Non-work Vehicle Occupancy Fortran code

This code estimates vehicle occupancies for work and non-work trips, and is an extension of the Mode Choice model code. The program reads trip interchange files after a complete mode choice model run. It randomly assigns a household to each trip. The household type determines the probability of different auto occupancy levels for home-work and home-other trips. When the mode choice model is applied with auto sub-mode estimation, the mode choice model auto occupancy is substituted for the household type determined auto occupancy. Trips by auto occupancy levels are accumulated at the attraction end of home-work and home-other trips. These then determine the probabilities for non-home trips. Trips are split by auto occupancy and the resulting auto trip tables written in the emmebank.

Input parameters are provide to the model via four text files (VEHOCC_NAMELIST_[].TXT). Each file includes a unique set of modeling zones so that four instances of the code are run simultaneously.

Additional documentation of table attributes is included in the Travel Demand Model Documentation.

Program Execution

MAIN_VEHOCC_2012	Begin writing to output log (VOCC_LOGOUT[].TXT), Read vehicle occupancy namelist file (VEHOCC_NAMELIST_[].TXT). Include: COMMON_PARAMS.FI.	
Call:	**DATA1.f**	Subroutine DATA1 reads the parameters from the namelist file and sets defaults for parameters not specified. Include: COMMON_PARAMS.FI.
	Set the random number seed.	
Call:	**DATA2.f**	Subroutine DATA2 reads a file of enumerated households from the Trip Generation model (TG_HHENUM_OUTPUT.TXT) which includes subzone, zone and household-vehicle type code and loads household types for each zone. It then reads a file (HH_VTYPE_TRIPS_IN.TXT) built from Travel Tracker that includes HH type, # of HH in survey days and the number of 1, 2, 3+ occupant auto trips for HW, HO, WO & OO purposes so that the number of trips by HH type in a zone can be calculated. Include: COMMON_PARAMS.FI and COMMON_OCC.FI.

Call:	**OPEN_EMME4.f**	Open emmebank to read parameters. Include: COMMON_PARAMS.FI and COMMON_EMME4BANK.FI.
If HOV is FALSE Call:	**HWORK1.FOR**	Subroutine controls reading the HW trip table when Mode Choice is run without the auto occupancy sub-model. Iterates over all zone pairs. **DATA3.f** called to read all Mode Choice combinations of HW matrices: • Ttype=1 (HOV=F, LOW_INC=F, HIGH_INC=F) • Ttype=10 (HOV=T, LOW_INC=F, HIGH_INC=F) • Ttype=100 (HOV=T, LOW_INC=T, HIGH_INC=T) For each HW ttype, the appropriate matrices are read (identified in NAMELIST). Selects HH type to determine auto occupancy allocation for trips. Work-other trips are accumulated at destination end by occupancy level for later use; writes HW trips to appropriate matrices. Include: all COMMON files.
If HOV is TRUE Call:	**HWORK2.FOR**	Subroutine controls reading the HW trip table when Mode Choice is run with the auto occupancy sub-model. Iterates over all zone pairs. **DATA3.f** called to read all Mode Choice combinations of HW matrices. Selects HH type to determine auto occupancy allocation for trips at work end (Mode Choice already separated HW trips into SOV, HOV2 & HOV3+). Work-other trips are accumulated at destination end by occupancy level for later use; writes HW trips to appropriate matrices. Include: all COMMON files.
Call:	**HOTHER.FOR**	Subroutine controls reading the HO trip tables, selects HH type to determine auto occupancy allocation for trips. Other-other trips are accumulated at destination end by occupancy level for later use; writes HO trips to appropriate matrices. **DATA3.f** called to read HO matrices. Include: all COMMON files.

Call:	**NONHOME.FOR**	Subroutine controls reading the NH trip tables. NH trips cannot be directly matched to a HH type; instead auto occupancy allocated based on the combined accumulated occupancies of WO and OO trips. Writes NH trips to appropriate matrices. **DATA3.f** called to read NH matrices. Includes all COMMON files.

Common Blocks

Bdata.for	Block data: provides default values for NAMELIST parameters.
COMMON_PARAMS.FI	Declares common variables used throughout program (NAMELIST and other); includes coding to read/write to Emme 4 matrix files stored outside emmebank file.
COMMON_OCC.FI	Declares common variables for household type, vehicle occupancy and vehicle trip data.
COMMON_EMME4BANK.FI	Declares common variables for parameters stored in emmebank.
COMMON_DEST.FI	Declares common variables for home-work and home-other attraction trips.