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NATIONAL ROADWAY TRAFFIC
NOISE EXPOSURE MODEL
(NRTNEM)

- PROGRAMMER'S MANUAL -

JANUARY 1982

OFFICE OF NOISE ABATEMENT AND CONTROL
U. S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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15. Supplementary Notes A description of the NRTNEM and its data bases is presented in a separate report (available from EPA/ONAC). This report, as well as the "User's Manual" (EPA 550/9-82-201-A) and a computer tape of the NRTNEM programs and data bases are available from NTIS.				11. Contract(C) or Grant(G) No. (C) EPA 68-01-3948 (G)	
16. Abstract (Limit: 200 words) The National Roadway Traffic Noise Exposure Model (NRTNEM) is comprised of a collection of on-line datasets, some containing programs and others containing data. This manual describes the NRTNEM system as it existed on the NCC (EPA's National Computer Center) in December 1981, under user ID EPADYN. NRTNEM actually consists of two models: The General Adverse Response Model ("GAR"), and the Single Event Model ("SEM"). Only one of them can be executed by a job at a time. The User's Manual describes job submission procedures. This manual describes the NRTNEM system in more detail so as to facilitate program maintenance. This manual is organized from two points of view: present first those items the user first comes into contact with, and go from the general to the specific. Accordingly, the general properties of files and datasets are described first, and the coding details are last.				13. Type of Report & Period Covered Final	
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FOREWORD

The reader should be familiar with the NRTNEM User's Manual and is assumed to be a fairly experienced FORTRAN programmer familiar with IBM's TSO (Time Sharing Option for models 360/370) and the WYLBUR conversational system. In addition, he should have a working knowledge of procedures and conventions at EPA's National Computer Center (NCC). In particular, he should have the following publications available:

- National Computer Center - IBM System,
"NCC - IBM WYLBUR Guide"
- U.S. Environmental Protection Agency,
"NCC - IBM User's Guide"
- IBM, "OS/VS2 TSO Command Language Reference,"
GC28-0646-4.
- IBM, "OS/VS2 TSO Terminal User's Guide,"
GC28-0645-4.
- IBM, "IBM System/360 and System/370 FORTRAN
IV Language," GC28-6515-10.
- Ashbrook, J.D. and Sande, G., "A User's
Guide to the Integrated Plotting Package,"
National Institute of Health, U.S. Depart-
ment of Health, Education and Welfare, March
1975.
- IBM, "OS/VS2 MVS Job Control Language,"
GC28-0692-4.

The National Roadway Traffic Noise Exposure Model is described in the form in which it existed in NCC files on August, 1981.

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1. INTRODUCTION

The National Roadway Traffic Noise Exposure Model (NRTNEM) exists in the computer as a collection of on-line datasets, some containing programs and others containing data. A full list of these datasets is provided in Table 1-1. This is the minimum required. As a user works with NRTNEM, he will undoubtedly establish other datasets which are derived from this minimum collection. This manual describes the system as it existed in NCC (EPA's National Computer Center) on August, 1981, in user id EPADYN.

NRTNEM actually consists of two models: The General Adverse Response Model ("GAR"), and the Single Event Model ("SEM"). Only one of them can be executed by a job at a time. The User's Manual describes job submission procedures. This manual describes the NRTNEM system in more detail so as to facilitate program maintenance. This manual is organized from two points of view: present first those items the user first comes into contact with, and go from the general to the specific. Accordingly, the general properties of files and datasets are described first, and the coding details are last.

Table 1-1
NRTNEM Computer Files

Fully Qualified Dataset Name	Characteristics							Description
	(1)	WYLDUR Format	Volume	Tracks	Record Format	Logical Record Length	Block Size	
CN.EPADYN.S2KC.TRAWO	P	CARD	USER75	190	FB	80	3120	FORTRAN source code for GAR and SEM. Each source module constitutes a member of TRAWO.
CN.EPADYN.S2KC.BUILD	P	(not applicable)	USER68	190	FB	80	80	Object module library. Each object module constitutes a member of BUILD.
CN.EPADYN.S2KC.FRRXC	S	CARD	USER75	1	FB	80	3120	Contains JCL (including a PROC) for compiling members of TRAWO and storing them into BUILD.
CN.EPADYN.S2KC.RNHXE9R	S	TSO	USER65	1	FB	80	3120	Contains JCL and some input data for running either GAR or SEM. This dataset is edited by \$RNHSUF.
CN.EPADYN.S2KC.\$RNHSUF.CLIST	S	(not accessible)	USER67	1	VU	255	4240	TSO command procedure file executed by the user in the TSO conversational environment. Edits RNHXC9R and submits result as a job to be run.
CN.EPADYN.S2KC.WYLIB(FIMP)	M	EDIT	USER69	267	FB	80	3120	Contains fractional impact information for SEM only.
CN.EPADYN.S2KC.WYLIB(FLOHIX08)	M	EDIT						Contains traffic flow and mix data.
CN.EPADYN.S2KC.WYLIB(MILE)	M	EDIT						Contains highway mileages.
CN.EPADYN.S2KC.WYLIB(PERCNT)	M	EDIT						Contains Traffic Percentages by vehicle type.
CN.EPADYN.S2KC.WYLIB(SIGMA0)	M	EDIT						Contains standard deviations of vehicular noise levels.
CN.EPADYN.S2KC.HLDICT	S	CARD	USER76	3	FB	80	3120	Contains a menu of noise levels organized by vehicle type and amount of noise reduction.
CN.EPAxxx.aaaa.WYLIB(yyyyyy) ⁽²⁾	M	EDIT						Contains vehicle population and growth data. Resides in the user's WYLIB. May be a copy of CN.EPADYN.S2KC.WYLIB(VGFS001).
CN.EPADYN.S2KC.WYLIB(VGFS001)	M	EDIT						Contains <u>master</u> vehicle population and growth data.
CN.EPAxxx.aaaa.zzzzzz ⁽²⁾	S	CARD						Contains Regulation Instructions (often referred to as RIF).

(1) P = Partitioned Dataset
S = Sequential Dataset
M = Member of a Partitioned Dataset

(2) EPAxxx = user's identification
aaaa = user's account
yyyyyy = user-assigned name for vehicle growth data
zzzzz = user-assigned name for regulation instructions

2. SUPPORT SYSTEM

Files RNMEXE9R and \$RNMSUF.CLIST are considered the support system. RNMEXE9R contains Job Control Language (JCL) statements and data for running both the GAR and SEM. \$RNMSUF.CLIST is a TSO command file (invoked by the EXEC command in TSO) which edits RNMEXE9R according to user interaction while \$RNMSUF.CLIST is executing and thus produces a stream of lines which is automatically submitted as a batch job. During this editing, lines not needed for one or the other model are deleted, character strings are modified, and symbols (preceded by a # sign in RNMEXE9R) are replaced by values to be used in this job.

Figure 2-1 shows RNMEXE9R. The following discusses it line by line. RNMEXE9R is also explained in Appendix B of the User's Manual so that the following text concentrates on programming aspects leaving out details available in the User's Manual. Figure 2-2 shows \$RNMSUF.CLIST; its execution's effects on RNMEXE9R are described together with that file starting on page 2-7.

```

//SYSUID JOB (#ACCT, FILE, 25, 000, 000, 1), #NAME,
// TIME=(TIME), NOTIFY=#SYSDA, PRTY=#PRTY
//ROUTE PRINT HOLD
// THIS IS FILE RNMEXE9R (199) SEP 23)
// TO BE EDITED BY LRMNSUF.CLIST
//LKED EXEC PGM=IEWL, REGION=190K
//SYSFRINT DD SYSOUT=A
//SYSLMOD DD DSN=#SLC0 (V09R), DISP=(,PASS), UNIT=SYSDA,
// SPACE=(CYL,(2,1,2),RLSE), DCS=BUFNO=1
//SYSUT1 DD UNIT=SYSDA, SPACE=(1024, (120,120)), ROUND,
// DCR=BUFNO=1
//SYCLIB DD DSN=SYS1.FORTLIB, DISP=SHR
//RNMCLIB DD DSN=CN.EP40YN.S2KC.SLILD, DISP=SHR
//SYSLIN DD *
INCLUDE RNMOLIB (#MAINP, #RKO)
INCLUDE RNMOLIB (#SERESC, ZFRD)
ADD, CONST, DPLEV, FACTOR, FIX, HEADER, IYBAS, IYES,
IYREF, PRINT1, PRINT2, PRINT3, PRINT4, PRINT5, PRINT6,
PRINT7, PRINT8, PRINT9, PRINT10, PRINT11, RAD, UPDATE, VFD,
VEHPOP, XMINUS,
COLECT, OSBAND, DUMPER, EVENTS, EVNTOR, FIXSEM, HEADG,
HEADRSEM, HFDV, IYBASSEM, IYFSEM, IYREFSEM, NORMAL,
PRT1SEM, PRT10SEM, PRT11SEM, PRT12SEM, PRT13SEM, PRT14SEM,
PRT15SEM, TABLE, TIMSTRS, UPDATSEM, VSDSEM, VEHPOPSEM,
ZFRD1)
//AUSF EXEC PGM=LOADER, PARM='EP=MAIN, TERM', REGION=#REGN
//SYSLIN DD DSN=#.LKED.SYSLMOD, DISP=(OLD,DELETE,DELETE)
//SYSOUT DD SYSOUT=A
//SYSTEM DD SYSOUT=A
//FT05F001 DD DSN=#SYSPREF.JYLIB (#REGSC01), DISP=SHR
//FT06F001 DD SYSOUT=A, DCR=(RECFM=VBA, LRECL=137, RLKSIZE=3155)
//FT11F001 DD DSN=#SLILF, DISP=(NEW,PASS), SPACE=(3120, (40,40)),
// UNIT=SYSDA, DCR=(RECFM=FB, LRECL=40, RLKSIZE=4000)
//FT12F001 DD DSN=#SYSPREF.HFILU2, DISP=SHR
//FT13F001 DD DSN=CN.EP40YN.S2KC.HLICIT, DISP=SHR
//FT13F001 DD DSN=CN.EP40YN.S2KC.JYLIB (#FILE), DISP=SHR
// FT13F001 DD DSN=CN.EP40YN.S2KC.JYLIB (#PCHT), DISP=SHR
// FT13F001 DD DSN=CN.EP40YN.S2KC.JYLIB (#IMP), DISP=SHR
// FT13F001 DD DSN=CN.EP40YN.S2KC.JYLIB (#LDMIX08), DISP=SHR
//FT14F001 DD *
IPLBT :0222222
IPLBT :111130000000
IPLBT :000000000000
IPLBT :1111111
IPLBT :000000000000
IPLBT :000000000000
IPLBT :111111111
IPLBT :1111001
IPLBT :111
IPLBT :000000000000
VPC74-1 0.4673 0.1420 0.0167 0.0618 0.1603 0.1514 0.0000
VPC74-2 0.5146 1.3254 1.0000 1.0000 1.0000 0.8800 0.1200
VPC77 0.4390 1.1324 0.0176 0.0600 0.1400 0.2100 0.0000
VPC85 0.01700 0.1253 0.0247 0.0300 0.1500 0.1300 0.2100
VPC85 0.014210
VPC85 0.014300
VPC85 0.014400
VPC85 0.014720
: 1.3000E+01 1.4611E+00 2.1745E+00 1.1185E+00 4.5542E+00 5.6565E+00 0.014720
: 1.3866E+01 9.4692E+01 2.7601E+02 7.0799E+02 2.7466E+03 6.4720E+03 0.014720

```

Figure 2-1. JCL File RNMEXE9R

BEST COPY AVAILABLE

```

1 1.6335E+04 5.2343E+04 1.4443E+05 4.2600E+05 1.2179E+06 3.4764E+06 0000014726
1 1.0000E+00 1.6419E+00 2.6957E+00 4.4200E+00 7.2609E+00 3.2152E+01 000014726
1 8.2700E+01 2.1307E+02 5.4451E+02 1.4120E+03 3.6350E+03 9.3570E+03 000014730
1 2.4089E+04 6.2014E+04 1.5964E+05 4.1097E+05 1.0580E+06 2.7235E+06 000014732
1 1.0000E+00 2.1004E+00 4.4139E+00 9.2732E+00 1.9462E+01 4.0931E+01 000014734
1 6.5942E+01 1.8006E+02 3.7950E+02 7.9743E+02 1.6753E+03 3.5197E+03 000014736
1 7.3947E+03 1.5530E+04 3.2634E+04 6.8573E+04 1.4407E+05 3.0267E+05 000014738
1 1.0000E+00 1.3300E+00 1.7690E+00 2.3528E+00 3.1293E+00 4.1621E+00 0000014740
1 6.3150E+00 1.0935E+01 1.8932E+01 3.2777E+01 5.6748E+01 9.8250E+01 000014742
1 1.7010E+02 2.9450E+02 5.0988E+02 8.8278E+02 1.5284E+03 2.6461E+03 000014744
1 1.0000E+00 1.4142E+00 2.0000E+00 2.8284E+00 4.0000E+00 6.7225E+00 0000014746
1 1.1298E+01 1.8988E+01 3.1912E+01 5.3633E+01 9.0137E+01 1.5149E+02 000014748
1 2.5460E+02 4.2780E+02 7.1911E+02 1.2086E+03 2.0312E+03 3.4137E+03 000014750
1 1.0000E+00 1.5704E+00 2.4862E+00 3.8730E+00 6.0822E+00 9.5516E+00 0000014752
1 1.5000E+01 2.3556E+01 3.6993E+01 5.8095E+01 9.1233E+01 1.4327E+02 0000014754
1 2.2500E+02 3.5335E+02 5.5490E+02 8.7143E+02 1.3685E+03 2.1491E+03 0000014756

```

```

00014800
00014900
***** 00015000
* 00015100
* ENVIRONMENTAL PROTECTION AGENCY OF THE UNITED STATES * 00015200
* OFFICE OF NOISE ABATEMENT AND CONTROL * 00015300
* * 00015400
* NATIONAL ROADWAY TRAFFIC NOISE EXPOSURE MODEL * 00015500
* SINGLE EVENT MODEL * 00015600
* * 00015700
* * 00015800
* * 00015900
* * 00016000
* * 00016100
* * 00016200
* * 00016300
* * 00016400
* * 00016500
* * 00016600
* * 00016700
* * 00016800
* * 00016900
* * 00017000
* * 00017100
* * 00017200
* * 00017300
* * 00017400
* * 00017500
* * 00017600
* * 00017700
* * 00017800
* * 00017900
* * 00018000
* * 00018100
* * 00018200
* * 00018300
* * 00018310
* * 00018320
* * 00018321
* * 00018322
* * 00018330
* * 00018331
* * 00018340
* * 00018350
* * 00018360
*****
* * 00018310
* * 00018320
* * 00018321
* * 00018322
* * 00018330
* * 00018331
* * 00018340
* * 00018350
* * 00018360
*****
//PLKED EXEC PGM=IEHL,REGION=150K 00018310
//SYSLIB DD DSN=SYS1,FM2L10,DISP=SHR 00018320
// DD DSN=SYS1,FORTLIB,DISP=SHR 00018321
// DD DSN=SYS2,IPP,LOAD,DISP=SHR 00018322
//SYSPRINT DD SYSOUT=A 00018330
//SYSLMOD DD DSN=GOSET(MAIN),DISP=(,PASS),UNIT=SYSDA, 00018340
// SPACE=(TRK,(10,10,1),RLSE) 00018350
//SYSUT1 DD UNIT=SYSDA,SPACE=(TRK,(10,10),RLSE) 00018360
*****

```

Figure 2-1 (Continued)

```

- //PLLIB DD DSN=SYS2.IPP.LOAD,DISP=SHR 00018370
//RNMULIB DD DSN=CN.EPACYN.S2KC.BUILD,DISP=SHR 00018380
//SYSLIN DD * 00018400
INCLUDE PLLIB(PPPBUF,PPPBIT,PPRSPC) 00018405
INCLUDE RNMULIB(RNMPL01,LOGL14,UPPLIM) 00018410
INCLUDE RNMULIB(PLUTTER,SUBPLT) 00018415
----- 00018430
//PLOGD EXEC PGM=*,PLKED,SYSLMOD,COND=(4,LT,LKED),REGION=150K 00018440
//FT01F001 DD DDNAME=SYSIN,DCB=BLKSIZE=80 00018445
//FT02F001 DD DSN=1IPPTAPE,UNIT=SYS0A,SPACE=(CYL,(2,2),RLSE), 00018450
// DCB=(RECFM=VS0,LRECL=516,BLKSIZE=3155),DISP=(NEW,PASS,DELETE) 00018460
//FT05F001 DD DSN=PLINF,DISP=(OLD,DELETE) 00018470
//FT06F001 DD SYSOUT=A 00018480
//FT15F001 DD SYSOUT=A 00018490
//PRPLOT EXEC PGM=PRINTER,COND=(8,LE),REGION=100K 00018500
//STEP16 DD DSN=SYS2.IPP.LOAD,DISP=SHR 00018510
//FT01F001 DD DDNAME=SYSIN,DCB=BLKSIZE=80 00018515
//FT02F001 DD DSN=1IPPTAPE,DISP=(OLD,DELETE,DELETE) 00018520
//FT06F001 DD SYSOUT=A 00018530
//FT15F001 DD SYSOUT=A 00018540

```

Figure 2-1 (Concluded)

```

00010000 /* NATIONAL ROADWAY NOISE MODEL - COMBINED JOB SUBMISSION PROCEDURE */
00010010 /* THIS IS FILE $RNMSUF.CLIST AS OF 1980 SEP 18 */
00010100 WRITE >>>>NATIONAL ROADWAY NOISE MODEL VERSION 9R &SYSDATE &SYSTEME
00010200 CONTROL END(ENDE)
00010210 EDIT 'CN,EPADYN,52KC,RN#EXE9R'
0001030051: WRITENR 51, VERSION(SEM OR GAR) 1
00010400 HEAD VERSION
00010410 IF '&VERSION' = '1' THEN SET VERSION=SEM
00010500 IF &VERSION=GAR THEN DO
00010600 C 9975 'MAINP' 'VARN2T9R'
00010650 C 'BK0' 'BLKDTA'
00010655 C 9987 'PRINT6,' 'PRT6V9R,'
00010660 DEL 9991 9994
00010665 DEL 18415
00010720 C 10000 'BHEGN' '3004'
00010800 C 13100 14620 /FIMP/SIGMA0/
00010900 DEL 13820 13840
00011000 DEL 14722 14756
00011200 C 15600 /SINGLE EVENT/GENERAL ADVERSE RESPONSE/
00011210 C 13700 /000000000000000/111111111111/
00011220 C 13800 /0000/0001/
00011250 C 13400 /00000000/11111111/
00011500 ENDE
00011510 IF &VERSION=SEM THEN DO
00011515 C 9975 'MAINP' 'SEMAIN9R'
00011517 C 'BK0' 'BKUSEM8S'
00011520 C 10000 /TERM/TERM,SIZE=400K/
00011521 C 10000 /BHEGN/700K/
00011530 DEL 9986 9989
00011532 C 9985 'ZERO,' 'SE,ZERO,'
00011535 DEL 18410
00011540 ENDE
0001180053: WRITE 93, ENTER EDITING COMMANDS.
0001190054: WRITENR 3
00012000 READ
00012100 HEADVAL COMMAND
00012120 VERIFY ON
00012200 IF '&COMMAND'='1' THEN GOTO 545
00012300 &SYSDVAL
00012400 GOTO 54
0001242054: WRITENR 34,5 REGULATION INSTRUCTION FILE:
00012424 READ INSTRF
00012428 VERIFY OFF
00012432 IF '&INSTRF'='1' THEN GOTO 545
0001250055: WRITENR 55, ENTER VEM,GROWTH F. FILE 1
00012600 READ VGF
0001270056: WRITENR 56, ENTER NET-YEARS(MAX 9):
00012800 READ NETYEAR
00012900 SET NYRN*((&LENGTH(&NETYEAR)+1)/5)
00013000 SET NYRN=ASTR(0&NYRN)
0001310057: WRITE 57, ENTER -PGMRNAME-RUNNAME -TIME-PTY-JOBID-COPY-ROOM-PLOT-.
00013150 WRITE LIMITS : -XXXXXXXX-XXXXXXXX-XX---X---XX---XX---XXXX-XXX.
00013160 WRITENR 1
00013200 READ MANNAME RUNNAME TIME PTY JOBID COPY ROOM PLOT.
00013400 /* SET DEFAULTS */
00013500 IF '&RUNNAME' = '' THEN SET RUNNAME=RNMRUN
00013600 IF '&PTY' = '' THEN SET PTY=2
00013700 IF '&COPY' = '' THEN SET COPY=1
00013800 IF '&MANNAME' = '' THEN SET MANNAME=&SYSUID
00013900 IF '&TIME' = '' && &VERSION=SEM THEN SET TIME=20
00014000 IF '&TIME' = '' && &VERSION=GAR THEN SET TIME=10

```

Figure 2-2. TSO Command File \$RNMSUF.CLIST

```

00014030 IF '%JOBID%' * '' THEN SET JOBID=NN
00014060 IF '%ROOM%' * '' THEN SET ROOM=E2CM
00014070 IF '%PLOT%' * '' THEN SET PLOT=NO
00014100 /* REPLACE DATA */
00014200 IF '%NETYEAR%' NE '' THEN DO
00014300 C 14300 /09/%MYRN/
00014400 14400 MYRNET=1 %NETYEAR
00014500 ENDE
00014600 SET ACCT=%SUBSTR(11:14,%SYSPREF)
00014700 C 9000 99999 /*ACCT/ACCT/ ALL
00014750 C 9000 '%SYSUID%' '%SYSUID%'JOBID'
00014800 C 9000 9001 /*SYSUID/SYSUID/ ALL
00014900 C 9000 99999 /*SYSPREF/SYSPREF/ ALL
00015000 C 9000 /*,MYLE/,%ROOM/
00015100 C 14720 16600 /*DATE?%SYSDATE? ALL
00015200 C 14720 16700 /*RUNNAME/BRUNNAME/ ALL
00015300 C 9001 /*TIME/%TIME/
00015400 C 9001 /*PRTY/%PRTY/
00015500 C 9000 /*COPY/%COPY/
00015600 C 9000 16650 /*MANNNAME/%MANNNAME/ ALL
00015700 /* CHANGE COMPLICATED DATA */
00015800 IF %VERSION%GEAR %PLOT%YES THEN C 13300 /2/1/
00015900 IF %PLOT%YES THEN C 16750 /*PLOTNAME/BRUNNAME/
00016000 IF %PLOT%NO THEN DO
00016100 DEL 16750
00016200 DEL 18310 25300
00016300 C 13300 /2/0/ ALL
00016400 ENDE
00016500C 12500 /*REGSCN1/%YGF/
00016520C 16850 /*REGSCN1/%YGF/
00016540C 12930 /*FILU2/%INSTRF/
00016560C 16760 /*FILU2/%INSTRF/
00016600 C 15600 18100 /* /* FIELD(70:70) ALL
00018100%WRITE %S% COMMAND%
00018120 VERIFY ON
00018200%WRITE%R %
00018300 READ
00018400 READOVAL COMMAND
00018500 IF '%COMMAND%' THEN GOTO S10
00018600 %SYSOVAL%
00018700 GOTO S9
00018800%SAVE RNMTEMP.CNTL
00018810 VERIFY OFF
00018900 SUBMIT RNMTEMP.CNTL
00019000 END NOSAVE
00019050%WRITE%R DELETE SUBMITTED JCL FILE? Y OR N:
00019060%READ ANSWER%
00019070IF %ANSWER%Y THEN +
00019100 DELETE RNMTEMP.CNTL
00019110ELSE WRITE YOU MUST DELETE RNMTEMP.CNTL BEFORE YOUR NEXT MWTNET JOB SUBMISSION.
00019200 EXIT

```

Figure 2-2 (Concluded)

Line or Line Range in RNME9R	Explanation	Effect by \$RNMSUF.CLIST
9000-9001	JOB statement	symbols (strings preceded by #) are replaced with actual values
9020	Output routing specification	
9954-9995	Linkedit job step	
9970	Dataset BUILD is the library of object modules.	
9975		for SEM, #MAINP is replaced by SEMAIN9R and #BKD becomes BKDSEM8S; for GAR #MAINP becomes VARNET9R and #BKD becomes BLKDTA.
9985-9995	Names of object modules needed during link editing.	
9985		none for GAR; for SEM SERESC becomes SERESCSE.
9986-9889		deleted for SEM
9991-9994		deleted for GAR
10000-18200	Job step that executes NRTNEM.	
10000		supply REGION parameter depending on SEM or GAR
10020	Use the load module generated in the previous step; don't keep it after end of this step.	
12500		#REGSCN1 is replaced by the user's vehicle growth file name
12700	FORTTRAN unit 6 is the unit for printed output	
12800	Unit 1 is a temporary file to receive data to be plotted	
12930		#FILU2 is replaced by the user's regulation instruction file name.
12940	Unit 8 contains the noise level dictionary	
13000-13150	From unit 3, the program reads mostly constant data	for GAR, FIMP is replaced by SIGMA0
13200-18200	Unit 4 data is read right from the input stream	

Line or Line Range in RNMEXE9R	Explanation	Effect by \$RNMSUF.CLIST
13300-13840	Control strings (see User's Guide)	May be edited directly by the user. The user <u>must</u> edit at least the IVMASK control string for SEM runs.
	Strings as shown in Figure 2-1 are defaults for GAR	Establishes default strings for SEM
13820-13840		deleted for GAR
13900-14210	Vehicle breakdown ratios (see Appendix D of User's Guide)	
14300	Number of net years	Change 09 to actual number of net years (computed in lines 12900-13000, implemented in 14300).
14400	A default string of net years	Replace with actual net years (read in line 12800, implement in 14400)
14722-14756	RATIO data for SEM	deleted for GAR
14800-18200	Text for Title Page	
15600		if GAR, change appropriately
16600-16850		Symbols (preceded by #) are replaced by actual strings
17300-18100	Space for insertion of comments by the user	User may edit comments into these lines during Steps S3 or S8.
18310-18430	Linkedit job step for plotting	
18370	The Integrated Plotting Package is used	
18380	BUILD also contains some plotting modules	
18410		deleted for SEM
18415		deleted for GAR
18440-18490	Generation of neutral plotting file	
18450	&IPPTAPE is neutral plotting file	
18470	&PLINF contains data to be plotted (see line 12800)	
18500-18540	Creation of printer plots from neutral plotting file	

3. HOW TO MODIFY THE FORTRAN SOURCE CODE

A listing of all the source modules is provided in Appendix C. They are written in FORTRAN for IBM's FORTRAN H Extended Compiler. Each module (main program or subroutine) is sorted as a separate member of the partitioned dataset CN.EPADYN.S2KC.TRAWO (see Table 1-1 for a listing of datasets). When making modifications, the programmer goes through the following steps:

1. Edit the source module in WYLBUR, save the edited version in TRAWO. The same operation may replace an existing module or create a new one.
2. Modify the job and output routing statements in lines 1 and 2 of file CN.EPASRD.MUSN.FORT2 as appropriate*.
3. Change the member name of BUILD and TRAWO in lines 9 and 10 of FORT2 to the name of the edited or new source module.

Figure 3-1 shows a listing of file CN.EPASRD.MUSN.FORT2. It is used for submitting jobs for compiling source modules in TRAWO and saving the resulting object modules in BUILD.

*File CN.EPADYN.S2KC.FRRXC was originally used to modify or create an object module. However, this file is not operable since the program IFEAAB does not exist in STEPLIB FTHXLINK at NCC.

```

//EPASRD JOB (MUSN,COTM),COTMAN,PRTY=5
/*ROUTE PRINT RMT171
/*
/* @FORT          FORTRAN G1 COMPILE AND SAVE OBJECT MODULE
/* DEFAULT PARAMETERS OF PROC FTG1C:
/*   CREGION=246K,PRINT=A,PUNCH=DUMMY,CPARM=
/*
//STEPFORT EXEC FTG1C,CREGION=500K,CPARM='MAP,ID'
//SYSPUNCH DD DSN=CN.EPADYN.S2KC.BUILD(DEGFAC1),DISP=(OLD,KEEP)
//SYSIN DD DSN=CN.EPADYN.S2KC.TRAWO(DEGFAC1),DISP=SHR
//COMPFORT EXEC PGM=IEBCOPY,PARM='COMPRESS'
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DISP=OLD,DSN=CN.EPADYN.S2KC.TRAWO
//SYSUT2 DD DISP=OLD,DSN=CN.EPADYN.S2KC.TRAWO
//SYSUT3 DD UNIT=SYSDA,SPACE=(TRK,(1))
//SYSUT4 DD UNIT=SYSDA,SPACE=(TRK,(1))
//SYSIN DD DUMMY
//COMPOBJ EXEC PGM=IEBCOPY,PARM='COMPRESS'
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DISP=OLD,DSN=CN.EPADYN.S2KC.BUILD
//SYSUT2 DD DISP=OLD,DSN=CN.EPADYN.S2KC.BUILD
//SYSUT3 DD UNIT=SYSDA,SPACE=(TRK,(1))
//SYSUT4 DD UNIT=SYSDA,SPACE=(TRK,(1))
//SYSIN DD DUMMY

```

Figure 3-1. Listing of File CN.EPASRD.MUSN.FORT2

4. DATA STORED EXTERNALLY TO THE PROGRAM MODULES

NRTNEM reads several data files in the course of its execution (see also Table 1-1):

A. Files with invariant names:

1. CN.EPADYN.S2KC.NLDICT: Noise level dictionary
2. CN.EPADYN.S2KC.WYLIB(MILE): Roadway mileages
3. CN.EPADYN.S2KC.WYLIB(PERCNT): Traffic percentages
4. CN.EPADYN.S2KC.WYLIB(FIMP): Fractional impact (SEM only)
5. CN.EPADYN.S2KC.WYLIB(SIGMA0): Noise level standard deviations (GAR only)
6. CN.EPADYN.S2KC.WYLIB(FLOMIX08): Flow mix

B. Files with user-assigned names:

7. CN.EPAxxx.aaa.WYLIB(yyyyyy): xxx = user id, aaa = account code, yyyyyy = name of WYLIB member containing vehicle growth and population data.
8. CN.EPAxxx.aaa.zzzzz: Dataset containing regulation instructions.

Note that the block data subprograms (module BLKDAT for GAR, module BLKDTSEM for SEM) contain other data which are discussed in Section 5. Those of the above eight files which are not discussed in the User's Guide are explained in detail later in this section. Files 1 (NLDICT), 7 (VGFS001), and 8 (RIF) are discussed in the User's Guide. The vehicle population portion of file 7 is discussed in this section.

4.1 Roadway Mileages

Figure 4-1 shows the contents of the WYLIB member CN.EPADYN.S2KC.WYLIB(MILE). As can be seen, data is provided in NAMELIST format for an array called MILE. It is dimensioned as follows:

MILE (6, 9, 4, 5)

where there are six roadway types, nine place sizes, four population density categories, and five speed ranges. One thousand and eighty (1080) data items are therefore provided, arranged six to a line in 180 lines. Each provides the mileage for a particular collection of pieces of roads as described by the meanings of the array's indices.

	AMINAY2						
	MILE:						
1.							
2.		0,	5,	16,	41,	37,	94,
3.		0,	7,	21,	71,	71,	172,
4.		0,	1,	4,	11,	12,	31,
5.		0,	3,	17,	45,	42,	119,
6.		0,	5,	24,	58,	61,	149,
7.		0,	5,	29,	67,	69,	171,
8.		0,	1,	6,	14,	15,	33,
9.		0,	3,	27,	59,	63,	140,
10.		0,	0,	0,	8698,	6159,	215859,
11.		6,	78,	438,	1085,	989,	2494,
12.		1,	19,	54,	201,	203,	491,
13.		1,	6,	31,	84,	95,	242,
14.		7,	69,	360,	963,	886,	2514,
15.		2,	23,	110,	273,	283,	699,
16.		1,	18,	99,	229,	233,	579,
17.		1,	10,	97,	210,	228,	504,
18.		1,	16,	154,	336,	364,	804,
19.		0,	0,	0,	0,	0,	0,
20.		14,	182,	1025,	2540,	2314,	5837,
21.		7,	125,	384,	1321,	1333,	3216,
22.		7,	51,	280,	761,	866,	2197,
23.		9,	88,	458,	1223,	1125,	3143,
24.		7,	92,	444,	1100,	1142,	2821,
25.		4,	67,	372,	860,	877,	2178,
26.		1,	25,	241,	523,	568,	1253,
27.		3,	58,	554,	1206,	1306,	2887,
28.		0,	0,	0,	0,	0,	0,
29.		0,	0,	0,	0,	0,	0,
30.		6,	101,	304,	1063,	1073,	2584,
31.		7,	53,	290,	788,	897,	2276,
32.		0,	0,	0,	0,	0,	0,
33.		0,	0,	0,	0,	0,	0,
34.		0,	0,	0,	0,	3,	0,
35.		2,	31,	299,	650,	765,	1556,
36.		4,	75,	712,	1551,	1679,	3712,
37.		0,	0,	0,	0,	0,	0,
38.		1,	8,	43,	83,	76,	422,
39.		1,	16,	54,	144,	145,	775,
40.		0,	2,	10,	22,	23,	141,
41.		1,	9,	44,	92,	85,	534,
42.		1,	13,	61,	114,	123,	673,
43.		1,	14,	76,	137,	140,	767,
44.		0,	2,	16,	28,	30,	147,
45.		1,	7,	70,	120,	129,	631,
46.		0,	1714,	3111,	43489,	30792,	863437,
47.		18,	202,	1138,	2213,	2017,	11225,
48.		4,	44,	152,	411,	415,	2208,
49.		2,	15,	80,	171,	145,	1090,
50.		22,	182,	937,	1956,	1805,	11311,
51.		5,	60,	286,	556,	577,	3146,
52.		3,	46,	257,	466,	475,	2606,
53.		2,	26,	251,	429,	465,	2266,
54.		3,	42,	401,	685,	742,	3614,
55.		0,	0,	0,	0,	0,	0,
56.		42,	472,	2662,	5179,	4720,	26264,
57.		28,	291,	999,	2643,	2717,	14473,
58.		20,	133,	728,	1551,	1765,	9888,
59.		29,	231,	1191,	2467,	2293,	14368,
60.		20,	241,	1154,	2242,	2328,	12695,
61.		11,	174,	967,	1753,	1767,	9803,

Figure 4-1. Contents of CN.EPADYN.S2KC.WYLIB(MILE)

62.	4,	66,	625,	1068,	1156,	5639,
63.	10,	150,	1441,	2459,	2664,	12992,
64.	0,	0,	0,	0,	0,	0,
65.	0,	0,	0,	0,	0,	0,
66.	22,	234,	803,	2167,	2167,	11649,
67.	21,	138,	754,	1606,	1828,	10241,
68.	0,	0,	0,	0,	0,	0,
69.	0,	0,	0,	0,	0,	0,
70.	0,	0,	0,	0,	0,	0,
71.	6,	81,	776,	1326,	1436,	7002,
72.	13,	193,	1852,	3161,	3425,	16702,
73.	0,	0,	0,	0,	0,	0,
74.	1,	5,	29,	24,	21,	422,
75.	2,	10,	36,	41,	41,	775,
76.	0,	1,	7,	6,	7,	141,
77.	1,	6,	29,	26,	24,	534,
78.	1,	9,	41,	34,	35,	671,
79.	1,	9,	51,	39,	40,	769,
80.	0,	1,	11,	8,	9,	147,
81.	1,	5,	47,	34,	37,	631,
82.	0,	10286,	15666,	130468,	92375,	863437,
83.	24,	134,	759,	626,	571,	11225,
84.	6,	30,	102,	116,	117,	2206,
85.	3,	10,	54,	48,	55,	1090,
86.	30,	121,	624,	555,	511,	11311,
87.	6,	40,	191,	157,	163,	3146,
88.	4,	31,	172,	132,	134,	2606,
89.	2,	18,	168,	121,	132,	2266,
90.	4,	28,	268,	194,	210,	3619,
91.	0,	0,	0,	0,	0,	0,
92.	55,	315,	1776,	1465,	1335,	26264,
93.	37,	194,	667,	762,	769,	14473,
94.	27,	89,	486,	439,	499,	9888,
95.	38,	154,	793,	705,	650,	14368,
96.	26,	161,	769,	635,	659,	12695,
97.	16,	116,	646,	495,	506,	9803,
98.	6,	44,	417,	302,	327,	5639,
99.	14,	101,	461,	646,	754,	12992,
100.	0,	0,	0,	0,	0,	0,
101.	0,	0,	0,	0,	0,	0,
102.	30,	156,	537,	614,	619,	11649,
103.	28,	92,	503,	455,	517,	10241,
104.	0,	0,	0,	0,	0,	0,
105.	0,	0,	0,	0,	0,	0,
106.	0,	0,	0,	0,	0,	0,
107.	7,	54,	518,	375,	407,	7002,
108.	18,	129,	1235,	895,	969,	16702,
109.	0,	0,	0,	0,	0,	0,
110.	8,	3,	16,	8,	7,	0,
111.	17,	6,	21,	14,	14,	0,
112.	3,	1,	4,	2,	2,	0,
113.	12,	3,	17,	9,	8,	0,
114.	12,	5,	24,	11,	12,	0,
115.	10,	5,	29,	13,	13,	0,
116.	1,	1,	6,	3,	3,	0,
117.	6,	3,	27,	11,	12,	0,
118.	5070,	33427,	60663,	178931,	126246,	0,
119.	201,	78,	438,	204,	191,	0,
120.	48,	17,	59,	39,	39,	0,
121.	26,	6,	31,	16,	18,	0,
122.	256,	69,	360,	185,	170,	0,

Figure 4-1 (Continued)

123.	55,	23,	110,	52,	54,	0,
124.	34,	18,	99,	44,	45,	0,
125.	20,	10,	97,	40,	44,	0,
126.	33,	16,	154,	65,	70,	0,
127.	0,	0,	0,	0,	0,	0,
128.	470,	182,	1025,	488,	446,	0,
129.	317,	112,	384,	254,	256,	0,
130.	233,	51,	280,	146,	166,	0,
131.	325,	88,	458,	235,	217,	0,
132.	224,	92,	444,	211,	220,	0,
133.	124,	67,	372,	165,	164,	0,
134.	51,	25,	241,	101,	109,	0,
135.	117,	58,	554,	232,	251,	0,
136.	0,	0,	0,	0,	0,	0,
137.	0,	0,	0,	0,	0,	0,
138.	255,	90,	309,	205,	206,	0,
139.	241,	53,	290,	152,	172,	0,
140.	0,	0,	0,	0,	0,	0,
141.	0,	0,	0,	0,	0,	0,
142.	0,	0,	0,	0,	0,	0,
143.	63,	31,	299,	125,	135,	0,
144.	151,	75,	712,	298,	323,	0,
145.	0,	0,	0,	0,	0,	0,
146.	13,	1,	6,	2,	1,	0,
147.	29,	2,	7,	3,	3,	0,
148.	6,	0,	1,	0,	0,	0,
149.	21,	1,	8,	2,	2,	0,
150.	20,	2,	8,	2,	2,	0,
151.	17,	2,	10,	3,	3,	0,
152.	2,	0,	2,	1,	1,	0,
153.	10,	1,	9,	2,	2,	0,
154.	26665,	40284,	73107,	73931,	52345,	0,
155.	343,	26,	147,	42,	38,	0,
156.	83,	6,	20,	8,	8,	0,
157.	44,	2,	10,	3,	4,	0,
158.	437,	23,	120,	37,	35,	0,
159.	94,	7,	37,	10,	11,	0,
160.	59,	6,	33,	9,	9,	0,
161.	35,	3,	32,	8,	9,	0,
162.	55,	5,	51,	13,	14,	0,
163.	0,	0,	0,	0,	0,	0,
164.	802,	60,	343,	98,	90,	0,
165.	541,	37,	128,	51,	51,	0,
166.	397,	17,	94,	29,	33,	0,
167.	555,	29,	152,	47,	44,	0,
168.	381,	30,	148,	42,	44,	0,
169.	222,	22,	123,	33,	34,	0,
170.	87,	8,	80,	20,	22,	0,
171.	199,	19,	185,	47,	51,	0,
172.	0,	0,	0,	0,	0,	0,
173.	0,	0,	0,	0,	0,	0,
174.	435,	30,	103,	41,	41,	0,
175.	411,	18,	97,	30,	34,	0,
176.	0,	0,	0,	0,	0,	0,
177.	0,	0,	0,	0,	0,	0,
178.	0,	0,	0,	0,	0,	0,
179.	107,	10,	100,	25,	27,	0,
180.	256,	25,	238,	60,	65,	0,
181.	0,	0,	0,	0,	0,	0,

Figure 4-1 (Concluded)

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4.2 Operating Mode Percentages

Figure 4-2 shows the contents of WYLIB member CN.EPADYN.S2KC.WYLIB(PERCNT). The data indicate the percent of time vehicles spend in various operating modes as a function of roadway type. Since there are four operating modes, six roadway types, and 14 vehicle types, one would expect 336 data items. However, the data differ only for two roadway type groups (group 1 includes types 1, 2, 3; group 2 includes 4, 5, 6) and for four vehicle type groups (group 1: vehicle types 1 through 7, and 13 and 14; group 2: vehicle types 8, 9, 10; group 3: vehicle type 11; group 4: vehicle type 12) (see array IPER in BLOCK DATA). Therefore, only 4*2*4 numbers are required for filling array PERCNT which is dimensioned:

PERCNT (4, 2, 4)

where the first index refers to operating mode, the second to roadway type group, and the last to vehicle type group.

```
1. PERCNT= 0.0470,0.0536,0.8888,0.0106,0.1540,0.1600,0.5510,0.1350,  
2. 0.0500,0.0500,0.8500,0.0500,0.1300,0.1700,0.5800,0.1400,  
3. 0.0500,0.0500,0.8500,0.0500,0.2000,0.2000,0.2800,0.3400,  
4. 0.0500,0.0500,0.8500,0.3500,0.0900,0.0900,0.2100,0.8100,
```

Figure 4-2. Contents of CN.EPADYN.S2KC.WYLIB(PERCNT)

4.3 Fractional Impact Data

Figure 4-3 shows the contents of WYLIB member CN.EPADYN.S2KC.WYLIB(FIMP). The data indicate the fractional impact factors for the SEM. Array FIMP is filled which is dimensioned:

FIMP (80, 5)

where 80 reserves space for 80 factors corresponding to noise levels spaced 1 dB apart; the 5 reserves spaces for five different fractional impact functions:

- 1 -- Sleep disruption
- 2 -- Sleep awakening
- 3 -- Indoor Speech Interference
- 4 -- Outdoor and Pedestrian Speech Interference
- 5 -- All fractional impact factors are set to 1 which results in a simple "population exposed" count

```
1.      FIMP#
2.      0.007,0.020,0.034,0.047,0.061,0.074,0.088,0.101,0.115,0.128,
3.      0.142,0.155,0.169,0.182,0.196,0.209,0.223,0.236,0.250,0.263,
4.      0.277,0.290,0.304,0.317,0.331,0.344,0.358,0.371,0.385,0.398,
5.      0.412,0.425,0.439,0.452,0.466,0.479,0.493,0.506,0.520,0.533,
6.      0.547,0.560,0.574,0.587,0.601,0.614,0.628,0.641,0.655,0.668,
7.      0.682,0.695,0.709,0.722,0.736,0.749,0.763,0.776,0.790,0.803,
8.      0.817,0.830,0.844,0.857,0.871,0.884,0.898,0.911,0.925,0.938,
9.      0.952,0.965,0.979,0.992,1.000,1.000,1.000,1.000,1.000,1.000,
10.     0.060,0.071,0.082,0.093,0.104,0.115,0.126,0.137,0.148,0.159,
11.     0.170,0.181,0.192,0.203,0.214,0.225,0.236,0.247,0.258,0.269,
12.     0.280,0.291,0.302,0.313,0.324,0.335,0.346,0.357,0.368,0.379,
13.     0.390,0.401,0.412,0.423,0.434,0.445,0.456,0.467,0.478,0.489,
14.     0.500,0.511,0.522,0.533,0.544,0.555,0.566,0.577,0.588,0.599,
15.     0.610,0.621,0.632,0.643,0.654,0.665,0.676,0.687,0.698,0.709,
16.     0.720,0.731,0.742,0.753,0.764,0.775,0.786,0.797,0.808,0.819,
17.     0.830,0.841,0.852,0.863,0.874,0.885,0.896,0.907,0.918,0.929,
18.     0.000,0.001,0.002,0.003,0.004,0.005,0.006,0.007,0.008,0.009,
19.     0.011,0.013,0.015,0.017,0.019,0.022,0.028,0.032,0.041,0.052,
20.     0.090,0.138,0.205,0.275,0.355,0.445,0.560,0.665,0.800,0.935,
21.     1.000,49*1.0,
22.     0.010,0.018,0.028,0.035,0.042,0.052,0.058,0.063,0.068,0.072,
23.     0.098,0.145,0.245,0.365,0.475,0.600,0.705,0.820,0.922,0.984,
24.     1.000,59*1.0,
25.     80*1.0,
```

Figure 4-3. Contents of CN.EPADYN.S2KC.WYLIB(FIMP)

4.4 Noise Level Standard Deviations

Figure 4-4 shows the contents of WYLIB member CN.EPADYN.S2KC.WYLIB(SIGMA0). The user may supply the standard deviations of the vehicle noise levels if he runs the GAR. The data may be present if SEM is run, but is not used. The basic noise levels are supplied through the noise level dictionary file NLDICT and the user's regulation instruction file. Denoting a noise level standard deviation by SIG, a basic noise level LEQ is modified according to:

$$LEQ = LEQ + 0.05 * LN(10) * SIG ** 2$$

(see DO-Loop in module TRAWO(VARNET9R) ending at label 4101).

It is recommended that this feature of the program not be used for the following reason:

- o SEM and GAR use the same noise level dictionary file, but only GAR can accept noise level standard deviation data. Running GAR with nonzero standard deviation data therefore would lead to using different noise levels in the two models.

The noise level standard deviations should therefore always be set to zero as shown in Figure 4-4.

```
1. SIG=1400*0.E0,
```

Figure 4-4. Contents of CN.EPADYN.S2KC.WYLIB(SIGMA0)

4.5 Flow Mix

Figure 4-5 shows the contents of WYLIB member CN.EPADYN.S2KC.WYLIB(FLOMIX08). The data contain the percentage vehicle mix in traffic flow by place size and roadway type. Since there are 14 vehicle types, nine place size categories, and six roadway types, one might expect 756 data items. However, the data are assumed to differ only for four place size groups (group 1: place size categories 1-3; group 2: 4-6; group 3: 7-8; group 4: 9) and five roadway groups (group 1: roadway types 1 and 2; group 2: 3; group 3: 4; group 4: 5; group 5: 6). The data fill array FLOMIX which is dimensioned:

FLOMIX (14, 4, 5)

where the first index refers to vehicle type, the second to place size group, and the last to roadway group.

```

1.      FLOMIX=
2.      0.4345, 0.1320, 0.0155, 0.0575, 0.1490, 0.0872, 0.0005,
3.      0.0211, 0.0917, 0.00026, 0.00077, 0.000, 0.0093, 0.0007,
4.      0.4302, 0.1357, 0.0157, 0.0582, 0.1509, 0.0872, 0.0005,
5.      0.0211, 0.0417, 0.00039, 0.00039, 0.000, 0.0093, 0.0007,
6.      0.4345, 0.1322, 0.0150, 0.0575, 0.1492, 0.0872, 0.0005,
7.      0.0211, 0.0417, 0.0, 0.00047, 0.000, 0.0093, 0.0007,
8.      0.3764, 0.1145, 0.0135, 0.0498, 0.1292, 0.1130, 0.0004,
9.      0.0274, 0.1015, 0.00240, 0.0, 0.00192, 0.0093, 0.0007,
10.     0.4303, 0.1320, 0.0150, 0.0577, 0.1490, 0.1259, 0.0005,
11.     0.0305, 0.0403, 0.00026, 0.00077, 0.000, 0.0093, 0.0007,
12.     0.4305, 0.1320, 0.0150, 0.0577, 0.1490, 0.1259, 0.0005,
13.     0.0305, 0.0403, 0.00039, 0.00039, 0.000, 0.0093, 0.0007,
14.     0.4304, 0.1327, 0.0150, 0.0578, 0.1498, 0.1259, 0.0005,
15.     0.0305, 0.0403, 0.00, 0.00047, 0.000, 0.0093, 0.0007,
16.     0.3858, 0.1174, 0.0138, 0.0511, 0.1324, 0.1508, 0.0005,
17.     0.030, 0.0549, 0.00240, 0.0, 0.00192, 0.0093, 0.0007,
18.     0.4005, 0.1217, 0.0143, 0.0530, 0.1373, 0.1779, 0.0005,
19.     0.0431, 0.0311, 0.00004, 0.00535, 0.00018, 0.0140, 0.0011,
20.     0.4015, 0.1220, 0.0144, 0.0531, 0.1377, 0.1779, 0.0005,
21.     0.0431, 0.0311, 0.00007, 0.00278, 0.00081, 0.0140, 0.0011,
22.     0.3942, 0.1215, 0.0143, 0.0524, 0.1371, 0.1779, 0.0005,
23.     0.0431, 0.0311, 0.00, 0.00213, 0.00523, 0.0140, 0.0011,
24.     0.3803, 0.1173, 0.0138, 0.0511, 0.1324, 0.1813, 0.0005,
25.     0.0439, 0.0514, 0.00, 0.0, 0.00096, 0.0140, 0.0011,
26.     0.4160, 0.1264, 0.0149, 0.0550, 0.1427, 0.1491, 0.0005,
27.     0.0301, 0.0381, 0.00004, 0.00535, 0.00018, 0.0140, 0.0011,
28.     0.4175, 0.1208, 0.0149, 0.0552, 0.1431, 0.1491, 0.0005,
29.     0.0301, 0.0381, 0.00007, 0.00278, 0.00081, 0.0140, 0.0011,
30.     0.4151, 0.1263, 0.0149, 0.0550, 0.1425, 0.1491, 0.0005,
31.     0.0301, 0.0381, 0.0, 0.00213, 0.00523, 0.0140, 0.0011,
32.     0.5012, 0.1523, 0.0179, 0.0603, 0.1718, 0.0232, 0.0006,
33.     0.0050, 0.0391, 0.0, 0.0, 0.00096, 0.0140, 0.0011,
34.     0.5014, 0.1523, 0.0179, 0.0603, 0.1718, 0.0477, 0.0006,
35.     0.00115, 0.0099, 0.00004, 0.00535, 0.00018, 0.0140, 0.0011,
36.     0.5024, 0.1520, 0.0180, 0.0604, 0.1723, 0.0477, 0.0005,
37.     0.00115, 0.0099, 0.00007, 0.00278, 0.00081, 0.0140, 0.0011,
38.     0.5001, 0.1521, 0.0179, 0.0602, 0.1718, 0.0477, 0.0006,
39.     0.00115, 0.0099, 0.00, 0.00213, 0.00523, 0.0140, 0.0011,
40.     0.5236, 0.1541, 0.0187, 0.0693, 0.1795, 0.0167, 0.0006,
41.     0.004, 0.0005, 0.000, 0.000, 0.00096, 0.0140, 0.0011,
42.     *END

```

Figure 4-5. Contents of CN.EPADYN.52KC.WYLIB(FLOMIX08)

4.6 Distribution of Vehicle Population by Type

This is also referred to as "Vehicle Breakdown" and is described in detail in Appendix D of the User's Guide.

4.7 Vehicle Population and Age Data

Appendix C of the User's Guide describes the Vehicle Growth File, a portion of which contains vehicle population and age data. Array REMO (Figure C-1 of the User's Guide) contains the vehicle population data as it existed in 1974, broken down by model year, for six vehicle type groups (group 1: light vehicles (types 1 through 7); group 2: trucks (types 8 and 9); group 3: intercity buses (10); group 4: transit buses (11); group 5: school buses (12); group 5: motorcycles (types 13 and 14)). Array MYREF contains six years which indicate the model years with which the corresponding population data in REMO begins. Thus, the second number in the second line of REMO (59871.) is the population of trucks of model year 1959 as they existed in 1974. Note that the populations for the earliest model years (first line of REMO) also include all vehicles older than that model year.

The REMO data in the master vehicle growth file CN.EPADYN.S2KC.WYLIB (VGFS001) is identical to the data in BLOCK DATA. Thus, it is superfluous. However, if updated information should become available, it will not be necessary to change BLOCK DATA, but only this input data since it supercedes the data in BLOCK DATA.

5. DATA STORED INTERNALLY TO THE PROGRAM MODULES

5.1 The GAR BLOCK DATA Subprogram

GAR's BLOCK DATA module, TRAWO(BLKDTA), contains data and verbal definitions (see Appendix C) for the GAR constants listed alphabetically below.

A	GAMM	NAT
ADBA	IEQAGE	NHT
ADT	IPER	NIDD
ALC	ITABLE	NSR
AREA	IVAF	NVT
BONE	IVBD	N16DB
BTWO	IVGF	PGFØ
CDBA	JFLO	POP
CZD	JPGF	POPDEN
DBK	JWYLE	POPLTN
DBSUM	KFLO	REMO
DDBA	KPER	V
EDGEpz	LANE	VAF
FACT3	LIFE	VGf
FACT4	MIXDB	WDTHPZ
FI	MYRB	WIDTH
FPAREA	MYREF	XK
FPROAD		

5.2 The SEM BLOCK DATA Subprogram

SEM's BLOCK DATA module, TRAWO(BK0SEMBS), contains data and verbal definitions (see Appendix C) for the SEM constants listed alphabetically below.

A
ADBL
ADT
AREA
AVDBL
COC
CZD
DBK
EDGEpz
FPAREA
FPROAD
GAMM
IEQAGE
IFIMP
INOUT
IPACT
IPER
ITABLE
IVAF
IVBD

IVGF
JCOC
JFLO
JPGF
JWYLE
KFLO
KOM
KPER
LANE
LIFE
MYRB
MYREF
NADB
NAT
NHT
NIDD
NRDB
NSR
NVT

PACT
PGFØ
PLDEN
POP
POPDEN
POPLTN
RDBCUT
RDBEDG
RDBL
REDGE
REMO
REPZ
SEPROB
SHIFT
V
VAF
VGF
WDTHPZ
WIDTH

6. THE SOURCE CODE

6.1 Introduction

The source code of all routines is written in FORTRAN, occasionally taking advantage of nonstandard features offered by IBM's FORTRAN H Extended Compiler. The code is stored by module: each module contains one routine (main program or subroutine, no matter what the size) and is stored as a member of the partitioned dataset TRAWO (see Table 1-1). Section 3 explains the mechanics of how to make changes to the modules.

Section 6.2 gives an overview of the models through the use of flowcharts and subroutine linkage tables.

In Section 6.3 we refer to the source listings in Appendix C where we first provide a listing of all source modules in the sequence given in Figure 3-1. Note that the listings for each module first show the cross-references and then the source code itself in an edited format provided by the compiler (except BLOCK DATA routines). The source code contains numerous comments which the reader should consider an integral part of this manual.

Section 6.4 gives symbol dictionaries for the GAR and SEM.

6.2 Flowcharts and Subroutine Linkages

6.2.1 The General Adverse Response Model

Figure 6-1 shows a flowchart of the GAR stressing the overall logic flow through the program, but including most subroutine calls for easy reference by programming personnel. Table 6-1 lists the modules in alphabetical order and indicates their purpose; also listed are the source module's member names in TRAWO which are sometimes different from the FORTRAN global symbol under which a module is known to the linkage editor. Note that the object module member names for dataset BUILD equal those in TRAWO.

Table 6-2 gives a cross-reference of subroutine calls.

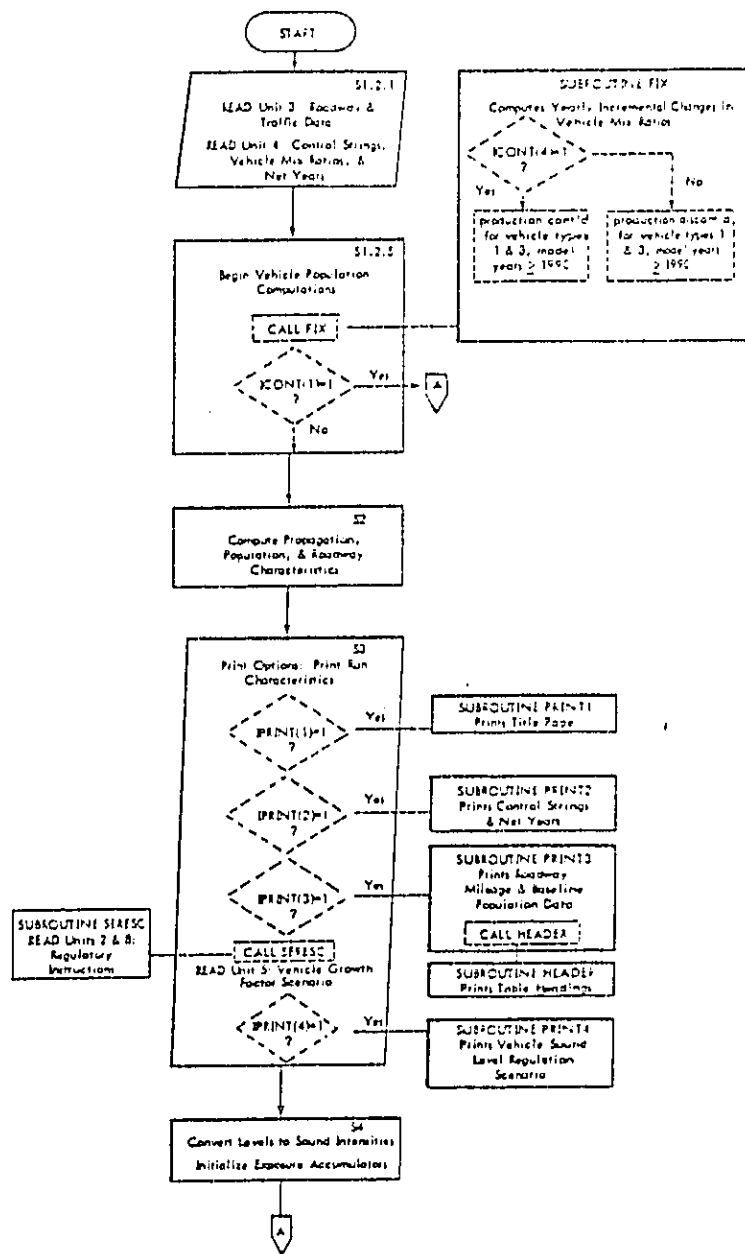


Figure 6-1. Flowchart for GAR

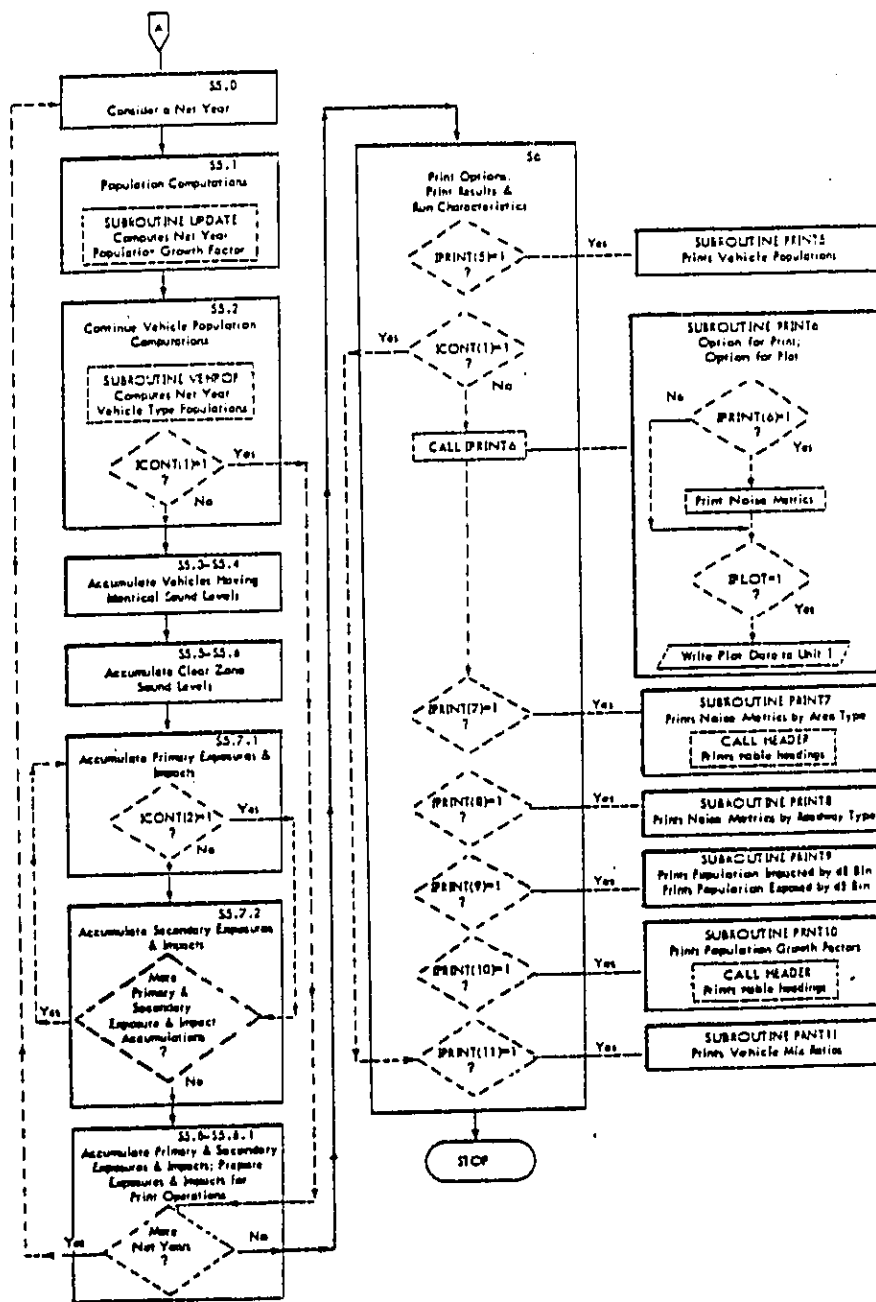


Figure 6-1 (Concluded)

Table 6-1
List of GAR Modules

FS = Function subprogram
Sub = Subroutine

Module Name	Member Name in TRAWO	Module Type	Purpose
ADD(AL1, AL2)	ADD	FS	adds two sound levels
BLOCK DATA	BLKDTA	block data	contains compiled data
CONST(GAM)	CONST	FS	assigns attenuation factor dependent constants
DBLEV(X)	DBLEV	FS	returns "DBLEV" at "X", given "X"; reads Wyle curve, inverse to "RAD(AL)"
FACTOR(GAM, DR, DFCL)	FACTOR	Sub	assigns and combines attenuation factor dependent constants
FIX	FIX	Sub	computes the new array YINC to fix function "VBD"
HEADER	HEADER	Sub	prints a common heading for all population tables (in PRINT3, PRINT7, & PRINT10)
IYBAS(MDUM)	IYBAS	FS	converts standard notation year, to year with respect to baseline (in VEHPOP(IYRN))
IYES(IYR)	IYES	FS	converts year with respect to reference, to year with respect to "MYRE" (in VEHPOP(IYRN))
IYREF(MDUM)	IYREF	FS	converts standard year to year measured with respect to reference year (in VEHPOP(IYRN))
MAIN	VARNET9R	Main	calculates the number of people impacted by noise originating from highway traffic
PRINT1	PRINT1	Sub	prints title page for each run
PRINT2	PRINT2	Sub	prints user opted control strings
PRINT3	PRINT3	Sub	prints constant data by area type "J"
PRINT4	PRINT4	Sub	prints the regulation scenario
PRINT5	PRINT5	Sub	prints vehicle population
PRINT6(I PLOT)	PRT6V9R	Sub	prints primary impact metrics

Table 6-1 (Continued)

Module Name	Member Name in TRAWO	Module Type	Purpose
PRINT7	PRINT7	Sub	prints population impacted, by area type
PRINT8	PRINT8	Sub	prints population impacted, by road-way type
PRINT9(ICASE)	PRINT9	Sub	prints impact and exposure in 5 dB intervals
PRNT10	PRNT10	Sub	prints population growth factors by area type
PRNT11	PRNT11	Sub	prints vehicle breakdown factor for each year from 1957 through 2013
RAD(AL)	RAD	FS	gives distance at which given level "AL" occurs, given "ALO"; it is an inverse Wyle curve reader
SERESC	SERESC	Sub	defines the vehicle noise levels using a noise level dictionary file on unit 8 and accepting regulatory selection instructions from unit 2
UPDATE(MYRC)	UPDATE	Sub	updates population growth factor each year
VBD	VBD	FS	computes current vehicle breakdown (in PRNT11 & VEHPOP(IYRN))
VEHPOP(IYRN)	VEHPOP	Sub	computes vehicle population from "REMO", growth, and attrition factors
XMINUS(AL1,AL2)	XMINUS	FS	takes the difference between two sound levels

Table 6-2
GAR Subroutine Cross-Reference

Invoked Subprogram	F/S	Invoking Section of MAIN PROGRAM										Invoking Subprogram					
		1.2.5	2.2	2.3.2	3.0	5.1	5.2	5.4	5.7.1	5.7.2	6.0	PRINT3	PRINT7	PRNT10	PRNT11	SERESC	VEHPOP
ADD CONST*	F		X														
DBLEV	S																
FACTOR	F								X	X							
FIX	S	X															
HEADER	S																
IYBAS	F																X
IYES	F								X								X
IYREF	F								X								X
PRINT1	S					X											
PRINT2	S					X											
PRINT3	S					X											
PRINT4	S				X												
PRINT5	S																X
PRINT6	S																X
PRINT7	S																X
PRINT8	S																X
PRINT9	S																X
PRNT10	S																X
PRNT11	S																X
RAD	F								X	X							
SERESC	S				X												
UPDATE	S					X											
VDD	F													X			X
VEHPOP	S								X								
XMINUS	F		X														
ZERO	S																X
ZERO1	S																X

F - Function Subprogram

S - Subroutine

* Note: Subroutine CONST is not referenced in this version.

6-6

6.2.2 The Single Event Model

The following pages contain:

Figure 6-2: Flowchart for SEM

Table 6-3: Alphabetical list of modules

Table 6-4: Cross-reference of subroutine calls.

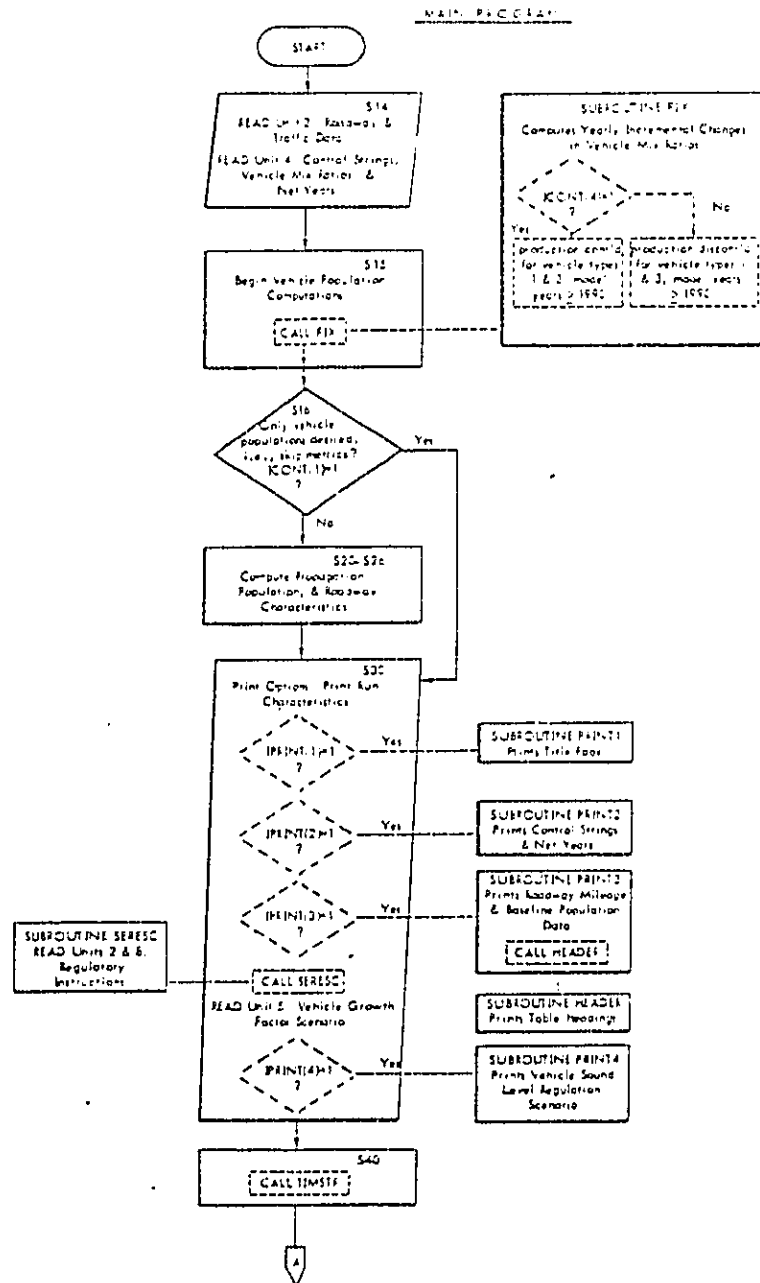


Figure 6-2. Flowchart for SEM

SUBROUTINE TIMSTL

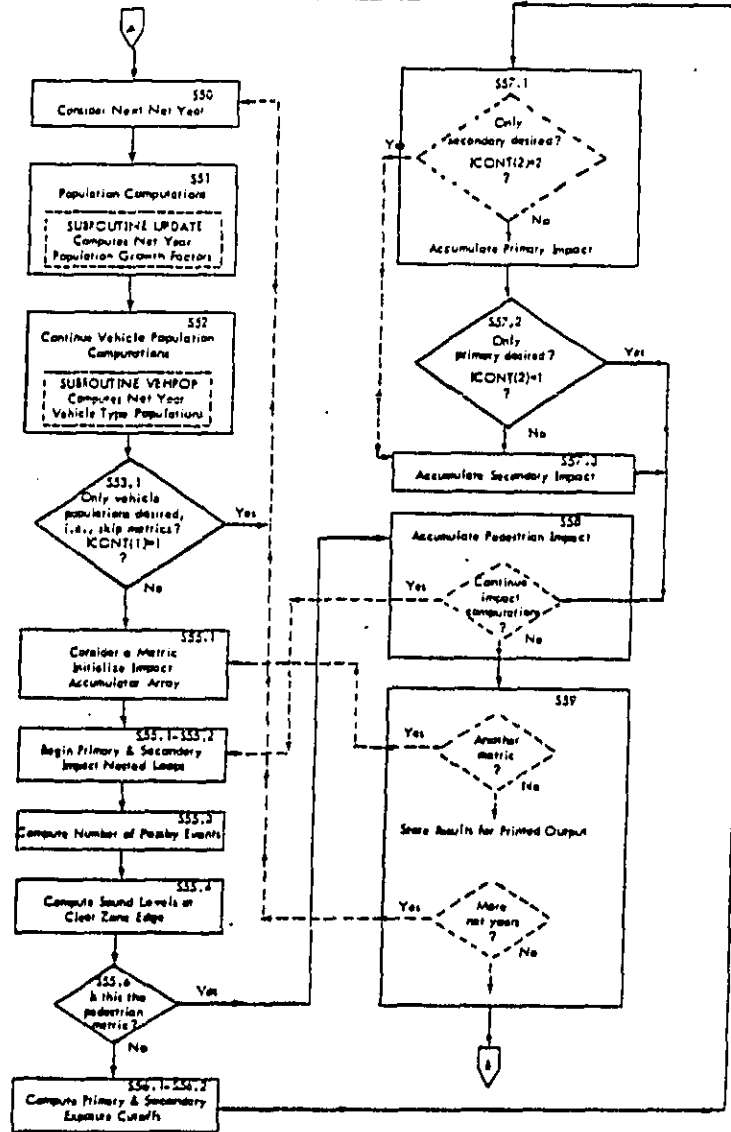


Figure 6-2 (Continued)

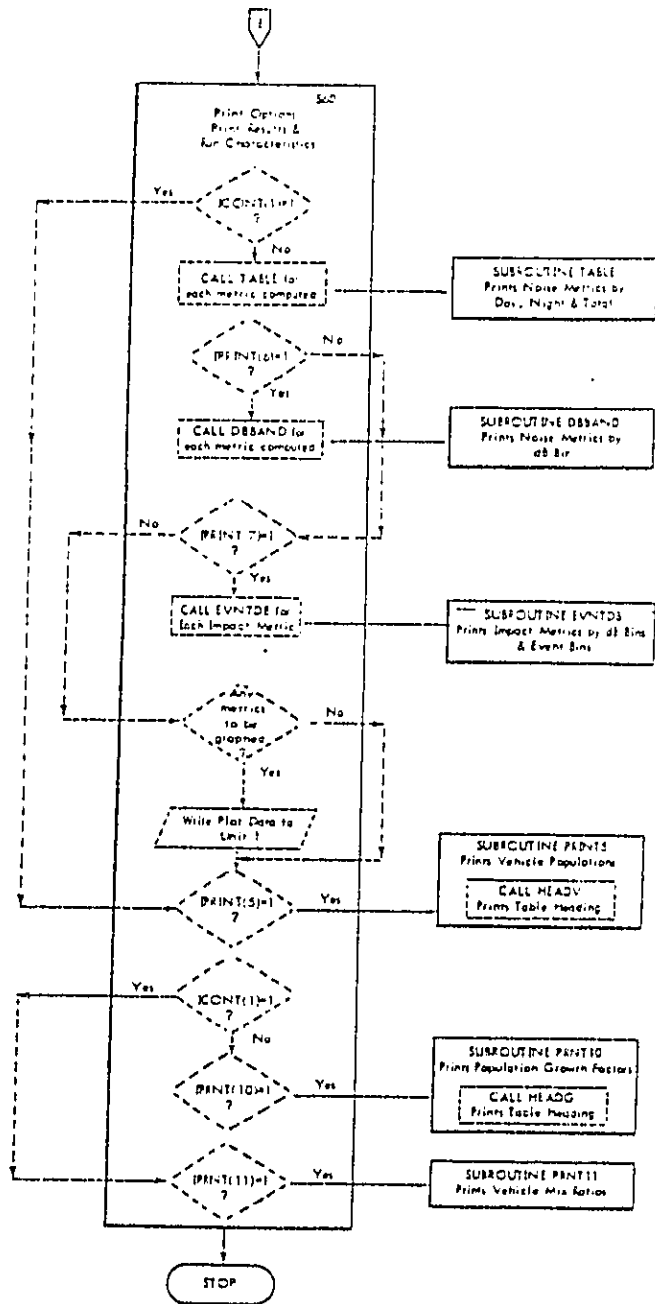


Figure 6-2 (Concluded)

Table 6-3
List of SEM Modules

FS = Function Subprogram
SUB = Subroutine

Module Name	Member Name in TRAWO	Module Type	Purpose
COLECT(POP INC, IE, KDB)	COLECT	SUB	Accumulates impacts
DBBAND(IBEG, ARRAY, TITLE)	DBBAND	SUB	Prints noise metrics by dB bin
EVENTS	EVENTS	SUB	Computes the event bins in which noise impacts may occur
EVNTDB(IBEG, TITLE, IIM)	EVNTDB	SUB	Prints noise metrics by dB & event bins
FIX	FIXSEM	SUB	Computes the new array YINC to fix function "VBD"
HEADER(I SUB)	HEADRSEM	SUB	Prints table headings
HEADG(ICASE)	HEADG	SUB	Prints table headings
HEADV	HEADV	SUB	Prints table headings
IYBAS(MDVM)	IYBASSEM	FS	Converts standard notation year, to year with respect to baseline
IYES(IYR)	IYESSEM	FS	Converts year with respect to reference, to year with respect to "MYRE"
IYREF(MDVM)	IYREFSEM	FS	Converts standard year, to year with respect to reference year
MAIN	SEMAIN9R	MAIN	Reads, computes & prints data to be exercised by SUBROUTINE TIMSTR
NORMAL(IM)	NORMAL	SUB	Prepares impact data for printed tabulation
PRINT1	PRT1SEM	SUB	Prints title page for each run
PRINT2	PRT2SEM	SUB	Prints control strings & net years

Table 6-3 (Continued)

Module Name	Member Name in TRAWO	Module Type	Purpose
PRINT3	PRT3SEM	SUB	Prints roadway milage & base- line population data
PRINT4(ICS)	PRT4SEM	SUB	Prints vehicle sound level regulation scenario
PRINT5	PRT5SEM	SUB	Prints vehicle population
PRNT10	PRT10SEM	SUB	Prints population growth factors by area type
PRNT11	PRT11SEM	SUB	Prints vehicle breakdown factor for each year from 1957 through 2013
SERESC(KRET)	SERESCSE	SUB	Defines the vehicle noise levels using a noise level dictionary file on unit 8 and accepting regulatory selec- tion instructions from unit 2
TABLE(ARRAY, TITLE)	TABLE	SUB	Prints noise metrics by day, night & total
TIMSTR	TIMSTR8S	SUB	Computes seven metrics of noise originating from road- way traffic
UPDATE(YEAR)	UPDATSEM	SUB	Updates population growth factor each year in a piece- wise linear fashion as a function of place size
VBD(1)	VBDSEM	FS	Computes current vehicle mix ratio
VEHPOP(1YRN)	VEPOPSEM	SUB	Computes vehicle population from "REMO", growth and attrition factors
ZERO(R,N)	ZERO	SUB	Initializes real arrays to zero
ZEROI(1,N)	ZEROI	SUB	Initializes integer arrays to zero

Table 6-4
SEM Subroutine Cross-Reference

Invoked Subprogram	F/S	Invoking Section of MAIN Program					Invoking Section of SUBROUTINE TIMSTR										Invoking Subprogram							
		14	15	30	30.2	40	51	52	55.01	55.1	57.1	57.3	58	59	60	EVENTS	HEADG	PRINT3	PRINT5	PRNT10	PRNT11	SERESC	VEHPOP	
COLLECT	S										X		X		X									
DBBAND	S																							
DUMPER*	S																							
EVENTS	S						X																	
EVNTDB	S																							
FIX	S																							
HEADER	S																							
HEADG	S																							
HEADV	S																							
IYBAS	F																							
IYES	F																							
IYREF	F																							
NORMAL	S																							
PRINT1	S																							
PRINT2	S																							
PRINT3	S																							
PRINT4	S																							
PRINT5	S																							
PRNT10	S																							
PRNT11	S																							
SERESC	S																							
TABLE	S																							
TIMSTR	S																							
UPDATE	S																							
VDD	F																							
VEHPOP	S																							
ZERO	S																							
ZERO1	S																							

F = Function Subprogram
S = Subroutine

*Note: Subroutine DUMPER is not referenced in this version.

6.3 Source Code Listings

The NRTNEM Version 9R source code as of September 29, 1980, appears in Appendix C. Due to its bulk, it was impractical to include it into the main text of this manual.

6.4 Symbol Dictionaries

The GAR Symbol Dictionary starts on the next page, the one for SEM start on page 6-27.

6.4.1 GAR Symbol Dictionary

```

*****
* SYMBOL DICTIONARY FOR THE GENERAL ADVERSE RESPONSE MODEL OF THE NATIONAL ROADWAY TRAFFIC NOISE EXPOSURE MODEL *
*                                                                                                                                           *
*                                                                                               VERSION 9R                                                                                               *
*                                                                                                                                           *
*****

```

KEY:

ENTRIES ARE OF THE GENERAL FORM: NAME, INDICES, NATURE, COMMON BLOCK OR SUBROUTINE, AND DESCRIPTION.

"NAME" OCCUPIES THE FIRST COLUMN.

"INDICES" OCCUPY COLUMN 2 AND GIVE THE INDICES OF ARRAY VARIABLES.

COLUMN 3 CONTAINS THE NATURE AND IS A CODED DESCRIPTION OF THE NATURE OF THE VARIABLE. THE CODE BEFORE THE COLON INDICATES WHETHER THE NAME IS A CONSTANT (C) OR A VARIABLE (V). THE CODE AFTER THE COLON TELLS WHAT KIND OF VARIABLE OR CONSTANT IT IS.

THE OPTIONS ARE:

FOR CONSTANTS:

- C COMPILED CONSTANTS. INITIALIZED IN DATA STATEMENTS.
- D DERIVED CONSTANTS. THEY ARE COMPUTED ONCE IN THE PROGRAM AND NOT CHANGED AFTER THAT.
- 1,3,4,5 INPUT CONSTANTS WHICH ARE READ IN. NUMERAL INDICATES THE INPUT FILE NUMBER.
- S SELECTOR ARRAYS.

FOR VARIABLES:

- A ACCUMULATORS INTO WHICH QUANTITIES ARE ACCUMULATED.
- D DUMMY VARIABLES.
- C COUNTER VARIABLES: KEEP TRACK OF ORDINAL OF TABLES PRINTED.
- I VARIABLES WHOLLY INTERNAL TO A SUBROUTINE.

6-15

S STORAGE VARIABLES FOR VARIOUS COMPUTED METRICS.
 T TEMPORARY VARIABLES FOR PASSING NUMBERS ALONG TO SUBROUTINES IN COMMON AREAS OR FOR LEGIBILITY OF CODE.
 X INDEX VARIABLES. THEIR RANGE IS GIVEN BY THE EXPRESSION R(X:Y) AT THE BEGINNING OF THE DESCRIPTION.
 PA INTERMEDIATE ACCUMULATOR FROM WHICH A METRIC IS LATER DERIVED.

THE RANGE OF AN INDEX IS GIVEN IN THE FORM R(X:Y) OR R(Y) AT THE BEGINNING OF THE DESCRIPTION. X IS THE LOWER LIMIT AND Y THE UPPER LIMIT. WHEN X IS NOT EXPLICITLY GIVEN, IT IS 1.

"COMMON BLOCK OR SUBROUTINE" GIVES EITHER THE NAME OF THE COMMON BLOCK WITHIN WHICH THE SYMBOL APPEARS OR THE SUBROUTINE (OR MAIN PROGRAM) GLOBAL NAME WHERE IT IS USED IF IT IS NOT IN A COMMON BLOCK.

THE "DESCRIPTION" IS A SHORT, ONE-LINE EXPLANATION OF THE MEANING OF THE VARIABLE.

THE ENTRIES FOLLOW AND ARE IN ALPHABETICAL ORDER.

