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"AS-BUILT" DESIGN SPECIFICATION
OF THE
CAMS/CAS INTERFACE TAPE REPORT
GENERATION PROGRAM FOR LACIE 7

Job Order 71-593

(TIRFs 77-0052 & 78-0010)

(E80-10203) AS-BUILT DESIGN SPECIFICATION
OF THE CAM/CAS INTERFACE TAPE REPORT
GENERATION PROGRAM FOR LACIE 7 (Lockheed
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For

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CONTENTS

Section Page

Section Page

Section Page

Section Page

Appendices

1. SCOPE

1.1 GENERAL

This document is the "as-built" design specification of the CAMS/CAS Interface Tape Report Generation Program for LACIE 7.

2. APPLICABLE DOCUMENTS

- TIRF 77-0052
- TIRF 77-0040
- Specification for the CAMS/CAS Interface Tape Report Generation Program - LEC-9151
- CAMS/CAS Interface Control Tape format specification in Earth Resources Data Format Control Book Volume 1 (PHO-TR543, Rec. A. Change 3)
- TIRF 78-0010
- CAMS/CAS Interface Tape Printout after LACIE 6A JSC Memorandum, SF4-77-7-13, 7/21/77.
- "As-Built" Design Specification of the CAMS/CAS interface to tape Report Generation Program LEC-11292
- Acceptance Test Specification For CAMS/CAS Interface tape report generation Program for LACIE 7-LEC 11787
- Clarification and Prioritization of LACIE 7 CCIT Report JSC memorandum, SF4-77-11-8, 11/4/77.

3. SYSTEM DESCRIPTION

3.1 HARDWARE DESCRIPTION

N/A

3.2 SOFTWARE DESCRIPTION

The purpose of this program is to produce CAMS reports from data on the CAMS/CAS interface tape.

3.2.1 SOFTWARE COMPONENT NO. 1 (CAMRPT)

The main program CAMRPT reads control cards, locates segment data on the input tape and calls subroutines to generate requested reports.

3.2.1.1 Linkages

CAMRPT calls subroutines CDRED, CAMREC, BAUEXT, CLURES, STDATA, CONRED, and DOTRAY.

3.2.1.2 Interfaces

N/A

3.2.1.3 Inputs

CAMRPT control cards are: SEGMENT XXXX, RECORD ID XXXXXX XXXXXX, ALL, END. CAMS/CAS interface tape records are inputs to CAMRPT. See reference 4 in section 2, for record formats.

3.2.1.4 Outputs

An error message is output indicating a bad data card. If a requested segment is not on the input tape, the program writes a message to that effect.

3.2.1.5 Storage Requirements

Total space allocated is 2390 bytes.

3.2.1.6 Description

CAMRPT is the CAMRPT main program. The program sets the printout option indicator PRTOUT to 0 initially. In this mode the output of some reports is conditional. On the first call to tape read subroutine CDRED, the program reads two data cards specifying the device code (M or X) and the unit number (0 to 1), then calls CONRED to read constants to be used in the calculations for DW & DS. CAMPRT next reads a program control card and tests the first non-blank character for one of the following: S, R, A, or E. If the card is blank or the first character is not one of the above, the program prints an error message on the line printer and stops.

The action taken for each control card is given below. Note that if a control card other than E is read in, the printout option indicator PRTOUT is set to 1. This is the option to output all reports, including conditional reports.

- S - Option indicator PRTOUT is set to 1. The program obtains the segment number from the input card. The program searches the input tape for a recognition segment record whose segment number matches the control card segment number. If a match is not found, a message is printed and the program goes to read the next control card. If a match is found, the reports for the segment requested are generated. The program then reads the next control card.
- R - The action taken is the same as for the S card above, except that the record identification number is used instead of the segment number.
- A - Option indicator PRTOUT is set to 1. Beginning with the segment on the tape at which the tape is currently positioned, the program generates reports for that

segment and all the following segments. When the second tape end of file, indicating end of data, is roached, the program rewinds the tape and returns to read the next control card.

- E - If the printout option indicator PRTOUT is 0, the program generates reports in the limited printout mode, rewinds the tape, and then stops. If PRTOUT is 1, the tape is rewound and the program stops.

The tape read subroutine CDRED tests all records for valid characters. If any invalid data is encountered an error message is output to the line printer to inform the user that the data for that segment or record is questionable. Any invalid characters in the record are converted to ones (1) and normal processing is resumed.

To generate reports for a segment the program first calls CAMREC to process recognition segment records. The processing entails generation of the optional classification Data report, the standard Separability Report and the standard header sheet for the report.

After CAMREC, the programming calls BAUEXT to process the Bias correction results records. Data from the Bias correction results records is saved in common blocks BIAS and Dummy. CAMRPT next calls CLURES to process the clustering results records and to generate the conditional cluster report. In addition CLURES saves cluster dot data in common block CLDOT for later use in the optional Dot report. Next STDATA is called to process the statistics records and generate the optional Statistics Report. Finally DOTRAY is called to process the Dot subset records and generate the standard Dot Label/Classification, Bias Correction Classification, Dot Label/Cluster and Bias Correction Cluster Reports.

In the limited printout mode the decision as to whether or not to output the optional reports is not made until the percentage of correctly classified Dots (PCC-1 & PCC-2 for Bias Correction Classification report) or percentage of correctly clustered Dots (PCC-1 & PCC-2 for Bias Correction Cluster Report) are calculated in subroutine DOTRAY. If any of the values are less than 80%, PRTOUT is set to 2 in DOTRAY and the conditional reports are read from disc and written to the line printer. In the full printout mode (PRTOUT=1) the conditional reports are always retrieved from disc and printed out. If PRTOUT was = 2 it is reset to 0 after the report for a segment has been butput.

3.2.1.7 Flowcharts

See Flow Diagram 1.

3.2.1.8 Listing

See Appendix A.

3.2.2 SOFTWARE COMPONENT NO. 2 (CAMREC)

This program processess classification results contained in recognition segment records, outputs the conditional Classification Data report, saves data from the recognition segment records for use in generating the standard Separability Report and the standard CAMS Interface Report Header sheet.

3.2.2.1 Linkages

CAMREC is called by CAMPRT and calls subroutines BIAPRT, CPIPO, MV, CDRED, BNT and SEPRPT.

3.2.2.2 Interfaces

N/A

3.2.2.3 Inputs

Recognition segment records, containing subclass a priori and threshold values, subclass related classification results, and feature selection Bhattacharyya separability data for available acquisitions.

3.2.2.4 Outputs

CAMS Interface Report Header and a Classification Data report.

3.2.2.5 Storage Requirements

Total space allocated is 2845 bytes.

3.2.2.6 Description

CAMREC is called with the first recognition segment record for the segment to be processed residing in array IBUF. CAMREC first calls BIAPRT with PASS=1 to have the report heading, segment number, record ID, and acquisition dates output. Next CAMREC saves the number of channels used in classification and the Bhattacharyya separability data from the first recognition segment record for later use in generation of the Separability Report.

Title and column headings for the classification section of the report are written out by CAMREC. Processing of classification results begins by setting the location in array IBUF of the first subfield containing subclass related results. Subfield contents are accessed by calling CPIPO. CPIPO returns the class portion of the subclass name and the counts PI and PO of pixels classified into, and thresholded out of the subclass. If the first character of the class name is X, PI is added to the X category pixel count. If the category is W, for wheat, then the count for the first wheat class is set to PI and the wheat class name is saved in CLIST. PO is added to the total of pixels threshold, TC, in the COMMON blocks CBIAS.

In processing for the second, and subsequent subclasses, the program calls CPIPO to get the next class name, checks to see if it is wheat, and, if so, compares it to the last class name in CLIST. If it is not the same, the new name is saved in CLIST and the class index is incremented by 1. This causes wheat class pixel count PI to be tallied in the next results array location.

After all classification data has been processed the feature selection Bhattacharyya separability data is saved from the last recognition segment record and SEPRPT is called to generate the normal Separability Report.

3.2.2.7 Flowcharts

N/A

3.2.2.8 Listing

See Appendix A.

3.2.3 SOFTWARE COMPONENT NO. 3 (BAUEXT)

This program saves data contained in the clustering bias correction and classification bias correction results records.

3.2.3.1 Linkages

BAUEXT is called by CAMRPT. It calls CDRED.

3.2.3.2 Interfaces

N/A

3.2.3.3 Inputs

Clustering Bias correction and Classification Bias Correction results records.

3.2.3.4 Outputs

None.

3.2.3.5 Storage Requirements

Total space allocated is 2306 bytes.

3.2.3.6 Description

BAUEXT is called when the main program reads the first clustering Bias correction result record. BAUEXT saves the following data from both the Clustering Bias Correctin and Classification Bias Correction results records for up to 8 categories of interest plus the "designated other" and "unclassified" category"

Pixel pouplation
Bias corrected estimator
Machine estimate
Random estimate
Variable of bias corrected estimate
Variance

In addition the number of categories of interest and the character used for the categories of interest are saved. All data is saved in common blocks CBIAS arrays. This data is used by CALC for certain calculations and by BIAPRT for output of the normal Bias Correction reports.

3.2.3.7 Flowcharts

N/A

3.2.3.8 Listing

See Appendix A.

3.2.4 SOFTWARE COMPONENT NO. 4 (CLURES)

This program process the cluster results records and generates the conditional cluster report.

3.2.4.1 Linkages

CLURES is called by CAMRPT. It calls CDRED.

3.2.4.2 Interfaces

N/A

3.2.4.3 Inputs

Cluster results records.

3.2.4.4 Outputs

The conditional Cluster report.

3.2.4.5 Storage Requirements

Total space allocated is 5632 bytes.

3.2.4.6 Description

CLURES is called when the main routine reads the first cluster results record. The program decodes ALSETS, the total number of clusters, and SETSR, the number of clusters in the current record. The routine then outputs the cluster report header, ALSETS as clusters generated and any options used. Next CLURES saves all data for each cluster for later output. When all clusters in the current record have been processed, another cluster results record is read in and processed as above.

After all cluster have been processed and if the cluster/dot report option is set, four additional cluster results records need to be processed. The processing consists of saving all dot information in an array called DOTBUF for later output. In addition each dots cluster assignment is transfered to the common blocks CLCOM for later use in a different report. Finally when all cluster results records are processed in the above manner the cluster information is output as follows. For each cluster the program outputs the cluster name, the Labeling dot match name, L1 distance, categorie used, brightness and greenness numbers for all Acquisitions used and information on all dots in the cluster. The clustering channel list is written at the end of the report.

3.2.4.7 Flowchart

See Flow Diagram 2.

3.2.4.8 Listing

See Appendix A.

3.2.5 SOFTWARE COMPONENT NO. 5 (STDATA)

This subroutine formats and outputs field and subclass statistics data.

3.2.5.1 Linkages

STDATA is called by CAMRPT. STDATA calls subroutines KNT, MDTTL, MEAN, POP, CDRED, SNAME, FANME, STDMP, and BNT.

3.2.5.2 Interfaces

N/A

3.2.5.3 Inputs

The statistics record, containing, for fields or for subclasses, the population and values of the mean and standard deviation by channel.

3.2.5.4 Outputs

The conditional statistics report.

3.2.5.5 Storage Requirements

Space allocated is 3792 bytes.

3.2.5.6 Description

STDATA is called from CAMRPT. By means of decode statements, the program converts several variables from input character format in IBUF to integers. The variables are ALSETS, the total number of statistics sets, SETSR, the number of sets in the current record, and NCH, the number of channels. STDATA calls souboutines to move data from input record subfields to print buffers. SNAME and FNAME move name data and insert SUBCL and FIELD designations in the print buffer. POP is called to move population data. MDTTL is called to supply column headings for means and standard deviations, which are transferred to a print buffer by MEAN. MEAN also puts decimal points where needed. The variable DSETS, set to 5, controls the number of statistics sets to be accumulated before outputting the print buffers. When the current record statistics sets counter reaches SETSR, and ALSETS sets have not yet been processed, STDATA calls CDRED to read the next statiscics record from tape. In addition, the pixel population and classified percentage for the category "unassigned" in the bias correction cluster report is calculated and saved in the common blocks CBIAS.

3.2.5.7 Flowcharts

N/A

3.2.5.8 Listing

See Appendix A.

3.2.6 SOFTWARE COMPONENT NUMBER 6 (DOTRAY)

This program processes Dot Data records and generator the conditional Dot Report.

3.2.6.1 Linkage

DOTRAY is called by CAMRPT. It calls BIAPRT, CALC and CDRED.

3.2.6.2 Interfaces

Dot Data records.

3.2.6.3 Inputs

N/A

3.2.6.4 Outputs

The Conditional Dot report.

3.2.6.5 Storage Requirements

Total space allocated is 2306 Bytes.

3.2.6.6 Description

DOTRAY is called by CAMPRT after reading the first Dot Data record. DOTRAY next outputs the report header to the top of the next page and processess the Dot Data records until all 209 dots are processed. DOTRAY also saves the dot Lable, dot type and classification for each dot in the common block CBIAS for later use by BIAPRT & CALC.

The processing involves outputting the following for each of 209 dots:

Dot number, line and pixel number for the dot, type and label (if any) for the dot, cluster and classification às well as the greenness and brightness of up to 4 acquisition for the Dot. Each record contains data for 15 dots. After the 15 dots in the record has been processed and output the next record is read in via CDRED and processed. After all dots are processed DOTRAY calls CALC to perform calculation for the bias correction reports then calls BIAPRT to output the bias correction reports. Finally, DOTRAY check the value PRTOUT. If PRTOUT is 1 DOTRAY returns to the main program. If PRTOUT is not 1 all valid PCC values (percentages of TYPE 1 & TYPE 2 correctly classified or clustered dots) are tested. If any of the valid PCC's are less than 80%, then PRTOUT is set to 2, to indicate to the main program that the conditional reports are to be read from the disk and output to the line printer.

3.2.6.7 Flowcharts

N/A

3.2.6.8 Listing

See Appendix A

3.2.7 SOFTWARE COMPONENT 7 (SEPRPT)

This program processess the separability data which was saved for it by CAMREC and outputs the separability report.

3.2.7.1 Linkage

SEPRPT is called by CAMREC.

3.2.7.2 Interfaces

N/A

3.2.7.3 Inputs

Segment Recognition record number 1.

3.2.7.4 Outputs

The normal Separability report.

3.2.7.5 Storage Requirements

Total space allocated in 588 bytes.

3.2.7.6 Description

SEPRPT is called by CAMREC after all separability data has been saved. SEPRPT then outputs the separability report which consists of channel combinations for up 4
(16 channels) and selection Battacharyya separability data.

3.2.7.7 Flowcharts

N/A

3.2.7.8 Listings

See Appendix A.

3.2.8 SOFTWARE COMPONENT NO. 8 (CALC)

This subroutine calculates data necessary for the output of the Bias Correction Classification and Bias Correction Cluster reports.

3.2.8.1 Linkage

CALC is called by DOTRAY.

3.2.8.2 Interface

N/A

3.2.8.3 Inputs

Dot Data from common blocks CBIAS.

3.2.8.4 Output

None

3.2.8.5 Storage

Total space allocated is 4031 bytes.

3.2.8.6 Description

CALC performs 2 identical calculations on different sets of data. The first data set involves Classification data and the second involves Cluster data. CALC first sets all needed variables to zero. If the flag CLADUM is equal to 1 no classification calculations are performed and CALC goes directly to the cluster calculations. Otherwise CALC checks "category 8 interest" for the presence of an"S", "N", or "W", and sets pointers and indication as necessary. Next certain arrays are zeroed.

Following is the variables calculated for each of 209 dots. It is understood in every case that the conditions apply to DOTS which are labeled, that is, LBLED (I) is not blank, and to DOTS not classified as DU or DO.

- NTYP1 - The number of DOTS which are either type 1 or type 3.
- NTYP 2 - The number of type 2 DOTS
- NAII - The number of type 1 type 3 DOTS whose label and classification are the same.
- NGIJ - The number of type 1 and type 3 "Grain TYPE" DOTS whose label and classification are not the same.
- NOCL - The number of type 2 DOTS which are both labeled and classified.

In addition when calculating the above for all dots a bias correction vector table is calculated. This table consists of a two dimensional array and contains summations of dots that have valid labels as the first index and valid classification as the second index.

In addition the following variables are calculated: It is understood that classified does not mean "threshold".

- ALGT - The number of TYPE 2 dots labeled either "W" or "S" and classified either "W" or "S".
- ALBG - The number of TYPE 2 dots labeled with any "category used" and classified either "W" or "S".
- ALNT - The number of TYPE 2 dots labeled in any "category used" other than "W" or "S" and classified in any "category used" other than "W" or "S".
- ALNT - The number TYPE 2 dots labeled in any "category used" and classified in any "category used" other than "W" or "S".

The subroutines computes the corrected percentages, uncorrected popuiations, variances, uncorrected percentages and random sample data for all "categories used" plus "grain category". The equations for these calculations are shown in Attachment B.

CALC now performs the identical calculations on the cluster data after checking CLUDUM as outlined above.

3.2.8.7 Flowchart

See Flow diagram No. 3.

3.2.8.8 Listing

See Appendix A.

3.2.9 SOFTWARE COMPONENT NO. 9 (BIAPRT)

This program outputs the report header sheet, Label/Classification table, Lable/Cluster table and the Bias Correction reports.

3.2.9.1 Linkage

BIAPRT is called by CAMREC & DOTRAY. It calls BNT.

3.2.9.2 Interface

N/A

3.2.9.3 Inputs

Segment recognition records and common blocks CBIAS, Dummy and CLCOM.

3.2.9.4 Outputs

Report header sheet, TYPE1 and TYPE2 Dot Label/Classification report, Bias Correction Classification Report, TYPE1 and TYPE2 Dot Label/Cluster report and the Bias Correction Cluster reports.

3.2.9.5 Storage Requirements

Total space allocated in 3712 bytes.

3.2.9.6 Description

When CAMREC calls BIAPRT it sets PASS=1. This causes BIAPRT to output the report header which contains tape number, DPAR No., record ID, segment number and all acquisition dates. This information is retrieved from the segment recognition record which had been read into IBUF.

When DOTRAY calls BIAPRT it sets PASS=2. In this mode of operation up to 2 similar reports can be generated. If CLADUM is equal to 1 no classification report is generated.

Otherwise DOTRAY generates an 11 by 19 matrix of user label/classification entries for type 1 and type 3 DOTS. A similar Matrix is generated for type 2 DOTS which also includes type 0 DOTS. DOTS with a classification label of DU or DO do not appear in either matrix.

Next the bias correction classification report is output using data calculated by CALC and stored in common blocks CBIAS. The report consists entries for all "categories of interest", DO, TH, UN and grain as follows:

Pixel population, classified and corrected percentages, variance and random sample estimates.

Also the alpha value matrix is output, and PCC values, DW and DS and lastly the Bias correction vectors and totals.

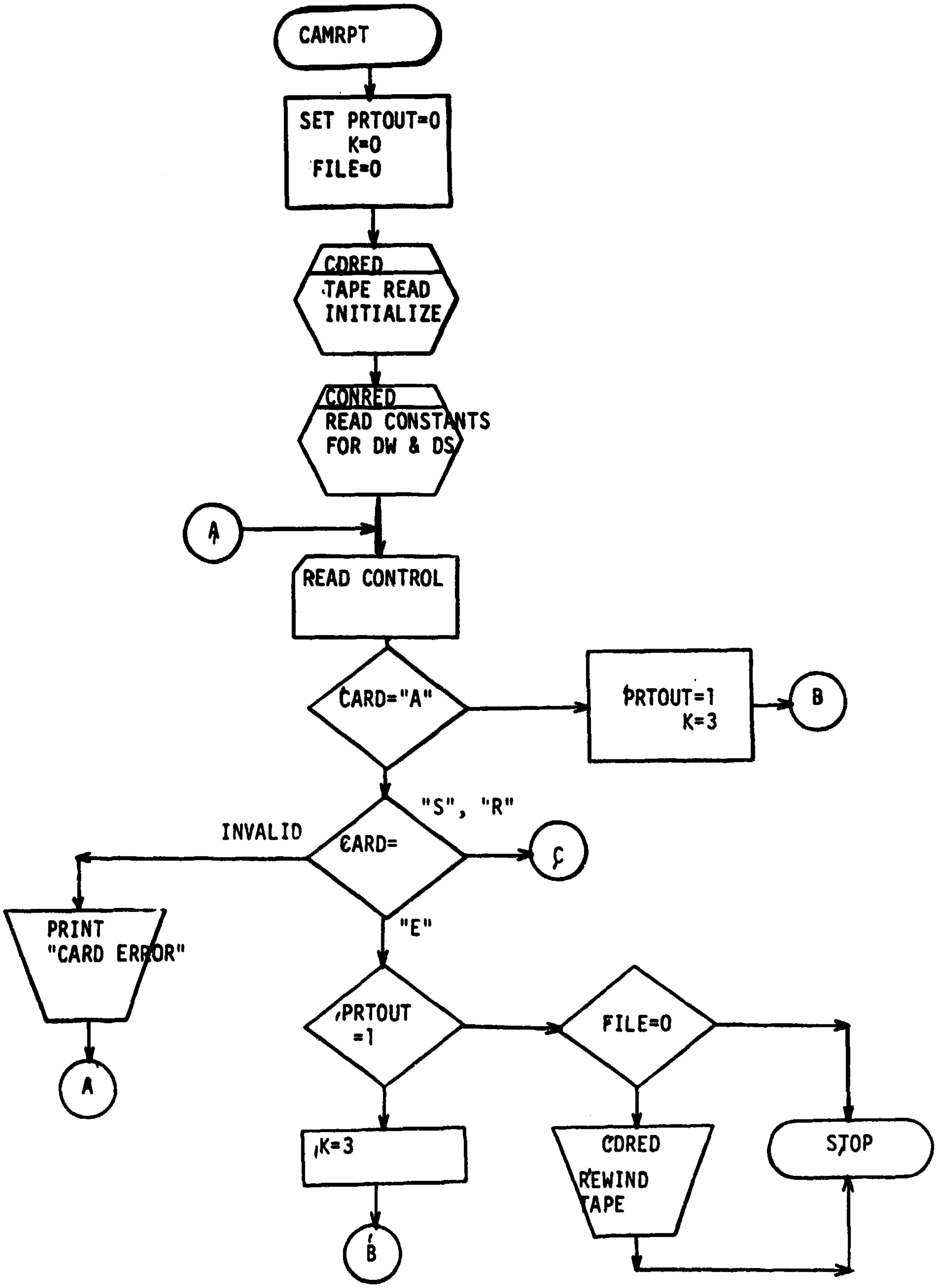
A similar report is generated for the cluster data if CLUDUM is not equal to 1.

3.2.9.7 Flowcharts

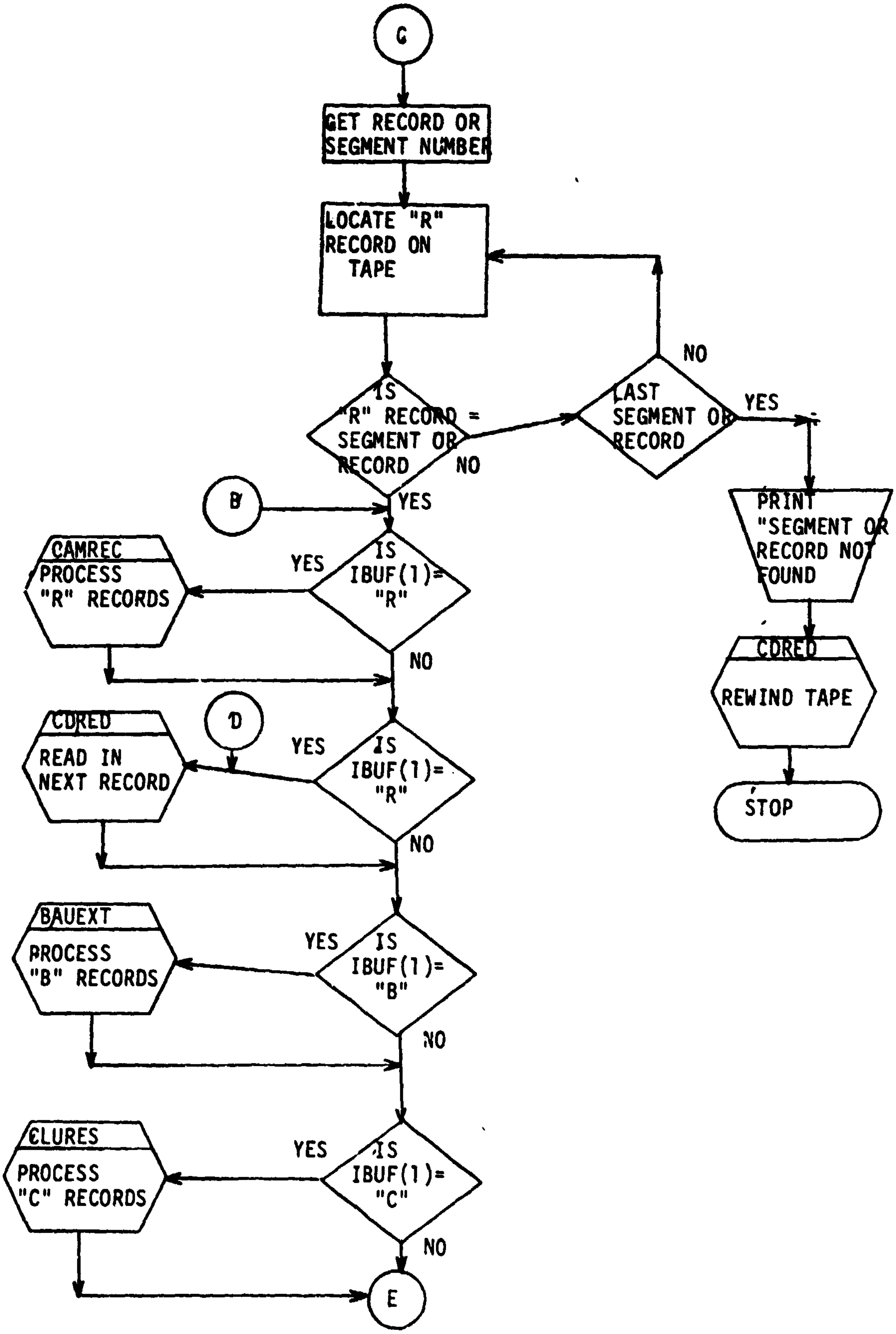
See flow diagram 4.

3.2.9.8 Listing

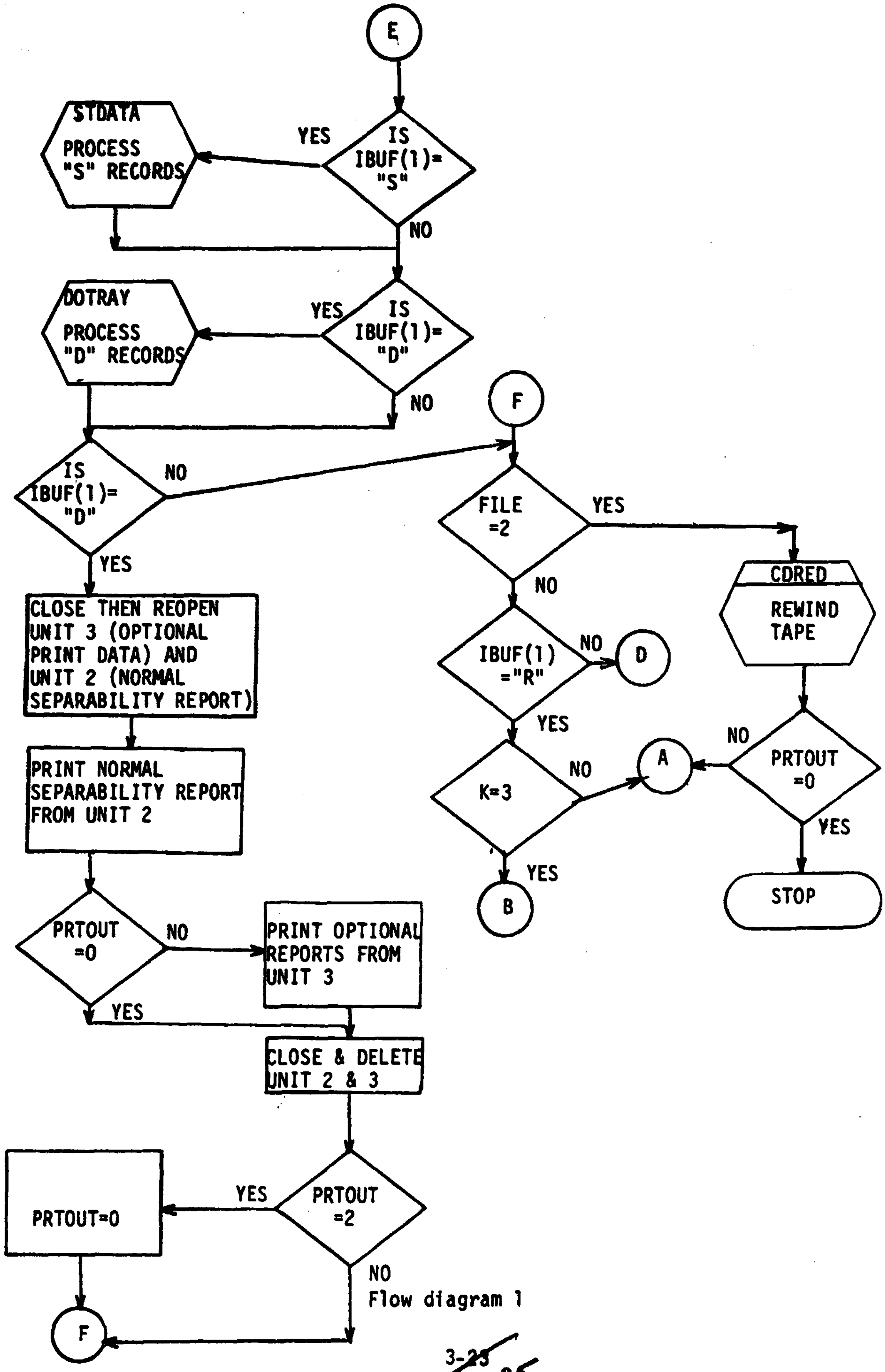
See Appendix A.



