

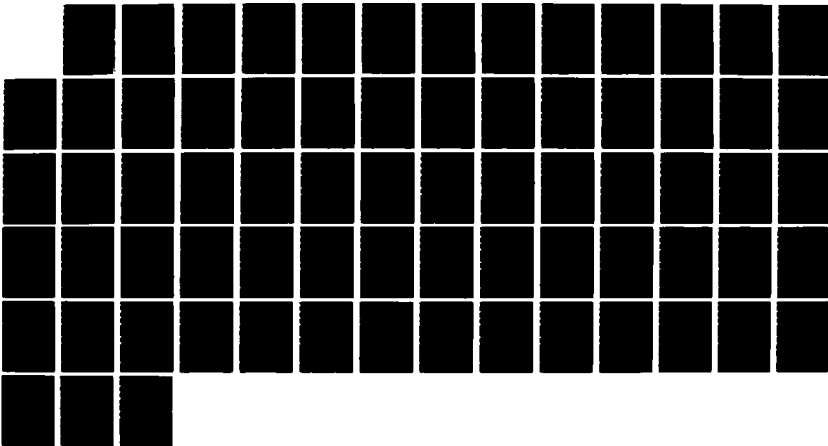
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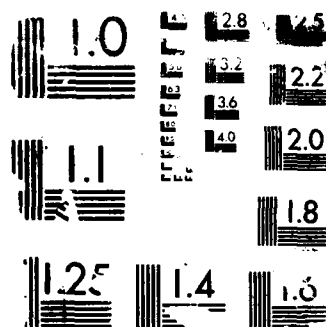
USERS MANUAL FOR FAA COST ALLOCATION MODEL (U) FEDERAL
AVIATION ADMINISTRATION WASHINGTON DC OFFICE OF
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Users Manual for FAA Cost Allocation Model

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Section 1.0

USERS MANUAL FOR THE COST ALLOCATION MODEL

The first section of this volume provides a brief overview of the model, and instructions on how to use. Subsequent sections describe each of the files in the model more specifically and document the databases used in assembling this model.

The final page of this section is a quick reference guide to the model.

1.1 Layout of Files

Figure 1.1 shows the layout of the cost allocation files. The files run sequentially from top to bottom. At the points indicated, the flow branches depending on the fiscal year being allocated. The files on the left of the page, specific to the period 1985 through 1992, are part of Future System I while their counterparts on the right-hand side of the page, for the 1993 through 1997 allocations, are in Future System II. The middle files are common to all allocation years. Future Systems I and II are shown as they would run linearly in Figure 1.2 and 1.3 respectively. In addition, these figures describe briefly the functions of the file groups in each system. As noted above, a more detailed description of each of these files and their functions can be found in Section 2.0 of this volume.

Figure 1.1

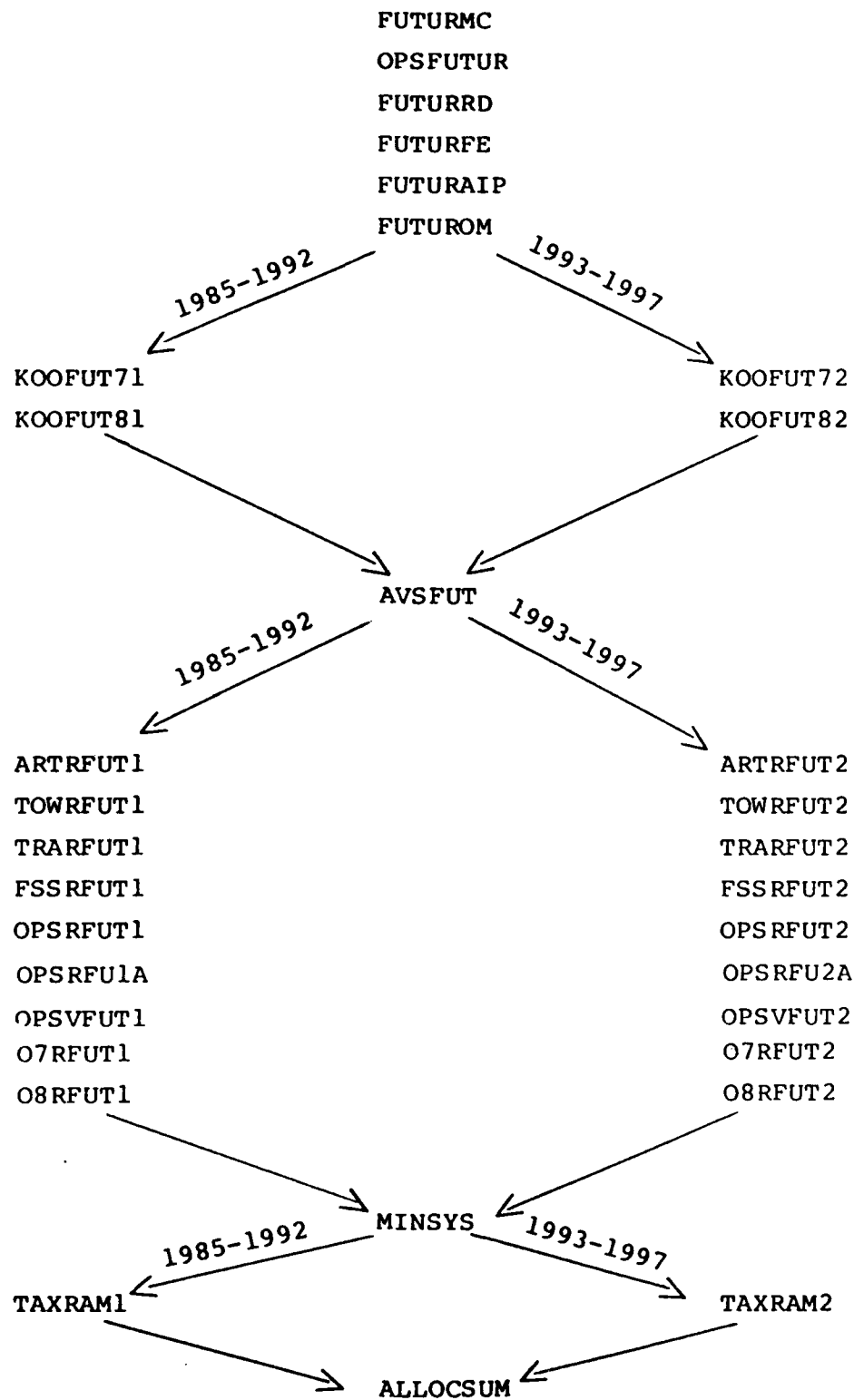


Figure 1.2

COST ALLOCATION FILES
FUTURE SYSTEM 1
1985-1992

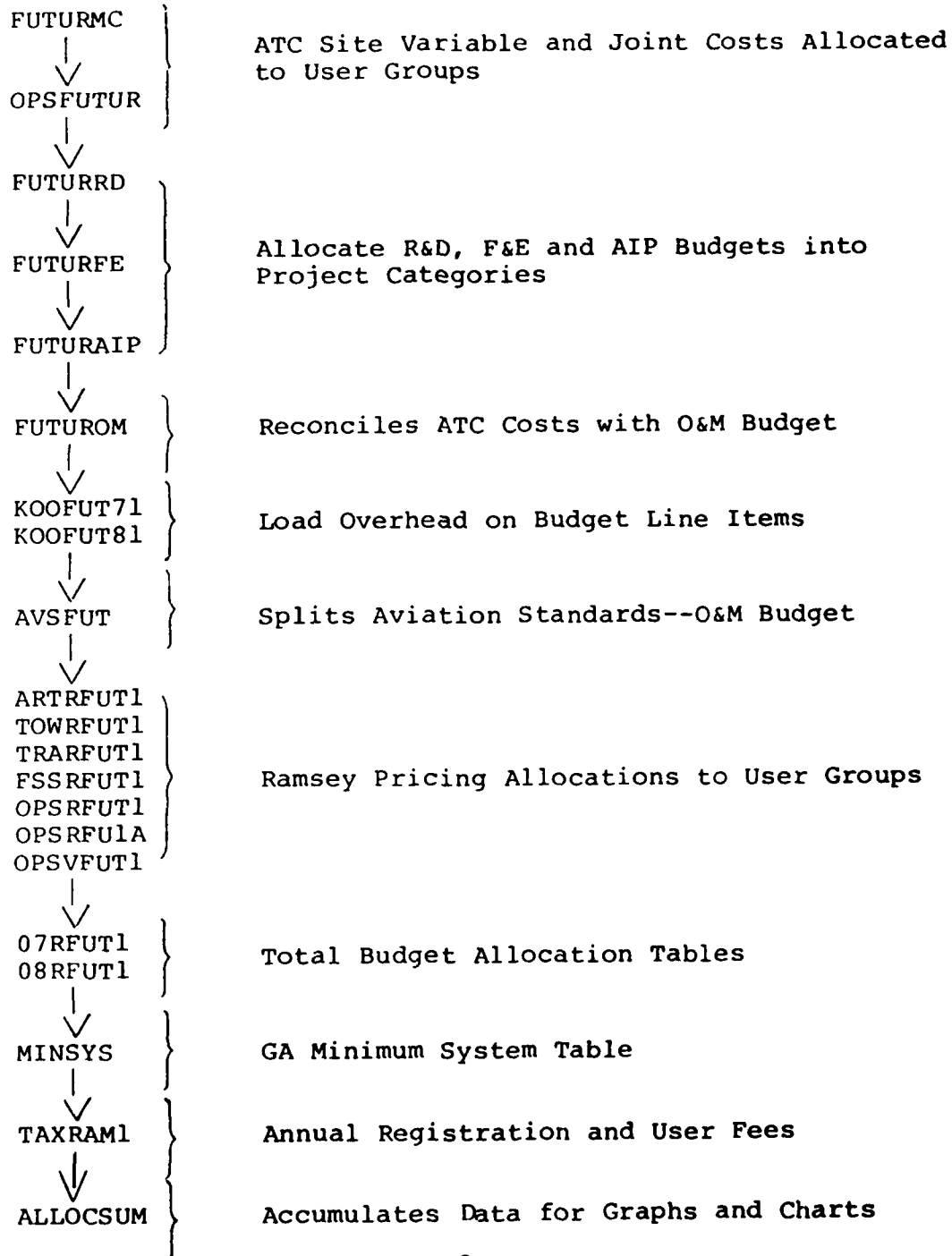
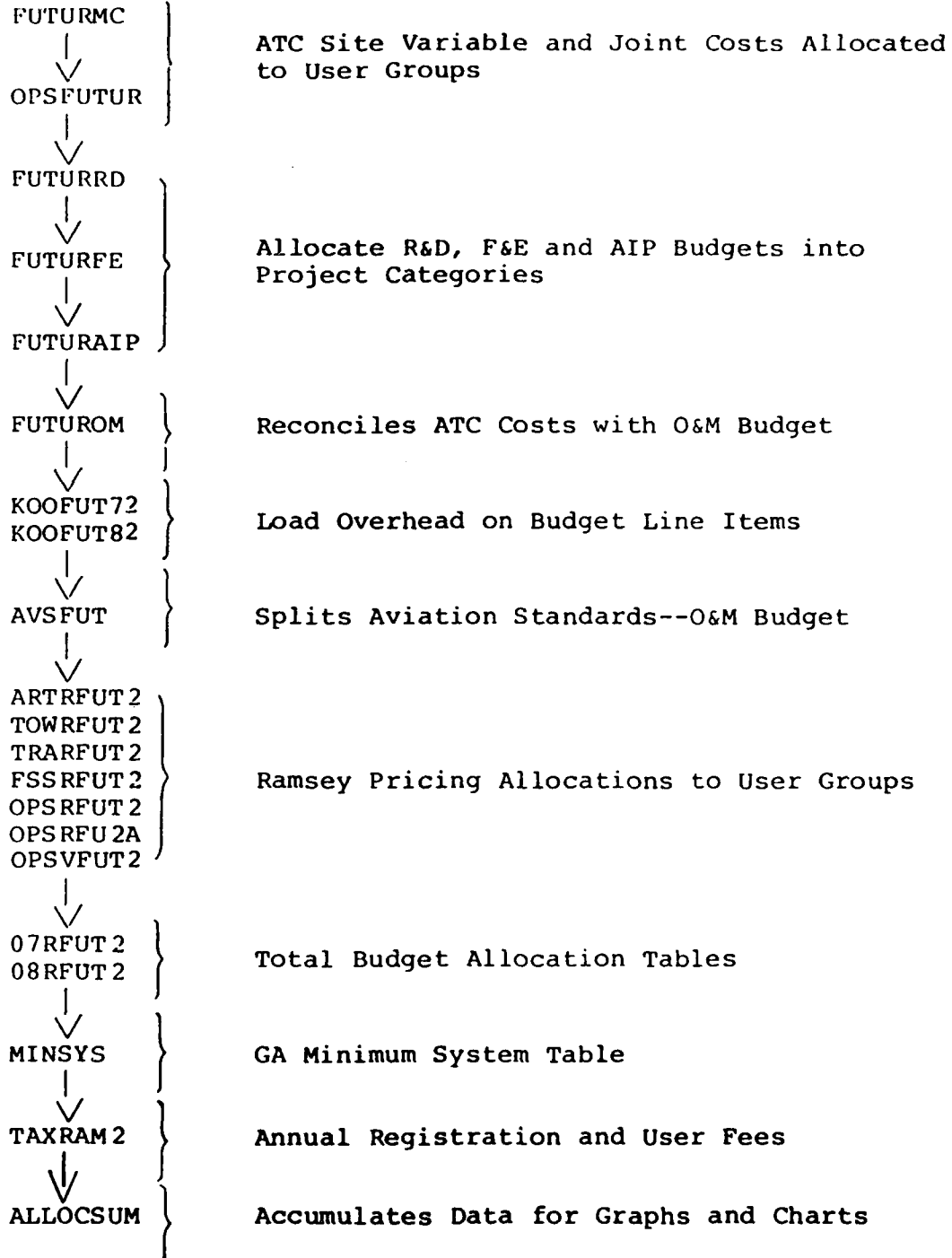


Figure 1.3

COST ALLOCATION FILES
FUTURE SYSTEM 2
1993-1997



1.2 Controlling File

The model itself is controlled completely through the file FUTURMC. In this file one can select:

- o the starting year for the model;
- o the number of years the model will run and,
- o a whole host of specific variables to be used in the model.

1.3 Variable Options

Table 1.1 lists all of these variables in the order they appear in FUTURMC. This table begins at cell W1 in that file. First, the user must select a beginning year for the model. In the table, it is 1985. In addition, he/she selects the number of years the model should run, in this case 12 years, which is the entire model through 1997. (Note: the model will never go beyond 1997). The remaining variables are grouped according to their relevant budget items, e.g., towers, ARTCCs, TRACONS, R&D, F&E, etc. To change a variable, one simply moves down to that cell and enters the new number. For instance, if one wishes to inflate TRACON costs by 5 percent rather than the 4.64 percent entered, simply move down to that cell, enter .05 and hit return.

1.4 Print Options

FUTURMC also determines what will be printed by the model. Table 1.2 shows the various print options which begin at cell AC1 in FUTURMC. By moving to cell AD1, typing the selected print option and pressing return, one selects the files to be printed

Table 1.1
VARIABLE OPTIONS

SYSTEM VARIABLES
07-Aug-86

BUDGET ITEM	FILE	VARIABLE	SETTING
	FUTURMC	FISCAL YEAR	1992
	FUTURMC	MULTIPLE YEAR OPTION (# YEARS)	1
O&M TOTAL BUDGET	FUTURMC	O&M TOTAL 1985 BUDGET	\$2,699,000,000
	FUTURMC	O&M TOTAL 1986 BUDGET	\$2,759,000,000
	FUTURMC	O&M TOTAL 1987 BUDGET	\$2,814,600,000
	FUTURMC	O&M TOTAL 1988 BUDGET	\$3,041,200,000
	FUTURMC	O&M TOTAL 1989 BUDGET	\$3,019,200,000
	FUTURMC	O&M TOTAL 1990 BUDGET	\$3,836,300,000
	FUTURMC	O&M TOTAL 1991 BUDGET	\$3,060,200,000
	FUTURMC	O&M TOTAL 1992 BUDGET	\$3,085,200,000
O&M ARTCC	FUTURMC	O&M INFLATION RATE 1993-97	4.64%
	FUTURMC	ARTCC INFLATION POST 1986	3.00%
	FUTURMC	ARTCC INFLATION 1991	4.64%
	FUTURMC	ARTCC INFLATION 1992	4.64%
	FUTURMC	ARTCC INFLATION POST 1992	4.64%
	FUTURMC	ARTCC NASP COMPL RATE 1986-92	14.30%
O&M TOWER	OPSFUTUR	1992 TOTAL ARTCC HANDLES	40,851,998
	OPSFUTUR	1997 TOTAL ARTCC HANDLES	45,300,000
	FUTURMC	TOWER INFLATION POST 1986	3.00%
	FUTURMC	TOWER INFLATION 1991	4.64%
	FUTURMC	TOWER INFLATION 1992	4.64%
	FUTURMC	TOWER INFLATION POST 1992	4.64%
	FUTURMC	TOWER NASP COMPL RATE 1986-92	14.30%
	OPSFUTUR	1992 AC OPS AT TOWERS	358,211
	OPSFUTUR	1992 COM OPS AT TOWERS	1,776,675
	OPSFUTUR	1992 GA OPS AT TOWERS	31,651,843
	OPSFUTUR	1992 MIL OPS AT TOWERS	903,658
	OPSFUTUR	1997 AC OPS AT TOWERS	344,196
	OPSFUTUR	1997 COM OPS AT TOWERS	2,007,081
	OPSFUTUR	1997 GA OPS AT TOWERS	35,548,118
O&M TRACON	OPSFUTUR	1997 MIL OPS AT TOWERS	922,283
	FUTURMC	TRACON INFLATION POST 1986	3.00%
	FUTURMC	TRACON INFLATION 1991	4.64%
	FUTURMC	TRACON INFLATION 1992	4.64%
	FUTURMC	TRACON INFLATION POST 1992	4.64%
	FUTURMC	TRACON NASP COMPL RATE 1986-92	14.30%
	OPSFUTUR	1992 AC TSOS AT TRACONS	12,585,100
	OPSFUTUR	1992 COM TSOS AT TRACONS	6,830,565
	OPSFUTUR	1992 GA TSOS AT TRACONS	33,701,399
	OPSFUTUR	1992 MIL TSOS AT TRACONS	3,953,017
	OPSFUTUR	1997 AC TSOS AT TRACONS	15,977,932
	OPSFUTUR	1997 COM TSOS AT TRACONS	8,306,686
	OPSFUTUR	1997 GA TSOS AT TRACONS	35,585,520
	OPSFUTUR	1997 MIL TSOS AT TRACONS	3,728,000
	OPSFUTUR	1992 AC OPS AT TRACONS	11,712,130
	OPSFUTUR	1992 COM OPS AT TRACONS	5,506,384
	OPSFUTUR	1992 GA OPS AT TRACONS	22,455,854
	OPSFUTUR	1992 MIL OPS AT TRACONS	1,625,542

Table 1.1 (cont.)

