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ARMY LIFE CYCLE COST MODEL; PROGRAMMER'S GUIDE. VOLUME II.(U)
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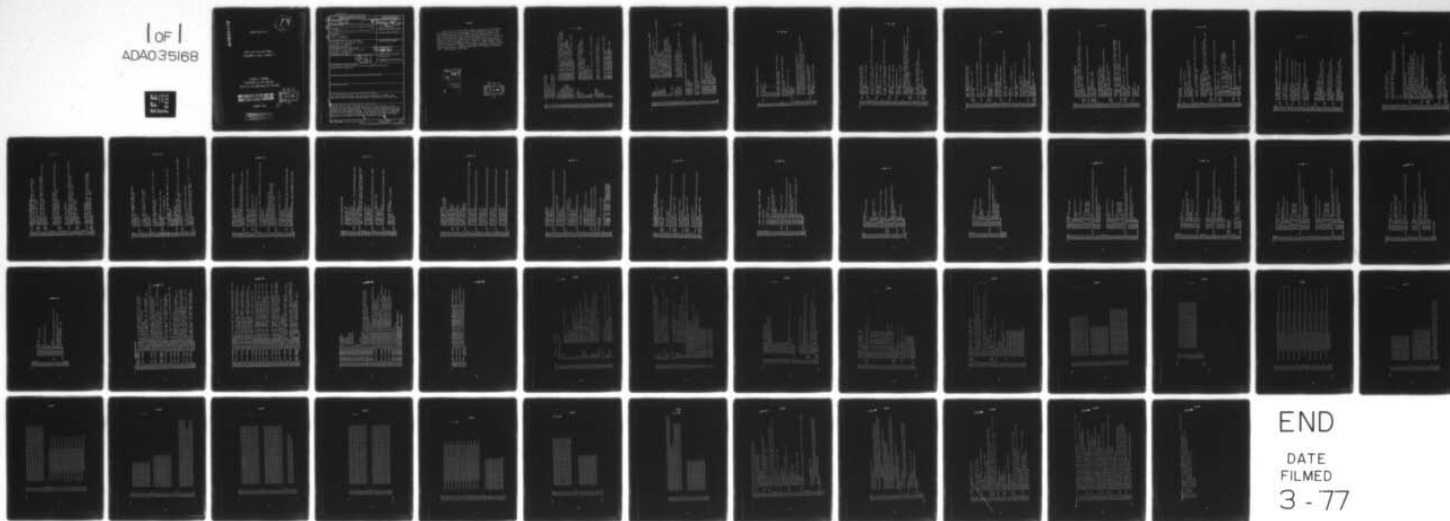
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REPORT DCA -R-15

ARMY LIFE CYCLE COST MODEL
PROGRAMMER'S GUIDE, VOLUME II

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Volume <u>1</u> , User's Guide, describes the Army Life Cycle Cost Model, a time sharing cost model which produces both static and time phased parametric cost estimates for major weapons systems. The output reports conform to the latest Research and Development, Investment, and Operating and Support DA Pamphlets, 11-2, 11-3, 11-4. Program listings of the model and its associated report generator are contained in Volume <u>1</u> , Programmer's Guide. <u>2</u>		

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FOREWORD

The Army Life Cycle Cost Model (ALCCM), documented in this Programmer's Guide, is a time sharing system which produces both static and time phased parametric cost estimates for major weapons systems. The output reports conform to the latest Research and Development, Investment, and Operating and Support Guides (DA Pamphlets 11-2, 11-3 and 11-4). Program listings of the model and its associated report generator and contained in this Programmer's Guide, Volume II. Sample inputs and outputs, flowcharts and explanations are given in the User's Guide, Volume I. Comments, questions or requests for programs (available as punched cards) should be directed to: DACA-CAS, Room 2B679, the Pentagon, Washington, D. C. 20310 (Autovon 8-225-1118).

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113C	DACA-CAS, THE PENTAGON	
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120C		
130C	REAL:	
140C	A(50,12)	STORAGE FOR RPT 1 (COST ELEM BY SYS STRUC)
150C	ACON(14,5)	STORAGE FOR REPORT 3 (APPROPRIATION BY PHASE)
160C	ACUR(14,5)	STORAGE FOR REPORT 8 (APPR BY PHASE, CURRENT)
170C	TRAW(14,5,60)	RAW DATA FOR REPTS 4-7 (TIME, RAW)
180C	ICON(14,5,60)	STORAGE FOR REPTS 4,5 (TIME, CONSTANT)
190C	ICUR(14,5,60)	STORAGE FOR REPTS 6,7 (TIME, CURRENT)
200C	DCON(15,3)	STORAGE FOR REPORT 2 (KEY COST)
210C	INF(14,60)	STORAGE FOR COMPOSITE INDICES (APPR, YEAR)
220C	G(12)	USED FOR READING FI
230C		
240C	INTEGER:	
250C	IN(15)	STORAGE OF REPORT NUMBERS WANTED
260C	R(15)	SWITCHES FOR REPORTS (1=WANT, 0=NOT)
270C	M(15)	SWITCHES FOR MATRICES (1=WANT, 0=NOT)
280C	VAL	EVALUATION OF IN(15)
290C	ROW	ROW NUMBER
300C	COL	COLUMN NUMBER
310C	YEAR	BASE YEAR
320C	SKIP	NUMBER OF LINES NOT PRINTED (66 LIN/PAGE)
330C		
340C	FILENAME:	
350C	WORDS(3)	THREE LABELS TO APPEAR ON OUTPUT
360C	WORD1	CHECK WORD FOR CHECKING SNTAX OF FILES
370C	WORD2	"
380C	WORD3	"
390C	F1	NAME OF COST DATA FILE (WRITTEN BY MODEL)
400C	F2	NAME OF KEY COST DEFNS FILE
410C	F3	NAME OF APPROPRIATION FILE
420C	F4	NAME OF FILE WITH TIME-PHASING DATA
430C	F5	NAME OF INFLATION MAIN FILE

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440C	FIL	NAME OF SATELLITE FILES FOR INFL AND DEFNS
450C	MODEL	AIRCO, MICO OR TRACO
460C	DATAF	NAME OF DATA INPUT FILE WHICH MADE FI
470C	LABEL(15)	LABELS FOR KEY COST REPORTS
480C	FYEAR	USED FOR TESTING EQUALITY TO TESTYR1 (ALSO TO TESTYR2)
490C	TESTYR1	THE FIRST "AMOUNT" YEAR
500C	TESTYR2	THE FIRST "PERCENT" YEAR
510C	HEADERS	NAME OF HEADERS MAIN FILE
520C	H1	HEADERS SATELLITE FILE (ROW TITLES)
530C	H2	HEADERS SATELLITE FILE (APPR TITLES)
540C	H3	HEADERS SATELLITE FILE (COLUMN TITLES)
550C	YR(14,60)	IDENTIFIERS FOR YEARS (APPR,YR)
560C		
570C	ALPHA:	
580C	T1(50,6)	ROW TITLES FOR REPORT 1
590C	T2(14,6)	ROW TITLES FOR REPORTS 3-7
600C	T3(6,29)	COLUMN TITLES FOR REPORT 1 (ROWS 1-4) AND
610C		FOR TIME PHASING (ROWS 5,6)
620C		
630	INTEGER IN(15),R(15),M(15),VAL	
640	INTEGER ROW,COL	
650	INTEGER YEAR	
660	INTEGER SKIP	
670C		
680	REAL G(12),ACON(14,5),ACUR(14,5),INF(14,60),DCON(15,3)	
690	REAL DCUR(15,3),TCON(14,5,60),TCUR(14,5,60),TRAW(14,5,60)	
700	REAL A(50,12)	
710C		
720	FILENAME WORDS(3),WORD1,WORD2,F1,F2,F3,F4,F5,FIL	
730	FILENAME WORD3	
740	FILENAME MODEL,DATAF,LABEL(15)	
750	FILENAME FYEAR,TESTYR1,TESTYR2	
760	FILENAME HEADERS,H1,H2,H3	
770	ALPHA T1(50,6),T2(14,6),T3(6,29)	
780	FILENAME YR(14,60)	
790	FILENAME NNYEAR	
800C		

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810 EQUIVALENCE (TRAW,TCOM,TCUR)
820C
830 DO 100 I=1,12
840 YR(I,1)="
850 NNYEAR=NNYEAR
860 F1="
870 F2="
880 F3="
890 F4="
900 F5="
910 FIL="
920 PRINT,"HOW MANY REPORTS, WHICH ONES----"
930 INPUT,NR,(IN(I),I=1,NR)
940C
950C DETERMINE WHICH REPORTS ARE REQUIRED:
960 DO 1010 I=1,15
970 VAL=IN(I)
980 IF(VAL.EQ. 0) GO TO 1010
990 R(VAL)=1
1000 1010 CONTINUE
1010 LN=999
1020C
1030C DETERMINE WHICH MATRICES ARE REQUIRED:
1040 IF((R(2)+R(9)).GE. 1) M(2)=1
1050 IF((R(3)+R(4)+R(5)+R(6)+R(7)+R(8)+R(9)).GE. 1) M(3)=1
1060 IF((R(4)+R(5)+R(6)+R(7)+R(8)+R(9)).GE. 1) M(4)=1
1070 IF((R(6)+R(7)+R(8)+R(9)).GE. 1) M(6)=1
1080C
1090C GET NAMES OF FILES REQUIRED:
1100 1020 PRINT,"COST DATA FILE----"
1110 INPUT,F1
1120 CALL SOPEN(F1," ", "$1020)
1130C

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1140 IF(M(2).NE.1) GO TO 1040
1150 1030 PRINT,"DEFINITIONS FILE----"
1160 INPUT,F2
1170 CALL SOPEN(F2," ",",",S1030)
1180 1040 CONTINUE
1190C
1200C IF M(3) IS NOT NEEDED, THEN DON'T NEED APPROP, OR TIME PHASING.
1210 IF(M(3).NE.1) GO TO 1190
1220C
1230 1050 PRINT,"APPROPRIATIONS FILE----"
1240 INPUT,F3
1250 CALL SOPEN(F3," ",",",S1050)
1260C
1270C IF M(4) IS NOT NEEDED, THEN DON'T NEED TIME PHASING.
1280 IF(M(4).NE.1) GO TO 1190
1290C
1300 1060 PRINT,"TIME PHASING FILE----"
1310 INPUT,F4
1320 CALL SOPEN(F4," ",",",S1060)
1330C
1340 1070 PRINT,"INFLATION FILE----"
1350 INPUT,F5
1360 CALL SOPEN(F5," ",",",S1070)
1370C
1380C READ INFLATION FILE. ALSO, READ THE FILE IT REFERS TO:
1390 READ(F5,9010,END=1080,ERR=1080) LN,WORD1,WORD2
1400 IF(WORD1.EQ."APPROP".AND. WORD2.EQ."LOCATION") GO TO 1090
1410 1080 PRINT 9020,F5; STOP
1420 1090 CONTINUE
1430 LN=9999
1440C
1450C GET NAME OF INFL SATELLITE FILE
1460 1100 READ(F5,9010,END=1190,ERR=1110) LN,APR,FIL
1470 GO TO 1120
1480 1110 PRINT 9030,F5,LN; STOP
1490 1120 CONTINUE
1500 LN=888
1510C
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1520C READ INFLATION SATELLITE FILE
1530 CALL SOPEN(FIL," ", "$1130)
1540 GO TO 1140
1550 1130 PRINT 9040,FIL,F5; STOP
1560 1140 CONTINUE
1570C
1580C READ INFLATION DATA INTO STORAGE:
1590 I=1
1600 1150 READ(FIL,9010,END=1170,ERR=1160) LN,YR(APR,I),INF(APR,I)
1610 I=I+1
1620 GO TO 1150
1630C
1640 1160 PRINT 9050,FIL,F5,LN,FIL; STOP
1650 1170 CONTINUE
1660 CLOSEFILE FIL
1670C
1680C CALCULATE REST OF INF:
1690 RATIO=INF(APR,I-1)/INF(APR,I-2)
1700 DO 1180 J=I,60
1710 1180 INF(APR,J)=INF(APR,J-1)*RATIO
1720C
1730C LOCATE AND PROCESS NEXT INFL SATELLITE FILE
1740 GO TO 1100
1750C
1760 1190 CONTINUE
1770 IF(F5.NE." ") CLOSEFILE F5
1780C
1790 PRINT,"GIVE WORDS 1,2 AND 3---"
1800 INPUT, WORDS
1810C
1820C READ COST DATA FILE:
1830 DO 2010 I=1,50
1840 READ(F1,9060,END=2015,ERR=2015) LN,G
1850 DO 2010 COL=1,12
1860 2010 A(I,COL)=G(COL)
1870 READ(F1,9010,END=2015,ERR=2015) LN, YEAR, MODEL, DATAF
1880 GO TO 2020
1890 2015 PRINT 9070,LN,F1; STOP
1900 2020 CLOSEFILE F1
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1910C
1920C      READ DEFINITIONS, IF REQUIRED:
1930      IF(M(2) .NE. 1) GO TO 2200
1940      READ(F2,9010,END=2025,ERR=2025) LN,WORD1,WORD2
1950      IF(WORD1 .EQ. "LABEL" .AND. WORD2 .EQ. "LOCATION") GO TO 2030
1960      PRINT 9080,F2; STOP
1970      CONTINUE
1980      I=1
1990      READ(F2,9010,END=2200,ERR=2045) LN,LABEL(I),FIL
2000      GO TO 2050
2010      PRINT 9090,LN,F2; STOP
2020      PRINT 9095,FIL,F2; STOP
2030      CONTINUE
2040C
2050C      READ DEFN SATELLITE FILE:
2060      CALL SOPEN(FIL," ", " ",$2046)
2070C      PROCESS FIL INTO DCON(I,1)
2080      READ(FIL,9010,END=2060,ERR=2060) LN,WORD1,QT
2090      DCON(I,2)=QT
2100      IF(WORD1 .EQ. "QTY") GO TO 2070
2110      PRINT 9097,FIL,F2; STOP
2120      CONTINUE
2130C
2140      READ(FIL,9010,END=2060,ERR=2060) LN,WORD1,WORD2,WORD3
2150      IF(WORD1 .NE. "ROW" .OR. WORD2 .NE. "COL" .OR. WORD3
2160      .NE. "FRACTION") GO TO 2060
2170      READ(FIL,9010,END=2110,ERR=2090) LN,ROW,COL,FRACTION
2180      GO TO 2100
2190      PRINT 9099,FIL,F2,LN; STOP
2200      CONTINUE
2210      DCON(I,1)=DCON(I,1)+A(ROW,COL)*FRACTION
2220      GO TO 2080
2230C
2240      CONTINUE
2250      CLOSEFILE FIL
2260      I=I+1
2270      GO TO 2040

