



TECOM PROJECT NO. 7-CO-RD8-EPI-003

PUBLICATION NO. USAEPG-FR-1092

THE ENVIRONMENTAL INTERFERENCE EFFECTS MODEL
OF
THE ELECTROMAGNETIC ENVIRONMENTAL TEST FACILITY

VOLUME III

COMPUTER PROGRAM DESCRIPTIONS

PART 2

PRELIMINARY DATA PROCESSING

SEPTEMBER 1980

U.S. ARMY ELECTRONIC PROVING GROUND
Fort Huachuca, Arizona

DTIC
ELECTE
OCT 7 1982

82 09 23 04 Q

S

D

D

DISTRIBUTION STATEMENT A

Approved for public release
Distribution Unlimited

AD A 121178

DTIC FILE COPY

FOREWORD

Bell Technical Operations Textron, Tucson, Arizona, assisted in the preparation of this document under contract DAEA18-76-C-0002.

Accession For	
NTIS GRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By <u>Per Ltr. on File</u>	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
<u>A</u>	



TABLE OF CONTENTS :

	<u>Page</u>
FOREWORD	1
→ <u>SECTION 1 - PROGRAM EDIT</u> 8	
1.1 PURPOSE	1-1
1.2 PRINCIPAL FUNCTIONS.....	1-1
1.3 INPUT/OUTPUT DESCRIPTION.....	1-1
1.4 PROCESS DESCRIPTION.....	1-2
1.5 PROGRAM OPERATION.....	1-4
1.6 LIMITATIONS.....	1-4
1.7 RUNNING TIME.....	1-4
1.8 COMPUTER PROGRAM LISTING.....	1-4
→ <u>SECTION 2 - PROGRAM ANAM</u> 9	
2.1 PURPOSE.....	2-1
2.2 PRINCIPAL FUNCTIONS.....	2-1
2.3 INPUT/OUTPUT DESCRIPTION.....	2-1
2.4 PROCESS DESCRIPTION.....	2-2
2.5 PROGRAM OPERATION.....	2-2
2.6 LIMITATIONS.....	2-2
2.7 RUNNING TIME.....	2-3
2.8 COMPUTER PROGRAM LISTING.....	2-3
→ <u>SECTION 3 - PROGRAM UPDATMF</u> 10	
3.1 PURPOSE.....	3-1
3.2 PRINCIPAL FUNCTIONS.....	3-1
3.3 INPUT/OUTPUT DESCRIPTION.....	3-1
3.4 PROCESS DESCRIPTION.....	3-2
3.5 PROGRAM OPERATION.....	3-3
3.6 LIMITATIONS.....	3-3
3.7 RUNNING TIME.....	3-3
3.8 COMPUTER PROGRAM LISTING.....	3-3
→ <u>SECTION 4 - PROGRAM NTYPGEN</u> 11	
4.1 PURPOSE.....	4-1
4.2 PRINCIPAL FUNCTIONS.....	4-1
4.3 INPUT/OUTPUT DESCRIPTION.....	4-1
4.4 PROCESS DESCRIPTION.....	4-2
4.5 PROGRAM OPERATION.....	4-3
4.6 LIMITATIONS.....	4-3
4.7 RUNNING TIME.....	4-3
4.8 COMPUTER PROGRAM LISTING.....	4-3

TABLE OF CONTENTS (CONT)

	<u>Page</u>
SECTION 5 - PROGRAM ANTENNA 12 12;	
5.1 PURPOSE.....	5-1
5.2 PRINCIPAL FUNCTIONS.....	5-1
5.3 INPUT/OUTPUT DESCRIPTION.....	5-1
5.4 PROCESS DESCRIPTION.....	5-1
5.5 PROGRAM OPERATION.....	5-2
5.6 LIMITATIONS.....	5-2
5.7 RUNNING TIME.....	5-2
5.8 COMPUTER PROGRAM LISTING.....	5-2
SECTION 6 - PROGRAM GANTUP 13	
6.1 PURPOSE.....	6-1
6.2 PRINCIPAL FUNCTIONS.....	6-1
6.3 INPUT/OUTPUT DESCRIPTION.....	6-1
6.4 PROCESS DESCRIPTION.....	6-1
6.5 PROGRAM OPERATION.....	6-2
6.6 LIMITATIONS.....	6-2
6.7 RUNNING TIME.....	6-2
6.8 COMPUTER PROGRAM LISTING.....	6-2
SECTION 7 - PROGRAM DANTUP 14 14;	
7.1 PURPOSE.....	7-1
7.2 PRINCIPAL FUNCTIONS.....	7-1
7.3 INPUT/OUTPUT DESCRIPTION.....	7-1
7.4 PROCESS DESCRIPTION.....	7-2
7.5 PROGRAM OPERATION.....	7-2
7.6 LIMITATIONS.....	7-2
7.7 RUNNING TIME.....	7-2
7.8 COMPUTER PROGRAM LISTING.....	7-2
SECTION 8 - PROGRAM ANAX 15 15;	
8.1 PURPOSE.....	8-1
8.2 PRINCIPAL FUNCTIONS.....	8-1
8.3 INPUT/OUTPUT DESCRIPTION.....	8-1
8.4 PROCESS DESCRIPTION.....	8-2
8.5 PROGRAM OPERATION.....	8-2
8.6 LIMITATIONS.....	8-2
8.7 RUNNING TIME.....	8-2
8.8 COMPUTER PROGRAM LISTING.....	8-2

