

GENPRO DATA PROCESSING PROCEDURE

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INTRODUCTION

This document consists of the procedure that I follow for setting up a GENPRO data processor for a "routine" RAF field project. I am assuming that future users of the GENPRO data processor at RAF are familiar with the computer systems and environment which are required to execute the CRAY Y-MP UNICOS version of the GENPRO data processing system.

Examples of the scripts and data files which I have used to accomplish many GENPRO data processing tasks are included in the Appendix section. Please note that most of the examples are project specific. Modifications are required to build a script to match a particular project's needs. I am sure that these are not the world's greatest scripts. However, I offer them here to help friendly GENPRO users at RAF. You are welcome to alter any of them as you please.

I have also included the location (directories on spock) for the UNICOS version GENPRO source code files. In addition, the location for the Masscomp version GENPRO source code files are listed as well.

PHASE I: Information gathering

- Step 1: Collect as much information as possible from the project manager.
- Step 2: Review the obtained information.
- Step 3: Clarify issues of confusion with the project manager.

PHASE II: GUINT

- Step 1: Set up a directory for the project.
Example: /users/computing/celia/spin
- Step 2: Create a project summary file for GUINT with all the necessary information required to generate a GENPRO processor.
- Step 3: Stage all tapes for the particular project
- Step 4: Generate an INPUT UD
- Step 5: Scan time segments to eliminate time gaps.

Step 6: Prepare initial job file
Example: /users/computing/celia/spin/spin.job

Step 7: Initial editing on the job file. This includes adding nonstandard derived variables to CALIB UD. Some examples are:

- Change PLOT ranges
- Change Calibrations in INICAL UD
- Add variables to appropriate VECVAR
- Delete variables from appropriate VECVAR
- Change or add titles/units

PHASE III: shavano job file generation

Step 1: Convert the job file (spin.job), generated by GUINT from phase II, to a generic GENPRO PDUD file: pdudxx (see Appendix-A)

The utility script to use is conv.scr.
(see Appendix-A1)

Step 2: Make additional changes to the PDUD file (pdudxx) for the entire project. This also includes marking the locations for per flight changes, such as the location to insert flight information. (See next step for more detailed description of the flight information.)

Examples: Change PLOT ranges
Change Calibrations in INICAL UD
Add variables to appropriate VECVAR
Delete variables from appropriate VECVAR
Change or add titles/units

Step 3: Prepare a "runjob" script with the following files:

genxx: a generic GENPRO shavano job script
(see Appendix-B)

drxx: a sub-ud of GENPRO DRIVER operation
(see Appendix-C)

snpxx: contains time intervals information for GENPRO STATS, PLOT, and PRINT operations
(see Appendix-D)

The runjob script generates a GENPRO pdud file and a shavano job script file for a particular flight of a project. For example, it generates files, such as pdud01, dr01, snp01 for flight RF01 of a particular project.

(see Appendix-A2 for a runjob script;
Appendix-B1 for a GENPRO shavano job script;
Appendix-C1 for a complete dr file; and
Appendix-D1 for a complete snp file.)

Step 4: Add source code to CALIB operation for a new derived variable by using the caladd file. This includes defining variable name with DATA statement; adding IFTRAN statement for a variable name check and subroutine call to an appropriate derivation level in the CALIB code; and adding a subroutine for the new derived variables. (Please note that the new variable names must be included in the CALIB UD.)
(see Appendix-E)

Step 5: Prepare a catrcp file to gather all required source code before the job is submitted to shavano.
(see Appendix-F)

Step 6: Check out runs
Prepare the gen script to send the gmeta file back to spock for the users to review.
After reviewing the output, it may be required to go back to the previous steps for modifications.

Step 7: Preproduction

Again, after reviewing the output, it may be required to go back to the previous steps for modifications.

Step 8: Production
Run runjob to enter flight information and per flight changes according to the instruction of the script.
(Be prepared to have the flight information on hand at this point.)

Step 9: Output data set dump
Using tdump script, program, and data file.
(see Appendix-G & G1)

Step 10: Prepare tape log for RDP data clerk to copy the data sets.
(see Appendix-H)

Step 11: Utilize some simple script to transfer files between computer systems, generate microfilms from meta files, check and update MSS files, and archive GENPRO source code, script, decks, and output logfiles to MSS/microfiche.
(see Appendix-I)

pdudxx

Appendix-A

```

NOLIST
/-----DRIVER PD01
/  FETCH 1,57
BEGINPD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X  DRIVER      OPERATION      X
/
X  PROGRAMMER DIRECTIVE FILE  X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN = NAMPD ,                      NAMLIB
DIMGEN= 'NONE' ,                      'NONE'
/
DEFGEN =  BEGIV ,                      ENDIV ,                      DELIV
DIMGEN = (0.,0.,0.), (00.,01.,00.),      1.
/
DEFGEN =                      SCALIV ,                      LABIV ,                      IVDIM
DIMGEN = (3600.,60.,1.), (HRS,MNS,SEC),      3
/
DEFGEN =                      PROJECT
DIMGEN = ' '
/
DEFGEN =                      PRTIME ,                      PRDATE
DIMGEN = (' ',' ',' ',' '), (' ',' ',' ',' ')
/DIMGEN = ('IIH','IIM','IIS'), ('DD','MON','YY')
/
DEFGEN = NUMOPT, OVRFLO, GAPVAL, BITCHR, BITNSU, IABORT
DIMGEN = 1, -99999., 99999., 8, 64, 4
/
DEFGEN = KCHECK, KDUMP , KERR , KFILM , KFICHE, KPRINT, KPROC
DIMGEN = 6, 4, 6, 4, 4, 4, 6
/
DEFGEN = PRINT
DIMGEN = <(CASE), (RATE), (SNAP), (TIME), (SIZE)>
/
DEFGEN = DEBUG,                      DUMP
DIMGEN = <(NOSNAP), (NOFLOW), (NOCONTROLS)>, (0,1,1,1)
/
DEFGEN = NAMEOP, NUMCYC, ITYPOP
DIMGEN = INDR , 0 , 1
/
DEFGEN = BEGSNP, ENDSNP, FLUSHP
DIMGEN = (0.,0.,0.), (99.,99.,99.), 900
/
DEFGEN = KUNIT , LIMREC, RECSIZ, DATLOG, NUMBIT, MAXCHR
DIMGEN = (9,10), 0 , 0 , 0 , 0 , 128
/
MODGEN = NAMPD , NAMLIB, NUMCYC,
        BEGIV , ENDIV , DELIV , SCALIV, LABIV , IVDIM ,
        PRTIME, PRDATE, PROJECT, PRINT , DEBUG , DUMP ,
        NUMOPT, OVRFLO, GAPVAL, BITCHR, BITNSU, IABORT,
        KCHECK, KDUMP , KERR , KFILM , KFICHE, KPRINT, KPROC,
        BEGSNP, ENDSNP, FLUSHP,
        KUNIT , LIMREC, RECSIZ, DATLOG, NUMBIT, MAXCHR
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT, RATE
DIMVAR = NAMVAR, 0 , 0 , 0 , 1
/
MODVAR = RATE
/
ENDPD /*****
LIST
BEGINUD
/  drxx -----
/-----
FLUSHP = 1800
LABIV = (HOURS,MINUTES,SECONDS)

```

IABORT = 5
 KPROC = 6
 KPRINT = 4
 KERR = 6
 KCHECK = 6
 KDUMP = 6
 BITCHR = 8
 NUMBIT = 64
 BITNSU = 64
 ENDUD
 /

NOLIST

/-----INPUT PD01

/ FETCH 58,116

BEGINPD

/
 / ----- REVISED DIRECTIVE FILE JAN 1983 -----
 /

/
 / XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 / X INPUT OPERATION X
 / X PROGRAMER DIRECTIVE FILE X
 / XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 /

DEFGEN = NAMEOP, NAMPD, NAMUD, NAMLIB, ITYPOP, NUMCYC
 DIMGEN = INPUT, 'INPUT', 'INPUT', 'NONE', 1, -1
 /

/
 DEFGEN = CONV, FRTIM, IVTYPE, IVNAM
 DIMGEN = 1., 1.0, 0, NOLINK
 LNKVAR=IVNAM
 /

/
 DEFGEN = JCL
 DIMGEN = '0'
 /

/
 DEFGEN = KIN, KMODE, KPOS, KTYPE
 DIMGEN = 20, 1, (0, 0), 1
 /

/
 DEFGEN = LOGBIT, DATLOG, BITKEY, DATSIZ, MEDIA, DATOPT
 DIMGEN = 1000, 1, 0, 10000, 1, (AUTO,NOSPAN)
 /

/
 DEFGEN = NPHY, NSEC, NAMKEY, NWVOL
 DIMGEN = 1, 0, NOLINK, 'EOFTAP'
 LNKVAR=NAMKEY
 /

/
 DEFGEN = NUMV, NEWV, NOLDV, NTOT, I, KSTOP, NUMLOG, IVPR, DATBIT
 DIMGEN = 1, 0, 0, 0, 0, 0, 0, 0, 1
 /

/
 DEFGEN = OFFSET, MAXIV, KEOF, KOUNT, IKOUNT
 DIMGEN = 0.0, 86400., 1, 0, 0
 /

/
 MODGEN = NAMPD, NAMUD, NAMLIB, NUMCYC, CONV, FRTIM, IVTYPE, IVNAM, JCL, KIN,
 KMODE, KPOS, KTYPE, LOGBIT, DATLOG, BITKEY, NSEC, NAMKEY, NWVOL,
 DATSIZ, DATOPT, MEDIA, IVPR, DATBIT, OFFSET, MAXIV, KEOF, KOUNT
 /

/
 DEFVAR = NAMVAR, INDGET, INRATE, INDPUT
 DIMVAR = NAMVAR, 0, 0, 0
 /

/
 DEFVAR = RATE, BITS, FSTBIT, SKIP, SAMPLE, CONKEY, SCLKEY, TERM, FACTOR
 DIMVAR = 1, 16, 1, 0, 1, 1, 2, 0, 1.
 /

```

DEFVAR = TITLE, UNITS
DIMVAR = '
/
MODVAR = RATE , BITS, FSTBIT, SKIP, SAMPLE, CONKEY, SCLKEY, TERM, FACTOR,
        TITLE, UNITS
/
ENDPD /*****
LIST
BEGINUD
/
/          #####
/          #      INPUT OPERATION      #
/          #  USER DIRECTIVE FILE    #
/          #####
/
/ GENERAL  CONTROLS
/
ORDGEN = FRTIM, IVTYPE ,IVPR
LETGEN = 1.0 , 1 , 0
/
NUMCYC = -1
/
IVNAM=[HR,MIN,SEC]
CONV=[3600.,60.,1.]
JCL = 'YES'
/
/ MULTIPLE INPUT TAPES JOB -- no longer used: merge multiples into
/ one single dataset in the script when needed
KEOF = 1
KIN = 14
KPOS = [(0,0)]
NWVOL= ['TAPEXX']
/
/ ATTENTION: insert ADSUD output from ADSRAW program here
ORDGEN = LOGBIT, DATLOG, DATSIZ, NAMKEY, BITKEY
LETGEN = 19296, 4, 77184, IDWD , 34433

VECVAR = GAP , IDWD , HR , MIN , SEC , STEF ,
FTR , INST , RSWD , BECT , TECT , SYST ,
QCW , TTB , TTRF , QCR , ADIFR , BDIFR ,
VLA , PHDG , VZI , ROLL , PITCH , CNTS ,
HGM , PSW , DPT , DPB , RSTB , RICE ,
SWT , SWB , IRT , IRB , DTT , STT ,
DTB , STB , TCAVB , TEO3 , XSO2 , FCN ,
PCN , CMODE , UVT , UVB , XNO , XNOX ,
XSTAT , XO2F , XNOF , XNOP , XCALG , XCALD ,
XCO , PSFD2 , CROLL , PSFD , TEP , TET ,
TSEC , THNDS , ALAT , ALON , THI , ALPHA ,
XVI1 , XVI2 , YVI1 , YVI2 , GSI , ASAS ,
V10 , V10R , TADS , TV10 , FLOADS , FZV ,
FZVR , VDREF , XIDICE , XI400U , XI60U , XI28U ,
XI400D , XI60D , XI28D , XILGEN , XIRGEN , XIEXT ,
VP15D , V28 , VP15A , VM15A , TCBADS , FCBADS ,
SP1A , SP2A , SP3A , SP4A , SP5A , SP6A ,
CCKPIT , CMFMC , DISW , SQSW , CAMESW , CKEVP1 ,
HCPY1 , EV1 , HPCY2 , EV2 , HCPY3 , EV3 ,
HCPY4 , EV4 , HCPY5 , TA2D , TS2D , TLSI ,
/ SP1D , SP2D , SP3D , SP4D , SP5D , SP6D ,
/ SP7D , CSTAT , CSEC , CFSEC , LORN

ORDVAR = FSTBIT,BITS,SKIP, SAMPLE,CONKEY,TERM, FACTOR
LETVAR = 1, 1, 0, 1, 1, 0.0, 1.0000000, %FOR, GAP
LETVAR = 1, 16, 0, 1, 1, 0.0, 1.0000000, %FOR, IDWD
LETVAR = 17, 16, 0, 1, 1, 0.0, 1.0000000, %FOR, HR
LETVAR = 33, 16, 0, 1, 1, 0.0, 1.0000000, %FOR, MIN
LETVAR = 49, 16, 0, 1, 1, 0.0, 1.0000000, %FOR, SEC
LETVAR = 65, 16, 0, 1, 1, 0.0, 1.0000000, %FOR, STEF

```

LETVAR =	81,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	FTER
LETVAR =	97,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	INST
LETVAR =	113,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	RSWD
LETVAR =	129,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	BECT
LETVAR =	145,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	TECT
LETVAR =	161,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	SYST
LETVAR =	177,	16,	176,	50,	2,	0.0,	817.6614881,	%FOR,	QCW
LETVAR =	193,	16,	176,	50,	2,	0.0,	817.6614881,	%FOR,	TTB
LETVAR =	209,	16,	176,	50,	2,	0.0,	817.6614881,	%FOR,	TTRF
LETVAR =	225,	16,	176,	50,	2,	0.0,	817.6614881,	%FOR,	QCR
LETVAR =	241,	16,	176,	50,	2,	0.0,	817.6614881,	%FOR,	ADIFR
LETVAR =	257,	16,	176,	50,	2,	0.0,	817.6614881,	%FOR,	BDIFR
LETVAR =	273,	16,	176,	50,	2,	0.0,	817.6614881,	%FOR,	VLA
LETVAR =	289,	16,	176,	50,	7,	0.0,	364.0898210,	%FOR,	PHDG
LETVAR =	305,	16,	176,	50,	2,	0.0,	82.0209970,	%FOR,	VZI
LETVAR =	321,	16,	176,	50,	7,	0.0,	364.0898210,	%FOR,	ROLL
LETVAR =	337,	16,	176,	50,	7,	0.0,	364.0898210,	%FOR,	PITCH
LETVAR =	353,	16,	176,	50,	2,	0.0,	1.0000000,	%FOR,	CNTS
LETVAR =	9777,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	HGM
LETVAR =	9793,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	PSW
LETVAR =	9809,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	DPT
LETVAR =	9825,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	DPB
LETVAR =	9841,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	RSTB
LETVAR =	9857,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	RICE
LETVAR =	9873,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	SWT
LETVAR =	9889,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	SWB
LETVAR =	9905,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	IRT
LETVAR =	9921,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	IRB
LETVAR =	9937,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	DTT
LETVAR =	9953,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	STT
LETVAR =	9969,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	DTB
LETVAR =	9985,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	STB
LETVAR =	10001,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	TCAVB
LETVAR =	10017,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	TEO3
LETVAR =	10033,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	XSO2
LETVAR =	10049,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	FCN
LETVAR =	10065,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	PCN
LETVAR =	10081,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	CMODE
LETVAR =	10097,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	UVT
LETVAR =	10113,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	UVB
LETVAR =	10129,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	XNO
LETVAR =	10145,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	XNOX
LETVAR =	10161,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	XSTAT
LETVAR =	10177,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	XO2F
LETVAR =	10193,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	XNOF
LETVAR =	10209,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	XNOP
LETVAR =	10225,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	XCALG
LETVAR =	10241,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	XCALD
LETVAR =	10257,	16,	528,	5,	2,	0.0,	817.6614881,	%FOR,	XCO
LETVAR =	10273,	16,	528,	5,	2,	0.0,	1.0000000,	%FOR,	PSFD2
LETVAR =	10289,	16,	528,	5,	7,	0.0,	45.5112276,	%FOR,	CROLL
LETVAR =	10305,	16,	528,	5,	7,	0.0,	29.5298842,	%FOR,	PSFD
LETVAR =	12497,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	TEP
LETVAR =	12513,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	TET
LETVAR =	12529,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	TSEC
LETVAR =	12545,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	THNDS
LETVAR =	12563,	18,	0,	1,	2,	0.0,	728.1777861,	%FOR,	ALAT
LETVAR =	13459,	18,	0,	1,	2,	0.0,	728.1777861,	%FOR,	ALON
LETVAR =	12691,	18,	206,	5,	2,	0.0,	728.1777861,	%FOR,	THI
LETVAR =	12659,	18,	206,	5,	2,	0.0,	728.1777861,	%FOR,	ALPHA
LETVAR =	12595,	18,	206,	5,	2,	0.0,	26.2567192,	%FOR,	XVI1
LETVAR =	12723,	18,	206,	5,	2,	0.0,	26.2567192,	%FOR,	XVI2
LETVAR =	12627,	18,	206,	5,	2,	0.0,	26.2567192,	%FOR,	YVI1
LETVAR =	12755,	18,	206,	5,	2,	0.0,	26.2567192,	%FOR,	YVI2
LETVAR =	13235,	18,	0,	1,	2,	0.0,	1.9425019,	%FOR,	GSI
LETVAR =	13681,	16,	0,	210,	2,	0.0,	1.0000000,	%FOR,	ASAS

LETVAR =	17041,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	V10
LETVAR =	17057,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	V10R
LETVAR =	17073,	16,	0,	1,	2,	0.0,	163.5322976,	%FOR,	TADS
LETVAR =	17089,	16,	0,	1,	2,	0.0,	163.5322976,	%FOR,	TV10
LETVAR =	17105,	16,	0,	1,	2,	0.0,	163.5322976,	%FOR,	FLOADS
LETVAR =	17121,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	FZV
LETVAR =	17137,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	FZVR
LETVAR =	17153,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	VDREF
LETVAR =	17169,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	XIDICE
LETVAR =	17185,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	XI400U
LETVAR =	17201,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	XI60U
LETVAR =	17217,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	XI28U
LETVAR =	17233,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	XI400D
LETVAR =	17249,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	XI60D
LETVAR =	17265,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	XI28D
LETVAR =	17281,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	XILGEN
LETVAR =	17297,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	XIRGEN
LETVAR =	17313,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	XIEXT
LETVAR =	17329,	16,	0,	1,	2,	0.0,	272.5538294,	%FOR,	VP15D
LETVAR =	17345,	16,	0,	1,	2,	0.0,	131.8808852,	%FOR,	V28
LETVAR =	17361,	16,	0,	1,	2,	0.0,	272.5538294,	%FOR,	VP15A
LETVAR =	17377,	16,	0,	1,	2,	0.0,	272.5538294,	%FOR,	VM15A
LETVAR =	17393,	16,	0,	1,	2,	0.0,	163.5322976,	%FOR,	TCBADS
LETVAR =	17409,	16,	0,	1,	2,	0.0,	163.5322976,	%FOR,	FCBADS
LETVAR =	17425,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	SP1A
LETVAR =	17441,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	SP2A
LETVAR =	17457,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	SP3A
LETVAR =	17473,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	SP4A
LETVAR =	17489,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	SP5A
LETVAR =	17505,	16,	0,	1,	2,	0.0,	817.6614881,	%FOR,	SP6A
LETVAR =	17521,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	CCKPIT
LETVAR =	17524,	1,	0,	1,	1,	0.0,	1.0000000,	%FOR,	CMFMC
LETVAR =	17525,	1,	0,	1,	1,	0.0,	1.0000000,	%FOR,	DISW
LETVAR =	17526,	1,	0,	1,	1,	0.0,	1.0000000,	%FOR,	SQSW
LETVAR =	17530,	1,	0,	1,	1,	0.0,	1.0000000,	%FOR,	CAMESW
LETVAR =	17531,	6,	0,	1,	1,	0.0,	1.0000000,	%FOR,	CKEVP1
LETVAR =	17537,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	HCPY1
LETVAR =	17553,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	EV1
LETVAR =	17569,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	HPCY2
LETVAR =	17585,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	EV2
LETVAR =	17601,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	HCPY3
LETVAR =	17617,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	EV3
LETVAR =	17633,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	HCPY4
LETVAR =	17649,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	EV4
LETVAR =	17665,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	HCPY5
LETVAR =	17681,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	TA2D
LETVAR =	17697,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	TS2D
LETVAR =	17713,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	TL5I
LETVAR =	17729,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	SP1D
LETVAR =	17745,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	SP2D
LETVAR =	17761,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	SP3D
LETVAR =	17777,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	SP4D
LETVAR =	17793,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	SP5D
LETVAR =	17809,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	SP6D
LETVAR =	17825,	16,	0,	1,	2,	0.0,	1.0000000,	%FOR,	SP7D
LETVAR =	17841,	16,	0,	0,	0,	0.0,	1.0000000,	%FOR,	LRNC
LETVAR =	17853,	4,	0,	1,	0,	0.0,	1.0000000,	%FOR,	CSTAT
LETVAR =	17857,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	CSEC
LETVAR =	17873,	16,	0,	1,	1,	0.0,	1.0000000,	%FOR,	CFSEC
LETVAR =	17889,	8,	0,	64,	0,	0.0,	1.0000000,	%FOR,	LORN
RATE =	5,	%FOR,							