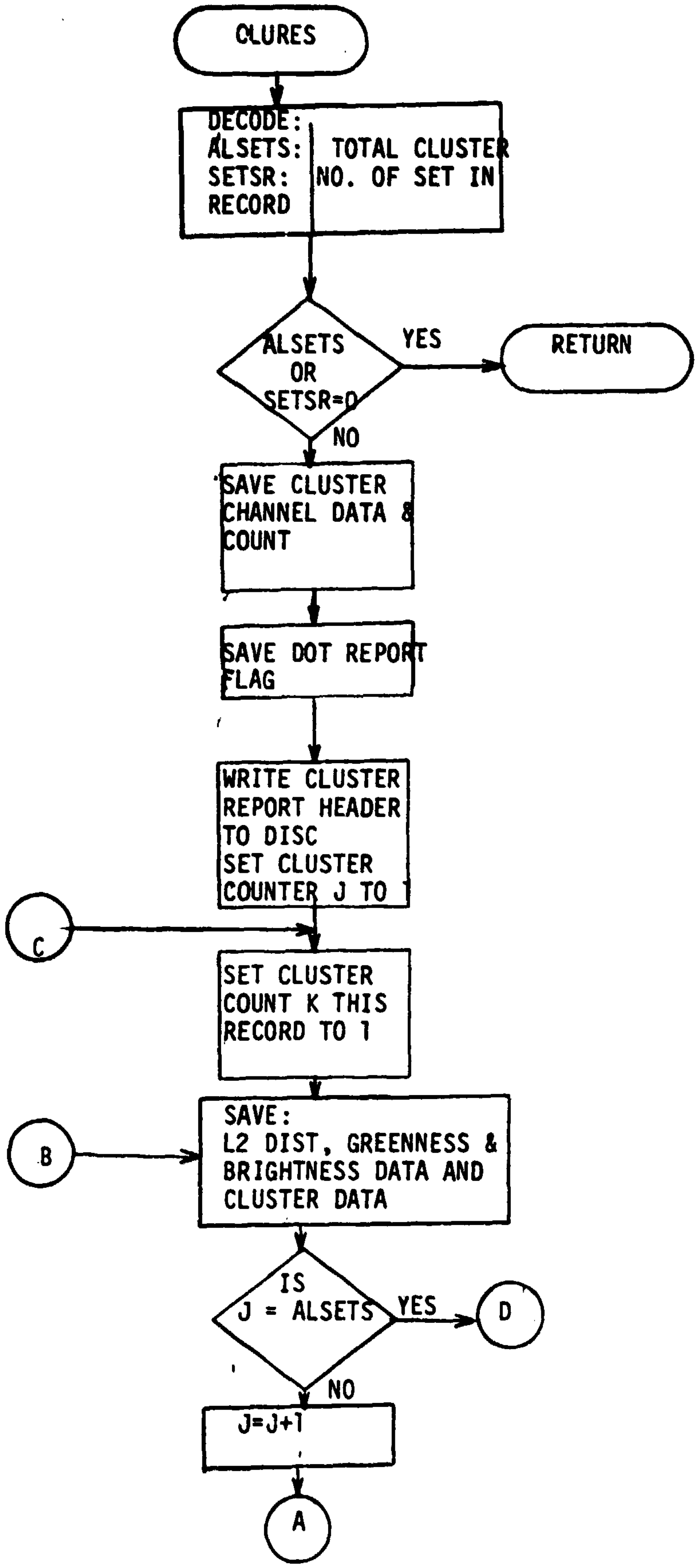
Flow diagram 1



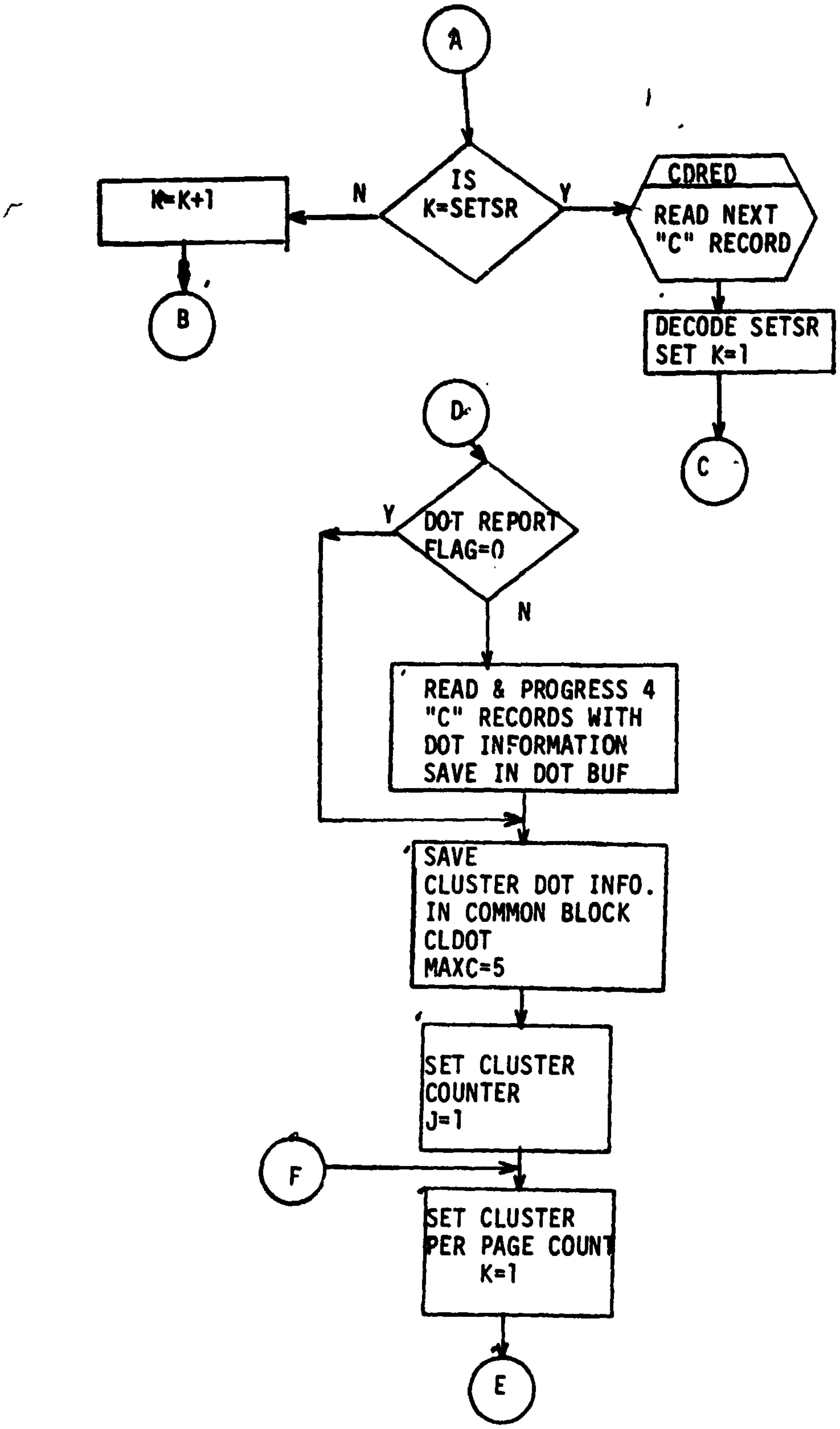
Flow diagram 1



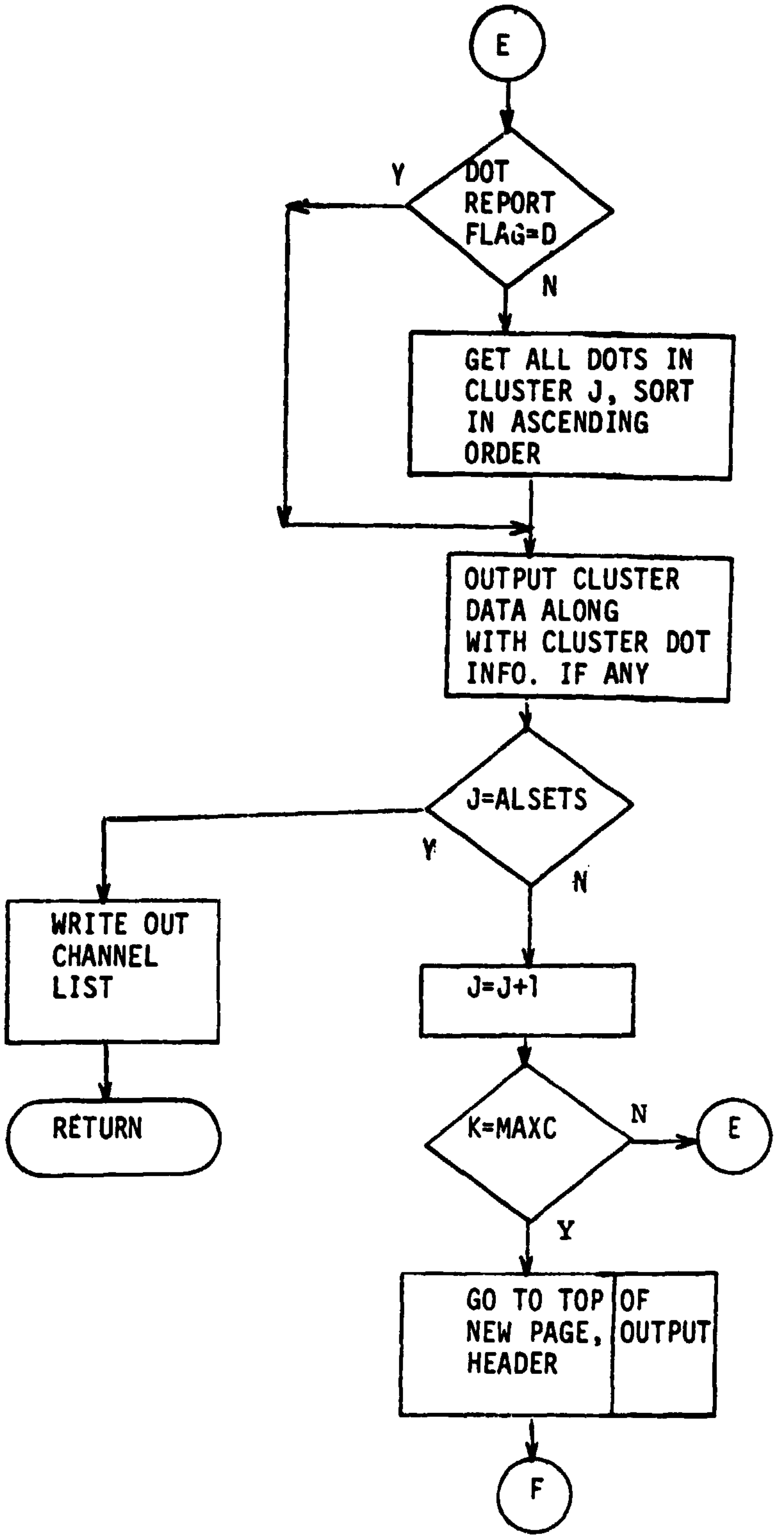
Flow diagram 1


CLURES
DECODE:
ALSETS: TOTAL CLUSTER
SETSR: NO. OF SET IN
RECORD
ALSETS OR SETSR=0
YES
RETURN
NO
SAVE CLUSTER CHANNEL DATA & COUNT
SAVE DOT REPORT FLAG
WRITE CLUSTER REPORT HEADER TO DISC
SET CLUSTER COUNTER J TO 1
C
SET CLUSTER COUNT K THIS RECORD TO 1
B
SAVE:
L2 DIST, GREENNESS & BRIGHTNESS DATA AND CLUSTER DATA
IS J = ALSETS
YES
D
NO
J=J+1
A

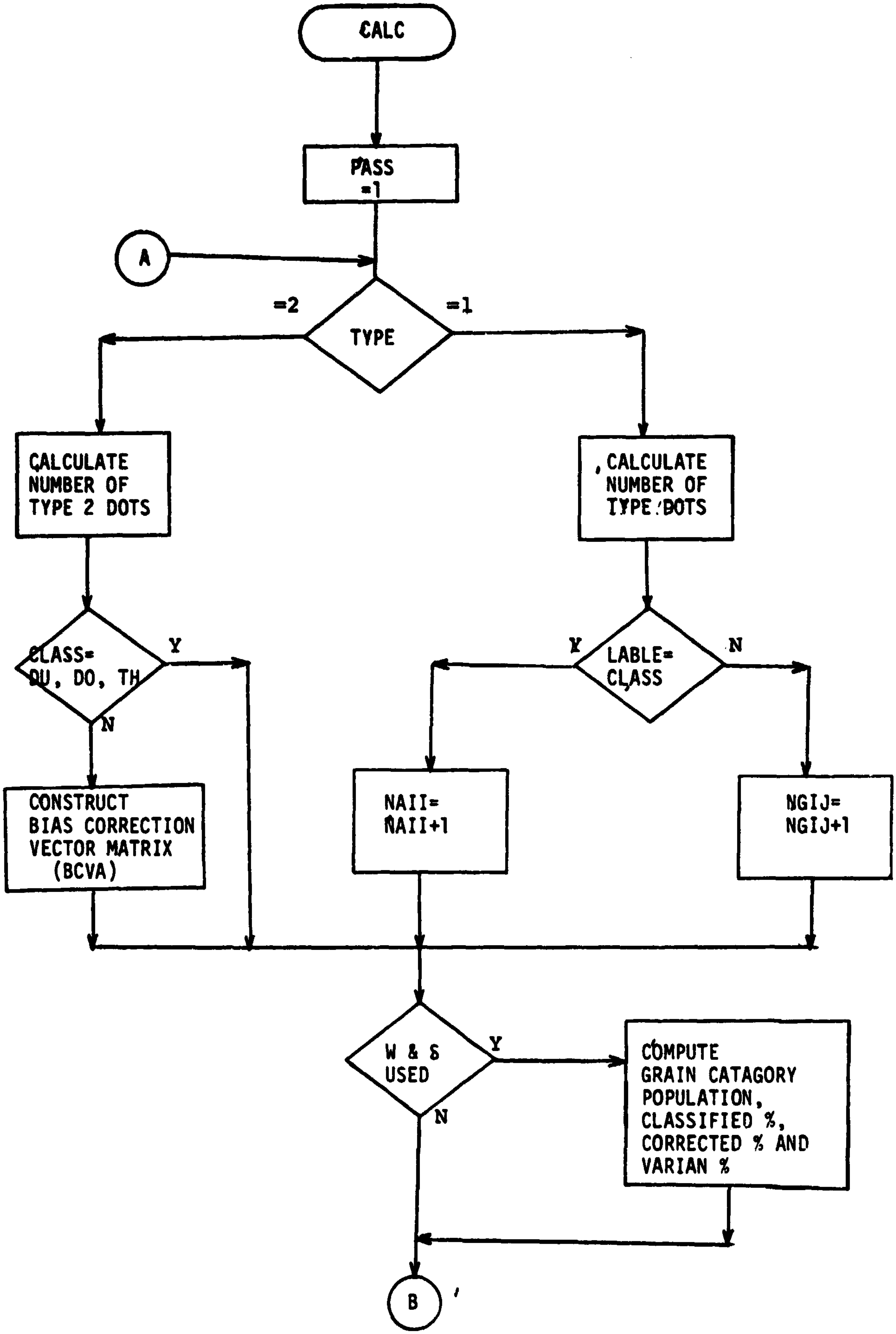
Flow diagram 2



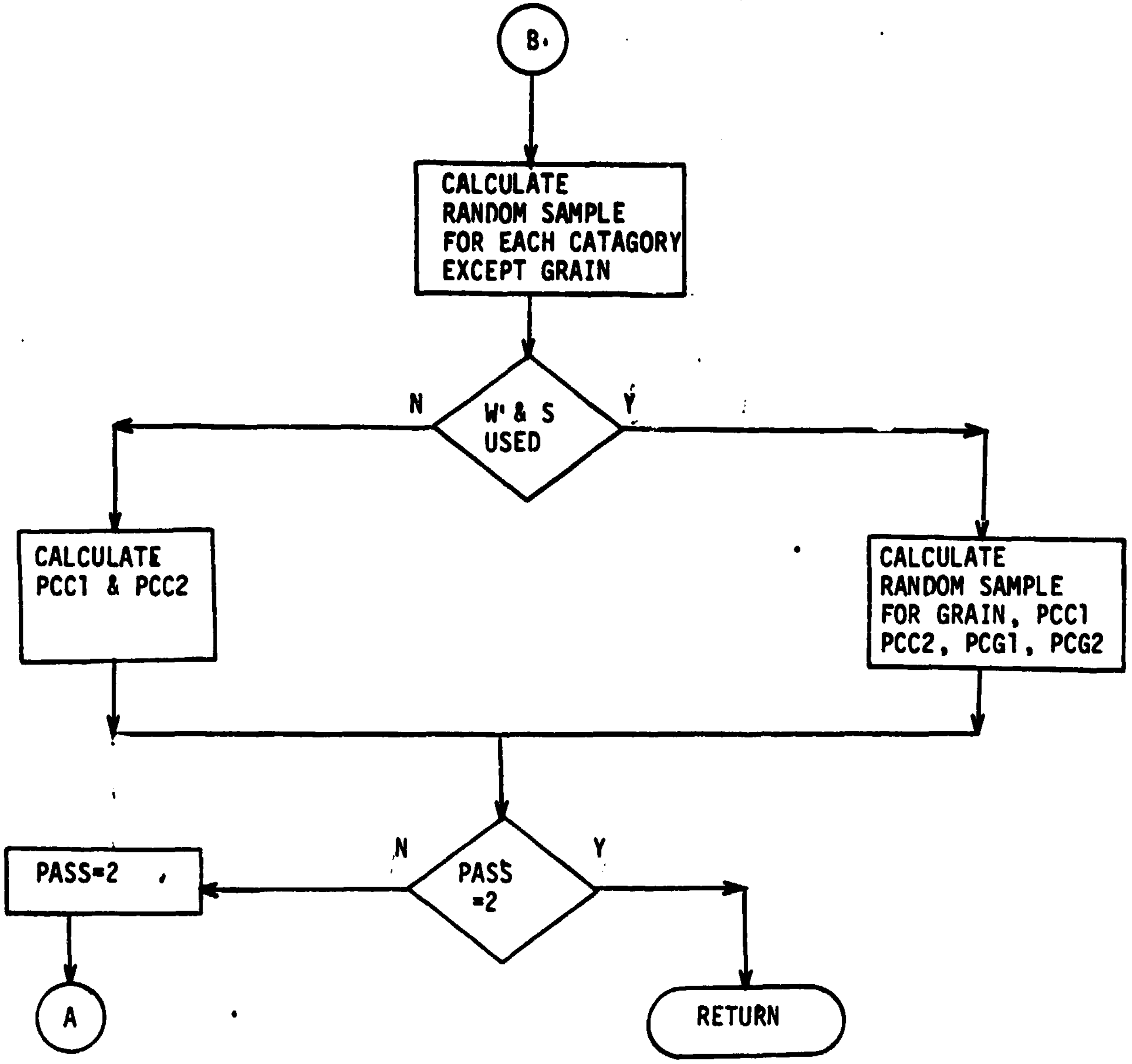
Flow diagram 2


E
DOT REPORT FLAG=D
Y
N
GET ALL DOTS IN CLUSTER J, SORT IN ASCENDING ORDER
OUTPUT CLUSTER DATA ALONG WITH CLUSTER DOT INFO. IF ANY
J=ALSETS
Y
N
WRITE OUT CHANNEL LIST
RETURN
J=J+1
K=MAXC
N
E
Y
GO TO TOP OF NEW PAGE, OUTPUT HEADER
F

Flow diagram 2

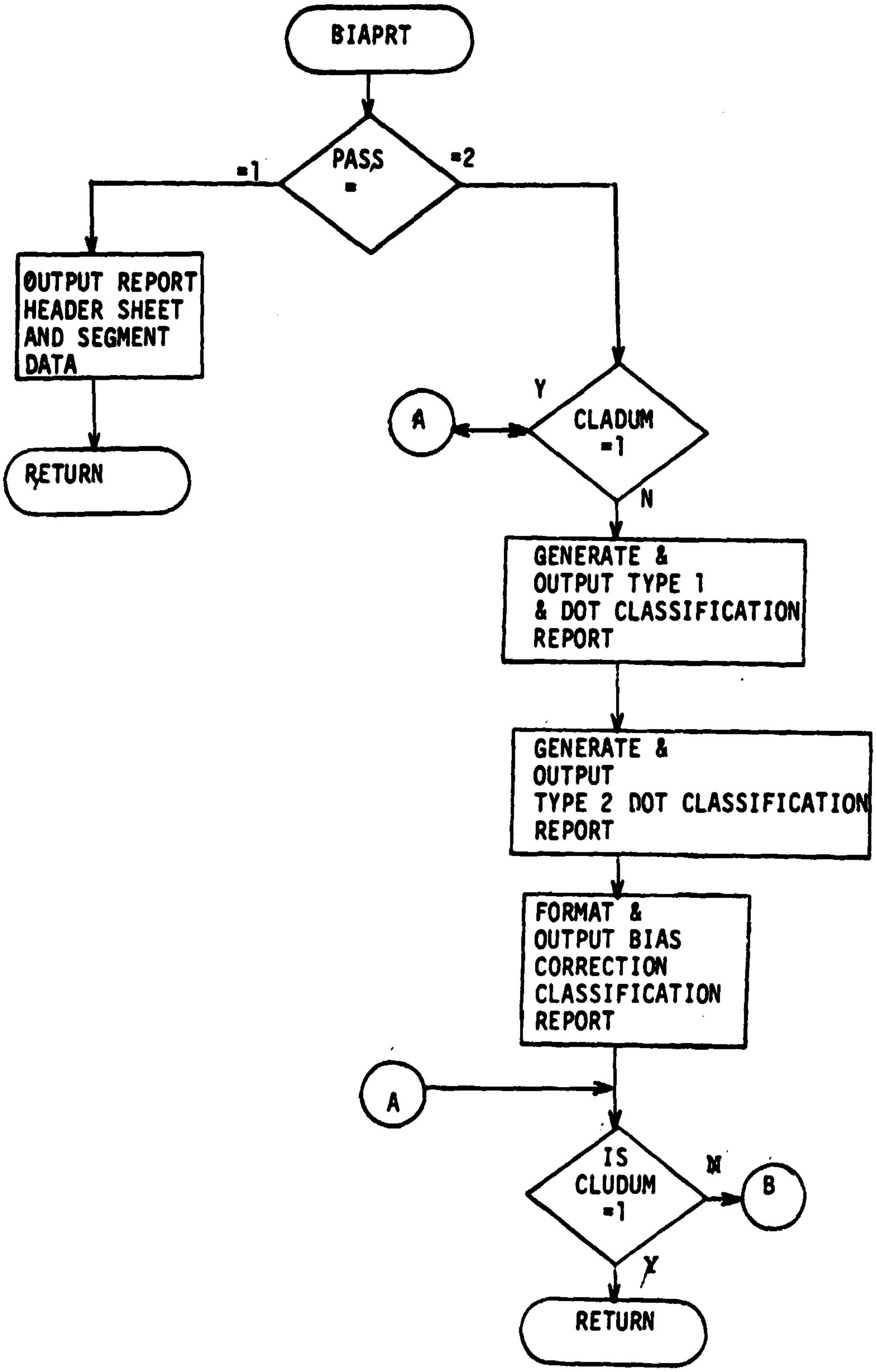

CALC
PASS =1
A
=2
TYPE
=1
CALCULATE NUMBER OF TYPE 2 DOTS
CALCULATE NUMBER OF TYPE 1 DOTS
CLASS= DU, DO, TH
Y
N
LABLE= CLASS
Y
N
CONSTRUCT BIAS CORRECTION VECTOR MATRIX (BCVA)
NAII= NAII+1
NGIJ= NGIJ+1
W & S USED
Y
N
COMPUTE GRAIN CATAGORY POPULATION, CLASSIFIED %, CORRECTED % AND VARIAN %
B

Flow diagram 3

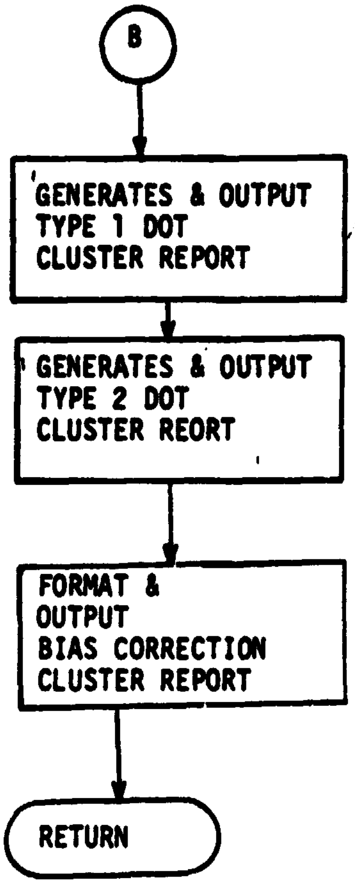

B
CALCULATE RANDOM SAMPLE FOR EACH CATAGORY EXCEPT GRAIN
W & S USED
N
Y
CALCULATE PCC1 & PCC2
CALCULATE RANDOM SAMPLE FOR GRAIN, PCC1 PCC2, PCG1, PCG2
PASS =2
N
Y
PASS=2
A
RETURN

THE LOGIC FOR SECOND PASS IS THE SAME AS THE FLOW CHART ONLY THE VARIABLES ARE CHANGED.

Flow diagram 3


BIAPRT
PASS =
=1
=2
OUTPUT REPORT HEADER SHEET AND SEGMENT DATA
RETURN
Y
A
CLADUM =1
N
GENERATE & OUTPUT TYPE 1 & DOT CLASSIFICATION REPORT
GENERATE & OUTPUT TYPE 2 DOT CLASSIFICATION REPORT
FORMAT & OUTPUT BIAS CORRECTION CLASSIFICATION REPORT
A
IS CLUDUM =1
N
B
Y
RETURN

Flow diagram 4


B
GENERATES & OUTPUT TYPE 1 DOT CLUSTER REPORT
GENERATES & OUTPUT TYPE 2 DOT CLUSTER REORT
FORMAT & OUTPUT BIAS CORRECTION CLUSTER REPORT
RETURN

Flow diagram 4

4. OPERATING PROCEDURE

4.1 GENERAL

CAMRPT is an RSX-11D Batch program which reads a CAMS/CAS Interface tape and generates a series of reports which are output on the line printer. It requires data card inputs.