SYMBOL	RANGE	NATURE	COMMON BLOCK OR SUBROUTINE (GLOBAL SYMBOL)	EXPLANATORY TEXT
A	(2,IT)	C:C	BIG001	ATTENUATION CURVE COEFFICIENT
ADBA	(IDB)	C:C	BIG003	AVERAGE DB LEVEL OF A DB BAND
ADT	(K,J)	C:C	BIG001	AVERAGE DAILY TRAFFIC FLOW ON A ROADWAY K IN AREA J (SUMMED OVER ALL LANES)
AL		V:D	RAD	ADBA(IDB) FOR PRIMARY EXPOSURE OR DIDL FOR SECONDARY EXPOSURE IN MAIN'S FUNCTION SUBPROGRAM RAD(AL)
ALC	(J)	C:C	BIG001	LOCAL CRITERION LEVEL FOR EXPOSURE
ALEVEL	(K,L)	V:T	BIG003	TEMPORARY STORAGE OF ALO (Q.V.)
ALREG	(LEVEL,L,H,I)	C:I	BIG002	REGULATION LEVELS
ALRPJ	(J,IYRN)	V:S	BIG002	LRP BY AREA TYPE FOR EACH NET YEAR

ALWPK	(K, TYRN)	V:AS	BIG002	LEVEL WEIGHTED POPULATION BY ROADWAY TYPE
ALWPOP	(TYRN)	V:S	BIG002	LEVEL WEIGHTED POPULATION FOR EACH YEAR
ALO		V:T	BIG001	NOISE LEVEL AT EDGE OF CLEAR ZONE
AL1		V:D	ADD,	A DB LEVEL TO BE ADDED
			XNINUS	
AL2		V:D	ADD,	A DB LEVEL TO BE ADDED OR SUBTRACTED
			XNINUS	
AVL	(J,K, ID, LEVEL)	C:D	BIG003	LINEAR VEHICLE DENSITY=ADT/V/LANE
AONE	(ID, J, K)	C:D	MAIN	ATTENUATION CURVE COEFFICIENT 1
AREA	(ID, J)	C:C	BIG001	AREA OF POPULATION REGION ID, J
A1		V:T	BIG001	=AONE(ID, J, K), ATTENUATION CURVE COEFFICIENT 1
A2		V:T	BIG001	=A(TWO(IT)), ATTENUATION CURVE COEFFICIENT 2
ATWO	(IT)	C:C	MAIN	ATTENUATION CURVE COEFFICIENT 2
BIGSUM		V:A	VEHPOP	ACCUMULATOR FOR TOTAL NUMBER OF VEHICLES CVTOT
BLANK		C:C	SERESC	BLANK CHARACTER STRING
BONE	(ID, J, K)	C:D	BIG003	ATTENUATION CURVE COEFFICIENT ONE
BTWO	(ID, J, K)	C:D	BIG003	ATTENUATION CURVE COEFFICIENT TWO
BVPOP	(I)	C:D	BIG001	BASELINE VEHICLE POPULATION BY VEHICLE TYPE
B1		V:T	BIG001	=BONE(ID, J, K), ATTENUATION CURVE COEFFICIENT
B2		V:T	BIG001	=BTWO(ID, J, K), ATTENUATION CURVE COEFFICIENT
CBAR	(IT)	C:C	MAIN	DISTANCE FROM CZD (O.V.) AT WHICH KINK IN ATTENUATION CURVE OCCURS
CDBA	(J, IDB)	C:D	BIG003	COMPLEMENTARY DB LEVELS, S.T. CDBA (J, IDB)+ADBA(IDB)=ALC(J) (O.V.)
CL		V:T	MAIN	=ALC(J) LOCAL CRITERION LEVEL
CONVI		C:C	MAIN	CONVERSION FACTOR IN EQUATION FOR FACT2

CONV2	C:C	MAIN	CONVERSION FACTOR: HALF MILE TO FEET CONVERSION
CON0	C:D	BIG001	STORED COMPUTED CONSTANT=CON(0.5)
CON2	C:D	BIG001	STORED COMPUTED CONSTANT=CON(0.5)
CZD (ID,J,K)	C:C	BIG001	CLEAR ZONE DISTANCE
DREXCE	V:T	MAIN	=DBLEV(EDGE). DB LEVEL AT CRITERION DISTANCE IN SECONDARY EXPOSURE COMPUTATION
DEK (IT)	C:C	BIG001	DB LEVEL AT MATCH KTIK IN ATTENUATION CURVE OCCURS
DINLO	V:T	MAIN	LOW END OVERRIDE OF SECONDARY EXPOSURE JOB LOOP
DINEAN	V:T	MAIN	ADJUSTED ADDA FOR DB BAND CONTAINING ALO.=AVERAGE OF ALO AND LOWER LIMIT OF THAT BAND
DBSUM (IDB,JDB)	C:C	BIG003	RESULTANT DB LEVEL = ADDB(IDB)+ADDB(JDB)
DDBA (IDB)	C:C	BIG002	DB BAND LIMITS
DDBSUM	V:T	MAIN	ADJUSTED DBSUM (O.V.) FOR DB BAND CONTAINING ALO.=AVERAGE OF ADDB(IDB) & ALO
DECK	C:I	SERESC	= '*DK'
DELEXP	V:T	MAIN	SECONDARY EXPOSURE DELTA
DFCL	V:T	MAIN,	DISTANCE OF THE CENTERLINE OF A LAKE FROM EDGE OF CLEARZONE
		FACTOR	
DLIP	V:I	PRINTG	DELTA LIP=LIP-LIP(BASELINE)
DR	V:D	MAIN,	DISTANCE OF A LAKE FROM EDGE OF ROADWAY
		FACTOR	
DREF	C:C	MAIN	REFERENCE DISTANCE=50 FT
EDGE (ID,J,K)	C:D	BIG003	CRITERION DISTANCE FOR SECONDARY EXPOSURE CUTOFF
EDGEPZ (ID,J,K)	C:D	BIG003	EDGE OF POPULATED ZONE
ELREG (LEVEL,L,M,I)	C:D	MAIN	NOISE LEVEL EQUATION CONSTANT DERIVED FROM ALREG, EQUIVALENCED WITH ALREG
ENI	V:A	MAIN	ACCUMULATOR FOR LIP
ENIA	V:A	MAIN	ACCUMULATOR FOR LIP BY AREA TYPE

ENIDB (IDB, IYRN)	V:AS	BIG002	LWP IN DB BANDS FOR EACH YEAR
ENTNET	V:A	MAIN	NET LWP FOR A SPECIFIC HIGHWAY TYPE AND SOUND LEVEL BIN COMBINATION
EXPDB (IDB, IYRN)	V:AS	BIG002	EXPOSURE IN DB BANDS FOR EACH YEAR
EXPDEC (IDB, K)	V:AP	BIG003	DETAILED NET EXPOSURE DECREASE (SHIFTED FROM IDB TO ANOTHER IDB) INTERMEDIATE ACCUMULATOR
EXPINC (IDB, K)	V:AP	BIG003	DETAILED NET EXPOSURE INCREASE INTERMEDIATE ACCUMULATOR
EXPNET	V:A	MAIN	NET EXPOSURE FOR A SPECIFIC HIGHWAY TYPE AND SOUND LEVEL BIN COMBINATION
FACTET	V:T	MAIN	=FACT4*PGF (D.V.)
FACT2 (ID, J, K)	C:D	BIG003	CONSTANT FACTOR IN NOISE EQUATION
FACT3 (ID, J)	C:D	MAIN	POPULATED AREA FACTOR IN NOISE ACCUMULATION
FACT4 (ID, J)	C:D	BIG003	POPULATION FACTOR IN MAIN'S NOISE CALCULATION
FI (J)	C:C	BIG001	FRACTION OF PEOPLE EXPOSED AND ARE IMPACTED
FLOMIX (I, KFLO, JFLO)	C:I3	BIG003	FLOMIX OF TYPE I VEHICLE
FPAREA (J, ID)	C:C	BIG001	FRACTION OF AREA WHICH IS POPULATED
FPROAD (J, K)	C:C	BIG001	FRACTION OF ROADWAY ALONG POPULATED AREAS
GAM	V:D	FACTOR	CLASSICAL ATTENUATION FACTOR
GAMM (K, J)	C:C	BIG002	CLASSICAL ATTENUATION COEFFICIENT
GTOT	V:IA	PRINT3	BASELINE U.S. POPULATION
GVTOT (IYRN)	V:S	BIG002	GRAND VEHICLE TOTAL FOR YEAR IYRN
HEAD (J, 2)	V:I	HEADER	A SET OF HEADINGS FOR AREA TYPE TABLES
HEADER (2, 4)	C:C	PRINT4	TEXT STRING FOR PRINTING TABLES
HIWAY2	:	MAIN	A NHVELIST COMPRISED OF MILE, PERCNT, FLOMIX, SIG
I	V:X	(MANY)	R(14): INDEX, ONE OF 14 VEHICLE TYPES
IAGE	V:T	VEHPOP	CURRENT AGE OF VEHICLES OF A PARTICULAR MODEL YEAR
ICONT (12)	C:I4	BIG004	A CONTROL STRING FOR SPECIFYING PROGRAM BEHAVIOR

ID		V:X	(MANY) R(NIDD(J)): INDEX FOR A POPULATION DENSITY REGION WITHIN AN AREA TYPE J
IDB		V:X	PRINT9, R(16): ONE OF 16 DB BANDS MAIN
IDBFLG		V:	MAIN FLAG TO SKIP INITIALIZATION BLOCK IN DB BAND LOOPS
IDLXP	(12)	C:I4	BIG004 ARRAY CONTROLLING THE DUMPING OF VARIABLES
IEFACE	(IVBD)	C:C	BIG001 EQUIVALENT AGE OF VEHICLES LUMPED INTO REFERENCE YEAR
II		V:IX	PRINT4 R(2): USED BY VARIABLE STRING HEADER (II,H) TO PRINT COMPLEMENTARY HALVES OF TABLE HEADINGS
ILANE		V:X	MAIN R(ILANE): INDEX FOR THE I-TH LANE
ILEV		V:IX	PRINT4 R(ILEVEL): INDEX TO REGULATION YEARS AND LEVELS, FOR PRINTING OF REGULATION SCENARIO TABLE ENTRIES
IPER	(1)	C:CS	BIG003 PERCENT TABLE SELECTOR FOR VEHICLE TYPES
IPLT		C:I4	MAIN, FLAG TO OUTPUT DERIVED DATA ONTO PLOTTING UNIT 1 PRINT6
IPR		V:D	PRINT6 DETERMINES WHETHER OR NOT PRINTED OUTPUT IS DESIRED
IPRINT	(8)	C:I4	BIG004 ARRAY CONTROLLING THE SELECTION OF TABLES TO PRINT
IRCNT	(INT)	V:C	SERESC COUNTS NUMBER OF REGULATIONS PER VEHICLE TYPE
IRYR		V:I2	SERESC REGULATION YEAR
ISP		V:C	SERESC COUNTER FOR SPEED RANGE
IT		V:T	BIG001 =JWYLE(ID,J). ATTENUATION CURVE SELECTOR
ITABLE		V:C	BIG002 ORDINAL OF TABLE
ITABS		V:C	(MANY) SUB-TABLE NUMBER
IVAF	(1)	C:CS	BIG001 VAF TABLE SELECTOR
IVBD	(1)	C:CS	BIG001 VEHICLE BREAKDOWN GROUP SELECTOR

IVEH		C:X	SERESC	VEHICLE TYPE
IVGF	(I)	C:CS	BIG001	VGF TABLE SELECTOR
IVMASK	(I)	C:I4	BIG004	VEHICLE MASK. IF MASK BIT OF THE I-TH TYPE IS ZERO, NOISE CONTRIBUTION FROM THAT TYPE IS ZERO
IYR		V:D	PRINT2	A YEAR IN RELATIVE FORM TO BE CHANGED TO STANDARD FORM OR ANOTHER RELATIVE FORM
IYRN		V:X	(NANY) R(NYRN)	(MAXIMUM=9) THE ORDINAL OF A NET YEAR
II		V:I	PRINT4	=I+1
J		V:X	(NANY) R(NAT)	INDEX FOR AN AREA TYPE (DETERMINED BY THE PLACE SIZE)
JDB		V:X	MAIN	R(N16DB); INDEX FOR ONE OF 16 DB BANDS
JFLO	(J)	C:CS	BIG003	FLOW MIX TABLE SELECTOR FOR TYPE J
JJ		V:X	UPDATE,	JJ RANGES THROUGH RANGE OF JPCF MAIN
JMILE	(J)	V:IA	PRINT3	THE MILEAGE OF ROADWAY IN AREA J, ALL ROADWAY TYPES
JPCF	(J)	C:CS	BIG001	POPULATION GROWTH FACTOR SELECTOR
JWYLE	(J, ID)	C:C	BIG001	ATTENUATION CURVE SELECTOR
K		V:X	(NANY) R(NRT)	INDEX FOR A ROADWAY TYPE
KFLO	(K)	C:CS	BIG003	FLOW MIX TABLE SELECTOR FOR TYPE K
KMASK	(K)	C:I4	BIG004	ROADWAY TYPE MASK--IF MASK BIT IS ZERO, THE NOISE LEVEL OF THAT ROADWAY TYPE IS SET TO ZERO
KMILE		V:IA	PRINT3	TOTAL MILEAGE OF TYPE K ROADWAYS, ALL U.S.
KP		V:X	MAIN	INDEX FOR ROADWAY TYPE USED IN SECONDARY EXPOSURE CALCULATION
KPER	(K)	C:CS	BIG003	PERCENT TABLE SELECTOR FOR ROADWAY TYPES
L		V:X	(NANY) R(NSR)	INDEX FOR A SPEED RANGE
LWE	(J, K)	C:C	BIG001	NUMBER OF LANES OF ROADWAY TYPE J, K

LDB		V:X	MAIN	R(16): INDEX FOR ONE OF 16 DB BANDS
LEVEL		V:X	MAIN	R(NLEVEL): INDEX TO REGULATION LEVELS
LIFE	(IVAF)	C:C	BIG001	NUMBER OF ENTRIES IN VAF TABLE
H		V:X	(HANY)	R(4): INDEX FOR AN OPERATING MODE (ACCELERATION, DECELERATION, CRUISE AND IDLE)
HDXM		V:D	IYBAS, IYREF	SUBROUTINE VEIPOP(IYRN) (CALLED BY MAIN) SUBSTITUTES HYRB AND HODYR INTO FUNCTION SUBPROGRAMS IYREF(HDXM) AND IYBAS(HDXM) AS APPROPRIATE
HILE	(K,J,LD,L)	C:I3	BIG002	HILES OF ROADWAY
HILEJK	(J)	V:IA	PRINT3	THE MILEAGE OF ROADWAY IN AREA J, ROADWAY TYPE K
HIXDB	(IDB, JDB)	C:D	BIG003	RESULTANT LEVEL SORTING MACHINE
HLEVEL		V:I	PRINT4	=HLEV(IH)
HODYR		V:X	BIG001	A VEHICLE MODEL YEAR
HSUM		V:IA	PRINT3	TOTAL U.S. ROADWAY MILEAGE
HYOLD		V:T	MAIN, VEIPOP	=HYRE(1) EARLIEST SURVIVAL YEAR
HYR		V:IX	PRINT1	R(1957:2013): MODEL YEAR FOR COLUMN HEADINGS HODYR=HYR
HYRB		C:C	BIG002	BASELINE YEAR=1974
HYRC		V:X	(HANY)	R(HYRB:HYRNET(HYRN)): CURRENT YEAR IN TIME NET UNDER CONSIDERATION
HYRE	(I)	V:	BIG001	EARLIEST YEAR FROM WHICH TYPE I VEHICLES SURVIVE
HYREF	(IVBD)	C:C	BIG001	REFERENCE YEAR FOR VEHICLE BREAKDOWN GROUP IVBD
HYREG	(LEVEL, N, I)	C:I5	BIG002	REGULATION YEARS
HYRNET	(IYRN)	C:I4	BIG002	A NET OF YEARS FOR WHICH THE COMPUTATION IS TO BE DONE
HAT		C:C	BIG002	NUMBER OF AREA TYPES=9
HIT		C:C	BIG002	NUMBER OF ROADWAY TYPE=6=RANGE OF K

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NTD		V:	PRINT7, =NIDD(J), NUMBER OF DENSITY REGIONS MAIN
NIDD (J)		C:C	BIG002 NUMBER OF DENSITY REGIONS IN AN AREA TYPE
NII (J)		V:I	PRINT7 NOISE IMPACT INDEX (IN PERCENT) BY AREA TYPE
NLANE		V:	MAIN =LANE(J,K), NUMBER OF LANES
NLDKRM		V:I	SERESC STRING IDENTIFYING A NOISE LEVEL DATA BLOCK FOR ONE REGULATION FOR ONE VEHICLE, IN NOISE LEVEL DICTIONARY
NLDKIR		V:I	SERESC LIKE NLDKRM, BUT READ FROM UNIT 2 (REGULATION INSTRUCTION FILE)
NLEV (I,M)		C:I5	BIG002 NUMBER OF REGULATION LEVELS
NLEVEL		V:	MAIN, =NLEV(I,M) NUMBER OF REGULATION LEVELS PRINT4
NPHILE		V:A	MAIN NUMBER OF POPULATED MILES FOR GIVEN REGION
NSR		C:C	BIG002 NUMBER OF SPEED RANGES=5=RANGE OF L
NUN5 (7)		C:C	PRNT11 LIGHT VEHICLE TYPE IDENTIFICATION NUMBERS FOR ROW HEADINGS
NVT		C:C	BIG002 NUMBER OF VEHICLE TYPES=14
NYRN		C:I4	BIG002 NUMBER OF YEARS IN YEAR NET
N16DB		C:C	BIG002 NUMBER OF DB BAND LIMITS=1+NUMBER OF DB BANDS
PERCNT (M,KPER, IPER)		C:I3	BIG003 PERCENT OF TIME IN EACH OPERATING MODE
PEXP		V:A	MAIN ACCUMULATOR FOR NUMBER OF PEOPLE EXPOSED
PEXPA		V:A	MAIN ACCUMULATOR FOR NUMBER EXPOSED BY AREA TYPE
PEXPJ (J,IYRN)		V:S	BIG002 EXPOSURE BY AREA TYPE FOR EACH YEAR
PEXPX (X,IYRN)		V:SA	BIG002 EXPOSURE BY ROADWAY TYPE FOR EACH YEAR
PGF (JPGF(J))		V:	BIG001 CURRENT POPULATION GROWTH FACTOR
PGFO (JJ)		C:C	BIG001 FIVE INITIAL POPULATION GROWTH FACTORS, EACH =1 FROM BLOCK DATA

PI		C:C	MAIN	RATIO OF CIRCUMFERENCE TO DIAMETER OF A CIRCLE
PIIP		V:A	MAIN	ACCUMULATOR FOR NUMBER OF PEOPLE IMPACTED
PIIPA		V:A	MAIN	ACCUMULATOR FOR NUMBER IMPACTED BY AREA TYPE
PIIPJ	(J, IYRN)	V:S	BIG002	IMPACT BY AREA TYPE FOR EACH YEAR
PIIPK	(K, IYRN)	V:AS	BIG002	IMPACT BY ROADWAY TYPE FOR EACH YEAR
PIINC	(IP, JJ)	C:C	UPDATE	THREE SETS OF EXTRAPOLATORY INCREMENTS FOR THE POPULATION GROWTH FACTOR
PLO		V:A	MAIN	ACCUMULATOR FOR POWER LEVEL AT EDGE OF CLEARZONE
PHYEXP	(IDB, K)	V:A	BIG003	DETAILED PRIMARY EXPOSURE ACCUMULATOR WITHIN AN AREA TYPE ID, J
PHYLP	(IDB, K)	V:A	BIG003	PRIMARY LEVEL-WEIGHTED POPULATION ACCUMULATOR WITHIN AN AREA TYPE ID, J
POP	(J)	V:IA	BIG003	THE BASELINE POPULATION OF AREA TYPE J
POP		V:A	PRINT7	POPULATION ACCUMULATOR.
POPDEN	(ID, J)	C:C	BIG002	BASELINE POPULATION DENSITY BY POPULATION REGION
POPEXP	(IYRN)	V:S	BIG002	POPULATION EXPOSED FOR EACH YEAR IN TIMESTREAM
POPID	(ID)	V:IA	PRINT3	BASELINE POPULATION BY DENSITY REGION
POPIMP	(IYRN)	V:S	BIG002	POPULATION IMPACTED FOR EACH YEAR IN TIMESTREAM
POPINC		V:	MAIN	INCREMENTAL PEXPOB IN PRIMARY EXPOSURE CALCULATION
POPPTH	(ID, J)	C:D	BIG002	BASELINE POPULATION BY POPULATION REGION
POPPOP		V:A	MAIN	ACCUMULATOR FOR CURRENT U.S. POPULATION
PROPT		V:I	SERESC	TO CHECK IF A *DK LINE WAS ENCOUNTERED IN NOISE LEVEL DICTIONARY (UNIT 8)
PXPDEK	(IDB)	V:A	BIG003	EXPOSURE IN DB BANDS FOR ALL BANDS WITHIN AN AREA ID, J (I.E., INCL. BANDS < LOCAL CRITERION)
REGSCN		:	MAIN	A NAMELIST COMPRISED OF NUREG, NLEV, NUREG (SUPERSETED BY CALLING SERESC)
REMO	(IVBD, IYREF)	C:C	BIG001	BASELINE YEAR VBD GROUP POPULATIONS
REXP		V:I	PRINT6	RELATIVE EXPOSURE. POPEXP(IYR)/TOPOP(IYR)

RLWP		V:I	PRINT7, RELATIVE LWP. $=LWP(IYR)/TOPOP(IYR)$
			PRINT6
RNAME	(5)	C:I4	BIG004 RUNNAME AND DATE STRING
RRCI		V:I	PRINT6 RELATIVE CHANGE IN IMPACT= $DLWP/LWP$ (BASELINE)
SIG	(L,M,LEVEL,I)	C:I3	BIG003 STANDARD DEVIATION OF ALREG. THE VEHICULAR NOISE LEVEL
STORCF	(J,IYRN)	C:D	BIG002 STORED POPULATION GROWTH FACTOR FOR EACH YEAR
SUM		V:A	(NNY) GENERALLY USED AS AN ACCUMULATOR
SUM1		V:A	MAIN GENERAL ACCUMULATOR
TOPOP	(IYRN)	V:S	BIG002 TOTAL U.S. POPULATION FOR EACH YEAR IN TIMESTREAM
V	(L)	C:C	BIG003 AVERAGE VELOCITY OF SPEED RANGES
VAF	(IVBD,IYREF)	C:C	BIG001 FOUR ATTRITION FACTOR TABLES
VBD5	(I)	V:I	PRINT11 LIGHT VEHICLE BREAKDOWN FOR TABLE ENTRIES
VBD74	(I)	C:I4	BIG001 1974 BREAKDOWN RATIOS FOR EACH OF THE 14 VEHICLE TYPES (IN MAIN, VBD(I), FIX, & VEHPOP(IYRN))
VBD77	(I)	C:I4	BIG001 1977 BREAKDOWN RATIOS FOR EACH OF SEVEN VEHICLE TYPES (IN MAIN, FIX, AND VBD(I))
VBD85	(I)	C:I4	BIG001 1985 BREAKDOWN RATIOS FOR EACH OF SEVEN VEHICLE TYPES (IN MAIN, FIX, AND VBD(I))
VBD90	(I)	C:D	BIG001 1990 BREAKDOWN RATIOS FOR EACH OF SEVEN VEHICLE TYPES (IN FIX AND VBD(I))
VEHGF1		:	MAIN A NOVELIST COMPRISED OF VGF, IVGF, REYD, NYREF, VAF, LIFE
VGF	(IYBAS,IVGF)	C:C	BIG001 SIX VEHICLE GROWTH FACTOR TABLES
VINC	(I)	C:D	BIG001 SEVEN VBD INCREMENTS INTERPOLATED (IN FIX) BETWEEN VBD74 AND VBD77
VNL	(I,M,LEVEL)	V:A	BIG003 NUMBER OF VEHICLES IN EACH NOISE LEVEL RANGE
VPOP	(I,IYES)	V:	BIG001 CURRENT YEAR VEHICLE POPULATION BY MODEL YEAR
VTOT	(I,IYRN)	V:S	BIG002 VEHICLE BY TYPE FOR EACH YEAR
WTHPZ	(ID,J)	C:D	BIG003 WIDTH OF THE POPULATED ZONE

WIDTH	(J,K)	C:C	BIG001	WIDTH OF A LAKE
X		V:D	DBLEV	A DISTANCE AT WHICH A DB LEVEL IS TO BE FOUND
XINC	(I)	C:C	BIG001	INTERPOLATION TABLES FOR THE VBD FUNCTION
XX	(ID,J,K)	C:D	BIG003	DISTANCE AT WHICH KINK IN ATTENUATION CURVE OCCURS
XKINK		V:	BIG001	=XX (ID,J,K). DISTANCE AT WHICH KINK IN ATTENUATION CURVE OCCURS
XLTHE	(IB)	C:I4	PRINT1	ALPHANUMERIC STRING ARRAY FOR THE RUN'S TITLE PAGE
XLO		V:	MAIN	LOWER SPATIAL LIMIT OF A DB BAND
XUP		V:T	MAIN	UPPER SPATIAL LIMIT OF A DB BAND
XX		V:	VEIPOP	TOTAL NUMBER OF TYPE I VEHICLES
Y		V:	MAIN	=ADBA (IOB) Q.V.
YINC	(I)	C:D	BIG001	2ND INTERPOLATION TABLE FOR THE VBD FUNCTION

6.4.2 SEM Symbol Dictionary

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*      SYMBOL DICTIONARY FOR THE SINGLE EVENT MODEL OF THE NATIONAL ROADWAY TRAFFIC NOISE EXPOSURE MODEL      *
*                                                                                                                                            *
*                                                                                               VERSION SR                                                                                               *
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KEY:

ENTRIES ARE OF THE GENERAL FORM: NAME, INDICES, NATURE, COMMON BLOCK OR SUBROUTINE, AND DESCRIPTION.

"NAME" OCCUPIES THE FIRST COLUMN.

"INDICES" OCCUPY COLUMN 2 AND GIVE THE INDICES OF ARRAY VARIABLES.

COLUMN 3 CONTAINS THE NATURE AND IS A CODED DESCRIPTION OF THE NATURE OF THE VARIABLE. THE CODE BEFORE THE COLON INDICATES WHETHER THE NAME IS A CONSTANT (C) OR A VARIABLE (V). THE CODE AFTER THE COLON TELLS WHAT KIND OF VARIABLE OR CONSTANT IT IS.

THE OPTIONS ARE:

FOR CONSTANTS:

- C COMPILED CONSTANTS. INITIALIZED IN DATA STATEMENTS.
- D DERIVED CONSTANTS. THEY ARE COMPUTED ONCE IN THE PROGRAM AND NOT CHANGED AFTER THAT.
- 1,3,4,5 INPUT CONSTANTS WHICH ARE READ IN. NUMBER INDICATES THE INPUT FILE NUMBER.
- S SELECTOR ARRAYS.

FOR VARIABLES:

- A ACCUMULATORS INTO WHICH QUANTITIES ARE ACCUMULATED.
- D DUMMY VARIABLES.
- C COUNTER VARIABLES: KEEP TRACK OF ORDINAL OF TABLES PRINTED.
- I VARIABLES WHOLLY INTERNAL TO A SUBROUTINE.

S STORAGE VARIABLES FOR VARIOUS COMPUTED METRICS.
 T TEMPORARY VARIABLES FOR PASSING NUMBERS ALONG TO SUBROUTINES IN COMMON AREAS OR FOR LEGIBILITY OF CODE.
 X INDEX VARIABLES. THEIR RANGE IS GIVEN BY THE EXPRESSION R(X:Y) AT THE BEGINNING OF THE DESCRIPTION.
 PA INTERMEDIATE ACCUMULATOR FROM WHICH A METRIC IS LATER DERIVED.

THE RANGE OF AN INDEX IS GIVEN IN THE FORM R(X:Y) OR R(Y) AT THE BEGINNING OF THE DESCRIPTION. X IS THE LOWER LIMIT AND Y THE UPPER LIMIT. WHEN X IS NOT EXPLICITLY GIVEN, IT IS 1.

"COMMON BLOCK OR SUBROUTINE" GIVES EITHER THE NAME OF THE COMMON BLOCK WITHIN WHICH THE SYMBOL APPEARS OR THE SUBROUTINE (OR MAIN PROGRAM) GLOBAL NAME WHERE IT IS USED IF IT IS NOT IN A COMMON BLOCK.

THE "DESCRIPTION" IS A SHORT, ONE-LINE EXPLANATION OF THE MEANING OF THE VARIABLE.

THE ENTRIES FOLLOW AND ARE IN ALPHABETICAL ORDER.

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SYMBOL	RANGE	NATURE	COMMON BLOCK OR SUBROUTINE (GLOBAL SYMBOL)	EXPLANATORY TEXT
A	(2,IT)	C:C	BIG001	ATTENUATION CURVE COEFFICIENT (SLOPE)
ACCH	(JADB, IDAY)	V:PA	BIG006	INITIAL ACCUMULATOR FOR METRICS
ACEV		V:A	BIG006	ACCUMULATES NUMBER OF EVENTS FOR ONE VEHICLE TYPE BY ROADWAY TYPE AND BY PLACE SIZE IN EVENT AND IS USED TO DEFINE IEVB
ACLMP		V:A	BIG006	ACCUMULATES LEVEL-WEIGHTED POPULATION BY EVENT BIN AND DB BAND IN COLECT
ADBL	(21)	C:C	BIG005	DB BIN BOUNDARY LEVELS
ADT	(K,J)	C:C	BIG001	AVERAGE DAILY TRAFFIC FLOW ON A ROADWAY K IN AREA J (SUMMED OVER ALL LANES)
ADTFAC	(I, IDAY)	C:C	TINSTR	AVERAGE DAILY TRAFFIC FACTOR
ALMAX	(IM)	V:I	TINSTR	MAXIMUM NOISE LEVEL AT THE EDGE OF THE CLEAR ZONE BY METRIC (NOT USED IN

CALCULATIONS, JUST FOR DUMPING)

ALREG	(LEVEL,L,H,I)	C:I	BIC002	REGULATION LEVELS, DEFINED IN SERESC
ALIP1		V:I	TABLE	INTERMEDIATE STORAGE FOR OUTPUT
ALIP2		V:I	TABLE	INTERMEDIATE STORAGE FOR OUTPUT
ALIP3		V:I	TABLE	INTERMEDIATE STORAGE FOR OUTPUT
ALO		V:T	BIC001	NOISE LEVEL AT EDGE OF CLEAR ZONE (SEE ALSO DESCRIPTION OF DJRLEV)
ANNMET	(IYRN,3,IN)	C:D	BLANK	METRICS PREPARED FOR PRINTED OUTPUT (1 FOR DAY; 2 FOR NIGHT; 3 FOR 24 HOURS)
			COEFF	EQUIVALENCED WITH SLPDSP
AREA	(ID,J)	C:C	BIC001	AREA OF POPULATION REGION ID,J
ARAY		V:D	TABLE,	PRINTED OUTPUT METRIC ARAY—ARGUMENT FOR A SUBROUTINE
			DBBAND	
AVDBL		C:C	BIC005	MIDPOINT LEVEL OF EACH DB BIN
BDISP		V:I	TINSTR	DIFFERENCE BETWEEN EDGE OF CLEAR ZONE LEVEL AND LOWER DB BIN BOUNDARY
BLANK		C:C	SERESC	BLANK CHARACTER
BRATIO		V:I	TINSTR	RATIO OF BDISP OVER BIN WIDTH (5 DB)
BRCP		V:I	TINSTR	BAND RATIO AT CUTOFF, PRIMARY
BRCS		V:I	TINSTR	BAND RATIO AT CUTOFF, SECONDARY
BVPOP	(I)	C:D	BIC001	BASELINE VEHICLE POPULATION BY VEHICLE TYPE
CDISP		V:I	TINSTR	5.-BDISP
COC	(IM)	C:C	BIC005	METRIC CUTOFF CRITERIA
COMP		V:I	SERESC	COMPARATOR TO SEE IF VEHICLE TYPE HAS CHANGED
CONV2		C:C	HAIN	CONVERSION FACTOR: HALF MILE TO FEET CONVERSION (HALF BECAUSE A ROAD HAS TWO SIDES; SEE EDGE DEFINITION IN HAIN'S DO LOOP LABELED 2301)
CRATIO		V:I	TINSTR	1.-BRATIO=BAND RATIO (HOW MUCH DOES ALO STICK INTO THIS DB BAND)

CRCP		V:I	TIMSTR	1-BRCP (USUALLY)
CRCS		V:I	TIMSTR	1-BRCS (USUALLY)
CZD	(ID,J,K)	C:C	BIG001	CLEAR ZONE DISTANCE
DBK	(IT)	C:C	BIG001	DB LEVEL AT WHICH KINK IN ATTENUATION CURVE OCCURS
DECK		C:C	SERESC	'*DK' (CHARACTER STRING INDICATING A NEW BLOCK OF DATA IN NLDICT=VEHICLE NOISE LEVEL DICTIONARY FILE, UNIT 8)
DELBRP		V:I	TIMSTR	DELRP*BRCP
DELRBS		V:I	TIMSTR	DELRB*BRCS
DELCRP		V:I	TIMSTR	DELRP*CRCP
DELRCS		V:I	TIMSTR	DELRB*CRCS
DELPA		V:T	TIMSTR	LWD AREA SIZE REPRESENTATION (UNITLESS) OF THE POPULATION ZONE PARALLELING A ROADWAY AND LYING WITHIN A PRIMARY EXPOSURE DB BIN STRIP
DELRB		V:T	TIMSTR	LWD AREA SIZE REPRESENTATION (UNITLESS) OF THE POPULATION ZONE PARALLELING A ROADWAY AND LYING WITHIN A SECONDARY EXPOSURE DB BIN STRIP
DJKLEV	(J,K,IL,KH)	C:D	BIG005	COMBINED AREA TYPE AND ROADWAY TYPE LEVEL CORRECTION (COMPUTED IN MAIN, DO LOOP 2110). USED FOR CALCULATING ALD TOGETHER WITH DLLEV IN TIMSTR, ACCORDING TO Eqs. (E-19) AND (E-20) OF THE THEORETICAL BACKGROUND MANUAL, AS FOLLOWS: THE MAIN PROGRAM CALCULATES (ARRAY SUBSCRIPTS DROPPED FOR CLARITY):

$$\text{FOR SEL: DJKLEV} = -10 \times \text{NLOG}_{10}(X_2) + 10 \times \text{GAMM} \times \text{NLOG}_{10}(\text{DRE}/X_2),$$

WHERE DRE = DISTANCE FROM LANE CENTER TO ROADWAY EDGE.
FOR LEQ: DJKLEV = $-20 \times \text{NLOG}_{10}(X_2) + 10 \times \text{GAMM} \times \text{NLOG}_{10}(\text{DRE}/X_2)$

NOTE THAT THE FIRST EXCESS ATTENUATION COEFFICIENT $C_{AV}(1)$ MENTIONED IN APPENDIX E IS ALWAYS ZERO SINCE THE SOUND IS ALWAYS EMITTED FROM A ROADWAY WHICH IS ALWAYS ASSUMED ACOUSTICALLY HARD. EQS. (E-17B) AND (E-18B) FOR SOFT SURFACES ARE THEREFORE NEVER USED IN THE COMPUTER PROGRAM. THE MAIN PROGRAM CALCULATES FURTHER:

$$\text{FOR SEL: } \Delta L_{LEV} = 10 \times \log_{10}(2 \times \theta \times D_{REF}^{*2} / (117.5 \times V))$$

WHERE $2 \times \theta$ IS THE RESULT OF THE INTEGRAL IN EQ. (E-18A), AND $117.5 = 1.466$ IS THE CONVERSION FACTOR FROM MILES PER HOUR TO FEET PER SECOND.

$$\text{FOR LEQ: } \Delta L_{LEV} = 10 \times \log_{10}(2 \times \theta \times D_{REF}^{*2} / 6)$$

WHERE THE 6 STEMS FROM EQ. (E-17A).

SUBROUTINE T11STR CALCULATES ALO AS FOLLOWS:

$$A_{LO} = A_{LREG} + \Delta L_{LEV} + \Delta L_{LEV} + \text{SHIFT}$$

THIS EXPANDS TO:

$$\text{FOR SEL: } A_{LO} = A_{LREG} + \text{SHIFT} + 10 \times C_{AV}(1) \times \log_{10}(D_{REF}/X_2) + 10 \times \log_{10}(2 \times \theta \times (X_2/1.466 \times V)) \times (D_{REF}/X_2)^{*2},$$

WHERE: A_{LREG} IS THE NOISE LEVEL AT THE REFERENCE DISTANCE D_{REF} ,
SHIFT IS EXTERIOR SKIN BUILDING NOISE REDUCTION,
THE THIRD TERM REPRESENTS THE EXCESS ATTENUATION FROM THE ROAD EDGE TO THE CLEAR ZONE EDGE,

AND THE LAST TERM COMPRISES THREE ITEMS:

$2 \times \text{TETA} = \text{INTEGRAL OF EQ. (E-18A)},$
 $X2 / (1.466 \times V) = \text{THE } 10 \times \text{ALOG}_{10}(D/V) \text{ TERM IN EQ. (E-19)},$
 $(\text{DREF}/X2)^{**2} = \text{SPREADING LOSS.}$

FOR LEQ: $\text{ALO} = \text{ALREG} + \text{SHIFT} + 10 \times \text{GAIN} \times \text{ALOG}_{10}(\text{DRE}/X2)^{**2} + 10 \times \text{ALOG}_{10}(2 \times \text{TETA} \times (X2/V) / (6(X2/V))) + (\text{DREF}/X2)^{**2},$

WHERE $6(X2/V) = T$ FROM EQ. (E-17A).

DLLEV	(L,KM)	C:D	BIG005	LEVEL SHIFT ARRAY FOR SPEED RANGE (SEE DESCRIPTION OF DLKLEV)
DLPSI	(J,K,IL)	C:D	BIG005	LEVEL SHIFT ARRAY FOR LANES (USED ONLY IF ICONT(7)=1 IN TIMSTR, AND ONLY FOR IM=7 (PEDESTRIANS))
DLMP1		V:I	TIMSTR	INTERMEDIATE STORAGE FOR OUTPUT
DLMP2		V:I	TIMSTR	INTERMEDIATE STORAGE FOR OUTPUT
DLMP3		V:I	TIMSTR	INTERMEDIATE STORAGE FOR OUTPUT
DMINUS		V:I	TIMSTR	-CDISP/2.-FIS(IM) (HALF WIDTH COMPLEMENTING DPLUS)
DNTOT	(JADB,IM)	V:S	TIMSTR	DAY-NIGHT TOTAL OF RESULTS BY METRIC AND BY DB BIN
DPLUS		V:I	TIMSTR	BDISP/2.-FIS(IM) (HALF WIDTH OF EXCESS OF ALO BEYOND LOCAL DB BAND LIMIT)
DRAT			TIMSTR	POPULATION WITHIN A DB BAND = POPULATION NORMALIZED TO X2, TIMES DIFFERENCE OF DISTANCE RATIOS OF DB BAND LIMITS TO X2.
DRATIO	(I7,IT,KIND)	C:D	BIG005	LAND AREA SIZE (UNITLESS) OF THE POPULATED ZONE WHICH PARALLELS A ROADWAY AND LIES WITHIN A DB BIN STRIP (DIFFERENCE BETWEEN RATIO VALUES)
DREF		C:C	MAIN	REFERENCE DISTANCE=50 FT

EDGE	(ID,J,K)	C:D	BIG003	CRITERION DISTANCE FOR SECONDARY EXPOSURE CUTOFF
EDGEZ	(ID,J,K)	C:D	BIG003	EDGE OF POPULATED ZONE
EYPROB	(I,J,K)	C:D	BIG005	PASSBY EVENT PROBABILITY IN THE BASELINE YEAR
FIMP	(00,IFM)	C:I3	BIG005	FRACTION OF PEOPLE EXPOSED AND ARE IMPACTED (SEE ALSO FIS)
FIS	(IH)	C:C	TINSTR	NOISE LEVEL AT AND BELOW WHICH FIMP IS ZERO = LOWER BOUND OF PEOPLE RESPONSE TRANSFER FUNCTION. FOR ONE METRIC, ARRAY FIMP CONTAINS 00 FRACTIONAL IMPACT NUMBERS IN 1 DB STEPS. THE NOISE LEVEL GIVEN BY FIS IS JUST 1 DB BELOW THE NOISE LEVEL CORRESPONDING TO THE FIRST FIMP ARRAY ELEMENT FOR ONE METRIC.
FLOHTX	(I,KFLD,JFLO)	C:I3	BIG003	FLOHTX OF TYPE I VEHICLE
FPAREA	(J,ID)	C:C	BIG001	FRACTION OF AREA WHICH IS POPULATED
FPROAD	(J,K)	C:C	BIG001	FRACTION OF ROADWAY ALONG POPULATED AREAS (AS OPPOSED TO VACANT ONES)
FRTN	(IDAY)	V:I	BIG005	PRODUCT OF PEOPLE DAY/NIGHT ACTIVITY FRACTION AND VEHICLE TYPE DAY/NIGHT TRAFFIC SPLIT
GWH	(K,J)	C:C	BIG003	EXCESS ATTENUATION COEFFICIENT
GTPOP		V:I	PRINT3	GRAND TOTAL POPULATION
GVTOT	(IYR)	V:S	BIG002	GRAND VEHICLE TOTAL FOR YEAR IYR
GVTSUM		V:I	VEHPOP	INTERMEDIATE STORAGE FOR GVTOT
HEAD	(J,2)	V:I	HEADER	A SET OF HEADINGS FOR AREA TYPE TABLES
HEAD	(5,4)	C:CI	PRINT4	SPEED RANGE TEXT STRINGS
HEADER	(2,4)	C:CI	PRINT4	TEXT STRINGS
HWAY2		C:I3	HAIN	HAYLIST COMPOSED OF HILE, PERCENT, FLOHTX, FIMP
I		V:X	(HAY) R(14)	INDEX, ONE OF 14 VEHICLE TYPES
IAGE		V:T	VEHPOP	CURRENT AGE OF VEHICLES OF A PARTICULAR MODEL YEAR

IBEG	(IM)	C:14	BIG004	DISPLACEMENT OF THE TEN DB BIN POSITIONS TO BE PRINTED
IBEG		V:D	EVNTDB	DUMMY ARGUMENT FOR AN ELEMENT OF ARRAY IBEG (WHEN CALLING EVNTDB FROM TIMSTR)
IBG		V:I	NORMAL	ABBREVIATION FOR AN ELEMENT OF IBEG
IBIN		V:X	NORMAL	R(15): INDEX TO DB BINS
ICASE		V:D	HEADG	DETERMINES WHICH CASE IS PRINTED: POPULATION, OR ITS GROWTH FACTORS
ICLIP	(X)		TIMSTR	A FORTRAN STATEMENT FUNCTION: THE UPPER AND LOWER EXPOSURE LIMITS OF THE INPUT TO THE FRACTIONAL IMPACT ARRAY (FROM 1 THROUGH 80)
ICONT	(12)	C:14	BIG004	A CONTROL STRING FOR SPECIFYING PROGRAM BEHAVIOR
ICS		V:D	PRINT4	A "FLAG" TO PRINT HEADING INFORMATION—ARGUMENT FOR A SUBROUTINE
ID		V:X	(MANY) R(INDD(J)):	INDEX FOR A POPULATION DENSITY REGION WITHIN AN AREA TYPE J
IDAY		V:X	TIMSTR	R(2): DAY-NIGHT INDEX (1 FOR DAY; 2 FOR NIGHT)
IDUMP	(12)	C:14	BIG004	ARRAY CONTROLLING THE DUMPING OF VARIABLES
IE		V:D	COLLECT	R(80): INDEX FOR FIMP ARRAY CORRESPONDING TO NOISE LEVEL
IEGAGE	(IVBD)	C:C	BIG001	EQUIVALENT AGE OF VEHICLES LUMPED INTO REFERENCE YEAR
IEVB	(K,J)	V:X	BIG006	SUBROUTINE EVENTS FILLS THIS ARRAY WITH EVENT BIN NUMBERS TO BE USED LATER IN THE MAIN LOOP STRUCTURES OF SUBROUTINE TIMSTR
IFIMP	(IM)	C:CS	BIG005	SELECTS A METRIC'S FRACTIONAL IMPACT FUNCTION (FIMP)
IFLAG	(IVBD(1))	V:	VEHPOP	VEHICLE BREAKDOWN FLAG
IFN		V:T	BIG006	SELECTS A METRIC'S FRACTIONAL IMPACT FUNCTION (FIMP) THROUGH SELECTOR ARRAY IFIMP
IIN		V:I	NORMAL	MODIFIED IN (RANGE OF THIRD INDEX OF VNTDB IS ONLY 5 SINCE IM=5 AND IM=6 ARE IGNORED FOR THE EVENT BIN BY DB BIN TABLE. THEREFORE, IIM=5 FOR PEDESTRIANS INSTEAD OF 7)

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IL		V:X	(HWY) R(VALVE): INDEX SIGNIFYING A LANE HEADER
ILDBP		V:I	TIHSTR NUMBER OF DB BINS COVERED (IPCUT-1)
ILDBS		V:I	TIHSTR NUMBER OF DB BINS COVERED (ISCUT-1)
ILEV		V:X	(HWY) COUNTS REGULATIONS (1 TO HLEVEL)
ILIH1		V:I	TIHSTR INDEX TO BE USED IN ENTERING FINP TABLES IN CALL TO COLLECT (LOWER PART OF LOCAL DB BAND)
ILIH2		V:I	TIHSTR INDEX TO BE USED IN ENTERING FINP TABLES IN CALL TO COLLECT (UPPER PART OF LOCAL DB BAND)
IH		V:X	(HWY) R(7): INDEX TO METRICS
IHS6		V:	BIG006 NORMALLY 0; UNLESS EVENT BIN BY DB TABLE IS REQUIRED AND METRIC TYPE (IH) IS NOT 5 OR 6; THEN IT IS 1.
INCR			BIG002 (NOT USED)
INOUT	(IH)	C:CS	BIG005 SELECTS A METRIC'S APPROPRIATE "SHIFT"
IPACT	(IH)	C:CS	BIG005 SELECTS A METRIC'S APPROPRIATE "PACT"
IPCUT		V:I	TIHSTR A PRIMARY CUTOFF RELATIVE DB BIN POSITION (DEPENDS ON DIFFERENCE BETWEEN POOLV AND HLO)
IPER	(I)	C:CS	BIG003 PERCENT TABLE SELECTOR FOR VEHICLE TYPES
IPLOT	(IH)	C:I4	HAIN FLAG TO OUTPUT DERIVED DATA ONTO PLOTTING UNIT 1
IPRINT	(8)	C:I4	BIG004 ARRAY CONTROLLING THE SELECTION OF TABLES TO PRINT
IRCNT	(HVT)	V:C	SERESC COUNTS NUMBER OF REGULATIONS PER VEHICLE TYPE
IRDB		V:X	HAIN, R(17): INDEX FOR DB BINS TIHSTR
IRYR		V:I2	SERESC REGULATION YEAR
ISCUT		V:I	TIHSTR A SECONDARY CUTOFF RELATIVE DB BIN POSITION (DEPENDS ON DIFFERENCE BETWEEN

SOOLV AND ALO)

ISP		V:C	SERESC	COUNTER FOR SPEED RANGE
ISUB		V:D	HEADER	DETERMINES WHICH SUBROUTINE IS USING HEADER
ISUM		V:I	TIMSTR	TO CHECK WHETHER ANY PLOTS ARE DESIRED
IT		V:T	BIG001	=JWYLE(ID,J). ATTENUATION CURVE SELECTOR
ITABLE		V:C	BIG004	ORDINAL OF TABLE
ITABS		V:C	BIG004	SUB-TABLE NUMBER
IV		V:I	PRINT4	SHORT NOTATION FOR IVMASK(I)
IVAF	(I)	C:CS	BIG001	VAF TABLE SELECTOR
IVBD	(I)	C:CS	BIG001	VEHICLE BREAKDOWN GROUP SELECTOR
IVEH		C:X	SERESC	VEHICLE TYPE
IVGF	(I)	C:CS	BIG001	VGF TABLE SELECTOR
IVMASK	(I)	C:I4	BIG004	VEHICLE MASK. IF MASK BIT OF THE I-TH TYPE IS ZERO, NOISE CONTRIBUTION FROM THAT TYPE IS ZERO
IYR		V:D	IYES	A YEAR IN RELATIVE FORM TO BE CHANGED TO STANDARD FORM OR ANOTHER RELATIVE FORM
IYRN		V:X	(NHY)	R(NYRN) (MAXIMUM=9) THE ORDINAL OF A NET YEAR
II		V:I	PRINT4	=I+1
J		V:X	(NHY)	R(NAT): INDEX FOR AN AREA TYPE (DETERMINED BY THE PLACE SIZE)
JADB		V:X	TIMSTR	R(20): INDEX TO THE DB BIN POSITIONS (G L O B A L DB BANDS)
JADBO		V:I	TIMSTR	THE DB BIN POSITION AT WHICH COMPUTATION BEGINS (DUE TO ALO) (L O C A L DB BAND)
JCP		V:T	TIMSTR	PRIMARY EXPOSURE CUTOFF DB BIN POSITION (JADBO+IPCUT-1)
JCS		V:T	TIMSTR	SECONDARY EXPOSURE CUTOFF DB BIN POSITION (JADBO+ISCUT-1)
JFLO	(J)	C:CS	BIG003	FLOW MIX TABLE SELECTOR FOR TYPE J
JJ		V:X	UPDATE	JJ RANGES THROUGH RANGE OF JPCF

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JHASK	(KS)	C:I4	BIG004	USER OPTION MASK FOR CHOOSING AREA TYPE
JHILE	(J)	V:IA	PRINT3	THE MILEAGE OF ROADWAY IN AREA J, ALL ROADWAY TYPES
JPCUT		V:I	TINHSTR	A PRIMARY CUTOFF DB BIN POSITION
JPCF	(J)	C:CS	BIG001	POPULATION GROWTH FACTOR SELECTOR
JSCUT		V:I	TINHSTR	A SECONDARY CUTOFF DB BIN POSITION
JV		V:I	PRINT4	SHORT NOTATION FOR IVHASK (I+1)
JWLE	(J, ID)	C:C	BIG001	ATTENUATION CURVE SELECTOR
K		V:X	(KANY) R(NMT):	INDEX FOR A ROADWAY TYPE
KA		V:X	NAH, R(NMT):	INDEX TO ROADWAY TYPE (USUALLY FOR SECONDARY EXPOSURE)
			TINHSTR	
KDB		V:I	COLLECT, R(11):	RELATIVE INDEX TO EVENT BINS
			EVNTDB,	
			NORMAL	
KDBTBC		V:I	NORMAL,	ABSOLUTE INDEX TO EVENT BINS
			TINHSTR	
KFLO	(K)	C:CS	BIG003	FLOW MIX TABLE SELECTOR FOR TYPE K
KIND		V:X	NAH	R(2): INDEX TO METRIC TYPE (1 FOR SEL; 2 FOR LED)
KH		V:X	TINHSTR	R(2): INDEX TO KIND OF METRIC (1 FOR SEL; 2 FOR LED)
KHASK	(K)	C:I4	BIG004	ROADWAY TYPE MASK—IF MASK BIT IS ZERO, THE NOISE LEVEL OF THAT ROADWAY TYPE IS SET TO ZERO
KHILE		V:IA	PRINT3	TOTAL MILEAGE OF TYPE K ROADWAYS, ALL U.S.
KOH	(IH)	C:CS	BIG005	KIND OF METRIC: KOH=1 FOR SEL; KOH=2 FOR LED
KPER	(K)	C:CS	BIG003	PERCENT TABLE SELECTOR FOR ROADWAY TYPES
KRET		V:D	SERESC	RETURN QUALITY INDICATOR. KRET=0 IS THE NORMAL RETURN

KS		V:X	BIG006 R(NHT): INDEX TO HIGHWAY TYPES
KSJEVD			BIG006 =IEVB(KS,J), EVENT BIN COUNTER
L		V:X	(MHWY) R(NSR): INDEX FOR A SPEED RANGE
LWE (J,K)		C:C	BIG001 NUMBER OF LANES OF ROADWAY TYPE J,K
LCOUNT		V:I	TIMSTR COUNTS THE NUMBER OF PASSES THROUGH THE INNERMOST LOOP OF EACH METRIC COMPUTATION
LEO1DB (JADB,IYRN)		C:D	TIMSTR PRINTED OUTPUT OF THE FIRST TEN OF THE TWENTY BINS FROM THE LEQ METRIC
LEO2DB (JADB,IYRN)		C:D	TIMSTR PRINTED OUTPUT OF THE SECOND TEN OF THE TWENTY BINS FROM THE LEQ METRIC
LEVEL		V:X	(MHWY) R(LEVEL): INDEX TO REGULATION SCENARIOS
LIFE (IVAF)		C:C	BIG001 NUMBER OF ENTRIES IN VAF TABLE
LIMIT (20)		C:C	DBBAND, DB BAND LIMITS (FOR PRINTING PURPOSES) EVRTDB
LLEV (10)		C:C	DBBAND, DB BAND NUMBERS (FOR PRINTING PURPOSES) EVRTDB
LWPPXP (IYRN,3)		V:S	TIMSTR, PRINTED OUTPUT OF THE LEQ EXPOSURE, EQUIVALENCED WITH ANNET BLANK COMMON
M		V:X	(MHWY) R(4): INDEX FOR AN OPERATING MODE (ACCELERATION, DECELERATION, CRUISE AND IDLE). M=4 (IDLE) NOT USED IN SEN
MDUM		V:D	IYBAS, SUBROUTINE VEIPOP(IYRN) (CALLED BY MAIN) SUBSTITUTES MYRB AND IYREF MDYR INTO FUNCTION SUBPROGRAMS IYREF(MDUM) AND IYBAS(MDUM) AS APPROPRIATE
METHSK (IM)		C:I4	BIG004 USER OPTION MASK FOR CHOOSING METRIC TYPES
METRIC (JADB,IM,IDAY)		V:PA	BIG005 INTERMEDIATE STORAGE OF RESULTS
MILE (K,J,IO,L)		C:I3	BIG002 MILES OF ROADWAY

HILEJK (J)	V:IA	PRINT3	THE MILEAGE OF ROADWAY IN AREA J, ROADWAY TYPE K
HLEVEL	V:I	PRINT4	=HLEV(I,M)
MODHSK (H)	C:I4	BIG004	USER OPTION MASK FOR CHOOSING VEHICLE OPERATING MODES
MOBYR	V:X	PRINT11	A VEHICLE MODEL YEAR
MSUM	V:IA	PRINT3	TOTAL U.S. ROADWAY MILEAGE
MYOLD	V:T	VEHPOP	=HYRE(I) EARLIEST SURVIVAL YEAR
MYR	V:X	BIG001	R(1957-2013): A VEHICLE MODEL YEAR
MYRB	C:C	BIG002	BASELINE YEAR=1974
MYRE (I)	V:	BIG001	EARLIEST YEAR FROM WHICH TYPE I VEHICLES SURVIVE
MYREF (IVBD)	C:C	BIG001	REFERENCE YEAR FOR VEHICLE BREAKDOWN GROUP IVBD
MYREG (LEVEL,M,I)	C:I5	BIG002	REGULATION YEARS
MYRN		BIG002	(NOT USED)
MYRSET (IYRN)	C:I4	BIG002	A SET OF YEARS FOR WHICH THE COMPUTATION IS TO BE DONE
NADB	C:C	BIG005	RELATED TO THE NUMBER OF INTERVAL DB BIN POSITIONS
NAT	C:C	BIG002	NUMBER OF AREA TYPES=9
BEVENT	V:T	TIMESTR,	NUMBER OF PASSBY EVENTS
		COLLECT,	
		EVENTS	
NIT	C:C	BIG002	NUMBER OF ROADWAY TYPE=G-RANGE OF K
NID	V:	(HANY)	=NIDD(J). NUMBER OF DENSITY REGIONS
NIDD (J)	C:C	BIG002	NUMBER OF DENSITY REGIONS IN AN AREA TYPE
NLANE	V:	(HANY)	=LANE(J,K). NUMBER OF LANES
NLDXNH	V:I	SERESC	STRING IDENTIFYING A NOISE LEVEL DATA BLOCK FOR ONE
			REGULATION FOR ONE VEHICLE, IN NOISE LEVEL DICTIONARY

NLDKPR		V:I	SERESC	LIKE NLDKPR, BUT READ FROM UNIT 2 (REGULATION INSTRUCTION FILE)
NLEV (I,M)		C:I5	BIG002	NUMBER OF REGULATION LEVELS
NLEVEL		V:T	(MANY)	=NLEV(I,M) NUMBER OF REGULATION LEVELS
NPHLE (ID,J)		V:A	BIG001	NUMBER OF POPULATED MILES FOR GIVEN REGION
NPK (ID,J,K)		V:A	BIG001	ROADWAY MILES HAVING ADJACENT POPULATION
NSR		C:C	BIG002	NUMBER OF SPEED RANGES=5-RANGE OF L
NTABS		V:	BIG004	NUMBER OF PAGES IN A PRINTED TABLE
NNS		C:C	PNT11	FOR NUMBERING COLUMNS IN THE PRINTED TABLE
NVT		C:C	BIG002	NUMBER OF VEHICLE TYPES=14
NYRN		C:I4	BIG002	NUMBER OF YEARS IN YEAR NET
PACT (IPACT(IH),IDAY)		C:C	BIG005	POPULATION FRACTION WHOSE ACTIVITY RENDERS IT SUBJECT TO A METRIC
PCOLV		V:I	TINSTR	PRIMARY EXPOSURE CUTOFF LEVEL
PDSPDB (JADB,IYRN)		V:S	TINSTR	PRINTED OUTPUT OF THE PEDESTRIAN SPEECH INTERFERENCE METRIC BY DB BIN
PEDSPC (IYRN,3)		V:S	TINSTR,	PRINTED OUTPUT OF THE PEDESTRIAN SPEECH INTERFERENCE METRIC, BLANK EQUIVALENCED WITH ANNET COMMON
PERCNT (M,KPER,IPER)		C:I3	BIG003	PERCENT OF TIME IN EACH OPERATING MODE BY ROADWAY GROUP, BY VEHICLE GROUP
PGF (JPGF(J))		V:	BIG001	CURRENT POPULATION GROWTH FACTOR
PGFO (JJ)		C:C	BIG001	INITIAL POPULATION GROWTH FACTORS (=0)
PINC (IP,JJ)		C:C	UPDATE	THREE SETS OF INTER-EXTRAPOLATORY COEFFICIENTS FOR THE POPULATION GROWTH FACTORS (FOR 5 PLACE SIZE GROUPS)
PLDEN (ID,J,K,L,IL)		C:CD	BIG005	NORMALIZED POPULATION THAT GOES WITH EACH LANE. IT IS NORMALIZED TO THE CLEAR ZONE

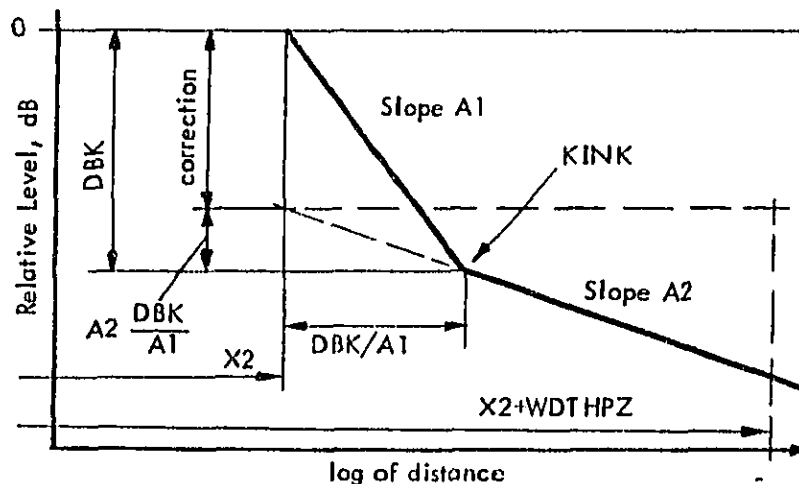
DISTANCE X2. THIS METHOD ALLOWS USE OF THE RATIO AND DRATIO ARRAYS TO CALCULATE ACTUAL POPULATIONS (SEE PLDPGF AND DRAT).

PLDPGF	V:I	TINSTR	POPULATION TIMES GROWTH FACTOR. INTERMEDIATE STORAGE OF NORMALIZED POPULATION BEFORE IT IS MULTIPLIED BY DRATIO (DO LOOP 5711). SEE ALSO DRAT.
PNORH	V:I	BIG006	NORMALIZED PERCENTAGE TIME IN EACH OPERATING MODE (ONLY FOR ICONF(10)=1)
POP (J)	V:IA	BIG002	THE BASELINE POPULATION OF AREA TYPE J
POPDEN (ID,J)	C:C	BIG002	BASELINE POPULATION DENSITY BY POPULATION REGION
POPFIN	V:I	COLLECT	IMPACTED POPULATION (OR: EQUIVALENT POPULATION INCREMENT)
POPID	V:IA	PRINT3	BASELINE POPULATION BY DENSITY REGION
POPINC	V:D	COLLECT	THE POPULATION INCREMENT FOR THIS CALL TO COLLECT
POPITN (ID,J)	C:D	BIG002	BASELINE POPULATION BY POPULATION REGION
PROMPT	V:I	SEDESC	TO CHECK IF A *DK LINE WAS ENCOUNTERED IN NOISE LEVEL DICTIONARY (UNIT 8) (SEE ALSO DECK)
RATIO (IB,IT,KIND)	C:IA	BIG005	SIZE (UNITLESS) OF THE POPULATED ZONE WHICH PARALLELS A ROADWAY FOR 18 DB BIN LIMITS, FOR IT=1,2,3 PROPAGATION LAWS FOR POPULATED AREAS, AND KIND=1 FOR SEL AND KIND=2 FOR LEO.
RCI1	V:I	TABLE	RELATIVE CHANGE OF IMPACT, DAY
RCI2	V:I	TABLE	RELATIVE CHANGE OF IMPACT, NIGHT
RCI3	V:I	TABLE	RELATIVE CHANGE OF IMPACT, 24 HOURS
RDBL (IB)	C:C	BIG005	RELATIVE DB BIN LIMITS. USED IN DETERMINING EXPOSURES IN DB BANDS CONTAINING THE CUTOFFS.
RDBOUT (ID,J,KS,IL,KN)	C:D	BIG005	SOUND LEVEL CUTOFF CRITERIA FOR SECONDARY EXPOSURE. COMPUTED SIMILARLY TO RDBEDG.
RDBEDG (ID,J,KS,IL,KN)	C:D	BIG005	RELATIVE SOUND LEVEL AT THE EDGE OF THE POPULATED ZONE (ALO IS ADDED TO OBTAIN CUTOFF LEVEL). THE WAY THIS ARRAY IS COMPUTED BECOMES CLEAR WHEN USING FIG. 2-9 OF THE THEORETICAL BACKGROUND DOCUMENT WHICH

SHOWS THE POINT SOURCE SOUND ATTENUATIONS IN POPULATED ZONES. LET A1 BE THE SLOPE OF THIS FUNCTION ABOVE THE KINK, AND A2 BELOW IT. TAKE AS AN EXAMPLE THE FIRST EQUATION FOR REDGDC COMPUTED IN SECTION 24 OF THE MAIN PROGRAM AND WRITE IT IN MORE EXPLICIT FORM (SUBSCRIPTS DROPPED FOR CLARITY), AND ASSUME THAT WE ARE "BELOW" THE KINK:

$$REDGDC = (10-A2) * \log_{10} * (X2+WDT HPZ) / X2 - (DBK - (DBK/A1) * A2)$$

REDGDC IS THE SOUND ATTENUATION FROM THE EDGE OF THE CLEAR ZONE TO THE END OF THE POPULATED ZONE. THE FIRST TERM IS THE SIMPLE SPREADING LOSS. SINCE SEL PROPAGATES LIKE A LINE SOURCE, 10 IS ADDED TO THE SLOPE -A. LEU PROPAGATES LIKE A POINT SOURCE AND THEREFORE THERE IS NO 10 IN FRONT OF -A. THE SECOND TERM CORRECTS FOR THE PRESENCE OF THE KINK. THE SKETCH EXPLAINS THE EXPRESSION:



REDGE (TD,J,K,IL) C:D B10003 RATIO OF "EDGE" TO "X2"

REGSCH	:	PATH	PATH LIST COMPOSED OF ALREG, NLEV, HYREG (SUPERSEDED BY SERESC IMPLEMENTATION)
REHO (IVBD, IYREF)	C:C,15	BIG001	BASELINE YEAR VEHICLE GROUP POPULATIONS
REPZ (ID,J,K,IL)	C:D	BIG003	RATIO OF DISTANCE TO EDGE OF POPULATED ZONE (X2 + LDTPZ) TO DISTANCE TO EDGE OF CLEAR ZONE (X2)
RUNVE (5)	C:14	BIG004	RUNWAY AND DATE STRING
RPOOL	V:I	TIHSTR	PRIMARY EXPOSURE CUTOFF LEVEL RELATIVE TO LEVEL AT EDGE OF CLEAR ZONE
RSCOL	V:I	TIHSTR	SECONDARY EXPOSURE CUTOFF LEVEL RELATIVE TO LEVEL AT EDGE OF CLEAR ZONE
SCOLV	V:I	TIHSTR	SECONDARY EXPOSURE CUTOFF LEVEL
SEL1DB (JADB,IYRN)	C:D	TIHSTR	PRINTED OUTPUT OF THE FIRST TEN FROM THE TWENTY BINS OF THE SEL METRIC
SEL2DB (JADB,IYRN)	C:D	TIHSTR	PRINTED OUTPUT OF THE SECOND TEN FROM THE TWENTY BINS OF THE SEL METRIC
SELPXP (IYRN,3)	V:T	TIHSTR	PRINTED OUTPUT OF THE SINGLE EVENT EXPOSURE METRIC, EQUIVALENCED WITH A#MET
SEPPCF (K)	V:S	TIHSTR	(SECONDARY EVENT PROBABILITY)*(POPULATION GROWTH FACTOR)*(DISTANCE FROM LAKE TO FAR END OF CLEAR ZONE)
SEPROB (ID,J,K,YA,L)	C:D	BIG005	SECONDARY EXPOSURE PROBABILITY
SHIFT (ID,J,INCL(TH))	C:C	BIG005	INDOOR AND OUTDOOR LEVEL CORRECTIONS (DUE TO BUILDING SKIN SOUND ATTENUATION)
SLPADB (JADB,IYRN)	V:S	TIHSTR	PRINTED OUTPUT OF THE SLEEP AWAKENING METRIC BY DB BIN
SLPALK (IYRN,3)	V:S	TIHSTR,	PRINTED OUTPUT OF THE SLEEP AWAKENING METRIC, EQUIVALENCED WITH A#MET BLANK COLUMN
SLPddb (JADB,IYRN)	V:S	TIHSTR	PRINTED OUTPUT OF THE SLEEP DISRUPTION METRIC BY DB BIN
SLPDSP (IYRN,3)	V:S	TIHSTR,	PRINTED OUTPUT OF THE SLEEP DISRUPTION METRIC, EQUIVALENCED WITH A#MET BLANK COLUMN
SPCHTH (IYRN,3)	V:S	TIHSTR,	PRINTED OUTPUT OF THE INDOOR SPEECH INTERFERENCE METRIC, EQUIVALENCED WITH

			BLANK	ANNMET	
			COMMON		
SPCOUT	(IYRN,3)	V:S	TINSTR,	PRINTED OUTPUT OF THE OUTDOOR SPEECH INTERFERENCE METRIC, EQUIVALENCED WITH	
			BLANK	ANNMET	
			COMMON		
SPEXDB	(JADB,IYRN)	V:S	TINSTR	PRINTED OUTPUT OF THE OUTDOOR SPEECH INTERFERENCE BY DB BIN	
SPINDB	(JADB,IYRN)	V:S	TINSTR	PRINTED OUTPUT OF THE INDOOR SPEECH INTERFERENCE BY DB BIN	
STOPCF	(J,IYRN)	C:D	BIG002	STORED POPULATION GROWTH FACTOR FOR EACH YEAR	
STOPOP	(J)	V:T	PRNT10	TO STORE POPULATIONS TO BE PRINTED	
STRING	(6)	C:C	EVNTDB	TEXT STRING	
SUN		V:A	(MANY)	GENERALLY USED AS AN ACCUMULATOR	
TDAY		V:PA	TINSTR	TEMPORARY ACCUMULATOR FOR DAYTIME METRICS ("TOTAL FOR DAY")	
THETA		C:D	MAIN	1.249 RADIAN=HALF OF 10-DB-DOWN ANGULAR LIMIT FOR "HWY" SITE (EQ. E-17A IN THEORETICAL BACKGROUND MANUAL)	
TITLE	(6)	V:D	TABLE,	PRINTED TITLE FOR A TABLE--ARGUMENT FOR A SUBROUTINE	
-	(4)		DBBAND		
			EVNTDB		
TNITE		V:PA	TINSTR	ACCUMULATION OF NIGHTTIME METRICS ("TOTAL FOR NIGHT")	
TOTAL		V:I	TINSTR	24-HOUR TOTAL OF METRICS	
V	(L)	C:C	BIG003	AVERAGE VELOCITY OF SPEED RANGES	
VAF	(IVBD,26)	C:C	BIG001	FOUR ATTRITION FACTOR TABLES	
VBD5	(I)	V:I	PRNT11	LIGHT VEHICLE BREAKDOWN FOR TABLE ENTRIES	
VBD74	(I)	C:I4	BIG001	1974 BREAKDOWN RATIOS FOR EACH OF THE 14 VEHICLE TYPES (IN MAIN, VBD(I), FIX, & VEHPOP(IYRN))	

VBD77	(I)	C:I4	BIG001	1977 BREAKDOWN RATIOS FOR EACH OF SEVEN VEHICLE TYPES (IN MAIN, FIX, AND VBD(I))
VBD85	(I)	C:I4	BIG001	1985 BREAKDOWN RATIOS FOR EACH OF SEVEN VEHICLE TYPES (IN MAIN, FIX, AND VBD(I))
VBD90	(I)	C:D	BIG001	1990 BREAKDOWN RATIOS FOR EACH OF SEVEN VEHICLE TYPES (IN FIX AND VBD(I))
VEKGF1		:	MAIN	NAMELIST COMPOSED OF VGF, IVGF, REHO, HYREF, VAF, LIFE
VGF	(IYBAS,IVGF)	C:C	BIG001	SIX VEHICLE GROWTH FACTOR TABLES
VINC	(I)	C:D	BIG001	"VBD" INCREMENTS INTERPOLATED (IN FIX) BETWEEN "VBD74" AND "VBD77"
VNL	(I,H,LEVEL)	V:A	BIG001	NUMBER OF VEHICLES IN EACH NOISE LEVEL RANGE. INDEX H COUNTS OPERATIONAL MODES BECAUSE THE PROGRAM IS STRUCTURED SUCH THAT A REGULATION MAY BE ALLOWED TO AFFECT JUST ONE MODE OF OPERATION. HOWEVER, THIS IS NOT AVAILABLE TO THE USER AS AN INPUT OPTION IN VERSION SR (USING THE SERESC ROUTINE).
WNTDAY		V:T	BIG006	NEVENT*FRTN(1)
WNTDB	(IBIN K,DB,IH,IYRN)	V:T	BIG006	ARRAY THAT STORES THE VALUES PRINTED IN THE EVENT BIN BY DB BIN TABLE
WNTNIT		V:T	BIG006	NEVENT*FRTN(2)
WNTTRK	(I4)	C:C	EVNTDB	TEXT STRINGS FOR ANNOTATING RANGES OF EVENT BINS
VPOP	(I,IYES)	V:A	BIG001	CURRENT YEAR VEHICLE POPULATION BY MODEL YEAR
VPSUH		V:S	VEHPOP	
VTOT	(I,IYRN)	V:S	BIG002	VEHICLE POPULATION BY TYPE FOR EACH YEAR
WDTHPZ	(I,D,J)	C:D	BIG003	WIDTH OF THE POPULATED ZONE
WIDTH	(J,K)	C:C	BIG001	WIDTH OF A LANE
XINC	(I)	C:C	BIG001	INTERPOLATION TABLES FOR THE VBD FUNCTION (IN FIX)
XLIN	(I8)	V:I4	PRINT1	USED TO REPRODUCE TITLE BLOCK
X2	(J,K,IL)	C:D	BIG001	DISTANCE FROM LANE CENTER TO OUTER CLEAR ZONE EDGE
XX		V:	VEHPOP	TOTAL NUMBER OF TYPE I VEHICLES
YEAR		V:T	(MANY)	A NET YEAR IN STANDARD CALENDAR YEAR NOTATION

YINC (I)

C:D BIG001 SECOND INTERPOLATION TABLE FOR THE VIB FUNCTION (IN FIX)

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BEST COPY AVAILABLE

<u>Symbol</u>	<u>Range</u>	<u>Nature</u>	<u>Common Block or Subroutine (Global Symbol)</u>	<u>Explanatory Text</u>
DEGFAC	(IAGE, L, M, LEVEL, NI)	C:C	MAIN	Sound level degradation values
EDEGFC	(IAGE, L, M, LEVEL, NI)	C:D	MAIN	Sound energy degradation values = 10**(DEGFAC/10)
IAGE		V:X V:T	MAIN, VEHPOP	R(26): Current age of vehicles
IDEGFC	(I)	C:C	MAIN	Sound level degradation is a factor for those vehicles in which IDEGFC(I) = 1 and is not a factor for those vehicles in which IDEGFC(I) = 0.
NI		C:D	MAIN	Number of vehicle types that ex- hibit degradation
PERDEG	(IAGE)	C:C	MAIN	Percent of vehicles exhibiting sound level degradation for all vehicle types in which sound level degradation is a factor

6-48 .

Figure 6-3. Update To GAR Symbol Dictionary

APPENDIX A

Modifications of NRTNEM to Include Vehicle Breakdown Ratios
for 1983 for Motorcycles

This appendix describes modifications to the National Roadway Traffic Noise Exposure Model to include vehicle breakdown ratios for the year 1983 for the two motorcycle vehicle types: "unmodified" and "modified," types 13 and 14, respectively. Both GAR and SEM were modified. These modifications were not incorporated in Version 9R of NRTNEM which is documented in the main body of this document.

Logic and coding modifications were required as shown in Table A-1.

Table A-1

List of Modified Files

Which Model	Member Name in Version 9R	Member Name after Modification
GAR	FIX VBD PRNT11	FIX83 VBD83 PRNT1183
SEM	FIXSEM VBDSEM PRT11SEM	FIXSEM83 VBDSEM83 PRT11S83
	Support System Files	
both	RNMEXE9R \$RNMSUF.CLIST	WAYNEJCL.CNTL CLSTWAYN.CLIST

Common Block BIG007 was added containing array VBD83 which is analogous in structure to VBD77 and VBD85, except that it pertains only to vehicle types 13 and 14.

Whereas VBD77 and VBD85 are read in the main program, VBD83 is read in subroutine FIX. The remainder of the logic parallels existing logic for VBD77 and VBD85.

Listings of the modified source code members of partitioned dataset TRAWO are shown in Figures A-1 through A-6. Figures A-7 and A-8 show WAYNEJCL.CNTL and CLSTWAYN.CLIST. Note that the latter two were developed sometime before NRTNEM Version 9R (described in the main text of this manual) was frozen on September 29, 1980. In the latter two figures, the relevant sections are highlighted with double vertical parallel bars so that they could be used for editing later version files.

PRT11SEM and PRNT11 generate the vehicle breakdown tables for SEM and GAR, respectively. Examples of the superseded and superseding formats are shown in Tables A-2 and A-3. The purpose of revising the table format was to permit inspection of the model year vehicle breakdowns for vehicle types 13 and 14, which were not previously available.

Using VBD83

VBD83 is on line 14150 of RNMEXE9R (the JCL file) as follows:

```
00014150 VBD83 :0.8800 0.1200
```

"0.8800" is the VBD83 value which applies to vehicle type 13, while the "0.1200" applies to vehicle type 14. The sum of these two VBD83 values must equal "1.0000".

Change of these VBD83 values is performed at sequence 3 or 8 (i.e., "S3" or "S8") of a \$RNMSUF terminal session simply by applying the TSO change command to line 14150:

e.g., C 14150 /0.8800 0.12/0.9300 0.07/ (CR)

will result in

```
00014150 VBD83 :0.9300 0.0700
```

```

SUBROUTINE FIX
CX FIX LAST UPDATE: 11/01/78 11:17:05 00064100
C 7/31/80 VBDS ADDED FOR I=13 & 14, 00064110
C THIS SUBROUTINE COMPUTES THE NEW ARRAY YINC TO FIX FUNCTION VBD 00064200
COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7), 00064310
B1 2 VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7), 00064320
B1 3 A(2,3),DBK(3),CZD(4,9,6),ALC(9),FI(9),PGF(5), 00064330
B1 4 PGFO(5),WIDTH(9,6),FROAD(9,6),ADT(6,9), 00064340
B1 5 AREA(4,9),FPAHEA(9,4),VPU(14,26),8VPU(14), 00064350
B1 6 XKINK,A1,A2,B1,B2,ALO,CONO,CON2,IvAF(14), 00064360
B1 7 MYREF(6),IvBD(14),LIFE(4),IEGAGE(6),JWYLE(9,4), 00064370
B1 8 JPGF(9),LANE(9,6),MYHE(14),IvGF(14),MOUVR,I,I 00064380
COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6), 00064500
B4 2 ICONT(12) 00064510
COMMON /BIG007/ ZINC(2),VBD83(2)
C 00064600
READ(4,500) VBD83
500 FORMAT(10X,2(F6.3,1X))
DO 4000 I=13,14
4000 ZINC(I-12)=(VBD83(I-12)-VBD74(I))/9.0
C FIXES VBD SO THAT CATEGORIES 1 AND 3 DIE AFTER 1990 00064700
C VBD LAST UPDATE: 10/18/78 16:14:37 00064800
C 00064820
IF(ICONT(4).EQ.1) GOTO 2000 00064840
C 00064860
SUM = VBD85(2) + VBD85(4) 00064900
1 + VBD85(5) + VBD85(6) + VBD85(7) 00065000
YINC(1) = -VBD85(1) / 5.0E0 00065010
YINC(3) = -VBD85(3) / 5.0E0 00065020
VBD90(1) = 0.0E0 00065030
VBD90(3) = 0.0E0 00065040
C 00065100
C RENORMALIZE THE REST OF YINC ACCORDING TO VBD85 00065120
C 00065140
DO 1000 I = 1,7 00065160
C 00065180
XINC(I) = (VBD85(I)-VBD77(I)) / 8.0 00065240
YINC(I) = (VBD77(I)-VBD74(I)) / 3.0 00065260
IF(I.EQ.1.OR.I.EQ.3) GOTO 1000 00065414
VBD90(I) = VBD85(I) / SUM 00065420
YINC(I) = (VBD90(I) - VBD85(I)) / 5.0E0 00065430
C 00065440
1000 CONTINUE 00065450
C 00065460
RETURN 00065600
C 00065620
2000 CONTINUE 00065640
C 00065660
DO 3000 I = 1,7 00065680
C 00065690
XINC(I) = (VBD85(I)-VBD77(I)) / 8.0 00065700
YINC(I) = (VBD77(I)-VBD74(I)) / 3.0 00065710
VBD90(I) = VBD85(I) 00065730
YINC(I) = 0.0E0 00065740
C 00065750
3000 CONTINUE 00065760
RETURN 00065770
END 00065780

```

Figure A-1. Contents of CN.EPADYN.S2KC.TRAWO(FIX83)

```

FUNCTION VBD(I)
CX VBD LAST UPDATE: 10/18/78 17:37117 00062700
C 7/31/80 VBD83 ADDED FOR I=13 & 14. 00062710
C THIS FUNCTION COMPUTES THE CURRENT VEHICLE BREAKDOWN 00062800
COMMON /B1G001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7), 00063100
B1 2 VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7), 00063110
B1 3 A(2,3),DBK(3),CZD(4,9,6),ALC(9),F1(9),PGF(5), 00063120
B1 4 PGF0(5),*10TH(9,6),FPROAD(9,6),ADT(6,9), 00063130
B1 5 AREA(4,9),FPAKEA(9,4),VPOP(14,26),SVPOP(14), 00063140
B1 6 XKINK,A1,A2,B1,B2,AL0,CON0,CON2,IVAF(14), 00063150
B1 7 MYREF(6),IVBD(14),LIFE(4),IEUAGE(6),JWYLE(9,4), 00063160
B1 8 JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MYR,IT,II 00063170
COMMON /B1G007/ ZINC(2),VBD83(2)
C
IF(I.LE.7.OR.I.GE.13) GO TO 200 00063200
VBD=VBD74(I) 00063300
RETURN 00063400
200 IF(I.LE.7) GO TO 300
IF(MYR.LT.1974) VBD=VBD74(I)
IF(MYR.GE.1974.AND.MYR.LT.1983)
1 VBD=VBD74(I)+ZINC(I-12)*(MYR-1974)
IF(MYR.GE.1983) VBD=VBD83(I-12)
RETURN
300 IF(MYR.LT.1974) VBD = VBD74(I) 00063440
IF(MYR.GE.1974.AND.MYR.LT.1977) VBD = VBD74(I)+VINC(I)*(MYR-1974) 00063500
IF(MYR.GE.1977.AND.MYR.LT.1985) VBD = VBD77(I)+XINC(I)*(MYR-1977) 00063600
IF(MYR.GE.1985.AND.MYR.LT.1990) VBD = VBD85(I)+YINC(I)*(MYR-1985) 00063700
IF(MYR.GE.1990) VBD = VBD90(I) 00063800
RETURN 00063900
END 00064000

```

Figure A-2. Contents of CN.EPADYN.S2KC.TRAWO(VBD83)

```

SUBROUTINE PRNT11
C
C
C
C
C
C
C PRINTS THE STORED VEHICLE BREAKDOWN FUNCTION FOR EACH YEAR FROM
C 1957 TO 2013 IN TWO TABLES
C COMMON /BIG001/ VAF(4,26),VGF(40,6),REMU(6,17),XINC(7),YINC(7),
B1 2 VINC(7),V8074(14),V8077(7),V8085(7),V8090(7),
B1 3 A(2,3),DBK(3),CZD(4,9,6),ALC(9),FI(9),PGF(5),
B1 4 PGFO(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),
B1 5 AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPUP(14),
B1 6 IKINK,A1,A2,B1,B2,ALO,CON0,CON2,IVAF(14),
B1 7 MYNEF(6),IV80(14),LIFE(4),IEQAGE(6),JWYLE(9,4),
B1 8 JPGF(9),LANE(9,5),MYRE(14),IVGF(14),MODYR,IT,II
C COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),DOBA(16),
B2 2 POEXP(9),POPIMP(9),ALWPOP(9),TUPUP(9),
B2 3 PIMPK(6,9),PEXPJ(6,9),ALWPK(6,9),PIMPJ(9,9),
B2 4 PEXPJ(9,9),ALWPK(9,9),POPLIN(4,9),STUPGF(9,9),
B2 5 PUPDEN(4,9),ENIDB(16,9),EXPOB(16,9),NID0(9),
B2 6 MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),
B2 7 MYRNET(9),MYRB,NYRN,NVT,NAT,NMT,NSR,N160B,
B2 8 ITABLE
C COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6),
B4 2 ICONT(12)
C
C DIMENSION V809(7)
C
C INTEGER NUMS(7) /1,2,3,4,5,6,7/
C REAL*8 SUMB14
C DATA SUMB14/8M N/A /
C
C ITABLE=ITABLE+1
C ITABS=0
C
C SET UP COMPREHENSIVE DO LOOP
C
C DO 1000 NHALF=1,2
C IF (NHALF.EQ.1) GO TO 100
C DO 200 INUMS=1,7
C 200 YUMS(INUMS)=YUMS(INUMS)+7
C 100 DO 1000 MYR = 1957,2013
C
C IF (MYR.EQ.1957.OR,MYR.EQ.1976.OR,MYR.EQ.1996)
C * ITABS = ITABS + 1
C IF (MYR.EQ.1957.OR,MYR.EQ.1976.OR,MYR.EQ.1996)
C * WRITE(6,7000) ITABLE,ITABS,ITABS,RNAME,NUMS
C
C MODYR = MYR
C SUM = 0.0
C
C DO 1001 INUMS = 1,7
C
C I=NUMS(INUMS)
C V809(INUMS) = V80(I)
C IF (NHALF.EQ.1) SUM = SUM + V809(I)
C
C 1001 CONTINUE
C
C

```

```

00123000
00123100
00123200
00123300
00123400
00123500
00123600
00123700
00123800
00123900
00124000
00124100
00124200
00124300
00124400
00124500
00124600
00124700
00124800
00124900
00125000
00125100
00125200
00125210
00125220
00125230
00125310
00125320
00125400
00125500
00125600
00125700
00125800
00125900
00126000
00126100
00126200
00126300
00126400
00126410
00126500
00126510
00126600
00126610
00126614
00126620
00126630
00126640
00126650
00126655
00126660
00126670
00126680

```

Figure A-3. Contents of CN.EPADYN.S2KC.TRAWO(PRNT1183)

```

WRITE(6,7003)
IF(NHALF.EQ.1) WRITE(6,7002) MYR,VBDS,SUM
IF(NHALF.EQ.2) WRITE(6,7005) MYR,VBDS,SUM814
WRITE(6,7004)
C
IF(MYR.EQ.1975.OR.MYR.EQ.1995.OR.MYR.EQ.2013)
WRITE(6,7001)
C
1000 CONTINUE
C
RETURN
C
FORMAT STATEMENTS
C
7000 FORMAT('11/10 TABLE 1,12,1,1,12,1 VEHICLE BREAKDOWN',
* ' RATIOS FOR 1957-2013.(TABLE 1,12,1 )',T110,5A4/'0'/
L0 * ' ',91(' ')// ' ',T20,' ',T83,' ',T92,' ' //
L1 * ' ',T20,' ',T71,' ****PRNT11',T83,' ',T92,' ' //
L2 * ' ',T8,'VEHICLE'/'+' ,T20,' ',T83,' ',T92,' ' /'+' ,T20,64(' ')//
L3 * ' ',T8,'TYPE >' ,T24,7(12,7X) /'+' ,T20,9(' ',8(' '))//
L3-4 * ' ',T20,64(' ') /'+' ,T20,' ',T83,' ',T92,' ' //
L4 * ' ',T8,'MODEL YEAR',T40,'VEHICLE BREAKDOWN,' ,
L5 * ' ',VBDS(1),' ',T85,'SUM'/'+' ,T20,' ',T83,' ',T92,' ' //
L6 * ' ',T20,' ',T83,' ',T92,' ' /'+' ,91(' ')
7001 FORMAT(' ',T20,' ',8(8(' '),' '))/'+' ,91(' ')
7002 FORMAT(' ',T15,I4,T21,8(F7.4,2X))
7003 FORMAT(' ',T20,' ',8(8(' '),' '))
7004 FORMAT('+' ,T20,' ',8(8(' '),' '))
7005 FORMAT(' ',T15,I4,T21,7(F7.4,2X),A7)
END
00126700
00126800
00126900
00127000
00127100
00127110
00127200
00127300
00127400
00127500
00127600
00127700
00127800
00127900
00128000
00128010
00128100
00128200
00128300
00128400
00128410
00128500
00128600
00128800
00128900
00129000
00129100
00129200

```

Figure A-3 (Concluded)

```

SUBROUTINE FIX                                00064100
C BELONGS TO SINGLE EVENT MODEL
C* FIX COMPUTES INTER-EXTRAPOLATORY ARRAYS FOR FUNCTION V3D 00064120
C FIX LAST UPDATE: 8/4/80 V8063 ADDED FOR I=13 & 14.
C
COMMON /B1G001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
00064130
00064310
00064320
00064330
00064340
00064350
00064360
00064370
00064380
00064390
00064400
00064410
00064600
C
READ(4,500) V8083
500 FORMAT(10X,2(F0.3,1X))
DO 4000 I=13,14
4000 ZINC(I-12)=(V8083(I-12)-V8074(I))/9.0
C FIXES V8D SO THAT CATEGORIES 1 AND 3 DIE AFTER 1990
C
C
IF(ICONT(4).EQ.1) GOTO 2000
C
SUM = V8085(2) + V8085(4)
1 SUM = SUM + V8085(5) + V8085(6) + V8085(7)
YINC(1) = -V8085(1) / 5.0E0
YINC(3) = -V8085(3) / 5.0E0
V8090(1) = 0.0E0
V8090(3) = 0.0E0
C
C RENORMALIZE THE REST OF YINC ACCORDING TO V8085
C
DO 1000 I = 1,7
C
XINC(I) = (V8085(I)-V8077(I)) / 6.0
YINC(I) = (V8077(I)-V8074(I)) / 3.0
IF(I.EQ.1.OR.I.EQ.3) GOTO 1000
V8090(I) = V8085(I) / SUM
YINC(I) = (V8090(I) - V8085(I)) / 5.0E0
C
1000 CONTINUE
C
RETURN
C
2000 CONTINUE
C
DO 3000 I = 1,7
C
XINC(I) = (V8085(I)-V8077(I)) / 6.0
YINC(I) = (V8077(I)-V8074(I)) / 3.0
V8090(I) = V8085(I)
YINC(I) = 0.0E0
C
3000 CONTINUE
RETURN
C
DEBUG SUBCHK
END
00064700
00064800
00064820
00064840
00064860
00064900
00065000
00065010
00065020
00065030
00065040
00065100
00065120
00065140
00065160
00065180
00065200
00065260
00065414
00065420
00065430
00065440
00065450
00065460
00065600
00065620
00065640
00065660
00065680
00065690
00065700
00065710
00065730
00065740
00065750
00065760
00065770
00065775
00065780

```

Figure A-4. Contents of CN.EPADYN.S2KC.TRAWO(FIXSEM83)

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```

FUNCTION VBD(I)
C BELONGS TO THE SINGLE EVENT MODEL
CT VBD(I) 06/28/79 13:44:56
C VBD LAST UPDATE: 8/4/80 VBD83 ADDED FOR I=13 & 14.
CX VBD COMPUTES THE CURRENT VEHICLE BREAKDOWN
COMMON /BIG001/ VAF(4,26),VGF(40,6),HEMO(6,17),XINC(7),YINC(7),
B1 2 VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
B1 3 VML(14,4,5),A(2,3),DEK(3),CZU(9,6),PGF(5),
B1 4 PGFO(5),MIDTM(9,6),FPROAD(9,6),ADT(6,9),
B1 5 AREA(4,9),FPAREA(9,4),VPOP(14,26),SVPOP(14),
B1 6 X2(9,6,4),NPMILE(4,9),NPHA(4,9,6),ALO,IVAF(14),
B1 7 MYREF(6),IVBD(14),LIFE(4),LEUAGE(6),JMYLE(9,4),
B1 8 JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MYR,IT,II
COMMON /BIG007/ ZINC(2),VBD83(2)
C
IF(I.LE.7.OR.I.GE.13) GO TO 200
VBD=VBD74(I)
RETURN
200 IF(I.LE.7) GO TO 300
IF(MYR.LT.1974) VBD=VBD74(I)
IF(MYR.GE.1974.AND.MYR.LT.1983)
1 VBD=VBD74(I)+ZINC(I-12)*(MYR-1974)
IF(MYR.GE.1983) VBD=VBD83(I-12)
RETURN
300 IF(MYR.LT.1974) VBD = VBD74(I)
IF(MYR.GE.1974.AND.MYR.LT.1977) VBD = VBD74(I)+VINC(I)*(MYR-1974)
IF(MYR.GE.1977.AND.MYR.LT.1985) VBD = VBD77(I)+XINC(I)*(MYR-1977)
IF(MYR.GE.1985.AND.MYR.LT.1990) VBD = VBD85(I)+YINC(I)*(MYR-1985)
IF(MYR.GE.1990) VBD = VBD90(I)
RETURN
C
DEBUG SUBCHK
END

```

Figure A-5. Contents of CN.EPADYN.S2KC.TRAWO(VBDSEM83)


```

SUBROUTINE PRNT11
C BELONGS TO SINGLE EVENT MODEL
CX PRNT11 PRINTS THE STORED VEHICLE BREAKDOWN FUNCTION
C PRNT11 LAST UPDATE:      8/4/80   V8083 ADDED FOR I=13 & 14.
C
COMMON /BIG001/ VAF(4,26),VGF(40,6),HEMO(6,17),XINC(7),YINC(7),
01 2 VINC(7),VBD74(14),VBU77(7),VBD85(7),VBD90(7),
01 3 YML(14,4,5),A(2,3),DBK(3),CZD(9,6),PGF(5),
01 4 PGF0(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),
01 5 AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPOP(14),
01 6 X2(9,6,4),NPMILE(4,9),NPMK(4,9,6),AL0,IVAF(14),
01 7 MYREF(6),IVBD(14),LIFE(4),IEQAGE(6),JWYLE(9,4),
01 8 JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MYR,IT,I
COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),POP(9),
02 2 POPDEN(4,9),POPLTN(4,9),STOPGF(9,9),TOTPUP(9),
02 3 MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYRNET(9),
02 4 NIDD(9),MYHN,INCR,MYRB,MYRN,NVT,NAT,NMT,MSR
C
COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
04 2 KMASK(6),METMSK(7),ICGT(12),MUOMSK(3),ISEG(7),
04 3 IPLUT(7),ITABLE,ITABS,NTADS
C
DIMENSION VBD5(7)
INTEGER NUMS(7) /1,2,3,4,5,6,7/
REAL*8 SUM814
DATA SUM814/8M N/A /
C
ITABLE=ITABLE+1
ITABS=0
C
C SET UP COMPREHENSIVE DO LOOP
C
DO 1000 NHALF=1,2
IF (NHALF.EQ.1) GO TO 100
DO 200 INUMS=1,7
200 NUMS(INUMS)=NUMS(INUMS)+7
100 DO 1000 MYR = 1957,2013
C
IF (MYR.EQ.1957.OR.MYR.EQ.1976.OR.MYR.EQ.1996)
* ITABS = ITABS + 1
IF (MYR.EQ.1957.OR.MYR.EQ.1976.OR.MYR.EQ.1996)
* WRITE(6,7000) ITABLE,ITABS,ITABS,NUMS
C
MODYR = MYR
SUM = 0.0
C
DO 1001 INUMS = 1,7
C
I=NUMS(INUMS)
VBD5(INUMS) = VBD(I)
IF (NHALF.EQ.1) SUM = SUM + VBD5(I)
C
1001 CONTINUE
C
WRITE(6,7003)
IF (NHALF.EQ.1) WRITE(6,7002) MYR,VBD5,SUM
IF (NHALF.EQ.2) WRITE(6,7005) MYR,VBD5,SUM814
WRITE(6,7004)
C
IF (MYR.EQ.1975.OR.MYR.EQ.1995.OR.MYR.EQ.2013)
* WRITE(6,7001)

```

Figure A-6. Contents of CN.EPADYN.S2KC.TRAWO(PRT11S83)

```

C
1000 CONTINUE
C
      RETURN
C
C   FORMAT STATEMENTS
C
7000  FORMAT('11/10  TABLE 1,12,1,12,1          VEHICLE BREAKDOWN',00127900
*      ' RATIOS FOR 1957-2013.(TABLE 1,12,1 )1/101/
L0  *      '1,91('1')/1,1,1,T20,1,1,T83,1,1,T92,1,1/
L1  *      '1,1,T20,1,1,T71,1,1,PRNT11,1,T83,1,1,T92,1,1/
L2  *      '1,1,T8,1,VEHICLE1/1,1,T20,1,1,T83,1,1,T92,1,1/1,1,T20,64('1')/
L3  *      '1,1,T8,1,TYPE >1,1,T24,7(12,7X)/1,1,T20,9(1,1,8('1'))/
L3-4 *      '1,1,T20,64('1')/1,1,T20,1,1,T83,1,1,T92,1,1/
L4  *      '1,1,T8,1,MODEL YEAR1,T40,1,VEHICLE BREAKDOWN,1,
L5  *      '1,1,VBD(1),1,T85,1,SUM1/1,1,T20,1,1,T83,1,1,T92,1,1/
L6  *      '1,1,1,1,1,1,1,T20,1,1,T83,1,1,T92,1,1/1,1,91('1')
7001  FORMAT('1,1,T20,1,1,8(8('1'),1,1)/1,1,91('1'))
7002  FORMAT('1,1,115,14,T21,8(F7.4,2X))
7003  FORMAT('1,1,T20,1,1,8(8('1'),1,1))
7004  FORMAT('1,1,T20,1,1,8(8('1'),1,1))
7005  FORMAT('1,1,115,14,T21,7(F7.4,2X),A7)
      END

```

Figure A-6 (Concluded)

```

//SYSUID JOB (*ACCT, *YLE, ,25, , , *COPY, , ), *MANNAME, 00009000
// TIME=(#TIME,0), NOTIFY=#SYSUID, PRTY=#PRTY 00009001
//ROUTE PRINT HOLD 00009020
//* THIS IS FILE RNMEXE9R (1980 JUL 15) 00009050
//* TO BE EDITED BY SRMMSUF, CLIST 00009051
//*LAST UPDATE 8/1/80 V8003 ADDED FOR I=13 & 14. 00009052
//LKED EXEC PGM=IEWL, REGION=192K, PARM='LIST' 00009054
//SYSPRINT DD SYSOUT=A 00009056
//SYSLMOD DD DSN=64L00(V69R), DISP=(,PASS), UNIT=SYSUA, 00009058
// SPACE=(CYL,(2,1,2),RLSE), OCB=8UFNO#1 00009060
//SYSUT1 DD UNIT=SYSUA, SPACE=(1024,(120,120), , , ROUND), 00009062
// OCB=8UFNO#1 00009064
//SYSLIB DD DSN=SYS1.FTM2LIB, DISP=SHR 00009066
// DD DSN=SYS1.FONTLIB, DISP=SHR 00009068
//RNMOLIB DD DSN=CN.EPADYN.S2KC.BUILD, DISP=SHR 00009070
//SYSLIN DD * 00009072
INCLUDE RNMOLIB(*MAINP, #BKD) 00009075
INCLUDE RNMOLIB(SERESC, ZERO, C00009085
ADD, CONST, DBLEV, FACTOR, FIX, HEADER, IY8A9, IYES, C00009086
ITREF, PRINT1, PRINT2, PRINT3, PRINT4, PHINT5, PRINT6, C00009087
PRINT7, PHINT8, PRINT9, PRNT10, PRNT11, RAD, UPDATE, V3D, C00009088
VEPOP, XMINUS, C00009089
COLECT, DDBAND, DUMPER, EVENTS, EVNTDB, FIXSEM, HEAOG, C00009091
HEAURSEM, HEADV, IY8ASSEM, IY8SEM, ITREFSEM, NOMMAL, C00009092
PRT1SEM, PRT10SEM, PRT11SEM, PRT2SEM, PRT3SEM, PRT4SEM, C00009093
PRT5SEM, TABLE, TIMSTR89, UPDATSEM, V80SEM, VEPOPSEM, C00009094
ZERO) 00009095
//AUSF EXEC PGM=LUADER, PARM=MAP, EP=MAIN, TERM, REGION=REGN 00010000
//SYSLIN DD DSN=*, LKED, SYSLMOD, DISP=(OLD, DELETE, DELETE) 00010020
//SYSLOUT DD SYSOUT=A 00010040
//SYSTEM DD SYSOUT=A 00010060
//FT05F001 DD DSN=#SYSPREF, *YLIB(REGSCN1), DISP=SHR 00012500
//FT06F001 DD SYSOUT=A, OCB=(RECFM=VBA, , RECL=137, BLKSIZE=3155) 00012700
//FT01F001 DD DSN=#PLINF, DISP=(NEW, PASS), SPACE=(3120, (40, 40)), 00012800
// UNIT=SYSUA, OCB=(RECFM=FB, LRECL=80, BLKSIZE=4000) 00012900
//FT02F001 DD DSN=#SYSPREF, #FILU2, DISP=SHR 00012930
//FT06F001 DD DSN=CN.EPADYN.S2KC.NLDICT, DISP=SHR 00012940
//FT03F001 DD DSN=CN.EPADYN.S2KC.YLIB(MILE), DISP=SHR 00013000
// DD DSN=CN.EPADYN.S2KC.YLIB(PERCNT), DISP=SHR 00013030
// DD DSN=CN.EPADYN.S2KC.YLIB(FIMP), DISP=SHR 00013100
// DD DSN=CN.EPADYN.S2KC.YLIB(FLOMIX06), DISP=SHR 00013150
//FT04F001 DD * 00013200
IPLUT 1222222 00013300
IPRINT 111100000000 00013400
IOUMP 1000000000000 00013500
KMASK 111111 00013600
IYMASK 100000000000000 00013700
ICONT 1000000000000 00013800
JMASK 111111111 00013810
METMSK 1111001 00013820
MOOMSK 1111 00013830
IBEG 15575005 00013840
V8074=1 10.4073 0.1420 0.0167 0.0616 0.1603 0.1514 0.0035 00013900
V8074=2 10.6146 0.3854 1.0000 1.0000 1.0000 0.8800 0.1200 00014000
V8077 10.4390 0.1324 0.0176 0.0600 0.1400 0.2100 0.0010 00014100
V8083 10.8800 0.1200 00014150
V8085 10.0700 0.1853 0.0247 0.2300 0.1500 0.1300 0.2100 00014200
V8085 10.0700 0.1853 0.0247 0.2300 0.1500 0.1300 0.2100 00014210
V8085 10.0700 0.1853 0.0247 0.2300 0.1500 0.1300 0.2100 00014300
MYNET=1 1974, 1979, 1984, 1989, 1994, 1999, 2004, 2009, 2013, 1983, * 00014400
RNAME 1:SRUNAME:DATE * 00014720

```

Figure A-7. Contents of CN.EPADYN.S2KC.WAYNEJCL.CNTL

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```

: 1.0000E+00 1.4610E+00 2.1345E+00 3.1185E+00 4.5562E+00 6.6565E+00 00014722
: 3.3866E+01 9.6682E+01 2.7601E+02 7.8798E+02 2.2496E+03 6.4222E+03 00014724
: 1.8335E+04 5.2343E+04 1.4943E+05 4.2660E+05 1.2179E+06 3.4769E+06 00014726
: 1.0000E+00 1.6419E+00 2.6957E+00 4.4250E+00 7.2609E+00 3.2152E+01 00014728
: 8.2768E+01 2.1307E+02 5.4851E+02 1.4120E+03 3.6350E+03 9.3576E+03 00014730
: 2.4089E+04 6.2014E+04 1.5964E+05 4.1097E+05 1.0580E+06 2.7235E+06 00014732
: 1.0000E+00 2.1009E+00 4.4139E+00 9.2732E+00 1.9482E+01 4.0931E+01 00014734
: 8.5992E+01 1.8066E+02 3.7956E+02 7.9743E+02 1.6753E+03 3.5197E+03 00014736
: 7.3947E+03 1.5536E+04 3.2639E+04 6.8573E+04 1.4407E+05 3.0267E+05 00014738
: 1.0000E+00 1.3300E+00 1.7690E+00 2.3528E+00 3.1293E+00 4.1621E+00 00014740
: 6.3158E+00 1.0935E+01 1.8932E+01 3.2777E+01 5.6748E+01 9.8250E+01 00014742
: 1.7010E+02 2.9450E+02 5.0988E+02 8.8278E+02 1.5284E+03 2.5461E+03 00014744
: 1.0000E+00 1.4142E+00 2.0000E+00 2.8284E+00 4.0000E+00 6.7225E+00 00014746
: 1.1298E+01 1.8985E+01 3.1912E+01 5.3633E+01 9.0137E+01 1.5149E+02 00014748
: 2.5460E+02 4.2768E+02 7.1911E+02 1.2086E+03 2.0312E+03 3.4137E+03 00014750
: 1.0000E+00 1.5704E+00 2.4662E+00 3.8730E+00 6.0622E+00 9.5516E+00 00014752
: 1.5000E+01 2.3556E+01 3.6993E+01 5.6095E+01 9.1233E+01 1.4327E+02 00014754
: 2.2500E+02 3.5335E+02 5.5490E+02 8.7143E+02 1.3685E+03 2.1491E+03 00014756