HGM	,PSW	,DPT	,DPB	,RSTB	,RICE	,
SWT	,SWB	,IRT	,IRB	,DTT	,STT	,
DTB	,STB	,TCAVB	,TEO3	,XSO2	,FCN	,
PCN	,CMODE	,UVT	,UVB	,XNO	,XNOX	,
XSTAT	,XO2F	,XNOF	,XNOP	,XCALG	,XCALD	,

```

      XCO      ,PSFD2      ,CROLL      ,PSFD      ,THI      ,ALPHA
RATE =      5,%FOR,
      XVI1      ,XVI2      ,YVI1      ,YVI2
RATE =      50,%FOR,
      ADIFR      ,BDIFR      ,VLA      ,PHDG      ,VZI      ,ROLL      ,
      PITCH      ,CNTS      ,QCW      ,TTB      ,TTRF      ,QCR
RATE =      64,%FOR,
      LORN
RATE =      210,%FOR,
      ASAS
SCLKEY = 2
SCLKEY = 1,%FOR,ASAS      ,
      LORN      ,CSTAT
/
ENDUD
/
NOLIST
BEGINPD
/
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/      X      GAPFIL OPERATION      X
/      X PROGRAMMER DIRECTIVE FILE      X
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
/
DEFGEN = NAMEOP, NUMCYC, ITYPOP, OVERLAP
DIMGEN = GAPFIL, -2, -1, 1
MODGEN = NUMCYC,OVERLAP
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT, RATE
DIMVAR = NAMVAR, 0, 0, 0, 1
DEFVAR = VTITLE
DIMVAR = '
DEFVAR = UNITS
DIMVAR = '
DEFVAR = GAPF, GAPV
DIMVAR = 0 , 99999.
MODVAR = NAMVAR, RATE, UNITS, VTITLE, GAPF, GAPV
/
ENDPD
/
LIST
BEGINUD
//      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/      X      GAPFIL OPERATION      X
/      X USER      DIRECTIVE FILE      X
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
/
OVERLAP = 5
VECVAR = %T
REMVAR = GAP
GAPF = 1 / LINEAR INTERPOLATION
GAPV = 99999.
RATE = %T
ENDUD
/
/
NOLIST
/-----INTERP PD01
/ FETCH 241,262
BEGINPD
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/      X TERP OPERATION      X
/      X PROGRAMMER DIRECTIVE FILE      X
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

```

```

/
DEFGEN = NAMEOP, ITYPOP, NUMCYC, OVRLAP, NAMPD, NAMLIB
DIMGEN = TERP, 2, -1, 0, 'NONE', 'NONE'
/
MODGEN = NAMPD, NAMLIB, NUMCYC, OVRLAP
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT
DIMVAR = NAMVAR, 0, 0, 0
/
DEFVAR = RATE, TRPTYP, LOWPAS, SOURCE
DIMVAR = 1, 1, NO, NOLINK
/
MODVAR = RATE, TRPTYP, LOWPAS, SOURCE
/
LNKVAR = SOURCE
/
ENDPD /*****
LIST
BEGINUD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X TERP OPERATION X
/
X USER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/ until needed at some future date, remove PSFD2 for now
/
VECVAR = %T
REMPVAR = PSFD2
RATE = %T
ENDUD
/
NOLIST
/-----SETRNG PD01
/ FETCH 117,138
BEGINPD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X SETRNG OPERATION X
/
X PROGRAMMER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN = NAMEOP, ITYPOP, NUMCYC, OVRLAP, NAMPD, NAMLIB
DIMGEN = SETRNG, -1, -2, 0, 'NONE', 'NONE'
/
MODGEN = NAMPD, NAMLIB, NUMCYC, OVRLAP
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT
DIMVAR = NAMVAR, 0, 0, 0
/
DEFVAR = RATE, DISJMP, NDELAY, SLAVTO, SLVDEL, FIXRNG, TOPVAL, GAPSCN
DIMVAR = 1, 0., 1, NOLINK, 0., 0., 360., NO
/
MODVAR = RATE, DISJMP, NDELAY, SLAVTO, SLVDEL, FIXRNG, TOPVAL, GAPSCN
/
LNKVAR = SLAVTO
/
ENDPD /*****
LIST
BEGINUD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X SETRNG OPERATION X
/
X USER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
/ ATTENTION: append HGME and/or CHGME if either appears in VECVAR
VECVAR = ALPHA, PITCH, CROLL, ROLL, PHDG, VZI, THI
/
DISJMP = 360., %FOR, THI, ALPHA, CROLL

```

```

DISJMP = 45. , %FOR , PITCH,ROLL,PHDG
DISJMP = 399.05, %FOR , VZI
SLAVTO = CHGME , %FOR, HGME
SLVDEL = 14.4 , %FOR, HGME
/
NDELAY = 5, %FOR, CROLL, ALPHA, PITCH, ROLL, PHDG, VZI, THI
/OVLAP=1
RATE = %T
ENDUD
/
NOLIST
/-----DESPIKE PD01
/ FETCH 139,177
BEGINPD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X  DESPIKE  OPERATION          X
X  PROGRAMMER DIRECTIVE FILE   X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN = NAMEOP, ITYPOP, NUMCYC, OVLAP, NAMPD, NAMLIB
DIMGEN = DESP , 2, -1, 0, 'NONE', 'NONE'
/
DEFGEN = KOUT , PROJECT
DIMGEN = (KPROC), ' , '
/
DEFGEN = BEGSNP, ENDSNP, FLUSHP
DIMGEN = (00.,00.,00.), (99.,99.,99.), 900
/
DEFGEN = LOUT, MAXCHR
DIMGEN = [UNITS,RATE,TOTPTS,NUMSPK,NUMPTS,LSHFTS,NUMUNC,NUMGAP,
DELTOL,NWIDTH,STOP],128
/
MODGEN = NAMPD, NAMLIB, NUMCYC, OVLAP, BEGSNP,ENDSNP,FLUSHP,KOUT,LOUT,
MAXCHR
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT
DIMVAR = NAMVAR, 0 , 0 , 0
/
DEFVAR = RATE, TOTPTS, NUMSPK, NUMPTS, LSHFTS, NUMUNC, NUMGAP
DIMVAR = 1 , 0, 0, 0, 0, 0 , 0
/
DEFVAR = TRPTYP, DELTOL, NWIDTH
DIMVAR = 1 , 0. , 0
/
DEFVAR = UNITS, SOURCE
DIMVAR = ' , ' , NOLINK
/
MODVAR = RATE,TRPTYP,DELTOL,NWIDTH,UNITS,SOURCE
/
LNKVAR = SOURCE
/
ENDPD /*****
LIST
BEGINUD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X  DESPIKE  OPERATION          X
X  USER DIRECTIVE FILE       X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
BEGSNP = %D
ENDSNP = %D
FLUSHP = 1800
TRPTYP = 3
/
VECVAR = %T
UNITS = %T
/

```

```

/ ATTENTION: following are always included; specify more vars as noted
/ in memo
DELTOL = .0028 , %FOR , ALAT
DELTOL = .0319 , %FOR , ALON
DELTOL = 1.5000 , %FOR , THI
DELTOL = 1.0000 , %FOR , XVII, XVI2, YVII, YVI2
DELTOL = .2000 , %FOR , ALPHA
DELTOL = 50.0000 , %FOR , PITCH
DELTOL = 50.0000 , %FOR , PHDG
DELTOL = 10.0000 , %FOR , CROLL
DELTOL = 50.0000 , %FOR , ROLL
DELTOL = 10.0000 , %FOR , VZI
RATE = %T
/ NWIDTH always 1 for ALAT, ALON
NWIDTH = 1 , %FOR , ALAT, ALON
/ NWIDTH always 5 for XVII, XVI2, YVII, YVI2
NWIDTH = 5 , %FOR , XVII, XVI2, YVII, YVI2
/ ATTENTION: specify all others from above DELTOL's by setting NWIDTH to
/ RATE as given in INPUT for each
KOUT=(KPROC), (KPRINT)
ENDUD
/
/----- INI-PD
LIST
BEGINPD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X INI-CALIB PD (OCT. 04, 1986) X
/
X INICAL OPERATION X
/
X PROGRAMMER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN=1-NAMEOP; 2-NAMPD; 3-NAMLIB; 4-NUMCYC; 5-ITYPOP; 6-PROJECT (5)
/
7-QCREF;
/
/
DEFGEN=NAMEOP, NAMPD, NAMLIB, NUMCYC, ITYPOP
DIMGEN= INICAL, 'INICAL', 'INICAL.IF', -1, 2
DEFGEN= PROJECT
DIMGEN= '
DEFGEN = QCREF
DIMGEN = ('QCX1', 'QCX2')
/
MODGEN=NUMCYC, NAMPD, NAMLIB, PROJECT, QCREF
/
/
/ DEFVAR =1-NAMVAR; 2-INDGET; 3-INRATE; 4-INDPUT; 5-RATE; 6-UNITS, 7-TITLE;
/ 8-CONS1; 9-CONSN; 10-CONSU; 11-NUMSOU; 12-DERIVE (); 13-CONVERT; 14-KONVUF;
/ 15-KUTOFF; 16-ITAB; 17-CALDAT; 18-NCFABV; 19-NCFBLO; 20-COEF5
DEFVAR= NAMVAR, INDGET, INRATE, INDPUT, RATE, UNITS
DIMVAR= NAMVAR, 0, 0, 0, 1, '
/
DEFVAR= TITLE
DIMVAR= '
/
DEFVAR = CONS1, CONSN, CONSU, NUMSOU
DIMVAR = 99999., 'CONSNAME', 'CONSUNIT', 0
/
DEFVAR= DERIVE
DIMVAR= (NOLINK)
LNKVAR= DERIVE
/
DEFVAR = CONVERT, KONVUF, KUTOFF
DIMVAR = 1., ' ', 0
/
DEFVAR= TABLE
DIMVAR= (NOLINK)
LNKFUN= TABLE

```

```

/
DEFVAR= CALDATE,      NCFABV
DIMVAR=' 31DEC99',    0
/
DEFVAR= NCFBLO
DIMVAR=      0
DEFVAR= COEFS
DIMVAR= [0.0]
/
/ MODVAR - THE VARIABLE CONTROLS WHICH CAN BE MODIFIED IN UD
/
MODVAR= RATE, UNITS, TITLE, DERIVE, NUMSOU, CONS1, CONSN, CONSU, CONVERT,
      KUTOFF, TABLE, NCFABV, NCFBLO, CALDATE, COEFS, KONVUF
/FUNCTION
/ DEFFUN=1-NAMFUN;2-LOOKUP TABLES;3-LENGTH OF EACH LOOKUP TABLE
DEFFUN = NAMFUN
DIMFUN = NAMFUN
/
DEFFUN=LOOKUP,      LENT
DIMFUN=(999.,999.), 0
/
MODFUN = LOOKUP, LENT
ENDPD
/
LIST
BEGINUD
/***** INICAL OPERATION *****/
/***** USER DIRECTIVE FILE *****/
/
/***** GENERAL AREA *****/
/
PROJECT = %D
QCREF = ('QCR', 'QCW')
/
/***** VARIABLE AREA *****/
/
/ DEFVAR =1-NAMVAR;2-INDGET;3-INRATE;4-INDPUT;5-RATE;6-UNITS;7-TITLE;
/ 8-CONS1;9-CONSN;10-CONSU;11-NUMSOU;12-DERIVE();13-CONVERT;14-KONVUF;
/ 15-KUTOFF;16-ITAB;17-CALDAT;18-NCFABV;19-NCFBLO;20-COEFS
VECVAR = %T
/ ATTENTION: if LORN is used, add CLAT, CLON, CCEP, CGS
APPVAR=TPTIME,PTIME,DUM,TMLAG,THF,XVI,YVI,
DEI,DNI
RATE = %T
/ATTENTION: add FREQ,FLAG,RANG if DME is used
RATE = 1,%FOR,TMLAG,TPTIME,PTIME,DUM,DEI,DNI
CLAT,CLON,CCEP,CGS
/ATTENTION: set RATE for THF according to RATE of PHDG in INPUT
RATE= 50,%FOR,THF
RATE =10,%FOR,XVI,YVI
/
/ ATTENTION: insert CALCOE output from ADSRAW here
KUTOFF= 1, %FOR,HGM
NCFBLO = 2, %FOR,HGM
ORDVAR =NCFABV,      COEFS,      CALDATE
LETVAR=3,[ 51.96200, -5.18000, 0.00030], '16FEB91', %FOR, QCW
LETVAR=3,[ -9.90901, -4.89800, 0.00590], '16FEB91', %FOR, TTB
LETVAR=3,[ -9.96101, -5.01500, 0.00200], '16FEB91', %FOR, TTRF
LETVAR=3,[ 51.403, -5.16600, 0.00000], '16FEB91', %FOR, QCR
LETVAR=3,[ 0.05600, 6.91200, 0.00260], '16FEB91', %FOR, ADIFR
LETVAR=3,[ -0.24900, 6.92300, 0.00060], '16FEB91', %FOR, BDIFR
LETVAR=3,[ 0.00000, -1.00000, 0.00000], '16FEB91', %FOR, VLA
LETVAR=3,[ 541.79297, -54.26702, 0.00900], '16FEB91', %FOR, PSW
LETVAR=3,[ 0.17600, -10.01451, -0.00100], '16FEB91', %FOR, DPT
LETVAR=3,[ -0.08700, -4.99000, 0.00010], '16FEB91', %FOR, DPB
LETVAR=3,[ 25.17100, -2.76600, 0.00540], '16FEB91', %FOR, RSTB

```

```

LETVAR=3, [ 0.00000, -1.00001, 0.00000], '16FEB91', %FOR, RICE
LETVAR=3, [ 996.00000, -99.51204, -0.00340], '16FEB91', %FOR, SWT
LETVAR=3, [ 1052.30005, -104.29404, -0.06820], '16FEB91', %FOR, SWB
LETVAR=3, [ 1320.09985, -221.21008, -0.02930], '16FEB91', %FOR, IRT
LETVAR=3, [ 1500.00000, -247.95407, 0.21240], '16FEB91', %FOR, IRB
LETVAR=3, [ -3.31302, 3.78000, 0.11800], '16FEB91', %FOR, DTT
LETVAR=3, [ -3.31302, 3.78000, 0.11800], '16FEB91', %FOR, STT
LETVAR=3, [ -3.31302, 3.78000, 0.11800], '16FEB91', %FOR, DTB
LETVAR=3, [ -3.31302, 3.78000, 0.11800], '16FEB91', %FOR, STB
LETVAR=3, [ 44.23000, -1.04330, -0.01210], '16FEB91', %FOR, TCAVB
LETVAR=3, [ 0.00000, -100.00050, 0.00000], '16FEB91', %FOR, TEO3
LETVAR=3, [ 0.42000, -21.08000, 0.00000], '16FEB91', %FOR, XSO2
LETVAR=3, [ 0.00000, -0.50000, 0.00000], '16FEB91', %FOR, FCN
LETVAR=3, [ 0.00000, -150.00015, 0.00000], '16FEB91', %FOR, PCN
LETVAR=3, [ 0.00000, -1.00000, 0.00000], '16FEB91', %FOR, CMODE
LETVAR=3, [ 37.38430, -3.72600, -0.00010], '16FEB91', %FOR, UVT
LETVAR=3, [ 58.06000, -5.80600, 0.00200], '16FEB91', %FOR, UVB
LETVAR=3, [ 0.00000, -38.80000, 0.00000], '16FEB91', %FOR, XNO
LETVAR=3, [ 0.00000, -38.80000, 0.00000], '16FEB91', %FOR, XNOX
LETVAR=3, [ 0.00000, -1.00000, 0.00000], '16FEB91', %FOR, XSTAT
LETVAR=3, [ 0.00000, -1.00000, 0.00000], '16FEB91', %FOR, XO2F
LETVAR=3, [ 0.00000, -1.00000, 0.00000], '16FEB91', %FOR, XNOF
LETVAR=3, [ 0.00000, -1.00000, 0.00000], '16FEB91', %FOR, XNOP
LETVAR=3, [ 0.00000, -1.00000, 0.00000], '16FEB91', %FOR, XCALG
LETVAR=3, [ 0.00000, -1.00000, 0.00000], '16FEB91', %FOR, XCALD
LETVAR=3, [ xcoxx, -2.60000, 0.00000], '16FEB91', %FOR, XCO
LETVAR=3, [ -8.00007, 0.10096, 0.00000], '16FEB91', %FOR, TEP
LETVAR=3, [ -3.00001, .002500, 0.00000], '16FEB91', %FOR, TET
LETVAR =2, [111.76, -101.60, -0.4, 146.304, -15.24 ], '23SEP83', %FOR, HGM
/

```

```

ORDVAR=NUMSOU, DERIVE
LETVAR= 3, [HR, MIN, SEC], %FOR, TPTIME
LETVAR= 2, [ALON, ALAT], %FOR, DEI
LETVAR= 1, [ALAT], %FOR, DNI
LETVAR= 2, [PHDG, ALPHA], %FOR, THE
LETVAR= 2, [XVI1, XVI2], %FOR, XVI
LETVAR= 2, [YVI1, YVI2], %FOR, YVI
LETVAR= 3, [TSEC, THNDS, SEC], %FOR, TMLAG
/

```

```

ORDVAR = CONSN, CONSU, CONS1 /VARNAME
LETVAR = 'INI-LON', ' DEG', -99.0767, %FOR, DEI /PROJ.244
LETVAR = 'INI-LAT', ' DEG', 19.4183, %FOR, DNI /PROJ.244
UNITS = %T
TITLE = %T
/

```

/ ATTENTION: insert INICAL TITLES here

ORDVAR=	TITLE	UNITS	/NAME
LETVAR='RAW DYNAMIC PRESSURE (WING)		MB	%FOR, QCW
LETVAR='TOTAL TEMPERATURE (BOOM)		C	%FOR, TTB
LETVAR='TOTAL TEMPERATURE (REVERSE FLOW)		C	%FOR, TTRF
LETVAR='RAW DYNAMIC PRESSURE (RADOME)		MB	%FOR, QCR
LETVAR='ATTACK DIFFERENTIAL PRESSURE (RADOME)		MB	%FOR, ADIFR
LETVAR='SIDESLIP DIFFERENTIAL PRESSURE (RADOME)		MB	%FOR, BDIFR
LETVAR='RAW LYMAN-ALPHA VOLTAGE		VDC	%FOR, VLA
LETVAR='RAW STATIC PRESSURE (WING)		MB	%FOR, PSW
LETVAR='DEW/FROST POINT TEMP (THERMOELEC) (TOP)		C	%FOR, DPT
LETVAR='DEW/FROST POINT TEMP (THERMOELEC) (BOT)		C	%FOR, DPB
LETVAR='RADIOMETRIC SURFACE TEMPERATURE		C	%FOR, RSTB
LETVAR='RAW ICING RATE INDICATOR		VDC	%FOR, RICE
LETVAR='TOP SHORTWAVE IRRADIANCE		W/M2	%FOR, SWT
LETVAR='BOTTOM SHORTWAVE IRRADIANCE		W/M2	%FOR, SWB
LETVAR='RAW TOP INFRARED IRRADIANCE		W/M2	%FOR, IRT
LETVAR='RAW BOTTOM INFRARED IRRADIANCE		W/M2	%FOR, IRB
LETVAR='TOP PYRGEOMETER DOME TEMPERATURE		C	%FOR, DTT
LETVAR='TOP PYRGEOMETER SINK TEMPERATURE		C	%FOR, STT

```

LETVAR='BOTTOM PYRGEOMETER DOME TEMPERATURE      ',' C      ',%FOR,DTB
LETVAR='BOTTOM PYRGEOMETER SINK TEMPERATURE      ',' C      ',%FOR,STB
LETVAR='CAVITY TEMPERATURE: BOTTOM PRT5          ',' C      ',%FOR,TCAVB
LETVAR='TECO OZONE CONCENTRATION, RAW OUTPUT      ',' PPB    ',%FOR,TEO3
LETVAR='RAW SULFUR DIOXIDE CONCENTRATION          ',' PPB    ',%FOR,XSO2
LETVAR='RAW COUNTS FROM TSI CN COUNTER           ',' N      ',%FOR,CNTS
LETVAR='CN COUNTER RAW FLOW RATE                 ',' L/M     ',%FOR,FCN
LETVAR='CN COUNTER INLET PRESSURE                ',' MB      ',%FOR,PCN
LETVAR='CARBON MONOXIDE DETECTOR, STATUS         ',' VDC     ',%FOR,CMODE
LETVAR='TOP ULTRAVIOLET IRRADIANCE               ',' W/M2    ',%FOR,UVT
LETVAR='BOTTOM ULTRAVIOLET IRRADIANCE            ',' W/M2    ',%FOR,UVB
LETVAR='NITROGEN OXIDE (NO) DETECTOR=OUTPUT      ',' PPB     ',%FOR,XNO
LETVAR='NITROGEN OXIDES (NOY) DETECTOR-OUTPUT    ',' PPB     ',%FOR,XNOX
LETVAR='O2 FLOW RATE / NO-NOY ANALYZER           ',' VDC     ',%FOR,XO2F
LETVAR='NO-NOY DETECTOR - SAMPLE FLOW            ',' VDC     ',%FOR,XNOF
LETVAR='CARBON MONOXIDE CONCENTRATION             ',' PPM     ',%FOR,XCO
LETVAR='TECO INTERNAL OZONE SAMPLING PRESSURE     ',' MB      ',%FOR,TEP
LETVAR='TECO INTERNAL OZONE SAMPLING TEMPERATURE',' C      ',%FOR,TET
LETVAR='CN COUNTER INLET TEMPERATURE             ',' C      ',%FOR,TCBADS
LETVAR='GEOMETRIC (RADIO) ALTITUDE               ',' M      ',%FOR,HGM