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2280C 2280C CONTINUE
2290 2200 IF(F2 .NE. " ") CLOSEFILE F2
2300
2310C CALCULATE DCON, COLUMN 3:
2320C DO 2120 I=1,15
2330 IF(DCON(I,2) .LE. 0.01) GO TO 2120
2340 DCON(I,3)=DCON(I,1)/DCON(I,2)
2350 CONTINUE
2360 2120
2370C
2380C IF M(3) IS NOT NEEDED, THEN DON'T NEED RPTS 3,4,5,6,7,8:
2390 IF(M(3) .NE. 1) GO TO 2760
2400C
2410C CALCULATE ACON(14,5)
2420C READ APPROPRIATION FILE:
2430 READ(F3,9010,END=2210,ERR=2210) LN,WORD1,WORD2,WORD3
2440 IF(WORD1 .EQ. "ROW" .AND. WORD2 .EQ. "CODE" .AND. WORD3 .EQ.
2450 "FRACTION") GO TO 2220
2460 2210 PRINT 9110,F3: STOP
2470 2220 CONTINUE
2480C
2490 2230 READ(F3,9010,END=2270,ERR=2240) LN,ROW,CODE,FRACTION
2500 GO TO 2250
2510 2240 PRINT 9120,LN,F3: STOP
2520 2250 PHASE=0
2530 IF(ROW .GE. 1 .AND. ROW .LE. 11) PHASE=1
2540 IF(ROW .GE. 12 .AND. ROW .LE. 23) PHASE=2
2550 IF(ROW .GE. 24 .AND. ROW .LE. 47) PHASE=3
2560 IF(ROW .EQ. 49) PHASE=4
2570 IF(PHASE .NE. 0) GO TO 2260
2580 PRINT 9120,LN,F3:STOP
2590 2260 CONTINUE
2600 ACON(CODE,PHASE)=ACON(CODE,PHASE)+A(ROW,11)*FRACTION
2610 GO TO 2230
2620 2270 CONTINUE
2630 IF(F3 .NE. " ") CLOSEFILE F3

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2640C
2650C      DO TOTALS AND PERCENTS IN ACON(14,5):
2660      DO 2280 ROW=1,10
2670 2280 ACON(ROW,4)=ACON(ROW,1)+ACON(ROW,2)+ACON(ROW,3)
2680C
2690      DO 2290 COL=1,4
2700      DO 2290 ROW=1,10
2710 2290 ACON(11,COL)=ACON(11,COL)+ACON(ROW,COL)
2720C
2730      DO 2295 COL=1,4
2740 2295 ACON(13,COL)=ACON(11,COL)+ACON(12,COL)
2750      TOTAL=ACON(13,4)
2760      IF(ABS(TOTAL) .LE. 0.001) GO TO 2320
2770      DO 2300 ROW=1,13
2780 2300 ACON(ROW,5)=ACON(ROW,4)*100.0/TOTAL
2790C
2800      DO 2310 COL=1,4
2810 2310 ACON(14,COL)=ACON(13,COL)*100.0/TOTAL
2820      ACON(14,5)=ACON(13,5)
2830 2320 CONTINUE
2840C
2850C
2860C
2870 9990 CONTINUE
2880C      TEST ACON FOR 100%:
2890      RDDIFF=ACON(13,1)-A(1,11)
2900      IF(ABS(RDDIFF) .LE. 0.05) GO TO 2330
2910      PRINT 9130,F3,ACON(13,1),A(1,11): STOP
2920 2330 CONTINUE
2930C
2940      INDIFF=ACON(13,2)-A(12,11)
2950      IF(ABS(INDIFF) .LE. 0.05) GO TO 2340
2960      PRINT 9140,F3,ACON(13,2),A(12,11): STOP
2970 2340 CONTINUE
2980C
2990      OSDIFF=ACON(13,3)-A(24,11)
3000      IF(ABS(OSDIFF) .LE. 0.05) GO TO 2350
3010      PRINT 9150,F3,ACON(13,3),A(24,11): STOP
3020 2350 CONTINUE
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3030C
3040C
3050C
3060
3070C
3080C
3090C
3100C
3110C
3120C
3130
3140C
3150C
3160C
3170
3180 2360
3190
3200C
3210C
3220C
3230C
3240
3250 2370
3260
3270
3280 2380
3290 2390
3300
3310
3320C
3330CC
3340C
3350 2400
3360
33708
3380 2410
3390 2420
3400C

IS TIME PHASING NEEDED?
IF(M(4) .NE. 1) GO TO 2760

READ TIME PHASING FILE F4:
PATTERN MUST BE: PHASE, CODE, YEAR(10), YEAR(N)
CODE, YEAR(10), YEAR(N)
ETC.
LN=0

DETERMINE FIRST AMOUNT YEAR AND FIRST PERCENT YEAR:
(FIRST SKIP THREE LINES):
DO 2360 I=1,3
3180 2360 READ(F4,9010,END=2380,ERR=2380) LN
3190 READ(F4,9010,END=2380,ERR=2380) LN,TESTYR1
NOTE: TESTYR1 IS THE FIRST AMOUNT YEAR.
ALL BLOCKS MUST HAVE SAME FIRST AMOUNT YEAR:
NEXT SKIP 10 LINES:
NOTE: TESTYR2 IS THE FIRST PERCENT YEAR:
DO 2370 I=1,10
3250 2370 READ(F4,9010,END=2380,ERR=2380) LN
3260 READ(F4,9010,END=2380,ERR=2380) LN,TESTYR2
GO TO 2390
3280 2380 PRINT 9160,F4: STOP
3290 2390 CONTINUE
3300 REWIND F4
3310 LN=0
3320C
3330CC
3340C
3350 2400 READ(F4,9010,END=2410,ERR=2410) LN,WORD1,PHASE
3360 IF(WORD1 .EQ. "PHASE" .AND. PHASE .GE. 1 .AND. PHASE
33708 .LE. 4) GO TO 2420
3380 2410 PRINT 9170,F4,LN: STOP
3390 2420 CONTINUE
3400C

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3410C READ A NEW APPROPRIATION:
3420 2430 READ(F4,9010,END=2440,ERR=2440) LN,WORD1,APR
3430 IF(WORD1.EQ."CODE".AND.APR.GE.1.AND.
34408 APR.LE.13) GO TO 2450
3450 2440 PRINT 9180,F4,LN: STOP
3460 2450 CONTINUE
3470 READ(F4,9010,END=2460,ERR=2460) LN,WORD1,WORD2
3480 IF(WORD1.EQ."YEAR".AND.WORD2.EQ."AMOUNT")GO TO 2470
3490 2460 PRINT 9190,F4,LN: STOP
3500 2470 CONTINUE
3510 I=1
3520C
3530C
3540C
3550 READ TIME PHASE DATA INTO TRAW:
3560 READ(F4,9010,END=2480,ERR=2480) LN,FYEAR,TRAW(APR,PHASE,I)
3570 IF(FYEAR.EQ.TESTYR1) GO TO 2490
3580 2480 PRINT 9200,F4,LN,TESTYR1
3590C
3600C
3610C READ REST OF AMOUNTS:
3620 DO 2500 I=2,10
3630 2500 READ(F4,9010,END=2510,ERR=2510) LN,NYEAR,TRAW(APR,PHASE,I)
3640 READ(F4,9010,END=2510,ERR=2510) LN,WORD1,WORD2
3650 IF(WORD1.EQ."YEAR".AND.WORD2.EQ.
36608 "PERCENT") GO TO 2520
3670 2510 PRINT 9210,F4,LN: STOP
3680 2520 CONTINUE
3690 I=11
3700C
3710C
3720C READ ANOTHER PERCENT:
3730 2530 READ(F4,9010,END=2580,ERR=2540) LN,FYEAR,PERCENT
3740 IF(FYEAR.EQ.TESTYR2.OR.I.GT.11) GO TO 2550
3750 2540 PRINT 9220,F4,LN,TESTYR2: STOP
3760 2550 CONTINUE
3770C
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3780C IF THIS LINE IS NEW APR CODE, GO BACK:
3790 IF(FYEAR.NE."CODE") GO TO 2560
3800 BACKSPACE F4
3810 GO TO 2430
3820 2560 CONTINUE
3830C
3840C IF THIS LINE IS NEW PHASE, GO BACK:
3850 IF(FYEAR.NE."PHASE") GO TO 2570
3860 BACKSPACE F4
3870 GO TO 2400
3880 2570 CONTINUE
3890C
3900C IF THIS LINE IS NOT A NEW APR OR PHASE, IT IS DATA:
3910 TRAW(APR,PHASE,I)=PERCENT
3920 I=I+1
3930 GO TO 2530
3940C DONE READING TIME DATA INTO TRAW:
3950 2580 CONTINUE
3960 IF(F4.NE." ") CLOSEFILE F4
3970C
3980C TEST PERCENTS TO MAKE SURE THEY ADD TO 1.00 (OR 0.0)
3990 DO 2600 ROW=1,12
4000 DO 2600 COL=1,4
4010 SUM=0.0
4020 DO 2590 IPAG=11,57
4030 2590 SUM=SUM+TRAW(ROW,COL,IPAG)
4040 IF(ABS(SUM).LE.0.01 .OR. ABS(SUM-1.0) .LE.0.001) GO TO 2600
4050 PRINT 9230,PHASE,APR,F4; STOP
4060 2600 CONTINUE
4070C
4080C ARE INF AND YR SYNCHRONIZED WITH TRAW?
4090 DO 2610 ROW=1,12
4100 IF(YR(ROW,1).EQ.TESTYR1 .OR. YR(ROW,1).EQ." ") GOTO 2610
4110 PRINT 9240,ROW,YR(ROW,1),TESTYR1; STOP
4120 2610 CONTINUE
4130C
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4140C  CHANGE RAW CURRENT DOLLARS INTO CONSTANT DOLLARS:
4150  DO 2620 ROW=1,12
4160  DO 2620 COL = 1,4
4170  DO 2620 IPAG=1,10
4180  IF(INF(ROW,IPAG) .LE. 0.01) GO TO 2620
4190  TCON(ROW,COL,IPAG)=TRAW(ROW,COL,IPAG)/INF(ROW,IPAG)
4200 2620 CONTINUE
4210C
4220C  PUT CONSTANT AMTS FROM ACON(14,5) INTO TCON, PAGE 60:
4230  DO 2630 ROW=1,10
4240  DO 2630 COL=1,3
4250 2630 TCON(ROW,COL,60)=ACON(ROW,COL)
4260  DO 2635 COL=1,3
4270 2635 TCON(12,COL,60)=ACON(12,COL)
4280C
4290C  PUT RESIDUE (TOTALS MINUS CONSTANT AMTS) INTO TCON, PAG 59:
4300  DO 2650 ROW=1,12
4310  DO 2650 COL=1,4
4320  AMOUNT=0.0
4330  DO 2640 IPAG=1,10
4340 2640 AMOUNT=AMOUNT+TCON(ROW,COL,IPAG)
4350  TCON(ROW,COL,59)=TCON(ROW,COL,60)-AMOUNT
4360  IF(TCON(ROW,COL,59) .GE. 0.0) GO TO 2650
4370  PRINT 9250,F4,COL,ROW: STOP
4380 2650 CONTINUE
4390C
4400C  CALCULATE TCON, PAGES 11 THRU 57:
4410  DO 2660 ROW=1,10
4420  DO 2660 COL=1,3
4430  DO 2660 IPAG=11,57
4440 2660 TCON(ROW,COL,IPAG)=TCON(ROW,COL,59)*TRAW(ROW,COL,IPAG)
4450  DO 2665 COL=1,3
4460  DO 2665 IPAG=11,57
4470 2665 TCON(12,COL,IPAG)=TCON(12,COL,59)*TRAW(12,COL,IPAG)
4480C
```

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```
4490C
4500C
4510C
4520C
4530
4540
4550
4560 2670
4570
4580
4590 2675
4600C
4610C
4620C
4630
4640
4650
4660 2680
4661C
4662C
4663
4664
4665
4666 2681
4667C
4670C
4680C
4681C
4682
4683 2679
4690C

      CALCULATE TOTALS FOR TCON:

      CALCULATE ROW 13:
      CALCULATE ROW 11:
      DO 2670 COL=1,3
      DO 2670 IPAG=1,60
      DO 2670 ROW=1,10
      TCON(11,COL,IPAG)=TCON(11,COL,IPAG)+TCON(ROW,COL,IPAG)
      DO 2675 COL=1,3
      DO 2675 IPAG=1,60
      TCON(13,COL,IPAG)=TCON(11,COL,IPAG)+TCON(12,COL,IPAG)
      ROWS 11 AND 13 ARE NOW COMPLETE (COLS 1-3 ONLY).

      CALCULATE COLUMN 4:
      DO 2680 ROW=1,13
      DO 2680 IPAG=1,60
      DO 2680 COL=1,3
      TCON(ROW,4,IPAG)=TCON(ROW,4,IPAG)+TCON(ROW,COL,IPAG)

      CALCULATE "TO COMPLETE" HERE:
      DO 2681 ROW=1,13
      DO 2681 COL=1,4
      DO 2681 IPAG=29,57
      TCON(ROW,COL,58)=TCON(ROW,COL,58)+TCON(ROW,COL,IPAG)

      TCON IS NOW COMPLETE.
      FIRST PRINT ALL CONSTANT $ REPORTS:
      GO TO 2760
      CONTINUE
```