```

```

00014800
00014900
00015000
*****
* ENVIRONMENTAL PROTECTION AGENCY OF THE UNITED STATES * 00015100
* OFFICE OF NOISE ABATEMENT AND CONTROL * 00015200
* * 00015300
* NATIONAL ROADWAY TRAFFIC NOISE EXPOSURE MODEL * 00015400
* PART 2 : SINGLE EVENT MODEL * 00015500
* * 00015600
* * 00015700
* * 00015800
* * 00016100
* * 00016300
*****
* 00016400
* 00016500
* DATE OF RUN : #DATE * 00016600
* NAME OF PROGRAMMER : #MANN * 00016650
* NAME OF RUN : #RUNNAME * 00016700
* NAME OF PLOT : #PLUTNAME * 00016750
* NAME OF DATAFILE 2 : #STSPHEF,#FILU2 * 00016760
* NAME OF DATAFILE 3 : EPADYN,#YLIB(MILE) * 00016800
* : EPADYN,#YLIB(PERCNT) * 00016810
* : EPADYN,#YLIB(FIMP) * 00016820
* : EPADYN,#YLIB(FLOMIX08) * 00016830
* NAME OF DATAFILE 5 : #YLIB(#REGSCN1) * 00016850
* * 00017100
*****
* 00017200
* 00017300
* 00017400
* 00017500
* 00017600
* 00017700
* 00017800
* 00017900
* 00018000
* 00018100
*****
00018200
//SYSUOUMP DD SYSOUT=A 00018300
//PLKED EXEC PGM=IEHL,REGION=150K,PANM='LIST' 00018310
//SYSLIB DD DSN=SYS1.FTM2LIB,DISP=SHR 00018320
// DD DSN=SYS1.FONTLIB,DISP=SHR 00018321
// DD DSN=SYS2.IPP.LOAD,DISP=SHR 00018322
//SYSPRINT DD SYSOUT=A 00018330

```

Figure A-7 (Continued)

```

//SYSLMOD DD DSN=&GOSET(MAIN),DISP=(,PASS),UNIT=SYSDA,          00018340
//          SPACE=(TRK,(10,10,1),RLSE)                          00018350
//SYSUT1 DD UNIT=SYSDA,SPACE=(TRK,(10,10),RLSE)                 00018360
//PLLIB DD DSN=SYS2.IPP,LOAD,DISP=SHR                          00018370
//RNMOLIB DD DSN=CN.EPADYN,32KC,BUILD,DISP=SHR                 00018380
//SYSLIN DD *                                                  00018400
//          INCLUDE PPLIB(PPRBUF,PPRBIT,PPRSPC)                 00018405
//          INCLUDE RNMOLIB(RNMPLUT,LORLIM,UPPLIM)              00018410
//          INCLUDE RNMOLIB(PLOTTER,SUBPLT)                     00018415
/*                                                              00018430
//PLOGG EXEC PGM=*,PLKED,SYSLMOD,COND=(4,LT,LKED),REGION=150K  00018440
//FT01F001 DD DDNAME=SYSIN,DCB=BLKSIZE=80                      00018445
//FT02F001 DD DSN=&IPPTAPE,UNIT=SYSDA,SPACE=(CYL,(2,2),RLSE),  00018450
//          DCB=(RECFM=VS8,LRECL=516,BLKSIZE=3156),DISP=(NEW,PASS,DELETE) 00018460
//FT05F001 DD DSN=&PLINF,DISP=(OLD,DELETE)                     00018470
//FT06F001 DD SYSOUT=A                                         00018480
//FT15F001 DD SYSOUT=A                                         00018490
//PRPLOT EXEC PGM=PRINTER,COND=(8,LE),REGION=100K             00018500
//STEP18 DD DSN=SYS2.IPP,LOAD,DISP=SHR                         00018510
//FT01F001 DD DDNAME=SYSIN,DCB=BLKSIZE=80                    00018515
//FT02F001 DD DSN=&IPPTAPE,DISP=(OLD,DELETE,DELETE)           00018520
//FT06F001 DD SYSOUT=A                                         00018530
//FT15F001 DD SYSOUT=A                                         00018540

```

Figure A-7 (Concluded)

```

00010000 /* NATIONAL ROADWAY NOISE MODEL - COMBINED PROCEDURE */
00010010 /* THIS IS FILE $RNMSUF.CL1ST AS OF 1960 JUL 21 */
00010100 WRITE >>>>NATIONAL ROADWAY NOISE MODEL VERSION 9R &SYSDATE &SYSTEME
00010200 CONTROL END(ENDE)
00010210 EDIT 'CN,EPADYN,S2KC,RNMEXE9R'
00010300S1: WRITENR S1, VERSION(SEM OR GAR) ;
00010400 READ VERSION
00010410 IF '&VERSION' = '' THEN SET VERSION=SEM
00010500 IF &VERSION=GAR THEN DO
00010600 C 9975 '#MAINP' 'VARNETS9R'
00010650 C '#BKD' 'BLKDTA'
00010655 C 9987 'PRINTb,' 'PRTBV9R,'
00010660 DEL 9991 9994
00010665 DEL 18415
00010720 C 10000 '#REGN' '300K'
00010800 C 13100 16620 /FIMP/SIGMA0/
00010900 DEL 13820 13840
00011100 DEL 14722 14756
00011200 C 15600 /SINGLE EVENT/GENERAL ADVERSE RESPONSE/
00011210 C 13700 /000000000000000/!111111111111/
00011220 C 13800 /0000/0001/
00011250 C 13400 /00000000/11111111/
00011500 ENDE
00011510 IF &VERSION=SEM THEN DO
00011515 C 9975 '#MAINP' 'SEMARN9R'
00011517 C '#BKD' 'BK0SEMB5'
00011520 C 10000 /TERM/TERM,SIZE=400K/
00011521 C 10000 /#REGN/700K/
00011530 DEL 9986 9989
00011532 C 9985 ',ZERO,' 'SE,ZERO,'
00011535 DEL 18410
00011540 ENDE
00011800S3: WRITE S3, ENTER EDITING COMMANDS.
00011900S4: WRITENR ?
00012000 READ
00012100 READQVAL COMMAND
00012120 VERIFY DN
00012200 IF '&COMMAND'='?' THEN GOTO S45
00012300 &SYSDVAL
00012400 GOTO S4
00012420S45: WRITENR S4.5 REGULATION INSTRUCTION FILE:
00012424 READ INSTRF
00012428 VERIFY OFF
00012432 IF '&INSTRF'='?' THEN GOTO S45
00012500S5: WRITENR S5, ENTER VEN,GROWTH F. FILE ;
00012600 READ VGF
00012700S6: WRITENR S6, ENTER NET-YEARS(MAX 9):
00012800 READ NETYEAR
00012900 SET NYHNS=(%LENGTH(&NETYEAR)+1)/5
00013000 SET NYRNR=STR(0&NYRN)
00013100S7: WRITE S7, ENTER =PGMRNAME=RUNNAME =TIME=PRTY=JOBID=COPY=ROOM=PLOT=,
00013150 WRITE LIMITS : -XXXXXXXX=XXXXXXXX=XX==X==X====X====X====XXX=XXX=,
00013160 WRITENR ;
00013200 READ MANNAME RUNNAME TIME PRTY JOBID COPY ROOM PLOT
00013400 /* SET DEFAULTS */
00013500 IF '&RUNNAME' = '' THEN SET RUNNAME=RNMRUN
00013600 IF '&PRTY' = '' THEN SET PRTY=2
00013700 IF '&COPY' = '' THEN SET COPY=1
00013800 IF '&MANNAME' = '' THEN SET MANNAME=&SYSUID
00013900 IF '&TIME' = '' && &VERSION=SEM THEN SET TIME=20
00014000 IF '&TIME' = '' && &VERSION=GAR THEN SET TIME=10

```

Figure A-8. Contents of CN.EPADYN.S2KC.CLSTWAYN.CL1ST

```

00014050 IF '%JOBID' = '' THEN SET JOBID=NN
00014060 IF '%ROOM' = '' THEN SET ROOM=EL2CM
00014070 IF '%PLOT' = '' THEN SET PLOT=NU
00014100 /* REPLACE DATA */
00014200 IF '%NETYEAR' NE '' THEN DO
00014300 C 14300 /09/%NYRN/
00014400 14400 MYRNET=1 %NETYEAR
00014500 ENDE
00014600 SET ACCT=%SUBSTR(11:14,%SYSPREF)
00014700 C 9000 99999 /*ACCT/%ACCT/ ALL
00014750 C 9000 '%SYSUID' '%SYSUID%JOBID'
00014800 C 9000 9001 /*SYSUID/%SYSUID/ ALL
00014900 C 9000 99999 /*SYSPREF/%SYSPREF/ ALL
00015000 C 9000 /*FILE/%ROOM/
00015100 C 14720 16600 ?%DATE?%SYSDATE? ALL
00015200 C 14720 16700 /*RUNNAME/%RUNNAME/ ALL
00015300 C 9001 /*TIME/%TIME/
00015400 C 9001 /*PRTY/%PRTY/
00015500 C 9000 /*COPY/%COPY/
00015600 C 9000 16650 /*MANNNAME/%MANNNAME/
00015700 /* CHANGE COMPLICATED DATA */
00015800 IF %VERSION=GAR && %PLOT=YES THEN C 13300 /2/1/
00015900 IF %PLOT=YES THEN C 16750 /*PLOTNAME/%RUNNAME/
00016000 IF %PLOT=NO THEN DO
00016100 DEL 16750
00016200 DEL 18310 25300
00016300 C 13300 /2/0/ ALL
00016400 ENDE
00016500C 12500 /*REGSCN1/%VGF/
00016520C 16650 /*REGSCN1/%VGF/
00016540C 12930 /*FILU2/%INSTRF/
00016560C 16760 /*FILU2/%INSTRF/
00018000 C 15600 17000 /* /% / FIELD(70 70) ALL
0001810038: WRITE 38, COMMAND:
00018120 VERIFY ON
0001820039: WRITENR ?
00018300 READ
00018400 READVAL COMMAND
00018500 IF '%COMMAND'='*' THEN GOTO 310
00018600 %SYSVAL
00018700 GOTO 39
00018710310: VERIFY OFF
00018720 IF %VERSION=SEM THEN MOVE 14150 14650
00018730 IF %VERSION=GAR THEN MOVE 14150 14721
00018740 VERIFY ON
00018800 SAVE RNMTEMP.CNTL
00018810 VERIFY OFF
00018900 SUBMIT RNMTEMP.CNTL
00019000 END NOSAVE
00019050WRITENR DELETE SUBMITTED JCL FILE? Y OR N:
00019060READ ANSWER
00019070IF %ANSWER=Y THEN +
00019100 DELETE RNMTEMP.CNTL
00019110ELSE WRITE YOU MUST DELETE RNMTEMP.CNTL BEFORE YOUR NEXT EXEC SRNMSUF.
00019200 EXIT

```

Figure A-8 (Concluded)

Table A-2

Sample of Superseded Tables

TABLE 12. 1 LIGHT VEHICLE WEAR-AND-TEAR RATES FOR 1954-2015, TABLE 1. 1

VEHICLE TYPE	WEAR-AND-TEAR RATES							SUM
	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	
1957	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1958	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1959	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1960	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1961	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1962	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1963	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1964	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1965	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1966	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1967	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1968	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1969	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1970	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1971	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1972	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1973	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1974	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1975	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000

TABLE 12. 2 LIGHT VEHICLE WEAR-AND-TEAR RATES FOR 1954-2015, TABLE 2. 1

VEHICLE TYPE	WEAR-AND-TEAR RATES							SUM
	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	VEHICLE WEAR-AND-TEAR RATES	
1976	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1977	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1978	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1979	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1980	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1981	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1982	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1983	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1984	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1985	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1986	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1987	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1988	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1989	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1990	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1991	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1992	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1993	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1994	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000
1995	0.4673	0.1420	0.0167	0.0618	0.1603	0.1518	0.0005	1.0000

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Table A-2 (Concluded)

TABLE A-2. LIGHT VEHICLE OPERATING EXPENSES FOR 1977-2011 (TABLE 1)

VEHICLE TYPE	OPERATING EXPENSES							SUM
	REGISTRATION	TITLE	SALES TAX	PROPERTY TAX	SALES TAX	SALES TAX	SALES TAX	
MODEL YEAR	VEHICLE OPERATING EXPENSES							SUM
1976	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
1977	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
1978	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
1979	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2000	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2001	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2002	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2003	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2004	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2005	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2006	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2007	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2008	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2009	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2010	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2011	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2012	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000
2013	0.1400	0.2020	0.0271	0.2300	0.1400	0.1400	0.0810	1.0000

Table A-3
Sample of Superseding Tables

TABLE 2.1 VEHICLE BREAKDOWN RATIOS FOR 1957-2013, TABLE 1

VEHICLE TYPE P	*****							SUM
	1	2	3	4	5	6	7	
MODEL YEAR	VEHICLE BREAKDOWN, YBU(I),							
1957	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1958	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1959	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1960	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1961	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1962	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1963	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1964	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1965	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1966	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1967	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1968	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1969	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1970	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1971	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1972	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1973	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1974	0.4673	0.1420	0.0167	0.0618	0.1603	0.1514	0.0005	1.0000
1975	0.4574	0.1389	0.0170	0.0612	0.1595	0.1508	0.0007	1.0000

TABLE 2.2 VEHICLE BREAKDOWN RATIOS FOR 1976-2013, TABLE 2

VEHICLE TYPE P	*****							SUM
	1	2	3	4	5	6	7	
MODEL YEAR	VEHICLE BREAKDOWN, YBU(I),							
1976	0.4484	0.1336	0.0173	0.0606	0.1468	0.1405	0.0008	1.0000
1977	0.4390	0.1324	0.0176	0.0600	0.1408	0.2100	0.0010	1.0000
1978	0.3929	0.1390	0.0185	0.0612	0.1412	0.2000	0.0271	1.0000
1979	0.3608	0.1456	0.0194	0.1025	0.1425	0.1900	0.0532	1.0000
1980	0.3096	0.1522	0.0203	0.1237	0.1437	0.1800	0.0794	1.0000
1981	0.2545	0.1588	0.0212	0.1450	0.1450	0.1700	0.1055	1.0000
1982	0.2084	0.1655	0.0220	0.1662	0.1462	0.1600	0.1316	1.0000
1983	0.1623	0.1721	0.0229	0.1875	0.1475	0.1500	0.1577	1.0000
1984	0.1161	0.1787	0.0238	0.2087	0.1487	0.1400	0.1839	1.0000
1985	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000
1986	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000
1987	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000
1988	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000
1989	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000
1990	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000
1991	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000
1992	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000
1993	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000
1994	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000
1995	0.0700	0.1853	0.0247	0.2300	0.1500	0.1300	0.2100	1.0000

Table A-3 (Continued)

TABLE 2. 3 VEHICLE BREAKDOWN RATES FOR 1997-2013. (TABLE 3)

VEHICLE TYPE	*****								
	MODEL YEAR	VEHICLE BREAKDOWN, YBU(1)							SUM
	1996	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	1997	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	1998	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	1999	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2000	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2001	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2002	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2003	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2004	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2005	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2006	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2007	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2008	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2009	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2010	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2011	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2012	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000
	2013	0.0700	0.1053	0.0247	0.2100	0.1500	0.1300	0.2100	1.0000

TABLE 2. 4 VEHICLE BREAKDOWN RATES FOR 1997-2013. (TABLE 4)

VEHICLE TYPE	*****								
	MODEL YEAR	VEHICLE BREAKDOWN, YBU(1)							SUM
	1997	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1998	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1999	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1998	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1991	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1992	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1993	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1994	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1995	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1996	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1997	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1998	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1999	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1970	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1971	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1972	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1973	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1974	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1200	N/A
	1975	0.0140	0.3054	1.0000	1.0000	1.0000	0.0000	0.1100	N/A

Table A-3 (Concluded)

TABLE 2. 5 VEHICLE BREAKDOWN RATIOS FOR 1977-2013, TABLE 5.1

VEHICLE TYPE	*****							SUM
	MODEL YEAR	VEHICLE BREAKDOWN RATIO						
1976	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1977	0.0146	0.3854	1.0000	1.0000	1.0000	0.9307	0.0693	N/A
1978	0.0146	0.3854	1.0000	1.0000	1.0000	0.9022	0.0978	N/A
1979	0.0146	0.3854	1.0000	1.0000	1.0000	0.9078	0.0922	N/A
1980	0.0146	0.3854	1.0000	1.0000	1.0000	0.9133	0.0867	N/A
1981	0.0146	0.3854	1.0000	1.0000	1.0000	0.9189	0.0811	N/A
1982	0.0146	0.3854	1.0000	1.0000	1.0000	0.9244	0.0756	N/A
1983	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1984	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1985	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1986	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1987	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1988	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1989	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1990	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1991	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1992	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1993	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1994	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1995	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A

TABLE 2. 6 VEHICLE BREAKDOWN RATIOS FOR 1996-2013, TABLE 5.1

VEHICLE TYPE	*****							SUM
	MODEL YEAR	VEHICLE BREAKDOWN RATIO						
1996	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1997	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1998	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
1999	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2000	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2001	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2002	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2003	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2004	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2005	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2006	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2007	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2008	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2009	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2010	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2011	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2012	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A
2013	0.0146	0.3854	1.0000	1.0000	1.0000	0.9300	0.0700	N/A

APPENDIX B

Modifications of the General Adverse Response Model
to Incorporate Sound Level Changes with Vehicle Age

The degradation model (DEGFAC) that was written by Wyle Laboratories is part of the VARNET8Q version of the NRTNEM. Since VARNET9R is the updated version of the model, it was necessary to either include the degradation features into VARNET9R or modify DEGFAC to include the new features of VARNET9R. After comparing the two files it was decided to incorporate the necessary changes into DEGFAC. The modifications that were made appear in Figure B-1.

In addition to these modifications, the DEGFAC file that was stored in TRAWO did not contain several lines dealing with the PERDEG variable, which is used to determine the percent of vehicles exhibiting sound level degradation for all vehicle types which are affected by this change in noise level with age. Therefore, five lines that are included in DEGFAC had to be reinserted in TRAWO(DEGFAC). The resulting file is stored in TRAWO as DEDGAC1. Figure B-2 presents a listing of DEGFAC1.

In order to use DEGFAC1, the user must change line 00010600 of CN.EPADYN.S2KC.\$RNMSUF.CLIST to:

```
00010600 C 9975 '#MAINP' 'DEGFAC1'
```

VARNET9R is still a member of TRAWO and BUILD, so if degradation features are not desired, it may be used by changing DEGFAC1 back to VARNET9R in this line. At the end of the session, however, DEGFAC1 should be reentered in line 00010600.

B4	2	ICONT(12), JMASK(9)	00015230 (JMASK(9) added)
C		Foll. Stmt. Added 1980-04-25 by RRACKL	00016722
		READ(4,999) JMASK	00016724
		999 FORMAT(10X,9I1)	00016726
C		Following 2 statements inserted by RRACKL 1980-5-5. Subroutine	00025811
C		Seresc 'selects regulation scenarios' from the noise level	00025812
C		dictionary file on unit 8 according to instruction on unit 2.	00025813
	3000	CALL SERESC(J)	00025814
		IF(J.EQ.-1) STOP 1111	00025815
	3000	READ(5,REGSCN,END=7000)	00025900 (deleted)
C		Following statement added 1980 -04-25 by RRACKL	00040702
		IF(JMASK(J).EQ.0) GO TO 5510	00040704
		CALL PRINT6(IPLOT,IPRINT(6))	00062150
		IF(IPRINT(6).EQ.1) CALL PRINT6(IPLOT)	00062190 (deleted)

B-1A

Figure B-1. Modifications Made to Degradation File DEGFAC.
Unless Otherwise Noted, All Lines Above Were Inserted

APPENDIX B

Modification of The "National Roadway Traffic Noise Exposure Model" To Incorporate Sound Level Changes With Vehicle Age

DEGFAC1 is a modified version of VARNET9R. It is identical to DEGFAC except for modifications to incorporate the new features of VARNET9R. DEGFAC1 presently contains the IDEGFC, DEGFAC, and PERDEG values, so it is not necessary for the user to input them for each run unless changes in these values are desired.

A copy of DEGFAC1 is presented on Figure B-2.

New Variables Introduced Into the Model by DEGFAC1

- IDEGFC(I)

"IDEGFC(I)" is either 1 (one) or 0 (zero) depending upon whether sound level degradation will be a factor for the particular vehicle under consideration. For the case at hand, degradation is to be considered for only medium duty trucks (I = 8) and heavy duty trucks (I = 9); therefore, IDEGFC(8) = 1 and IDEGFC(9) = 1. IDEGFC(I) = 0 for all the other vehicle types, i.e., for I = 1 through 7, and I = 10 through 14. The user is required to define and input all 14 IDEGFC values.

- NI

"NI" is an index of vehicle type, as is "I," however, where "I" takes on values from 1 (one) through 14, inclusive, NI takes on only as many values as there are vehicle types for which degradation is being considered. Consequently, the DEGFAC1 will define NI = 1 when I = 8, and NI = 2 when I = 9. NI is internally generated, and therefore does not require user attention.

- DEGFAC (IAGE,L,M,LEVEL,NI)

DEGFAC (IAGE,L,M,LEVEL,NI) (hereinafter termed DEGFAC value) is the difference between the actual sound level of the vehicle and the maximum

permissible sound level specified in the noise emission regulation (ALREG). In short, a DEGFAC value is the sound level degradation value.

DEGFAC values are expressed in decibels and are positive, negative, or zero, depending upon whether the vehicle has a sound level respectively greater than, less than, or equal to the ALREG for that vehicle. Twenty-six DEGFAC values are requisite user inputs for each combination of the 5 L's (speed ranges), 4 M's (operation modes), 5 LEVEL's (noise regulations under which the vehicle was manufactured), and (for this case) 2 NI's (vehicle types). This gives one DEGFAC value for each year the vehicle operates, with 26 years being the maximum lifetime of any vehicle considered by the Model. Thus, the DEGFAC array, in this case, is a 26*5*4*5*2 matrix giving a 5200 element array. The user is required to define and input all of this case's 5200 DEGFAC values.

o EDEGFC (IAGE, L, M, LEVEL, NI)

EDEGFC (IAGE, L, M, LEVEL, NI) is sound degradation expressed in terms of sound energy as opposed to DEGFAC (IAGE, L, M, LEVEL, NI) which is expressed in terms of sound level. Each EDEGFC value is defined by a DEGFAC value where

$$EDEGFC = 10^{\frac{DEGFAC}{10}}$$

5200 EDEGFC values, one for each DEGFAC value considered by the case at hand, will be computed within the program. The EDEGFC array is internally generated, and therefore does not require user attention.

o PERDEG (IAGE)

"PERDEG" represents the percentage of vehicles exhibiting a specific sound level degradation. It is assumed the same for all vehicle types with degradation. This percentage depends upon the age of the vehicles under consideration; thus, PERDEG is an array of 26 elements, one element for each of the 26 years of age permitted by the Model. The user is required to define and input all of the 26 PERDEG values.

the need to renumber lines. Fifty-seven lines of DEGFAC values may be keyed into sequence number 16643 through 16699, inclusive. If additional space for DEGFAC values is still needed, the following sequence ranges may be used to obtain another 118 lines:

16781 through 16799 inclusive, and

16841 through 16939, inclusive.

• 25972

This statement converts DEGFAC values from their representation as a decibel difference (DEGFAC) to a sound factor (EDEGFC).

• 45115

This statement causes operation to transfer to the sound level summation process appropriate to the particular vehicle type. Those vehicle types for which IDEGFC = 0 have their sound energy calculated in sequence number 45300 which utilizes VML. VML is a vehicle population tally. This tally is taken without regard to vehicle age; thus, the tally may include vehicles of various ages. Vehicle types having IDEGFC = 0 have sound levels which do not vary with age; therefore their sound energy summation is performed using VML.

Those vehicle types for which DEGFAC values are a consideration (i.e., I = 8 & 9 for the case at hand) have their sound energy calculated in sequence numbers 45652 through 45656 which utilizes VPOP. VPOP is a population tally of vehicles of a single distinct age. Vehicle types having IDEGFC = 1 have sound levels which do vary with age; therefore their sound energy summation is performed using VPOP.

Verification of DEGFAC1 Logic

Verification of DEGFAC1 was performed by comparing the output of VARNET9R using the baseline regulation instruction file (RIFBL) with the DEGFAC1 output that used the same regulations.

Since the degradation features are not used when only baseline regulations are specified, the two runs should have identical noise impact values, which they do. Other comparison runs were also made for VARNET9R and DEGFAC1 using identical input values. Figure B-3 is a printout of noise impact for a DEGFAC1 run. For comparison, a similar printout is given in Figure B-4 for a run using VARNET9R as the main file with identical inputs (see Appendix G of the User's Manual).

B-5A

This modification of VARNET9R is saved under file-name CN.EPADYN.
S2KC.TRAWO(DEGFAC1)

```

C MAIN 00010000
C THIS IS A PROGRAM WHICH CALCULATES THE NUMBER OF PEOPLE 00010100
C IMPACTED BY NOISE ORIGINATING FROM HIGHWAY TRAFFIC. 00010200
C 00010300
C 00010400
CF DESCRIPTION: THIS IS FILE VARNET4 00010410
CF VARNET4 LAST UPDATE: 11/13/78 10:06:16 00010420
CC BIG001 LAST UPDATE: 10/31/78 22:26:23 00010430
CC BIG002 LAST UPDATE: 10/18/78 17:36:26 00010440
CC BIG003 LAST UPDATE: 11/07/78 17:39:27 00010450
CC BIG004 LAST UPDATE: 11/01/78 14:13:45 00010500
C FEATURES: WAS VARNET1. CORRECTION EVERY YEAR (WITHOUT LINE 32270) 00010600
C RETAINED MOST WOTANY CHARACTERISTICS 00010700
C SOME FEATURES OF WOTAN8B ADDED:E.G ELREG 00010800
C LWP DERIVED FROM EXPOSURE IN DB BANDS 00010900
C CHANGE IN LOCAL CRITERION PERMITTED (I.E. ALC(J)) 00011000
C VARIABLE NET: READS IN A NET OF YEARS 00011100
C NEW SUBROUTINES, CONSOLIDATED COMMON AREAS 00011110
C E.G. BACGRG, VEHPCP 00011120
C NON-REF SUBROUTINES DELETED: MRF, MBAS, CON 00011130
C EXTENSIVE REFORMATTING OF TEXT 00011140
C CONSOLIDATION OF BACGRG INTO VEHPOP 00011150
C DELETION OF VARIABLE GAN 00011160
C MIXDB ARRAY FIXED...HAD UNDEFINED NUMBERS FOR LOW IDE 00011170
C RESTRUCTURING OF LOWEST LEVEL IMPACT: NOW COMPUTED IN 00011180
C PRIMARY, ADDITIONAL AND DECREMENTAL SECONDARY EXPO- 00011190
C SURE. OLD ARRAYS REMOVED. 00011200
C DC LOOPS WITH SAME END POINT GIVEN SEPARATE ONES 00011210
C TESTS FOR ILLEGAL SITUATIONS 00011220
C FULL CONTROL FOR DUMP AND PRINT 00011230
C REGULATION SCENARIO IS NOW ITS OWN SEPARATE FILE 00011240
C ARRAY B SPILT INTO TWO SEPARATE ONES 00011250
C SELECTED ZEROING OF ALEVEL(K,L) TO ISOLATE EFFECT OF 00011260
C ROADWAY TYPES 00011270
C IF ALEVEL=0, PUT EVERYBODY INTO LOWEST DB BAND 00011280
C TEN PRINT SUBROUTINES 00011290
C NEW VBD METHODOLOGY---VBD74 MOVED INTO FILE4 00011300
C VBD IS NOW INTERPOLATED FROM INPUT ARRAYS FOR 77 & 85 00011310
C CONV1 AND CONV2 MOVED WHOLLY INTO MAIN PROGRAM 00011320
C SKIP FEATURE ADDED 00011330
C VINC, XINC COMPUTED IN FIX, FIX INVOKED EARLIER 00011340
C NEW CONTROL STRING ICONT SKIPS CERTAIN SECTIONS 00011350
C NEW KFLC ARRAY 00011360
C NEW FLOMIX DIMENSIONS 00011370
C NEW REMO DATA 00011380
C FULL CURRENT MODEL YEAR POPULATION ON ROAD. 00011390
C BLOCK DATA AND OTHER SUBROUTINES MOVED INTO VARNET4A 00011400
C 00011410
C 00011420
C MAIN PROGRAM 00011430
C 00011440

```

Figure B-2. DEGFAC1 Listing

```

C SECTION 1.0 DATA MANAGEMENT 00011640
C 00011650
C SECTION 1.1 COMMON BLOCKS, DIMENSIONS 00011660
C 00011700
COMMON /BIG001/ VAF(4,26),VGF(40,6),RENO(6,17),XINC(7),YINC(7), 00011900
B1 2 VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD9C(7), 00012000
B1 3 A(2,3),DBK(3),CZD(4,9,6),ALC(9),FI(9),PGF(5), 00012100
B1 4 PGFO(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9), 00012200
B1 5 AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPOP(14), 00012300
B1 6 XKINK,A1,A2,B1,B2,ALO,CONO,CON2,IVAF(14), 00012400
B1 7 MYREF(6),IVBD(14),LIFE(4),IEGAGE(6),JWYLE(9,4), 00012500
B1 8 JPGF(9),LANE(9,6),HYRE(14),IVGF(14),HODYR,IT,I 00012600
C 00012700
C THE FOLLOWING COMMON BLOCKS SERVE PRINT SUBROUTINES 00012800
C 00012900
COMMON /BIG002/ ALREG(5,5,4,14),CVTOT(9),VTOT(14,9),DDBA(16), 00013000
B2 2 POEXP(9),POPIMP(9),ALWPOP(9),TOPOP(9), 00013100
B2 3 PIMP(6,9),PEXP(6,9),ALWPK(6,9),PIMPJ(9,9), 00013200
B2 4 PEXPJ(9,9),ALWPJ(9,9),POPLTH(4,9),STOPGF(9,9), 00013300
B2 5 POPDEN(4,9),ENIDB(16,9),EXPDB(16,9),NIDB(9), 00013400
B2 6 MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4), 00013500
B2 7 MYRNET(9),MYRB,MYRN,NVT,NAT,NHT,NSR,N16DB, 00013600
B2 8 ITABLE 00013700
C 00013800
C END PRINT COMMON BLOCK 00013900
C 00014000
COMMON /BIG003/ GAMK(6,9),ALEVEL(6,5),BONE(4,9,6),BTWO(4,9,6), 00014400
B3 2 XK(4,9,6),FACT2(4,9,6),AML(9,6,5),VML(14,4,5), 00014500
B3 3 EDGE(4,9),EDGEpz(4,9,6),WDTHPZ(4,9),PGP(9),V(5), 00014600
B3 4 SIG(5,4,5,14),FLCMIX(14,4,5),PERCNI(4,2,4), 00014700
B3 5 PMYEXP(16,6),PMYLWP(16,6),EXPINC(16,6), 00014800
B3 6 EXPDEC(16,6),PXPDBK(16),CDBA(9,16),ADBA(16), 00014900
B3 7 DESUM(16,16),MIXDB(16,16),FACT3(4,9),FACT4(4,9), 00015000
B3 8 JFLO(9),KFLO(6),KPER(6),IPER(14) 00015200
COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6), 00015220
B4 2 ICONT(12),JMASK(9) 00015230
C 00015300
C SECTION 1.2 INITIALIZE AND READ IN SOME DATA 00015400
C 00015500
DIMENSION ELREG(5,5,4,14) 00015600
EQUIVALENCE (ALREG(1),ELREG(1)) 00015700
DATA PI/3.1415927/,DREF/50./,CONV1,CCNV2/5.83963E4,2.64E3/ 00016000
REAL ATWO(3)/12.564608,12.564708,15.0/,CHAR(3)/2*150.,50./ 00016100
DIMENSION AONE(4,9,6) 00016120
C 00016400
C SECTION 1.2.1 DEFINE NAMELISTS, READ IN MILEAGE AND TIMESTREAM 00016410
C 00016420
C 00016430
C 00016500
NAMELIST/REGSCH/ ALREG,NLEV,MYREG 00016500
NAMELIST/HIWAY2/ MILE,PERCNT,FLCMIX,SIG 00016600
C THIS COMMENT THROUGH THE NEXT "DATA DEGFACT" STATEMENT ARE PART OF 00016604

```

Figure B-2. (Continued)

C	A MODIFICATION TO VARNET DESIGNED TO INCORPORATE VEHICLE SOUND	00016608
	NAMELIST/VEHGF1/ VGF,IVGF,REMO,MYREF,VAF,LIFE	00016610
C	LEVEL DEGRADATION AS A FUNCTION OF VEHICLE AGE.	00016612
C	ADDITIONAL RELATED MODIFICATIONS ARE CONTAINED IN SECTIONS	00016616
C	3.0 AND 5.6.3 OF THIS PROGRAM.	00016620
	DIMENSION IDEGFC(14),DEGFAC(26,5,4,5,2),EDEGFC(26,5,4,5,2)	00016624
	DIMENSION PERDEG(26)	00016626
	EQUIVALENCE (DEGFAC(1),EDEGFC(1))	00016628
	DATA IDEGFC/7*0,1,1,5*0/	00016632
C	THE FOLLOWING ARE THE DEGRADATION FACTORS. THEY ARE TO BE SUPPLIED	00016636
C	BY THE USER.	00016640
	DATA PERDEG/2*.19,2*.08,22*.19/	00016642
	DATA DEGFAC/520*0.,	00016650
	12*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*1.,2*1.5,22*1.,	00016654
	576*0.,	00016656
	22*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*1.,2*2.,22*1.,	00016658
	32*1.,2*2.,22*1.,208*0.,	00016662
	12*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*1.,2*1.5,22*1.,	00016666
	576*0.,	00016668
	22*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*1.,2*2.,22*1.,	00016670
	32*1.,2*2.,22*1.,208*0.,	00016674
	61560*0.,	00016676
	12*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*1.,2*1.5,22*1.,	00016678
	576*0.,	00016680
	22*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*1.,2*2.,22*1.,	00016682
	32*1.,2*2.,22*1.,208*0.,	00016686
	12*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*1.,2*1.5,22*1.,	00016690
	576*0.,	00016692
	22*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*2.,2*3.,22*2.,2*1.,2*2.,22*1.,	00016694
	32*1.,2*2.,22*1.,208*0.,	00016698
	41040*0./	00016699
	READ(3,HIWAY2)	00016700
	READ(4,1000) IPLOT,IPRINT,IDUMP,KMASK,IVMASK,ICONT	00016710
1000	FORMAT(10X,I1/10X,12I1/10X,12I1/10X,6I1/10X,14I1/10X,12I1)	00016720
C	FOLL. STMT. ADDED 1980-04-25 BY RRACKL	00016722
	READ(4,999) JMASK	00016724
999	FORMAT(10X,9I1)	00016726
	READ(4,1001) VBD74,VBD77,VBD85	00016730
1001	FORMAT(4(10X,7(F6.3,1X)/))	00016740
	READ(4,1002) MYRN,MYRNET	00016750
1002	FORMAT(10X,12/10X,9(14,1X))	00016760
	READ(4,1003) RNAME	00016770
1003	FORMAT(10X,5A4)	00016780
C		00016800
C		00016810
C	SECTION 1.2.5 COMPUTE ARRAYS USED BY FUNCTION VBD	00016820
C		00016830
	CALL FIX	00016840
C		00016940
C	CSKIP	00016950
C		00016960

Figure B-2. (Continued)

	IF(ICONT(1),EQ.1) GOTO 50	00016970
C		00017000
C	COMPUTE VARIOUS CONSTANTS	00017010
C		00017020
	CONO=PI	00017100
	CON2=PI*GAMMA(1.5E0)/ SQRT(2.0E0)/GAMMA(1.25E0)**2	00017150
C		00017220
C	SECTION 1.5 CHECK TIMESTREAM NET POINTS FOR ORDERING AND LIMITS	00017230
C		00017240
	IF(MYRNET(1).NE.MYRB)WRITE(6,1320)	00017250
1320	FORMAT(' ', 'FIRST YEAR IS NOT BASELINE...HAS BEEN RESET')	00017260
	MYRNET(1)=MYRB	00017270
	IF (MYRN.EQ.1) GOTO 22	00017272
C		00017275
13	DO 1300 IYRN, = 2, NYRN	00017280
C		00017285
	IF(MYRNET(IYRN).LE.MYRNET(IYRN-1))WRITE(6,1310)	00017290
1310	FORMAT(' ', 'YEARS NOT IN ASCENDING ORDER!!!!!!!')	00017300
C		00017305
1300	CONTINUE	00017310
C		00017315
	IF(MYRNET(NYRN).GT.2013)WRITE(6,1330)	00017320
1330	FORMAT('0'/'0'/' ' LAST NET YEAR IS LATER THAN 2013...')	00017330
C		00017400
C	SECTION 2.0 COMPUTE VARIOUS NUMBERS BEFORE TIMESTREAM	00017420
C		00017440
C		00017600
C	SECTION 2.2 DERIVE DBSUM,CDBA AND MIXDB ARRAYS	00017620
C		00017660
22	DO 2200 IDB = 2,N16DB	00017680
C		00017690
	DO 2203 J = 1,NAT	00017700
	CDBA(J,IDB) = XMINUS(ALC(J),ADBA(IDB))	00017720
2203	CONTINUE	00017740
C		00017750
	DO 2201 JDB = 2,N16DB	00017760
C		00017770
	DBSUM(IDB,JDB) = ADD(ADBA(IDB),ADBA(JDB))	00017774
	DDBSUM = DBSUM(IDB,JDB)	00017778
	IF(DDBSUM.GT.DDBA(1)) MIXDB(IDB,JDB) = 1	00017780
	IF(DDBSUM.GT.DDBA(1)) GO TO 2201	00017790
C		00017810
	DO 2202 LDB = 2,N16DB	00017820
C		00017830
	IF(DDBSUM.GE.DDBA(LDB).AND.DDBSUM.LT.DDBA(LDB-1))	00017840
C	MIXDB(IDB,JDB) = LDB	00017860
C		00017870
2202	CONTINUE	00017880
2201	CONTINUE	00017882
2200	CONTINUE	00017884
C		00017900

Figure B-2. (Continued)

```

C DUMP CDBA, DBSUM, MIXDB AND CONO, CON2
C
C          IF(IDUMP(1).EQ.1) CALL PDUMP(CDBA(1,1),CDBA(9,16),5,
D1 2          MIXDB(2,2),MIXDB(16,16),4,CONO,CONO,5,
D1 3          CON2,CON2,5,DBSUM(1,1),DBSUM(16,16),5,
D1 4          VBD74(1),VBD74(14),5,VBD85(1),VBD85(7),5,
D1 5          XINC(1),XINC(7),5,VINC(1),VINC(7),5)
C
C SECTION 2.3 THE FOLLOWING BLOCK PROCESSES THE ADT AND DELINEATES
C THE POPULATED ZONE ASSOCIATED WITH EACH ID,J AND K.
C
C
C 23 DO 2300 J      = 1,NAT
C
C          MID      = MIDD(J)
C          POP(J)   = 0.0EO
C
C          DC 2310 ID      = 1,NID
C
C          NPMILE = 0
C          FACT3(ID,J)   = FPAREA(J, ID)/AREA(ID, J)/CONV2
C          FACT4(ID,J)   = POPDEN(ID, J)/CONV2/FPAREA(J, ID)
C          EDGE(ID, J)   = CONV2*SQRT(AREA(ID, J))
C
C          DO 2302 K      = 1,NHT
C
C          NLANE      = LANE(J, K)
C
C          DC 2303 L      = 1,NSR
C          NPMILE = NPMILE+MILE(K, J, ID, L)*FPROAD(J, K)
C          IF(ID.EQ.1) AML(J, K, L) = ADT(K, J)/V(L)/NLANE
5          CONTINUE
2303
C
C SECTION 2.4 COMPUTE DERIVED WYLE CURVE COEFFICIENTS AND X AT KINK
C
C          IT          = JWYLE(J, ID)
C          XK(ID, J, K) = CZD(ID, J, K) + CBAR(IT)
C          AONE(ID, J, K) = DBK(IT) / ALOG10(1. + CBAR(IT)/CZD(ID, J, K))
C          BONE(ID, J, K) = -AONE(ID, J, K) * ALOG10(CZD(ID, J, K))
C          BTWO(ID, J, K) = DBK(IT) - ATWO(IT) * ALOG10(XK(ID, J, K))
C
C 2302 CONTINUE
C
C SECTION 2.3.1 COMPUTE WDTHPZ(WIDTH OF THE POPULATED ZONE) AFTER
C OBTAINING NUMBER OF POPULATED MILES, NPMILE.
C COMPUTE POPULATION BY AREA ID, J AND ALSO BY J ALONE
C
C          WDTHPZ(ID, J) = AREA(ID, J)*FPAREA(J, ID)/NPMILE*CONV2
C          PCPLTN(ID, J) = POPDEN(ID, J)*AREA(ID, J)
C          POP(J)      = POP(J)+POPLTN(ID, J)

```

Figure B-2. (Continued)

```

2310 CONTINUE                                00022840
2300 CONTINUE                                00022900
      IF(IDUMP(2).EQ.1) CALL PDUMP(WDTHPZ(1,1),WDTHPZ(4,9),5,
D2  2      EDGE(1,1),EDGE(4,9),5,BONE(1,1,1),BTWO(4,9,6),5,
D2  3      XK(1,1,1),XK(4,9,6),5)            00022920
      IF(IDUMP(3).EQ.1) CALL PDUMP(FACT3(1,1),FACT3(4,9),5,
D3  2      FACT4(1,1),FACT4(4,9),5,          00022950
D3  3      AML(1,1,1),AML(9,6,5),5)          00022970
C                                             00022990
C SECTION 2.3.2 COMPUTE CONSTANT ARRAYS IN THE NOISE EQUATION
C                                             00023100
      DO 2304 J      = 1,NAT                    00023120
      DO 2304 ID    = 1,4                      00023200
      DO 2304 K      = 1,NHT                    00023300
C                                             00023310
      NLANE = LANE(J,K)                       00023400
      SUM   = 0.0E0                            00023440
C                                             00023500
      DO 2301 ILANE = 1,NLANE                  00023600
C                                             00023700
      DR    = WIDTH(J,K) * (ILANE- 0.5E0)      00023800
      DFCL  = DR + CZD(ID,J,K)                 00023840
      SUM   = SUM + FACTOR(GAMM(K,J),DREF,DFCL)/DFCL
C                                             00023900
2301 CONTINUE                                00023900
      FACT2(ID,J,K) = ALOG10(SUM*PI*DREF**2/CONV1)
C                                             00024000
C SECTION 2.3.3 COMPUTE THE EDGE OF THE POPULATED ZONE
C                                             00024100
      EDGEPZ(ID,J,K) = CZD(ID,J,K)+WDTHPZ(ID,J)
C                                             00024140
C                                             00024200
2304 CONTINUE                                00024300
C DUMP FACT2 ARRAY                            00024400
      IF(IDUMP(4).EQ.1) CALL PDUMP(FACT2(1,1,1),FACT2(4,9,6),5)
C                                             00024500
C SECTION 3.0 READ A REGULATION SCENARIO, AND (FOR THE FIRST LOOP)
C                                             00024520
C SIG, PERCNT AND FLOMIX                      00024540
C                                             00024700
C CALL PRINT4, PRINTS CONSTANT DATA          00024710
C                                             00024720
      IF(IPRINT(1).EQ.1) CALL PRINT1           00024800
      IF(IPRINT(2).EQ.1) CALL PRINT2           00024810
      IF(IPRINT(3).EQ.1) CALL PRINT3           00024820
C                                             00024830
C READ A REGULATION SCENARIO                   00025110
C FOLLOWING 2 STATEMENTS INSERTED BY RRACKL 1980-5-5. SUBROUTINE
C                                             00025120
C                                             00025200
C                                             00025300
C                                             00025400
C                                             00025500
C                                             00025600
C                                             00025620
C                                             00025630
C                                             00025800
C                                             00025810

```

Figure B-2. (Continued)

C SERESC 'SELECTS REGULATION SCENARIOS' FROM THE NOISE LEVEL	00025812
C DICTIONARY FILE ON UNIT 8 ACCORDING TO INSTRUCTIONS ON UNIT 2.	00025813
3000 CALL SERESC(J)	00025814
IF(J.EQ.-1) STOP 1111	00025815
C	00025820
C THIS COMMENT THROUGH STATEMENT NUMBER 1110 COMPRISE A MODIFICATION	00025903
C OF VARNET DESIGNED TO INCORPORATE VEHICLE SOUND LEVEL DEGRADATION	00025906
C AS A FUNCTION OF VEHICLE AGE.	00025909
READ(5,VEHGF1,END=6666)	00025910
533 FORMAT(1H1,4HIAGE,5X,1HL,4X,1HM,4X,5HLEVEL,4X,2HNI,6X,	00025925
134HDEGFAC(IAGE,L,M,LEVEL,NI) .NE. 0.0//)	00025927
6666 NI=0	00025936
666 FORMAT(1H ,5(I6),6X,F6.1)	00025937
WRITE(6,333)	00025938
DC 1110 I=1,NVT	00025939
IF(IDEGFC(I).EQ.0)GO TO 1110	00025942
NI=NI+1	00025945
DO 1100 M=1,4	00025948
NLEVEL=NLEV(I,M)	00025951
DC 1100 L=1,NSR	00025954
DO 1100 LEVEL=1,NLEVEL	00025957
DO 1100 IAGE=1,26	00025960
IF(DEGFAC(IAGE,L,M,LEVEL,NI).NE.0.)	00025962
1WRITE(6,666)IAGE,L,M,LEVEL,NI,DEGFAC(IAGE,L,M,LEVEL,NI)	00025964
1033 EDEGFC(IAGE,L,M,LEVEL,NI)=1.2589254**DEGFAC(IAGE,L,M,LEVEL,NI)	00025972
1100 CONTINUE	00025978
1110 CONTINUE	00025993
C	00026000
C CALL PRINT4, TO PRINT THE REGULATION SCENARIO	00026300
C	00026320
3002 IF(IPRINT(4).EQ.1) CALL PRINT4	00026400
IF(IDUMP(5).EQ.1) WRITE(6,5306) RNAME,REMO,VGF,IVGF,	00026405
RNAME,VAF,LIFE,MYREF	00026410
5306 FORMAT('1#8 DUMP: REMO',T110,5A4/'0'/17(1X,6E12.3//)	00026425
D8 4 '0#8 DUMP: VGF(IYRN,IVBD)'/ '0'/24(2X,10(F5.3,' '))//	00026430
D8 5 '0#8 DUMP: IVGF(I)'/ '0'/ ' ',14(11,2X)//	00026435
D8 6 '1#8 DUMP: VAF(IVAF,IAGE)',T110,5A4/13(9X,4F8.4,9X,4F8.4//)	00026440
D8 7 '/ '0#8 DUMP: LIFE(IVAF)'/ '0'/T10,4I3/	00026445
D8 8 '0#8 DUMP: MYREF(IVBBD)'/ '0'/T10,6I8)	00026450
C	00026500
C SECTION 4.0 PRE-TIMESTREAM CHORES FOR EACH COMPUTATION	00026600
C	00026700
C	00026800
C SECTION 4.1 COMPUTE ELREG ARRAY FROM REGULATION LEVELS.	00026900
C	00027000
41 DO 4101 I = 1,NVT	00027160
DO 4101 M = 1,4	00027180
C	00027190
NLEVEL = NLEV(I,M)	00027200
C	00027210
DO 4101 L = 1,NSR	00027220

Figure B-2. (Continued)

```

..      DC 4101 LEVEL = 1,NLEVEL                                00027240
C                                             00027250
      ELREG(LEVEL,L,H,I) = 1.0E1**((ALREG(LEVEL,L,M,I)+
C      ALCG( 1.0E1)/ 2.0E1*SIG(L,M,LEVEL,I)**2)/ 1.0E1)      00027260
C                                             00027280
C 4101 CONTINUE                                             00027290
C                                             00027300
C DUMP ELREG ARRAY                                         00027320
C                                             00027340
C      IF(IDUMP(6).EQ.1) CALL PDUMP(ELREG(1,1,1,1),ELREG(5,5,4,14),
C                                             00027360
D6 2 5)                                             00027400
C                                             00029400
C SECTION 4.3 ZERO EXPOSURE IN DB BAND ACCUMULATORS
C 43                                             00029410
C 43 DO 4300 IDB = 1,N16DB                                00029420
C      DO 4300 IYRN = 1,9                                  00029500
C                                             00029600
C      ENIDB(IDB,IYRN)= 0.0E0                              00029640
C      EXPDB(IDB,IYRN)= 0.0E0                              00029700
C                                             00029800
C 4300 CONTINUE                                             00029900
C                                             00030000
C SECTION 4.4 ZEROS EXPOSURE BY HIGHWAY TYPE ARRAYS
C                                             00030100
C      DO 4400 K = 1,NHT                                    00030200
C      DO 4400 IYRN = 1,9                                  00030300
C                                             00030400
C      PEXPK(K,IYRN)= 0.0E0                                00030500
C      PIMPK(K,IYRN)= 0.0E0                                00030600
C      ALWPK(K,IYRN)= 0.0E0                                00030700
C                                             00030800
C 4400 CONTINUE                                             00030900
C                                             00031000
C 4400 CONTINUE                                             00031100
C SECTION 5.0 TIME STREAM LOOP. IYRN=ORDINAL OF A NET YEAR.
C      MYRN=A NET YEAR                                     00031200
C                                             00031300
C 50 DO 5000 IYRN = 1,NYRN                                 00031400
C                                             00031500
C      MYRC=MYRNET(IYRN)                                   00032100
C                                             00032200
C SECTION 5.1 COMPUTE POPULATION GROWTH FACTOR IN THE CURRENT YEAR
C      CALL UPDATE(MYRC)                                   00032300
C                                             00032400
C DUMP CURRENT PGF                                         00032500
C                                             00032600
C      IF(IDUMP(7).EQ.1) CALL PDUMP(IYRN,IYRN,4,PGF(1),PGF(5),5)
C                                             00032700
C                                             00032710
C                                             00032720
C                                             00032730
C SECTION 5.2 COMPUTE THE CURRENT VEHICULAR POPULATION AND MYRE(I),
C      THE CURRENT EARLIEST YEAR OF SURVIVAL. FOR THE BASE-
C      LINE YEAR, BACKGROW THE REMO ARRAY AFTER ASSIGNMENT
C                                             00032740
C                                             00032800
C                                             00032900
C                                             00033000
C                                             00033100

```

Figure B-2. (Continued)

C		00033200
C	CALL VEHPOP(IYRN)	00033300
C	DUMP VPOP ARRAY	00033400
C		00033500
C	IF(IDUMP(8).EQ.1) CALL PDUMP(VPOP(1,1),VPOP(14,26),5)	00033600
C	CSKIP	00033700
C		00033710
C		00033720
C	IF(ICONT(1).EQ.1) GOTO 5000	00033730
C		00033740
C	SECTION 5.4 COMPUTE NUMBER OF CARS IN EACH NOISE RANGE	00036600
C		00036700
C	54 DO 5401 I = 1,NVT	00036800
C		00036900
C	MYOLD=MYRE(I)	00036940
C		00037000
C	DO 5401 M = 1,4	00037040
C		00037100
C	NLEVEL=NLEV(I,M)	00037140
C	MYREG(NLEVEL+1,M,I)=2014	00037200
C		00037300
C	DO 5402 LEVEL = 1,5	00037400
C	VML(I,M,LEVEL)= 0.0EO	00037500
C	5402 CONTINUE	00037600
C		00037700
C	SECTION 5.5 COMPUTE AND SUM EXPOSURE AND IMPACT NUMBERS OVER	00037780
C	J,K,ID,L	00037800
C		00037810
C	DO 5403 MODYR = MYOLD,MYRC	00037820
C	DO 5404 LEVEL = 1,NLEVEL	00037830
C		00037840
C	IF(MODYR.GE.MYREG(LEVEL,M,I).AND.MODYR.LT.MYREG(LEVEL+1,M,I))	00037900
C	VML(I,M,LEVEL) = VML(I,M,LEVEL)+VPOP(I,IYES(IYREF(MODYR)))	00038000
C	IF(MODYR.GE.MYREG(LEVEL,M,I).AND.MODYR.LT.MYREG(LEVEL+1,M,I))	00038200
C	GO TO 5403	00038300
C		00038340
C	5404 CONTINUE	00038400
C	5403 CONTINUE	00038700
C		00038740
C	5401 CONTINUE	00038800
C		00038810
C	C DUMP VML	00038820
C		00038830
C	IF(IDUMP(9).EQ.1) CALL PDUMP(IYRN,IYRN,4,	00038840
C	VML(1,1,1),VML(14,4,5),5)	00038850
C		00038900
C	SECTION 5.5 COMPUTE AND SUM EXPOSURE AND IMPACT NUMBERS OVER	00039000
C	J,K,ID,L	00039100
C		00039200
C	SECTION 5.5.1 SET UP LAND USE AREA LOOP (J LOOP)	00039300
C		00039400

Figure B-2. (Continued)

	ENI = 0.0E0	00039500
	PEXP = 0.0E0	00039600
	PIMP = 0.0E0	00039700
	POPOP = 0.0E0	00039800
C	DO 5510 J = 1,NAT	00039900
C	STOPGF(J,IYRN)=PGF(JPGF(J))	00040000
	PEXPA = 0.0E0	00040100
	PIMPA = 0.0E0	00040200
	ENIA = 0.0E0	00040300
	CL = ALC(J)	00040400
	NID = NIDD(J)	00040500
C	FOLLOWING STATEMENT ADDED 1980-04-25 BY RRACKL	00040600
	IF(JMASK(J).EQ.0) GO TO 5510	00040700
C	SECTION 5.5.2 SET UP VARIABLE POPULATION DENSITY LOOP (ID LOOP)	00040702
C	DO 5520 ID = 1,NID	00040704
C	IT=JWYLE(J, ID)	00040800
	FACRET=FACT4(ID,J)*PGF(JPGF(J))	00040900
C	SECTION 5.5.3 SET UP HIGHWAY TYPE LOOP (FIRST K LOOP)	00041000
C	DO 5530 K = 1,NHT	00041100
C	IF(MILE(K,J, ID,L).EQ.0.OR.(KMASK(K).EQ.0.AND.ICONT(3).EQ.0))	00041200
	ALEVEL(K,L) = 0.0E0	00041300
	IF(MILE(K,J, ID,L).EQ.0.OR.(KMASK(K).EQ.0.AND.ICONT(3).EQ.0))	00041400
	GO TO 5530	00041600
	PL0= 0.0E0	00041700
C	SECTION 5.5.4 SET UP SPEED RANGE LOOP (L LOOP)	00041800
C	DO 5530 L = 1,NSR	00041900
C	SECTION 5.6 COMPUTE NOISE LEVEL AND IMPACT NUMBERS ASSOCIATED WITH	00042000
	HIGHWAY TYPE K,L IN AREA ID,J	00042500
C	SECTION 5.6.1 SUM NOISE CONTRIBUTION FROM ALL VEHICLE TYPES I.	00042600
C	THE FOLLOWING LINE IS A VEHICLE SOUND LEVEL DEGRADATION MOD-	00042700
C	IFICATION DESCRIBED IN SECTION 1.2.1 OF THIS PROGRAM.	00042800
	NI=0	00042900
C	DO 5610 I = 1,NVT	00042910
C	SEQ #43850 IS A DEGFAC MODIFICATION.	00042920
	IF(IDEGFC(I).NE.0)NI=NI+1	00042960
C	CALCULATE USAGE FACTOR AND CURRENT NO OF TYPE I VEHICLES ON ROAD	00042980
		00043000
		00043100
		00043200
		00043300
		00043400
		00043500
		00043505
		00043510
		00043515
		00043600
		00043700
		00043800
		00043840
		00043850
		00043900

Figure B-2. (Continued)

```

C                                     00044000
      IF(IVMASK(I).EQ.0) GOTO 5610      00044010
      USAGE=ANL(J,K,L)*FLOMIX(I,JFLO(J),KFLO(K))/BVPCP(I) 00044100
C                                     00044200
C SECTION 5.6.2 SUM NOISE CONTRIBUTION FROM EACH OPERATING MODE M. 00044300
C                                     00044400
      DO 5620 M      = 1,4              00044500
C                                     00044600
      SUM1= 0.0E0
      NLEVEL=NLEV(I,M)                 00044700
C                                     00044800
C                                     00044900
C SECTION 5.6.3 SUM NOISE CONTRIBUTION FROM EACH NOISE RANGE, LEVEL. 00045000
C                                     00045100
C THE FOLLOWING LINE IS A VEHICLE SOUND LEVEL DEGRADATION MOD- 00045105
C IFICATION DESCRIBED IN SECTION 1.2.1 OF THIS PROGRAM. 00045110
      IF(IDEFC(I).NE.0)GO TO 5640      00045115
      DC 5630 LEVEL = 1,NLEVEL         00045200
      SUM1=SUM1+VML(I,M,LEVEL)*ELREG(LEVEL,L,M,I) 00045300
5630 CONTINUE                          00045500
C                                     00045600
C THE FOLLOWING THROUGH STATEMENT NUMBER 5670 IS A CONTINUATION OF THE 00045605
C MODIFICATION DISCUSSED IN THE COMMENTS CONTAINED IN SECTION 1.2.1 OF 00045610
C THIS PROGRAM.                        00045615
      GO TO 5650                        00045620
5640 MYCLD=MYRE(I)                      00045630
      DO 5670 MODYR=MYOLD,MYRC          00045635
      DO 5660 LEVEL=1,NLEVEL            00045640
      IF(.NOT.(MODYR.GE.MYREG(LEVEL,M,I).AND.NODYR.LT.MYREG(LEVEL+1,M,I) 00045645
1      ))GO TO 5660                    00045650
      IAGE=MYRC-MODYR+1                 00045651
      SUM1=SUM1+VPOP(I,IYES(IYREF(MODYR)))*ELREG(LEVEL,L,M,I) 00045652
1      *EDECFC(IAGE,L,M,LEVEL,MI)      00045653
2      *PERDEG(IAGE)                   00045654
3      +VPOP(I,IYES(IYREF(MODYR)))*(ELREG(LEVEL,L,M,I) 00045655
4      -PERDEG(IAGE)*ELREG(LEVEL,L,M,I)) 00045656
      GO TO 5670                        00045670
5660 CONTINUE                          00045675
5670 CONTINUE                          00045680
C THE STATEMENT NUMBER '5650' APPEARING IN THE NEXT LINE 00045685
C IS A VEHICLE SOUND LEVEL DEGRADATION MODIFICATION DESCRIBED IN 00045686
C SECTION 1.2.1 OF THIS PROGRAM. 00045687
5650 PLC=PLO+SUM1*PERCNT(M,KPER(K),IPER(I))*USAGE 00045700
C                                     00046000
5620 CONTINUE                          00046010
5610 CONTINUE                          00046100
C                                     00046200
C SECTION 5.6 CONTINUED. COMPUTE PLO AND ALO FROM SUM 00046300
C                                     00046400
      IF(PLO.EQ. 0.0E0)ALEVEL(K,L)= 0.0E0 00046500
      IF(PLO.NE. 0.0E0)ALEVEL(K,L)= 10.*(ALOG10(PLO)+FACT2(ID,J,K))00046600
      IF(ALEVEL(K,L).GT.DDBA(1)) WRITE(6,5532) K,L,ALEVEL(K,L) 00046610

```

Figure B-2. (Continued)

```

5532      FORMAT(' ', 'ALEVEL IS TOO HIGH...K= ', I2, ' L= ', I2, ' ALO=', 00046620
C          F10.3) 00046630
C          00046700
5530 CONTINUE 00046900
C          00047000
C          00047010
C DUMP ALEVEL 00047020
C          00047030
C          IF(IDUMP(10).EQ.1) CALL PDUMP(IYRN, IYRN, 4, J, J, 4, ID, ID, 4, 00047040
D10 2          ALEVEL(1, 1), ALEVEL(6, 5), 5) 00047050
C          00047100
C SECTION_5.7 COMPUTATION OF SECONDARY EXPOSURE FOR THE BASELINE YEAR 00047200
C          00047300
C          00047400
C SECTION 5.7.1 FIRST COMPUTE DETAILED EXPOSURE IN DB BANDS 00047500
C          00047600
C          DO 5713 K      = 1, NHT 00047700
C          00047740
C          B1      = DONE(ID, J, K) 00047800
C          B2      = BTWO(ID, J, K) 00047900
C          XKINK   = XK(ID, J, K) 00048000
C          A1      = AONE(ID, J, K) 00048100
C          A2      = ATWO(IT) 00048200
C          00048300
C          DO 5728 IDB   = 1, N16DB 00048400
C          00048440
C          PMYEXP(IDB, K) = 0.0EO 00048500
C          PMYLWP(IDB, K) = 0.0EO 00048600
C          EXPINC(IDB, K) = 0.0EO 00048700
C          EXPDEC(IDB, K) = 0.0EO 00048710
C          PXPDBK(IDB)   = 0.0EO 00048720
C          00048740
5728 CONTINUE 00048800
C          00048900
C          IF(ICCNT(3).EQ.1.AND.KMASK(K).EQ.0) GO TO 5713 00048920
C          00048940
C          DO 5714 L      = 1, NSR 00049000
C          00049040
C          ALO      = ALEVEL(K, L) 00049100
C          IF(ALO.LE. 0.0EO) PXPDBK(16) = PXPDBK(16) + 00049200
C          WDTHPZ(ID, J)*MILE(K, J, ID, L)*FPROAD(J, K)*FACRET 00049210
C          IF(ALO.LE. 0.0EO) GO TO 5714 00049220
C          IDBFLG = 0 00049300
C          DBEDGE = DBLEV( EDGEFZ(ID, J, K)) 00049310
C          00049340
C          DO 5715 IDB   = 2, N16DB 00049400
C          00049440
C          IF (DDBA(IDB).GE.ALO) GO TO 5715 00049500
C          IF (IDBFLG.NE.0) GO TO 5717 00049600
C          DBMEAN   = (AMAX1(DDBA(IDB), DBEDGE)+ALO)/ 2.0EO 00049700
C          XLO      = C2D(ID, J, K) 00049800

```

Figure B-2. (Continued)

```

IDBFLG      = 1                                00049900
GO TO 5716                                     00050000
C
5717      XLC      = XUP                        00050040
IF(DDBA(IDB).LT.DBEDGE) DBMEAN = (DBEDGE+DDBA(IDB-1))/ 2.0E000050200
IF(DDBA(IDB).GE.DBEDGE) DBMEAN = ADDBA(IDB)     00050220
5716      XUP      = AMIN1(RAD(DDBA(IDB)),EDGEFZ(ID,J,K)) 00050300
POPINC      = FACRET*FPROAD(J,K)*(XUP-XLO)*MILE(K,J,ID,L) 00050400
PXPDBK(IDB) = PXPDBK(IDB)+POPINC             00050500
IF(DDBA(IDB).GE.CL) PMYEXP(IDB,K) = PMYEXP(IDB,K)+POPINC 00050600
IF(DDBA(IDB).GE.CL) PMYLWP(IDB,K) = PMYLWP(IDB,K)+      00050700
C
POPINC * (DBMEAN-CL) / 2.0E1                 00050800
IF(XUP.EQ.EDGEFZ(ID,J,K)) GO TO 5714         00051100
C
5715      CONTINUE                             00051140
5714      CONTINUE                             00051200
C
CSKIP                                           00051300
C
IF(ICONT(2).EQ.1) GOTO 5713                  00051310
C
C SECTION 5.7.2 COMPUTATION OF EXTRA IMPACT DUE TO SECONDARY EXPOSURE 00051320
C
C
C
DO 5720 KP      = 1,NHT                       00051330
C
E1      = BONE(ID,J,KP)                       00051340
A1      = AONE(ID,J,KP)                       00051400
B2      = BTWO(ID,J,KP)                       00051500
XKINK   = XK(ID,J,KP)                         00051540
C
DO 5721 IDB    = 2,N16DB                      00051800
C
IF(PXPDBK(IDB).EQ. 0.0E0) GO TO 5721         00051900
Y      = ADDBA(IDB)                           00051940
C
DO 5722 L      = 1,NSR                       00052000
C
ALO     = ALEVEL(KP,L)                       00052010
IF(ALO.LE. 0.0E0.OR.CDBA(J,IDB).GE.ALO) GO TO 5722 00052100
DBEDGE = DBLEV(EDGE(ID,J))                   00052100
IF(DBEDGE.GE.ALO) WRITE(6,5790) IYRN,J,ID,K,KP,DBEDGE,A1,A2, 00052200
B1,B2,ALO,ALO                                00052240
5790      FORMAT(' ',I4,4I3,1X,7F10.3)       00052300
IDBFLG = 0                                    00052340
C
DO 5723 JDB    = 2,N16DB                      00052540
C
IF(IDBFLG.NE.0) GO TO 5724                   00052600
IF(DDBA(JDB).GE.ALO) GO TO 5723              00052640
XLO     = CZD(ID,J,KP)                       00052700
00052800
00052900
00052930
00053000
00053040
00053100
00053140
00053200
00053300
00053400

```

Figure B-2. (Continued)

```

      ILBFLG = 1
      GO TO 5726
C
5724      XLO = XUP
5726      IF(Y.LT.CL) DBLG = AMAX1(CDBA(J, IDB), DDBA(JDB), DBEDGE)
          IF(Y.GE.CL) DBLO = AMAX1(DDBA(JDB), DBEDGE)
          XUP = RAD(DBLO)
          DELEXP = (XUP-XLO) * MILE(KP, J, ID, L) * PXPDBK(IDB)
          EXPINC(MIXDB(IDB, JDB), K) = EXPINC(MIXDB(IDB, JDB), K) + DELEXP
          IF(Y.GE.CL) EXPDEC(IDB, K) = EXPDEC(IDB, K) - DELEXP
          IF(DBLO.LE.DBEDGE.OR.(Y.LT.CL.AND.DBLO.LE.CDBA(J, IDB)))
C
      GO TO 5722
C
5725 CONTINUE
5722 CONTINUE
5721 CONTINUE
5720 CONTINUE
5713 CONTINUE
C
C SECTION 5.8 DERIVE ROW AND COLUMN SUMS FROM DETAILED MATRICES
C
      DO 5727 IDB = 1, N1GDB
      DO 5727 K = 1, NHT
C
          EXPNET = PMYEXP(IDB, K) + (EXPINC(IDB, K) + EXPDEC(IDB, K)) *
C
C
          ENINET = PMYLWP(IDB, K) + (EXPINC(IDB, K) + EXPDEC(IDB, K)) *
C
C
          FACT3(ID, J) * (ADBA(IDB) - CL) / 2.0E1 * FI(J)
C
          EXPDB(IDB, IYRN) = EXPDB(IDB, IYRN) + EXPNET
          ENIDB(IDB, IYRN) = ENIDB(IDB, IYRN) + ENINET
C
          PEXPK(K, IYRN) = PEXPK(K, IYRN) + EXPNET
          PIMP(K, IYRN) = PIMP(K, IYRN) + EXPNET * FI(J)
          ALWPK(K, IYRN) = ALWPK(K, IYRN) + ENINET
C
          PEXPA = PEXPA + EXPNET
          PIMPA = PIMPA + EXPNET * FI(J)
          ENIA = ENIA + ENINET
C
5727 CONTINUE
C
C DUMP DETAILED IMPACT
C
      IF(IDUMP(11).EQ.1) CALL PDUMP( IYRN, IYRN, 4, J, J, 4, ID, ID, 4,
D11 2      EXPINC(1, 1), EXPINC(16, 6), 5, EXPDEC(1, 1), EXPDEC(16, 6), 5,
D11 3      PMYLWP(1, 1), PMYLWP(16, 6), 5, PMYEXP(1, 1), PMYEXP(16, 6), 5)
C
5520 CONTINUE
C
C
C

```

Figure B-2. (Continued)

PEXPJ(J,IYRN)	=	PEXPA	00059700
PIMPJ(J,IYRN)	=	PIMPA	00059800
ALWPJ(J,IYRN)	=	ENIA	00059900
PEXP	=	PEXP + PEXPA	00060000
PIMP	=	PIMP + PIMPA	00060100
ENI	=	ENI + ENIA	00060200
POPOP	=	POPOP + PGF(JPGF(J)) * PCP(J)	00060300
C			00060400
5510	CONTINUE		00060500
C			00060600
C			00060700
C			00060800
C	SECTION 5.8.1	STORE OVERALL IMPACT DATA TO BE PRINTED AT THE END	00060900
C		OF THE TIMESTREAM.	00061000
C			00061100
	TOPCP(IYRN)	= POPOP	00061200
	POPEXP(IYRN)	= PEXP	00061300
	POPIMP(IYRN)	= PIMP	00061400
	ALWPOP(IYRN)	= ENI	00061500
C			00061600
5000	CONTINUE		00061700
C			00061800
C	SECTION 6.0	END OF TIMESTREAM. PRINT OUT STORED DATA	00061900
C			00062000
C	DUMP ANNUAL METRICS		00062010
C			00062020
	IF(IDUMP(12).EQ.1)	CALL PDUMP(POPEXP(1),STOPGF(9,9),5,	00062030
D12	2	ENIDB(2,1),EXPDB(16,9),5)	00062040
C			00062050
	IF(IPRINT(5).EQ.1)	CALL PRINT5	00062060
	IF(ICONT(1).EQ.1)	GO TO 6001	00062100
	CALL PRINT6(IPL0T,IPRINT(6))		00062110
	IF(IPRINT(7).EQ.1)	CALL PRINT7	00062150
	IF(IPRINT(8).EQ.1)	CALL PRINT8	00062200
	IF(IPRINT(9).EQ.1)	CALL PRINT9(1)	00062300
	IF(IPRINT(9).EQ.1)	CALL PRINT9(2)	00062400
	IF(IPRINT(10).EQ.1)	CALL PRNT10	00062500
6001	IF(IPRINT(11).EQ.1)	CALL PRNT11	00062510
C			00062520
C			00062600
C	SECTION 7.0	READ IN ANOTHER REGULATION SCENARIO	00062700
C			00062800
C			00063000
7000	STOP		00063100
C			00063200
C	SECTION 8.0	DEBUG PACKETS	00063300
C			00063400
C	DEBUG SUBCHK		00063500
C	AT 13		00063600
C	DISPLAY N16DB		00063700
C	TRACE ON		00063800
C	END		00064000

Figure B-2. (Continued)

Figure B-3. Noise Impact Printout Using DEGRAC1
as the Main Program

	TOTAL US POPULATION	POPULATION EXPOSED >55DB, PEXP	RELATIVE EXPOSURE PEXP/TOPOP	POPULATION IMPACTED POPIMP	LEVEL- WEIGHTED POPULATION LWP	NOISE IMPACT INDEX, NII= LWP/TOPOP	CHANGE IN LWP DLWP= LWPO-LWP	RELATIVE CHANGE IN IN LWP RCI= DLWP/LWPO
UNIT>	MILLIONS	MILLIONS	PERCENT	MILLIONS	MILLIONS	PERCENT	MILLIONS	PERCENT
YEAR								
1974	216.70	82.11	37.89	82.11	25.67	11.85	0.0	0.0
1980	232.80	87.78	37.71	87.78	27.70	11.90	-2.04	-7.93
1985	246.08	90.81	36.90	90.81	27.78	11.29	-2.12	-8.24
1990	259.37	93.19	35.93	93.19	27.46	10.59	-1.79	-6.98
1995	272.24	99.90	36.69	99.90	29.16	10.71	-3.49	-13.61
2000	285.11	110.31	38.69	110.31	32.56	11.42	-6.89	-26.84
2005	297.99	121.49	40.77	121.49	36.35	12.20	-10.68	-41.62
2010	310.86	132.88	42.74	132.88	40.34	12.98	-14.67	-57.16
2013	318.59	140.03	43.95	140.03	42.91	13.47	-17.24	-67.15

Figure B-4. Noise Impact Printout Using VARNEF9R
as the Main Program

	TOTAL US POPULATION	POPULATION EXPOSED >55DB, PEXP	RELATIVE EXPOSURE PEXP/TOPOP	POPULATION IMPACTED POPIMP	LEVEL- WEIGHTED POPULATION LWP	NOISE IMPACT INDEX, NII= LWP/TOPOP	CHANGE IN LWP DLWP= LWPO-LWP	RELATIVE CHANGE IN IN LWP RCI= DLWP/LWPO
UNIT>	MILLIONS	MILLIONS	PERCENT	MILLIONS	MILLIONS	PERCENT	MILLIONS	PERCENT
YEAR								
1974	216.70	82.11	37.89	82.11	25.67	11.85	0.0	0.0
1980	232.80	87.58	37.62	87.58	27.61	11.86	-1.94	-7.56
1985	246.08	90.34	36.71	90.34	27.56	11.20	-1.89	-7.37
1990	259.37	92.54	35.68	92.54	27.15	10.47	-1.48	-5.78
1995	272.24	99.19	36.44	99.19	28.02	10.59	-3.15	-12.28
2000	285.11	109.57	38.43	109.57	32.19	11.29	-6.52	-25.41
2005	297.99	120.70	40.51	120.70	35.95	12.07	-10.28	-40.07
2010	310.86	132.05	42.48	132.05	39.90	12.84	-14.24	-55.46
2013	318.59	139.19	43.69	139.19	42.45	13.32	-16.78	-65.36

B-21A

Table 1
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 1
 LEVEL : 1978
 VEHICLE TYPE : 8
 PERDEG : .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 2
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 2
 LEVEL: 1978
 VEHICLE TYPE: 8
 PERDEG: .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 4
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 4
 LEVEL: 1978
 VEHICLE TYPE: 8
 PERDEG: .08

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	3	0	2	
	2	3	0	2	
	3	3	3	0	
	4	1.5	3	0	
	5	0	3	0	

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

CORRECTION!

**THE PREVIOUS DOCUMENT(S)
MAY HAVE BEEN FILMED
INCORRECTLY ...**

RESHOOT FOLLOWS!

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Table 3
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 3
 LEVEL: 1978
 VEHICLE TYPE: 8
 PERDEG: .08

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	3	0	2	0
	2	3	0	2	0
	3	3	3	0	0
	4	1.5	3	0	0
	5	0	3	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 4
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 4
 LEVEL: 1978
 VEHICLE TYPE: 8
 PERDEG: .08

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	3	0	2	
	2	3	0	2	
	3	3	3	0	
	4	1.5	3	0	
	5	0	3	0	

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 5
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 5
 LEVEL : 1972
 VEHICLE TYPE : 8
 PERDEG : .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 6
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 1
 LEVEL: 1982
 VEHICLE TYPE: 8
 PERDEG: .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 7
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 2
 LEVEL : 1972
 VEHICLE TYPE : 8
 PERDEG : .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 8
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 3
 LEVEL: 1972
 VEHICLE TYPE: 8
 PERDEG: .08

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	3	0	2	0
	2	3	0	2	0
	3	3	3	0	0
	4	1.5	3	0	0
	5	0	3	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 9
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 4
 LEVEL: 1972
 VEHICLE TYPE: 8
 PERDEG: .08

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	3	0	2	0
	2	3	0	2	0
	3	3	3	0	0
	4	1.5	3	0	0
	5	0	3	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 10
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 5
 LEVEL : 1982
 VEHICLE TYPE : 8
 PERDEG : .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 11
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 1
 LEVEL: 1978
 VEHICLE TYPE: 9
 PERDEG: .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 12
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 2
 LEVEL : 1972
 VEHICLE TYPE : 9
 PERDEG : .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 13
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 3
 LEVEL : 1978
 VEHICLE TYPE : 9
 PERDEG : .08

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	3	0	2	0
	2	3	0	2	0
	3	3	3	0	0
	4	1.5	3	0	0
	5	0	3	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 14
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 4
 LEVEL : 1971
 VEHICLE TYPE : 9
 PERDEG : .08

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	3	0	2	0
	2	3	0	2	0
	3	3	3	0	0
	4	1.5	3	0	0
	5	0	3	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 15
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 5
 LEVEL: 1978
 VEHICLE TYPE: 9
 PERDEG: .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 16
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 1
 LEVEL: 1982
 VEHICLE TYPE: 9
 PERDEG: .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 17
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 2
 LEVEL: 1982
 VEHICLE TYPE: 9
 PERDEG: .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 18
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 3
 LEVEL: 1972
 VEHICLE TYPE: 9
 PERDEG: .08

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	3	0	2	0
	2	3	0	2	0
	3	3	3	0	0
	4	1.5	3	0	0
	5	0	3	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 19
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 4
 LEVEL : 1982
 VEHICLE TYPE : 9
 PERDEG : .08

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	3	0	2	0
	2	3	0	2	0
	3	3	3	0	0
	4	15	3	0	0
	5	0	3	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Table 20
DEGFAC and PERDEG Values

NOISE DEGRADATION MATRIX

AGE : 5
 LEVEL : 1982
 VEHICLE TYPE : 9
 PERDEG : .19

AVERAGE NOISE DEGRADATION (dB)

		OPERATION MODE (M)			
		ACCEL	DECEL	CRUISE	IDLE
SPEED RANGE (L)	1	2	0	1	0
	2	2	0	1	0
	3	2	2	0	0
	4	1	2	0	0
	5	0	2	0	0

SPEED RANGE DEFINITIONS (MPH)

SPEED RANGE MODE	1	2	3	4	5
ACCEL	0-20	0-30	0-40	0-50	0-60
DECEL	20-0	30-0	40-0	50-0	60-0
CRUISE	<25	25-34	35-44	45-54	>55
IDLE	0	0	0	0	0

Intentionally Left Blank

*B-42

Intentionally Left Blank

B-43

Intentionally Left Blank

B-44

Table 24
ALREG Values (Noise Emission Levels, in-dBA)

TYPE 1		TYPE 2	
ACCELERATION MODE		ACCELERATION MODE	
YEAR	1974	YEAR	1974
0-20 MPH	59.30	0-20 MPH	60.50
0-30	61.30	0-30	62.70
0-40	63.80	0-40	63.70
0-50	66.80	0-50	65.30
0-60	69.70	0-60	67.80
ACCELERATION MODE		DECELERATION MODE	
YEAR	1974	YEAR	1974
20-0 MPH	59.30	20-0 MPH	59.30
30-0	59.10	30-0	59.10
40-0	60.10	40-0	60.10
50-0	61.20	50-0	61.20
60-0	62.00	60-0	62.00
CRUISE MODE		CRUISE MODE	
YEAR	1974	YEAR	1974
<25 MPH	59.00	<25 MPH	59.00
25-34	62.00	25-34	62.00
35-44	66.00	35-44	66.00
45-54	69.50	45-54	69.50
>55	72.00	>55	72.00
IDLE MODE		IDLE MODE	
YEAR	1974	YEAR	1974
	66.00		66.00

Table 25
ALREG Values (Noise Emission Levels, in dBA)

TYPE 3

TYPE 4

ACCELERATION		MODE	
YEAR>	1974		
0-20 MPH	60.20		
0-30	62.40		
0-40	63.90		
0-50	65.50		
0-60	67.20		

DECELERATION		MODE	
YEAR>	1974		
20-0 MPH	50.50		
30-0	56.10		
40-0	60.10		
50-0	63.20		
60-0	65.80		

CRUISE		MODE	
YEAR>	1974		
425 MPH	59.80		
25-34	62.40		
35-44	66.40		
45-54	69.50		
55	72.80		

IDLE		MODE	
YEAR>	1974		
	66.80		

ACCELERATION		MODE	
YEAR>	1974		
0-20 MPH	62.50		
0-30	64.00		
0-40	65.10		
0-50	66.40		
0-60	67.80		

DECELERATION		MODE	
YEAR>	1974		
20-0 MPH	50.50		
30-0	56.10		
40-0	60.10		
50-0	63.20		
60-0	65.80		

CRUISE		MODE	
YEAR>	1974		
425 MPH	59.80		
25-34	62.40		
35-44	66.40		
45-54	69.50		
55	72.80		

IDLE		MODE	
YEAR>	1974		
	66.80		

Table 26
ALREG Values (Noise Emission Levels, in dBA)

TYPE 5		ACCELERATION MODE			
YEARS	1974				
0-20 MPH	62.20				
0-40	64.30				
0-60	65.00				
0-80	67.00				
0-90	68.00				
		DECELERATION MODE			
YEARS	1974				
20-0 MPH	51.70				
30-0	57.30				
40-0	61.30				
50-0	64.00				
60-0	67.00				
		CRUISE MODE			
YEARS	1974				
45 MPH	61.00				
25-30	61.00				
35-40	67.00				
45-50	70.70				
55	73.20				
		IDLE MODE			
YEARS	1974				
	66.00				

TYPE 6		ACCELERATION MODE			
YEARS	1974				
0-20 MPH	62.30				
0-30	64.00				
0-40	66.00				
0-50	67.00				
0-60	68.70				
		DECELERATION MODE			
YEARS	1974				
20-0 MPH	53.00				
30-0	59.00				
40-0	63.00				
50-0	66.10				
60-0	68.70				
		CRUISE MODE			
YEARS	1974				
45 MPH	62.70				
25-30	65.30				
35-40	69.30				
45-50	72.00				
55	76.00				
		IDLE MODE			
YEARS	1974				
	66.00				

Table 27
ALREG Values (Noise Emission Levels, in dBA)

TYPE 7				TYPE 8			
ACCELERATION		MODEL		ACCELERATION		MODEL	
YEARS	1974			YEARS	1974	1978	1982
0-20 MPH	65.20			0-20 MPH	75.10	75.10	74.80
0-30	66.80			0-30	75.70	75.70	75.40
0-40	67.50			0-40	76.50	76.50	76.20
0-50	68.30			0-50	77.50	77.50	77.50
0-60	69.30			0-60	78.70	78.70	78.80
DECELERATION		MODEL		DECELERATION		MODEL	
YEARS	1974			YEARS	1974	1978	1982
20-0 MPH	54.50			20-0 MPH	65.70	65.70	65.80
30-0	57.50			30-0	65.70	65.70	65.80
40-0	61.40			40-0	69.90	69.90	69.80
50-0	65.00			50-0	73.20	73.20	73.10
60-0	67.80			60-0	75.90	75.90	75.80
CRUISE		MODEL		CRUISE		MODEL	
YEARS	1974			YEARS	1974	1978	1982
425 MPH	61.80			425 MPH	74.40	74.40	74.20
25-34	64.20			25-34	76.40	76.40	76.20
35-44	66.20			35-44	76.40	76.40	76.30
45-54	71.30			45-54	79.70	79.70	79.60
655	75.80			655	82.30	82.30	82.30
IDLE		MODEL		IDLE		MODEL	
YEARS	1974			YEARS	1974	1978	1982
	48.80				54.80	54.80	54.80

Table 28
ALREG Values (Noise Emission Levels, in dBA)

TYPE 9				TYPE 10			
ACCELERATION MODE				ACCELERATION MODE			
YEARS	1974	1976	1982	YEARS	1974		
0-20 MPH	66.70	70.00	75.00	0-20 MPH	61.00		
0-10	62.00	70.00	70.00	0-10	62.00		
0-40	62.00	70.10	70.00	0-40	62.30		
0-50	63.00	70.00	70.00	0-50	62.00		
0-60	63.20	70.10	77.70	0-60	62.00		
DECELERATION MODE				DECELERATION MODE			
YEARS	1974	1976	1982	YEARS	1974		
20-0 MPH	73.70	76.10	67.00	20-0 MPH	71.00		
30-0	73.70	76.10	67.00	30-0	71.00		
40-0	70.70	73.00	71.00	40-0	73.00		
50-0	70.10	76.00	73.70	50-0	70.00		
60-0	63.10	70.00	70.10	60-0	77.10		
CRUISE MODE				CRUISE MODE			
YEARS	1974	1976	1982	YEARS	1974		
425 MPH	66.70	77.20	70.00	425 MPH	70.00		
25-50	66.70	77.20	70.00	25-50	70.00		
35-40	62.10	70.00	70.00	35-40	70.00		
45-50	64.50	61.00	70.00	45-50	60.20		
955	60.50	63.70	62.10	955	61.70		
IDLE MODE				IDLE MODE			
YEARS	1974	1976	1982	YEARS	1974		
	63.00	60.00	57.00		62.00		

Table 29
ALREG Values (Noise Emission Levels, in dBA)

TYPE 11		TYPE 12	
ACCELERATION MODE		ACCELERATION MODE	
YEARS	1974	YEARS	1974
0-20 MPH	81.00	0-20 MPH	77.00
0-30	81.00	0-30	78.10
0-40	81.10	0-40	78.40
0-50	81.20	0-50	79.00
0-60	81.50	0-60	79.40
DECELERATION MODE		DECELERATION MODE	
YEARS	1974	YEARS	1974
20-0 MPH	83.70	20-0 MPH	83.70
30-0	87.80	30-0	87.80
40-0	70.00	40-0	70.00
50-0	72.90	50-0	72.90
60-0	74.70	60-0	74.70
CRUISE MODE		CRUISE MODE	
YEARS	1974	YEARS	1974
<25 MPH	73.00	<25 MPH	73.00
25-34	73.00	25-34	73.00
35-44	75.00	35-44	75.00
45-54	78.10	45-54	78.10
55	79.00	55	79.00
IDLE MODE		IDLE MODE	
YEARS	1974	YEARS	1974
	58.00		58.00

Table 30
ALREG Values (Noise Emission Levels, in dBA)

TYPE 13

TYPE 14

ACCELERATION MODE				
YEARS	1974	1980	1982	1985
0-20 MPH	71.10	71.10	71.10	69.50
20-30	74.00	74.00	73.10	71.10
30-40	75.00	75.00	73.00	71.00
40-50	75.70	75.70	73.00	71.00
50-60	75.00	75.00	73.10	72.10

DECELERATION MODE				
YEARS	1974	1980	1982	1985
20-0 MPH	61.10	61.10	59.70	57.70
30-0	65.00	65.00	64.10	62.10
40-0	66.10	66.00	67.20	65.20
50-0	71.00	71.00	69.00	67.00
60-0	73.00	73.00	71.00	69.00

CRUISE MODE				
YEARS	1974	1980	1982	1985
<25 MPH	71.10	71.10	69.10	67.10
25-30	71.10	71.10	69.10	67.10
30-40	70.00	70.00	72.00	70.00
40-50	70.00	70.00	73.10	71.10
>50	70.00	70.00	77.10	75.10

IDLE MODE				
YEARS	1974	1980	1982	1985
	69.00	69.00	69.00	67.00

ACCELERATION MODE				
YEARS	1974			
0-20 MPH	67.10			
20-30	69.10			
30-40	69.00			
40-50	69.00			
50-60	69.10			

DECELERATION MODE				
YEARS	1974			
20-0 MPH	70.70			
30-0	66.10			
40-0	62.20			
50-0	65.00			
60-0	67.00			

CRUISE MODE				
YEARS	1974			
<25 MPH	65.10			
25-30	65.10			
30-40	66.00			
40-50	67.10			
>50	65.10			

IDLE MODE				
YEARS	1974			
	72.00			

APPENDIX C

Source Code Listings of NRTNEM Version 9R

This appendix contains the listings of the FORTRAN source code. For each module, the cross-reference listing is given first, followed by the edited source listing as produced by the IBM FORTRAN H Extended Compiler, except for BLOCK DATA modules where the standard source listing precedes the cross-reference. The listings are not identified by section, figure, or table numbers, but the modules appear in the manual's table of contents with the appropriate page numbers. The modules are named by their member name in TRAWO which is unique. The FORTRAN global symbol names are not always unique since GAR and SEM modules often use the same globals, but are derived from different source modules. The sequence of modules is the same as shown in Figure 3-1.

C.1 GAR Modules

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NDOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
NOSOURCE EBCDIC NOLIST NODECK NDOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** FORTRAN CROSS REFERENCE LISTING*****

SYMBOL INTERNAL STATEMENT NUMBERS

ADD 0002 0003
AL1 0002 0003
AL2 0002 0003
ALOG10 0003

/ STRUCTURED SOURCE LISTING /

001	ISN 0002	FUNCTION ADD(AL1,AL2)	00089700
		C ADDS TWO NOISE LEVELS	00089800
	ISN 0003	ADD*10, ALOG10(10,**(AL1/10.))+10***(AL2/10.))	00089900
	ISN 0004	RETURN	00090000
001)		C	
	ISN 0005	END	00090100

OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NODECK NDOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 4, PROGRAM SIZE = 354, SUBPROGRAM NAME = ADD

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

C-2

REQUESTED OPTIONS: XREF,OPT(2),GOSTMT,NOTERMINAL,NOOBJECT

OPTIONS IN EFFECT: NAME(4AIN) OPTIMIZE(2) LINECOJNT(60) SIZE(MAX) AUTOOBL(NONE) SOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP NOFORMAT GOSTMT XREF NOALC NUANSF NOTERM FLAG(1)

ISN 0002

BLOCK DATA

C BLOCK DATA 00064100
CF FILE VARNET4D IS THE FIRST SUBFILE TO VARNET4 00064110
CF FILE LAST UPDATED: 12/29/78 17:07:34 00064120
C 00064130
C 00064140
C 00064150

ISN 0003

C COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),KINC(7),YINC(7), 00064200
B1 2 VINC(7),VBD74(14),VHD77(7),VBOBS(7),VBD90(7), 00064210
B1 3 A(2,3),DBK(3),CZD(4,9,6),ALC(9),F1(9),PGF(5), 00064220
B1 4 PGF0(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9), 00064230
B1 5 AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPOP(14), 00064240
B1 6 XKINK,A1,A2,B1,B2,ALO,CON0,CON2,IVAF(14), 00064250
B1 7 MYREF(6),IVBD(14),LIFE(4),IEGAGE(6),JWYLE(9,4), 00064260
B1 8 JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MUDYR,IT,I 00064270
C 00064280
C THE FOLLOWING COMMON BLOCKS SERVE PRINT SUBROUTINES 00064290
C 00064300

ISN 0004

C COMMON /BIG002/ ALMEL(5,5,4,14),GVTOT(9),VIUT(14,9),DDBA(16), 00064310
B2 2 POPEXP(9),POPIHP(9),ALWJP(9),TOPOP(9), 00064320
B2 3 PIMPK(6,9),PEXP(6,9),ALWPK(6,9),PIMPJ(9,9), 00064330
B2 4 PEXPJ(9,9),ALPJ(9,9),POPLTN(4,9),STOPGF(8,9), 00064340
B2 5 POPDEN(4,9),ENIDR(16,9),EXPDB(16,9),NIDD(9), 00064350
B2 6 MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4), 00064360
B2 7 MYRNET(9),MYRB,MYRN,NVT,NAT,NHT,NDR,N16DB, 00064370
B2 8 ITABLE 00064380
C 00064390
C END PRINT COMMON BLOCK 00064400
C 00064410

ISN 0005

C COMMON /BIG003/ GAMM(6,9),ALEVEL(6,5),BONE(4,9,6),BTWO(4,9,6), 00064450
B3 2 XK(4,9,6),FACT2(4,9,6),AML(9,6,5),VML(14,4,5), 00064460
B3 3 EDGE(4,9),EDGEFZ(4,9,6),WTHFZ(4,9),POP(9),V(5), 00064470
B3 4 SIG(5,4,5,14),FLOMIX(14,4,5),PERCNT(4,2,4), 00064480
B3 5 PMYEXP(16,6),PMYLP(16,6),EXPIVC(16,6), 00064490
B3 6 EXPDEC(16,6),XPDBK(16),CDBA(9,16),ADBA(16), 00064500
B3 7 DBSUM(16,16),MIXDR(16,16),FACT3(4,9),FACT4(4,9), 00064510
B3 8 JFLO(9),KFLO(6),KPER(6),IPER(14) 00064530
C 00064540
C 00065900
C DATA STATEMENTS FOLLOW 00066000
C 00066100
C 00066200
C AREA AND POPULATION DATA, 00066300
C 00066400
C NIDD(J) IS THE NUMBER OF VARIABLE DENSITY REGIONS IN AREA TYPE J 00066500
C 00066600

ISN 0006

C DATA NIDD/3,4,4,3,3,3,4,4,1/ 00066700
C 00066800
C POPULATION DENSITIES, NUMBER OF PEOPLE PER SQ. MILE. 00066900
C 00067000

ISN 0007

C DATA POPDEN / 00067100
C ID# 1 2 3 4 00067200
C J# 1 41026., 6236.8, 2583.6, 0., 00067300
C 00067400

C-3

BEST COPY AVAILABLE

C IYREF=

1>	2100062,,	370391,,	13905,,	42057,,	184460,,	83436,,	00079000
2>	506559,,	59871,,	1084,,	3319,,	28263,,	20129,,	00079200
3>	883563,,	70227,,	1886,,	4419,,	30378,,	35063,,	00079300
4>	1167286,,	69094,,	2246,,	6706,,	47511,,	46317,,	00079400
5>	2348827,,	97573,,	1479,,	12571,,	58226,,	93308,,	00079500
6>	3658626,,	121684,,	0,,	0,,	0,,	145340,,	00079600
7>	5151096,,	152266,,	0,,	0,,	0,,	204629,,	00079700
8>	7397576,,	185276,,	0,,	0,,	0,,	293871,,	00079800
9>	8461220,,	211814,,	0,,	0,,	0,,	336125,,	00079900
10>	8581706,,	211166,,	0,,	0,,	0,,	340911,,	00080000
11>	10274987,,	229451,,	0,,	0,,	0,,	408177,,	00080100
12>	11161141,,	291911,,	0,,	0,,	0,,	443380,,	00080200
13>	11003084,,	274759,,	0,,	0,,	0,,	437103,,	00080300
14>	11170210,,	281879,,	0,,	0,,	0,,	443740,,	00080400
15>	13145920,,	387705,,	0,,	0,,	0,,	522226,,	00080500
16>	14599324,,	457770,,	0,,	0,,	0,,	579971,,	00080600
17>	13959524,,	447578,,	0,,	0,,	0,,	518315,,	00080700

C VBD74(I) = VEHICLE BREAKDOWN RATIO IN ITS IVBD GROUP.
 C IVBD(I) = THE VBD GROUP TO WHICH TYPE I BELONGS.
 C XINC(I=1-7) ARE INTERPOLATORY INCREMENTS WHICH ARE USED TO CALCULATE
 C THE CURRENT VBD FROM VBD74.