```

/ ATTENTION: if DME block is used, insert DME TITLES here

/

ENDUD

/

NOLIST

/-----SETRNG PD01

/ FETCH 117,138

BEGINPD

```

/
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/      X  SETRNG      OPERATION          X
/      X  PROGRAMMER DIRECTIVE FILE      X
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/

```

```

DEFGEN =  NAMEOP, ITYPOP, NUMCYC, OVLAP,      NAMPD,      NAMLIB
DIMGEN =  SETRNG ,  -1,      -2,      0,      'NONE',      'NONE'
/

```

```

MODGEN =  NAMPD, NAMLIB, NUMCYC, OVLAP
/

```

```

DEFVAR =  NAMVAR, INDGET, INRATE, INDPUT
DIMVAR =  NAMVAR,      0 ,      0 ,      0
/

```

```

DEFVAR =  RATE, DISJMP, NDELAY, SLAVTO, SLVDEL, FIXRNG, TOPVAL, GAPSCN
DIMVAR =   1,      0.,      1, NOLINK,      0.,      0.,      360.,      NO
/

```

```

MODVAR =  RATE,DISJMP,NDELAY,SLAVTO,SLVDEL,FIXRNG,TOPVAL,GAPSCN
/

```

```

LNKVAR =  SLAVTO
/

```

ENDPD /*****

LIST

BEGINUD

```

/
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/      X  SETRNG      OPERATION          X
/      X  USER DIRECTIVE FILE          X
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/

```

```

VECVAR =  ALPHA,PITCH,CROLL,ROLL,THI,THF
/

```

```

SLAVTO =  THI      , %FOR, THF
SLAVTO =  CROLL   , %FOR, ROLL
SLVDEL =  45.0    , %FOR, ROLL,THF
RATE =  %T
ENDUD
/

```

NOLIST

/-----FILTER PD01

/ FETCH 178,218

```

BEGINPD
/
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/      X  FILT      OPERATION              X
/      X  PROGRAMMER DIRECTIVE FILE      X
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN = NAMEOP, ITYPOP, NUMCYC, OVRLAP, NAMPD, NAMLIB
DIMGEN = FILT, 2, -1, 0, 'NONE', 'NONE'
/
/      -----
/
DEFGEN = WTS1, WTS2, WTS3, WTS4, WTS5
DIMGEN = (0.) , (0.) , (0.) , (0.) , (0.)
/
MODGEN = NAMPD, NAMLIB, NUMCYC, OVRLAP, WTS1, WTS2, WTS3, WTS4, WTS5
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT
DIMVAR = NAMVAR, 0, 0, 0
/
DEFVAR = RATE, FILTER, FILRTE, INDREC, SOURCE
DIMVAR = 1, NOLINK, 0, 0, NOLINK
/
MODVAR = RATE, FILTER, SOURCE
/
LNKVAR = SOURCE
LNKFUN = FILTER
/
/
DEFFUN = NAMFUN, NRAW, NREC, LOCWTS, ITYPE, FSAMP, ISYM
DIMFUN = NAMFUN, 0, 0, NOLINK, 0, 0, YES
/
DEFFUN = FTITLE
DIMFUN = '
/
/      **** PROVIDE FINAL ORDER ****
/
MODFUN = LOCWTS, ISYM, NRAW, NREC, FSAMP, FTITLE
/
LNKGEN = LOCWTS
/
ENDPD /*****
LIST
BEGINUD
/
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/      X  FILTER OPERATION  U D      X
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
/ ATTENTION: choose filter weights:
/ THE FOLLOWING WTS ARE FOR 4 POLE BUTTERWORTH, SPS/FC=2.5 FILTER,
/ USED IN QUEEN AIR 306 PROJECTS (ARIS IV)
/ WTS1= [(-.00439873683772829), (.0342344577612603), (-.115221833111989),
/      (.217207115545358), (.868178996643096)]
/
/ THE FOLLOWING FILTER WEIGHTS ARE FOR 4 POLE BUTTERWORTH,
/ SPS/FC=5 FILTER, USED IN KING AIR AND ELECTRA PROJECTS (ADS)
/
WTS1= [(-.0423958346984659), (.289442679693826), (-.813136624064022),
      (1.17285101820862), (.393238760860040)]
/
/
VECVAR=%T
REMVAR = LORN, XVII, XVI2, YVI1, YVI2, DME
RATE=%T
FILTER=FUN1, %FOR, PITCH, ROLL, THF, VZI, XVI, YVI
VECFUN=FUN1
NRAW=1
NREC=4

```

```

LOCWTS=WTS1
FTITLE = ' FOUR POLE, LO PASS, BUTTERWORTH FILTER '
ENDUD
/
NOLIST
/-----SHIFT PD01
/ FETCH 219,240
BEGINPD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X  SHIFT      OPERATION      X
/
X  PROGRAMMER DIRECTIVE FILE  X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN = NAMEOP, ITYPOP, NUMCYC, OVLAP, NAMPD, NAMLIB
DIMGEN = SHFT , 2, -1, 0, 'NONE' , 'NONE'
/
MODGEN = NAMPD, NAMLIB, NUMCYC, OVLAP
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT
DIMVAR = NAMVAR, 0 , 0 , 0
/
DEFVAR = RATE, STSHFT, DYSHFT, DYMAX, TRPTYP, SOURCE
DIMVAR = 1, 0. , NOLINK, 1., 1 , NOLINK
/
MODVAR = RATE, STSHFT, DYSHFT, DYMAX, TRPTYP, SOURCE
/
LNKVAR = DYSHFT, SOURCE
/
ENDPD /*****
LIST
BEGINUD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X  SHIFT      OPERATION      X
/
X  USER DIRECTIVE FILE      X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
VECVAR = %T
/ ATTENTION: set DYMAX to 1 if ARIS IV data system is used (QUEEN AIR)
ORDVAR = DYSHFT, DYMAX
LETVAR = TMLAG , 2. , %FOR, ALAT,ALON,THI,XVI,YVI,ALPHA
/
/
STSHFT = -.040, %FOR, PITCH,ROLL,THE,VZI
STSHFT = -.040,%FOR, XVI,YVI,THI
/
RATE = %T
ENDUD
/
NOLIST
/-----INTERP PD01
/ FETCH 241,262
BEGINPD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X  TERP      OPERATION      X
/
X  PROGRAMMER DIRECTIVE FILE  X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN = NAMEOP, ITYPOP, NUMCYC, OVLAP, NAMPD, NAMLIB
DIMGEN = TERP , 2, -1, 0, 'NONE' , 'NONE'
/
MODGEN = NAMPD, NAMLIB, NUMCYC, OVLAP
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT
DIMVAR = NAMVAR, 0 , 0 , 0
/
DEFVAR = RATE, TRPTYP, LOWPAS, SOURCE

```

```

DIMVAR =      1,      1 ,    NO , NOLINK
/
MODVAR =  RATE,  TRPTYP, LOWPAS, SOURCE
/
LNKVAR = SOURCE
/
ENDPD /*****
LIST
BEGINUD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X   TERP   OPERATION                X
/
X   USER DIRECTIVE FILE            X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TRPTYP = 3
VECVAR = %T
RATE = %T
/ ATTENTION: -- PMS vars ALWAYS remain the same RATE (ASAS,FSSP,X200,
LOWPAS=YES,%FOR,
      XNO      ,XNOX      ,XCO      ,CMODE      ,RSTB      ,
      SWT      ,SWB      ,UVT      ,UVB      ,PHDG      ,THI      ,
      CROLL    ,IRT      ,IRB      ,DTT      ,STT      ,DTB      ,
      STB      ,TCAVB    ,XO2F    ,XNOF      ,TEO3      ,FCN      ,
      PCN      ,RICE      ,CNTS
RATE=1,%FOR,
      XNO      ,XNOX      ,XCO      ,CMODE      ,RSTB      ,
      SWT      ,SWB      ,UVT      ,UVB      ,PHDG      ,THI      ,
      CROLL    ,IRT      ,IRB      ,DTT      ,STT      ,DTB      ,
      STB      ,TCAVB    ,XO2F    ,XNOF      ,TEO3      ,FCN      ,
      PCN      ,RICE      ,CNTS
RATE=20,%FOR,
      ALPHA    ,ALAT      ,HGM      ,THF      ,ROLL      ,PITCH      ,
      VZI      ,XVI      ,YVI      ,QCW      ,QCR      ,ADIFR      ,
      BDIFR    ,PSFD      ,PSW      ,TTB      ,TTRF      ,DPT      ,
      DPB      ,VIA      ,XS02
ENDUD
/
NOLIST
/-----SETRNG PD01
/  FETCH 117,138
BEGINPD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X   SETRNG   OPERATION                X
/
X   PROGRAMMER DIRECTIVE FILE        X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DEFGEN =  NAMEOP, ITYPOP, NUMCYC, OVRLAP,      NAMPD,      NAMLIB
DIMGEN =  SETRNG ,  -1,      -2,      0,      'NONE',      'NONE'
/
MODGEN =  NAMPD, NAMLIB, NUMCYC, OVRLAP
/
DEFVAR =  NAMVAR, INDGET, INRATE, INDPUT
DIMVAR =  NAMVAR,      0 ,      0 ,      0
/
DEFVAR =  RATE, DISJMP, NDELAY, SLAVTO, SLVDEL, FIXRNG, TOPVAL, GAPSCN
DIMVAR =      1,      0.,      1, NOLINK,      0.,      0.,      360.,      NO
/
MODVAR =  RATE,DISJMP,NDELAY,SLAVTO,SLVDEL,FIXRNG,TOPVAL,GAPSCN
/
LNKVAR = SLAVTO
/
ENDPD /*****
LIST
BEGINUD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X   SETRNG   OPERATION                X
/
X   USER DIRECTIVE FILE            X

```

```

/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
VECVAR = THI,PITCH,ROLL,THF,ALAT,ALON,ALPHA
/
FIXRNG = 360.,%FOR,ALON,THI,ROLL,THF,ALPHA
TOPVAL = 180.,%FOR,ALON,ROLL
TOPVAL = 360.,%FOR,THI,THF,ALPHA
FIXRNG = 180.,%FOR,ALAT,PITCH
TOPVAL = 90.,%FOR,ALAT,PITCH
RATE = %T
ENDUD
/
/
/
/-----
/-----
LIST
BEGINPD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X CALIB PD - V2      (SEP 1987) X
/
X CALIB OPERATION    X
/
X PROGRAMMER DIRECTIVE FILE  X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN=1-NAMEOP;2-NAMPD;3-NAMLIB;4-NUMCYC;5-ITYPOP;6-PROJECT(5);
/
7-QCREF(3);8-GUSTIN(8):[(1)-LAT,(2)-ALPHA,(3)-XVI,(4)-YVI,
/
(5)-PITCH,(6)-ROLL,(7)-VZI,(8)-PALT];9-GUSTR(8);
/
PMS FSSP PROBE:10-NCSUMF;11-THRESHF;12-TAU1;13-TAU2;14-TAU3;15-DOF;
/
16-BDIA;17-CWD(4);18-CBIAS(4);19-KRANGE;20-KSTROB;
/
21-KRESET;22-MRATEF;23-MWORDF;24-MCELLF;
/
PMS ASAS PROBE:25-NCSUMA;26-THRESHA;27-MRATEA;28-MWORDA;29-MCELLA;
/
PMS X200 PROBE:30-NCSUMX;31-THRESHX;32-MRATEx;33-MWORDX;34-MCELLX;
/
PMS X260 PROBE:35-NCSUM6;36-THRESH6;37-MRATE6;38-MWORD6;39-MCELL6;
/
PMS Y200 PROBE:40-NCSUMY;41-THRESHY;42-MRATEY;43-MWORDY;44-MCELLY;
/
45-TWIRE;46-CN1;47-EN1;48-SIZEF(15);49-SIZE6;50-SIZE6;51-SIZE6;
/
52-CX(4);53-XC;54-CX1(4);55-XC1
/
NCSUM = THE NO OF CELLS TO BE SUM UP FOR THRESH CHECK
/
THRESH= THRESH FOR PLOTING HISTOGRAM
/
TAU'S ARE MEASURED FSSP PROBE DELAYS IN SECONDS
/
DOF = FSSP MEASURED DEPTH OF FIELD (MM)
/
BDIA = FSSP MEASURED BEAM DIAMETER(MM)
/
FSSP CELL WIDTHS CORRESPONDING TO RANGES(IRANGE)1,2,3,4,(MICRONS)
/
CBIAS = CALIBRATED CELL WIDTH OFFSET      (MICRONS)
/
DEFGEN=NAMEOP, NAMPD, NAMLIB,NUMCYC,ITYPOP
DIMGEN= CALIB1,'CALPD','CALIB.IF', -1, 2
DEFGEN= PROJECT
DIMGEN= '
/
DEFGEN = QCREF
DIMGEN = ('QCX1','QCX2')
/
DEFGEN = GUSTIN
DIMGEN = ('ALAT','ALPHA','XVI','YVI','PITCH','ROLL','VZI','PALT')
DEFGEN = GUSTR
DIMGEN = ('ALAT','ALPHA','XVI','YVI','PITCH','ROLL','VZI','PALT')
/
----- PMS FSSP PROBE CONTROLS
DEFGEN =NCSUMF,THRESHF, TAU1, TAU2,TAU3
DIMGEN = 15, 50.,0.0000063,0.0000038,0.02
/
DEFGEN = DOF, BDIA, CWD, CBIAS
DIMGEN =2.74, 0.180,(3.0,2.0,1.0,0.5),(0.5,1.0,0.5,0.25)
/
DEFGEN = KRANGE,KSTROB,KRESET,MRATEF,MWORDF,MCELLF
DIMGEN = 1, 4, 5, 1, 21, 15
/
----- PMS ASAS PROBE CONTROLS
/MRATE CHANGED TO 1 AT CELIA'S REQUEST 2-22-88 JB
DEFGEN = NCSUMA,THRESHA,MRATEA,MWORDA,MCELLA

```

```

DIMGEN = 15, 50., 1, 21, 15
/ ----- PMS 200X PROBE CONTROLS
DEFGEN = NCSUMX, THRESHX, MRATEX, MWORDX, MCELLX
DIMGEN = 15, 50., 1, 21, 15
/ ----- PMS X260 PROBE CONTROLS
DEFGEN = NCSUM6, THRESH6, MRATE6, MWORD6, MCELL6
DIMGEN = 15, 50., 1, 70, 62
/ ----- PMS 200Y PROBE CONTROLS
DEFGEN = NCSUMY, THRESHY, MRATEY, MWORDY, MCELLY
DIMGEN = 15, 50., 1, 21, 15
/ ----- PMS KING LIQUID WATER CONSTANTS MODDED FOR 830 1985
DEFGEN = TWIRE, CN1, EN1
DIMGEN = 403.16, 0.22, 0.62
/
/ ----- PMS 1D CELL SIZE TABLE OR CALCULATION CONSTANT FEB1986
DEFGEN = SIZEF
DIMGEN = (1., 2., 3., 4., 5., 6., 7., 8., 9., 10., 11., 12., 13., 14., 15.)
DEFGEN = SIZEX, SIZE6, SIZEY
DIMGEN = 20., 10., 375.
/ ----- DLA/DLA1 CONSTANTS --SEP1987
DEFGEN = CX, XC
DIMGEN = (4.04, 1.063, -0.00269, -0.000671), 0.828
DEFGEN = CX1, XC1
DIMGEN = (4.156, 0.8870, -0.00425, -0.0056), 0.5
MODGEN=NUMCYC, NAMPD, NAMLIB, PROJECT, QCREF, GUSTIN, GUSTR, NCSUMF, THRESHF,
NCSUMY, THRESHY, TAU1, TAU2, TAU3, DOF, BDIA, CWD, CBIAS, NCSUMA, THRESHA,
KRANGE, KSTROB, KRESET, NCSUMX, THRESHX, NCSUM6, THRESH6,
MRATEF, MWORDF, MCELLF, MRATEA, MWORDA, MCELLA, MRATEX, MWORDX, MCELLX,
MRATE6, MWORD6, MCELL6, MRATEY, MWORDY, MCELLY, TWIRE, CN1, EN1,
SIZEF, SIZEX, SIZE6, SIZEY, CX, XC, CX1, XC1
/
/ DEFVAR =1-NAMVAR;2-INDGET;3-INRATE;4-INDPUT;5-RATE;6-UNITS;7-TITLE;
/ 8-CONS1;9-CONSN;10-CONSU;11-NUMSOU;12-DERIVE();13-CONVERT;
/ 14-KONVUF
/
DEFVAR= NAMVAR, INDGET, INRATE, INDPUT, RATE, UNITS
DIMVAR= NAMVAR, 0, 0, 0, 1, '
/
DEFVAR= TITLE
DIMVAR= '
/
DEFVAR = CONS1, CONSN, CONSU, NUMSOU
DIMVAR = 99999.0, 'CONSNAME', 'CONSUNIT', 0
/
DEFVAR= DERIVE
DIMVAR= (NOLINK)
LNKVAR= DERIVE
/
DEFVAR = CONVERT, KONVUF
DIMVAR = 1., '
/ MODVAR - THE VARIABLE CONTROLS WHICH CAN BE MODIFIED IN UD
/
MODVAR=RATE, UNITS, TITLE, DERIVE, NUMSOU, CONS1, CONSN, CONSU, CONVERT, KONVUF
/
/FUNCTION
/ DEFFUN=1-NAMFUN;2-PMS PLT NSIZE;
/ 3-PMS PLT LOGLIN;4-PMS PLT MGRY;5-PMS PLT MINRY;6-PMS PLT BOT;
/ 7-PMS PLT TOP; 8-PMS PLT LABX;9-PMS PLT LABY
/ 10-# OF STATIONS; 11-LONGITUDE; 12-LATITUDE; 13-ALTITUDE;
/ 14-FREQUENCY;
/
DEFFUN = NAMFUN
DIMFUN = NAMFUN
/
/
DEFFUN= NSIZE, LOGLIN, MGRY, MINRY, BOT, TOP