4.2 DECK SET UP

The first 22 data cards define the input tape drive, input tape unit and curve fitting constants for DW & DS calculations. The DS & DS formular are shown in Appendix B. The card formats are:

M or X (tape drive)
0 or 1 (tape unit)
10 DW curve fitting constant cards as described in Appendix C1
10 DS curve fitting constant cards as described in Appendix C2

Entries always start in column 1. To execute the CAMRPT default option for a limited printout of reports, an END card must follow the two data cards above. If the option for a full output of all reports is desired, the control card sequence is:

```
A     (for all reports)
END
```

If the user desires to obtain the output for only a single segment on the input tape, segment 9681 for example, the control card sequence is:

```
S     9681
END
```

To obtain the output for segment 9681, and all segments following 9681, the control card sequence is:

```
S     9681
A
END
```

The above option is used when there is a bad segment on the input tape, to obtain the output for segments following the bad segment.

The Batch deck set up for the CAMRPT default option using input tape unit MTO is as follows:

```
$JOB/NAME=CAMRPT/MCR/LIMIT=99/ACCOUNT=5050
$DATA
M
O
10 DW constant cards
10 DS constant cards
END
$EOD
$MCR REM RSXBAT
$RUN CAMRPT
$EOJ
```

To run the program, mount the CAMS/CAS Interface tape and enter a mount message.

For MTO the message would be:

```
MCR > MOU MTO:/CHA=[FOR]     (CR)
```

Then load the card reader with the CAMRPT Batch deck and enter BAT CR:, to read in the deck.

APPENDIX A

```
FØRTRAN IV-PLUS V02-51                08:02:02    09-MAR-78          PAGE 1
CAMRPT.FTN            /TR:BLØCKS/WR
0001                  IMPLICIT INTEGER(A-Z)
0002                  BYTE PBUF(120)
0003                  LØGICAL*1 IBUF(3060)
0004                  LØGICAL*1 CCHAR
0005                  LØGICAL*1 CD(80)
0006                  LØGICAL*1 CØNTR(4)
0007                  LØGICAL*1 SEGNM(4),RECØRD(12)
0008                  CØMMØN/SEG/SEGNM
0009                 CØMMØN/PCNT/LINE,PAGE
0010                  DATA CØNTR/1HS,1HR,1HA,1HE/
0011                  PRTØUT=0
0012                  K=0
0013                  R=0
0014                  FILE=0
0015                  TAPNØ=0
0016                  CALL CDRED(IBUF,R,FILE)
0017                  R=1
0018                  CALL CDRED(IBUF,R,FILE)
0019          100     FØRMAT(I4)
            C READ CØNSTANTS FØR DW AND DW CALCULATIØNS
0020                  CALL CØARED
0021        15        CØNTINUE
0022                  R=2
            C         TYPE 1000
0023          1000    FØRMAT(1H$,5X,'INPUT RUN TYPE >')
            C         ACCEPT 99,CD
0024                  READ(1,99,END=97) CD
0025        99        FØRMAT(80A1)
0026                  DØ 20 I=1,72
0027                  IF(CD(I).NE.' ')   GØ TØ 21
0028        20        CØNTINUE
0029                  GØ TØ 9
0030        21        CCHAR=CD(I)
0031                  DØ  1  K=1,4
0032                  IF(CØNTR(K).EQ.CCHAR)  GØ TØ 2
0033        1         CØNTINUE
0034        22        CØNTINUE
0035                  WRITE(6,88)
0036        88        FØRMAT('1',10X,'  BAD DATA CARD ')
0037        97        STØP
0038        18        FILE=0
0039                  R=-1
0040                  CALL CDRED(IBUF,R,FILE)
0041                  IF(PRTØUT.EQ.0)  STØP
0042                  GØ TØ 15
0043          2       CØNTINUE
0044                  IF(TAPNØ.EQ.0) DECØDE(4,100,IBUF(44))  TAPNØ
0045                  GØ TØ(31,31,34,35)K
0046        35        CØNTINUE
0047                  IF(PRTØUT.EQ.1)  GØ TØ 5
0048                  K=3
0049                  GØ TØ 6
0050          5       IF(FILE.EQ.0)  STØP
0051                  R=-1
0052                  CALL CDRED(IBUF,R,FILE)
0053                  STØP
```

```
      31    CØNTINUE
            PRTØUT=1
            F=0
            I=1
      4     IF(CD(I).NE.' ')  GØ TØ 3
            I=I+1
            IF(I.GT.72)  GØ TØ 22
            GØ TØ 4
      3     F=F+1
            IF(F.EQ.1)  GØ TØ 7
            IF(K.EQ.1)  GØ TØ 8
            IF(F.EQ.2)  GØ TØ 7
            GØ TØ 8
      7     I=I+1
            IF(CD(I).EQ.' ')  GØ TØ 4
            IF(I.GT.72)  GØ TØ 22
            GØ TØ 7
      8     CØNTINUE
            IF(K.EQ.2)  GØ TØ 12
            JJ=1
            DØ  11  J=I,I+3
            SEGNØ(JJ)=CD(J)
            JJ=JJ+1
      11    CØNTINUE
            GØ TØ 13
      12    CØNTINUE
            JJ=1
            DØ  14  J=I,I+12
            DIF=J-I+1
            IF(DIF.EQ.7)  GØ TØ 14
            RECØRD(JJ)=CD(J)
            JJ=JJ+1
      14    CØNTINUE
      13    CØNTINUE
            GØ TØ 47
      41    CØNTINUE
            CALL CDRED(IBUF,R,FILE)
            IF(FILE.LT.2)  GØ TØ 47
            WRITE(6,89)
      89    FØRMAT(1H0,10X,'SEGMENT NØ. ØR RECØRD ID NØT FØUND')
            GØ TØ 18
      47    CØNTINUE
            R=R+1
            IF(IBUF(1).NE.'R')  GØ TØ 41
            IF(IBUF(2).GT.'1')  GØ TØ 41
      C     IF(K .EQ. 2) GØ TØ 15
            DØ  43  I=1,4
            IF(SEGNØ(I).NE.IBUF(147+I)) GØ TØ 41
      43    CØNTINUE
            SFLG=1
            GØ TØ 46
      48   CALL CDRED(IBUF,R,FILE)
      34    CØNTINUE
            PRTØUT=1
       6    R=R+1
       46   CØNTINUE
```

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OF POOR QUALITY

```
                 IF(IBUF(1).EQ.'R')  CALL CAMREC(IBUF,R,FILE,TAPNØ)
                 IF(IBUF(1).NE.'R') GØ TØ 51
      49         CØNTINUE
      50         CALL CDRED(IBUF,R,FILE)
    51           CØNTINUE
                 IF(IBUF(1).EQ.'E') CALL SAVEXT(IBUF,R,FILE)
                 IF(IBUF(1) .EQ. 'C') CALL CLURES(IBUF,R,FILE)
                 IF(IBUF(1).EQ.'S')  CALL STDATA(IBUF,R,FILE,DFLG)
                 IF(IBUF(1).EQ.'D') CALL DETRAY(IBUF,R,FILE,PRTØUT)
                IF(IBUF(1).EQ.'P') GØ TØ 25
      19         IF(FILE.EQ.2)  GØ TØ 19
                 IF(IBUF(1).NE.'R')  GØ TØ 49
                 IF(K.NE.3) GØ TØ 15
                 GØ TØ 46
    9            WRITE(6,98)
    98           FØRMAT('1',10X,'  BLANK DATA CARD  ')
                 GØ TØ 18
      25         CØNTINUE
    27           CLØSE(UNIT=2,DISPØSE='SAVE')
                CLØSE(UNIT=3,DISPØSE='SAVE')
                ØPEN(UNIT=3,TYPE='ØLD',NAME='XXXX.DAT')
                 ØPEN(UNIT=2,TYPE='ØLD',NAME='YYYY.DAT')
    23           READ(2,500,END=24) PBUF
                 WRITE(6,500) PBUF
                 GØ TØ 23
    24           IF(PRTØUT.EQ.0)  GØ TØ 10
      26         READ(3,500,END=10)  PBUF
                 WRITE(6,500)  PBUF
      500        FØRMAT(120A1)
                 GØ TØ 26
      10         CLØSE(UNIT=3,DISPØSE='DELETE')
                 CLØSE(UNIT=2,DISPØSE='DELETE')
                 IF(PRTØUT.EQ.2) PRTØUT=0
                 GØ TØ 19
                 END
```

```
FØRTRAN IV-PLUS V02-51           08102102     09-MAR-78            PAGE 4
CAMRPT.FTN       /TR:BLØCKS/WR
PRØGRAM SECTIØNS
@
NUMBER   NAME         SIZE                   ATTRIBUTES
@
   1     $CØDE1   002272    605              RW,I,CØN,LCL
   2     $PDATA   000036     15              RW,D,CØN,LCL
   3     $IDATA   000344    114              RW,D,CØN,LCL
   4     $VARS    006346   1651              RW,D,CØN,LCL
   5     $TEMPS   000002      1              RW,D,CØN,LCL
   6     SEG      000004      2              RW,D,ØVR,GBL
   7     PCNT     000004      2              RW,D,ØVR,GBL
@
@
VARIABLES
@
 NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME  TYPE  ADDRESS    NAME  TYPE  ADDRESS    NAME  TYPE  ADDRESS
@
 CCHAR  L*1   4-006154   DFLG   I*2   4-006344   DIF   I*2   4-006340   F     I*2   4-006332   FILE  I*2   4-006324
 I      I*2   4-006330   J      I*2   4-006336   JJ    I*2   4-006334   K     I*2   4-006320   LINE  I*2   7-000000
 PAGE   I*2   7-000002   PRTØUT I*2   4-006316   R     I*2   4-006322   SFLG  I*2   4-006312   TAPE  I*2   4-106326
@
@
ARRAYS
@
 NAME   TYPE  ADDRESS        SIZE            DIMENSIØNS
@
 CD     L*1   4-006155   000120     40       (80)
 CØNTR  L*1   4-006275   000004      2       (4)
 IBUF   L*1   4-000170   005764   1530       (3060)
 PBUF   L*1   4-000000   000170     60       (120)
 RECØRD L*1   4-006301   000014      6       (12)
 SEGNØ  L*1   6-000000   000004      2       (4)
@
@
LABELS
@
 LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS
@
 1          **            2       1-000426         3       1-000676         4       1-000436         5       1-000542
 6       1-001440         7       1-000742         8       1-001004         9       1-001714         10      1-002224
 11         **            12      1-001102         13      1-001234         14      1-001212         15      1-000110
 18      1-000360         19      1-001444         20         **            21      1-000232         22      1-000316
 23      1-002014         24      1-002112         25      1-001746         26      1-002124         27         **
 31      1-000610         34      1-001424         39      1-000512         41      1-001244         43         **
 46      1-001452         47      1-001316         48         **            49      1-001510         50         **
 51      1-001526         88'     3-000010         89'     3-000040         97      1-000344         98'     3-000112
 99'     3-000004         100'    3-000000         500'    3-000144         1000'      **
@
@
FUNCTIØNS AND SUBRØUTINES REFERENCED
@
 BAUEXT  CAMREC  CDRED   CLØSS   CLURES  CØNRED  DPTRAY  ØPENS   STDATA
@
@
TØTAL SPACE ALLØCATED = 011254  2390
@
```

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```
FØRTRAN IV-PLUS V02-51                08:02:02    09-MAR-78                PAGE 5
CAMRPT.FTN        /TR:BLØCKS/WR
NØ FPP INSTRUCTIØNS GENERATED
@
CAMRPT,LP:=CAMRPT
```

```
CAMREC.FTN           /TR:BLOCKS/WR
0001                  SUBRØUTINE CAMREC(IBUF,R,FILE,TAPNØ)
0002                  IMPLICIT INTEGER(A-Z)
0003                  LØGICAL*1  IBUF(1),TØTSEP(8),SDATA(112)
0004                   INCLUDE 'CØMMØN1.DAT'
0005 *                BYTE CLASFY(418),CLØZT(416)
0006 *                 LØGICAL*1 TYPE(209),LBLED(209)
0007 *                 LØGICAL*1 BALABL(8),BACLAB(8),BUCLAB(8),BULABL(8)
0008 *                REAL PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2
0009 *                 REAL CLAD,CLUD,TCØNS,RCØNS,CCØNS
0010 *                DIMENSIØN CLAD(2),CLUD(2),TCØNS(2,8),CCØNS(2),RCØNS(2,8,8)
0011 *                 DIMENSIØN PCVA(8,8),PCVU(8,8)
0012 *                 DIMENSIØN BAPØP(12),BUPØP(12)
0013 *                 CØMMØN/CBIAS/BAPØP,BUPØP,BAUNCØ,BUUNCØ,BACØR,BUCØR,BACAIN,BUCAIN,
     *       *                      BAVAR,BUVAR,BARANS,BURANS,A,DØ,DU,TC,BUCATS,BUCLAB,
     *       *                      BULABL,BALABL,CLASFY,TYPE,LBLED,BACATS,BACLAB,
     *       *                      PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2,
     *       *                      PCVA,PCVU,BATØT,BUTØT,CLAD,CLUD,TCØNS,RCØNS,CCØNS
0014 *                 CØMMØN/DUMMY/CLADUM,CLUDUM
0015 *                CØMMØN/CLØRM/CLØZT
0016 *                 REAL A(3,2)
0017 *                 DIMENSIØN BAUNCØ(12),BUUNCØ(12),BACØR(12),BUCØR(12)
0018 *                 REAL BACAIN(8,8),BUCAIN(8,8),BAVAR(12),BUVAR(12),BARANS(12),BURANS(12)
0019                  CØMMØN/PCNT/LINE,PAGE
0020                   CØMMØN/SEG/SEGNØ

0021                  LØGICAL*1  CLIST(240),CLASS(4),CATLAB(8)
0022                   BYTE PB(132),BLANK,PT,LABEL(5)
0023                   LØGICAL*1 SEGNØ(4)
0024                   DIMENSIØN CT(16)
0025                   INTEGER NI(5)
0026                  INTEGER WI(60)
0027                  REAL PW(60),T1,X,Y,PCW,PNW
0028                  REAL  PDU,PDØ,PTH,PX,PWTH
0029                   DATA BLANK/1H /
0030                   DATA PT/1H./
0031                   DØ 11  I=1,132
0032        11         PB(I)=BLANK
0033                   PASS=1
0034                   CALL BIAPRT(IBUF,TAPNØ,PASS)
0035                   ØPEN(UNIT=3,TYPE='NEW',NAME='XXXX.DAT')
0036                   ØPEN(UNIT=2,TYPE='NEW',NAME='YYYY.DAT')
            C        SAVE DATA FØR SEPARABILITY REPØRT
0037                   TCHAN=0
0038                   DØ 7 J=64,99
0039                   IF(IBUF(J).EQ.'1') TCHAN=TCHAN+1
0040        7          CØNTINUE
0041                   DØ 8 J=1,8
0042                   TØTSEP(J)=IBUF(99+J)
0043        8          CØNTINUE
0044                  DECØDE(4,100,IBUF(56))  NØSUB
0045                   IF(NØSUB.EQ.0) GØ TØ 41
0046        100       FØRMAT(I4)
0047                   LINE=70
0048                   CALL BNT
0049                   WRITE(3,99)
0050        99        FØRMAT('0',28X,'CLASSIFICATIØN DATA')
```

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```
              WRITE(3,90)
      94      FØRMAT(2H0 )
              WRITE(3,98)
      98      FØRMAT(1H ,53X,'NØRMALIZED')
              II=0
              DØ 95 JJ=1,16
              IF(IBUF(83+JJ).EQ.'1')  GØ TØ 96
              GØ TØ 95
      96      II=II+1
              CT(II)=JJ
      95      CØNTINUE
              IIMAX=II
              WRITE(3,97)
      97      FØRMAT(1H ,15X,' CLUSTER NAME     THRESHØLD VALUE    ',
             *'APRIØRI VALUE     ')
              CALL RNT
              WRITE(3,90)
        90    FØRMAT('  ')
             LINE=LINE+5
             K=0
             J=1
             N=1
             RJ=249
             PØP=0
             SETSR=14
             LFLD=32
             WIT=0
             XC=0
             TC=0
             DØ  3 II=1,60
      3      WI(II)=0
             DECØDE(5,101,IBUF(64))  DV
      101    FØRMAT(I5)
             DECØDE(5,101,IBUF(69))  DU
             GØ TØ 2
      1      CALL CDRED(IBUF,K,FILE)
             RJ=3
             SETSR=22
             N=1
      2      CØNTINUE
             DECØDE(5,102,IBUF(RJ+27)) DUM1
             PØP=PØP+DUM1
             CALL CRIPØ(IBUF(RJ),CLASS,PI,PE)
              CALL MV(IBUF(RJ),PB(28),6)
              CALL MV(IBUF(RJ+15),PB(46),3)
              PB(49)=PT
              PB(50)=IBUF(RJ+18)
              CALL MV(IBUF(RJ+19),PB(66),3)
              WRITE(3,111)  (PB(PJ),PJ=27,79)
             CALL RNT
      111     FØRMAT(20X,60A1)
             TC=TC+PØ
             IF(CLASS(1).EQ.'X')  GØ TØ 10
             IF(CLASS(1).EQ.'N')  GØ TØ 20
             GØ TØ 30
      10     XC=XC+PI
```

```
30      IF(J.EQ.NØSUB)  GØ TØ 40
        J=J+1
        IF(N.EQ.SETSR)  GØ TØ 1
        N=N+1
        RJ=RJ+LFLD
        GØ TØ 2
20      IF(K.EQ.0)  GØ TØ 5
        LK=4*(K-1)
        DØ  4 II=1,4
        IF(CLASS(II).NE.CLIST(LK+II))  GØ TØ 5
4       CØNTINUE
        WI(K)=WI(K)+PI
         WIT=WIT+PØ*PI
        GØ TØ 30
5       K=K+1
        LK=4*(K-1)
        DØ  6 II=1,4
6       CLIST(LK+II)=CLASS(II)
        WI(K)=WI(K)+PI
         WIT=WIT+PØ*PI
        GØ TØ 30
40      CØNTINUE
        CALI RNT
        CALL RNT
         WRITE(3,93)  (CT(II),II=1,IIMAX)
93       FØRMAT(25X,'CHANNELS USED: ',16(1X,I2))
102     FØRMAT(I5)
41      GAPØP(10)=PØP
        T1=PØP
        T1=(T1/22932.)*100.
        GAUNCØ(10)=T1
         DØ 35 II=1,112
         SDATA(II)=IBUF(II+596)
35       CØNTINUE
         CALL CDRED(IBUF,2,FILE)
         IF(IBUF(1).NE.'R') GØ TØ 50
         DØ 45 II=1,112
         SDATA(II)=IBUF(II+596)
45       CØNTINUE
50       CALL SEPRPT(TCHAN,TØTSEP,SDATA)
         RETURN
         END
```

```
FORTRAN IV-PLUS V02-51          06102116     09-MAR-78          PAGE 4
CAMREC.FTN      /TR:BLOCKS/WR
PROGRAM SECTIONS

NUMBER   NAME        SIZE                  ATTRIBUTES

  1      $CODE1   002462    665            RW,I,CON,LCL
  2      $PDATA   000040     16            RW,D,CON,LCL
  3      $IDATA   000400    128            RW,D,CON,LCL
  4      $VARS    001744    498            RW,D,CON,LCL
  5      $TEMPS   000004      2            RW,D,CON,LCL
  6      CBIAS    005122   1321            RW,D,OVR,GBL
  7      DUMMY    000004      2            RW,D,OVR,GBL
  8      CLCOM    000642    209            RW,D,OVR,GBL
  9      PCNT     000004      2            RW,D,OVR,GBL
 10      SEC      000004      2            RW,D,OVR,GBL


ENTRY POINTS

 NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS

 CAMREC       1-000000


VARIABLES

 NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS

 BACATS I*2   6-003314   BAT3T  I*2   6-003766   BLANK  L*1   4-000770   BUCATS I*2   6-001556   BUTOT  I*2   6-003770
 CAADUM I*2   7-000000   CLUDUM I*2   7-000002   D3     I*2   6-001550   DU     I*2   6-001552   DUM1   I*2   4-001732
 FILE   I*2   F-000006*  I      I*2   4-001672   II     I*2   4-001704   IIMAX  I*2   4-001710   J      I*2   4-001700
 JJ     I*2   4-001706   K      I*2   4-001712   LFLD   I*2   4-001724   LINE   I*2   9-000000   LM     I*2   4-001742
 N      I*2   4-001714   NOSUB  I*2   4-001702   PAGE   I*2   9-000002   PASS   I*2   4-001674   PCCC1  R*4   6-003336
 PCCG2  R*4   6-003342   PCC1   R*4   6-003326   PCC2   R*4   6-003332   PCLC1  R*4   6-003356   PCLC2  R*4   6-003362
 PCL1   R*4   6-003346   PCL2   R*4   6-003352   PCM    R*4   4-001636   PD2    R*4   4-001652   PDU    R*4   4-001646
 PI     I*2   4-001734   PJ     I*2   4-001740   PNW    R*4   4-001642   PO     I*2   4-001736   POP    I*2   4-001720
 PT     L*1   4-000771   PTH    R*4   4-001656   PUTH   R*4   4-001666   PX     R*4   4-001662   R      I*2   F-000004*
 RJ     I*2   4-001716   SETSR  I*2   4-001722   TAPNO  I*2   F-000010*  TC     I*2   6-001554   TCHAN  I*2   4-001676
 T1     R*4   4-001622   WIT    I*2   4-001726   X      R*4   4-001626   XC     I*2   4-001730   Y      R*4   4-001632


ARRAYS

 NAME   TYPE  ADDRESS        SIZE           DIMENSIONS

 A      R*4   6-001520   000030     12      (3,2)
 BACAIN R*4   6-000220   000400    128      (8,8)
 BACLAB L*1   6-003316   000010      4      (8)
 BACZR  I*2   6-000140   000030     12      (12)
 BALABL L*1   6-001600   000010      4      (8)
 BAPOP  I*2   6-000000   000030     12      (12)
 BARANS R*4   6-001360   000060     24      (12)
 BAUNCA I*2   6-000060   000030     12      (12)
 BAVAR  R*4   6-001220   000060     24      (12)
 BCVA   I*2   6-003366   000200     64      (8,8)
 BCVU   I*2   6-003566   000200     64      (8,8)
 BUCAIN R*4   6-000620   000400    128      (8,8)
```

```
FORTRAN IV-PLUS V02-51                 06:32:16    05-MAR-78           PAGE 5
CAMREC.FTN          /TR:BLOCKS/WR
  BUCLAB  L*1    6-001560   000010      4     (8)
  BUCBR   I*2    6-000170   000030     12     (12)
  BULABL  L*1    6-001570   000010      4     (8)
  BUP2P   I*2    6-000030   000030     12     (12)
  BURANS  R*4    6-001440   000060     24     (12)
  BUUNCP  I*2    6-000110   000030     12     (12)
  BUVAR   R*4    6-001300   000060     24     (12)
  CATLAB  L*1    4-000554   000010      4     (8)
  CC3NS   R*4    6-005112   000010      4     (2)
  CLAD    R*4    6-003772   000010      4     (2)
  CLASFY  L*1    6-001610   000642    209     (418)
  CLASS   L*1    4-000550   000004      2     (4)
  CLOUT   L*1    8-000000   000642    209     (418)
  CLIST   L*1    4-000170   000360    120     (240)
  CLUD    R*4    6-004002   000010      4     (2)
  CT      I*2    4-001000   000040     16     (16)
  IBUF    L*1    F-000002*  000001      0     (1)
  LABEL   L*1    4-000772   000005      2     (5)
  LBLED   L*1    6-002773   000321    104     (209)
  NI      I*2    4-001040   000012      5     (5)
  PH      L*1    4-000564   000204     66     (132)
  PW      R*4    4-001242   000360    120     (60)
  RCBNS   R*4    6-004112   001000    256     (2,8,8)
  SDATA   L*1    4-000010   000160     56     (112)
  SEGNB   L*1   10-000000   000004      2     (4)
  TCBNS   R*4    6-004012   000100     32     (2,8)
  TRTSEP  L*1    4-000000   000010      4     (8)
  TYPE    L*1    6-002452   000321    104     (209)
  WI      I*2    4-001052   000170     60     (60)
 
 
LABELS
 
 LABEL   ADDRESS       LABEL   ADDRESS       LABEL   ADDRESS       LABEL   ADDRESS       LABEL   ADDRESS
 
 1       1-001064      2       1-001152      3          **         4          **         5       1-001750
 6          **         7          **         8          **         10      1-001520      11         **
 20      1-001610      30      1-001534      35         **         40      1-002100      41      1-002210
 45         **         50      1-002430      90'     3-000154      93'     3-000174      94'        **
 95      1-000530      96      1-000562      97'     3-000060      98'     3-000034      99'     3-000004
 100'    3-000000      101'    3-000164      102'    3-000232      111'    3-000170
 
 
FUNCTIONS AND SUBROUTINES REFERENCED
 
 BIAPRT  BNT      CORED   CPIP#   KV      OPENS   SEPRPT
 
 
TOTAL SPACE ALLOCATED = 013072  2845
 
CAMREC.LP:=CAMREC
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45

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FORTRAN IV-PLUS V02-51              08:02:37    09-MAR-78         PAGE 1
BAUEXT.FTN       /TR:BLOCKS/WR
0001             SUBROUTINE BAUEXT(IBUF,N,FILE)
0002             IMPLICIT INTEGER (A-Z)
0003             BYTE IBUF(1)
0004            INCLUDE '[illegible].DAT'
0005 *           BYTE CLASFY(4,5),[illegible](4,10)
0006 *           LOGICAL*1 TYPE(2[illegible]),LBLED([illegible]9)
0007 *           LOGICAL*1 BALABL(8),BACLAB(8),BUCLAB(8),BUCABL(8)
0008 *          REAL PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2
0009 *           REAL CLAD,CLUD,TCNS,RCNS,CCNS
0010 *          DIMENSION CLAD(2),CLUD(2),TCNS(2,6),CCNS(2),RCNS(2,8,6)
0011 *           DIMENSION [illegible],CVS(2,3)
0012 *           DIMENSION BARBP(12),BUBBP(12)
0013 *           COMMON/CBIAS/BARBP,BUBBP,BALNCB,BUNCB,BACRR,BUCRR,BACAIN,BUCAIN,
     *    *                     BAVAR,BUVAR,BARANS,BURANS,A,DA,D[illegible]C,BUCATS,BUCLAB,
     *    *                     BULABL,BALABL,CLASFY,TYPE,LBLED,BACATS,BACLAB,
     *    *                     PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2,
     *    *                     PCVA,[illegible],ATOT,[illegible],CLAD,CLUD,TCNS,RCNS,CCNS
0014 *           COMMON/DUMMY/CLA[illegible],CLUD[illegible]
0015 *          COMMON/CLCNT/CLCNT
0016 *           REAL A(3,2)
0017 *           DIMENSION BALNCB(12),BUNCB(12),BACRR(12),BUCRR(12)
0018 *           REAL BACAIN(8,8),BUCAIN(8,8),BAVAR(12),BUVAR(12),BARANS(12),BURANS(12)
0019             REAL TEMP
0020        100  FORMAT(I2)
0021        101  FORMAT(I4)
0022        102  FORMAT(I3)
0023      103   FORMAT(I4)
0024             DO 99 I=1,8
0025             BALABL(I)=' '
0026             BACLAB(I)=' '
0027             BUCLAB(I)=' '
0028             BULABL(I)=' '
0029             BARBP(I)=0
0030             BUBBP(I)=0
0031             BALNCB(I)=0
0032             BUNCB(I)=0
0033             BACRR(I)=0
0034             BUCRR(I)=0
0035             BAVAR(I)=0
0036             BUVAR(I)=0
0037             DO 99 J=1,8
0038             BACAIN(I,J)=0
0039             BUCAIN(I,J)=0
0040      99     CONTINUE
0041             BACATS=0
0042             BUCATS=0
0043             CLAFLG=0
0044             CLUFLG=0
0045            CLADUM=0
0046            CLUDUM=0
0047            LFLT=203
0048            CAT=0
0049      6       RJ=33
0050             RPW=3
0051             CTR=1
0052             IF(IBUF(2) .EQ. '[illegible]') GO TO [illegible]
```

```
             CLUFLG=0
             CLAFLG=1
             GØ TØ 2
       1     CLUFLG=1
       2     DECØDE(2,100,IBUF(3)) SEQNØ
            IF(SEQNØ.GT.1) GØ TØ 7
            DØ 3 I=5,30
             IF(IBUF(I) .NE. ' ') GØ TØ 5
       3     CØNTINUE
             IF(CLUFLG .EQ. 1) GØ TØ 4
             CLADUM=1
             RETURN
       4     CLUDUM=1
             CALL CØMED(IBUF,0,FILE)
             GØ TØ 6
    5       DECØDE(2,100,IBUF(31)) TEMP2
            IF(CLUFLG.EQ.1) GØ TØ 22
            BACATS=TEMP2
            DØ 21 I=1,BACATS
            BACLAR(I)=IBUF(I+4)
    21      CØNTINUE
            GØ TØ 24
    22      BUCATS=TEMP2
            DØ 23 I=1,BUCATS
            BUCLAR(I)=IBUF(I+4)
    23      CØNTINUE
    24       IF(SEQNØ .EQ. 0)  CPR=TEMP2
    7        CAT=CAT+1
             IF(CLUFLG .NE. 1) GØ TØ 19
             PULABL(CAT)=IBUF(RJ)
             GØ TØ 20
      19     BALABL(CAT)=IBUF(RJ)
    20       CØNTINUE
             DECØDE(5,101,IBUF(RJ+1)) DUM1
             IF(CLUFLG .NE. 1) GØ TØ 8
             BUPØP(CAT)=DUM1
             GØ TØ 9
       8     BAPØP(CAT)=DUM1
       9     DECØDE(3,102,IBUF(RJ+6)) DUM1
             IF(CLUFLG .NE. 1) GØ TØ 10
             PUUNCØ(CAT)=DUM1
             GØ TØ 11
      10     BAUNCØ(CAT)=DUM1
      11     DECØDE(3,102,IBUF(RJ+9)) DUM1
             IF(CLUFLG .NE. 1) GØ TØ 12
             BUCØR(CAT)=DUM1
             GØ TØ 13
      12     BACØR(CAT)=DUM1
    13        DECØDE(4,103,IBUF(RJ+12)) DUM1
            TEMP1=DUM1
            TEMP1=TEMP1/100.
            IF(CLUFLG.NE.1) GØ TØ 25
            BUVAR(CAT)=TEMP1
            GØ TØ 26
    25      BAVAR(CAT)=TEMP1
      26     CJ=RJ+26
```

