calls the FARENTRX program which skims through paths of each access mode and reports 8 transit fare tables:

1. Total fare
2. Parking cost
3. RTD local bus
4. RTD express bus
5. Metro rail fare
6. Light rail fare
7. Non-RTD local bus
8. Non-RTD express bus

REVENUE then calls a UMATRIX PROC which will read the fare tables from each access mode and trip tables from mode-split and compute revenues in each period. The revenues are then computed to daily and annual revenues.

To run the REVENUE program, it is necessary to execute the REVENUE CLIST procedure from U-DRIVE. The CLIST procedure will edit the JCL control file with the appropriate input files to execute a REVENUE job for a specific transit network. The relevant REVENUE files are stored in:

- o Source Code - MRP.DRIVER.FORT(FARENTRX)
- o CLIST Procedure - MRP.DRIVER.CLIST(REVENUE)
- o JCL Control file - MRP.DRIVER.CNTL(REVENUE)

The REVENUE CLIST allows the user to run a job with the defaults or to change from one to all of the default variables. The defaults consist of the user's account number and the necessary input data and files for executing a REVENUE JOB.

Prior to submitting a job, the CLIST shows on the terminal screen the necessary inputs for running a REVENUE Job. The REVENUE inputs are on tape and disk. The CLIST asks the user if the inputs exist. If the user answers no, the procedure will notify the user to exit the CLIST and prepare the inputs. If the user answers yes, the CLIST will list the VOLSER for each input and ask the user to enter it. The CLIST stores the VOLSER in a variable for use in preparing the job memo for the system operator. When all of the VOLSER have been entered, the CLIST edits the JCL control file and submits the job. Next, the CLIST offers the user the option of submitting the job memo through the driver or returning to the main menu to exit REVENUE.

3.1.3 UFARE8

UFARE8 is a program that produces the transit fares for selected transit networks. Fares are computed by UFARE8 by the midday, walk, park-and-ride, and kiss-and-ride access modes and a total for the transit network.

The UFARE8 JCL stream calls the FARENTRX program which skims through the paths of each access mode and reports the 8 transit fare tables listed under the

REVENUE section (3.1.2). UFARE8 then uses an UNCON step to report the AM walk, kiss-and-ride, and parking cost total and the midday walk table total.

To run the UFARE program, it is necessary only to execute the UFARE8 CLIST procedure from U-DRIVE. The CLIST procedure will edit the JCL control file with the appropriate input files to execute a UFARE job for a specific transit network. The relevant UFARE8 files are stored in:

- o Source code - MRP.DRIVER.FORT(FAREMTRX)
- o CLIST procedure - MRP.DRIVER.CLIST(UFARE8)
- o JCL control file - MRP.DRIVER.CNTL(UFARE8)

The UFARE8 CLIST allows the user to run a job with the defaults or to change from one to all of the default variables. The defaults consist of the user's account number and the necessary input data and files for executing a UFARE8 job. Prior to submitting a job, the CLIST shows on the terminal screen the necessary inputs for running a UFARE8 job. The UFARE8 inputs are on tape and disk. The CLIST asks the user if the inputs exist. If the user answers no, the procedure will notify the user to exit CLIST and prepare the inputs. If the user answers yes, the CLIST will list the VOLSER for each input and ask the user to enter it. The CLIST stores the VOLSER in a variable for use in preparing the job memo for the system operator. When all of the VOLSER have been entered, the CLIST edits the JCL control file and submits the job. Next, the CLIST offers the user the option of submitting the job memo through the driver or returning to the main menu to exit UFARE8.

3.1.4 UBRIM

UBRIM is a UTPS compatible FORTRAN Bus-Rail Interface program which reports transit trip movements to and from a Metrorail station. These reports summarize transit passenger movements by following: mode and route, direction and movement, and zones directly connected to the metrorail station. Reports can be developed in two formats, production/attraction and/or origin/destination. The UBRIM JCL stream input files include the following: the transit network files, the transit path file, a transit trip table, and user-specified parameters.