```

```

DIMFUN= 1 , 2 , 0 , 0 , 1. , 1000.
/
DEFFUN= LABX
DIMFUN= ' PMS PROBE          CELL SIZE IN MICRONS '
/
DEFFUN= LABY
DIMFUN= ' PMS          RAW ACCUMMULATION (COUNTS) '
/
MODFUN = NSIZE, LOGLIN, MGRY, MINRY, BOT, TOP, LABX, LABY
ENDDP
/
/
LIST
BEGINUD
/***** CALIB OPERATION *****/
/***** USER DIRECTIVE FILE *****/
/
/***** GENERAL AREA *****/
NUMCYC= -1
PROJECT = %D
QCREF = ('QCR', 'QCW')
/
/ ATTENTION: if MRATEX for given PMS probe does not concur with
ORDGEN= MRATEA
LETGEN= 10
/ SAMPLE as given in INPUT, reset here
ORDGEN = TWIRE, CN1, EN1
LETGEN = 403.160, 0.220, 0.620
ORDGEN = DOF, BDIA, CWD, CBIAS
LETGEN = 2.740, 0.180, (3.0, 2.0, 1.0, 0.5), (0.5, 1.0, 0.5, 0.25)
ORDGEN = TAU1, TAU2, TAU3
LETGEN = 0.00000630, 0.00000380, 0.000000
ORDGEN = SIZEF
LETGEN=(1., 2., 3., 4., 5., 6., 7., 8., 9., 10., 11., 12., 13., 14., 15.)
/
/***** VARIABLE AREA *****/
/
/DEFVAR=1-NAMVAR, 2-INDGET, 3-INRATE, 4-INDPUT, 5-RATE, 6-UNITS, 7-CONS1,
/ 8-CONSN, 9-CONSU, 10-DERIVE, 11-NUMSO, 12-TITLE, 13-IFLAG
/
/ ATTENTION: insert CALIB VECVAR here
VECVAR= HR , MIN , SEC , PTIME , TPTIME , ALPHA ,
ALAT , ALON , CLAT , CLON , DEI , DNI ,
PSFDC , PSWC , ATB , ATRF , DPTC , DPBC ,
WDR , WSR , UIR , VIR , WIR , UXR ,
VYR , HGM , PALT , HI3 , THETA , THETA E ,
THETA V , TVIR , MR , RHODT , RHODB , RHOLA ,
RHUM , SPHUM , TEO3C , XNO , XNOX , XSO2C ,
XCO , CMODE , CONCA , CONCN , RSTB , SWT , SWB ,
IRTC , IRBC , UVT , UVB , PHDG , THI ,
THF , ROLL , CROLL , PITCH , ACINS , VZI ,
WP3 , GSF , CGS , VEW , VNS , XVI ,
YVI , TASW , TASR , QCWC , QCRC , QCW ,
QCR , AKRD , SSRD , ADIFR , BDIFR , PSFD ,
PSW , PSURF , TTB , TTRF , DPT , DPB ,
VLA , RFLAG , ASAS , SUM15A , DBARA , DISPA ,
AACT , CAACT , IRT , IRB , DTT , STT ,
DTB , STB , TCAVB , XO2F , XNOF , TEO3 , XSO2 ,
TET , TEP , CNTS , FCN , FCNC , PCN , TCBADS , CCEP ,
TMLAG , DFATBR , DFDPTB , DFPKAD , DFPSWD , DFQCRW ,
RICE , V10 , V10R , TADS , TV10 , FLOADS ,
FZV , FZVR , VDREF , CKEVP , EV1 , EV2 ,
EV3 , EV4 , TSEC , GUSTR , DLA , CNCC ,
AASS01 , AASS02 , AASS03 , AASS04 , AASS05 , AASS06 , AASS07 ,
AASS08 , AASS09 , AASS10 , AASS11 , AASS12 , AASS13 ,
AASS14 , AASS15 ,

```

CASS01 ,CASS02 ,CASS03 ,CASS04 ,CASS05 ,CASS06,CASS07,
 CASS08 ,CASS09 ,CASS10 ,CASS11 ,CASS12 ,CASS13 ,
 CASS14 ,CASS15 ,ACCUMAS

/
 ORDVAR = CONSN, CONSU, CONS1 /VARNAME
 /

LETVAR = 'RECF ' , ' ND ' , 0.95, %FOR, ATB
 LETVAR = 'RECF ' , ' ND ' , 0.60, %FOR, ATRF
 LETVAR = 'ASTG ' , ' MB ' , astgxx, %FOR, PALT
 LETVAR = 'XKT ' , ' ' , 5.50, %FOR, IRTC
 LETVAR = 'XKB ' , ' ' , 5.50, %FOR, IRBC
 LETVAR = 'RECF ' , ' ND ' , 0.95, %FOR, TASW
 LETVAR = 'RECF ' , ' ND ' , 0.95, %FOR, TASR
 LETVAR = 'OFFSET 2' , ' MB ' , 0.00, %FOR, QCRC
 LETVAR = 'BIAS 312' , ' DEG ' , 0.00, %FOR, AKRD
 LETVAR = 'BIAS 312' , ' DEG ' , 0.00, %FOR, SSRD
 LETVAR = 'HISTOG ' , ' SEC ' , 60.00, %FOR, ASAS
 LETVAR = 'BOOMLN 2' , ' M ' , 5.80, %FOR, GUSTR
 LETVAR = 'THRSH ' , ' PERCEN' , 200.00, %FOR, DLA
 /

ORDVAR=NUMSOU, DERIVE
 LETVAR= 2, [PSFD , QCR] , %FOR, PSFDC
 LETVAR= 2, [PSW , QCW] , %FOR, PSWC
 LETVAR= 3, [TTB , QCRC , PSFDC] , %FOR, ATB
 LETVAR= 3, [TTRF , QCWC , PSFDC] , %FOR, ATRF
 LETVAR= 1, [DPT] , %FOR, DPTC
 LETVAR= 1, [DPB] , %FOR, DPBC
 LETVAR= 1, [PSFDC] , %FOR, PALT
 LETVAR= 2, [ATB , PSFDC] , %FOR, THETA
 LETVAR= 4, [DPBC , ATB , PSFDC , MR] , %FOR, THETA
 LETVAR= 3, [ATB , MR , PSFDC] , %FOR, THETA
 LETVAR= 2, [ATB , MR] , %FOR, TVIR
 LETVAR= 2, [DPBC , PSFDC] , %FOR, MR
 LETVAR= 3, [DPTC , ATB , PSFDC] , %FOR, RHODT
 LETVAR= 3, [DPBC , ATB , PSFDC] , %FOR, RHODB
 LETVAR= 3, [DPBC , ATB , PSFDC] , %FOR, RHUM
 LETVAR= 2, [DPBC , PSFDC] , %FOR, SPHUM
 LETVAR= 3, [TEO3 , TEP , TET] , %FOR, TEO3C
 LETVAR= 3, [DTT , STT , IRT] , %FOR, IRTC
 LETVAR= 3, [DTB , STB , IRB] , %FOR, IRBC
 LETVAR= 2, [XVI , YVI] , %FOR, GSF
 LETVAR= 3, [TTB , QCWC , PSFDC] , %FOR, TASW
 LETVAR= 3, [TTB , QCRC , PSFDC] , %FOR, TASR
 LETVAR= 1, [QCW] , %FOR, QCWC
 LETVAR= 3, [QCR , ADIFR , BDIFR] , %FOR, QCRC
 LETVAR= 2, [ADIFR , QCRC] , %FOR, AKRD
 LETVAR= 2, [BDIFR , QCRC] , %FOR, SSRD
 LETVAR= 4, [ATB , MR , PSFDC , HGM] , %FOR, PSURE
 /LETVAR= 3, [FCN , PCN , TCBADS] , %FOR, FCNC
 /LETVAR= 2, [CNTS , FCNC] , %FOR, CONCNC
 LETVAR= 4, [PCN, FCN, TCBADS, CNTS] , %FOR, CNCC
 LETVAR= 2, [XSO2 , PSFDC] , %FOR, XSO2C
 LETVAR= 2, [TPTIME , TASR] , %FOR, ASAS
 LETVAR= 2, [ATB , ATRF] , %FOR, DFATBR
 LETVAR= 2, [DPTC , DPBC] , %FOR, DFDPTB
 LETVAR= 2, [PITCH , AKRD] , %FOR, DFPHAKD
 LETVAR= 2, [PSWC , PSFDC] , %FOR, DFPSWD
 LETVAR= 2, [QCRC , QCWC] , %FOR, DFQCRW
 LETVAR= 5, [THF , TASR , TASR , AKRD , SSRD] , %FOR, GUSTR
 LETVAR= 4, [VLA , ATB , PSFDC , RHODB] , %FOR, DLA
 /

RATE= %T

/ ATTENTION:

RATE= 1, %FOR,
 HR , MIN , SEC , PTIME , TPTIME , ALON ,
 CLAT , CLON , DEI , DNI , TEO3C , XNO ,

```

XNOX      ,XCO      ,CMODE      ,RSTB      ,SWT      ,
SWB        ,IRTC      ,IRBC      ,UVT      ,UVB      ,PHDG      ,
THI        ,CROLL     ,CGS      ,IRT      ,IRB      ,DTT      ,
STT        ,DTB      ,STB      ,TCAVB     ,XO2F     ,XNOF      ,
TEO3       ,TET      ,TEP      ,FCN      ,PCN      ,CCEP      ,
TMLAG      ,DFATBR    ,DFDPTB   ,DFPHAKD  ,DFPSWD   ,DFQCRW   ,
RICE       ,V10      ,V10R     ,TADS     ,TV10     ,FLOADS   ,
FZV        ,FZVR     ,VDREF    ,CKEVP    ,EV1      ,EV2      ,
EV3        ,EV4      ,TSEC     ,FCNC     ,TCBADS   ,

RATE= 1,%FOR,
CONCA      ,SUM15A    ,DBARA    ,DISPA    ,AACT     ,CAACT     ,
AASS06     ,AASS01    ,AASS02    ,AASS03    ,AASS04    ,AASS05    ,
AASS07     ,AASS08    ,AASS09    ,AASS10    ,AASS11    ,AASS12    ,
AASS13     ,AASS14    ,AASS15    ,
CASS06     ,CASS01    ,CASS02    ,CASS03    ,CASS04    ,CASS05    ,
CASS07     ,CASS08    ,CASS09    ,CASS10    ,CASS11    ,CASS12    ,
CASS13     ,CASS14    ,CASS15    ,

RATE= 20,%FOR,
ALPHA      ,ALAT      ,PSFDC     ,PSWC     ,ATB      ,ATRF      ,
DPTC       ,DPBC      ,WDR       ,WSR      ,UIR      ,VIR      ,
WIR        ,UXR      ,VYR      ,HGM      ,PALT     ,HI3      ,
THETA      ,THETA     ,THETA     ,TVIR     ,MR       ,RHODT    ,
RHODB      ,RHOLA     ,RHUM      ,SPHUM    ,THF      ,ROLL     ,
PITCH      ,ACINS     ,VZI      ,WP3      ,GSF      ,VEW      ,
VNS        ,XVI      ,YVI      ,TASW     ,TASR     ,QCWC     ,
QCRC       ,QCW       ,QCR      ,AKRD     ,SSRD     ,ADIFR    ,
BDIFR      ,PSFD      ,PSW      ,PSURF    ,TTB      ,TTRF     ,
DPT        ,DPB      ,VLA      ,REFLAG   ,GUSTR    ,XS02    ,
XSO2C      ,DLA

RATE= 150,%FOR, ACCUMAS
RATE= 210,%FOR,
ASAS

/
/ ATTENTION: insert CALPMS FUNCTIONS here if any PMS probes are used
/DEFFUN=1-NAMFUN,2-NSIZE ,3-LOGLIN,4-MGRY ,5-MINRY ,
/ 6-BOT,7-TOP ,8-LABX, 9-LABY
/
VECFUN=CASAS /,AASAS
/
ORDFUN= NSIZE, LOGLIN, MGRY, MINRY, BOT, TOP
LETFUN= 1 , 2 , 0 , 0 , 0. , 0.0, %FOR,AASAS
LETFUN= 1 , 2 , 0 , 0 , 0. , 0.0, %FOR,CASAS
/
LABX = ' ASAS PROBE CELL SIZE IN MICRONS ' ,%FOR,AASAS
LABX = ' ASAS PROBE CELL SIZE IN MICRONS ' ,%FOR,CASAS
/
LABY = ' ASAS CONCENTRATION (N/CC) ' ,%FOR,CASAS
LABY = ' ASAS ACCUMMULATION (COUNT) ' ,%FOR,AASAS
/
/ and change names of probes as needed
UNITS = %T
TITLE = %T
/
/ ATTENTION: insert CALIB TITLES here
ORDVAR= TITLE
LETVAR='UNALTERED TAPE TIME ' , ' HR ' ,%FOR,HR
LETVAR='UNALTERED TAPE TIME ' , ' MIN ' ,%FOR,MIN
LETVAR='UNALTERED TAPE TIME ' , ' S ' ,%FOR,SEC
LETVAR='PROCESSOR TIME ' , ' S ' ,%FOR,PTIME
LETVAR='RAW TAPE TIME ' , ' S ' ,%FOR,TPTIME
LETVAR='INS WANDER ANGLE ' , ' DEG ' ,%FOR,ALPHA
LETVAR='INS LATITUDE ' , ' DEG ' ,%FOR,ALAT
LETVAR='INS LONGITUDE ' , ' DEG ' ,%FOR,ALON
LETVAR='LORAN C LATITUDE ' , ' DEG ' ,%FOR,CLAT
LETVAR='LORAN C LONGITUDE ' , ' DEG ' ,%FOR,CLON
LETVAR='DISTANCE EAST OF START ' , ' KM ' ,%FOR,DEI

```

LETVAR='DISTANCE NORTH OF START	' , ' KM	' , %FOR, DNI
LETVAR='CORRECTED STATIC PRESSURE (FUSELAGE DI)	' , ' MB	' , %FOR, PSFDC
LETVAR='CORRECTED STATIC PRESSURE (WING)	' , ' MB	' , %FOR, PSWC
LETVAR='AMBIENT TEMPERATURE (BOOM)	' , ' C	' , %FOR, ATB
LETVAR='AMBIENT TEMPERATURE (REVERSE FLOW)	' , ' C	' , %FOR, ATRF
LETVAR='DEW POINT TEMPERATURE (THERMOELEC) (TOP)	' , ' C	' , %FOR, DPTC
LETVAR='DEW POINT TEMPERATURE (THERMOELEC) (BOT)	' , ' C	' , %FOR, DPBC
LETVAR='HORIZONTAL WIND DIRECTION (RADOME)	' , ' DEG	' , %FOR, WDR
LETVAR='HORIZONTAL WIND SPEED (RADOME)	' , ' M/S	' , %FOR, WSR
LETVAR='WIND EAST COMPONENT (RADOME)	' , ' M/S	' , %FOR, UIR
LETVAR='WIND NORTH COMPONENT (RADOME)	' , ' M/S	' , %FOR, VIR
LETVAR='WIND VERTICAL COMPONENT (RADOME)	' , ' M/S	' , %FOR, WIR
LETVAR='WIND LONGITUDINAL COMPONENT (RADOME)	' , ' M/S	' , %FOR, UXR
LETVAR='WIND LATERAL COMPONENT (RADOME)	' , ' M/S	' , %FOR, VYR
LETVAR='NACA PRESSURE ALTITUDE	' , ' M	' , %FOR, PALT
LETVAR='PRESSURE-DAMPED INERTIAL ALTITUDE	' , ' M	' , %FOR, HI3
LETVAR='POTENTIAL TEMPERATURE	' , ' K	' , %FOR, THETA
LETVAR='EQUIVALENT POTENTIAL TEMPERATURE	' , ' K	' , %FOR, THETA E
LETVAR='VIRTUAL POTENTIAL TEMPERATURE	' , ' K	' , %FOR, THETA V
LETVAR='VIRTUAL TEMPERATURE	' , ' C	' , %FOR, TVIR
LETVAR='MIXING RATIO	' , ' G/KG	' , %FOR, MR
LETVAR='ABSOLUTE HUMIDITY (THERMOELEC) (TOP)	' , ' G/M3	' , %FOR, RHODT
LETVAR='ABSOLUTE HUMIDITY (THERMOELEC) (BOT)	' , ' G/M3	' , %FOR, RHODB
LETVAR='CORRECTED L-A ABSOLUTE HUMIDITY	' , ' GM-3	' , %FOR, RHOLA
LETVAR='RELATIVE HUMIDITY	' , ' PCT	' , %FOR, RHUM
LETVAR='SPECIFIC HUMIDITY	' , ' G/KG	' , %FOR, SPHUM
LETVAR='CORRECTED OZONE CONCENTRATION	' , ' PPB	' , %FOR, TEO3C
LETVAR='ASAS PROBE CONCENTRATION (0.17-3.1um)	' , ' N/CM3	' , %FOR, CONCA
LETVAR='CN PARTICLE CONCENTRATION (0.01-3.0um)	' , ' N/CM3	' , %FOR, CONCN
LETVAR='CORRECTED CN SAMPLE FLOW	' , ' L/M	' , %FOR, FCNC
LETVAR='CORRECTED SULFUR DIOXIDE CONCENTRATION	' , ' PPB	' , %FOR, XS02C
LETVAR='TOP INFRARED CORRECTED IRRADIANCE	' , ' W/M2	' , %FOR, IRTC
LETVAR='BOTTOM INFRARED CORRECTED IRRADIANCE	' , ' W/M2	' , %FOR, IRBC
LETVAR='PLATFORM HEADING	' , ' DEG	' , %FOR, PHDG
LETVAR='AIRCRAFT TRUE HEADING (ARINC)	' , ' DEG	' , %FOR, THI
LETVAR='AIRCRAFT TRUE HEADING	' , ' DEG	' , %FOR, THF
LETVAR='AIRCRAFT ROLL ATTITUDE ANGLE	' , ' DEG	' , %FOR, ROLL
LETVAR='AIRCRAFT COARSE ROLL ANGLE	' , ' DEG	' , %FOR, CROLL
LETVAR='AIRCRAFT PITCH ATTITUDE ANGLE	' , ' DEG	' , %FOR, PITCH
LETVAR='AIRCRAFT INS ACCELERATION	' , ' M/S2	' , %FOR, ACINS
LETVAR='RAW INS VERTICAL VELOCITY	' , ' M/S	' , %FOR, VZI
LETVAR='DAMPED AIRCRAFT VERTICAL VELOCITY	' , ' M/S	' , %FOR, WP3
LETVAR='INS GROUND SPEED	' , ' M/S	' , %FOR, GSF
LETVAR='LORAN C GROUND SPEED	' , ' M/S	' , %FOR, CGS
LETVAR='INS GROUND SPEED EAST COMPONENT	' , ' M/S	' , %FOR, VEW
LETVAR='INS GROUND SPEED NORTH COMPONENT	' , ' M/S	' , %FOR, VNS
LETVAR='INS GROUND SPEED X COMPONENT	' , ' M/S	' , %FOR, XVI
LETVAR='INS GROUND SPEED Y COMPONENT	' , ' M/S	' , %FOR, YVI
LETVAR='AIRCRAFT TRUE AIRSPEED (WING)	' , ' M/S	' , %FOR, TASW
LETVAR='AIRCRAFT TRUE AIRSPEED (RADOME)	' , ' M/S	' , %FOR, TASR
LETVAR='CORRECTED DYNAMIC PRESSURE (WING)	' , ' MB	' , %FOR, QCWC
LETVAR='CORRECTED DYNAMIC PRESSURE (RADOME)	' , ' MB	' , %FOR, QCRC
LETVAR='ATTACK ANGLE (RADOME)	' , ' DEG	' , %FOR, AKRD
LETVAR='SIDESLIP ANGLE (RADOME)	' , ' DEG	' , %FOR, SSRD
LETVAR='RAW STATIC PRESSURE (FUSELAGE DI)	' , ' MB	' , %FOR, PSFD
LETVAR='SURFACE PRESSURE	' , ' MB	' , %FOR, PSURF
LETVAR='FLAG=-1.0, ((RHOLA-RHODT)/RHODT) > .20	' , ' ' ,	' , %FOR, RFLAG
LETVAR='PMS ASAS PROBE	' , ' CNTS	' , %FOR, ASAS
LETVAR='PMS ASAS PROBE (TOTAL COUNTS)	' , ' CNTS	' , %FOR, SUM15A
LETVAR='ASASP MEAN DIAMETER	' , ' MICRON	' , %FOR, DBARA
LETVAR='ASASP DISPERSION (SIGMA/DBARA)	' , ' ' ,	' , %FOR, DISPA
LETVAR='ASASP RAW ACTIVITY COUNTS	' , ' ' ,	' , %FOR, AACT
LETVAR='ASAS CALCULATED ACTIVITY	' , ' PCT	' , %FOR, CAACT
LETVAR='LORAN C CIRC ERROR OF PROBABILITY	' , ' NMI	' , %FOR, CCEP
LETVAR='ARINC TIME LAG	' , ' S	' , %FOR, TMLAG
LETVAR='ATB - ATRF	' , ' C	' , %FOR, DFATBR