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```
                DØ 14 I=1,8
                DECØDE(3,102,IBUF(CJ)) DUM1
               TEMP1=DUM1
                APTR=1
                IF(TEMP1 .EQ. 0) GØ TØ 17
                TEMP1=TEMP1/1000.
      17        IF(CLUFLG .NE. 1) GØ TØ 15
                BUCAIN(CAT,I)=TEMP1
                GØ TØ 16
         15     BACAIN(CAT,I)=TEMP1
         16     CJ=CJ+3
         14     CØNTINUE
                IF(CAT .EQ. TEMP2) GØ TØ 30
                IF(CTR.EQ.CPR) GØ TØ 18
                CTR=CTR+1
                RJ=RJ+LFLD
                GØ TØ 7
      18        CALL CDRED(IBUF,R,FILE)
                GØ TØ 6
      30       CAT=0
                DECØDE(5,101,IBUF(670)) T2
                DECØDE(5,101,IBUF(679)) T1
                DECØDE(3,102,IBUF(675)) T4
                DECØDE(3,102,IBUF(684)) T3
                IF(CLUFLG.NE.1) GØ TØ 31
                BUPØP(9)=T1
                BUPØP(11)=T2
                BUUNCØ(9)=T3
                BUUNCØ(11)=T4
                GØ TØ 18
      31        BAPØP(9)=T1
                BAPØP(11)=T2
                BAUNCØ(9)=T3
                BAUNCØ(11)=T4
                CALL CDRED(IBUF,R,FILE)
               RETURN
                END
```

```
FORTRAN IV-PLUS V02-51          08102137   09-MAR-78          PAGE 4
BAUEXT.FTN      /TR:BLOCKS/WR
PROGRAM SECTIONS

NUMBER   NAME       SIZE                    ATTRIBUTES

   1     $CODE1  002710    740              RW,I,CON,LCL
   3     $IDATA  000042     17              RW,D,CON,LCL
   4     $VARS   000050     20              RW,D,CON,LCL
   6     CBIAS   005122   1321              RW,D,OVR,GBL
   7     DUMMY   000004      2              RW,D,OVR,GBL
   8     CLCOM   000642    209              RW,D,OVR,GBL


ENTRY POINTS

 NAME     TYPE  ADDRESS    NAME    TYPE  ADDRESS    NAME    TYPE  ADDRESS    NAME    TYPE  ADDRESS    NAME    TYPE  ADDRESS

 BAUEXT         1-000000


VARIABLES

 NAME     TYPE  ADDRESS    NAME    TYPE  ADDRESS    NAME    TYPE  ADDRESS    NAME    TYPE  ADDRESS    NAME    TYPE  ADDRESS

 APTR     I*2   4-000036   BACATS  I*2   6-003310   BATPT   I*2   4-003766   BUCATS  I*2   6-001556   BUTPT   I*2   6-003770
 CAT      I*2   4-000016   CJ      I*2   4-000034   CLADUM  I*2   7-000000   CLAFLS  I*2   4-007310   CLUDUM  I*2   7-000002
 CLUFLG   I*2   4-000012   CPR     I*2   6-000022   CTR     I*2   4-003624   DP      I*2   6-001302   DT      I*2   6-001592
 DUM1     I*2   4-000032   FILE    I*2   6-000000   I       I*2   4-000034   J       I*2   4-000026   LFLT    I*2   4-000014
 PCCR1    R*4   6-003334   PCCR2   R*4   6-003342   PCC1    R*4   6-003326   PCC2    R*4   6-003332   PCLG1   R*4   6-003356
 PCLG2    R*4   6-003362   PCL1    R*4   6-003346   PCL2    R*4   6-003352   R       I*2   6-003640   NJ      I*2   4-000070
 SECND    I*2   4-000026   TC      I*2   6-001554   TEMP1   R*4   4-000006   TEMP2   I*2   4-000036   T1      I*2   4-000042
 T2       I*2   4-000043   T3      I*2   4-000046   T4      I*2   4-000044


ARRAYS

 NAME     TYPE  ADDRESS        SIZE            DIMENSIONS

 A        R*4   6-001520   000030     12       (3,2)
 BACAIN   R*4   6-000220   000400    128       (8,8)
 BACLAR   L*1   6-003316   000010      4       (8)
 BACPR    I*2   6-000140   000030     12       (12)
 BALABL   L*1   6-001630   000010      4       (8)
 BAPOP    I*2   6-000000   000030     12       (12)
 BARANS   R*4   6-001360   000060     24       (12)
 BAUNCP   I*2   6-000060   000030     12       (12)
 BAVAR    R*4   6-001220   000060     24       (12)
 BCVA     I*2   6-003366   000200     64       (8,8)
 BCVU     I*2   6-003566   000200     64       (8,8)
 BUCAIN   R*4   6-000620   000400    128       (8,8)
 BUCLAR   L*1   6-001560   000010      4       (8)
 BUCPR    I*2   6-000170   000030     12       (12)
 BULABL   L*1   6-001570   000010      4       (8)
 BUPOP    I*2   6-000030   000030     12       (12)
 BURANS   R*4   6-001440   000060     24       (12)
 BUUNCP   I*2   6-000110   000030     12       (12)
 BUVAR    R*4   6-001300   000060     24       (12)
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49

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FØRTRAN IV-PLUS V02-51              06102137    09-MAR-78            PAGE 5
BAUEXT,FTN        /TR:BLØCKS/WP
 CCØNS   R*4    6-005112  000010     4     (2)
 CLAD    R*4    6-003772  000010     4     (2)
 CLASFY  L*1    6-001610  000642   209     (416)
 CLDØT   L*1    8-000000  000642   209     (416)
 CLUD    R*4    6-004002  000010     4     (2)
 IBUF    L*1    F-000002* 000001     0     (1)
 LBLED   L*1    6-002773  000321   104     (209)
 RCØNS   R*4    6-004112  001000   256     (2,8,8)
 TCØNS   R*4    6-004012  000100    32     (2,8)
 TYPE    L*1    6-002452  000321   104     (209)
•
•
LABELS
•
 LABEL   ADDRESS        LABEL   ADDRESS        LABEL   ADDRESS        LABEL   ADDRESS        LABEL   ADDRESS
•
 1       1-000365       2       1-000402       3          **          4       1-000554       5       1-000630
 6       1-000306       7       1-001062       8       1-001254       9       1-001274       10      1-001400
 11      1-001422       12      1-001324       13      1-001546       14         **          15      1-002144
 16      1-002204       17      1-002072       18      1-002272       19      1-001126       20      1-001154
 21         **          22      1-000762       23         **          24      1-001040       25      1-001700
 26      1-001730       30      1-002342       31      1-002612       99         **          100'    3-000000
 101'    3-000004       102'    3-000010       103'    3-000014
•
•
FUNCTIØNS AND SUBRØUTINES REFERENCED
•
 CORED
•
•
TØTAL SPACE ALLØCATED = 011012  2309
•
BAUEXT,LP:=BAUEXT
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```
 FØRTRAN IV-PLUS V02-51                     08:02:54    09-MAR-78             PAGE 1
 CLURES.FTN        /TR:BL2CKS/WR
 0001              SUBRØUTINE CLURES(IBUF,R,FILE)
 0002              IMPLICIT INTEGER(A-Z)
 0003              INCLUDE 'CØMMØN1.DAT'
 0004 *            BYTE CLASFY(418),CLØBT(418)
 0005 *             LØGICAL*1 TYPE(209),LBLED(209)
 0006 *             LØGICAL*1 BALABL(8),BACLAB(8),BUCLAB(8),BULABL(8)
 0007 *            REAL PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2
 0008 *             REAL CLAD,CLUD,TCØNS,RCØNS,CCØNS
 0009 *            DIMENSIØN CLAD(2),CLUD(2),TCØNS(2,8),CCØNS(2),RCØNS(2,8,8)
 0010 *             DIMENSIØN BCVA(8,8),BCVU(8,8)
 0011 *             DIMENSIØN BAPAP(12),BUPAP(12)
 0012 *             CØMMØN/CBIAS/BAPAP,BUPAP,BALNCE,BUUNCE,BACØR,BUCØR,BACAIN,BUCAIN,
      *     *                   BAVAR,BUVAR,BAFANS,BURANS,A,DM,DU,TC,BUCATS,BUCLAB,
      *     *                   BULABL,BALABL,CLASFY,TYPE,LBLED,BACATS,BACLAB,
      *     *                   PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2,
      *     *                   BCVA,BCVU,BATØT,BUTØT,CLAD,CLUD,TCØNS,RCØNS,CCØNS
 0013 *             CØMMØN/DUMMY/CLADUM,CLUDUM
 0014 *            CØMMØN/CLCØM/CLØBT
 0015 *             REAL A(3,2)
 0016 *             DIMENSIØN BAUNCE(12),BUUNCE(12),BACØR(12),BUCØR(12)
 0017 *             REAL BACAIN(8,8),BUCAIN(8,8),BAVAR(12),BUVAR(12),BARANS(12),BURANS(12)
 0018              REAL XL2,XB,XC,DIS(5)
 0019              BYTE IBUF(1),CAT(6),CNAME(6,60),SCLASS(6,60)
 0020              BYTE ØPTBUF(2510),N1,N2,TBLF(5,30)
 0021              BYTE DD(5,5)
 0022              DIMENSIØN CT(16),STAB(30),CØNAME(60),DBUF(30)
 0023              DIMENSIØN A1G(60),A1B(60),A2G(60),A2B(60),A3G(60),A3B(60)
 0024              DIMENSIØN A4G(60),A4B(60),L2LIST(60)
 0025              DIMENSIØN DSEUF(30)
 0026              DATA BLANK/' '/
 0027              DECØDE(2,10',IBUF(4))  ALSETS
 0028               IF(ALSETS.EQ.0)  RETURN
 0029         .    DECØDE(2,102,IBUF(6))  SETSR
 0030               IF(SETSR.EQ.0)  RETURN
 0031         102  FØRMAT(I2)
 0032              I=0
 0033              DØ 10 J=1,16
 0034              IF(IBUF(7+J).EQ.'1')  GØ TØ 12
 0035              GØ TØ 10
 0036          12  I=I+1
 0037              CT(I)=J
 0038          10  CØNTINUE
 0039              CHMAX=I
 0040              DØPT=IBUF(706)
             C
             C WRITE CLUSTER RESULTS HEADER
             C
 0041                WRITE(3,98)
 0042          98  FØRMAT('1',80X)
 0043               WRITE(3,100)
 0044         100   FØRMAT(' ',53X,'CLUSTER REPØRT ')
 0045              WRITE(3,99)
 0046          99  FØRMAT('  ')
 0047               WRITE(3,110)  ALSETS
 0048         110   FØRMAT('0',16X,'CLUSTERS GENERATED: ',I2)
 0049              WRITE(3,200)
```

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51

```
200     FØRMAT('0',16X,'ØPTIØNS USED:')
        IF(IBUF(704).EQ.'1') WRITE(3,1000)
        IF(IBUF(705).EQ.'1') WRITE(3,1003)
        IF(IBUF(706).EQ.'1') WRITE(3,1001)
        IF(IBUF(707).EQ.'1') WRITE(3,1002)
1000    FØRMAT(' ',20X,'SUN ANGLE NØRMALIZATIØN ')
1001    FØRMAT(' ',20X,'DØ EXCLUSIØN')
1002    FØRMAT(' ',20X,'DU EXCLUSIØN')
1003    FØRMAT(' ',20X,'MIN/MAX RADIENCE EXCLUSIØN')
        J=1
        RJ=24
        LFLD=45
        DFLD=12
19      K=RJ
        PT=K
        DØ 20 I=1,SETSR
        DECØDE(2,102,IBUF(K+4)) NUM
        CDNAME(NUM)=IBUF(K)
        DØ 21 JJ=1,6
        CNAME(JJ,J)=IBUF(K)
        SCLASS(JJ,J)=IBUF(K+6)
        K=K+1
21      CØNTINUE
        DECØDE(5,105,IBUF(PT+12)) L2DIST(J)
        DECØDE(3,204,IBUF(PT+17)) A1E(J)
        DECØDE(4,202,IBUF(PT+20)) A1G(J)
        DECØDE(3,204,IBUF(PT+24)) A2E(J)
        DECØDE(4,202,IBUF(PT+27)) A2G(J)
        DECØDE(3,204,IBUF(PT+31)) A3E(J)
        DECØDE(4,202,IBUF(PT+34)) A3G(J)
        DECØDE(3,204,IBUF(PT+38)) A4E(J)
        DECØDE(4,202,IBUF(PT+41)) A4G(J)
        J=J+1
        PT=PT+LFLD
        K=PT
20      CØNTINUE
204     FØRMAT(I3)
        IF(J.GT.ALSETS) GØ TØ 30
        CALL CDRED(IBUF,K,FILE)
        DECØDE(2,102,IBUF(6)) SETSR
        RJ=8
        GØ TØ 19
C SAVE THE DØT DATA
C
30      IF(DØPT.EQ.0) GØ TØ 43
        K=1
        DØ 40 I=1,3
        CALL CDRED(IBUF,K,FILE)
        DØ 39 JJ=4,499
        DØTBUF(K)=IBUF(JJ)
        K=K+1
39      CØNTINUE
40      CØNTINUE
        CALL CDRED(IBUF,K,FILE)
        DØ 41 JJ=4,423
        DØTBUF(K)=IBUF(JJ)
```

```
              K=K+1
      41      CØNTINUE
      43      MAXC=4
      C     SAVE THE CLUSTER ASSIGNMENT FØR DØT REPØRT
              IJ=1
              DØ 45 II=1,209
              NDX=(II-1)*DFLD+1
              IF(DØTBUF(NDX).EQ.'D') GØ TØ 47
              IF(DØTBUF(NDX).EQ.'N') GØ TØ 47
              IF(DØTBUF(NDX).EQ.'U') GØ TØ 47
              DECØDE(2,102,DØTBUF(NDX)) NUM
              CLDØT(IJ)=CDNAME(NUM)
              CLDØT(IJ+1)=BLANK
              GØ TØ 46
      47      CLDØT(IJ)=DØTBUF(NDX)
              CLDØT(IJ+1)=DØTBUF(NDX+1)
      46      IJ=IJ+2
      45      CØNTINUE
              J=1
        1     CØNTINUE
              K=1
        2     CØNTINUE
      C
      C PRØCESS A CLUSTER DATA SET
      C
              IF(DRPT.EQ.0) GØ TØ 44
      C    PRØCESS THE DØT REPØRT HERE SØ CATAGØRY DATA CAN BE ØUTPUT,
      C     PRØCESSING DØT DATA FØR CLUSTER 'J'
              DØ 42 I=1,8
              CAT(I)=' '
      42      CØNTINUE
              N1=CNAME(5,J)
              N2=CNAME(6,J)
              N=0
              DC=1
              DØ 250 II=1,209
              IF(DØTBUF(DC).NE.N1.ØR.DØTBUF(DC+1).NE.N2) GØ TØ 249
              N=N+1
              TBUF(1,N)=DØTBUF(DC+5)
              TBUF(2,N)=DØTBUF(DC+2)
              TBUF(3,N)=DØTBUF(DC+3)
              TBUF(4,N)=DØTBUF(DC+4)
              TBUF(5,N)=DØTBUF(DC+6)
              DECØDE(5,103,DØTBUF(DC+7)) DBUF(N)
      103     FØRMAT(I5)
              DSBUF(N)=DBUF(N)
      249      DC=DC+DFLD
      250     CØNTINUE
              IF(DRPT.EQ.0) GØ TØ 44
      C NØW CHECK FØR CATAGØRIES
              IF(N.EQ.0) GØ TØ 44
              NC=1
              CAT(NC)=TBUF(1,1)
              IF(N.EQ.1) GØ TØ 271
              DØ  270 I=2,N
              DØ  260 JJ=1,NC
```

```
0153                IF(TBUF(1,N).EQ.CAT(NC)) GØ TØ 270
0154       260      CØNTINUE
0155                NC=NC+1
0156                CAT(NC)=TBUF(1,N)
0157       270      CØNTINUE
           C NØW SØRT THE ENTRIES BY DØT DISTANCE
0158       271      DØ 280 II=1,N
0159                T=9998
0160                DØ 275 JJ=1,N
0161                IF(T.LT.DBUF(JJ)) GØ TØ 275
0162                PTAB(II)=JJ
0163                T=DBUF(JJ)
0164       275      CØNTINUE
0165                JK=PTAB(II)
0166                DBUF(JK)=9999
0167       280      CØNTINUE
0168       44       CØNTINUE
0169         105     FØRMAT(I5)
0170                XL2=L2DIST(J)
0171                XL2=XL2/100.
0172       210       FØRMAT(I2)
0173                WRITE(3,201)
0174       201      FØRMAT('0',70X,'BRIGHTNESS  GREEN NUMBER')
0175       202      FØRMAT(I4)
0176                WRITE(3,203) (CNAME(L,J),L=1,6),A1B(J),A1G(J)
0177       203      FØRMAT(' ',16X,'CLUSTER NAME:',2X,6A1,18X,'ACQUISITIØN 1',6
                 2I4,8X,I3)
0178                WRITE(3,211) (SCLASS(L,J),L=1,6),A2B(J),A2G(J)
0179       211      FØRMAT(' ',16X,'LABELING DØT:',2X,6A1,18X,'ACQUISITIØN 2',6
                 2I4,8X,I3)
0180                WRITE(3,212) XL2,A3B(J),A3G(J)
0181       212      FØRMAT(' ',16X,'L1 DISTANCE: ',2X,F6.2,18X,'ACQUISITIØN 3',
                 2I4,8X,I3)
0182                WRITE(3,213) CAT,A4B(J),A4G(J)
0183       213      FØRMAT(' ',16X,'CATAGØRIES:  ',2X,8(X,A1),8X,'ACQUISITIØN 4
                 2I4,8X,I3)
0184                WRITE(3,99)
           C
           C    NØW ØUTPUT DØTS IF ANY
0185                IF(N.EQ.0) GØ TØ 106
0186                WRITE(3,214)
0187       214      FØRMAT(' ',10X,'DØTS    DISTANCE      DØTS    DISTANCE      D
                 2'    DISTANCE      DØTS    DISTANCE      DØTS    DISTANCE')
0188                WRITE(3,99)
0189                DØ 216 II=1,N,5
0190                FF=II+4
0191                LIM=5
0192                IF(FF.LE.N) GØ TØ 220
0193                FF=N
0194                LIM=N-II+1
0195       220       LL=1
0196                DØ 217 JJ=II,FF
0197                NDX=PTAB(JJ)
0198                 DØ 218 KK=1,5
0199                DD(KK,LL)=TBUF(KK,NDX)
0200       218       CØNTINUE
```

```
                DIS(LL)=DSBUF(NDX)
                DIS(LL)=DIS(LL)/100.
                LL=LL+1
        217     CØNTINUE
                WRITE(3,215) ((DF(KK,JJ),KK=1,5),DIS(JJ),JJ=1,LIM)
        216     CØNTINUE
        215     FØRMAT(' ',9X,5(A1,1X,3A1,1X,A1,3X,F6.2,5X))
        C
        C TEST FØR END ØF DATA
        C
        106     IF(J.EQ.ALSETS)  GØ TØ 4
                J=J+1
               IF(K.EQ.MAXC) GØ TØ 15
                K=K+1
                GØ TØ 2
        C       FINISHED 1 PAGE. DØ TØP ØF FØRM AND HEADER
        15      WRITE(3,98)
                WRITE(3,100)
               MAXC=5
                GØ TØ 1
        C
          4     CØNTINUE
                 WRITE(3,50)
         50      FØRMAT('0',18X,'CLUSTERING CHANNEL LIST:')
                 WRITE(3,51)  (CT(I),I=1,CHMAX)
         51      FØRMAT(' ',10X,16(1X,I2))
                 RETURN
                END
```

```
FORTRAN IV-PLUS V02-51              05102154    05-MAR-79          PAGE 6
CLURES.FTN        /TR:BLOCKS/WR
PROGRAM SECTIONS

NUMBER   NAME        SIZE                    ATTRIBUTES

   1     $CODE1   005076   1311              RW,I,CON,LCL
   3     $IDATA   001214    326              RW,D,CON,LCL
   4     $VARS    011464   2458              RW,D,CON,LCL
   5     $TEMPS   000012      5              RW,D,CON,LCL
   6     CBIAS    005122   1321              RW,D,OVR,GBL
   7     DUMMY    000004      2              RW,D,OVR,GBL
   8     CLCOM    000642    209              RW,D,OVR,GBL


ENTRY POINTS

  NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS

  CLURES        1-000000


VARIABLES

  NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS

  ALSETS  I*2   4-011376    BACATS I*2   6-003314    BATRT  I*2   6-003766    BLANK  I*2   4-011374    BUCATS I*2   6-001556
  BUTZT   I*2   6-003770    CMMAX  I*2   4-011406    CLADUM I*2   7-000000    CLUDUM I*2   7-000002    CP     I*2   4-011442
  DFLD    I*2   4-011416    DR     I*2   6-001550    DRPT   I*2   4-011410    DU     I*2   6-001552    FF     I*2   4-011454
  FILE    I*2   F-000006*   I      I*2   4-011402    II     I*2   4-011434    IJ     I*2   4-011432    J      I*2   4-011404
  JJ      I*2   4-011426    JK     I*2   4-011450    K      I*2   4-011420    KK     I*2   4-011462    L      I*2   4-011452
  LFLD    I*2   4-011414    LIM    I*2   4-011456    LL     I*2   4-011460    MAXC   I*2   4-011430    N      I*2   4-011440
  NC      I*2   4-011444    NRX    I*2   4-011436    NUM    I*2   4-011424    N1     L*1   4-006306    N2     L*1   4-006307
  PCCG1   R*4   6-003336    PCCG2  R*4   6-003342    PCC1   R*4   6-003326    PCC2   R*4   6-003332    PCLG1  R*4   6-003356
  PCLG2   R*4   6-003362    PCL1   R*4   6-003346    PCL2   R*4   6-003352    PT     I*2   4-011422    R      I*2   F-000004*
  RJ      I*2   4-011412    SETSR  I*2   4-011400    T      I*2   4-011446    TC     I*2   6-001554    XB     R*4   4-000004
  XG      R*4   4-000010    XL2    R*4   4-000000


ARRAYS

  NAME    TYPE  ADDRESS      SIZE             DIMENSIONS

  A       R*4   6-001520   000030     12      (3,2)
  A1B     I*2   4-007400   000170     60      (60)
  A1G     I*2   4-007210   000170     60      (60)
  A2B     I*2   4-007760   000170     60      (60)
  A2G     I*2   4-007570   000170     60      (60)
  A3B     I*2   4-010340   000170     60      (60)
  A3G     I*2   4-010150   000170     60      (60)
  A4B     I*2   4-010720   000170     60      (60)
  A4G     I*2   4-010530   000170     60      (60)
  BACAIN  R*4   6-000220   000400    128      (8,8)
  BACLAB  L*1   6-003316   000010      4      (8)
  BACOR   I*2   6-000140   000030     12      (12)
  BALABL  L*1   6-001600   000010      4      (8)
  BAPOP   I*2   6-000000   000030     12      (12)
  BARANS  R*4   6-001360   000060     24      (12)
```

```
FORTRAN IV-PLUS V02-51                 08102154_    05-MAR-73         PAGE 7
CLURES.FTN          /TR:BLOCKS/WR
    BAUNCR  I*2     6-000260   000030     12     (12)
    BAVAR   R*4     6-001220   000060     24     (12)
    BCVA    I*2     6-003346   000200     64     (8,8)
    BCVU    I*2     6-003566   000200     64     (8,8)
    BUCAIT  R*4     6-000620   000400    128     (8,8)
    BUCLAS  L*1     6-001560   000010      4     (8)
    BUCNR   I*2     6-000170   000030     12     (12)
    BULABL  L*1     6-001570   000010      4     (8)
    BURCP   I*2     6-000030   000030     12     (12)
    BURANS  R*4     6-001440   000060     24     (12)
    BUUNCR  I*2     6-000110   000030     12     (12)
    BUVAR   R*4     6-001300   000060     24     (12)
    CAT     L*1     4-000040   000010      4     (8)
    CCRNS   R*4     6-005112   000010      4     (2)
    CDNAME  I*2     4-004724   000170     60     (60)
    CLAS    R*4     6-003772   000010      4     (2)
    CLASFY  L*1     6-001610   000642    209     (418)
    CLCST   L*1     3-000000   000642    209     (418)
    CLUD    R*4     6-004072   000010      4     (2)
    CNAME   L*1     4-000050   000550    180     (6,60)
    CT      I*2     4-006570   000040     16     (16)
    DBUF    I*2     4-007114   000074     30     (30)
    DD      L*1     4-004536   000031     12     (5,5)
    DIS     R*4     4-000014   000024     10     (5)
    DTBUF   L*1     4-001370   004716   2255     (2510)
    DSBUF   I*2     4-011300   000074     30     (30)
    IBUF    L*1     F-000002*  000001      0     (1)
    LBLSD   L*1     6-002773   000321    104     (209)
    L2LIST  I*2     4-011110   000170     60     (60)
    PTAS    I*2     4-006630   000074     30     (30)
    ROWS    R*4     6-004112   001000    256     (2,6,8)
    SCLASS  L*1     4-000620   000550    180     (6,60)
    TBUF    L*1     4-006320   000226     75     (5,30)
    TCOMS   R*4     6-004012   000100     32     (2,8)
    TYPE    L*1     6-002452   000321    104     (209)
 *
 *
 LABELS
 *
  LABEL   ADDRESS          LABEL   ADDRESS         LABEL   ADDRESS         LABEL   ADDRESS         LABEL   ADDRESS
 *
   1      1-002452         2       1-002466        4       1-004770        10      1-000250        12      1-010222
   15     1-004710         19      1-000634        20        **            21        **            30      1-001474
   39       **             40        **            41        **            42        **            43      1-002166
   44     1-003432         45        **            46      1-002414        47      1-002360        50'     3-001106
   51'    3-001146         98'     3-000004        99'     3-000040        100'    3-000010        102'    3-000000
   103'   3-000306         105'    3-000312        106     1-004646        110'    3-000044        200'    3-000104
   201'   3-000316         202'    3-000356        203'    3-000362        204'    3-000302        210'      **
   211'   3-000444         212'    3-000526        213'    3-000610        214'    3-000474        215'    3-001054
   216      **             217       **            218       **            220     1-004254        240     1-002771
   250      **             260       **            270     1-003200        271     1-003222        275     1-003342
   280      **             1000'   3-000130        1001'   3-000170        1002'   3-000214        1003'   3-000240
 *
 *
 FUNCTIONS AND SUBROUTINES REFERENCED
 *
```