VARIABLE OPTIONS

SYSTEM VARIABLES

07-Aug-86

BUDGET ITEM	FILE	VARIABLE	SETTING
	OPSFUTUR	1997 AC OPS AT TRACONS	13,445,113
	OPSFUTUR	1997 COM OPS AT TRACONS	6,520,053
	OPSFUTUR	1997 GA OPS AT TRACONS	25,778,529
	OPSFUTUR	1997 MIL OPS AT TRACONS	1,659,147
04M FSS	FUTURMC	FSS INFLATION POST 1986	3.00%
	FUTURMC	FSS INFLATION 1991	4.64%
	FUTURMC	FSS INFLATION 1992	4.64%
	FUTURMC	FSS INFLATION POST 1992	4.64%
	FUTURMC	FSS NASP COMPL RATE 1986-92	14.30%
	OPSFUTUR	1992 TOTAL FSS SERVICES	37,599,674
	OPSFUTUR	1997 TOTAL FSS SERVICES	40,500,000
04M NAVAID MAINT	FUTURDM	UNALLOC MAINT INFL RATE 1987-92	-8.62%
	FUTURDM	UNALLOC MAINT INFL RATE 1993-97	4.64%
04M AVIATION STDS	FUTURDM	AV STDS 04M INFL RATE 1987-90	3.00%
	FUTURDM	AV STDS 04M INFL RATE 1991	4.64%
	FUTURDM	AV STDS 04M INFL RATE 1992	4.64%
	FUTURDM	AV STDS 04M INFL RATE 1993-97	4.64%
	FUTURDM	AV STDS AV SEC INFL RATE 1987-90	3.00%
	FUTURDM	AV STDS AV SEC INFL RATE 1991	4.64%
	FUTURDM	AV STDS AV SEC INFL RATE 1992	4.64%
	FUTURDM	AV STDS AV SEC INFL RATE 1993-97	4.64%
04M OVERHEAD	FUTURDM	TOWERS THAT FAIL PHASE II 1985	\$6,017,076
	FUTURDM	TOW FAIL PHS II INFL RATE 1986-90	3.97%
	FUTURDM	TOW FAIL PHS II INFL RATE 1991	4.20%
	FUTURDM	TOW FAIL PHS II INFL RATE 1992	4.38%
	FUTURDM	TOW FAIL PHS II INFL RATE 1993-97	4.64%
	FUTURDM	WEATHER OBS 1986\$ BASE 1985	\$11,215,788
	FUTURDM	WEATHER OBS 1986\$ BASE 1986	\$11,608,341
	FUTURDM	WEATHER OBS 1986\$ BASE 1988	\$12,677,786
	FUTURDM	WEATHER OBS 1986\$ BASE 1989	\$13,351,713
	FUTURDM	WEATHER OBS 1986\$ BASE 1990	\$13,376,180
	FUTURDM	WEATHER OBS 1986\$ BASE 1991	\$13,385,786
	FUTURDM	WEATHER OBS 1986\$ BASE 1992	\$13,472,997
	FUTURDM	WEATHER OBS INFL RATE 1987-1990	3.00%
	FUTURDM	WEATHER OBS INFL RATE 1991	4.64%
	FUTURDM	WEATHER OBS INFL RATE 1992	4.64%
	FUTURDM	WEATHER OBS INFL RATE 1993-1997	4.64%
	FUTURDM	TOWER SUBSIDY 1985-1988	\$795,252
	FUTURDM	CONTRACT TOWERS 1985	\$1,044,094
	FUTURDM	CONTRACT TOWERS INFL RATE 1986-92	0.14%
	FUTURDM	CONTRACT TOWERS INFL RATE 1993-97	4.64%
	FUTURDM	CIVILIANS AT MILITARY 1985	\$2,009,255
	FUTURDM	CIVILIANS AT MILITARY 1986	\$2,079,579
	FUTURDM	CIV AT MIL INFLATION RATE 1987-90	3.00%
	FUTURDM	CIV AT MIL INFLATION RATE 1991	4.64%
	FUTURDM	CIV AT MIL INFLATION RATE 1992	4.64%
	FUTURDM	CIV AT MIL INFLATION RATE 1993-97	4.64%
	FUTURDM	MILITARY COMMUNICATIONS 1985	\$1,729,775

Table 1.1 (cont.)

VARIABLE OPTIONS

SYSTEM VARIABLES

07-Aug-86

BUDGET ITEM	FILE	VARIABLE	SETTING
R&D BUDGET	FUTURDM	MIL COM INFLATION RATE 1986-92	13.06%
	FUTURDM	MIL COM INFLATION RATE 1993-97	4.64%
	FUTURRD	R&D TOTAL 1985 BUDGET	\$265,000,000
	FUTURRD	R&D TOTAL 1986 BUDGET	\$190,000,000
	FUTURRD	R&D TOTAL 1987 BUDGET	\$134,500,000
	FUTURRD	R&D TOTAL 1988 BUDGET	\$214,000,000
	FUTURRD	R&D TOTAL 1989 BUDGET	\$222,000,000
	FUTURRD	R&D TOTAL 1990 BUDGET	\$229,000,000
	FUTURRD	R&D TOTAL 1991 BUDGET	\$237,000,000
	FUTURRD	R&D TOTAL 1992 BUDGET	\$218,000,000
F&E BUDGET	FUTURRD	R&D INFLATION POST 1992	4.64%
	FUTURFE	F&E DISCOUNT RATE	10.00%
	FUTURFE	F&E TOTAL 1986 BUDGET	\$950,000 (000)
	FUTURFE	F&E TOTAL 1987 BUDGET	\$872,500 (000)
	FUTURFE	F&E TOTAL 1988 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1989 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1990 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1991 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1992 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1993 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1994 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1995 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1996 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1997 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1998 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1999 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 2000 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E INFLATION RATE POST 1988	0.00%
	FUTURFE	F&E INFLATION RATE POST 1992	4.64%
AIP BUDGET	FUTURAIP	AIP TOTAL 1985 BUDGET	\$924,737,000
	FUTURAIP	AIP TOTAL 1986 BUDGET	\$885,000,000
	FUTURAIP	AIP TOTAL 1987 BUDGET	\$712,000,000
	FUTURAIP	AIP TOTAL 1988 BUDGET	\$800,000,000
	FUTURAIP	AIP INFLATION POST 1988	0.00%
	FUTURAIP	AIP % PR GRANTS 1985-92	56.77%
	FUTURAIP	AIP % RL GRANTS 1985-92	14.10%
	FUTURAIP	AIP % CS GRANTS 1985-92	8.66%
	FUTURAIP	AIP % GA GRANTS 1985-92	20.47%
	FUTURAIP	AIP INFLATION POST 1992	4.64%
	FUTURAIP	AIP % PR GRANTS 1992-97	56.77%
	FUTURAIP	AIP % RL GRANTS 1992-97	14.10%
	FUTURAIP	AIP % CS GRANTS 1992-97	8.66%
	FUTURAIP	AIP % GA GRANTS 1992-97	20.47%
ELASTICITIES	RAMSEY FILES	AIR CARRIER DOMESTIC ELASTICITY	1
	RAMSEY FILES	AIR CARRIER INTL ELASTICITY	1
	RAMSEY FILES	AIR CARRIER FREIGHT ELASTICITY	1
	RAMSEY FILES	COMMUTER ELASTICITY	1
	RAMSEY FILES	AIR TAXI ELASTICITY	1

Table 1.1 (cont.)

VARIABLE OPTIONS

SYSTEM VARIABLES

07-Aug-86

BUDGET ITEM	FILE	VARIABLE	SETTING
	RAMSEY FILES	GENL AVIATION PISTON ELASTICITY	2
	RAMSEY FILES	GENL AVIATION TURBO ELASTICITY	1
	RAMSEY FILES	ROTOR ELASTICITY	1
	RAMSEY FILES	GOVERNMENT ELASTICITY	1
	RAMSEY FILES	MILITARY ELASTICITY	1
MINIMUM SYSTEM	FUTURMC	MIN SYS % TOWER JC GROW RATE	9.90%
	FUTURMC	MIN SYS % TRACON JC GROW RATE	16.74%
	OPSFUTUR	MIN GA % TOWER OPS GROW RATE	6.01%
	OPSFUTUR	MIN GA % TRACON TSOS GROW RATE	4.15%

Table 1.2
PRINT OPTIONS

PRINT SELECT=	9
PRINT OPTIONS	SETTING
NOTHING	0
ALLOCATION TABLES ONLY	1
KOOFUT + ALLOCATION TABLES	2
ALLOCATION TABLES + MINSYS + TAXRAM	3
KOOFUT + ALLOCATION TABLES + MINSYS + TAXRAM	4
ALLOCATION TABLES + VOL 1 TABLES	5
ALLOCATION TABLES + VOL 3 TABLES	6
ALLOCATION TABLES + VOL 1 + VOL 3 TABLES	7
ALLOCATION TABLES + VOL 1 + VOL 3 TABLES + TAXRAM	8
EVERYTHING	9
VOLUME 1 TABLES ONLY (INCLUDES MINSYS)	10
VOLUME 3 TABLES ONLY (INCLUDES PI TABLE)	11

Allocation Tables = Full cost allocations to ten user groups
(e.g., Volume 1, Table 2.8.3.1).

KOOFUT = Overhead allocated to budget categories.

MINSYS = Minimum General Aviation allocation.

TAXRAM = Current taxes and recovery.

Volume 1 Tables = Tables from Volume 1 for year of interest.

Volume 3 Tables = Tables from Volume 3 for year of interest.

when the model runs. For example, in this case, the number nine is entered meaning that the model will print all tables.

1.5 Running the Model

Once all of these options have been selected and the user is prepared to proceed with the model, he/she must save FUTURMC with its new settings and then retrieve the file OPSFUTUR. The model will run automatically, beginning with the year selected and continuing for the number of years selected. If at any time one wishes to stop the model while it is running, press the control key and the break key simultaneously. The computer will beep and a flashing red flag will appear in the upper right-hand corner of the screen. This will disappear when escape is pressed. Under no circumstances should changes ever be made in any of the files in this model other than in the variable listing and print option sections of the FUTURMC file. Questions should be directed to Gellman Research Associates, Inc. (215) 884-7500.

1.6 Quick Reference

Finally, Table 1.3 is a summary of how to run this model.

Table 1.3

COST ALLOCATION MODEL COMMAND SUMMARY

Model is controlled in LOTUS 123 from FUTURMC.

To retrieve FUTURMC:

/FRFUTURMC {Return} {Control-Break} Once in file: {Esc}

Find variable options:

{F5} W1 {Return}

Select starting year:

Move to cell Z5, enter starting year {Return}

Select number of years to run:

Move to cell Z6, enter number of years {Return}

To change any other variable:

Using arrow keys, go to old variable setting,
enter new setting {Return}

To print out new variable settings sorted by affected files:

{Alt}S [simultaneously]

To print out new variable settings as they appear in FUTURMC:

{Alt}R [simultaneously]

To select model print options (see Table 1.2):

{F5} AC1 {Return}, move right one column,
enter desired print option {Return}

Saving FUTURMC (must always be saved):

/FS {Return} R

Starting model:

/FROPSFUTUR {Return}

To interrupt model:

{Control-Break} Once in file: {Esc}

Section 2.0

INDIVIDUAL FILES

This section summarizes the functions of the individual files within the model. Though it is useful to understand the functions each file performs, it is strongly urged that users do not change any of these files. Table 1.1 shows all of the model variables as they appear in FUTURMC. These are the only changes that should ever be made in the model. For each file there is a corresponding table of the variables in FUTURMC that control that specific file and which can be changed.

2.1 FUTURMC

This file controls the entire model, as shown in Section 1.0 of this volume. FUTURMC also performs a specific task within the model, and it is this specific task which is dealt with here. This file takes as inputs the marginal costs estimated for ARTCCs, towers, TRACONS and FSSs. There are two sets of marginal costs:

- o FY1984 marginal costs were estimated based on actual activity and costs incurred by the FAA in that fiscal year.
- o FY1992 marginal costs were estimated based upon projections of activity and air traffic and airway facility labor costs for that fiscal year.

For any fiscal year covered by the model, two assumptions about the relevant marginal costs are made:

- o One pertaining to the effects of inflation.
- o One pertaining to how quickly and over what time period the NASP will be completed.

For the period 1986 through 1990, labor rates are assumed to increase at an annual rate of 3.0 percent. From 1991 through 1997 the annual increase is 4.64 percent. (The effective annual inflation rate from 1986 through 1992 is 3.5 percent). This is consistent with the most recent Economic Report of the President.

Beginning in 1986, the NASP is assumed to be completed at a rate of 14.3 percent per year. At this rate, by the end of 1992, NASP will be completed. The effect of the NASP assumption is that new FY1992 technology is assumed to be in place and productive. Future marginal costs are then averaged in with the historic marginal cost in the model in order to project marginal costs for any given year. By 1992 and for all years thereafter, only future marginal costs are employed. For the period 1986 through 1991, a mixture of marginal costs are employed.

Also included in this file are the joint operating site costs. These correspond to the constant terms from the econometric cost functions calculated for this study. These costs are also assumed to grow at an annual effective inflation rate of 3.5 percent from 1986 through 1992 and 4.64 percent from 1993-1997. The annual rate of inflation for the period 1985 through 1986 is 3.5 percent.

Like the marginal cost, these joint site costs are subject to the NASP completion rate assumption. That is, new and old technologies (as reflected in the cost function) are blended for the period 1986 through 1991. The same 14.3 percent completion rate is assumed.

Also included in this file are assumptions concerning the percentage of joint tower and TRACON site costs attributable to the minimum general aviation allocation. This determination is made based upon the valuation of each tower and TRACON in terms of the FAA's establishment criteria.

Table 2.1 shows all of the variables that can be changed in FUTURMC, grouped according to budget items. As noted in Section 1.0, the first two variables control the running of the model itself. For each of the the ATC facilities, one can select inflation rates for 1987-1990, 1991, 1992, and 1993-1997 and NASP completion rates for 1986-1992. In addition, growth rates for the minimum system's percentage of tower and TRACON joint costs can be adjusted.

2.2 OPSFUTUR

This file derives measures of activity at all operating sites for the years 1985 through 1997. Once the activity measures are derived for the year of interest, they are multiplied by the marginal costs from the FUTURMC file in order to derive estimates on variable costs attributable to each user group. These variable costs, together with joint operating site costs are used in the Ramsey allocation files.

Table 2.1

FUTURMC

BUDGET ITEM	FILE	VARIABLE	SETTING
	FUTURMC	FISCAL YEAR	1992
	FUTURMC	MULTIPLE YEAR OPTION (# YEARS)	1
O&M ARTCC	FUTURMC	ARTCC INFLATION POST 1986	3.00%
	FUTURMC	ARTCC INFLATION 1991	4.64%
	FUTURMC	ARTCC INFLATION 1992	4.64%
	FUTURMC	ARTCC INFLATION POST 1992	4.64%
	FUTURMC	ARTCC NASP COMPL RATE 1986-92	14.30%
O&M TOWER	FUTURMC	TOWER INFLATION POST 1986	3.00%
	FUTURMC	TOWER INFLATION 1991	4.64%
	FUTURMC	TOWER INFLATION 1992	4.64%
	FUTURMC	TOWER INFLATION POST 1992	4.64%
	FUTURMC	TOWER NASP COMPL RATE 1986-92	14.30%
O&M TRACON	FUTURMC	TRACON INFLATION POST 1986	3.00%
	FUTURMC	TRACON INFLATION 1991	4.64%
	FUTURMC	TRACON INFLATION 1992	4.64%
	FUTURMC	TRACON INFLATION POST 1992	4.64%
	FUTURMC	TRACON NASP COMPL RATE 1986-92	14.30%
O&M FSS	FUTURMC	FSS INFLATION POST 1986	3.00%
	FUTURMC	FSS INFLATION 1991	4.64%
	FUTURMC	FSS INFLATION 1992	4.64%
	FUTURMC	FSS INFLATION POST 1992	4.64%
	FUTURMC	FSS NASP COMPL RATE 1986-92	14.30%
MINIMUM SYSTEM	FUTURMC	MIN SYS % TOWER JC GROW RATE	9.90%
	FUTURMC	MIN SYS % TRACON JC GROW RATE	16.74%

The derivation of the activity measures is straightforward. For the four types of ATC facilities, actual FAA activity forecasts are entered for 1992 and 1997 and the model extrapolates their growth rates evenly over the time periods:

- o 1985-1992,
- o 1993-1997.

