```
C       PPTD2=40
RUN     FIGURE 6-37: TECHNOLOGICAL INCREASE IN TRANSMISSION DELAY
T       AHLMT=1/6/11/16/21
RUN     FIGURE 6-38: ASSIMILATION TECHNOLOGY
T       LMP2T=1/1/.99/.98/.95/.92/.88/.82/.77/.70/.60
T       LFDR2T=0/.05/.15/.25
RUN     FIGURE 6-39: DAMAGE TECHNOLOGIES
C       PPGF21=.2
RUN     FIGURE 6-40: POLLUTION CONTROL TECHNOLOGY
C       SWAT=1
RUN     FIGURE 6-41: ADAPTIVE TECHNOLOGIES
C       SWAT=1
C       PPTD1=2
C       PPTD2=2
RUN     FIGURE 6-43: ADAPTIVE TECHNOLOGIES, PPTD=2 YEARS
NOTE
NOTE    EQUILIBRIUM RUNS
NOTE
T       PCRUMT=17/30/52/78/138/280/280/280/280/280/280
T       POPT=16/19/22/31/42/53/53/53/53/53/53
T       AIPHT=6.6/11/20/34/51/97/97/97/97/97/97
T       ALT=9/10/11/13/16/20/20/20/20/20/20
RUN     FIGURE 6-44: EQUILIBRIUM IN 2000
T       PCRUMT=17/30/52/78/138/280/480/480/480/480/480
T       POPT=16/19/22/31/42/53/67/67/67/67/67
T       AIPHT=6.6/11/20/34/51/97/168/168/168/168/168
T       ALT=9/10/11/13/16/20/24/24/24/24/24
RUN     FIGURE 6-45: EQUILIBRIUM IN 2020
T       PCRUMT=17/30/52/78/138/280/480/480/480/480/480
T       POPT=16/19/22/31/42/53/67/67/67/67/67
T       AIPHT=6.6/11/20/34/57/97/168/168/168/168/168
T       ALT=9/10/11/13/16/20/24/24/24/24/24
C       SWAT=1
RUN     FIGURE 6-46: ADAPTIVE CONTROL AND EQUILIBRIUM IN 2020
```

## APPENDIX B: PARAMETER CHANGES TO RUN DDT AND MERCURY MODELS

*Figure 6-15* An illustration of the transmission delays associated with diffusion of DDT through the global environment—the relations between the rate of DDT application over cropland and the level of DDT in marine fish tissue.

To the DDT model reported in Randers (1973), in edit mode:

add A TDDT.K=S.K+A.K+R.K+O.K+F.K
change equation 3 A AR.K=TABHL(ART,TIME.K,1948, 1952,2)*1E4
change equation 3.1 T ART=0/100/0

in rerun mode:
C LENGTH=2000
PLOT AR=A,S=S(0,1E6)/F=F(0,400)/TDDT=T

*Figure 6-16* An illustration of the transmission delay associated with the diffusion of mercury through the global environment—the relation between the rate of mercury release to fresh water and the level of mercury in marine fish tissue.

To the mercury model listed in Anderson and Anderson (1973), in edit mode:
add A TM.K=AM.K+AO.K+MM.K+MO.K+SM.K+SO.K+OM.K+OO.K +FM.K+FO.K

change equation 19 A CMOX.K=TABHL(CMOXT,CMM.KC,0,100,50)
change equation 19.1 T CMOXT=0/2.5/5
change equation 20 R BC.KL=MAX(0,(CMOX.K−CMO.K)/DT*(MUD/IE9)



in rerun mode:

```
C AMB =0   C OOB =0
C AOB =0   C FMB =0
C MMB=0    C FOB =0
C MOB =0   C PIT  =4000
C SMB =0   C EN   =0
C SOB =0   T P1T  =0/1E2/0/0/0/0/0/0/0/0/0/0/0/0/0
C OMB =0   PLOT P=P,SO=S,MO=M(0,1Ef)/FO=F(0,1)/TM=T
```

## APPENDIX C: SIMPLE TWO-POLLUTION MODEL AND RUN CHANGES

*Figure 6-19* Secular shifts in the composition of total pollution in a simple two-pollution model when the half-lives are unequal. The basic model is:

```
        *       SIMPLE MODEL OF POLLUTION ACCUMULATION AND ASSIMILATION
        NOTE
1       L       MO93.K=MO93.J+(DT)(MO93PR.JK-MO93DR.JK)
1.1     N       MO93=MO93I
1.2     C       MO93I=75
2       L       SR90.K=SR90.J+(DT)(SR90PR.JK-SR90DR.JK)
2.1     N       SR90=SR90I
2.2     C       SR90I=25
3       R       MO93DR.KL=MO93.K/(HLMO93*1.4)
3.1     C       HLMO93=2
4       R       SR90DR.KL=SR90.K/(HLSR90*1.4)
4.1     C       HLSR90=25
5       A       TP.K=SR90.K+MO93.K
6       A       FPSR90.K=SR90.K/TP.K
7       R       MO93PR.KL=FPRMO*TPPR.K
7.1     C       FPRMO=.75
8       R       SR90PR.KL=FPRSR*TPPR.K
8.1     C       FPRSR=.25
9       A       TPPR.K=PPRI*EXP(GC*TIME.K)
9.1     C       PPRI=0
9.2     C       GC=.05
        NOTE
        NOTE    CONTROL CARDS
        NOTE
        SPEC    DT=.25/LENGTH=25/PLTPER=1.25/PRTPER=0
        PLOT    MO93=3,SR90=0(0,75)/MO93PR=M,SR90PR=S(0,50)/
        X       FPSR90=F(0,1)
        RUN     FIGURE 6-19A: ZERO POLLUTION INPUTS
        C       MO93I=3
        C       SR90I=1
        C       PPRI=4
        PLOT    MO93=3,SR90=0(0,50)/MO93PR=M,SR90PR=S(0,10)/
        X       FPSR90=F(0,1)
        RUN     FIGURE 6-19B: 5%/YR GROWTH IN POLLUTION INPUTS
```

To obtain Figure 6-19A, in rerun mode:
C GC=0

To obtain Figure 6-19B, in rerun mode:
C MO93I=0
C SR90I=0