TABLE OF CONTENTS (CONT)

	<u>Page</u>
 → <u>SECTION 9 - PROGRAM MISEQIP</u> <u>16</u> / 16 ;	
9.1 PURPOSE.....	9-1
9.2 PRINCIPAL FUNCTIONS.....	9-1
9.3 INPUT/OUTPUT DESCRIPTION.....	9-1
9.4 PROCESS DESCRIPTION.....	9-2
9.5 PROGRAM OPERATION.....	9-2
9.6 LIMITATIONS.....	9-2
9.7 RUNNING TIME.....	9-3
9.8 COMPUTER PROGRAM LISTING.....	9-3
 → <u>SECTION 10 - PROGRAM ECUPDT</u> <u>17</u> / 17 ;	
10.1 PURPOSE.....	10-1
10.2 PRINCIPAL FUNCTIONS.....	10-1
10.3 INPUT/OUTPUT DESCRIPTION.....	10-1
10.4 PROCESS DESCRIPTION.....	10-2
10.5 PROGRAM OPERATION.....	10-2
10.6 LIMITATIONS.....	10-2
10.7 RUNNING TIME.....	10-2
10.8 COMPUTER PROGRAM LISTING.....	10-2
 → <u>SECTION 11 - PROGRAM OVERLAP</u> <u>18</u> / 18 ;	
11.1 PURPOSE.....	11-1
11.2 PRINCIPAL FUNCTIONS.....	11-1
11.3 INPUT/OUTPUT DESCRIPTION.....	11-1
11.4 PROCESS DESCRIPTION.....	11-2
11.5 PROGRAM OPERATION.....	11-3
11.6 LIMITATIONS.....	11-3
11.7 RUNNING TIME.....	11-3
11.8 COMPUTER PROGRAM LISTING.....	11-3
 → <u>SECTION 12 - PROGRAM AMCSMNT</u> <u>19</u> / 19 ;	
12.1 PURPOSE.....	12-1
12.2 PRINCIPAL FUNCTIONS.....	12-1
12.3 INPUT/OUTPUT DESCRIPTION.....	12-1
12.4 PROCESS DESCRIPTION.....	12-2
12.5 PROGRAM OPERATION.....	12-2
12.6 LIMITATIONS.....	12-2
12.7 RUNNING TIME.....	12-2
12.8 COMPUTER PROGRAM LISTING.....	12-2

TABLE OF CONTENTS (CONT)

Page

→ SECTION 13 - PROGRAM BMATUP 20 20;

13.1	PURPOSE.....	13-1
13.2	PRINCIPAL FUNCTIONS.....	13-1
13.3	INPUT/OUTPUT DESCRIPTION.....	13-1
13.4	PROCESS DESCRIPTION.....	13-1
13.5	PROGRAM OPERATION.....	13-2
13.6	LIMITATIONS.....	13-2
13.7	RUNNING TIME.....	13-2
13.8	COMPUTER PROGRAM LISTING.....	13-2

→ SECTION 14 - PROGRAM READDB 21 21; AND

14.1	PURPOSE.....	14-1
14.2	PRINCIPAL FUNCTIONS.....	14-1
14.3	INPUT/OUTPUT DESCRIPTION.....	14-1
14.4	PROCESS DESCRIPTION.....	14-2
14.5	PROGRAM OPERATION.....	14-2
14.6	LIMITATIONS.....	14-2
14.7	RUNNING TIME.....	14-3
14.8	COMPUTER PROGRAM LISTING.....	14-3

→ SECTION 15 - PROGRAM EQCLSFF 22 22.