The specific variables that can be changed for OPSFUTUR are listed in Table 2.2. For ARTCCs, total handles for 1992 and 1997 are entered directly. Annualized growth rates for 1985-1992 and 1993-1997 are calculated and applied to spread the activity growth evenly over the two time periods. Tower activity is measured in operations (ops). Ops are entered for 1992 and 1997 broken down into four categories:

- o AC (includes Air Carrier--Domestic, Air Carrier--International, and Air Carrier--Freight),
- o Com (Commuters),
- o GA (Air Taxis, General Aviation--Piston, General Aviation--Turbine, and Government),
- o MIL (Military).

Annual growth rates are calculated separately for each group for 1985-1992 and 1992-1997 and are used to spread the growth evenly over the time periods.

TRACON activity is measured by operations, seconds and overs (TSOs) and by operations only (ops). These activity measures are entered in the four categories for 1992 and 1997 and again the annualized growth rates for each individual category is applied evenly over the two time periods.

Table 2.2

OPSFUTUR

BUDGET ITEM	FILE	VARIABLE	SETTING
O&M ARTCC	OPSFUTUR	1992 TOTAL ARTCC HANDLES	40,851,998
	OPSFUTUR	1997 TOTAL ARTCC HANDLES	45,300,000
O&M TOWER	OPSFUTUR	1992 AC OPS AT TOWERS	358,211
	OPSFUTUR	1992 COM OPS AT TOWERS	1,776,675
	OPSFUTUR	1992 GA OPS AT TOWERS	31,651,843
	OPSFUTUR	1992 MIL OPS AT TOWERS	903,658
	OPSFUTUR	1997 AC OPS AT TOWERS	344,196
	OPSFUTUR	1997 COM OPS AT TOWERS	2,007,081
	OPSFUTUR	1997 GA OPS AT TOWERS	35,548,118
	OPSFUTUR	1997 MIL OPS AT TOWERS	922,283
O&M TRACON	OPSFUTUR	1992 AC TSOS AT TRACONS	12,585,108
	OPSFUTUR	1992 COM TSOS AT TRACONS	6,830,565
	OPSFUTUR	1992 GA TSOS AT TRACONS	33,701,399
	OPSFUTUR	1992 MIL TSOS AT TRACONS	3,953,017
	OPSFUTUR	1997 AC TSOS AT TRACONS	15,977,932
	OPSFUTUR	1997 COM TSOS AT TRACONS	8,306,686
	OPSFUTUR	1997 GA TSOS AT TRACONS	35,585,520
	OPSFUTUR	1997 MIL TSOS AT TRACONS	3,728,000
	OPSFUTUR	1992 AC OPS AT TRACONS	11,712,130
	OPSFUTUR	1992 COM OPS AT TRACONS	5,506,384
	OPSFUTUR	1992 GA OPS AT TRACONS	22,455,854
	OPSFUTUR	1992 MIL OPS AT TRACONS	1,625,542
	OPSFUTUR	1997 AC OPS AT TRACONS	13,445,113
	OPSFUTUR	1997 COM OPS AT TRACONS	6,528,053
	OPSFUTUR	1997 GA OPS AT TRACONS	25,778,529
	OPSFUTUR	1997 MIL OPS AT TRACONS	1,659,147
O&M FSS	OPSFUTUR	1992 TOTAL FSS SERVICES	37,599,674
	OPSFUTUR	1997 TOTAL FSS SERVICES	40,500,000
MINIMUM SYSTEM	OPSFUTUR	MIN GA % TOWER OPS GROW RATE	6.01%
	OPSFUTUR	MIN GA % TRACON TSOS GROW RATE	4.15%

FSS total services, like ARTCC handles, are simply entered for 1992 and 1997 with the growth spread evenly over 1985-1992 and 1993-1997. Finally, the percentage of tower operations and TRACON TSOs that are required by the minimum GA system are derived in OPSFUTUR and the rate at which those percentages can grow between 1985 and 1997 can be adjusted as desired.

2.3 FUTURRD

This file allocates current and future R&D budgets to the following project categories.

- o air carriers projects,
- o general aviation projects,
- o projects for IFR users,
- o projects for all users.

In addition, the table identifies those R&D projects which would be allocated to the public sector if regulatory costs are also allocated to the public sector. These R&D projects are primarily environmental programs related to the regulatory functions of the agency.

As shown in Table 2.3, the user can enter specific total R&D budgets for each year between 1985 and 1992. For 1993 to 1997, the 1992 budget is inflated at an adjustable annual percentage (4.64 percent in the base case).

2.4 FUTURFE

This file presents the allocations of FAA F&E budgets for the period 1985 through 1997. The file first contains projected

Table 2.3

FUTURRD

BUDGET ITEM	FILE	VARIABLE	SETTING
R&D BUDGET	FUTURRD	R&D TOTAL 1985 BUDGET	\$265,000,000
	FUTURRD	R&D TOTAL 1986 BUDGET	\$190,000,000
	FUTURRD	R&D TOTAL 1987 BUDGET	\$134,500,000
	FUTURRD	R&D TOTAL 1988 BUDGET	\$214,000,000
	FUTURRD	R&D TOTAL 1989 BUDGET	\$222,000,000
	FUTURRD	R&D TOTAL 1990 BUDGET	\$229,000,000
	FUTURRD	R&D TOTAL 1991 BUDGET	\$237,000,000
	FUTURRD	R&D TOTAL 1992 BUDGET	\$210,000,000
	FUTURRD	R&D INFLATION POST 1992	4.64%

F&E budgets. These budgets are then discounted back to the year of interest and amortized over a 13 year period.

The file also distributes the F&E budgets into the following project categories:

- o air carriers projects,
- o general aviation projects,
- o projects for IFR users,
- o projects for all users,
- o projects in the public interest.

The result of the procedure is that F&E allocations are constant over the 1985-1997 time period. This evening of the F&E budget over time was necessary to ensure the user taxes would not have to change periodically in order to accommodate fluctuations in the F&E programs.

Table 2.4 shows that the user can alter the discount rate used in the F&E amortization. Projected F&E budgets are entered for all years from 1986 through 2000 (in thousands) for use in the amortization. In addition, F&E budgets can be inflated for the periods:

- o 1989-1992 (0.00 percent in base case),
- o 1993-1997 (4.64 percent in base case).

2.5 FUTURAIP

This file shows the allocation of annual AIP funds to primary, reliever, commercial services and general aviation airports. The distribution is based on an analysis of a sample of airport grants for the years 1980, 1982, 1983 and 1984. The distribution among the airport types is constant over time.

Table 2.4

FUTURFE

BUDGET ITEM	FILE	VARIABLE	SETTING
F&E BUDGET	FUTURFE	F&E DISCOUNT RATE	10.00%
	FUTURFE	F&E TOTAL 1986 BUDGET	\$950,000 (000)
	FUTURFE	F&E TOTAL 1987 BUDGET	\$872,500 (000)
	FUTURFE	F&E TOTAL 1988 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1989 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1990 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1991 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1992 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1993 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1994 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1995 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1996 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1997 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1998 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 1999 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E TOTAL 2000 BUDGET	\$1,414,600 (000)
	FUTURFE	F&E INFLATION RATE POST 1988	0.00%
	FUTURFE	F&E INFLATION RATE POST 1992	4.64%

As illustrated in Table 2.5, the user can enter AIP total budgets for 1985 through 1988 and the growth rate of that 1988 budget from 1989-1992. The derived 1992 budget is then inflated by a selected rate (4.64 percent in the base case) for 1993-1997. In addition, the user can alter the distribution of the total AIP budget between the four airport types for the periods 1985-1992 and 1993-1997.

2.6 FUTUROM

This file disaggregates the current and future O&M budgets among FAA operations budget categories.

The total O&M budget is split among the following categories:

- o ATC site costs.
- o Public interest costs such as towers that fail Phase II and weather observations in the public interest.
- o Overhead items such as administrative support and central training.

The first two categories were analyzed in detail as part of the cost allocation project. That is, for each year there are estimated ATC site costs and public interest costs. The total from these two categories is then subtracted from the actual or projected FAA O&M budget. The residual is split among the overhead categories based upon actual overhead budgets in the year 1986.

This file also projects O&M budgets for the years 1993 through 1997. In the base case, these budgets are projected to

Table 2.5

FUTURAIP

BUDGET ITEM	FILE	VARIABLE	SETTING
AIP BUDGET	FUTURAIP	AIP TOTAL 1985 BUDGET	\$924,737,000
	FUTURAIP	AIP TOTAL 1986 BUDGET	\$885,000,000
	FUTURAIP	AIP TOTAL 1987 BUDGET	\$712,000,000
	FUTURAIP	AIP TOTAL 1988 BUDGET	\$800,000,000
	FUTURAIP	AIP INFLATION POST 1988	0.00%
	FUTURAIP	AIP % PR GRANTS 1985-92	56.77%
	FUTURAIP	AIP % RL GRANTS 1985-92	14.10%
	FUTURAIP	AIP % CS GRANTS 1985-92	8.66%
	FUTURAIP	AIP % GA GRANTS 1985-92	20.47%
	FUTURAIP	AIP INFLATION POST 1992	4.64%
	FUTURAIP	AIP % PR GRANTS 1992-97	56.77%
	FUTURAIP	AIP % RL GRANTS 1992-97	14.10%
	FUTURAIP	AIP % CS GRANTS 1992-97	8.66%
	FUTURAIP	AIP % GA GRANTS 1992-97	20.47%

increase from the 1992 budget at an annual rate of 4.64 percent per year.

Also included in this file are the assumptions concerning changes in specific O&M budget categories including: DC airports, aviation standards O&M, aviation standards security, towers that fail Phase II criteria, contract towers, subsidized towers, military installations, military communications and weather observations in the public interest. The assumptions are split into two time periods: 1985 through 1992, and 1993 through 1997.

The variables that the user can input into FUTUROM are listed by budget category in Table 2.6. Total O&M budgets for each year from 1985 through 1992 can be entered as well as the annual rate at which the 1992 O&M budget will grow for the period 1993-1997.

The user can also alter various growth rates for NAVAID maintenance and aviation standards. The 1986 NAVAID maintenance budget is inflated (or deflated as in the base case) by a fixed percentage for the years 1987 through 1992. The derived 1992 budget is then inflated by another percentage for 1993-1997. The two distinct portions of the aviation standards budget, aviation standards O&M and aviation standards safety, each provide for separate inflation rates for four time periods:

- o 1986-1990,
- o 1991,
- o 1992,
- o 1993-1997.

Table 2.6

FUTUROM

BUDGET ITEM	FILE	VARIABLE	SETTING
O&M TOTAL BUDGET	FUTUROM	O&M TOTAL 1985 BUDGET	\$2,699,000,000
	FUTUROM	O&M TOTAL 1986 BUDGET	\$2,759,000,000
	FUTUROM	O&M TOTAL 1987 BUDGET	\$2,814,600,000
	FUTUROM	O&M TOTAL 1988 BUDGET	\$3,041,200,000
	FUTUROM	O&M TOTAL 1989 BUDGET	\$3,019,200,000
	FUTUROM	O&M TOTAL 1990 BUDGET	\$3,036,300,000
	FUTUROM	O&M TOTAL 1991 BUDGET	\$3,060,200,000
	FUTUROM	O&M TOTAL 1992 BUDGET	\$3,005,200,000
	FUTUROM	O&M INFLATION RATE 1993-97	4.64%
O&M NAVAJD MAINT	FUTUROM	UNALLOC MAINT INFL RATE 1987-92	-8.62%
	FUTUROM	UNALLOC MAINT INFL RATE 1993-97	4.64%
O&M AVIATION STDS	FUTUROM	AV STDS O&M INFL RATE 1987-90	3.00%
	FUTUROM	AV STDS O&M INFL RATE 1991	4.64%
	FUTUROM	AV STDS O&M INFL RATE 1992	4.64%
	FUTUROM	AV STDS O&M INFL RATE 1993-97	4.64%
	FUTUROM	AV STDS AV SEC INFL RATE 1987-90	3.00%
	FUTUROM	AV STDS AV SEC INFL RATE 1991	4.64%
	FUTUROM	AV STDS AV SEC INFL RATE 1992	4.64%
	FUTUROM	AV STDS AV SEC INFL RATE 1993-97	4.64%
O&M OVERHEAD	FUTUROM	TOWERS THAT FAIL PHASE II 1985	\$6,017,076
	FUTUROM	TOW FAIL PHS II INFL RATE 1986-90	3.97%
	FUTUROM	TOW FAIL PHS II INFL RATE 1991	4.20%
	FUTUROM	TOW FAIL PHS II INFL RATE 1992	4.38%
	FUTUROM	TOW FAIL PHS II INFL RATE 1993-97	4.64%
	FUTUROM	WEATHER OBS 1986\$ BASE 1985	\$11,215,788
	FUTUROM	WEATHER OBS 1986\$ BASE 1986	\$11,608,341
	FUTUROM	WEATHER OBS 1986\$ BASE 1988	\$12,677,706
	FUTUROM	WEATHER OBS 1986\$ BASE 1989	\$13,351,713
	FUTUROM	WEATHER OBS 1986\$ BASE 1990	\$13,376,180
	FUTUROM	WEATHER OBS 1986\$ BASE 1991	\$13,385,706
	FUTUROM	WEATHER OBS 1986\$ BASE 1992	\$13,472,997
	FUTUROM	WEATHER OBS INFL RATE 1987-1990	3.00%
	FUTUROM	WEATHER OBS INFL RATE 1991	4.64%
	FUTUROM	WEATHER OBS INFL RATE 1992	4.64%
	FUTUROM	WEATHER OBS INFL RATE 1993-1997	4.64%
	FUTUROM	TOWER SUBSIDY 1985-1988	\$795,252
	FUTUROM	CONTRACT TOWERS 1985	\$1,044,094
	FUTUROM	CONTRACT TOWERS INFL RATE 1986-92	0.14%
	FUTUROM	CONTRACT TOWERS INFL RATE 1993-97	4.64%
	FUTUROM	CIVILIANS AT MILITARY 1985	\$2,009,255
	FUTUROM	CIVILIANS AT MILITARY 1986	\$2,079,579
	FUTUROM	CIV AT MIL INFLATION RATE 1987-90	3.00%
	FUTUROM	CIV AT MIL INFLATION RATE 1991	4.64%
	FUTUROM	CIV AT MIL INFLATION RATE 1992	4.64%
	FUTUROM	CIV AT MIL INFLATION RATE 1993-97	4.64%
	FUTUROM	MILITARY COMMUNICATIONS 1985	\$1,729,775
	FUTUROM	MIL COM INFLATION RATE 1986-92	13.06%
	FUTUROM	MIL COM INFLATION RATE 1993-97	4.64%

The rest of the variables in Table 2.6 concern the overhead portion of the O&M budget. The overhead categories that can be adjusted are:

- o towers that fail Phase II,
- o weather observation,
- o subsidized towers,
- o contract towers,
- o civilians at military,
- o military communications.

The budget for towers that fail Phase II is entered for 1985 and can be inflated at distinct rates for these periods:

- o 1986-1990,
- o 1991,
- o 1992,
- o 1993-1997.

For weather observation, base budgets in 1986 dollars can be entered for 1985 through 1992. These bases can be inflated at different rates for four distinct periods:

- o 1987-1990,
- o 1991,
- o 1992,
- o 1993-1997.

Tower subsidies are simply a fixed annual amount (\$795,252 in the base case) between 1985 and 1988 and \$0 afterwards. The contract towers budget is entered for 1985 and inflated by a percentage (0.14 percent in the base case) for 1986-1992 and another percentage (4.64 percent) for 1993-1997.

The budget for civilians at military is entered for 1985 and 1986 and then inflated separately over four time periods:

- o 1987-1990,
- o 1991,
- o 1992,
- o 1993-1997.

Finally, military communications is entered for 1985 and inflated separately for:

- o 1986-1992,
- o 1993-1997.

2.7 KOOFUT71 & KOOFUT72

These two files allocate overhead to direct cost centers based upon allocation statistics. For example, headquarters administration costs are allocated among operating sites based upon the number of total full-time equivalent employees at each of the four types of operating sites in the FAA system. These two files perform these allocations under the assumption that regulatory costs are properly allocated to users.

The first file noted above performs these allocations for the time period 1985 through 1992 while the second performs the allocations for the time period 1993-1997.

These files receive all of their inputs from previous files in the model and contain no variables to be changed by the user.

2.8 KOOFUT81 & KOOFUT82

These files perform the same functions as the files described immediately above. The only difference is that the

allocations are performed under the assumption that regulatory costs are allocated to the public.

KOOFUT81 performs these allocations for the time period 1985 through 1992. KOOFUT82 performs the allocations for the time period 1993-1997.

These files also contain no variables to be changed by the user.

2.9 AVSFUT

This file allocates the AVS O&M budget based upon inspector hours for the year 1984. The budget is broken down into the following categories:

- o general aviation users,
- o general aviation-turbo users,
- o commuter and air taxi users,
- o IFR users,
- o air carriers,
- o military,
- o all users.