```
FØRTRAN IV-PLUS V02-51              08:02:54    09-MAR-78                  PAGE 8
CLURES,FTN      /TR:BLØCKS/WR
 CDRED
•
•
TØTAL SPACE ALLØCATED = 026000  5632
•
CLURES,LP:=CLURES
```

```
FORTRAN IV-PLUS V02-51                08:03:26    09-MAR-78          PAGE 1
STDATA.FTN           /TR:BL:CKS/WR
                     SUBROUTINE STDATA(IBUF,B,FILE,DFLG)
                     IMPLICIT INTEGER(A-Z)
                     INCLUDE 'COMMON1.DAT'
      •              BYTE CLASFY(418),CLDET(418)
      •               LOGICAL*1 TYPE(209),LBLED(209)
      •               LOGICAL*1 BALABL(8),BACLAB(8),BUCLAB(8),BULABL(8)
      •              REAL PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2
      •               REAL CLAD,CLUD,TCONS,RCONS,CCONS
      •              DIMENSION CLAD(2),CLUD(2),TCONS(2,8),CCONS(2),RCONS(2,8,8)
      •               DIMENSION BCVA(8,8),BCVU(8,8)
      •               DIMENSION BAPZP(12),BUPZP(12)
      •               COMMON/CBIAS/BAPZP,BUPZP,BALNCB,BUUNCB,BACBR,BUCBR,BACAIN,BUCAIN,
      •       •                  BAVAR,BUVAR,BAPANS,BUPANS,A,DF,DU,TC,BUCATS,BUCLAB,
      •       •                  BULABL,BALABL,CLASFY,TYPE,LBLED,BACATS,BACLAB,
      •       •                  PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2,
      •       •                  BCVA,BCVU,BATBT,BUTBT,CLAD,CLUD,TCONS,RCONS,CCONS
      •               COMMON/DUMMY/CLADUM,CLUDUM
      •              COMMON/CLCOM/CLDET
      •               REAL A(3,2)
      •               DIMENSION BAUNCB(12),BUUNCB(12),BACBR(12),BUCBR(12)
      •               REAL BACAIN(8,8),BUCAIN(8,8),BAVAR(12),BUVAR(12),BAPANS(12),BUPANS(12)
                     LOGICAL*1 IBUF(1),PFN(132),PP(132),PN(132)
                     LOGICAL*1 PTL(132),PK(2112)
                     LOGICAL*1 BLANK
                      LOGICAL*1 PF(132)
                     REAL T1
                      COMMON/PCNT/LINE,PAGE
                     DATA BLANK/1H /
                      IF(DFLG.EQ.0)  GO TO 12
                      CALL STDMP(IBUF)
                      GO TO 13
            12        CONTINUE
            13        CONTINUE
                      NMAX=110
                     DPZP=0
                     K=1
                     I=1
                     PI=11
                     DECODE(3,99,IBUF(5))  ALSETS
                      IF(ALSETS.EQ.0)  RETURN
            99       FORMAT(I3)
                     DECODE(2,98,IBUF(10))  NCH
            98       FORMAT(I2)
                     LINE=66
                     CALL BNT
                      IF(IBUF(2).EQ.'S')  LINE=LINE+2
                      NLINS=59-LINE
                      LSAV=LINE
                      XL=NCH+6
                      IF(DFLG.EQ.1) NLINS=NLINS-7
                      LSETS=NLINS/XL
                      IF(LSETS.GT.0) WRITE(3,100)
            100       FORMAT('0 ')
                      IF(LSETS.GT.0)  GO TO 8
                      LINE=66
                      CALL BNT
```

59

```
              LSETS=60/XL
      8       CØNTINUE
              IF(IBUF(2).EQ.'F')  GØ TØ 16
              WRITE(3,97)
       97     FØRMAT(' ',49X,'STATISTICS REFØRT')
       16     CØNTINUE
             ØSETS=5
              PSETS=0
             LFLD=11+9*NCH
             IF(IBUF(2).EQ.'F')  LFLD=18+9*NCH
     20      J=1
             RJ=12
             IF(K.EQ.1)  GØ TØ 6
             CALL CDRED(IBUF,R,FILF)
     4       DECØDE(2,98,IBUF(R))  SETSR
              IF(SETSR.EQ.0)  RETURN
     1        CØNTINUE
             IF(IBUF(2).EQ.'S')  GØ TØ 22
             CALL FNAME(IBUF(RJ),PFN(PI))
     22      CALL PØP(IBUF(RJ),PP(PI),IBUF(2))
             CALL SNAME(IBUF(RJ),PN(PI),IBUF(2))
             CALL MDTTL(PTL(PI))
              CALL MEAN(IBUF(RJ),PM(PI),NCH,IBUF(2))
             DECØDE(5,96,IBUF(RJ+6)) DUM1
     96       FØRMAT(I5)
             DPØP=DPØP+DUM1
             IF(K.EQ.ALSETS)  GØ TØ 10
             K=K+1
             IF(I.EQ.ØSETS)  GØ TØ 9
             I=I+1
             PI=PI+19
     2       IF(J.EQ.SETSR)  GØ TØ 20
             J=J+1
             RJ=RJ+LFLD
             GØ TØ 1
     9        K=K-1
     10      CØNTINUE
              PSETS=PSETS+1
              IF(PSETS.LE.LSETS)  GØ TØ 11
              PSETS=1
              IF(DFLG.EQ.1)  GØ TØ 14
              LINE=66
              CALL BNT
              LSETS=60/XL
              GØ TØ 11
     14       CØNTINUE
              LINE=66
              CALL KNT
     11       CØNTINUE
              WRITE(3,90)
     90       FØRMAT(1H0,' ')
             IF(IBUF(2).EQ.'S')  GØ TØ 3
             WRITE(3,101)  (PFN(N),N=1,NMAX)
     101     FØRMAT(1H ,131A1)
             WRITE(3,102)  (PP(N),N=10,NMAX)
     102     FØRMAT(1H ,'CHANNEL ',122A1)
```

```
             WRITE(3,101)  (PN(N),N=1,NMAX)
             GØ T  7
      3       CØNTINUE
             WRITE(3,101)  (PN(N),N=1,NMAX)
             WRITE(3,102)  (PP(N),N=10,NMAX)
      7      WRITE(3,103)  (PTL(N),N=8,NMAX)
      103    FØRMAT(1H ,'NUMREW ',122A1)
             IN=6
             IM=NMAX
             DØ 5  II=1,NCH
             WRITE(3,104)  (II,(PM(N),N=IN,IM))
      104    FØRMAT(1H ,2X,I2,128A1)
             IN=IN+132
             IM=IM+132
      5      CØNTINUE
      6      CØNTINUE
             DØ  30 N=1,132
             PF(N)=BLANK
              PFN(N)=BLANK
             PN(N)=BLANK
             PTL(N)=BLANK
             PP(N)=BLANK
             DØ  40  NN=1,NCH
             PM(N+(NN-1)*132)=BLANK
      40     CØNTINUE
      30     CØNTINUE
             IF(K.EQ.1)  GØ TØ 4
             IF(K.EQ.ALSETS)  GØ TØ 15
              K=K+1
             I=1
             PI=11
             GØ TØ 2
      15      CØNTINUE
              IF(LINE.EQ.0) LSAV=0
              LINE=PSETS*XL+LSAV
              CALL BNT
             BUPØP(10)=22932-DPØP
             BUUNCØ(10)=((22932.-DPØP)/22932.)*100
              RETURN
             END
```

```
FORTRAN IV-PLUS V02-51              08:03:26    05-MAR-78            PAGE 4
STDATA.FTN      /TR:BLOCKS/WR
PROGRAM SECTIONS
0
NUMBER   NAME        SIZE                 ATTRIBUTES
0
   1     $CODE1   003012   773            RW,I,CON,LCL
   2     $PDATA   000004     2            RW,D,CON,LCL
   3     $IDATA   000210    68            RW,D,CON,LCL
   4     $VARS    005410  1412            RW,D,CON,LCL
   5     $TEMPS   000006     3            RW,D,CON,LCL
   6     CBIAS    005122  1321            RW,D,OVR,GBL
   7     DUMMY    000004     2            RW,D,OVR,GBL
   8     CLCOM    000642   209            RW,D,OVR,GBL
   9     PCNT     000004     2            RW,D,OVR,GBL
0
0
ENTRY POINTS
0
 NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS
0
 STDATA        1-000000
0
0
VARIABLES
0
 NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS
0
 ALSETS  I*2   4-005344    BACATS  I*2   6-003314    BATOT   I*2   6-003766    BLANK   L*1   4-005120    BUCATS  I*2   6-001556
 BUTOT   I*2   6-003770    CLADUM  I*2   7-000000    CLUDUM  I*2   7-000002    DFLG    I*2   F-000010*   DP      I*2   6-001550
 DPOP    I*2   4-005334    DU      I*2   6-001552    DUM1    I*2   4-005374    FILE    I*2   F-000006*   I       I*2   4-005340
 II      I*2   4-005404    IN      I*2   4-005402    IN      I*2   4-005400    J       I*2   4-005366    K       I*2   4-005336
 LFLD    I*2   4-005364    LINE    I*2   8-000000    LSAV    I*2   4-005352    LSETS   I*2   4-005356    N       I*2   4-005376
 NCH     I*2   4-005346    NLINS   I*2   4-005350    NMAX    I*2   4-005332    NN      I*2   4-005406    OSETS   I*2   4-005360
 PAGE    I*2   9-000002    PCCO1   R*4   6-003336    PCCO2   R*4   6-003342    PCC1    R*4   6-003376    PCC2    R*4   6-003332
 PCLO1   R*4   6-003356    PCLO2   R*4   6-003362    PCL1    R*4   6-003346    PCL2    R*4   6-003352    PI      I*2   4-005342
 PSETS   I*2   4-005362    R       I*2   F-000004*   RJ      I*2   4-005370    SETSR   I*2   4-005372    TC      I*2   6-001554
 T1      R*4   4-005326    XL      I*2   4-005354
0
0
ARRAYS
0
 NAME    TYPE  ADDRESS         SIZE             DIMENSIONS
0
 A       R*4   6-001520   000030     12         (3,2)
 BACAIN  R*4   6-000220   000400    128         (8,8)
 BACLAB  L*1   6-003316   000010      4         (8)
 BACOR   I*2   6-000140   000030     12         (12)
 BALABL  L*1   6-001600   000010      4         (8)
 BAPOP   I*2   6-000000   000030     12         (12)
 BARANS  R*4   6-001360   000060     24         (12)
 BAUNCO  I*2   6-000060   000030     12         (12)
 BAVAR   R*4   6-001220   000060     24         (12)
 BCVA    I*2   6-003366   000200     64         (8,8)
 BCVU    I*2   6-003566   000200     64         (8,8)
 BUCAIN  R*4   6-000620   000400    128         (8,8)
 BUCLAB  L*1   6-001560   000010      4         (8)
 BUCOR   I*2   6-000170   000030     12         (12)
```

63

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FORTRAN IV-PLUS V02-51             08:03:26    09-MAR-78          PAGE 5
STDATA.FTN          /TR:BLOCKS/WR
  BULABL L*1     6-001570  000010      4    (8)
  BUPOP  I*2     6-000030  000030     12    (12)
  BURANS R*4     6-001440  000060     24    (12)
  BUUNCO I*2     6-000110  000030     12    (12)
  BUVAR  R*4     6-001300  000060     24    (12)
  CCONS  R*4     6-005112  000010      4    (2)
  CLAD   R*4     6-003772  000010      4    (2)
  CLASFY L*1     6-001610  000642    209    (418)
  CLDOT  L*1     0-000000  000642    209    (418)
  CLUD   R*4     6-004002  000010      4    (2)
  IBUF   L*1     F-000002* 000001      0    (1)
  LBLED  L*1     6-002773  000321    104    (209)
  PF     L*1     4-005121  000204     66    (132)
  PFN    L*1     4-000000  000204     66    (132)
  PM     L*1     4-001020  004100   1056    (2112)
  PN     L*1     4-000410  000204     66    (132)
  PP     L*1     4-000204  000204     66    (132)
  PTL    L*1     4-006614  000204     66    (132)
  RCONS  R*4     6-004112  001000    256    (2,8,8)
  TCONS  R*4     6-004012  000100     32    (2,8)
  TYPE   L*1     6-002452  000321    104    (209)


LABELS

  LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS

  1       1-001004         2       1-001426         3       1-002104         4       1-000724         5          **
  6       1-002466         7       1-002240         8       1-000500         9       1-001466         10      1-001500
  11      1-001632         12      1-000072         13      1-000100         14      1-001602         15      1-002666
  16      1-000542         20      1-000630         22      1-001072         30         **            40         **
  90'     3-000052         91'     3-000046         97'     3-000016         98'     3-000004         99'     3-000000
  100'    3-000010         101'    3-000060         102'    3-000066         103'    3-000106         104'    3-000126


FUNCTIONS AND SUBROUTINES REFERENCED

  BNT     CORED   FNAME   KNT     MDTTL   MEAN    POP     SNAME   STDMP


TOTAL SPACE ALLOCATED = 016640  3792

STDATA,LP:=STDATA
```

```
DØTRAY.FTN        /TRIBLØCKS/WR
                  SUBRØUTINE DØTRAY(IBUF,R,FILE,PRTØUT)
                 IMPLICIT INTEGER (A-Z)
                  BYTE IBUF(1)
                  INCLUDE 'CØMMØN1.DAT'
       •         BYTE CLASFY(418),CLDØT(418)
       •          LØGICAL*1 TYPE(209),LBLED(209)
       •          LØGICAL*1 BALABL(8),BACLAB(8),BLCLAB(8),BULABL(8)
       •         REAL PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2
       •          REAL CLAD,CLUD,TCØNS,RCØNS,CCØNS
       •         DIMENSIØN CLAD(2),CLUD(2),TCØNS(2,8),CCØNS(2),RCØNS(2,8,8)
       •          DIMENSIØN BCVA(8,8),BCVU(8,8)
       •          DIMENSIØN BAPØP(12),BUPØP(12)
       •          CØMMØN/CRIAS/BAPØP,BUPØP,BALNCØ,BUUNCØ,BACØR,BUCØR,BACAIN,BUCAIN,
       •      •                     BAVAR,BUVAR,BARANS,BURANS,A,DØ,DU,TC,BUCATS,BUCLAB,
       •      •                     BULABL,BALABL,CLASFY,TYPE,LBLED,BACATS,BACLAB,
       •      •                     PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2,
       •      •                     BCVA,BCVU,BATØT,BUTØT,CLAD,CLUD,TCØNS,RCØNS,CCØNS
       •          CØMMØN/DUMMY/CLADUM,CLUDUM
       •         CØMMØN/CLCØM/CLDØT
       •          REAL A(3,2)
       •          DIMENSIØN BAUNCØ(12),BUUNCØ(12),BACØR(12),BUCØR(12)
       •          REAL BACAIN(8,8),BUCAIN(8,8),BAVAR(12),BUVAR(12),BARANS(12),BURANS(12)
                  CØMMØN/PCNT/LINE,PAGE
                  REAL S(6),VC(2)
                  INTEGER PAGE,FILE,R,REC,RJ,SETSR,PRTØUT
                  INTEGER NI(5),LN(3),CØL(19),PASS
                  BYTE BLK,ØNE,ØNETØ,SLASH,TWØ,LABEL(5)
                  BYTE LB,DT(4)
                  DATA ØNE/'1'/,SLASH/'/'/,TWØ/'2'/
                 DATA DT/' ','L','R','S'/
                  DATA TH1/'T'/,TH2/'H'/
                  DATA BLK/' '/
                  LFLD=44
                  K=1
                  REC=1
                  WRITE(3,100)
                  WRITE(3,106) (I,I=1,4)
                  WRITE(3,101)
                  WRITE(3,102)
                  WRITE(3,103)
                  WRITE(3,105)
                  LCNT=6
                  SETSR=15
             2    CØNTINUE
                  RJ=12
                  N=1
             1    CØNTINUE
                  TYPE(K)=IBUF(RJ+12)
                  LBLED(K)=IBUF(RJ+11)
                  IF(IBUF(RJ+13) .EQ. '1') GØ TØ 8
                  CLASFY(2*K)=IBUF(RJ+10)
                  CLASFY(2*K-1)=IBUF(RJ+9)
                  GØ TØ 9
              8   CLASFY(2*K)=TH2
                  CLASFY(2*K-1)=TH1
            9    IF(LCNT.LT.60) GØ TØ 10
```

```
0053            WRITE(3,100)
0054            WRITE(3,106) (I,I=1,4)
0055            WRITE(3,101)
0056            WRITE(3,102)
0057            WRITE(3,103)
0058            WRITE(3,105)
0059           LCNT=6
0060     10     DECODE(1,200,TYPE(K)) ID
0061            ID=ID+1
0062            WRITE(3,104) (IBUF(RJ+L-1),L=1,5),DT(ID),LBLED(K),CLDOT(2*K-1),
          1CLDOT(2*K),CLASFY(2*K-1),CLASFY(2*K),(IBUF(RJ+15+M),M=1,3),
          2(IBUF(RJ+27+NN),NN=1,4),(IBUF(RJ+18+B),B=1,3),
          3(IBUF(RJ+31 P),P=1.4),(IBUF(RJ+21+O),O=1,3),
          4(IBUF(RJ+35+R),R=1,4),(IBUF(RJ+24+U),U=1,3),(IBUF(RJ+39+T),T=1,4)
0063            LCNT=LCNT+1
0064            K=K+1
0065            IF(N.EQ.SETSR)  GO TO 13
0066            N=N+1
0067            RJ=RJ+LFLD
0068            GO TO 1
0069      13    IF(REC.EQ.14) GO TO 3
0070            CALL CORED(IBUF,R,FILE)
0071            REC=REC+1
0072            IF(REC.EQ.14) SETSR=14
0073            GO TO 2
0074       3    PASS=2
0075            CALL CALC
0076            CALL BIAPRT(IBUF,TAPNO,PASS)
0077           IF(PRTOUT.EQ.1) RETURN
0078            IF(CLADUM.EQ.1) GO TO 20
0079           IF((PCC1.LT.80.).OR.(PCC2.LT.80.)) PRTOUT=2
0080     20     IF(CLUDUM.EQ.1) RETURN
0081           IF((PCL1.LT.60.).OR.(PCL2.LT.60.)) PRTOUT=2
0082            RETURN
0083     100    FORMAT(1H1,54X,'DOT REPORT')
0084     101    FORMAT(' ',54X,4('  BRIGHT  GREEN'))
0085     102    FORMAT(' ',9X,'DOT  LINE  PIXEL  TYPE  LABEL  CLUSTER')
0086     103    FORMAT(1H+,49X,'CLASS',4('  *NESS    NO. '))
0087     104    FORMAT(' ',6X,3(3X,3A1),1X,2(4X,A1),1X,2(6X,A1,A1),
          11X,4(4X,3A1,4X,4A1))
0088     105    FORMAT(' ',10X)
0089     106    FORMAT('0',56X,4('ACCUISITION',I2,2X))
0090     200    FORMAT(I2)
0091            END
```

```
FØRTRAN IV-PLUS V02-51          08:03:50    09-MAR-78            PAGE 3
DØTRAY.FTN     /TR:BLØCKS/WR
PRØGRAM SECTIØNS

NUMBER   NAME        SIZE                    ATTRIBUTES

   1     SCØDE1   002210    580              RW,I,CØN,LCL
   3     SIDATA   000356    119              RW,D,CØN,LCL
   4     SVARS    000220     72              RW,D,CØN,LCL
   5     STEMPS   000002      1              RW,D,CØN,LCL
   6     CBIAS    005122   1321              RW,D,ØVR,GBL
   7     DUMMY    000004      2              RW,D,ØVR,GBL
   8     CLCØM    000642    209              RW,D,ØVR,GBL
   9     PCLT     000004      2              RW,D,ØVR,GBL


ENTRY PØINTS

 NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS

 DØTRAY        1-000000


VARIABLES

 NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS

 BACATS  I*2   6-003314    BATØT  I*2   6-003766   BLK    L*1   4-000136    BUCATS I*2   6-00[illegible]  [illegible]T  I*2   6-003771
 CLADUM  I*2   7-000000    CLUDUM I*2   7-000002   DØ     I*2   6-001550    DU     I*2   6-0015[illegible]2 [illegible] I*2   F-000006
 I       I*2   4-000166    ID     I*2   4-000174   K      I*2   4-000164    L      I*2   4-000176    LØ     L*1   4-000150
 LCNT    I*2   4-000170    LFLD   I*2   4-000162   LINE   I*2   9-000000    M      I*2   4-000200    N      I*2   4-000172
 NN      I*2   4-000202    Ø      I*2   4-000204   ØNE    L*1   4-000137    ØNETØ  L*1   4-000140    P      I*2   4-00020[illegible]
 PAGE    I*2   9-000002    PASS   I*2   4-000134   PCCG1  R*4   6-003336    PCCG2  R*4   6-003342    PCC1   R*4   6-00332[illegible]
 PCC2    R*4   6-003332    PCLG1  R*4   6-003356   PCLG2  R*4   6-003362    PCL1   R*4   6-003346    PCL2   R*4   6-00335[illegible]
 PRTØUT  I*2   F-000010*   C      I*2   4-000210   R      I*2   F-000004*   REC    I*2   4-000340    R.I    I*2   4-00004[illegible]
 SETSR   I*2   4-000044    SLASH  L*1   4-000141   T      I*2   4-000214    TAPNØ  I*2   4-000216    TC     I*2   6-001554
 TH1     I*2   4-000156    TH2    I*2   4-000160   TWØ    L*1   4-000142    U      I*2   4-000212


ARRAYS

 NAME    TYPE  ADDRESS        SIZE            DIMENSIØNS

 A       R*4   6-001520   000030    12        (3,2)
 BACAIN  R*4   6-000220   000400   128        (8,8)
 BACLAB  L*1   6-003316   000010     4        (8)
 BACØR   I*2   6-000140   000030    12        (12)
 BALABL  L*1   6-001600   000010     4        (8)
 BAPØP   I*2   6-000000   000030    12        (12)
 BARANS  R*4   6-001360   000060    24        (12)
 BAUNCØ  I*2   6-000060   000030    12        (12)
 BAVAR   R*4   6-001220   000060    24        (12)
 BCVA    I*2   6-003366   000200    64        (8,8)
 BCVU    I*2   6-003566   000200    64        (8,8)
 BUCAIN  R*4   6-000620   000400   128        (8,8)
 BUCLAB  L*1   6-001560   000010     4        (8)
 BUCØR   I*2   6-000170   000030    12        (12)
 BULABL  L*1   6-001570   000010     4        (8)
```

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FØRTRAN IV-PLUS V02-51        ---- 08103159     07-MAR-78          PAGE 4
DØTRAY.FTN         /TR:PLØCKS/WP
 BUPØP   I*2   6-000030  000030    12     (12)
 BURANS  R*4   6-001440  000060    24     (12)
 BUUNCR  I*2   6-000110  000030    12     (12)
 BUVAR   R*4   6-001300  000060    24     (12)
 CCØNS   R*4   6-005112  000010     4     (2)
 CLAD    R*4   6-003772  000010     4     (2)
 CLASFY  L*1   6-001610  000642   209     (418)
 CLDØT   L*1   8-000000  000642   209     (418)
 CLUD    R*4   6-004002  000010     4     (2)
 CPL     I*2   4-000066  000046    19     (19)
 DT      L*1   4-000151  000004     2     (4)
 IBUF    L*1   F-000002* 000001     0     (1)
 LABEL   L*1   4-000143  000005     2     (5)
 LBLED   L*1   6-002773  000321   104     (209)
 LN      I*2   4-000060  000006     3     (3)
 NI      I*2   4-000046  000012     5     (5)
 RCØNS   R*4   6-004112  001000   256     (2,8,8)
 S       R*4   4-000000  000030    12     (6)
 TCØNS   R*4   6-004012  000100    32     (2,8)
 TYPE    L*1   6-002452  000321   104     (209)
 VC      R*4   4-000030  000010     4     (2)
*
*
LABELS
*
 LABEL   ADDRESS        LABEL   ADDRESS        LABEL   ADDRESS        LABEL   ADDRESS        LABEL   ADDRESS
*
 1       1-000320       2       1-000276       3       1-002002       8       1-000410       9       1-000440
 10      1-000664       13      1-001700       20      1-002132       100'    3-000000       101'    3-000022
 102'    3-000054       103'    3-000132       104'    3-000174       105'    3-000254       106'    3-000264
 200'    3-000316
*
*
FUNCTIØNS AND SUBRØUTINES REFERENCED
*
 BIAPRT  CALC    CDRED
*
*
TØTAL SPACE ALLØCATED = 011004   2306
*
DØTRAY.LP:=DØTRAY
```

67

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

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FØRTRAN IV-PLUS V02-51              08:04:13    09-MAR-78          PAGE 1
SEPRPT.FTN           /TR:BLØCKS/WR
                     SUBRØUTINE SEPRPT(TCHAN,TØTSEP,SDATA)
                     IMPLICIT INTEGER(A-Z)
                     LØGICAL*1 SDATA(1),TØTSEP(1)
                     WRITE(2,200)
                     IF(TCHAN.NE.0) GØ TØ 20
                     WRITE(2,199)
        199          FØRMAT('0','DATA FILE EMPTY')
                     RETURN
        20           WRITE(2,201) (I,I=1,16)
                     WRITE(2,202)
                     WRITE(2,203) (TØTSEP(J),J=1,8)
                     DPTR=0
                     DØ 50 I=1,14
                     DØ 47 KK=1,8
                     IF(SDATA(KK+DPTR).NE.'0') GØ TØ 48
        47           CØNTINUE
                     GØ TØ 49
        48           GØ TØ (1,2,3,4,5,6,7,8,9,10,11,12,13,14),I
        1            WRITE(2,101)
                     GØ TØ 46
        2            WRITE(2,102)
                     GØ TØ 46
        3            WRITE(2,103)
                     GØ TØ 46
        4            WRITE(2,104)
                     GØ TØ 46
        5            WRITE(2,105)
                     GØ TØ 46
        6            WRITE(2,106)
                     GØ TØ 46
        7            WRITE(2,107)
                     GØ TØ 46
        8            WRITE(2,108)
                     GØ TØ 46
        9            WRITE(2,109)
                     GØ TØ 46
        10           WRITE(2,110)
                     GØ TØ 46
        11           WRITE(2,111)
                     GØ TØ 46
        12           WRITE(2,112)
                     GØ TØ 46
        13           WRITE(2,113)
                     GØ TØ 46
        14           WRITE(2,114)
        46           WRITE(2,203) (SDATA(DPTR+KK),KK=1,8)
        49           DPTR=DPTR+8
        50           CØNTINUE
                     RETURN
        200          FØRMAT(1H1,59X,'SEPARABILITY REPØRT')
        201          FØRMAT('0',19X,'CHANNELS',7X,16I3,6X,'SEPARABILITY')
        202          FØRMAT('0',19X,'AVAILABLE',6X,<TCHAN>(2X,'X'))
        203          FØRMAT(1H+,88X,2A1,'.',6A1)
        101          FØRMAT('0',19X,'1AN2',11X,4(2X,'X'))
        102          FØRMAT('0',46X,4(2X,'X'))
        103          FØRMAT('0',59X,4(2X,'X'))
```

```
0057      104       FØRMAT('0',70X,4(2X,'X'))
0058      105       FØRMAT('0',19X,'2ACQ',11X,8(2X,'X'))
0059      106       FØRMAT('0',34X,4(2X,'X'),12X,4(2X,'X'))
0060      107       FØRMAT('0',34X,4(2X,'X'),24X,4(2X,'X'))
0061      108       FØRMAT('0',46X,8(2X,'X'))
0062      109       FØRMAT('0',46X,4(2X,'X'),12X,4(2X,'X'))
0063      110       FØRMAT('0',58X,6(2X,'X'))
0064      111       FØRMAT('0',19X,'3ACQ',11X,12(2X,'X'))
0065      112       FØRMAT('0',36X,8(2X,'X'),12X,4(2X,'X'))
0066      113       FØRMAT('0',36X,4(2X,'X'),12X,8(2X,'X'))
0067      114       FØRMAT('0',46X,12(2X,'X'))
0068                END
```

```
FORTRAN IV-PLUS V02-51          08104113     09-MAR-78           PAGE 3
SEPRPT.FTN      /TR:BLOCKS/WR
PROGRAM SECTIONS

NUMBER   NAME       SIZE                 ATTRIBUTES

   1     $CODE1   001322    361          RW,I,CON,LCL
   2     $PDATA   000036     15          RW,D,CON,LCL
   3     $IDATA   000640    208          RW,D,CON,LCL
   4     $VARS    000010      4          RW,D,CON,LCL


ENTRY POINTS

 NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS

 SEPRPT        1-000000


VARIABLES

 NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS

 DPTR    I*2   4-000004    I       I*2   4-000000    J       I*2   4-000002    KK      I*2   4-000006    TCHAN   I*2   3-000636*


ARRAYS

 NAME    TYPE  ADDRESS          SIZE           DIMENSIONS

 SDATA   L*1   F-000006* 000001       0        (1)
 TRTSEP  L*1   F-000004* 000001       0        (1)


LABELS

 LABEL   ADDRESS           LABEL   ADDRESS           LABEL   ADDRESS           LABEL   ADDRESS           LABEL   ADDRESS

 1       1-000444          2       1-000476          3       1-000530          4       1-000562          5       1-000612
 6       1-000642          7       1-000672          8       1-000722          9       1-000752          10      1-001002
 11      1-001032          12      1-001062          13      1-001112          14      1-001142          20      1-000134
 46      1-001170          47         **             48      1-000422          49      1-001254          50         **
 101'    3-000174          102'    3-000222          103'    3-000240          104'    3-000256          105'    3-000274
 106'    3-000322          107'    3-000352          108'    3-000402          109'    3-000420          110'    3-000452
 111'    3-000466          112'    3-000514          113'    3-000544          114'    3-000574          199'    3-000000
 200'    3-000024          201'    3-000056          202'    3-000122          203'    3-000154


TOTAL SPACE ALLOCATED = 002230   588

NO FPP INSTRUCTIONS GENERATED

SEPRPT,LP:=SEPRPT
```