ISN 0025

DATA IVBD/1,1,1,1,1,1,1,2,2,3,4,5,6,6/

C VAF(I,IAF,IAE) = FOUR ATTRITION FACTOR TABLES FOR VEHICLES
 C IAE = AGE OF VEHICLES IN THE CURRENT YEAR.
 C IAF(I)=1,2,3 OR 4, POINTS TO WHICH COLUMN TO USE FOR TYPE I

ISN 0026

DATA VAF /

IAE	1	2	3	4	1	2	3	4
1-2>	1.000	1.000	1.000	0.98	0.9998	1.0000	1.0000	0.96
3-4>	0.9990	0.9998	0.9998	0.90	0.9960	0.9927	0.9927	0.75
5-6>	0.9877	0.9711	0.9711	0.55	0.9683	0.9329	0.9329	0.37
7-8>	0.9307	0.8783	0.8783	0.26	0.8677	0.8089	0.8089	0.17
9-10>	0.7756	0.7272	0.7272	0.10	0.6570	0.6364	0.6364	0.05
11-12>	0.5214	0.5402	0.5402	0.02	0.3854	0.4424	0.4424	0.01
13-14>	0.2583	0.3469	0.3469	0.00	0.1575	0.2576	0.2576	0.00
15-16>	0.0857	0.1780	0.1780	0.00	0.0410	0.1113	0.1113	0.00
17-18>	0.0168	0.0598	0.0598	0.00	0.0057	0.0248	0.0248	0.00
19-20>	0.0	0.0062	0.0062	0.0	0.0	0.0013	0.0013	0.0
21-22>	0.0	0.0013	0.0013	0.0	0.0	0.0000	0.0	0.0
23-24>	0.0	0.0000	0.0	0.0	0.0	0.0000	0.0	0.0
25-26>	0.0	0.0000	0.0	0.0	0.0	0.0000	0.0	0.0

ISN 0027

DATA IYAF/1,1,1,1,1,1,1,2,2,3,3,3,4,4/

C VGF(IYR,IVGF(I)) IS A SET OF FOUR TABLES. EACH TABLE HAS FORTY REAL*4
 C CONSTANTS, ONE FOR EACH YEAR IN THE TIMESTREAM. IT IS THE VEHICLE
 C GROWTH FACTOR FOR VEHICLES IN THAT IVGF GROUP.
 C IVGF(I) IS THE POINTER WHICH POINTS TO THE APPROPRIATE VGF TABLE FOR
 C TYPE I VEHICLES.

ISN 0028

DATA VGF /

TABLE 1. FOR TYPES 1-9,13-14

00080800, 00080900, 00081000, 00081100, 00081200, 00081300, 00081600, 00081900, 00082000, 00082100, 00082200, 00082300, 00082400, 00082500, 00082600, 00082700, 00082800, 00082900, 00083000, 00083100, 00083200, 00083300, 00083400, 00083500, 00083600, 00083700, 00083800, 00083900, 00084000, 00084100, 00084200, 00084300, 00084400, 00084500, 00084600, 00084700, 00084800, 00084900, 00085000, 00085100

```

* 10., 20., 30., 40., 10., 20., 30., 40., 40., 40., 40., 40., 00088590
* 10., 15., 20., 30., 10., 15., 20., 30., 10., 15., 20., 30., 00088600
* 10., 20., 30., 40., 10., 20., 30., 40., 10., 20., 30., 40., 00088610
* 10., 20., 30., 40., 10., 20., 30., 40., 40., 40., 40., 40., 00088620
* 5., 10., 15., 20., 5., 10., 15., 20., 5., 10., 15., 20., 00088630
* 10., 20., 30., 40., 10., 20., 30., 40., 10., 20., 30., 40., 00088640
* 10., 20., 30., 40., 10., 20., 30., 40., 40., 40., 40., 40., 00088650
* 5., 10., 15., 20., 5., 10., 15., 20., 5., 10., 15., 20., 00088660
* 10., 20., 30., 40., 10., 20., 30., 40., 10., 20., 30., 40., 00088670
* 10., 20., 30., 40., 10., 20., 30., 40., 40., 40., 40., 40., 00088680

```

ISN 0035

C
C
C
C
C
C

NDW SET UP VARIOUS CONSTANTS

GAMM, SITE HARDNESS FACTOR

```

DATA GAMM /12*0.,2*5.4*0.,2*5.4*0.,2*5.4*0.,2*5.4*0.,18*5./
DATA ITABLE /0/
DATA CDBA / 144 * 0.0E0 /, DBSUM / 256 * 0.0E0 /, MIXDB / 256 * 1 /
DATA FACT3 / 36 * 0.0 /, FACT4 / 36 * 0.0 /
DATA WDTMPZ / 36 * 0.0 /, EDGEFZ / 216 * 0.0 /, XK / 216 * 0.0 /
DATA BONE / 216 * 0.0E0 /, BTNO / 216 * 0.0E0 /
DATA POPLTN / 36 * 0.0 /, POP / 9 * 0.0 /
END

```

ISN 0036
ISN 0037
ISN 0038
ISN 0039
ISN 0040
ISN 0041
ISN 0042
ISN 0043

*****FORTRAN CROSS REFERENCE LISTING*****

C-8 SYMBOL INTERNAL STATEMENT NUMBERS

A	0003	0013
I	0003	
V	0005	0030
A1	0003	
A2	0003	
B1	0003	
B2	0003	
FI	0003	0015
IT	0003	
XK	0005	0040
ADT	0003	0032
ALC	0003	0016
ALO	0003	
AML	0005	
CZD	0003	0034
DBK	0003	0014
NAT	0004	0017
NHT	0004	0017
NSR	0004	0017
VVT	0004	0017
PGF	0003	
POP	0005	0042
SIG	0005	
VAF	0003	0026
VGF	0003	0028
VML	0005	
ADBA	0005	0019
AREA	0003	0009
BDNE	0005	0041

***** O R T H A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
BTMO	0005 0041
COBA	0005 0038
CONO	0003
CON2	0003
DDDA	0004 0010
EDGE	0005
GAMM	0005 0036
IPER	0005 0033
IYAF	0003 0027
IVDD	0003 0025
IVGF	0003 0029
JFLO	0005 0031
JPGF	0003 0000
KFLD	0005 0031
KPER	0005 0033
LANE	0003 0035
LIFE	0003 0022
MILE	0004
MYRD	0004 0017
MYRE	0003
NIDD	0004 0006
NLEV	0004
NYRN	0004
PGFO	0003 0006
REMO	0003 0024
VINC	0003
VPOP	0003
VTOT	0004
XINC	0003
YINC	0003
ALREG	0004
ALHPJ	0004
ALHPK	0004
BVPOP	0003
DBSUM	0005 0030
EH100	0004
EXP08	0004
FACT2	0005
FACT3	0005 0039
FACT4	0005 0039
GVTOT	0004
JNYL8	0003 0012
MYX08	0005 0036
MQDYR	0003
MYREF	0003 0021
MYREC	0004
N1600	0004 0020
PEXPJ	0004
PEXPK	0004
PIMPJ	0004
PIMPK	0004
TDPOP	0004
VDD74	0003
VDD77	0003
VDD85	0003

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

BTWO	0005	0041
COBA	0005	0038
CONO	0003	
CON2	0003	
DDBA	0004	0018
EDGE	0005	
GAMM	0005	0036
IPER	0005	0033
IVAF	0003	0027
IVDD	0003	0025
IVGF	0003	0029
JFLO	0005	0031
JPGF	0003	0008
KFLO	0003	0031
KPER	0005	0033
LANE	0003	0035
LIFE	0003	0022
MILE	0004	
MYRD	0004	0017
MYRE	0003	
NIDD	0004	0006
NLEV	0004	
NYRN	0004	
PGFO	0003	0008
REMO	0003	0024
VINC	0003	
VPOP	0003	
VTOT	0004	
XINC	0003	
YINC	0003	
ALREG	0004	
ALHPJ	0004	
ALHPK	0004	
BYPOP	0003	
DBSUM	0005	0038
ENIDD	0004	
EXPOB	0004	
FACT2	0005	
FACT3	0005	0039
FACT4	0005	0039
GYTOT	0004	
JHYLE	0003	0012
MIXDB	0005	0030
MUDYA	0003	
MYREF	0003	0021
MYREG	0004	
N16DB	0004	0020
PEXPJ	0004	
PEXPJ	0004	
PIMPJ	0004	
PIMPK	0004	
TOPOP	0004	
VDD74	0003	
VDD77	0003	
VDD85	0003	

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
VDD40	0003
WIDTH	0003 0035
XKINK	0003
ALEVEL	0005
ALWPOP	0004
EDGEPI	0005 0040
EKPDEC	0005
EKPINC	0005
FLOMIX	0005
FPARA	0003 0010
FPROAD	0003 0011
IEQAGE	0003 0023
ITABLE	0004 0037
MYRNET	0004
PERCNT	0005
PHYEXP	0005
PHYLP	0005
POPEN	0004 0007
POPEXP	0004
POPIMP	0004
POPLTN	0004 0042
PXPDBK	0005
STOPGF	0004
WDTHPZ	0005 0040

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 *OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODACK NOOBJECT NOHAP NOFORMAT COSTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS .SOURCE STATEMENTS = 42, PROGRAM SIZE = 0, SUBPROGRAM NAME #BIG001

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

98K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMINAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOUBL(NONE) NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NONAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

***** D R T H A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

A	0003		
I	0003		
A1	0003		
A2	0003		
B1	0003		
B2	0003		
PI	0003		
IT	0003		
ADT	0003		
ALC	0003		
AL0	0003		
G2D	0003		
DBK	0003		
QAM	0002	0004	0006
PGF	0003		
VAF	0003		
YGF	0003		
AREA	0003		
CON0	0003	0004	
CON2	0003	0006	
IVAF	0003		
IVB0	0003		
IVGF	0003		
JPGF	0003		
LANE	0001		
LIFE	0001		
MYRE	0003		
PGFO	0003		
REMO	0003		
VINC	0003		
VPOP	0003		
XINC	0003		
YINC	0003		
BVPOP	0003		
CONST	0002	0004	0006
JHYL	0003		
M00YR	0003		
MYHEP	0003		
V0074	0003		
V0077	0003		
V0085	0003		
V0090	0003		
WIDTH	0003		
XKINK	0003		
FPAREA	0003		
FPRDAD	0003		
EDAGE	0003		

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/ STRUCTURED SOURCE LISTING /

```

(001 ISN 0002 FUNCTION CONST(GAM) 00010000
C THIS IS A MORE EFFICIENT SPECIAL CASE OF CON(GAM) 00010100
CX CONST LAST UPDATE: 00020000
C 00020100
C THE FOLLOWING IS A KEYED TABLE OF COMMON AREAS 00020200
C 00020300
CC BIG001 LAST UPDATE: 10/31/78 22:31:44 00020400
CC BIG002 LAST UPDATE: 10/18/78 17:36:26 00020500
CC BIG003 LAST UPDATE: 10/18/78 17:36:26 00020600
CC BIG004 LAST UPDATE: 11/01/78 16:12:41 00020700
C 00020800
C THE FOLLOWING IS A HEADER FOR THE ENTIRE FILE 00020900
C 00021000
CF VARNETD LAST UPDATE: 11/16/78 10:10:49 00021100
C CHANGES: CREATED PHNT11 00021110
C FIXED VBD FOR YEARS BEFORE 1974 00021120
C 00021200
ISN 0003 COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7), 00056321
B1 2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7), 00056322
B1 3A(2,3),DBK(3),C2D(4,9,6),ALC(9),F1(9),PGF(5), 00056323
B1 4PGF0(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9), 00056324
B1 5AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPOP(14), 00056325
B1 6XKINK,A1,A2,B1,B2,ALO,CON0,CON2,IVAF(14), 00056326
B1 7MYREF(6),IVBD(14),LIFE(4),IEQAGE(6),JNYLE(9,4), 00056327
B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MOYR,IT, 00056328
ISN 0004 IF(GAM.EQ. 0.0E0)CONST=CON0 00056350
ISN 0006 IF(GAM.EQ. 0.5E0)CONST=CON2 00056360
ISN 0008 RETURN 00056370
001) C
ISN 0009 END 00056380

```

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```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*NO$SOURCE EBCDIC NOLIST NO$ECK NO$OBJECT NOMAP:FORMAT GOSTMT XREF NO$ALC NO$ANSF NOTERM FLAG(1)
*STATISTICS* SOURCE STATEMENTS * 8, PROGRAM SIZE * 282, SUBPROGRAM NAME = CONST
*STATISTICS* NO. DIAGNOSTICS GENERATED
***** END OF COMPILE ***** 126K BYTES OF CORE NOT USED

```

LEVEL 2.2 (SEPT 76)

DBLEV

09/2007 FURTHER H ENLNDL

DA 10.2 9.0

PAGE

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMINAL,OBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZ(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NULIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
A	0003
I	0003
X	0002 0004 0004 0006 0006
A1	0003 0004
A2	0003 0006
B1	0003 0004
B2	0003 0006
F1	0003
IT	0003
ADT	0003
ALC	0003
ALD	0003 0004 0006
CZD	0003
DBK	0003
PGF	0003
VAF	0003
VGF	0003
AREA	0003
CONU	0003
CON2	0003
IVAF	0003
IVBD	0003
IVGF	0003
JPGF	0003
LANE	0003
LIFE	0003
MYRE	0003
PGFO	0003
REMO	0003
VINC	0003
VPOP	0003
XINC	0003
YINC	0003
BVPOP	0003
DBLEV	0002 0004 0006
JHYLE	0003
MOYR	0003
MYREF	0003
VBD74	0003
VBD77	0003
VBD85	0003
VBD90	0003
WIDTH	0003
XKINK	0003 0004 0006
ALOG10	0004 0006
FPAREA	0003
FPHEAD	0003
ISPAGE	0003

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/ STRUCTURED SOURCE LISTING /
0001 ISN 0002      FUNCTION DBLEV(X)                                00090900
      C GIVEN X, RETURN DBLEV AT X, MYLE CURVE HEADER, INVERSE TO RAD  00091000
      COMMON /B1G001/ VAF(4,26),VGF(40,6),HEMU(6,17),XINC(7),YINC(7),  00091100
      ISN 0003      2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),    00091120
      B1           3A(2,3),DUK(3),CZD(4,9,6),ALC(9),FI(9),PGF(5),    00091140
      B1           4PGF0(5),WIDTH(9,6),FPRDAD(9,6),ADT(6,9),        00091160
      B1           5AREA(4,9),FPAREA(9,4),VPDP(14,26),NVPDP(14),    00091180
      B1           6XKINK,A1,A2,B1,B2,ALU,CONO,CUN2,IVAP(14),      00091200
      B1           7MYREF(6),IVBD(14),LIFE(4),TEDAGE(6),JNYLE(9,4),  00091220
      B1           8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MDDYR,IT,I  00091240
      ISN 0004      IF(X.LE,XKINK)DBLEV=ALU-A1*ALOG10(X)-B1        00091400
      ISN 0006      IF(X.GT,XKINK)DBLEV=ALU-A2*ALOG10(X)-B2        00091500
      ISN 0008      RETURN                                          00091600
001)  C
      ISN 0009      END                                          00091700

```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*NOUSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 8, PROGRAM SIZE = 364, SUBPROGRAM NAME = DBLEV

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

LEVEL 2 (SEPT 76)

FACTOR

08/360 FORTRAN H EXTENDED

DATE 30.2.57.19.05.00

PAGE

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOSUBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NOLIST NODECK NOSUBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL	STATEMENT	NUMBERS
DR	0002	0005	
GAM	0002	0003	0005 0005
DFCL	0002	0005	
FACTOR	0002	0003	0005

/ STRUCTURED SOURCE LISTING /

(001) ISN 0002	FUNCTION FACTOR(GAM,DR,DFCL)	00056400
	CX FACTOR LAST UPDATEI	00056500
	C	00056700
	C FACTOR COMPUTES (DR/C)**GAM	00056800
	C	00056900
ISN 0003	IF(GAM,ED. 0.0E0)FACTOR= 1.0E0	00057000
ISN 0005	IF(GAM,NE. 0.0E0)FACTOR=(DR/DFCL)**GAM	00057100
ISN 0007	RETURN	00057200
	C DEBUG SUBCHK,TRACE,INIT,SUBTHACE	00057300
001) ISN 0008	C	
	C	
	END	00057400

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OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

OPTIONS IN EFFECT: NOSOURCE EBCDIC NOLIST NODECK NOSUBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS: SOURCE STATEMENTS = 7, PROGRAM SIZE = 292, SUBPROGRAM NAME = FACTOR

STATISTICS: NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NDSOURCE,NOTERMAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODL(NONE) NDSOURCE EBCDIC NOLIST NODECK NOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL	INTERNAL STATEMENT NUMBERS																		
A	0003																		
I	0012	0013	0013	0013	0014	0014	0014	0015	0015	0017	0017	0018	0018	0018	0022	0023	0023	0023	0024
	0024	0024	0025	0025	0026														
A1	0003																		
A2	0003																		
B1	0003																		
B2	0003																		
F1	0003																		
I1	0003																		
IT	0003																		
ADT	0003																		
ALC	0003																		
ALO	0003																		
CZD	0003																		
DUK	0003																		
FIX	0002																		
PGF	0003																		
SUM	0007	0017																	
VAF	0003																		
VGF	0003																		
AREA	0003																		
CON0	0003																		
CON2	0003																		
IVAF	0003																		
IVBD	0003																		
IVGF	0003																		
JPGF	0003																		
LANE	0003																		
LIFE	0003																		
MYRE	0003																		
PGF0	0003																		
REMD	0003																		
VINC	0003	0014	0024																
VPOP	0003																		
XINC	0003	0013	0023																
YINC	0003	0008	0009	0018	0026														
BVPOP	0003																		
ICONT	0004	0005																	
IDUMP	0004																		
JWYLE	0003																		
KMASK	0004																		
MODYR	0003																		
MYREF	0003																		
RNAME	0004																		
VBD74	0003	0014	0024																
VBD77	0003	0013	0014	0023	0024														
VBD85	0003	0007	0007	0007	0007	0007	0008	0009	0013	0017	0018	0023	0025						
VBD90	0003	0010	0011	0017	0018	0025													
WIDTH	0003																		

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***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
XKINK	0003
FPAREA	0003
FPROAD	0003
IEQAGE	0003
IPRINT	0004
IVMASK	0004

***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCED
1000	0019	0012 0015
2000	0021	0005
3000	0027	0022

(003 ISN 0002

ISN 0003

ISN 0004

ISN 0005

ISN 0007

ISN 0008

ISN 0009

ISN 0010

ISN 0011

ISN 0012

(001 ISN 0013

ISN 0014

ISN 0015

ISN 0017

ISN 0018

ISN 0019

001)

```

/ STRUCTURED SOURCE LISTING /
SUBROUTINE FIX
CX FIX      LAST UPDATED:  11/01/78 11:17:05
C THIS SUBROUTINE COMPUTES THE NEW ARRAY YINC TO FIX FUNCTION VBD
COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
B1 2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
B1 3A(2,3),DBK(3),CZD(4,9,6),ALC(9),PI(9),PGF(5),
B1 4PGFO(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),
B1 5AREA(4,9),FPAREA(9,4),VPOP(14,26),IVPOP(14),
B1 6XKINK,A1,A2,B1,B2,ALO,CONO,CON2,IVAF(14),
B1 7MYREF(6),IVDD(14),LIFE(4),IEQAGE(6),JWYLE(9,4),
B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MODYR,IT,II
COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6),
B4 2ICONT(12)
C
C FIXES VBD SO THAT CATEGORIES 1 AND 3 DIE AFTER 1990
C VBD      LAST UPDATE:  10/18/78 16:14:37
C
IF(ICONT(4).EQ.1) GOTO 2000
C
SUM =
+ VBD85(5) + VBD85(6) + VBD85(7) + VBD85(4)
YINC(1) = -VBD85(1) / 5.0E0
YINC(3) = -VBD85(3) / 5.0E0
VBD90(1) = 0.0E0
VBD90(3) = 0.0E0
C
C RENORMALIZE THE REST OF YINC ACCORDING TO VBD85
C
OD 1000 I = 1,7
C
XINC(I) = (VBD85(I)-VBD77(I)) / 8.0
YINC(I) = (VBD77(I)-VBD74(I)) / 3.0
IF(I.EQ.1.OR.I.EQ.3) GOTO 1000
VBD90(I) = VBD85(I) / SUM
YINC(I) = (VBD90(I) - VBD85(I)) / 5.0E0
C
CONTINUE
C

```

00064100
00064110
00064200
00064310
00064320
00064330
00064340
00064350
00064360
00064370
00064380
00064500
00064510
00064600
00064700
00064800
00064820
00064840
00064860
00064900
00065000
00065010
00065020
00065030
00065040
00065100
00065120
00065140
00065160
00065180
00065240
00065260
00065414
00065420
00065430
00065440
00065450
00065460

	ISN 0020		RETURN		00065600
			C		00065620
	ISN 0021	2000	CONTINUE		00065640
			C		00065660
	ISN 0022		DO 3000 I = 1,7		00065680
			C		00065690
{002	ISN 0023		XINC(I) = (VBD85(I)-VBD77(I)) / 8.0		00065700
	ISN 0024		YINC(I) = (VBD77(I)-VBD74(I)) / 3.0		00065710
	ISN 0025		VBD90(I) = VBD85(I)		00065730
	ISN 0026		YINC(I) = 0.0E0		00065740
			C		00065750
	ISN 0027	3000	CONTINUE		00065760
002)			C		
	ISN 0028		RETURN		00065770
003)			C		
	ISN 0029		END		00065780

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODDL(NONE)

*OPTIONS IN EFFECT*NO\$SOURCE\$EBCDIC NOLIST NO\$DECK NO\$OBJECT NO\$MAP FORMAT GUSTMT XREF NO\$ALC NO\$ANSF NO\$TERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 20, PROGRAM SIZE = 516, SUBPROGRAM NAME = FIX

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

122K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NOLIST NUDECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL	INTERNAL STATEMENT NUMBERS
J	0015 0015 0021 0021 0021 0024 0024 0024
NAT	0003
NHT	0003
NSR	0003
NVT	0003
DDBA	0003
HEAD	0004 0004 0021 0024
MILE	0003
MYRB	0003
NIDD	0003
NLEV	0003
NYRN	0003
VTOT	0003
ALREG	0003
ALWPJ	0003
ALWPK	0003
ENIDB	0003
EXPOB	0003
GVTOT	0003
MYREG	0003
NIDDB	0003
PEXPJ	0003
PEXPB	0003
PIMPJ	0003
PIMPB	0003
TOPOP	0003
ALHPOP	0003
HEADEN	0002
ITABLE	0003
MYRNET	0003
POPEN	0003
PUREXP	0003
PUMIP	0003
POPLTN	0003
STOPCF	0003

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*****FORTRAN CROSS REFERENCE LISTING*****

LABEL	DEFINED	REFERENCES
1003	0006	0005
1004	0009	0008
1005	0012	0011
1007	0016	0015
1010	0022	0021
1011	0025	0024
1013	0029	0019 0020
2006	0031	0014 0018 0020 0027
2007	0032	0017 0023 0026
2010	0033	0007

*****FORTRAN CROSS REFERENCE LISTING*****

LABEL DEFINED REFERENCES
2011 0034 0010 0013

/ STRUCTURED SOURCE LISTING /

```

(002 ISN 0002      SUBROUTINE HEADER                                00112550
                   CX HEADER LAST UPDATE:                          00112560
                   C THIS SUBROUTINE PRINTS A COMMON HEADER FOR ALL POPULATION TABLES 00112570
                   COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),DOBA(16),    00112600
                   B2 2POPEXP(9),POPIMP(9),ALWPOP(9),TOPOP(9),          00112610
                   B2 3PIMP(6,9),PEXP(6,9),ALWPK(6,9),PIMPJ(9,9),      00112620
                   B2 4PEXPJ(9,9),ALWPKJ(9,9),POPLTH(4,9),STOPCF(9,9), 00112630
                   B2 5POPDEN(4,9),ENIDB(16,9),EXPDB(16,9),MIDD(9),    00112640
                   B2 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),        00112650
                   B2 7MYRNET(9),MYRB,NYRN,NVT,NAT,NHT,NSR,N16DB,      00112660
                   B2 8ITABLE                                          00112670
                   REAL*8 HEAD(9,2)/' OVER ',' 1000-' ,,' 500-' ,,' 200-' ,,'
                   C' 100-' ,,' 50-' ,,' 25-' ,,' 5-' ,,' ,,' ,,'
                   C2x' 2000 ' ,,' 1000 ' ,,' 500 ' ,,' 200 ' ,,' 100 ' ,,'
                   C' 50 ' ,,' 25 ' ,,' RURAL ' ,,'
                   ISN 0004      WRITE(6,1003)                          00112900
                   ISN 0005      1003  FORMAT(' ',112(' '))           00112950
                   ISN 0006      WRITE(6,2010)                          00113000
                   ISN 0007      WRITE(6,1004)                          00113050
                   ISN 0008      1004  FORMAT(' ',T40,'AREA TYPE,J1)    00113100
                   ISN 0009      WRITE(6,2011)                          00113150
                   ISN 0010      WRITE(6,1005)                          00113200
                   ISN 0011      1005  FORMAT(' ',T21,93(' '))         00113250
                   ISN 0012      WRITE(6,2011)                          00113300
                   ISN 0013      WRITE(6,2006)                          00113350
                   ISN 0014      WRITE(6,1007)(J,J=1,9)                 00113400
                   ISN 0015      C
                   (001) ISN 0016      1007  FORMAT(' ',T20,9(I6,3X),T105,'ALL J') 00113450
                   ISN 0017      WRITE(6,2007)                          00113500
                   ISN 0018      WRITE(6,2006)                          00113550
                   ISN 0019      WRITE(6,1013)                          00113600
                   ISN 0020      WRITE(6,2006)                          00113650
                   ISN 0021      WRITE(6,1010)(HEAD(J,1),J=1,9)        00113700
                   (002) C
                   ISN 0022      1010  FORMAT(' ',T6,'PLACE SIZE',T22,9(A8,1X)) 00113750
                   ISN 0023      WRITE(6,2007)                          00113800
                   ISN 0024      WRITE(6,1011)(HEAD(J,2),J=1,9)        00113850
                   ISN 0025      1011  FORMAT(' ',T7,'THOUSANDS',T22,9(A8,1X)) 00113900
                   ISN 0026      WRITE(6,2007)                          00113950
                   ISN 0027      WRITE(6,2006)                          00114000
                   ISN 0028      WRITE(6,1013)                          00114050
                   ISN 0029      1013  FORMAT(' ',112(' '))             00114100
                   ISN 0030      RETURN                                  00114150
                   ISN 0031      2006  FORMAT(' ',11,T21,11,9(8X,11),10X,11) 00114200
                   ISN 0032      2007  FORMAT(' ',11,T21,11,9(8X,11),10X,11) 00114250
                   ISN 0033      2010  FORMAT(' ',11,T21,11,T102,11,T113,11) 00114300
                   ISN 0034      2011  FORMAT(' ',11,T21,11,T102,11,T113,11) 00114350
                   ISN 0035      END                                    00114400

```

OPTIONS EFFECTANAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

LEVEL 2.2 (SEPT 76)

HEADER

OS/360 FORTRAN H EXTENDED

DATE 80.273/19.06.01

PAGE 3

OPTIONS IN EFFECT NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FDRMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 34, PROGRAM SIZE = 1070, SUBPROGRAM NAME = HEADER

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

118K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE((MAX) AUTODHL(NONE)
 NOSOURCE EBCDIC NOLIST NODACK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL INTERNAL STATEMENT NUMBERS

NAT 0003
 NHT 0003
 NSR 0003
 NVT 0003
 DDBA 0003
 MDUM 0002 0004
 MILE 0003
 MYRB 0003 0004
 NIDD 0003
 NLEV 0003
 NYRN 0003
 VTOT 0003
 ALREG 0003
 ALWPK 0003
 ALWPK 0003
 ENIDB 0003
 EXPDB 0003
 GVTOT 0003
 IYBAS 0002 0004
 MYREG 0003
 N16DB 0003
 PEXPK 0003
 PEXPK 0003
 PIMPJ 0003
 PIMPJ 0003
 TOPOP 0003
 ALWPOP 0003
 ITABLE 0003
 MYRNET 0003
 POPDEN 0003
 POPEXP 0003
 POPEXP 0003
 POPLTN 0003
 STOPGF 0003

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/ STRUCTURED SOURCE LISTING /

0001 ISN 0002 FUNCTION IYBAS(MDUM) 00065800
 CX IYBAS LAST UPDATE: 00065810
 C THIS FUNCTION CONVERTS STANDARD NOTATION YEAR TO YR WRT BASELINE 00065900
 ISN 0003 COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),DDBA(16), 00066000
 B2 2POPXP(9),POPEXP(9),ALWPOP(9),TOPOP(9), 00066010
 B2 3PIMPJ(6,9),PEXP(6,9),ALWPK(6,9),PIMPJ(9,9), 00066020
 B2 4PEXPJ(9,9),ALWPK(9,9),POPLTN(4,9),STOPGF(9,9), 00066030
 B2 5POPDEN(4,9),ENIDB(16,9),EXPDB(16,9),NIDD(9), 00066040
 B2 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4), 00066050
 B2 7MYRNET(9),MYRB,NYRN,NVT,NAT,NHT,NSR,N16DB, 00066060
 B2 8ITABLE 00066070
 ISN 0004 IYBAS=MDUM=MYRB+1 00066100

LEVEL 2.2--(SEPT 76)

OS/360 FORTRAN H EXTENDED

DATE 80.273/19.06.55

PAGE 4

ISN 0005	RETURN	00066200
001)	C	00066300
ISN 0006	DEBUG SUBCHK	
	C	
	END	00066400

*OPTIONS IN EFFECT*NAME(CHAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*NO\$SOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT COSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 5, PROGRAM SIZE = 274, SUBPROGRAM NAME = IYBAS

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

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LEVEL 2.2 (SEPT 76)

IYES

US7360 FORTRAN II EXTENDED

DATE 80.273/19.07.08

PAGE 1

REQUESTED OPTIONS: AREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMINAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZL(2) LINECOUNT(60) SIZE(MAX) AUTODHL(NONE)
NOSOURCE EBCDIC IOLIST NODECK NOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NUTERM FLAG(2)

***** F O R T R A N		C R O S S R E F E R E N C E		L I S T I N G *****	
SYMBOL	INTERNAL STATEMENT NUMBERS				
A	0003				
I	0003	0004	0004		
A1	0003				
A2	0003				
B1	0003				
B2	0003				
FI	0003				
IT	0003				
ADT	0003				
ALC	0003				
ALO	0003				
CZD	0003				
DBK	0003				
IYR	0002	0004			
PGF	0003				
VAF	0003				
VGF	0003				
AREA	0003				
CDNO	0003				
CON2	0003				
IVAF	0003				
IVBD	0003	0004			
IVGF	0003				
IYES	0002	0004			
JPGF	0003				
LANE	0003				
LIFE	0003				
MYRE	0003	0004			
PGFO	0003				
REMO	0003				
VINC	0003				
VPOP	0003				
XINC	0003				
YINC	0003				
BVPOP	0003				
JWYLE	0003				
MODYR	0003				
MYREF	0003	0004			
VB074	0003				
VB077	0003				
VB085	0003				
VB090	0003				
WIDTH	0003				
XXINK	0003				
FPAREA	0003				
FPRUAD	0003				
IEQAGE	0003				

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LEVEL 2 (JUL 76)

US/300 FUJIKAWA H EXTENDED

DATE 80.273/19.07.08

PAGE 2

001 ISN 0002

ISN 0003

ISN 0004

ISN 0005

001)

ISN 0006

```

FUNCTION IYES(IYR) / STRUCTURED SOURCE LISTING /
CX IYLR LAST UPDATE:
C THIS FUNCTION CONVERTS YEAR WRT REF TO YEARS WRT MYRE
COMMON /BIG001/ VAF(4,26),VGF(140,6),REMO(6,17),XINC(7),YINC(7),
2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
B1 1A(2,3),DBK(3),CZU(4,9,6),ALC(9),FI(4),PLF(5),
B1 4PGFO(5),WIDTH(9,6),FPHDAD(9,6),ADT(6,9),
B1 5AREA(4,9),FPAHEA(9,4),VPOP(14,26),BVPOP(14),
B1 6XXINX,A1,A2,B1,B2,ALO,CONO,CON2,IVAF(14),
B1 7MYREF(6),IVDD(14),LIFE(4),IQAGE(6),JNYLE(9,4),
B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MODYK,1,1
IYES=IYR-MYRE(I)+MYREF(IVDD(I))
RETURN
C          DEBUG SUBCHK
C
END
00069200
00069210
00069300
00069400
00069410
00069420
00069430
00069440
00069450
00069460
00069470
00069800
00069900
00070000
00070100

```

```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECNT(10) SIZE(MAX) AUTOBLK(NONE)
*OPTIONS IN EFFECT*NOBOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMI XREF NOALC NOANSF NOTERM FLAG(1)
*STATISTICS* SOURCE STATEMENTS = 5, PROGRAM SIZE = 272, SUBPROGRAM NAME = IYES
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION *****

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126K BYTES OF CORE NOT USED

LEVEL 2:21 (SEPT 76)

IYREF

109/360 FORTRAN EXTENDED DATE 80.273/10.07.45

PAGE 2

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSSOURCE,NOTERMIAL,NOOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NDLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL INTERNAL STATEMENT NUMBERS

A	0003	
I	0003	0004
A1	0003	
A2	0003	
B1	0003	
B2	0003	
F1	0003	
IT	0003	
ADT	0003	
ALC	0003	
ALC	0003	
ALC	0003	
C20	0003	
DBK	0003	
PGF	0003	
YAF	0003	
YGF	0003	
AREA	0003	
CON0	0003	
CON2	0003	
IVAF	0003	
IVBD	0003	0004
IVGF	0003	
JPGF	0003	
LANE	0003	
LIFE	0003	
MDUM	0002	0004
MYRE	0003	
PGFO	0003	
REMU	0003	
VINC	0003	
VPOP	0003	
XINC	0003	
YINC	0003	
BVPOP	0003	
IYREF	0002	0004
JWYLE	0003	
MOUTR	0003	
MYREF	0003	0004
VBD74	0003	
VBD77	0003	
VBD85	0003	
VBD90	0003	
WIDTH	0003	
XKINA	0003	
FPAREA	0003	
FPRDAD	0003	
LEUAGE	0003	

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```

/ STRUCTURED SOURCE LISTING /
001 ISN 0002      FUNCTION IYREF(MDUM)                00066500
                  CX IYREF LAST UPDATE:          00066510
                  C THIS FUNCTION CONVERT STANDAR YEAR TO YEAR MEASURED WRT REF YEAR 00066600
ISN 0003          COMMON /BIG001/ VAF(4,26),VGF(40,6),MEMU(6,17),XINC(7),YINC(7),    00066700
                  B1 2VINC(7),VUD74(14),VUD77(7),VUD85(7),VUD90(7),              00066710
                  B1 3A(2,3),DBK(3),C2D(4,9,6),ALC(9),FI(9),PGF(5),              00066720
                  B1 4PGFD(5),WIDTH(9,6),FPHOAD(9,6),ADT(6,9),                  00066730
                  B1 5AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPOP(14),              00066740
                  B1 6XKINK,A1,A2,B1,B2,ALO,CUNO,CON2,IYAF(14),                  00066750
                  B1 7MYREF(6),IVBD(14),LIFE(4),ICGAGE(6),JAYLE(9,4),          00066760
                  B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MODYR,IT,I            00066770
ISN 0004          IYREF=MDUM+MYREF(IVBD(I))+1                                     00067100
                  C          DEBUG SUBCHK                                         00067200
ISN 0005          RETURN                                                            00067300
001)              C                                                                00067300
ISN 0006          END                                                                00067400

```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*NO SOURCE BUGDIO, NOLIST NUDECK NOOBJECT NOHAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 5, PROGRAM SIZE = 266, SUBPROGRAM NAME = IYREF

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NCOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOOBL(NONE) NOSOURCE EBCDIC NOLIST NUDECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

*****F O R T R A N C R O S S R E F E R E N C E L I S T I N G*****

SYMBOL INTERNAL STATEMENT NUMBERS
XLINE 0003 0006 0008
PRINT1 0002

*****F O R T R A N C R O S S R E F E R E N C E L I S T I N G*****

LABEL DEFINED REFERENCES
98 0011 0006
99 0006 0010
100 0007 0006
101 0009 0006
103 0005 0004

/ STRUCTURED SOURCE LISTING /

(002	13N 0002		SUBROUTINE PRINT1	00071600
			CX PRINT1 LAST UPDATE: 10/19/78 14:52:52	00071610
			C PRINTS A HEADING FOR ALL THE OUTPUT TABLES	00071630
	13N 0003		DIMENSION XLINE(18)	00071640
	13N 0004		WRITE(6,103)	00071650
	13N 0005	103	FORMAT('1')	00071660
(001	13N 0006	99	READ(4,100,END=99)XLINE	00071690
	13N 0007	100	FORMAT(18A4)	00071700
	13N 0008		WRITE(6,101)XLINE	00071710
	13N 0009	101	FORMAT(' ',30X,18A4)	00071720
	13N 0010		GO TO 99	00071730
001)			C	
	13N 0011	98	RETURN	00071740
002)			C	
	13N 0012		END	00071750

OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOOBL(NONE)

OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NUDECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

ASTATISTICS* SOURCE STATEMENTS * 11, PROGRAM SIZE * 362, SUBPROGRAM NAME *PRINT1

ASTATISTICS* NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
 NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** FORTRAN CROSS REFERENCE LISTING *****

SYMBOL	INTERNAL STATEMENT NUMBERS		
I	0008	0009	0009
K	0013	0014	0014
IYH	0024	0024	0024
NAT	0003		
NHT	0003	0013	
N9R	0003		
NVT	0003	0008	
ODBA	0003		
MILE	0003		
MYRB	0003		
NIDJ	0003		
NLEV	0003		
NYRN	0003	0024	0024
YTUT	0003		
ALREG	0003		
ALHPJ	0003		
ALHPK	0003		
ENIDB	0003		
EXPOB	0003		
SVTOT	0003		
ICONT	0004	0022	
IDUMP	0004	0018	
KMASK	0004	0014	
MYREG	0003		
N16DB	0003		
PEXPJ	0003		
PEXPB	0003		
PIMPJ	0003		
PIMPK	0003		
RNAME	0004	0006	
TUPOP	0003		
ALHPUP	0003		
IPRINT	0004	0020	
ITABLE	0003	0005	0006
IYMASR	0004	0009	
MYRNET	0003	0024	
POPEN	0003		
POPEXP	0003		
POPIMP	0003		
POPILT	0003		
PRINT2	0002		
STOPGF	0003		

***** FORTRAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCES
999	0007	0006
1000	0012	0008
1001	0017	0013

***** D R T R A W C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
2000	0011	0009
2001	0016	0014
2002	0019	0018
2003	0021	0020
2004	0025	0024
2005	0023	0022

/ STRUCTURED SOURCE LISTING /

```

(003 ISN 0002      SUBROUTINE PRINT2                                00118000
                  CX PRINT2 LAST UPDATE:      10/19/78 16:13:14 00118100
                  C                                00118200
                  CL PRINT2 LAST CHANGE: CORRECTED WRONG STMT NUMBER 200 00118300
                  C                                00118400
                  C THIS SUBROUTINE PRINTS THE CONTROL STRINGS 00118500
                  COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),DDBA(16), 00118600
                  B2 2POPEXP(9),POPIMP(9),ALWPOP(9),TOPUP(9), 00118700
                  B2 3PIMP(6,9),PEAPK(6,9),ALWPK(6,9),PIMPJ(9,9), 00118800
                  B2 4PEXPJ(9,9),ALWPJ(9,9),POPLTN(4,9),BTDPGF(9,9), 00118900
                  B2 5PODEN(4,9),ENIOB(16,9),EXPOB(16,9),NIDD(9), 00119000
                  B2 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4), 00119100
                  B2 7MYRNET(9),MYRU,NYKN,NVT,NAT,NHT,NSR,N16DB, 00119200
                  B2 8ITABLEI                                00119300
                  COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6), 00119400
                  B4 2ICONT(12)                                00119402
                  ITABLE = ITABLE + 1                          00119410
                  WRITE(6,999) ITABLE,RNAME                   00119420
                  999 FORMAT('1',I0, ' TABLE ',I2,' LISTING OF CONTROL STRINGS ', 00119430
                  *AND NET YEARS',T110,5A4)                    00119435
                  C                                00119440
                  C FIRST PRINT VEHICLE MASK                   00119450
                  C                                00119500
                  DO 1000 I=1,NVT                               00119600
                  C                                00119700
                  IF(IVMASK(I).EQ.0) WRITE(6,2000) I           00119800
                  ISN 0009 2000 FORMAT('0',4X,'VEHICLE TYPE ',I2,' SUPPRESSED') 00119900
                  ISN 0011                                C                                00120000
                  ISN 0012 1000 CONTINUE                       00120100
                  C                                00120200
                  C NO DO ROADWAY TYPE                         00120300
                  C                                00120400
                  C
                  DO 1001 K=1,NHT                               00120500
                  C                                00120600
                  IF(KMASK(K).EQ.0) WRITE(6,2001) K           00120700
                  ISN 0013 2001 FORMAT('0',I, ' ROADWAY TYPE ',I2,' SUPPRESSED.') 00120800
                  ISN 0014                                C                                00120900
                  ISN 0016 1001 CONTINUE                       00121000
                  C                                00121100
                  C NOW PRINT DUMP CONTROL                    00121200
                  C                                00121300
                  C
                  001)  ISN 0018 2002 WRITE(6,2002) IDUMP      00121400
                  ISN 0019 2002 FORMAT('0',I, ' DUMP CONTROL STRING IS ',I2I1) 00121500
                  C                                00121600

```

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LEVEL 2,2 (0,1,76)

PRINT 09/500 FOR... H... ENDEL

DA 0,21...),08

AGE

		C NOW PRINT IPrint, THE TABULATION CONT... STRING	00121700
		C	00121800
ISN 0020		WRITE(6,2003) IPrint	00121900
ISN 0021	2003	FORMAT('0', ' PRINT CONTROL STRING IS ',1211)	00122000
ISN 0022		WRITE(6,2005) ICUNT	00122010
ISN 0023	2005	FORMAT('0', ' ICONT LOGIC CONTROL STRING IS ',1211)	
		C	00122100
		C NOW PRINT THE NET YEARS	00122200
		C	00122300
ISN 0024		WRITE(6,2004) NYRN,(MYRNET(IYR),IYR=1,NYRN)	00122400
003) ISN 0025	2004	FORMAT('0', ' THERE ARE ',12,' NET YEARS1'/' ' ,	00122500
		C9(14,' '))	00122600
		C	00122700
ISN 0026		RETURN	00122800
ISN 0027		END	00122900

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOOBL(NONE)

*OPTIONS IN EFFECT*NO SOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NDANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 26, PROGRAM SIZE = 962, SUBPROGRAM NAME. #PRINT2

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

122K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
 NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NUANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL	STATEMENT	NUMBERS																
J	0019	0019	0019	0038	0039	0041	0041	0043	0044	0044	0044	0047	0047	0047	0055	0056	0058	0058	0058
	0075	0076	0078	0081	0081	0081	0083	0083	0083	0084	0087	0087	0087	0094	0095	0098	0098	0098	
K	0073	0076	0081	0087															
L	0080	0081																	
ID	0017	0019	0019	0036	0039	0041	0041	0043	0044	0047	0047	0079	0081						
NAT	0003	0038	0055	0056	0075	0087	0094	0098											
NHT	0003	0073																	
NSR	0003	0080																	
NVT	0003																		
POP	0005	0039	0044	0044	0056	0058													
ODBA	0003																		
GTOT	0054	0056	0056	0058															
MILE	0003	0081																	
MSUM	0093	0095	0095	0098															
MYRB	0003																		
NIDD	0003	0041																	
NLEV	0003																		
NYRN	0003																		
VTOT	0003																		
ALREG	0003																		
ALWPJ	0003																		
ALWPK	0003																		
ENIDH	0003																		
EXPDD	0003																		
GVTOT	0003																		
ICONT	0004																		
IDUMP	0004																		
ITABS	0007	0008	0025	0025	0026														
JMILE	0005	0076	0083	0083	0095	0098													
KMASK	0004																		
KMILE	0074	0084	0084	0087															
MYREG	0003																		
NI6DB	0003																		
PEXPJ	0003																		
PEXPK	0003																		
PIMPJ	0003																		
PIMPK	0003																		
POPID	0037	0043	0043	0047															
RNAME	0004	0008	0026	0064															
TOPOP	0003																		
ALWPOP	0003																		
HEADER	0010	0020	0066																
IPKINT	0004																		
ITABLE	0003	0006	0006	0008	0026	0063	0063	0064											
IVMASK	0004																		
MILEJK	0005	0078	0081	0081	0083	0084	0087												
MYRNET	0003																		
POPDEN	0003	0019																	
POPEXP	0003																		

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***** D R T R A N   C R O S S   R E F E R E N C E   L I S T I N G *****
SYMBOL  INTERNAL STATEMENT NUMBERS
POPIMP  0003
POPLIN  0003  0041  0043  0044  0047
PRINT3  0002
STOP6F  0003

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***** D R T R A N   C R O S S   R E F E R E N C E   L I S T I N G *****
LABEL   DEFINED  REFERENCES
1000    0027    0026
1001    0065    0064
2000    0009    0008
2001    0013    0012
2002    0035    0016  0024  0034  0052  0062  0072  0092  0102
2003    0022    0017
2004    0020    0019
2006    0104    0010  0023  0046  0051  0053  0061  0086  0091  0097  0101
2007    0105    0021  0049  0060  0089  0100
2008    0106    0011  0015  0029  0033  0067  0071
2009    0107    0014  0032  0070
2201    0090    0073
2202    0085    0075
2203    0088    0087
2204    0069    0068
2300    0096    0094
2301    0099    0098
2305    0082    0079  0080
3001    0031    0030
3003    0050    0036
3004    0048    0047
3005    0045    0038
3006    0057    0055
3007    0059    0050

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(010 18N 0002          / STRUCTURED SOURCE LISTING /
SUBROUTINE PRINT3
CX PRINT3 LAST UPDATE: 10/19/78 15:42:06 00102600
CL LAST CHANGE: RENAME 00102610
C THIS SUBROUTINE PRINTS OUT CONSTANT DATA BY AREA TYPE, J. 00102620
COMMON /BIG002/ ALREG(5,5,4,14),CVTOT(9),VTOT(14,9),DOBK(16), 00102650
B2 ZPOEXP(9),POPIMP(9),ALHPOP(9),TOPUP(9), 00102700
B2 IPMPK(6,9),PEXP(6,9),ALHPK(6,9),PIMPJ(9,9), 00102710
B2 4PEXPJ(9,9),ALHPJ(9,9),POPLIN(4,9),STOP6F(9,9), 00102720
B2 5POPEN(4,9),ENIOB(16,9),EXPDU(16,9),NIDD(9), 00102730
B2 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4), 00102740
B2 7MYNET(9),MYRB,MYRN,NVT,NAT,NHT,NSR,N160B, 00102750
B2 8ITABLE 00102760
COMMON /BIG004/ HNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6), 00102770
B4 2ICONT(12) 00102800
DIMENSION POP(9),MILEJK(9),JMILE(9) 00102900
C 00103000
C NOA PRINT THE BASELINE POPULATION DENSITIES BY J AND ID 00103050
C 00103100
ITABLE=ITABLE+1 00103150
ITABR=1 00103160
00103200

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	ISN 0008		WRITE(6,2000) ITABLE,ITABS,RNAME	00103300
	ISN 0009	2000	FORMAT('11//0 TABLE ',I2,',',I2,', BASELINE POPULATION ',	00103350
			*'DENSITY BY AREA AND DENSITY TYPE',I110,5A4/'0/'0')	00103400
	ISN 0010		CALL HEADER	00103450
	ISN 0011		WRITE(6,2008)	00103500
	ISN 0012		WRITE(6,2001)	00103550
	ISN 0013	2001	FORMAT(' ',T4,' ID ',T11,' VARIABLE',T48,' POPULATION DENSITY, IN T	00103600
			CHOUSANDS PER SQ.MI.')	00103650
	ISN 0014		WRITE(6,2009)	00103700
	ISN 0015		WRITE(6,2008)	00103750
	ISN 0016		WRITE(6,2002)	00103800
	ISN 0017		DO 2003 ID=1,4	00103850
(009)	ISN 0018		WRITE(6,2006)	00103900
	ISN 0019		WRITE(6,2004) ID, (POPDEN(ID,J), J=1,9)	00103950
	ISN 0020	2004	FORMAT(' ',T4,I4,T23,9(-3PF6.2,3X))	00104000
	ISN 0021		WRITE(6,2007)	00104050
	ISN 0022	2003	CONTINUE	00104100
(009)			C	
	ISN 0023		WRITE(6,2006)	00104150
	ISN 0024		WRITE(6,2002)	00104200
			C	00104250
			C NOW PRINT THE BASELINE POPULATION BY AREA AND DENSITY TYPE	00104300
			C	00104350
	ISN 0025		ITABS=ITABS+1	00104400
	ISN 0026		WRITE(6,1000) ITABLE,ITABS,RNAME	00104450
	ISN 0027	1000	FORMAT('11//0 TABLE ',I2,',',I2,', BASELINE POPULATION ',	00104500
			*'BY AREA AND DENSITY TYPE',I110,5A4/'0/'0')	00104550
	ISN 0028		CALL HEADER	00104600
	ISN 0029		WRITE(6,2008)	00104650
	ISN 0030		WRITE(6,3001)	00104700
	ISN 0031	3001	FORMAT(' ',T4,' ID ',T11,' VARIABLE',T48,' POPULATION, MILLIONS',	00104750
			GT105,'TOTAL')	00104800
	ISN 0032		WRITE(6,2009)	00104850
	ISN 0033		WRITE(6,2008)	00104900
	ISN 0034		WRITE(6,2002)	00104950
	ISN 0035	2002	FORMAT('+',I12(' '))	00105000
	ISN 0036		DO 3003 ID=1,4	00105050
(008)	ISN 0037		POPID= 0.0E0	00105100
	ISN 0038		DO 3005 J=1,NAT	00105150
(004)	ISN 0039		IF (ID.EQ.1) POP(J)= 0.0E0	00105200
	ISN 0040		IF (ID.GT.NIDD(J)) POPLTN(ID,J)=0.0	00105210
	ISN 0041		POPID=POPID+POPLTN(ID,J)	00105250
	ISN 0042		POP(J)=POP(J)+POPLTN(ID,J)	00105300
	ISN 0043	3005	CONTINUE	00105350
(004)			C	
	ISN 0046		WRITE(6,2006)	00105400
	ISN 0047		WRITE(6,3004) ID, (POPLTN(ID,J), J=1,9), POPID	00105450
	ISN 0048	3004	FORMAT(' ',T4,I4,T23,9(-6PF6.2,3X),-6PF8.2)	00105500
	ISN 0049		WRITE(6,2007)	00105550
	ISN 0050	3003	CONTINUE	00105600
(008)			C	
	ISN 0051		WRITE(6,2006)	00105650
	ISN 0052		WRITE(6,2002)	00105700
	ISN 0053		WRITE(6,2006)	00105750
	ISN 0054		GTOT= 0.0E0	00105800
	ISN 0055		DO 3006 J=1,NAT	00105850
(007)	ISN 0056		GTOT=GTOT+POP(J)	00105900
	ISN 0057	3006	CONTINUE	00105950

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007) C
(006 ISN 0052 3007 WRITE(6,3007)(POP(J),J=1,NAT),GTOT 00106000
ISN 0054 3007 FORMAT(' ',T11,'TOTAL',T23,9(=6PF6.2,3X),=6PF6.2) 00106050
ISN 0060 WRITE(6,2007) 00106100
ISN 0061 WRITE(6,2006) 00106150
ISN 0062 WRITE(6,2002) 00106200
C 00106250
C NON PRINT THE JK MILEAGE TABLE 00106300
C 00106350
ISN 0063 ITABLE=ITABLE+1 00106400
ISN 0064 WRITE(6,1001) ITABLE,IRNAME 00106410
ISN 0065 1001 FORMAT('1',I0 TABLE '12,' MILEAGE OF ROADWAY, BY AREA ', 00106420
'AND ROADWAY TYPE',T110,5A4/'0',I0') 00106430
ISN 0066 CALL HEADER 00106440
ISN 0067 WRITE(6,2008) 00106450
ISN 0068 WRITE(6,2204) 00106460
ISN 0069 2204 FORMAT(' ',T4,' K ',T4,' MILES OF ROADWAY') 00106470
ISN 0070 WRITE(6,2009) 00106480
ISN 0071 WRITE(6,2008) 00106490
ISN 0072 WRITE(6,2002) 00106500
ISN 0073 DO 2201 K=1,NHT 00106510
ISN 0074 KMILE=0 00106520
ISN 0075 DO 2202 J=1,NAT 00106530
(001 ISN 0076 IF(K.EQ.1)JMILE(J)=0 00106540
ISN 0078 MILEJK(J)=0 00106550
ISN 0079 DO 2305 ID=1,4 00106560
(002 ISN 0080 DO 2305 L=1,NSH 00106570
(001 ISN 0081 MILEJK(J)=MILEJK(J)+MILE(K,J,ID,L) 00106580
ISN 0082 2305 CONTINUE 00106590
001) C
002) C
ISN 0083 JMILE(J)=JMILE(J)+MILEJK(J) 00106600
ISN 0084 KMILE=KMILE+MILEJK(J) 00106610
ISN 0085 2202 CONTINUE 00106620
003) C
ISN 0086 WRITE(6,2006) 00106630
ISN 0087 WRITE(6,2203)K,(MILEJK(J),J=1,NAT),KMILE 00106640
ISN 0088 2203 FORMAT(' ',T4,I4,T22,9(17,2X),19) 00106650
ISN 0089 WRITE(6,2007) 00106660
ISN 0090 2201 CONTINUE 00106670
004) C
ISN 0091 WRITE(6,2006) 00106680
ISN 0092 WRITE(6,2002) 00106690
ISN 0093 MSUM=0 00106700
ISN 0094 DO 2300 J=1,NAT 00106710
(005 ISN 0095 MSUM=MSUM+JMILE(J) 00106720
ISN 0096 2300 CONTINUE 00106730
005) C
ISN 0097 WRITE(6,2006) 00106740
ISN 0098 WRITE(6,2301)(JMILE(J),J=1,NAT),MSUM 00106750
010) C
ISN 0099 2301 FORMAT(' ',T11,'TOTAL',T22,9(17,2X),19) 00106760
ISN 0100 WRITE(6,2007) 00106770
ISN 0101 WRITE(6,2006) 00106780
ISN 0102 WRITE(6,2002) 00106790
ISN 0103 RETURN 00108400
ISN 0104 2006 FORMAT(' ',I1,'T9',I1,'T21',I1,'9(8X,I1)',10X,I1) 00108450
00108500

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LEVEL 2.2 (SEPT 76)

PRINT3

OS/360 FORTRAN H EXTENDED

DATE 00.273/19.09.26

PAGE 5

ISN 0105	2007	FORMAT(' ', ' ', 'T9', ' ', 'T21', ' ', '9(8X, ' '), '10X, ' ')	00108550
ISN 0106	2008	FORMAT(' ', ' ', 'T9', ' ', 'T21', ' ', 'T102', ' ', 'T113, ' ')	00108600
ISN 0107	2009	FORMAT(' ', ' ', 'T9', ' ', 'T21', ' ', 'T102, ' ', 'T113, ' ')	00108650
ISN 0108		END	00108700

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NODACK NODBJECT NOMAP FORMAT CUSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 107, PROGRAM SIZE = 3050, SUBPROGRAM NAME *PRINT3

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

106K BYTES OF CORE NOT USED

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BEST COPY AVAILABLE

REQUESTED OPTIONS: XREF,UPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(414) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

Table with columns: SYMBOL, INTERNAL STATEMENT NUMBERS, and various cross-reference numbers (0011, 0013, 0016, etc.). Rows include symbols like I, L, M, II, NAT, NHT, NBR, NVT, UDUU, HEAD, ILEV, MILE, MYRS, NIID, NLEV, NYRN, VTOT, ZERO, ALREG, ALAPJ, ALHPK, ENIDB, EXPOB, GVTOT, ICONT, IDUMP, ITABS, KMAUA, MYREG, N16DB, PEXPJ, PEXPK, PIMPJ, PIMPA, RNAME, TPOPP, ALHPOP, HEADER, IPRINT, ITABLE, IVMAJK, MLEVEL, MYRNET, NLEVEL, POPDEA, POPEXP, PDPIMP.

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****
 SYMBOL INTERNAL STATEMENT NUMBERS
 POPLTN 0003
 PRINT4 0002
 STOPGF 0003

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****
 LABEL DEFINED REFERENCES
 1593 0022
 8025 0100 0011
 8026 0015 0014
 8027 0017 0016
 8028 0019 0018
 8029 0063 0021
 8030 0025 0024
 8031 0027 0026
 8032 0038 0034 0036
 8033 0044 0040 0042
 8034 0060 0048
 8035 0053 0049 0051
 8036 0050 0054 0056
 8037 0066 0065
 8038 0077 0073 0075
 8039 0083 0079 0081
 8040 0091 0087 0089
 8041 0096 0092 0094
 8042 0101 0031 0032 0045 0047 0061 0070 0071 0084 0086 0098
 8043 0102 0059 0097
 8044 0103 0023 0029 0064 0068
 8045 0104 0028 0067
 8046 0105 0020 0030 0046 0062 0069 0085 0099

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/ STRUCTURED SOURCE LISTING /

(004	ISN 0002	SUBROUTINE PRINT4	00083000
		CX PRINT4 LAST UPDATE: 10/19/78 15124:397	00083010
		C	00083100
		C THE FOLLOWING BLOCK PRINTS OUT THE REGULATION SCENARIO	00083200
		C	00083300
	ISN 0003	COMMON /BIG002/ ALREG(5,5,4,14),CVTOT(9),VTOT(14,9),DDBA(16),	00083500
		B2 2POEXP(9),POPIMP(9),ALWPOP(9),TUPOP(9),	00083510
		B2 3PIMP(6,9),PEXP(6,9),ALWPK(6,9),PIMPJ(9,9),	00083520
		B2 4PEXPJ(9,9),ALWPK(9,9),POPLTN(4,9),STOPGF(9,9),	00083530
		B2 5POPDEN(4,9),ENIDB(16,9),EXPDB(16,9),NICD(9),	00083540
		B2 6MILE(6,9,4,5),MYREG(6,4,14),ALEV(14,4),	00083550
		B2 7MYRNET(9),MYNB,MYRN,MYT,HAT,NHT,NSR,N16DB,	00083560
		B2 8ITABLE	00083570
	ISN 0004	COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6),	00083600
		B4 2ICONT(12)	00083700
	ISN 0005	REAL*8 HEADER(2,4) / ACCELE, RATION, DECELE, RATION,	00083800
		CRUISE, IDLE	00083900
	ISN 0006	REAL*8 HEAD(5,4) / 0-20 MPH, 0-30, 0-40, 0-50,	00084000
		0-60, 20-30 MPH, 30-40, 40-50, 50-60,	00084100
		<25 MPH, 25-34, 35-44, 45-54, >55, 5*	00084200
	ISN 0007	DATA ZERO /0.0/	00084210
		C ALSO BEGINNT DAS RICHTIGE STUFF	00084300

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ISN 0008      ITABS=0                      00084400
ISN 0009      MYNB=1974                    00084410
ISN 0010      ITABLE=ITABLE+1              00084500
(003) ISN 0011      DO 8025 I=1,13,2        00084600
ISN 0012      ITABS=ITABS+1                00084700
ISN 0013      II=I+1                       00084800
ISN 0014      WRITE(6,8026)ITABLE,ITABS,MNAME 00085100
ISN 0015      8026  FORMAT('1',/0         TABLE ',I2,',',I2,') NOISE EMISSION LEVEL',
              *' IN DBA',I110,5A4)          00085200
ISN 0016      WRITE(6,8027)I,II            00085300
ISN 0017      8027  FORMAT('0',T21,'TYPE ',I2,T91,'TYPE ',I2) 00085400
ISN 0018      WRITE(6,8028)                00085500
ISN 0019      8028  FORMAT('0')            00085600
ISN 0020      WRITE(6,8046)                 00085700
ISN 0021      DO 8029 M=1,3                 00085800
(002) ISN 0022      1593 CONTINUE           00085900
ISN 0023      WRITE(6,8044)                 00086000
ISN 0024      WRITE(6,8030)(HEADER(II,M),II=1,2) 00086100
ISN 0025      8030  FORMAT(' ',I20,2A8,' MODE') 00086200
ISN 0026      WRITE(6,8031)(HEADER(II,M),II=1,2) 00086300
ISN 0027      8031  FORMAT('+',T90,7A8,' MODE') 00086400
ISN 0028      WRITE(6,8045)                 00086500
ISN 0029      WRITE(6,8044)                 00086600
ISN 0030      WRITE(6,8045)                 00086700
ISN 0031      WRITE(6,8042)                 00086800
ISN 0032      WRITE(6,8042)                 00086900
ISN 0033      NLEVEL=NLEV(I,M)              00087000
ISN 0034      IF(NLEVEL.EQ.1)WRITE(6,8032)MYNB 00087100
C-39 ..... ISN 0036      IF(NLEVEL.NE.1)WRITE(6,8032)MYRB,(MYREG(ILEV,M,I),ILEV#2,NLEVEL) 00087200
ISN 0038      8032  FORMAT('+', ' YEARS>',T10,5(6X,I4)) 00087300
ISN 0039      MLEVEL=NLEV(II,M)              00087400
ISN 0040      IF(MLEVEL.EQ.1)WRITE(6,8033)MYRB 00087490
ISN 0042      IF(MLEVEL.NE.1) WRITE(6,8033)MYRB,(MYREG(ILEV,M,II),ILEV#2,MLEVEL) 00087500
C-39 .....
ISN 0044      8033  FORMAT('+',T71,' YEARS>',T00,5(6X,I4)) 00087600
ISN 0045      WRITE(6,8042)                  00087700
ISN 0046      WRITE(6,8046)                  00087800
ISN 0047      WRITE(6,8042)                  00087900
ISN 0048      DO 8034 L=1,5                  00088000
(001) ISN 0049      IF(IVMASK(I).EQ.0) WRITE(6,8035) HEAD(L,M),(ZERO,ILEV#1,NLEVEL) 00088010
ISN 0051      IF(IVMASK(I).EQ.1)             00088020
              CWRITE(6,8035)HEAD(L,M),(ALREG(ILEV,L,M,I),ILEV#1,NLEVEL) 00088100
ISN 0053      8035  FORMAT(' ',T4,A8,T12,5(4X,F6.2)) 00088200
ISN 0054      IF(IVMASK(II).EQ.0) WRITE(6,8036) HEAD(L,M),(ZERO,ILEV#1,MLEVEL) 00088220
ISN 0056      IF(IVMASK(II).EQ.1)             00088240
              CWRITE(6,8036)HEAD(L,M),(ALREG(ILEV,L,M,II),ILEV#1,MLEVEL) 00088300
ISN 0058      8036  FORMAT('+',T74,A8,T82,5(4X,F6.2)) 00088400
ISN 0059      WRITE(6,8043)                  00088500
(001) ISN 0060      8034 CONTINUE             00088600
              C
ISN 0061      WRITE(6,8042)                  00088700
ISN 0062      WRITE(6,8046)                  00088800
ISN 0063      8029 CONTINUE                   00088900
              C IDLE MODE IS TAKEN CARE OF AS A SPECIAL CASE 00089000
              C
(002) ISN 0064      WRITE(6,8044)              00089100
ISN 0065      WRITE(6,8037)(HEADER(II,4),II=1,2),(HEADER(II,4),II=1,2) 00089200

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ISN 0066	8037	FORMAT(' ',T20,2A8,' MODE',T90,2A8,' MODE')	00089300
ISN 0067		WRITE(6,8045)	00089400
ISN 0068		WRITE(6,8044)	00089500
ISN 0069		WRITE(6,8046)	00089600
ISN 0070		WRITE(6,8042)	00089700
ISN 0071		WRITE(6,8042)	00089800
ISN 0072		NLEVEL=NLEV(1,4)	00089810
ISN 0073		IF(NLEVEL.EQ.1)WRITE(6,8038)MYRB	00089820
ISN 0075		IF(NLEVEL.NE.1)WRITE(6,8038)MYRB,(MYREG(ILEV,3,1),ILEV=2,NLEVEL)	00089900
C-----			
ISN 0077	8038	FORMAT(' ', YEARS>',T10,5(6X,I4))	00090000
ISN 0078		NLEVEL=NLEV(1,4)	00090010
ISN 0079		IF(NLEVEL.EQ.1)WRITE(6,8039)MYRB	00090020
ISN 0081		IF(NLEVEL.NE.1)WRITE(6,8039)MYRB,(MYREG(ILEV,3,1),ILEV=2,NLEVEL)	00090100
C-----			
ISN 0083	8039	FORMAT(' ',T71,' YEARS>',T80,5(6X,I4))	00090200
ISN 0084		WRITE(6,8042)	00090300
ISN 0085		WRITE(6,8046)	00090400
ISN 0086		WRITE(6,8042)	00090500
ISN 0087		IF(IVMASK(1).EQ.0)WRITE(6,8040)(ZERO,ILEV=1,NLEVEL)	00090510
ISN 0089		IF(IVMASK(1).EQ.1)	00090520
		WRITE(6,8040)(ALREG(ILEV,1,4,1),ILEV=1,NLEVEL)	00090600
ISN 0091	8040	FORMAT(' ',T12,5(4X,F6,2))	00090700
ISN 0092		IF(IVMASK(1).EQ.0)WRITE(6,8041)(ZERO,ILEV=1,NLEVEL)	00090720
ISN 0094		IF(IVMASK(1).EQ.1)	00090730
		WRITE(6,8041)(ALREG(ILEV,1,4,1),ILEV=1,NLEVEL)	00090800
ISN 0096	8041	FORMAT(' ',T82,5(4X,F6,2))	00090900
ISN 0097		WRITE(6,8043)	00091000
ISN 0098		WRITE(6,8042)	00091100
ISN 0099		WRITE(6,8046)	00091200
ISN 0100	8025	CONTINUE	00091300
C			
003)	ISN 0101	8042	FORMAT(' ',10X,5(' ',9(' ')),',',8X,',',10X,5(' ',9(' ')),',',11)
	ISN 0102	8043	FORMAT(' ',10X,5(' ',9(' ')),',',8X,',',10X,5(' ',9(' ')),',',11)
	ISN 0103	8044	FORMAT(' ',10X,5(' ',9(' ')),',',8X,',',10X,5(' ',9(' ')),',',11)
	ISN 0104	8045	FORMAT(' ',10X,5(' ',9(' ')),',',8X,',',10X,5(' ',9(' ')),',',11)
	ISN 0105	8046	FORMAT(' ',42(' ',8X,62(' ')))
	ISN 0106		RETURN
004)			C
	ISN 0107		END

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003)

004)

OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOOBL(NONE)

OPTIONS IN EFFECT*NOBSOURCE EBCDIC NOLIST NODACK NODIRECT NODMAP FORMAT GOSTMT XREF NOALE NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 106, PROGRAM SIZE = 3442, SUBPROGRAM NAME *PRINT4

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

98K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GDSMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINEC(JNT(60) SIZE(MAX) AUTODBL(NONE)
 NOSOURCE EBCDIC NOLIST NODECK NOBJECT NOMAP FORMAT GDSMT XREF NOALC NOANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
I	0010 0010 0040 0040 0040
NAT	0003
NHT	0003
NSR	0003
NVT	0003
DDUA	0003
IYRN	0037 0038 0040 0040
MILE	0003
MYRD	0003
MYRC	0038 0040
NIDD	0003
NLEV	0003
NYRN	0003 0037
VTOT	0003 0040
ALREG	0003
ALAPJ	0003
ALAPK	0003
ENIDB	0003
EXPOS	0003
GVTOT	0003 0040
ICONT	0004
IDUMP	0004
KMASK	0004
MYREG	0003
NIGUB	0003
PEXPJ	0003
PEXPK	0003
PIMPJ	0003
PIMPK	0003
RNAME	0004 0006
TUPOP	0003
ALXPOP	0003
IPRINT	0004
ITABLE	0003 0005 0005 0006
IVMASH	0004
MYHNET	0003 0038
POPEN	0003
POPEXP	0003
POPIMP	0003
POPILT	0003
PRINTS	0002
STOPGF	0003

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
7999	0007	0006
8000	0011	0010
8002	0017	0016


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C MAN= 1,9(1 1),7X,11)
ISN 0024 WRITE(6,6005) 00075200
ISN 0025 #005 FORMAT(' MISSION',T13,1,2(' MATIC 1'),' UAL 1,' MATIC 1', 00075300
C UAL 1,9(1 --- 1),7X,11) 00075400
ISN 0026 WRITE(6,8012) 00075500
ISN 0027 WRITE(6,8008) 00075600
ISN 0028 #006 FORMAT(' VEH. TYPE>',T13,1,3(' PC 1'),2(' PC&LT 1'), 00075700
A' LT TRK| PC&LT |MED TRK|HVY TRK|IC BUS |TR BUS |SCH BUS|, 00075800
A'UM HCY|MD HCY|',7X,11) 00075900
ISN 0029 WRITE(6,8012) 00076000
ISN 0030 WRITE(6,8013) 00076100
ISN 0031 WRITE(6,8007) 00076200
ISN 0032 #007 FORMAT(' 1',T13,1,1,T05,1,1,T109,1,1,T133,1,1/1 1,1 UNIT', 00076300
A'T13,1,1,T50,'MILLIONS',T85,1,1,T90,'THOUSANDS X 0.01',T109, 00076400
A'1,1,116,'MILLIONS',T133,1,1/1 1,T13,1,1,T85,1,1,T109, 00076500
A'1,1,133,1,1) 00076600
ISN 0033 WRITE(6,8013) 00076610
ISN 0034 WRITE(6,8012) 00076700
ISN 0035 WRITE(6,8008) 00076800
ISN 0036 #008 FORMAT(' +1 YEAR|) 00076900
ISN 0037 DO 8010 IYRN=1,NYRN 00077000
(001 ISN 0038 MYRC=MYRNET(IYRN) 00077100
ISN 0039 WRITE(6,8012) 00077110
ISN 0040 WRITE(6,8009)MYRC, (VTOT(1,IYRN),I=1,14),CVTOT(IYRN) 00077120
ISN 0041 #009, FORMAT (' 1',16,T13,1,1,9(-6PF6.2,1 1),3(-5PF6.2,1 1),2(-6PF6.2, 00077300
C 1),-6PF7.2,11) 00077400
ISN 0042 #010 CONTINUE 00077500
001) C 00077600
ISN 0043 WRITE(6,8012) 00077610
ISN 0044 WRITE(6,8013) 00077620
ISN 0045 RETURN 00077630
003) C
ISN 0046 #011 FORMAT(' +1',T13,1,1,16(1 1)) 00077700
ISN 0047 #012 FORMAT(' 1',T13,1,1,16(1 1)) 00077800
ISN 0048 #013 FORMAT(' +1',132(1-1)) 00077900
ISN 0049 END 00077920

```

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***** END OF COMPILATION *****

OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

OPTIONS IN EFFECT*NOSOURCE EBCDIC NULIST NUDECK NUOBJECT NOMAP FORMAT GOSTMT XREF NOALC NDANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 48, PROGRAM SIZE = 1866, SUBPROGRAM NAME *PRINTS

STATISTICS NO DIAGNOSTICS GENERATED

122K BYTES OF CORE NOT USED

BEST COPY AVAILABLE

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOSOURCE,NOTERMAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODOUL(NONE) NOSOURCE EBCDIC NOCLIST NUDECK NUOBJECT NUMAPI FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(1)

*****F O R T R A N C R O S S R E F E R E N C E L I S T I N G*****

SYMBOL	INTERNAL STATEMENT NUMBERS															
J	0007	0008	0010	0010	0010	0025	0026	0026	0026	0026	0029	0029	0029	0035	0035	0035
ID	0009	0010														
NAT	0003	0007	0025	0029	0035											
NHT	0003															
NID	0008	0009														
NII	0005	0005	0026	0032												
NSR	0003															
NYT	0003															
POP	0005	0005	0010	0010	0026											
DDMA	0003															
IYRN	0022	0023	0024	0024	0026	0026	0029	0029	0035	0035						
MILE	0003															
MYRB	0003															
MYRC	0023	0032														
NIDD	0003	0008														
NLEN	0003															
NYHN	0003	0022														
RLHP	0024	0032														
VTOT	0003															
ALREG	0003															
ALAPJ	0003	0026	0035													
ALHPK	0003															
ENIDB	0003															
EXPDB	0003															
QVTOT	0003															
ICONT	0004															
IDUMP	0004															
MMASK	0004															
MYREG	0003															
NI608	0003															
PEXPJ	0003	0029														
PEXPJ	0003															
PIMPJ	0003															
PIMPJ	0003															
RNAME	0004	0013														
TUPOP	0003	0024														
ALWPOP	0003	0024	0035													
HEADER	0015															
IPKINT	0004															
ITABLE	0003	0006	0006	0013												
IYHASK	0004															
MYRNET	0003	0023														
POPDEN	0003															
POPEXP	0003	0029														
POPIMP	0003															
POPLTN	0003	0010														
PRINT7	0002															
STUPGF	0003	0026														

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***** FORTRAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCES
1000	0014	0013
1002	0046	0021 0039
2006	0042	0028 0038
2007	0043	0031 0034 0037
2008	0044	0016 0020
2009	0045	0019
2101	0018	0017
2103	0040	0022
2104	0030	0029
2105	0033	0032
2106	0036	0035
3000	0027	0025
3001	0012	0007
3002	0011	0009

/ STRUCTURED SOURCE LISTING /

(005 ISN 0002

SUBROUTINE PRINT7 00110510

CX PRINT7 LAST UPDATE: 12/05/78 16127852 00110520

C 00110530

CL PRINT7 LAST UPDATE: COPY FORMAT STMT 1000 FROM PRNT10 00110540

C 00110550

ISN 0003

COMMON /B16002/ ALREG(5,5,4,14),CVTOT(9),VTOT(14,9),OOBA(16), 00110560

B2 ZPUPEXP(9),PUPIMP(9),ALNPGP(9),TOPOP(9), 00110570

B2 3PIMPJ(6,9),PEXPJ(6,9),ALHPK(6,9),PIMPJ(9,9), 00110580

B2 4PEXPJ(9,9),ALHPJ(9,9),POPLTN(4,9),STOPGF(9,9), 00110590

B2 5POPDEN(4,9),ENIDU(16,9),EXPDB(16,9),NIOD(9), 00110600

B2 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4), 00110610

B2 7MYRNET(9),MYR8,MYRN,NVT,NAT,NHT,NSR,NI6DB, 00110620

B2 8ITABLE 00110630

ISN 0004

COMMON /B16004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),MASK(6), 00110635

B4 2ICONT(12) 00110640

ISN 0005

REAL POP(9)/9*0,0/,NII(9)/9*0,0/ 00110650

C 00110660

C NOW PRINT POPULATION IMPACTED BY AREA TYPE 00110670

C 00110680

ISN 0006

ITABLE=ITABLE+1 00110690

C 00110700

DO 3001 J=1,NAT 00110710

NID = NIOD(J) 00110720

DO 3002 ID=1,NID 00110730

POP(J) = POP(J) + POPLTN(ID,J) 00110740

CONTINUE 00110750

C 00110760

C 00110770

C 00110780

WRITE(6,1000) ITABLE,RNAME 00110790

ISN 0013

ISN 0014

1000 FORMAT('1',/10 'TABLE ',12,' AREA SPECIFIC IMPACT METRICS', 00110795

AT110,5A4,' ') 00110800

C 00110810

CALL HEADER 00110820

WRITE(6,2000) 00110830

ISN 0016

ISN 0017

WRITE(6,2101) 00110840

ISN 0018

2101 FORMAT(' ',T4,'YEAR',T11,'VARIABLE',T50,'PEXP AND LMP IN ', 00110845

'MILLIONS, NII IN PERCENT.') 00110842

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LEVEL 2.2 (SEPT 76)	PRINT7	US/360 FORTRAN H EXTENDED	DATE 00,273/19,11,37	PAGE 3
ISN 0019		WRITE(6,2009)	00110850	
ISN 0020		WRITE(6,2008)	00110860	
ISN 0021		WRITE(6,1002)	00110870	
ISN 0022		DO 2103 IYRN=1,IYRN	00110880	
003 ISN 0023		MYRC=MYRNET(IYRN)	00110890	
ISN 0024		RLWP=ALWPOP(IYRN)/TUPOP(IYRN)	00110895	
		C	00110900	
ISN 0025		DO 3000 J=1,NAT	00110910	
		C	00110920	
001 ISN 0026		NII(J)=ALWPJ(J,IYRN)/POP(J)/STUPOF(J,IYRN)	00110930	
		C	00110940	
ISN 0027	3000	CONTINUE	00110950	
		C	00110960	
001 ISN 0028		WRITE(6,2006)	00110980	
ISN 0029		WRITE(6,2104)(PEXPJ(J,IYRN),J=1,NAT),POPEXP(IYRN)	00111000	
ISN 0030	2104	FORMAT(' ',T11,'EXPOSED>',T23,10(-6PF6.2,3X))	00111020	
ISN 0031		WRITE(6,2007)	00111040	
ISN 0032		WRITE(6,2105)MYRC,NII,RLWP	00111060	
ISN 0033	2105	FORMAT(' ',T4,14,T11,' NII, X >',T23,10(2PF6.2,3X))	00111080	
ISN 0034		WRITE(6,2007)	00111100	
ISN 0035		WRITE(6,2106)(ALWPJ(J,IYRN),J=1,NAT),ALWPOP(IYRN)	00111120	
ISN 0036	2106	FORMAT(' ',T11,' LWP >',T23,10(-6PF6.2,3X))	00111140	
ISN 0037		WRITE(6,2007)	00111160	
ISN 0038		WRITE(6,2006)	00111180	
ISN 0039		WRITE(6,1002)	00111200	
003 ISN 0040	2103	CONTINUE	00111220	
		C		
ISN 0041		RETURN	00111240	
		C ZE DU=ALL FORMATS FOLLOW	00111260	
005		C		
ISN 0042	2006	FORMAT(' ',T9,' ',T21,' ',9(8X,' '),10X,' ')	00111280	
ISN 0043	2007	FORMAT(' ',T9,' ',T21,' ',9(8X,' '),10X,' ')	00111300	
ISN 0044	2008	FORMAT(' ',T9,' ',T21,' ',1102,' ',T113,' ')	00111320	
ISN 0045	2009	FORMAT(' ',T9,' ',T21,' ',T102,' ',T113,' ')	00111340	
ISN 0046	1002	FORMAT(' ',T112(' '))	00111360	
ISN 0047		END	00111400	

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NOPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODDL(NONE)

NOPTIONS IN EFFECT*NOUSOURCE EBCDIC NOLIST NODACK NODIRECT NODMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS * 46, PROGRAM SIZE = 1404, SUBPROGRAM NAME =PRINT7

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

118K BYTES OF CORE NOT USED

BEST COPY AVAILABLE

REQUESTED OPTIONS: AREF,OPT(2),FORMAT,GOSTMT,NO\$SOURCE,NOTERMIAL,NO\$BJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
 NOSOURCE EHCIC NOLIST NODECK NO\$BJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS										
K	0020	0020	0020	0020	0020	0031	0031	0031	0034	0034	0034
NAT	0003										
NHT	0003										
NSR	0003										
NVT	0003										
DU\$A	0003										
IYRN	0025	0026	0028	0028	0031	0031	0034	0034			
MILE	0003										
MYR0	0003										
MYRC	0026	0031									
NIDD	0003										
NLEV	0003										
NYRN	0003	0025									
VTOT	0003										
ALREG	0003										
ALHPJ	0003										
ALHPK	0003	0034									
ENIDB	0003										
EXPDB	0003										
GVTOT	0003										
ICONT	0004										
IDUMP	0004										
KM\$SK	0004										
MYREG	0003										
N100B	0003										
PEXPJ	0003										
PEXPK	0003	0028									
PIMPJ	0003										
PIMPK	0003	0031									
RNAME	0004	0006									
TOPOP	0003										
ALHPUP	0003	0034									
IPHINT	0004										
ITABLE	0003	0005	0005	0006							
IYP\$SK	0004										
MYRNET	0003	0026									
POPEN	0003										
POPEXP	0003	0028									
POPIMP	0003	0031									
POPLTN	0003										
PRINTU	0002										
STOPGF	0003										

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
3001	0039	0025
B100	0007	0006
B103	0011	0010

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***** ORTHAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCES
8104	0015	0014
8105	0019	0018
8106	0021	0020
8107	0029	0028
8108	0032	0031
8109	0035	0034
8110	0042	0009 0013
8111	0043	0012
8112	0040	0017 0023 0027 0037
8113	0041	0022 0030 0033 0036
8114	0044	0008 0024 0038
8115	0045	0016

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(003 ISN 0002 SUBROUTINE PRINTB / STRUCTURED SOURCE LISTING /
ISN 0003 CK PRINTB LAST UPDATE: 10/19/78 15:32:23 00092100
COMMON /BIG002/ ALREG(5,5,4,14),GVTDI(9),VTOT(14,9),DOBA(16), 00092110
B2 2POEXP(9),POIMP(9),ALWOP(9),TOPOP(9), 00092300
B2 3PIMP(6,9),PEXP(6,9),ALWPK(6,9),PIMPJ(9,9), 00092310
B2 4PEXPJ(9,9),ALWPJ(9,9),POPLTH(4,9),3TOPGF(9,9), 00092320
B2 5MOPDEN(4,9),ENIDU(16,9),EXPDU(16,9),NIOD(9), 00092330
B2 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4), 00092340
B2 7MYRHET(9),MYRB,NYRN,NVI,NAT,NHT,NBR,NIDDB, 00092350
B2 8ITABLE 00092360
COMMON /BIG004/ RNAME(5),IVMASK(10),IDUMP(12),IPRINT(12),MASK(6), 00092370
B4 ZICONT(12) 00093000
C NOW WE PRINT BY ROADWAY TYPE. 00093100
ITABLE=ITABLE+1 00097600
WRITE(6,8100) ITABLE,RNAME 00097700
8100 FORMAT('1',I0 TABLE '1,12,' IMPACT METRICS BY ROADWAY TYPE, ' 00097800
' IN MILLIONS',T10,5A4,'0',) 00097900
WRITE(6,8114) 00098000
WRITE(6,8110) 00098300
WRITE(6,8103) 00098400
8103 FORMAT('1',T50,'ROADWAY TYPE, K',T97,'TOTAL') 00098500
WRITE(6,8111) 00098600
WRITE(6,8110) 00098700
WRITE(6,8104) 00098800
8104 FORMAT('1',T98,'ALL') 00098900
WRITE(6,8115) 00099000
WRITE(6,8112) 00099100
WRITE(6,8105) 00099200
8105 FORMAT('1',T4,'YEAH',T11,'VARIABLE',T97,'TYPES') 00099300
WRITE(6,8106)(K,K=1,6) 00099400
C 00099500
8106 FORMAT(T27,6(11,11X))
WRITE(6,8113) 00099600
WRITE(6,8112) 00099700
WRITE(6,8114) 00099800
DD 3001 IYRN=1,NYRN 00099900
MYRC=MYRHET(IYRN) 00100100
WRITE(6,8112) 00100200
WRITE(6,8107)(PEXP(K,IYRN),K=1,6),POEXP(IYRN) 00100300
8107 FORMAT('1',T11,'EXPOSED',T22,7(-6PF10,2,2X)) 00100400
00100500
ISN 0008 00092100
ISN 0009 00092110
ISN 0010 00092300
ISN 0011 00092310
ISN 0012 00092320
ISN 0013 00092330
ISN 0014 00092340
ISN 0015 00092350
ISN 0016 00092360
ISN 0017 00092370
ISN 0018 00093000
ISN 0019 00093100
ISN 0020 00097600
(002) ISN 0021 00097700
ISN 0022 00097800
ISN 0023 00097900
ISN 0024 00098000
ISN 0025 00098300
(001) ISN 0026 00098400
ISN 0027 00098500
ISN 0028 00098600
ISN 0029 00098700

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LEVEL	LINE	STATEMENT	ADDRESS
		LEVEL 2 (SEPT 76)	
		PRINTB	
		OS/360 FORTRAN H, ENDED	
		DATE 80,273/19.12.51	
		PAGE 3	
	ISN 0030	WRITE(6,8113)	00100600
	ISN 0031	WRITE(6,8108)*YHC, (P1*PK(K,IYRN),K=1,6),POPIMP(IYRN)	00100700
	ISN 0032	8108 FORMAT(' ',14,14,T11,'IMPACTED>',T22,7(-6PF10.2,2X))	00100800
	ISN 0033	WRITE(6,8113)	00100900
	ISN 0034	WRITE(6,8109)(ALX*PK(K,IYRN),K=1,6),ALAPOP(IYRN)	00101000
	ISN 0035	8109 FORMAT(' ',T11,' LWP >',T22,7(-6PF10.2,2X))	00101100
	ISN 0036	WRITE(6,8113)	00101200
	ISN 0037	WRITE(6,8112)	00101300
	ISN 0038	WRITE(6,8114)	00101400
	ISN 0039	3001 CONTINUE	00101700
001)		C	
	ISN 0040	8112 FORMAT(' ',11,T9,' ',T21,' ',7(11X,' '))	00101800
	ISN 0041	8113 FORMAT(' ',11,T9,' ',T21,' ',7(11X,' '))	00101900
	ISN 0042	6110 FORMAT(' ',11,T9,' ',T21,' ',T93,' ',T105,' ')	00102000
	ISN 0043	8111 FORMAT(' ',11,T9,' ',T21,' ',T93,' ',T105,' ')	00102100
	ISN 0044	8114 FORMAT(' ',104,' ')	00102200
	ISN 0045	8115 FORMAT(' ',T21,T2(' '))	00102300
	ISN 0046	RETURN	00102400
003)		C	
	ISN 0047	END	00102500

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
 *OPTIONS IN EFFECT*NOUSOURCE EUCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NODTERM FLAG(1)
 STATISTICS SOURCE STATEMENTS * 46, PROGRAM SIZE * 1364, SUBPROGRAM NAME *PRINTB
 STATISTICS NO DIAGNOSTICS GENERATED
 ***** END OF COMPILATION ***** 122K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NDOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE LUCDIC NOLIST NOCHECK NDOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS											
I	0030	0030	0030	0033	0033	0033						
IDB	0024	0024	0024	0052	0053	0055	0058	0058	0058	0060	0060	0060
NAT	0003											
NHT	0003											
NSR	0003											
NVT	0003											
SUM	0051	0053	0053	0055	0055	0058	0060					
UDBA	0003	0030	0033									
IYRN	0049	0050	0053	0055	0058	0060						
MILE	0003											
MYRB	0003											
MYRC	0050	0058	0060									
NIDD	0003											
NLEV	0003											
NYRN	0003	0049										
VTUT	0003											
ALREG	0003											
ALWPJ	0003											
ALWPK	0003											
ENIDB	0003	0053	0058									
EXPDB	0003	0055	0060									
GVTOT	0003											
ICASE	0002	0006	0008	0014	0016	0039	0041	0053	0055	0058	0060	
ICONT	0004											
IDUMP	0004											
KMASK	0004											
MYREG	0003											
NIDDB	0003											
PEXPJ	0003											
PEXPJ	0003											
PIMPJ	0003											
PIMPK	0003											
RNAME	0004	0006	0008									
TOPDP	0003											
ALWPOP	0003											
IPRINT	0004											
ITABLE	0003	0005	0005	0006	0008							
IYMASK	0004											
MYRNET	0003	0050										
POPDEN	0003											
POPEXP	0003											
POPIMP	0003											
POPLTN	0003											
PRINT9	0002											
STOPCF	0003											

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL DEFINED REFERENCES

***** FORTRAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCES
1001	0018	0014
1002	0025	0024
1003	0031	0030
1004	0034	0033
1005	0043	0039
1006	0062	0058 0060
1101	0019	0016
1102	0068	0013 0021 0038 0046
1103	0069	0020 0045
1104	0070	0023 0027 0029 0036 0048 0064
1105	0071	0026 0032 0035 0063
1106	0072	0012 0028 0037 0047 0066
1107	0073	0022
1990	0057	0052
1999	0065	0049
2000	0010	0006
2001	0011	0008
2005	0044	0041

/ STRUCTURED SOURCE LISTING /

(004	ISN 0002	SUBROUTINE PRINT9(ICASE)	00114450
		CX PRINT9 LAST UPDATE: 10/19/78 15:57:58	00114460
		C	00114470
		CL PRINT9 LAST CHANGE: NAME CHANGED FROM PRINT6 TO PRINT9	00114480
		C	00114490
		C PRINTS IMPACT AND EXPOSURE IN 5 DBA INTERVALS	00114500
	ISN 0003	COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTUT(14,9),DDBA(16),	00114550
		02 2POPEXP(9),POPIMP(9),ALWPOP(9),TUPOP(9),	00114560
		02 3PIWPK(6,9),PEXP(6,9),ALWPK(6,9),PIMPJ(9,9),	00114570
		02 4PEXPJ(9,9),ALWPJ(9,9),POPLTN(4,9),STDPGF(9,9),	00114580
		02 5POPOEN(4,9),ENIDB(16,9),EXPOB(16,9),NIDD(9),	00114590
		02 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),	00114600
		02 7MYRNET(9),MYRB,MYRN,NVT,NAT,NHT,NSR,N16DB,	00114610
		02 8ITABLE	00114620
	ISN 0004	COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6),	00114630
		04 ZICUNT(12)	00114640
		C FIRST PRINTS THE IMPACT BY 5DB	00114750
	ISN 0005	ITABLE=ITABLE+1	00114800
	ISN 0006	IF(ICASE,EQ,1)WRITE(6,2000) ITABLE,RNAME	00114950
	ISN 0008	IF(ICASE,EQ,2)WRITE(6,2001) ITABLE,RNAME	00115000
	ISN 0010	2000 FORMAT('1//10 TABLE ',I2,' LEVEL-WEIGHTED POPULATION ',	00115020
		'IN DB BANDS ABOVE 55',T110,5A4/'0//0')	00115040
	ISN 0011	2001 FORMAT('1//10 TABLE ',I2,' POPULATION EXPOSED IN DB BANDS ',	00115060
		'ABOVE 55',T110,5A4/'0//0')	00115080
	ISN 0012	WRITE(6,1106)	00115150
	ISN 0013	WRITE(6,1102)	00115200
	ISN 0014	IF(ICASE,EQ,1)WRITE(6,1001)	00115250
	ISN 0016	IF(ICASE,EQ,2)WRITE(6,1101)	00115300
	ISN 0018	1001 FORMAT(' ',T5,'LWP',T27,'DBA RANGE, IDB')	00115350
	ISN 0019	1101 FORMAT(' ',T4,'PEXP',T27,'DBA RANGE, IDB')	00115400
	ISN 0020	WRITE(6,1103)	00115450
	ISN 0021	WRITE(6,1102)	00115500
	ISN 0022	WRITE(6,1107)	00115550
	ISN 0023	WRITE(6,1104)	00115600

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	ISN 0024		WRITE(6,1002)(IDB, IDB*2,13)	00115650
(003)	ISN 0025	1002	C FORMAT(' ',T10,12(2X,12,4X),1106,'TOTAL')	00115700
	ISN 0026		WRITE(6,1105)	00115750
	ISN 0027		WRITE(6,1104)	00115800
	ISN 0028		WRITE(6,1106)	00115850
	ISN 0029		WRITE(6,1104)	00115900
	ISN 0030		WRITE(6,1003)(DDBA(I),I=1,12)	00115950
	ISN 0031	1005	FORMAT(' ',T4,'DDBA',T10,12(F4.0,'_',5X))	00116000
	ISN 0032		WRITE(6,1105)	00116050
	ISN 0033		WRITE(6,1004)(DDBA(I),I=2,13)	00116100
	ISN 0034	1004	FORMAT(' ',T3,'RANGE',T10,12(1X,F5.0,2X))	00116150
	ISN 0035		WRITE(6,1105)	00116200
	ISN 0036		WRITE(6,1104)	00116250
	ISN 0037		WRITE(6,1106)	00116300
	ISN 0038		WRITE(6,1102)	00116350
	ISN 0039		IF(ICASE.EQ.2)WRITE(6,1005)	00116400
	ISN 0041		IF(ICASE.EQ.1)WRITE(6,2005)	00116450
	ISN 0043	1005	FORMAT(' ',T4,'YEAR',T47,'MILLIONS OF PEOPLE')	00116500
	ISN 0044	2005	FORMAT(' ',T4,'YEAR',T47,'MILLIONS OF LEVEL-WEIGHTED PEOPLE')	00116550
	ISN 0045		WRITE(6,1103)	00116600
	ISN 0046		WRITE(6,1102)	00116650
	ISN 0047		WRITE(6,1106)	00116700
	ISN 0048		WRITE(6,1104)	00116750
			C	00116800
	ISN 0049		DO 1999 IYRN=1,NYRN	00116850
(002)	ISN 0050		MYRC=MYRNET(IYRN)	00116900
	ISN 0051		SUM=0.0E0	00116950
	ISN 0052		DO 1990 IDB=2,13	00117000
(001)	ISN 0053		IF(ICASE.EQ.1)SUM=SUM+ENIDB(IDB,IYRN)	00117020
	ISN 0055		IF(ICASE.EQ.2)SUM=SUM+EXPDB(IDB,IYRN)	00117030
C-----	ISN 0057	1990	CONTINUE	00117100
			C	00117105
001)	ISN 0058		IF(ICASE.EQ.1)WRITE(6,1006)MYRC,(ENIDB(IDB,IYRN),IDB*2,13),SUM	00117110
	ISN 0060		IF(ICASE.EQ.2)WRITE(6,1006)MYRC,(EXPDB(IDB,IYRN),IDB*2,13),SUM	00117130
	ISN 0062	1006	FORMAT(' ',T4,I4,T10,12(-6PF6.2,2X),-6PF7.2)	00117200
	ISN 0063		WRITE(6,1105)	00117250
	ISN 0064		WRITE(6,1104)	00117260
	ISN 0065	1999	CONTINUE	00117300
002)			C	
	ISN 0066		WRITE(6,1106)	00117400
	ISN 0067		RETURN	00117450
			C 2E DO ALL FORMATS	00117500
004)			C	
	ISN 0068	1102	FORMAT(' ',T9,' ',T105,' ',T114,' ')	00117550
	ISN 0069	1103	FORMAT('+',T9,' ',T105,' ',T114,' ')	00117600
	ISN 0070	1104	FORMAT(' ',T9,' ',12(7X,' '),8X,' ')	00117650
	ISN 0071	1105	FORMAT('+',T9,' ',12(7X,' '),8X,' ')	00117700
	ISN 0072	1106	FORMAT(' ',113(' '))	00117750
	ISN 0073	1107	FORMAT('+',T9,97(' '))	00117800
	ISN 0074		END	00117900

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTI IN EFFECT*NO SOURCE EBCDIC NO LIST NO DLOCK NO SUBJECT NO FORMAT NO STAT XREF NO JALC NO ANYSF NO TERM FLAG(1)

LEVEL 2.2 (SEPT 76)

PRINT9

OS/360 FORTRAN H EXTENDED

DATE 80.273/19.14.02

PAGE 4

STATISTICS SOURCE STATEMENTS =

73, PROGRAM SIZE = 2018, SUBPROGRAM NAME =PRINT9

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

114K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOSOURCE,NOTERMIAL,NDOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NOLIST NODECK NDOBJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(I)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL INITIAL STATEMENT NUMBERS

J	0019	0019	0019
NAT	0003		
NHT	0003		
NSR	0003		
AVT	0003		
DBBA	0003		
IYRN	0016	0017	0019
MILE	0003		
MYRB	0003		
MYRC	0017	0019	
NIJD	0003		
NLEV	0003		
NYRH	0003	0016	
VTOT	0003		
ALREG	0003		
ALNPJ	0003		
ALNPK	0003		
ENTOB	0003		
EXPDB	0003		
GVTOT	0003		
ICONT	0004		
IDUMP	0004		
KMASK	0004		
MYREG	0003		
NIGDB	0003		
PEXPJ	0003		
PEXPK	0003		
PIMPJ	0003		
PIMPK	0003		
RNAME	0004	0006	
TOPUP	0003		
ALNPOP	0003		
HEADER	0004		
IPRINT	0004		
ITABLE	0003	0005	0005 0006
IVMASK	0004		
MYHRT	0003	0017	
POPDEN	0003		
POPEXP	0003		
PGPIMP	0003		
POPLTN	0003		
PRNT10	0002		
STOPGF	0003	0019	

*****FORTRAN CROSS REFERENCE LISTING*****

LABEL	DEFINED	REFERENCES
1000	0007	0006
1001	0011	0010

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***** FORTRAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCES
1002	0015	0014 0025
1003	0022	0016
1004	0020	0019
2006	0027	0018 0024
2007	0028	0021 0023
2008	0029	0009 0013
2009	0030	0012

/ STRUCTURED SOURCE LISTING /

(002)	ISN 0002	SUBROUTINE PHNT10	00108750
		CX PHNT10 LAST UPDATE: 10/19/76 15142143	00108760
		CL LAST CHANGE: PHNT10 DERIVED FROM OLD PRINTS	00108770
		C	00108780
		C THIS SUBROUTINE PRINTS OUT DATA BY AREA TYPE, J.	00108800
	ISN 0003	COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),DDBA(16),	00108850
		B2 2POEXP(9),POPIMP(9),ALNPOP(9),TPOPOP(9),	00108860
		B2 3PIMPX(6,9),PEXPX(6,9),ALNPK(6,9),PIMPJ(9,9),	00108870
		B2 4PLXPJ(9,9),ALNPJ(9,9),POPLYN(4,9),STUPGF(9,9),	00108880
		B2 5POPDEN(4,9),ENIDB(16,9),EXPOB(16,9),NIDD(9),	00108890
		B2 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),	00108900
		B2 7MYRNET(9),MYRB,NYRN,NVT,NAT,NHT,NSH,NIDDB,	00108910
		B2 0TABLE	00108920
	ISN 0004	COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6),	00108930
		B4 2ICONT(12)	00108940
		C PRINT POPULATION GROWTH FACTOR	00109200
	ISN 0005	TABLE=TABLE+1	00109250
	ISN 0006	WRITE(6,1000) TABLE,RNAME	00109300
	ISN 0007	1000 FORMAT('1',10 TABLE '1,12,' POPULATION GROWTH FACTOR FOR ',	00109400
		'EACH NET YEAR',I110,5A4/'0'/'0')	00109500
	ISN 0008	CALL HEADER	00109550
	ISN 0009	WRITE(6,2006)	00109600
	ISN 0010	WRITE(6,1001)	00109650
	ISN 0011	1001 FORMAT(' ',T4,'YEAR',T11,'VARIABLE',T48,'POP(YEAR)/POP(BABELINE)	00109700
		C)	00109750
	ISN 0012	WRITE(6,2009)	00109800
	ISN 0013	WRITE(6,2006)	00109850
	ISN 0014	WRITE(6,1002)	00109900
	ISN 0015	1002 FORMAT('+',112(' '))	00109950
	ISN 0016	DO 1003 IYRN=1,NYRN	00110050
(001)	ISN 0017	MYRC=MYRNET(IYRN)	00110060
	ISN 0018	WRITE(6,2006)	00110100
	ISN 0019	WRITE(6,1004)MYRC,(STUPGF(J,IYRN),J=1,9)	00110150
	ISN 0020	1004 FORMAT(' ',T4,T14,T23,9(F6,2,3X))	00110200
	ISN 0021	WRITE(6,2007)	00110250
	ISN 0022	1003 CONTINUE	00110400
		C	
	ISN 0023	WRITE(6,2007)	00110410
	ISN 0024	WRITE(6,2006)	00110420
	ISN 0025	WRITE(6,1002)	00110430
	ISN 0026	RETURN	00110440
		C ZE DO ALL FORMATS	00110450
(002)		C	
	ISN 0027	2006 FORMAT(' ',11,T9,' ',T21,' ',9(6X,' '),10X,' ')	00110460
	ISN 0028	2007 FORMAT(' ',11,T9,' ',T21,' ',9(6X,' '),10X,' ')	00110470

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LEVEL 2.2 (SEPT 76) PRN110 OS/360 FORTRAN 4 EXTENDED DATE 80.273/19.14.52 PAGE 3
ISN 0029 2008 FORMAT(' ',11,19,11,121,11,1102,11,1113,11') 00110480
ISN 0030 2009 FORMAT(' ',11,19,11,121,11,1102,11,1113,11') 00110490
ISN 0031 END 00110500

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LIVECOUNT(60) SIZE(MAX) AUTODHL(NONE)
*OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NODECK NODUJECT NDMAP FORMAT GUSTMT XREF NOALL NOANSF NOTERM FLAG(I)
STATISTICS SOURCE STATEMENTS * 30, PROGRAM SIZE * 946, SUBPROGRAM NAME =PRN110
STATISTICS NO DIAGNOSTICS GENERATED
***** END OF COMPILATION ***** 122K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOSOURCE,NOTERMIAL,NOSUBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODDL(1000)
 NOSOURCE EBCDIC NOLIST NODACK NOSUBJECT NODMAP FORMAT GUSTMT XREF NOALC NUANSF NOTERM FLAG(1)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL	INTERNAL STATEMENT NUMBERS											
A	0003											
I	0017	0018	0018	0019								
A1	0003											
A2	0003											
B1	0003											
B2	0003											
F1	0003											
I1	0003											
IT	0003											
ADT	0003											
ALC	0003											
ALO	0003											
CZD	0003											
DBK	0003											
MYR	0010	0011	0011	0011	0013	0013	0013	0015	0022	0024	0024	0024
NAT	0004											
NHT	0004											
NSR	0004											
NVT	0004											
PGF	0003											
SUM	0016	0019	0019	0022								
VAF	0003											
VBD	0018											
VGF	0003											
AREA	0003											
CON0	0003											
CON2	0003											
DOBA	0004											
IYAF	0003											
IYBD	0003											
IYGF	0003											
JPGF	0003											
LANE	0003											
LIFE	0003											
MILE	0004											
MYRD	0004											
MYRE	0003											
NIOD	0004											
NLEV	0004											
VU49	0007	0007	0013									
NYHN	0004											
PGFO	0003											
REMO	0003											
VBD5	0006	0018	0019	0022								
VINC	0003											
VPOP	0003											
VTD1	0004											
XINC	0003											
YINC	0003											

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***** FORTRAN CROSS REFERENCE LISTING *****

SYMBOL	INTERNAL STATEMENT NUMBERS
ALNEG	0004
ALWPJ	0004
ALWPK	0004
BVPOP	0003
ENIDB	0004
EXPDB	0004
GVTVT	0004
ICONT	0005
IDUMP	0005
ITANS	0009 0011 0011 0013 0013
JNYLE	0003
KMASK	0005
MOLYH	0003 0015
MYRLF	0003
MYREG	0004
NIBDB	0004
PEXPJ	0004
PEXPK	0004
PIMPJ	0004
PIMPK	0004
RNAME	0005 0013
TOPOP	0004
VDD74	0003
VDD77	0003
VDD85	0003
VDD90	0003
WIDTH	0003
XKINK	0003
ALWPOP	0004
FPAREA	0003
PPRUAD	0003
IEDAGE	0003
IPRINT	0005
ITABLE	0004 0008 0008 0013
IVMASK	0005
MYHNEI	0004
POPDEN	0004
POPEXP	0004
POPIMP	0004
POPLTN	0004
PRN111	0002
STOPGF	0004

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***** FORTRAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCES
1000	0026	0010
1001	0020	0017
7000	0028	0013
7001	0029	0024
7002	0030	0022
7003	0031	0021
7004	0032	0023

/ STRUCTURED SOURCE LISTING /