The file is divided into two subsegments. The top part of the file shows the period 1985 through 1992 while the bottom provides the allocations for 1993 through 1997. All inputs are received from the model.

2.10 Ramsey Files

These groups of files allocate various costs to the ten user groups including the allocation of joint costs by Ramsey Pricing.

The only inputs these files received that can be changed by the user are the price elasticities for each of the ten user groups.

Each of these files also presents results for the two scenarios used in the model:

- o if regulatory costs are allocated to users (Option 7),
- o if regulatory costs are allocated to the public sector (Option 8).

2.10.1 ARTRFUT1 & ARTRFUT2

These files allocate ARTCC costs and F&E, R&D and aviation standards IFR projects to users, for the periods 1985-1992 (ARTRFUT1) and 1993-1997 (ARTRFUT2). The following costs are estimated for each of the 10 user groups:

- o ARTCC variable costs,
- o ARTCC joint site costs,
- o ARTCC site total costs,
- o ARTCC overhead,
- o IFR R&D projects,
- o IFR F&E projects,
- o aviation standards IFR activities.

2.10.2 TOWRFUT1 & TOWRFUT2

These files allocate tower costs among the ten user groups of interest in the study. The following costs are allocated in this file:

- o variable operating site costs,
- o joint operating site costs,
- o tower overhead costs.

Also included in this file are the minimum GA allocation of tower costs.

TOWRFUT1 allocates tower costs for the period 1985 through 1992; TOWRFUT2 performs the same types of allocations for the period 1993 through 1997.

2.10.3 TRARFUT1 & TRARFUT2

These files allocate TRACON costs among the ten relevant user groups. The former file performs these allocations for the time period 1985 through 1992, while the latter performs the same functions for the time period 1993 through 1997.

The following TRACON costs are allocated in this file:

- o operating site variable costs,
- o joint operating site costs,
- o TRACON overhead costs.

Also included in these files are the minimum general aviation allocations for TRACONS. These minimum general aviation allocations are based upon the determination of whether TRACONS would continue to operate as TRACONS if only general aviation traffic were present. As a result, the minimum cost allocation variable and overhead costs are far less than the full cost allocation.

2.10.4 FSSRFUT1 & FSSRFUT2

These files present the allocation of FSS costs to the ten user groups of interest in this study. The former file performs these allocations for the time period 1985 through 1992 while the latter performs these same functions for the time period 1993 through 1997.

The following costs are allocated in this file:

- o FSS operating site variable costs,

- o FSS operating site joint costs,
- o FSS overhead costs.

2.10.5 OPSRFUT1 & OPSRFUT2

This file allocates the following cost centers among user groups using the Ramsey Pricing algorithm:

- o maintenance,
- o aviation standards regulatory activities,
- o regulation of airports,
- o F&E and R&D projects attributable to all users,
- o F&E and R&D projects attributable to general aviation users,
- o overhead items allocated to direct cost centers.

The OPSRFUT1 file evaluates the years 1985 through 1992. The latter file evaluates the time period 1993 through 1997.

2.10.6 OPSRFU1A & OPSRFU2A

These files allocate airport grants and airport grant overhead to the ten user group categories. Grants allocated among users are:

- o primary grants,
- o commercial service grants,
- o reliever grants,
- o general aviation airport grants,
- o overhead on these categories.

OPSRFU1A performs these allocations for the period 1985 through 1992. OPSRFU2A performs these allocations for the years 1993 through 1997.

2.10.7 OPSVFUT1 & OPSVFUT2

These files allocate certain air carrier projects and activities among air carrier groups. The cost categories included in this file are:

- o aircraft purchase loan guarantee program,
- o overhead on the aircraft purchased loan guarantee program,
- o F&E air carrier projects,
- o R&D air carrier projects.

OPSVFUT1 performs these allocations for the years 1985 through 1992; OPSVFUT2 performs the allocations for the time period 1993 through 1997.

2.11 Allocation Tables

These files summarize the full budget allocations to all ten user groups. In addition to presenting figures that include applicable overhead, these files have tables splitting out direct and indirect costs as well as other tables from Volumes I and III. They draw entirely upon inputs from other files in the cost allocation model.

2.11.1 O7RFUT1 & O7RFUT2

O7RFUT1 covers the years 1985 through 1992; O7RFUT2 covers the years 1993 through 1997. Both files represent the scenario in which regulatory costs are allocated to users.

2.11.2 O8RFUT1 & O8RFUT2

These files summarize the final allocations to all ten user groups under the assumption that regulatory costs are borne by

the public sector. O8RFUT1 covers the years 1985 through 1992; O8RFUT2 covers the years 1993 through 1997.

2.12 MINSYS

This file develops the minimum general aviation allocation system for the time period 1985 through 1997. It draws entirely on inputs from several other files in the cost allocation model.

2.13 TAXRAM1 & TAXRAM2

These files calculate the direct user taxes discussed in detail in Volume 4 of the report. TAXRAM1 performs calculations for the years 1985 through 1992, while TAXRAM2 performs the calculations for the time period 1993 through 1997.

These taxes are designed to cover fully allocated costs for each user group. The allocated costs are drawn from the O7RFUT and O8RFUT files. The files also project various activity measures and fleet sizes for different user groups. They also draw inputs entirely from other files in the model.

2.14 ALLOCSUM

This file simply accumulates data results from each year that the model is run. This data is then used to generate the various pie, bar and line graphs in the report. These graphs are printed using PGRAPH.

Section 3.0

DATABASES

3.1 Introduction

This section presents the databases which were used to construct the cost allocation model. The FAA budget has been segregated into four general categories:

- o O&M,
- o F&E,
- o R&D,
- o airport grants.

This same categorization is used to describe the databases.

3.2 O&M

The majority of O&M costs are related to the production of air traffic control services at FAA operating sites--ARTCCs, FSSs, TRACONS and towers. The direct costs of producing these services are documented in the econometric analysis in Volume 5, and include:

- o ATC labor costs,
- o AFS labor costs associated with operating sites,
- o leased telecommunications.

Shown in Figure 3.1 are the projected changes in activity at FAA operating sites over the period 1985 through 1997. These growth rates govern the forecast changes in activity in the

Figure 3.1

INDICES OF GROWTH IN ACTIVITY AT
FAA OPERATING SITES
(1985 = 100)

	ARTCC Handles*		FSS Services**		TRACON TSOS***		Tower Operations***	
	1992	1997	1992	1997	1992	1997	1992	1997
Air Carriers	125.4	137.8	105.1	114.8	107.6	136.6	132.3	127.1
Commuters	162.6	214.8	112.2	125.7	125.7	152.9	144.8	163.6
General Aviation Plus Government	125.8	139.7	118.4	128.3	132.5	139.9	134.8	151.4
Military	103.8	99.5	90.9	88.7	91.9	86.7	107.3	109.5
Combined	125.4	139.1	114.5	123.3	121.8	135.7	134.3	150.3

*Based on FAA: "Air Route Traffic Control Center Forecasts--Fiscal Years 1985-1996" (April, 1985).

**Based on FAA: "Total Flight Services, Pilot Briefs, Aircraft Contacted and Flight Plans Originated--Flight Service Stations Fiscal Years 1985-1992" (October, 1985).

***Based on FAA Terminal Area Forecasts (1984) (Note: FAA Aviation Forecasts does not provide breakdown of relative growth rates at TRACONS and towers).

model. The model also allows the user to change cost inflation factors as described in Sections 1.0 and 2.0 above.

The remaining cost categories in the O&M budget were derived directly from FAA budgets; shown below are the 1985 levels and how they were forecast:

	(\$-MIL) <u>1985</u>	<u>Labor</u> <u>Inflation</u>
o aviation standards	257.9	Y
o airports administration	26.6	3
o maintenance of ATC system ¹	388.3	Y ²
o centralized training	102.1	3
o installation and material service	193.4	3 ³
o administrative support		
(including NOAA)	180.4	3

3.3 F&E

The database for facilities and equipment expenditures in the period 1984 through 1992 was developed from budgetary information. Specifically, the budgets for 1984, 1985 and 1986, together with congressional smart sheets, were utilized to identify the ultimate allocation of individual F&E projects. Each project was allocated to one of five categories:

¹Other than those costs directly accounted for at ATC sites as documented in Volume 5.

²Maintenance costs are also affected by changes in labor effort due to changes in technology as identified in the 1990 FMF.

³These overhead items are part of the residual O&M budget calculated as: Total O&M-ATC costs-other items. In the post-1992 environment, these costs increase at a rate of 4.64 percent.

- o air carrier,
- o general aviation,
- o IFR users (denoted as "not VFR" in the tables which follow),
- o all users,
- o public interest.

In all cases the avoidable cost concept was utilized to allocate each project to the proper category.

The following tables show these allocations for the period 1984 through 1992.

F&E DATABASE

F&E(1984/1985/1986 BUDGET)
464FE84

13-Nov-85

TOTAL DOLLARS(000) 1984

ACTIVITY	PAGE	PROGRAM	AIR CORR.	GA	NOT VFR	ESTAB		PI
						ALL	CRITERIA	
ARTCC	191	LONG RANGE RADAR	0	0	81	0	0	0
ARTCC	192	RADAR MICROWAVE LINK	0	0	38800	0	0	0
ARTCC	193	NEXT GEN. WEATHER RADAR	2000	0	0	0	0	0
ARTCC	194	ATC RADAR BEACON SYSTEM	0	0	0	0	0	0
ARTCC	195	IMPROVE ATC EN ROUTE RADAR	0	0	700	0	0	0
ARTCC	196	HOST COMPUTER	2022	0	0	0	0	0
ARTCC	197	ADVANCED AUTOMATION SYSTEM	0	0	0	0	0	0
ARTCC	198	COM. FACILITY CONSOLID.	0	0	0	0	0	0
ARTCC	199	ARTCC BUILDINGS/PLANT	0	0	6546	0	0	0
ARTCC	200	DATA MULTIPLEXING NETWORK	0	0	0	0	0	0
ARTCC	221	UPGRADE TRAFFIC MANAG.	0	0	0	0	0	0
ARTCC	222	IMPROVE EN ROUTE COM.	0	0	3249	0	0	0
ARTCC	244(84)	PROVIDE RML TRUNKING	0	0	1200	0	0	0
ARTCC	246(84)	PROVIDE CENTER WEATHER PROC.	0	0	0	25000	0	0
ARTCC	248(84)	ENROUTE ALRT/MIN SAFE ALT WRNG	0	0	2776	0	0	0
ARTCC	248(84)	EN RTE AUTOMATION HARDWARE IMPRV	0	0	1700	0	0	0
ARTCC	249(84)	REPLACE ARTCC/ACAS TONE EQPT	0	0	0	0	0	0
ARTCC	252(84)	INTEGRATE BOARD APPROACH CNTRL	0	0	1600	0	0	0
ARTCC	252(84)	PROVIDE RADIN ENHANCEMENTS	5032	0	0	0	0	0
ARTCC	253(84)	PROVIDE ARTCC CONSOLIDATION	0	0	2400	0	0	0
ARTCC	253(84)	IN-SERVICE COMM IMPROVEMENTS	0	0	800	0	0	0
ARTCC		TOTAL	15,000	0	59,954	26,022	0	0
TOWERS	224	REPLACE AIRPORT SURVEIL. RADAR	0	0	99984	0	0	0
TOWERS	225	AIRPORT SURFACE DETECTION	0	0	0	0	0	0
TOWERS	226	AIRPORT SURVEIL. RADAR	0	0	10264	0	0	0
TOWERS	227	TERMINAL RADAR SYSTEM	0	0	1170	0	0	0
TOWERS	228	SUSTAIN NEW YORK TACOM	0	0	0	0	0	0
TOWERS	229	NAS REMOTE MONITORING	0	0	0	1504	0	0
TOWERS	230	ESTABL. CONTROL TOWER	0	0	0	0	0	0
TOWERS	231	REPLACE TERMINAL FACILITIES	45367	0	0	0	0	0
TOWERS	232	MODERN. RADAR APPROACH FACIL.	0	0	0	0	0	0
TOWERS	233	INTEG. COM. SWITCH SYSTEM	0	0	0	9202	0	0
TOWERS	234	REPLACE BRTE EQUIP.	17463	0	0	0	0	0
TOWERS	235	IMPROVE TERMINAL COM.	0	0	0	2402	0	0
TOWERS	255(84)	MODERN SURVEILLANCE & DATA LINK	0	0	114200	0	0	0
TOWERS	258(84)	PROVIDE RADAR IMPROVEMENTS	0	0	1500	0	0	0
TOWERS	259(84)	REPLACE TAX-42 TRNKL EMPTR SYST	0	0	0	0	0	0
TOWERS	259(84)	POS FOR ARTS 111A FACILITIES	0	0	28500	0	0	0
TOWERS	260(84)	ESTABLISH/REPLACE FID0 EQPT	0	0	4966	0	0	0
TOWERS	262(84)	PROVIDE ARTS 111A MEMORY	0	0	4145	0	0	0
TOWERS	264(84)	MODERN/IMPROV TRNKL FACILITIES	0	0	0	16001	0	0
TOWERS	265(84)	RELOC 8 & 9 CHNL VOICE RECORDERS	0	0	0	12337	0	0
TOWERS	265(84)	PROVIDE TRNKL IN-SERVICE ENGR	0	0	0	500	0	0
TOWERS	148(85)	RELOC MULTICHANL VOICE RECORDERS	0	0	0	0	0	0
TOWERS	149(85)	REPLACE ATIS RECORDERS	0	0	0	0	0	0
TOWERS	150(85)	LEAD SECTOR MAINTENANCE PROGRAM	0	0	0	0	0	0
TOWERS	151(85)	DIGITAL TIME CODE READERS	0	0	0	0	0	0
TOWERS	152(85)	PROVIDE DMS0 EQUIPMENT	0	0	0	0	0	0
TOWERS		TOTAL	62830	0	253657	42042	0	0

F&E DATABASE (cont.)

FSS	267(84)	FSS	0	102050	0	0	0	0
AIRNAV	217	VOR, DME, VORTAC REPLACEMENT	0	0	0	14093	0	0
AIRNAV	218	LOGAN-C	0	0	0	0	0	0
AIRNAV	219	NR-DIRECTIONAL RADIO BEACON	0	0	0	9009	0	0
AIRNAV	220	MLS AND MALSR	0	0	25200	0	0	0
AIRNAV	221	APPROACH LIGHTING SYSTEM	13236	0	0	0	0	0
AIRNAV	222	AWOS	0	0	0	0	0	0
AIRNAV	223	WINDSHEAR	0	0	0	0	0	0
AIRNAV	224	RUNWAY END LIGHTS	0	0	0	0	0	0
AIRNAV	225	PRECISION APPROACH PATH	0	0	0	0	0	0
AIRNAV	226	STRAIGHT-IN, NON-PREC. APPROCH.	0	0	0	4864	0	0
AIRNAV	227	THRESHOLD LIGHTS	0	0	0	3396	0	0
AIRNAV	228	RUNWAY VISUAL RANGE	6589	0	0	0	0	0
AIRNAV	229	AIRPORT APPROCH/LANDING AID FAC.	0	0	0	0	0	0
AIRNAV	279(84)	EST VISUAL APPROCH SLOPE INDIC	0	0	0	3709	0	0
AIRNAV	280(84)	IMPROVE ILS FACILITIES	0	0	1239	0	0	0
AIRNAV	281(84)	IMPROVE VISUAL AID FACILITIES	0	0	0	666	0	0
AIRNAV	281(84)	PROVIDE ADD'L FACILITIES TO ILS	0	0	1814	0	0	0
AIRNAV	282(84)	PRECISION LANDING AID IMPRVMTS	0	0	720	0	0	0
AIRNAV	NA(84)	ESTABLISH ILS	0	0	0	2529	0	0
AIRNAV	NA(85)	MALSR W/ RWAY ALIGNMT IND LGHTS	0	0	0	0	0	0
AIRNAV	NA(85)	NAVAIDS ADDED BY CONGRESS	0	0	0	0	0	0
AIRNAV	NA(85)	ILS POLICY CHANGE	0	0	0	0	0	0
AIRNAV		TOTAL	15,825	0	28,961	35,066	0	0
H.U.M.	231	NAT'L RADIO COM. SYSTEM	0	0	0	0	0	12024
H.U.M.	232	UNMANNED FRA FAC. AND EQUIP.	0	0	0	11623	0	0
H.U.M.	233	AIRPORT CABLE LOOP	0	0	0	0	0	0
H.U.M.	234	IMPROVE/REPLACE POWER SYSTEM	0	0	0	0	0	0
H.U.M.	235	CAD DESIGN SYSTEM	0	0	0	0	0	0
H.U.M.	236	ACQUIRE LAND/LEASEMENTS	0	0	0	14320	0	0
H.U.M.	237	MAINTENANCE CONTROL CENTERS	0	0	0	0	0	0
H.U.M.	238	PROVIDE TEST EQUIP.	0	0	0	0	0	0
H.U.M.	239	LOGISTICS/INVENTORY SYSTEM	0	0	0	2327	0	0
H.U.M.	240	AIRPORT DATUM MONV.	0	0	0	0	0	0
H.U.M.	241	SYSTEM INTEG. SUPPORT	0	0	0	0	0	0
H.U.M.	242	NAV AID/ATC FAC.	0	0	0	2002	0	0
H.U.M.	243	AIR NAV/ATC SYSTEM SUPPORT	0	0	0	3002	0	0
H.U.M.	244	FREQ/SPECTRUM ENGIN.	0	0	0	402	0	0
H.U.M.	255(84)	PCR TESTERS FOR MAINTNCE HUBS	0	0	0	4353	0	0
H.U.M.	257(84)	MECHANIZED MATERIAL HANDLG SYST	0	0	0	2902	0	0
H.U.M.	257(84)	COMPUTER-BASED INSTRUCTN TRNLS	0	0	0	1720	0	0
H.U.M.	258(84)	EXPLOSIVE DETECTION SYSTEMS	0	0	0	0	0	0
H.U.M.	NA(85)	AIR SCIENCE CURR GRANT	0	0	0	0	0	0
H.U.M.		TOTAL	800	0	0	44,539	0	12,024

F&E DATABASE (cont.)