7A

```
FØRTRAN IV-PLUS V02-51              08:04:25    09-MAR-78              PAGE 1
CALC.FTN            /TR:BLØCKS/WR
0001                SUBRØUTINE CALC
0002                IMPLICIT INTEGER(A-Z)
0003                INCLUDE 'CØMMØN1.DAT'
0004 *             BYTE CLASFY(418),CLØUT(418)
0005 *              LØGICAL*1 TYPE(209),LBLED(209)
0006 *              LØGICAL*1 BALAPL(8),BACLAB(8),BUCLAB(8),BULAPL(8)
0007 *             REAL PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2
0008 *              REAL CLAD,CLUD,TCØNS,RCØNS,CCØNS
0009 *             DIMENSIØN CLAD(2),CLUD(2),TCØNS(2,8),CCØNS(2),RCØNS(2,8,8)
0010 *              DIMENSIØN RCVA(8,8),RCVU(8,8)
0011 *              DIMENSIØN BAPØP(12),BUPØP(12)
0012 *              CØMMØN/CØIA /BAPØP,BUPØP,BAUNCØ,BUUNCØ,BACØR,BUCØR,BACAIN,BUCAIN,
     *    *                      BAVAR,BUVAR,BARANS,BURANS,A,DØ,DU,TC,BUCATS,BUCLAR,
     *    *                      BULAPL,BALAPL,CLASFY,TYPE,LBLED,BACATS,BACLAR,
     *    *                      PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2,
     *    *                      RCVA,RCVU,BATØT,BUTØT,CLAD,CLUD,TCØNS,RCØNS,CCØNS
0013 *              CØMMØN/DUMMY/CLADUM,CLUDUM
0014 *             CØMMØN/CLCØM/CLØUT
0015 *              REAL A(3,2)
0016 *              DIMENSIØN BAUNCØ(12),BUUNCØ(12),BACØR(12),BUCØR(12)
0017 *              REAL BACAIN(8,8),BUCAIN(8,8),BAVAR(12),BUVAR(12),BARANS(12),BURANS(12)
0018                DIMENSIØN LCAT(11),BCVT(8)
0019                REAL BSUM,VAR,ALN,ALG,BASE1,BASE2,V3F,BASEF
0020                REAL ALNTF,ALNØF,ALGTF,ALGØF,BAFF,GMSF,Z4F
0021                REAL NØCLF,LCATF(12),SLN,CLN,MARY(8),BAPØPF(12)
0022                BYTE LB,CL,C(12),CL2
0023                NTYP2=0
0024                NTYP1=0
0025                NAII=0
0026                NBII=0
0027                NBIJ=0
0028                BASE=22932
0029                GMS=0
0030                BAPØP(12)=0
0031               BAVAR(12)=0
0032                BACØR(12)=0
0033                BAUNCØ(12)=0
0034                      BARANS(12)=0
0035                K=0
0036                S=0
0037                N=0
0038                CHECK=0
0039                PCC1=0
0040                PCC2=0
0041                NØCL=0
0042                PCCG1=0
0043                PCCG2=0
0044                IF(CLADUM.EQ.1) GØ TØ 470
0045                DØ 15 I=1,BACATS
0046                IF(BACLAR(I).NE.'K') GØ TØ 10
0047                CHECK=CHECK+1
0048                K=1
0049                GØ TØ 15
0050      10        IF(BACLAR(I).NE.'S') GØ TØ 12
0051                CHECK=CHECK+1
0052                S=1
```

```
0053                    GØ TØ 15
0054        12          IF(BACLAB(I).NE.'N') GØ TØ 15
0055                    N=I
0056        15          CØNTINUE
0057                    DØ 40 I=1,11
0058                    LCAT(I)=0
0059        40          CØNTINUE
0060                    DØ 401 J=1,8
0061                    DØ 401 I=1,8
0062                    BCVA(J,I)=0
0063        401           CØNTINUE
0064                    DØ 41 I=1,12
0065                    PARAMS(I)=0
0066        41          CØNTINUE
0067                    DØ 39 I=1,200
0068                    LB=LBLED(I)
0069                    CL=CLASFY(2*I-1)
0070                    CL2=CLASFY(2*I)
0071                    IF(LB .EQ. ' ') GØ TØ 39
0072                    IF (CL .EQ.'0' .ØR.CL.EQ.' ') GØ TØ 39
0073                    IF (TYPE(I).EQ.'2'.ØR.TYPE(I).EQ.'0') GØ TØ 35
            C
            C CØMPUTE TYPE 1 DØT DATA
            C
0074                    NTYP1=NTYP1+1
0075                    IF (LB.NE.CL .AND. CL.NE.' ') GØ TØ 32
0076                    NAII=NAII +1
0077                    GØ TØ 35
0078        32          IF(CHECK.LT.2)GØ TØ 35
0079        33          IF (LB.EQ.BACLAB(W).AND.CL.EQ.BACLAB(S)) NGIJ=NGIJ+1
0080                    IF(LB.EQ.BACLAB(S).AND.CL.EQ.BACLAB(W)) NGIJ=NGIJ+1
            C
            C CØMPUTE TYPE 2 DØT
            C
0081        35          IF (TYPE(I).NE.'2')GØ TØ 39
0082                    IF(CL2.NE.' ') GØ TØ 39
0083                    NTYP2=NTYP2+1
0084                    IF(LB.NE.' '.AND.CL.NE.' ') NØCL=NØCL+1
            C
            C CØNSTRUCT BIAS CØRRECTIØN VECTØRS(LB)
            C
0085                    Z1=0
0086                    Z2=0
0087                    DØ 43 K=1,BACATS
0088                    IF(LB.EQ.BACLAB(K))Z1=K
0089                    IF(CL.EQ.BACLAB(K))Z2=K
0090        43          CØNTINUE
0091                    IF(Z1.EQ.0.ØR.Z2.EQ.0)GØ TØ 39
0092                    BCVA(Z1,Z2)=BCVA(Z1,Z2)+1
0093        39          CØNTINUE
            C
            C CØMPUTE GRAIN PØPULATIØN, CLASSIFIED %, CORRECTED %
            C
0094                    IF(CHECK.LT.2)GØ TØ 25
0095                    BAPØP(12)=BAPØP(W)+BAPØP(S)
0096                    BAUNCØ(12)=BAUNCØ(W)+BAUNCØ(S)
```

```
              C
              C COMPUTE GRAIN CØRRECTED % AND VARIANCE %
              C
0097    47          ALGT=BCVA(W,W)+BCVA(W,S)+BCVA(S,W)+BCVA(S,S)
0098                ALGB=0
0099                DØ 155 I=1,BACATS
0100                ALGB=ALGB+BCVA(I,W)+BCVA(I,S)
0101    155         CØNTINUE
0102                ALGTF=FLØAT(ALGT)
0103                ALGBF=FLØAT(ALGB)
0104                ALG=ALGTF/ALGBF
0105                ALNB=0
0106                ALNT=0
0107                DØ 156 I=1,BACATS
0108                IF(I.EQ.W.ØR.I.EQ.S)GØ TØ 156
0109                DØ 156 J=1,BACATS
0110                IF(J.EQ.W.ØR.J.EQ.S)GØ TØ 156
0111                ALNT=ALNT+BCVA(I,J)
0112    156         CØNTINUE
0113                DØ 158 I=1,BACATS
0114                DØ 158 J=1,BACATS
0115                     IF(J.EQ.W.ØR.J.EQ.S)GØ TØ 158
0116                ALNB=ALNB+BCVA(I,J)
0117    158         CØNTINUE
0118                BASEF=FLØAT(BASE-BAPØP(11))
0119                BASE1=0.
0120                IF(BASEF.LE.0) BASEF=1
0121                BAPF=FLØAT(BAPØP(12))
0122                BASE1=BAPF/BASEF
0123                ALNTF=FLØAT(ALNT)
0124                ALNBF=FLØAT(ALNB)
0125                IF(ALNBF.LE.0) ALNBF=1
0126                ALN=ALNTF/ALNBF
0127                N3F=0.
0128                DØ 159 I=1,BACATS
0129                IF(I.EQ.W.ØR.I.EQ.S)GØ TØ 159
0130                N3F=N3F+BAPØP(I)
0131    159         CØNTINUE
0132                BACØP(12)=(ALG*BASE1+(1.-ALN)*N3F/BASEF)*100.
0133                BASE2=(N3F/BASEF*100.)**2
0134                Z4=0
0135                DØ 21 J=1,BACATS
0136                Z4=Z4+BCVA(J,W)+BCVA(J,S)
0137    21          CØNTINUE
0138                VAR=0.
0139                Z4F=FLØAT(Z4-1)
0140                IF (Z4.LT.1)GØ TØ 24
0141                VAR=((BASE1*100.)**2*(ALG*(1.-ALG)))/Z4F
0142    24          IF(ALNBF .GT. 1.) GØ TØ 22
0143                BAVAR(12)=VAR
0144                GØ TØ 25
0145    22          BAVAR(12)=VAR+BASE2*ALN*(1.-ALN)/(ALNBF-1.)
              C
              C COMPUTE THE RANDØM SAMPLE FØR EACH CATEGØRY EXCEPT FØR GRAIN
              C
0146    25               BATØT=0
```

```
              PSUM=0.
              DØ 160 I=1,BACATS
              PSUM=PSUM+FLØAT(HAPØP(I))
      160         CØNTINUE
              PSUM=PSUM/(22932.*HAPØP(11))
              NØCLF=FLØAT(NØCL)
              DØ 165 I=1,BACATS
              BCVT(I)=0
              DØ 168 J=1,BACATS
              BCVT(I)=BCVT(I)+BCVA(I,J)
      168     CØNTINUE
              BARANS(I)=FLØAT(BCVT(I))/NØCLF*PSUM*100.
              BATØT=BATØT+BCVT(I)
              IF(I.NE.W.AND.I.NE.S)GØ TØ 165
              GWS=GWS+BCVT(I)
      165     CØNTINUE
      C
      C CØMPUTE THE RANDØM SAMPLE FØR GRAIN
      C
              IF(CHECK.LT.2)GØTØ 100
              GWSF=FLØAT(GWS)
              BARANS(12)=GWSF/NØCLF*PSUM*100.
      C
      C CØMPUTE PCC1, PCC2, PCCG1, PCCG2
      100     BATAT=0
              X=0
              IF (NTYP1 .EQ. 0) GØ TØ 45
              PCC1=FLØAT(NAII)*100./FLØAT(NTYP1)
      45      IF(NTYP2 .EQ. 0) GØ TØ 469
              X=BCVA(1,1)+BCVA(2,2)+BCVA(3,3)+BCVA(4,4)+BCVA(5,5)
              X=X+BCVA(6,6)+BCVA(7,7)+BCVA(8,8)
              PCC2=FLØAT(X)*100./FLØAT(NTYP2)
      469     IF(CHECK.LT.2)GØ TØ 470
              BATAT=BCVA(W,S)+BCVA(S,W)
              DØ 175 I=1,BACATS
              BATAT=BATAT+BCVA(I,I)
      175     CØNTINUE
                  IF (NTYP1.EQ.0)GØ TØ 468
              PCCG1=(FLØAT(NAII)+FLØAT(NGIJ))*100./FLØAT(NTYP1)
      468     IF(NTYP2.EQ.0)GØ TØ 470
              PCCG2=FLØAT(BATAT)*100./FLØAT(NTYP2)
      470     CØNTINUE
      C CLADW CALCULATIØNS FIRST
              DØ 280 MM=1,2
              IF(MM.EQ.1) KK=W
              IF(MM.EQ.2) KK=S
              SLW=0.
              CLW=0.
              IF(KK.EQ.0) GØ TØ 270
              WARY(7)=0.
              WARY(1)=BACØP(KK)
              WARY(2)=BAUNCØ(KK)
              WARY(3)=BARANS(KK)
              WARY(4)=BAVAR(KK)
              WARY(5)=BACAIN(KK,KK)
              WARY(6)=PCC1
```

```
        IF(N.NE.0) WARY(7)=BACAIN(N,N)
        WARY(8)=PCC2
        DØ 250 I=1,8
        SLW=SLW+WARY(I)*TCØNS(MM,I)
        DØ 240 J=1,8
        CLW=CLW+WARY(I)*WARY(J)*RCØNS(MM,I,J)
240     CØNTINUE
250     CØNTINUE
        SLW=SLW+CCØNS(MM)
270     CLAD(MM)=CLW+SLW
280     CØNTINUE
        NTYP2=0
        NAII=0
        NBII=0
        NGIJ=0
        BASE=22932
        GWS=0
        BUPØP(12)=0
       BUVAH(12)=0
        BUC2H(12)=0
        BUUNCØ(12)=0
                BURANS(12)=0
        W=0
        S=0
        CHECK=0
        PCL1=0
        NØCL=0
        NTYP1=0
        PCL2=0
        PCLG1=0.
        PCLG2=0.
        IF(CLUDUM.EQ.1) RETURN
        DØ 915 I=1,BUCATS
        IF(BUCLAR(I).NE.'W') GØ TØ 910
        CHECK=CHECK+1
        W=I
        GØ TØ 915
910     IF(BUCLAR(I).NE.'S') GØ TØ 915
        CHECK=CHECK+1
        S=I
915     CØNTINUE
        DØ 940 I=1,11
        LCAT(I)=0
940     CØNTINUE
        DØ 9401 J=1,8
        DØ 9401 I=1,4
        BCVJ(J,I)=0
9401      CØNTINUE
        DØ 941 I=1,12
        BURANS(I)=0
941     CØNTINUE
        DØ 939 I=1,209
        LB=LBLED(I)
        CL=CLDØT(2*I-1)
        CL2=CLDØT(2*I)
        IF(LB.EQ.' ') GØ TØ 939
```

```
                IF (CL .EQ.'C' .ØR.CL.EQ.' ') GØ TØ 939
                IF (TYPE(I).EQ.'2'.ØR.TYPE(I).EQ.'0') GØ TØ 935
        C
        C COMPUTE TYPE 1 DØT DATA
        C
                NTYP1=NTYP1+1
                IF (LB.NE.CL .AND. CL.NE.' ') GØ TØ 932
                NAII=NAII +1
                GØ TØ 935
        932     IF(CHECK.LT.2)GØ TØ 939
        933     IF (LB.EQ.BUCLAB(W).AND.CL.EQ.BUCLAB(S)) NGIJ=NGIJ+1
                IF(LB.EQ.BUCLAB(S).AND.CL.EQ.BUCLAB(W)) NGIJ=NGIJ+1
        C
        C COMPUTE TYPE 2 DØT
        C
        935     IF (TYPE(I).NE.'2')GØ TØ 939
                IF(CL2.NE.' ') GØ TØ 939
                NTYP2=NTYP2+1
                IF(LB.NE.' '.AND.CL.NE.' ') NØCL=NØCL+1
        C
        C CØNSTRUCT BIAS CØRRECTIØN VECTØRS(LE)
        C
                Z1=0
                Z2=0
                DØ 943 K=1,BUCATS
                IF(LB.EQ.BUCLAB(K))Z1=K
                IF(CL.EQ.BUCLAB(K))Z2=K
        943     CØNTINUE
                IF(Z1.EQ.0.ØR.Z2.EQ.0)GØ TØ 939
                BCVU(Z1,Z2)=BCVU(Z1,Z2)+1
        939     CØNTINUE
        C
        C CØMPUTE GRAIN PØPULATIØN, CLASSIFIED %, CØRRECTED %
        C
                IF(CHECK.LT.2)GØ TØ 925
                BUPØP(12)=BUPØP(W)+BUPØP(S)
                BUUNCØ(12)=BUUNCØ(W)+BUUNCØ(S)
        C
        C CØMPUTE GRAIN CØRRECTED % AND VARIANCE %
        C
        947      ALGT=BCVU(W,W)+BCVU(W,S)+BCVU(S,W)+BCVU(S,S)
                ALGB=0
                DØ 9155 I=1,BUCATS
                ALGB=ALGB+BCVU(I,W)+BCVU(I,S)
        9155    CØNTINUE
                ALGTF=FLØAT(ALGT)
                ALGBF=FLØAT(ALGB)
                ALG=ALGTF/ALGBF
                ALNB=0
                ALNT=0
                DØ 9156 I=1,BUCATS
                IF(I.EQ.W.ØR.I.EQ.S)GØ TØ 9156
                DØ 9156 J=1,BUCATS
                IF(J.EQ.W.ØR.J.EQ.S)GØ TØ 9156
                ALNT=ALNT+BCVU(I,J)
        9156    CØNTINUE
```

```
              DØ 9158 I=1,BUCATS
              DØ 9158 J=1,BUCATS
                 IF(J.EQ.W.ØR.J.EQ.S)GØ TØ 9158
              ALNB=ALNB+BCVU(I,J)
      9158    CØNTINUE
              BASEF=FLØAT(BASE-BUPØP(11))
              BASE1=0.
              IF(BASEF.LE.0) BASEF=1
              BAPF=FLØAT(BUPØP(12))
              BASE1=BAPF/BASEF
              ALNTF=FLØAT(ALNT)
              ALNBF=FLØAT(ALNB)
              IF(ALNBF.LE.0) ALNBF=1
              ALN=ALNTF/ALNBF
              N3F=0.
              DØ 9159 I=1,BUCATS
              IF(I.EQ.W.ØR.I.EQ.S)GØ TØ 9159
              N3F=N3F+FLØAT(BUPØP(I))
      9159    CØNTINUE
              BUCØR(12)=(ALG*BASE1+(1.-ALN)*N3F/BASEF)*100.
              BASE2=(N3F/BASEF*100.)**2
              Z4=0
              DØ 921 J=1,BUCATS
              Z4=Z4+BCVU(J,W)+BCVU(J,S)
      921     CØNTINUE
              VAR=0.
              Z4F=FLØAT(Z4-1)
              IF (Z4.LT.1)GØ TØ 924
              VAR=((BASE1*100.)**2*(ALG*(1.-ALG)))/Z4F
      924     IF(ALNBF .GT. 1.) GØ TØ 922
              BUVAR(12)=VAR
              GØ TØ 925
      922      BUVAR(12)=VAR+BASE2*ALN*(1.-ALN)/(ALNBF-1.)
      C
      C CØMPUTE THE RANDØM SAMPLE FØR EACH CATEGØRY EXCEPT FØR GRAIN
      C
      925               BUTØT=0
              PSUM=0.
              DØ 9160 I=1,BUCATS
              PSUM=PSUM+FLØAT(BUPØP(I))
      9160        CØNTINUE
              PSUM=PSUM/(22932.-BUPØP(11))
              NØCLF=FLØAT(NØCL)
              DØ 9165 I=1,BUCATS
              BCVT(I)=0
              DØ 9168 J=1,BUCATS
              BCVT(I)=BCVT(I)+BCVU(I,J)
      9168    CØNTINUE
              BURANS(I)=FLØAT(BCVT(I))/NØCLF*PSUM*100.
              BUTØT=BUTØT+BCVT(I)
              IF(I.NE.W.AND.I.NE.S)GØ TØ 9165
              GWS=GWS+BCVT(I)
      9165    CØNTINUE
      C
      C CØMPUTE THE RANDØM SAMPLE FØR GRAIN
      C
```

```
                IF(CHECK.LT.2)GØTØ 9100
                GWSF=FLØAT(GWS)
                BURANS(12)=GWSF/NØCLF*PSUM*100.
        C
        C CØMPUTE PCC1, PCC2, PCCG1, PCCG2
        9100    BATAT=0
                X=0
                IF (NTYP1 .EQ. 0) GØ TØ 945
                PCL1=FLØAT(NAII)*100./FLØAT(NTYP1)
        945     IF(NTYP2 .EQ. 0) GØ TØ 9469
                X=BCVU(1,1)+BCVU(2,2)+BCVL(3,3)+BCVU(4,4)+BCVU(5,5)
                X=X+BCVU(6,6)+BCVU(7,7)+BCVL(8,8)
                PCL2=FLØAT(X)*100./FLØAT(NTYP2)
        9469     IF(CHECK.LT.2)GØ TØ 9470
                BATAT=BCVU(W,S)+BCVU(S,W)
                DØ 9175 I=1,BUCATS
                BATAT=BATAT+BCVU(I,I)
        9175    CØNTINUE
                     IF (NTYP1.EQ.0)GØ TØ 9468
                PCLG1=(FLØAT(NAII)+FLØAT(NGIJ))*100./FLØAT(NTYP1)
        9468     IF(NTYP2.EQ.0)GØ TØ 9470
                PCLG2=FLØAT(BATAT)*100./FLØAT(NTYP2)
        9470    CØNTINUE
        C CLUDW CALCULATIØNS NØW
                DØ 9280 MM=1,2
                IF(MM.EQ.1) KK=W
                IF(MM.EQ.2) KK=S
                SLW=0.
                CLW=0.
                IF(KK.EQ.0) GØ TØ 9270
                WARY(7)=0.
                WARY(1)=BUCØP(KK)
                WARY(2)=BUUNØZ(KK)
                WARY(3)=BURANS(KK)
                WARY(4)=BUVAR(KK)
                WARY(5)=BUCAIN(KK,KK)
                WARY(6)=PCL1
                IF(N.NE.0) WARY(7)=BUCAIN(N,N)
                WARY(8)=PCL2
                DØ 9250 I=1,8
                SLW=SLW+WARY(I)*TCØNS(MM,I)
                DØ 9240 J=1,8
                CLW=CLW+WARY(I)*WARY(J)*RCØNS(MM,I,J)
        9240    CØNTINUE
        9250    CØNTINUE
                SLW=SLW+CCØNS(MM)
        9270    CLUD(MM)=CLW+SLW
        9280    CØNTINUE
                CØNTINUE
                RETURN
                END
```

```
FØRTRAN IV-PLUS V02-51              08104125    09-MAR-78         PAGE 9
CALC.FTN            /TR:BLØCKS/WR
PRØGRAM SECTIØNS
@
NUMBER   NAME        SIZE                 ATTRIBUTES
@
   1     $CODE1   011150   2356           RW,I,CØN,LCL
   2     $PDATA   000004      2           RW,D,CØN,LCL
   4     $VARS    000462    153           RW,D,CØN,LCL
   5     $TEMPS   000034     14           RW,D,CØN,LCL
   6     CSTAS    005122   1321           RW,D,OVR,GBL
   7     DUMMY    000004      2           RW,D,OVR,GBL
   8     CLC04    000642    209           RW,D,OVR,GBL
@
@
ENTRY POINTS
@
 NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS
@
 CALC         1-000000
@
@
VARIABLES
@
 NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS
@
 ALG    R*4   4-000052    ALGP   I*2   4-000442    ALGRF  R*4   4-000122    ALCT   I*2   [illegible]  ALSTF  R*4   4-000116
 ALK    R*4   4-000056    ALNP   I*2   4-000444    ALNRF  R*4   4-000112    ALST   I*2   [illegible]  [illegible] R*4 4-000176
 BACATS I*2   6-003314    BAFF   R*4   4-000126    BASE   I*2   4-003410    BASEF  R*4   [illegible]  BASEF1 R*4   4-000066
 BASE2  R*4   4-000072    BATAT  I*2   4-000402    BATGT  I*2   6-003766    BUCATS I*2   [illegible]  [illegible] I*2 6-003770
 CHECK  I*2   4-000422    CL     I*1   4-000357    CLADUM I*2   7-000000    CLUSUM I*2   [illegible]  [illegible] R*4 4-000232
 CL2    L*1   4-000374    DP     I*2   6-001550    DU     I*2   6-001552    GYS    I*2   4-000412     [illegible] R*4 4-000132
 I      I*2   4-000426    J      I*2   4-000430    K      I*2   4-000436    KK     I*2   4-000440     LF     I*1   4-000356
 MM     I*2   4-000456    N      I*2   4-000420    NAI1   I*2   4-000412    NRI1   I*2   4-000404     [illegible] I*2 6-000406
 NCCL   I*2   4-000424    NPCLF  R*4   4-000142    NTYP1  I*2   4-000400    NTYP2  I*2   4-000376     [illegible] R*4 4-000076
 PCCG1  R*4   6-003334    PCC32  R*4   6-003342    PCC1   R*4   6-003326    PCCP   R*4   6-003372     PCL01  R*4   6-003356
 PCLG2  R*4   6-003362    PCL1   R*4   6-003346    PCL2   R*4   6-003352    PSUM   R*4   [illegible]  S      I*2   4-000416
 SLM    R*4   4-000226    TC     I*2   6-001554    VAR    R*4   4-000052    [illegible] I*2 [illegible] X  I*2   4-000454
 Z1     I*2   4-000432    Z2     I*2   4-000434    Z4     I*2   4-000450    Z4F    R*4   4-000136
@
@
ARRAYS
@
 NAME   TYPE  ADDRESS           SIZE           DIMENSIØNS
@
 A      R*4   6-001520   000030     12         (3,2)
 BACAIN R*4   6-000270   000400    128         (8,8)
 BACLAR L*1   6-003316   000010      4         (8)
 BACUR  I*2   6-000140   000030     12         (12)
 BALABL L*1   6-001600   000010      .         (8)
 BAPEP  I*2   6-000000   000030     12         (12)
 BAPRPF R*4   4-000276   000060     24         (12)
 BARANS R*4   6-001350   000060     24         (12)
 BAUNCC I*2   6-000060   000030     12         (12)
 BAVAR  R*4   6-001220   000060     24         (12)
 BCVA   I*2   6-003356   000200     64         (8,8)
 BCVT   I*2   4-000026   000020      8         (8)
 BCVU   I*2   6-003566   000200     64         (8,8)
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79

ORIGINAL PAGE IS
OF POOR QUALITY

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FORTRAN IV-PLUS V02-51                08104125    05-MAR-78              PAGE 10
CALC.FTN             /TRIBLOCKS/WR
 BUCAIN R*4     6-000620  000400   128      (8,8)
 BUCLAR L*1     6-001560  000010     4      (8)
 BUCOR  I*2     6-000170  000030    12      (12)
 BULABL L*1     6-001570  000010     4      (8)
 BUPOP  I*2     6-000030  000030    12      (12)
 BURANS R*4     6-001440  000060    24      (12)
 BUUNCO I*2     6-000110  000030    12      (12)
 BUVAR  R*4     6-001300  000060    24      (12)
 C      L*1     4-000360  000014     6      (12)
 CCONS  R*4     6-005112  000010     4      (2)
 CLAD   R*4     6-003772  000010     4      (2)
 CLASFY L*1     6-001620  003642   209      (418)
 CLDAT  L*1     8-000000  003642   209      (418)
 CLUD   R*4     6-004002  000010     4      (2)
 LABEL  L*1     6-002773  000321   104      (209)
 LCAI   I*2     4-000000  000026    11      (11)
 LCATF  R*4     4-000146  000060    24      (12)
 RCONS  R*4     6-004112  001000   256      (2,8,8)
 TCONS  R*4     6-004012  000100    32      (2,8)
 TYPE   L*1     6-002452  000321   104      (209)
 WARY   R*4     4-000236  000040    16      (8)
@
@
LABELS
6
 LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS
@
 10      1-000236         12      1-000272         15      1-000320         21        **             22      1-002450
 24      1-002612         25      1-002724         32      1-000702         33        **             35      1-001000
 39      1-001210         40        **             41        **             43        **             45      1-003364
 47        **             100     1-003312         155       **             156     1-001464         158     1-002034
 159     1-002302         140       **             165     1-003224         168       **             175       **
 240       **             250       **             270     1-004440         280       **             401       **
 468     1-003570         469     1-003474         470     1-003732         910     1-004726         915     1-004752
 921       **             922     1-007302         924     1-007244         925     1-007356         932     1-015334
 933       **             935     1-005432         939     1-005642         940       **             941       **
 943       **             945     1-010015         947       **             9100    1-007744         9155      **
 9156    1-006320         9158    1-006466         9159    1-006734         9160      **             9165    1-007656
 9168      **             9175      **             9240      **             9250      **             9270    1-012272
 9280      **             9401      **             9468    1-010322         9460    1-010126         9470    1-010364
@
@
TOTAL SPACE ALLOCATED = 017662  4057
@
CALC.LP1=CALC
```