15.1	PURPOSE.....	15-1
15.2	PRINCIPAL FUNCTIONS.....	15-1
15.3	INPUT/OUTPUT DESCRIPTION.....	15-1
15.4	PROCESS DESCRIPTION.....	15-2
15.5	PROGRAM OPERATION.....	15-3
15.6	LIMITATIONS.....	15-3
15.7	RUNNING TIME.....	15-3
15.8	COMPUTER PROGRAM LISTING.....	15-3

TABLE OF CONTENTS (CONT)

Page

LIST OF ILLUSTRATIONS

Figure

1. Program EDIT, functional block diagram.....	1-5
2. EDIT input, program control card.....	1-6
3. EDIT input, area classification data.....	1-7
4. EDIT input, normalizing factors for latitude/longitude.....	1-8
5. EDIT input, limits card for area matrix (9).....	1-9
6. EDIT input, detail data cards for area matrix (9).....	1-10
7. EDIT/ANAM control card listing.....	1-31
8. Program ANAM, functional block diagram.....	2-4
9. ANAM input, program control card.....	2-5
10. ANAM/EDIT control card listing.....	2-21
11. Program UPDATMF, functional block diagram.....	3-4
12. UPDATMF input, program control card.....	3-5
13. UPDATMF input, net type header update card (14).....	3-6
14. UPDATMF input, operator update card (14).....	3-8
15. UPDATMF control card listing.....	3-16
16. Program NTYPGEN, functional block diagram.....	4-4
17. NTYPGEN input, program control card.....	4-5
18. NTYPGEN input, update data card (16).....	4-6
19. NTYPGEN control card listing.....	4-11
20. Program ANTENNA, functional block diagram.....	5-3
21. ANTENNA input, program control card.....	5-4
22. ANTENNA (MISEQIP/OVERLAP/ANTENNA) control card listing.....	5-14
23. Program GANTUP, functional block diagram.....	6-3
24. GANTUP input, program control card.....	6-4
25. GANTUP input, update data card (19).....	6-5
26. GANTUP control card listing.....	6-10
27. Program DANTUP, functional block diagram.....	7-3
28. DANTUP input, program control card.....	7-4
29. DANTUP input, update data card (20).....	7-5
30. DANTUP control card listing.....	7-10
31. Program ANAX, functional block diagram.....	8-4
32. ANAX/READDB control card listing.....	8-18
33. Program MISEQIP, functional block diagram.....	9-4
34. MISEQIP input, program control card.....	9-5
35. MISEQIP input, use code data card.....	9-6
36. MISEQIP (MISEQIP/OVERLAP/ANTENNA) control card listing.....	9-17
37. Program ECUPDT, functional block diagram.....	10-3
38. ECUPDT input, program control card.....	10-4
39. ECUPDT input, print option card.....	10-5
40. ECUPDT input, update data card (26).....	10-6
41. ECUPDT control card listing.....	10-13
42. Program OVERLAP, functional block diagram.....	11-4
43. OVERLAP input, program control card.....	11-5
44. OVERLAP (MISEQIP/OVERLAP/ANTENNA) control card listing.....	11-18

TABLE OF CONTENTS (CONT)

Page

LIST OF ILLUSTRATIONS (CONT)

Figure

45. Program AMCSMNT, functional block diagram.....	12-3
46. AMCSMNT input, transmitter update card (29)	12-4
47. AMCSMNT input, receiver update cards (29)	12-5
48. AMCSMNT control card listing.....	12-12
49. Program BMATUP, functional block diagram.....	13-3
50. BMATUP input, program control card.....	13-4
51. BMATUP input, B-matrix update data card (30)	13-5
52. BMATUP control card listing.....	13-10
53. Program READDB, functional block diagram.....	14-4
54. READDB input, program control card.....	14-5
55. READDB/ANAX control card listing.....	14-20
56. Program EQCLSFF, functional block diagram.....	15-4
57. EQCLSFF input, program control card.....	15-5
58. EQCLSFF control card listing.....	15-24