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LETVAR='DPTC      -   DPBC
LETVAR='PITCH     -   AKRD
LETVAR='PSWC      -   PSFDC
LETVAR='QCRC      -   QCWC
LETVAR='10-V REFERENCE
LETVAR='10-V REFERENCE THROUGH RESISTOR
LETVAR='AIR TEMP ADS INTERFACE
LETVAR='TEMP OF VOLTAGE REFERENCE
LETVAR='AIR TEMP FLOW MONITOR - ADS
LETVAR='FIXED ZERO VOLTAGE
LETVAR='FIXED ZERO VOLTAGE THRU RESISTOR
LETVAR='DIFFERENCE OF 10-V REFERENCES
LETVAR='COCKPIT EVENT (BITS 0-5)
LETVAR='EVENT PAD (1)
LETVAR='EVENT PAD (2)
LETVAR='EVENT PAD (3)
LETVAR='EVENT PAD (4)
LETVAR='TIME OF DAY IN SECONDS AFTER MIDNIGHT
LETVAR='KEYWORD
LETVAR='ASASP CORRECTED ACCUMULATION CELL 01
LETVAR='ASASP CORRECTED ACCUMULATION CELL 02
LETVAR='ASASP CORRECTED ACCUMULATION CELL 03
LETVAR='ASASP CORRECTED ACCUMULATION CELL 04
LETVAR='ASASP CORRECTED ACCUMULATION CELL 05
LETVAR='ASASP CORRECTED ACCUMULATION CELL 06
LETVAR='ASASP CORRECTED ACCUMULATION CELL 07
LETVAR='ASASP CORRECTED ACCUMULATION CELL 08
LETVAR='ASASP CORRECTED ACCUMULATION CELL 09
LETVAR='ASASP CORRECTED ACCUMULATION CELL 10
LETVAR='ASASP CORRECTED ACCUMULATION CELL 11
LETVAR='ASASP CORRECTED ACCUMULATION CELL 12
LETVAR='ASASP CORRECTED ACCUMULATION CELL 13
LETVAR='ASASP CORRECTED ACCUMULATION CELL 14
LETVAR='ASASP CORRECTED ACCUMULATION CELL 15
LETVAR='ASASP CORRECTED CONCENTRATION CELL 01
LETVAR='ASASP CORRECTED CONCENTRATION CELL 02
LETVAR='ASASP CORRECTED CONCENTRATION CELL 03
LETVAR='ASASP CORRECTED CONCENTRATION CELL 04
LETVAR='ASASP CORRECTED CONCENTRATION CELL 05
LETVAR='ASASP CORRECTED CONCENTRATION CELL 06
LETVAR='ASASP CORRECTED CONCENTRATION CELL 07
LETVAR='ASASP CORRECTED CONCENTRATION CELL 08
LETVAR='ASASP CORRECTED CONCENTRATION CELL 09
LETVAR='ASASP CORRECTED CONCENTRATION CELL 10
LETVAR='ASASP CORRECTED CONCENTRATION CELL 11
LETVAR='ASASP CORRECTED CONCENTRATION CELL 12
LETVAR='ASASP CORRECTED CONCENTRATION CELL 13
LETVAR='ASASP CORRECTED CONCENTRATION CELL 14
LETVAR='ASASP CORRECTED CONCENTRATION CELL 15
/ ATTENTION: insert ADSUD TITLES if it was generated FOR THIS PROJECT
/
ENDUD
/
/ ATTENTION: if HRT deck, insert here: TERP2 OPCODE
/-----INTERP PD01
/ FETCH 241,262
BEGINPD
/
/          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/          X  TERP  OPERATION              X
/          X PROGRAMMER DIRECTIVE FILE      X
/          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN = NAMEOP, ITYPOP, NUMCYC, OVLAP, NAMPD, NAMLIB
DIMGEN = TERP , 2, -1, 0, 'NONE', 'NONE'
/
MODGEN = NAMPD, NAMLIB, NUMCYC, OVLAP

```

```

/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT
DIMVAR = NAMVAR, 0, 0, 0
/
DEFVAR = RATE, TRPTYP, LOWPAS, SOURCE
DIMVAR = 1, 1, NO, NOLINK
/
MODVAR = RATE, TRPTYP, LOWPAS, SOURCE
/
LNKVAR = SOURCE
/
ENDPD /*****
LIST
BEGINUD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X TERP OPERATION X
/
X USER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TRPTYP = 3
VECVAR = %T
REMVAR = ASAS
RATE = %T
/Some of these rates may be unnecessary, but are include for
/ documentation puposes
LOWPAS= YES,%FOR,
HR ,MIN ,SEC ,HGM ,PSW ,DPT ,
DPB ,RSTB ,RICE ,SWT ,SWB ,IRT ,
IRB ,DTT ,STT ,DTB ,STB ,TCAVB ,
TEO3 ,XSO2 ,FCN ,PCN ,CMODE ,UVT ,
UVB ,XNO ,XNOX ,XO2F ,XNOF ,XCO ,
CROLL ,PSFD ,TEP ,TET ,TSEC ,ALAT ,
ALON ,THI ,ALPHA ,V10 ,V10R ,TADS ,
TV10 ,FLOADS ,FZV ,FZVR ,VDREF ,EV1 ,
EV2 ,EV3 ,EV4 ,DPBC ,DPTC ,IRBC ,
IRTC ,PSFDC ,PSWC ,PALT ,TVIR ,MR ,
RHODT ,RHODB ,RHUM ,SPHUM ,PSURF ,FCNC ,TCBADS,XSO2C
RATE = 1,%FOR,
HR ,MIN ,SEC ,HGM ,PSW ,DPT ,
DPB ,RSTB ,RICE ,SWT ,SWB ,IRT ,
IRB ,DTT ,STT ,DTB ,STB ,TCAVB ,
TEO3 ,XSO2 ,FCN ,PCN ,CMODE ,UVT ,
UVB ,XNO ,XNOX ,XO2F ,XNOF ,XCO ,
CROLL ,PSFD ,TEP ,TET ,TSEC ,ALAT ,
ALON ,THI ,ALPHA ,V10 ,V10R ,TADS ,
TV10 ,FLOADS ,FZV ,FZVR ,VDREF ,EV1 ,
EV2 ,EV3 ,EV4 ,DPBC ,DPTC ,IRBC ,
IRTC ,PSFDC ,PSWC ,PALT ,TVIR ,MR ,
RHODT ,RHODB ,RHUM ,SPHUM ,PSURF ,FCNC ,TCBADS,XSO2C
ENDUD
/
/
NOLIST
ENDUD
/
NOLIST
/-----OUTPUT PD01
/ FETCH 330,392
BEGINPD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X OUTPUT OPERATION X
/
X PROGRAMMER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN = NAMEOP, ITYPOP, NAMPD, NAMLIB
DIMGEN = OUTPUT, 0, 'NONE', 'NONE'
/

```

```

DEFGEN = BEGSNP, ENDSNP
DIMGEN = (00.,00.,00.0), (99.,00.,00.0)
/
DEFGEN = NUMCYC, FLUSHP, MEDIA
DIMGEN = 1, 1, 0
/
DEFGEN = CHRBIT, HDRCHR, HDRWRT, LOGBIT, DATBIT, DATWRT
DIMGEN = 0, 0, 0, 0, 0, 0
/
DEFGEN = SCLCNT
DIMGEN = 0
/
DEFGEN = OUNIT, DEVBIT
DIMGEN = 30, 8
/
DEFGEN = PROJECT
DIMGEN = ' PROJECT NAME '
/
DEFGEN = COMMENT
DIMGEN = ' GENPRO OUTPUT '
/
DEFGEN = HDROPT, HDRLOG, HDRSIZ
DIMGEN = (HEADER, LOGICAL, ASCII), 1, 5760
/
DEFGEN = DATOPT, DATLOG, DATSIZ
DIMGEN = (AUTO, LOGICAL), 1, 5760
/
DEFGEN = KOUT, PRINT
DIMGEN = (KPROC), <(HEADER), (SUMMARY)>
/
DEFGEN = SCLERR
DIMGEN = (20,100)
/ -----
MODGEN = NAMPD, BEGSNP, ENDSNP, NUMCYC, OUNIT, DEVBIT, PROJECT, COMMENT,
        HDROPT, HDRLOG, HDRSIZ, DATOPT, DATLOG, DATSIZ, KOUT, PRINT, SCLERR
/ -----
/
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT, RATE
DIMVAR = NAMVAR, 0, 0, 0, 1
/
DEFVAR = ERRCNT
DIMVAR = 0
/
DEFVAR = NEWNAM, TITLE, UNITS
DIMVAR = ' ', ' '
/
DEFVAR = TERM, FACTOR, CONKEY, SCLKEY, BITS, FSTBIT, SKIP
DIMVAR = 0.0, 1.0, 1, 2, 20, 0, 0
/ -----
MODVAR = RATE, NEWNAM, TITLE, UNITS, TERM, FACTOR, CONKEY,
        SCLKEY, BITS, FSTBIT, SKIP
/ -----
ENDPD /*****
/
LIST
BEGINUD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X OUTPUT OPERATION X
/
X USER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
NUMCYC = -1
OUNIT = 21
/ 762 -----
BEGSNP= %D
ENDSNP= %D

```

```

PROJECT = %D
COMMENT = (
    NCAR RAF MAGNETIC TAPE FORMATS
    (
    THE CALIBRATED MAGNETIC TAPES ARE PRODUCED BY THE NCAR RAF DATA
    (
    MANAGEMENT GROUP, WITH THE GENPRO-II DATA PROCESSING SOFTWARE.
    (
    THE FORMAT OF THESE TAPES INCLUDES A HEADER FILE AND A DATA FILE
    (
    WHICH CORRESPONDS TO ALL OR PART OF A PARTICULAR AIRCRAFT FLIGHT
    (
    - HEADER FILE DESCRIPTION
    (
    THE HEADER FILE DESCRIBING THE DATA FORMATS IS IN ASCII
    (
    CHARACTER FORMAT, 80 CHARACTERS TO A LOGICAL RECORD AND 10
    (
    LOGICAL RECORDS TO A PHYSICAL RECORD.
    (
    THE HEADER FILE IS DIVIDED INTO THE FOLLOWING FIVE SECTIONS:
    (
    1. THE GENERAL INFORMATION SECTION CONSISTS OF THREE PARTS:
    (
    A) THE TITLE LINE IS (BEGINHD). THIS PART CONTAINS THE
    (
    INFORMATION PERTAINING TO HEADER FILE: HEADER RECORD OP-
    (
    TIONS(HDRDPT), LOGICAL HEADER RECORDS PER PHYSICAL RECORD
    (
    (HDRLOG), PHYSICAL HEADER RECORD SIZE IN BITS(HDRSIZ),
    (
    RESEARCH FLIGHT PROJECT TITLE(PROJECT), RESEARCH FLIGHT
    (
    DATE(PRDATE), RESEARCH FLIGHT TIME(PRTIME), BEGINNING TIME
    (
    (BEGSNP), AND ENDING TIME(ENDSNP).
    (
    B) THE TITLE LINE IS (COMMENT= NCAR RAF MAGNETIC TAPE
    (
    FORMATS). THIS PART DESCRIBES THE DATA FORMAT OF
    (
    GENPRO-II GENERATED DATA SETS.
    (
    C) THIS PART CONTAINS INFORMATION PERTAINING TO DATA SET
    (
    GENERATION AND THE DATA FILE: PRODUCTION JOB EXECUTION
    (
    DATE(EXDATE), EXECUTION TIME(EXTIME), COMPUTER USED FOR
    (
    THE JOB(MACHINE), JOB IDENTIFICATION(JOBID), MEDIA NUMBER
    (
    (MEDIA), DATA RECORD OPTIONS(DATOPT), BITS PER LOGICAL
    (
    DATA RECORD(LOGBIT), LOGICAL DATA RECORDS PER PHYSICAL
    (
    RECORD(DATLOG) AND PHYSICAL DATA RECORD SIZE IN BITS
    (
    (DATSIZ).
    (
    2. THE TITLE LINE OF THE VARIABLE NAME LIST SECTION IS
    (
    (/VARIABLE WRITTEN FOR THIS SNAPSHOT PERIOD). VARIABLE
    (
    NAMES ARE LISTED ON THE FOLLOWING LINES THAT BEGIN WITH
    (
    (APPVAR=). THIS SECTION CONTAINS ALL THE VARIABLE NAMES THAT
    (
    ARE ON THE DATA FILE. A BRIEF DESCRIPTION OF EACH VARIABLE
    (
    IS GIVEN IN SECTION 3.
    (
    3. THE TITLE LINE OF THIS SECTION IS (ORDVAR = TITLE). EACH
    (
    LINE FOLLOWING WILL BEGIN WITH (LETVAR=) AND BE FOLLOWED BY
    (
    THE VARIABLE TITLE. AT THE END OF THAT LINE, (%FOR,) IS
    (
    FOLLOWED BY THE VARIABLE NAME.
    (
    4. THE TITLE LINE OF THIS SECTION IS (ORDVAR = UNITS, SAMPLE,
    (
    RATE, BITS, FSTBIT, SKIP). EACH LINE FOLLOWING WILL BEGIN
    (
    WITH (LETVAR =), AND BE FOLLOWED BY THE VARIABLE UNITS
    (
    (UNITS), SAMPLING RATE(SAMPLE), OUTPUT RATE(RATE), BIT
    (
    LENGTH OF EACH DATA VALUE(BITS), FIRST BIT LOCATION OF EACH
    (
    VARIABLE(FSTBIT) AND NUMBER OF BITS BETWEEN TWO SEQUENTIAL
    (
    DATA VALUES FOR THE SAME VARIABLE(SKIP). AT THE END OF
    (
    THAT LINE, (%FOR,) IS FOLLOWED BY THE VARIABLE NAME.
    (
    5. THE TITLE LINE OF THIS SECTION IS (ORDVAR = CONKEY, SCLKEY,
    (
    TERM, FACTOR). EACH LINE FOLLOWING WILL BEGIN WITH
    (
    (LETVAR =) AND BE FOLLOWED BY THE CONVERSION CODE USED BY
    (
    GENPRO(CONKEY), THE SCALING ALGORITHM SELECTION(SCLKEY),
    (
    THE VALUE OF THE SCALING TERM(TERM), AND THE SCALING FACTOR
    (
    (FACTOR). AT THE END OF THAT LINE, (%FOR,) IS FOLLOWED BY
    (
    THE VARIABLE NAME.
    (
    - DATA FILE DESCRIPTION
    (
    THE DATA FILE CONTAINS DATA VALUES OF VARIABLES OVER A
    (
    SPECIFIED TIME PERIOD (FROM BEGSNP TO ENDSNP) OF A PROJECT
    (
    PRODUCTION FLIGHT. A GENPRO CYCLE INTERVAL OF DATA IS OUTPUT AS
    (
    A DATA LOGICAL RECORD, WHERE ONE GENPRO CYCLE INTERVAL IS 1
    (
    SECOND(S) FOR THIS PROJECT. BEFORE THE DATA ARE WRITTEN TO THE
    (
    OUTPUT DESTINATION, EACH DATA VALUE IS SCALED AND TRUNCATED TO A
    (
    SPECIFIED NUMBER OF BINARY BITS ("BITS") AND THEN WRITTEN AS A
    (
    POSITIVE INTEGER. (I.E. A "TERM" IS ADDED TO EACH VALUE OF
    (
    VARIABLE AND THE RESULT IS MULTIPLIED BY A "FACTOR".)
    (
    EACH VARIABLE IN THE DATA FILE HAS A CORRESPONDING "FSTBIT",
    (

```

```

(' "BITS", "RATE", "TERM", AND "FACTOR". A GIVEN VARIABLE CAN BE '),
(' CONVERTED FROM A PACKED INTEGER VALUE TO AN UNPACKED REAL VALUE '),
(' BY FOLLOWING THIS PROCEDURE: '),
(' TAKE "BITS" NUMBER OF BITS STARTING AT "FSTBIT" '),
(' FROM THIS INTEGER VALUE DIVIDE BY THE "FACTOR" '),
(' AND THEN SUBTRACT THE BIAS "TERM" FROM THE RESULT. '),
(' IF THE VARIABLE HAS MORE THAN ONE SAMPLE PER GENPRO CYCLE '),
(' INTERVAL IN A LOGICAL RECORD, THE PROCEDURE MUST BE REPEATED '),
(' "RATE" TIMES IN A LOOP WHERE I=1 TO "RATE". THE STARTING BIT '),
(' NUMBER FOR EACH SEPARATE ITERATION IS THEN: '),
(' FSTBIT + BITS*(I-1) '),
(' IF ALL PACKED VALUES ARE UNPACKED AND PLACED IN AN ARRAY, '),
(' THE FOLLOWING EQUATION MAY BE USED TO OBTAIN THE STARTING '),
(' INDEX OF A GIVEN VARIABLE (IVAR) WITHIN THE UNPACKED ARRAY: '),
(' INDEX(IVAR) = ((FSTBIT(IVAR)-1)/BITS)+1 ')
/

```

HDROPT = (HEADER,NOSPAN,ASCII)

TERM=1000.

FACTOR=1000.

/ INSERT TERMVARS FILE

/

/END TERMVARS FILE

HDRLOG = 10

HDRSIZ = 6400

DATOPT = (AUTO,LOGICAL)

DATLOG = 3

/ ATTENTION: insert OUTPUT VECVAR here

```

VECVAR= HR      ,MIN      ,SEC      ,TPTIME  ,PTIME    ,ALAT    ,
        ALON     ,DEI      ,DNI      ,PSFDC   ,          ,
        PSWC     ,DPTC     ,DPBC     ,HGM      ,PALT     ,TVIR     ,
        MR       ,RHODT    ,RHODB    ,RHUM     ,SPHUM    ,TEO3C    ,
        XNO      ,XNOX     ,XCO      ,CMODE    ,RSTB     ,
        SWT      ,SWB      ,IRTC     ,IRBC     ,UVT      ,UVB      ,
        THI      ,CROLL    ,PSFD     ,PSW      ,PSURF    ,
        DPT      ,DPB      ,IRT      ,IRB      ,DTT      ,STT      ,
        DTB      ,STB      ,TCAVB    ,XO2F     ,XNOF,XSO2,TEO3 ,
        TET      ,TEP      ,FCN      ,PCN      ,TMLAG    ,
        RICE     ,V10      ,V10R     ,TADS     ,TV10     ,
        FLOADS   ,FZV      ,FZVR     ,VDREF    ,EV1      ,EV2      ,
        EV3      ,EV4      ,CONCA    ,SUM15A   ,DBARA    ,DISPA, AACT,CAACT,
        AASS01   ,AASS02   ,AASS03   ,AASS04   ,AASS05   ,AASS06,AASS07,
        AASS08   ,AASS09   ,AASS10   ,AASS11   ,AASS12   ,AASS13 ,
        AASS14   ,AASS15   ,
        CASS01   ,CASS02   ,CASS03   ,CASS04   ,
        CASS05   ,CASS06   ,CASS07   ,CASS08   ,CASS09   ,CASS10 ,
        CASS11   ,CASS12   ,CASS13   ,CASS14   ,CASS15   ,ATB     ,
        ATRF     ,WDR      ,WSR      ,UIR      ,VIR      ,WIR      ,
        UXR      ,VYR      ,HI3      ,THETA    ,THETAE   ,THETAV  ,
        RHOLA    ,PHDG     ,THF      ,ROLL     ,PITCH    ,ACINS   ,
        VZI      ,WP3      ,GSF      ,VEW      ,VNS      ,XVI      ,
        YVI      ,TASW     ,TASR     ,QCWC     ,QCRC     ,QCW      ,
        QCR      ,AKRD     ,SSRD     ,ADIFR    ,BDIFR    ,TTB      ,
        TTRF ,VLA ,RFLAG ,CNTS ,TCBADS ,FCNC ,CONCN ,XSO2C ,ACCUMAS

```

RATE = %T

TITLE = %T

UNITS = %T

BITS = 32

ENDUD

/

NOLIST

/-----STATS PD01

/ FETCH 585,628

BEGINPD

/

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

/

X STATS OPERATION X

/

X PROGRAMMER DIRECTIVE FILE X

```

/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN=NAMEOP ,NAMPD ,NAMLIB ,ITYPOP ,NUMCYC
DIMGEN= STATS,'NONE ','NONE ' ,0 , -2
/
DEFGEN = BEGSNP, ENDSNP, FLUSHP, KOUT
DIMGEN= (00.,00.,00.), (99.,99.,99.), 900, (KPRINT)
/
DEFGEN = LOUT
DIMGEN = <(RATE), (UNITS), (NPTOT), (XMAX), (XMIN), (XMEAN), (SIGMA), (SKEW),
(KURTOSIS), (NDEL), (DLMAX), (DLMIN), (DLMEN), (DELSIG), (NUMGAP), (STOP)>
/
DEFGEN = PROJECT
DIMGEN= '
/
DEFGEN = MAXCHR
DIMGEN = 128
/
MODGEN = NAMPD, NAMLIB, NUMCYC, BEGSNP, ENDSNP, FLUSHP, KOUT, LOUT,
PROJECT, MAXCHR
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT
DIMVAR = NAMVAR, 0, 0, 0
/
DEFVAR=RATE
DIMVAR=1
/
DEFVAR = UNITS
DIMVAR = '
/
DEFVAR = NPTOT, XMAX, XMIN, XMEAN, SIGMA, SKEW, KURTOSIS
DIMVAR = 0, -9.E32, 09.E32, 0.0, 0.0, 0.0, 0.0
/
DEFVAR = NDEL, DLMAX, DLMIN, DLMEN, DELSIG, PTSAV, TMSAV, NUMGAP
DIMVAR = 0, -9.E32, 09.E32, 0.0, 0.0, 0.0, 0.0, 00
/
/
MODVAR = RATE, UNITS
/
ENDPD /*****
LIST
BEGINUD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X STATS OPERATION X
/
X USER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
NUMCYC = -1
KOUT = (KPRINT), (KPROC), (KFILM)
/ ATTENTION: select statistical parameters
LOUT = RATE, UNITS, NPTOT, XMEAN, XMAX, XMIN, SIGMA, SKEW, KURTOSIS, STOP
/ NDEL, DLMAX, DLMIN, DLMEN, DELSIG, PTSAV, TMSAV, NUMGAP, STOP
/
PROJECT = %D
/ statxx
FLUSHP = 1800
/ ATTENTION: insert PRSTAT VECVAR here
VECVAR= ALAT, ALON, DEI, DNI,
PSFDC, PSWC, ATB, ATRF, DPTC, DPBC,
WDR, WSR, UIR, VIR, WIR, UXR,
VYR, HGM, PALT, HI3, THETA, THETA E,
THETA V, TVIR, MR, RHODT, RHODB, RHOLA,
RHUM, SPHUM, TEO3C, XNO, XNOX, XSO2C,
XCO, CMODE, CONCA, CONCN, RSTB, SWT, SWB,
IRTC, IRBC, UVT, UVB, PHDG, THI,
THF, ROLL, CROLL, PITCH, ACINS, VZI,

```