```

003 ISN 0002      SUBROUTINE PRNT11                                00123000
C                                                         00123100
C8 PRNT11: CREATED          11/02/78 13437:53          00123200
C                                                         00123300
C8 PRNT11 LAST UPDATED:    11/07/78 17100:55          00123400
C                                                         00123500
C PRINTS THE STORED VEHICLE BREAKDOWN FUNCTION FOR EACH YEAR FROM 00123600
C 1957 TO 2013 IN TWO TABLES                             00123700
ISN 0003          COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7), 00123800
B1 2VINC(7),VBD74(14),VUD77(7),VBD85(7),VBD90(7),      00123900
B1 3A(2,3),DBK(3),CZD(4,9,6),ALC(9),FI(9),PGF(5),      00124000
B1 4PGFU(5),WIDTH(9,6),PPROAD(9,6),AOT(6,9),          00124100
B1 5AHLA(4,9),FPAREA(9,4),VPOP(14,26),BVPOP(14),      00124200
B1 6XKINK,A1,A2,B1,B2,ALO,CONU,CON2,IVAF(14),         00124300
B1 7MYREF(6),IVBD(14),LIFE(4),IEQAGE(6),JWYLE(9,4),    00124400
B1 8JPGF(9),LANE(9,4),MYRE(14),IVGF(14),MUDYR,IT,II    00124500
ISN 0004          COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),DOBA(16), 00124600
B2 2POPEXP(9),POPIMP(9),ALWPOP(9),TOPOP(9),           00124700
B2 3PMPK(6,9),PEXP(6,9),ALWPK(6,9),PIWJ(9,9),         00124800
B2 4PEXPJ(9,9),ALWPK(9,9),PDPLTN(4,9),STOPGF(9,9),    00124900
B2 5SPDEN(4,9),ENIOB(16,9),EXPDB(16,9),NIID(9),       00125000
B2 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),          00125100
B2 7MYRNET(9),MYRB,NYRN,NVT,NAT,NHT,NQH,NIGDB,        00125200
B2 8ITABLE                                             00125210
ISN 0005          COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6), 00125220
B4 2ICONT(12)                                         00125230
C                                                         00125310
ISN 0006          DIMENSION VBD8(7)                   00125320
C                                                         00125400
ISN 0007          INTEGER NUM3(7) /1,2,3,4,5,6,7/     00125500
C                                                         00125600
ISN 0008          ITABLE=ITABLE+1                     00125700
ISN 0009          ITABS=0                              00125800
C                                                         00125900
C SET UP COMPREHENSIVE DO LOOP                          00126000
C                                                         00126100
ISN 0010          DO 1000 MYR = 1957,2013             00126200
C                                                         00126300
002 ISN 0011      IF(MYR.EQ.1957.OR.MYR.EQ.1976.OR.MYR.EQ.1996) 00126400
ISN 0013          *ITABS = ITABS + 1                   00126410
IF(MYR.EQ.1957.OR.MYR.EQ.1976.OR.MYR.EQ.1996)        00126500
*WRITE(6,7000) ITABLE,ITABS,ITABS,RNAME,NUM3         00126510
C                                                         00126600
ISN 0015          MUDYR = MYR                          00126610
ISN 0016          SUM = 0.0                            00126614
C                                                         00126620
ISN 0017          DO 1001 I = 1,7                      00126630
C                                                         00126640
001 ISN 0018      VBD8(I) = VBD(I)                    00126650
ISN 0019          SUM = SUM + VBD8(I)                  00126655
C                                                         00126660
ISN 0020          1001 CONTINUE                       00126670
C                                                         00126680
001) ISN 0021      WRITE(6,7003)                      00126700
ISN 0022          WRITE(6,7002) MYR,VBD8,SUM          00126800
ISN 0023          WRITE(6,7004)                      00126900

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C
ISN 0024 IF (MYR.EQ.1975.OR.MYR.EQ.1995.OR.MYR.EQ.2013) 00127000
WRITE(6,7001) 00127100
C 00127110
ISN 0026 1000 CONTINUE 00127200
C 00127300
002) C 00127400
ISN 0027 RETURN 00127500
C 00127600
C FORMAT STATEMENTB 00127700
C 00127800
003) C
ISN 0028 7000 FORMAT('1//0 TABLE '12,'12,' LIGHT VEHICLE BREAKDOWN', 00127900
A' RATIOS FOR 1957-2013,(TABLE '12,' ),T110,5A4/'0'/ 00128000
L0 A' '91(')/' '1',T20,'1',T83,'1',T92,'1'/ 00128010
L1 A' '1',T20,'1',T71,'PRNT11',T83,'1',T92,'1'/ 00128100
L2 A' '1',T8,'VEHICLE'/+1',T20,'1',T03,'1',T92,'1'/+1',T20,64(')/ 00128200
L3 A' '1',T8,'TYPE >',T24,7(I2,7X)/+1',T20,9('1',8(' '))/ 00128300
L3-4 A' '1',T20,64(')/' '1',T20,'1',T83,'1',T92,'1'/ 00128400
L4 A' '1',T8,'MODEL YEAR',T40,'VEHICLE BREAKDOWN', 00128410
L5 A' VBD(1),'T85,'BUM'/+1',T20,'1',T83,'1',T92,'1'/ 00128500
L6 A' '1',T20,'1',T83,'1',T92,'1'/+1',91(')/ 00128600
ISN 0029 7001 FORMAT('15,T20,'1',8(8(' '),'1')/+'91(')/ 00128600
ISN 0030 7002 FORMAT('15,T15,I4,T21,M(F7.4,2X)) 00128900
ISN 0031 7003 FORMAT('1',T20,'1',8(8(' '),'1')) 00129000
ISN 0032 7004 FORMAT('1+15,T20,'1',8(8(' '),'1')) 00129100
ISN 0033 END 00129200

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*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*NO$SOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GDSMT XREF NOALC NOAN6F NOTERM FLAG(1)
*STATISTICS* SOURCE STATEMENTS = 32, PROGRAM SIZE = 1310, SUBPROGRAM NAME =PHN11
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION ***** 118K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOSOURCE,NOTERMAL,NOOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECJNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NDLIST NODECK NOOBJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS												
IPR	0002	0005	0007	0052	0059								
NAT	0003												
NHT	0003												
NSR	0003												
VVT	0003												
ODBA	0003												
DLWP	0045	0046	0049	0054									
IYRN	0043	0044	0045	0047	0047	0048	0048	0049	0049	0049	0054	0054	0054
MILE	0003												
MYRB	0003												
MYHC	0044	0049	0054										
NIDD	0003												
NLEW	0003												
NYRN	0003	0043											
REXP	0047	0049	0054										
RLWP	0044	0049	0054										
RRCI	0044	0049	0054										
VTOT	0003												
ALREG	0003												
ALNPJ	0003												
ALNPK	0003												
ENIDB	0003												
EXPDB	0003												
GVLOT	0003												
ICONT	0004												
IDUMP	0004												
IPLUT	0002	0005	0040	0049									
KMASK	0004												
MYREG	0003												
NIGDB	0003												
PEXPJ	0003												
PEXPK	0003												
PIMPJ	0003												
PIMPK	0003												
RNAME	0004	0010	0040										
TOPDP	0003	0047	0048	0049	0054								
ALNPOP	0003	0045	0045	0046	0048	0049	0054						
IPRINT	0004												
ITABLE	0003	0009	0009	0010									
IVMASK	0004												
MYHNET	0003	0044											
POPVEN	0003												
POPEXP	0003	0047	0049	0054									
POPIMP	0003	0054											
POPILT	0003												
PRINT6	0002												
STOPGF	0003												

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***** F O R T R A N   C R O S S   R E F E R E N C E   L I S T I N G *****
LABEL  DEFINED  REFERENCES
  98    0040    0007
  99    0042    0040
  100   0051    0049
 7777   0011    0010
8021    0065    0012  0010  0036  0062
8022    0015    0014
8023    0018    0017
8024    0021    0020
8025    0024    0023
8026    0033    0032
8027    0038    0037
8028    0058    0043  0052
8029    0055    0054
8030    0063    0015  0029  0031  0035  0057  0061
8031    0064    0016  0019  0022  0025  0028  0034  0039  0056
8032    0027    0026

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/ STRUCTURED SOURCE LISTING /
SUBROUTINE PRINT6(IPL0T,IPR)
CX PRINT6 LAST UPDATE
C
C THIS SUBROUTINE PRINTS THE PRIMARY IMPACT METRICS
COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),DDBA(16),
B2 2POEXP(9),POPIHP(9),ALWPOP(9),TOPOP(9),
B2 3PIMPJ(6,9),PEXPJ(6,9),ALWPK(6,9),PIMPJ(9,9),
B2 4PEXPJ(9,9),ALWPK(9,9),POPLTN(4,9),BTOPGF(9,9),
B2 5POPDEN(4,9),ENIDB(16,9),EXPOB(16,9),NIDD(9),
B2 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),
B2 7MYRNET(9),MYRU,MYRN,NVT,NAT,NHT,NSH,NL60B,
B2 8ITABLEI
COMMON /BIG004/ RNAME(5),IVHASK(14),IDUMP(12),IPRINT(12),KMASK(6),
B4 2ICONT(12)
C
C THE FOLLOWING BLOCK PRINTS THE YEARLY IMPACT
C
IF (IPL0T.EQ.0 .AND. IPR.EQ.0) RETURN
IF (IPR.EQ.0) GOTO 98
ITABLE=ITABLE+1
WRITE(6,7777)ITABLE,RNAME
7777 FORMAT('1/' TABLE ',12,' NOISE IMPACT FOR EACH YEAR IN ',
A 'THE TIMESTREAM',T110,5A4/'0'/'0')
WRITE(6,8021)
WRITE(6,8030)
WRITE(6,8022)
8022 FORMAT(' ',T65,'LEVEL-',T70,'NOISE ',T103,'RELATIVE')
WRITE(6,8031)
WRITE(6,8023)
8023 FORMAT(' ',T19,' TOTAL US',T24,'POPULATION',T38,'RELATIVE',T50,
C 'POPULATION',T64,'WEIGHTED',T77,' IMPACT',T89,'CHANGE IN',T102,
C 'CHANGE IN')
WRITE(6,8031)
WRITE(6,8024)
8024 FORMAT(' ',T11,'POPULATION',T25,'EXPUSED',T38,'EXPOSURE',T51,
C 'IMPACTED',T63,'POPULATION',T78,'INDEX',T192,'LWP',T104,'IN LWP')
WRITE(6,8031)

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    ISN 0023      WRITE(6,8025)
    ISN 0024      8025  FORMAT(' ',T26,'>55DB',T79,'N11=',T91,'DLN.P=',T105,'RC1=')
    ISN 0025      WRITE(6,8031)
    ISN 0026      WRITE(6,8032)
    ISN 0027      8032  FORMAT(' ',T27,'PEXP',T37,'PEXP/TOPOP',T52,'POPIMP',T67,'LWP',
    C              T77,'LWP/TOPOP',T90,'LWP0=LWP',T103,'DLWP/LWP0')
    ISN 0028      WRITE(6,8031)
    ISN 0029      WRITE(6,8030)
    ISN 0030      WRITE(6,8021)
    ISN 0031      WRITE(6,8030)
    ISN 0032      WRITE(6,8026)
    ISN 0033      8026  FORMAT(' ',T4,'UNIT>',T12,'MILLIONS',T25,'MILLIONS',T38,'PERCENT',
    C              T51,'MILLIONS',T63,'MILLIONS',T77,'PERCENT',T90,'MILLIONS',T103,
    C              'PERCENT')
    ISN 0034      WRITE(6,8031)
    ISN 0035      WRITE(6,8030)
    ISN 0036      WRITE(6,8021)
    ISN 0037      WRITE(6,8027)
    ISN 0038      8027  FORMAT(' ',T4,'YEAR')
    ISN 0039      WRITE(6,8031)
    ISN 0040      98   IF (IPLUT.EQ.1) WRITE(1,99) RNAME
    ISN 0041      99   FORMAT(1X,5A4)
    ISN 0042      DO 8028 IYRN=1,MYRN
    ISN 0043      MYRC=MYRNET(IYRN)
    ISN 0044      C
    C              C COMPUTE DERIVED DATA
    C              C
    ISN 0045      DLNP=ALWPOP(1)-ALWPOP(IYRN)
    ISN 0046      RRCI=DLNP/ALWPOP(1)
    ISN 0047      REXP=POPEXP(IYRN)/TOPOP(IYRN)
    ISN 0048      RLNP=ALWPOP(IYRN)/TOPOP(IYRN)
    C              C
    ISN 0049      IF (IPLUT.EQ.1) WRITE(1,100) MYRC, TOPOP(IYRN), POPEXP(IYRN), REXP,
    C              CALWPOP(IYRN), RLNP, DLNP, RRCI
    ISN 0051      100  FORMAT(' ',14,' ',2(-6PF7.2),2PF7.2,-6PF7.2,2PF7.2,-6PF7.2,
    C              C2PF7.2)
    ISN 0052      IF (IPR.EQ.0) GOTO 8028
    ISN 0053      WRITE(6,8029) MYRC, TOPOP(IYRN), POPEXP(IYRN), REXP, POPIMP(IYRN),
    C              ALWPOP(IYRN), RLNP, DLNP, RRCI
    ISN 0054      8029  FORMAT(' ',T3,I6,2X,2(-6PF10.2,3X),2PF10.2,3X,2(+6PF10.2,3X),
    C              2PF10.2,3X,-6PF10.2,3X,2PF10.2)
    ISN 0055      WRITE(6,8031)
    ISN 0056      WRITE(6,8030)
    ISN 0057      C
    C *****
    ISN 0058      8028  CONTINUE
    ISN 0059      C
    ISN 0060      IF (IPR.EQ.0) RETURN
    ISN 0061      WRITE(6,8030)
    ISN 0062      WRITE(6,8021)
    C              C
    C              C ZE DO ALL FORMATS
    C              C
    ISN 0063      8030  FORMAT(' |          |',8(12X,'|'))
    ISN 0064      8031  FORMAT(' +|          |',8(12X,'|'))
    ISN 0065      8021  FORMAT(' +',112(' -'))
    ISN 0066      RETURN
    ISN 0067      C
    C              END
  
```

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C *****
001)

002)

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*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*NOBOURCE EBCDIC NOLIST NUDECK NOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)
STATISTICS SOURCE STATEMENTS = 66, PROGRAM SIZE = 1966, SUBPROGRAM NAME =PRINT6
STATISTICS NO DIAGNOSTICS GENERATED
***** END OF COMPILATION ***** 114K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,UPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
 NOSOURCE EBCDIC NDLIST NODECK NOBJECT NOMAP FORMAT GOSTMT XREF NOALC NUANSF NOTERM FLAG(I)

***** U R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
A	0003
I	0003
AL	0002 0004
A1	0003 0005
A2	0003 0007
B1	0003 0005
B2	0003 0007
FI	0003
IT	0003 0005 0007
ADT	0003
ALC	0003
AL0	0003 0004
CZ0	0003
DBK	0003 0005 0007
PGF	0003
RAD	0002 0005 0007
VAF	0003
VGF	0003
AREA	0003
CON0	0003
CON2	0003
DELT	0004 0005 0005 0007 0007
IYAF	0003
IVBD	0003
IVGF	0003
JPGF	0003
LANE	0003
LIFE	0003
MYRE	0003
PGF0	0003
REMO	0003
YINC	0003
VPOP	0003
XINC	0003
YINC	0003
BVPOP	0003
JHYLE	0003
MODYN	0003
MYREF	0003
VBL74	0003
VBD77	0003
VBD85	0003
VBD90	0003
WIDTH	0003
XKINK	0003
FPAREA	0003
PPH0AD	0003
IEWAGE	0003

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```

/ STRUCTURED SOURCE LISTING /
001) ISN 0002      FUNCTION RAD(AL)                                00057500
                  CX RAD      LAST UPDATE;                      00057510
ISN 0003          COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7), 00057610
B1 2VINC(7),VUD74(14),VUD77(7),VUD85(7),VUD90(7),              00057620
B1 3A(2,3),DBK(3),CZ0(4,9,6),ALC(9),F1(9),PGF(5),              00057630
B1 4PGF0(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),                  00057640
B1 5AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPOP(14),              00057650
B1 6XINK,A1,A2,B1,B2,ALO,CON0,CON2,IVAF(14),                  00057660
B1 7MYREF(6),IVUD(14),LIFE(4),IEGAGE(6),JMYLE(9,4),           00057670
B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MDDYR,IT,I            00057680
C                                                                00058010
C RAD GIVES THE DISTANCE AT WHICH A GIVEN LEVEL AL OCCURS, GIVEN ALO 00058020
C IT IS AN INVERSE MYLE CURVE READER                          00058030
C                                                                00058040
ISN 0004          DELT=ALO-AL                                    00058100
ISN 0005          IF(DELT.LE.DBK(IT))RAD= 1.0E1**((DELT-B1)/A1) 00058400
ISN 0007          IF(DELT.GT.DBK(IT))RAD= 1.0E1**((DELT-B2)/A2) 00058600
ISN 0009          RETURN                                         00058700
C                                                                00058800
C          DEBUG SUBCHK,TRACE,INIT,SUBTRACE
001) ISN 0010      END                                           00058900

```

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*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOBL(NONE)
*OPTIONS IN EFFECT*NDOSOURCE:EHCDIC NOLIST NODCK NODJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)
*STATISTICS* SOURCE STATEMENTS = 9, PROGRAM SIZE = 390, SUBPROGRAM NAME = RAD
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION *****
126K BYTES OF CORE NOT USED

```

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTHT,NOSOURCE,NOTERMIAL,NOOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOJNT(60) SIZE(MAX) AUTODBL(NOVE)
NGBOURCE EBCDIC NOLIST NDECK NOBJECT NOHAP FORMAT GOSTHT XREF NOALC NOANSF NOTERM FLAG(I)

*****FORTRAN CROSS REFERENCE LISTING*****

Table with columns: SYMBOL, INTERNAL STATEMENT NUMBERS, and cross-reference numbers. Symbols include A, I, A1, A2, B1, B2, F1, IT, JJ, ADT, ALC, ALU, CZD, DBK, NAT, NHT, NSH, NVT, PGF, YAF, VGF, AREA, CONG, CON2, ODUA, IVAF, IVDD, IVGF, JPCF, LANE, LIFE, MILE, MYRB, MYRC, MYRE, NIDD, NLEV, NYKH, PGFO, PINC, HMO, C.

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***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
BVPOP	0003
ENIDB	0004
EXPOB	0004
GVTOT	0004
JWYLE	0003
MUDYR	0003
MYREF	0003
MYREG	0004
NIGDB	0004
PEXPJ	0004
PEXPX	0004
PIMPJ	0004
PIMPK	0004
TOPUP	0004
VBD74	0003
VBD77	0003
VBD85	0003
VBD90	0003
WIDTH	0003
XKINK	0003
ALWPOP	0004
FPAREA	0003
FPROAD	0003
IEWAGE	0003
ITABLE	0004
MYRNET	0004
POPGEN	0004
POPEXP	0004
POPIMP	0004
POPLTN	0004
STORGF	0004
UPDATE	0002.

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***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL 200 DEFINED 0013

0002 IN 0002

0006

0003

0004

REFERENCE	DESCRIPTION	ADDRESS
	SUBROUTINE UPDATE(MYRC) / STRUCTURED SOURCE LISTING /	00070200
	CALL UPDATE LAST UPDATE:	00070210
	C THIS SUBROUTINE UPDATES THE POPULATION GROWTH FACTOR EACH YEAR	00070300
	C	00070400
	C IT IS CALLED AT THE BEGINNING OF A YEAR	00070500
	C	00070600
B1	COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),	00070700
B1	ZVINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),	00070710
B1	JA(2,3),DOK(3),CZG(4,9,6),ALC(9),FI(9),PGF(5),	00070720
B1	4PGF0(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),	00070730
B1	SAREA(4,9),FPAREA(9,4),VPOP(14,26),OVPOP(14),	00070740
B1	BXXINK,A1,A2,B1,B2,ALO,CONO,CON2,IVAF(14),	00070750
B1	7MYREF(6),IVDD(14),LIFE(4),IEQAGE(6),JWYLE(9,4),	00070760
B1	8JHGF(9),LANE(9,6),MYRE(14),IYGF(14),MODXN,IT,1	00070770
	COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(14,9),DOBAC(16),	00071000

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REQUESTED OPTIONS: XREF, OPT(2), FORMAT, GOSTMT, NOSOURCE, NOTERMAL, NOOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODIAG(MOVE) NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL	INTERNAL STATEMENT NUMBERS																			
A	0002																			
I	0002	0123	0125	0128	0128	0128	0153	0154	0156	0157	0159	0163	0163	0163	0163	0163	0165	0165	0195	
J	0196	0198	0198	0201	0203	0203	0205													
	0045	0046	0046	0063	0064	0065	0068	0068	0069	0069	0069	0070	0070	0072	0074	0074	0075	0075	0075	
	0078	0079	0079	0080	0080	0081	0081	0081	0082	0082	0084	0084	0084	0085	0085	0085	0086	0086	0086	
	0073	0096	0099	0100	0101	0103	0104	0104	0104	0114	0115	0176	0177	0177	0181	0182	0183	0186	0187	
	0157	0190	0192	0198	0198	0210	0216	0216	0219	0220	0221	0222	0235	0235	0235	0240	0247	0256	0256	
	0256	0262	0269	0270	0271	0272	0279	0281	0282	0291	0295	0300	0304	0313	0314	0314	0318	0321	0324	
	0324	0327	0328	0329	0331	0333														
K	0071	0072	0074	0074	0075	0075	0079	0079	0080	0080	0081	0081	0081	0082	0082	0095	0096	0099	0100	
	0101	0103	0104	0104	0137	0139	0140	0141	0188	0190	0190	0192	0192	0192	0198	0198	0205	0208	0210	
	0210	0212	0212	0212	0218	0219	0220	0221	0222	0225	0226	0228	0231	0234	0235	0235	0240	0247	0247	
	0255	0256	0256	0258	0258	0260	0260	0262	0262	0301	0302	0302	0312	0313	0313	0313	0313	0314	0314	
	0314	0317	0317	0318	0318	0319	0319													
L	0073	0074	0075	0075	0126	0128	0128	0128	0189	0190	0190	0192	0198	0203	0208	0210	0212	0212	0212	
	0233	0234	0235	0256	0277	0278	0300													
M	0124	0125	0128	0128	0128	0155	0156	0157	0159	0163	0163	0163	0163	0165	0165	0199	0201	0203	0203	
	0205																			
V	0004	0075																		
Y	0276	0295	0297	0302	0304															
A1	0002	0222	0270	0282																
A2	0002	0223	0282																	
B1	0002	0219	0269	0282																
B2	0002	0220	0271	0282																
CL	0181	0258	0260	0260	0295	0297	0302	0304	0314											
DR	0099	0100																		
FI	0002	0314	0318	0321																
ID	0066	0068	0068	0068	0069	0069	0069	0070	0070	0074	0075	0078	0079	0079	0080	0080	0081	0081	0081	
	0082	0082	0084	0084	0084	0085	0085	0085	0086	0094	0100	0103	0104	0104	0104	0185	0186	0187	0190	
	0192	0210	0216	0216	0219	0220	0221	0222	0235	0235	0240	0247	0255	0256	0262	0269	0270	0271	0272	
	0281	0282	0291	0300	0313	0314	0324	0324												
IT	0002	0078	0079	0080	0080	0082	0082	0186	0223											
KP	0268	0269	0270	0271	0272	0278	0282	0291	0300											
PI	0068	0028	0029	0103																
XK	0004	0079	0082	0089	0089	0221	0272													
ADD	0049																			
AUT	0002	0075																		
ALC	0002	0046	0181																	
ALO	0002	0234	0235	0237	0242	0246	0278	0279	0279	0282	0282	0282	0289							
AML	0004	0075	0091	0091	0198															
C2D	0002	0079	0080	0081	0100	0104	0247	0291												
DBK	0002	0080	0082																	
ENI	0172	0332	0312	0318																
FIX	0025																			
IDB	0044	0046	0046	0049	0049	0050	0051	0056	0132	0134	0135	0224	0225	0226	0227	0228	0229	0241	0242	
	0246	0251	0251	0253	0253	0255	0257	0258	0258	0258	0260	0260	0260	0260	0273	0274	0276	0279	0295	
	0300	0301	0301	0302	0302	0304	0311	0313	0313	0313	0314	0314	0314	0314	0315	0315	0316	0316		
JOB	0048	0049	0049	0050	0051	0056	0286	0289	0295	0297	0301	0301								
LUB	0055	0056	0056	0056																

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***** I R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

NAT	0003	0045	0063	0093	0176															
NH1	0003	0071	0095	0137	0188	0216	0268	0312												
NID	0064	0066	0182	0185																
NSR	0003	0071	0126	0189	0233	0277														
NVT	0003	0123	0153	0195																
PGF	0002	0146	0146	0177	0187	0333														
PLU	0194	0205	0205	0208	0210	0210														
PUP	0004	0065	0086	0086	0333															
RAU	0255	0299																		
SIG	0004	0012	0128																	
SUM	0097	0101	0101	0103																
VAF	0002	0013	0120																	
VGF	0002	0013	0120																	
VML	0004	0159	0163	0163	0170	0170	0203													
XLO	0247	0250	0256	0291	0294	0300														
XUP	0250	0255	0256	0262	0294	0299	0300													
ADBA	0004	0046	0049	0049	0253	0276	0314													
ALUG	0128																			
ADNE	0010	0080	0081	0222	0270															
AREA	0002	0060	0070	0084	0085															
ATNU	0009	0009	0082	0223																
BDNE	0004	0081	0089	0219	0269															
BTND	0004	0082	0089	0220	0271															
CBAR	0009	0009	0079	0080																
COBA	0004	0046	0061	0061	0279	0295	0304													
CUNO	0002	0028	0061	0061																
CON2	0002	0029	0061	0061																
DBLO	0295	0297	0299	0304	0304															
DOBA	0003	0051	0053	0056	0056	0212	0242	0246	0251	0251	0253	0255	0258	0260	0289	0295	0297			
DFCL	0100	0101	0101																	
DREF	0008	0101	0103																	
EDGE	0004	0070	0089	0089	0281															
ENIA	0180	0322	0322	0329	0332															
GAMM	0004	0101																		
IPEH	0004	0205																		
IYAF	0002																			
IYBD	0002																			
IYGF	0002	0013	0120																	
IYES	0163																			
IYRN	0036	0037	0037	0133	0134	0135	0138	0139	0140	0141	0143	0144	0146	0146	0148	0170	0170	0177	0216	
	0216	0282	0315	0315	0316	0316	0317	0317	0318	0318	0319	0319	0324	0324	0327	0328	0329	0335	0336	
	0337	0338																		
JFLO	0004	0198																		
JPGF	0002	0177	0187	0333																
KFLU	0004	0198																		
KPER	0004	0205																		
LANE	0002	0072	0096																	
LIFE	0002	0013	0120																	
MILE	0003	0012	0074	0190	0192	0235	0256	0300												
MYRB	0003	0030	0033																	
MYRC	0144	0145	0161																	
MYRE	0002	0154																		
NIDD	0003	0064	0182																	
NLEV	0003	0011	0125	0156	0201															
NYRN	0003	0021	0034	0036	0041	0143														

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***** I N T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS									
PEXP	0173	0330	0330	0336						
PGFO	0002									
PIMP	0174	0331	0331	0337						
REMO	0002	0013	0120							
SRKT	0029	0070								
SUM1	0200	0203	0203	0205						
VINC	0002	0061	0061							
VPOP	0002	0149	0149	0163						
V701	0001									
XINC	0002	0061	0061							
YINC	0002									
ALHEG	0003	0007	0011	0128						
ALWPJ	0003	0329								
ALWPK	0003	0141	0319	0319						
AMAX1	0246	0295	0297							
AMIN1	0255									
BVPOP	0002	0190								
CONV1	0008	0103								
CONV2	0008	0068	0069	0070	0084					
DBLEV	0240	0201								
DBSUM	0004	0049	0050	0061	0061					
ELHEG	0006	0007	0128	0130	0130	0203				
EN10B	0003	0134	0316	0316	0340					
EXP00	0003	0135	0315	0315	0340					
FACT2	0004	0103	0106	0106	0210					
FACT3	0004	0068	0091	0091	0313	0314				
FACT4	0004	0069	0091	0091	0187					
GAMMA	0029	0029								
GV10T	0003									
ICONT	0005	0015	0026	0151	0190	0192	0231	0266	0344	
IDUMP	0005	0015	0061	0089	0091	0106	0120	0130	0146	0149 0170 0216 0324 0340
ILANE	0098	0099								
IPL0T	0015	0346								
IYREF	0163									
JMASK	0005	0017	0183							
JHYLE	0002	0078	0186							
KMASK	0005	0015	0190	0192	0231					
LEVEL	0127	0128	0128	0128	0158	0159	0162	0163	0163	0163 0163 0165 0165 0202 0203 0203
MIXDB	0004	0051	0056	0061	0061	0301	0301			
MDUVR	0002	0161	0163	0163	0163	0165	0165			
MYOLD	0154	0161								
MYREF	0002	0013	0120							
MYREG	0003	0011	0157	0163	0163	0165	0165			
NLANE	0072	0075	0096	0098						
N16DB	0003	0044	0048	0055	0132	0224	0241	0273	0286	0311
PDUMP	0061	0089	0091	0106	0130	0146	0149	0170	0216	0324 0340
PEXPA	0178	0320	0320	0327	0330					
PEXPJ	0003	0327								
PEXPK	0003	0139	0317	0317						
PIMPA	0179	0321	0321	0328	0331					
PIMPJ	0003	0328								
PIMPK	0003	0140	0318	0318						
POPOP	0175	0333	0333	0335						
RNAME	0005	0023	0120	0120						
TOPOP	0003	0335								

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***** J R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS		CROSS REFERENCE LISTING																			
USAGE	0190	0205																				
YBC74	0002	0019	0061	0061																		
YB077	0002	0019																				
YBDB5	0002	0019	0061	0061																		
YBD90	0002																					
WIDTH	0002	0099																				
XKINK	0002	0221	0278																			
ALVEL	0004	0190	0208	0210	0212	0212	0216	0216	0234	0278												
ALG010	0080	0001	0002	0103	0210																	
ALWPOP	0003	0336																				
DBEDGE	0240	0246	0251	0251	0253	0201	0202	0202	0295	0297	0304											
DBMEAN	0246	0251	0253	0260																		
DCBSUM	0050	0051	0053	0056	0056																	
DELEXP	0300	0301	0302																			
EDGEF2	0004	0104	0240	0255	0262																	
ENINET	0314	0316	0319	0322																		
EXPOEC	0004	0228	0302	0302	0313	0314	0324	0324														
EXPINC	0004	0227	0301	0301	0313	0314	0324	0324														
EXPNET	0313	0315	0317	0318	0320	0321																
FACRET	0187	0215	0256																			
FACTOR	0101																					
FLOMIX	0004	0012	0198																			
FPAHEA	0002	0068	0069	0084																		
FPHOAD	0002	0074	0235	0256																		
HIWAY2	0012	0014																				
IDBFLG	0239	0244	0248	0265	0207	0292																
IEQAGE	0002																					
IPRINT	0005	0015	0108	0110	0112	0110	0342	0346	0347	0349	0351	0353	0355	0357								
ITADLE	0003																					
IVMASK	0005	0015	0196																			
MYRNET	0003	0021	0030	0033	0037	0037	0041	0144														
NLEVEL	0125	0127	0156	0157	0162	0201	0202															
NPMILE	0067	0074	0074	0084																		
PERCNT	0004	0012	0205																			
PMYEXP	0004	0225	0258	0258	0313	0324	0324															
PMYLWP	0004	0226	0260	0260	0314	0324	0324															
PUPDEN	0003	0069	0085																			
POPEXP	0003	0336	0340																			
POPIMP	0003	0337																				
POPINC	0256	0257	0258	0260																		
POPLTN	0003	0005	0006																			
PRINT1	0108																					
PRINT2	0110																					
PRINT3	0112																					
PRINT4	0118																					
PRINT5	0342																					
PRINT6	0346																					
PRINT7	0347																					
PRINT8	0349																					
PRINT9	0351	0353																				
PRINT10	0355																					
PRINT11	0357																					
PAPDOK	0004	0229	0235	0235	0257	0257	0274	0300														
REGSCN	0011																					
SENEBC	0114																					

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***** U K T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
STDFGF	0003 0177 0340
UPDATE	0145
VEHGF1	0013 0117
VEHPUP	0148
WOTMPZ	0004 0084 0089 0089 0104 0235
XHINUS	0046

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
4	0101	
5	0075	
13	0036	
22	0044	0034
23	0063	
41	0123	
43	0132	
50	0143	0026
54	0153	
999	0018	0017
1000	0016	0015
1001	0020	0019
1002	0022	0021
1003	0024	0023
1300	0040	0036
1310	0039	0037
1320	0032	0030
1330	0043	0041
2200	0060	0044
2201	0059	0048 0053
2202	0058	0055
2203	0047	0045
2300	0088	0063
2301	0102	0098
2302	0083	0071
2303	0077	0073
2304	0105	0093 0094 0095
2310	0087	0066
3000	0114	
3002	0118	0117
4101	0129	0123 0124 0126 0127
4300	0136	0132 0133
4400	0142	0137 0138
5000	0339	0143 0151
5306	0122	0120
5401	0169	0153 0155
5402	0160	0158
5403	0168	0161 0165
5404	0167	0162
5510	0314	0176 0183
5520	0326	0185
5530	0215	0188 0189 0192
5532	0214	0212
5610	0107	0195 0196
5620	0106	0199

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***** FURTHA CROSS REFERENCE LISTING *****			
LABEL	DEFINED	REFERENCES	
5630	0204	0202	
5713	0310	0218	0231 0266
5714	0265	0233	0237 0262
5715	0264	0241	0242
5716	0255	0249	
5717	0250	0244	
5720	0309	0268	
5721	0308	0273	0274
5722	0307	0277	0279 0304
5723	0306	0286	0289
5724	0294	0287	
5726	0295	0293	
5727	0123	0311	0312
5728	0230	0224	
5790	0284	0282	
6001	0357	0344	
7000	0359		

/ STRUCTURED SOURCE LISTING /

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C MAIN
C THIS IS A PROGRAM WHICH CALCULATES THE NUMBER OF PEOPLE
C IMPACTED BY NOISE ORIGINATING FROM HIGHWAY TRAFFIC.
C
C DESCRIPTION: THIS IS FILE VARNET4
CF VARNET4 LAST UPDATE: 11/13/78 14:06:16
CC BIG001 LAST UPDATE: 10/31/78 22:26:23
CC BIG002 LAST UPDATE: 10/18/78 17:36:26
CC BIG003 LAST UPDATE: 11/07/78 17:39:27
CC BIG004 LAST UPDATE: 11/01/78 14:13:45
C FEATURES: HAS VARNET1, CORRECTION EVERY YEAR (WITHOUT LINE 32270)
C RETAINED MOST NOTAN7 CHARACTERISTICS
C SOME FEATURES OF NOTAN7 ADDED: E.G. ELREG
C LWP DERIVED FROM EXPOSURE IN DB BANDS
C CHANGE IN LOCAL CRITERION PERMITTED (I.E. ALC(J))
C VARIABLE NET: READS IN A NET OF YEARS
C NEW SUBROUTINES, CONSOLIDATED COMMON AREAS
C E.G. BACGRU, VEHPOP
C NON-REF SUBROUTINES DELETED: MRF, MWAS, CON
C EXTENSIVE REFORMATTING OF TEXT
C CONSOLIDATION OF BACGRU INTO VEHPOP
C DELETION OF VARIABLE GAM
C MIXED ARRAY FIXED... HAD UNDEFINED NUMBERS FOR LOW IDB.
C RESTRUCTURING OF LOWEST LEVEL IMPACT: NOW COMPUTED IN
C PRIMARY, ADDITIONAL AND DECREMENTAL SECONDARY EXPO-
C SURE, OLD ARRAYS REMOVED.
C DD LOOPS WITH SAME END POINT GIVEN SEPARATE ONES
C TESTS FOR ILLEGAL SITUATIONS
C FULL CONTROL FOR DUMP AND PRINT
C REGULATION SCENARIO IS NOW ITS OWN SEPARATE FILE
C ARRAY B SPLIT INTO TWO SEPARATE ONES
C SELECTED ZEROING OF ALEVEL(K,L) TO ISOLATE EFFECT OF
C ROADWAY TYPES
C IF ALEVEL=0, PUT EVERYBODY INTO LOWEST DB BAND
C TEN PRINT SUBROUTINES
    
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C
 C NEW VBD METHODOLOGY--VBD74 MOVED INTO FILE4
 C VBD IS NOW INTERPOLATED FROM INPUT ARRAYS FOR 77 & 85
 C CONV1 AND CONV2 MOVED WHOLLY INTO MAIN PROGRAM
 C SKIP FEATURE ADDED
 C VINC,XINC COMPUTED IN FIX, FIX INVOKED EARLIER
 C NEW CONTROL STRING ICONT SKIPS CERTAIN SECTIONS
 C NEW KFLD ARRAY
 C NEW FLOWIX DIMENSIONS
 C NEW REMD DATA
 C FULL CURRENT MODEL YEAR POPULATION ON ROAD.
 C BLOCK DATA AND OTHER SUBROUTINES MOVED INTO VARNET4A

C
 C MAIN PROGRAM

C SECTION 1.0 DATA MANAGEMENT

C SECTION 1.1 COMMON BLOCKS, DIMENSIONS

(045 ISN 0002

C
 COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
 B1 2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
 B1 3A(2,3),DBK(3),C2D(4,9,6),ALC(9),FI(9),PGF(5),
 B1 4PGFO(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),
 B1 5AREA(4,9),FPAREA(9,4),VPOP(14,26),HVPOP(14),
 B1 6XKINK,A1,A2,B1,B2,ALO,CUNO,CON2,IVAF(14),
 B1 7MYREF(6),IVBD(14),LIFE(4),IEQAGE(6),JWYLE(9,4),
 B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MUDYR,IT,I

C THE FOLLOWING COMMON BLOCKS SERVE PRINT SUBROUTINES

ISN 0003

C
 COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),DDBA(16),
 B2 2POPEXP(9),PUPIP(9),ALWPOP(9),TOPUP(9),
 B2 3PIPK(6,9),PEXP(6,9),ALWPK(6,9),PIPKJ(9,9),
 B2 4PEXPJ(9,9),ALWPKJ(9,9),POPLIN(4,9),STOPGF(9,9),
 B2 5POPDEN(4,9),ENIDB(16,9),EXPDB(16,9),NIDD(9),
 B2 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),
 B2 7MYRNET(9),MYRB,MYRN,NVT,NAT,NHT,NSK,N16DB,
 B2 8ITABLE

C END PRINT COMMON BLOCK

ISN 0004

C
 COMMON /BIG003/ GAMM(6,9),ALEVEL(6,5),BONE(4,9,6),BTWO(4,9,6),
 B3 2XK(4,9,6),FACT2(4,9,6),AML(9,6,5),VNL(14,4,5),
 B3 3EDGE(4,9),EDGEZ(4,9,6),MOTHRZ(4,9),POP(4),V(5),
 B3 4SIG(5,4,5,14),FLOMIX(14,4,5),PERCNT(4,2,4),
 B3 5PMYEXP(16,6),PMYLRP(16,6),EXPINC(16,6),
 B3 6EXPDEC(16,6),XPDBK(16),CDBA(9,16),ADUA(16),
 B3 7DBSUM(16,16),MIXDB(16,16),FACT3(4,4),FACT4(4,9),
 B3 8JFLU(9),KFLU(6),KPER(6),IPER(14)

ISN 0005

C
 COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),KMASK(6),
 B4 2ICONT(12),JMASK(9)

C SECTION 1.2 INITIALIZE AND READ IN SOME DATA

ISN 0006

ISN 0007

ISN 0008

ISN 0009

C
 DIMENSION LLREG(5,5,4,14)
 EQUIVALENCE (ALREG(1),ELREG(1))
 DATA P/3.14159277,OREF/50.,CONV1,CONV2/5.83963E4,2.64E3/
 REAL ATAU(3)/12.564608,12.564708,15.0/ ,AR(3)/2*150.,50./

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ISN 0010      DIMENSION ADNE(4,9,6)
C
C SECTION 1.2.1  DEFINE NAMELISTS, READ IN MILEAGE AND TIMESTREAM
C               NET DATA, AND IPLOT
C
ISN 0011      NAMELIST/REGSCN/ ALREG,NLEV,MYREG
ISN 0012      NAMELIST/HIWAY2/ MILE,PERCNT,FLUMIX,BIG
ISN 0013      NAMELIST/VEHGF1/ VGF,IVGF,REMU,MYREF,VAF,LIFE
ISN 0014      READ(3,HIWAY2)
ISN 0015      HEAD(4,1000) IPLOT,IPRINT,IDUMP,KNASK,IVMASK,ICONT
ISN 0016      1000  FORMAT(10X,11/10X,1211/10X,1211/10X,811/10X,1411/10X,1211)
C FJLL. STMT. ADDED 1980-04-25 BY RRACKL
ISN 0017      READ(4,999) JMASK
ISN 0018      999  FORMAT(10X,911)
ISN 0019      READ(4,1001) VBO74,VBD77,VBO85
ISN 0020      1001  FORMAT(4(10X,7(F6,3,1X)/))
ISN 0021      READ(4,1002) NYRN,MYRNET
ISN 0022      1002  FORMAT(10X,12/10X,9(I4,1X))
ISN 0023      READ(4,1003) RNAME
ISN 0024      1003  FORMAT(10X,5A4)
C
C SECTION 1.2.5  COMPUTE ARRAYS USED BY FUNCTION VBD
C
ISN 0025      CALL FIX
C
C SKIP
C
ISN 0026      IF(ICONT(1),EQ.1) GOTO 50
C
C COMPUTE VARIOUS CONSTANTS
C
ISN 0028      CON0=PI
ISN 0029      CON2=PI*GAMMA( 1.5E0)/ SQRT( 2.0E0)/GAMMA( 1.25E0)**2
C
C SECTION 1.3  CHECK TIMESTREAM NET POINTS FOR ORDERING AND LIMITS
C
ISN 0030      IF(MYRNET(1),NE,MYRNB)WRITE(6,1320)
ISN 0032      1320  FORMAT(' ', 'FIRST YEAR IS NOT BASELINE...HAB BEEN RESET')
ISN 0033      MYRNET(1)=MYRNB
ISN 0034      IF (NYRN,EQ.1)      GOTO 22
C
ISN 0036      13  DO 1300 IYRN = 2,NYRN
C
(042) ISN 0037      IF (MYRNET(IYRN),LE,MYRNET(IYRN-1))WRITE(6,1310)
ISN 0039      1310  FORMAT(' ', 'YEARS NOT IN ASCENDING ORDER ')
C
ISN 0040      1300  CONTINUE
C
(042) ISN 0041      IF (MYRNET(NYRN).GT.2013)WRITE(6,1330)
ISN 0043      1330  FORMAT('0','0',' ' LAST NET YEAR IS LATER THAN 2013...' )
C
C SECTION 2.0  COMPUTE VARIOUS NUMBERS BEFORE TIMESTREAM
C
C SECTION 2.2  DERIVE DBSUM,COBA AND MIXOB ARRAYS
C

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C-----
      ISN 0044      22      DO 2200 IDB      = 2,N16DB
      C
(043 ISN 0045      DO 2203 J          = 1,NAT
036 ISN 0046      CDBA(J,IOB) = XMINUS(ALC(J),ADBA(IOB))
      ISN 0047      2203      CONTINUE
      C
      C
      C
(036) ISN 0048      DO 2201 JDB      = 2,N16DB
      C
(034 ISN 0049      DDBSUM(IOB,JOB) = ADD(ADBA(IOB),ADBA(JOB))
      ISN 0050      DDBSUM = DBSUM(IDB,JDB)
      ISN 0051      IF(DDBSUM.GT.DDBA(1)) MIXDB(IOB,JDB) = 1
      ISN 0053      IF(DDBSUM.GT.DDBA(1)) GO TO 2201
      C
      ISN 0056      DO 2202 LOB      = 2,N16DB
      C
(026 ISN 0056      IF(DDBSUM.GE.DDBA(LOB).AND.DDBSUM.LT.DDBA(LOB+1))
      C          MIXDB(IOB,JDB) = LOB
      C
      ISN 0058      2202.      CONTINUE
      C
      C
      C
(026) C-----
      ISN 0059      2201      CONTINUE
      C
(034) ISN 0060      2200      CONTINUE
      C
      C          DUMP CDBA,DBSUM,MIXDB AND CON0,CON2.
      C
      C
      C
(043) ISN 0061      IF(IDUMP(1).EQ.1) CALL PDUMP(CDBA(1,1),CDBA(9,16),5,
      D1 2          MIXDB(2,2),MIXDB(16,16),4,CUN0,CUN0,5,
      D1 3          CON2,CON2,5,DBSUM(1,1),DBSUM(16,16),5,
      D1 4          VBD74(1),VBD74(14),5,VDB85(1),VDB85(7),5,
      D1 5          XINC(1),XINC(7),5,VINC(1),VINC(7),5)
      C
      C          SECTION 2.3 THE FOLLOWING BLOCK PROCESSES THE ADT AND DELINEATES
      C          THE POPULATED ZONE ASSOCIATED WITH EACH IO,J AND K.
      C
      C
      C
      ISN 0063      23      DO 2300 J          = 1,NAT
      C
(041 ISN 0064      NID          = NIDD(J)
      ISN 0065      POP(J) = 0.0E0
      C
      ISN 0066      DO 2310 ID          = 1,NID
      C
(033 ISN 0067      NPMILE = 0
      ISN 0068      FACT3(ID,J) = FPAREA(J,IO)/AREA(ID,J)/CONV2
      ISN 0069      FACT4(ID,J) = PUPDEN(ID,J)/CONV2/FPAREA(J,IO)
      ISN 0070      EDGE(ID,J) = CONV2*SQRT(AREA(ID,J))
      C
      ISN 0071      DO 2302 K          = 1,NHT
      C
(025 ISN 0072      NLANE          = LANE(J,K)
      C
      ISN 0073      DO 2303 L          = 1,NSK
(019 ISN 0074      NPMILE = NPMILE+MILE(N,J,IO,L)*FPR(J,K)
    
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1SN 0075      5      IF (ID.EQ.1) AML(J,K,L) = ADT(K,J)/V(L)/NLANE
1SN 0077      2303  CONTINUE
C
C SECTION 2.4 COMPUTE DERIVED WYLE CURVE COEFFICIENTS AND X AT KINK
C
019)          C
1SN 0076      IT = JWYLE(J, ID)
1SN 0079      XK(ID, J, K) = CZD(ID, J, K) + CBAR(IT)
1SN 0080      ALONE(ID, J, K) = DBK(IT) / ALOG10(1. + CBAR(IT)/CZD(ID, J, K))
1SN 0081      BONE(ID, J, K) = -ALONE(ID, J, K) * ALOG10(CZD(ID, J, K))
1SN 0082      BTWO(ID, J, K) = DBK(IT) - ATWO(IT) * ALOG10(XK(ID, J, K))
C
1SN 0083      2302  CONTINUE
C
C SECTION 2.3.1 COMPUTE WDTHPZ(WIDTH OF THE POPULATED ZONE) AFTER
C OBTAINING NUMBER OF POPULATED MILES, NPMILE.
C COMPUTE POPULATION BY AREA ID, J AND ALSO BY J ALONE
C
025)          C
1SN 0084      WDTHPZ(ID, J) = AREA(ID, J) * FPAREA(J, ID) / NPMILE * CONV2
1SN 0085      POPLTN(ID, J) = POPDEN(ID, J) * AREA(ID, J)
1SN 0086      POP(J) = POP(J) + POPLTN(ID, J)
C
1SN 0087      2310  CONTINUE
C
033)          C
1SN 0088      2300  CONTINUE
C
041)          C
1SN 0089      D2  2  IF (IDUMP(2).EQ.1) CALL PDUMP(WDTHPZ(1,1), WDTHPZ(4,9), 5,
D2  3  EDGE(1,1), EDGE(4,9), 5, BONE(1,1,1), BTWO(4,9,6), 5,
1SN 0091      D3  2  IF (IDUMP(3).EQ.1) CALL PDUMP(FACT3(1,1), FACT3(4,9), 5,
D3  3  FACT4(1,1), FACT4(4,9), 5,
AML(1,1,1), AML(9,6,5), 5)
C
C SECTION 2.3.2 COMPUTE CONSTANT ARRAYS IN THE NOISE EQUATION
C
1SN 0093      DO 2304 J = 1, NAT
040 1SN 0094      DO 2304 ID = 1, 4
031 1SN 0095      DO 2304 K = 1, NHT
C
023 1SN 0096      NLANE = LANE(J, K)
1SN 0097      SUM = 0.0E0
C
1SN 0098      DO 2301 I LANE = 1, NLANE
C
016 1SN 0099      DR = WIDTH(J, K) * (ILANE - 0.5E0)
1SN 0100      DFCL = UR + CZD(ID, J, K)
1SN 0101      SUM = SUM + FACTOR(GAMM(K, J), DREF, DFCL) / DFCL
C
1SN 0102      2301  CONTINUE
C
016)          C
1SN 0103      FACT2(ID, J, K) = ALOG10(SUM * PI * DREF ** 2 / CONV1)
C
C SECTION 2.3.3 COMPUTE THE EDGE OF THE POPULATED ZONE
C
1SN 0104      EDGEFZ(ID, J, K) = CZD(ID, J, K) + WDTHPZ(ID, J)
C
    
```

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ISN 0105      2304      CONTINUE
C
C DUMP FACT2 ARRAY
C
C
C
C
C
C
C IF(IDUMP(4).EQ.1) CALL PDUMP(FACT2(1,1,1),FACT2(4,9,6),5)
C
C SECTION 3.0 READ A REGULATION SCENARIO, AND (FOR THE FIRST LOOP)
C SIG, PERCENT AND FLOMIX
C
C
C CALL PRINT4, PRINTS CONSTANT DATA
C
C
C IF(IPRINT(1).EQ.1) CALL PRINT1
C IF(IPRINT(2).EQ.1) CALL PRINT2
C IF(IPRINT(3).EQ.1) CALL PRINT3
C
C READ A REGULATION SCENARIO
C FOLLOWING 2 STATEMENTS INSERTED BY RRACKL 1980-5-5. SUBROUTINE
C SERESC 'SELECTS REGULATION SCENARIOS' FROM THE NDISE LEVEL
C DICTIONARY FILE ON UNIT 8 ACCORDING TO INSTRUCTIONS ON UNIT 2.
C-----
ISN 0114      3000      CALL SERESC(J)
ISN 0115      IF(J.EQ.-1) STOP 1111
ISN 0117      READ(5,VENGF1,END=3002)
C
C CALL PRINT4, TO PRINT THE REGULATION SCENARIO
C
C
C IF(IPRINT(4).EQ.1) CALL PRINT4
C IF(IDUMP(5).EQ.1) WRITE(6,5306) RNAME,REMO,VGF,IVGF,
C HNAME,VAF,LIFE,NYREF
C
C *
C 5306      FORMAT('1#B DUMP: REMO',T110,5A4/10'/17(1X,6E12.3)/
DB 4        '10#B DUMP: VGF(IYRN,IVBD)'/10'/24(2X,10(F5.3,' '))/
DB 5        '10#B DUMP: IVGF(I)'/10'/14(11,2X)/
DB 6        '1#B DUMP: VAF(IVAF,IAGE)',T110,5A4/13(9X,4F8.4,4X,4F8.4)/
DB 7        '10#B DUMP: LIFE(IVAF)'/10'/T10,413/
DB 8        '10#B DUMP: NYREF(IVBD)'/10'/T10,618)
C
C SECTION 4.0 PRE-TIMESTREAM CHANGES FOR EACH COMPUTATION
C
C
C SECTION 4.1 COMPUTE ELREG ARRAY FROM REGULATION LEVELS.
C
C-----
ISN 0123      41.      DU 4101 I      * 1,NVT
(039 ISN 0124      DD 4101 M      * 1,4
C
C NLEVEL = NLEV(I,M)
C
C DD 4101 L      * 1,NSR
(022 ISN 0126      DD 4101 LEVEL * 1,NLEVEL
C
C ELREG(LEVEL,L,M,I) = 1.0E1**((ALREG(LEVEL,L,M,I)+
(014 ISN 0128      ALOG( 1.0E1)/ 2.0E1*SIG(L,M,LEVEL,I)**2)/ 1.0E1)
C
ISN 0129      4101      CONTINUE

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C
C DUMP ELREG ARRAY
C
C
C
C
C
C
C IF(IDUMP(6),EQ.1) CALL PDUMP(ELREG(1,1,1,1),ELREG(5,5,4,14),
06 2 5)
C
C SECTION 4.3 ZERO EXPOSURE IN DB BAND ACCUMULATORS
C 43
C DD 4300 IDB = 1,N10DB
(018 ISN 0132 43 DD 4300 IYRN = 1,9
ISN 0133
C
C ENIGH(IDB,IYRN)= 0,0E0
(029 ISN 0134 ENIGH(IDB,IYRN)= 0,0E0
ISN 0135
C
C CONTINUE
ISN 0136 4300
C
C SECTION 4.4 ZERO EXPOSURE BY HIGHWAY TYPE ARRAYS
C
C
C
C
C DD 4400 K = 1,NHT
(037 ISN 0137 DD 4400 IYRN = 1,9
ISN 0138
C
C PEXPK(K,IYRN)= 0,0E0
(028 ISN 0139 PEXPK(K,IYRN)= 0,0E0
ISN 0140
ISN 0141
C
C ALWPK(K,IYRN)= 0,0E0
ISN 0142 4400
C CONTINUE
C
C SECTION 5.0 TIME STREAM LOOP. IYRN=ORDINAL OF A NET YEAR.
C MYRN=A NET YEAR
C
C
C
C
C DD 5000 IYRN = 1,MYRN
(020 ISN 0143 50 DD 5000 IYRN = 1,MYRN
(044 ISN 0144
C MYRC=MYRNET(IYRN)
C
C SECTION 5.1 COMPUTE POPULATION GROWTH FACTOR IN THE CURRENT YEAR
C
C CALL UPDATE(MYRC)
ISN 0145
C
C DUMP CURRENT PGF
C
C IF(IDUMP(7),EQ.1) CALL PDUMP(IYRN,IYRN,4,PGF(1),PGF(5),5)
ISN 0146
C
C SECTION 5.2 COMPUTE THE CURRENT VEHICULAR POPULATION AND MYRE(I),
C THE CURRENT EARLIEST YEAR OF SURVIVAL, FOR THE BASE-
C LINE YEAR, BACKGROUND THE MEMO ARRAY AFTER ASSIGNMENT
C
C CALL VEHPOP(IYRN)
ISN 0148
C
C DJMP VPOP ARRAY
C

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ISN 0149      IF(IDUMP(8).EQ.1) CALL PDUMP(VPOP(1,1),VPOP(14,26),5)
L
C SKIP
C
ISN 0151      IF(ICONT(1).EQ.1) GOTO 5000
C
C SECTION 5.4  COMPUTE NUMBER OF CARS IN EACH NOISE RANGE
C
ISN 0153      54    DO 5401 I      * 1,NVT
C
(035) ISN 0154      MYOLD=MYRE(I)
C
ISN 0155      DO 5401 M      * 1,4
C
(027) ISN 0156      NLEVEL=NLEV(I,M)
ISN 0157      MYREG(NLEVEL+1,M,1)=2014
C
ISN 0158      DO 5402 LEVEL * 1,5
(021) ISN 0159      VML(I,M,LEVEL)= 0.0E0
ISN 0160      5402 CONTINUE
C
C SORT CARS INTO NOISE GROUPS ACCORDING TO THE REGULATION SCENARIO
C
C
(021) ISN 0161      DO 5403 MODYR * MYOLD,MYRC
(020) ISN 0162      DO 5404 LEVEL * 1,NLEVEL
C
(013) ISN 0163      IF(MODYR.GE.MYREG(LEVEL,M,1).AND.MODYR.LT.MYREG(LEVEL+1,M,1))
C VML(I,M,LEVEL) = VML(I,M,LEVEL)+VPOP(I,IYES(IYREF(MODYR)))
ISN 0165      IF(MODYR.GE.MYREG(LEVEL,M,1).AND.MODYR.LT.MYREG(LEVEL+1,M,1))
C GO TO 5403
C
C-----
ISN 0167      5404 CONTINUE
(013) C
C-----
ISN 0168      5403 CONTINUE
C
(020) ISN 0169      5401 CONTINUE
C
C DUMP VML
C
C
(027) ISN 0170      09 2 IF(IDUMP(9).EQ.1) CALL PDUMP(IYRN,IYRN,M,
(035) VML(1,1,1),VML(14,4,5),5)
C
C SECTION 5.5  COMPUTE AND SUM EXPOSURE AND IMPACT NUMBERS OVER
C J,K,LD,L
C
C SECTION 5.5.1 SET UP LAND USE AREA LOOP (J LOOP)
C
ISN 0172      ENI * 0.0E0
ISN 0173      PEXP * 0.0E0
ISN 0174      PIMP * 0.0E0
ISN 0175      PUPOP * 0.0E0
C

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      ISN 0176      DD 5510 J      = 1,NAT
(032  ISN 0177      C
      ISN 0178      STOPGF(J,IYRN)=PGF(JPGF(J))
      ISN 0179      PEXPA = 0.0E0
      ISN 0180      PIMPA = 0.0E0
      ISN 0181      ENIA  = 0.0E0
      ISN 0182      CL    = ALC(J)
      ISN 0183      VID   = NIDD(J)
      C FOLLOWING STATEMENT ADDED 1980-04-25 BY R RACKL
      IF (JMASK(J).EQ.0)GOTO 5510
      C
      C SECTION 5.5.2 SET UP VARIABLE POPULATION DENSITY LOOP (ID LOOP)
      C
      ISN 0185      DD 5520 ID      = 1,NID
(024  ISN 0186      C
      ISN 0187      IT=JHYLE(J, ID)
      FACRET=FACT4(ID,J)*PGF(JPGF(J))
      C
      C SECTION 5.5.3 SET UP HIGHWAY TYPE LOOP (FIRST-K LOOP)
      C
      ISN 0188      DD 5530 K      = 1,NHT
      C
      C SECTION 5.5.4 SET UP SPEED RANGE LOOP (L LOOP)
      C
(018  ISN 0189      DD 5530 L      = 1,N8R
(012  ISN 0190      C
      ISN 0191      IF(MILE(K,J, ID,L).EQ.0.OR.(KMASK(K).EQ.0.AND.ICONT(3).EQ.0))
      ISN 0192      ALEVEL(K,L) = 0.0E0
      ISN 0193      IF(MILE(K,J, ID,L).EQ.0.OR.(KMASK(K).EQ.0.AND.ICONT(3).EQ.0))
      ISN 0194      GO TO 5530
      PLO= 0.0E0
      C
      C SECTION 5.6 COMPUTE NOISE LEVEL AND IMPACT NUMBERS ASSOCIATED WITH
      HIGHWAY TYPE I,K,L IN AREA ID,J
      C
      C SECTION 5.6.1 SUM NOISE CONTRIBUTION FROM ALL VEHICLE TYPES I.
      C
      ISN 0195      DD 5610 I      = 1,NVT
      C
      C CALCULATE USAGE FACTOR AND CURRENT NO OF TYPE I VEHICLES ON ROAD
      C
(007  ISN 0196      IF(IVMASK(I).EQ.0) GOTO 5610
      ISN 0197      USAGE=AML(J,K,L)*FLOMIX(I,JFLO(J),KFLO(K))/BVPOP(I)
      C
      C SECTION 5.6.2 SUM NOISE CONTRIBUTION FROM EACH OPERATING MODE M.
      C
      ISN 0199      DD 5620 M      = 1,4
      C
(004  ISN 0200      SUMI= 0.0E0
      ISN 0201      NLEVEL=NLEV(I,M)
      C
      C SECTION 5.6.3 SUM NOISE CONTRIBUTION FROM EACH NOISE RANGE, LEVEL.
      C
      ISN 0202      DD 5630 LEVEL = 1,NLEVEL
(002  ISN 0203      SUMI=SUMI+VNL(I,M,LEVEL)*ELNEG(LEVEL,L,M,I)
      ISN 0204      CONTINUE
      C
      5630

```

```

002) ISN 0205          C
                        PLU=PLU+SUM1*PENCNT(M,KPER(K),IPER(I))*USAGE
                        C
004) ISN 0206          5620  C
                        CONTINUE
                        C
      ISN 0207          5610  C
                        CONTINUE
                        C
                        C SECTION 5.6   CONTINUED. COMPUTE PLO AND ALO FROM SUM
                        C
007) ISN 0208          C
      ISN 0210          C
      ISN 0212          5532  C
      ISN 0214          C
                        IF(PLO.EQ. 0.0E0) ALEVEL(K,L) = 0.0E0
                        IF(PLO.NE. 0.0E0) ALEVEL(K,L) = 10.*(ALOG10(PLO)+FACT2(ID,J,K))
                        IF(ALEVEL(K,L).GT.ODBA(1)) WRITE(6,5532) K,L,ALEVEL(K,L)
                        FORMAT(' ',ALEVEL IS TOO HIGH...K= ',12,' L= ',12,' ALO=',
                        F10.3)
                        C
C-----
      ISN 0215          5530  CONTINUE
                        C
                        C DUMP ALEVEL
                        C
012) ISN 0216          010  2  C
010)                                IF(IDUMP(10).EQ.1) CALL PDUMP(IYRN,IYRN,4,J,J,4,10,10,4,
                        ALEVEL(1,1),ALEVEL(6,5),5)
                        C
                        C SECTION 5.7  COMPUTATION OF SECONDARY EXPOSURE FOR THE BASELINE YEAR
                        C
                        C SECTION 5.7.1  FIRST COMPUTE DETAILED EXPOSURE IN DB BANDS
                        C
      ISN 0218          DO 5713 K      = 1,NHT
                        C
017) ISN 0219          B1      = BONE(ID,J,K)
      ISN 0220          B2      = BTWO(ID,J,K)
      ISN 0221          XKINK   = XK(ID,J,K)
      ISN 0222          A1      = AONE(ID,J,K)
      ISN 0223          A2      = ATWO(IT)
                        C
      ISN 0224          DO 5728 IDB   = 1,N16DB
                        C
011) ISN 0225          PMYEXP(IDB,K) = 0.0E0
      ISN 0226          PMYLWP(IDJ,K) = 0.0E0
      ISN 0227          EXPINC(IDB,K) = 0.0E0
      ISN 0228          EXPDEC(IDB,K) = 0.0E0
      ISN 0229          PXPDBK(IDB)  = 0.0E0
                        C
      ISN 0230          5728  CONTINUE
                        C
011) ISN 0231          IF(ICUNT(3).EQ.1.AND,KMASK(K).EQ.0) GO TO 5713
                        C
      ISN 0233          DO 5714 L      = 1,NSR
                        C
010) ISN 0234          ALO      = ALEVEL(K,L)
      ISN 0235          IF(ALO.LE. 0.0E0) PXPDBK(16) = PXPDBK(16) +
                        WDTHPZ(ID,J)*MILE(K,J,10,L)*AFACR1*AD(J,K)*AFACR2

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ISN 0237      IF(ALO,LE, 0,0E0) GO TO 5714
ISN 0239      IDOFLG = 0
ISN 0240      DBEDGE = DBLEV( EDGEPI(ID,J,K))
ISN 0241      C
ISN 0241      DD 5715 IDB = 2,N1608
ISN 0242      C
ISN 0242      IF (DDBA(IDB),GE,ALO) GO TO 5715
ISN 0244      IF (IDBFLG,NE,0) GO TO 5717
ISN 0246      DBMEAN = (AMAX1(DDBA(IDB),DBEDGE)+ALO)/ 2.0E0
ISN 0247      XLD = CZD(ID,J,K)
ISN 0248      IDBFLG = 1
ISN 0249      GO TO 5716
ISN 0250      C
ISN 0251      XLD = XUP
ISN 0251      IF(DDBA(IDB),LT,DBEDGE) DBMEAN = (DBEDGE+DDBA(IDB-1))/ 2.0E0
ISN 0253      IF(DDBA(IDB),GE,DBEDGE) DBMEAN = DDBA(IDB)
ISN 0255      XUP = AMIN1(HAU(DDBA(IDB)),EDGEPI(ID,J,K))
ISN 0256      POPINC = FACRET*FRDAD(J,K)*(XUP-XLD)*MILEKK(J,IO,L)
ISN 0257      PKPDBK(IDB) = PKPDBK(IDB)+POPINC
ISN 0258      IF(DDBA(IDB),GE,CL) PHYEXP(IDB,K) = PHYEXP(IDB,K)+POPINC
ISN 0260      IF(DDBA(IDB),GE,CL) PHYLHP(IDB,K) = PHYLHP(IDB,K)+
ISN 0260      POPINC = (DBMEAN-CL) / 2.0E1
ISN 0262      IF(XUP,EG,EDGEPI(ID,J,K)) GO TO 5714
ISN 0262      C
ISN 0264      CONTINUE
ISN 0264      C
ISN 0265      CONTINUE
ISN 0265      C
ISN 0265      CSKIP
ISN 0265      C
ISN 0265      C
ISN 0265      IF(ICONT(2),EQ,1) GOTO 5713
ISN 0265      C
ISN 0265      SECTION 5.7.2 COMPUTATION OF EXTRA IMPACT DUE TO SECONDARY EXPOSURE
ISN 0265      C
ISN 0265      DD 5720 KP = 1,NHT
ISN 0265      C
ISN 0269      B1 = BDNE(ID,J,KP)
ISN 0270      A1 = ADNE(ID,J,KP)
ISN 0271      D2 = BTHU(ID,J,KP)
ISN 0272      XKINK = XK(ID,J,KP)
ISN 0273      C
ISN 0273      DD 5721 IDB = 2,N1608
ISN 0274      C
ISN 0274      IF(PKPDBK(IDB),EG, 0,0E0) GO TO 5721
ISN 0276      Y = ADDBA(IDB)
ISN 0277      C
ISN 0277      DD 5722 L = 1,NSR
ISN 0277      C
ISN 0277      ALO = ALEVEL(KP,L)
ISN 0279      IF(ALO,LE, 0,0E0,OR,CDBA(J,IDB),GE,ALO) GO TO 5722
ISN 0281      DBEDGE = DBLEV(EDGEPI(ID,J))
ISN 0282      IF(DBEDGE,GE,ALO) WRITE(6,5790) IYHN,J,IO,K,KP,DBEDGE,A1,A2,
ISN 0284      H1,G2,ALO,ALO
ISN 0285      FORMAT(' ',I4,4I3,1X,7F10,3)
ISN 0285      IDOFLG = 0

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C
DD 5723 JDB      = 2,N16DB
C
IF (IDBFLG.NE.0)      GO TO 5724
IF (DDBA(JDB).GE.ALO) GO TO 5723
XLO = CZD(ID,J,KP)
IDBFLG = 1
GO TO 5726
C
XLD = XUP
IF (Y.LT.CL) DULO = AMAX1(CDBA(J,IDB),DDBA(JDB),DBEDGE)
IF (Y.GE.CL) DULO = AMAX1(DDBA(JDB),DBEDGE)
XUP = RAN(DBLO)
DELEXP = (XUP-XLO) * MILL(KP,J,LD,L) * PXPDBK(IDB)
EXPINC(MIXDB(IDB,JDB),K) = EXPINC(MIXDB(IDB,JDB),K)+DELEXP
IF (Y.GE.CL) EXPDEC(IDB,K) = EXPDEC(IDB,K)-DELEXP
IF (DBLO.LE.DBEDGE.OR.(Y.LT.CL.AND.DBLO.LE.CDBA(J,IDB)))
GO TO 5722
C
CONTINUE
C
CONTINUE
C
CONTINUE
C
CONTINUE
C
CONTINUE
C
SECTION 5.8  DERIVE ROW AND COLUMN SUMS FROM DETAILED MATRICES
C
DD 5727 JDB      = 1,N16DB
DD 5727 K        = 1,NHT
C
EXPNET = PMYEXP(IDB,K)+(EXPINC(IDB,K)+EXPDEC(IDB,K))*
FACT3(ID,J)
ENINET = PMYLWP(IDB,K)+(EXPINC(IDB,K)+EXPDEC(IDB,K))*
FACT3(ID,J)*(ADBA(IDB)-CL)/ 2.0E1 * FI(J)
C
EXPDB(IDB,IYRN) = EXPDB(IDB,IYRN) + EXPNET
ENIDB(IDB,IYRN) = ENIDB(IDB,IYRN) + ENINET
C
PEXP(K,IYRN) = PEXP(K,IYRN) + EXPNET
PIMPK(K,IYRN) = PIMPK(K,IYRN) + EXPNET * FI(J)
ALWPK(K,IYRN) = ALWPK(K,IYRN) + ENINET
C
PEXPA = PEXPA + EXPNET
PIMPA = PIMPA + EXPNET * FI(J)
ENIA = ENIA + ENINET
C
CONTINUE
C
DUMP DETAILED IMPACT
C
C
C
IF (IDUMP(11).EQ.1) CALL PDUMP(IYRN,IYRN,4,J,J,4,LD,LD,4,

```

ISN 0286
(001) ISN 0287
ISN 0289
ISN 0291
ISN 0292
ISN 0293

ISN 0294 5724
ISN 0295 5726
ISN 0297
ISN 0299
ISN 0300
ISN 0301
ISN 0302
ISN 0304

C
ISN 0306 5723
(001) ISN 0307 5722
(003) ISN 0308 5721
(005) ISN 0309 5720
(008) ISN 0310 5713

(017) ISN 0311
(015) ISN 0312
(009) ISN 0313
ISN 0314

ISN 0315
ISN 0316

ISN 0317
ISN 0318
ISN 0319

ISN 0320
ISN 0321
ISN 0322

ISN 0323 5727

(009)
(015) 0324

```
D11 2 EXPINC(1,1),EXPINC(16,6),5,EXPDEC(1,1),EXPDEC(16,6),5,
D11 3 PMYLNK(1,1),PMYLNK(16,6),5,PMYEXP(1,1),PMYEXP(16,6),5)
```

ISN 0326 5520

CONTINUE

024)

ISN 0327
ISN 0328
ISN 0329
ISN 0330
ISN 0331
ISN 0332
ISN 0333

```
PEXPJ(J,IYRN) = PEXPA
PIMPJ(J,IYRN) = PIMPA
ALWPPJ(J,IYRN) = ENIA
PEXP = PEXP + PEXPA
PIMP = PIMP + PIMPA
ENI = ENI + ENIA
POPOP = POPOP + PGF(JPGF(J)) * POP(J)
```

ISN 0334 5510

CONTINUE

C
C
C SECTION 5.0.1 STORE OVERALL IMPACT DATA TO BE PRINTED AT THE END
C OF THE TIMESTREAM.
C

032)

ISN 0335
ISN 0336
ISN 0337
ISN 0338

```
TOPOP(IYRN) = POPOP
POPEXP(IYRN) = PEXP
POPIMP(IYRN) = PIMP
ALWPOP(IYRN) = ENI
```

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ISN 0339

5000

CONTINUE

C
C SECTION 6.0 END OF TIMESTREAM, PRINT OUT STORED DATA
C
C DUMP ANNUAL METRICS.
C

044)

ISN 0340

D12

```
IF(ICOMP(12),EQ,1) CALL PDUMP(POPEXP(1),STUPGF(9,9),5,
ZENIDB(2,1),EXPDB(16,9),5)
```

ISN 0342
ISN 0344
ISN 0346
ISN 0347
ISN 0349
ISN 0351
ISN 0353
ISN 0355

```
IF(IPRINT(5),EQ,1) CALL PRINT5
IF(ICOUNT(1),EQ,1) GO TO 6001
CALL PRINT6(IPLOT,IPRINT(6))
IF(IPRINT(7),EQ,1) CALL PRINT7
IF(IPRINT(8),EQ,1) CALL PRINT8
IF(IPRINT(9),EQ,1) CALL PRINT9(1)
IF(IPRINT(9),EQ,1) CALL PRINT9(2)
IF(IPRINT(10),EQ,1) CALL PRINT10
```

ISN 0357

6001

```
IF(IPRINT(11),EQ,1) CALL PRINT11
```

C
C SECTION 7.0 READ IN ANOTHER REGULATION SCENARIO
C

ISN 0359

7000

STOP

C
C SECTION 8.0 DEMO PACKETS
C

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LEVEL 2.2 (SEPT 76) MAIN OS/360 FORTRAN H EXTENDED DATE 80.273/19.18.55 PAGE 19

C OERUG SUBCHK
C AT 13
C DISPLAY WIDTH
C TRACE ON
C
END

045) ISN 0360

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*NOBSOURCE EBCDIC NULIST NUDECK NUOBJECT NUMAP FORMAT GDSMT XREF NOALC NOANSF NOTERM FLAG(I)
STATISTICS SOURCE STATEMENTS = 359, PROGRAM SIZE = 13252, SUBPROGRAM NAME = MAIN
STATISTICS NO DIAGNOSTICS GENERATED
***** END OF COMPILATION ***** 14K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(32) AUTODBL(MONE)
NOSOURCE EBCDIC NOLIST NOCHECK NOOBJECT NONAP FORMAT GOSTMT XREF NOALC NOANSI NOTERM FLAG(I)

***** U R T R A N C H O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
A	0003
I	0002 0004 0004 0006 0008 0010 0010 0012 0012 0014 0014 0016
A1	0003
A2	0003
B1	0003
B2	0003
F1	0003
I1	0003
IT	0003
ADT	0003
ALC	0003
AL0	0003
C20	0003
DBK	0003
MYH	0003 0008 0010 0010 0010 0012 0012 0012 0014 0014 0014 0016
PGF	0003
VAF	0003
VBD	0002 0004 0008 0010 0012 0014 0016
VGF	0003
AREA	0003
CUN0	0003
CON2	0003
IYAF	0003
IYBD	0003
IYGF	0003
JPGF	0003
LANE	0003
LIFE	0003
MYRE	0003
PGFO	0003
REMU	0003
VINC	0003 0010
VPOP	0003
XINC	0003 0012
YINC	0003 0014
BVFD0	0003
JHYLE	0003
MYREF	0003
VBD74	0003 0004 0008 0010
VBD77	0003 0012
VBD85	0003 0014
VBD90	0003 0016
WIDTH	0003
XKIRK	0003
FPAREA	0003
FPRDAD	0003
IEDAGL	0003

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/ STRUCTURED SOURCE LISTING /

```

(001 ISN 0002      FUNCTION VBD(1)
                  CX VBD      LAST UPDATE:      10/18/78 17:57:17
                  C THIS FUNCTION COMPUTES THE CURRENT VEHICLE BREAKDOWN
ISN 0003          COMMON /B1G001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
B1              2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
B1              3A(2,3),DBR(3),CZD(4,9,6),ALC(9),FI(9),PGF(5),
B1              4PGFO(5),WIDTH(9,6),FPHOAD(9,6),AUT(6,9),
B1              5AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPDP(14),
B1              6XKINK,A1,A2,B1,B2,ALO,CUNO,CUN2,IVAF(14),
B1              7MYREF(6),IVBD(14),LIFE(4),EQAGE(6),JWYLE(9,4),
B1              8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MYR,IT,II
                  C
ISN 0004          IF(I.GT.7)              VBD = VBD74(1)
ISN 0006          IF(I.GT.7)              RETURN
C-----
ISN 0008          IF(MYR.LT.1974)         VBD = VBD74(1)
ISN 0010          IF(MYR.GE.1974.AND.MYR.LT.1977) VBD = VBD74(1)+VINC(I)*(MYR-1974)
ISN 0012          IF(MYR.GE.1977.AND.MYR.LT.1985) VBD = VBD77(I)+XINC(I)*(MYR-1977)
ISN 0014          IF(MYR.GE.1985.AND.MYR.LT.1990) VBD = VBD85(I)+YINC(I)*(MYR-1985)
ISN 0016          IF(MYR.GE.1990)         VBD = VBD90(1)
ISN 0018          RETURN
001)              C
                  END
                  00064000

```

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```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)
*STATISTICS* SOURCE STATEMENTS = 18, PROGRAM SIZE = 526, SUBPROGRAM NAME = VBD
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION *****
122K BYTES OF CORE NOT USED

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LEVEL (SLPT 76) VEHPOP 09/360 FURTHAN .XTENDED DATE 80,273/19.21.13 PAGE

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOSOURCE,NOTERMAL,NDOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
NOSOURCE EBCDIC NULIST WUDECK NDOBJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF VOTE-AM FLAG(1)

***** D I R T R A N C R O S S R E F E R E N C E L I S T I N G *****																		
SYMBOL	INTERNAL	STATEMENT NUMBERS																
A	0004																	
I	0004	0006	0008	0012	0014	0014	0014	0015	0018	0018	0023	0025	0027	0027	0027	0029	0029	0029
	0032	0034	0036	0042	0043	0045	0046	0050	0052	0052	0052	0052						
A1	0004																	
A2	0004																	
B1	0004																	
B2	0004																	
F1	0004																	
IT	0004																	
XX	0018	0027	0029	0031	0032													
ADT	0004																	
ALC	0004																	
ALO	0004																	
CZD	0004																	
DBK	0004																	
IYR	0007	0008	0017	0018	0023	0027	0032	0048	0050	0052	0052							
NAT	0005																	
NHT	0005																	
NSH	0005																	
NVT	0005	0012	0042															
PGF	0004																	
SUM	0013	0031	0031	0034	0036	0037												
YAF	0004	0027	0029	0052														
VUD	0027	0029																
VGJ	0004	0029																
AREA	0004																	
CUNO	0004																	
CON2	0004																	
QUUA	0005																	
IAGE	0022	0023	0024	0025	0027	0029	0049	0050	0050	0052	0052							
IVAF	0004	0014	0025	0027	0029	0052	0052											
IVUD	0004	0014	0018	0023	0027	0029	0043	0045	0050	0052	0052							
IVGF	0004	0029																
IYES	0032																	
IYRN	0002	0018	0018	0020	0034	0036	0039	0040										
JPGF	0004																	
LAGE	0004																	
LIFE	0004	0014	0025	0052														
MAXD	0014																	
MILE	0005																	
MYRB	0005	0027	0029	0029	0047	0049												
MYRC	0010	0014	0016	0022														
MYRE	0004	0014	0015	0046														
NIDD	0005																	
NLEV	0005																	
NYRN	0005																	
PLFU	0004																	
REMU	0004	0018	0027	0029	0052	0052												
VINC	0004																	

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS									
VPOP	0004	0006	0032							
VTDT	0005	0036								
XINC	0004									
YINC	0004									
ALREG	0005									
ALWPK	0005									
BVPOP	0004	0034								
ENIDB	0005									
EXPOB	0005									
GVTOT	0005	0039								
IFLAG	0003	0004	0043	0045						
IYBAS	0029									
IYREF	0017	0029	0048							
JWYLE	0004									
MGDYR	0004	0016	0017	0022	0027	0029	0029	0047	0048	0049
MYCLD	0015	0016	0046	0047						
MYREF	0004	0014								
MYREG	0005									
N16DB	0005									
PEXPJ	0005									
PEXPX	0005									
PIMPJ	0005									
PIMPK	0005									
POPOP	0005									
VDD74	0004	0018								
VDD77	0004									
VDD85	0004									
VDD90	0004									
WIDTH	0004									
XKINK	0004									
ALXPOP	0005									
BIGSUM	0011	0037	0037	0039						
FPAKEA	0004									
FPRDAD	0004									
IEQAGE	0004	0023	0050							
ITABLE	0005									
MYRNET	0005	0010								
POPDEN	0005									
POPEXP	0005									
POPIMP	0005									
POPLTN	0005									
STOPGF	0005									
VEHPOP	0002									

C-92

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
1	0012	
2	0052	
2000	0009	0006 0007
2101	0038	0012
2102	0033	0016 0025
2103	0031	0020
2104	0022	

***** U R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
2200	0055	0042 0043
2201	0054	0047

/ STRUCTURED SOURCE LISTING /

```

(007 15N 0006 SUBROUTINE VEHPOP(IYR)                                00091800
C                                                            00091820
C COMPUTED THE VEHICLE POPULATION FROM REMO AND GROWTH AND  00091840
C ATTRITION FACTORS.                                       00091860
C                                                            00091880
C                                                            00092000
15N 0003  IINTEGER IFLAG(6)/6*0/                               00092100
15N 0004  COMMON /BIG001/ VAF(4,26),VGF(40,6),MEMO(6,17),XINC(7),VINC(7),
01 2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
01 3A(2,3),UGK(3),CZD(4,9,6),ALC(9),FI(9),PGF(5),
01 4PGFD(5),WIDTH(9,6),FPRDAD(9,6),ADT(6,9),
01 5AREA(4,9),SPAREA(9,4),VPOP(14,26),BVPOP(14),
01 6XKINK,A1,A2,D1,52,ALO,CONO,CON2,IVAF(14),
01 7MYREF(6),IVBD(14),LIFE(4),IEAGE(6),JAYLE(9,4),
01 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MODYR,IT,1
15N 0005  COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),DDUA(16),
02 2PDPXP(9),PUPIMP(9),ALHPOP(4),TOPOP(9),
02 3PIMP(6,9),PEXP(6,9),ALNPK(6,9),PIMPJ(9,9),
02 4PEXPJ(9,9),ALNPJ(9,9),POPLTN(4,9),STOPGF(9,9),
02 5POPDEN(4,9),ENIDU(16,9),EXPDU(16,9),NIDU(9),
02 6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),
02 7MYRNET(9),MYRB,MYRN,NV,NAT,NHT,NSH,NIBOB,
02 8ITABLE.
C
C DO 2000 I=1,14
C DO 2000 IYR=1,26
C
C VPOP(I,IYR) = 0.0
C
15N 0009  2000 CONTINUE
C
C
C
003)
006) 15N 0010  MYRC = MYRNET(IYRN)                                00093800
15N 0011  M16SUM = 0.0E0                                         00093900
C                                                            00093920
15N 0012  1 DO 2101 I = 1,NVI
C                                                            00094000
C                                                            00094040
003 15N 0013  SUM = 0.0E0                                         00094100
15N 0014  MYRE(I) = MAXO(MYRC - LIFE(IVAF(I)) + 1,MYREF(IVBD(I))) 00094200
15N 0015  MYOLD = MYRE(I)                                         00094300
C                                                            00094340
15N 0016  DO 2102 MODYR = MYOLD,MYRC
C                                                            00094400
C                                                            00094440
002 15N 0017  IYR = IYREF(MODYR)
15N 0018  IF(IYRN.EQ.1) XX = REMO(IVBD(I),IYR) * VBD74(I)
15N 0020  IF(IYRN.EQ.1) GOTO 2103
C
C THE FOLLOWING IS THE MAIN PART OF THE SUBROUTINE
C
15N 0022  2104  TAGE = MYRC + MODYR + 1                                00095000
C                                                            00095100

```

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	ISN 0023		IF(IYR.EQ.1)IAGE = IAGE+IEAGE(IVBD(I))	00095200
	ISN 0025		IF(IAGE.GT.LIFE(IVAF(I)))GO TO 2102	00095300
	ISN 0027		IF(MDYR.LE.MYRB) XX = REMD(IVBD(I),IYR) * VBD(I) *	00095400
		*	VAF(IVAF(I),IAGE)	00095410
	ISN 0029		IF(MDYR.GT.MYRB) XX = REMD(IVBD(I),IYRLF(MYRB)) * VBD(I)	00095500
		*	* VAF(IVAF(I),IAGE) * VGF(IYBRS(MDYR),IVGF(I))	00095600
		C		00095700
		C	CONTINUE COMPUTATION; GO TO DESTINATION FOR BASELINE YEAR	00095800
		C		00095900
C-----				
	ISN 0031	2103	SUM = SUM + XX	00096000
	ISN 0032		VPOP(I,IYR) = XX	00096200
		C		00096240
C-----				
	ISN 0033	2102	CONTINUE	00096300
		C		00096340
002)				
	ISN 0034		IF(IYRN.EQ.1) BVPOP(I) = SUM	00096350
	ISN 0036		VTOT(I,IYRN) = SUM	00096400
	ISN 0037		BIGSUM = BIGSUM + SUM	00096500
		C		00096540
	ISN 0038	2101	CONTINUE	00096600
		C		00096640
005)				
	ISN 0039		GVTO(I,IYRN) = BIGSUM	00096700
	ISN 0040		IF(IYRN.NE.1) RETURN	00096800
		C		00096900
		C	SECTION 2.2 BACKGROUND VEHICLE POPULATION IN EACH VBD GROUP	00097000
		C		00097100
	ISN 0042		DO 2200 I = 1,NVT	00097200
		C		00097240
004)	ISN 0043		IF(IFLAG(IVBD(I)).EQ.1)GO TO 2200	00097300
	ISN 0045		IFLAG(IVBD(I))=1	00097400
		C		00097480
		C	IF IFLAG =1, REMO HAS ALREADY BEEN BACKGROUND	00097500
		C		00097520
	ISN 0046		MYOLD=MYRE(I)	00097600
		C		00097640
	ISN 0047		DO 2201 MDYR = MYOLD,MYRB	00097700
		C		00097740
001)	ISN 0048		IYR = IYRIF(MDYR)	00097800
	ISN 0049		IAGE = MYRB - MDYR + 1	00097900
	ISN 0050		IF(IYR.EQ.1)IAGE = IAGE + IEAGE(IVBD(I))	00098000
	ISN 0052	2	IF(IAGE.LE.LIFE(IVAF(I)))	00098100
		C	REMO(IVBD(I),IYR) = REMD(IVBD(I),IYR)/VAF(IVAF(I),IAGE)	00098200
		C		00098240
	ISN 0054	2201	CONTINUE	00098300
		C		
001)	ISN 0055	2200	CONTINUE	00098400
		C		00098440
004)				
	ISN 0056		RETURN	00098500
007)				
	ISN 0057		END	00098600

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LEVEL (SEPT 76) VEHPUP OS/360 FORTRAN ATTENDED DATE 80.273/19.21.13 PAGE

OPTIONS IN EFFECT*NOBSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 56, PROGRAM SIZE = 1410, SUBPROGRAM NAME *VEHPUP

STATISTICS NO DIAGNOSTICS GENERATED

*****END OF COMPILATION*****

110K BYTES OF CORE NOT USED

C-95

BEST COPY AVAILABLE

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOSOURCE,NOTERM,NOAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(I)

```

***** O R T R A N   C R O S S   R E F E R E N C E   L I S T I N G *****
SYMBOL  INTERNAL STATEMENT NUMBERS
AL1     0002 0003 0005 0005
AL2     0002 0003 0005 0005
ALOG10  0005
XMINUS  0002 0003 0005

```

```

(001 18N 0002          / STRUCTURED SOURCE LISTING /
          FUNCTION XMINUS(AL1,AL2)
          C SUBTRACTS TWO NOISE LEVELS
          C AL1 MUST BE GREATER THAN AL2.
          IF(AL1.LE.AL2)XMINUS=0.
          IF(AL1.GT.AL2)XMINUS=10.*ALOG10(10.*(AL1/10.))-10.*(AL2/10.)
          RETURN
          C
          END
          00090200
          00090300
          00090400
          00090500
          00090600
          00090700
          00090800

```

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OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
 OPTIONS IN EFFECT: NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(I)
 STATISTICS: SOURCE STATEMENTS = 7, PROGRAM SIZE = 396, SUBPROGRAM NAME = XMINUS
 STATISTICS: NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

C.2 Common Modules

C-97

AAAAAF O R I T H A N C H O S S R E F E R E N C E L I S T I N G A A A A A

LABEL	DEFINED	REFERENCES
1	0026	0025
2	0025	0027 0029
3	0020	0019
4	0022	0021
5	0018	0017
9	0037	0031
11	0040	0038
12	0042	0041
13	0019	0043
14	0044	0019
15	0047	0025
16	0048	0047
17	0050	0035
18	0051	0050
19	0015	0012 0013 0014
20	0053	0023
21	0054	0053
22	0056	0041
23	0057	0056
24	0059	0044
25	0060	0059
30	0061	0049 0052 0055 0058
31	0062	0061

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/ STRUCTURED SOURCE LISTING /

```

(006) 18N 0002  SUBROUTINE HERESC (KRET)
C THIS SUBROUTINE SELECTS THE PROPER NOISE LEVELS FROM UNIT 8 (NOISE
C LEVEL DICTIONARY) AS DIRECTED BY CONTENTS OF UNIT 2.
      INTEGER COMP
      DIMENSION IRCNT(14), NLDXNM(2), NLDKMR(2)
      COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),DDBA(16),
      2POPEXP(9),POPIPM(9),ALNPOP(9),TOPOP(9),
      3PIMPK(6,9),PEXP(6,9),ALNPK(6,9),PIMPJ(9,9),
      4PEXPJ(9,9),ALNPJ(9,9),POPLIN(4,9),STOPGF(9,9),
      5MURDEN(4,9),ENIDB(16,9),EXPDB(16,9),NIDD(9),
      6MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),
      7MYRNET(9),MYRB,NYRN,NVT,NAT,NHT,NDR,N16DB,
      8ITABLE
      DATA DECK, BLANK /4HADR, 4H /
C INITIALIZATION
      KRET=0
      CALL ZERO (ALREG,1400)
      CALL ZEROI (NLEV,56)
      CALL ZEROI (IRCNT,14)
      COMP = BLANK
      DO 19 IVEN=1,14
      DO 19 M=1,4
      DO 19 L=1,6
(005) 18N 0013 19 MYREG(I,M,IVEN)=2014
(003) 18N 0014 C
(001) 18N 0015 C
(003) C
(005) C
      IVEN=0
      18N 0016 WRITE (6,5)
      18N 0017 FORMAT ('1 REGULATION INSTRUCTION FILE1',//)
      18N 0018
  
```

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```

004 ISN 0019 13 C GET NEXT LINE OF INPUT DENARIO SPEC FILE
    ISN 0020 3 READ(2,3,END=14) IRYR,NLDKNR
    ISN 0021 3 FORMAT(1X,14,2A3)
    ISN 0022 4 WRITE(6,4) IRYR,NLDKNR
    ISN 0023 4 FORMAT(' INSTRUCTION ON UNIT 21 Y',14,2A3)
    IF(IRYR.LT.1957.OR.IRYR.GT.2014) GO TO 20
C SEARCH NLDICT FILE
    ISN 0025 2 READ(8,1,END=15) PROMPT,NLDKNM
    ISN 0026 1 FORMAT(A4,2A3)
    ISN 0027 1 IF(PROMPT.NE.DECK ) GO TO 2
    ISN 0029 1 IF (NLDKNR(1) .NE. NLDKNM(1) .OR.
    NLDKNR(2) .NE. NLDKNM(2)) GO TO 2
    IF (COMP .EQ. NLDKNR(1) ) GO TO 9
    COMP = NLDKNR(1)
    IVEH=IVEH+1
    IF(IVEH.GT.14) GO TO 17
    IRCNT(IVEH)=IRCNT(IVEH)+1
    DO 11 4=1,4
    MYREG(IRCNT(IVEH),M,IVEH)=IRYR
    NLEV(IVEH,M)=NLEV(IVEH,M)+1
002) ISN 0041 11 C
    READ(8,12,END= 22 )((ALREG(IRCNT(IVEH),ISP,M,IVEH),ISP=1,5),M=1,4
    )
    C
    C
004) ISN 0042 12 FORMAT(1X,F5.1,1X,F5.1,1X,F5.1,1X,F5.1,1X,F5.1,1X)
    ISN 0043 12 GO TO 13
    C
    ISN 0044 14 IF(IVEH.LT.1)GOTO 24
    ISN 0046 14 RETURN
    C
C-----
    ISN 0047 15 WRITE(6,16) NLDKNR
    ISN 0048 16 FORMAT('NO MATCH FOR ',2A3,' IN NLDICT.')
    ISN 0049 16 GO TO 30
C-----
    ISN 0050 17 WRITE(6,18) NLDKNR
    ISN 0051 18 FORMAT('TOO MANY VEHICLES SPECIFIED (',2A3,')')
    ISN 0052 18 GO TO 30
C-----
    ISN 0053 20 WRITE(6,21) IRYR,NLDK NR
    ISN 0054 21 FORMAT('ILLEGAL REGULATION YEAR',16)
    ISN 0055 21 GO TO 30
C-----
    ISN 0056 22 WRITE(6,23) IVEH, IRCNT(IVEH)
    ISN 0057 23 FORMAT('PREMATURE E-O-F ON UNIT 8, VEHICLE ',13,
    ', REGULATION COUNTER ',14)
    ISN 0058 23 GO TO 30
C-----
    ISN 0059 24 WRITE(6,25)
    ISN 0060 25 FORMAT(' NO INSTRUCTIONS ON UNIT 2.')
    ISN 0061 30 WRITE(6,31)
    ISN 0062 31 FORMAT('OABOVE ERROR IN SERESC.',30('*'))
    ISN 0063 31 KRET=-1
    ISN 0064 31 RETURN
006) ISN 0065 31 C
    END
    
```

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LEVEL 2 (SEPT 76) SERESC OS/360 FORTRAN EXTENDED DATE 80.273/19.22.17 PAGE

OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODDL(NONE)

OPTIONS IN EFFECT*NO\$SOURCE EBCDIC NOLIST NODCK NODJJECT NUMAP FORMAT GOSTMT XREF NOALC NJANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS * 64, PROGRAM SIZE * 1818, SUBPROGRAM NAME *SERESC

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

110K BYTES OF CORE NOT USED

C-101

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC KOLIST NODECK NOOBJECT NUMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL	INTERNAL STATEMENT NUMBERS
I	0014 0015
M	0013 0015 0038 0039 0040 0040 0041 0041 0041
ISP	0041 0041 0041
NAT	0005
INT	0005
NUR	0005
VVT	0005
POP	0005
COMP	0003 0011 0031 0033
DECK	0006 0027
INCR	0005
IRYH	0019 0021 0023 0023 0039 0053
IYEH	0012 0015 0016 0034 0034 0035 0037 0037 0039 0039 0040 0040 0041 0041 0044 0056 0056
KRET	0002 0007 0063
MILE	0005
MYRB	0005
MYRN	0005
NIDD	0005
NLEV	0005 0009 0040 0040
NYRN	0005
VTOT	0005
ZERO	0008
ALREG	0005 0008 0041
BLANK	0006 0011
GVTOT	0005
IRCNT	0004 0010 0037 0037 0039 0041 0056
MYREG	0005 0015 0039
ZERO1	0009 0010
MYHRET	0005
NLDKYM	0004 0025 0029 0029
NLDKVR	0004 0019 0021 0029 0029 0031 0033 0047 0050 0053
POPEN	0005
POPLTN	0005
PROMPT	0025 0027
SEKRC	0002
STOPCF	0005
TUTPOP	0005

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*****FORTRAN CROSS REFERENCE LISTING*****

LABEL	DEFINED	REFERENCES
1	0024	0025
2	0025	0027 0029
3	0020	0019
4	0022	0021
5	0018	0017
9	0037	0031
11	0010	0038
12	0042	0041

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
13	0019	0043
14	0044	0019
15	0047	0025
16	0048	0047
17	0050	0035
18	0051	0050
19	0015	0012 0013 0014
20	0053	0023
21	0054	0053
22	0056	0041
23	0057	0056
24	0059	0044
25	0060	0059
30	0061	0049 0052 0053 0050
31	0062	0061

/ STRUCTURED SOURCE LISTING /

(006 ISN 0002

SUBROUTINE SERESC (KRET)
C THIS SUBROUTINE SELECTS THE PROPER NOISE LEVELS FROM UNIT 8 (NOISE
C LEVEL DICTIONARY) AS DIRECTED BY CONTENTS OF UNIT 2.