To run the UBRIM program, it is necessary only to execute the UBRIM CLIST procedure from U-DRIVE. The CLIST procedure will edit the JCL control file with the appropriate input file to execute a UBRIM job for a specific transit network. The relevant UBRIM files are stored in:

- o source code - MRP.TRNNET.FORT(UBRIM)
- o CLIST procedure - MRP.DRIVER.CLIST(UBRIM)
- o JCL control file - MRP.DRIVER.CNTL(UBRIM)

The UBRIM CLIST allows the user to run a job with the defaults or to change from one to all the default variables. The defaults consist of the user's account number and the necessary input data and files for executing a UBRIM job. Prior to submitting a job, the CLIST shows on the terminal screen the necessary inputs for running a UBRIM job. The UBRIM inputs are on tape and disk. Next, the CLIST asks the user if the inputs exist. If the user answers no, the procedure will notify the user to exit and prepare the inputs. If the user answers yes, the CLIST will list the VOLSER for each input and ask the user to enter it. The CLIST stores the VOLSER in a variable for use in preparing the job memo for the

system operator. When all of the VOLSER have been entered, the CLIST edits the JCL control file and submits the job. Next, the CLIST offers the user the options of submitting the job memo through the driver or returning to the main menu to UBRIM.

3.2 EXISTING U-DRIVE CLIST PROCEDURES

3.2.1 LMATCH

LMATCH is a FORTRAN program that compares two UTPS transit network links files. This CLIST procedure sorts the input links files by the B-nodes and then the A-nodes, compiles and links the FORTRAN program, then compares the two links files. The CLIST asks the user to enter the name of the base network and the name of the network that will be compared to the base network. The CLIST edits the JCL control file and submits the job. To run the LMATCH program, the user must execute the LMATCH CLIST procedure from U-DRIVE. The relevant LMATCH files are stored in:

- o source code - MRP.TRNNET.FORT(LMATCH)
- o CLIST procedure - MRP.DRIVER.CLIST(LMATCH)
- o JCL control file - MRP.DRIVER.CNT0(LMATCH)

3.2.2 UCHECK

UCHECK is a FORTRAN program that compares two UTPS transit network lines files. UCHECK checks the distribution of walk links at each rail station, park-and-ride links at each park-and-ride station, and kiss-n-ride links at each kiss-n-ride station. Next, UCHECK compares the transit network lines stop by stop. UCHECK prints the identical links and lines and flags the discrepancies.

The CLIST asks the user to enter the name for the current network file. Next, the CLIST will show on the terminal screen the block size of the current network file and asks the user to enter this block size. The user is then asked to enter the name of the base network file which is to be compared to the current network file. The CLIST procedure edits the JCL control file and submits the UCHECK job. To run the UCHECK program, the user must execute the UCHECK CLIST procedure from U-DRIVE. The relevant UCHECK files are stored in:

- o source - MRP.TRNNET.FORT(UCHECK)
- o CLIST procedure - MRP.DRIVER.CLIST(UCHECK)
- o JCL control file - MRP.DRIVER.CNTL(UCHECK)

3.2.3 UMATCH

UMATCH is a FORTRAN program that matches a transit networks lines file to rail stations. The program reads each lines file record and determines if a match to a rail station occurs. The program will output match information for each station.

The CLIST asks the user to enter the name of the transit network and the name of the lines file for the transit network. The CLIST will check if the network file exists, and if it does not, it will ask the user to exit the CLIST procedure and prepare the input network file before running the job. If the input network file does exist, the CLIST will edit the JCL control file and

submit the job. To run the UMATCH program, the user must execute the UMATCH CLIST procedure from U-DRIVE. The relevant UMATCH files are stored in:

- o source code - MRP.TRNNET.FORT(UMATCH)
- o CLIST procedure - MRP.DRIVER.CLIST(UMATCH)
- o JCL control file - MRP.DRIVER.CNTL(UMATCH)

APPENDIX A:
DETAILS OF MRP.DRIVER.CLIST

MEMBER NAME	DESCRIPTION	FILE MANIPULATED
BLDCON	Runs the FORTRAN program and submits the job to construct PNR and KNR connectors.	MRP.DRIVER.CNTL(BLDCON)
LMATCH	Runs FORTRAN program and compares the UTPS transit network links files.	MRP.DRIVER.CNTL(LMATCH)
REVENUE	Runs the FORTRAN program FAREMTRX and submits the job to estimate daily and annual transit revenues.	MRP.DRIVER.CNTL(REVENUE)
UBRIM	Runs FORTRAN program and submits the job to report on bus-rail interface.	MRP.DRIVER.CNTL(UBRIM)
UCHECK	Runs FORTRAN program and compares two UTPS transit network lines files.	MRP.DRIVER.CNTL(UCHECK)
UFARE8	Runs FORTRAN program FAREMTRX and submits the job to compute transit network fares.	MRP.DRIVER.CNTL(UFARE8)
UMATCH	Runs FORTRAN program and matches transit network lines file to rail stations.	MRP.DRIVER.CNTL(UMATCH)