LIST OF TABLES

Table

I. Updated Deployment Data File (8)	1-12
II. Master Net Type Code File (15)	1-20
III. Edited Deployment Data File (10)	1-22
IV. Antenna Summary Data File (12)	1-28
V. Equipment Class Summary File (11)	1-30
VI. EDIT Computer Listing.....	1-32
VII. Net Value Source File (13)	2-9
VIII. Edited Deployment Data File (10)	2-16
IX. ANAM Computer Listing.....	2-22
X. Net Value Source File (13)	3-11
XI. UPDATMF Computer Listing.....	3-17
XII. Unique Net Data File (3)	4-8
XIII. Master Net Type Code File (15)	4-10
XIV. NTYPGEN Computer Listing.....	4-12
XV. Antenna Summary Data File (12)	5-6
XVI. Master General Antenna Data File (17)	5-8
XVII. Required General Antenna Data File (18)	5-12
XVIII. ANTENNA Computer Listing.....	5-16
XIX. Master General Antenna Data File (17)	6-8
XX. GANTUP Computer Listing.....	6-11
XXI. Master Directional Antenna Data File (21)	7-8
XXII. DANTUP Computer Listing.....	7-11
XXIII. Required General Antenna Data File (18)	8-6
XXIV. Master Directional Antenna Data File (21)	8-10
XXV. General Antenna Binary File (22)	8-14
XXVI. Directional Antenna Binary File (23)	8-16

TABLE OF CONTENTS (CONT)

Page

LIST OF TABLES (CONT)

<u>Table</u>		
XXVII.	ANAX Computer Listing.....	8-19
XXVIII.	Equipment Class Summary File (11)	9-8
XXIX.	Master Equipment Class Code Assignment File (24)	9-10
XXX.	Required Equipment File (25)	9-14
XXXI.	MISEQIP Computer Listing.....	9-18
XXXII.	Master Equipment Class Code Assignment File (24)	10-10
XXXIII.	ECUPDT Computer Listing.....	10-14
XXXIV.	Required Equipment File (25)	11-8
XXXV.	Master Equipment Call Summary File (27)	11-12
XXXVI.	Required Equipment Call Summary File (28)	11-16
XXXVII.	OVERLAP Computer Listing.....	11-20
XXXVIII.	Master Equipment Call Summary File (27)	12-10
XXXIX.	AMCSMNT Computer Listing.....	12-13
XL.	Master B-Matrix Data File (31)	13-8
XLI.	BMATUP Computer Listing.....	13-11
XLII.	Master B-Matrix Data File (31)	14-8
XLIII.	Required Equipment Call Summary File (28)	14-12
XLIV.	Packed B-Matrix Binary File (33)	14-16
XLV.	Call Summary Binary File (32)	14-18
XLVI.	READDB Computer Listing.....	14-21
XLVII.	Required Equipment File (25)	15-8
XLVIII.	Edited Deployment Data File (10)	15-12
XLIX.	Deployment Data File with Identifiers (34)	15-18
L.	EQCLSFF Computer Listing.....	15-25

SECTION 1 - PROGRAM EDIT 8

1.1 PURPOSE

Program EDIT 8 edits and summarizes deployment data for analysis purposes and assigns certain codes to the equipments for use in later processing.

1.2 PRINCIPAL FUNCTIONS

Program EDIT, shown in figure 1, accepts as input the updated deployment data file prepared for the deployment of interest by program GENANOM 6, the master net type code file, and the required data cards for editing purposes. The program makes necessary additions or changes to the data, makes various data summaries for the analysis, and outputs the edited deployment file and the summary files. The principal functions of program EDIT are summarized as follows:

- a. Assigns an area code to each equipment in the deployment.
- b. Assigns a 6-character net type code to each equipment in the deployment.
- c. Performs a census of the deployment in terms of equipment types, modulation types, number of channels, and assigned frequency ranges. This census is used to extract the required equipment class data from the master equipment class file.
- d. Identifies as crypto equipments all equipments operating in the encrypted mode.
- e. Converts the coordinates of each equipment from the given latitude and longitude to normalized latitude and longitude. The normalizing factors are chosen so that both latitude and longitude become positive values in ten-thousandths of a degree.
- f. Makes a census of posture codes, net control station codes, data set codes, and modulation codes.
- g. Makes a census of unique antennas in the deployment for use in extracting the required antenna data from the master general antenna file.
- h. Deletes all grounded aircraft records.
- i. Deletes all records deployed at dedicated international emergency frequencies.

1.3 INPUT/OUTPUT DESCRIPTION

Input to program EDIT consists of three program control cards, two types of data cards, the master net type code file, and the updated deployment data file. Output consists of the edited deployment data file

for input to subsequent programs ANAM [9] and EQCLSFF [22]; the antenna summary data file for input to program ANTENNA [12]; the equipment class summary data file for input to program MISEQIP [16]; an operational listing of the contents of the deployment file in easy-reading format; remarks identifying erroneous content or anomalous data; and a listing of all equipment/antenna/modulation code/number of channels combination with frequency range data, plus census type summaries of various parameters.