ISN 0003
ISN 0004
ISN 0005

INTEGER COMP
DIMENSION IRCNT(14), NLDKRM(2), NLDKRN(2)
COMMON /B16002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),POP(9),
ZPOPEN(4,9),POPLIN(4,9),STOPGF(9,9),TOTPOP(9),
SMILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYRNET(9),
4NIDD(9),MYRN,INCH,MYRD,MYRN,NVT,NAT,NMT,NSR

B2
B2
B2

ISN 0006

DATA DECK, BLANK /4HADR, 4H /
C INITIALIZATION

ISN 0007
ISN 0008
ISN 0009
ISN 0010
ISN 0011
ISN 0012

KRET=0
CALL ZERO (ALREG,1400)
CALL ZEROI(NLEV,56)
CALL ZEROI(IRCNT,14)
COMP = BLANK
DO 19 IVEH=1,14

(005 ISN 0013
(003 ISN 0014
(001 ISN 0015
001)
003)
005)

DO 19 M=1,4
DO 19 I=1,6
19 MYREG(I,M,IVEH)=2014
C
C
C

ISN 0016
ISN 0017
ISN 0018

IVEH=0
WRITE(6,5)
5 FORMAT ('1 REGULATION INSTRUCTIONS:',//)
C GET NEXT LINE OF INPUT SCENARIO SPEC FILE

(004 ISN 0019
ISN 0020
ISN 0021
ISN 0022
ISN 0023

13 READ(2,3,END=14) IRYR,NLDKRN
FORMAT(1X,14,2A3)
WRITE(6,4) IRYR,NLDKRN
FORMAT(' INSTRUCTION ON UNIT 2: Y',14,2A3)
IF(IRYR.LT.1957.OR.IRYR.GT.2014) GO TO 20
C SEARCH NLDICT FILE

ISN 0025
ISN 0026
ISN 0027
ISN 0029

READ(6,1,END=15) PROMPT,NLDKRM
FORMAT(A4,2A3)
IF(PROMPT.NE.'DECK') GO TO 2
IF (NLDKRM(1) .NE. NLDKRM(1) .OR.

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```

1      NLDKNR(2) = NLDKNR(2) GOTO 2
      IF (COMP.EQ.(NLDKNR(1))) GOTO 4
      COMP = NLDKNR(1)
      IVEH = IVEH + 1
      IF (IVEH.GT.14) GO TO 17
      IRCNT(IVEH) = IRCNT(IVEH) + 1
      DO 11 M=1,4
      MYREG(IRCNT(IVEH),M,IVEH) = IRYR
      NLEV(IVEH,M) = NLEV(IVEH,M) + 1
002)   C
      IVEH = IVEH + 1
      READ(8,12,END= 22)((ALREG(IRCNT(IVEH),ISP,M,IVEH),ISP=1,5),M=1,4)
      C
004)   C
      IVEH = IVEH + 1
      FORMAT(1X,F5.1,1X,F5.1,1X,F5.1,1X,F5.1,1X,F5.1,1X)
      GO TO 13
      C
      IF(IVEH.LT.1)GOTO 24
      RETURN
      C
C-----
      IVEH = IVEH + 1
      WRITE(6,16) NLDKNR
      FORMAT('OND MATCH FOR ',2A3,' IN NLDICT.')
```

C-104

C-----

C-----

006)

*OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODRL(NONE)
*OPTIONS IN EFFECT: NOSOURCE ENCDIC NULIST NUDECK NUOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)
*STATISTICS: SOURCE STATEMENTS = 64, PROGRAM SIZE = 1606, SUBPROGRAM NAME =SERESC
*STATISTICS: NO DIAGNOSTICS GENERATED
***** END OF COMPILATION ***** 110K BYTES OF CORE NOT USED

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LEVEL 2 (SLPT 76) ZERO

OS/360 FORTRAN EXTENDED

DATE 80.275/19.24.08

PAGE 1

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOBSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
NOBSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

***** FORTRAN CROSS REFERENCE LISTING *****

SYMBOL INTERNAL STATEMENT NUMBERS

J 0004 0005
N 0002 0003 0004
R 0002 0003 0005
ZERO 0002

***** FORTRAN CROSS REFERENCE LISTING *****

LABEL DEFINED. REFERENCES
1 0005 0004

/ STRUCTURED SOURCE LISTING /

(002 ISN 0002 SUBROUTINE ZERO (R, N)
ISN 0003 DIMENSION R(N)
ISN 0004 DO 1 J=1,N
(001 ISN 0005 1 R(J)=0.
001) C
ISN 0006 RETURN
(002) C
ISN 0007 END

C-105

*OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT: NOBSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 6, PROGRAM SIZE = 268, SUBPROGRAM NAME = ZERO

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION. *****

126K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOSOURCE,NOTERMAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOOBL(NONE) NOSOURCE EBCDIC NOLIST NODECK NOBJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(1)

```

*****FORTRAN CROSS REFERENCE LISTING*****
SYMBOL INTERNAL STATEMENT NUMBERS
I      0002 0003 0005
J      0004 0005
N      0002 0003 0004
ZERO1 0002

```

```

*****FORTRAN CROSS REFERENCE LISTING*****
LABEL  DEFINED  REFERENCES
1      0005    0004

```

```

/ STRUCTURED SOURCE LISTING /
(002 ISN 0002      SUBROUTINE ZERO1 (I, N)
      ISN 0003      DIMENSION I(N)
      ISN 0004      DD I J=1,N
(001 ISN 0005      1 I(J)=0
001)              C
      ISN 0006      RETURN
(002)              C
      ISN 0007      END

```

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*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOOBL(NONE)

*OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NODECK NOBJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 6, PROGRAM SIZE = 268, SUBPROGRAM NAME = ZERO1

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

C.3 SEM Modules

REQUESTED OPTIONS: XREF,OPT(2),GOSTMT,NOTERMINAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) SOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP NOFORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

ISN 0002 BLOCK DATA
C BELONGS TO SINGLE EVENT MODEL
C
C
C UNNAMED COMMON
C

ISN 0003 COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
B1 2 VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
B1 3 VML(14,4,5),A(2,3),DRK(3),CZD(9,6),PGF(5),
B1 4 PGFO(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),
B1 5 AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPOP(14),
B1 6 X2(9,6,4),NPMILE(4,9),NPMK(4,9,6),ALD,IVAF(14),
B1 7 MYREF(6),IVHD(14),LIFE(4),IEDAGE(6),JWYLE(9,4),
B1 8 JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MYR,IT,I

C THE FOLLOWING COMMON BLOCKS SERVE PRINT SUBROUTINES

ISN 0004 COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),POP(9),
B2 2 PUPDEN(4,9),POPLIN(4,9),STOPGF(9,9),TOTPOP(9),
B2 3 MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYRNET(9),
B2 4 NIDD(9),MYRN,INCH,MYRB,MYRN,NVT,NAT,NHT,NSR

C END PRINT COMMON BLOCK

ISN 0005 COMMON /BIG003/ GANM(6,9),V(5),EDGE(4,9),EDGEpz(4,9,6),
B3 2 WDTMPZ(4,9),FLOMIX(14,4,5),PERCNT(4,2,4),
B3 3 REPZ(4,9,6,4),REDGE(4,9,6,4),
B3 4 JFLO(9),KFLO(6),KPER(6),IPER(14)

ISN 0006 COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
B4 2 KMASK(6),METMSK(7),ICONT(12),MOH8K(3),IBEG(7),
B4 3 IPLOT(7),ITABLE,ITABS,NNTABS

ISN 0007 COMMON /BIG005/ HATIO(18,3,2),ORATIO(17,3,2),ADBL(21),RDBL(18),
B5 2 PLDEN(4,9,6,4,9),SEPROB(4,9,6,6,5),
B5 3 HDREDD(4,9,6,4,2),HDBUCUT(4,9,6,4,2),DLPSI(9,6,4),
B5 4 METHIC(20,7,2),DJKLEV(9,6,4,2),DLLEV(5,2),
B5 5 PACT(5,2),FHTN(2),COC(7),EVPROB(14,9,6),
B5 6 FIMP(80,5),SHIFT(4,9,2),AVDHL(20),IPACT(7),
B5 7 IFIMP(7),JCOC(7),INDUT(7),KOH(7),NADR,NRDB

ISN 0008 COMMON/BIG006/PNOHM(3,2,4),ACEV(6,9),IYRN,IFM,
B6 1 ACCM(20,2),VNTDAY,VNINIT,IEVB(6,9),KS,J,
B6 2 VNTDB(15,11,5,9),ACLWP(15,21),KSJEVB,IM56

ISN 0009 DATA MADB,NRDB/20,17/
ISN 0010 DATA ADDBL /130.,125.,120.,115.,110.,105.,100.,95.,90.,85.,80.,
* 75.,70.,65.,60.,55.,50.,45.,40.,35.,30./

ISN 0011 DATA AVGBL /127.5,122.5,117.5,112.5,107.5,102.5,97.5,92.5,87.5,
* 82.5,77.5,72.5,67.5,62.5,57.5,52.5,47.5,42.5,37.5,32.5/

ISN 0012 DATA RDBL /0.,-5.,-10.,-15.,-20.,-25.,-30.,-35.,-40.,-45.,
* -50.,-55.,-60.,-65.,-70.,-75.,-80.,-85./

ISN 0013 DATA RDBEDG /1728*0.0/, RDBUCUT /1728*0.0/,
DATA * PLDEN /4320*0.0/, SEPROB /6480*0.0/

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BEST COPY AVAILABLE

ISN 0014 DATA * REPZ /864*0.0/, HEDGE /864*0.0/
 DATA * IFIMP /1,2,3,4,5,5,4/
 DATA * KUM /1,1,2,2,1,2,2/
 DATA * INOUT /1,1,1,2,2,2,2/
 DATA * COC /55.7,55.7,45.,55.,30.,30.,55./
 DATA * JCOC /19,16,17,15,20,20,15/
 DATA * PACT /0.73770,0.00670,0.00490,0.04340,1.0000,
 DATA * /0.12900,0.00000,0.00125,0.83570,1.00000/
 DATA * IPACT /4,4,1,2,5,5,3/

C AREA AND POPULATION DATA.

C NIDD(J) IS THE NUMBER OF VARIABLE DENSITY REGIONS IN AREA TYPE J

ISN 0015 DATA NIDD/3,4,4,3,3,4,4,1/

C POPULATION DENSITIES, NUMBER OF PEOPLE PER SQ. MILE.

ISN 0016 DATA POPDEN /

J=	ID= 1	2	3	4
1	41826.	6236.8	2583.6	0.
2	7720.6	5264.5	2190.4	1307.9
3	5666.7	4174.2	1897.4	1156.
4	7469.8	2287.4	1165.5	0.
5	4164.9	2247.5	1298.5	0.
6	3243.2	1903.1	1078.7	0.
7	8051.7	3327.0	1574.4	693.8
8	8406.8	3944.5	1868.3	464.1
9	18.46	0.	0.	0.

PGF0=INITIAL POPULATION GROWTH FACTOR=1
 JPGF=SELECTOR ARRAY FOR PGF

ISN 0017 DATA PGF0/5*1.E0/, JPGF/1,2,2,3,3,4,4,4,5/

C AREA DATA, SQUARE MILES

ISN 0018 DATA AREA /

J=	ID= 1	2	3	4
1	134.20E0	3572.0E0	8358.0E0	0.0E0
2	272.0E0	775.0E0	5080.0E0	4089.0E0
3	63.0E0	488.0E0	4426.0E0	4584.0E0
4	215.0E0	4550.0E0	5790.0E0	0.0E0
5	279.0E0	1385.0E0	5266.0E0	0.0E0
6	329.0E0	1115.0E0	4195.0E0	0.0E0
7	58.0E0	896.0E0	2230.0E0	2769.0E0
8	220.0E0	1261.0E0	4527.0E0	5820.0E0
9	3476938.0E0	0.0E0	0.0E0	0.0E0

C THE AREA AND ROADWAY ADJUSTMENT FACTORS FOR UNPOPULATED LAND
 C POPULATED AREA=TOTAL AREA * ADJUSTMENT FACTOR

ISN 0019 DATA FPAEA/
 C J= 1 2 3 4 5 6 7 8 9
 C ID=

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1	.646,	.574,	.610,	.777,	.715,	.777,	.619,	.495,	1.00,
2	.493,	.574,	.610,	.614,	.578,	.664,	.591,	.369,	.0,
3	.423,	.437,	.444,	.529,	.646,	.670,	.335,	.298,	.0,
4	.00,	.466,	.495,	.0,	.0,	.0,	.523,	.285,	.0/

ISN 0020

C DATA FROAD /

	J#	1-6	7-8	9	
K#					
1	6*	.764,	2*	.656,	1.00,
2	6*	.750,	2*	.679,	1.00,
3	6*	.866,	2*	.843,	1.00,
4	6*	.845,	2*	.849,	1.00,
5	6*	.852,	2*	.867,	1.00,
6	6*	.852,	2*	.867,	1.00,

C LOCAL CRITERIA, PROPAGATION AND INDOOR SHIFT DATA

ISN 0021

C DATA SHIFT/

ID#	1	2	3	4	1	2	3	4
INSIDE SHIFT								
J#1-2>	-20.0,	-20.0,	-20.0,	-20.0,	-20.0,	-20.0,	-15.0,	-15.0,
J#3-4>	-20.0,	-20.0,	-15.0,	-15.0,	-20.0,	-15.0,	-15.0,	-15.0,
J#5-6>	-20.0,	-15.0,	-15.0,	-15.0,	-20.0,	-15.0,	-15.0,	-15.0,
J#7-8>	-20.0,	-20.0,	-15.0,	-15.0,	-20.0,	-20.0,	-15.0,	-15.0,
J#9 >	-15.0,	-15.0,	-15.0,	-15.0,				

C OUTSIDE SHIFT

C OUT > 36* 0.0/

C WYLE CURVE CHOOSER

ISN 0022

C DATA JWYLE /

	J#	1	2	3	4	5	6	7	8	9
ID#										
1	1,	1,	2,	1,	2,	2,	1,	2,	3,	
2	2,	2,	2,	3,	3,	3,	2,	2,	0,	
3	2,	3,	3,	3,	3,	3,	3,	3,	0,	
4	0,	3,	3,	0,	0,	0,	3,	3,	0,	/

ISN 0023

ISN 0024

DATA A /4.03675E1,2.09749E1,3.32193E1,2.21755E1,2*2.55082E1/
 DATA DBK /2.75E1,2.E1,1.E6/

C MEANING OF VARIABLES: MYHD = BASELINE YEAR
 NVT = NUMBER OF VEHICLE TYPES
 NAT = NUMBER OF AREA TYPES
 NHT = NUMBER OF HIGHWAY TYPES
 NSR = NUMBER OF SPEED RANGES

ISN 0025

DATA MYHD,NVT,NAT,NHT,NSR/
 C 1974,14,9,6,5 /

C VEHICLE DATA

C MYREF = REFERENCE YEAR FOR EACH IVBD GROUP

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C IEQAGE = EQUIVALENT AGE OF CARS LUMPED IN EMO(I,IVBD) IN THE
 C BASELINE YEAR.
 C LIFE = LIFE OF CARS OF GROUP IVAF, AS GIVEN BY THE NUMBER OF
 C NON-ZERO ENTRIES IN THE RELEVANT VAF TABLE.

ISN 0026
 ISN 0027
 ISN 0028

DATA MYREF/1958,1958,1970,1970,1970,1958/
 DATA LIFE/18,21,21,12/
 DATA IEQAGE/6,7,7,7,6/

C REMO(IVBD,IYR)*TOTAL NUMBER OF VEHICLES OF GROUP IVBD AND MODEL
 C IYR INT REFERENCE YEAR OF GROUP IVBD WHICH SURVIVES IN THE BASE-
 C LINE YEAR.
 C IVBD(I)=VEHICLE BREAKDOWN GROUP TO WHICH TYPE I BELONGS. THERE ARE
 C A TOTAL OF SIX VEHICLE BREAKDOWN GROUPS, GROUP 1(I=1 TO 7) ARE
 C AUTOMOBILES;GROUP 2(I=8-9) ARE TRUCKS;GROUP 3-5 ARE BUSES, AND
 C GROUP 6 CONSISTS OF MOTORCYCLES.(I=13-14)
 C DATA SOURCES FOR REMO: MVMA, BUS DOCUMENT.

ISN 0029

DATA REMO /
 C IVBD=1 2 3 4 5 6

C IYREF=

1>	2100082.	370391.	13905.	42057.	184460.	83436.
2>	506559.	59871.	1084.	3319.	28263.	20129.
3>	883563.	70227.	1886.	4819.	38378.	35063.
4>	1167288.	69094.	2246.	6706.	47511.	46317.
5>	2348827.	97573.	1479.	12571.	58226.	93308.
6>	3658626.	121684.	0.	0.	0.	145340.
7>	5151096.	152266.	0.	0.	0.	204629.
8>	7397576.	165276.	0.	0.	0.	293871.
9>	8461220.	211814.	0.	0.	0.	336125.
10>	8581706.	211166.	0.	0.	0.	340911.
11>	10274987.	229451.	0.	0.	0.	408177.
12>	11161141.	291911.	0.	0.	0.	443380.
13>	11003084.	274759.	0.	0.	0.	437103.
14>	11170210.	261879.	0.	0.	0.	443740.
15>	13145920.	387705.	0.	0.	0.	522226.
16>	14599524.	457770.	0.	0.	0.	579971.
17>	13959524.	447576.	0.	0.	0.	518315.

C VBD74(I) = VEHICLE BREAKDOWN RATIO IN ITS IVBD GROUP.
 C IVBD(I)=THE VBD GROUP TO WHICH TYPE I BELONGS.

ISN 0030

DATA IVBD/1,1,1,1,1,1,1,2,2,3,4,5,6,6/

C VAF(IVAF, IAGE)=FOUR ATTRITION FACTOR TABLES FOR VEHICLES
 C IAGE=AGE OF VEHICLES IN THE CURRENT YEAR.
 C IVAF(I)=1,2,3 OR 4, POINTS TO WHICH COLUMN TO USE FOR TYPE I

ISN 0031

DATA VAF /

C IAGE=	ODD IAGE				EVEN IAGE			
	1	2	3	4	1	2	3	4
1-2>	1.000	1.000	1.000	0.98	0.9998	1.0000	1.0000	0.96
3-4>	0.9990	0.9998	0.9998	0.90	0.9960	0.9927	0.9927	0.75
5-6>	0.9877	0.9711	0.9711	0.55	0.9683	0.9329	0.9329	0.37
7-8>	0.9307	0.8783	0.8783	0.26	0.8677	0.8089	0.8089	0.17
9-10>	0.7756	0.7272	0.7272	0.10	0.6570	0.6364	0.6364	0.05

```

11-12> 0.5213,0.5402,0.5402,0.02 , 0.3634,0.4424,0.4424,0.01 ,
13-14> 0.2533,0.3409,0.3409,0.00 , 0.1575,0.2576,0.2576,0.00 ,
15-16> 0.0857,0.1700,0.1700,0.00 , 0.0410,0.1113,0.1113,0.00 ,
17-18> 0.0168,0.0598,0.0598,0.00 , 0.0057,0.0248,0.0248,0.00 ,
19-20> 0.0 , 0.0062,0.0062,0.00 , 0.0 , 0.0013,0.0013,0.00 ,
21-22> 0.0 , 0.0013,0.0013,0.00 , 0.0 , 0.0000, 0.0 , 0.00 ,
23-24> 0.0 , 0.0000, 0.0 , 0.00 , 0.0 , 0.0000, 0.0 , 0.00 ,
25-26> 0.0 , 0.0000, 0.0 , 0.0 , 0.0 , 0.0000, 0.0 , 0.0 /
    
```

ISN 0032

DATA IVAF/1,1,1,1,1,1,2,2,3,3,3,4,4/

```

C
C VGF(IYR,IVGF(I)) IS A SET OF FOUR TABLES, EACH TABLE HAS FORTY REAL*4
C CONSTANTS, ONE FOR EACH YEAR IN THE TIMESTREAM. IT IS THE VEHICLE
C GROWTH FACTOR FOR VEHICLES IN THAT IVGF GROUP.
C IVGF(I) IS THE POINTER WHICH POINTS TO THE APPROPRIATE VGF TABLE FOR
C TYPE I VEHICLES.
    
```

ISN 0033

DATA VGF /

```

C
C TABLE 1. FOR TYPES 1-9,13-14
C 1.0, 1.02, 1.040, 1.061, 1.08243, 1.104, 1.126, 1.149, 1.172,
C 1.195, 1.219, 1.243, 1.268, 1.294, 1.3195, 1.346, 1.373, 1.40,
C 1.428, 1.457, 1.486, 1.526, 1.546, 1.577, 1.608, 1.641, 1.673,
C 1.707, 1.741, 1.776, 1.811, 1.848, 1.885, 1.922, 1.96 , 1.999,
C 2.040, 2.081, 2.122, 2.165,
C
C TABLE 2. FOR TYPE 10- INTERCITY BUSES
C 1.0, 0.93, 0.93, 0.916, 0.916, 0.93, 31*0.9311,
C
C TABLE 3. FOR TYPE 11, TRANSIT BUSES
C 1.0, 1.0, 1.51, 1.22, 1.168, .908, .874, 5A.802, 26* .815,
C
C TABLE 4. FOR TYPE 12, SCHOOL BUSES
C 1.0 , 1.0 , 0.99, 1.01, 1.03, 1.05, 1.11, 1.15, 1.19, 1.23,
C 1.27, 1.31, 1.34, 1.38, 1.42, 1.46, 1.49, 1.53, 1.57, 1.61,
C 1.64, 1.68, 1.72, 1.75, 1.79, 1.83, 1.86, 1.90, 1.94, 1.98,
C 2.01, 2.05, 2.09, 2.13, 2.16, 2.20, 2.24, 2.27, 2.31, 2.35,
1
80*0.0/
    
```

ISN 0034

DATA IVGF/1,1,1,1,1,1,1,1,2,3,4,1,1/

TRAFFIC DATA

V, THE AVERAGE VELOCITY OF A SPEED RANGE

ISN 0035

DATA V/2.E1,3.E1,4.E1,5.E1,6.E1/

JFLO, KFLD ARE THE FLOMIX TABLE SELECIORS

ISN 0036

DATA JFLO/3*1,3*2,2*3,4/,KFLD/2*1,2,3,4,5/

ADT, AVERAGE DAILY TRAFFIC.

ISN 0037

```

C
C DATA ADT
C K# 1 2 3 4 5 6
C J#
    
```

K#	1	2	3	4	5	6
J# 1	74866.	66470.	18768.	9315.	3783.	1129.
J# 2	60228.	32548.	17397.	6898.	3496.	656.
J# 3	46997.	34036.	16359.	8045.	3760.	672.
J# 4	40367.	28812.	16029.	8470.	3812.	839.
J# 5	32190.	22984.	14893.	7301.	3287.	649.
J# 6	21913.	14971.	12376.	6057.	2917.	645.
J# 7	23251.	16875.	11384.	5430.	2884.	631.
J# 8	18206.	13224.	8922.	4255.	1946.	495.

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9 13700., 4623., 2523., 089., 370., 90. /

C
C KPER, IPER ARE THE SELECTORS FOR THE PERCENT ARRAY

ISN 0038 DATA KPER/3*1,3*2/, IPER/7*1,3*2,3,4,2*1/.

C
C VARIOUS ROADWAY DATA

ISN 0039 DATA CID/9*5,E1,3*3,E1,5*4,E1,8,E1,3*3,E1,5*4,E1,8,E1
1,3*3,E1,5*4,E1,8,E1,3*3,E1,5*4,E1,8,E1,3*3,E1,5*4,E1,8,E1/
ISN 0040 DATA WIDTH/9*1,5*1,4*1,2*1/, LANE/4*4,9*2/
ISN 0041 DATA GAMM /12*0.,2*5,4*0.,2*5,4*0.,2*5,4*0.,2*5,4*0,18*5/

C
C NUM INITIALIZE VARIOUS VARIABLES

ISN 0042 DATA ITABLE /0/,POPLTN /36 * 0.0/, POP / 9 * 0.0/,
* WIDTHPZ / 36 * 0.0 /, EDGEPEZ / 216 * 0.0 /
ISN 0043 END

***** U R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
A	0003 0023
I	0003
J	0008
V	0005 0035
IT	0003
KS	0008
X2	0003
ADT	0003 0037
ALQ	0003
CDC	0007 0014
CZD	0003 0039
DBK	0003 0024
IFM	0008
KOM	0007 0014
MYR	0003
NAT	0004 0025
NMT	0004 0025
NSH	0004 0025
NVT	0004 0025
PGF	0003
POP	0004 0042
VAF	0003 0031
VGF	0003 0033
VML	0003
ACCM	0008
ACEV	0008
ANBL	0007 0010
AREA	0003 0018
EDGE	0005
FINP	0007
FRIN	0007
GAMM	0005 0041
INEG	0006
IEVB	0008
INS6	0008
INCR	0004

***** C H T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

IPER	0005	0030
IVAF	0003	0032
IVHU	0003	0030
IVGF	0003	0034
IYRN	0008	
JCUC	0007	0014
JFLO	0005	0036
JPGF	0003	0017
KFLU	0005	0036
KPER	0005	0038
LANE	0003	0040
LIFE	0003	0027
MILE	0004	
MYRB	0004	0025
MYRE	0003	
MYRN	0004	
NAUB	0007	0009
NIDD	0004	0015
NLEV	0004	
NPMK	0003	
NRDB	0007	0009
YARN	0004	
PACT	0007	0014
PGFO	0003	0017
RDRL	0007	0012
REMO	0003	0029
REPZ	0005	0013
VINC	0003	
VPOP	0003	
VTOT	0004	
XINC	0003	
YINC	0003	
ACLAP	0008	
ALREG	0004	
AVDBL	0007	0011
BVPOP	0003	
DLLEV	0007	
DLPSI	0007	
GVTOT	0004	
ICONT	0006	
IDUMP	0006	
IFIMP	0007	0014
INDUT	0007	0014
IPACT	0007	0014
IPLUT	0006	
ITABS	0006	
JMASK	0006	
JHYLE	0003	0022
KMASK	0006	
MYREF	0003	0026
MYREG	0004	
PLDEN	0007	0013
PNDHM	0008	
RATIO	0007	
REDGE	0005	0013

***** D R T R A I L C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

RNAME	0006	
SHIFT	0007	0021
VBD74	0003	
VBD77	0003	
VBD85	0003	
VBD90	0003	
VNTDB	0008	
WIDTH	0003	0040
OJKLEV	0007	
ORATIO	0007	
EDGEFZ	0005	0042
EMPROB	0007	
FLOMIX	0005	
FPAREA	0003	0019
FPROAD	0003	0020
IEQAGE	0003	0020
IPRINT	0006	
ITABLE	0006	0042
IVMASK	0006	
KSJEVH	0006	
METMSK	0006	
METRIC	0007	
MDLMSK	0006	
MYRNET	0006	
NNTAGS	0006	
NPMILE	0003	
PERCENT	0005	
POPDEN	0004	0016
POPLTN	0004	0042
RDUCUT	0007	0013
RDBEDG	0007	0013
SEPROB	0007	0013
STOPGF	0004	
TOTPOP	0004	
VNTDAY	0008	
VNTNIT	0006	
WDTHPZ	0005	0042

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OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

OPTIONS IN EFFECT: SOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP NOFORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS: SOURCE STATEMENTS = 42, PROGRAM SIZE = 0, SUBPROGRAM NAME #BIG001

STATISTICS: NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

102K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,6DSSTMT,NOSOURCE,NO(FR)MINAL,NOOBJECT

OPTIONS IN EFFECT: NAME(MATH) OPTIMIZE(12) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCCIC NOLIST NODECK NOOBJECT NOMAP,FORMAT 6DSSTMT XREF NOALC NDAYSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS.
J	0004
IE	0002 0007
KS	0004
CDC	0003
IFM	0004 0007
KDB	0002 0008 0008 0009 0009 0010 0010
KUM	0003
ACCM	0004 0008 0008 0009 0009
ACEV	0004
ADBL	0003
FIMP	0003 0007
FRTN	0003
IEVB	0004
IMS6	0004 0010
IYRN	0004
JCUC	0003
NADB	0003
NKDB	0003
PACT	0003
RDBL	0003
ACLWP	0004 0010 0010
AVDBL	0003
DLLEV	0003
OLPSI	0003
IFIMP	0003
INDUT	0003
IPACT	0003
PLDEN	0003
PNDRY	0004
RATIO	0003
SHIFT	0003
VNTDB	0004
COLECT	0002
DJKLEV	0003
DKRATU	0003
EVPRDU	0003
KSJEVH	0004 0010 0010 0010
METRIC	0003
NEVENT	0005 0006 0010
PUPFIM	0007 0008 0009 0010
POPINC	0002 0007
RDBCUT	0003
RDBEDG	0003
SEPROH	0003
VNTDAY	0004 0006 0008
VNTMIT	0004 0006 0009

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/ STRUCTURED SOURCE LISTING /

```

(001 ISN 0002      SUBROUTINE COLECT(POPINC,IE,KDB)          00010000
                   C                                         00049600
                   COMMON /BIG005/ RATIO(10,3,2),DNATIO(17,3,2),ADBL(21),RDBL(18), 00049700
                   B5 2PLDER(4,9,6,5,4),SEPRDB(4,9,6,6,5),      00049800
                   B5 IRDBEDG(4,9,6,4,2),RUBCUT(4,9,6,4,2),DLPSI(9,6,4), 00049900
                   B5 4METRIC(20,7,2),DJALEV(9,6,4,2),DLLEV(5,2), 00050000
                   B5 SPACT(5,2),FRIN(2),CUC(7),EVPRDB(14,9,6), 00050100
                   U5 6FIMP(80,5),SHIFT(4,9,2),AVDBL(20),IPAC(7), 00050200
                   B5 7IFIMP(7),JCOC(7),INDUT(7),KOM(7),NADB,NRDB 00050400
                   C                                         00050410
                   COMMON/BIG006/PNORM(3,2,4),ACEV(6,9),IYHN,IFM, 00050420
                   B6 1ACCM(20,2),VNTDAY,VNTNIT,IEVB(6,9),K9,J, 00050430
                   B6 2VNTDB(15,11,5,9),ACLWP(15,21),K9JEVB,IMS6 00050440
                   C                                         00050490
                   REAL NEVENT
                   NEVENT=VNTDAY+VNTNIT
                   POPFIM = POPINC * FIMP(IE,IFM)          00060100
                   ACCM(KDB,1) = ACCM(KDB,1) + POPFIM * VNTDAY 00060200
                   ACCM(KDB,2) = ACCM(KDB,2) + POPFIM * VNTNIT 00060300
                   IF(K9JEVB.NE.0.AND.IMS6.EQ.1)
                   1ACLWP(K9JEVB,KDB)=ACLWP(K9JEVB,KDB)+POPFIM*NEVENT 00060500
                   RETURN                                     00090000
                   C
                   END                                       00099999
001) ISN 0013

```

```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*NO$SOURCE EBCDIC NOLIST NODECK NOOBJECT NO$AP. FORMAT GOSTMT XREF NOALC NOANDP. NOTERM FLAG(I)
*STATISTICS* SOURCE STATEMENTS = 12, PROGRAM SIZE = 498, SUBPROGRAM NAME *COLECT
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION ***** 122K BYTES OF CORE NOT USED

```


REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LIVECOUNT(60) SIZE(MAX) AUTODDL(NONE) NOSOURCE EXECIC NOLIST NODECK NOBJECT NUMAP FORMAT GOSTMT XREF NOALC NDANSF NOTERM FLAG(1)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL	INTERNAL STATEMENT NUMBERS
CUC	0005
KUM	0005
NAT	0003
NIT	0003
NSR	0003
NVT	0003
PLP	0003
ADHL	0005 0013 0014
FIMP	0005
FRTN	0005
IBEG	0002 0013 0014 0017
ILEV	0012 0013 0013 0014 0014 0016 0017 0017 0025 0025 0025
INCR	0003
IYRN	0019 0020 0021 0021 0023 0023 0025 0025 0027 0027
JHEG	0004
JCOE	0005
LLEV	0004 0017 0023
MILE	0003
MYRB	0003
MYRN	0003
NADB	0005
NIDD	0003
NLEV	0003
NKDB	0005
NYRN	0003 0019 0027
PACT	0005
RDBL	0005
VLOT	0003
YEAR	0006 0020
ALREG	0003
ARRAY	0002 0007 0025
AVDBL	0005
DLLEV	0005
DLPSI	0005
GVTOI	0003
ICON7	0004
IGUMP	0004
IFIMP	0005
INDUT	0005
IPACT	0005
IPLCI	0004
ITABS	0004 0011 0021 0021 0023
JMASK	0004
KMASK	0004
LIMIT	0007 0013 0014 0023
MYREG	0003
XIAHS	0004
PLDEN	0005
RATIO	0005

***** U R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
RNAME	0004 0023
SHIFT	0005
TITLE	0002 0009 0023
DBBAND	0002
DJKLEV	0005
DRATIO	0005
EVPRDB	0005
IPRINT	0004
ITABLE	0004 0010 0010 0023
IVMASK	0004
METMSK	0004
METRIC	0005
MODMSK	0004
MYRNET	0003 0020 0025
POPDEN	0003
POPLTN	0003
RDBCUT	0005
RDBEDG	0005
SEPROB	0005
STOPGF	0003
TOTPOP	0003

***** U R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
1000	0015	0012
1001	0018	0016
2000	0030	0019
3001	0031	0023
3002	0026	0025
3003	0029	0027

0004 ISN 0002. / STRUCTURED SOURCE LISTING /

```

SUBROUTINE DBBAND(IGEG,ARRAY,TITLE)
  CT DBBAND      LAST UPDATE
  CX DBBAND      TABULATED THE METRICS IN DBBANDS
  C
  18N 0003      COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),POP(9),
  B2           2POPDEN(4,9),POPLTN(4,9),STOPGF(9,9),TOTPOP(9),
  B2           3MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYRNET(9),
  B2           4NIDD(9),MYRN,INCR,MYRB,MYRN,NVT,NAT,NHT,NSR
  C
  C END PRINT COMMON BLOCK
  C
  18N 0004      COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
  B4           2KMASK(6),METMSK(7),TCOAT(12),MODMSK(3),JBEG(7),
  B4           3IPLOT(7),ITABLE,ITAB8,NTAB8
  C
  18N 0005      COMMON /BIG005/ RATIO(10,3,2),DRATIO(17,3,2),ADBL(21),RDBL(10),
  B5           2PLDEN(4,9,6,5,4),DEPHOB(4,9,6,6,5),
  B5           3RDBEDG(4,9,6,4,2),RDBCUT(4,9,6,4,2),DLPSI(9,6,4),
  B5           4METRIC(20,7,2),DJKLEV(9,6,4,2),DLLEV(5,2),
  B5           5PACT(5,2),FRTN(2),CDC(7),EVPRDB(14,9,6),
  B5           6FIMP(60,5),SHIFT(4,9,2),AVDBL(20),IPACT(7),
  
```

```

      H5 /IFINP(7),JCUC(7),INDUT(7),KOM(7),NADB,NRDH
      C
      ISN 0006 INTEGER YEAR
      ISN 0007 REAL ARRAY(10, 4),LIMIT(20)
      ISN 0008 DIMENSION LLEV(10)
      ISN 0009 REALAB TITLE(6)
      ISN 0010 ITABLE = ITABLE + 1
      ISN 0011 ITABS = 0
      C
      C ESTABLISH UPPER AND LOWER LEVELS
      C
      ISN 0012 DO 1000 ILEV=1,10
      C
      (003 ISN 0013 LIMIT(2*ILEV-1) = ADDBL(ILEV+IBEG)
      ISN 0014 LIMIT(2*ILEV) = ADDBL(ILEV+IBEG+1)
      C
      ISN 0015 1000 CONTINUE
      C
      (003) ISN 0016 DO 1001 ILEV=1,10
      C
      (002 ISN 0017 LLEV(ILEV) = ILEV + IBEG
      C
      ISN 0018 1001 CONTINUE
      C
      C
      C
      (002) ISN 0019 DO 2000 IYRN=1,NYRN
      C
      (001 ISN 0020 YEAR = MYRNET(IYRN)
      ISN 0021 IF(IYRN.EQ.1.OR.IYRN.EQ.21) ITABS = ITABS + 1
      ISN 0022 IF(IYRN.EQ.1.OR.IYRN.EQ.21) WRITE(6,3001) ITABLE,ITABS,TITLE,
      ARNAME,LLEV,LIMIT
      ISN 0025 WRITE(6,3002) MYRNET(IYRN),(ARRAY(ILEV,IYRN),ILEV=1,10)
      C-----
      ISN 0026 3002 FORMAT(' ',T12,' ',10(11X,' ')/T4,I4,T11,10(3X,1PE9.3)/
      ' ',T12,' ',10(11X,' '))
      ISN 0027 IF(IYRN.EQ.20.OR.IYRN.EQ.NYRN) WRITE(6,3003)
      ISN 0029 3003 FORMAT(' ',T12,' ',10(11X,' ')/'+',131(' ')
      C
      C-----
      ISN 0030 2000 CONTINUE
      C
      (001) ISN 0031 3001 FORMAT(' ',T12,' ',12,1,1,12,4X,6A0,T110,5A4/
      '0',131(' ')/' ',T12,' ',10(11X,' ')/
      ' BAND #',T8,10(10X,12)/'+',T12,' ',10(11X,' ')/
      ' ',T12,' ',10(11X,' ')/'+',T12,121(' ')/
      ' | LEVEL,',T12,' ',10(11X,' ')/
      ' IN DBA>',T11,10(3X,F4.0,'-',F4.0)/
      '+',T12,' ',10(11X,' ')/' ',T12,' ',10(11X,' ')/
      '+',131(' ')/' | YEAR',T12,' ',10(11X,' '))
      C
      ISN 0032 RETURN
      (004) ISN 0033 END
  
```

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C-----

C-----

LEVEL 2.2 (SEPT 76)

DBBAND

OS/360 FORTRAN II EXTENDED

DATE 80.2.13/19.21.50

PAGE

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX, AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FOMHAT GUSTMT XREF NOALC NUANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 32, PROGRAM SIZE = 1310, SUBPROGRAM NAME *DBBAND

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

122K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GDSST=1,NOSOURCE,NUTERMINAL,NNOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NOLIST NOCHECK NNOBJECT NOMAP FORMAT GDSST=1 XREF NOALC NOANSF NOTERM FLAG(I)

***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

J	0012	0013	0013
L	0010	0013	0015
IL	0007	0008	0013
KM	0006	0008	0013 0013
KS	0011	0013	0015
COC	0004		
KOM	0004		
AOBL	0004		
FIMP	0004		
FRIN	0004		
IBEG	0003		
JCOC	0004		
HAUB	0004		
NROB	0004		
PACT	0004		
ROBL	0004		
AVDBL	0004		
DELTA	0005	0013	0015
DLLEV	0004	0013	
DLPSI	0004		
ICONT	0003		
IDUMP	0003		
IFIMP	0004		
INDUT	0004		
IPACT	0004		
IPLOT	0003		
ITABS	0003		
JMASK	0003		
KMASK	0003		
PLGEN	0004		
RATIO	0004		
RNAME	0003	0008	
SHIFT	0004		
DJRLEV	0004	0013	
DRATIO	0004		
DUMPER	0002		
EVPROB	0004		
IPRINT	0003		
ITABLE	0003		
IVMASK	0003		
METMSK	0003		
METHIC	0004		
MUDMSK	0003		
NNTABS	0003		
RODCUT	0004		
ROBEGG	0004		
SEPROB	0004		

LABEL	DEFINED	REFERENCES
1000	0018	0006 0007
1001	0017	0010 0011
1002	0014	0012
2000	0009	0008
2001	0016	0015

***** D I R T A N C R O S S R E F E R E N C E L I S T I N G *****

/ STRUCTURED SOURCE LISTING /

```

0006 ISN 0002      SUBROUTINE DUMPER                                00050900
C                                                         00051000
C DUMPS THE COMBINED DELTA LEVEL ARRAYS                    00051100
C                                                         00051200
ISN 0003          COMMON /B1G004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9), 00051240
B4 2NMASK(6),METASK(7),ICONT(12),MODMSK(3),IBEG(7),      00051250
B4 3IPLOT(7),ITABLE,ITABS,NNTABS                          00051260
ISN 0004          COMMON /OIG005/ RATIO(18,3,2),ORATIO(17,3,2),ADBL(21),ROBL(18), 00051300
B5 2PLDEN(4,9,6,4,5),SEPROB(4,9,6,6,5),                00051400
B5 3ROBEDG(4,9,6,4,2),ROHCUT(4,9,6,4,2),DPSI(9,6,4),    00051500
B5 4METRIC(20,7,2),DJKLEV(9,6,4,2),DLLEV(5,2),          00051600
B5 5PACT(5,2),FRIN(2),COC(7),EVPROB(14,9,6),            00051700
B5 6FIMP(D0,5),SHIFT(4,9,2),AVOBL(20),IPACT(7),         00051800
B5 7IFIMP(7),JCOC(7),INOUT(7),KOM(7),NADU,NRDB          00051900
ISN 0005          DIMENSION DELTA(9)                      00052000
C                                                         00052100
ISN 0006          DD 1000 KM=1,2                           00052200
0005 ISN 0007      DD 1000 IL=1,4                           00052300
C                                                         00052400
0004 ISN 0008      WRITE(6,2000) KM,IL,RNAME                00052500
ISN 0009          2000 FORMAT('1 #10 DUMP: COMBINED DELTA ARRAYS,KM= ',12,' IL= ',12, 00052600
AT110,5A4//)                                             00052700
C                                                         00052800
ISN 0010          DD 1001 L=1,5                             00052900
0001 ISN 0011      DD 1001 KS=1, 4                          00053000
0002 ISN 0012      DD 1002 J=1,9                            00053100
C                                                         00053200
0001 ISN 0013      DELTA(J) = DJKLEV(J,KS,IL,KM) + DLLEV(L,KM) 00053300
C                                                         00053400
ISN 0014          1002 CONTINUE:                            00053500
C                                                         00053600
001) C
ISN 0015          WRITE(6,2001) L,KS,DELTA                 00053700
ISN 0016          2001 FORMAT(' ',2I3,2X,9F10.3)           00053800
C                                                         00053900
ISN 0017          1001 CONTINUE                             00054000
C                                                         00054010
002) C
003) C
ISN 0018          1000 CONTINUE:                            00054020
C                                                         00054100
004) C
005) C
ISN 0019          RETURN                                    00054200
006) C
ISN 0020          END                                       00054300

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LEVEL 2.2 (SLPT 76) DUMPER OS/360 FORTRAN H EXTENDED DATE 80,273/19.28.28 PAGE 3

*OPTIONS IN EFFECT*MAPL(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODDLIC(MONE)

*OPTIONS IN EFFECT*NO\$SOURCE EBCDIC NGLIST NODLCK \$NO\$OBJECT NOMAP FORMAT GOSTMT XREF NOALC NUANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 19, PROGRAM SIZE = 876, SUBPROGRAM NAME =DUMPER

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

122K BYTES OF CORE NOT USED

TEL (87 76)

E. L. N. T. S.

REQUESTED OP NS: XREF, OPT(2), FORMAT, GOSTMT, NOSOURCE, NOTERMINAL, NOOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AD. DNL(NONE)
NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NUANSF NOTERM FLAG(1)

***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS																
A	0003																
I.	0003	0012	0013	0026	0030	0032	0032	0032	0034								
J	0008	0015	0016	0017	0022	0032	0038	0038	0044	0046	0048	0049	0050	0050	0052	0054	0054
M	0023	0024	0026	0030	0032	0032	0034										
V	0005																
IT	0003																
XB	0008	0019	0020	0022	0032	0032	0034	0038	0038	0045	0046	0048	0049	0050	0050	0052	0054 0054
Y2	0003																
ADT	0003																
ALO	0003																
CDC	0007																
CZU	0003																
DBK	0003																
IFM	0008																
INT	0050																
KOM	0007																
MYH	0003																
NAT	0004	0015	0044														
NHT	0004	0019	0045														
NID	0016																
NSR	0004																
NVT	0004	0012															
PCF	0003																
POP	0004																
VAF	0003																
VGF	0003																
VNL	0003	0030	0032														
ACCH	0008																
ACEV	0008	0011	0030	0030	0046	0048											
ADBL	0007																
AREA	0003																
EDGE	0005																
FIMP	0007																
FRTN	0007																
GAPM	0005																
IBLG	0006																
IEVD	0008	0010	0049	0050	0050	0052	0054	0054									
IMS6	0008																
INCR	0004																
IPER	0005	0032	0034														
IVAF	0003																
IVDD	0003																
IVGF	0003																
IYRN	0008																
JCOC	0007																
JFLO	0005																
JPGF	0003																
KFLD	0005																
KPER	0005	0032	0034														

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***** D R I T R A N C H O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
LANE	0003 0022
LIFE	0003
MILE	0004
MYRD	0004
MYRE	0005
MYRN	0004
NADB	0007
NIDD	0004 0016
NLEV	0004 0026
NPMK	0003
NKRB	0007
VYRN	0004
PACT	0007
PGFO	0003
RDUL	0007
REMO	0003
RLPZ	0005
VINC	0003
VPOP	0003
VTOT	0004
XINC	0003
YINC	0003
ZERO	0011
ACLOG	0048 0049 0050 0050 0052
ACLMP	0008
ALREG	0004
AVDBL	0007
BVPOP	0003
DLLEY	0007
DLPSI	0007
FLOAT	0050
GVTOT	0004
ICONT	0006 0028 0032 0034 0036
IDUMP	0006
IFIMP	0007
INDUT	0007
IPACT	0007
IPLUT	0006
ITABS	0006
JMABK	0006 0017
JHYLE	0003
KHASK	0006 0020
LEVEL	0027 0028 0030 0032
MYREF	0003
MYREG	0004
NLANE	0022 0034 0036
NTABS	0006
PLDEN	0007
PNORM	0006 0034
RA110	0007
REOGE	0005
RNAME	0006
SHIFT	0007
VBD74	0003
VBD77	0003

***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
VBD05	0003
VBD90	0003
VNT08	0008
WIDTH	0003
ZEROI	0010
ALG010	0048
DJKLEV	0007
DRATIO	0007
EDGEFZ	0005
EVENTS	0002
EVPK08	0007 0032
FLOMIX	0005
FPAREA	0003
FPROAD	0003
IEQAGE	0003
IPRINT	0006
ITABLE	0006
IWMASK	0006 0013
K9JEVB	0008
METMSK	0006
METRIC	0007
MDDMSK	0006 0024
MYRNET	0004
NEVENT	0009 0032 0034 0036 0038
NLEVEL	0026 0027
NPMILE	0003
PERCNT	0005 0032
POPDEN	0004
POPLTH	0004
ROBCUT	0007
RDBEDG	0007
SEPROB	0007
STOPGF	0004
TOTPOP	0004
VNTDAY	0008
VNTNIT	0008
WDTMP2	0005

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***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
500	0039	0027 0028 0030
501	0040	0023 0024
502	0041	0019 0020
503	0042	0015 0017
504	0043	0012 0013
600	0056	0044 0045 0046

/ STRUCTURED SOURCE LISTING /

(008 ISN 0002

SUBROUTINE EVENTS

ISN 0003

C
 COMMON /HIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
 B1 2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
 B1 3VHL(14,4,5),A(2,3),DBA(3),CZU(9,6),PGF(5),

```

B1 4PRFD(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),
B1 5ARLA(4,9),FPAREA(9,4),VPIP(14,26),BVPDP(14),
B1 6X2(9,6,4),NPMILE(4,9),NPMK(4,9,6),ALU,IVAF(14),
B1 7MYREF(6),IVHD(14),LIFE(4),ILDAGE(6),JAYLE(9,4),
B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MYR,11,1
C
C THE FOLLOWING COMMON BLOCKS SERVE PRINT SUBROUTINES
C
ISN 0004 COMMON /BIG002/ ALNEG(5,5,4,14),GVTOT(9),VTOT(14,9),POP(9),
B2 2POPEN(4,9),POPLTN(4,9),STOPGF(9,9),TOTPOP(9),
B2 3MILE(6,9,4,5),MYNEG(6,4,14),NLEV(14,4),MYRNET(9),
B2 4NIDD(9),MYRN,INCH,MYRB,NYRN,NVT,NAT,NHT,NSR
C
C END PRINT COMMON BLOCK
C
ISN 0005 COMMON /BIG003/ GAMM(6,9),V(5),EDGE(4,9),EDGEPZ(4,9,6),
B3 2WDTHPZ(4,9),FLUMIX(14,4,5),PERCVI(4,2,4),
B3 3REPZ(4,9,6,4),REDGE(4,9,6,4),
B3 4JFLU(9),KFLU(6),KPEK(6),IPEK(14)
ISN 0006 COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
B4 2KMASK(6),METMSK(7),ICONT(12),MODMSK(3),IDEG(7),
B4 3IPLT(7),ITABLE,ITABS,NTABS
C
ISN 0007 COMMON /BIG005/ RATIO(18,3,2),DRA110(17,3,2),ADBL(21),RDBL(18),
B5 2PLDEN(4,9,6,5,4),SEPHOB(4,9,6,6,5),
B5 3RDHEDG(4,9,6,4,2),RDBCUR(4,9,6,4,2),DLPS1(9,6,4),
B5 4METRIC(20,7,2),DJKLEV(9,6,4,2),DLLEV(5,2),
B5 5PACT(5,2),FRTN(2),COC(7),EVPKOB(14,9,6),
B5 6FIMP(80,5),SHIFT(4,9,2),AVOBL(20),IPACT(7),
B5 7IFIMP(7),JCOC(7),IHOUT(7),KOM(7),NADB,NRDU
C
ISN 0008 COMMON /BIG006/ PNORM(3,2,4),ACEV(6,9),IYRN,IFM;
B6 1ACCH(20,2),VNTDAY,VNTNIT,IEVB(6,9),K8,J,
B6 2VNTDB(15,11,5,9),ACLWP(15,21),K9JEVB,IM56
ISN 0009 REAL REVENT
ISN 0010 CALL ZERO(IEVB,54)
ISN 0011 CALL ZERO(ACEV,54)
C
ISN 0012 DO 504 I=1,NVT
C
0007 ISN 0013 IF(IVMASK(I).EQ.0) GO TO 504
C
ISN 0015 DO 503 J = 1,NAT
C
0005 ISN 0016 NID = NIDD(J)
ISN 0017 IF(JMASK(J).EQ.0) GO TO 503
C
ISN 0019 DO 502 KS=1,NHT
C
0003 ISN 0020 IF(KMASK(KS).EQ.0) GO TO 502
ISN 0022 LANE=LANE(J,KS)
C
ISN 0023 DO 501 M=1,J
C
0002 ISN 0024 IF(MODMSK(M).EQ.0) GO TO 501
ISN 0026 NLEVEL = NLEV(I,M)
C
ISN 0027 DO 500 LLEVEL=1,NLEVEL

```

```

001) ISN 0026          C
      ISN 0030          IF(ICONT(10),NE,0,AND,LEVEL,GT,1) GO TO 500
      ISN 0032          IF(VML(I,M,LEVEL),LE,1,0) GO TO 500
      ISN 0034          C
      ISN 0036          IF(ICONT(10),EQ,0) NEVENT = VML(I,M,LEVEL) * EVPRUH(I,J,KS)
      ISN 0038          * PERCNT(M,KPER(KS),IPER(I))
      ISN 0039          IF(ICONT(10),EQ,1) NEVENT = 1./ NLAEF *
      ISN 0040          PNRHM(4,KPER(KS),IPER(I))
      ISN 0041          IF(ICONT(10),EQ,2) NEVENT = 1./ NLANE / 3.
      ISN 0042          C
      ISN 0043          ACEV(KS,J) = ACEV(KS,J) + NEVENT
      ISN 0044          500 CONTINUE
      ISN 0045          C
      ISN 0046          CONTINUE
      ISN 0047          C
      ISN 0048          CONTINUE
      ISN 0049          C
      ISN 0050          CONTINUE
      ISN 0051          C
      ISN 0052          CONTINUE
      ISN 0053          C
      ISN 0054          CONTINUE
      ISN 0055          C
      ISN 0056          CONVERT QUANTITY OF EVENTS (ACEV) TO ITS BIN NUMBER (IEVB).
      ISN 0057          C
      ISN 0058          C
      ISN 0059          C
      ISN 0060          DD 600 J=1,NAT
      ISN 0061          DD 600 KS=1,NHT
      ISN 0062          IF(ACEV(KS,J),EQ,0.) GO TO 600
      ISN 0063          ACLOG=ALOG10(ACEV(KS,J))*3.
      ISN 0064          IEVB(KS,J)=ACLOG+2.
      ISN 0065          IF(FLOAT(INT(ACLOG)),EQ,ACLOG) IEVB(KS,J)=IEVB(KS,J)-1
      ISN 0066          IF(ACLOG,LT,0.) IEVB(KS,J)=1
      ISN 0067          IF(IEVB(KS,J),GT,14) IEVB(KS,J)=14
      ISN 0068          600 CONTINUE
      ISN 0069          C
      ISN 0070          C
      ISN 0071          RETURN
      ISN 0072          C
      ISN 0073          END
  
```

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```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NOCHECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)
*STATISTICS* SOURCE STATEMENTS * 57, PROGRAM SIZE * 1818, SUBPROGRAM NAME #EVENTS
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION ***** 110K BYTES OF CORE NOT USED
  
```

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GLSTMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODDL(NONE) NOSOURCE EBCDIC NOLIST NOLDECK NOOBJECT NOMAP FORMAT GUSTMT XREF NOALL NOANSF NOTERM FLAG(1)

***** D I R T R A H C H O S S R E F E R E N C E L I S T I N G A M M *

SYMBOL	INTERNAL STATEMENT NUMBERS
A	0003
I	0003
J	0008
V	0005
IT	0003
KS	0008
X2	0003
ADT	0003
ALO	0003
CLC	0007
CZD	0003
DBK	0003
IFM	0008
IIM	0002 0026 0027 0027
KDB	0026 0026 0026 0027 0027 0027
KDM	0007
MYR	0003
NAT	0004
NHT	0004
NSR	0004
NVT	0004
PGF	0003
POP	0004
VAF	0003
VGF	0003
VML	0003
ACCM	0008
ACEV	0008
ADBL	0007 0018 0019
ARFA	0003
EDGE	0005
FIMP	0007
FRTN	0007
GAMM	0005
IDEG	0002 0018 0019 0020
IBYN	0025 0026 0026
IEVU	0008
ILEV	0017 0018 0018 0019 0019 0020 0020
IMS6	0008
INCR	0004
IPER	0005
IVAF	0003
IVBD	0003
IVGF	0003
IYRN	0008 0021 0022 0026 0027 0027
JBEG	0006
CCOC	0007
FLO	0005
PGF	0003

LEVEL 2 (COPY 78)

CYNTDC

US/300 FOR... H L... DLD

DR. 1967 1. 30.

***** O H T H A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

KFLD	0005				
KPER	0005				
LAGE	0003				
LIFE	0003				
LLEV	0009	0020	0024		
MILE	0008				
MYRB	0004				
MYRE	0003				
MYRN	0004				
NADB	0007				
NIDD	0004				
NLEV	0004				
NPMK	0003				
NROB	0007				
VYRN	0004	0021			
PACT	0007				
PGFD	0003				
RDHL	0007				
REHU	0003				
REPZ	0005				
VINC	0003				
VPOD	0003				
VTOI	0004				
XINC	0003				
YEAR	0010	0022	0024		
YINC	0003				
ACLWP	0008				
ALREG	0004				
AVOBL	0007				
BVPOP	0003				
OLLEY	0007				
DLPBI	0007				
GVTOI	0004				
ICONT	0006				
IDUMP	0006				
IFIMP	0007				
INDUT	0007				
IPACT	0007				
IPLOI	0006				
ITABS	0006	0016	0023	0023	0024
JMASH	0006				
JWYLE	0003				
KMASK	0006				
LIMIT	0011	0018	0019	0024	
MYREF	0003				
MYREG	0004				
YTABS	0006				
PLDEN	0007				
PNORM	0006				
RATIO	0007				
REDGE	0005				
RNAME	0006	0024			
SHIFT	0007				
TITLE	0002	0012	0024		
VUD74	0003				

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
VBD77	0003
VBD85	0003
VBD90	0003
VNTDB	0008 0026 0027 0027
WIDTH	0003
DJKLEV	0007
DRATIO	0007
EDGEPI	0005
EVNTDB	0002
EVPROB	0007
FLOMIX	0005
FPAHEA	0003
FPRDAD	0003
IEDAGE	0003
IPRINT	0006
ITABLE	0006 0015 0015 0024
IVMASK	0006
KSJEVB	0008
METMSK	0006
METRIC	0007
MODMSK	0006
MYRNET	0004 0022
NPMILE	0003
PERCNT	0005
POPDEN	0004
POPLTN	0004
ROBCUT	0007
RDBEOD	0007
SEPROR	0007
STOPGF	0004
STRING	0012 0014 0024 0024 0024 0024 0024 0024
TOTPOP	0004
VNTDAY	0008
VNTNIT	0008
VNTNNG	0012 0013 0026
WNTHPZ	0005

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
100	0020	0017
200	0027	0021
300	0026	0025
3030	0030	0027
4040	0029	0026
5050	0028	0024

/ STRUCTURED SOURCE LISTING /

(004 ISN 0002
ISN 0003

```

SUBROUTINE EVNTDB(IBEK,TITLE,IIM)
C
COMMON /SIG001/ VAF(4,26),VGF(40,6),REMU(6,17),XINC(7),YINC(7),
H1 2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
H1 3VNL(14,4,5),A(2,3),DBK(3),C2D(4,6),PGF(5),
H1 4PGFG(5),WIDTH(4,6),FPRUAD(9,6),ADT(6,9),
    
```

LEVEL 2.2 (SEPT 76)

EVIDENCE

05/360 FORTRAN 4 EXTENDED

DATE 00.2737.1.00.21

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```

B1 5AREA(4,9),FPAHEA(9,4),VPOP(14,26),DVPOP(14),
B1 6X2(9,6,4),NPMILE(4,9),NPK(4,9,6),PLU,IVAF(14),
B1 7MYREF(6),IVHD(14),LIFE(4),LEAGE(6),JAYLE(9,4),
B1 8JPGF(9),LANE(9,6),MYHE(14),IVGF(14),MYR,II,I

```

C THE FOLLOWING COMMON BLOCKS SERVE PRINT SUBROUTINES

ISN 0004

```

COMMON /BIG002/ ALNEG(5,5,4,14),GVTOT(9),VTOT(14,9),POP(9),
B2 2POPDEN(4,9),POPLTH(4,9),STDPGF(9,9),TOTPOP(9),
B2 3HILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYRNET(9),
B2 4NIDD(9),MYRN,INCR,MYRB,MYRN,NVT,NAT,NMT,NSR

```

C END PRINT COMMON BLOCK

ISN 0005

```

COMMON /BIG003/ GAM4(6,9),V(5),EDGE(4,9),EDGEZ(4,9,6),
B3 2NDTHPZ(4,9),FLOMIX(14,4,5),PERCNT(4,2,4),
B3 3REPZ(4,9,6,4),HEDE(4,9,6,4),
B3 4JFLO(9),KFLO(6),KPER(6),IPER(14)

```

ISN 0006

```

COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
B4 2KMASK(6),METMSK(7),ICONT(12),MODMSK(3),JUEG(7),
B4 3IPLUT(7),ITABLE,ITABS,NTABS

```

ISN 0007

```

COMMON /BIG005/ RATIO(16,3,2),DRATIO(17,3,2),ADBL(21),RDBL(16),
B5 2PLDEN(4,9,6,5,4),SEPROB(4,9,6,6,5),
B5 3HDBEDG(4,9,6,4,2),HDBCUT(4,9,6,4,2),DLPSI(4,6,4),
B5 4METRIC(20,7,2),DJKLEV(9,6,4,2),DLLEY(5,2),
B5 5PACT(5,2),FRIN(2),CDC(7),EVPROB(14,9,6),
B5 6FIMP(60,5),SHIFT(4,9,2),AVDUL(20),IPACT(7),
B5 7IFIMP(7),JCDC(7),INOUT(7),KOM(7),NADA,NROB

```

ISN 0008

```

COMMON /BIG006/ PNORM(3,2,4),ACEV(6,9),IYRN,IFM,
B6 1ACCM(20,2),VNTDAY,VNTNII,IEVB(6,9),KS,J,
B6 2VNTDB(15,11,5,9),ACLMP(15,21),KSJEVB,IMS6

```

ISN 0009

DIMENSION LLEV(10)

ISN 0010

INTEGER YEAR

ISN 0011

REAL LIMIT(20)

ISN 0012

REAL*8 TITLE(4),VNTRNG(14),STRING(6)

ISN 0013

```

DATA VNTRNG/8H0>0-1, 0,8H02,15440,8H04,64160,8H010,0000,
18H021,5440,8H046,4160,8H0100,000,8H0215,440,
28H0464,160,8H01000,00,8H02154,40,8H04641,60,
38H010000,0,8H0>100000/

```

ISN 0014

```

DATA STRING/8HPOPULATI,8HON EXPUS,8HED TO /
18HUY EVENT,8H BIN AND,8H DB BIN /

```

ISN 0015

ITABLE=ITABLE+1

ISN 0016

ITABS=0

ISN 0017

C ESTABLISH UPPER AND LOWER LIMITS

ISN 0018

DO 100 ILEV=1,10

ISN 0019

LIMIT(2*ILEV-1)=ADBL(ILEV+IUEG)

ISN 0020

LIMIT(2*ILEV)=ADBL(ILEV+IUEG+1)

(003

100 LLEV(ILEV)=ILEV+IUEG

003)

ISN 0021

C DO 200 IYRN=1,MYRN

ISN 0022

YEAR=MYRNET(IYRN)

ISN 0023

ITABS=ITABS+1

ISN 0024

```

WRITE(6,5050) ITABLE,ITABS,YEAR,STRING(1),STRING(2),
1STRING(3),TITLE,RNAME,STRING(4),STRING(5),STRING(6),
2LLEV,LIMIT

```

ISN 0025

DO 300 IBIN=1,14

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```

001 ISN 0026 300 WRITE(6,4040) VVTRNG(IHIN), (V:IGH(IHIN,KDB,IIM,IYHN),P(LB=1,11)
001) C
ISN 0027 200 WRITE(6,3030)(VNTDB(15,KDB,IIM,IYHN),KDB=1,10),
VNTDB(15,11,IIM,IYHN)
002) C
ISN 0028 5050 FORMAT('1'// TABLE 'I2','I2,4X,I4,1X,2A8,A6,4A8,T110,5A4/
1'0',T21,3A8/'0'/'0',131('1')/'0',15,'00',T9,'0',10(10X,'0'),
2T132,'0'/'X',T9,'X',10(10X,'X'),T132,'X'/'++',T9,'+',10(10X,
3'+'),T132,'+'/' OHIN # 0',10(4X,I2,4X,'0'),T123,'TOTALS',T132,'0'/'
4'+X',T9,'X',10(10X,'X'),T132,'X'/'++',T9,'+',10(10X,'+'),T132,
5'+/'/'0',T9,'0',10(10('1'),'0'),T125,'BY',T132,'0'/'X',T9,'X',
610(10X,'X'),T132,'X'/'++',T9,'+',10(10X,'+'),T132,'+'/'
7' OLEVEL,0',10(10X,'0'),T121,'EVENT BIN 0'/'X',T9,'X',
810(10X,'X'),T132,'X'/'++',T9,'+',10(10X,'+'),T132,'+'/'
9' OIN DHA0',10(1X,F4,0,'-',F4,0,'0'),T132,'0'/'X',T9,'X',
X10(10X,'X'),T132,'X'/'++',T9,'+',10(10X,'+'),T132,'+'/'
1'0',6('1'),'0',10(10('1'),'0'),12('1'),'0'/'X',T9,'X',
210(10X,'X'),T132,'X'/'++',T9,'+',10(10X,'+'),T132,'+'/'
3'0 # OF 0',10(10X,'0'),T132,'0'/'X',T9,'X',10(10X,'X'),T132,
4'X'/'++',T9,'+',10(10X,'+'),T132,'+'/' EVENTS0',10(10X,'0'),
5T132,'0'/'X',T9,'X',10(10X,'X'),T132,'X'/'++',T9,'+',
610(10X,'+'),T132,'+'/' O(4 #)0',10(10X,'0'),T132,'0'/'X',T9,
7'X',10(10X,'X'),T132,'X'/'++',T9,'+',10(10X,'+'),T132,'+'/'0',
8T9,'0',10(10X,'0'),T132,'0'/'X',T9,'X',10(10X,'X'),T132,'X'/'
9'++',T9,'+',10(10X,'+'),T132,'+'
C
ISN 0029 4040 FORMAT('1,AB,10(1X,1PE9.3,'0'),2X,1PE9.3,1X,'0'/'
1'+X',T9,'X',10(10X,'X'),T132,'X'/'
2'+',T9,'+',10(10X,'+'),T132,'+'/'
3'0',T9,'0',10(10X,'0'),T132,'0'/'
4'+X',T9,'X',10(10X,'X'),T132,'X'/'
5'+',T9,'+',10(10X,'+'),T132,'+'
C
ISN 0030 3030 FORMAT('1,131('1')/'0TOTALS0',10(10X,'0'),T132,'0'/'
1'+X',T9,'X',10(10X,'X'),T132,'X'/'++',T9,'+',10(10X,'+'),T132,
2'+/'/'0 BY 0'/'++',T10,10(1X,1PE9.3,'0'),T132,'0'/'X',T9,'X',
310(10X,'X'),T132,'X'/'++',T9,'+',10(10X,'+'),T132,'+'/'
4'0 0'/'++ DB BIN ',10(10X,'0'),T132,'0'/'X',6('1'),'X',
510(10('1'),'X'),T132,'X'/'++',T9,'+',10(10X,'+'),T132,'+'/'
6'0',T119,'0',T132,'0'/'X',T119,'X',T132,'X'/'++',T119,'+',
7T132,'+'/'0 GRAND TOTAL'/'++',T119,'0',2X,1PE9.3,1X,'0'/'
7'+X',T119,'X',T132,'X'/'
8'+',T119,'+',T132,'+'/'0'/'++',T119,'0',T132,
9'0'/'X',T119,'X',T132,'X'/'++',131('1')/'++',T119,'+',
XT132,'+'
C
ISN 0031 RETURN
004) C
ISN 0032 END

```

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ADDITIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NOCHECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS * 31, PROGRAM SIZE * 2772, SUBPROGRAM NAME *EVNTDB

*STATISTIC NO DIAGNOSTICS GENERATED

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LEVEL 4.0 (SERIAL 76) CONTINUED
***** END OF COMPILATION *****

US/300 FORTRAN II EXTENDED

DATE 08.27.74 19.30.21

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110K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOSOURCE,INTERMVAL,N.OBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOBL(NONE) NOSOURCE LBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(1)

***** O R T H A N C H O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS																
A	0003																
I	0003	0012	0013	0013	0013	0014	0014	0014	0015	0015	0017	0017	0018	0018	0018	0022	0023
	0024	0024	0024	0025	0025	0026											
IT	0003																
X2	0003																
AUI	0003																
ALO	0003																
CZD	0003																
DBK	0003																
FIX	0002																
MYR	0003																
PGF	0003																
SUM	0007	0017															
.AF	0003																
GF	0003																
VML	0003																
AKEA	0003																
IBEG	0004																
IVAF	0003																
IVBD	0003																
IVGF	0003																
JPGF	0003																
LANE	0003																
LIFE	0003																
MYHE	0003																
NPFK	0003																
PGFO	0003																
REMO	0003																
VINC	0003	0014	0024														
VPUP	0003																
XINC	0003	0013	0023														
YINC	0003	0008	0009	0018	0026												
BVPLP	0003																
ICUNT	0004	0005															
IDUMP	0004																
IPLUT	0004																
ITABS	0004																
JMASK	0004																
JWYLE	0003																
KMASK	0004																
MYREF	0003																
NTABS	0004																
RNAME	0004																
VBD74	0003	0014	0024														
VBD77	0003	0013	0014	0023	0024												
VBD85	0003	0007	0007	0007	0007	0007	0008	0009	0013	0017	0018	0023	0025				
VBD90	0003	0010	0011	0017	0018	0025											
WIDTH	0003																
FPAREA	0003																

***** ORTHAN CROSS REFERENCE LISTING *****

SYMBOL	INTERNAL STATEMENT NUMBERS
FPRDAD	0003
IEGAGE	0003
IPHINT	0004
ITABLE	0004
IVMASK	0004
METMSK	0004
MODMSK	0004
NPMILE	0003

***** ORTHAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCES
1000	0019	0012 0015
2000	0021	0005
3000	0027	0022

/ STRUCTURED SOURCE LISTING /

```

(003 ISN 0002      SUBROUTINE FIX                                00064100
                   C BELONGS TO SINGLE EVENT MODEL
                   CX FIX COMPUTES INTER-EXTRAPOLATORY ARRAYS FOR FUNCTION VBD
                   C
                   COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
ISN 0003          2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
                   3VML(14,4,5),A(2,3),ODK(3),CZO(9,6),PGF(5),
                   4PGF0(5),WIDTH(9,6),FPRDAD(9,6),ADT(6,9),
U1              5AREA(4,9),FPAREA(9,4),VPDP(14,26),OVPOP(14),
                   6X2(9,6,4),NPMILE(4,9),NPMK(4,9,6),ALO,IVAF(14),
                   7MYREF(6),IVBD(14),LIFE(4),IEGAGE(6),JHYLE(9,4),
U1              8JPGFK(9),LANE(9,6),MYRE(14),IVGF(14),MYR,I,I
ISN 0004          COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
                   2RMASK(6),METMSK(7),ICONT(12),MODMSK(3),IBEG(7),
U4              3IPL0T(7),ITABLE,ITABO,NTABO
                   C
                   C FIXES VBD SO THAT CATEGORIES 1 AND 3 DIE AFTER 1990
                   C
                   C
                   C
                   C
ISN 0005          IF(ICONT(4).EQ.1) GOTO 2000
                   C
ISN 0007          SUM = VBD85(2) + VBD85(4)
ISN 0008          1 + VBD85(5) + VBD85(6) + VBD85(7)
ISN 0009          YINC(1) = -VBD85(1) / 5.0E0
ISN 0010          YINC(3) = -VBD85(3) / 5.0E0
ISN 0011          VBD90(1) = 0.0E0
                   VBD90(3) = 0.0E0
                   C
                   C RENORMALIZE THE REST OF YINC ACCORDING TO VBD85
                   C
ISN 0012          DO 1000 I = 1,7
                   C
(001 ISN 0013      XINC(1) = (VBD85(1)-VBD77(1)) / 8.0
ISN 0014          VINC(1) = (VBD77(1)-VBD74(1)) / 3.0
ISN 0015          IF(I.EQ.1,OR,I.EQ.3) GOTO 1000
ISN 0017          VBD90(1) = VBD85(1) / SUM
ISN 0018          YINC(1) = (VBD90(1) - VBD85(1)) / 5.0E0

```

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			C		00065440
	ISN 0019	1000	CONTINUE		00065450
			C		00065460
001)			C		
	ISN 0020		RETURN		00065600
			C		00065620
	ISN 0021	2000	CONTINUE		00065640
			C		00065660
	ISN 0022		DO 3000 I = 1,7		00065680
			C		00065690
002	ISN 0023		XINC(1) = (VBD85(I)-VBD77(I)) / 8.0		00065700
	ISN 0024		VINC(1) = (VBD77(I)-VBD74(I)) / 3.0		00065710
	ISN 0025		VBD90(I) = VBD85(I)		00065730
	ISN 0026		YINC(1) = 0.0E0		00065740
			C		00065750
	ISN 0027	3000	CONTINUE		00065760
			C		
002)	ISN 0028		RETURN		00065770
			C	DEBUG SUBCHK	00065775
			C		
003)	ISN 0029		END		00065780

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LIVECOUNT(60) SIZE(MAX) AUTODOBL(NONE)

*OPTIONS IN EFFECT*NO\$SOURCE EUCDIC NOLIST NO\$DECK NO\$OBJECT.NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 28, PROGRAM SIZE = 550, SUBPROGRAM NAME = FIX

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

122K BYTES OF CORE NOT USED

REQUEST OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMINI,NOOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
 NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
IBEG	0003
HEADG	0002
ICASE	0002 0005 0008 0013 0016
ICONT	0003
IDUMP	0003
IPLUT	0003
ITABS	0003 0004 0004 0005 0005 0008 0008
JMASK	0003
KMASK	0003
NTABS	0003 0005 0008
RNAME	0003 0005 0008
HEADER	0011
IPRINT	0003
ITABLE	0003 0005 0008
IVMASK	0003
METMSK	0003
MUDMSK	0003

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
1000	0007	0005
1001	0015	0013
1002	0023	0021
2000	0010	0008
2001	0018	0016
2007	0024	
2008	0025	0012 0020
2009	0026	0019

```

(001 ISN 0002          / STRUCTURED SOURCE LISTING /
SUBROUTINE HEADG(ICASE)                                00110220
CT HEADG      LAST UPDATE: 06/28/79 16126122           00110230
CX HEADG PRINTS A HEADING FOR THE PGF TITLES (FOR PRNT10) 00110240
C                                                       00110250
COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9), 00110270
B4 2KMASK(6),METMSK(7),ICONT(12),MUDMSK(3),IBEG(7),    00110280
B4 3IPLUT(7),ITABLE,ITABS,NTABS                        00110290
ITABS = ITABS + 1                                       00110305
IF(ICASE.EQ.1) WRITE(6,1000) ITABLE,ITABS,ITABS,NTABS,RNAME 00110310
FORMAT('1/'0',T3,'TABLE ',12,' OF ',12,' POPULATION GROWTH FACTOR', 00110315
' FOR EACH NET YEAR.( TABLE ',12,' OF ',12,' )',T110,5A4/'0') 00110320
IF(ICASE.EQ.2) WRITE(6,2000) ITABLE,ITABS,ITABS,NTABS,RNAME 00110325
FORMAT('1/'0',T3,'TABLE ',12,' OF ',12,' POPULATION BY AREA TYPE', 00110330
' FOR EACH NET YEAR.( TABLE ',12,' OF ',12,' )',T110,5A4/'0') 00110335
C                                                       00110340
CALL HEADER(10)                                         00110350
C                                                       00110360
    
```

ISN 0012		WRITE(6,2008)	00110370
ISN 0013		IF(ICASE.EQ.1) WRITE(6,1001)	00110380
ISN 0015	1001	FORMAT(' ',T4,'YEAR',T11,'VARIABLE',T40,'POP(YEAR)/POP(BASELINE)')	00110382
ISN 0016		IF(ICASE.EQ.2) WRITE(6,2001)	00110384
ISN 0018	2001	FORMAT(' ',T4,'YEAR',T11,'VARIABLE',T40,'POPULATION, IN MILLIONS')	00110386
ISN 0019		WRITE(6,2009)	00110410
ISN 0020		WRITE(6,2008)	00110420
ISN 0021		WRITE(6,1002)	00110430
ISN 0022		RETURN	00110435
		C	00110439
		C ZE DO ALL FORMATS	00110440
		C	00110445
001)		C	
ISN 0023	1002	FORMAT('+',T12(' '))	00110450
ISN 0024	2007	FORMAT('+',T19,' ',T21,' ',9(BX,' '),10X,'')	00110460
ISN 0025	2008	FORMAT(' ',T9,' ',T21,' ',T102,' ',T113,'')	00110470
ISN 0026	2009	FORMAT('+',T9,' ',T21,' ',T102,' ',T113,'')	00110480
ISN 0027		END	00110490

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOOBL(NONE)

*OPTIONS IN EFFECT*NOBSOURCE EBCDIC NOLIST NODYCK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 26, PROGRAM SIZE = 950, SUBPROGRAM NAME = HEADG

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

REQUESTED OPT. 31 XREF,OPT(2),FORMAT,GOSTMT,NUSOURCE,NOTERMIAL,NOOBLCT
 OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
 NUSOURCE EBCDIC NULIST NODECK NUOBJECT NONAP FORMAT GOSTMT XREF NOALC NUANSF NOTERM FLAG(I)

***** DRTRAN CROSS REFERENCE LISTING *****

SYMBOL	INTERNAL STATEMENT NUMBERS
EAD	0015 0015 0015 0021 0021 0021 0024 0024 0024
SUB	0004 0004 0021 0024
TITLE	0002 0008
EADER	0003 0003 0008
EADER	0002

***** DRTRAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCES
1003	0006	0005
1004	0009	0008
1005	0012	0011
1007	0016	0015
1010	0022	0021
1011	0025	0024
1013	0029	0019 0028
2006	0031	0014 0018 0020 0027
2007	0032	0017 0023 0026
2010	0033	0007
2011	0034	0010 0013

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/ STRUCTURED SOURCE LISTING /
002 ISN 0002 SUBROUTINE HEADER(1800) 00112550
C BELONGS TO SINGLE EVENT MODEL
CX HEADER PRINTS A HEADER FOR ALL POPULATION TABLES 00112565
C 00112575
ISN 0003 REAL *8 TITLE(12) 'PRINT1 ', 'PRINT2 ', 'PRINT3 ', 'PRINT4 ', 00112600
'PRINT5 ', 'PRINT6 ', 'PRINT7 ', 'PRINT8 ', 'PRINT9 ', 00112620
'PRINT10 ', 'PRINT11 ', 'PRINT12 ' 00112640
C 00112660
ISN 0004 REAL *8 HEAD(9,2) / OVER '1, 1000- ', '500- ', '200- ', 00112700
'100- ', '50- ', '25- ', '5- ', 00112750
'A2A' 2000 '1, 1000 ', '500 ', '200 ', '100 ', 00112800
'A' 50 '1, 25 ', 'RURAL ' 00112850
ISN 0005 WRITE(6,1003) 00112900
ISN 0006 1003 FORMAT(' ',112(' ')) 00112950
ISN 0007 WRITE(6,2010) 00113000
ISN 0008 WRITE(6,1004) TITLE(1800) 00113050
ISN 0009 1004 FORMAT(' ',T40,'AREA TYPE,J',106,'*****',A8) 00113100
ISN 0010 WRITE(6,2011) 00113150
ISN 0011 WRITE(6,1005) 00113200
ISN 0012 1005 FORMAT(' ',T21,93(' ')) 00113250
ISN 0013 WRITE(6,2011) 00113300
ISN 0014 WRITE(6,2006) 00113350
ISN 0015 WRITE(6,1007)(J,J=1,9) 00113400
011 C
ISN 0016 1007 FORMAT(' ',T20,9(I6,3X),T105,'ALL J') 00113450
ISN 0017 WRITE(6,2007) 00113500
    
```



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002) ISN 0018      WRITE(6,2006)                00113550
      ISN 0019      WRITE(6,1013)                00113600
      ISN 0020      WRITE(6,2006)                00113650
      ISN 0021      WRITE(6,1010)(HEAD(J,1),J=1,9) 00113700
      C
      ISN 0022      1010 FORMAT(' ',T6,'PLACE SIZE,',T22,9(A8,1X)) 00113750
      ISN 0023      WRITE(6,2007)                00113800
      ISN 0024      WRITE(6,1011)(HEAD(J,2),J=1,9) 00113850
      ISN 0025      1011 FORMAT(' ',T7,'THOUSANDS',T22,9(A8,1X)) 00113900
      ISN 0026      WRITE(6,2007)                00113950
      ISN 0027      WRITE(6,2006)                00114000
      ISN 0028      WRITE(6,1013)                00114050
      ISN 0029      1013 FORMAT('+',112(' '))      00114100
      ISN 0030      RETURN                        00114150
      ISN 0031      2006 FORMAT(' ',11,T21,' ',9(6X,' '),10X,' ') 00114200
      ISN 0032      2007 FORMAT('+',11,T21,' ',9(8X,' '),10X,' ') 00114250
      ISN 0033      2010 FORMAT(' ',11,T21,' ',1102,' ',T113,' ') 00114300
      ISN 0034      2011 FORMAT('+',11,T21,' ',1102,' ',T113,' ') 00114350
      ISN 0035      END                          00114400
    
```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NUDECK NOOBJECT NOMAP FORMAT COSTMT XREF NOALC NUANSF:NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS * 34, PROGRAM SIZE * 1150, SUBPROGRAM NAME =HEADER

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

122K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NUSOURCE,NUTERMINAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NGNE) NOSOURCE EBCDIC NOLIST NUDECK NOOBJECT NOMAP FORMAT GUSTMT XREF NOALL NOANSF NOTERM FLAG(1)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL	INTERNAL STATEMENT NUMBERS
I	0009 0009 0009
IBEG	0003
HEADV	0002
ICONT	0003
IDUMP	0003
IPLOT	0003
ITABS	0003 0004 0004 0005 0005
JMASK	0003
KMASK	0003
NTABS	0003 0005
RNAME	0003 0005
IPRINT	0003
ITABLE	0003 0005
IVMASK	0003
METMSK	0003
MDDMSK	0003

*****FORTRAN CROSS REFERENCE LISTING*****

C-143	LABEL	DEFINED	REFERENCES
	7000	0006	0005
	8000	0010	0009
	8002	0013	0012
	8003	0016	0015
	8004	0019	0018
	8005	0021	0020
	8006	0024	0023
	8007	0028	0027
	8008	0032	0031
	8011	0033	
	8012	0034	0008 0011 0014 0017 0022 0025 0030
	8013	0035	0007 0026 0029

/ STRUCTURED SOURCE LISTING /

(002	ISN 0002	SUBROUTINE HEADV	00072300
		CT HEADV LAST UPDATE:	00072310
		CX HEADV PRINTS A HEADER FOR VEHICLE POPULATION TABLES	00072320
		C	00072330
	ISN 0003	COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),	00072000
		84 2KMASK(6),METMSK(7),ICONT(12),MDDMSK(3),IBEG(7),	00072010
		84 3IPLOT(7),ITABLE,ITABS,NTABS	00072020
		C	00072030
	ISN 0004	ITABS = ITABS + 1	00073100
		C	00073110
	ISN 0005	WRITE(6,7000)ITABLE,ITABS,ITABS,NTABS,RNAME	00073200
	ISN 0006	7000 FORMAT('1','0',T3,'TABLE ',12,' ',12,T15,'VEHICLE POPULATION '	00073250
		'BY TYPE, FOR EACH NET YEAR.', '(TABLE ',12,' OF ',12,')',	00073300
		AT110,5A4/'0/')	00073310

```

(001) ISN 0007      WRITE(6,8013)
      ISN 0008      WRITE(6,8012)
      ISN 0009      WRITE(6,8000)(I,I=1,14)
      C
      ISN 0010      8000  FORMAT(' |TYPE>',T13,'|',14(14,' |'),T127,'TOTAL |')
      ISN 0011      WRITE(6,8012)
      ISN 0012      WRITE(6,8002)
      ISN 0013      8002  FORMAT(' |CYLINDERS',T13,'|',1 8 | 6 | 6&8 | 4 |',
      *' 4 | 6&8 | | | | |',
      *' | | |',7X,'|')
      ISN 0014      WRITE(6,8012)
      ISN 0015      WRITE(6,8003)
      ISN 0016      8003  FORMAT(' |ENGINE',T13,'|',6(' GAS |'),' DIESEL|',8(' |'))
      ISN 0017      WRITE(6,8012)
      ISN 0018      WRITE(6,8004)
      ISN 0019      8004  FORMAT(' |TRANS-',T13,'|',2(' AUTO- |'),' MAN- |', ' AUTO- |',
      *' MAN- |',9(' |'),7X,'|')
      ISN 0020      WRITE(6,8005)
      ISN 0021      8005  FORMAT(' |MISSION',T13,'|',2(' MATIC |'),' DUAL |', ' MATIC |',
      *' DUAL |',9(' --- |'),7X,'|')
      ISN 0022      WRITE(6,8012)
      ISN 0023      WRITE(6,8006)
      ISN 0024      8006  FORMAT(' |VEH. TYPE>',T13,'|',3(' PC |'),2(' PC&LT |'),
      *' LT TRKI PC&LT |MED TRKIHVY TRKIIC BUS |TR BUS |SCH BUS|',
      *'UM MTCY|MD MTCY|',7X,'|')
      ISN 0025      WRITE(6,8012)
      ISN 0026      WRITE(6,8013)
      ISN 0027      WRITE(6,8007)
      ISN 0028      8007  FORMAT(' |',T13,'|',T85,'|',T109,'|',T133,'|',/ '|', ' | UNIT',
      *T13,'|',T50,'MILLIONS',T85,'|',T89,'TENS OF THOUSANDS',T109,
      *'|',T116,'MILLIONS',T133,'|',/ '|',T13,'|',T85,'|',T109,
      *'|',T133,'|')
      ISN 0029      WRITE(6,8013)
      ISN 0030      WRITE(6,8012)
      ISN 0031      WRITE(6,8008)
      ISN 0032      8008  FORMAT(' | YEAR')
      C
      C ZE FORMAT STATEMENTS
      C
      ISN 0033      8011  FORMAT(' |',T13,'|',15(' |'))
      ISN 0034      8012  FORMAT(' |',T13,'|',15(' |'))
      ISN 0035      8013  FORMAT(' |',132(' _|'))
      C
      RETURN
(002) C
      ISN 0037      END

```

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```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOBLINDONE)
*OPTIONS IN EFFECT*NOBSOURCE EBCDIC NOLIST NODIAG NOOBJECT NOMAP FORMAT GOSTMT XREF NOALLC NOANSF NOTERM FLAG(1)
*STATISTICS* SOURCE STATEMENTS = 36, PROGRAM SIZE = 1498, SUBPROGRAM NAME = HEADV
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION *****

```

126K BYTES OF CORE NOT USED

LEVEL 2.2 (SEPT 76)

IYBASSEM

US/360 FORTRAN 4 EXCLUDED

DATE 06.273.19.34.5.