```

WP3      ,GSF      ,VEW      ,VNS      ,XVI      ,
YVI      ,TASW     ,TASR     ,QCWC     ,QCRC     ,QCW      ,
QCR      ,AKRD     ,SSRD     ,ADIFR    ,BDIFR    ,PSFD     ,
PSW      ,PSURF    ,TTB      ,TTRF     ,DPT      ,DPB      ,
VLA      ,RFLAG    ,SUM15A   ,DBARA    ,DISPA    ,AACT     ,
CAACT    ,IRT      ,IRB      ,DTT      ,STT      ,DTB      ,
STB      ,TCAVB    ,XO2F     ,XNOF     ,XSO2     ,TEO3     ,TET      ,
TEP      ,CNTS     ,FCN      ,FCNC     ,PCN      ,TCBADS   ,PTIME    ,
TPTIME   ,TMLAG    ,DFATBR   ,DFDPTB   ,DFPHAKD  ,DFPSWD   ,
DFQCRW   ,RICE     ,ALPHA

```

```

/
RATE = 1
UNITS = %T
ENDUD
/
/

```

NOLIST

/-----PRINTER PD01

/ FETCH 476,516

BEGINPD

```

/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X PRINT OPERATION X
/
X PROGRAMMER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/

```

DEFGEN = IOFMT, NLINES, MAXCHR, MRATE, MSGOPT, NOPTIN

DIMGEN = 0, 60, 128, 0, 0, 0

DEFGEN = PROJECT

DIMGEN = ' ' ,

DEFGEN = VCOEF, IVLAB

DIMGEN = (3600., 60., 60.), ('HR', 'MN', 'SEC')

DEFGEN = FLUSHP

DIMGEN = 900

DEFGEN = BEGSNP, ENDSNP

DIMGEN = (00., 00., 00.), (99., 99., 99.)

DEFGEN = NAMEOP, NAMLIB, NAMPD, ITYPOP, NUMCYC, OVLAP

DIMGEN = PRINT, 'NONE', 'NONE', 0, -1, 0

MODGEN = IOFMT, NLINES, MAXCHR, MRATE, NOPTIN, MSGOPT, PROJECT, VCOEF, IVLAB,
FLUSHP, BEGSNP, ENDSNP, NUMCYC, OVLAP

DEFVAR = NAMVAR, INDGET, INRATE, INDPUT

DIMVAR = NAMVAR, 0, 0, 0

DEFVAR = RATE, PNAME, UNITS, FORMAT

DIMVAR = 1, ' ', ' ', 'F7.2'

/ 12345678 12345678 12345678

MODVAR = RATE, PNAME, UNITS, FORMAT

DEFFUN = NAMEFUN, PGRT, NLIST

DIMFUN = NAMEFUN, < (0) >, < (NOLINK) >

MODFUN = PGRT, NLIST

ENDPD /*****

LIST

BEGINUD

```

/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X PRINTER OPERATION X
/
X USER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

```

```

NUMCYC = -1
MSGOPT=3
PROJECT = %D
NLINE = 60
MAXCHR = 128
NOPTIN = 1
VCOEF = (3600., 60., 60.)
IVLAB = ('HR', 'MI', 'SEC')
/
FLUSHP = 1800
BEGSNP = %D
ENDSNP = %D
UNITS = %T
/
/ ATTENTION: insert PRSTAT VECVAR
VECVAR= ALAT , ALON , DEI , DNI ,
        PSFDC , PSWC , ATB , ATRF , DPTC , DPBC ,
        WDR , WSR , UIR , VIR , WIR , UXR ,
        VYR , HGM , PALT , HI3 , THETA , THETA ,
        THETA , TVIR , MR , RHODT , RHODB , RHOLA ,
        RHUM , SPHUM , TEO3C , XNO , XNOX , XSO2C ,
        XCO , CMODE , CONCA , CONCN , RSTB , SWT , SWB ,
        IRTC , IRBC , UVT , UVB , PHDG , THI ,
        THF , ROLL , CROLL , PITCH , ACINS , VZI ,
        WP3 , GSF , VEW , VNS , XVI ,
        YVI , TASW , TASR , QCWC , QCRC , QCW ,
        QCR , AKRD , SSRD , ADIFR , BDIFR , PSFD ,
        PSW , PSURF , TTB , TTRF , DPT , DPB ,
        VLA , RFLAG , SUM15A , DBARA , DISPA , AACT ,
        CAACT , IRT , IRB , DTT , STT , DTB ,
        STB , TCAVB , XO2F , XNOF , XSO2 , TEO3 , TET ,
        TEP , CNTS , FCN , FCNC , PCN , TCBADS , PTIME ,
        TPTIME , TMLAG , DFATBR , DFDPTB , DFPKAD , DFPDWD ,
        DFQCRW ,
        AASS01 , AASS02 , AASS03 , AASS04 , AASS05 , AASS06 , AASS07 ,
        AASS08 , AASS09 , AASS10 , AASS11 , AASS12 , AASS13 ,
        AASS14 , AASS15
RATE = 1
/
FORMAT = 'F8.0' , %FOR , TIME , TPTIME
FORMAT = 'F6.3' , %FOR , TMLAG , FZV
FORMAT = 'F7.3' , %FOR , ALAT
FORMAT = 'F8.3' , %FOR , ALON , CLON
FORMAT = 'F8.2' , %FOR , CLAT
ENDUD
/
NOLIST
/-----PLOTTER PD01
/ FETCH 393,475
BEGINPD
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
X PLOT OPERATION X
/
X PROGRAMMER DIRECTIVE FILE X
/
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN = NAMEOP , NAMPD , NAMLIB , NUMCYC , ITYPOP
DIMGEN = PLOT , 'NONE' , 'NONE' , -1 , 0
/
DEFGEN = PRINT
DIMGEN = <(TABLE) , (SUMMARY) , (STOP) , (CONTROLS) , (IO)>
/
DEFGEN = BEGSNP , ENDSNP , FLUSHP
DIMGEN = (0., 0., 0.) , (99., 99., 99.) , 900
/
DEFGEN = PROJECT
DIMGEN =

```

```

/
DEFGEN = IVUNIT,          IVTITLE
DIMGEN =      2      ,
/
DEFGEN = KACCUM ,        RASTER ,    SIMPLE , LENARO , LENBRB
DIMGEN = (0,-1) ,    (1024.,1024.) ,    MIX ,    60 ,    60
/
DEFGEN = NCELLS , CSIZE , CAREA
DIMGEN =      15 ,    (0.) ,    (1.)
/
DEFGEN = OV1GRD , OV2GRD , OV3GRD , OV4XY , OV5XY , OV6XY
DIMGEN = (1.,1.) , (1.,1.) , (1.,1.) , (1.,1.) , (1.,1.) , (1.,1.)
/
DEFGEN =          OV1TXT          OV2TXT
DIMGEN = '          ' , '          '
/
DEFGEN =          OV3TXT          OV4TXT
DIMGEN = '          ' , '          '
/
DEFGEN =          OV5TXT          OV6TXT
DIMGEN = '          ' , '          '
/
DEFGEN =          SIZTXT
DIMGEN = (2,2,2,2,2,2)
/
DEFVAR = NAMVAR, INDGET, INRATE, INDPUT, RATE
DIMVAR = NAMVAR,      0 ,      0 ,      0 ,      1
/
DEFVAR =          TITLE          ,          UNITS
DIMVAR = '          ' , '          '
/
DEFFUN = NAMFUN, PLTYPE, PLTCYC, FRAME ,          SETCAL
DIMFUN = NAMFUN, XY ,          0, YES , <(.15,.95) , (.15,.95)> / (X,Y)
/
DEFFUN = IGRID , ISCALE, REVERSE , EQUAL, RNGTYP
DIMFUN = 5 ,      1 , NONE , NO , (FULL,FULL) / (X,Y)
/
DEFFUN =          BOTRNG          ,          MAJMIN
DIMFUN =          <(-99.,-99.) , (-99.,-99.)> , <(-99,-99) , (-99,-99)> / (X,Y)
/
DEFFUN = REPLOT, WINDOW, EXTREMA, SIGMAS , ADIBAT
DIMFUN = NO , NO , NO , (5.,5.) , 0. / (X,Y)
/
DEFFUN = XAXIS , YAXIS , ARROWS, BRBTYP, BRBVARs
DIMFUN = IV , NOLINK, NO , NONE , (NOLINK,NOLINK) / (U,V) OR (S,D)
/
DEFFUN = HSTYPE, PROBE , OVLAys
DIMFUN = ACC , 1 , (NOLINK,NOLINK) / (COORDS,TEXT) OR (COORDS,NOLINK)
/
MODGEN = BEGSNP, ENDSNP, FLUSHP, PROJECT, PRINT, IVUNIT, IVTITLE,
SIMPLE, KACCUM, RASTER, NUMCYC, LENARO, LENBRB, NCELLS ,
CSIZE , CAREA , OV1GRD, OV2GRD, OV3GRD, OV4XY , OV5XY ,
OV6XY , OV1TXT, OV2TXT, OV3TXT, OV4TXT, OV5TXT, OV6TXT , SIZTXT
/
MODVAR = RATE, TITLE, UNITS
/
MODFUN = PLTYPE, PLTCYC, FRAME , SETCAL, IGRID , ISCALE, REVERSE, EQUAL,
RNGTYP, BOTRNG, MAJMIN, REPLOT, WINDOW, EXTREMA, SIGMAS, ADIBAT,
XAXIS , YAXIS , ARROWS, BRBTYP, BRBVARs, HSTYPE, PROBE , OVLAys
/
LNKGEN = OVLAys
LNKVAR = XAXIS
LNKVAR = YAXIS
LNKVAR = BRBVARs
/
ENDPD /*****

```

```
LIST  
BEGINUD  
/  
/  
/  
/  
  
NUMCYC = -1  
FLUSHP   = 1800  
/  
pltxx  
PROJECT = %D  
IVTITLE= 'CENTRAL STANDARD TIME'  
/  
VECVAR  = %T  
KACCUM=(70,71)  
RATE    = 1  
IGRID   = 0  
TITLE   = %T  
UNITS   = %T  
SIMPLE  = NONE  
/  
ATTENTION: insert PLOT VECFUN here  
VECFUN= PLALONI ,DEN1      ,DEN2      ,PSFDC     ,PSWC      ,  
        ATB       ,ATRF     ,DPTC      ,DPBC      ,WDR       ,WSR       ,  
        UIR       ,VIR      ,WIR       ,UXR       ,VYR       ,HGM       ,  
        PALT      ,HI3      ,THETA     ,THETAE    ,THETAV   ,TVIR      ,  
        MR ,RHODT ,RHODB ,RHOLA ,RHUM     ,SPHUM    ,TEO3C    ,  
        XNO ,XNOX ,XSOC ,XCO   ,CMODE    ,CONCA    ,CONCN    ,  
        RSTB     ,SWT       ,SWB       ,IRT       ,IRBC     ,UVT       ,  
        UVB      ,PHDG     ,THI       ,THF       ,ROLL     ,CROLL     ,  
        PITCH    ,ACINS    ,VZI       ,WP3       ,GSF       ,  
        VEW      ,VNS      ,XVI       ,YVI       ,TASW     ,TASR      ,  
        QCWC     ,QCRC     ,QCW       ,QCR       ,AKRD     ,SSRD      ,  
        ADIFR    ,BDIFR    ,PSFD     ,PSW       ,PSURF    ,TTB       ,  
        TTRF     ,DPT      ,DPB      ,VLA      ,PDLA     ,SUM15A    ,  
        DBARA,DISPA ,AACT     ,CAACT     ,IRT      ,IRB      ,  
        DTT      ,STT      ,DTB      ,STB      ,TCABV    ,XO2F     ,  
        XNOF    ,XSOC ,TEO3 ,TET     ,TEP     ,CNTS     ,FCN      ,FCNC     ,  
        PCN ,TCBADS ,PTIME ,TPTIME ,TMLAG   ,DFATBR ,  
        DEFDETB ,DFPHAkd ,DFPSWD ,DEFQCRW  
/  
/  
ATTENTION: to plot XMIN minute XY-plots, specify XMIN and VARS below  
and remove leading '/'  
PLTCYC=XMIN ,%FOR, VARS  
/  
ATTENTION: add YAXIS stmts for Rhola and Rflag vs IV if Rhola used  
/  
ATTENTION: insert PLOT FUNCTS here  
ORDFUN= XAXIS , YAXIS , BOTRNG , MAJMIN  
LETFUN=ALON ,ALAT , [(,.75),(.75)],[(5,5),(5,5)],%FOR, PLALONI  
LETFUN=CLON ,CLAT , [(,.75),(.75)],[(5,5),(5,5)],%FOR, PLALONC  
/LETFUN=DEI ,DNI , [(,300.),(.300.)],[(10,3),(10,3)],%FOR,DEN1  
/LETFUN=DEI ,DNI , [(,300.),(.300.)],[(10,3),(10,3)],%FOR,DEN2  
LETFUN=DEI ,DNI ,,,,%FOR,DEN1  
LETFUN=DEI ,DNI ,,,,%FOR,DEN2  
LETFUN= ,PSFDC , , , , ,,%FOR, PSFDC  
LETFUN= ,PSWC , , , , ,,%FOR, PSWC  
LETFUN= ,ATB , , , , ,,%FOR, ATB  
LETFUN= ,ATRF , , , , ,,%FOR, ATRF  
LETFUN= ,DPTC , , , , ,,%FOR, DPTC  
LETFUN= ,DPBC , , , , ,,%FOR, DPBC  
LETFUN= ,WDR , , , , ,,%FOR, WDR  
LETFUN= ,WSR , , , , ,,%FOR, WSR  
LETFUN= ,UIR , , , , ,,%FOR, UIR  
LETFUN= ,VIR , , , , ,,%FOR, VIR  
LETFUN= ,WIR , , , , ,,%FOR, WIR  
LETFUN= ,UXR , , , , ,,%FOR, UXR  
LETFUN= ,VYR , , , , ,,%FOR, VYR  
LETFUN= ,HGM , , , , ,,%FOR, HGM
```

LETFUN=	,PALT	,			, %FOR, PALT
LETFUN=	,HI3	,			, %FOR, HI3
LETFUN=	,THETA	,			, %FOR, THETA
LETFUN=	,THETA E	,			, %FOR, THETA E
LETFUN=	,THETA V	,			, %FOR, THETA V
LETFUN=	,TVIR	,			, %FOR, TVIR
LETFUN=	,MR	,			, %FOR, MR
LETFUN=	,RHODT	,			, %FOR, RHODT
LETFUN=	,RHODB	,			, %FOR, RHODB
LETFUN=	,RHOLA	,			, %FOR, RHOLA
LETFUN=	,RHUM	, [, (0., 100.)]	,		, %FOR, RHUM
LETFUN=	,SPHUM	,			, %FOR, SPHUM
LETFUN=	,TEO3C	, [, (0., 300.)]	,		, %FOR, TEO3C
/LETFUN=	,XNO	, [, (0., 250.)]	,		, %FOR, XNO
/LETFUN=	,XNOX	, [, (0., 250.)]	,		, %FOR, XNOX
/LETFUN=	,XSO2C	, [, (0., 100.)]	,		, %FOR, XSO2C
/LETFUN=	,XCO	, [, (0., 10.)]	,		, %FOR, XCO
LETFUN=	,XNO	,		, %FOR, XNO	
LETFUN=	,XNOX	,		, %FOR, XNOX	
LETFUN=	,XSO2C	,		, %FOR, XSO2C	
LETFUN=	,XCO	,		, %FOR, XCO	
LETFUN=	,CMODE	, [, (0., 1.)]	,		, %FOR, CMODE
LETFUN=	,CONCA	,			, %FOR, CONCA
LETFUN=	,CONCN	,			, %FOR, CONCN
LETFUN=	,RSTB	,			, %FOR, RSTB
LETFUN=	,SWT	, [, (0., 1200.)]	,		, %FOR, SWT
LETFUN=	,SWB	, [, (0., 1200.)]	,		, %FOR, SWB
LETFUN=	,IRTC	, [, (0., 450.)]	,		, %FOR, IRTC
LETFUN=	,IRBC	, [, (0., 450.)]	,		, %FOR, IRBC
LETFUN=	,UVT	, [, (0., 70.)]	,		, %FOR, UVT
LETFUN=	,UVB	, [, (0., 70.)]	,		, %FOR, UVB
LETFUN=	,PHDG	,			, %FOR, PHDG
LETFUN=	,THI	,			, %FOR, THI
LETFUN=	,THF	,			, %FOR, THF
LETFUN=	,ROLL	,			, %FOR, ROLL
LETFUN=	,CROLL	,			, %FOR, CROLL
LETFUN=	,PITCH	,			, %FOR, PITCH
LETFUN=	,ACINS	,			, %FOR, ACINS
LETFUN=	,VZI	,			, %FOR, VZI
LETFUN=	,WP3	,			, %FOR, WP3
LETFUN=	,GSF	, [, (0., 150.)]	,		, %FOR, GSF
LETFUN=	,CGS	, [, (0., 150.)]	,		, %FOR, CGS
LETFUN=	,VEW	,			, %FOR, VEW
LETFUN=	,VNS	,			, %FOR, VNS
LETFUN=	,XVI	,			, %FOR, XVI
LETFUN=	,YVI	,			, %FOR, YVI
LETFUN=	,TASW	,			, %FOR, TASW
LETFUN=	,TASR	,			, %FOR, TASR
LETFUN=	,QCWC	,			, %FOR, QCWC
LETFUN=	,QCRC	,			, %FOR, QCRC
LETFUN=	,QCW	,			, %FOR, QCW
LETFUN=	,QCR	,			, %FOR, QCR
LETFUN=	,AKRD	,			, %FOR, AKRD
LETFUN=	,SSRD	,			, %FOR, SSRD
LETFUN=	,ADIFR	,			, %FOR, ADIFR
LETFUN=	,BDIFR	,			, %FOR, BDIFR
LETFUN=	,PSFD	,			, %FOR, PSFD
LETFUN=	,PSW	,			, %FOR, PSW
LETFUN=	,PSURF	,			, %FOR, PSURF
LETFUN=	,TTB	,			, %FOR, TTB
LETFUN=	,TTRF	,			, %FOR, TTRF
LETFUN=	,DPT	,			, %FOR, DPT
LETFUN=	,DPB	,			, %FOR, DPB
LETFUN=	,VLA	,			, %FOR, VLA
LETFUN=	,RFLAG	, [, (-1., 2.)]	,		, %FOR, RFLAG
LETFUN=	,SUM15A	,			, %FOR, SUM15A

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LETFUN=      ,DBARA      ,      ,      , %FOR, DBARA
LETFUN=      ,DISPA      ,      ,      , %FOR, DISPA
LETFUN=      ,AACT       ,      ,      , %FOR, AACT
LETFUN=      ,CAACT      ,      ,      , %FOR, CAACT
LETFUN=      ,IRT        ,      ,      , %FOR, IRT
LETFUN=      ,IRB        ,      ,      , %FOR, IRB
LETFUN=      ,DTT        ,      ,      , %FOR, DTT
LETFUN=      ,STT        ,      ,      , %FOR, STT
LETFUN=      ,DTB        ,      ,      , %FOR, DTB
LETFUN=      ,STB        ,      ,      , %FOR, STB
LETFUN=      ,TCAVB      ,      ,      , %FOR, TCAVB
LETFUN=      ,XO2F       ,      ,      , %FOR, XO2F
LETFUN=      ,XNOF       ,      ,      , %FOR, XNOF
LETFUN=      ,XSO2       ,      ,      , %FOR, XSO2
LETFUN=      ,TEO3       ,      ,      , %FOR, TEO3
LETFUN=      ,TET        ,      ,      , %FOR, TET
LETFUN=      ,TEP        ,      ,      , %FOR, TEP
LETFUN=      ,CNTS       ,      ,      , %FOR, CNTS
LETFUN=      ,FCN        ,      ,      , %FOR, FCN
LETFUN=      ,FCNC       ,      ,      , %FOR, FCNC
LETFUN=      ,PCN        ,      ,      , %FOR, PCN
LETFUN=      ,TCBADS     ,      ,      , %FOR, TCBADS
LETFUN=      ,CCEP       ,      ,      , %FOR, CCEP
LETFUN=      ,PTIME      ,      ,      , %FOR, PTIME
LETFUN=      ,TPTIME     ,      ,      , %FOR, TPTIME
LETFUN=      ,TMLAG      ,      ,      , %FOR, TMLAG
LETFUN=      ,DFATBR     ,      ,      , %FOR, DFATBR
LETFUN=      ,DFDPTB     ,      ,      , %FOR, DFDPTB
LETFUN=      ,DFPHAKD    ,      ,      , %FOR, DFPHAKD
LETFUN=      ,DFPSWD     ,      ,      , %FOR, DFPSWD
LETFUN=      ,DFQCRW     ,      ,      , %FOR, DFQCRW
/ -----
/