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FØRTRAN IV-PLUS V02-51                          08:05:15    09-MAR-78             PAGE 1
BIAPRT.FTN          /TR:BLØCKS/WR
0001                SUBRØUTINE BIAPRT(IUNF,TAPN2,PASS)
0002                IMPLICIT INTEGER (A-Z)
0003                LØGICAL*1 TRUE(1)
0004               INCLUDE 'CØMMØN.CAT'
0005 *             BYTE CLASFY(418),CLØZT(418)
0006 *              LØGICAL*1 TYPE(209),LBLED(209)
0007 *              LØGICAL*1 PALABL(8),BACLAB(8),BLCLAB(8),PULABL(5)
0008 *             REAL PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2
0009 *              REAL CLAD,CLUD,TCØNS,RCØNS,CCØNS
0010 *             DIMENSIØN CLAD(2),CLUD(2),TCØNS(2,8),CCØNS(2),RCØNS(2,8,6)
0011 *              DIMENSIØN ACVAR(8,8),BCVAR(8,8)
0012 *              DIMENSIØN APØP(12),BUPØP(12)
0013 *              CØMMØN /CBIAS/APØP,BUPØP,BALNCØ,BUUNCØ,BACØR,BUCØR,BACAIN,BUCAIN,
     *      *                     AAVAR,BUVAR,BAFANS,BURANS,A,CØ,DU,TC,BUCAT,BUCLAB,
     *      *                     BULABL,BALABL,CLASFY,TYPE,LBLED,BACATS,BACLAB,
     *      *                     PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2,
     *      *                     BCVA,ACVA,BATØT,BUTØT,CLAD,CLUD,TCØNS,RCØNS,CCØNS
0014 *              CØMMØN/DUMMY/CLADUM,CLUDUM
0015 *             CØMMØN/CLØØM/CLØØT
0016 *              REAL A(8,2)
0017 *              DIMENSIØN BAUNCØ(12),BUUNCØ(12),BACØR(12),BUCØR(12)
0018 *              REAL BACAIN(8,8),BUCAIN(8,8),BAVAR(12),BUVAR(12),BARANS(12),BURANS(12)
0019                CØMMØN/SEG/SEGNØ
0020                LØGICAL*1 SEGNØ(4),PM(120),BLANK,PMATR(120)
0021               DIMENSIØN CØL(19)
0022                DATA CØL/10,20,30,40,50,60,70,80,90,100,110,120,130,140,
            *                150,160,170,180,190/
0023                DATA BLANK/' '/,ØNE/'1'/,SLASH/'/'/,TWØ/'2'/
0024         100    FØRMAT(1H1,41X,'BIAS CØRRECTIØN CLASSIFICATIØN REPØRT')
0025         101    FØRMAT(1H0,20X,12(5X,'CAT'))
0026         102    FØRMAT(1H ,19X,5(7X,1A1))
0027         103    FØRMAT(1H0,5X,'PØPULATIØN         ',12(3X,I5))
0028       104      FØRMAT(1H ,5X,'CLASSIFIED      % ',12(2X,I6))
0029         105    FØRMAT(1H ,5X,'CØRRECTED       % ',2(2X,I6),26X,I6)
0030         106    FØRMAT(1H ,5X,'VARIANCE        % ',8(2X,F6.2),25X,F6.2)
0031         107    FØRMAT(1H ,5X,'RANDØM SAMPLE   ',8(2X,F6.2),26X,F6.2)
0032         108    FØRMAT(1H0,51X,'ALPHA VALUE MATRIX')
0033         109    FØRMAT(1H ,19X,8(5X,'CAT'))
0034         110    FØRMAT(1H ,5X,'CAT. ØF INT./',8(4X,1A1,1X))
0035         111    FØRMAT(1H ,5X,'CAT. ØF INT.')
0036         112    FØRMAT(1H ,11X,1A1,6Y,8(4X,F4.3))
0037         113    FØRMAT(1H0,32X,'BIAS CØRRECTIØN VECTØRS (LABLED:CLASSIFIED)')
0038         114    FØRMAT(1H0,14X,8(4Y,1A1,'!',1I1,I3))
0039         115    FØRMAT('1',49X,'CAMS INTERFACE REPØRT')
0040         116    FØRMAT(1H0,3X,'LPAR NØ.  = ',24A1,57X,'TAPE NUMBER: ',I5,'0')
0041         117    FØRMAT(1H0,3X,'RECØRD ID = ',6A1,1X,6A1)
0042         118    FØRMAT(1H0,50X,'ACQUISITIØN DATES')
0043         119    FØRMAT(1H ,47X,'1',6X,'2',6X,'3',6X,'4')
0044         120    FØRMAT(1H ,4X,'******  SEGMENT NUMBER =',4A1,13X,4(5A1,2X))
0045         121    FØRMAT(1H ,'TRAINING SEGMENT NØ. ',I2,' =',66A1)
0046         122    FØRMAT(1H0,42X,'TYPE',1A1,' DØT LABEL/CLASSIFICATIØN')
0047         123    FØRMAT(1H0,40X,'TYPE',1A1,' DØT LABEL/CLUSTER ASSIGNMENT')
0048       124      FØRMAT(1H0,1X,'PIXEL/')
0049       125      FØRMAT(' ',1X,'LINE',2X,19(I3,3X))
0050         126    FØRMAT(1H+,97X,'DØ',4X,'TH',6X,'UN',4X,'GRAIN')
0051         127    FØRMAT(1H+,90X,'DØ',6X,'UA',6X,'UN',4X,'GRAIN')
```

```
0052      128   FØRMAT(1H1,41X,'BIAS CØRRECTIØN CLUSTER REPØRT')
0053      129   FØRMAT(1H1,10X)
0054      130   FØRMAT(1H+,90X,'PCC1  = ',F6.1,' PCC2  = ',F6.1)
0055      131   FØRMAT(1H+,90X,'PCCG1 = ',F6.1,' PCCG2 = ',F6.1)
0056      136   FØRMAT(1H+,90X,' DW   = ',F6.1,'  DS   = ',F4.1)
0057      132   FØRMAT(1H0,10X)
0058      133   FØRMAT(1H+,70X,'CLUSTERED ')
0059      134   FØRMAT(' ',20X,9(A1,'(',A1,I4,4X))
0060      135   FØRMAT(1H0,22X,'TØTAL = ',I5)
0061            GØ TØ(1,2),PASS
0062        1   WRITE(6,115)
0063            DØ 3 I=1,4
0064      3     SEGNØ(I)= BUF(947+I)
0065            WRITE(6,114) (IBUF(I),I=3,26),TAPNØ
0066            WRITE(6,117) (IBUF(I),I=709,714),(IBUF(J),J=715,720)
0067            WRITE(6,118)
0068            WRITE(6,119)
0069            WRITE(6,120) (SEGNØ(I),I=1,4),(IBUF(J),J=154,158),
              2(IBUF(K),K=159,163),(IBUF(L),L=164,168),(IBUF(M),M=169,173)
0070            RETURN
0071      2     IF(CLADUM.EQ.1) GØ TØ 202
0072            WRITE(6,129)
0073            CNT=ØNE
0074            DØ 97 JJ=1,2
0075            K=1
0076            NLINE=10
0077            WRITE(6,122) CNT
0078            WRITE(6,124)
0079            WRITE(6,125) (CØL(I),I=1,19)
0080            DØ 98 J=1,11
0081            L=6
0082            DØ 10 I=1,120
0083            PMATR(I)=BLANK
0084      10    CØNTINUE
0085            DØ 12 K=1,19
0086            IF(CNT.EQ.'1') GØ TØ 6
0087            IF(TYPE(K).EQ.'1'.ØR.TYPE(K).EQ.'2') GØ TØ 7
0088            GØ TØ 5
0089      6     IF(TYPE(K).EQ.'1'.ØR.TYPE(K).EQ.'3') GØ TØ 7
0090            GØ TØ 5
0091      7     PMATR(L)=LABLED(K)
0092            PMATR(L+1)=SLASH
0093            PMATR(L+2)=CLASFY(2*K)
0094            IF(CLASFY(2*K-1).EQ.' ') GØ TØ 5
0095            PMATR(L+2)=CLASFY(2*K-1)
0096            PMATR(L+3)=CLASFY(2*K)
0097       5    CØNTINUE
0098            K=K+1
0099            L=L+6
0100       12   CØNTINUE
0101            WRITE(6,99) NLINE,(PMATR(I),I=6,120)
0102       99   FØRMAT(1H0,2X,I3,2X,115A1)
0103            NLINE=NLINE+10
0104       98   CØNTINUE
0105            CNT=TWØ
0106      97    CØNTINUE
```

```
          WRITE(6,100)
          WRITE(6,101)
          WRITE(6,102) (BAPAHL(I),I=1,6)
         WRITE(6,126)
          WRITE(6,103) (BAPZP(I),I=1,12)
          WRITE(6,104) (BAUNCA(I),I=1,12)
          WRITE(6,105) (BACZP(I),I=1,6),BACPR(12)
          WRITE(6,106) (BAVAR(I),I=1,6),BAVAR(12)
          WRITE(6,107) (BARANS(I),I=1,3),BARANS(12)
         WRITE(6,132)
          CALL BNT
          WRITE(6,109)
         WRITE(6,130) PCC1,PCC2
          WRITE(6,109)
         WRITE(6,131) PCCS1,PCCS2
          WRITE(6,110) (BACLAB(I),I=1,8)
          WRITE(6,111)
          WRITE(6,136) (CLAD(I),I=1,2)
          DØ 96 J=1,BACATS
          WRITE(6,112) BALABL(J),(BACAIN(J,K),K=1,BACATS)
    96    CØNTINUE
         WRITE(6,132)
          CALL BNT
          CALL BNT
          WRITE(6,113)
         DØ 50 K=1,BACATS
         WRITE(6,134) (BACLAB(K),BACLAB(LL),BCVA(K,LL),LL=1,BACATS)
    50   CØNTINUE
         WRITE(6,135) NATN
    202     IF(CLUDUM.EQ.1) RETURN
         WRITE(6,129)
         CNT=ØNE
         DØ 297 JJ=1,2
         K=1
         NLINE=10
         WRITE(6,123) CNT
         WRITE(6,124)
         WRITE(6,125) (CØL(I),I=1,19)
         DØ 298 J=1,11
         L=6
         DØ 210 I=1,120
         PMATR(I)=BLANK
    210   CØNTINUE
         DØ 212 N=1,19
         IF(CNT.EQ.'1') GØ TØ 206
         IF(TYPE(K).EQ.'0'.ØR.TYPE(K).EQ.'2') GØ TØ 207
         GØ TØ 205
    206     IF(TYPE(K).EQ.'1'.ØR.TYPE(K).EQ.'3') GØ TØ 207
         GØ TØ 205
    207   PMATR(L)=LBLEC(K)
         PMATR(L+1)=SLASH
         PMATR(L+2)=CLDØT(2*K)
         IF(CLDØT(2*K-1).EQ.' ') GØ TØ 5
          PMATR(L+2)=CLDØT(2*K-1)
          PMATR(L+3)=CLDØT(2*K)
     205  CØNTINUE
```

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```
                  K=K+1
                  L=L+6
         212      CONTINUE
                  WRITE(6,99) NLINE,(PMATR(I),I=6,127)
                  NLINE=NLINE+10
           298    CONTINUE
                  CNT=TWO
         297     CONTINUE
                 WRITE(6,128)
                  WRITE(6,101)
                  WRITE(6,102) (BULABL(I),I=1,8)
                 WRITE(6,127)
                  WRITE(6,103) (BUPRP(I),I=1,12)
                  WRITE(6,104) (BUINCR(I),I=1,12)
                  WRITE(6,105) (BUCCR(I),I=1,8),BLCRR(12)
                  WRITE(6,106) (BUVAR(I),I=1,5),BLVAR(12)
                  WRITE(6,107) (BUHANS(I),I=1,8),BUHANS(12)
                 WRITE(6,132)
                  CALL BNT
                  WRITE(6,108)
                 WRITE(6,130) PCL1,PCL2
                  WRITE(6,109)
                 WRITE(6,131) PCLG1,PCLG2
                  WRITE(6,110) (BUCLAR(I),I=1,8)
                  WRITE(6,111)
                  WRITE(6,136) (CLUD(I),I=1,2)
                  DO 20 J=1,BUCATS
                  WRITE (6,112) BULABL(J),(BUCAIN(J,K),K=1,BUCATS)
             20   CONTINUE
                 WRITE(6,132)
                  CALL BNT
                  CALL BNT
                  WRITE(6,113)
                 DO 250 K=1,BUCATS
                 WRITE(6,134) (BUCLAR(K),BUCLA3(LL),BCVU(K,LL),LL=1,BACATS)
         250     CONTINUE
                 WRITE(6,135) BUTWT
                  RETURN
                  END
```

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```
FORTRAN IV-PLUS V02-51           08:05:19    05-MAR-79           PAGE 5
BIAPRT.FTN        /TR:BLOCKS/WR
PROGRAM SECTIONS

NUMBER   NAME       SIZE                   ATTRIBUTES

   1     $CODE1   006000  1536             RW,I,CON,LCL
   2     $PDATA   000006     3             RW,D,CON,LCL
   3     $IDATA   001714   486             RW,D,CON,LCL
   4     $VARS    000462   153             RW,D,CON,LCL
   6     CBIAS    005122  1321             RW,D,OVR,GBL
   7     DUMMY    000004     2             RW,D,OVR,GBL
   8     CLCOM    000642   209             RW,D,OVR,GBL
   9     SEG      000004     2             RW,D,OVR,GBL


ENTRY POINTS

 NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS

 BIAPRT       1-000000


VARIABLES

 NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS

 BACATS I*2   6-003314   BATPT  I*2   6-003766   BLANK  L*1   4-000170   BUCATS I*2   6-001556   BUTPT  I*2   6-003770
 CLADUM I*2   7-000000   CLUDUM I*2   7-000002   CNT    I*2   4-000450   CR     I*2   6-001550   DR     I*2   4-001552
 I      I*2   4-000436   J      I*2   4-000440   JJ     I*2   4-000452   K      I*2   4-000442   L      I*2   4-000444
 LL     I*2   4-000460   M      I*2   4-000446   N      I*2   4-000456   NLINE  I*2   4-000454   ONE    I*2   4-000430
 PASS   I*2   F-000006*  PCCG1  R*4   6-003336   PCCG2  R*4   6-003342   PCC1   R*4   6-003326   PCC2   R*4   6-003332
 PCLG1  R*4   6-003356   PCLG2  R*4   6-003362   PCL1   R*4   6-003346   PCL2   R*4   6-003352   SLASH  I*2   4-000432
 TAPNO  I*2   F-000004*  C      I*2   6-001554   TWO    I*2   4-000434


ARRAYS

 NAME   TYPE  ADDRESS        SIZE          DIMENSIONS

 A      R*4   6-001520   000030     12     (3,2)
 BACAIN R*4   6-000220   000400    128     (8,8)
 BACLAB L*1   6-003316   000010      4     (8)
 BACOR  I*2   6-000140   000030     12     (12)
 BALABL L*1   6-001650   000010      4     (8)
 BAPPP  I*2   6-000000   000030     12     (12)
 BARANS R*4   6-001360   000060     24     (12)
 BAUNCR I*2   6-000060   000030     12     (12)
 BAVAR  R*4   6-001220   000060     24     (12)
 BCVA   I*2   6-003366   000200     64     (8,8)
 BCVU   I*2   6-003566   000200     64     (8,8)
 BUCAIN R*4   6-000620   000400    128     (8,8)
 BUCLAB L*1   6-001550   000010      4     (8)
 BUCOR  I*2   6-000170   000030     12     (12)
 BULABL L*1   6-001570   000010      4     (8)
 BUPPP  I*2   6-000030   000030     12     (12)
 BURANS R*4   6-001440   000060     24     (12)
 BUUNCR I*2   6-000110   000030     12     (12)
```

```
FORTRAN IV-PLUS V02-51              08:05:19    05-MAR-78           PAGE 6
BIAPRT.FTN          /TR:BLOCKS/WR
  BUVAR   R*4     6-001330  000050     24      (12)
  CCONS   R*4     6-005112  000020      4      (2)
  CLAD    R*4     6-003772  000010      4      (2)
  CLASFY  L*1     6-001610  000642    209      (418)
  CLOUT   L*1     8-000000  000642    209      (418)
  CLUD    R*4     6-004002  000010      4      (2)
  COL     I*2     4-000352  000046     19      (19)
  IPUF    L*1     F-000002* 000001      0      (1)
  LALED   L*1     6-002773  000321    104      (209)
  PR      L*1     4-000030  000170     60      (120)
  PYATR   L*1     4-000171  000170     63      (120)
  RCONS   R*4     6-004112  001000    256      (2,8,8)
  SEGNW   L*1     9-000050  000004      2      (4)
  TCONS   R*4     6-004012  000100     32      (2,8)
  TYPE    L*1     6-002452  000321    104      (209)
 *
 *
LABELS
 *
  LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS
 *
  1       1-000054         2       1-000430         3          **            5       1-001344         6       1-101216
  7       1-001254         10         **            12         **            20         **            50         **
  96         **            97         **            98         **            99'     3-001454         100'    3-000000
  101'    3-000054         102'    3-000074         103'    3-000112         104'    3-000150         105'    3-000204
  106'    3-000250         107'    3-000314         108'    3-000360         109'    3-000412         110'    3-000432
  111'    3-000470         112'    3-000514         113'    3-000536            114'    **            115'    3-000620
  116'    3-000654         117'    3-000730         118'    3-000762         119'    3-001012         120'    3-001034
  121'       **            122'    3-001114         123'    3-001164         124'    3-001240         125'    3-001254
  126'    3-001300         127'    3-001336         128'    3-001374         129'    3-001442         130'    3-001450
  131'    3-001510         132'    3-001520         133'       **            134'    3-001516         135'    3-001642
  136'    3-001550         202     1-003312         205     1-004030         206     1-003474         207     1-003734
  210        **            212        **            250        **            297        **            298        **
 *
 *
FUNCTIONS AND SUBROUTINES REFERENCED
 *
  BNT
 *
 *
TOTAL SPACE ALLOCATED = 016400  3712
 *
NO FPP INSTRUCTIONS GENERATED
 *
BIAPRT,LP:=BIAPRT
```

```
FORTRAN IV-PLUS V02-51               08:05:55    09-MAR-78           PAGE 1
CORED.FTN        /TR:BLOCKS/WR
0001             SUBROUTINE CORED(IBUF,R,FILE)
0002             IMPLICIT INTEGER(A-Z)
0003             INTEGER*2 ISTAT(2),IPRM(6)
0004              EQUIVALENCE(ISTAT(1),IB)
0005              BYTE IB(2)
0006             LOGICAL*1 IBUF(1)
0007             DIMENSION IWDAT(1)
0008             DIMENSION IA(37)
0009             DATA XDEV/2HXT/
0010             DATA MDEV/2HMT/
0011             RECORD=R
0012             IF(RECORD.GT.0)  GO TO 10
0013              ERCNT=0
0014              IF(RECORD.EQ.-1)  GO TO 6
0015      12     CONTINUE
0016             FILE=C
          D      WRITE(5,49)                                               i00hEh00
          CTYPE 49
0017      49     FORMAT(10X,' TYPE M OR X FOR TAPE DEVICE CODE'/)
0018            READ(1,51,END=99)  IA
          C      ACCEPT 51,IA
0019             IF(IA(1).EQ.'M')  GO TO 13
0020             IF(IA(1).EQ.'X')  GO TO 14
0021      99     CONTINUE
0022             WRITE(6,97)
0023      97     FORMAT(10X,' CARD ERROR  '//)
0024             WRITE(6,97)
0025             STOP
0026      13     IDEV=MDEV
0027             GO TO 15
0028      14     IDEV=XDEV
0029      15     CONTINUE
          D      WRITE(5,50)                                               i00pFh00
          C      TYPE 50
0030      50     FORMAT(10X,' TYPE TAPE UNIT NUMBER = 0 OR 1')
0031             READ(1,51,END=99)  IA
          C      ACCEPT 51,IA
0032      51     FORMAT(37A2)
0033              IF(IA(1).EQ.'0')  GO TO 18
0034              IF(IA(1).EQ.'1')  GO TO 19
0035              GO TO 99
0036      18      IUNT=0
0037              GO TO 20
0038      19      IUNT=1
0039      20      CONTINUE
0040             ILUN=9
0041             IDS=0
0042             ISR=0
0043             CALL ASNLUN(ILUN,IDEV,IUNT,IDS)
0044             IF(IDS.LT.0)  GO TO 1
0045             CALL GETADR(IPRM,IBUF)
0046      6       CONTINUE
0047             CALL QIO("2400,ILUN,1,,ISTAT,IPRM,ISR)
0048             IF(ISR.LT.0)  GO TO 2
0049              IF(RECORD.EQ.-1)  GO TO 11
0050             IPRM(2)=3600
```

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```
0051    10      CØNTINUE
0052            ISW=0
0053            RECØRD=RECØRD+1
0054            CALL QIØ("1000,ILUN,1,,ISTAT,IPRM,ISW)
0055            IF(ISW.LT.0)  GP TØ 3
0056            CALL WAITFR(1,IDS)
0057            IF(IDS.LT.0)  GØ TØ 4
        C        WRITE(6,101) (IB(I),I=1,2),ISTAT(2)
0058    101      FØRMAT(1H0,10X,2I4,3X,I5,2X,'BYTES TRANSFERED')
0059             ERCØDE=IB(1)
0060            IF(ERCØDE.LT.0)  GØ TØ 5
0061             FF=0
0062             DØ 800 JJ=1,720
0063    798      IF(IBUF(JJ).LT.0) GØ TØ 799
0064    800      CØNTINUE
0065             RETURN
0066    799      IBUF(JJ)='1'
0067             IF(FF.EQ.1) GØ TØ 798
0068             FF=1
0069             WRITE(6,1000)
0070    1000     FØRMAT(1H '***** THIS SEGMENT CØNTAINS BAD DATA *****')
0071             GØ TØ 798
0072    1       CØNTINUE
0073            WRITE(6,100)  IDS
0074    100     FØRMAT(1H ,'  ASLUN CALL DSW=   ',I6)
0075            STØP
0076    2       CØNTINUE
0077            WRITE(6,200) ISP
0078    200     FØRMAT(1H ,'REWIND DSW = ',I6)
0079            STØP
0080    3       CØNTINUE
0081            WRITE(6,300)  ISW
0082    300     FØRMAT(1H ,'  READ QIØ DSW = ',I6)
0083            STØP
0084    4       CØNTINUE
0085            WRITE(6,400)  IDS
0086    400     FØRMAT(1H ,'  WAIT DSW = ',I6)
0087            STØP
0088    5       CØNTINUE
0089            IF(ERCØDE.EQ.-10)  FILE=FILE+1
0090            IF(ERCØDE.EQ.-10)  RETURN
0091             IF(ERCØDE.NE.-4)  GØ TØ 7
0092             ERCNT=ERCNT+1
0093             RETURN
0094    11       CØNTINUE
0095             WRITE(6,700)
0096    700      FØRMAT('  ')
0097             IF(ERCNT.EQ.0)  RETURN
0098             WRITE(6,600)  ERCNT
0099    600      FØRMAT('1',10X,' TAPE ERRØRS ENCØUNTERED - ',I5)
0100             RETURN
0101    7        CØNTINUE
0102            WRITE(6,500)  ERCØDE
0103    500     FØRMAT(1H0,'  I/Ø STATUS BLØCK ERRØR CØDE= ',I6)
0104            STØP
0105            END
```

```
FORTRAN IV-PLUS V02-51          ?8105155    05-MAR-78          PAGE 3
CORED.FTN        /TR:BLOCKS/WR
PROGRAM SECTIONS
 
NUMBER   NAME       SIZE                  ATTRIBUTES
 
  1      $CODE1   001470    332           RW,I,CON,LCL
  2      $PDATA   000014      6           RW,D,CON,LCL
  3      $IDATA   000472    157           RW,D,CON,LCL
  4      $VARS    000166     59           RW,D,CON,LCL
 
 
ENTRY POINTS
 
  NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS
 
  CORED        1-000060
 
 
VARIABLES
 
  NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS
 
  ERCNT  I*2   4-000142    ERCODE I*2   4-000160    FF     I*2   4-000142    FILE   I*2   F-000006*   IDEV   I*2   4-000144
  IDS    I*2   4-000152    ILUN   I*2   4-000150    ISR    I*2   4-000154    ISW    I*2   4-000155    IUNIT  I*2   4-000146
  JJ     I*2   4-000164    NDEV   I*2   4-000136    R      I*2   F-000004*   RECORD I*2   4-000112    XDEV   I*2   4-000134
 
 
ARRAYS
 
  NAME   TYPE  ADDRESS    SIZE            DIMENSIONS
 
  IA     I*2   4-000022   000112    37    (37)
  IP     L*1   4-000000   000002     1    (2)
  IRUF   L*1   F-000002*  000001     3    (1)
  IWDAT  I*2   4-000020   000002     1    (1)
  IPRM   I*2   4-000004   000014     6    (6)
  ISTAT  I*2   4-000060   000004     2    (2)
 
 
LABELS
 
  LABEL   ADDRESS        LABEL   ADDRESS        LABEL   ADDRESS        LABEL   ADDRESS        LABEL   ADDRESS
 
  1       1-000774       2       1-001040       3       1-001104       4       1-001150       5       1-001214
  6       1-000472       7       1-001354       10      1-000544       11      1-001264       12        **
  13      1-000232       14      1-000250       15      1-000204       18      1-000352       19      1-000366
  20      1-000402       40'       **           50'       **           51'     3-000024       97'     3-000000
  99      1-000156       100'    3-000110       101'      **           200'    3-000142       300'    3-000106
  400'    3-000216       500'    3-000314       600'    3-000250       700'    3-000240       798     1-001452
  799     1-000712       800       **           1000'   3-000030
 
 
FUNCTIONS AND SUBROUTINES REFERENCED
 
  ASNLUN  GETADR  OIO      WAITFR
 
```

```
FØRTRAN IV-PLUS V02-51                 03:05:55    05-MAR-78                PAGE 4
CDRED.FTN          /TR:BLØCKS/WR
TØTAL SPACE ALLØCATED = 002314   614
>
NØ FPP INSTRUCTIØNS GENERATED
>
CDRED,LP:=CDRED
```

```
FORTRAN IV-PLUS V02-51                        CEIGA107     09-MAR-78             PAGE 1
CONRED.FTN          /TR:BLOCKS/WR
0001                SUBROUTINE CONRED
0002                IMPLICIT INTEGER(A-Z)
0003                INCLUDE 'COMMON1.DAT'
0004 *              BYTE CLASFY(418),CLNAT(418)
0005 *                LOGICAL*1 TYPE(2,5),LPLET(265)
0006 *                LOGICAL*1 HALABL(5),FACLAB(5),SUCLAB(8),PULABL(5)
0007 *              REAL PCC1,PCC2,DUMMY,PCCG2,PCL1,PCL2,PCLG1,PCLG2
0008 *                REAL CLAD,CLUD,TCONS,RCONS,CCONS
0009 *            DIMENSION CLAD(2),CLUD(2),TCONS(2,8),CCONS(2),PCONS(2,8,6)
0010 *                DIMENSION HCVA(8,6),HCVU(8,6)
0011 *                DIMENSION DAPRO(12),DUPRO(12)
0012 *                COMMON/CDIAS/DAP P,HUP,DP,BALACB,RUDACB,BACPF,SUCPR,DACAIT,RUCAIP,
     *        *                    DAVAR,DUVAR,DACARS,DUCARS,A,PC,LC,TC,SUCITS,HACLAB,
     *        *                    HALABL,PULABL,CLASFY,TYPE,LPLET,FACATS,FACLAB,
     *        *                    PCC1,PCC2,PCCG1,PCCG2,PCL1,PCL2,PCLG1,PCLG2,
     *        *                    HCVA,HCVU,DATCT,DUTZT,CLAD,CLUD,TCONS,RCONS,CCONS
0013 *                COMMON/DUMMY/CLADUM,CLUDUM
0014 *              COMMON/CLDAT/CLDAT
0015 *                REAL A(3,2)
0016 *                DIMENSION SAVDAC(12),SVDUCA(12),DACPR(12),DUCPR(12)
0017 *                REAL DACLOC(8,8),DUCLO (8,6),SAVDA(12),SUVAR(12),SARANS(12),SURANS(12)
0018                IU=1
0019                DO 10 I=1,2
0020                READ(IU,101) CCONS(I)
0021      101       FORMAT(F10.5)
0022                READ(IU,100) (TCONS(I,J),J=1,8)
0023                DO 9 J=1,8
0024                READ(IU,100) (PCONS(I,J,K),K=1,6)
0025      9         CONTINUE
0026      10        CONTINUE
0027      100       FORMAT(8F10.5)
0028                RETURN
0029                END
```