PAGE

REQUESTED OF LINKS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOLJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NULIST NUDECK NUOBJECT NOMAP FORMAT GOSTMT XREF NOALLC NOANSF NOTERM FLAG(1).

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL INTERNAL STATEMENT NUMBERS

NAT 0003
NHT 0003
NSR 0003
NVT 0003
POP 0003
INCR 0003
MDUM 0002 0004
MILE 0003
MYRB 0003 0004
MYRN 0003
NILD 0003
NLEV 0003
MYRN 0003
VTOT 0003
ALREG 0003
GVTOT 0003
IYBAS 0002 0004
MYREG 0003
MYRNET 0003
POPDEN 0003
POPLIN 0003
STOPGF 0003
TOTPOP 0003

/ STRUCTURED SOURCE LISTING /

(001 ISN 0002 FUNCTION IYBAS(MDUM)
C BELONGS TO SINGLE EVENT MODEL
CX IYBAS CONVERTS YEAR IN STANDARD NOTATION TO YR WRT BASELINE
C
ISN 0003 COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),POP(9),
B2 2POPDEN(4,9),POPLIN(4,9),STOPGF(9,9),TOTPOP(9),
B2 3MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYRNET(9),
B2 4NILD(9),MYRN,INCR,MYRB,MYRN,NVT,NAT,NHT,NSR
ISN 0004 IYBAS=MDUM+MYRB+1
ISN 0005 RETURN
001) C DEBUG SUBCHK
ISN 0006 C
END

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*NOSOURCE EBCDIC NULIST NUDECK NUOBJECT NOMAP FORMAT GOSTMT XREF NOALLC NOANSF NOTERM FLAG(1)
STATISTICS SOURCE STATEMENTS * 5, PROGRAM SIZE * 276, SUBPROGRAM NAME * IYBAS
STATISTICS NO DIAGNOSTICS GENERATED

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LEVEL 2.2 (SEP1 76)

08/360 FORTRAN II EXTENDED

DATE 00.273/19.34.57

PAGE 2

***** END OF COMPILATION *****

1264 BYTES OF CORE NOT USED

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REQUESTED OPTIONS: AREF,OPT(2),FORMAT,GUSTMT,NDSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
NDSOURCE EBCDIC NULIST NUDECK NOBJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

A	0003		
I	0003	0004	0004
IT	0003		
X2	0003		
ADT	0003		
ALO	0003		
CZC	0003		
DUK	0003		
IYR	0002	0004	
MYR	0003		
PGF	0003		
YAF	0003		
YGF	0003		
VML	0003		
AREA	0003		
IYAF	0003		
IYBD	0003	0004	
IYGF	0003		
IYES	0002	0004	
JMGP	0003		
LANE	0003		
LIFE	0003		
MYHE	0003	0004	
NPMK	0003		
PGFO	0003		
REMO	0003		
VINC	0003		
VPOP	0003		
XINC	0003		
YINC	0003		
BVPOP	0003		
JHYLE	0003		
MYHEF	0003	0004	
VDD74	0003		
VDD77	0003		
VDD85	0003		
VDD90	0003		
HIDH	0003		
FPAREA	0003		
PPROAD	0003		
IEGAGE	0003		
NPMILE	0003		

/ STRUCTURED SOURCE LISTING /

(001 15N 0002

FUNCTION	IYES(IYR)	00069200
C	BELONGS TO SINGLE EVENT MODEL	
CX	IYES CONVERTS YEAR WRT REFERENCE TO YEARS WRT MYRE	00069220
C		00069230

```

ISN 0003      COMMON /BIG001/ VAF(4,26),VGF(40,6),REMU(6,17),XINC(7),YINC(7),
             00069400
             2VINC(7),VHG74(14),VHS77(7),VHS05(7),VHS9U(7),
             00069410
             3VPL(14,4,5),A(2,3),DISK(3),C2D(9,6),PGF(5),
             00069420
             4PGF0(5),WIDTH(9,6),FPRGAD(9,6),AD1(6,9),
             00069430
             5AREA(4,9),FPAAREA(9,4),VPOP(14,26),VPPOP(14),
             00069440
             6A2(9,6,4),NPMILE(4,9),NPMK(4,9,6),ALU,IVAF(14),
             00069450
             7MYRLF(6),IVBD(14),LIFE(4),IEWAGE(6),JHYLE(9,4),
             00069460
             8JPGF(9),LAGE(9,6),MYRE(14),IVGF(14),MYR,IT,I
             00069470
ISN 0004      IYES=LYR-MYRE(I)+MYREF(IVBD(I))
             00069600
ISN 0005      RETURN
             00069900
             C          DEBUG SUBCHK
             00070000
             C
001) ISN 0006      END
             00070100
    
```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINESCOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*NOSSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 5, PROGRAM SIZE = 288, SUBPROGRAM NAME = IYES

STATISTICS NO DIAGNOSTIC GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

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EVENT 2 (76' IYREFSE... US73 FOR H P TODECT DA 9,21 1,35 AGE

REQUESTED IONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL, OBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTIDBL(NONE)
NOSOURCE EBCDIC NOLIST NUDECK NUOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** U R T R A N C R D S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

A	0003	
I	0003	0004
IT	0003	
X2	0003	
ADT	0003	
ALO	0003	
CZD	0003	
DUK	0003	
MYR	0003	
PGF	0003	
VAF	0003	
VGf	0003	
VML	0003	
AHEA	0003	
IVAF	0003	
IVBD	0003	0004
IVGF	0003	
JPGF	0003	
LANE	0003	
LIFE	0003	
MDUM	0002	0004
MYRE	0003	
NPMK	0003	
PGFO	0003	
REMO	0003	
VINC	0003	
VPOP	0003	
XINC	0003	
YINC	0003	
SVPOP	0003	
IYREF	0002	0004
JNYLE	0003	
MYREF	0003	0004
VDD74	0003	
VDD77	0003	
VDD85	0003	
VDD90	0003	
WIDTH	0003	
FPAREA	0003	
FPROAD	0003	
IEWAGE	0003	
NPMILE	0003	

/ STRUCTURED SOURCE LISTING /

(00) ISN 0002

FUNCTION	IYREF(MDUM)	00066500
C	BELONGS TO SINGLE EVENT MODEL	
CX	IYREF CONVERTS STANDARD YEAR TO YEAR NOT REFERENCE YEAR. (MYREF)	00066520
C		00066530

LEVEL 2.2 (SEPT 76)

OS/360 FORTRAN 4 EXTENDED

DATE 80.273/14.35.50

PAGE 2

19N 0003	H1	CHMMOI, /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),	00066700
	H1	2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),	00066710
	H1	3VML(14,4,5),A(2,3),DUK(3),CZD(9,6),PGF(5),	00066720
	H1	4PGFO(5),WILTH(9,6),FPRUAD(9,6),ADT(6,9),	00066730
	H1	5AKEA(4,9),FPAHEA(9,4),VPOP(14,26),BVPUP(14),	00066740
	H1	6XZ(9,6,4),NPHLE(4,9),NPNK(4,9,6),ALD,IVAF(14),	00066750
	H1	7MYREF(6),IVBD(14),LIFE(4),IEGAGE(6),JWYLE(9,4),	00066760
	H1	8JPGF(9),LAHE(9,6),MYRE(14),IVGF(14),MYH,IT,I	00066770
19N 0004		IVREF#MDUM-MYREF(IVBD(1))+1	00066770
	C	DEBUG SUBCHK	00067100
19N 0005		RETURN	00067200
001)	C		00067300
19N 0006		END	00067400

*OPTIONS IN EFFECT*NAME(CHAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*NOUSOURCE EBCDIC NOLIST NODCK NOOBJECT NOMAP FORMAT,GOBTMT XREF NOALC NOANSF NOTERM FLAG(1)
STATISTICS SOURCE STATEMENTS = 5, PROGRAM SIZE = 282, SUBPROGRAM NAME = IYREF
STATISTICS NO DIAGNOSTICS GENERATED
***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

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BEST COPY AVAILABLE

REQUESTED OPTIONS: XREF,DPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOUBL(NONE)
NOSOURCE EBCDIC NOLIST NUDECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS									
A	0003									
I	0003									
J	0008									
V	0005									
IM	0002	0009	0010	0012						
IT	0003									
K8	0008									
K2	0003									
ADT	0003									
ALO	0003									
COC	0007									
C2D	0003									
DBK	0003									
IBG	0012	0014	0016							
IFM	0008									
IIM	0009	0010	0020	0022	0022	0024	0024	0025	0025	
KDB	0013	0014	0016	0020	0021	0022	0022			
KOM	0007									
MYR	0003									
NAT	0004									
NHT	0004									
NSR	0004									
NVT	0004									
PGF	0003									
POP	0004									
VAF	0003									
VGF	0003									
VML	0003									
ACCM	0008									
ACEV	0008									
ADBL	0007									
AREA	0003									
EDGE	0005									
FIMP	0007									
FRTA	0007									
GAMM	0005									
IBEG	0006	0012								
IDIN	0017	0018	0018	0018	0019	0020	0020	0023	0024	0024
IEVU	0008									
IMS6	0008									
INER	0004									
IPER	0005									
IVAF	0003									
IVBD	0003									
IVGF	0003									
IYRN	0008	0020	0022	0022	0024	0024	0025	0025		
JCCG	0007									
JFLO	0005									
JPGF	0003									

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***** F U R T H A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
KFLO	0005
KPER	0005
LANE	0003
LIFE	0003
MILE	0004
MYRB	0004
MYRE	0003
MYRN	0004
NADB	0007
NIDD	0004
NLEV	0004
NPHK	0003
NROB	0007
NTRN	0004
PACT	0007
PGFO	0003
RORL	0007
REMD	0003
REPZ	0005
VINC	0003
VPOP	0003
VIOT	0004
XINC	0003
YINC	0003
ACLWP	0008 0018 0018 0018 0019 0019 0019 0020
ALREG	0004
AVOUL	0007
BVPOP	0003
DLLEY	0007
DLPSI	0007
GVLOT	0004
ICONT	0006
IDUMP	0006
IFIMP	0007
INDUT	0007
IPACT	0007
IPLDT	0006
ITANS	0006
JMASK	0006
JAYLE	0003
KMASK	0006
MYREF	0003
MYREG	0004
NTANS	0006
PLDEN	0007
PNDRM	0008
RATIO	0007
REGGE	0005
RNAME	0006
SHIFT	0007
VBD74	0003
VBD77	0003
VBD85	0003
VBD90	0003
VNTDB	0008 0020 0022 0022 0024 0024 0025 0025

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***** ORTRAN CROSS REFERENCE LISTING *****

SYMBOL INTERNAL STATEMENT NUMBERS
 WIDTH 0003
 DJKLEV 0007
 DRATIO 0007
 EDGEFZ 0005
 EVFRUB 0007
 FLUMIX 0005
 FPAREA 0003
 FPRJAD 0003
 IEUAGE 0003
 IPRINT 0006
 ITABLE 0006
 IVMASK 0006
 KDBIOG 0016 0018 0019 0019 0019 0020
 KSJEVB 0008
 NETMSK 0006
 METHIC 0007
 MDDMSK 0006
 MYRNET 0004
 NORIAL 0002
 NPMILE 0003
 PERCNT 0005
 POPDEN 0004
 POPLTN 0004
 ROBCUT 0007
 ROBEDG 0007
 BEPROB 0007
 STOPGF 0004
 TOTPOP 0004
 VNTDAY 0008
 VNTNIT 0008
 WOTHPZ 0005

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***** ORTRAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCES
500	0020	0013 0017
600	0022	0021
700	0025	
800	0024	0023

/ STRUCTURED SOURCE LISTING /

(005 18N 0002
 18N 0003

SUBROUTINE NORMAL(IM)
 C
 COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
 B1 2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
 B1 1VML(14,4,5),A(2,3),DBK(3),CZ0(9,6),PGF(5),
 B1 4PGF0(5),WIDTH(9,6),FPHOAD(9,6),ADT(6,9),
 B1 5AREA(4,9),FPAREA(4,4),VPOP(14,26),UVPOP(14),
 B1 6X2(9,6,4),NPMILE(4,9),NPMK(4,9,6),ALO,1VAF(14),
 B1 7MYREF(6),1VBD(14),LIFE(4),IEUAGE(6),JNYLE(9,4),
 B1 8JPGF(9),LANE(9,6),MYRE(14),1VGF(14),MYR,IT,1
 C
 C THE FOLLOWING COMMON BLOCKS SERVE PRINT SUBROUTINES
 C

```

ISN 0004      COMMON /B1G002/ ALREG(5,5,4,14),GVTOI(9),VINT(14,9),POP(9),
B2 2PJPMFN(4,9),POPLIN(4,9),STUPGF(9,9),TJTPUP(9),
B2 3NILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYNMET(9),
B2 4NIDB(9),MYRN,INCK,MYRB,MYRN,NVI,MAI,NFI,MSK
C
C END PRINT COMMON BLOCK
C
ISN 0005      COMMON /B1G003/ GAMM(6,9),V(5),EDGE(4,9),EDGEPZ(4,9,6),
B3 2WDTHPZ(4,9),FLUMIX(14,4,5),PERCNT(4,2,4),
B3 3REPZ(4,9,6,4),REDGE(4,9,6,4),
B3 4JFLO(9),KFLO(6),KPEH(6),IPER(14)
ISN 0006      COMMON /B1G004/ RNAME(5),VMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
B4 2KMASK(6),METPSK(7),ICJNT(12),MODMSK(3),JREG(7),
B4 3IPLT(7),ITABS,NTABS
C
ISN 0007      COMMON /B1G005/ RATIO(18,3,2),DRATIO(17,3,2),ADBL(21),RDBL(18),
B5 2PLDEN(4,9,6,5,4),SEPROB(4,9,6,6,5),
B5 3HDBEDG(4,9,6,4,2),RDBOUT(4,9,6,4,2),DLPSI(9,6,4),
B5 4METRIC(20,7,2),DJKLEV(9,6,4,2),OLLEV(5,2),
B5 5PACT(5,2),FRIN(2),COC(7),EVPROB(14,9,6),
B5 6FIMP(80,5),SHIFT(4,9,2),AVDBL(20),IPACT(7),
B5 7FIMP(7),JCOC(7),INOUT(7),KOM(7),NADB,HRDB
C
ISN 0008      COMMON /B1G006/ PNDRM(3,2,4),ACEV(6,9),IYRN,IFM,
B6 1ACCM(20,2),VNTDAY,VNTNIT,IEVB(6,9),KS,J,
B6 2VNTDB(15,11,9),ACLWP(15,21),KSJEVB,IMS6
ISN 0009      IIM=IM
ISN 0010      IF(IM.EQ.7) IIM=5
ISN 0012      IUG=IDEG(IM)
ISN 0013      DO 500 KDB=1,11
(004) ISN 0014      IF(KDB.EQ.11) IBG=10
ISN 0016      KDBINC=KDB+10G
ISN 0017      DO 500 IBIN=1,15
(001) ISN 0018      ACLWP(IBIN,21)=ACLWP(IBIN,21)+ACLWP(IBIN,KDBIBG)
ISN 0019      ACLWP(15,KDBIBG)=ACLWP(15,KDBIBG)+ACLWP(IBIN,KDBIBG)
ISN 0020      500 VNTDB(IBIN,KDB,IIM,IYRN)=ACLWP(IBIN,KDBIBG)
C
C
ISN 0021      DO 600 KDB=1,10
(003) ISN 0022      600 VNTDB(15,KDB,IIM,IYRN)=VNTDB(15,KDB,IIM,IYRN)/2.
C
ISN 0023      DO 800 IBIN=1,14
(002) ISN 0024      800 VNTDB(IBIN,11,IIM,IYRN)=VNTDB(IBIN,11,IIM,IYRN)/2.
C
ISN 0025      700 VNTDB(15,11,IIM,IYRN)=VNTDB(15,11,IIM,IYRN)/12.
ISN 0026      RETURN
(005) ISN 0027      END

```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODOBL(NONE)

*OPTIONS IN EFFECT*NO SOURCE EBCDIC NOLIST NODECK NOOBJECT NUMAP FORMAL GUSTMT XREF NOJALC NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 26, PROGRAM SIZE = 848, SUBPROGRAM NAME ENORMAL

STATISTICS NO DIAGNOSTICS GENERATED

LEVEL (L. 76) NORMAL

09/300 FORT AND H ENDED

DATE BU, 275/19.36.22

PAGE 5

***** END OF COMPILATION *****

118K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERM,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NOLIST NUDECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL INTERNAL STATEMENT NUMBERS
XLINE 0003 0006 0008
PRINT 0002

*****FORTRAN CROSS REFERENCE LISTING*****

Table with 3 columns: LABEL, DEFINED, REFERENCES. Rows include 98, 99, 100, 101, 103.

/ STRUCTURED SOURCE LISTING /

(002 18N 0002 SUBROUTINE PRINT1 00071600
C BELONGS TO SINGLE EVENT MODEL
CX PRINT1 PRINTS A HEADING FOR THE RUN (TITLE PAGE) 00071620
C 00071630
18N 0003 DIMENSION XLINE(18) 00071640
18N 0004 WRITE(6,103) 00071650
18N 0005 103 FORMAT('1',10',10',10') 00071660
(001 18N 0006 99 READ(4,100,END=98)XLINE 00071690
18N 0007 100 FORMAT(18A4) 00071700
18N 0008 WRITE(6,101)XLINE 00071710
18N 0009 101 FORMAT(' ',30X,18A4) 00071720
18N 0010 GO TO 99 00071730
(001) C
18N 0011 98 RETURN 00071740
(002) C
18N 0012 END 00071750

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NUDECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 11, PROGRAM SIZE = 378, SUBPROGRAM NAME =PRINT1

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

LEVEL 2.2 (SEPT 76)

05/300 FORTRAN 4 EXTENDED

DATE 00,2737,9,38.15

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTAT,NUSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
NUSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GUSTAT XREF NOALC NOANSF NOTERM FLAG(1)

*****F O R T R A N C R O S S R E F E R E N C E L I S T I N G*****

SYMBOL	INTERNAL STATEMENT NUMBERS												
J	0015	0015	0015	0024	0025	0025	0025	0031	0031	0031			
NAT	0003												
NMT	0003												
NSH	0003												
NVT	0003												
POP	0003	0025											
IREG	0004												
INCR	0003												
IYRN	0010	0011	0012	0012	0015	0018	0018	0023	0025	0027	0028	0028	0034 0034
MILE	0003												
MYRN	0003												
MYRN	0003												
NIDD	0003												
NLEV	0003												
YVRN	0003	0008	0010	0018	0023	0034							
VTOT	0003												
YEAR	0005	0011	0015	0027	0031								
ALREG	0003												
GVTOT	0003												
HEADG	0012	0028											
ICONT	0004												
IDUMP	0004												
IPLOT	0004												
ITABS	0004	0009	0022										
JMASK	0004												
KMASK	0004												
MYREG	0003												
NTABS	0004	0000											
RNAME	0004												
IPRINT	0004												
ITABLE	0004	0007	0007	0021	0021								
IYMASK	0004												
METASK	0004												
MODASK	0004												
MYKNET	0003	0011	0027										
POPDEN	0003												
POPLIN	0003												
PRINTIG	0002												
STOPGF	0003	0015	0025										
STLPOP	0006	0025	0031										
TOTPOP	0003												

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*****F O R T R A N C R O S S R E F E R E N C E L I S T I N G*****

LABEL	DEFINED	REFERENCES
1003	0020	0010
1004	0016	0015
2003	0036	0023
2004	0026	0024

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*****FORTRAN CROSS REFERENCE LISTING*****

LABEL	DEFINED	REFERENCES
2005	0032	0031
2006	0038	0014 0030
2007	0039	0017 0033
2010	0040	0018 0034

/ STRUCTURED SOURCE LISTING /

```

(004 ISN 0002      SUBROUTINE PRNT10
                   C BELONGS TO SINGLE EVENT MODEL
                   CX PRNT10 PRINTS THE POPULATION GROWTH FACTOR
                   C
                   ISN 0003      COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTDI(14,9),POP(9),
                   B2 2PGPDEN(4,9),PGPLTN(4,9),STOPGF(9,9),TOTPOP(9),
                   B2 3MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYRNET(9),
                   B2 4NIDD(9),MYRN,INCR,MYRB,MYRN,NVT,NAT,NHT,NSR
                   ISN 0004      COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
                   B4 2KMASK(6),METMSK(7),ICONT(12),MDDMSK(3),IBEG(7),
                   B4 3IPLOT(7),ITABLE,ITABS,NTABS
                   C
                   ISN 0005      INTEGER YEAR
                   ISN 0006      DIMENSION STOPOP(9)
                   C
                   C PRINT POPULATION GROWTH FACTOR
                   C
                   C-158 ISN 0007      ITABLE = ITABLE + 1
                   ISN 0008      NTABS = (MYRN - 1) / 20 + 1
                   ISN 0009      ITABS = 0
                   C
                   ISN 0010      DO 1003 IYRN=1,MYRN
                   C
                   (003 ISN 0011      YEAR=MYRNET(IYRN)
                   ISN 0012      IF(IYRN.EQ.1.OR.IYRN.EQ.21) CALL HEADG(1)
                   ISN 0014      WRITE(6,2006)
                   ISN 0015      WRITE(6,1004)YEAR,(STOPGF(J,IYRN),J=1,9)
                   C-----
                   ISN 0016      1004  FORMAT('  ',I4,I4,T23,9(F6.2,3X))
                   ISN 0017      WRITE(6,2007)
                   ISN 0018      IF(IYRN.EQ.20.OR.IYRN.EQ.MYRN) WRITE(6,2010)
                   C
                   C-----
                   ISN 0020      1003 CONTINUE
                   C
                   (003) ISN 0021      ITABLE = ITABLE + 1
                   ISN 0022      ITABS = 0
                   C
                   ISN 0023      DO 2003 IYRN=1,MYRN
                   C
                   (002 ISN 0024      DO 2004 J=1,9
                   C
                   (001 ISN 0025      STOPOP(J) = STOPGF(J,IYRN) * POP(J)
                   C
                   ISN 0026      2004 CONTINUE
                   C
                   (001) C
    
```

LEVEL 2 (SEP 76)

PRNT10

US/300 FORTRAN H/ENDED

DATE 09,27,76,30.00

PAGE 1

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ISN 0027 YEAR=IRNET(IYRN)
ISN 0028 IF(IYRN.EQ.1.UR,IYRN.EQ.21) CALL MEAUG(2)
ISN 0030 WRITE(6,2006)
ISN 0031 WRITE(6,2005)YEAR,(STOPP(J),J=1,9)
C-----
ISN 0032 2005 FORMAT(' ',14,14,T23,9(-6PF6.2,3X))
ISN 0033 WRITE(6,2007)
ISN 0034 IF(IYRN.EQ.20.UR,IYRN.EQ.NYRN) WRITE(6,2010)
C
C-----
ISN 0036 2003 CONTINUE
002) C
ISN 0037 RETURN
C ZE DO ALL FORMATS
004) C
ISN 0038 2006 FORMAT(' ',11,T9,11,T21,11,9(8X,11),10X,11)
ISN 0039 2007 FORMAT(11,11,T9,11,T21,11,9(8X,11),10X,11)
ISN 0040 2010 FORMAT(' ',11,T9,11,T21,11,9(8X,11),10X,11/'+',112(' '))
ISN 0041 END

```

ADDITIONS IN EFFECT NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTO DBL(NONE)

ADDITIONS IN EFFECT AND SOURCE EBCDIC NOLIST NUDECK NOOBJECT NUMAP FORMAT COSTHT XREF NOALC NOANSF NOTERM FLAG(1)

ADDITIONS IN EFFECT AND SOURCE EBCDIC NOLIST NUDECK NOOBJECT NUMAP FORMAT COSTHT XREF NOALC NOANSF NOTERM FLAG(1)

ADDITIONS IN EFFECT AND SOURCE EBCDIC NOLIST NUDECK NOOBJECT NUMAP FORMAT COSTHT XREF NOALC NOANSF NOTERM FLAG(1)

ADDITIONS IN EFFECT AND SOURCE EBCDIC NOLIST NUDECK NOOBJECT NUMAP FORMAT COSTHT XREF NOALC NOANSF NOTERM FLAG(1)

122K BYTES OF CORE NOT USED

C-159

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NDSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOOBL(PONE)
NDSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

***** D R T H A W C R O S S R E F E R E N C E L I S T I N G A M A *

SYMBOL	INTERNAL STATEMENT NUMBERS
A	0003
I	0003 0017 0018 0018 0019
IT	0003
X2	0003
ADT	0003
ALO	0003
CZD	0003
DBK	0003
MYR	0003 0010 0011 0011 0011 0013 0013 0013 0015 0022 0024 0024 0024
NAT	0004
NHT	0004
NBR	0004
NVT	0004
PGF	0003
POP	0004
SUM	0016 0019 0019 0022
YAF	0003
VBD	0018
VGJ	0003
VHL	0003
ANEA	0003
IBEG	0005
INCR	0004
IVAF	0003
IVBD	0003
IVGF	0003
JPGF	0003
LANE	0003
LIFE	0003
MILE	0004
MYRB	0004
MYRE	0003
MYRN	0004
NIDD	0004
NLEV	0004
NPMK	0003
NUMS	0007 0007 0013
NYRN	0004
PGFO	0003
REMO	0003
VBDS	0006 0018 0019 0022
VINC	0003
VPOP	0003
VTOT	0004
XINC	0003
YINC	0003
ALREG	0004
LVPGP	0003
GVTOT	0004

***** FORTRAN CROSS REFERENCE LISTING *****

SYMBOL INTERNAL STATEMENT NUMBERS

ICONT 0005

IDUMP 0005

IPLUT 0005

ITABS 0005 0009 0011 0011 0013 0013

JMASK 0005

JWYLE 0003

KMASK 0005

MDDYR 0015

MYREF 0003

MYREG 0004

NTABS 0005

RNAME 0005

VBD74 0003

VBD77 0003

VBD85 0003

VBD90 0003

WIDTH 0003

FPAREA 0003

FPROAD 0003

LEWAGE 0003

IPRINT 0005

ITABLE 0005 0008 0008 0013

IVHASK 0005

METMSK 0005

MODMSK 0005

MYRNET 0004

NPMILE 0003

POPDEN 0004

PUPLTN 0004

PRN11 0002

STOPGF 0004

TOTPOP 0004

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***** FORTRAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCE
1000	0026	0010
1001	0020	0017
7000	0028	0013
7001	0029	0024
7002	0030	0022
7003	0031	0021
7004	0032	0023

/ STRUCTURED SOURCE LISTING /

(003 19N 0002 SUBROUTINE PRN11
 C BELONGS TO SINGLE EVENT MODEL
 CX PRN11 PRINTS THE STORED VEHICLE BREAKDOWN FUNCTION
 C
 19N 0003 COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
 B1 2VINC(7),VBD74(14),VBD77(7),VDD85(7),VDD90(7),
 B1 3VML(14,4,5),A(2,3),DJK(3),CZD(9,6),PGF(5),
 B1 4PGFO(5),WIDTH(9,6),FPROAD(9,6),ADT(6,4),
 B1 5AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPOP(14),

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(002

(001

(001)

(002)

(003)

```

01 6X2(9,6,4),NPMILE(4,9),NPMK(4,9,6),ALO,IVAF(14),
01 7MYREF(6),IVOD(14),LIFE(4),IEGAGE(6),JHYLE(9,4),
01 8JPGF(9),LANE(9,6),MYHE(14),IVGF(14),MYH,IT,1
ISN 0004 COMMON /BIG002/ ALREG(5,5,4,14),GVTOF(9),VTOF(14,9),POP(9),
02 2POPDEN(4,9),POPLTN(4,9),STOPGF(9,9),TJTOP(9),
02 3MILE(6,9,4,5),MYREG(6,4,14),ALEV(14,4),MYHNET(9),
02 4NIDD(9),MYRN,INCR,MYRB,NYRN,NVT,NAI,NHT,NSR
C
ISN 0005 COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
04 2KMASK(6),METMSK(7),ICONT(12),MODMSK(3),IBEG(7),
04 3IPLOT(7),ITABLE,ITABS,NTABB
C
ISN 0006 DIMENSION VBDS(7)
ISN 0007 INTEGER NUMS(7) /1,2,3,4,5,6,7/
C
ISN 0008 ITABLE=ITABLE+1
ISN 0009 ITABS=0
C
C SET UP COMPREHENSIVE DO LOOP
C
ISN 0010 DO 1000 MYR = 1957,2013
C
(002 ISN 0011 IF(MYR.EQ.1957.OR.MYR.EQ.1976.OR.MYR.EQ.1996)
C
ISN 0013 *ITABS = ITABS + 1
IF(MYR.EQ.1957.OR.MYR.EQ.1976.OR.MYR.EQ.1996)
*WRITE(6,7000) ITABLE,ITABS,ITABS,NUMS
C
ISN 0015 MODYR = MYR
ISN 0016 SUM = 0,0
C
ISN 0017 DO 1001 I = 1,7
C
(001 ISN 0018 VBDS(I) = VUD(I)
ISN 0019 SUM = SUM + VBDS(I)
C
ISN 0020 1001 CONTINUE
C
(001) ISN 0021 WRITE(6,7003)
ISN 0022 WRITE(6,7002) MYR,VBDS,SUM
ISN 0023 WRITE(6,7004)
C
ISN 0024 IF(MYR.EQ.1975.OR.MYR.EQ.1995.OR.MYR.EQ.2013)
*WRITE(6,7001)
C
ISN 0026 1000 CONTINUE
C
(002) ISN 0027 RETURN
C
C FORMAT STATEMENTS
C
(003) ISN 0028 7000 FORMAT('1','0' ,TABLE '1,12,'1,12,' LIGHT VEHICLE BREAKDOWN',
A' RATIOS FOR 1957-2013.(TABLE '1,12,'1)'/'0'/'
L0 A' '91('1)'/' '1,12,11,183,11,192,11'/'
L1 A' '1,120,11,171,11,183,11,192,11'/'
L2 A' '1,18,1VEHICLE'/'1,120,11,183,11,192,11'/'1,120,64('1)'/'

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L3 A' ,T8,'TYPE >',T24,7(I2,7X)/'+',T20,9(' ',B(' ')) /
L3-4 A' ,T20,64(' ') / '+',T20,' ',T83,' ',T92,' ' /
L4 A' ,T8,'MODEL YEAR',T40,'VEHICLE BREAKDOWN',
L5 A' VBU(1),T85,'SUM' / '+',T20,' ',T83,' ',T92,' ' /
L6 A' I
      V',T20,' ',T83,' ',T92,' ' / '+',91(' ')
ISN 0029 7001 FORMAT(' ',T20,' ',B(8(' '),'+',91(' '))
ISN 0030 7002 FORMAT(' ',T15,I4,T21,B(7,4,2X))
ISN 0031 7003 FORMAT(' ',T20,' ',B(6(' '),'+'))
ISN 0032 7004 FORMAT(' '+',T20,' ',B(8(' '),'+'))
ISN 0033 END

```

```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*NO$SOURCE EBCDIC NOLIST NO$DECK NO$OBJECT NUMAP FORMAT, GOSTMT XREF NO$ALC NO$ANSF NO$TERM FLAG(1)
*STATISTICS* SOURCE STATEMENTS = 32, PROGRAM SIZE = 1270, SUBPROGRAM NAME *PRNT11
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION *****

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118K BYTES OF CORE NOT USED

C-163

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NNOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NOLIST NOECK NNOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

*****FORTRAN CROSS REFERENCE LISTING*****

C-164

SYMBOL	INTERNAL STATEMENT NUMBERS
NAT	0003
NHT	0003
NSR	0003
NVT	0003
POP	0003
IDEG	0004
INCR	0003
MILE	0003
MYR0	0003
MYRN	0003
NIDD	0003
NLEV	0003
VYRN	0003 0008
VTOT	0003
ALREG	0003
GVTOT	0003
ICONT	0004 0008
IDUMP	0004 0008
IPLOT	0004
ITABS	0004
JMASK	0004 0008
KMASK	0004 0008
MYREG	0003
NTABS	0004
RNAME	0004 0008
IPRINT	0004 0008
ITABLE	0004 0005 0006
IVMASK	0004 0008
MEIMSK	0004 0008
MODMSK	0004 0008
MYRNET	0003 0008
POPDEN	0003
POPLTN	0003
PRINT2	0002
STOPGF	0003
TOTPOP	0003

*****FORTRAN CROSS REFERENCE LISTING*****

LABEL	DEFINED	REFERENCES
999	0007	0006
1001	0009	0008

(001 ISN 0002

/ STRUCTURED SOURCE LISTING /
SUBROUTINE PRINT2
C BELONGS TO SINGLE EVENT MODEL
CX PRINT2 PRINTS THE CONTROL STRINGS
C

```

ISN 0003      COMMON /B1G002/ ALNER(5,5,4,14),GVDT(9),VTUT(14,9),POP(9),
      B2 2PDPDEN(4,9),FOPLTN(4,9),STOPLF(9,9),TOTPOP(9),
      B2 3MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYNET(9),
      B2 4NIDD(9),MYHN,INCH,MYND,MYRN,NVI,NAI,NTI,NSR
ISN 0004      COMMON /B1G004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
      B4 2KMASK(6),NETMSK(7),ICONT(12),MODMSK(3),IBEG(7),
      B4 3IPLOT(7),ITABLE,ITABS,NTABS
ISN 0005      ITABLE = ITABLE + 1
ISN 0006      WRITE(6,999) ITABLE
ISN 0007      999  FORMAT('1',1,' TAULE ',12,' LISTING OF CONTROL STRINGS',
      C* AND NET YEARS')
ISN 0008      WRITE(6,1001) RNAME,IVMASK,KMASK,JMASK,NETMSK,
      AMODMSK,IPRINT,IDUMP,ICONT,MYRN,MYHNET
ISN 0009      1001  FORMAT('ORNAME ',54,' IVMASK ',14,' KMASK ',611/
      A* JMASK ',911/' METMSK ',711/' MODMSK ',311/
      A* IPRINT ',1211/' IDUMP ',1211/' ICONT ',1211/
      A* MYRN ',12/' MYHNET-1 ',10(14,' ')/
      A* MYHNET-2 ',10(14,' ')/ MYHNET-3 ',10(14,' ')/
      A* MYHNET-4 ',10(14,' '))
ISN 0010      RETURN
0011          C
ISN 0011          END

```

*OPTIONS IN EFFECT:NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT:NOBSOURCE EBCDIC NOLIST NOCHECK NOOBJECT NOHAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 10, PROGRAM SIZE = 770, SUBPROGRAM NAME *PRINT2

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOBSOURCE,NOTERMIAL,NOOBSJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINESCOUNT(60) SIZE(444) AUTODBL(NONE) NOBSOURCE EBCDIC NOLIST NOCHECK NOOBSJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** O R T R A N C R O S S R E F E R E N C E L I S T I N G *****																		
SYMBOL	INTERNAL STATEMENT NUMBERS																	
J	0019	0019	0019	0039	0040	0041	0044	0044	0044	0051	0051	0051	0068	0069	0071	0074	0074	0076
	0076	0076	0077	0080	0080	0080	0087	0088	0091	0091	0091							
K	0066	0069	0074	0080														
L	0073	0074																
ID	0017	0019	0019	0036	0040	0044	0044	0072	0074									
NAT	0003	0039	0051	0068	0080	0087	0091											
NHT	0003	0066																
NSR	0003	0073																
NVT	0003																	
POP	0003	0041	0051															
IBEG	0004																	
INCR	0003																	
MILE	0003	0074																
MSUM	0086	0088	0088	0091														
MYRB	0003																	
MYRN	0003																	
NIDD	0003																	
NLEV	0003																	
YVRN	0003																	
VTOT	0003																	
ALREG	0003																	
GTPOP	0037	0041	0041	0051														
GVTOT	0003																	
ICONT	0004																	
IDUMP	0004																	
IPLOT	0004																	
ITABS	0004	0007	0008	0025	0025	0026												
JMASK	0004																	
JMILE	0005	0069	0076	0076	0088	0091												
KMASK	0004																	
KMILE	0067	0077	0077	0080														
MYREG	0003																	
NTAUS	0004																	
POPID	0038	0040	0040	0044														
RNAME	0004	0008	0026	0057														
HEADER	0010	0028	0059															
IPRINI	0004																	
ITABLE	0004	0006	0006	0008	0026	0056	0056	0057										
IVHASK	0004																	
METMSK	0004																	
MILEJK	0005	0071	0074	0074	0076	0077	0080											
MDVMSK	0004																	
MYRNET	0003																	
POPDEN	0003	0019																
POPLIN	0003	0040	0044															
PRINT3	0002																	
STOPCF	0003																	
TOTPOP	0003																	

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AAAAAF O N T R A N C R O S S R E F E R E N C E L I S T I N G A A A A A

LABEL	DEFINED	REFERENCES
1000	0009	0008
1001	0027	0026
1002	0058	0057
2001	0013	0012
2002	0035	0016 0024 0034 0049 0055 0065 0085 0095
2003	0022	0017
2004	0020	0019
2006	0097	0018 0023 0043 0048 0050 0054 0079 0084 0090 0094
2007	0098	0021 0046 0053 0082 0093
2008	0099	0011 0015 0029 0033 0060 0064
2009	0100	0014 0032 0063
2201	0083	0066
2202	0078	0068
2203	0081	0080
2204	0062	0061
2300	0089	0087
2301	0092	0091
2305	0075	0072 0073
3001	0031	0030
3003	0047	0036
3004	0045	0044
3005	0042	0039
3007	0052	0051

/ STRUCTURED SOURCE LISTING /

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```

0009 ISN 0002 SUBROUTINE PRINT3
C BELONGS TO SINGLE EVENT MODEL
CX PRINT3 TABULATES BASELINE POPULATION, POP. DENSITY AND JK MILEAGE
C
ISN 0003 C THIS SUBROUTINE PRINTS OUT CONSTANT DATA BY AREA TYPE, J.
      COMMON /BIG002/ ALREG(5,5,4,14),GVLOT(9),VTOT(14,9),POP(9),
      02 2POPDEN(4,9),POPLTN(4,9),STOPGF(9,9),TOIPDP(9),
      02 3MILE(6,4,5),MYREG(6,4,14),ALEV(14,4),MYHNET(9),
      02 4NIDD(9),MYHN,INCR,MYRB,MYHN,NVT,NAT,NHT,NSR
ISN 0004 COMMON /BIG004/ RNAME(5),IWMASK(14),IUMPK(12),IPRINT(12),JMASK(9),
      04 2RMASK(6),METMSK(7),ICONT(12),MODMSK(3),ISEG(7),
      04 3IPLUT(7),ITABLE,ITABS,ITABS
ISN 0005 DIMENSION MILEJK(9),JMILE(9)
C
C NOW PRINT THE BASELINE POPULATION DENSITIES BY J AND ID
C
ISN 0006 ITABLE=ITABLE+1
ISN 0007 ITABS=1
ISN 0008 WRITE(6,1000)ITABLE,ITABS,RNAME
ISN 0009 1000 FORMAT('1','0','1','1',I3,'TABLE',I2,'1',I2,' BASELINE POPULATION ',
      '1'DENSITY BY AREA AND DENSITY TYPE.',T110,5A4/'0')
ISN 0010 CALL HEADER(3)
ISN 0011 WRITE(6,2000)
ISN 0012 WRITE(6,2001)
ISN 0013 2001 FORMAT('1',I4,' ID ',T11,'VARIABLE',T40,'POPULATION DENSITY, IN T
      THOUSANDS PER SQ.MI.')
```

```

(008) ISN 0018      WRITE(6,2006)
      ISN 0019      WRITE(6,2004)ID,(POPDEN(ID,J),J=1,9)
      ISN 0020      2004 FORMAT(' ',14,14,T23,9(-3PF6.2,3X))
      ISN 0021      WRITE(6,2007)
      ISN 0022      2003 CONTINUE
008)  ISN 0023      WRITE(6,2006)
      ISN 0024      WRITE(6,2002)
      C
      C NOW PRINT THE BASELINE POPULATION BY AREA AND DENSITY TYPE
      C
      ISN 0025      ITABS=ITABS+1
      ISN 0026      WRITE(6,1001)ITABLE,ITABS,RNAME
      ISN 0027      1001. FORMAT('11//0//' ',T3,'TABLE',12,' ',12,' BASELINE POPULATION, ',
      *'BY AREA AND DENSITY TYPE',T110,5A4/'0//0')
      ISN 0028      CALL HEADER(3)
      ISN 0029      WRITE(6,2008)
      ISN 0030      WRITE(6,3001)
      ISN 0031      3001 FORMAT(' ',T4,' ID ',T11,'VARIABLE',T48,'POPULATION, MILLIONS',
      CT105,'TOTAL')
      ISN 0032      WRITE(6,2009)
      ISN 0033      WRITE(6,2008)
      ISN 0034      WRITE(6,2002)
      ISN 0035      2002 FORMAT('+',112(' '))
      C
      ISN 0036      DO 3003 ID = 1,4
      C
      (007) ISN 0037      GTPOP = 0.0E0
      ISN 0038      POPID = 0.0E0
      ISN 0039      DO 3005 J = 1,NAT
      C
      (004) ISN 0040      POPID = POPID + POPLTN(ID,J)
      ISN 0041      GTPOP = GTPOP + POP(J)
      C
      ISN 0042      3005 CONTINUE
      C
      004) ISN 0043      WRITE(6,2006)
      ISN 0044      WRITE(6,3004)ID,(POPLTN(ID,J),J=1,9),POPID
      ISN 0045      3004 FORMAT(' ',T4,14,T23,9(-6PF6.2,3X),-6PF6.2)
      ISN 0046      WRITE(6,2007)
      ISN 0047      3003 CONTINUE
      C
      007) ISN 0048      WRITE(6,2006)
      ISN 0049      WRITE(6,2002)
      ISN 0050      WRITE(6,2006)
      ISN 0051      WRITE(6,3007)(POP(J),J=1,NAT),GTPOP
      (006) ISN 0052      3007 FORMAT(' ',T11,'TOTAL',T23,9(-6PF6.2,3X),-6PF6.2)
      ISN 0053      WRITE(6,2007)
      ISN 0054      WRITE(6,2006)
      ISN 0055      WRITE(6,2002)
      C
      C NOW PRINT THE JK MILEAGE TABLE
      C
      ISN 0056      ITABLE=ITABLE+1
      ISN 0057      WRITE(6,1002)ITABLE,RNAME
      ISN 0058      1002 FORMAT('11//0//' ',T3,'TABLE',12,' MILEAGE OF ROADWAY BY AREA',
      *' AND ROADWAY TYPE.',T110,5A4/'0//0')

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      ISN 0059      CALL HEADER(3)
      ISN 0060      WRITE(6,2008)
      ISN 0061      WRITE(6,2204)
      ISN 0062      2204 FORMAT(' ',14,' K ',148,' MILES OF ROADWAY')
      ISN 0063      WRITE(6,2009)
      ISN 0064      WRITE(6,2008)
      ISN 0065      WRITE(6,2002)
      ISN 0066      DO 2201 K=1,NNT
      ISN 0067      KMILE=0
      ISN 0068      DO 2202 J=1,NAT
(003) ISN 0069      IF(K.EQ.1)JMILE(J)=0
      ISN 0071      MILEJK(J)=0
      ISN 0072      DO 2305 ID=1,4
(002) ISN 0073      DO 2305 LR=1,NSR
(001) ISN 0074      MILEJK(J)=MILEJK(J)+MILE(K,J,LD,L)
      ISN 0075      2305 CONTINUE
(001) C
(002) C
      ISN 0076      JMILE(J)=JMILE(J)+MILEJK(J)
      ISN 0077      KMILE=KMILE+MILEJK(J)
      ISN 0078      2202 CONTINUE
(003) C
      ISN 0079      WRITE(6,2006)
      ISN 0080      WRITE(6,2203)K,(MILEJK(J),J=1,NAT),KMILE
      ISN 0081      2203 FORMAT(' ',14,14,T22,9(17,2X),19)
      ISN 0082      WRITE(6,2007)
      ISN 0083      2201 CONTINUE
(004) C
      ISN 0084      WRITE(6,2006)
      ISN 0085      WRITE(6,2002)
      ISN 0086      MSUM=0
      ISN 0087      DO 2300 J=1,NAT
(005) ISN 0088      MSUM=MSUM+JMILE(J)
      ISN 0089      2300 CONTINUE
(005) C
      ISN 0090      WRITE(6,2006)
      ISN 0091      WRITE(6,2301)(JMILE(J),J=1,NAT),MSUM
(009) C
      ISN 0092      2301 FORMAT(' ',711,'TOTAL',T22,9(17,2X),19)
      ISN 0093      WRITE(6,2007)
      ISN 0094      WRITE(6,2006)
      ISN 0095      WRITE(6,2002)
      ISN 0096      RETURN
      C      DEBUG SUBCHK
      C ZE DG=ALL FORMATS FOLLOW
      ISN 0097      2006 FORMAT(' ',19,'T21',9(8X,' '),10X,' ')
      ISN 0098      2007 FORMAT(' ',19,'T21',9(8X,' '),10X,' ')
      ISN 0099      2008 FORMAT(' ',19,'T21',T102,'T113,' ')
      ISN 0100      2009 FORMAT(' ',19,'T21',T102,'T113,' ')
      C      DEBUG SUBCHK
      ISN 0101      END

```

*OPTIONS IN EFFECT:NAME(MAIN) OPTIMIZE(2) LINZCOUNT(60) SIZE(MAX) AUTODDL(NONE)

*OPTIONS IN EFFECT:NDOSOURCE EBCDIC NOLIST NODDECK NOOBJECT NDMAP FORMAT GUSINT XREF NOALC NOANSF NOTERM FLAG(1)

*STATISTICS: SOURCE STATEMENTS = 100, PROGRAM SIZE = 2874, SUBPROGRAM NAME =PRINTS

LEVEL 2.2 (SEPT 76)

PRINT3

OS/360 FORTRAN H EXTENDED

DATE 80,273/19,41.12

PAGE 5

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPIATION *****

106K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF, OPT(2), FORMAT, GUSTMT, NUSOURCE, NOTERMAL, NOOBJECT

OPTIONS IN EFFECT: NAME(MATH) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(VONE) NUSOURCE EBCDIC NOLIST NOPECK NOOBJECT NUMAP FORMAT GUSTMT XREF NOALL NUANSF NOTERM FLAG(1)

SYMBOL	***** D R T R A N *****						C R O S S R E F E R E N C E						L I S T I N G *****						
	INTERNAL STATEMENT NUMBERS																		
I	0012	0014	0015	0032	0040	0043	0058	0079	0082	0096									
L	0055	0056	0058	0058	0060	0062	0062												
M	0025	0026	0030	0032	0040	0043	0046	0049	0056	0058	0058	0060	0062	0062					
II	0028	0028	0028	0030	0030	0030	0072	0072	0072	0072	0072	0072							
IV	0015	0017	0056	0058	0094	0096													
II	0014	0016	0032	0046	0049	0062	0085	0088	0100										
JV	0016	0017	0060	0062	0096	0100													
ICS	0002	0021																	
NAT	0003																		
NMT	0003																		
NSR	0003																		
NVT	0003																		
POP	0003																		
HEAD	0006	0006	0056	0056	0060	0062													
IDIG	0004																		
ILEV	0043	0043	0043	0049	0049	0049	0056	0056	0058	0058	0058	0060	0060	0062	0062	0062	0082	0082	0082
	0088	0088	0088	0094	0094	0096	0096	0096	0098	0098	0100	0100	0100						
INCR	0003																		
MILE	0003																		
MYRD	0003	0009	0041	0043	0047	0049	0080	0082	0086	0088									
MYRN	0003																		
NIOD	0003																		
NLEV	0003	0040	0046	0079	0085														
NYRN	0003																		
VTOI	0003																		
ZERO	0007	0056	0060	0094	0098														
ALREG	0003	0058	0062	0096	0100														
GVIOT	0003																		
ICONT	0004																		
IDUMP	0004																		
IPLOT	0004																		
ITABS	0004	0000	0013	0013	0021	0021													
JMASK	0004																		
KMASK	0004																		
MYREG	0003	0043	0049	0062	0088														
NTABS	0004	0011	0021																
RNAME	0004	0021																	
HEADER	0005	0005	0028	0030	0072	0072													
IPRINT	0004																		
ITABLE	0004	0010	0010	0021															
IVPASK	0004	0015	0016																
NETMBK	0004																		
NLEVEL	0046	0047	0049	0049	0060	0062	0085	0086	0088	0088	0098	0100							
MODMBK	0004																		
MYRNET	0003																		
NLEVEL	0040	0041	0043	0043	0056	0058	0079	0080	0082	0082	0094	0096							
POPDEF	0003																		
POPLIN	0003																		
PRINT4	0002																		

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```

C
ISN 0012      UD 8025 I = 1,13,2
C
003 ISN 0013  ITABS = ITABS+1
ISN 0014      I1 = I+1
ISN 0015      IV = IVMASK(I)
ISN 0016      JV = IVMASK(I1)
C
ISN 0017      IF (IV.EQ.0.AND.JV.EQ.0) GO TO 8025
C
ISN 0019      WRITE(6,8047)
ISN 0020      8047  FORMAT('1','0')
ISN 0021      IF (IC9.EQ.1) WRITE(6,8126) ITABLE,ITABS,ITABS,NTABS,RNAME
ISN 0023      8126  FORMAT('0',T5,'TABLE ',I2,',',I2,',',I2,' EMISSION LEVELS, DBA.',
      *          ' ( TABLE ',I2,' OF ',I2,' )',T110,'5A4','0')
      *          WRITE(6,8046)
ISN 0024      DO 8029 M=1,1
ISN 0025      1593  CONTINUE
ISN 0026      WRITE(6,8044)
ISN 0027      8030  WRITE(6,8030)(HEADER(I1,M),I1=1,2)
ISN 0028      FORMAT(' ',T20,2A8,' MODE')
ISN 0029      8031  WRITE(6,8031)(HEADER(I1,M),I1=1,2)
ISN 0030      FORMAT(' ',T190,2A8,' MODE')
ISN 0031      8011  IF (M.EQ.1) WRITE(6,8027) I, I1
ISN 0032      8027  FORMAT(' ',T5,'TYPE ',I2,',T77,'TYPE1 ',I2,T110,'AAAAPRINT4')
ISN 0033      WRITE(6,8045)
ISN 0034      WRITE(6,8044)
ISN 0035      WRITE(6,8046)
ISN 0036      WRITE(6,8042)
ISN 0037      WRITE(6,8042)
ISN 0038      MLEVEL=NLEV(I,M)
ISN 0039      IF (MLEVEL.EQ.1) WRITE(6,8032)MYRB
ISN 0040      IF (MLEVEL.NE.1) WRITE(6,8032)MYRB,(MYREG(ILEV,M,I),ILEV=2,NLEVEL)
ISN 0041
ISN 0043
C-----
ISN 0045      8032  FORMAT(' ',T10,5(6X,I4))
ISN 0046      MLEVEL=NLEV(I1,M)
ISN 0047      IF (MLEVEL.EQ.1) WRITE(6,8033)MYRB
ISN 0049      IF (MLEVEL.NE.1) WRITE(6,8033)MYRB,(MYREG(ILEV,M,I1),ILEV=2,MLEVEL)
C-----
ISN 0051      8033  FORMAT(' ',T71,' YEARS',T80,5(6X,I4))
ISN 0052      WRITE(6,8042)
ISN 0053      WRITE(6,8046)
ISN 0054      WRITE(6,8042)
ISN 0055      UD 8034 L=1,5
C
001 ISN 0056  IF (IV.EQ.0) WRITE(6,8035) HEAD(L,M),(ZERO,ILEV=1,NLEVEL)
ISN 0058      IF (IV.EQ.1)
      *          WRITE(6,8035) HEAD(L,M),(ALREG(ILEV,L,M,I),ILEV=1,NLEVEL)
C
ISN 0060      IF (JV.EQ.0) WRITE(6,8036) HEAD(L,M),(ZERO,ILEV=1,MLEVEL)
ISN 0062      IF (JV.EQ.1)
      *          WRITE(6,8036) HEAD(L,M),(ALREG(ILEV,L,M,I1),ILEV=1,MLEVEL)
C
ISN 0064      8035  FORMAT(' ',I4,AB,T12,5(4X,F6.2))
ISN 0065      8036  FORMAT(' ',T74,AB,T82,5(4X,F6.2))
C
ISN 0066      WRITE(6,8043)
ISN 0067      8034  CONTINUE
    
```

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001)      C
          ISN 0068      WRITE(6,8042)
          ISN 0069      WRITE(6,8046)
          ISN 0070      8029 CONTINUE
          C IDLE MODE IS TAKEN CARE OF AS A SPECIAL CASE
          C
002)      C
          ISN 0071      WRITE(6,8044)
          ISN 0072      WRITE(6,8037)(HEADER(11,4),11*1,2),(HEADER(11,4),11=1,2)
          ISN 0073      8037 FORMAT(' ',T20,2A8,' MODE',T90,2A8,' MODE')
          ISN 0074      WRITE(6,8045)
          ISN 0075      WRITE(6,8044)
          ISN 0076      WRITE(6,8046)
          ISN 0077      WRITE(6,8042)
          ISN 0078      WRITE(6,8042)
          ISN 0079      NLEVEL=NLEV(I,4)
          ISN 0080      IF(NLEVEL.EQ.1) WRITE(6,8038)MYRB
          ISN 0082      IF(NLEVEL.NE.1) WRITE(6,8038)MYRB,(MYREG(ILEV,3,I),ILEV*2,NLEVEL)
C-----
          ISN 0084      8038 FORMAT('+', ' YEARS>',T10,5(6X,I4))
          ISN 0085      MLEVEL=NLEV(11,4)
          ISN 0086      IF(MLEVEL.EQ.1) WRITE(6,8039)MYRH
          ISN 0088      IF(MLEVEL.NE.1) WRITE(6,8039)MYRH,(MYREG(ILEV,3,11),ILEV*2,MLEVEL)
C-----
          ISN 0090      8039 FORMAT('+',T71, ' YEARS>',T80,5(6X,I4))
          ISN 0091      WRITE(6,8042)
          ISN 0092      WRITE(6,8046)
          ISN 0093      WRITE(6,8042)
          C
          ISN 0094      IF(IV.EQ.0) WRITE(6,8040) (ZERO,ILEV*1,NLEVEL)
          ISN 0096      IF(IV.EQ.1)
          * WRITE(6,8040)(ALREG(ILEV,1,4,I),ILEV*1,NLEVEL)
          C
          ISN 0098      IF(JV.EQ.0) WRITE(6,8041) (ZERO,ILEV*1,MLEVEL)
          ISN 0100      IF(JV.EQ.1)
          * WRITE(6,8041)(ALREG(ILEV,1,4,11),ILEV*1,MLEVEL)
          C
          ISN 0102      8040 FORMAT(' ',T12,5(4X,F6.2))
          ISN 0103      8041 FORMAT(' ',T82,5(4X,F6.2))
          C
          ISN 0104      WRITE(6,8043)
          ISN 0105      WRITE(6,8042)
          ISN 0106      WRITE(6,8046)
          ISN 0107      8025 CONTINUE
          C
003)      C
          ISN 0108      8042 FORMAT(' ',11,10X,5(' ',9(' ')), ' ',8X, ' ',10X,5(' ',9(' ')), ' ')
          ISN 0109      8043 FORMAT(' ',11,10X,5(' ',9(' ')), ' ',8X, ' ',10X,5(' ',9(' ')), ' ')
          ISN 0110      8044 FORMAT(' ',11,T63,' ',T72,' ',T133,' ')
          ISN 0111      8045 FORMAT(' ',11,T63,' ',T72,' ',T133,' ')
          ISN 0112      8046 FORMAT('+',62(' '),8X,62(' '))
          ISN 0113      RETURN
          C          DEBUG SUBCHK
004)      C
          ISN 0114      END

```

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*OPTIONS IN EFFECT ANAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
 *OPTIONS IN EFFECT ANOSOURCE1 ZBCDIC NOLIST NOCHECK NOOBJECT NOMAP FOR CUSTMT XREF NOALL NOANSF NOTERM FLAG(1)

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LEVEL 2 (SEPT 76)

PRINT4

DS/360 FORTRAN H TENDED

DATE 80,273/19,42,09

PAGE

STATISTICS SOURCE STATEMENTS * 113, PROGRAM SIZE = 3574, SUBPROGRAM NAME =PRINT4

STATISTICS NO DIAGNOSTICS GENERATED

*****.END OF COMPILATION *****

94K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,CUSTOM,NOSOURCE,NOTLMINAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) ADJUDL(NONE) NOSOURCE EBCDIC NOLIST NOCHECK NOOBJECT NOMAP FORMAT CUSTOM XREF NOALC NOANSF NOTERM FLAG(1)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL	INTERNAL STATEMENT NUMBERS									
I	0014	0014	0014							
NAT	0003									
NHT	0003									
NSR	0003									
NVI	0003									
POP	0003									
IBEG	0004									
INCR	0003									
IYRN	0009	0010	0011	0011	0011	0014	0014	0016	0016	0016
MILE	0003									
MYRB	0003									
MYRN	0003									
NIDD	0003									
NLEY	0003									
MYRN	0003	0008	0009	0016						
VTOT	0003	0014								
YEAR	0005	0010	0014							
ALREG	0003									
GVTOT	0003	0014								
HEADV	0011									
ICONT	0004									
IDUMP	0004									
IPLUT	0004									
IJAGS	0004	0007								
JMASK	0004									
KMASK	0004									
MYREG	0003									
NTAGS	0004	0008								
RNAME	0004									
IPRINT	0004									
ITABLE	0004	0006	0006							
IVMASK	0004									
METMSK	0004									
MODMSK	0004									
MYRNLT	0003	0010								
POPDEN	0003									
POPLIN	0003									
PRINT5	0002									
STOPGF	0003									
TOTPOP	0003									

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*****FORTRAN CROSS REFERENCE LISTING*****

LABEL	DEFINED	REFERENCES
0000	0018	0009
0009	0015	0014
0012	0020	0013
0014	0021	0016

/ STRUCTURED SOURCE LISTING /

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002 ISN 0002      SUBROUTINE PRINTS
                  C BELONGS TO SINGLE EVENT MODEL
                  CX PRINTS TABULATES THE VEHICLE POPULATION FOR EACH NET YEAR
                  C
003 ISN 0003      COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),V(TOT(14,9),POP(9),
B2 2POPDEN(4,9),POPLTN(4,9),STDPGF(9,9),TOTPOP(9),
B2 3MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYRNET(9),
B2 4HIDD(9),MYRN,INCH,MYRB,NYRN,NVT,NAT,PHI,OSK
004 ISN 0004      COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
B4 2KMASK(6),MEINSK(7),ICON1(12),MODMSK(3),IBEG(7),
B4 3IPLOT(7),ITABLE,ITABS,NTABS
                  C
005 ISN 0005      INTEGER YEAR
006 ISN 0006      ITABLE = ITABLE + 1
007 ISN 0007      ITABS = 0
008 ISN 0008      NTABS = (NYRN + 1) / 14 + 1
                  C
009 ISN 0009      DD 8000 IYRN = 1,NYRN
                  C
001 ISN 0010      YEAR = MYRNET(IYRN)
001 ISN 0011      IF (IYRN.EQ.1.OR.IYRN.EQ.15.OR.IYRN.EQ.29) CALL HEADV
001 ISN 0012      WRITE(6,8012)
001 ISN 0013      WRITE(6,8009)YEAR,(VTOT(1,IYRN),I=1,14),GVTOT(IYRN)
C-----
001 ISN 0015      8009  FORMAT (' 1',16,T13,'1',9(-6PF6.2,' 1'),3(-4PF6.2,' 1'),2(-6PF6.2,
001 ISN 0016      ' 1'),-6PF7.2,'1')
                  IF (IYRN.EQ.14.OR.IYRN.EQ.28.OR.IYRN.EQ.NYRN) WRITE(6,8014)
                  C
C-----
001 ISN 0018      8000  CONTINUE
001 ISN 0019      C
                  RETURN
                  C
                  C  FORMAT STATEMENTS
                  C
002 ISN 0020      8012  FORMAT(' 1',T13,'1',15(' 1'))
002 ISN 0021      8014  FORMAT(' 1',T13,'1',15(' 1')/'1',132(' 1'))
002 ISN 0022      END

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***** END OF COMPILATION *****
OPTIONS IN EFFECT=NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
OPTIONS IN EFFECT=SOURCE EUCDIC NQLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)
*STATISTICS* SOURCE STATEMENTS = 21, PROGRAM SIZE = 652, SUBPROGRAM NAME =PRINTS
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION *****
122K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOSOURCE,NOTERMAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOUBL(NONE) NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(1)

		***** F O R T H A N C H O S S R E F E R E N C E L I S T I N G *****																	
SYMBOL		INTERNAL STATEMENT NUMBERS																	
A	0002	0105	0106	0106	0108	0109	0109	0109	0112	0113	0113	0113	0115	0116	0116	0116			
J	0022	0023	0023	0058	0061	0061	0061	0062	0062	0062	0062	0063	0063	0063	0063	0063	0064	0064	
	0070	0071	0073	0074	0074	0076	0078	0078	0078	0080	0080	0080	0082	0082	0082	0082	0083	0083	
	0083	0084	0084	0084	0087	0087	0088	0088	0088	0090	0099	0103	0105	0105	0106	0106	0106	0108	
	0108	0109	0109	0109	0112	0113	0113	0113	0115	0115	0116	0116	0116	0132	0133	0136	0138	0138	
K	0138	0138	0138	0140	0140	0140	0140	0140											
	0059	0061	0061	0061	0062	0062	0062	0062	0063	0063	0063	0063	0063	0064	0064	0075	0076	0078	
	0078	0078	0078	0080	0085	0087	0087	0088	0088	0101	0105	0105	0106	0106	0108	0108	0109	0109	
	0109	0112	0112	0113	0113	0113	0115	0115	0116	0116	0116	0135	0138	0138	0138	0140	0140	0155	
L	0156																		
V	0066	0067	0067	0068	0077	0078	0136	0138	0138	0140	0140								
ID	0004	0067																	
	0072	0073	0074	0074	0076	0078	0078	0078	0080	0080	0082	0082	0082	0082	0083	0083	0083	0084	
	0087	0087	0088	0080	0100	0103	0105	0105	0106	0106	0106	0108	0108	0109	0109	0112	0112	0113	
IL	0113	0113	0115	0115	0116	0116	0116	0134	0138	0138	0138	0138	0140	0140	0140	0140	0140	0140	
	0060	0061	0061	0062	0062	0062	0063	0063	0063	0063	0064	0064	0086	0067	0087	0088	0088	0102	
	0105	0105	0106	0106	0106	0108	0108	0109	0109	0109	0112	0112	0113	0113	0113	0115	0115	0116	0116
IT	0116	0137	0138	0138															
	0002	0103	0105	0106	0106	0106	0106	0106	0108	0109	0109	0109	0109	0109	0112	0113	0113	0113	0113
	0113	0115	0116	0116	0116	0116	0124	0127	0127	0127									
KA	0139	0140	0140																
X2	0002	0061	0062	0062	0063	0063	0087	0088	0138										
ADT	0002																		
ALD	0002																		
CJC	0006	0037																	
CZO	0002	0061																	
DBK	0002	0106	0106	0109	0109	0113	0113	0116	0116										
FIX	0034																		
KUM	0006	0037																	
MYR	0002																		
NAT	0003	0058	0070	0098	0132														
NHT	0003	0059	0075	0085	0101	0135	0139												
NID	0071	0072	0099	0100	0113	0134													
NSR	0003	0066	0077	0136															
NVT	0003																		
PGF	0002																		
POP	0003	0084	0084																
VAF	0002	0013																	
VGF	0002	0013																	
VML	0002																		
AUBL	0006																		
AREA	0002	0074	0082	0083															
DHEF	0009	0064	0067	0066															
EDGE	0004	0074	0088	0092															
FIMP	0006	0012	0037																
FRTN	0006																		
GAMM	0004	0062	0063																
IBEG	0005	0020																	

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS							
INCH	0003							
IPER	0004							
INDH	0125	0127	0127	0127				
IYAF	0002							
IVBU	0002							
IVGF	0002	0013						
IYRN	0028	0028	0028	0046	0047	0047		
JCOC	0006	0037						
JFLO	0004							
JPGF	0002							
KFLO	0004							
KIND	0104	0111	0126	0127	0127	0127		
KPLR	0004							
LANE	0002							
LIFE	0002	0013						
MILE	0003	0012	0078	0138	0140			
MYHD	0003	0040	0043					
MYRE	0002							
MYRN	0003							
NADD	0006							
NIOD	0003	0071	0099	0133				
NLEV	0003	0011						
NPMK	0002	0076	0078	0078	0080	0140		
NREG	0006							
NYRN	0003	0028	0028	0044	0046	0051		
PACT	0006	0037						
PCFO	0002							
ROBL	0006							
REMO	0002	0013						
REPZ	0004	0087	0092	0105	0106	0112	0113	
SQRT	0057	0074						
VINC	0002							
VPOP	0002							
VTOT	0003							
XINC	0002							
YINC	0002							
ZEND	0016							
ALREG	0003	0011						
ARCUS	0057							
AVOBL	0004							
BVPOP	0002							
CONV2	0009	0074	0082	0138	0140			
OLLEV	0006	0067	0068	0095				
DLP31	0006	0064	0095					
GVTOT	0003							
ICONT	0005	0014	0018	0035	0054	0146	0161	
IDUMP	0005	0018	0037	0092	0095	0121	0129	0143
IFIMP	0006	0037						
INDUT	0006	0037						
IPACT	0006	0037						
IPLDT	0005	0018	0023					
ITABS	0005							
JMASR	0005	0020						
JAYLE	0002	0103						
KMABK	0005	0018						

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS														
MYREF	0002	0013													
MYREG	0003	0011													
PLDEN	0006	0138	0143												
RATIO	0006	0032	0127	0127	0129										
REDGE	0004	0088	0092	0100	0109	0115	0116								
RNAME	0005	0030	0037	0037	0092	0092	0092	0095	0095	0129					
SHIFT	0006														
THETA	0057	0064	0067	0068											
VBD74	0002	0026													
VBD77	0002	0026													
VBD85	0002	0026													
VBD90	0002														
WIDTH	0002	0061	0062	0063	0064										
ALOG10	0062	0062	0063	0063	0064	0067	0068	0105	0106	0108	0109	0112	0113	0115	0116
ANNMET	0007	0016													
DJKLEY	0006	0062	0063	0095											
DRATIO	0006	0127	0129												
EDGEFZ	0004														
EVPRUB	0006														
FLOMIX	0004	0012													
FPAREA	0002	0082	0138												
FPRJAD	0002	0078	0138												
HINAY2	0012	0017													
ILUAGE	0002														
IPRINT	0005	0018	0149	0151	0153	0159									
ITABLE	0005														
IVMASK	0005	0018													
NETMSK	0005	0020	0023												
METRIC	0006	0000													
MODMSK	0005	0020													
MYRNET	0003	0020	0040	0043	0047	0047	0051								
NEVENT	0008														
NTABS	0005														
NPMILE	0002	0073	0080	0080	0082	0140									
PERCNT	0004	0012													
PUPDEN	0003	0083	0138	0140											
POPLTN	0003	0083	0084												
PRINT1	0149														
PRINT2	0151														
PRINT3	0153														
PRINT4	0159														
HDBCU1	0006	0108	0109	0109	0115	0116	0116	0121							
KDBEDG	0006	0105	0106	0106	0112	0113	0113	0121							
REGSCN	0011														
SEPRUB	0006	0140	0143												
SERESC	0155														
STOPGF	0003														
TIMSTR	0164														
TOTPOP	0003														
VEHCF1	0013	0158													
WDTHPZ	0004	0082	0087	0092											

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL DEFERRED REFERENCES

LABEL	DEFINED	REFERENCES	***** F U R T H A N C R O S S R E F E R E N C E L I S T I N G *****			
10	0046					
22	0054	0044				
23	0070					
50	0146	0035				
1000	0019	0018				
1001	0027	0026				
1002	0029	0028				
1003	0031	0030				
1004	0033	0032				
1005	0021	0020				
1006	0039	0037				
1010	0025	0022				
1400	0010	0014				
1800	0050	0046				
1810	0049	0047				
1820	0042	0040				
1830	0053	0051				
2001	0056	0054				
2110	0065	0058	0059	0060		
2120	0069	0066				
2300	0091	0070				
2301	0090	0072				
2303	0081	0075				
2304	0079	0077				
2311	0089	0085	0086			
2398	0094	0092				
2399	0097	0095				
2401	0120	0098	0100			
2402	0119	0101				
2403	0118	0102				
2407	0123	0121				
2501	0128	0124	0125	0126		
2503	0131	0129				
2601	0142	0132	0134	0135	0136	0137
2602	0141	0139				
2605	0145	0143				
3000	0155					
3001	0140	0146				
3002	0159	0156				
4001	0163	0161				
7000	0165					
7001	0166	0165				

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/ STRUCTURED SOURCE LISTING /

C MAIN
 COICTI CF FILE DESCRIPTION
 COICT CX SUBPROGRAM DESCRIPTION
 COICT CT SUBPROGRAM TITLES
 COICT CC COMMON BLOCK DESCRIPTION
 COICT CD EXPLANATION OF COMMON & CONTINUATION DESCRIPTION FIELDS
 COICT CX CONTINUATION OF COMMON BLOCK #1600X
 COICT UX CONTINUATION OF DUMP BLOCKS
 C
 C

C THIS IS A PROGRAM WHICH CALCULATES THE NUMBER OF PEOPLE
C IMPACTED BY SINGLE-EVENT NOISE ORIGINATING FROM HIGHWAY TRAFFIC.

C
C DESCRIPTION: THIS IS FILE SEMAIN9R
C SEMAIN9R LAST UPDATE: 21 JUL 1980
C BIG001 LAST UPDATE: 07/26/79 16:25:09
C BIG002 LAST UPDATE: 80-07-15
C BIG003 LAST UPDATE: 07/26/79 16:25:33
C BIG004 LAST UPDATE: 11/16/78 11:53:45
C BIG005 LAST UPDATE: 07/30/79 17:17:23

C
C MAIN PRUGHAM
C
C SECTION 10 DATA MANAGEMENT
C
C SECTION 11 COMMON BLOCKS, DIMENSIONS

(026 ISN 0002

C
COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
B1 2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
B1 3VML(14,4,5),A(2,3),DBK(3),C20(9,6),PGF(5),
B1 4PGFO(5),WIDTH(9,6),FPRDAD(9,6),ADT(6,9),
B1 5AREA(4,9),FPAREA(9,4),VPOP(14,26),HVPOP(14),
B1 6X2(9,6,4),NPMILE(4,9),NPMK(4,9,6),ALO,IVAF(14),
B1 7MYREF(6),IVUD(14),LIFE(4),IEQAGE(6),JMYLE(9,4),
B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MYR,IT,1

C
C THE FOLLOWING COMMON BLOCKS SERVE PRINT SUBROUTINES

ISN 0003

C
COMMON /BIG002/ ALREG(5,5,4,14),CVTOT(9),VTOT(14,9),POP(9),
B2 2POPDEN(4,9),POPLIN(4,9),BTOPGF(9,9),TOTPOP(9),
B2 3MILE(6,9,4,5),MYREG(6,4,14),HLEV(14,4),MYRNET(9),
B2 4NIOD(9),MYRN,INCR,MYRB,MYRN,NVT,NAT,NHT,NSR

C
C END PRINT COMMON BLOCK

ISN 0004

C
COMMON /BIG003/ GAMM(6,9),V(5),EDGE(4,9),EDGEPZ(4,9,6),
B3 2WIDTHPZ(4,9),FLOMIA(14,4,5),PERCNT(4,2,4),
B3 3REPZ(4,9,6,4),REDEGE(4,9,6,4),
B3 4JFLO(9),KFLO(6),KPER(6),IPEN(14)

ISN 0005

C
COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
B4 2KMASK(6),METMSK(7),ICONT(12),MODMSK(3),IBEG(7),
B4 3IPLQT(7),ITABLE,ITABS,MNTABS

ISN 0006

C
COMMON /BIG005/ RATIO(18,3,2),DRATIO(17,3,2),ADBL(21),ROUL(18),
B5 2PLDEN(4,9,6,5,4),SEPRUB(4,9,6,6,5),
B5 3HDBEDG(4,9,6,4,2),RDBCUT(4,9,6,4,2),DLPBI(9,6,4),
B5 4METRIC(20,7,2),DJKLEV(9,6,4,2),DLLEV(5,2),
B5 5PACT(5,2),FKIN(2),COC(7),EVPRUB(14,9,6),
B5 6FIMP(80,5),SHIFT(4,9,2),AVDRL(20),IPACT(7),
B5 7FIMP(7),JCOC(7),INOUT(7),KOM(7),KAOB,NHDB

C SECTION 12 INITIALIZE AND READ IN SOME DATA

ISN 0007
ISN 0008
ISN 0009

C
COMMON ANNMET(9,3,7)
REAL REVENT,METRIC
DATA CONV2/ 2.64E3 /,DREF/50,0/
C

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C SECTION 14 DEFINE NAMELISTS, READ IN MILEAGE & CONTROL MASKS
C
ISN 0010 1400 FORMAT(' SECTION 12 ')
C
ISN 0011 NAMELIST/REG9CN/ ALHLC,NLEV,MYREG
ISN 0012 NAMELIST/HIWAY2/ MILE,PERCNT,FLOMIX,FIMP.
ISN 0013 NAMELIST/VEHGFU/ VGF,IVGF,HEMO,MYREF,VAF,LIFE
C
ISN 0014 IF (ICONT(9).EQ.1) WRITE(6,1400)
ISN 0016 CALL ZERO(ANNMET,189)
ISN 0017 READ(3,HIWAY2)
ISN 0018 READ(4,1000) IPLDT,IPRINT,IDUMP,KMASK,IVMASK,ICONT
ISN 0019 1000 FORMAT(10X,7I1/10X,12I1/10X,12I1/10X,6I1/10X,14I1/10X,12I1)
ISN 0020 READ(4,1005) JHASK,NETMSK,MUMMSK,IBEG
ISN 0021 1005 FORMAT(10X,9I1/10X,7I1/10X,3I1/10X,7I1)
ISN 0022 DO 1010 J=1,7
(025 ISN 0023 IF (METMSK(J).EQ.0) IPLDT(J)=0
ISN 0025 1010 CONTINUE
C
ISN 0026 READ(4,1001) VBD74,VBD77,VBD85
ISN 0027 1001 FORMAT(4(10X,7(F6.3,1X)/))
ISN 0028 READ(4,1002) NYRN,(MYRNET(IYRN),IYRN=1,NYRN)
ISN 0029 1002 FORMAT(10X,12/10X,9(I4,1X))
ISN 0030 READ(4,1003) RNAME
ISN 0031 1003 FORMAT(10X,5A4)
ISN 0032 READ(4,1004) RATIU
ISN 0033 1004 FORMAT(10(6X,6E11.4/))
C
C SECTION 15 COMPUTE INTER-EXTRAPOLATORY ARRAYS USED BY FUNCTION VBD
C
ISN 0034 CALL FIX
C
C SECTION 16 SKIP TO TIMESTREAM IF ONLY VPOP IS WANTED(ICONT(1)=1)
C
ISN 0035 IF(ICONT(1).EQ.1) GO TO 50
ISN 0037 IF(IDUMP(1).EQ.1) WRITE(6,1006) RNAME,FIMP,IFIMP,RNAME,
* FACT,IPACT,JCC,JCUC,INOUT,KOM
ISN 0039 1006 * FORMAT('1#1 DUMP: FIMP(IL14,IFIMP)',T110,5A4/'0'/
D1 2 40(2X,10(F10.5,1X)/)/' #1 DUMP: IFIMP(IN)'/U ',7I4/
D1 3 '1#1 DUMP: FACT(IPACT)',T110,5A4/'0',10F10.5/
D1 4 '0#1 DUMP: IPACT',/'0',7I4/'0#1 DUMP: LUC'//'0',7F10.2/
D1 5 '0#1 DUMP: JCC',/'0',7I4/'0#1 DUMP: INOUT'//'0',7I4/
D1 6 '0#1 DUMP: KOM',/'0',7I4)
C
C SECTION 18 CHECK TIMESTREAM NET POINTS FOR ORDERING AND LIMITS
C
ISN 0040 IF (MYRNET(1).NE.MYRB)WRITE(6,1820)
ISN 0042 1820 FORMAT('0 FIRST YEAR IS NOT BASELINE...HAS BEEN RESET')
ISN 0043 MYRNET(1)=MYKB
ISN 0044 IF (NYRN.EQ.1) GO TO 22
C
ISN 0046 18 DO 1800 IYRN = 2,NYRN
C
(024 ISN 0047 IF (MYRNET(IYRN).LE.MYRNET(IYRN-1))WRITE(6,1810)
ISN 0049 1810 FORMAT(' ', 'YEARS NOT IN ASCENDING ORDER ' )
C
ISN 0050 1800 CONTINUE
C

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024) ISN 0051      C
      ISN 0053      1830 IF(MYRMEI(NYRN),GT.2013)WRITE(6,1830)
                                FORMAT('0'/ '0'/ ' LAST NET YEAR IS LATER THAN 2013...')
      C
      C SECTION 20      COMPUTE VARIOUS ARRAYS BEFORE TIMESTREAM
      C
C-----
      ISN 0054      22      IF (ICONT(9).EQ.1) WRITE(6,2001)
      ISN 0056      2001      FORMAT(' SECTION 20')
      C
      C SECTION 21      COMPUTE THE LEVEL SHIFT( DELTA-INDEX) ARRAYS
      C
      C SECTION 21.1    COMPUTE X2, DISTANCE TO CLEAR ZONE, & DJKLEV
      C
      ISN 0057      THETA = ARCOS (      1.0 / SQRT(10.0)      )
      ISN 0058      DO 2110 J=1,NAT
      C
      (023) ISN 0059      DO 2110 K=1,NMT
      (017) ISN 0060      DO 2110 IL=1,4
      C
      (012) ISN 0061      X2(J,K,IL)      = C2D(J,K) + (IL - 0.5) * WIDTH(J,K)
      ISN 0062      DJKLEV(J,K,IL,1) = -10. * ALOG10(X2(J,K,IL)) + GAMM(K,J) *
      *      10. * ALOG10((IL-0.5)*WIDTH(J,K)/X2(J,K,IL))
      ISN 0063      DJKLEV(J,K,IL,2) = -20. * ALOG10(X2(J,K,IL)) + GAMM(K,J) *
      *      10. * ALOG10((IL-0.5)*WIDTH(J,K)/X2(J,K,IL))
      ISN 0064      DLP91(J,K,IL)      = 10. * ALOG10( THETA / 3. *
      *      (DREF/IL/NIDTH(J,K))**2)
      C
      ISN 0065      2110      CONTINUE
      C
      C SECTION 21.2    COMPUTE DLLEV ARRAY
      C
      C
      C
      C
      (012)
      (017)
      (023)
      ISN 0066      DO 2120 L=1,NSR
      C
      (022) ISN 0067      DLLEV(L,1) = 10.* ALOG10(15. * THETA * DREF**2. / 11. / V(L))
      ISN 0068      DLLEV(L,2) = 10.* ALOG10(      THETA * DREF**2. / 3.)
      C
      ISN 0069      2120      CONTINUE
      C
      C SECTION 23      THE FOLLOWING BLOCK DELINEATES THE POPULATED ZONE
      C
      C
      (022) ISN 0070      23      DO 2300 J      = 1,NAT
      C
      (021) ISN 0071      NID      = NIDD(J)
      C
      ISN 0072      DO 2301 ID      = 1,NID
      C
      (016) ISN 0073      NPMILE(ID,J) = 0
      ISN 0074      EDGE(ID,J)      = CONV2 * SQRT(AREA(ID,J))
      C
      ISN 0075      DO 2303 K      = 1,NHT
      C
      (011) ISN 0076      NPMK(ID,J,K) = 0
  
```

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C-----

015)
020)

(019 ISN 0124
(014 ISN 0125
(014 ISN 0126
(008 ISN 0127

ISN 0104
ISN 0105
ISN 0106

ISN 0108
ISN 0109

ISN 0111
ISN 0112
ISN 0113

ISN 0115
ISN 0116

ISN 0118 2403
004) ISN 0119 2402
009) ISN 0120 2401

ISN 0121
ISN 0123 2407
D4 2

```

C SECTION 24.1 COMPUTE SEL CUTOFF CRITERIA(KIND=1)
C
KIND = 1
RDBEDG(ID,J,K,IL,1) =
* (10.-A(1,IT))*ALOG10(REPZ(ID,J,K,IL))
IF(RDBEDG(ID,J,K,IL,1).LT.-DBK(IT)) RDBEDG(ID,J,K,IL,1) =
* (10.-A(2,IT))*ALOG10(REPZ(ID,J,K,IL)) -
* DBK(IT)*(1.-A(2,IT)/A(1,IT))
C
RDBCUT(ID,J,K,IL,1) =
* (10.-A(1,IT))*ALOG10(REDGE(ID,J,K,IL))
IF(RDBCUT(ID,J,K,IL,1).LT.-DBK(IT)) RDBCUT(ID,J,K,IL,1) =
* (10.-A(2,IT))*ALOG10(REDGE(ID,J,K,IL)) -
* DBK(IT)*(1.-A(2,IT)/A(1,IT))
C
C SECTION 24.2 COMPUTE LEG CUTOFF CRITERIA(KIND=2)
C
KIND = 2
RDBEDG(ID,J,K,IL,2) =
* -A(1,IT)*ALOG10(REPZ(ID,J,K,IL))
IF(RDBEDG(ID,J,K,IL,2).LT.-DBK(IT)) RDBEDG(ID,J,K,IL,2) =
* -A(2,IT)*ALOG10(REPZ(ID,J,K,IL)) -
* DBK(IT)*(1.-A(2,IT)/A(1,IT))
C
RDBCUT(ID,J,K,IL,2) =
* -A(1,IT)*ALOG10(REDGE(ID,J,K,IL))
IF(RDBCUT(ID,J,K,IL,2).LT.-DBK(IT)) RDBCUT(ID,J,K,IL,2) =
* -A(2,IT)*ALOG10(REDGE(ID,J,K,IL)) -
* DBK(IT)*(1.-A(2,IT)/A(1,IT))
C
CONTINUE
CONTINUE
CONTINUE
C DUMP CUTOFF CRITERION ARRAYS
C
IF(IDUMP(4),EQ,1) WRITE(6,2407) RDBEDG,RDBCUT
FORMAT(4('1#4 DUMP:RDBEDG(ID,J,K,IL,KIND)'/54(1X,8F14.2)/))
4('1#4 DUMP:RDBCUT(ID,J,K,IL,KIND)'/54(1X,8F14.2)/))
C
C SECTION 25 COMPUTE AND DUMP DRATIO ARRAY
C
DO 2501 IT=1,3
DO 2501 IRDB=1,17
DO 2501 KIND=1,2
C
DRATIO(IRDB,IT,KIND)=RATIO(IRDB+1,IT,KIND)-RATIO(IRDB,IT,KIND)
C

```

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```

19N 0126 2501 CONTINUE
C
008) C
014) C
019) C
19N 0129 2503 IF(IDUMP(5),EQ,1) WRITE(6,2503) RNAME,RATIO,DRATIO
19N 0131 05 2 2503 FORMAT('105 DUMP: RATIO ',T110,5A4/12(1X,9F14.4)/
'DONS DUMP: DRATIO'///6(1X,9F14.4/1X,8F14.4/))
C
C SECTION 26 COMPUTE THE NORMALIZED POPULATION DENSITY
C AND THE SECONDARY EXPOSURE PROBABILITY; DJMP
C
19N 0132 DO 2601 J=1,NAT
C
018) 19N 0133 NID=NIDD(J)
C
19N 0134 DO 2601 ID=1,NID
013) 19N 0135 DO 2601 K=1,NHT
007) 19N 0136 DO 2601 L=1,NSH
001) 19N 0137 DO 2601 IL=1,4
C
002) 19N 0138 PLDEN(ID,J,K,L,IL) = POPDEN(ID,J) / CONV2 / FPAREA(J,ID)
* A FPROAD(J,K) * MILE(K,J,ID,L) * X2(J,K,IL)
19N 0139 DO 2602 KA=1,NHT
C
001) 19N 0140 SEPRUB(ID,J,K,KA,L) = MILE(K,J,ID,L) * POPDEN(ID,J) /
* CONV2 * NPMK(ID,J,KA) / NPMILE(ID,J)
19N 0141 2602 CONTINUE
C
001) 19N 0142 2601 CONTINUE
C
002) C
003) C
007) C
013) C
018) C
19N 0143 IF(IDUMP(6),EQ,1) WRITE(6,2605) PLDEN,SEPROB
19N 0145 2605 FORMAT(6('106 DUMP: PLDEN,1/
06 1 45(1X,4E10.3,3X,4E10.3,3X,4E10.3,3X//))
06 2 10('106 DUMP: SEPROB(ID,J,K,KA,L)',
06 3 54(1X,4E10.3,3X,4E10.3,3X,4E10.3,3X//))
C
C SECTION 30 READ A REGULATION SCENARIO, TABULATE CONSTANT DATA
C
19N 0146 50 IF (ICONT(9),EQ,1) WRITE(6,3001)
19N 0148 3001 FORMAT(' SECTION 30')
C
C CALL PRINT4, PRINTS CONSTANT DATA
C
19N 0149 IF(IPRINT(1),EQ,1) CALL PRINT1
19N 0151 IF(IPRINT(2),EQ,1) CALL PRINT2
19N 0153 IF(IPRINT(3),EQ,1) CALL PRINT3
C-----
19N 0155 3000 CALL SEREUC(K)
19N 0156 IF(K,EQ,-1) STOP 1111
19N 0158 READ(S,VEHGF1,END=3002)
C

```