1.3.1 Input Format

The format of input data, including information necessary to punch input data cards for program EDIT, is given in the following figures and tables:

- a. Program control card, figure 2, page 1-6.
- b. Area classification data card, figure 3, page 1-7.
- c. Normalizing factors for latitude/longitude, figure 4, page 1-8.
- d. Limits card for area matrix (9), figure 5, page 1-9.
- e. Detail data cards for area matrix (9), figure 6, page 1-10.
- f. Updated deployment data file (8), table I, page 1-12.
- g. Master net type code file (15), table II, page 1-20.

1.3.2 Output Format

The format of outputs from program EDIT is given in the following tables:

- a. Edited deployment data file (10), table III, page 1-22.
- b. Antenna summary data file (12), table IV, page 1-28.
- c. Equipment class summary file (11), table V, page 1-30.

1.4 PROCESS DESCRIPTION

a. Program EDIT is written in FORTRAN EXTENDED for processing on the CDC CYBER 172 computer. It requires 100000g words of central memory for compilation and execution.

b. The program reads in data cards and a control card. The data cards contain images of variables for use in data comparisons, and the control card identifies the program, security classification, number of files of input data, and parameter values for program execution.

c. After initializing, the program commences processing of input data as follows:

(1) The deployment file logical record (edited deployment data file) is output as two 84-character records.

(2) The content of the edited deployment data file is output in easy-reading format on a file. This is an optional output controlled by entry of the characters "LIST" in columns 66-69 of the EDIT control card.

(3) The number of receivers and transmitters in each net are tallied and output in a summary listing that identifies the net by number and name. The summary listing also flags nets that have more than 150 transmitters or 150 receivers.

(4) The frequency is checked for each input record. If the equipment is deployed at one of the four dedicated international emergency frequencies, the equipment is deleted and a new input record is processed. If the frequency changes within the net, a remark is output to call attention to this fact. The frequency is also compared with lowest and highest frequencies encountered for the respective equipment/antenna/modulation code/number of channels combinations and, if appropriate, is inserted into the table as the new lowest or highest frequency.

(5) The characters used for net control station (NCS) codes, posture codes, data set codes, and modulation codes are checked against a set of standard codes for each parameter entered in the program in data statements. A census is made for each standard code, and an error message is issued for each nonstandard code encountered. Each census also includes a count of the number of records that contain any invalid code.

(6) An area code is assigned for each equipment. A census of area codes is compiled and output at the end of processing.

(7) To flag equipments operating as crypto equipments, 500 is added to the contents of the number of channels field. For appropriate equipment class code assignment, any equipment having 500 or more channels is recognized as an encrypted equipment.

(8) A net type code is assigned to each equipment, based on the net number in the deployment. The set of codes assigned is contained in the master net type code file.

(9) Summaries are made of unique antenna types and equipment types in the deployment. These summaries are output to files called ANTENA and EQCLAS, respectively, which serve as input to later programs.

1.5 PROGRAM OPERATION

Figure 7, page 1-31, is a listing of all system control cards necessary to execute EDIT for a typical computer run.

1.6 LIMITATIONS

Program EDIT is currently set up to handle a maximum of 400 different combinations of equipment/antenna/modulation/number of channels codes. If more than 400 different combinations are encountered, the program outputs a listing of the combinations and starts a new accumulation of data. This action will generate a requirement for consolidating the listings.

1.7 RUNNING TIME

Running time is estimated at 1 minute per 1,000 input deployment records.

1.8 COMPUTER PROGRAM LISTING

Table VI, page 1-32, contains a complete computer listing for program EDIT and associated subroutines AREACD and LSTPG, annotated to aid in the understanding of the program functioning. The listings for the program subroutines appear at the end of the table.