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```

4700C IS TCUR REQUIRED?
4710 IF(M(6).NE.1) GO TO 2760
4720C FIRST ZERO OUT ALL TOTALS:
4730 DO 2682 ROW=1,13
4740 DO 2682 COL=1,4
4745 TCON(ROW,COL,58)=0.0
4750 2682 TCON(ROW,COL,60)=0.0
4760 DO 2684 ROW=1,13
4770 DO 2684 IPAG=1,57
4780 2684 TCON(ROW,4,IPAG)=0.0
4790 DO 2686 COL=1,3
4800 DO 2686 IPAG=1,57
4810 TCON(11,COL,IPAG)=0.0
4820 2686 TCON(13,COL,IPAG)=0.0
4830C
4840C CALCULATE CURRENT AMOUNTS FROM TCON AND INF, PUT INTO TCUR:
4850 DO 2690 ROW=1,12
4860 DO 2690 COL=1,4
4870 DO 2690 IPAG=1,57
4880 2690 TCUR(ROW,COL,IPAG)=TCON(ROW,COL,IPAG)+INF(ROW,IPAG)
4890C
4900C CALCULATE ROW 11:
4910 DO 2710 COL=1,3
4920 DO 2710 IPAG=1,57
4930 DO 2710 ROW=1,10
4940 2710 TCUR(11,COL,IPAG)=TCUR(11,COL,IPAG)+TCUR(ROW,COL,IPAG)
4950C
4960C CALCULATE ROW 13:
4970 DO 2715 COL=1,3
4980 DO 2715 IPAG=1,57
4990 2715 TCUR(13,COL,IPAG)=TCUR(11,COL,IPAG)+TCUR(12,COL,IPAG)
5000C
5010C CALCULATE COLUMN 4:
5020 DO 2720 ROW=1,13
5030 DO 2720 IPAG=1,57
5040 DO 2720 COL=1,3
5050 2720 TCUR(ROW,4,IPAG)=TCUR(ROW,4,IPAG)+TCUR(ROW,COL,IPAG)
5060C

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5070C  CALCULATE PAGE 60:
5080  DO 2725 ROW=1,13
5090  DO 2725 COL=1,4
5100  DO 2725 IPAG=1,57
5110 2725  TCUR(ROW,COL,60)=TCUR(ROW,COL,60)+TCUR(ROW,COL,IPAG)
5120C
5121C  CALCULATE "TO COMPLETE" HERE:
5122  DO 2726 ROW=1,13
5123  DO 2726 COL=1,4
5124  DO 2726 IPAG=29,57
5125 2726  TCUR(ROW,COL,58)=TCUR(ROW,COL,58)+TCUR(ROW,COL,IPAG)
5126C
5130C  IS ACUR(14,5) REQUIRED?
5140  IF(R(8).NE.1) GO TO 2760
5150C  CALCULATE ACUR:
5160  DO 2730 ROW=1,13
5170  DO 2730 COL=1,4
5180 2730  ACUR(ROW,COL)=TCUR(ROW,COL,60)
5190C
5200  TOTAL=ACUR(13,4)
5210C
5220C  CALCULATE PERCENTS:
5230  IF(TOTAL.LE.0.001) GO TO 2760
5240  ACUR(14,5)=100.0
5250  DO 2740 ROW=1,13
5260 2740  ACUR(ROW,5)=ACUR(ROW,4)*100.0/TOTAL
5270  DO 2750 COL=1,4
5280 2750  ACUR(14,COL)=ACUR(13,COL)*100.0/TOTAL
5290C
5300 2760  CONTINUE
5305  IF(LCUR.EQ.1) GO TO 3056
5310C
5320C  READ REPORT HEADINGS HERE:
5330  IF(MODEL.EQ."AIRC") HEADERS="AIRHD*"
5340  IF(MODEL.EQ."MICO") HEADERS="MICHHD*"
5350  IF(MODEL.EQ."TRAC") HEADERS="TRAHD*"
5360C

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```
5370C GET LOCATION OF HEADERS FILES:
5380 READ(HEADERS,9010,END=2800,ERR=2800) LN,H1,H2,H3
5390 CLOSEFILE HEADERS
5400 GO TO 2810
5410 2800 PRINT 9260,HEADERS: STOP
5420 2810 CONTINUE
5430C
5440C READ ROW TITLES:
5450 DO 2820 I=1,50
5460 2820 READ(H1,9280,END=2830,ERR=2830) LN,(T1(I,J),J=1,6)
5470 GO TO 2840
5480 2830 PRINT 9270,H1,HEADERS: STOP
5490 2840 CLOSEFILE H1
5500C
5510C READ APPROPRIATION TITLES:
5520 DO 2850 I=1,14
5530 2850 READ(H2,9280,END=2860,ERR=2860) LN,(T2(I,J),J=1,6)
5540 GO TO 2870
5550 2860 PRINT 9270,H2,HEADERS: STOP
5560 2870 CLOSEFILE H2
5570C
5580C READ COLUMN TITLES:
5590 DO 2880 I=1,6
5600 2880 READ(H3,9290,END=2890,ERR=2890) LN,(T3(I,J),J=1,29)
5610 GO TO 2900
5620 2890 PRINT 9270,H3,HEADERS: STOP
5630 2900 CLOSEFILE H3
```

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```
5640C PAUSE "ADJUST PAPER, GIVE RETURN"
5650
5660C
5670C PRINT REPORTS:
5680C
5690C PRINT REPORT 1:
5700 IF(R(1).NE.1) GO TO 2920
5710 PRINT,"."
5720 PRINT 9523: PRINT 9523: PRINT 9521
5730 PRINT 9530,GDAT(0),A(50,11)
5740 PRINT 9551,YEAR
5750 PRINT 9523
5760 DO 2909 I=1,4
5770 PRINT 9502, (T3(I,J),J=1,29)
5780 PRINT 9510
5790 DO 2910 I=1,50
5800 PRINT 9540,I,(T1(I,J),J=1,6),(A(I,J),J=1,12)
5810 PRINT 9510
5820 PRINT 9560,MODEL,DATAF,(WORDS(I),I=1,3)
5830 PRINT 9560,F1,F2,F3,F4,F5
5840 PRINT 9529
5850 PRINT 9529:PRINT 9529:PRINT 9529
5860 PRINT 9526
5870 PRINT 9523
5880 PRINT 9521
5890 2920 CONTINUE
5900C
```

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```
5910C
5920C PRINT REPORT 2:
5930 IF(R(2) .NE. 1) GO TO 2950
5940 SKIP=1
5950 PRINT,"."
5960 PRINT 9529
5970 PRINT 9531,GDAT(0),A(50,11)
5980 PRINT 9552,YEAR
5990 PRINT 9511
6000 DO 2931 I=1,14
6010 IF(DCON(I,1) .GE. 0.01) GO TO 2930
6020 SKIP=SKIP+1
6030 GO TO 2931
6040 2930 PRINT 9541,LABEL(I),(DCON(I,J),J=1,3)
6050 2931 CONTINUE
6060 PRINT 9511
6070 PRINT 9560, MODEL,DATAF,(WORDS(I),I=1,3)
6080 PRINT 9560,F1,F2,F3,F4,F5
6090 DO 2940 I=1,SKIP
6100 2940 PRINT 9521
6110 PRINT 9529
6120 PRINT 9529;PRINT 9526
6130 PRINT 9521
6140 2950 CONTINUE
6150C
```

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```
6160C
6170C
6180C      PRINT REPORT 3:
6190      IF(R(3) .NE. 1) GOTO 2970
6200      PRINT,"."
6210      PRINT 9529
6220      PRINT 9531,GDAT(0),A(50,11)
6230      PRINT 9553,YEAR
6240      PRINT 9597
6250      PRINT 9511
6260      DO 2960 I=1,14
6270      PRINT 9543,(T2(I,J),J=1,6),(ACON(I,J),J=1,5)
6280      PRINT 9511
6290      PRINT 9560,MODEL,DATAF,(WORDS(I),I=1,3)
6300      PRINT 9560,F1,F2,F3,F4,F5
6310      PRINT 9529;PRINT 9529
6320      PRINT 9526;PRINT 9522
6330      GOTO 2970 CONTINUE
6340C
6350C
6360C
```