91

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```
FORTRAN IV-PLUS V02-51            08106107    05-MAR-78             PAGE 2
CONRED.FTN        /TR:BLOCKS/WR
PROGRAM SECTIONS

NUMBER   NAME         SIZE                   ATTRIBUTES

   1     $CODE1   000334    110              RW,I,CON,LCL
   3     $IDATA   000012      5              RW,D,CON,LCL
   4     $VARS    000010      4              RW,D,CON,LCL
   6     CHIAS    005122   1321              RW,D,OVR,GBL
   7     DUMMY    000004      2              RW,D,OVR,GBL
   8     CLCOM    000642    209              RW,D,OVR,GBL


ENTRY POINTS

 NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS

 CONRED        1-000000


VARIABLES

 NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS

 BACATS  I*2   6-003114    BATOT   I*2   6-003766    BUCATS  I*2   6-001556    HUTOT   I*2   6-003770    CLADUM  I*2   7-000000
 CLUDUM  I*2   7-000002    DF      I*2   6-001550    DU      I*2   6-001552    I       I*2   4-000002    IU      I*2   4-000000
 J       I*2   4-000004    K       I*2   4-000006    PCCO1   R*4   6-003336    PCCO2   R*4   6-003342    PCC1    R*4   6-003326
 PCC2    R*4   6-003332    PCLG1   R*4   6-003356    PCLG2   R*4   6-003362    PCL1    R*4   6-003346    PCL2    R*4   6-003352
 TC      I*2   6-001554


ARRAYS

 NAME    TYPE  ADDRESS        SIZE          DIMENSIONS

 A       R*4   6-001520  000030     12      (3,2)
 BACAIN  R*4   6-000220  000400    128      (8,8)
 BACLAS  L*1   6-003316  000010      4      (8)
 BACOR   I*2   6-000140  000030     12      (12)
 BALABL  L*1   6-001600  000010      4      (8)
 BAPOP   I*2   6-000000  000030     12      (12)
 BARANS  R*4   6-001360  000060     24      (12)
 BAUNCZ  I*2   6-000060  000030     12      (12)
 BAVAR   R*4   6-001220  000060     24      (12)
 BCVA    I*2   6-003366  000200     64      (8,8)
 BCVU    I*2   6-003566  000200     64      (8,8)
 BUCAIN  R*4   6-000620  000400    128      (8,8)
 BUCLAS  L*1   6-001560  000010      4      (8)
 BUCOR   I*2   6-000170  000030     12      (12)
 BULABL  L*1   6-001570  000010      4      (8)
 BUPOP   I*2   6-000030  000030     12      (12)
 BURANS  R*4   6-001440  000060     24      (12)
 BUUNCZ  I*2   6-000110  000030     12      (12)
 BUVAR   R*4   6-001300  000060     24      (12)
 CCONS   R*4   6-005112  000010      4      (2)
 CLAD    R*4   6-003772  000010      4      (2)
 CLASFY  L*1   6-001610  000642    209      (418)
```

92

C-2

```
FORTRAN IV-PLUS V02-51                 15:06:07    05-MAR-78            PAGE 3
CONRED.FTN        /TR:BLOCKS/WR
  CLD2T   L*1    6-000000  003542   279     (418)
  CLU2    R*4    6-004002  000010     4     (2)
  LBLED   L*1    6-002773  000321   104     (209)
  RCONS   R*4    6-004112  001000   256     (2,6,8)
  TCONS   R*4    6-004012  000100    32     (2,8)
  TYPE    L*1    6-002452  000321   104     (209)
*
*
LABELS
*
 LABEL    ADDRESS           LABEL    ADDRESS          LABEL    ADDRESS          LABEL    ADDRESS          LABEL    ADDRESS
*
 9           **             10          **            100'     3-000004         101'     3-000000
*
*
TOTAL SPACE ALLOCATED = 006346  1651
*
NO FPP INSTRUCTIONS GENERATED
*
CONRED,LP:=CONRED
```

93

```
FORTRAN IV-PLUS V02-51                 08:06:13    09-MAR-78          PAGE 1
MDTTL.FTN         /TR:BLOCKS/WR
0001              SUBROUTINE MDTTL(PTL)
0002              IMPLICIT INTEGER(A-Z)
0003              LOGICAL*1  MSD(12),PTL(1)
0004               DATA MSD/1HM,1HE,1HA,1HN,1H ,1H ,1HS,1HT,1H ,1HD,1HE,1HV/
0005              DO 1  I=1,12
0006        1     PTL(I)=MSD(I)
0007              RETURN
0008              END
```

```
FØRTRAN IV-PLUS V02-51          08:06:13    09-MAR-78          PAGE 2
MDTTL.FTN         /TR:BLØCKS/WR
PRØGRAM SECTIØNS

NUMBER   NAME        SIZE                   ATTRIBUTES

  1      $CØDE1  000102    33               RW,I,CØN,LCL
  3      $IDATA  000012     5               RW,D,CØN,LCL
  4      $VARS   000016     7               RW,D,CØN,LCL


ENTRY PØINTS

 NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS

 MDTTL         1-000000


VARIABLES

 NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS

 I       I*2   4-000014


ARRAYS

 NAME    TYPE  ADDRESS          SIZE          DIMENSIØNS

 MSG     L*1   4-000000   000014      6       (12)
 PTL     L*1   F-000002*  000001      1       (1)


LABELS

 LABEL    ADDRESS          LABEL    ADDRESS          LABEL    ADDRESS          LABEL    ADDRESS          LABEL    ADDRESS

 1           **


TØTAL SPACE ALLØCATED = 000132    45

NØ FPP INSTRUCTIØNS GENERATED

MDTTL,LP:=MDTTL
```

95

```
FORTRAN IV-PLUS V02-51                         08:50:16    09-MAR-78          PAGE 1
FNAME.FTN              /TR:BLOCKS/WR
0001                   SUBROUTINE FNAME(FLD,PN)
0002                   IMPLICIT INTEGER(A-Z)
0003                   LOGICAL*1  FLD(6),PN(12),FIELD(6)
0004                   DATA FIELD/1HF,1HI,1HE,1HL,1HD,1H /
0005                   DO 11  II=1,6
0006                   PN(II)=FIELD(II)
0007                   PN(II+6)=FLD(II)
0008          11       CONTINUE
0009                   RETURN
0010                   END
```

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```
FORTRAN IV-PLUS V02-51        ----5106116     19-MAR-79            PAGE 2
FNAME.FTN          /TR:BLOCKS/WR
PROGRAM SECTIONS
●
NUMBER   NAME        SIZE                   ATTRIBUTES
●
  1      $CODE1   000132      45            RW,I,CON,LCL
  3      $IDATA   000024      10            RW,D,CON,LCL
  4      $VARS    000010       4            RW,D,CON,LCL
●
●
ENTRY POINTS
●
 NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS
●
 FNAME        1-000000
●
●
VARIABLES
●
 NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS
●
 II      I*2   4-000006
●
●
ARRAYS
●
 NAME    TYPE  ADDRESS          SIZE          DIMENSIONS
●
 FIELD   L*1   4-000000  000006       3       (6)
 FLD     L*1   F-000002* 000001       0       (1)
 PN      L*1   F-000004* 000001       0       (1)
●
●
LABELS
●
 LABEL    ADDRESS            LABEL    ADDRESS            LABEL    ADDRESS            LABEL    ADDRESS            LABEL    ADDRESS
●
 11          **
●
●
TOTAL SPACE ALLOCATED = 000166    59
●
NO FPP INSTRUCTIONS GENERATED
●
FNAME,LP:=FNAME
```

97

```
FORTRAN IV-PLUS V02-51                        08:06:19    09-MAR-79          PAGE 1
KNT.FTN            /TR:BLOCKS/WR
0001               SUBROUTINE KNT
0002               IMPLICIT INTEGER(A-Z)
0003               COMMON/PCNT/LINE,PAGE
0004               LINE=LINE+1
0005               IF(LINE .LT. 60) GO TO 10
0006               PAGE=PAGE+1
0007               LINE=0
0008               WRITE(6,100) PAGE
0009            10 RETURN
0010           100 FORMAT('1',26X,'CAPS/CAS INTERFACE TAPE PRINTOUT',14X,'PAGE',I4/)
0011               END
```

98

```
FORTRAN IV-PLUS V02-51        ----8106119    08-MAR-79          PAGE 2
KNT.FTN              /TR:BLOCKS/WR
PROGRAM SECTIONS

NUMBER   NAME       SIZE                  ATTRIBUTES

  1      $CODE1   000076     31           RW,I,CON,LCL
  3      $IDATA   000062     25           RW,D,CON,LCL
  6      PC:T     000004      2           RW,D,OVR,GBL


ENTRY POINTS

 NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS

 KNT           1-000000


VARIABLES

 NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS

 LINE    I*2   6-000000    PAGE   I*2   6-000002


LABELS

 LABEL   ADDRESS           LABEL  ADDRESS           LABEL  ADDRESS           LABEL  ADDRESS           LABEL  ADDRESS

 10      1-000074          100'   3-000000


TOTAL SPACE ALLOCATED = 000164    58

NO FPP INSTRUCTIONS GENERATED

KNT,LP:=KNT
```

99

```
FORTRAN IV-PLUS V02-51                08:06:22    09-MAR-78         PAGE 1
MEAN.FTN            /TR:BLOCKS/WR
                    SUBROUTINE MEAN(FLD,PM,NCH,FLG)
                    IMPLICIT INTEGER(A-Z)
                    LOGICAL*1 FLD(1),PM(1),FLG(1),PT
                     LOGICAL*1 BLK
                    DATA PT/1H./
                     DATA BLK/1H /
                    OFF=11
                    IF(FLG(1).EQ.'F')  OFF=10
                    K=1
                     DO  3  J=1,NCH
                    N=(J-1)*132
                     PM(N+1)=FLD(OFF+1)
                     PM(N+2)=FLD(OFF+2)
                     IF(PM(N+1).NE.'0')  GO TO 10
                     PM(N+1)=BLK
                     IF(PM(N+2).EQ.'0')  PM(N+2)=BLK
          10         PM(N+3)=FLD(OFF+3)
                     PM(N+4)=PT
                     PM(N+5)=FLD(OFF+4)
                     PM(N+6)=FLD(OFF+5)
                     PM(N+7)=BLK
                     PM(N+8)=FLD(OFF+6)
                     PM(N+9)=FLD(OFF+7)
                     IF(PM(N+8).NE.'0')  GO TO 11
                     PM(N+8)=BLK
                     IF(PM(N+9).EQ.'0')  PM(N+9)=BLK
          11         PM(N+10)=FLD(OFF+8)
                     PM(N+11)=PT
                     PM(N+12)=FLD(OFF+9)
                     OFF=OFF+9
          3         CONTINUE
                    RETURN
                     END
```

```
FORTRAN IV-PLUS V02-51                 16:06:22    05-MAR-79           PAGE 2
MEAN.FTN             /TR:BLOCKS/WR
PROGRAM SECTIONS

NUMBER   NAME          SIZE                         ATTRIBUTES

   1     $CODE1   000514    166                     RW,I,CON,LCL
   3     $IDATA   000036     15                     RW,D,CON,LCL
   4     $VARS    000012      5                     RW,D,CON,LCL
   5     $TEMPS   000002      1                     RW,D,CON,LCL


ENTRY POINTS

 NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS

 MEAN         1-000000


VARIABLES

 NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS

 BLK    L*1   4-000031    J      I*2   4-000006    K      I*2   4-000004    [illegible] I*2 4-00001[illegible] [illegible] I*2 F-000000*
 ZFF    I*2   4-000012    PT     I*2   4-000000


ARRAYS

 NAME   TYPE  ADDRESS          SIZE            DIMENSIONS

 FLG    L*1   F-000002* 000001     1       (1)
 FLS    L*1   F-000010* 000001     1       (1)
 PM     L*1   F-000004* 000002     2       (1)


LABELS

 LABEL   ADDRESS           LABEL   ADDRESS           LABEL   ADDRESS           LABEL   ADDRESS           LABEL   ADDRESS

 3          **             10      1-000260          11      1-000420


TOTAL SPACE ALLOCATED = 000566   187

NO FPP INSTRUCTIONS GENERATED

MEAN,LP:=MEAN
```

```
FORTRAN IV-PLUS V02-51                  08:06:29    09-MAR-78         PAGE 1
PBP.FTN            /TR:BLOCKS/WR
0001               SUBROUTINE PBP(FLD,PP,FLG)
0002               IMPLICIT INTEGER(A-Z)
0003               LOGICAL*1 FLD(1),PP(1),PAR(2),FLG(1)
0004               DATA PAR/1H(,1H)/
0005               OFF=6
0006               IF(FLG(1).EQ.'F')  OFF=3
0007               PP(3)=PAR(1)
0008               DO  1  I=1,5
0009               PP(I+3)=FLD(I+OFF)
0010       1       CONTINUE
0011               PP(9)=PAR(2)
0012               RETURN
0013               END
```

```
FORTRAN IV-PLUS V02-51              08106129    05-MAR-79            PAGE 2
PEP.FTN              /TR:BLOCKS/WR
PROGRAM SECTIONS
0
NUMBER   NAME       SIZE                  ATTRIBUTES
0
   1     $CODE1   000216     71           RW,I,CON,LCL
   3     $IDATA   000036     15           RW,D,CON,LCL
   4     $VARS    000006      3           RW,D,CON,LCL
0
0
ENTRY POINTS
0
 NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS
0
 PEP           1-000000
0
0
VARIABLES
0
 NAME    TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS
0
 I       I*2   4-000004    OFF    I*2   4-000002
0
0
ARRAYS
0
 NAME    TYPE  ADDRESS             SIZE         DIMENSIONS
0
 FLD     L*1   F-000002* 000001       0         (1)
 FLG     L*1   F-000006* 000001       0         (1)
 PAR     L*1   4-000000  000002       1         (2)
 PP      L*1   F-000004* 000001       0         (1)
0
0
LABELS
0
 LABEL   ADDRESS            LABEL   ADDRESS            LABEL   ADDRESS            LABEL   ADDRESS            LABEL   ADDRESS
0
 1          **
0
0
TOTAL SPACE ALLOCATED = 000262     89
0
NO FPP INSTRUCTIONS GENERATED
0
PEP,LP:=PEP
```

```
FORTRAN IV-PLUS V02-51              14:50:32    30-MAR-78          PAGE 1
SHAPE.FTN            /TR:BLOCKS/WR
0001                 SUBROUTINE SHAPE(FLP,PN,FLG)
0002                 IMPLICIT INTEGER(A-Z)
0003                 LOGICAL*1  FLP(1),PN(1),SHPCL(6),FLG(1)
0004                 DATA SHPCL/[illegible] /
0005                 ERR=0
0006                 IF(FLG(1).EQ.'F')  ERR=1
0007                 DO 11  I=1,6
0008                 PN(I)=SHPCL(I)
0009                 PN(I+6)=FLP(I+OFF)
0010         11      CONTINUE
0011                 RETURN
0012                 END
```

104

```
FORTRAN IV-PLUS V02-51          10:06:32    09-MAR-79          PAGE 2
SNAME.FTN          /TR:BLOCKS/WR
PROGRAM SECTIONS
0
NUMBER   NAME        SIZE                    ATTRIBUTES
0
   1     $CODE1   000202     65              RW,I,CON,LCL
   3     $IDATA   000036     15              RW,D,CON,LCL
   4     $VARS    000012      5              RW,D,CON,LCL
0
0
ENTRY POINTS
0
 NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS
0
 SNAME        1-000000
0
0
VARIABLES
0
 NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS     NAME   TYPE  ADDRESS
0
 II     I*2   4-000010    OFF    I*2   4-000006
0
0
ARRAYS
0
 NAME   TYPE  ADDRESS          SIZE             DIMENSIONS
0
 FLD    L*1   F-000002*  000001       0     (1)
 FLS    L*1   F-000006*  000001       0     (1)
 PH     L*1   F-000004*  000001       0     (1)
 SUBCL  L*1   4-000000   000005       3     (6)
0
0
LABELS
0
 LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS
0
 11         **
0
0
TOTAL SPACE ALLOCATED = 000252     85
0
NO FPP INSTRUCTIONS GENERATED
0
SNAME.LP1=SNAME
```

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105

```
FORTRAN IV-PLUS V02-51                     08:06:37    09-MAR-78            PAGE 1
STMP.FTN              /TR:BLOCKS/WR
                      SUBROUTINE STAMP(IBUF)
                      IMPLICIT INTEGER(A-Z)
                      LOGICAL*1 IBUF(1)
                      COMMON /PCN1/LINE,PAGE
                      LINE=66
                      CALL NWT
                      IF(IBUF(2).EQ.'F')  GO TO 8
                      WRITE(6,200)
          200         FORMAT(5X,'SUBCLASS STATISTICS RECORD')
                      GO TO 9
          8           WRITE(6,201)
          201         FORMAT(5X,'FIELD STATISTICS RECORD')
          9           CONTINUE
                      WRITE(6,202)  (IBUF(N),N=3,4)
          202         FORMAT(5X,'RECORD SEQ. NO.   ',2A1)
                      WRITE(6,203)  (IBUF(N),N=5,7)
          203         FORMAT(5X,'NO. SUBCLASSES   ',3A1)
                      WRITE(6,204)  (IBUF(N),N=8,9)
          204         FORMAT(5X,'NO. SUBCLASS SETS ',2A1)
                      WRITE(6,205)  (IBUF(N),N=10,11)
          205         FORMAT(5X,'NO. OF CHANNELS    ',2A1)
                      LINE=5
                      RETURN
                      END
```

```
FORTRAN IV-PLUS V02-51          08:06:57    09-MAR-78          PAGE 2
STDMP.FTN        /TR:BLOCKS/WR
PROGRAM SECTIONS

NUMBER   NAME        SIZE                 ATTRIBUTES

  1      $CODE1   000460    152           RW,I,CON,LCL
  3      $IDATA   000256     87           RW,D,CON,LCL
  4      $VARS    000002      1           RW,D,CON,LCL
  6      PCNT     000004      2           RW,D,OVR,GBL


ENTRY POINTS

 NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS

 STDMP        1-000000


VARIABLES

 NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS    NAME   TYPE  ADDRESS

 LINE   I*2   6-000000   N      I*2   4-000000   PAGE   I*2   6-000002


ARRAYS

 NAME   TYPE  ADDRESS        SIZE           DIMENSIONS

 IBUF   L*1   F-000002* 000001      1     (1)


LABELS

 LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS          LABEL   ADDRESS

 8       1-000120         9       1-000146         200'    3-000000         201'    3-000046         202'    3-000074
 203'    3-000126         204'    3-000156         205'    3-000210


FUNCTIONS AND SUBROUTINES REFERENCED

 KNT


TOTAL SPACE ALLOCATED = 000744   242

NO FPP INSTRUCTIONS GENERATED

STDMP,LP:=STDMP
```

107

```
FORTRAN IV-PLUS V02-51              08:06:42    09-MAR-78         PAGE 1
PNT.FTN         /TR:BLOCKS/WR
0001            SUBROUTINE PNT                                                    [illegible]
0002            IMPLICIT INTEGER(A-Z)                                             [illegible]
0003            COMMON/PCNT/LINE,PAGE
0004            LINE=LINE+1
0005            IF(LINE .LT. 58) GO TO 10
0006            PAGE=PAGE+1
0007            LINE=0
0008            WRITE(3,100)
0009        10  RETURN
0010       100  FORMAT('1',71X,'     ')                                   [illegible]
0011            END                                                               [illegible]
```

```
FØRTRAN IV-PLUS V02-51            09:06:42     05-MAR-78          PAGE 2
BNT.FTN             /TR:BLOCKS/WR
PRØGRAM SECTIØNS

NUMBER   NAME         SIZE                     ATTRIBUTES

  1      $CODE1   000066     27                RW,I,CON,LCL
  3      $IDATA   000014      6                RW,D,CON,LCL
  6      PCNT     000004      2                RW,D,OVR,GBL


ENTRY PØINTS

 NAME     TYPE   ADDRESS     NAME    TYPE   ADDRESS     NAME    TYPE   ADDRESS     NAME    TYPE   ADDRESS     NAME    TYPE   ADDRESS

 BNT             1-000000


VARIABLES

 NAME     TYPE   ADDRESS     NAME    TYPE   ADDRESS     NAME    TYPE   ADDRESS     NAME    TYPE   ADDRESS     NAME    TYPE   ADDRESS

 LINE     I*2    6-000000    PAGE    I*2    6-000002


LABELS

 LABEL   ADDRESS             LABEL   ADDRESS             LABEL   ADDRESS             LABEL   ADDRESS             LABEL   ADDRESS

 10      1-000064            100'    3-000000


TØTAL SPACE ALLØCATED = 000106    35

16 FPP INSTRUCTIØNS GENERATED

BNT,LP:=BNT
```

1.09

```
FORTRAN IV-PLUS V02-51                08:06:46    29-MAR-79          PAGE 1
CPIPP.FTN          /TR:BLOCKS/WR
0001               SUBROUTINE CPIPP(FLD,CLASS,P1,P2)
0002               IMPLICIT INTEGER(A-Z)
0003               LOGICAL*1  FLD(1),CLASS(1)
0004               DO 2  I=1,4
0005               CLASS(I)=FLD(I)
0006      2        CONTINUE
0007               DECODE(5,100,FLD(5))  P1
0008      100      FORMAT(I5)
0009               DECODE(5,100,FLD(10))  P2
0010               RETURN
0011               END
```

116

```
FORTRAN IV-PLUS V02-51              10:35:45    09-MAR-78               PAGE 2
CPIP3.FTN         /TR:BLOCKS/WR
PROGRAM SECTIONS

NUMBER   NAME        SIZE                  ATTRIBUTES

  1      $CODE1   000224      74           RW,I,CON,LCL
  3      $IDATA   000030      12           RW,D,CON,LCL
  4      $VARS    000002       1           RW,D,CON,LCL


ENTRY POINTS

 NAME    TYPE  ADDRESS      NAME   TYPE  ADDRESS      NAME   TYPE  ADDRESS      NAME   TYPE  ADDRESS      NAME   TYPE  ADDRESS

 CPIPW         1-000000


VARIABLES

 NAME    TYPE  ADDRESS      NAME   TYPE  ADDRESS      NAME   TYPE  ADDRESS      NAME   TYPE  ADDRESS      NAME   TYPE  ADDRESS

 I       I*2   4-000000     PI     I*2   F-000006*    PP     I*2   F-000010*


ARRAYS

 NAME    TYPE  ADDRESS           SIZE          DIMENSIONS

 CLASS   L*1   F-000004*  000001      0        (1)
 FLD     L*1   F-000002*  000001      0        (1)


LABELS

 LABEL    ADDRESS             LABEL   ADDRESS             LABEL   ADDRESS             LABEL   ADDRESS             LABEL   ADDRESS

 2            **              100'    3-000040


TOTAL SPACE ALLOCATED = 000256    87

NO FPP INSTRUCTIONS GENERATED

CPIP3,LP:=CPIP4
```

118

```
FORTRAN IV-PLUS V02-51                 08:15:51    09-MAR-79          PAGE 1
MV.FTN                 /TR:BLOCKS/WR
0001                   SUBROUTINE MV(FLD,PB,NC)
0002                   IMPLICIT INTEGER(A-Z)
0003                   LOGICAL*1 FLD(1),PB(1)
0004                   DO  8  J=1,NC
0005         8         PB(J)=FLD(J)
0006                   RETURN
0007                   END
```

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FORTRAN IV-PLUS V02-51          08:06:51    05-MAR-79          PAGE 2
MY.FTN          /TR:BLOCKS/WR
PROGRAM SECTIONS
*
NUMBER   NAME       SIZE                      ATTRIBUTES
*
  1     $CODE1   000124      42               RW,I,CON,LCL
  3     $IDATA   000024      10               RW,D,CON,LCL
  4     $VARS    000002       1               RW,D,CON,LCL
  5     $TEMPS   000002       1               RW,D,CON,LCL
*
*
ENTRY POINTS
*
 NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS
*
 MY            1-000000
*
*
VARIABLES
*
 NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS     NAME    TYPE  ADDRESS
*
 J       I*2   4-000000    NC      I*2   F-000000*
*
*
ARRAYS
*
 NAME    TYPE  ADDRESS            SIZE            DIMENSIONS
*
 FLD     L*1   F-000002* 000001     1             (1)
 PR      L*1   F-000004* 000001     1             (1)
*
*
LABELS
*
 LABEL    ADDRESS          LABEL    ADDRESS          LABEL    ADDRESS          LABEL    ADDRESS          LABEL    ADDRESS
*
  8          **
*
*
TOTAL SPACE ALLOCATED = 000154    54
*
NO FPP INSTRUCTIONS GENERATED
*
```

113

APPENDIX B

The values Dw and Ds are computed as follows:

$$Dw = C_1 + \Sigma_{p=1}^{8} \Sigma_{q=1}^{8} RpqWpWq + \Sigma_{p=1}^{8} TpWp \text{ or } 0 \text{ if Category W not used}$$

$$Ds = C_2 + \Sigma_{p=1}^{8} \Sigma_{q=1}^{8} UpqSpSq + \Sigma_{p=1}^{8} VpSp \text{ or } 0 \text{ if Category S not used}$$

where C_1, C_2, $\{Rpq\}_{p=1}^{8}{}_{q=1}^{8}$, $\{Tp\}_{p=1}^{8}$, $\{Upq\}_{p=1}^{8}{}_{q=1}^{8}$, and $\{Vp\}_{p=1}^{8}$ are constants, supplied by user

W_1 = Bias corrected estimate for Category W

S_1 = Bias corrected estimate for Category S

W_2 = Machine estimate for Category W

S_2 = Machine estimate for Categor; S

W_3 = Random estimate for Category W

S_3 = Random estimate for Category S

W_4 = Variance of Bias corrected estimate of W

S_4 = Variance of Bias corrected estimate of S

$$W_5 = \frac{W:W}{W:W + S:W + N:W}$$

$$S_5 = \frac{S:S}{W:S + S:S + N:S}$$

$W_6 = S_6$ = PCC1

$$W_7 = S_7 = \frac{N:N}{W:N + S:N + N:N}$$

$W_8 = S_8$ = PCC2

APPENDIX B

APPENDIX C

a. Constants* for Dw calculations

Card 1 contains C_1 as follows:
blanks or XXX.XXXXX in first 10 columns only

Card 2 contains T_1 thru T_8 as follows:
blanks or XXX.XXXXX for each entry. A maximum of 10 columns wide starting in columns 1, 11, 21, etc.

Card 3 thru 10 contain $R_{1,1}$ to $R_{8,8}$. $R_{1,1}$ thru $R_{1,8}$ on card 3, $R_{2,1}$ thru $R_{2,8}$ on card 4, etc. Format same as card 2.

b. Constants* for Ds calculations

Card 1 contains C_2 as follows:
blanks or XXX.XXXXX in first 10 columns only

Card 2 contains V_1 thru V_8 as follows:
blanks or XXX.XXXXX for each entry. A maximum of 10 columns wide starting in columns 1, 11, 21, etc.

Card 3 thru 10 contain $U_{1,1}$ to $U_{8,8}$. $U_{1,1}$ thru $U_{1,8}$ on card 3, $U_{2,1}$ thru $U_{2,8}$ on card 4, etc. Format same as card 2.

*List of test cards on the following page.

APPENDIX C