```

```

ARROWS = YES      , %FOR, PLALONI, PLALONC, DEN1, DEN2
BRBTYP = VUV      , %FOR, PLALONI, DEN1
BRBVAR= (UIR, VIR) , %FOR, PLALONI, DEN1
REVERSE= Y        , %FOR, PSB, PSW, PSBC, PSWC, PCAB, PSFD, PSFDC, PSF, PSFC
/
ENDUD
/ ATTENTION: don't include this operation if PLTCYC2 is off
/-----PLOTTER PD01
/ FETCH 393,475
BEGINPD
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/      X PLOT OPERATION X
/      X PROGRAMMER DIRECTIVE FILE X
/      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
/
DEFGEN = NAMEOP, NAMPD, NAMLIB, NUMCYC, ITYPOP
DIMGEN= PLOT, 'NONE', 'NONE', -1, 0
/
DEFGEN = PRINT
DIMGEN = <(TABLE), (SUMMARY), (STOP), (CONTROLS), (IO)>
/
DEFGEN = BEGSNP, ENDSNP, FLUSHP
DIMGEN = (0.,0.,0.), (99.,99.,99.), 900
/
DEFGEN = PROJECT
DIMGEN =
/
DEFGEN = IVUNIT, IVTITLE
DIMGEN = 2,
/
DEFGEN = KACCUM, RASTER, SIMPLE, LENARO, LENBRB
DIMGEN = (0,-1), (1024.,1024.), MIX, 60, 60
/

```

[illegible]

```

FLUSHP = 25200
/plotxx
BEGSNP=(bh.,bm.,bs.)
ENDSNP=(eh.,em.,es.)
PROJECT = %D
IVTITLE= ' CENTRAL STANDARD TIME'
/
VECVAR = %T
KACCUM=(80,81)
RATE = 1
IGRID = 0
TITLE = %T
UNITS = %T
SIMPLE = NONE
/ATTENTION: get PLOT VECFUN
VECFUN= PLALONI ,PALT ,PSFDC ,ATB ,DPBC ,RHUM ,
        RSTB ,CONCA ,CONCN ,TEO3C ,XNO ,XNOX,XSO2,XSO2C ,
        XCO
/
/ ATTENTION: to plot XMIN minute XY-plots, specify XMIN and VARS below
/ and remove leading '/'
/PLTCYC=XMIN ,%FOR, VARS
/ ATTENTION: add YAXIS stmts for Rhola and Rflag vs IV if Rhola used
/
/ ATTENTION: insert PLOT FUNCTS here
ORDFUN= XAXIS , YAXIS , BOTRNG , MAJMIN
LETFUN=ALON ,ALAT , [(,1.0),(,1.0)], [(5,5),(5,5)], %FOR, PLALONI
LETFUN= ,PALT , , , , %FOR, PALT
LETFUN= ,PSFDC , , , , %FOR, PSFDC
LETFUN= ,ATB , , , , %FOR, ATB
LETFUN= ,DPBC , , , , %FOR, DPBC
LETFUN= ,RHUM , , , , %FOR, RHUM
LETFUN= ,RSTB , , , , %FOR, RSTB
LETFUN= ,CONCA , , , , %FOR, CONCA
LETFUN= ,CONCN , , , , %FOR, CONCN
LETFUN= ,TEO3C , , , , %FOR, TEO3C
LETFUN= ,XNO , , , , %FOR, XNO
LETFUN= ,XNOX , , , , %FOR, XNOX
LETFUN= ,XSO2C , , , , %FOR, XSO2C
LETFUN= ,XCO , , , , %FOR, XCO
/ -----
/
ARROWS = YES , %FOR, PLALONI, PLALONC, DEN1, DEN2
BRBTYP = VUV , %FOR, PLALONI, DEN1
BRBVAR= (UIR,VIR) , %FOR, PLALONI, DEN1
REVERSE= Y , %FOR, PSB, PSW, PSBC, PSWC, PCAB, PSFD, PSFDC, PSF, PSFC
/
ENDUD
/ ATTENTION: insert remainder of deck regardless of -12 value
ENDCASE
ENDJOB

```

conv.scr

Appendix-A1

```

#
# This script converts a CX JCL file, generated by GUINT
#
rm pdud.244
set pdir = /users/computing/celia/unicos/pd
#
sed -e "s/&PROJNO-&FLTNO&SEG/drxx/g" \
-e "s/&BEGSNP/%D/g" \
-e "s/&ENDSNP/%D/g" \
-e "s/&OUTBI/%D/g" \
-e "s/&OUTEI/%D/g" \
-e "s/&KEOF/1/g" \
-e "s/&UNITS/14/g" \
-e "s/&KPOS/(0,0)/g" \
-e "s/&VOLUMES/['TAPEXX']/g" \
-e "s/&PROJNO/762/g" \
-e "s/- &FLTNO&SEG//g" \
-e "s/&FLUSHP/1800/g" \
-e "s/&INILAT/39.9130/g" \
-e "s/&INILON/-105.1180/g" \
-e "s/&STSHFT1/-.040/g" \
-e "s/&STSHFT2/-.040/g" \
-e "s/&QCREf1/QCB/g" \
-e "s/&QCREf2/QCB/g" \
-e "s/&TAU1/0.00000630/g" \
-e "s/&TAU2/0.00000380/g" \
-e "s/&TAU3/0.000000/g" \
-e "s/&DOF/2.740/g" \
-e "s/&BDIA/0.180/g" \
-e "s/&TWIRE/403.160/g" \
-e "s/&CN1/0.220/g" \
-e "s/&EN1/0.620/g" \
-e "s/&STATCYC/-1/g" \
-e "s/&PRTCYC/-1/g" \
-e "s/&PLTCYC/-1/g" \
-e "s/&OUTCYC/-1/g" \
-e "s/&WINDS//g" \
-e "s/&IVTITLE/'MOUNTAIN DAYLIGHT TIME'/g" \
-e 1,270d \
-e 277,283d \
-e "s/FETCH// FETCH/g" \
-e "/1,57/r $pdir/pd.driver" \
-e "/58,116/r $pdir/pd.input" \
-e "/241,262/r $pdir/pd.terp" \
-e "/117,138/r $pdir/pd.setrng" \
-e "/139,177/r $pdir/pd.dspike" \
-e "/178,218/r $pdir/pd.filter" \
-e "/219,240/r $pdir/pd.shift" \
-e "/330,392/r $pdir/pd.output" \
-e "/585,628/r $pdir/pd.stats" \
-e "/476,516/r $pdir/pd.print" \
-e "/393,475/r $pdir/pd.plot" \
mexap.job > pdud.244

```

runjob

Appendix-A2

```

# May 1991 - Celia Chen
# This script will generate a genpro pdud file and a shavano job script
# file for a particular flight of HARP project with the following input:
#
# flight number (Example: 01)
# flight segment (Example: A)
#
# The following files must exist in order for the shavano job script
# to run: (xx - flight number, including flight segment, such as 02A)
#
# drxx - DRIVER sub-ud with project title and time interval information
# snpdx - STATS/PLOT sub-ud with snapshot time interval information
#
# The shavano job script file will then be submitted to the
# CRAY Y-MP computer (shavano)
#
#
#
echo This script will generate a genpro pdud file and a shavano job script
echo file for a particular flight of your project with the following input
#
set kflg = 0
fltinf:
#echo -n " Enter aircraft number (Example: 307) "
#set acno = $<
set acno = 312
#
#echo -n " Enter project number (Example: 762) "
#set pjno = $<
set pjno = 244
#
echo -n " Enter flight number (Example: 01) "
set input0 = $<
#
echo -n " Enter segment of the flight to processed (Example: A) "
set input1 = $<
#
echo "Do you wish to setup & process project" $pjno "of" $acno
echo " flt #" $input0$input1 "(y/n/q) ([r]=y)?"
set yn = $<
if($yn == "n" || $yn == "N") goto fltinf
if($yn == "q" || $yn == "Q") exit
#
echo -n " Enter input tape number (Example: V59008) "
set intape = $<
echo -n " Is the tape #" $intape " correct (y/n/q) ([r]=y)?"
set yn = $<
if($yn == "n" || $yn == "N") goto fltinf
if($yn == "q" || $yn == "Q") exit
#
#
echo " The following files must exist in order for the shavano job script"
echo " to run: (xx - flight number, including flight segment, such as 02A)"
echo
echo "      drxx - DRIVER sub-ud with project title and beginning and ending"
echo "                  time informantion"
echo "      snpdx - STATS/PLOT sub-ud with snapshot time interval information"
echo "      "
#
prjinf:
ls dr*
ls snp*
echo "Above is a list of available dr and snp files, if dr"$input0$input1
echo "and snp"$input0$input1 "are not on the list, you must generate them now "
echo "by follow the instructions below. Otherwise, you can quit now "
#

```

```

echo -n " Do you wish to generate the drxx/snpxx files ?(y/n/q) ([r]=y) "
set yn = $<
if($yn == "N" || $yn == "n") goto genscr
if($yn == "Q" || $yn == "q") exit
#
# Read in flight date/time information here
#
set kflg = 1
fltd:
echo -n " Enter flight date: (05 AUG 90) "
set date = $<
set fdate = ($date)
set dd = $fdate[1]
set mm = $fdate[2]
set yy = $fdate[3]
#
echo -n " Is the flight date:" $fdate " correct ?(y/n/q) ([r]=y) "
set yn = $<
if($yn == "N" || $yn == "n") goto fltd
if($yn == "Q" || $yn == "q") exit
#
fltb:
echo -n " Enter begining flight time: (09 06 09) "
set time = $<
set btime = ($time)
set bh = $btime[1]
set bm = $btime[2]
set bs = $btime[3]
#
echo -n " Is the begining flight time:" $btime " correct ?(y/n/q) ([r]=y) "
set yn = $<
if($yn == "N" || $yn == "n") goto fltb
if($yn == "Q" || $yn == "q") exit
#
#
#
fltet:
echo -n " Enter ending flight time: (10 56 09) "
set time = $<
set etime = ($time)
set eh = $etime[1]
set em = $etime[2]
set es = $etime[3]
#
echo -n " Is the ending flight time:" $etime " correct ?(y/n/q) ([r]=y) "
set yn = $<
if($yn == "N" || $yn == "n") goto fltet
if($yn == "Q" || $yn == "q") exit
#
echo dr$input0$input1 " will be removed, if exists, then be re-generated"
#
rm dr$input0$input1
#
echo snp$input0$input1 " will be removed, if exists, then be re-generated"
#
rm snp$input0$input1
#
# Generate the drxx files here
sed -e s/xx/$input0/g -e s/ss/$input1/g \
    -e s/dd/$dd/g -e s/mm/$mm/g -e s/yy/$yy/g \
    -e s/bh/$bh/g -e s/bm/$bm/g -e s/bs/$bs/g \
    -e s/eh/$eh/g -e s/em/$em/g -e s/es/$es/g \
drxx > dr$input0$input1
#
# Generate the snpxx files here
#
set ph = $bh

```

```

set ps = 0
if($bm < 30) then
  set pm = 30
else
  set pm = 0
  @ ph = $ph + 1
endif
#
echo "begtime=" $bh $bm $bs "end pltp =" $ph $pm $ps
#
sed -e s/xx/$input0/g -e s/ss/$input1/g \
    -e s/bh/$bh/g -e s/bm/$bm/g -e s/bs/$bs/g \
    -e s/eh/$eh/g -e s/em/$em/g -e s/es/$es/g \
    -e s/ph/$ph/g -e s/pm/$pm/g -e s/ps/$ps/g \
snpxx > snp$input0$input1
cp snp$input0$input1 stat$input0$input1
cp snp$input0$input1 plt$input0$input1
#
more dr$input0$input1
#
echo "Above is the flight related information used by GENPRO DRIVER."
echo "If any of the information is incorrect, you may fix it now. "
echo "Do you need to fix this file? (y/n/q/) ([r]=y)"
set yn = $<
if($yn == "N" || $yn == "n") goto snpinf
if($yn == "Q" || $yn == "q") exit
echo -n " Do you know the vi screen editor ? (y/n/q) ([r]=y)"
set yn = $<
if($yn == "N" || $yn == "n") goto fltinf
if($yn == "Q" || $yn == "q") exit
#
echo -n "If you selected y but you don't know vi very well \n"
echo -n "type :q to get out when vi screen appears."
sleep 3
#
vi dr$input0$input1
#
snpinf:
more snp$input0$input1
#
echo "Above is the flight time intervals used by GENPRO STATS/PLOT."
echo "If any of the information is incorrect, you may fix it now. "
echo "Do you need to fix this file? (y/n/q/) ([r]=y)"
set yn = $<
if($yn == "N" || $yn == "n") goto genscr
if($yn == "Q" || $yn == "q") exit
echo -n " Do you know the vi screen editor ? (y/n/q) ([r]=y)"
set yn = $<
if($yn == "N" || $yn == "n") goto fltinf
if($yn == "Q" || $yn == "q") exit
#
echo -n "If you selected y but you don't know vi very well"
echo -n "type :q to get out when vi screen appears."
sleep 3
#
vi snp$input0$input1
#
#
genscr:
#
if( $kflg == 0) then
pjyr:
echo -n " Enter project year (Example: 91) "
set yy = $<
echo -n " Is the project year" $yy" correct (y/n/q) ([r]=y)?"
set yn = $<

```

```

if($yn == "n" || $yn == "N") goto pjyr
if($yn == "q" || $yn == "Q") exit
#
fltbtl:
echo -n " Enter begining flight time: (09 06 09) "
set time = $<
set btime = ($time)
set bh = $btime[1]
set bm = $btime[2]
set bs = $btime[3]
#
echo -n " Is the begining flight time:" $btime " correct ?(y/n/q) ([r]=y)"
set yn = $<
if($yn == "N" || $yn == "n") goto fltbtl
if($yn == "Q" || $yn == "q") exit
#
fltetl:
echo -n " Enter ending flight time: (10 56 09) "
set time = $<
set etime = ($time)
set eh = $etime[1]
set em = $etime[2]
set es = $etime[3]
#
echo -n " Is the ending flight time:" $etime " correct ?(y/n/q) ([r]=y)"
set yn = $<
if($yn == "N" || $yn == "n") goto fltetl
if($yn == "Q" || $yn == "q") exit
#
endif
#
# create a new genpro script file for the flight
#
echo gen$input0$input1 " will be removed, if exists, then be re-generated"
rm gen$input0$input1

# Building genpro production file
echo " Generating genpro production file for flt: " $input0$input1
sed -e s/xx/$input0$input1/g \
    -e s/aaa/$acno/g \
    -e s/yy/$yy/g \
    -e s/ppp/$pjno/g \
    -e s/yyyy/$intape/g \
    genxx > gen$input0$input1
#
# To generate pdud file for a particular flight
#
echo pdud$input0$input1 " will be removed, if exists, then be re-generated"
rm pdud$input0$input1
#
echo " Ready to generate a genpro pdud file for flt: " $input0$input1
#
xcoinf:
echo -n " Enter c1 calibration factor for calculating XCO (Example: 1.15) "
set xcol = $<
#
echo "XCO1="$xcol " Is it correct for flt #" $input0$input1 "(y/n/q) ([r]=y)?"
set yn = $<
if($yn == "n" || $yn == "N") goto xcoinf
if($yn == "q" || $yn == "Q") exit
#
astginf:
echo -n " Enter ASTG value for this flt (Example: 1013.0) "
set astg = $<
#
echo "ASTG="$astg " Is it correct for flt #" $input0$input1 "(y/n/q) ([r]=y)?"

```

```

set yn = $<
if($yn == "n" || $yn == "N") goto astginf
if($yn == "q" || $yn == "Q") exit
#
#
sed -e "/drxx/r dr$input0$input1" \
    -e "/statxx/r stat$input0$input1" \
    -e "/pltxx/r plt$input0$input1" \
    -e s/xcoxx/$xcol/g \
    -e s/astgxx/$astg/g \
    -e s/bh/$bh/g -e s/bm/$bm/g -e s/bs/$bs/g \
    -e s/eh/$eh/g -e s/em/$em/g -e s/es/$es/g \
    pdudxx > pdud$input0$input1
#
catrcp
#
chmod 744 gen$input0$input1
#
echo "\n"
echo " shavano job gen"$input0$input1 " is ready to be submitted.\n"
echo " Do you wish to submit it now ? (y/n/q) ([r]=y) "
set subm = $<
if($subm == "n" || $subm == "N") goto newjob
if($subm == "q" || $subm == "Q") exit
#
nrnet shjob gen$input0$input1
#
echo -n "shavano job gen"$input0$input1 " has been submitted. \n "
newjob:
echo -n " Do you wish to setup and run another flt now?(y/n/q) ([r]=y) "
set setup = $<
if($setup == "n" || $setup == "N") exit
if($setup == "q" || $setup == "Q") exit
goto fltinf
#

```

genxx

Appendix-B

```

# QSUB -eo
# q-class (premium-prem, regular-reg, economy-econ)
# QSUB -q reg
# To use c-shell
# QSUB -s /bin/csh
# To set time limit
# QSUB -lt 2000

# To use a new account number
newacct 41113aaa

# To start up the job accounting process
ja ${TMPDIR}/jacct

# To change to the temporary directory
cd ${TMPDIR}
ls -al
#
# -----
#
# To read ERRS file from MSS

lread local=ERRS remote=/RAF/PSTORE/GENPRO/REL02/ERRS format=ch

# To read GENPRO binary libraries from MSS
lread local=libgenpx.a remote=/CELIA/genpro/libgenprox format=tr
lread local=libcalib.a remote=/CELIA/genpro/libcalib format=tr

# To read ADS datasets from MSS
lread local=VTAPEX remote=/RAF/19yy/ppp/RFxx/ttttt format=tr

# assign units to input tape(s), output file, printer, and error message file
assign -a VTAPEX fort.14
assign -a OUTPUT fort.21
assign -a KPRINT fort.4
assign -a ERRS fort.98

# To read GENPRO source code in IFTRAN and PDUD file
# from either MSS , front end machine, or other machines with:
# lread (MSS files)
# rcp (from other UNIX machines that are on internet)
# netng (only if the job is submitted via MIGS )

rcp spock:/users/computing/celia/mex/pdudxx pdud
rcp spock:/users/computing/celia/mex/cal.if cal.if

# IFTRAN precompiler

iftran <cal.if> cal.f

# To compile using cft77

# with 64-bit integer maximum option for INPUT code
# and -a static option

cft7740 -i 64 -a static cal.f

# To load, link, and run the program with a pdud file
# and output to file outlog

segldr -o gen.exe cal.o \
-L /lib,/usr/lib,/usr/local/lib,${TMPDIR} \
-l ncarg,ncarg_gks,ncarg_loc,ncaro,net,ncaru,genpx,calib

gen.exe < pdud > outlog
# -----

```

```

# Output area
# -----
# plots to the Xerox 4050 printers
#plotmp gmeta
# plots to the color Dicomed
# sendtg gmeta PROJ=41113aaa
# To send gmeta file to mss
# lwrite local=gmeta remote=/RAF/19yy/ppp/PLOT/RFxx format=bi lrecl=1440 \
# PROJ=41113aaa
# To send output file to mss
# lwrite local=OUTPUT remote=/RAF/19yy/ppp/LRT/RFxx format=tr RETPD=4095 \
# VIRTUAL=CTRAFDMG PASSWD=,RAFDMG PROJ=41113aaa
# To Send printer file to mss
# lwrite local=KPRINT remote=/RAF/19yy/ppp/PRINT/RFxx format=ch

# To use netng to return files to spock - within an NQS batch job
# initially submitted via MIGS only
# netng FLNM=outlog DF=bi df=bi flnm=outxx.ppp
# netng FLNM=KPRINT DF=bi df=bi flnm=prxx.ppp
# netng FLNM=gmeta DF=bi df=bi flnm=pltxx.ppp
# -----
# To terminate the job accounting process
# ja -cst ${TMPDIR}/jacct
#
#