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```

6370C      PRINT REPORT 4:
6380      IF(R(4) .NE. 1) GO TO 3020
6390      PRINT, ". "
6400      PRINT 9522
6410      PRINT 9530, GDAT(0), A(50, 11)
6420      PRINT 9554, YEAR
6430      PRINT 9522
6440      PRINT 9500, (T3(5, J), J=1, 29)
6450      PRINT 9510
6460      DO 3000 COL=1, 3
6470      IF(COL .EQ. 1) PRINT 9581
6480      IF(COL .EQ. 2) PRINT 9582
6490      IF(COL .EQ. 3) PRINT 9583
6500      DO 3000 I=1, 13
6510      PRINT 9570, (T2(I, J), J=1, 3), (TCON(I, COL, IPAG), IPAG=1, 15)
6520      PRINT 9510
6530      PRINT 9560, MODEL, DATAF, (WORDS(I), I=1, 3)
6540      PRINT 9560, F1, F2, F3, F4, F5
6550      PRINT 9522; PRINT 9522
6560C
6570C
6580C
6590
6600      PRINT 9530, GDAT(0), A(50, 11)
6610      PRINT 9554, YEAR
6620      PRINT 9522
6630      PRINT 9500, (T3(6, J), J=1, 29)
6640      PRINT 9510
6650      DO 3010 COL=1, 3
6660      IF(COL .EQ. 1) PRINT 9581
6670      IF(COL .EQ. 2) PRINT 9582
6680      IF(COL .EQ. 3) PRINT 9583
6690      DO 3010 I=1, 13
6700      PRINT 9571, (T2(I, J), J=1, 3), (TCON(I, COL, IPAG), IPAG=16, 28),
6700&      TCON(I, COL, 58), TCON(I, COL, 60)
6710      PRINT 9510
6720      PRINT 9560, MODEL, DATAF, (WORDS(I), I=1, 3)
6730      PRINT 9560, F1, F2, F3, F4, F5
6740      PRINT 9522
6750      PRINT 9521
6760      PRINT 3020 CONTINUE

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```
6770C
6780C
6790C
6800C
6810
6820
6830
6840
6850
6860
6870
6880
6890 3030
6900
6910C
6920C
6930C
6940
6950
6960
6970
6980 3040
6990
7000
7010
7020
7030
7040
7050C
7060 3050
7066 3055
7070C
7080C
7081C
7082
7083
7084 3056

PRINT REPORT 5:
IF(R(5) .NE. 1) GO TO 3050
PRINT,"."
PRINT 9523: PRINT 9523: PRINT 9522
PRINT 9530,GDAT(O),A(50,11)
PRINT 9555,YEAR
PRINT 9500,(T3(5,J),J=1,29)
PRINT 9510
DO 3030 I=1,13
PRINT 9570,(T2(I,J),J=1,3),(TCON(I,4,IPAG),IPAG=1,15)
PRINT 9510

PRINT 9522
PRINT 9500,(T3(6,J),J=1,29)
PRINT 9510
DO 3040 I=1,13
PRINT 9571,(T2(I,J),J=1,3),(TCON(I,4,IPAG),IPAG=16,28),
TCON(I,4,58),TCON(I,4,60)
PRINT 9510
PRINT 9560,MODEL,DATAF,(WORDS(I),I=1,3)
PRINT 9560,F1,F2,F3,F4,F5
PRINT 9529
PRINT 9523

CONTINUE
CONTINUE

IF CURRENT $ RPTS ARE NEEDED, GO BACK, CALCULATE, THEN RETURN HERE:
IF(M(6) .EQ. 1) LCUR=1
IF(LCUR .EQ. 1) GO TO 2679
CONTINUE
```

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```
7090C
7100C
7110C
7120 PRINT REPORT 6:
7130 IF(R(6) .NE. 1) GO TO 3080
7140 PRINT " "
7150 PRINT 9521;PRINT 9523
7160 PRINT 9530,GDAT(0),TCUR(13,4,60)
7170 PRINT 9590
7180 PRINT 9500,(T3(5,J),J=1,29)
7190 PRINT 9510
7200 DO 3060 COL=1,3
7210 IF(COL .EQ. 1) PRINT 9581
7220 IF(COL .EQ. 2) PRINT 9582
7230 IF(COL .EQ. 3) PRINT 9583
7240 DO 3060 I=1,13
7250 PRINT 9570,(T2(I,J),J=1,3),(TCUR(I,COL,IPAG),IPAG=1,15)
7260 PRINT 9510
7270 PRINT 9560,MODEL,DATAF,(WORDS(I),I=1,3)
7280 PRINT 9560,F1,F2,F3,F4,F5
7290 PRINT 9523;PRINT 9522
7300C
7310C
7320C
7330 PRINT 9530,GDAT(0),TCUR(13,4,60)
7340 PRINT 9590
7350 PRINT 9500,(T3(6,J),J=1,29)
7360 PRINT 9510
7370 DO 3070 COL=1,3
7380 IF(COL .EQ. 1) PRINT 9581
7390 IF(COL .EQ. 2) PRINT 9582
7400 IF(COL .EQ. 3) PRINT 9583
7410 DO 3070 I=1,13
7420 PRINT 9571,(T2(I,J),J=1,3),(TCUR(I,COL,IPAG),IPAG=16,28),
7430 TCUR(I,COL,58),TCUR(I,COL,60)
7440 PRINT 9510
7450 PRINT 9560,MODEL,DATAF,(WORDS(I),I=1,3)
7460 PRINT 9560,F1,F2,F3,F4,F5
7470 PRINT 9521
7480 PRINT 3080 CONTINUE
```

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```
7490C
7500C
7510C
7520      PRINT REPORT 7:
7530      IF(R(7).NE.1) GO TO 3110
7540      PRINT,"."
7550      PRINT 9523: PRINT 9523: PRINT 9522
7560      PRINT 9530,GDAT(0),TCUR(13,4,60)
7570      PRINT 9595
7580      PRINT 9500,(T3(5,J),J=1,29)
7590      PRINT 9510
7600      DO 3090 I=1,13
7610      PRINT 9570,(T2(I,J),J=1,3),(TCUR(I,4,IPAG),IPAG=1,15)
7620C
7630C
7640
7650      PRINT 9522
7660      PRINT 9500,(T3(6,J),J=1,29)
7670      PRINT 9510
7680      DO 3100 I=1,13
7690      PRINT 9571,(T2(I,J),J=1,3),(TCUR(I,4,IPAG),IPAG=16,28),
7700      TCUR(I,4,58),TCUR(I,4,60)
7710      PRINT 9510
7720      PRINT 9560,MODEL,DATAF,(WORDS(I),I=1,3)
7730      PRINT 9560,F1,F2,F3,F4,F5
7740      PRINT 9529
7750C
7760      PRINT 9523
7770C
7770C      CONTINUE
```

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```
7780C  
7790C  
7800C  
7810C  
7820  
7830  
7840  
7850  
7860  
7870  
7880  
7890  
7900  
7910  
7920  
7930  
7940  
7950  
7960C  
7970C  
7980C  
  
PRINT REPORT 8:  
IF(R(8).NE.1) GO TO 3130  
PRINT,"."  
PRINT 9529  
PRINT 9531,GDAT(0),ACUR(13,4)  
PRINT 9596  
PRINT 9597  
PRINT 9511  
DO 3120 I=1,14  
3120 PRINT 9543,(T2(I,J),J=1,6),(ACUR(I,J),J=1,5)  
PRINT 9511  
PRINT 9560,MODEL,DATAF,(WORDS(I),I=1,3)  
PRINT 9560,F1,F2,F3,F4,F5  
PRINT 9529;PRINT 9529;PRINT 9529  
3130 CONTINUE
```