AIRCRAFT	246	AIRBORNE LORAN-C	2	0	2	0	0	0
AIRCRAFT	247	SPECTRUM ANALYZER	0	0	0	0	2	0
AIRCRAFT	248	TURBO PROP AIRCRAFT	3	2	2	3	0	2
AIRCRAFT	249	HEAD-UP IN SIMULATOR	2	0	0	2	0	0
AIRCRAFT	250	TURBO PROP AIRCRAFT	0	2	0	23102	0	2
AIRCRAFT	292(84)	PROCURE AIRBORNE MLS	2	0	1300	0	0	0
AIRCRAFT	176(85)	PROCURE LASER RANGE FINDERS	2	2	2	0	0	0
AIRCRAFT		TOTAL	2	2	1300	23102	2	2
D.T.E.	252	FAR TECH. CENTER LEASE	2	0	2	5250	2	2
D.T.E.	253	FIRE TEST FAC.	0	0	0	0	0	2
D.T.E.	254	INFLIGHT FIRE TEST FAC.	0	0	0	0	0	0
D.T.E.	255	AIRPORT IMPROVEMENTS	0	0	0	0	0	0
D.T.E.	256	TECH. CENTER HELIPORT	0	0	0	0	2	2
D.T.E.	257	NAS FIELD SUPPORT	0	0	400	0	0	0
D.T.E.	258	SWITCHING EQUIPMENT	2	0	2	1249	0	0
D.T.E.	259	ENGIN. SERVICES EQUIP.	0	0	0	0	0	0
D.T.E.	296(84)	CONSTRUCT TECH SUPPORT FACILITY	0	2	2	11000	0	0
D.T.E.	297(84)	PROVIDE EPA STD COMPLIANCE CAP	0	0	0	1096	0	0
D.T.E.	298(84)	ENHANCE COMPUTER LAB FACILITIES	2102	2	0	0	0	2
D.T.E.	298(84)	ATCSE UPGRADE	1035	0	0	2	0	0
D.T.E.	299(84)	ENHANCE NAS DOCUMENT'N FACILITY	0	0	0	605	0	0
D.T.E.	322(84)	ENHANCE GEN PURPOSE COMP FACIL	0	0	0	610	0	0
D.T.E.	162(85)	ENHANCE AVIATION SECURITY LAB	0	0	0	0	0	0
D.T.E.	162(85)	POWER CONDITIONING SYSTEM	0	0	0	0	0	0
D.T.E.	NA(85)	NAS SIMUL SUPPORT FACILITY	0	2	0	0	0	0
D.T.E.		TOTAL	3.275	2	466	20.052	0	0
GRAND TOTAL			101733	102250	349360	194897	8	12224
% OF TOTAL (1984)			13.38%	13.43%	45.96%	25.64%	0.00%	1.58%
% OF TOTAL (1984-1993)			43.07%	4.06%	29.54%	22.23%	0.02%	1.13%
% ALLOCATED TO 1984 TOTAL			327362	32953	224219	168362	0	5569

T = TERMINAL
R = REPLACEMENT/REPAIR
I = IMPROVE SERVICE
C = OUT COSTS
E = EXPANSION
0 = 00

H = HELICOPTER
L = LOCAL (WHERE)
O = OVERHEAD
P = PUBLIC INTEREST
J = JET

(1) FUNDING ENDS AFTER 1983 (2) 32000 PER YEAR
(3) AVERAGE OF 4000 PER YEAR (9) 5300 PER YEAR
(4) AVERAGE OF 13400 PER YEAR (10) NON-RADAR TOWERS
(4) FUNDING ENDS AT END OF 1992 (11) 6500 PER YEAR
(5) 5800 PER YEAR (12) 400 PER YEAR
(6) 5000 PER YEAR

F&E DATABASE (cont.)

F&E(1984/1985/1986 BUDGET)
464FE85

13-Nov-85

TOTAL DOLLARS(000) 1985

ACTIVITY	PAGE	PROGRAM	AIR CARR.	GA	NOT VFR	ESTAB ALL CRITERIA	PI
ARTCC	191	LONG RANGE RADAR	0	0	31173	0	2
ARTCC	192	RADAR MICROWAVE LINK	0	0	40581	0	0
ARTCC	193	NEXT GEN. WEATHER RADAR	7500	0	0	0	2
ARTCC	194	ATC RADAR BEACON SYSTEM	0	0	0	0	0
ARTCC	195	IMPROVE ATC EN ROUTE RADAR	0	2	0	0	0
ARTCC	196	HOST COMPUTER	244432	0	2	0	2
ARTCC	197	ADVANCED AUTOMATION SYSTEM	17604	0	0	0	2
ARTCC	198	COM. FACILITY CONSOLID.	0	0	0	5000	0
ARTCC	199	ARTCC BUILDINGS/PLANT	0	2	7311	0	2
ARTCC	200	DATA MULTIPLEXING NETWORK	0	0	0	0	0
ARTCC	201	UPGRADE TRAFFIC MANAG.	0	0	0	0	0
ARTCC	202	IMPROVE EN ROUTE COM.	0	0	7135	2	0
ARTCC	244(84)	PROVIDE RAL TRUNKING	0	0	0	0	0
ARTCC	246(84)	PROVIDE CENTER WEATHER PROC.	0	0	0	0	0
ARTCC	248(84)	CONFLICT ALERT/MIN SAFE ALT WRNS	0	0	0	0	0
ARTCC	248(84)	EN RTE AUTOMATION HARDWARE IMPRV	0	0	0	0	0
ARTCC	249(84)	REPLACE ARTCC/ROAG TONE EQPT	0	0	57685	0	2
ARTCC	252(84)	INTEGRATE NONRDR APPROCH CNTRLS	0	0	0	0	0
ARTCC	252(84)	PROVIDE RADIN ENHANCEMENTS	0	0	0	0	2
ARTCC	251(84)	PROVIDE ARTCC CONSOLIDATION	0	0	0	0	0
ARTCC	251(84)	IN-SERVICE COMM. IMPROVEMENTS	0	2	0	0	2
ARTCC		TOTAL	285.536	0	144.289	5.022	2
TOWERS	204	REPLACE AIRPORT SURVEIL. RADAR	0	0	144800	0	2
TOWERS	205	AIRPORT SURFACE DETECTION	57920	0	0	0	0
TOWERS	206	AIRPORT SURVEIL. RADAR	0	0	2952	0	0
TOWERS	207	TERMINAL RADAR SYSTEM	0	0	2336	0	0
TOWERS	208	SUSTAIN NEW YORK TRACON	0	0	0	0	2
TOWERS	209	NAS REMOTE MONITORING	0	0	0	42420	0
TOWERS	210	ESTABL. CONTROL TOWER	0	0	0	0	545.
TOWERS	211	REPLACE TERMINAL FACILITIES	16216	0	0	0	0
TOWERS	212	MODERN, RADAR APPROACH FACIL.	12341	0	0	0	0
TOWERS	213	INTEG. COM. SWITCH SYSTEM	0	0	0	10300	0
TOWERS	214	REPLACE BRTE EQUIP.	14052	0	0	0	0
TOWERS	215	IMPROVE TERMINAL COM.	0	0	0	0	2
TOWERS	255(84)	MODE-S SURVEILLANCE & DTA LINK	0	2	11312	0	2
TOWERS	255(84)	PROVIDE RADAR IMPROVEMENTS	0	2	0	0	2
TOWERS	255(84)	RLCE TPA-42 TRML EXPTA SYST	0	0	35333	0	2
TOWERS	255(84)	FOS FOR ARTS IIIA FACILITIES	0	2	8920	0	0
TOWERS	256(84)	ESTABLISH/REPLACE FOLD EQPT	0	0	0	0	0
TOWERS	256(84)	PROVIDE ARTS IIIA MEMORY	0	0	0	0	0
TOWERS	254(84)	MODERN/IMPROV TRML FACILITIES	0	0	0	6446	0
TOWERS	255(84)	RLCE 5 & 9 CHNL VOICE RECORDERS	0	0	0	0	0
TOWERS	255(84)	PROVIDE TRML IN-SERVICE ENGR	0	2	0	0	2
TOWERS	140(85)	RLCE MULTICHNL VOICE RECORDERS	0	0	0	12200	0
TOWERS	141(85)	REPLACE ARTS RECORDERS	0	2	0	11171	0
TOWERS	152(85)	LEAD SECTOR MAINTENANCE PAPER	0	2	0	5200	0
TOWERS	151(85)	DIGITAL TONE CODE READERS	0	2	0	566	0
TOWERS	152(85)	PROVIDE DASH EQUIPMENT	0	2	0	1354	0
TOWERS		TOTAL	37503	2	310.85	33857	9451

F&E DATABASE (cont.)

FSS	267(84)	FSS	0	142639	0	0	0	0
AIRNAV	217	VOR. DNE. VORTAC REPLACEMENT	0	0	0	9624	0	0
AIRNAV	218	LOMAN-C	0	0	0	0	0	2
AIRNAV	219	NM-DIRECTIONAL RADIO BEACON	0	0	0	11020	0	0
AIRNAV	220	MLS AND MALS	0	0	42575	0	0	0
AIRNAV	221	APPROACH LIGHTING SYSTEM	15956	0	0	0	0	0
AIRNAV	222	AWOS	0	0	0	0	0	2
AIRNAV	223	WINDSPEED	0	0	0	0	2	2
AIRNAV	224	RUNWAY END LIGHTS	0	0	0	4674	0	0
AIRNAV	225	PRECISION APPROACH PATH	2	0	3610	0	2	0
AIRNAV	226	STRAIGHT-IN, NON-PREC. APPROCH.	0	0	0	3110	0	0
AIRNAV	227	THRESHOLD LIGHTS	2	0	0	3375	2	2
AIRNAV	228	RUNWAY VISUAL RANGE	12263	0	0	0	0	2
AIRNAV	229	AIRPORT APPROCH/LANDING AID FAC.	0	0	5120	0	0	0
AIRNAV	273(84)	EST VISUAL APPROCH SLOPE INDIC	0	0	0	0	0	2
AIRNAV	280(84)	IMPROVE ILS FACILITIES	0	0	0	0	0	2
AIRNAV	280(84)	IMPROVE VISUAL AID FACILITIES	0	2	0	0	0	2
AIRNAV	281(84)	PROVIDE ADD'L FACILITIES TO ILS	0	0	0	0	0	0
AIRNAV	282(84)	PRECISION LANDING AID IMPRVMENTS	0	0	0	0	0	2
AIRNAV	NA(84)	ESTABLISH ILS	0	0	0	0	0	2
AIRNAV	NA(85)	MASLR W/ RWAY ALIGNMT IND LGHTS	0	0	1763	0	0	2
AIRNAV	NA(85)	NAVAIDS ADDED BY CONGRESS	2	0	0	6243	0	0
AIRNAV	NA(85)	ILS POLICY CHANGE	0	0	0	31830	0	2
AIRNAV		TOTAL	26,215	2	53,048	69,260	0	2
H.C.M.	231	NAT'L RADIO COM. SYSTEM	0	0	0	0	0	21000
H.C.M.	232	UNMANNED FAR FAC. AND EQUIP.	0	0	0	5332	0	0
H.C.M.	233	AIRPORT CABLE LOOP	8860	0	0	0	0	0
H.C.M.	234	IMPROVE/REPLACE POWER SYSTEM	0	0	0	0	0	2
H.C.M.	235	CAD DESIGN SYSTEM	0	0	0	0	0	0
H.C.M.	236	ACQUIRE LAND/EASEMENTS	0	0	0	6920	0	0
H.C.M.	237	MAINTENANCE CONTROL CENTERS	0	0	0	0	0	2
H.C.M.	238	PROVIDE TEST EQUIP.	0	0	0	7221	0	0
H.C.M.	239	LOGISTICS/INVENTORY SYSTEM	2	0	0	0	0	0
H.C.M.	240	AIRPORT DATUM MONV.	0	0	0	0	0	0
H.C.M.	241	SYSTEM INTEG. SUPPORT	0	0	0	54650	0	2
H.C.M.	242	NAV AID/ATC FAC.	0	0	0	2200	0	0
H.C.M.	243	AIR NAV/ATC SYSTEM SUPPORT	0	0	0	5500	0	2
H.C.M.	244	FREQ/SPECTRUM ENGIN.	0	0	0	400	0	2
H.C.M.	286(84)	PCB TESTERS FOR MAINTNCE HUBS	0	0	0	0	0	0
H.C.M.	287(84)	MECHANIZED MATERIAL HANDLE SYST	0	0	0	6760	0	0
H.C.M.	287(84)	COMPUTER-BASED INSTRUCTN TRNLS	2	0	0	0	0	0
H.C.M.	288(84)	EXPLOSIVE DETECTION SYSTEMS	2	0	0	0	0	0
H.C.M.	NA(85)	AIR SCIENCE CURR GRANT	0	0	0	5200	0	2
H.C.M.		TOTAL	8,862	0	2	97,963	0	22,200

F&E DATABASE (cont.)

AIRCRAFT	246	AIRBORNE LORAN-C	0	0	0	0	0	0
AIRCRAFT	247	SPECTRUM ANALYZER	0	0	0	0	2	0
AIRCRAFT	248	TURBO PROP AIRCRAFT	0	0	0	0	2	0
AIRCRAFT	249	HEAD-UP IN SIMULATOR	0	0	0	0	0	0
AIRCRAFT	250	TURBO PROP AIRCRAFT	0	0	0	0	2	0
AIRCRAFT	292(84)	PROCURE AIRBORNE MLS	0	0	1000	0	0	0
AIRCRAFT	176(85)	PROCURE LASER RANGE FINDERS	0	0	700	0	0	0
AIRCRAFT		TOTAL	0	0	1700	2	2	0
D, T, E,	252	FAA TECH. CENTER LEASE	0	0	0	5090	2	2
D, T, E,	253	FIRE TEST FAC.	0	0	0	695	0	0
D, T, E,	254	INFLIGHT FIRE TEST FAC.	0	0	0	2	2	2
D, T, E,	255	AIRPORT IMPROVEMENTS	0	0	2	2	0	0
D, T, E,	256	TECH. CENTER HELIPORT	0	0	0	2	2	2
D, T, E,	257	NAS FIELD SUPPORT	0	0	0	2	2	0
D, T, E,	258	SWITCHING EQUIPMENT	0	0	0	596	2	2
D, T, E,	259	ENGIN. SERVICES EQUIP.	0	0	235	0	0	0
D, T, E,	296(84)	CONSTRUCT TECH SUPPORT FACILITY	0	0	0	2	2	0
D, T, E,	297(84)	PROVIDE EPA STD COMPLIANCE CAP	0	0	0	0	0	0
D, T, E,	336(84)	ENHANCE COMPUTER LAB FACILITIES	164	0	2	2	2	2
D, T, E,	359(84)	ATCSP UPGRADE	0	0	0	0	2	2
D, T, E,	293(84)	ENHANCE NAS DOCUMENTN FACILITY	2	0	0	2	2	2
D, T, E,	300(84)	ENHANCE GEN PURPOSE COMP FACIL	0	0	0	2	2	0
D, T, E,	190(85)	ENHANCE AVIATION SECURITY LAB	503	2	0	2	2	0
D, T, E,	182(85)	POWER CONDITIONING SYSTEM	2000	0	0	2	2	0
D, T, E,	NA(85)	NAS SIMUL SUPPORT FACILITY	0	0	2	540	2	0
		TOTAL	2,673	0	235	7,233	2	0
		GRAND TOTAL	424897	140039	503481	273353	2	28461
T = TERMINAL R = REPLACEMENT/REPAIR I = IMPROVE SERVICE C = COST COSTS E = EXPANSION J = JET H = HELICOPTER L = LOCAL (WHERE) O = OVERHEAD P = PUBLIC INTEREST J = JET (1) FUNDING ENDS AFTER 1988 (2) AVERAGE OF 4000 PER YEAR (3) AVERAGE OF 13400 PER YEAR (4) FUNDING ENDS AT END OF 1992 (5) 5000 PER YEAR (6) 5000 PER YEAR (7) 2700 PER YEAR (8) 20000 PER YEAR (9) 8000 PER YEAR (10) NON-RADAR TOWERS (11) 13500 ITIN OPS (12) 6500 PER YEAR (13) 400 PER YEAR (14) 1500 PER YEAR								

F&E DATABASE (cont.)