```

C SECTION 30.2 PRINT THE REGULATION SCENARIO
C
  ISN 0159 3002 IF(IPRINT(4).EQ.1) CALL PRINT4(1)
C
C SECTION 40 CALL TIMESTREAM
C
  ISN 0161 IF (ICOUNT(9).EQ.1) WRITE(6,4001)
  ISN 0163 4001 FORMAT('1 SECTION 40')
  ISN 0164 CALL TIMSTR
  ISN 0165 7000 WRITE(6,7001)
  ISN 0166 7001 FORMAT('0 ERROR: END OF DATA (IN DATASET 5.)')
  ISN 0167 STOP
026) C
  ISN 0168 END

```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NODECK NOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 167, PROGRAM SIZE = 7916, SUBPROGRAM NAME = MAIN

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

62K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GDSMT,NOSOURCE,NOTERM,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NDLIST NUDECK NOBJECT NUMAP FORMAT GDSMT XREF NOALC NUANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

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SYMBOL	INTERNAL STATEMENT NUMBERS																			
NAT	0006																			
NHT	0006																			
NSR	0006																			
VVT	0006																			
POP	0006																			
IBEG	0005																			
INCR	0006																			
IYRN	0009	0010	0010	0012	0012	0014	0015	0020	0021	0026	0027	0032	0036	0036						
MILE	0006																			
MYRB	0006																			
MYRN	0006																			
NIDD	0006																			
NLEV	0006																			
NVRN	0006	0009	0036																	
RC11	0016	0010	0032																	
RC12	0022	0024	0032																	
RC13	0020	0030	0032																	
VTOT	0006																			
ALREG	0006																			
ALNP1	0014	0032																		
ALNP2	0020	0032																		
ALNP3	0026	0032																		
ARRAY	0002	0003	0014	0015	0015	0016	0016	0018	0020	0021	0021	0022	0022	0024	0026	0027	0027	0028	0028	
DLNP1	0015	0016	0032																	
DLNP2	0021	0022	0032																	
DLNP3	0027	0028	0032																	
GVTOT	0006																			
ICONT	0005																			
IDUMP	0005																			
IPLOT	0005																			
ITAB8	0005	0008	0010	0010	0012															
JMASK	0005																			
KMASK	0005																			
MYREG	0006																			
NTAB8	0005																			
RNAME	0005	0012																		
TABLE	0002																			
TITLE	0002	0004	0012																	
IPRINT	0005																			
ITABLE	0005	0007	0007	0012																
IVMASK	0005																			
METASK	0005																			
MODMSK	0005																			
MYRNET	0006	0032																		
POPCN	0006																			
POPLTN	0006																			
STOPGF	0006																			
TUTPUP	0006																			

*****F O R T R A N C R O S S R E F E R E N C E L I S T I N G*****

LABEL	DEFINED	REFERENCES
1000	0038	0009
9000	0040	0012
9001	0033	0032
9002	0041	0036
9003	0042	0035
9004	0043	0034

/ STRUCTURED SOURCE LISTING /

(002 ISN 0002

SUBROUTINE TABLE(ARRAY,TITLE)
CT TABLE LAST UPDATE:
CX TABLE TABULATES THE VARIOUS SEL & LEQ METRICS

ISN 0003
ISN 0004
ISN 0005

C
C
DIMENSION ARRAY(9,3)
REAL*8 TITLE(6)
COMMON /BIG004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
2KMASK(6),METHSK(7),ICUMF(12),MUDMSK(3),IBEG(7),
B4 3IPLOT(7),ITABLE,ITABS,NTABS

ISN 0006

COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),POP(9),
B2 2POPDEN(4,9),POPLTN(4,9),STOPCF(9,9),TOTPOP(9),
B2 3HILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYHNET(9),
B2 4NIUD(9),MYRN,INCH,MYRB,NYRN,NVT,NAT,NHT,NSR

ISN 0007
ISN 0008

ITABLE = ITABLE + 1
ITABS = 0

ISN 0009

DO 1000 IYRN = 1,NYRN

(001 ISN 0010
ISN 0012

IF(IYRN.EQ.1.OR.IYRN.EQ.2) ITABS = ITABS + 1
IF(IYRN.EQ.1.OR.IYRN.EQ.2) WRITE(6,9000) ITABLE,ITABS,TITLE,
*RNAME

ISN 0014
ISN 0015
ISN 0016
ISN 0018
ISN 0020
ISN 0021
ISN 0022
ISN 0024
ISN 0026
ISN 0027
ISN 0028
ISN 0030

ALWP1 = ARRAY(IYRN,1)
DLWP1 = ARRAY(1,1) = ARRAY(IYRN,1)
IF(ARRAY(1,1).NE.0.0) RC11 = DLWP1 / ARRAY(1,1)
IF(ARRAY(1,1).EQ.0.0) RC11 = 0.0
ALWP2 = ARRAY(IYRN,2)
DLWP2 = ARRAY(1,2) = ARRAY(IYRN,2)
IF(ARRAY(1,2).NE.0.0) RC12 = DLWP2 / ARRAY(1,2)
IF(ARRAY(1,2).EQ.0.0) RC12 = 0.0
ALWP3 = ARRAY(IYRN,3)
DLWP3 = ARRAY(1,3) = ARRAY(IYRN,3)
IF(ARRAY(1,3).NE.0.0) RC13 = DLWP3 / ARRAY(1,3)
IF(ARRAY(1,3).EQ.0.0) RC13 = 0.0

ISN 0032
ISN 0033
ISN 0034
ISN 0035
ISN 0036

WRITE(6,9001) MYRNET(IYRN),ALWP1,DLWP1,RC11,ALWP2,DLWP2,RC12,
*ALWP3,DLWP3,RC13
9001 FORMAT(1X,T4,I4,1B,3(3X,1PE10,3,\$X,E11,3,5X,2PF7.2,2X))
WRITE(6,9004)
WRITE(6,9003)
IF(IYRN.EQ.20.DH,IYRN.EQ.NYRN) WRITE(6,9002)

C-----
ISN 0038

1000 CONTINUE

001)

C
C

```

ISN 0039      RETURN
              C
              C FORMAT STATEMENTS
              C
002) ISN 0040  9000  FORMAT('1/'0',T5,'TABLE ',T12,'.',T12,4X,6AH,T110,5A4///
              *' ',T131('_)/1X,' ',T19,' ',T3(40X,' ')/' ',T28,'DAY',
              AT67,'NIGHT',T107,'TOTAL'/19,' ',T19,' ',T3(40X,' ')/
              *' ',T9,' ',T3(40X,' ')/'+',T7X,124('_)/' ',T9,' ',T3(12X,
              *' ',T13X,' ',T13X,' ')/1X,T4,'YEAR',T10,' ',T3(4X,'LWP',10X,
              *DLWP',11X,'RC1',6X)/'+',T9,' ',T3(12X,' ',T13X,' ',T13X,' ')/
              *' ',T9,' ',T3(12X,' ',T13X,' ',T13X,' ')/'+',T13(1_'//
              *' ',T9,' ',T3(12X,' ',T13X,' ',T13X,' '))
ISN 0041  9002  FORMAT(' ',T131('_'))
ISN 0042  9003  FORMAT(' ',T9,' ',T3(12X,' ',T13X,' ',T13X,' '))
ISN 0043  9004  FORMAT(' ',T9,' ',T3(12X,' ',T13X,' ',T13X,' '))
ISN 0044      END

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*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*SOURCE EBCDIC NULIST NUDECK NOBJECT NOMAP FORMAT CUSTMT XREF NOALC NOANBF NOTERM FLAG(1)
*STATISTICS* SOURCE STATEMENTS = 43, PROGRAM SIZE = 1290, SUBPROGRAM NAME = TABLE
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION *****

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122K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF, OPT(2), FORMAT, GOSTMT, NOSOURCE, NOTERMJAL, NOOBJLCT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINLCOUNT(60) SIZE(MAX) AUTODUPL(NONE) NOSOURCE EDCDIC NOLIST NOOLCR NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

***** FURTHER ANCHORS REFERENCE LISTING *****

SYMBOL	INTERNAL STATEMENT NUMBERS																		
A	0003																		
I	0003	0029	0030	0030	0030	0032	0032	0040	0043	0043	0043	0071	0072	0081	0090	0098	0102	0106	0106
	0106	0108	0112	0114	0133														
J	0008	0042	0043	0043	0043	0074	0075	0075	0076	0077	0080	0081	0085	0088	0093	0106	0112	0112	
	0114	0120	0120	0125	0125	0125	0133	0144	0150	0164	0165	0171	0185	0231	0237				
K	0028	0030	0030	0030	0032	0032	0041	0043	0043	0043	0043								
L	0092	0093	0112	0112	0114	0120	0125	0133	0150	0171									
M	0031	0032	0032	0095	0096	0098	0102	0106	0106	0108	0112	0114	0133						
V	0005																		
IO	0079	0080	0081	0093	0112	0120	0125	0133	0144	0150	0164	0165	0171	0185	0231	0237			
IL	0104	0112	0114	0120	0125	0133	0144	0164	0165	0185	0231	0237							
IM	0025	0026	0056	0058	0059	0060	0062	0062	0081	0090	0112	0112	0114	0116	0116	0127	0127	0127	0129
	0129	0129	0131	0133	0140	0141	0144	0153	0165	0174	0174	0202	0203	0222	0223	0229	0232	0240	
	0253	0255	0258	0262	0262	0262	0263	0264	0267	0268	0269	0340	0341						
IT	0003	0080	0157	0164	0178	0185	0196	0215											
KA	0121	0122	0123	0125	0125	0204	0210	0215	0224	0225	0234	0235	0237						
KM	0058	0112	0112	0144	0157	0164	0165	0178	0185	0196	0215								
KB	0008	0084	0085	0086	0088	0093	0106	0106	0108	0112	0114	0120	0123	0125	0125	0133	0144	0150	0164
	0165	0171	0185	0210	0231	0235	0237												
X2	0003	0125																	
ADT	0003	0043																	
ALO	0003	0112	0114	0116	0117	0127	0129	0133	0138	0144	0145	0147	0150	0165	0166	0168	0171	0202	0222
	0229																		
COC	0007	0127	0129	0144	0153	0165	0174												
C2D	0003																		
DUK	0003																		
F18	0017	0017	0140	0141	0202	0203	0222	0223	0229										
IFM	0008	0059																	
JCP	0149	0156	0159	0161	0161	0202	0203	0203	0204	0205									
JCH	0170	0177	0180	0182	0182	0222	0223	0223	0224	0225									
KOM	0007	0058																	
MYR	0003																		
NAT	0004	0042	0074																
NHT	0004	0041	0084	0121	0209	0234													
NID	0076	0079																	
NSK	0004	0092																	
NVT	0004	0040	0071																
PGF	0003	0075	0120	0125															
POP	0004																		
SUM	0030	0032																	
VAF	0003	0045																	
VGF	0003	0045																	
VML	0003	0035	0102	0106															
ACCH	0008	0069	0253																
ACEV	0008																		
ADBL	0007	0138	0156	0161	0177	0182	0197	0198	0202	0203	0203	0217	0218	0222	0223	0223			
AREA	0003																		
BRCP	0155	0159	0161	0163	0166														
BRC3	0176	0180	0182	0184	0188														

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BEST COPY AVAILABLE

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL	INTERNAL STATEMENT NUMBERS																		
CHLP	0156	0163	0167	0205															
CHCS	0177	0184	0189	0225															
DHAT	0196	0199	0200	0215	0219	0220													
EDGE	0005																		
FIMP	0007																		
FRIN	0007	0090	0118	0119															
GAMM	0005																		
IBEG	0006	0275	0276	0277	0278	0283	0305	0307	0309	0311	0313	0325	0327	0329	0331	0333			
IDAY	0068	0069	0089	0090	0090	0090	0252	0253	0253										
IEVD	0008	0085																	
IFIX	0018																		
IM56	0008	0057	0065	0254															
INCR	0004																		
IPER	0005	0106	0108																
INDB	0194	0195	0196	0214	0215	0216													
ISUM	0335	0336																	
IYAF	0003																		
IV60	0003																		
IVGF	0003	0045																	
IYRN	0008	0022	0023	0034	0038	0075	0133	0267	0268	0269	0275	0276	0277	0278	0279	0280	0281	0282	0283
JADB	0341	0341	0341																
	0067	0069	0195	0197	0198	0199	0200	0216	0217	0218	0219	0220	0230	0231	0237	0251	0253	0253	0261
	0262	0262	0262	0263	0264	0274	0275	0275	0276	0276	0277	0277	0278	0278	0279	0279	0280	0280	0281
	0281	0282	0282	0283	0283														
JCOC	0007																		
JFLO	0005	0041																	
JPGF	0003	0075	0120	0125															
KFLO	0005	0043																	
KPER	0005	0106	0108																
LANE	0003	0043	0088																
LIFE	0003	0045																	
MAX0	0010																		
MILE	0004	0093																	
MIN0	0010	0210																	
MYRH	0004																		
MYRE	0003																		
MYRN	0004																		
NAOB	0007	0230																	
NIDD	0004	0076																	
NLEV	0004	0098																	
NPMK	0003																		
NRDB	0007																		
NYRN	0004	0022	0338	0341															
PACT	0007	0040																	
PGFO	0003																		
RD8L	0007	0155	0176	0202	0222														
REMO	0003	0045																	
REP2	0005	0164	0231																
TDAY	0259	0263	0263	0266	0267														
VINC	0003																		
VPOP	0003	0035																	
VTOT	0004																		
XINC	0003																		
YEAR	0015	0023	0024	0035	0081	0271													
YINC	0003																		

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS																
ZERO	0000																
ACLWP	0008	0004															
ALMAX	0010	0026	0116	0116	0271												
ALHEG	0004	0112	0114														
AMAX1	0116	0144	0156	0165	0177	0202	0203	0222	0223								
AMINI	0155	0176															
AVDBL	0007																
BDISP	0138	0139	0140	0142	0155	0161	0161	0176	0182	0182							
BYPOP	0003	0043	0045														
CDISP	0132	0141															
DELWP	0157	0164	0186	0187													
DELRS	0178	0185	0188	0189													
DLLEV	0007	0112															
DLPBI	0007	0114															
DNTOT	0010	0262	0271	0275	0276	0277	0278	0279	0280	0281	0282	0283					
DPLUS	0140	0197	0202	0217	0222												
DVTOT	0004																
ICLIP	0018	0197	0198	0202	0203	0217	0218	0222	0223	0229							
ICONT	0006	0019	0048	0050	0081	0100	0106	0108	0110	0112	0114	0190	0207	0232	0286	0289	0345
IDUMP	0006	0035	0045	0248	0271												
IFIMP	0007	0059															
ILDDB	0148	0150	0150	0150	0192	0194											
ILDDBS	0169	0171	0171	0212	0214												
ILIMI	0197	0199	0202	0204	0217	0219	0222	0224	0229	0231	0237						
ILIM2	0198	0200	0203	0205	0218	0220	0223	0225									
INOUT	0007	0112															
IPACT	0007	0090															
IPCUT	0147	0148	0149	0155	0157	0164	0202										
IPLOT	0006	0335	0335	0335	0335	0335	0335	0335	0338								
ISCUT	0168	0169	0170	0176	0178	0185	0222										
ITAB9	0006																
JAU80	0117	0133	0133	0136	0138	0149	0150	0170	0171	0195	0216	0230					
JHASK	0006	0077															
JPCUT	0146	0159	0161														
JSCUT	0167	0180	0182														
JHYLE	0003	0080															
KHASK	0006	0086															
LEVEL	0099	0100	0102	0106	0112	0114	0133										
MYREF	0003	0045															
MYREG	0004																
NLANE	0006	0104	0108	0110													
NTAB9	0004																
PCOLV	0144	0145	0146	0147	0153	0156	0161	0202	0203								
PLDEN	0007	0120															
PNDRH	0008	0032	0108														
RATIO	0007	0164	0185														
REDGE	0005	0185	0237														
RNAME	0006	0035	0045	0045	0045	0271	0338										
RPCOL	0145	0155															
RBCOL	0166	0176															
SCOLV	0165	0166	0167	0168	0174	0177	0182	0222	0223								
SHIFT	0007	0112															
TABLE	0291	0293	0295	0297	0299	0301	0303										
TNITE	0260	0264	0264	0266	0268												
TOTAL	0260	0269															

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***** FORTRAN CROSS REFERENCE LISTING *****

SYMBOL	INTERNAL STATEMENT NUMBERS
SELFXP	0012 0301
SEL10B	0010 0279 0315
SEL20B	0010 0280 0317
SEPPGF	0009 0122 0125 0215 0224 0225 0237
SLPROB	0007 0125
SLPADB	0010 0276 0307
SLPANK	0012 0293
SLPDOB	0010 0275 0305
SLPDSB	0012 0013 0291
SPCHIN	0012 0295
SPCCUT	0012 0297
SPEXDB	0010 0278 0311
SPINDB	0010 0277 0309
STOPGF	0004 0075
TIMSTR	0002
TOTPOP	0004
UPDATE	0024
VEHPOP	0034
VNTDAY	0008 0118
VNTNIT	0008 0119
WDTHP2	0005

C-196 ***** FORTRAN CROSS REFERENCE LISTING *****

LABEL	DEFINED	REFERENCES
50	0022	
5000	0285	0022 0048
5001	0021	0019
5002	0288	0286
5120	0027	0025
5130	0033	0028 0029 0031
5200	0037	0035
5300	0044	0040 0041 0042
5304	0048	0038
5306	0047	0045
5490	0052	0050
5500	0056	0051
5505	0066	0062
5510	0257	0056 0060
5511	0070	0067 0068
5512	0247	0071 0072
5513	0242	0074 0077
5514	0245	0079
5518	0083	0081
5520	0244	0084 0086
5521	0091	0089
5522	0243	0092 0093
5523	0242	0095 0096
5524	0241	0099 0100 0102
5525	0240	0104 0127 0136 0207 0228
5550	0126	0121 0123
5594	0135	0131
5610	0159	0151
5619	0152	0150
5620	0158	0158

*****FORTRAN CROSS REFERENCE LISTING*****

LABEL	DEFINED	REFERENCES
5621	0180	0174
5629	0173	0171
5710	0186	0179
5711	0201	0194
5713	0202	0192
5715	0209	0190
5730	0227	0209 0210
5731	0221	0214
5733	0222	0212
5800	0229	0129 0131
5801	0239	0232
5802	0238	0234 0235
5809	0250	0248
5900	0254	0251 0252
5902	0270	0258
5903	0265	0261
5904	0284	0274
5908	0273	0271
5950	0335	0323
6001	0349	0345
6002	0343	0289 0336
6003	0342	0341
6004	0339	0338
6005	0341	0340

/ STRUCTURED SOURCE LISTING /

(032 ISN 0002

SUBROUTINE TIMSTR

C CX TIMSTR : TIMENTREAM OF THE SINGLE EVENT MODEL

ISN 0003

C COMMON /B1G001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
 U1 2VINC(7),VDD74(14),VDD77(7),VDD85(7),VDD90(7),
 U1 3VML(14,4,5),A(2,3),DBK(3),CZD(9,6),PGF(5),
 U1 4PGF0(5),KIDTH(9,6),FPROAD(9,6),ADJ(6,9),
 U1 5AREA(4,9),FPAREA(9,4),VPOP(14,26),UVPOP(14),
 U1 6X2(9,6,4),NPMILE(4,9),NPMK(4,9,6),ALO,IVAF(14),
 U1 7MYREF(6),IVBO(14),LIFE(4),IEWAGE(6),JAYLE(9,4),
 U1 8JPGF(9),LANE(9,6),MYHE(14),IVGF(14),MYR,IT,I

C THE FOLLOWING COMMON BLOCKS SERVE PRINT SUBROUTINES

ISN 0004

C COMMON /B1G002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),POP(9),
 U2 2PCPDEN(4,9),PUPLIN(4,9),STOPGF(9,9),TUTPOP(4),
 U2 3MILE(6,9,4,5),MYHEG(6,4,14),NLEV(14,4),MYRHET(9),
 U2 4NIDD(9),MYRN,INCH,MYRB,MYRN,NVT,NAT,NHT,NSR

C END PRINT COMMON BLOCK

ISN 0005

C COMMON /B1G003/ GAMM(6,9),V(5),EDGE(4,9),EDGEP2(4,9,6),
 U3 2ADTHPZ(4,9),FLOHIX(14,4,5),PERCNT(4,2,4),
 U3 3REPZ(4,9,6,4),REDGE(4,9,6,4),
 U3 4JFLD(9),KFLH(6),KPER(6),IPER(14)

ISN 0006

C COMMON /B1G004/ RNAME(5),IVMASK(14),IDUMP(12),IPRINT(12),JMASK(9),
 H4 2RMASK(6),METMSK(7),ICONT(12),MUDMSK(3),IBEG(7),

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      H4 3IPLUT(7),ITABLE,ITABS,NTABS
      C
      ISN 0007 COMMON /BIG005/ RATIO(18,1,2),DRA110(17,1,2),ADBL(21),RDBL(18),
      H5 2PLDEN(4,9,6,5,4),SEPHOB(4,9,6,6,5),
      H5 3RDBELB(4,9,6,4,2),RDBOUT(4,9,6,4,2),DLP9I(9,6,4),
      H5 4METRIC(20,7,2),DJKLEV(9,6,4,2),DLLEV(5,2),
      H5 5PACT(5,2),FRTN(2),CUC(7),EVPHOB(14,9,6),
      H5 6FIMP(80,5),SHIFT(4,9,2),AVD3L(20),1PACT(7),
      H5 7IFIMP(7),JCUC(7),INDUT(7),KOM(7),NADB,NRDB
      C
      ISN 0008 COMMON /BIG006/ PNORM(3,2,4),ACEV(6,9),IYRN,IFM,
      H6 1ACCM(20,2),VNTDAY,VNTNIT,IEVB(6,9),KS,J,
      H6 2VNTDB(15,11,5,9),ACLWP(15,21),KSJEVB,IMS6
      C
      C SECTION 41 DATA AND SPECIFICATION STATEMENTS
      C
      ISN 0009 DIMENSION SEPPGF(6)
      ISN 0010 DIMENSION DNTDT(20,7),ALMAX(7),
      *SLHODB(10,9),SLPADB(10,9),SPINDB(10,9),
      *SPLEXDB(10,9),SEL1DB(10,9),SEL2DB(10,9),
      *LEQ1DB(10,9),LEQ2DB(10,9),PDSPPDB(10,9)
      ISN 0011 REAL ANNMET(9,3,7)
      ISN 0012 COMMON SLPDSP(9,3),SLPANK(9,3),SPCHIN(9,3),SPCOUT(9,3),
      *SELXP(9,3),LWPPXP(9,3),PEDSPC(9,3)
      ISN 0013 EQUIVALENCE (ANNMET(1),SLPDSP(1))
      ISN 0014 REAL NEVENT,METRIC,LEQ1DB,LEQ2DB
      ISN 0015 INTEGER YEAR
      ISN 0016 REAL ADTFAC(14,2)/
      C
      C 1# 1-9 10 11 12 13-14
      C
      DAY >9A 0.870, 0.625, 0.040, 1.000, 2A 0.87,
      NITE >9A 0.130, 0.375, 0.160, 0.000, 2A 0.13/
      C
      ISN 0017 REAL P(18)/36.,49.,44.,54.,29.,29.,54./
      C
      C SECTION 41.1 DEFINE CLIPPER FUNCTION
      C
      ISN 0018 ICLIP(X) = MIN0(80,MAX0(1,IFIX(X)))
      C
      C SECTION 50 TIME STREAM LOOP, IYRN=ORDINAL OF A NET YEAR, YEAR
      C
      ISN 0019 IF (ICONT(9).EQ.1) WRITE(6,5001)
      ISN 0021 5001 FORMAT(' SECTION 50 BEGINNING OF TIMESTREAM,')
      C
      ISN 0022 50 DD 5000 IYRN = 1,NYRN
      C
      (031 ISN 0023 YEAR=MYRNE1(IYRN)
      C
      C SECTION 51 COMPUTE POPULATION GROWTH FACTOR IN THE CURRENT YEAR
      C
      ISN 0024 CALL UPDATE(YEAR)
      C
      C SECTION 51.2 INITIALIZE MAJOR DB BAND ACCUMULATOR
      C
      ISN 0025 DD 5120 IM=1,7
      C
      (029 ISN 0026 ALMAX(IM) = 0.0

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ISN 0027 5120 C
CONTINUE
C
C SECTION 51.3 COMPUTE PNORM, NORMALIZED PERCENT.(FOR ICOUNT(8).EU.1)
C
029) ISN 0028 DD 5130 K=1,2
(028 ISN 0029 GO 5130 I=1,4
C
(023 ISN 0030 SUM = PERCENT(1,K,I) + PERCENT(2,K,I) + PERCENT(3,K,I)
C
ISN 0031 DD 5130 M=1,3
C
(017 ISN 0032 PNORM(M,K,I) = PERCENT(M,K,I) / SUM
C
ISN 0033 5130 CONTINUE
C
C SECTION 52 CALL VEHPOP TO GET VPOP AND VML
C
017)
023)
020) ISN 0034 CALL VEHPOP(IYRN)
C
ISN 0035 IF(IDUMP(7).EQ.1) WRITE(6,5200) YEAR,RNAME,VPOP,VML
ISN 0037 5200 FORMAT('1M7 DUMP: VPOP',2X,14,F10,5A4/'0'/26(2X,14(-6PF8.4,1X))//
07 2'0M7 DUMP: VML'/'0'/20(2X,14(-6PF8.4,1X))//
C
C SECTION 53 COMPUTE PASSBY EVENT PROBABILITY IN THE BASELINE YEAR
C
ISN 0030 IF(IYRN.NE.1) GO TO 5304
C
(027 ISN 0040 DD 5300 I=1,NVT
(022 ISN 0041 DD 5300 K=1,NHT
ISN 0042 DD 5300 J=1,NAT
C
(016 ISN 0043 EVPROB(I,J,K) = ADT(K,J) * FLOMIX(I,JFLO(J),KFLO(K)) /
* BVPOP(I) / LANE(J,K)
C
ISN 0044 5300 CONTINUE
C
016)
022)
027) ISN 0045 IF(IDUMP(8).EQ.1) WRITE(6,5306) RNAME,EVPROB,RNAME,BVPOP,
* REMO,VGF,IVGF,RNAME,VAF,LIFE,MYREF
ISN 0047 5306 FORMAT('1M8 DUMP: EVPROD',T110,5A4/'0'/54(1X,14(F8.6,1X))//
08 2 '1M8 DUMP: BVPOP',T110,5A4//1X,7E12,3/1X,7E12,3//
08 3 '0M8 DUMP: REMO'//17(1X,6E12,3)//
08 4 '0M8 DUMP: VGF(IYRN,IVBD)'//24(2X,10(F5.3,1, '))//
08 5 '0M8 DUMP: IVGF(I)'//3X,14(11,2X)//
08 6 '1M8 DUMP: VAF(IVAF,1AGE)',T110,5A4//
08 7 13(9X,4F8.4,9X,4F8.4)//
08 7 '0M8 DUMP: LIFE(IVAF)'/'0'/T10,413/
08 8 '0M8 DUMP: MYREF(IVBD)'/'0'/T10,618)
C
C SECTION 53.1 SKIP IF VEHICLE POPULATION ONLY IS DESIRED
C

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C-----
ISN 0048 5304 IF(ICONT(1),EQ.1) GO TO 5000
ISN 0050 IF (ICONT(9),EQ.1) WRITE(6,5490)
ISN 0052 5490 FORMAT(' FINISHED SECTION 53')
C
C SECTION 55 COMPUTE AND SUM EXPOSURE AND IMPACT NUMBERS
C
C SECTION 55.01 FIND THE EVENT BINS.
C
ISN 0053 IF(IPRINT(7),NE.1) GO TO 5500
ISN 0055 CALL EVENTS
C
C SECTION 55.1 SET UP LOOPS IN I, J, ID
C
C
C-----
ISN 0056 5500 DO 5510 IM=1,7
(026 ISN 0057 IM56=0
C
ISN 0058 KM * KOM(IM)
ISN 0059 IFM * IFIMP(IM)
ISN 0060 IF(METMSK(IM),EQ.0) GO TO 5510
ISN 0062 IF(IPRINT(7),NE.1,OR,IM,EQ.5,OR,IM,EQ.6) GO TO 5505
ISN 0064 CALL ZERO(ACLWP,315)
ISN 0065 IM56=1
ISN 0066 5505 LDCOUNT = 0
C
ISN 0067 DO 5511 JADB=1,20
(021 ISN 0068 DO 5511 IDAY=1,2
C
(015 ISN 0069 ACCM(JADB,IDAY) = 0.0
C
ISN 0070 5511 CONTINUE
C
(015) C
(021) C
ISN 0071 DO 5512 I=1,NVT
C
(019 ISN 0072 IF(IVMASK(I),EQ.0) GO TO 5512.
C
ISN 0074 DO 5513 J = 1,NAT
C
(014 ISN 0075 STOPGF(J,IVHN)=PGF(JPGF(J))
ISN 0076 NID * NIOD(J)
ISN 0077 IF(JMASK(J),EQ.0) GO TO 5513
C
ISN 0079 DO 5514 ID * 1,NID
C
(012 ISN 0080 IT=JWYLE(J,ID)
ISN 0081 IF (ICONT(9),EQ.1) WRITE(6,5518)YEAR,IM,I,J,ID
ISN 0083 5518 FORMAT(' SECTION 55.1 YEAR,IM,I,J,ID=',I4,4I3)
C
C SECTION 55.2 KERNEL : LOOPS IN KS,L,M,LEVEL,IL
C
ISN 0084 DO 5520 KS=1,NHT
(011 ISN 0085 KSJEV0=IEV0(KS,J)
C
ISN 0086 IF(KMASK(KS),EQ.0) GO TO 5520

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LEVEL 2.2 (SEPT 76)

TIMSTR

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      ISN 0068      NLANE=LANE(J,K9)
      ISN 0089      C
      (010 ISN 0090  DD 5521 IDAY#1,2
      ISN 0091      C
      5521          FRTN(IDAY) = PACT(IPACT(IM),IDAY) * ADTFAC(1,IDAY)
      (10) ISN 0092  C
      ISN 0093      C
      (009 ISN 0094  DD 5522 L=1,NSR
      ISN 0095      C
      (008 ISN 0096  IF(MILE(K9,J,IO,L).EQ.0)          GO TO 5522
      ISN 0098      C
      ISN 0099      DD 5523 M#1,3
      (007 ISN 0100  IF(MIDMSK(M).EQ.0)          GO TO 5523
      ISN 0102      NLEVEL = NLEV(1,M)
      ISN 0104      DD 5524 LEVEL=1,NLEVEL
      (006 ISN 0105  IF(ICONT(10).NE.0.AND.LEVEL.GT.1)      GO TO 5524
      ISN 0106      IF(VML(I,M,LEVEL).LE.1.0)          GO TO 5524
      ISN 0107      DD 5525 IL#1,NLANE
      ISN 0108      LCOUNT = LCOUNT + 1
      ISN 0109      C
      ISN 0110      C SECTION 55.3 COMPUTE THE NUMBER OF PASSBY EVENTS
      ISN 0111      IF(ICONT(10).EQ.0)  NEVENT = VML(I,M,LEVEL) * EVPROB(I,J,K9)
      ISN 0112      * PEHCNT(M,KPER(K9),IPER(I))
      ISN 0113      * IF(ICONT(10).EQ.1)  NEVENT = 1./NLANE *
      ISN 0114      * PNORM(M,KPER(K9),IPER(I))
      ISN 0115      * IF(ICONT(10).EQ.2)  NEVENT = 1./NLANE / 3.
      ISN 0116      C
      ISN 0117      C SECTION 55.4 COMPUTE THE NOISE LEVEL AT THE EDGE OF THE CLEAR ZONE
      ISN 0118      IF(ICONT(7).EQ.0.OR.IM.NE.7)
      ISN 0119      * ALO = ALREG(LEVEL,L,M,1) + DJKLEV(J,K9,IL,KM) +
      ISN 0120      * DLLEV(L,KM) + SHIFT(ID,J,INOUT(IM))
      ISN 0121      * IF(ICONT(7).NE.0.AND.IM.EQ.7)
      ISN 0122      * ALO = ALREG(LEVEL,L,M,1) + DLPBI(J,K9,IL)
      ISN 0123      * ALMAX(IM) = AMAX(ALO,ALMAX(IM))
      ISN 0124      * JADBO = (135. * ALO) / 5
      ISN 0125      C SECTION 55.5 CONSTANTS USED IN SECTIONS 57 & 58.
      ISN 0126      VNTDAY = NEVENT * FRTN(1)
      ISN 0127      VNTNIT = NEVENT * FRTN(2)
      ISN 0128      PLDPPGF = PLOEN(ID,J,K9,L,IL) * PGF(JPGF(J))
      (005 ISN 0129  DD 5550 K#1,N#1
      ISN 0130      BEPPGF(KA) = 6.02E23
      ISN 0131      IF(KA.EQ.K9) GO TO 5550
      ISN 0132      BEPPGF(KA) = BEPRDB(ID,J,K9,KA,L3) *
      ISN 0133      PGF(JPGF(J)) * X2(J,K9,IL)
      C-----
      ISN 0126      5550      CONTINUE
      C
      C SECTION 55.6 CHANNEL TO APPROPRIATE PLACE IF ALO LT CUTOFF CRITERION

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005)

ISN 0127
ISN 0129
ISN 0131
ISN 0133

ISN 0135

5594

ISN 0136
ISN 0138
ISN 0139
ISN 0140
ISN 0141
ISN 0142
ISN 0143

ISN 0144
ISN 0145
ISN 0146
ISN 0147
ISN 0148
ISN 0149
ISN 0150

ISN 0152

5619

ISN 0153
ISN 0155
ISN 0156
ISN 0157
ISN 0158

ISN 0159
ISN 0161
ISN 0163
ISN 0164

5610

ISN 0165
ISN 0166
ISN 0167
ISN 0168
ISN 0169
ISN 0170
ISN 0171

5620

ISN 0173

5629

ISN 0174
ISN 0175

```

C
C
IF(ALO,LE,COC(1)).AND.(IM,NE,5).AND.(IM,NE,6) GO TO 5525
IF(ALO,LE,COL(IM)).AND.(IM,EQ,5,OR,IM,EQ,6))GO TO 5800
IF(IM,EQ,7) GO TO 5800
IF(JADBO,LE,0) WRITE(6,5594) IYRN,IM,I,J,ID,KS,L,N,LEVEL,
IL,JADBO,ALO
FORMAT(' ',//WWW,WARNING: JADBO LT ZERO.(IYRN,IM,I,J,ID,KS,L,M,
'LEVEL,IL,JADBO,ALO)'/IX,1116,F10,2)
C
C SECTION 56 COMPUTE BAND RATIOS, BAND DISPLACEMENTS & HALF WIDTHS
C
IF(JADBO,LE,0) GO TO 5525
BDISP = ALO - ADBL(JADBO+1)
CDISP = 5. - BDISP
DPLUS = BDISP / 2. - FIS(IM)
DMINUS = -CDISP / 2. - FIS(IM)
BRATIO = BDISP / 5.0
CRATIO = 1.0 - BRATIO
C
C SECTION 56.1 COMPUTE PRIMARY EXPOSURE CUTOFFS
C
PCOLV = AMAX1(COC(IM),RDBEDG(ID,J,KS,IL,KM)+ALO)
RPCOL = PCOLV - ALO
JPCUT = (135.-PCOLV)/5.
IPCUT = (5.-PCOLV+ALO)/5.
ILDDB = IPCUT - 1
JCP = JADBO + IPCUT - 1
IF(ILDDB,GE,17,OR,ILDDB,LT,0) WRITE(6,5619) ID,J,KS,L,ALO,
JADBO,ILDDB
FORMAT('0'/0',ID,J,KS,L',414,' ALO',F10.3,' JADBO,ILDDB',214)
C
IF(PCOLV,NE,COC(IM),OR,IM,GT,4) GO TO 5610
BRCP = AMIN1(BDISP,RDBL(IPCUT)-RPCOL)/5.
CRCP = AMAX1(0,0,ADBL(JCP+1)-PCOLV)/5.0
DELNP = DRATIO(IPCUT,IT,KM)
GO TO 5620
C
IF(JCP,EQ,JPCUT) BRCP = 1.
IF(JCP,EQ,JPCUT-1) BRCP = BDISP/(ADBL(JCP+1)-PCOLV+BDISP)
CRCP = 1.0 - BRCP
DELRP = (REPZ(ID,J,KS,IL) - RATIO(IPCUT,IT,KM))
C
C SECTION 56.2 COMPUTE SECONDARY EXPOSURE CUTOFFS
C
SCOLV = AMAX1(COC(IM),RDBCDT(ID,J,KS,IL,KM)+ALO)
RSCOL = SCOLV - ALO
JSCUT = (135. - SCOLV)/5.
ISCUT = (5. - SCOLV+ALO)/5.
ILDBS = ISCUT - 1
JCS = JADBO + ISCUT - 1
IF(ILDBS,GE,17,OR,ILDBS,LT,0) WRITE(6,5629) ID,J,KS,L,ALO,
JADBO,ILDBS
FORMAT('0'/0',ID,J,KS,L',414,' ALO',F10.3,' JADBO,ILDBS',214)
C
IF(SCOLV,NE,COC(IM),OR,IM,GT,4) GO TO 5621
BRCS = AMIN1(BDISP,RDBL(ISCUT)-RSCOL)/5.
    
```

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C-----

C-----

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ISN 0177
ISN 0178
ISN 0179

CHCS = AMAX1(ADBL(JCS+1)-SCOLV) / 5.0
DELRS = DRATIO(ISCUT,IT,K4)
GO TO 5710

ISN 0180 5621
ISN 0182
ISN 0184
ISN 0185

IF(JCS.EQ.JSCUT) BRCS = 1.
IF(JCS.EQ.JSCUT-1) BRCS = BDISP/(ADBL(JCS+1)-SCOLV+BDISP)
CHCS = 1.0 - BRCS
DELRS = (WEDGE(ID,J,KS,IL) * RATIO(ISCUT,IT,KM))

C
C SECTION 57.1 PRIMARY EXPOSURE
C

ISN 0186 5710
ISN 0187
ISN 0188
ISN 0189
ISN 0190
ISN 0192

DELBRP = DELRP * BRCP
DELCRP = DELRP * CRCP
DELRS = DELRS * BRCS
DELCRS = DELRS * CRCS
IF(ICUNT(2).EQ.2) GO TO 5715
IF(ILDBP.EQ.0) GO TO 5713

C
DU 5711 IRDB=1,ILDBP

(002) ISN 0195
ISN 0196
ISN 0197
ISN 0198

JADB = JADB0-1+IROB
DRAT = DRATIO(IRDB,IT,KM) * PLDPGF
ILIM1 = ICLIP(ADBL(JADB+1)+DPLUS)
ILIM2 = ICLIP(ADBL(JADB+1)+DMINUS)

C
C DEL DO 5712 IDAY=1,2

C-203 ISN 0199

CALL COLECT(DRAT*DRATIO,ILIM1,JADB)
C DEL ACCM(JADB,IDAY) = ACCM(JADB,IDAY) +
C DEL* PLEN(ID,J,KS,L,IL) * PGF(JPGF(J)) *
C DEL* DRATIO(IRDB,IT,KM) * BRATIO * FIMP(ILIM1,IFM) *
C DEL* NEVENT * FRN(IDAY)
CALL COLECT(DRAT*DRATIO,ILIM2,JADB+1)
C DEL ACCM(JADB+1,IDAY) = ACCM(JADB+1,IDAY) +
C DEL* PLEN(ID,J,KS,L,IL) * PGF(JPGF(J)) *
C DEL* DRATIO(IRDB,IT,KM) * CRATIO * FIMP(ILIM2,IFM) *
C DEL* NEVENT * FRN(IDAY)

ISN 0201 5711

C5712 CONTINUE DEL

CONTINUE

C
C

(002) ISN 0202 5713

ILIM1 = ICLIP(AMAX1(PCOLV + ALO + RDBL(IPCUT)) / 2. - FIS(IM),
ADBL(JCP+1) + DPLUS)
ILIM2 = ICLIP(AMAX1(PCOLV + ADBL(JCP+1)) / 2. - FIS(IM),
ADBL(JCP+1) + DMINUS)

C
C DEL DO 5714 IDAY = 1,2

ISN 0204

CALL COLECT(PLDPGF*DELBRP,ILIM1,JCP)
C DEL ACCM(JCP,IDAY) = ACCM(JCP,IDAY) +
C DEL* PLEN(ID,J,KS,L,IL) * PGF(JPGF(J)) * DELRP *
C DEL* BRCP * FIMP(ILIM1,IFM) * NEVENT * FRN(IDAY)

ISN 0205

IF(CRCP.GT.0.0)
CALL COLECT(PLDPGF*DELCRP,ILIM2,JCP+1)
C DEL ACCM(JCP+1,IDAY) = ACCM(JCP+1,IDAY) +

```

C DEL*          PLDEN(ID,J,KS,L,IL) * PGF(JPGF(J)) * DELRP *
C DEL*          CRCP * FIMP(ILIM2,IFM) * NEVENT * FRTN(IDAY)
C
C5714 CONTINUE DEL
C
C SECTION 57.2 SKIP SECONDARY EXPOSURE IF ICNT(2)=1
C
IF(ICNT(2),EQ,1) GO TO 5525
C
C SECTION 57.3 SECONDARY EXPOSUREI
C

```

ISN 0207

C-----

ISN 0209 5715

(003 ISN 0210

ISN 0212

ISN 0214

(001 ISN 0215

ISN 0216

ISN 0217

ISN 0218

ISN 0219

C-204

ISN 0220

ISN 0221 5731

(001)

C-----

ISN 0222 5733

ISN 0223

ISN 0224

ISN 0225 1

```

DO 5730 KA=1,NHT
C
IF(KA,EQ,K9) GO TO 5730
IF(ILDBS,EU,0) GO TO 5733
C
DO 5731 IRDB=1,ILDBS
C
DRAT = DRATIO(IRDB,IT,KM) * SEPPGF(KA)
JADB = JADB0-1+IRDB
ILIM1 = ICLIP(ADBL(JADB+1)+DPLUS)
ILIM2 = ICLIP(ADBL(JADB+1)+DMINUS)
C
C DEL DO 5732 IDAY=1,2
C
CALL COLECT(DRAT*BRATIO,ILIM1,JADB)
C DEL ACCM(JADB,IDAY) = ACCM(JADB,IDAY) +
C DEL* SEPRUB(ID,J,KS,KA,L) * PGF(JPGF(J)) * X2(J,KS,IL) *
C DEL* DRATIO(IRDB,IT,KM) * BRATIO * FIMP(ILIM1,IFM) *
C DEL* NEVENT * FRTN(IDAY)
CALL COLECT(DRAT*CRATIO,ILIM2,JADB+1)
C DEL ACCM(JADB+1,IDAY) = ACCM(JADB+1,IDAY) +
C DEL* SEPRUB(ID,J,KS,KA,L) * PGF(JPGF(J)) * X2(J,KS,IL) *
C DEL* DRATIO(IRDB,IT,KM) * CRATIO * FIMP(ILIM2,IFM) *
C DEL* NEVENT * FRTN(IDAY)
C
C5732 CONTINUE DEL
CONTINUE
C
ILIM1 = ICLIP(AMAX1( (SCOLV + ALO + RDBL(ISCUT)) / 2. - FIS(IM),
ADBL(JCS+1) + DPLUS ))
ILIM2 = ICLIP(AMAX1( (SCOLV + ADBL(JCS+1)) / 2. - FIS(IM),
ADBL(JCS+1) + DMINUS ))
C
C DEL DO 5734 IDAY = 1,2
C
CALL COLECT(SEPPGF(KA)*DELURS,ILIM1,JCS)
C DEL ACCM(JCS,IDAY) = ACCM(JCS,IDAY) +
C DEL* SEPRUB(ID,J,KS,KA,L) * PGF(JPGF(J)) * X2(J,KS,IL) *
C DEL* DELURS * BRCS * FIMP(ILIM1,IFM) * NEVENT * FRTN(IDAY)
IF(CRCS,GT,0.0)
CALL COLECT(SEPPGF(KA)*DELURS,ILIM2,JCS+1)
C DEL* ACCM(JCS+1,IDAY) = ACCM(JCS+1,IDAY) +
C DEL* SEPRUB(ID,J,KS,KA,L) * PGF(JPGF(J)) * X2(J,KS,IL) *
C DEL* DELURS * CRCS * FIMP(ILIM2,IFM) * NEVENT * FRTN(IDAY)

```

LEVEL 2.2 (SEPT 76)

TIMSTR

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C
C5734 CONTINUE DEL
C

C-----
ISN 0227 5730

CONTINUE

003) ISN 0228

C
C
GO TO 5525

C
C SECTION 58 PEDESTRIAN CASE OR JADB0 GE NADB
C

C-----
ISN 0229 5800
ISN 0230

ILIMI = ICLIP(ALO-FIS(IM))
JADB = MIN0(NADB,JADB0)

C
C DEL 00 5801 IDAY=1,2
C

ISN 0231

CALL COLECT(PLDPGF*(REPZ(ID,J,K8,IL)-1.),ILIMI,JADB)
C DEL ACCM(JADB,IDAY) = ACCM(JADB,IDAY) +
C DEL* (REPZ(ID,J,K8,IL)-1.0) * PLDEN(ID,J,K8,L,IL) *
C DELA PGF(JPGF(J)) * FIMP(ILIMI,IFM) * NEVENT * FRTN(IDAY)
C

ISN 0232
ISN 0234

IF(ICONT(2),EQ,1,OR,IM,EQ,7) GO TO 5801
DO 5802 KA=1,NMT

004) ISN 0235
ISN 0237

C
IF(KA,EQ,K8) GO TO 5802
CALL COLECT(SEPPGF(KA)*(REDGE(ID,J,K8,IL)-1.),ILIMI,JADB)
C DEL ACCM(JADB,IDAY) = ACCM(JADB,IDAY) +
C DEL* (REDGE(ID,J,K8,IL)-1.0) * SEPROB(ID,J,K8,KA,L) *
C DELA X2(J,K8,IL) * PGF(JPGF(J)) * FIMP(ILIMI,IFM) *
C DELA NEVENT * FRTN(IDAY)
C

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C-----
ISN 0238 5802

CONTINUE

004)

C
C

C-----
ISN 0239 5801

CONTINUE

C
C

C-----
ISN 0240 5525

CONTINUE

006) ISN 0241 5524

C
CONTINUE

007) ISN 0242 5523

C
C
CONTINUE

008) ISN 0243 5522

C
CONTINUE

009) ISN 0244 5520

C
CONTINUE

011) ISN 0245 5514

C
CONTINUE

012) ISN 0246 5513

C
CONTINUE

014) ISN 0247 5512

C
CONTINUE

C
CONTINUE
C


```

019) ISN 0248          C
      ISN 0250      5809 IF (IDUMP(9),EQ,1) WRITE(6,5809) IM,LCOUNT
                          FORMAT('0',1#9 DUMP: IM,COUNT',13,2X,112)
                          C
                          C SECTION 59 SORT AND STORE METRICS
                          C
010) ISN 0251          DD 5900 JADB=1,20
      ISN 0252          DD 5900 IDAY=1,2
                          C
013) ISN 0253          METRIC(JADB,IM,IDAY) = ACCM(JADB,IDAY)
                          C
013) ISN 0254          5900 CONTINUE
018) ISN 0255          C
                          C
      ISN 0257      5510 IF (IMS6.(0.1) CALL NORMAL(IM)
                          C
026) ISN 0258          CONTINUE
025) ISN 0259          C
      ISN 0260          DD 5902 IM=1,7
      ISN 0261          TDAY = 0.0
      ISN 0262          TNITE = 0.0
      ISN 0263          DD 5903 JADB=1,20
020) ISN 0264          DNTOT(JADB,IM) = METRIC(JADB,IM,1) + METRIC(JADB,IM,2)
      ISN 0265          TOAY = TDAY + METRIC(JADB,IM,1)
      ISN 0266          TNITE = TNITE + METRIC(JADB,IM,2)
020) ISN 0267          5903 CONTINUE
      ISN 0268          C
      ISN 0269          TOTAL = TDAY + TNITE
      ISN 0270          ANNMET(IYRN,1,IM) = TOAY
      ISN 0271          ANNMET(IYRN,2,IM) = TNITE
      ISN 0272          ANNMET(IYRN,3,IM) = TOTAL
025) ISN 0273          5902 CONTINUE
      ISN 0274          C
      ISN 0275          IF (IDUMP(9),EQ,1) WRITE(6,5908) YEAR,RNAME,METRIC,DNTOT,ALMAX
      ISN 0276          5908 FORMAT('1#9 DUMP: YEAR =',I4,T110,5A4/
D9 2 '0#9 DUMP: METRIC',10'/20(1X,1P10E10.3)/
D9 3 '0#9 DUMP: DNTOT',10'/14(1X,1P10E10.3)/
D9 4 '0#9 DUMP: ALMAX',10',7(OPF9.2))
                          C
                          C ----- ASSIGN YEARLY DBBAND IMPACT METRICS
                          C
      ISN 0277          DD 5904 JADB=1,10
                          C
024) ISN 0278          SLPDDB(JADB,IYRN) = DNTOT(JADB+IBEG(1),1)
      ISN 0279          SLPADB(JADB,IYRN) = DNTOT(JADB+IBEG(2),2)
      ISN 0280          SPINDB(JADB,IYRN) = DNTOT(JADB+IBEG(3),3)
      ISN 0281          SPFXDB(JADB,IYRN) = DNTOT(JADB+IBEG(4),4)
      ISN 0282          SEL1DB(JADB,IYRN) = DNTOT(JADB,5)
      ISN 0283          SEL2DB(JADB,IYRN) = DNTOT(JADB+10,5)
      ISN 0284          LEQ1DB(JADB,IYRN) = DNTOT(JADB,6)
      ISN 0285          LEQ2DB(JADB,IYRN) = DNTOT(JADB+10,6)
      ISN 0286          PDSPDB(JADB,IYRN) = DNTOT(JADB+IBEG(7),7)
      ISN 0287          5904 CONTINUE
                          C
024) ISN 0288          5000 CONTINUE
031) ISN 0289          C

```

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```

1SN 0286      IF (ICONT(9).EQ.1) WRITE(6,5002)
1SN 0288      5002  FORMAT('      END OF Timestream.')
```

C

```

C SECTION 60      END OF Timestream, PRINT OUT STORED DATA
C
```

```

1SN 0289      IF (ICONT(1).EQ.1) GO TO 6002
1SN 0291      IF (METMSK(1).EQ.1) CALL TABLE(SLPDSP,
*           'SLEEP DISRUPTION METRICS' )
1SN 0293      IF (METMSK(2).EQ.1) CALL TABLE(SLPANW,
*           'SLEEP AWAKENING METRICS' )
1SN 0295      IF (METMSK(3).EQ.1) CALL TABLE(SPCIN,
*           'INDOOR SPEECH INTERFERENCE METRICS' )
1SN 0297      IF (METMSK(4).EQ.1) CALL TABLE(SPCOUT,
*           'OUTDOOR SPEECH INTERFERENCE METRICS' )
1SN 0299      IF (METMSK(7).EQ.1) CALL TABLE(PEDSPC,
*           'PEDESTRIAN SPEECH INTERFERENCE METRICS' )
1SN 0301      IF (METMSK(5).EQ.1) CALL TABLE(SELXP,
*           'SEL PEX' )
1SN 0303      IF (METMSK(6).EQ.1) CALL TABLE(LWPPXP,
*           'LEG PEX' )
1SN 0305      IF (METMSK(1).EQ.1.AND.IPRINT(6).EQ.1) CALL DBBAND(1BEG(1),
*           SLPDDB,'SLEEP DISRUPTION IN DB BANDS' )
1SN 0307      IF (METMSK(2).EQ.1.AND.IPRINT(6).EQ.1) CALL DBBAND(1BEG(2),
*           SLPADB,'SLEEP AWAKENING IN DB BANDS' )
1SN 0309      IF (METMSK(3).EQ.1.AND.IPRINT(6).EQ.1) CALL DBBAND(1BEG(3),
*           SPINDB,'INDOOR SPEECH INTERFERENCE IN DB BANDS' )
1SN 0311      IF (METMSK(4).EQ.1.AND.IPRINT(6).EQ.1) CALL DBBAND(1BEG(4),
*           SPEDDB,'OUTDOOR SPEECH INTERFERENCE IN DB BANDS' )
1SN 0313      IF (METMSK(7).EQ.1.AND.IPRINT(6).EQ.1) CALL DBBAND(1BEG(7),
*           PSDPDB,'PEDESTRIAN SPEECH INTERFERENCE IN DB BANDS' )
1SN 0315      IF (METMSK(5).EQ.1.AND.IPRINT(6).EQ.1) CALL DBBAND(10,
*           SEL1DB,'SEL PEX IN DB BANDS.(PART 1)' )
1SN 0317      IF (METMSK(5).EQ.1.AND.IPRINT(6).EQ.1) CALL DBBAND(10,
*           SEL2DB,'SEL PEX IN DB BANDS.(PART 2)' )
1SN 0319      IF (METMSK(6).EQ.1.AND.IPRINT(6).EQ.1) CALL DBBAND(10,
*           LEJ1DB,'LEG PEX IN DB BANDS.(PART 1)' )
1SN 0321      IF (METMSK(6).EQ.1.AND.IPRINT(6).EQ.1) CALL DBBAND(10,
*           LEJ2DB,'LEG PEX IN DB BANDS.(PART 2)' )
1SN 0323      IF (IPRINT(7).NE.1) GO TO 5950
1SN 0325      IF (METMSK(1).EQ.1) CALL EVNTDB(1BEG(1),
1           'SLEEP DISRUPTION,' )
1SN 0327      IF (METMSK(2).EQ.1) CALL EVNTDB(1BEG(2),
1           'SLEEP AWAKENING,' )
1SN 0329      IF (METMSK(3).EQ.1) CALL EVNTDB(1BEG(3),
1           'INDOOR SPEECH INTERFERENCE,' )
1SN 0331      IF (METMSK(4).EQ.1) CALL EVNTDB(1BEG(4),
1           'OUTDOOR SPEECH INTERFERENCE,' )
1SN 0333      IF (METMSK(7).EQ.1) CALL EVNTDB(1BEG(7),
1           'PEDESTRIAN SPEECH INTERFERENCE,' )
C
C WRITE METRICS INTO FILE 7 FOR PLOTS
C
```

```

*****
1SN 0335      5950  ISUM = IPILOT(1) + IPILOT(2) + IPILOT(3) + IPILOT(4) +
*           IPILOT(5) + IPILOT(6) + IPILOT(7)
1SN 0336      IF (ISUM.EQ.0)      GOTO 6002
1SN 0338      WRITE(1,6004)  NAME,IPILOT,NYHM,NYHNET
1SN 0339      6004  FORMAT(10X,'S',5A4,' S'/10X,7I1/10X,I2/4(10X,10(14,' ')) )
```

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```

      ISN 0340      DO 6005 IM=1,7
030 ISN 0341      6005 WRITE(1,6003) (ANNMET(IYRN,3,I4),IYRVE=1,IYRW)
      030)        C
      ISN 0342      6003 FORMAT(S6(10X,5(E10.3,1X)/))
C-----
      ISN 0343      6002 IF(IPRINT(5).EQ.1) CALL PRINT5
      ISN 0345      IF(ICUNT(1).EQ.1) GO TO 6001
      ISN 0347      IF(IPRINT(10).EQ.1) CALL PRNT10
C-----
      ISN 0349      6001 IF(IPRINT(11).EQ.1) CALL PRNT11
      ISN 0351      C
      C STOP
      C
      C SECTION 20  DEBUG PACKETS
      C
      C      DEBUG SUBCHK
      C      AT 13
      C      TRACE ON
032) ISN 0352      C
      C END

```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*NO SOURCE EBCDIC NOLIST NUDECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

1) *STATISTICS* SOURCE STATEMENTS = 351, PROGRAM SIZE * 16344, SUBPROGRAM NAME =TIMSTR

3) *STATISTICS* NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

26K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMINAL,NDOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODDL(NONE) NOSOURCE EBCDIC ADLIST MDECK NDOBJECT NOMAP FORMAT GOSTMT XREF NOALC NUANSF NOTERM FLAG(1)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS												
A	0003												
I	0003												
IT	0003												
JJ	0007	0008	0008	0008	0010	0010	0010	0010	0012	0012	0012	0012	0012
XZ	0003												
ADT	0003												
ALO	0003												
CZD	0003												
DBK	0003												
MYK	0003												
NAT	0004												
NMT	0004												
NSR	0004												
NVT	0004												
PGF	0003	0008	0010	0012									
POP	0004												
VAF	0003												
VGF	0003												
VML	0003												
AHEA	0003												
2 INCH	0004												
3 I V A F	0003												
I V B D	0003												
I V W F	0003												
J P G F	0003												
L A N E	0003												
L I F E	0003												
M I L E	0004												
M Y R E	0004	0008	0010	0012									
M Y R E	0003												
M Y R N	0004												
N I D D	0004												
N L E V	0004												
N P M K	0003												
N Y R N	0004												
P G F O	0003	0008	0010	0012									
P I N C	0005	0005	0008	0010	0010	0012	0012	0012					
R E M O	0003												
V I N C	0003												
V P U P	0003												
V T O T	0004												
X I N C	0003												
Y E A R	0002	0006	0008	0008	0010	0010	0010	0012	0012				
Y I N C	0003												
A L R E G	0004												
B V P P P	0003												
C V T O T	0004												
J M Y L E	0003												
M Y R E F	0003												

***** D I T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

MYREG 0004
 VBD74 0003
 VBD77 0003
 VBD85 0003
 VBD90 0003
 WIDTH 0003
 PPAREA 0003
 FPROAD 0003
 IEWAGE 0003
 MYHNET 0004
 NPMILE 0003
 POPDEN 0004
 POPLTN 0004
 STUPGF 0004
 TOTPOP 0004
 UPDATE 0002

***** D I T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL DEFINED REFERENCES
 200 0014 0007

/ STRUCTURED SOURCE LISTING /

C-210

0002 ISN 0002 SUBROUTINE UPDATE(YEAR)
 C BELONGS TO THE SINGLE EVENT MODEL
 CX UPDATE UPDATES THE POPULATION GROWTH FACTOR EACH YEAR

ISN 0003 COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
 B1 2VINC(7),VUD74(14),VBD77(7),VBD85(7),VBD90(7),
 B1 3VML(14,4,5),A(2,3),DBK(3),CZO(9,6),PGF(5),
 B1 4PGFO(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),
 B1 5AREA(4,9),PPAREA(9,4),VPOP(14,26),BVPOP(14),
 B1 6X2(9,6,4),NPMILE(4,9),NPMK(4,9,6),ALO,IVAF(14),
 B1 7MYREF(6),IVBD(14),LIFE(4),IEWAGE(6),JMYLE(9,4),
 B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MYR,IT,I

ISN 0004 COMMON /BIG002/ ALHEG(5,5,4,14),GVTOI(9),VIOT(14,9),POP(9),
 B2 2POPDEN(4,9),POPLTN(4,9),STUPGF(9,9),TOTPOP(9),
 B2 3MILE(6,9,4,5),MYREG(6,4,14),NLEV(14,4),MYHNET(9),
 B2 4NIDU(9),MYRN,INCR,MYRU,MYRN,NVT,NAT,NHT,MSR

ISN 0005 HEAL PINC(3,5) /0.138613E-1,0.1391304E-1,0.14122137E-1,
 C0.11654135E-1,0.14814815E-1,0.14662757E-1,
 C0.13707865E-2,0.32604696E-2,0.31578947E-2,
 C0.34690799E-2,0.32069971E-2,0.32485876E-2,
 C0.20631970E-1,0.18489985E-1,0.1716515E-1/
 C
 C PINC CONTAINS THREE SETS OF INTER-EXTRAPOLATORY DATA FOR THE
 C POPULATION OF THE U.S. BASED ON TABLE FIVE,PG.22, WYLE REPORT
 C WR77-13 (UCT, 1977)

ISN 0006 INTEGER YEAR

ISN 0007 DO 200 JJ=1,5
 (001 ISN 0008 IF(YEAR.LE.1980)PGF(JJ)=PGFO(JJ)+PINC(1,JJ)*(YEAR-MYRB)
 ISN 0009 IF(YEAR.GT.1980.AND.YEAR.LE.1990)PGF(JJ)=PGFO(JJ)+

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LEVEL (SEPT 76)

UPDATE

US/360 FORTRAN EXTENDED

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ISN 0012

CPINC(1, JJ)*(1980-MYRB)+PINC(2, JJ)*(YEAR-1960)
IF(YEAR.GT.1990)PGF(JJ)=PGF0(JJ)+PINC(1, JJ)*(1980-MYRB)+
CPINC(2, JJ)*10.+PINC(3, JJ)*(YEAR-1990)

C-----

001) ISN 0014

200

CONTINUE

C

002) ISN 0015

RETURN

C

ISN 0016

END

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODDL(NONE)

*OPTIONS IN EFFECT*NOBSOURCE EUCDIC NOLIST NUDECK NOOBJECT NOMAP FORMAT GOBTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS * 15, PROGRAM SIZE * 734, SUBPROGRAM NAME *UPDATE

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

116K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTM,NOSSOURCE,NOTERMINAL,NOORJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODHL(NONE) NOSSOURCE EBCDIC NDLIST NOCHECK NOOBJECT NOMAP FORMAT GUSTM XREF NOALC NOANSF NOTERM FLAG(I)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
A	0003
I	0002 0004 0004 0006 0008 0010 0010 0012 0012 0014 0014 0016
II	0003
IT	0003
X2	0003
ADT	0003
ALG	0003
CZD	0003
DBK	0003
MYR	0003 0008 0010 0010 0010 0012 0012 0012 0014 0014 0014 0016
PGF	0003
VAF	0003
VBD	0002 0004 0008 0010 0012 0014 0016
YGF	0003
VML	0003
AHEA	0003
IVAF	0003
IVBD	0003
IVGF	0003
JPGM	0003
LANE	0003
LIFE	0003
MYRE	0003
NPMK	0003
PGFO	0003
REMO	0003
VINC	0003 0010
VPOP	0003
XINC	0003 0012
YINC	0003 0014
BVPOP	0003
JNYLE	0003
MYREF	0003
VBD74	0003 0004 0008 0010
VBD77	0003 0012
VBD85	0003 0014
VBD90	0003 0016
KIDTH	0003
FPAREA	0003
FPRCAL	0003
IEGAGE	0003
NPMILE	0003

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/ STRUCTURED SOURCE LISTING /

(001 - ISN 0002

FUNCTION VBD(I)
 C BELONGS TO THE SINGLE EVENT MODEL
 CT VBD(I) 06/28/79 15144156
 CX VBD COMPUTES THE CURRENT VEHICLE BREAKDOWN

00062700
 00062740
 00062760

LEVEL 2.2 (SEPT 76)

US/360 FORTRAN 4 EXTENDED

DATE 08.27.77/19.48.26

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ISN 0003      COMMON /BIL001/ VAF(4,26),VGF(40,6),REMI(6,17),XINC(7),YINC(7),
             B1 2VINC(7),VBD74(14),VDD77(7),VDD85(7),VDD90(7),
             B1 3VML(14,4,5),A(2,3),DNR(3),C2D(9,6),PGF(5),
             B1 4PGFD(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),
             B1 5AREA(4,9),FPAREA(9,4),VPOP(14,26),BVPOP(14),
             B1 6X2(9,6,4),RPMILE(4,9),RPMK(4,9,6),ALU,IVAF(14),
             B1 7MYREF(6),IVDD(14),LIFE(4),IEHAGE(6),JWYLE(9,4),
             B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MYR,II,II
             C
ISN 0004      IF(1.GT.7)          VBD = VBD74(I)
ISN 0006      IF(1.GT.7)          RETURN
C-----
ISN 0008      IF(MYR.LT.1974)     VBD = VBD74(I)
ISN 0010      IF(MYR.GE.1974.AND.MYR.LT.1977) VBD = VBD74(I)+VINC(I)*(MYR-1974)
ISN 0012      IF(MYR.GE.1977.AND.MYR.LT.1985) VBD = VBD77(I)+XINC(I)*(MYR-1977)
ISN 0014      IF(MYR.GE.1985.AND.MYR.LT.1990) VBD = VDD85(I)+YINC(I)*(MYR-1985)
ISN 0016      IF(MYR.GE.1990)     VBD = VDD90(I)
ISN 0018      RETURN
001)          C          DEBUG SUBCHK
             C
ISN 0019      END

```

OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOBL(NONE)

OPTIONS IN EFFECT*NOBSOURCE EBCDIC NOLIST NUDECK NOBJECT NOMAP FORMAT GOVTMT XREF NJALC NOANSF NOTERM FLAG(1)

STATISTICS* SOURCE STATEMENTS * 10, PROGRAM SIZE * 530, SUBPROGRAM NAME * VBD

STATISTICS* NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

122K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GUSTMT,NOSOURCE,NOTERMIAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(00) SIZE(MAX) AUTODML(NONE) NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOHAP FORMAT GUSTMT XREF NOALC NOANSF NOTERM FLAG(1)

***** D R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL INTERNAL STATEMENT NUMBERS

A	0004																				
I	0004	0007	0009	0013	0015	0015	0016	0019	0019	0024	0026	0028	0028	0028	0030	0030	0030	0030			
	0033	0035	0037	0041	0042	0044	0045	0047	0051	0051	0051	0051	0053	0053	0060	0061	0063	0064			
	0068	0070	0070	0070	0070																
M	0043	0044	0045	0047	0051	0051	0051	0051	0053	0053											
IT	0004																				
XX	0019	0028	0030	0032	0033																
XZ	0004																				
ADT	0004																				
ALO	0004																				
CZD	0004																				
DBK	0004																				
IYR	0008	0009	0018	0019	0024	0028	0033	0066	0068	0070	0070										
MYR	0004	0017	0018	0023	0028	0030	0030	0049	0051	0051	0051	0053	0053	0065	0066	0067					
NAT	0005																				
MHT	0005																				
NSN	0005																				
NVT	0005	0013	0041	0060																	
PLF	0004																				
POP	0005																				
VAF	0004	0028	0030	0070																	
VBD	0028	0030																			
VGF	0004	0030																			
VML	0004	0047	0051	0051																	
AKEA	0004																				
IAGE	0023	0024	0024	0026	0028	0030	0067	0068	0068	0070	0070										
INCR	0005																				
IVAF	0004	0015	0026	0028	0030	0070	0070														
IVBD	0004	0015	0019	0024	0028	0030	0061	0063	0068	0070	0070										
IVGF	0004	0030																			
IYES	0033	0051																			
IYRN	0002	0011	0019	0021	0035	0037	0040	0058													
JPGF	0004																				
LANE	0004																				
LIFE	0004	0015	0026	0070																	
MAXO	0015																				
MILE	0005																				
MYRB	0005	0028	0030	0030	0065	0067															
MYRE	0004	0015	0016	0042	0064																
MYRN	0005																				
NIDU	0005																				
NLEV	0005	0044																			
NPHK	0004																				
NYRN	0005																				
PGFO	0004																				
REMO	0004	0019	0026	0030	0070	0070															
VINC	0004																				
YFUP	0004	0009	0033	0051																	
VTOT	0005	0037																			

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS									
XINC	0004									
YEAR	0006	0011	0015	0017	0023	0049				
YINC	0004									
ALREG	0005									
BYPOP	0004	0035								
CVTDT	0005	0040								
IFLAG	0003	0003	0061	0063						
IYBAS	0030									
IYREF	0018	0030	0051	0064						
JNYLE	0004									
LEVEL	0046	0047	0050	0051	0051	0051	0051	0053	0053	
MYULD	0016	0017	0042	0049	0064	0065				
MYREF	0004	0015								
MYREG	0005	0045	0051	0051	0053	0053				
VBD74	0004	0019								
VBD77	0004									
VBD85	0004									
VBD90	0004									
VPSUM	0014	0032	0032	0035	0037	0038				
WIDTH	0004									
FPAREA	0004									
FPROAD	0004									
GVTSUM	0012	0038	0038	0040						
ICWAGE	0004	0024	0068							
MYRNET	0005	0011								
NLEVEL	0004	0045	0050							
NPMILE	0004									
POPDEN	0005									
POPLTN	0005									
STOPUF	0005									
TOTPOP	0005									
VEHPOP	0002									

C
S
I
C

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES	
1	0013		
2	0070		
54	0041		
2000	0010	0007	0008
2101	0039	0013	
2102	0034	0017	0026
2103	0032	0021	
2104	0023		
2200	0073	0060	0061
2201	0072	0065	
5401	0057	0041	0043
5402	0048	0046	
5403	0056	0049	0053
5404	0055	0050	

(012 ISN 0002

/ STRUCTURED SOURCE LISTING /
 SUBROUTINE VEHPOP(IYRN)
 C BELONGS TO THE SINGLE EVENT MODEL

```

CT VIRPOP LAST UPDATE:      07/26/79 16:44:52
CX VIRPOP1 COMPUTES THE VEHICLE POPULATION FROM REMO AND GROWTH AND
C                             ATTRITION FACTORS.
C
ISN 0003    INTEGER IFLAG(6)/640/
ISN 0004    COMMON /BIG001/ VAF(4,26),VGF(40,6),REMO(6,17),XINC(7),YINC(7),
B1 2VINC(7),VBD74(14),VBD77(7),VBD85(7),VBD90(7),
B1 3VNL(14,4,5),A(2,3),ODK(3),CZD(9,6),PGF(5),
B1 4PGFO(5),WIDTH(9,6),FPROAD(9,6),ADT(6,9),
B1 5AREA(4,9),FPARA(9,4),VPDP(14,26),BVPUP(14),
B1 6X2(9,6,4),NPMLE(4,9),NPMK(4,9,6),ALU,IVAF(14),
B1 7MYREF(6),IVBD(14),LIFE(4),IERAGE(6),JMYLE(9,4),
B1 8JPGF(9),LANE(9,6),MYRE(14),IVGF(14),MYR,IT,I
C
C THE FOLLOWING COMMON BLOCKS SERVE PRINT SUBROUTINES
C
ISN 0005    COMMON /BIG002/ ALREG(5,5,4,14),GVTOT(9),VTOT(14,9),POP(9),
B2 2POPDEN(4,9),POPLTH(4,9),STOPGF(9,9),TOTPOP(9),
B2 3MILE(6,9,4,5),MYREG(6,4,14),NLEY(14,4),MYHNET(9),
B2 4NIDD(9),MYRN,INCR,MYRB,NYRN,NVT,NAT,NHT,NSR
C
ISN 0006    INTEGER YEAR
C
ISN 0007    DO 2000 I=1,14
:011 ISN 0008    DO 2000 IYR=1,26
C
:007 ISN 0009    VPOP(I,IYR) = 0.0
C
ISN 0010    2000 CONTINUE
C
C
007) C
011) C
ISN 0011    YEAR = MYHNET(IYRN)
ISN 0012    GVTSUM = 0.0E0
C
ISN 0013    1 DO 2101 I = 1,NVT
C
:010 ISN 0014    VPSUM = 0.0E0
ISN 0015    MYRE(I) = MAX0(YEAR - LIFE(IVAF(I)) + 1,MYREF(IVBD(I)))
ISN 0016    MYOLD = MYRE(I)
C
ISN 0017    DO 2102 MYR = MYOLD,YEAR
C
:006 ISN 0018    IYR = IYREF(MYR)
ISN 0019    IF(IYRN,EO,1) XX = REMO(IVBD(I),IYR) * VBD74(I)
ISN 0021    IF(IYRN,EO,1) GOTO 2103
C
C . THE FOLLOWING IS THE MAIN PART OF THE SUBROUTINE
C
ISN 0023    2104 IAGE = YEAR - MYR + 1
ISN 0024    IF(IYR,EO,1) IAGE = IAGE + IERAGE(IVBD(I))
ISN 0026    IF(IAGE.GT.LIFE(IVAF(I))) GO TO 2102
ISN 0028    IF(MYR.LE.MYRB) XX = REMO(IVBD(I),IYR) * VBD(I) *
* VAF(IVAF(I),IAGE)
ISN 0030    IF(MYR.GT.MYRB) XX = REMO(IVBD(I),IYREF(MYRB)) * VBD(I)
* VAF(IVAF(I),IAGE) * VGF(IVBAS(MYR),IVGF(I))
C

```

C CONTINUE COMPUTATION: GOTU DESTINATION FOR BASELINE YEAR
C

C-----

ISN 0032 2103 VPSUM = VPSUM + XX
ISN 0033 VPOP(I,IYES(IYR)) = XX
C

C-----

ISN 0034 2102 CONTINUE
C
C
006) IF(IYRN.EQ.1) BVPOP(I) = VPSUM
ISN 0035 VTOT(I,IYRN) = VPSUM
ISN 0037 GVTSUM = GVTSUM + VPSUM
ISN 0038 C

ISN 0039 2101 CONTINUE

010)

ISN 0040 GVTOT(IYRN) = GVTSUM
C

C SECTION 5.4 COMPUTE NUMBER OF CARS IN EACH NOISE RANGE

ISN 0041 54 DD 5401 I = 1,NVT
C

009) ISN 0042

MYOLD=MYRE(I)
C

ISN 0043 DD 5401 M = 1,4
C

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005) ISN 0044

NLEVEL=NLEV(I,M)
MYREG(NLEVEL+1,M,I)=2014
C

003) ISN 0046

DD 5402 LEVEL = 1,5

ISN 0047

VML(I,M,LEVEL)= 0.0E0

ISN 0048

5402

CONTINUE
C

C SORT CARS INTO NOISE GROUPS ACCORDING TO THE REGULATION SCENARIO

003) ISN 0049

DD 5403 MYR = MYOLD, YEAR

002) ISN 0050

DD 5404 LEVEL = 1,NLEVEL
C

001) ISN 0051

IF(MYR.GE.MYREG(LEVEL,M,I).AND.MYR.LT.MYREG(LEVEL+1,M,I))

ISN 0053

CVML(I,M,LEVEL) = VML(I,M,LEVEL)+VPOP(I,IYES(IYR))

IF(MYR.GE.MYREG(LEVEL,M,I).AND.MYR.LT.MYREG(LEVEL+1,M,I))

GOTO 5403
C

C-----

ISN 0055 5404 CONTINUE
C

001)

C-----

ISN 0056 5403 CONTINUE
C

002)

ISN 0057 5401 CONTINUE
C

005)

009)

ISN 0058 IF(IYRN.NE.1) RETURN
C

C SECTION 2.2 BACKGROUN VEHICLE POPULATION IN EACH VBD GROUP

```

      C
      DD 2200 I      = 1,4VT
      C
18  ISN 0061      IF((FLAG(IVBD(I)).EQ.1)GO TO 2200
      ISN 0063      IFLAG(IVBD(I))=1
      C
      C IF IFLAG =1, REMO HAS ALREADY BEEN BACKGRDWN
      C
      ISN 0064      MYOLD=MYRE(I)
      C
      ISN 0065      DO 2201 MYR = MYOLD,MYRB
      C
4   ISN 0066      IYR = IYREF(MYR)
      ISN 0067      IAGE = MYRB - MYR + 1
      ISN 0068      IF(IYR.EQ.1)IAGE = IAGE + IEQAGE(IVBD(I))
      ISN 0070      2 IF(IAGE.LE.LIFE(IVAF(I)))
      C             REMD(IVBD(I),IYR) = REMD(IVBD(I),IYR)/VAF(IVAF(I),IAGE)
      C
      ISN 0072      2201 CONTINUE
4)  ISN 0073      2200 CONTINUE
      C
4)  ISN 0074      RETURN
      C             DEBUG SUBCHK
2)  ISN 0075      END

```

CTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

CTIONS IN EFFECT*NO\$SOURCE, EBCDIC \$OLIST \$NODECK \$NOBJECT \$NO\$AP \$FORMAT \$GUSTMT \$XREF \$NJALC \$NOANSF, \$NOTERM FLAG(I)

ATISTICS* SOURCE STATEMENTS = 74, PROGRAM SIZE = 2026, SUBPROGRAM NAME =VEHPOP

ATISTICS* NO \$DIAGNOSTICS GENERATED

*** END OF COMPILATION *****

106K BYTES OF CORE NOT USED

C.4 Plotting Modules

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOSOURCE,NOTERMIAL,NOOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOSOURCE EBCDIC NOLIST NOCHECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL STATEMENT NUMBERS
I	0003 0004
XINT	0002 0004
XLON	0002 0004 0005
XMIN	0002 0005
LOWLIM	0002

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
1000	0007	0003

/ STRUCTURED SOURCE LISTING /

```

0002 ISN 0002      SUBROUTINE LOWLIM(XLON,XINT,XMIN)
                  C GIVEN A SET OF INTERVALS AND A NUMBER, FIND THE LOWER LIMIT OF
                  C   THE INTERVAL WHICH CONTAINS THE NUMBER
0001 ISN 0003      DO 1000 I=1,21
                  XLON=XINT*(21-I)
                  IF(XLON.LE.XMIN)RETURN
0011 ISN 0004      CONTINUE
                  C
0021 ISN 0005      RETURN
                  C
0009 ISN 0006      END
  
```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) *OPTIONS IN EFFECT*NOSOURCE EBCDIC NOLIST NOCHECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

STATISTICS SOURCE STATEMENTS = 8, PROGRAM SIZE = 320, SUBPROGRAM NAME =LOWLIM

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED


```

C
C CHECK IF PLOT IS POSSIBLE. IF YEARS<4, NO PLOTS
C
ISN 0017 ISUM = IPLOT(1) + IPLOT(2) + IPLOT(3) + IPLOT(4) +
ISN 0018 IPLOT(5) + IPLOT(6) + IPLOT(7)
C----- IF(NYHM.LE.3.OR.ISUM.EQ.0) RETURN
ISN 0020 IF(IPLOT(1).NE.0) CALL SUBPLT(SLPDISP,IPLOT(1),
* 'SLEEP DISRUPTION METRICS $')
ISN 0022 IF(IPLOT(2).NE.0) CALL SUBPLT(SLPANK,IPLOT(2),
* 'SLEEP AWAKENING METRICS $')
ISN 0024 IF(IPLOT(3).NE.0) CALL SUBPLT(SPCIN,IPLOT(3),
* 'INDOOR SPEECH INTERFERENCE METRICS $')
ISN 0026 IF(IPLOT(4).NE.0) CALL SUBPLT(SPCOUT,IPLOT(4),
* 'OUTDOOR SPEECH INTERFERENCE METRICS $')
ISN 0028 IF(IPLOT(7).NE.0) CALL SUBPLT(PEDSPC,IPLOT(7),
* 'PEDESTRIAN SPEECH INTERFERENCE METRICS $')
ISN 0030 IF(IPLOT(5).NE.0) CALL SUBPLT(SELPXP,IPLOT(5),
* 'SEL PEXP $')
ISN 0032 IF(IPLOT(6).NE.0) CALL SUBPLT(LEOPXP,IPLOT(6),
* 'LEO PEXP $')
C
C END OF PLOT
C
ISN 0034 CALL PP CLUS
ISN 0035 RETURN
001) C
ISN 0036 END

```

OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTOUBL(NONE)

OPTIONS IN EFFECT*NOBSOURCE EBCDIC NOLIST NOCHECK NOOBJECT NOMAP FORMAT GOBTMT XREF NOALC NOANSF NOTERM FLAG(I)

ASTATISTICS* SOURCE STATEMENTS = 35, PROGRAM SIZE = 2752, SUBPROGRAM NAME = MAIN

ASTATISTICS* NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

114K BYTES OF CORE NOT USED

REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSTMT,NOBSOURCE,NOTERMINAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE) NOBSOURCE EBCDIC NOLIST NODECK NOOBJECT NO*AP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(1)

***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

SYMBOL	INTERNAL	STATEMENT	NUMBERS														
N	0005	0008	0008	0009	0009	0009	0009	0009	0009	0009	0010	0010	0010	0010	0010	0010	0010
RCI	0013	0014	0015	0016	0017	0018	0021	0021	0028	0034	0040	0046	0052	0058	0064		
XUP	0030	0034	0036	0040	0042	0046	0048	0052	0053	0054	0058	0059	0060	0064			
ALVP	0003	0009	0010	0015	0046												
DLWP	0003	0009	0010	0017	0058												
PEXP	0003	0009	0010	0013	0034												
XLDM	0029	0030	0034	0035	0036	0040	0041	0042	0046	0047	0048	0052	0054	0058	0060	0064	
YEAR	0003	0009	0010	0028	0034	0040	0046	0052	0058	0064							
AMAX1	0017	0018															
AMIN1	0013	0014	0015	0016													
SPECS	0003	0023	0026	0027	0032	0033	0038	0039	0044	0045	0050	0051	0056	0057	0062	0063	
TOPOP	0003	0009	0010	0028													
DLVMAX	0008	0017	0017	0053													
DSPECS	0022	0024	0025														
EXPMIN	0004	0013	0013	0029													
GTITLE	0027	0013	0019	0045	0051	0057	0063										
LOWLIM	0029	0035	0041	0047													
LHPMIN	0002	0004	0015	0015	0041												
PPADVW	0031	0037	0043	0049	0055	0061											
PPCLOS	0065																
PPPLOT	0028	0034	0040	0046	0052	0058	0064										
RCIMAX	0004	0018	0018	0059													
HELXP	0003	0009	0010	0014	0040												
RELLHP	0003	0009	0010	0016	0052												
RLWMIN	0004	0016	0016	0047													
RNNAME	0003	0006	0010	0027	0033	0039	0045	0051	0057	0063							
RXPMIN	0004	0014	0014	0035													
SSPECS	0023	0026	0032	0030	0044	0050	0056	0062									
UPPLIM	0053	0059															

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***** F O R T R A N C R O S S R E F E R E N C E L I S T I N G *****

LABEL	DEFINED	REFERENCES
99	0007	0006
100	0011	0010
101	0008	0019
201	0012	0009
301	0020	0009

/ STRUCTURED SOURCE LISTING /

(002 ISN 0002 C PROGRAM TO PLOT NOISE IMPACT RESULTS
 ISN 0003 REAL LHPMIN
 DIMENSION YEAR(50),TOPHP(50),PEXP(50),WELEXP(50),ALWP(50),
 IRELLHP(50),DLWP(50),RCI(50), SPECS(30), RNNAME(5)
 ISN 0004 DATA EXPMIN,RXPMIN,LHPMIN,RLWMIN,DLVMAX,RCIMAX/4*1000.,2*-1000./
 ISN 0005 N=0
 ISN 0006 HEAD(5,49) RNNAME

BEST COPY AVAILABLE

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ISN 0007      99  FORMAT(1X,5A4)
0001 ISN 0008      101  N=11
ISN 0009      HEAD(5,201,END=501) YEAR(N),TOPOP(N),PEXP(N),RELEXP(N),ALWP(N),
RELLWP(N),DLWP(N),RCI(N)
ISN 0010      WRITE(6,100)RNAME, YEAR(N),TOPOP(N),PEXP(N),RELEXP(N),ALWP(N),
RELLWP(N),DLWP(N),RCI(N)
ISN 0011      100  FORMAT(' PLOTTING DATA',/20X,5A4/' ',F6.0,7F7.2)
ISN 0012      201  FORMAT(F6.0,7F7.2)
ISN 0013      EXPMIN = AMINI( EXPMIN,PEXP(N))
ISN 0014      RXPMIN = AMINI( RXPMIN,RELEXP(N))
ISN 0015      LWPMIN = AMINI( LWPMIN,ALWP(N))
ISN 0016      RLWMIN = AMINI( RLWMIN,RELLWP(N))
ISN 0017      DLWMAX = AMAXI( DLWMAX,DLWP(N))
ISN 0018      RCIMAX = AMAXI( RCIMAX,RCI(N))
ISN 0019      GO TO 101
001) C
C-----
ISN 0020      301  CONTINUE
ISN 0021      N=N+1
ISN 0022      CALL D SPECS ('ZONET',0.4)
ISN 0023      CALL SSPECS(SPECS)
ISN 0024      CALL DSPECS('XSTART',9.8)
ISN 0025      CALL DSPECS('YSTART',9.3)
ISN 0026      CALL SSPECS(SPECS)
ISN 0027      CALL GTITLE(RNAME,SPECS)
ISN 0028      CALL PP PLOT (YEAR,TOPOP,N,1974.,2014.,200.,325.,          'TOTAL
10.9. POPULATION (MILLIONS) VS YEARS'
2,'SS','YEARS')
ISN 0029      CALL LOWLIM(XLOW,10.,EXPMIN)
ISN 0030      XUP=XLOW+100.
ISN 0031      CALL PP ADVN
ISN 0032      CALL SSPECS(SPECS)
ISN 0033      CALL GTITLE(RNAME,SPECS)
ISN 0034      CALL PP PLOT (YEAR,PEXP,N,1974.,2014.,XLOW,XUP,
1'SPOPULATION EXPOSED OVER LDN=55DB (MILLIONS) VS YEARS'
2,'SS','YEARS')
ISN 0035      CALL LOWLIM(XLOW,4.,RXPMIN)
ISN 0036      XUP=XLOW+20.
ISN 0037      CALL PP ADVN
ISN 0038      CALL SSPECS(SPECS)
ISN 0039      CALL GTITLE(RNAME,SPECS)
ISN 0040      CALL PP PLOT (YEAR,RELEXP,N,1974.,2014.,XLOW,XUP,
1'SPERCENT OF POPULATION EXPOSED OVER LDN=55DB (PERCENT) VS YEARS'
2,'SS','YEARS')
ISN 0041      CALL LOWLIM(XLOW,10.,LWPMIN)
ISN 0042      XUP=XLOW+50.
ISN 0043      CALL PP ADVN
ISN 0044      CALL SSPECS(SPECS)
ISN 0045      CALL GTITLE(RNAME,SPECS)
ISN 0046      CALL PP PLOT (YEAR,ALWP,N,1974.,2014.,XLOW,XUP,
1'SLEVEL WEIGHTED POPULATION (MILLIONS) VS YEARS'
2,'SS','YEARS')
ISN 0047      CALL LOWLIM(XLOW,2.,RLWMIN)
ISN 0048      XUP=XLOW+10.
ISN 0049      CALL PP ADVN
ISN 0050      CALL SSPECS(SPECS)
ISN 0051      CALL GTITLE(RNAME,SPECS)
ISN 0052      CALL PP PLOT (YEAR,RELLWP,N,1974.,2014.,XLOW,XUP,

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1'SINGLE IMPACT INDEX (PERCENT) VS YEARS'
2,'S', 'YEARS')
1SN 0053 CALL UPPLIM(XIP,10,,DLNMAX)
1SN 0054 XLON = XUP - 50.
1SN 0055 CALL PP ADVN
1SN 0056 CALL SSPECS(SPECS)
1SN 0057 CALL GTITLE(RNNAME,SPECS)
1SN 0058 CALL PP PLOT (YEAR,DLN,N,1974.,2014.,XLON,XUP,
1'SCHANGE IN LEVEL WEIGHTED POPULATION (MILLIONS) VS YEARS'
2,'S', 'YEARS')
1SN 0059 CALL UPPLIM(XUP,24,,RCIMAX)
1SN 0060 XLON = XUP - 120.
1SN 0061 CALL PP ADVN
1SN 0062 CALL SSPECS(SPECS)
1SN 0063 CALL GTITLE(RNNAME,SPECS)
1SN 0064 CALL PP PLOT (YEAR,RCI,N,1974.,2014.,XLON,XUP,
1'RELATIVE CHANGE IN LEVEL WEIGHTED POPULATION (PERCENT) VS YEARS'
2,'S', 'YEARS')
1SN 0065 CALL PP CLOS
1SN 0066 STOP
002) C
1SN 0067 END

```

```

*OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
*OPTIONS IN EFFECT*NOBSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NJALC NOANSF NOTERM FLAG(I)
*STATISTICS* SOURCE STATEMENTS = 66, PROGRAM SIZE = 4016, SUBPROGRAM NAME = MAIN
*STATISTICS* NO DIAGNOSTICS GENERATED
***** END OF COMPILATION *****

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110K BYTES OF CORE NOT USED

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REQUESTED OPTIONS: XREF,OPT(2),FORMAT,GOSINT,NOUSOURCE,NOINTERNAL,NOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZL(2) LINECOUNT(60) SIZE(MAX) AUTODHL(NONE)
 NOUSOURCE EBCDIC NOLIST NODECK NOBJECT NOMAP FORMAT GOSINT XREF NOALC NUANSF NOTERM FLAG(I)

*****FORTRAN CROSS REFERENCE LISTING*****

SYMBOL	INTERNAL	STATEMENT	NUMBERS			
RC1	0003	0013	0015	0019	0020	0050
XLD	0024	0028	0040			
XUP	0025	0028	0040			
AINT	0022	0023	0026			
NYRN	0012	0013	0015	0017	0018	0019 0020
NYRN	0004	0012	0040	0050		
XLD1	0027	0028	0050			
XUP1	0026	0027	0028	0050		
AMAX1	0017	0019				
AMIN1	0018	0020				
ARRAY	0002	0003	0010	0013	0015	0015 0015 0017 0018 0040
POWER	0022	0023	0024	0025	0028	
RNAME	0004	0036	0046			
SPECS	0003	0030	0035	0036	0038	0039 0045 0046 0048 0049
TITLE	0002	0003	0040	0050		
XMINT	0023	0024	0025	0028		
ALOG10	0022					
DSPECS	0031	0032	0033	0034	0037	0044 0047
GTITLE	0036	0039	0046	0049		
IPLOT1	0002	0010	0010	0042		
LWPMAX	0005	0006	0017	0017		
LWPMIN	0005	0007	0018	0018	0022	0023
MYRNET	0004	0005	0040	0050		
PPADVN	0041	0051				
PPPLOT	0040	0050				
RCIMAX	0008	0019	0019	0026		
RCIMIN	0009	0020	0020			
SSPECS	0030	0035	0038	0045	0048	
SUBPLT	0002					

*****FORTRAN CROSS REFERENCE LISTING*****

LABEL	DEFINED	REFERENCES
1000	0021	0012
3001	0029	0028

/ STRUCTURED SOURCE LISTING /

```

(002  ISN 0002      SUBROUTINE SUBPLT(ARRAY,IPLOT1,TITLE)
C
C   FOR EACH METRIC TYPE GIVEN, PLOT THE METRIC AND THE RCI
C
ISN 0003      DIMENSION ARRAY(40),RC1(40),TITLE(12),SPECS(30)
ISN 0004      COMMON /PLOT01/ RNAME(6),MYRNET(40),NYRN
ISN 0005      REAL LWPMAX,LWPMIN,MYRNET
C
C   DERIVE THE RCI ARRAY, FIND MAXIMUM AND MINIMUM VALUES
C
ISN 0006      LWPMAX = -1.0 E 60
    
```

```

10N 0007      LWPMIN = 1.0 E 60
10N 0008      RCIMAX = -1.0 E 60
10N 0009      RCIMIN = 1.0 E 60
              C
10N 0010      IF (IPLOT1, EQ, 1, OR, ARRAY(1), EQ, 0.0) IPLOT1 = 0
              C
10N 0012      DO 1000 IYRN=1, NYRN
              C
001 10N 0013      IF (ARRAY(1), EQ, 0.0) RCI(IYRN) = 0.0
10N 0015      IF (ARRAY(1), NE, 0.0) RCI(IYRN) =
* (1. - ARRAY(IYRN)/ARRAY(1)) * 100.
              C
10N 0017      LWPMAX = AMAX1(LWPMAX, ARRAY(IYRN))
10N 0018      LWPMIN = AMIN1(LWPMIN, ARRAY(IYRN))
10N 0019      RCIMAX = AMAX1(RCIMAX, RCI(IYRN))
10N 0020      RCIMIN = AMIN1(RCIMIN, RCI(IYRN))
              C
10N 0021      1000 CONTINUE
              C
              C NOW FIND THE UPLIM AND LOWLIM OF PLOT
              C
001 10N 0022      POWER = 10. * AINT(ALOG10(LWPMIN))
10N 0023      XMINT = AINT(LWPMIN / POWER)
10N 0024      XLO = XMINT * POWER
10N 0025      XUP = (XMINT + 10.) * POWER
10N 0026      XUP1 = 10. * AINT(RCIMAX / 10.0) + 10.
10N 0027      XLO1 = XUP1 - 200.
10N 0028      WRITE(6, 3001) POWER, XMINT, XLO, XUP, XUP1, XLO1
10N 0029      3001 FORMAT(10X, 6(E10.3, 2X))
              C
              C
              C NOW CALL PLOT ROUTINES TO PLOT LWP AND RCI
              C
10N 0030      CALL DSPECS(SPECS)
10N 0031      CALL DSPECS('ZONE1', 0.4)
10N 0032      CALL DSPECS('XDIV', 8.0)
10N 0033      CALL DSPECS('YSTART', 9.5)
10N 0034      CALL DSPECS('XSTART', 10.0)
10N 0035      CALL SSPECS(SPECS)
10N 0036      CALL GTITLE(RNAME, SPECS)
10N 0037      CALL DSPECS('START', 8.0)
10N 0038      CALL SSPECS(SPECS)
10N 0039      CALL GTITLE('LWP', SPECS)
10N 0040      CALL PP PLOT(MYRNET, ARRAY, NYRN, 1974., 2014., XLO, XUP,
* TITLE, 'LWP', 'YEARS')
10N 0041      CALL PP ADVN
10N 0042      IF (IPLOT1, EQ, 0) RETURN
10N 0044      CALL DSPECS('XSTART', 10.0)
10N 0045      CALL SSPECS(SPECS)
10N 0046      CALL GTITLE(RNAME, SPECS)
10N 0047      CALL DSPECS('XSTART', 8.0)
10N 0048      CALL SSPECS(SPECS)
10N 0049      CALL GTITLE('RCI', SPECS)
10N 0050      CALL PP PLOT(MYRNET, RCI, NYRN, 1974., 2014., XLO1, XUP1,
* TITLE, 'RCI', 'YEARS')
10N 0051      CALL PP ADVN
10N 0052      RETURN
    
```

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002)

19N 0053

C
END

OPTIONS IN EFFECT*NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

OPTIONS IN EFFECT*NO SOURCE EDCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GDSMT XREF NJALC NOANSF NOTERM FLAG(I)

STATISTICS* SOURCE STATEMENTS * 52, PROGRAM SIZE * 1754, SUBPROGRAM NAME *SUBPLT

STATISTICS* NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

118K BYTES OF CORE NOT USED

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BEST COPY AVAILABLE

LEVEL 4.2 (SEPT 76)

UPPLIM

09/300 FORTRAN H, EXTENDED

DATE 80.273/19.54.15

PAGE

REQUESTED OPTIONS: XREF, OPT(2), FORMAT, GOSTMT, NOSOURCE, NOTERMINAL, NOOBJECT

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODHL(NONE)
NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

```

***** FORTRAN CROSS REFERENCE LISTING *****
SYMBOL  INTERNAL STATEMENT NUMBERS
I       0003 0004
XUP    0002 0004 0005
XINT   0002 0004
XMAX   0002 0005
UPPLIM 0002

```

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***** FORTRAN CROSS REFERENCE LISTING *****
LABEL  DEFINED  REFERENCES
1000   0007    0003

```

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002) ISN 0002          / STRUCTURED SOURCE LISTING /
      ISN 0003          SUBROUTINE UPPLIM(XUP,XINT,XMAX)
      ISN 0004          DO 1000 I=1,21
      ISN 0005          XUP = XINT * (I-11)
      ISN 0007          IF(XUP.GE.XMAX) RETURN
001) ISN 0007          1000 CONTINUE
      C
002) ISN 0008          RETURN
      C
      ISN 0009          END

```

OPTIONS IN EFFECT NAME(MAIN) OPTIMIZE(2) LINECOUNT(60) SIZE(MAX) AUTODHL(NONE)
 OPTIONS IN EFFECT NOSOURCE EBCDIC NOLIST NODECK NOOBJECT NOMAP FORMAT GOSTMT XREF NOALC NOANSF NOTERM FLAG(I)

STATISTICS SOURCE STATEMENTS = 8, PROGRAM SIZE = 332, SUBPROGRAM NAME =UPPLIM

STATISTICS NO DIAGNOSTICS GENERATED

***** END OF COMPILATION *****

126K BYTES OF CORE NOT USED