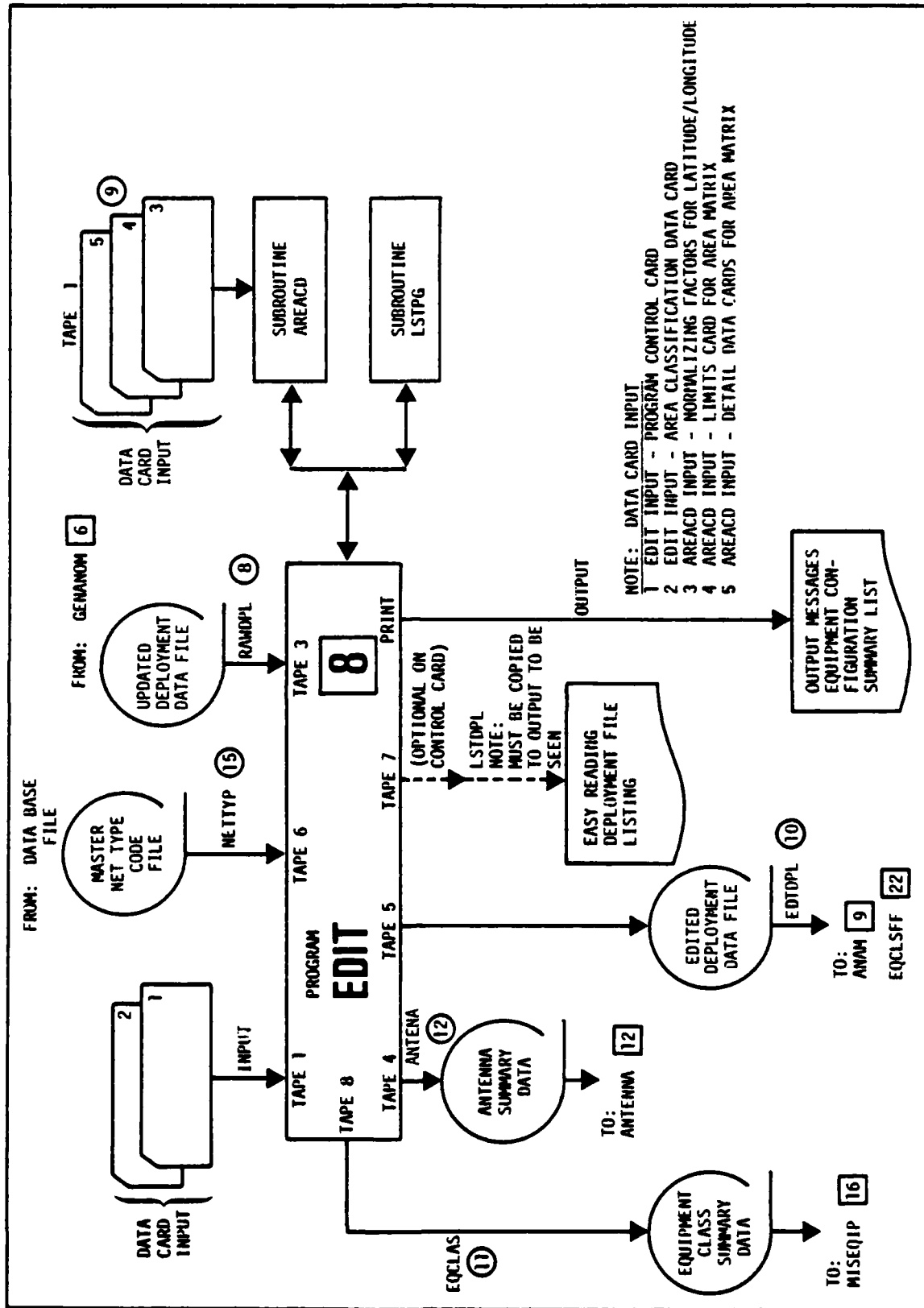


Figure 1. Program EDIT, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-10	A10	KARDID	EDITbbbbbb. This field must be as specified. If this field is incorrect, the program will abort.
2	11-40	3A10	TITLE	Title to be included in page headings.
3	41-60	2A10	CLASS	Security classification to appear in page headings. Must not be blank.
4	61-65	I5	NFILES	Number of input files to be processed.
5	66-70	A5	LSTFLAG	This field is used to select the option of listing the deployment tape in easy-reading format by nets. To select the option, enter the characters "LISTb" in this field. This output may be held on tape for later use or selective printout if desired.
6	74-75	I2	OUTAREA	Numeric code to be assigned to the area outside the defined deployment area. Must be specified. At present, the code 26 (for area Z) is used exclusively.
7	78-80	A3	ICOMSEC	YES = COMSEC code in each deployment record; any other code = COMSEC code flagged in net name (KG, KW, KY).

Figure 2. EDIT input, program control card.

<u>FIELD NO.</u>	<u>CARD COL.</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-10	A10	KARDID	Must contain AREACLSbbb
2	11	R1	AREACLS(1)	Defines the classification for Area #1 F = friendly, E = enemy, T = test. A blank is equivalent to an F.
3	12	R1	AREACLS(2)	Same as above for Area #2. This field is repeated once for each area to a maxi- mum of 63 areas.