FILE (1984/1985/1986 BUDGET)
464FE86

13-Nov-85

TOTAL DOLLARS(200) 1986

ACTIVITY		PROJ	PROGRAM	AIR DATA	SA	NET WFR	ESTIM ALL CRITERIA		PI	
ART00	191		LONG RANGE RADAR	0	0	46120	2	0	0	
ART00	192		RADAR MICROWAVE LINK	0	0	63700	0	0	0	
ART00	193		WENT SEW. WEATHER RADAR	4300	2	2	2	2	0	
ART00	194		ATC RADAR DECON SYSTEM	2	0	6404	2	0	0	
ART00	195		IMPROVE ATC EN ROUTE RADAR	2	2	2430	2	2	0	
ART00	196		HOST COMPUTER	20500	0	2	2	2	2	
ART00	197		ADVANCED AUTOMATION SYSTEM	10700	0	2	2	2	2	
ART00	198		COM. FACILITY CONSOLID.	2	0	2	11885	0	0	
ART00	199		ART00 BUILDINGS/PLANT	0	2	11904	0	0	2	
ART00	200		DATA MULTIPLEXING NETWORK	2	0	4000	2	0	0	
ART00	201		IMPROVE TRAFFIC MANS.	2	2	5700	0	0	0	
ART00	202		IMPROVE EN ROUTE COM.	2	0	4553	2	2	0	
ART00	244(84)		PROVIDE RVL TRUNKING	0	0	0	0	0	0	
ART00	245(84)		PROVIDE CENTER WEATHER PROG.	0	0	0	0	0	0	
ART00	246(84)		ONFLOT ALRT/KIN SAFE ALT WRNG	0	0	2	0	0	0	
ART00	247(84)		EN RTE AUTOMATION HRSWRE IMPRV	2	0	0	0	0	0	
ART00	248(84)		REPLACE ART00/AR05 TONE EQPT	2	2	0	0	0	0	
ART00	250(84)		INTEGRATE RADAR APPROCH CONTRLS	2	0	0	0	0	0	
ART00	252(84)		PROVIDE RADIN ENHANCEMENTS	2	2	0	2	0	0	
ART00	253(84)		PROVIDE ART00 CONSULTATION	2	0	2	0	0	0	
ART00	254(84)		IN-SERVICE COMM IMPROVEMENTS	0	2	0	0	0	2	
ART00			TOTAL	97.556	0	151.552	11.889	0	0	
TCW000	204		REPLACE AIRPORT SURVEILL. RADAR	2	2	157810	2	0	0	
TCW000	205		AIRPORT SURFACE DETECTION	51358	0	2	2	0	0	
TCW000	206		AIRPORT SURVEILL. RADAR	0	2	3000	2	0	0	
TCW000	207		TERMINAL RADAR SYSTEM	0	0	6245	0	0	0	
TCW000	208		SUSTAIN NEW YORK TRACON	31400	0	0	0	0	0	
TCW000	209		LAB REMOTE MONITORING	0	2	2	70049	0	0	
TCW000	210		ESTABL. CONTROL TOWER	0	0	0	0	0	1992	
TCW000	211		REPLACE TERMINAL FACILITIES	57109	0	0	0	0	0	
TCW000	212		MODERN. RADAR APPROACH- FACIL.	11974	0	0	2	0	0	
TCW000	213		INTEG. COMM. SWITCH SYSTEM	0	0	0	39040	0	0	
TCW000	214		REPLACE PRITE EQUIP.	44000	0	0	0	0	0	
TCW000	215		IMPROVE TERMINAL COM.	2	0	2	7054	0	0	
TCW000	216(84)		MODERN SURVEILLANCE & DTA LINK	2	2	2	0	0	0	
TCW000	217(84)		PROVIDE RADAR IMPROVEMENTS	2	0	0	0	0	0	
TCW000	218(84)		WALCO TWA-42 TRNG. CAPTR SYST	2	2	0	0	0	0	
TCW000	219(84)		ADS FOR ARTS TTA FACILITIES	2	0	0	0	0	0	
TCW000	220(84)		ESTABLISH/REPLACE FOTO EQPT	0	0	2	0	0	0	
TCW000	221(84)		PROVIDE ARTS TTA MEMORY	2	0	0	2	0	0	
TCW000	222(84)		MODERN/IMPROV TRNG. FACILITIES	0	0	2	0	0	0	
TCW000	223(84)		REPLACE 5 1/2 CHNL VOICE RECORDERS	0	0	0	0	0	0	
TCW000	224(84)		PROVIDE TRNG. IN-SERVICE ENGR	0	0	2	0	0	0	
TCW000	225(84)		REPLACE MULTICHNL VOICE RECORDERS	2	0	0	2	0	0	
TCW000	226(84)		REPLACE ATIS RECORDERS	0	0	2	2	0	0	
TCW000	227(84)		LEAD SECTOR MAINTENANCE PROGRAM	0	0	2	0	0	0	
TCW000	228(84)		DVD TTA TONE CODE READERS	0	0	2	0	0	0	
TCW000	229(84)		PROVIDE DAST EQUIPMENT	2	0	0	0	0	0	
TCW000			TOTAL	45	19636	0	16356	11949	2	2992

F&E DATABASE (cont.)

FSS	267(24)	FSS	0	0	0	0	0	0
AIRNAV	217	VOR, DNE, VORTAC REPLACEMENT	0	0	0	21260	2	0
AIRNAV	218	CORAN-C	0	5002	0	0	0	2
AIRNAV	219	NM-DIRECTIONAL RADIO BEACON	2	0	0	683	0	0
AIRNAV	220	NLS AND NALSR	0	0	46685	0	2	0
AIRNAV	221	APPROACH LIGHTING SYSTEM	24549	0	0	0	0	0
AIRNAV	222	AWOS	2	27225	0	0	2	0
AIRNAV	223	WINDSNEAR	15666	0	0	0	0	0
AIRNAV	224	RUNWAY END LIGHTS	0	2	2	4538	0	0
AIRNAV	225	PRECISION APPROACH PATH	2	2	2566	0	2	0
AIRNAV	226	STRAIGHT-IN, NON-PREC. APPROCH.	0	2	0	1881	0	2
AIRNAV	227	THRESHOLD LIGHTS	0	0	0	1332	2	0
AIRNAV	228	RUNWAY VISUAL RANGE	6232	2	2	2	0	2
AIRNAV	229	AIRPORT APPROCH/LANDING AID FAC.	0	2	2610	0	0	0
AIRNAV	279(84)	EST VISUAL APPROCH SLOPE INDIC	2	2	0	2	2	2
AIRNAV	280(84)	IMPROVE ILS FACILITIES	0	0	0	0	0	0
AIRNAV	280(84)	IMPROVE VISUAL AID FACILITIES	0	0	0	0	0	2
AIRNAV	281(84)	PROVIDE ADD'L FACILITIES TO ILS	0	0	0	0	0	0
AIRNAV	282(84)	PRECISION LANDING AID IMPRVMENTS	0	0	0	0	0	0
AIRNAV	NA(84)	ESTABLISH ILS	0	0	0	0	2	0
AIRNAV	NA(85)	NABLR W/ RWAY ALIGNMENT IND LIGHTS	0	0	0	0	2	0
AIRNAV	NA(85)	NABLR ADDED BY CONGRESS	2	0	0	0	0	2
AIRNAV	NA(85)	ILS POLICY CHANGE	0	2	2	0	0	2
AIRNAV		TOTAL	52,669	32,225	52,281	38,014	0	2
AIRNAV	231	NAT'L RADIO COM. SYSTEM	0	0	0	0	2	19700
AIRNAV	232	UNMANVED FRA FAC. AND EQUIP.	0	0	0	32734	0	2
AIRNAV	233	AIRPORT CABLE LOOP	17248	0	0	0	2	0
AIRNAV	234	IMPROVE/REPLACE POWER SYSTEM	2	0	0	6443	0	0
AIRNAV	235	CAD DESIGN SYSTEM	2	2	2	10922	0	2
AIRNAV	236	ACQUIRE LAND/EMSEMENTS	2	2	0	11282	0	2
AIRNAV	237	MAINTENANCE CONTROL CENTERS	2	0	0	11000	0	2
AIRNAV	238	PROVIDE TEST EQUIP.	2	0	0	3650	0	2
AIRNAV	239	LOGISTICS/INVENTORY SYSTEM	0	2	0	3000	2	0
AIRNAV	240	AIRPORT DATUM MONV.	0	0	1000	0	2	0
AIRNAV	241	SYSTEM INTES. SUPPORT	2	2	0	67200	2	0
AIRNAV	242	NAV AID/ATO FAC.	2	0	0	2300	2	0
AIRNAV	243	AIR NAV/ATO SYSTEM SUPPORT	2	0	0	5820	2	0
AIRNAV	244	FREQUENCY SPECTRUM ENGIN.	2	2	0	652	2	0
AIRNAV	283(84)	POS TESTERS FOR MAINTNCE -088	2	2	0	0	2	2
AIRNAV	287(84)	MECHANIZED MATERIAL HANDLING SYST	2	0	0	0	0	0
AIRNAV	287(84)	COMPUTER-BASED INSTRUCT. TRNLS	2	0	2	0	2	2
AIRNAV	287(84)	EXPLOSIVE DETECTION SYSTEMS	0	0	0	0	0	0
AIRNAV	NA(85)	AIR SCIENCE CORR GRANT	2	2	0	0	2	2
AIRNAV		TOTAL	17,248	0	1,000	154,777	2	15,700

F&E DATABASE (cont.)

AIRCRAFT	246	AIRBORNE LORAN-C	0	1500	0	0	0	0
AIRCRAFT	247	SPECTRUM ANALYZER	0	0	0	1125	0	0
AIRCRAFT	248	TURBO PROP AIRCRAFT	0	0	0	4433	0	0
AIRCRAFT	249	HEAD-UP IN SIMULATOR	150	0	0	0	0	0
AIRCRAFT	250	TURBO PROP AIRCRAFT	0	0	0	13300	0	0
AIRCRAFT	293(84)	PRECISE AIRBORNE MLS	0	0	0	0	0	0
AIRCRAFT	170(85)	PRECISE LASER RANGE FINDERS	0	0	0	0	0	0
AIRCRAFT		TOTAL	150	1500	0	18956	0	0
D.T.E.	251	FAA TECH. CENTER LEASE	0	0	0	5290	0	0
D.T.E.	252	FIRE TEST FAC.	0	0	0	875	0	0
D.T.E.	254	INFLIGHT FIRE TEST FAC.	1400	0	0	0	0	0
D.T.E.	255	AIRPORT IMPROVEMENTS	1620	0	0	0	0	0
D.T.E.	256	TECH. CENTER AIRPORT	0	520	0	0	0	0
D.T.E.	257	NAS FIELD SUPPORT	0	0	736	0	0	0
D.T.E.	258	SWITCHING EQUIPMENT	0	0	0	220	0	0
D.T.E.	259	ENGIN. SERVICES EQUIP.	0	0	275	0	0	0
D.T.E.	259(84)	CONSTRUCT TECH SUPPORT FACILITY	0	0	0	0	0	0
D.T.E.	257(84)	PROVIDE EPA STD COMPLIANCE CAP	0	0	0	0	0	0
D.T.E.	298(84)	ENHANCE COMPUTER LAB FACILITIES	0	0	0	0	0	0
D.T.E.	258(84)	ATDSE UPGRADE	0	0	0	0	0	0
D.T.E.	299(84)	ENHANCE NAS DOCUMENT'N FACILITY	0	0	0	0	0	0
D.T.E.	302(84)	ENHANCE GEN PURPOSE COMP FACIL	0	0	0	0	0	0
D.T.E.	180(85)	ENHANCE AVIATION SECURITY LAB	0	0	0	0	0	0
D.T.E.	182(85)	POWER CONDITIONING SYSTEM	0	0	0	0	0	0
D.T.E.	181(85)	NAS SIMUL SUPPORT FACILITY	0	0	0	0	0	0
D.T.E.		TOTAL	3,220	500	1,011	6,365	0	0
GRAND TOTAL			365207	34225	367838	340971	0	11592

T = TERMINAL
R = REPLACEMENT/REPAIR
I = IMPROVE SERVICE
C = COSTS
E = EXPANSION
N = NONE

H = HELICOPTER
L = LOCAL (WHERE)
O = OVERHEAD
P = PUBLIC INTEREST
J = JET

(1) FUNDING ENDS AFTER 1983
(2) AVERAGE OF 4000 PER YEAR
(3) AVERAGE OF 13400 PER YEAR
(4) FUNDING ENDS AT END OF 1990
(5) 5000 PER YEAR
(6) 1200 PER YEAR
(7) 2700 PER YEAR
(8) 20000 PER YEAR
(9) 8300 PER YEAR
(10) NON-RADAR TOWERS
(11) 171N OPS
(12) 6500 PER YEAR
(13) 400 PER YEAR
(14) 1500 PER YEAR

F&E DATABASE (cont.)

F&E(1984/1985/1986 BUDGET)
464FE87

13-Nov-85

TOTAL DOLLARS(000) 1987-1992

ACTIVITY	PAGE	PROGRAM	AIR CARR.	GA	NOT VFR	ESTAS		PI	
						ALL CRITERIA			
ART01	191	LONG RANGE RADAR	2	0	392100	0	0	2	
ART02	192	RADAR MICROWAVE LINK	0	0	121600	0	2	2	
ART03	193	NEXT GEN. WEATHER RADAR	248600	0	0	0	2	0	
ART04	194	ATO RADAR BEACON SYSTEM	2	0	0	2	0	0	
ART05	195	IMPROVE ATO EN ROUTE RADAR	2	2	24200	2	0	2	
ART06	196	HOST COMPUTER	6222	0	0	2	2	0	
ART07	197	ADVANCED AUTOMATION SYSTEM	257200	0	0	0	2	2	
ART08	198	COM. FACILITY CONSOLID.	2	2	0	6622	2	2	
ART09	199	ART01 BUILDINGS/PLANT	2	0	20-20	2	2	2	
ART10	200	DATA MULTIPLEXING NETWORK	2	0	16000	2	2	2	
ART11	201	UPGRADE TRAFFIC MANAG.	0	2	9720	0	2	0	
ART12	202	IMPROVE EN ROUTE COM.	2	2	34800	2	0	0	
ART13	244(84)	PROVIDE RML TRUNKING	0	2	0	2	0	2	
ART14	246(84)	PROVIDE CENTER WEATHER PROC.	0	0	0	2	2	0	
ART15	249(84)	ENFLDT ALRT/MIN SAFE ALT WRNG	0	2	0	2	2	0	
ART16	245(84)	EN RTE AUTOMATION PROWRE IMPRV	2	0	0	2	0	0	
ART17	247(84)	REPLACE ART02/RCS TONE EQPT	2	2	0	2	0	2	
ART18	252(84)	INTEGRATE NONRDR APPROCH CNTRLS	2	2	0	0	2	2	
ART19	252(84)	PROVIDE NADIN ENHANCEMENTS	2	2	0	0	2	2	
ART20	251(84)	PROVIDE ART02 CONSOLIDATION	0	0	0	2	0	0	
ART21	252(84)	IN-SERVICE COM. IMPROVEMENTS	2	2	0	2	2	2	
ART22		TOTAL	2,626,622	2	679,622	66,522	0	2	
TOA01	204	REPLACE AIRPORT SURVEILL. RADAR	0	0	125,12	2	0	2	
TOA02	205	AIRPORT SURFACE DETECTION	0	0	0	2	2	0	
TOA03	206	AIRPORT SURVEILL. RADAR	0	2	36300	2	2	0	
TOA04	207	TERMINAL RADAR SYSTEM	0	0	30200	0	2	0	
TOA05	208	SUSTAIN NEW YORK TRACON	0	2	0	2	0	0	
TOA06	209	WAB REMOTE MONITORING	2	0	0	193500	0	0	
TOA07	210	ESTABL. CONTROL TOWER	2	2	0	0	0	16200	
TOA08	211	REPLACE TERMINAL FACILITIES	122222	2	0	0	2	0	
TOA09	212	MODERN. RADAR APPROACH FACIL.	49500	0	2	0	2	2	
TOA10	213	INTELL. COM. SWITCH SYSTEM	2	0	0	3122	2	0	
TOA11	214	REPLACE BRTE EQUIP.	0	2	0	0	0	2	
TOA12	215	IMPROVE TERMINAL COM.	2	0	0	39000	2	2	
TOA13	216(84)	MODERN SURVEILLANCE & DTA LINK	2	2	0	0	2	2	
TOA14	217(84)	PROVIDE RADAR IMPROVEMENTS	0	0	0	0	2	0	
TOA15	218(84)	PROVIDE TRF-42 TRMNL CMPTER SYST	2	0	0	0	0	0	
TOA16	219(84)	MODERN. ARTS IIIA FACILITIES	2	2	0	0	0	0	
TOA17	220(84)	ESTABLISH/REPLACE FDIG EQPT	0	0	0	2	2	0	
TOA18	221(84)	PROVIDE ARTS IIIA MEMORY	2	2	0	0	0	0	
TOA19	222(84)	MODERN/IMPROV TRMNL FACILITIES	2	2	0	2	2	0	
TOA20	223(84)	REPLACE 2 & 3 CHNL VOICE RECORDERS	0	2	0	0	0	0	
TOA21	224(84)	PROVIDE TRMNL IN-SERVICE ENGR	2	2	0	2	2	0	
TOA22	225(84)	REPLACE MULTICHNL VOICE RECORDERS	0	2	0	0	0	0	
TOA23	226(84)	REPLACE ARTS RECORDERS	2	2	0	2	2	0	
TOA24	227(84)	REPLACE ARTS MAINTENANCE PRGRM	2	0	0	2	2	0	
TOA25	228(84)	DIGITAL TONE CODE READERS	2	2	0	0	2	2	
TOA26	229(84)	PROVIDE POST EQUIPMENT	2	0	0	0	0	0	
TOA27		TOTAL	48	169800	0	191120	237500	2	1620

F&E DATABASE (cont.)