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FORMATS SECTION:

```

7990C
8000 9010 FORMAT(V)
8010 9020 FORMAT(1H-, "ERROR IN FIRST LINE OF INFLATION FILE ", A8, ///,
8020& "XMUST READ: LN APPROP LOCATION ", ///, 8("*****"))
8030 9030 FORMAT(1H-, "ERROR IN INFLATION FILE ", A8, ///,
8040& "XON OR NEAR LINE ", I5, ///,
8050& "XEACH LINE OF FILE MUST READ: LN APR FIL", ///,
8060& "XWHERE APR IS AN INTEGER, AND FIL IS A FILENAME.", ///,
8070& "X", 8("*****"))
8080 9040 FORMAT(1H-, "UNABLE TO LOCATE FILE ", A8, " CALLED FOR BY FILE ", A8, ///,
8090& "XCHECK BOTH FILES AND START OVER.", ///, 8("*****"))
8100 9050 FORMAT(1H-, "ERROR OCCURRED TRYING TO READ FILE ", A8, ///,
8110& " (CALLED FOR BY FILE ", A8, ").", ///,
8120& "XCHECK ON OR NEAR LINE ", I5, " OF FILE ", A8, ///, 8("*****"))
8130 9060 FORMAT(13, I1, F11.2, 8(F9.2), F11.2, F12.2, F7.2)
8140 9070 FORMAT(1H-, "ERROR ON LINE ", I5, " OF COST DATA FILE ", A8,
8150& ///, 8("*****"))
8160 9080 FORMAT(1H-, "ERROR ON FIRST LINE OF DEFINITIONS FILE ", A8,
8170& ///, "XFIRST LINE MUST READ: LN LABEL LOCATION", ///,
8180& 8("*****"))
8190 9090 FORMAT(1H-, "ERROR ON OR NEAR LINE ", I5, " OF DEFINITIONS FILE ", A8,
8200& ///, 8("*****"))
8210 9095 FORMAT(1H-, "ERROR IN READING FILE ", A8, ///,
8220& "XCALLED FOR BY DEFINITION FILE ", A8, ///, 8("*****"))
8230 9097 FORMAT(1H-, "ERROR IN FILE: ", A8, " CALLED FOR BY FILE: ", A8, ///,
8240& "XFIRST LINE MUST BE: LN QTY N", ///,
8250& "XSECOND LINE MUST BE: ROW COL FRACTION", ///, 8("*****"))
8260 9099 FORMAT(1H-, "ERROR IN FILE: ", A8, ///, "XCALLED FOR BY FILE: ", A8,
8270& ///, "XON OR NEAR LINE ", I5, ///, 8("*****"))
8280 9100 FORMAT(1H-, "ERROR ON OR NEAR LINE ", I5, " OF LOCATION FILE ", A8,
8290& ///, 8("*****"))
8300 9110 FORMAT(1H-, "ERROR ON FIRST LINE OF APPROPRIATIONS FILE ", A8,
8310& ///, "XFIRST LINE MUST READ: LN ROW CODE FRACTION", ///,
8320& 8("*****"))

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8330 9120 FORMAT(1H-,"ERROR ON OR NEAR LINE ",I5," OF APPROPRIATION FILE ",A8,
83408 ///,8("*****"))
8350 9130 FORMAT(1H-,"APPROPRIATION FILE ",A8," RESULTS IN ",F12.3,///,
83608 "XOF R&D COST, BUT THE COST DATA FILE CONTAINS ",F12.3,///,
83708 "XOF R&D COST.",///,8("*****"))
8380 9140 FORMAT(1H-,"APPROPRIATION FILE ",A8,"RESULTS IN ",F12.3,///,
83908 "XOF INV COST, BUT THE COST DATA FILE CONTAINS ",F12.3,///,
84008 "XOF INV COST.",///,8("*****"))
8410 9150 FORMAT(1H-,"APPROPRIATION FILE ",A8," RESULTS IN ",F12.3,///,
84208 "XOF O&S COST, BUT THE COST DATA FILE CONTAINS ",F12.3,///,
84308 "XOF O&S COST.",///,8("*****"))
8440 9160 FORMAT(1H-,"ERROR IN FIRST 15 LINES OF TIME PHASING FILE ",A8,
84508 ///,8("*****"))
8460 9170 FORMAT(1H-,"ERROR IN TIME PHASING FILE ",A8," ON OR NEAR LINE ",I5,
84708 ///,"XEXPECTED: LN PHASE N",///,8("*****"))
8480 9180 FORMAT(1H-,"ERROR IN TIME PHASING FILE ",A8," ON OR NEAR LINE ",I5,
84908 ///,"XEXPECTED: LN CODE N",///,8("*****"))
8500 9190 FORMAT(1H-,"ERROR IN TIME PHASING FILE ",A8," ON OR NEAR LINE ",I5,
85108 ///,"XEXPECTED: LN YEAR AMOUNT",///,8("*****"))
8520 9200 FORMAT(1H-,"ERROR IN TIME PHASING FILE ",A8," ON OR NEAR LINE ",I5,
85308 ///,"XEXPECTED: LN YR $$,$, WHERE YR=",A8,///,1
85408 8("*****"))
8550 9210 FORMAT(1H-,"ERROR IN TIME PHASING FILE ",A8," ON OR NEAR LINE ",I5,
85608 ///,"XEXPECTED: LN YEAR PERCENT",///,8("*****"))
8570 9220 FORMAT(1H-,"ERROR IN TIME PHASING FILE ",A8," ON OR NEAR LINE ",I5,
85808 ///,"XEXPECTED: LN YR %",///,"XWHERE YR=",A8,///,8("*****"))
8590 9230 FORMAT(1H-,"PERCENTS DO NOT ADD TO 1.0, PHASE: ",I4,///,
86008 "XAPPROPRIATION CODE: ",I4,///,
86108 "XCHECK FILE ",A8,///,8("*****"))
8620 9240 FORMAT(1H-,"FIRST YEAR OF INFLATION DATA, CODE: ",I4,///,
86308 "XWAS ",A8," SHOULD HAVE BEEN SAME AS TIME PHASING: ",A8,///,
86408 8("*****"))
8650 9250 FORMAT(1H-,"TIME PHASING FILE: ",A8," (YEAR AMOUNTS SECTION),",///,
86608 "XSPECIFIED AMOUNTS GREATER THAN LIFE CYCLE TOTAL, PHASE ",I4,
86708 ///,"XAPPROPRIATION CODE ",I4,///,8("*****"))
8680 9260 FORMAT(1H-,"ERROR. CHECK FILE: ",A8,///,8("*****"))
8690 9270 FORMAT(1H-,"ERROR. CHECK FILE: ",A8,"CALLED FOR BY FILE: ",
87008 A8,///,8("*****"))

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8710 9280 FORMAT(I3,IX,6(A4))
8720 9290 FORMAT(I1,IX,29(A4))
8730 9300 FORMAT(IH,6(A4))
8740 9400 FORMAT(IH,6(A4))
8750 9500 FORMAT(IH,29(A4))
8760 9502 FORMAT(IH,2X,29(A4))
8770 9510 FORMAT(IH,29("===="))
8780 9511 FORMAT(IH,15("===="))
8790 9521 FORMAT(IH)
8800 9522 FORMAT(IHO)
8810 9523 FORMAT(IH-)
8820 9526 FORMAT(IH-/,IH-)
8830 9529 FORMAT(IH-/,IH-/,IH-)
8840 9530 FORMAT(IH,10X,"DATE:",A8,60X,"TOTAL SYSTEM COST:",F8.1,////)
8850 9531 FORMAT(IH,5X,"DATE:",A8,10X,"TOTAL SYSTEM COST:",F8.1,////)
8860 9540 FORMAT(IH,12,6(A4),F6.1,8(F8.1),2(F8.1),F6.1)
8870 9541 FORMAT(IH,2X,A8,F15.1,F15.4)
8880 9543 FORMAT(IH,6(A4),4(F8.1),F6.1)
8890 9551 FORMAT(IH,35X,"REPORT 1---COST ELEMENT BY SYSTEM STRUCTURE",//,
40X,"IN MILLIONS OF CONSTANT",I2,"DOLLARS")
8900&
8910 9552 FORMAT(IH,10X,"REPORT 2---KEY COST DEFINITIONS",//,
9X,"IN MILLIONS OF CONSTANT",I2,"DOLLARS",////,
21X,"TOTAL",8X,"QUANTITY",8X,"UNIT")
8920&
8930&
8940 9553 FORMAT(IH,10X,"REPORT 3---APPROPRIATION BY LIFE CYCLE PHASE",//,
15X,"IN MILLIONS OF CONSTANT",I2,"DOLLARS",////)
8950&
8960 9554 FORMAT(IH,35X,"REPORT 4---APPROPRIATION BY YEAR (DETAIL)",//
40X,"IN MILLIONS OF CONSTANT",I2,"DOLLARS",//)
8970&
8980 9555 FORMAT(IH,35X,"REPORT 5---APPROPRIATION BY YEAR (TOTAL)",//,
40X,"IN MILLIONS OF CONSTANT",I2,"DOLLARS",//)
8990&
9000 9560 FORMAT(IH,4X,5(A8,1X),//)
9010 9570 FORMAT(IH,3(A4),15(F7.1))
9020 9571 FORMAT(IH,3(A4),14(F7.1),F8.1)
9030 9581 FORMAT(IHO,46X,"RESEARCH AND DEVELOPMENT")
9040 9582 FORMAT(IHO,52X,"INVESTMENT")
9050 9583 FORMAT(IHO,47X,"OPERATING AND SUPPORT")

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9060 9590 FORMAT(1H,35X,"REPORT 6---APPROPRIATION BY YEAR (DETAIL)",//,
9070& 41X,"IN MILLIONS OF CURRENT DOLLARS",//)
9080 9595 FORMAT(1H,35X,"REPORT 7--- APPROPRIATION BY YEAR (TOTAL)",//,
9090& 43X,"IN MILLIONS OF CURRENT DOLLARS",//)
9100 9596 FORMAT(1H,10X,"REPORT 8---APPROPRIATION BY LIFE CYCLE PHASE",//,
9110& 18X,"IN MILLIONS OF CURRENT DOLLARS",////)
9120 9597 FORMAT(1H,27X,"R&D",5X,"INV",5X,"O&S",3X,"TOTAL",3X,"PERCT")
9130 STOP; END

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ALCCM*

ALCCM*	10:01EST	02/03/76	
	VERSION OF 3 FEB 1976		
100C	REAL:		SHIFT FACTOR FOR CHANGING BASE YEAR
110C	SF		QUANTITY
120C	KN		NUMBER OF YEARS
130C	YN		AVERAGE COST
140C	AC		COST FACTOR
150C	CF		THEORETICAL FIRST UNIT COST
160C	UC		EXPERIENCE CURVE SLOPES
170C	EC		NATURAL LOG(EC(1)) / NAT LOG(2.0)
180C	B(1)		PREVIOUS BUY QUANTITY
190C	PB		PHYSICAL OR PERFORMANCE CHARACTERISTIC
200C	PC		THRUPUTS, ADDED TO COST CELLS
210C	THRUPUTS		STORAGE OF COST RESULTS
220C	A(50,12)		TEMPORARY STORAGE FOR FIVE DATA INPUT ELEMENTS
230C	F(5)		THRUPUTS AMOUNTS IN MILLIONS(UNSHIFTED)
240C	AMT		VALUE OF SHIFT FACTOR TO BE USED
250C	SFX		INFLATED(SHIFTED) VALUE OF AMT
260C	INFTP		ACCUMULATOR FOR SUM(THRUPUTS), SHIFTED
270C	SUMTP		ACCUMULATOR FOR SUM(THRUPUTS), BEFORE SHIFTING
280C	SUMAMT		TEMPORARY STORAGE FOR 12 OUTPUT DATA ELEMENTS
290C	G(12)		STORAGE FOR INPUT DATA
300C	XX(300,10)		
310C	INTEGER:		
320C	LN		LINE NUMBER
330C	YEAR		2 DIGIT IDENTIFIER FOR RESULTS AFTER SHIFTING
340C	COLM		COLUMN OF XX(300,10)
350C	NROW(CUL)		CONTAINS NUMBER OF ROWS TO READ FOR EACH TYPE OF DATA
360C	NN		EVALUATION OF NROW(COL)
370C			
380C			
390C			

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400C BEGIN
410C NTP
420C TPSWITCH
430C ROW
440C COL
450C SFROM(ROW)
460C APCODE
470C ISTAT
480C
490C
500C
510C
520C
530C
540C
550C
560C
570C
580C
590C
600C
610C
620C
630C
640C
650C
660C
670C
680C
690C
700C
710C

SUBSCRIPT OF FIRST DATA VARIABLE ON EACH LINE OF INPUT
COUNTER FOR THE NUMBER OF THRUPTS PROCESSED
1 IF THRUPTS ARE BEING USED, 0 OTHERWISE
ROW OF MATRIX A(50,12)
COLUMN OF MATRIX A(50,12)
CONTAINS APPROPRIATION CODES FOR EACH ROW OF MATRIX
EVALUATION OF SFROM(ROW)
CONTAINS CODE FOR STATUS OF CREATE ATTEMPT

FILENAME:
IN NAME OF DATA INPUT FILE
WORD1 WORD FOR CHECKING SYNTAX OF INPUT DATA
WORD2 CHECK SYNTAX OF DATA
WORD3 CHECK SYNTAX OF DATA
MODEL IDENTIFIER FOR AIRCD, MICRO, OR TRACO
TYPE TYPE OF VARIABLE (AC, THRUPTS, ETC)
OUT NAME OF OUTPUT FILE USED FOR STORING RESULTS
TYPE, DIMENSION AND EQUIVALENCE STATEMENTS:
REAL SF(300), XN(300), YN(300), AC(300), CF(300), UC(300), EC(300), B(300)
REAL PB(300), PC(300), THRUPTS(300)
REAL A(50,12), F(5), G(12), XX(300,10)
REAL AMT, SFX, INFTP, SUMTP, SUMAMT
INTEGER LN, YEAR, COLM, NROW(10), NN, BEGIN, NTP, TPSWITCH
INTEGER ROW, COL, SFROM(50), APCODE, ISTAT
FILENAME IN, WORD1, WORD2, WORD3, MODEL, TYPE, OUT
EQUIVALENCE (XX(1,1), SF(1))
EQUIVALENCE (XX(1,2), XN(1))
EQUIVALENCE (XX(1,3), YN(1))