Figure 3. EDIT input, area classification data.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-8	I8	NRFLAT	Normalizing factor for latitude in ten-thousandths of a degree.
2	9-16	I8	NRFLON	Normalizing factor for longitude in ten-thousandths of a degree.

(The normalizing factors are the coordinates for the new reference point; i.e., 0, -30.0000)

Figure 4. EDIT input, normalizing factors for latitude/longitude.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	11-12	I2	IAREA	Number code identification of area.
2	13-16	I4	N	Number of data points input to describe area.
<u>REMARKS:</u> This card precedes detail data cards for each area. N must equal the number of detail data cards to describe area "IAREA."				

Figure 5. EDIT input, limits card for area matrix (9) .

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	11-12	I2	IAREA	Numeric code of area.
2	13-16	I4	K	Sequence number of data point for area "IAREA."
3	21-28	I8	LAT	Latitude of data point K in ten-thousandths of a degree.
4	31-38	I8	LON	Longitude of data point K in ten-thousandths of a degree.
<u>REMARKS:</u> This card must be repeated for as many points as are necessary to describe the perimeter of area "IAREA," and the cards must be in ascending order on "K." The number of cards must be specified in the "N" field on the corresponding header card.				

Figure 6. EDIT input, detail data cards for area matrix (9) .

File Description: Updated Deployment Data File ⑧
File Name: RAWDPL Logical Unit: 3
Mode/Type: BCD Record Length: 84 characters (2 records
for each equipment)
Origin: GENANOM ⑥
Used By: PRINT ③; BDHIST ⑤; EWMOD ⑦; EDIT ⑧

TABLE I. UPDATED DEPLOYMENT DATA FILE ⑧

Data Description	Field Size	Field Position	Remarks
<u>Record 1</u>			
Security classification	1	1	0 = unclassified, 1 = confidential, 2 = secret, 3 = top secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Net number	10	2-11	A unique 10-digit code assigned to each net. Digits 1-6 indicate the net type number and 7-10 indicate the troop number of the net control station (NCS).
Net sequence number	3	12-14	A 3-digit sequence number of equipments in the net as assigned by the supplier.
Frequency	8	15-22	Assigned frequency in kHz, right-justified.
Net sequence ID number	4	23-26	A 4-digit net sequence ID number assigned in CONVERT 1 to identify each equipment in the deployment: 0001-1999 for transmitters, 2000-7999 for transceivers, and 8000-9999 for receivers.
Data set code	2	27-28	Blank
	1	29	1 = friendly corps C-E, 2 = friendly TACAIR C-E, 3 = theater army, 4 = friendly EW, 5 = opposing forces C-E, 6 = opposing forces EW, 7 = test system items, 8 = TACAIR EW (unintentional), 9 = intentional interference (friendly army or opposing forces EW), 0 = intentional interference (TACAIR EW).
	2	30-31	Blank

TABLE I. UPDATED DEPLOYMENT DATA FILE ⑧ (CONT)

Data Description	Field Size	Field Position	Remarks
Geographic quadrant code	1	32	Geographic quadrant coded as 1, 2, 3, or 4. Indicates quadrant in counterclockwise direction where northeast quadrant is 1, baseline being the prime meridian and the equator.
	1	33	Blank
Latitude	6	34-39	Latitude in ten-thousandths of a degree, right-justified.
Longitude	7	40-46	Longitude in ten-thousandths of a degree, right-justified.
Aircraft height	5	47-51	<u>Subfield 47-50</u> : Height in meters of aircraft above ground. All zeros if aircraft is on the ground. Blank if not aircraft. <u>Subfield 51</u> : Multiplier N, used to multiply aircraft height by 10^N ; $N = 0, 1, 2, 3, \dots$
Antenna code	3	52-54	A 3-digit code assigned to each antenna type.
Antenna polarization	1	55	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.
Antenna azimuth angle	6	56-61	<u>Subfield 56-58</u> : Lower limit of scan.