FSS	267(84)	FSS	0	0	0	0	0	0
AIRNAV	217	VOR, DME, VORTAC REPLACEMENT	0	0	0	125800	0	0
AIRNAV	218	LOGAN-C	0	0	0	0	0	2
AIRNAV	219	XY-DIRECTIONAL RADIO BEACON	2	0	0	2400	0	2
AIRNAV	220	MLS AND MALS	0	0	620000	0	0	2
AIRNAV	221	APPROACH LIGHTING SYSTEM	62100	0	0	2	0	3
AIRNAV	222	ALES	0	103400	0	0	0	2
AIRNAV	223	WINDSHEAR	4700	0	2	0	0	2
AIRNAV	224	RUNWAY END LIGHTS	2	2	0	30900	0	2
AIRNAV	225	PRECISION APPROACH PATH	2	2	20000	2	0	2
AIRNAV	226	STRAIGHT-IN, NON-PREC. APPROCH.	2	0	0	15000	0	2
AIRNAV	227	THRESHOLD LIGHTS	2	0	0	13100	0	2
AIRNAV	228	RUNWAY VISUAL RANGE	24200	0	0	0	0	2
AIRNAV	229	AIRPORT APPROCH/LANDING AID FAC.	2	0	9000	0	0	2
AIRNAV	279(84)	EST VISUAL APPROCH SLOPE INDIC	0	0	2	0	0	2
AIRNAV	280(84)	IMPROVE ILS FACILITIES	2	0	0	0	0	2
AIRNAV	281(84)	IMPROVE VISUAL AID FACILITIES	0	0	0	0	0	2
AIRNAV	282(84)	PROVIDE ADD'L FACILITIES TO ILS	2	0	0	0	0	2
AIRNAV	283(84)	PRECISION LANDING AID IMPROVMENTS	0	0	0	0	0	2
AIRNAV	NA(84)	ESTABLISH ILS	0	0	0	0	0	2
AIRNAV	NA(85)	MASR W/ RAY ALIGNMENT AND LG-TS	2	0	0	2	0	2
AIRNAV	NA(86)	NAVIGATOR AIDED BY CONGRESS	2	0	0	2	0	2
AIRNAV	NA(87)	ILS POLICY CHANGE	0	0	0	0	0	2
AIRNAV		TOTAL	91,000	103,400	549,800	107,200	0	2
NAVSTA	201	NAT'L RADIO COM. SYSTEM	2	0	2	0	0	17000
NAVSTA	202	UNMANNED FRA FAC. AND EQUIP.	2	0	0	85000	0	2
NAVSTA	203	AIRPORT CABLE LOOP	85000	0	2	0	0	2
NAVSTA	204	IMPROVE/REPLACE POWER SYSTEM	0	2	0	40000	0	2
NAVSTA	205	DAO DESIGN SYSTEM	2	2	2	2	0	2
NAVSTA	206	ACQUIRED LAND/EASEMENTS	2	0	0	39700	0	2
NAVSTA	207	MAINTENANCE CONTROL CENTERS	2	0	0	0	0	2
NAVSTA	208	PROVIDE TEST EQUIP.	2	0	0	20900	0	0
NAVSTA	209	LOGISTICS/INVENTORY SYSTEM	0	0	2	0	0	0
NAVSTA	240	AIRPORT DATUM MONV.	0	0	7000	0	0	0
NAVSTA	241	SYSTEM INTEG. SUPPORT	2	2	0	491700	0	2
NAVSTA	242	NAV AID/ATE FAC.	2	2	0	15000	0	2
NAVSTA	243	AIR NAV/ATO SYSTEM SUPPORT	2	2	2	40500	0	2
NAVSTA	244	FREQ/SPECTRAL ENGIN.	2	2	0	5900	0	2
NAVSTA	260-24	AIR TESTERS FOR MAINTNCE HUBS	2	2	2	0	0	0
NAVSTA	267-24	MECHANICAL MATERIAL HANDLING SYST	0	0	0	0	0	2
NAVSTA	267(84)	COMPUTER-BASED INSTRUCTN. TRAINING	0	0	0	0	0	2
NAVSTA	268(84)	EXPLOSIVE DETECTION SYSTEMS	0	0	0	0	0	0
NAVSTA	NA(85)	AIR SCIENCE CURR. GRANT	2	0	0	0	0	0
NAVSTA		TOTAL	88,000	0	7,000	738,900	0	27,000

F&E DATABASE (cont.)

AIRCRAFT	246	AIRBORNE LORAN-C	0	0	0	0	0	0
AIRCRAFT	247	SPECTRUM ANALYZER	0	0	0	0	0	0
AIRCRAFT	248	TURBO PROP AIRCRAFT	0	0	0	0	0	0
AIRCRAFT	249	HEAD-UP IN SIMULATOR	2	0	0	0	0	0
AIRCRAFT	250	TURBO PROP AIRCRAFT	2	0	0	0	0	0
AIRCRAFT	252(84)	PROCURE AIRBORNE MLS	0	0	0	0	0	0
AIRCRAFT	172(85)	PROCURE LASER RANGE FINDERS	0	0	0	0	0	0
AIRCRAFT		TOTAL	0	0	0	0	0	0
D.T.E.	251	FAR TECH. CENTER LEASE	2	2	0	31742	2	0
D.T.E.	252	FIRE TEST FAC.	2	0	0	0	2	0
D.T.E.	254	INFLIGHT FIRE TEST FAC.	2	0	0	0	2	0
D.T.E.	255	AIRPORT IMPROVEMENTS	2776	0	0	2	2	0
D.T.E.	256	TECH. CENTER HELIPORT	0	0	0	0	0	0
D.T.E.	257	NAS FIELD SUPPORT	2	0	0	0	0	0
D.T.E.	258	SWITCHING EQUIPMENT	0	0	0	0	2	0
D.T.E.	259	ENGIN. SERVICES EQUIP.	0	0	1500	0	0	0
D.T.E.	258(84)	CONSTRUCT TECH SUPPORT FACILITY	0	0	0	0	0	0
D.T.E.	257(84)	PROVIDE EPA STD COMPLIANCE CAP	0	0	0	0	0	0
D.T.E.	258(84)	ENHANCE COMPUTER LAB FACILITIES	0	0	0	0	0	0
D.T.E.	256(84)	ATDSE UPGRADE	0	0	0	0	0	0
D.T.E.	259(84)	ENHANCE NAS DOCUMENT'N FACILITY	0	0	0	0	0	0
D.T.E.	302(84)	ENHANCE GEN PURPOSE COMP FACIL	0	0	0	0	0	0
D.T.E.	180(85)	ENHANCE AVIATION SECURITY LAB	0	0	0	0	0	0
D.T.E.	183(85)	POWER CONDITIONING SYSTEM	2	0	0	0	0	0
D.T.E.	184(85)	NAS SIMUL SUPPORT FACILITY	0	0	0	0	0	0
D.T.E.		TOTAL	3,776	0	1,500	31,740	2	2
GRAND TOTAL			3175976	123420	1526220	1281942	2	43402

THE TERMINAL
 AIR REPAIR/REPAIR
 AIR IMPROVE SERVICE
 AIR INT COSTS
 AIR EXPANSION
 AIR-1

A = HELICOPTER
 L = LOCAL (WHERE)
 O = OVERHEAD
 P = PUBLIC INTEREST
 C = COST

(1) FUNDING ENDS AFTER 1968
 (2) AVERAGE OF 4000 PER YEAR
 (3) AVERAGE OF 13400 PER YEAR
 (4) FUNDING ENDS AT END OF 1990
 (5) 5000 PER YEAR
 (6) 5000 PER YEAR
 (7) 2700 PER YEAR
 (8) 20000 PER YEAR
 (9) 5000 PER YEAR
 (10) NON-RADAR TOWERS
 13500 ITIN OPS
 (11) 6500 PER YEAR
 (12) 400 PER YEAR
 (13) 1500 PER YEAR

3.4 R&D

The R&D budgets were based upon the 1987 R&D budget.

Individual R&D projects for the period 1984 through 1992 were allocated in the following categories:

- o air carriers,
- o general aviation,
- o IFR users (denoted as "not VFR" in the table),
- o all users.

The following tables show the specific allocations.

R&D DATABASE

R, E&D 1987 BUDGET
464RD

11-Nov-85

ACTIVITY	PAGE	PROGRAM	TOTAL DOLLARS(000)1984-1992			
			AIR CARR.	GA	NOT VFR	ALL
ATC	3	SYS. ENGIN. INTEG.	0	2	2	49302
ATC	4	SYS. ENGIN. ANAL.	0	0	0	15946
ATC	5	SYS. REQUIRE- MENTS-B-C	0	0	0	2901
ATC	7	SYS. REQUIRE-CAP, SEPAR., NAV	0	2	0	44373
ATC	9	ADVANCED SYS. CONCEPTS	164935	2	0	2
ATC		TOTAL	164935	2	2	112517
BEADON	24-1841	MODE-S SURVEILLANCE	2	2	3275	0
NOSEP	11	TCAS	22533	2	0	2
COM	14	COMMUN.-MISC.	21186	0	2	2
COM	16	COMMUN.-VSCS	2	0	71955	2
COM		TOTAL	21186	0	71955	2
AIRPORT	17	AIRPORT	66992	2	0	2
EN ROUTE	19	EN ROUTE EXPER.	0	2	6125	0
FSS	20	FSS	2	41264	2	0
TERM/TOWER	21	TERM/TOWER	0	2	2	15222
TECH	23	HUMAN FACTORS	2	2	3695	2
TECH	24	ADVANCED TECH	48911	0	0	2
TECH	26	LONG RANGE RESEARCH	0	2	0	120849
TECH		TOTAL	48911	2	3695	120849
OUTPORT	27	OTHER REQ	2	0	0	37126
ADV AUTO	31	HOST COMPUTER	92345	2	2	2
ADV AUTO	32	ADV. AUTOMATION SYSTEMS	407372	0	0	2
ADV AUTO		TOTAL	497724	2	2	2
NAV	35	NAVIGATION	2	0	38-26	2
APP/LAND	37	APPROACH/LAND	26569	2	0	0

R&D DATABASE (cont.)

WEATHER	41	NAS WEATHER	0	0	0	61379
WEATHER	43	DOPPLER	36894	0	0	0
WEATHER	45	WEATHER RADAR	24339	0	0	0
WEATHER		TOTAL	60433	0	0	61379
MEDICINE	49	AEROMED. SUPPORT	0	0	0	12565
MEDICINE	51	PROTECT & SURVIVE	0	0	0	22378
MEDICINE	52	WORKFORCE OPT.	0	0	0	15244
MEDICINE	53	HUMAN PERF.	0	0	0	4566
MEDICINE		TOTAL	0	0	0	52753
A/C SAFETY	57	FIRE SAFETY	35238	0	0	0
A/C SAFETY	59	CRASHWORTHINESS	0	0	0	28756
A/C SAFETY	61	PROPULSION	0	0	0	12872
A/C SAFETY	62	FLIGHT SAFETY	0	0	25589	0
A/C SAFETY	64	RES. DEVELOP. SUPPORT	0	0	0	21453
A/C SAFETY	66	AVIATION SECURITY	52103	0	0	0
A/C SAFETY		TOTAL	87341	0	25589	69281
ENVIRON	72	A/C EMISSIONS	4607	0	0	0
ENVIRON	72	A/C NOISE	0	0	0	21100
ENVIRON		TOTAL	4607	0	0	21100
GRAND TOTAL			1021231	41004	141046	435625

R&D DATABASE (cont.)

R&D 1987 BUDGET
4642084

11-Nov-85

ACTIVITY	PAGE	PROGRAM	TOTAL DOLLARS (000) 1984			
			AIR CARR.	GA	NOT VFR	ALL
ATC	3	SYS. ENGIN. INTEG.	2	0	0	1522
ATC	4	SYS. ENGIN. ANAL.	2	0	0	565
ATC	5	SYS. REQUIRE- MENTS-B-C	2	0	2	51
ATC	7	SYS. REQUIRE-OP, SEPAR. NAV	2	0	2	4375
ATC	9	ADVANCED SYS. CONCEPTS	12318	2	2	2
ATC		TOTAL	12318	2	2	7024
BEACON	341 (64)	MODE-S SURVEILLANCE	2	0	2867	0
NOSEP	11	TCAS	9836	0	2	2
COM	14	COMMUN.-MISC.	5031	0	0	0
COM	16	COMMUN.-VSCS	0	0	3523	0
COM		TOTAL	5031	0	3523	2
AIRPORT	17	AIRPORT	3378	2	0	2
EN ROUTE	19	EN ROUTE EXPER.	0	0	1532	2
FSS	20	FSS	0	4450	0	0
TERM/TOWE	21	TERM/TOWER	0	0	0	1132
TECH	23	HUMAN FACTORS	2	2	1152	0
TECH	24	ADVANCED TECH	3984	0	0	0
TECH	26	LONG RANGE RESEARCH	0	2	2	0
TECH		TOTAL	3984	2	1152	2
SUPPORT	27	OTHER R&D	2	0	0	2634
ADV AUTO	31	HOST COMPUTER	52045	0	0	0
ADV AUTO	32	ADV. AUTOMATION SYSTEMS	95020	0	0	0
ADV AUTO		TOTAL	147265	0	0	0
NAV	35	NAVIGATION	2	0	1773	0
APP/LAND	37	APPROACH/LAND	3635	0	0	0

R&D DATABASE (cont.)

WEATHER	41	NAS WEATHER	0	0	0	6892
WEATHER	43	DOPPLER	8427	0	0	0
WEATHER	45	WEATHER RADAR	220	0	2	0
WEATHER		TOTAL	8647	0	0	6892
MEDICINE	49	AEROMED. SUPPORT	0	0	0	967
MEDICINE	51	PROTECT & SURVIVE	0	0	0	1326
MEDICINE	52	WORKFORCE OPT.	0	2	2	1733
MEDICINE	53	HUMAN PERF.	0	0	0	373
MEDICINE		TOTAL	0	2	2	4399
A/C SAFET	57	FIRE SAFETY	2555	0	0	0
A/C SAFET	59	CRASHWORTHINESS	0	0	0	4025
A/C SAFET	61	PROPULSION	0	2	2	1315
A/C SAFET	62	FLIGHT SAFETY	0	0	3265	0
A/C SAFET	64	REG. DEVELOP. SUPPORT	0	0	0	0
A/C SAFET	65	AVIATION SECURITY	2596	0	0	0
A/C SAFETY		TOTAL	6151	0	3265	5340
ENVIRON	70	A/C EMISSIONS	250	0	0	0
ENVIRON	72	A/C NOISE	0	0	0	1679
ENVIRON		TOTAL	250	0	0	1679
GRAND TOTAL			195795	4450	14110	32052

R&D DATABASE (cont.)

R&D 1987 BUDGET
464RDB5

11-Nov-85

ACTIVITY	PAGE	PROGRAM	TOTAL DOLLARS (000) 1985			
			AIR CARR.	GA	NOT VFR	ALL
ATC	3	SYS. ENGIN. INTEG.	0	0	0	0000
ATC	4	SYS. ENGIN. ANAL.	0	0	0	1741
ATC	5	SYS. REQUIRE- MENTS-B-C	0	0	0	000
ATC	7	SYS. REQUIRE-OP, SEPAR., NAV	0	0	0	3550
ATC	9	ADVANCED SYS. CONCEPTS	11073	0	0	0
ATC		TOTAL	11073	0	0	13524
BEACON	341 (24)	MODE-S SURVEILLANCE	0	0	406	0
NOSEP	11	TCAS	6505	0	0	0
COM	14	COMMUN.-MISC.	5912	0	0	0
COM	16	COMMUN.-VSCS	0	0	3200	0
COM		TOTAL	5912	0	3200	0
AIRPORT	17	AIRPORT	3205	0	0	0
EN ROUTE	19	EN ROUTE EXPR.	0	0	1662	0
FSS	20	FSS	0	5104	0	0
TECH/TOWER	21	TECH/TOWER	0	0	0	1787
TECH	23	HUMAN FACTORS	0	0	562	0
TECH	24	ADVANCED TECH	3688	0	0	0
TECH	26	LONG RANGE RESEARCH	0	0	0	0
TECH		TOTAL	3688	0	562	0
SUPPORT	27	OTHER R&D	0	0	0	3483
ADV AUTO	31	HOST COMPUTER	32426	0	0	0
ADV AUTO	32	ADV. AUTOMATION SYSTEMS	120332	0	0	0
ADV AUTO		TOTAL	152758	0	0	0
NAV	35	NAVIGATION	0	0	2011	0
APPROACH	37	APPROACH/LAND	3853	0	0	0

R&D DATABASE (cont.)

WEATHER	41	NAS WEATHER	0	0	0	9135
WEATHER	43	DOPPLER	6346	0	0	0
WEATHER	45	WEATHER RADAR	2	0	2	2
WEATHER		TOTAL	6346	0	2	9136
MEDICINE	49	AEROMED. SUPPORT	0	2	0	1062
MEDICINE	51	PROTECT & SURVIVE	0	0	0	1532
MEDICINE	52	WORKFORCE OPT.	2	2	2	1516
MEDICINE	53	HUMAN PERF.	2	0	0	519
MEDICINE		TOTAL	0	2	0	4599
A/C SAFET	57	FIRE SAFETY	3664	0	0	2
A/C SAFET	59	CRASHWORTHINESS	2	0	0	3453
A/C SAFET	61	PROPULSION	2	0	0	1029
A/C SAFET	62	FLIGHT SAFETY	0	0	2129	0
A/C SAFET	64	REG. DEVELOP.	2	0	0	0
		SUPPORT				
A/C SAFET	66	AVIATION SECURITY	2937	0	2	0
A/C SAFETY		TOTAL	6601	0	2129	4482
ENVIRON	70	A/C EMISSIONS	375	2	2	0
ENVIRON	72	A/C NOISE	2	0	0	1625
ENVIRON		TOTAL	375	2	0	1625
GRAND TOTAL			222115	5124	16250	35716

R&D DATABASE (cont.)