EQUIVALENCE (XX(1,4), AC(1))
EQUIVALENCE (XX(1,5), CF(1))
EQUIVALENCE (XX(1,6), UC(1))
EQUIVALENCE (XX(1,7), EC(1))

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720 EQUIVALENCE (XX(1,8),PB(1))
730 EQUIVALENCE (XX(1,9),PC(1))
740 EQUIVALENCE (XX(1,9),THRUPUTS(1))
750 DATA NROW/3,45,1,57,16,4,4,4,9,99/
760 DATA SFRW/0,1,1,1,1,1,
770& 1,1,1,1,1,
780& 1,0,2,2,2,
790& 2,2,2,2,2,
800& 2,2,2,0,0,
810& 8,3,8,8,0,
820& 7,7,2,0,7,
830& 2,7,2,0,7,
840& 7,0,8,8,7,
850& 8,7,0,12,0/
860C CERTAIN "DO NOTHING" VALUES ARE ASSIGNED HERE:
870 DO 1005 I=1,50
880 PC(I)=1.0
890 1005 CONTINUE
900C
910C
920
930 PRINT,"NAME OF DATA INPUT FILE---"
940 INPUT,IN
950 READ(IN,2010,END=1010,ERR=1010) LN, WORD1, WORD2, YEAR
960 IF(WORD1.EQ."BASE".AND.WORD2.EQ."YEAR") GO TO 1020
970 1010 PRINT 2020, IN; STOP
980 1020 CONTINUE
990 READ(IN,2010,END=1030,ERR=1030) LN, WORD1, MODEL
1000& IF(WORD1.EQ."MODEL".AND.MODEL.EQ."AIRCO".OR.MODEL.EQ.
1010 "MICO".OR.MODEL.EQ."TRACO") GO TO 1040
1020 1030 PRINT 2030, IN; STOP
1030 1040 CONTINUE

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1030 IF(MODEL.EQ."AIRCO") P=2
1040 IF(MODEL.EQ."AICO") P=3
1050 IF(MODEL.EQ."TRACO") P=4
1060 DO 1045 I=1,50
1070 IF(SFROM(I).EQ.2) SFROW(I)=P
1080 1045 READ(IN,2010,END=1999,ERR=1060) LN, TYPE
1090 COLM=0
1100 IF(TYPE.EQ."SF") COLM=1
1110 IF(TYPE.EQ."XN") COLM=2
1120 IF(TYPE.EQ."YN") COLM=3
1130 IF(TYPE.EQ."AC") COLM=4
1140 IF(TYPE.EQ."CF") COLM=5
1150 IF(TYPE.EQ."UC") COLM=6
1160 IF(TYPE.EQ."EC") COLM=7
1170 IF(TYPE.EQ."PB") COLM=8
1180 IF(TYPE.EQ."PC") COLM=9
1190 IF(TYPE.EQ."THRUPUTS") COLM=10
1200 IF(COLM.NE.0) GO TO 1070
1210 PRINT 2040, IN, LN, TYPE; STOP
1220 1060 PRINT 2050, IN, LN; STOP
1230 1070 CONTINUE
1240 NN=NR04(COLM)
1250 IF(COLM.EQ.10) GO TO 1120
1260 DO 1080 J=1,NN
1270 READ(IN,2010,END=1090,ERR=1100) LN, F
1280 BEGIN=1+(J-1)*5
1290 XX(BEGIN,COLM)=F(1)
1300 XX(BEGIN+1,COLM)=F(2)
1310 XX(BEGIN+2,COLM)=F(3)
1320 XX(BEGIN+3,COLM)=F(4)
1330 1080 XX(BEGIN+4,COLM)=F(5)
1340 GO TO 1050

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1350 1090 PRINT 2060, IN, LN, TYPE, NN; STOP
1360 1100 PRINT 2070, IN, LN, TYPE, NN; STOP
1370 1120 CONTINUE
1380C IF YN(5) IS NOT BEING USED, CALCULATE IT AS ONE HALF OF BUILDUP,
1390C PLUS LEVEL, PLUS ONE HALF OF PHASEDOWN:
1400 IF(ABS(YN(5)) .LE. 0.01) YN(5)=0.5*YN(1)+YN(2)+0.5*YN(3)
1410C READS FIRST LINE OF THRUPUTS BLOCK:
1420 NTP=0
1430 READ(IN, 2010, END=1999, ERR=1130) LN, WORD1, WORD2, WORD3
1440 IF(WORD1 .EQ. "ROW" .AND. WORD2 .EQ. "COL" .AND. WORD3 .EQ.
1450& "AMT") GO TO 1140
1460 PRINT 2080, IN; STOP
1470 1130 PRINT 2090, IN, LN; STOP
1480 1140 TPSWITCH=1
1490C THRUPUTS VALUES WILL BE READ LATER...
1500 1999 CONTINUE
1510 DENOM=ALOG(2.0)
1520 DO 1155 I=1, 50
1530 IF(ABS(EC(I)) .LE. 0.01) GO TO 1155
1540 B(I)=ALOG(EC(I))/DENOM
1550 1155 CONTINUE
1560 A(2,1)=XN(1)*AC(1)*SF(1)
1570 A(2,2)=XN(2)*AC(2)*SF(1)
1580 A(2,3)=XN(3)*AC(3)*SF(1)
1590 A(2,4)=XN(4)*AC(4)*SF(1)
1600 A(2,5)=XN(5)*AC(5)*SF(1)
1610 A(2,6)=XN(6)*AC(6)*SF(1)
1620 A(2,7)=XN(7)*AC(7)*SF(1)
1630 A(2,8)=XN(8)*AC(8)*SF(1)
1640 A(2,9)=XN(9)*AC(9)*SF(1)
1650 A(2,10)=XN(10)*AC(10)*SF(1)
1660C

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1670 A(5,1)=UC(1)*XN(11)**(1.+B(1))*SF(1)
 1680 A(5,2)=UC(2)*XN(12)**(1.+B(2))*SF(1)
 1690 A(5,3)=UC(3)*XN(13)**(1.+B(3))*SF(1)
 1700 A(5,4)=UC(4)*XN(14)**(1.+B(4))*SF(1)
 1710 A(5,5)=UC(5)*XN(15)**(1.+B(5))*SF(1)
 1720 A(5,6)=UC(6)*XN(16)**(1.+B(6))*SF(1)
 1730 A(5,7)=UC(7)*XN(17)**(1.+B(7))*SF(1)
 1740 A(5,8)=UC(8)*XN(18)**(1.+B(8))*SF(1)
 1750 A(5,9)=UC(9)*XN(19)**(1.+B(9))*SF(1)
 1760 A(5,10)=UC(10)*XN(20)**(1.+B(10))*SF(1)
 1770C
 1780 A(7,1)=XN(21)*AC(11)*SF(1)
 1790 A(7,2)=XN(22)*AC(12)*SF(1)
 1800 A(7,3)=XN(23)*AC(13)*SF(1)
 1810 A(7,4)=XN(24)*AC(14)*SF(1)
 1820 A(7,5)=XN(25)*AC(15)*SF(1)
 1830 A(7,6)=XN(26)*AC(16)*SF(1)
 1840 A(7,7)=XN(27)*AC(17)*SF(1)
 1850 A(7,8)=XN(28)*AC(18)*SF(1)
 1860 A(7,9)=XN(29)*AC(19)*SF(1)
 1870 A(7,10)=XN(30)*AC(20)*SF(1)
 1880C
 1890 A(8,1)=(XN(31)*AC(21)+XN(32)*AC(22))*SF(1)
 1900 A(8,2)=(XN(33)*AC(23)+XN(34)*AC(24))*SF(1)
 1910 A(8,3)=(XN(35)*AC(25)+XN(36)*AC(26))*SF(1)
 1920 A(8,4)=(XN(37)*AC(27)+XN(38)*AC(28))*SF(1)
 1930 A(8,5)=(XN(39)*AC(29)+XN(40)*AC(30))*SF(1)
 1940 A(8,6)=(XN(41)*AC(31)+XN(42)*AC(32))*SF(1)
 1950 A(8,7)=(XN(43)*AC(33)+XN(44)*AC(34))*SF(1)
 1960 A(8,8)=(XN(45)*AC(35)+XN(46)*AC(36))*SF(1)
 1970 A(8,9)=(XN(47)*AC(37)+XN(48)*AC(38))*SF(1)
 1980 A(8,10)=(XN(49)*AC(39)+XN(50)*AC(40))*SF(1)

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190C
2000 A(9,1)=(XN(51)*AC(41)+XN(52)*AC(42))*SF(1)
2010 A(9,2)=(XN(53)*AC(43)+XN(54)*AC(44))*SF(1)
2020 A(9,3)=(XN(55)*AC(45)+XN(56)*AC(46))*SF(1)
2030 A(9,4)=(XN(57)*AC(47)+XN(58)*AC(48))*SF(1)
2040 A(9,5)=(XN(59)*AC(49)+XN(60)*AC(50))*SF(1)
2050 A(9,6)=(XN(61)*AC(51)+XN(62)*AC(52))*SF(1)
2060 A(9,7)=(XN(63)*AC(53)+XN(64)*AC(54))*SF(1)
2070 A(9,8)=(XN(65)*AC(55)+XN(66)*AC(56))*SF(1)
2080 A(9,9)=(XN(67)*AC(57)+XN(68)*AC(58))*SF(1)
2090 A(9,10)=(XN(69)*AC(59)+XN(70)*AC(60))*SF(1)
2100C
2110C
2120C
2130C

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2140C A(14,1)=(XN(81)*AC(71)+XN(91)*AC(81))*SF(P)+
 2150C UC(11)*((XN(101)+PB(11))*((1.+B(11))-PB(11))*((1.+B(11))))*
 2160 (1.+CF(11))*SF(P)
 2170& A(14,2)=(XN(82)*AC(72)+XN(92)*AC(82))*SF(P)+
 2180& UC(12)*((XN(102)+PB(12))*((1.+B(12))-PB(12))*((1.+B(12))))*
 2190 (1.+CF(12))*SF(P)
 2200& A(14,3)=(XN(83)*AC(73)+XN(93)*AC(83))*SF(P)+
 2210& UC(13)*((XN(103)+PB(13))*((1.+B(13))-PB(13))*((1.+B(13))))*
 2220 (1.+CF(13))*SF(P)
 2230& A(14,4)=(XN(84)*AC(74)+XN(94)*AC(84))*SF(P)+
 2240& UC(14)*((XN(104)+PB(14))*((1.+B(14))-PB(14))*((1.+B(14))))*
 2250 (1.+CF(14))*SF(P)
 2260& A(14,5)=(XN(85)*AC(75)+XN(95)*AC(85))*SF(P)+
 2270& UC(15)*((XN(105)+PB(15))*((1.+B(15))-PB(15))*((1.+B(15))))*
 2280 (1.+CF(15))*SF(P)
 2290& A(14,6)=(XN(86)*AC(76)+XN(96)*AC(86))*SF(P)+
 2300& UC(16)*((XN(106)+PB(16))*((1.+B(16))-PB(16))*((1.+B(16))))*
 2310 (1.+CF(16))*SF(P)
 2320& A(14,7)=(XN(87)*AC(77)+XN(97)*AC(87))*SF(P)+
 2330& UC(17)*((XN(107)+PB(17))*((1.+B(17))-PB(17))*((1.+B(17))))*
 2340 (1.+CF(17))*SF(P)
 2350& A(14,8)=(XN(88)*AC(78)+XN(98)*AC(88))*SF(P)+
 2360& UC(18)*((XN(108)+PB(18))*((1.+B(18))-PB(18))*((1.+B(18))))*
 2370 (1.+CF(18))*SF(P)
 2380& A(14,9)=(XN(89)*AC(79)+XN(99)*AC(89))*SF(P)+
 2390& UC(19)*((XN(109)+PB(19))*((1.+B(19))-PB(19))*((1.+B(19))))*
 2400 (1.+CF(19))*SF(P)
 2410& A(14,10)=(XN(90)*AC(80)+XN(100)*AC(90))*SF(P)+
 2420& UC(20)*((XN(110)+PB(20))*((1.+B(20))-PB(20))*((1.+B(20))))*
 2430 (1.+CF(20))*SF(P)
 2440& 2450& 2460C

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2470C
2480
2490
2500
2510
2520
2530
2540
2550
2560
2570
2580C
2590C
2600
2610
2620
2630
2640
2650
2660
2670
2680
2690
2700C
2710C
2720C
2730C
2740C

A(15,1)=CF(21)*A(14,1)
A(15,2)=CF(22)*A(14,2)
A(15,3)=CF(23)*A(14,3)
A(15,4)=CF(24)*A(14,4)
A(15,5)=CF(25)*A(14,5)
A(15,6)=CF(26)*A(14,6)
A(15,7)=CF(27)*A(14,7)
A(15,8)=CF(28)*A(14,8)
A(15,9)=CF(29)*A(14,9)
A(15,10)=CF(30)*A(14,10)

A(16,1)=XN(111)*AC(91)*SF(P)
A(16,2)=XN(112)*AC(92)*SF(P)
A(16,3)=XN(113)*AC(93)*SF(P)
A(16,4)=XN(114)*AC(94)*SF(P)
A(16,5)=XN(115)*AC(95)*SF(P)
A(16,6)=XN(116)*AC(96)*SF(P)
A(16,7)=XN(117)*AC(97)*SF(P)
A(16,8)=XN(118)*AC(98)*SF(P)
A(16,9)=XN(119)*AC(99)*SF(P)
A(16,10)=XN(120)*AC(100)*SF(P)

NOTE: DATA, ROW 17, IS CALCULATED AS A PERCENTAGE OF ALL OTHER INVESTMENT CELLS IN EACH COLUMN. THUS, IT IS CALCULATED ONLY AFTER ALL THRUPTS ARE READ IN, BELOW.

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2150C
 2760 A(18,1)=XN(121)*AC(101)*SF(7)+XN(122)*AC(102)*SF(P)
 2770 A(18,2)=XN(123)*AC(103)*SF(7)+XN(124)*AC(104)*SF(P)
 2780 A(18,3)=XN(125)*AC(105)*SF(7)+XN(126)*AC(106)*SF(P)
 2790 A(18,4)=XN(127)*AC(107)*SF(7)+XN(128)*AC(108)*SF(P)
 2800 A(18,5)=XN(129)*AC(109)*SF(7)+XN(130)*AC(110)*SF(P)
 2810 A(18,6)=XN(131)*AC(111)*SF(7)+XN(132)*AC(112)*SF(P)
 2820 A(18,7)=XN(133)*AC(113)*SF(7)+XN(134)*AC(114)*SF(P)
 2830 A(18,8)=XN(135)*AC(115)*SF(7)+XN(136)*AC(116)*SF(P)
 2840 A(18,9)=XN(137)*AC(117)*SF(7)+XN(138)*AC(118)*SF(P)
 2850 A(18,10)=XN(139)*AC(119)*SF(7)+XN(140)*AC(120)*SF(P)
 2860C
 2870C
 2880C
 2890 A(20,1)=XN(141)*AC(121)*SF(P)+
 2900& XN(151)*AC(131)*CF(31)*SF(P)
 2910 A(20,2)=XN(142)*AC(122)*SF(P)+
 2920& XN(152)*AC(132)*CF(32)*SF(P)
 2930 A(20,3)=XN(143)*AC(123)*SF(P)+
 2940& XN(153)*AC(133)*CF(33)*SF(P)
 2950 A(20,4)=XN(144)*AC(124)*SF(P)+
 2960& XN(154)*AC(134)*CF(34)*SF(P)
 2970 A(20,5)=XN(145)*AC(125)*SF(P)+
 2980& XN(155)*AC(135)*CF(35)*SF(P)
 2990 A(20,6)=XN(146)*AC(126)*SF(P)+
 3000& XN(156)*AC(136)*CF(36)*SF(P)
 3010 A(20,7)=XN(147)*AC(127)*SF(P)+
 3020& XN(157)*AC(137)*CF(37)*SF(P)
 3030 A(20,8)=XN(148)*AC(128)*SF(P)+
 3040& XN(158)*AC(138)*CF(38)*SF(P)
 3050 A(20,9)=XN(149)*AC(129)*SF(P)+
 3060& XN(159)*AC(139)*CF(39)*SF(P)
 3070 A(20,10)=XN(150)*AC(130)*SF(P)+