```

Sample GENPRO shavano job script

Appendix-B1

```

# QSUB -eo
# q-class (premium-prem, regular-reg, economy-econ)
# QSUB -q reg
# To use c-shell
# QSUB -s /bin/csh
# To set time limit
# QSUB -lt 2000

# To use a new account number
newacct 41113312

# To start up the job accounting process
ja ${TMPDIR}/jacct

# To change to the temporary directory
cd ${TMPDIR}
ls -al
#
# -----
#
# To read ERRS file from MSS

lread local=ERRS remote=/RAF/PSTORE/GENPRO/REL02/ERRS format=ch

# To read GENPRO binary libraries from MSS
# lread local=libgenpx.a remote=/CELIA/genpro/libgenprox format=tr
# lread local=libcalib.a remote=/CELIA/genpro/libcalib format=tr

# To read ADS datasets from MSS
lread local=VTAPEX remote=/RAF/1991/244/RF01/R0162 format=tr

# assign units to input tape(s), output file, printer, and error message file
assign -a VTAPEX fort.14
assign -a OUTPUT fort.21
assign -a KPRINT fort.4
assign -a ERRS fort.98

# To read GENPRO source code in IFTRAN and PDUD file
# from either MSS , front end machine, or other machines with:
# lread (MSS files)
# rcp (from other UNIX machines that are on internet)
# netng (only if the job is submitted via MIGS )

rcp spock:/users/computing/celia/mex/pdud01 pdud
rcp spock:/users/computing/celia/mex/cal.if, cal.if

# IFTRAN precompiler

iftran <cal.if> cal.f

# To compile using cft77

# with 64-bit integer maximum option for INPUT code
# and -a static option

cft7740 -i 64 -a static cal.f

# To load, link, and run the program with a pdud file
# and output to file outlog

segldr -o gen.exe cal.o \
-L /lib,/usr/lib,/usr/local/lib,${TMPDIR} \
-l ncarg,ncarg_gks,ncarg_loc,ncaro,net,ncaru,genpx,calib

gen.exe < pdud > outlog
# -----

```

```

# Output area
# -----
# plots to the Xerox 4050 printers
#plotmp gmeta
# plots to the color Dicomed
# sendtg gmeta PROJ=41113312
# To send gmeta file to mss
# lwrite local=gmeta remote=/RAF/1991/244/PLOT/RF01 format=bi lrecl=1440 \
# PROJ=41113312
# To send output file to mss
# lwrite local=OUTPUT remote=/RAF/1991/244/LRT/RF01 format=tr RETPD=4095 \
# VIRTUAL=CTRAFDMG PASSWD=,RAFDMG PROJ=41113312
# To Send printer file to mss
# lwrite local=KPRINT remote=/RAF/1991/244/PRINT/RF01 format=ch

# To use netng to return files to spock - within an NQS batch job
# initially submitted via MIGS only
# netng FLNM=outlog DF=bi df=bi flnm=out01.244
# netng FLNM=KPRINT DF=bi df=bi flnm=pr01.244
# netng FLNM=gmeta DF=bi df=bi flnm=plt01.244
# -----
# To terminate the job accounting process
# ja -cst ${TMPDIR}/jacct
#
#

```

drxx

Appendix-C

PROJECT='244-RFxxss MEXCAPS ddmmyy'
PRDATE = ('dd','mm','yy')
PRTIME=('bhH','bmM','bsS')
BEGIV=(bh.,bm.,bs.)
ENDIV=(eh.,em.,es.)
BEGSNP=(bh.,bm.,bs.)
ENDSNP=(eh.,em.,es.)

Sample dr file

Appendix-C1

PROJECT='244-RF01 MEXCAPS 09FEB91'
PRDATE = ('09','FEB','91')
PRTIME=('11H','48M','30S')
BEGIV=(11.,48.,30.)
ENDIV=(13.,25.,21.)
BEGSNP=(11.,48.,30.)
ENDSNP=(13.,25.,21.)

snpxx

Appendix-D

BEGSNP=(bh.,bm.,bs.) ,(ph.,pm.,ps.)
ENDSNP=(ph.,pm.,ps.) ,(eh.,em.,es.)

Sample snp file

Appendix-D1

```
BEGSNP=(11.,48.,30.), (12.,0.,0.)  
ENDSNP=(12.,0.,0.), (13.,25.,21.)
```

caladd

Appendix-E

```

C
C-----
C Existing CALIB1 levels of derivation and the variables derived in each level
C-----
C Variable names: Derivation subroutine:
C----- Level 1 -----
C DPC DPBC DPTC DPGEC DPCVC SDPC
C GSF SGSF
C IRBC IRTC TPYGC2 SIRTBC
C POSDF SPODF
C PSFC PSBC PSWC PSFDC PSFDC20 SPSXC
C QCWC QCGC QCFC QCBC QCDC QCFC20 SQCX
C QCFC (ELECTRA PROJECT ONLY 308) SQCF
C QCRC SQCRC
C ATOPH SATOPH
C TEPC STEPC
C----- Level 2 -----
C AKFXL AKFXR SSFXB SSFXT SABFIX
C AKDF SSDF SATKSLP
C ATRF SATRF
C ATB ATF ATP ATW ATRW ATR SATX
C ATB1 ATR3 ATR6 ATRE ATKPR ATF20 SATX
C ATBH ATFH ATWH SATXH
C IAS SIAS
C MR SMR
C PALT PALT20 SPALT
C PALTF SPALTF
C SPHUM SSPHUM
C TASB TASF TASG TASW TASR TASD STASX
C BMACH FMACH RMACH GMACH WMACH SXMACH
C BMACH2 FMACH2 RMACH2 GMACH2 WMACH2 SXMACH2
C----- Level 3 -----
C CONC2C SCONC2C
C CONC2P SCONC2P
C DO3C SDO3C
C COC SCOC
C SCLWC SSCLWC
C DVALU SDIF
C CRYOC SCRYOC
C RHORF SRHORF
C CNC SCNC
C DMEC SDMEC
C GUSTO SGUST
C LWCC CLWC SLWCC
C PLCL SPLCL
C PLWCC SPLWCC
C PSURF SPSURF
C RHODT RHODB GERHOTD RHODGE RHOCR SRHOTD
C RHOD SRHOTD
C RHUM SRHUM
C THETA THETAK STHETA
C THETA STHETA
C THETA STHETA
C TLCL STLCL
C TVIR STVIR
C TEO3C STEO3C
C----- Level 4 -----
C AKRD SAKRD
C DLA1 SDLA
C SSRD SSSRD
C----- Level 5 -----
C GUSTR GUSTD SGUST
C CVI SCVI
C----- Level 6 -----
C DIF SDIF
C NETT SSUM2

```

```

c NETV SDIF
c NETI SDIF
c SUM SSUM2
c RATIO SRATIO
c TRKI STRKI
c ASAS SASAS
c FSSP SFSSP
c X200 SX200
c X260 SX260
c Y200 SY200
C ----- Level 7 -----
C DA SDA
c LWCCF SLWCCF
c PLWCCF SPLWCCF
C -----
.SAVE ADDNVAR
C -----
C ** NEW VARIABLE NAMES TO BE ADDED HERE
C Project HaRP new derived variables: (10/23/90 -- cc)
  DATA NTPL/8HTPL /
  DATA NFM /8HFM /
  DATA NCNCC/8HCNCC /
  DATA NXSO2C/8HXS02C /
  DATA NXDLA1/8HDXDLA1 /
  DATA NXCONCO/8HXCONCO /
  DATA NXGUSTG/8HXGUSTG /
  DATA NXDVALU1/8HDXDVALU1 /
  DATA NCON2DC1/8HCONC2DC1/,NCON2DP1/8HCONC2DP1/
  DATA NCON2DP2/8HCONC2DP2/

.END
.SAVE ADDV1
C -----
C ** NEW LEVEL 1 DERIVATION VARIABLE NAMES TO BE ADDED HERE
c OR IF (NAMVAR.EQ.NXXXXXX)
c CALL SXXXXXX
C ** NEW LEVEL 1 DERIVATION VARIABLE NAMES TO BE ADDED HERE
.END
.SAVE ADDV2
C -----
C ** NEW LEVEL 2 DERIVATION VARIABLE NAMES TO BE ADDED HERE
c OR IF (NAMVAR.EQ.NXXXXXX)
c CALL SXXXXXX
C -----
C ** XS02C
  OR IF (NAMVAR.EQ.NXS02C )
  CALL SXS02C
C ** CNCC
  OR IF (NAMVAR.EQ.NCNCC )
  CALL SCNCC
.END
.SAVE ADDV3
C -----
C ** NEW LEVEL 3 DERIVATION VARIABLE NAMES TO BE ADDED HERE
c OR IF (NAMVAR.EQ.NXXXXXX)
c CALL SXXXXXX
.END
.SAVE ADDV4
C -----
C ** NEW LEVEL 4 DERIVATION VARIABLE NAMES TO BE ADDED HERE
c OR IF (NAMVAR.EQ.NXXXXXX)
c CALL SXXXXXX
.END
.SAVE ADDV5
C -----
C ** NEW LEVEL 5 DERIVATION VARIABLE NAMES TO BE ADDED HERE

```

```

C      OR IF (NAMVAR.EQ.NXXXXXX)
C      CALL SXXXXXX
.END
.SAVE  ADDV6
C-----
C ** NEW LEVEL 6 DERIVATION VARIABLE NAMES TO BE ADDED HERE
      OR IF (NAMVAR.EQ.NXXXXXX)
      CALL SXXXXXX
.END
.SAVE  ADDV7
C-----
C ** NEW LEVEL 7 DERIVATION VARIABLE NAMES TO BE ADDED HERE
C----- TPL
C** TEMPERATURE PROBE - Paul Lawson
C   HaRP project   Sept. 1990   -cc
C
C      OR IF (NAMVAR.EQ.NTPL)
C      CALL  STPL
.END
.SAVE  ADDV8
C-----
C ** NEW LEVEL 8 DERIVATION VARIABLE NAMES TO BE ADDED HERE
C**NEW LEVEL**NEW LEVEL**NEW LEVEL**NEW LEVEL**NEW LEVEL**NEW LEVEL**
C*****
C***** LEVEL EIGHT DERIVATION *****
C*****
      IF (KT7.GT.0)
      DO (KT=1,KT7)
      K= KTSV(KT)
      IND = INDVAL+LENCON*(K-1)
      NAMVAR  =ICON(IND +IOFF01)
      INDGET  = ICON(IND+IOFF02)
      INDPUT  = ICON(IND+IOFF04)
      LRATE   = ICON(IND+IOFF05)
      CONS1   = CON(IND+IOFF08)
      LDO= LRATE * NCDO
      DO (N=1,MAXSOU)
      LRTSOU(N) = 1
      IPSOU(N) = 0
      END DO
      NUMSOU = ICON(IND+IOFF11)
      DO (J=1,NUMSOU)
      INDD= IND+IOFF12+(J-1)
      KSOU= ICON(INDD)
      INDS = INDVAL + LENCON *(KSOU-1)
      LRTSOU(J) = ICON (INDS + IOFF05)
      IPSOU(J ) = ICON(INDS + IOFF04)
      END DO
C----- XXXXXX
C** TITLE FOR VARIABLE NAME XXXXXX
      IF (NAMVAR.EQ.NXXXXXX)
      CALL  SXXXXXX
C----- YYYYYY
C** TITLE FOR VARIABLE NAME YYYYYY
      OR IF (NAMVAR.EQ.NYYYYY )
      CALL SYYYYY
C-----
      ELSE
      KT8= KT8+1
      KTSV(KT8)= K
      END IF
      END DO
      END IF
      KTEND=KT8
.END
      SUBROUTINE SXXXXXX

```

catrcp

Appendix-F

```
RETURN  
END  
SUBROUTINE SYYYYY  
RETURN  
END
```

```
# To cat all GENPRO CALIB IFTRAN modification code together here
rm cal.if
cat \
/users/computing/celia/unicos/genif/rep sav.x \
/users/computing/celia/pair/actsv.kr \
/users/computing/celia/mex/caladd \
/users/computing/celia/unicos/calib/calsvblk \
/users/computing/celia/pair/cals.kr \
/users/computing/celia/unicos/harp/gusto \
/users/computing/celia/unicos/harp/calib1 \
/users/computing/celia/unicos/harp/pinput \
/users/computing/celia/unicos/harp/spalt \
/users/computing/celia/unicos/harp/sxthet a e .if \
/users/computing/celia/unicos/harp/pmsplt \
/users/computing/celia/unicos/calib/stdlib \
/users/computing/celia/unicos/calib/atkslp \
/users/computing/celia/mex/newasas \
/users/computing/celia/mex/scncc.if \
/users/computing/celia/mex/sxso2c.if \
> cal.if
```

tdump.scr

Appendix-G

```

# QSUB -eo
# q-class (premium-prem, regular-reg, economy-econ)
# QSUB -q reg
# To use c-shell
# QSUB -s /bin/csh
# To set time limit
# QSUB -lt 600

# To use a new account number
newacct 41113312

# To start up the job accounting process
ja ${TMPDIR}/jacct

# To change to the temporary directory
cd ${TMPDIR}
# mkdir /usr/tmp/tdump
# cd /usr/tmp/tdump
# To copy GENPRO tape dump source code and data file from spock to stdumpvano

rcp spock:/users/computing/celia/unicos/tdump.f tdump.f
rcp spock:/users/computing/celia/unicos/tdata.mex tdata

lread local=gdata remote=/RAF/1991/244/LRT/RF01 format=tr

# assign units to input tape

assign -a gdata fort.7

# run cft77 with 64-bit integer maximum option for INPUT code

cft77 -i 64 -a static tdump.f

segldr -o tdump.exe tdump.o \
        -L /lib,/usr/lib,/usr/local/lib \
        -l ncaro
tdump.exe < tdata > tdout
xprint tdout

rcp tdout spock:tdout.mex

ja -cst ${TMPDIR}/jacct

```

tdump.data

Appendix-G1

1-----TDUMP INPUT DECK-----

UNIT NUMBER (I5)

7

WAS THE TAPE WRITTEN WITH GENPRO1 (0) OR GENPRO2 (1)

1

ARE YOU USING GENPROII BINARY LIBRARY VER 11-12 (0) OR LIB01 (1)
ANY OUTPUT TAPES GENERATED BEFORE DEC 1883 USES LIB 11-12

1

PRINT OCTAL, INTEGER(PACKED), DECIMAL(UNPACKED) [1] OR NOT [0]?

1

DO YOU WANT TPTIME(0) OR PTIME(1)?

1

START AND STOP TIME OF FORMATTED DUMP (3F5.0)

13. 31. 00.

13. 32. 00.

DO YOU WANT TO DUMP BY RATE (0) OR BY VARIABLE NAME (1)?

0

RATES TO BE PRINTED [Y=1, N=0] (I2I5) (POSSIBLE RATES)

1? 5? 10? 15? 20? 21? 25? 50? 64? 70? 150? 210? 640?

1 0 0 0 1 0 0 0 0 0 1 0 0

DO YOU WANT THE DATA PRINTED BY COLUMN (0) OR HORIZONTALLY (1)?

0

HOW MANY VARIABLES DO YOU WANT TO DUMP (I5)?

7

LIST OF VARIABLES TO BE DUMPED (IN 8(1X,A8) FORMAT)

HR ,MIN ,SEC ,GTIMV ,GTIMP ,TPTIME ,PTIME ,

TPTIME ,PTIME ,ACCUMA ,ACCUMF ,ACCUMX ,CONCA ,CONCF ,CONCX

Sample production tape log

Appendix-H

PRODUCTION TAPE LOG

Project no.: 876 Project name: HARP
Aircraft: 308 Scientist(s): Al Cooper
Data type: HRT Programmer(s): Celia Chen

OUTPUT TAPE SPECIFICATIONS:

Track: 9 Density: Word size: 32 bits/word
MSS path name: /RAF/1990/876/HRT/FLTNO

HEADER FILE INFORMATION:

Logical record size: 640 bits Physical record size: 6400 bits
No. of physical records: 107

DATA FILE INFORMATION:

Logical record size: 83296 bits Physical record size: 83296 bits
No. of Logical records per physical record: 1
No. of seconds per logical record (GENPRO cycle time): 1

FLTNO	Start	Stop	Start	Stop	Fltdate
RF01	54000.00	71111.00	15 00 00	19 45 11	7/19/90
RF02A	53774.00	66250.00	14 56 14	18 24 10	7/20/90
RF02B	67283.00	73457.00	18 41 23	20 24 17	
RF02C	73755.00	74880.00	20 29 15	20 48 00	
RF03A	7442.00	8760.00	02 04 02	02 26 00	7/22/90
RF03B	9370.00	21673.00	02 36 10	06 01 13	
RF03C	21673.00	32630.00	06 01 13	09 03 50	
RF04A	54157.00	62103.00	15 02 37	17 15 03	7/23/90
RF04B	62398.00	74668.00	17 19 58	20 44 28	
RF05A	51432.00	64878.00	14 17 12	18 01 18	7/24/90
RF05B	64878.00	76353.00	18 01 18	21 12 33	
RF06A	3294.00	9046.00	00 54 54	02 30 46	7/27/90
RF06B	9497.00	24868.00	02 38 17	06 54 28	
RF07	73593.00	84046.00	20 26 33	23 20 46	7/27/90
RF08A	51367.00	64445.00	14 16 07	17 54 05	7/28/90
RF08B	64445.00	73659.00	17 54 05	20 27 39	
RF09	52251.00	74903.00	14 30 51	20 48 23	7/30/90
RF10	7324.00	21624.00	02 02 04	06 00 24	8/02/90
RF11	54982.00	71877.00	15 16 22	19 57 57	8/02/90
RF12	7099.00	22344.00	01 58 19	06 12 24	8/03/90
RF13	53795.00	71900.00	14 56 35	19 58 20	8/03/90
RF14	7295.00	18107.00	02 01 35	05 01 47	8/05/90
RF15A	56923.00	67460.00	15 48 43	18 44 20	8/06/90
RF15B	67460.00	78554.00	18 44 20	21 49 14	
RF16	25652.00	42505.00	07 07 32	11 48 25	8/08/90
RF17	50186.00	63353.00	13 56 26	17 35 53	8/08/90

mc2tags/ms2tags

Appendix-I

```
# QSUB -eo
# q-class (premium-prem, regular-reg, economy-econ)
# QSUB -q prem
# To use c-shell
# QSUB -s /bin/csh
# To set time limit
# QSUB -lt 60

# To use a new account number
# newacct 41113312

# To start up the job accounting process
ja ${TMPDIR}/jacct

#rcp spock:/users/migs/celia/out06A out06A
#sendtg out06A req=print macr=fiche titl=harp_gout06A

rcp spock:/users/migs/celia/out15B out15B
sendtg out15B req=print macr=fiche titl=harp_gout15B

ja -cst ${TMPDIR}/jacct
```

```
# QSUB -eo
# q-class (premium-prem, regular-reg, economy-econ)
# QSUB -q prem
# To use c-shell
# QSUB -s /bin/csh
# To set time limit
# QSUB -lt 60

# To use a new account number
# newacct 41113312

# To start up the job accounting process
ja ${TMPDIR}/jacct

lread local=gmeta3 remote=/RAF/1990/762/PLOT/RF01 format=bi
sendtg gmeta3

lread local=gmeta4 remote=/RAF/1990/876/PLOT/RF15C format=bi
sendtg gmeta4

lread local=gmeta5 remote=/RAF/1990/876/PLOT/RF15B format=bi
sendtg gmeta5
ja -cst ${TMPDIR}/jacct
```

mc2ms

U.S. DEPT.
OF JUSTICE

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[illegible]
$$1.05 \times 10^{-4}$$

Appendix-I1

nrnet msget rf3a.760g r flnm=/RAF/1989/760/RF03A/HRT/G52866 mds=41000 mrs=10000 c
nrnet mspu calsavb r flnm=/CELIA/COS115/CALSAVB mds=41000 mrs=1000 df=ch 1 df=ch

2.0

21-xibm0000

msls/mschg

Appendix-I2

```
# QSUB -eo
# q-class (premium-prem, regular-reg, economy-econ)
# QSUB -q prem
# To use c-shell
# QSUB -s /bin/csh
# To set time limit
# QSUB -lt 60

# To use a new account number
# newacct 41113312

# To start up the job accounting process
ja ${TMPDIR}/jacct

# mschg - MSS change to change retention period:
# mschg -t 4095 -W RAFDMG /RAF/1990/241/HRT/RF10

#msls -v /RAF/1990/876
msls -l /RAF/1990/876
# mschg -t 4000 /raf/PRODUCTION/733/1989
ja -cst ${TMPDIR}/jacct
```