R, E&D 1987 BUDGET
464RD6E

11-Nov-85

ACTIVITY	PAGE	PROGRAM	TOTAL DOLLARS (000) 1986			
			AIR CARR.	GA	NOT VFR	ALL
ATC	3	SYS. ENGIN. INTEG.	0	0	0	7700
ATC	4	SYS. ENGIN. ANAL.	0	0	0	2313
ATC	5	SYS. REQUIRE- MENTS-B-C	0	0	0	500
ATC	7	SYS. REQUIRE-CAP. SEPAR., NAV	0	0	0	4115
ATC	9	ADVANCED SYS. CONCEPTS	10003	0	0	0
ATC		TOTAL	10003	0	0	14632
BEACON	341(84)	MODE-S SURVEILLANCE	0	0	0	0
NOSEP	11	TCAS	3477	0	0	0
COM	14	COMMUN.-MISC.	1721	0	0	0
COM	15	COMMUN.-VSCS	0	0	14770	0
COM		TOTAL	1721	0	14770	0
AIRPORT	17	AIRPORT	3537	0	0	0
EN ROUTE	19	EN ROUTE EXPER.	0	0	805	0
FSS	20	FSS	0	2354	0	0
TERM/TOWER	21	TERM/TOWER	0	0	0	272
TECH	23	HUMAN FACTORS	0	0	267	0
TECH	24	ADVANCED TECH	996	0	0	0
TECH	25	LONG RANGE RESEARCH	0	0	0	0
TECH		TOTAL	996	0	267	0
SUPPORT	27	OTHER R&D	0	0	0	3647
ADV AUTO	31	ACFT COMPUTER	3218	0	0	0
ADV AUTO	32	ADV. AUTOMATION SYSTEMS	121519	0	0	0
ADV AUTO		TOTAL	124737	0	0	0
NAV	35	NAVIGATION	0	0	1593	0
APP/LAND	37	APPROACH/LAND	1488	0	0	0

R&D DATABASE (cont.)

WEATHER	41	NAS WEATHER	0	0	0	5782
WEATHER	43	DOPPLER	3890	0	0	0
WEATHER	45	WEATHER RADAR	0	0	0	2
WEATHER		TOTAL	3890	0	0	5782
MEDICINE	49	AEROMED. SUPPORT	0	0	3	1170
MEDICINE	51	PROTECT & SURVIVE	0	0	0	2018
MEDICINE	52	WORKFORCE OPT.	0	0	0	1257
MEDICINE	53	HUMAN PERFL.	0	0	0	473
MEDICINE		TOTAL	0	0	0	4318
A/C SAFETY	57	FIRE SAFETY	3693	0	0	0
A/C SAFETY	59	CRASHWORTHINESS	0	0	0	2557
A/C SAFETY	61	PROPULSION	0	0	0	2213
A/C SAFETY	62	FLIGHT SAFETY	0	0	2555	2
A/C SAFETY	64	RES. DEVELOP. SUPPORT	0	0	0	0
A/C SAFETY	66	AVIATION SECURITY	17271	0	0	0
A/C SAFETY		TOTAL	20964	0	2555	4772
ENVIRON.	70	A/C EMISSIONS	375	0	0	0
ENVIRON.	72	A/C NOISE	0	0	0	1625
ENVIRON.		TOTAL	375	0	0	1625
GRAND TOTAL			151990	2354	19590	35566

R&D DATABASE (cont.)

R, E&D 1987 BUDGET
464RD88

11-Nov-85

ACTIVITY	PAGE	PROGRAM	TOTAL DOLLARS(000) 1988-1992			
			AIR CORR.	GA	NOT VFR	ALL
ATC	3	SYS. ENGIN. INTEG.	0	0	0	23300
ATC	4	SYS. ENGIN. ANAL.	0	0	2	8307
ATC	5	SYS. REQUIRE- MENTS-S-C	0	2	0	1631
ATC	7	SYS. REQUIRE-CAP, SEPAR., NAV	0	0	2	23673
ATC	9	ADVANCED SYS. CONCEPTS	110899	0	2	2
ATC		TOTAL	110899	0	2	57511
BEACON	341 (64)	MODE-S SURVEILLANCE	0	0	0	0
NOSEP	11	TCAS	0	0	0	0
COM	14	COMMUN.-MISC.	4991	0	0	0
COM	16	COMMUN.-VSCS	0	0	13172	0
COM		TOTAL	4991	0	13172	0
AIRPORT	17	AIRPORT	42589	0	0	0
EN ROUTE	19	EN ROUTE EXPR.	0	0	1271	0
FSS	20	FSS	2	24796	0	0
TERMINAL	21	TERMINAL/TOWER	0	0	0	7227
TECH	23	HUMAN FACTORS	0	0	1447	2
TECH	24	ADVANCED TECH	37089	0	0	0
TECH	26	LONG RANGE RESEARCH	0	0	0	122650
TECH		TOTAL	37089	0	1447	122650
AIRPORT	27	OTHER R&D	0	0	0	20739
ADV AUTO	31	HOST COMPUTER	0	0	0	0
ADV AUTO	32	ADV. AUTOMATION SYSTEMS	73604	0	0	0
ADV AUTO		TOTAL	73604	0	0	0
NAV	35	NAVIGATION	0	0	2,225	0
APPROACH	37	APPROACH/LAND	15335	0	0	0

R&D DATABASE (cont.)

WEATHER	41	NAS WEATHER	0	0	0	31596
WEATHER	43	DOPPLER	10035	0	0	0
WEATHER	45	WEATHER RADAR	22238	0	0	0
WEATHER		TOTAL	32163	0	0	31596
MEDICINE	49	AEROMED. SUPPORT	0	0	0	8122
MEDICINE	51	PROTECT & SURVIVE	0	0	0	13556
MEDICINE	52	WORKFORCE OPT.	0	0	0	3374
MEDICINE	53	HUMAN PERF.	0	0	0	2034
MEDICINE		TOTAL	0	0	0	32786
A/C SAFETY	57	FIRE SAFETY	19636	0	0	0
A/C SAFETY	59	CRASHWORTHINESS	0	0	0	16236
A/C SAFETY	61	PROPULSION	0	0	0	11285
A/C SAFETY	62	FLIGHT SAFETY	0	0	14075	0
A/C SAFETY	64	REG. DEVELOP. SUPPORT	0	0	0	20653
A/C SAFETY	66	AVIATION SECURITY	16566	0	0	0
A/C SAFETY		TOTAL	36422	0	14075	46144
ENVIRON	70	A/C EMISSIONS	3062	0	0	0
ENVIRON	72	A/C NOISE	0	0	0	13336
ENVIRON		TOTAL	3062	0	0	13336
GRAND TOTAL			392194	24796	51191	314651

3.5 Airport Grants

The population of airport grants is segregated into two categories:

- o primary airport grants,
- o all other airport grants.

The former were allocated among passenger air carriers based upon enplanements; this allocation procedure is based upon the 1982 Airport Improvement Program legislation.

The remainder of the airport grants were allocated based upon a sample of grants for each of the remaining airport grant categories:

- o commercial services,
- o reliever,
- o general aviation.

The results of these samples were then extrapolated to the entire population of grants in each of these categories.

It should be noted that each of these grant categories were further segregated into two groups: large and small grants. This procedure was employed to ensure that the sample results would not be dominated by only a few large grants and their allocations.

The following tables show the sample results.

COMMERCIAL SERVICE SAMPLE RESULTS

[illegible]

RESULTS FOR AIRPORT SAMPLE RESULTS

[illegible]

	TOTAL ALLOCATED \$	\$42,965	\$0	\$0	\$21,483	\$4,117.43	\$4,365.44	\$11,157	\$15,070.65
FL MEACHAM FIELD TX FFW 03-30	\$351,000	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00
FL PRAINE FIELD WA FAE 03-30	\$394,000	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
AL BOWMAN FIELD KY LOU 01-32	\$450,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AL EL MONTE CA EMT 01-33	\$470,250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AL SACRAMENTO EXEC CA SCL 02-34	\$450,000	0.20	0.00	0.00	0.20	0.20	0.20	0.00	0.00
AL PELO HILLVIEW CA RAV 02-34	\$900,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FL PRAINE FIELD WA FAE 01-33	\$950,000	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
AL COL JAMES WABARA KS 3M 02-33	\$924,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AL COL JAMES WABARA KS 3M 01-33	\$1,628,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AL DOUBLE EAGLE II NM NPS 02-33	\$1,973,234	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AL FAL-WHITE IL PW 01-34	\$5,120,000	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00
GRANTS=11 TOTAL \$	\$15,070,410	1.120	0.000	0.000	1.120	3.230	3.230	0.000	\$9.000

[illegible]

	1970-1971	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977	1977-1978	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	2042-2043	2043-2044	2044-2045	2045-2046	2046-2047	2047-2048	2048-2049	2049-2050	2050-2051	2051-2052	2052-2053	2053-2054	2054-2055	2055-2056	2056-2057	2057-2058	2058-2059	2059-2060	2060-2061	2061-2062	2062-2063	2063-2064	2064-2065	2065-2066	2066-2067	2067-2068	2068-2069	2069-2070	2070-2071	2071-2072	2072-2073	2073-2074	2074-2075	2075-2076	2076-2077	2077-2078	2078-2079	2079-2080	2080-2081	2081-2082	2082-2083	2083-2084	2084-2085	2085-2086	2086-2087	2087-2088	2088-2089	2089-2090	2090-2091	2091-2092	2092-2093	2093-2094	2094-2095	2095-2096	2096-2097	2097-2098	2098-2099	2099-2100	2100-2101	2101-2102	2102-2103	2103-2104	2104-2105	2105-2106	2106-2107	2107-2108	2108-2109	2109-2110	2110-2111	2111-2112	2112-2113	2113-2114	2114-2115	2115-2116	2116-2117	2117-2118	2118-2119	2119-2120	2120-2121	2121-2122	2122-2123	2123-2124	2124-2125	2125-2126	2126-2127	2127-2128	2128-2129	2129-2130	2130-2131	2131-2132	2132-2133	2133-2134	2134-2135	2135-2136	2136-2137	2137-2138	2138-2139	2139-2140	2140-2141	2141-2142	2142-2143	2143-2144	2144-2145	2145-2146	2146-2147	2147-2148	2148-2149	2149-2150	2150-2151	2151-2152	2152-2153	2153-2154	2154-2155	2155-2156	2156-2157	2157-2158	2158-2159	2159-2160	2160-2161	2161-2162	2162-2163	2163-2164	2164-2165	2165-2166	2166-2167	2167-2168	2168-2169	2169-2170	2170-2171	2171-2172	2172-2173	2173-2174	2174-2175	2175-2176	2176-2177	2177-2178	2178-2179	2179-2180	2180-2181	2181-2182	2182-2183	2183-2184	2184-2185	2185-2186	2186-2187	2187-2188	2188-2189	2189-2190	2190-2191	2191-2192	2192-2193	2193-2194	2194-2195	2195-2196	2196-2197	2197-2198	2198-2199	2199-2200	2200-2201	2201-2202	2202-2203	2203-2204	2204-2205	2205-2206	2206-2207	2207-2208	2208-2209	2209-2210	2210-2211	2211-2212	2212-2213	2213-2214	2214-2215	2215-2216	2216-2217	2217-2218	2218-2219	2219-2220	2220-2221	2221-2222	2222-2223	2223-2224	2224-2225	2225-2226	2226-2227	2227-2228	2228-2229	2229-2230	2230-2231	2231-2232	2232-2233	2233-2234	2234-2235	2235-2236	2236-2237	2237-2238	2238-2239	2239-2240	2240-2241	2241-2242	2242-2243	2243-2244	2244-2245	2245-2246	2246-2247	2247-2248	2248-2249	2249-2250	2250-2251	2251-2252	2252-2253	2253-2254	2254-2255	2255-2256	2256-2257	2257-2258	2258-2259	2259-2260	2260-2261	2261
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GA AIRPORT SAMPLE RESULTS

A/P CATEGORY	A/P NAME	STATE	LOC. GRANT #	PROJECT #	PL	AC-F	AC-F	COM	AT	GA-T	GA-P	GOV	ROTOR
GA	VERMONTA MUNI	NV	043	01-52	\$8,299	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	WATNER FIELD	GA	403	01-53	\$12,330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	WHEELER-HUBBY FLD	GA	773	01-52	\$13,500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	ARCADIA MUNI	FL	106	01-52	\$15,434	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	VERMONTA MUNI	NV	043	01-52	\$20,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	HARRIS COUNTY	TX	100	01-54	\$31,500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	GREENVILLE MUNI	PA	401	01-54	\$34,650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	FERDINAND BEACH	FL	551	01-50	\$36,214	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	OCEAN MUNI	NY	062	01-54	\$38,126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	FERDINAND BEACH	FL	551	01-50	\$41,312	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	SEELY MUNI	NY	NL1	01-52	\$43,600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	HOLLISTER MUNI	CA	307	01-54	\$43,500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	FERDINAND BEACH	FL	551	01-50	\$55,250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	OCEAN MUNI	NY	062	01-54	\$57,136	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	PADONIA FIELD	MI	250	01-52	\$58,153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	VERMONTA MUNI	NV	043	01-52	\$59,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	PEARSON AIRPORT	WA	303	01-54	\$73,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	CHANDLER MEMORIAL	AZ	037	01-52	\$74,702	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	HARNETT COUNTY	NC	374	01-53	\$102,313	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	OCEAN SHORES MUNI	WA	526	01-52	\$144,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	BEAUFORT PARISH	LA	081	01-52	\$145,000	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	VERMONTA MUNI	NV	043	01-52	\$150,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	AFTEN	WY	AF0	01-54	\$157,500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	SHELBYVILLE MUNI	TN	511	01-54	\$159,727	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	GREATER KANSAS	IL	197	02-54	\$180,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	CONNELLSVILLE	PA	201	01-50	\$188,370	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	NEIL ARMSTRONG	OH	ATV	02-54	\$200,000	0.00	0.00	0.00	0.00	0.33	0.33	0.33	0.00
GA-SMALL	GRANT-527	TOTAL #			\$2,185,774	1.30%	0.00%	0.00%	0.00%	5.06%	41.11%	51.50%	1.23%
		TOTAL ALLOCATED \$			\$22,917,625	\$293,227	\$0	\$0	\$0	\$1,160,023	\$5,420,543	\$11,755,392	\$282,934

GA	PENN VALLEY	PA	520	01-50	\$225,720	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00
GA	TOTTER FIELD	GA	403	01-53	\$233,745	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
GA	HENRY COUNTY	TN	F47	01-52	\$246,117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	BERNIE COUNTY	SC	500	01-53	\$246,599	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00
GA	DRESDEN-H.S. STATES	FL	024	01-54	\$302,580	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00
GA	DRESDEN-H.S. STATES	FL	024	01-54	\$310,139	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00
GA	OCEAN SHORES MUNI	WA	526	01-52	\$315,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	MURRAY-CALLAWAY F.	NY	027	01-54	\$322,132	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00
GA	SHASTA COUNTY	CA	701	01-50	\$335,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	FRANKLIN MUNI	TX	773	01-53	\$345,357	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00
GA	BENT WOODWARD	GA	W4P	01-53	\$400,000	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
GA	HARNETT COUNTY	NC	374	01-53	\$417,606	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
GA	ROCKY MUNI	AR	AR0	01-52	\$425,041	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	ARCADIA MUNI	FL	106	01-52	\$479,045	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00
GA	WILKINSON COUNTY	TX	502	01-50	\$511,000	0.00	0.00	0.00	0.00	0.33	0.33	0.00	0.00
GA	PADONIA FIELD	MI	250	01-52	\$523,422	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	SHELBYVILLE MUNI	TN	511	01-54	\$535,607	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	INDEPENDENCE MUNI	IA	413	01-52	\$547,524	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
GA	HAZEL CITY MUNI	MT	W4A	01-54	\$548,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	PENDER MUNI	NE	NE11	01-53	\$555,300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	FREDERICK MUNI	MO	F24	04-50	\$539,112	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00
GA	LONDON MUNI	CA	151	01-53	\$560,000	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00
GA	KELSO-LONGVIEW	WA	413	01-53	\$921,240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GA	BARNES MUNI	MA	B4P	01-54	\$1,141,200	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
GA	CLARK COUNTY	IN	CLV	01-50	\$1,600,000	0.00	0.00	0.00	0.00	0.33	0.33	0.00	0.00
GA	JOHNSTON	AR	JOH	01-54	\$4,250,000	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

A/P CATEGORY	A/P NAME	STATE	LOC. GRANT #	PROJECT #	PL	AC-F	AC-F	COM	AT	GA-T	GA-P	GOV	ROTOR
GA-SMALL	GRANT-525	TOTAL #			\$17,212,186	0.00%	0.00%	0.00%	3.85%	2.56%	34.14%	58.72%	0.38%
		TOTAL ALLOCATED \$			\$180,468,071	\$0	\$0	\$0	\$6,941,060	\$4,627,386	\$61,613,650	\$105,967,149	\$694,108
GA-TOTAL		GA #			\$293,385,696	\$293,227	\$0	\$0	\$6,941,060	\$5,787,414	\$71,034,194	\$117,723,042	\$977,042
		% OF GA TOTAL			100.00%	0.15%	0.00%	0.00%	3.41%	2.85%	34.93%	57.88%	0.46%

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