 3080& XN(160)*AC(140)*CF(40)*SF(P)
 3090C

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3100C	
3110	A(21,1)=CF(41)*A(14,1)
3120	A(21,2)=CF(42)*A(14,2)
3130	A(21,3)=CF(43)*A(14,3)
3140	A(21,4)=CF(44)*A(14,4)
3150	A(21,5)=CF(45)*A(14,5)
3160	A(21,6)=CF(46)*A(14,6)
3170	A(21,7)=CF(47)*A(14,7)
3180	A(21,8)=CF(48)*A(14,8)
3190	A(21,9)=CF(49)*A(14,9)
3200	A(21,10)=CF(50)*A(14,10)
3210C	
3220C	
3230	A(22,1)=XN(161)*AC(141)*SF(P)
3240	A(22,2)=XN(162)*AC(142)*SF(P)
3250	A(22,3)=XN(163)*AC(143)*SF(P)
3260	A(22,4)=XN(164)*AC(144)*SF(P)
3270	A(22,5)=XN(165)*AC(145)*SF(P)
3280	A(22,6)=XN(166)*AC(146)*SF(P)
3290	A(22,7)=XN(167)*AC(147)*SF(P)
3300	A(22,8)=XN(168)*AC(148)*SF(P)
3310	A(22,9)=XN(169)*AC(149)*SF(P)
3320	A(22,10)=XN(170)*AC(150)*SF(P)
3330C	
3340C	
3350C	
3360C	
3370	A(26,7)=XN(187)*XN(191)*(AC(256)+AC(262)+AC(263))*YN(5)*SF(8)
3380	A(26,10)=XN(190)*XN(192)*(AC(257)+AC(263)+AC(269))*YN(5)*SF(8)
3390	A(27,7)=XN(187)*XN(193)*(AC(258)+AC(264)+AC(270))*YN(5)*SF(8)
3400	A(27,10)=XN(190)*XN(194)*(AC(259)+AC(265)+AC(271))*YN(5)*SF(8)
3410	A(28,7)=XN(187)*XN(195)*(AC(260)+AC(266))*YN(5)*SF(8)
3420	A(28,10)=XN(190)*XN(196)*(AC(261)+AC(267))*YN(5)*SF(8)
3430	A(29,7)=XN(187)*XN(191)+XN(193)+XN(195))*AC(274)*YN(5)*SF(8)
3440	A(29,10)=XN(190)*XN(192)+XN(194)+XN(196))*AC(275)*YN(5)*SF(8)
3450C	

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3460C
3470C

A(31,1)=XN(181)*XN(201)*AC(151)*YN(5)/100000.0*SF(7)
A(31,2)=XN(182)*XN(202)*AC(152)*YN(5)/100000.0*SF(7)
A(31,3)=XN(183)*XN(203)*AC(153)*YN(5)/100000.0*SF(7)
A(31,4)=XN(184)*XN(204)*AC(154)*YN(5)/100000.0*SF(7)
A(31,5)=XN(185)*XN(205)*AC(155)*YN(5)/100000.0*SF(7)
A(31,6)=XN(186)*XN(206)*AC(156)*YN(5)/100000.0*SF(7)
A(31,7)=XN(187)*XN(207)*AC(157)*YN(5)/100000.0*SF(7)
A(31,8)=XN(188)*XN(208)*AC(158)*YN(5)/100000.0*SF(7)
A(31,9)=XN(189)*XN(209)*AC(159)*YN(5)/100000.0*SF(7)
A(31,10)=XN(190)*XN(210)*AC(160)*YN(5)/100000.0*SF(7)

3580C
3590C
3600C

A(32,1)=XN(181)*XN(201)*AC(161)*YN(5)/100000.0*SF(7)
A(32,2)=XN(182)*XN(202)*AC(162)*YN(5)/100000.0*SF(7)
A(32,3)=XN(183)*XN(203)*AC(163)*YN(5)/100000.0*SF(7)
A(32,4)=XN(184)*XN(204)*AC(164)*YN(5)/100000.0*SF(7)
A(32,5)=XN(185)*XN(205)*AC(165)*YN(5)/100000.0*SF(7)
A(32,6)=XN(186)*XN(206)*AC(166)*YN(5)/100000.0*SF(7)
A(32,7)=XN(187)*XN(207)*AC(167)*YN(5)/100000.0*SF(7)
A(32,8)=XN(188)*XN(208)*AC(168)*YN(5)/100000.0*SF(7)
A(32,9)=XN(189)*XN(209)*AC(169)*YN(5)/100000.0*SF(7)
A(32,10)=XN(190)*XN(210)*AC(170)*YN(5)/100000.0*SF(7)

3710C
3720C
3730C
3740
3750
3760
3770C
3780C

A(33,6)=XN(186)*AC(246)*YN(5)/100000.0*SF(5)
A(33,7)=XN(187)*AC(247)*YN(5)/100000.0*SF(5)
A(33,10)=XN(190)*AC(250)/100000.0*SF(5)

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A(35,1)=(XN(201)*YN(5)/PC(11)-1)*XN(181)*AC(171)*SF(7)
A(35,2)=(XN(202)*YN(5)/PC(12)-1)*XN(182)*AC(172)*SF(7)
A(35,3)=(XN(203)*YN(5)/PC(13)-1)*XN(183)*AC(173)*SF(7)
A(35,4)=(XN(204)*YN(5)/PC(14)-1)*XN(184)*AC(174)*SF(7)
A(35,5)=(XN(205)*YN(5)/PC(15)-1)*XN(185)*AC(175)*SF(7)
A(35,6)=(XN(206)*YN(5)/PC(16)-1)*XN(186)*AC(176)*SF(7)
A(35,7)=(XN(207)*YN(5)/PC(17)-1)*XN(187)*AC(177)*SF(7)
A(35,8)=(XN(208)*YN(5)/PC(18)-1)*XN(188)*AC(178)*SF(7)
A(35,9)=(XN(209)*YN(5)/PC(19)-1)*XN(189)*AC(179)*SF(7)
A(35,10)=(XN(210)*YN(5)/PC(20)-1)*XN(190)*AC(180)*SF(7)

A(36,1)=(XN(201)*YN(5)/PC(11)-1)*XN(181)*AC(181)*SF(P)
A(36,2)=(XN(202)*YN(5)/PC(12)-1)*XN(182)*AC(182)*SF(P)
A(36,3)=(XN(203)*YN(5)/PC(13)-1)*XN(183)*AC(183)*SF(P)
A(36,4)=(XN(204)*YN(5)/PC(14)-1)*XN(184)*AC(184)*SF(P)
A(36,5)=(XN(205)*YN(5)/PC(15)-1)*XN(185)*AC(185)*SF(P)
A(36,6)=(XN(206)*YN(5)/PC(16)-1)*XN(186)*AC(186)*SF(P)
A(36,7)=(XN(207)*YN(5)/PC(17)-1)*XN(187)*AC(187)*SF(P)
A(36,8)=(XN(208)*YN(5)/PC(18)-1)*XN(188)*AC(188)*SF(P)
A(36,9)=(XN(209)*YN(5)/PC(19)-1)*XN(189)*AC(189)*SF(P)
A(36,10)=(XN(210)*YN(5)/PC(20)-1)*XN(190)*AC(190)*SF(P)

3790
3800
3810
3820
3830
3840
3850
3860
3870
3880
3890C
3900C
3910C
3920
3930
3940
3950
3960
3970
3980
3990
4000
4010
4020C

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4030C
4040C
4050
4060&
4070
4080&
4090
4100&
4110
4120&
4130
4140&
4150
4160&
4170
4180&
4190
4200&
4210
4220&
4230
4240&
4250C
4260C
4270C
4280
4290
4300
4310
4320
4330
4340
4350
4360
4370
4380C

A(37,1)=(XN(201)*YN(5)/PC(11)-1)*XN(181)*
PC(21)*PC(31)*AC(191)/100000.0*SF(7)
A(37,2)=(XN(202)*YN(5)/PC(12)-1)*XN(182)*
PC(22)*PC(32)*AC(192)/100000.0*SF(7)
A(37,3)=(XN(203)*YN(5)/PC(13)-1)*XN(183)*
PC(23)*PC(33)*AC(193)/100000.0*SF(7)
A(37,4)=(XN(204)*YN(5)/PC(14)-1)*XN(184)*
PC(24)*PC(34)*AC(194)/100000.0*SF(7)
A(37,5)=(XN(205)*YN(5)/PC(15)-1)*XN(185)*
PC(25)*PC(35)*AC(195)/100000.0*SF(7)
A(37,6)=(XN(206)*YN(5)/PC(16)-1)*XN(186)*
PC(26)*PC(36)*AC(196)/100000.0*SF(7)
A(37,7)=(XN(207)*YN(5)/PC(17)-1)*XN(187)*
PC(27)*PC(37)*AC(197)/100000.0*SF(7)
A(37,8)=(XN(208)*YN(5)/PC(18)-1)*XN(188)*
PC(28)*PC(38)*AC(198)/100000.0*SF(7)
A(37,9)=(XN(209)*YN(5)/PC(19)-1)*XN(189)*
PC(29)*PC(39)*AC(199)/100000.0*SF(7)
A(37,10)=(XN(210)*YN(5)/PC(20)-1)*XN(190)*
PC(30)*PC(40)*AC(200)/100000.0*SF(7)

A(38,1)=CF(61)*A(14,1)*YN(5)
A(38,2)=CF(62)*A(14,2)*YN(5)
A(38,3)=CF(63)*A(14,3)*YN(5)
A(38,4)=CF(64)*A(14,4)*YN(5)
A(38,5)=CF(65)*A(14,5)*YN(5)
A(38,6)=CF(66)*A(14,6)*YN(5)
A(38,7)=CF(67)*A(14,7)*YN(5)
A(38,8)=CF(68)*A(14,8)*YN(5)
A(38,9)=CF(69)*A(14,9)*YN(5)
A(38,10)=CF(70)*A(14,10)*YN(5)

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4390C
4400
4410
4420
4430
4440
4450
4460
4470
4480
4490
4500C
4510C
4520C
4530C
4540
4550
4560
4570
4580
4590
4600
4610
4620
4630
4640C
4650C
4660C

A(40,1)=XN(181)*XN(211)*AC(201)*YN(5)*SF(7)
A(40,2)=XN(182)*XN(212)*AC(202)*YN(5)*SF(7)
A(40,3)=XN(183)*XN(213)*AC(203)*YN(5)*SF(7)
A(40,4)=XN(184)*XN(214)*AC(204)*YN(5)*SF(7)
A(40,5)=XN(185)*XN(215)*AC(205)*YN(5)*SF(7)
A(40,6)=XN(186)*XN(216)*AC(206)*YN(5)*SF(7)
A(40,7)=XN(187)*XN(217)*AC(207)*YN(5)*SF(7)
A(40,8)=XN(188)*XN(218)*AC(208)*YN(5)*SF(7)
A(40,9)=XN(189)*XN(219)*AC(209)*YN(5)*SF(7)
A(40,10)=XN(190)*XN(220)*AC(210)*YN(5)*SF(7)

A(41,1)=AC(211)*YN(5)*SF(7)
A(41,2)=AC(212)*YN(5)*SF(7)
A(41,3)=AC(213)*YN(5)*SF(7)
A(41,4)=AC(214)*YN(5)*SF(7)
A(41,5)=AC(215)*YN(5)*SF(7)
A(41,6)=AC(216)*YN(5)*SF(7)
A(41,7)=AC(217)*YN(5)*SF(7)
A(41,8)=AC(218)*YN(5)*SF(7)
A(41,9)=AC(219)*YN(5)*SF(7)
A(41,10)=AC(220)*YN(5)*SF(7)

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A(43,7)=XN(187)*(XN(191)+XN(193)+XN(195))*CF(73)*AC(221)*YN(5)*SF(8)
A(43,10)=XN(190)*(XN(192)+XN(194)+XN(196))*CF(74)*AC(222)*YN(5)*SF(8)
A(44,7)=CF(75)*(A(26,7)+A(27,7)+A(28,7))
A(44,10)=CF(76)*(A(26,10)+A(27,10)+A(28,10))
A(45,7)=XN(187)*(XN(191)+XN(193)+XN(195))*AC(225)*YN(5)*SF(7)
A(45,10)=XN(190)*(XN(192)+XN(194)+XN(196))*AC(226)*YN(5)*SF(7)
A(46,7)=XN(187)*(XN(191)+XN(193)+XN(195))*AC(229)*YN(5)*SF(8)
A(46,10)=XN(190)*(XN(192)+XN(194)+XN(196))*AC(230)*YN(5)*SF(8)

A(47,1)=AC(231)*YN(5)*SF(7)
A(47,2)=AC(232)*YN(5)*SF(7)
A(47,3)=AC(233)*YN(5)*SF(7)
A(47,4)=AC(234)*YN(5)*SF(7)
A(47,5)=AC(235)*YN(5)*SF(7)
A(47,6)=AC(236)*YN(5)*SF(7)
A(47,7)=AC(237)*YN(5)*SF(7)
A(47,8)=AC(238)*YN(5)*SF(7)
A(47,9)=AC(239)*YN(5)*SF(7)
A(47,10)=AC(240)*YN(5)*SF(7)

4670
4680
4690
4700
4710
4720
4730
4740
4750C
4760C
4770C
4780
4790
4800
4810
4820
4830
4840
4850
4860
4870
4880C
4890C

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ALCCM*

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4900C *****
4910C *****
4920C *****
4930C *****
4940C *****
4950C *****
4960C *****
4970C *****
4980C *****
4990C *****
5000C *****
5010C *****
5020C *****
5030C *****
5040C *****
5050C *****
5060C *****
5070C *****
5080C *****
5090C *****
5100C *****
5110C *****
5120C *****
5130C *****
5140C *****
5150C *****
5160C *****
5170C *****
5180C *****
5190C *****
5200C *****
5210C *****
5220C *****
5230C *****
5240C *****
5250C *****
5260C *****
5270C *****
5280C *****
5290C *****

IS THRUPTS READING REQUIRED?
IF(TPSWITCH.NE.1) GO TO 1199

READ THRUPTS:
4960 1145 READ(IN,2010,END=1199,ERR=1130) LN, ROW, COL, AMT
4970 IF(COL.GE.1.AND. COL.LE.10) GO TO 1150
4980 PRINT 2100, IN, LN, AMT, COL; STOP
4990 1150 CONTINUE
5000 IF(ROW.GE.2.AND. ROW.NE.12.AND. ROW.NE.24.AND.
5010 ROW.NE.25.AND. ROW.NE.30.AND. ROW.NE.34.AND.
5020 ROW.NE.39.AND. ROW.NE.42.AND. ROW.NE.48.AND. ROW.LE.
5030 49) GO TO 1160
5040 PRINT 2110, IN, LN, AMT, ROW; STOP
5050 1160 CONTINUE
5060 APCODE=SFROW(ROW)
5070 SFX=SF(APCODE)
5080 IF(SFX.GE.01) GO TO 1170
5090 PRINT 2120, IN, LN, APCODE, ROW; STOP
5100 1170 CONTINUE
5110 INFTP=AMT*SFX
5120 SUMTP=SUMTP + INFTP
5130 SUMAMT=SUMAMT + AMT
5140 NTP=NTP+1
5150 A(ROW,COL) = A(ROW,COL) + INFTP
5160 GO TO 1145
5170 1199 CONTINUE
5180 AT THIS POINT, ALL THRUPTS HAVE BEEN SHIFTED AND ADDED TO MATRIX.

DATA IS CALCULATED HERE:
DO 1171 ICOL=1,10
COLSUM=A(13,ICOL)+A(14,ICOL)+A(15,ICOL)+A(16,ICOL)+A(18,ICOL)+
A(19,ICOL)+A(20,ICOL)+A(21,ICOL)+A(22,ICOL)+A(23,ICOL)
A(17,ICOL)=CF(ICOL)*COLSUM
5270 1171 CONTINUE

```

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ALCCM*

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5300C
5310C
5320
5330
5340&
5350
5360&
5370&
5380
5390
5400
5410
5420
5430
5440&
5450
5460
5470 1172
5480
5490
5500&
5510 1173
5520
5530
5540
5550 1175
5560 1174
5570C
5580C
5590C

```

TOTALS ARE CALCULATED HERE:

```

DO 1172 ICOL=1,10
A(1,ICOL)=A(2,ICOL)+A(3,ICOL)+A(4,ICOL)+A(5,ICOL)+A(6,ICOL)+
A(7,ICOL)+A(8,ICOL)+A(9,ICOL)+A(10,ICOL)+A(11,ICOL)
A(12,ICOL)=A(13,ICOL)+A(14,ICOL)+A(15,ICOL)+A(16,ICOL)+A(17,ICOL)+
A(18,ICOL)+A(19,ICOL)+A(20,ICOL)+A(21,ICOL)+A(22,ICOL)+
A(23,ICOL)
A(25,ICOL)=A(26,ICOL)+A(27,ICOL)+A(28,ICOL)+A(29,ICOL)
A(30,ICOL)=A(31,ICOL)+A(32,ICOL)+A(33,ICOL)
A(34,ICOL)=A(35,ICOL)+A(36,ICOL)+A(37,ICOL)
A(39,ICOL)=A(40,ICOL)+A(41,ICOL)
A(42,ICOL)=A(43,ICOL)+A(44,ICOL)+A(45,ICOL)+A(46,ICOL)+A(47,ICOL)
A(24,ICOL)=A(25,ICOL)+A(30,ICOL)+A(34,ICOL)+A(38,ICOL)+A(39,ICOL)+
A(42,ICOL)
A(48,ICOL)=A(1,ICOL)+A(12,ICOL)+A(24,ICOL)
A(50,ICOL)=A(48,ICOL)+A(49,ICOL)
CONTINUE
DO 1173 IROW=1,50
A(IROW,11)=A(IROW,1)+A(IROW,2)+A(IROW,3)+A(IROW,4)+A(IROW,5)+
A(IROW,6)+A(IROW,7)+A(IROW,8)+A(IROW,9)+A(IROW,10)
CONTINUE
TOTAL=A(50,11)
IF(ABS(TOTAL).LE.0.01) GO TO 1174
DO 1175 IROW=1,50
A(IROW,12)=A(IROW,11)*100.0/TOTAL
CONTINUE

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ALCCM*

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5600C * * * * *
5610C * * * * *
5620C * * * * *
5630C * * * * *
5640 * * * * *
5650 * * * * *
5660 * * * * *
5670 * * * * *
5680 * * * * *
5690 * * * * *
5700 * * * * *
5710 * * * * *
5720 * * * * *
5730 * * * * *
5740 * * * * *
5750 * * * * *
5760 * * * * *
5770 * * * * *
5780 * * * * *
5790 * * * * *
5800 * * * * *
5810 * * * * *
5820 * * * * *
5830 * * * * *
5840 * * * * *
5850 * * * * *
5860 * * * * *
5870 * * * * *
5880 * * * * *
5890 * * * * *
5900 * * * * *
5910 * * * * *
5920 * * * * *

      NM WRITE RESULTS TO A FILE:
      PRINT 2130, NIP, SUMAMT, SUMTP
      PRINT 2135, TOTAL
      PRINT, "NAME OF FILE TO STORE RESULTS----"
      INPUT, OUT
      CALL CREATE(OUT, " ", 0, ISTAT)
      IF(ISTAT.EQ. 0) GO TO 1220
      GO TO(1190,1200,1200,1200,1200,1200,1200,1200,1200), ISTAT
      1190 PRINT, "ALREADY EXISTS A FILE WITH THAT NAME."; GO TO 1180
      1200 PRINT, "COMPUTER ERROR; START OVER."; STOP
      1210 PRINT, "INVALID FILENAME. MUST BE LESS THAN OR EQUAL TO 8 CHARACTERS"
      PRINT, "AND IT MUST START WITH A LETTER."; GO TO 1180
      1220 CONTINUE
      DO 1230 LN=101,150
      DO 1231 J=1,12
      1231 G(J)=A(LN-100,J)
      1230 WRITE(OUT,2140) LN, G
      LN=151
      WRITE(OUT,2150) LN, YEAR, MODEL, IN
      PRINT 2160, OUT
      2010 FORMAT(V)
      2020 FORMAT(1H-, "ERROR IN FIRST LINE OF DATA FILE ", A8, ///,
      "XSHOULD BE: LN BASE YEAR NN", ///,
      "XWHERE NN IS A TWO-DIGIT IDENTIFIER FOR YEAR OF RESULTS", ///,
      "XAFTER SHIFT FACTORS ARE APPLIED.",
      ///, 8("****"), ///)
      2030 FORMAT(1H-, "ERROR IN SECOND LINE OF DATA FILE ", A8, ///,
      "XSHOULD BE: LN MODEL AA", ///,
      "XWHERE AA IS AIRCO, MICO OR TRACO",
      ///, 8("****"), ///)

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5230 2040 FORMAT(1H-,"TYPE OF VARIABLE NOT UNDERSTOOD. SEE DATA INPUT FILE ",A8
5940& ,///,"XLINE NUMBER:",15," TYPE:",A3,///
5950& "XTHE VARIABLE TYPE MUST BE SELECTED FROM THE FOLLOWING:",///,
5960& "XSF XN YN AC CF UC EC PB PC THRUPUTS",///,
5970& "XIS PREVIOUS DATA BLOCK TOO LONG?",///,8("*****"),/////
5980 2050 FORMAT(1H-,"ERROR IN DATA FILE ",A3,///
5990& "XON OR AFTER LINE NUMBER ",15,///
6000& "XIS PREVIOUS DATA BLOCK TOO LONG?",///,8("*****"),/////
6010 2060 FORMAT(1H-,"ERROR IN DATA INPUT FILE ",A3,///
6020& "XUNEXPECTED END OF FILE ON OR AFTER LINE ",15,///
6030& "XTHE DATA BLOCK FOR ",A3," MUST HAVE EXACTLY",
6040& 12," ROWS OF DATA. IS IT TOO SHORT?",///,8("*****"),/////
6050 2070 FORMAT(1H-,"ERROR IN DATA FILE ",A3,///
6060& "XON OR AFTER LINE NUMBER ",15,///,8("*****"),/////
6070 2080 FORMAT(1H-,"ERROR IN DATA FILE ",A3,///
6080& "XTHRUPUTS SECTION. SECOND LINE OF THE BLOCK MUST READ:",///
6090& "XROW COL AMT",///,8("*****"),/////
6100 2090 FORMAT(1H-,"ERROR IN DATA FILE ",A3,///
6110& "XTHRUPUTS SECTION, ON OR AFTER LINE NUMBER ",15,///,8("*****"),/////
6120 2100 FORMAT(1H-,"ERROR IN DATA FILE ",A3,///
6130& "XTHRUPUTS SECTION, LINE NUMBER ",15,///
6140& "XWHERE THE AMOUNT ",F12.5,///,
6150& "XIS BEING PUT INTO COLUMN ",15,///,
6160& "XSELECT COLUMNS FROM 1 TO 10 ONLY.",///,8("*****"),/////
6170 2110 FORMAT(1H-,"ERROR IN DATA FILE ",A3," LINE NUMBER ",15,///
6180& "XWHERE THE AMOUNT ",F12.5," IS BEING PUT INTO ROW ",15,///,
6190& "XTHIS IS NOT A LEGAL ROW FOR THRUPUTS.",///,8("*****"),/////
6200 2120 FORMAT(1H-,"ERROR IN DATA FILE ",A3," LINE NUMBER ",15,///
6210& "XSHIFT FACTOR ",15," IS REQUIRED FOR ROW ",15,///,
6220& "XBUT WAS NOT FOUND.",///,
6230& "XTHRUPUTS BLOCK MUST BE LAST.",///,8("*****"),/////

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6240 2130 FORMAT(1H-,15," THRUPUTS HAVE BEEN ADDED, AND THE LUT AMT IS:",///,
62508    "F12.5,///,"XSHIFTED:",F12.5,////)
6260 2135 FORMAT(1H,"LIFE CYCLE COST ESTIMATE IS:",F12.5,////)
6270 2140 FORMAT(13,1X,F11.2,8(F9.2),F11.2,F12.3,F7.2)
6280 2150 FORMAT(13,1X,1X,12,1X,A8,1X,A8)
6290 2160 FORMAT(1H-,"RESULTS STORED IN ",A8)
6300    CALL EXIT
6310    STOP; END

```