TABLE I. UPDATED DEPLOYMENT DATA FILE ⑧ (CONT)

Data Description	Field Size	Field Position	Remarks
Antenna azimuth angle (cont)			Subfield 59-61: Upper limit of scan. Expressed in degrees clockwise from true north, not greater than 360°. For stationary antennas, both are equal. Blank for omnidirectional antennas.
Antenna elevation angle	6	62-67	Subfield 62-64: Lower limit of scan. Subfield 65-67: Upper limit of scan. Expressed in degrees upward from horizontal (0°-90° and 270°-360°). Blank for omnidirectional antennas.
Antenna structural height	3	68-70	Height of antenna in tenths of a meter.
Power output	5	71-75	Power transmitted in dBm, right-justified.
Protected frequency assignment code	1	76	Alpha character (P) indicating protected frequency assignment; blank if unprotected.
	1	77	Blank
Equipment status code	1	78	Code indicating on or off condition. A = listening silence, B = maintenance, C = aircraft grounded, D = spare equipment, E = required special purpose, F = destroyed, G = turned off, H-M = not used, N = space diversity reception, O = not used, P = EW jammer manual targeting, Q = not used, R = EW jammer standby, S = SIGINT/DF receiver operating, T-V = not used, W = SIGINT/DF receiver in standby or turned off mode, X = EW jammer random targeting, Y = SIGINT/DF receiver random targeting, Z = not used, blank = turned on in operational mode.

TABLE I. UPDATED DEPLOYMENT DATA FILE ⑧ (CONT)

Data Description	Field Size	Field Position	Remarks
Number of channels	3	79-81	The number of channels assigned for this equipment component. Blank if single-channel. During edit processing at EMEFF, digit "5" is written in position 79 if the net is encrypted.
Component code	3	82-84	A 3-character alphanumeric code assigned to this equipment component.
<u>Record 2</u>			
Major equipment code	2	1-2	A 2-character alphanumeric code assigned to this major equipment class.
Modulation code	2	3-4	A 2-digit code indicating modulation type: 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
R/T code	1	5	A 1-character alphabetic code: R = receiver, X = transmitter, T = transceiver.
Posture code	1	6	A 1-character alphabetic code indicating the combat posture of the unit to which the operator is assigned. N = normal, H = heavy, L = light, R = reserve, P = priority, K = nuclear, S, T, and W = special assignments.

TABLE I. UPDATED DEPLOYMENT DATA FILE (8) (CONT)

Data Description	Field Size	Field Position	Remarks
Operator name	14	7-20	Standard name assigned to the operator, left-justified.
Operator troop number	4	21-24	A 4-digit number indicating the unit to which the operator is assigned.
Net control station code	1	25	A 1-digit code indicating the status of the station. 0 = NCS, 1 = out-station (not NCS).
Organization name	18	26-43	Name of the troop numbered unit to which the operator is assigned.
Vehicle code	3	44-46	A 3-character alphanumeric code assigned to the vehicle.
Radar pulse repetition rate	4	47-50	Subfield 47-49: Pulses per second, right-justified with leading zeros. Subfield 50: Exponent N, used to multiply value in 47-49 by 10^N to designate a high pulse rate whose value exceeds 999; N may = 0, 1, 2, 3, ... 9.
Number of DF targeted	1	51	Count of DF targeted in a net by EWMOD <u>7</u> , (maximum = 3). Appears only in DF equipment records; blank or zero otherwise.
Special targeting code	1	52	Code inserted by EWMOD <u>7</u> during analysis processing; field is blank prior to analysis processing. For X, 1 = jammer; for R, 4 = intercept receiver; 1, 2, 3 = DF.

TABLE I. UPDATED DEPLOYMENT DATA FILE ⑧ (CONT)

Data Description	Field Size	Field Position	Remarks
Net name	28	53-80	Standard name assigned to this net type, left-justified.
System ID code	2	81-82	Code indicating type of system in which the equipment operates: TF = TACFIRE, TS = tactical operations system (TOS), MM = missile minder, etc.
COMSEC equipment code	2	83-84	Code indicating type of COMSEC device associated with the end item-component combination. Blank if unsecured.

INTENTIONALLY BLANK

File Description: Master Net Type Code File (15)

File Name: NETTYP Logical Unit: 6

Mode/Type: BCD Record Length: 51 characters

Origin: Data base file maintained by NTYPGEN (11)

Used By: NTYPGEN (11) : EDIT (8)

Note: This file is sorted in ascending order on columns 1-10.

TABLE II. MASTER NET TYPE CODE FILE (15)

Data Description	Field Size	Field Position	Remarks
Net type number	6	1-6	The first 6 digits of the net number.
Low troop number	4	7-10	The lower boundary of the troop range associated with the net number for this net type code.
High troop number	1	11	Blank
	4	12-15	The upper boundary of the troop range associated with the net number for this net type code.
Net name	28	16-43	The net name associated with the net number for this net type code.
Net type code	2	44-45	Blank
	6	46-51	A 6-character alphanumeric code assigned to indicate the net type category. The characters indicate proponent (1), employment (2), echelon (3), category (4), and function (5). Character 6 specifies fine distinctions within the group described by the first 5 characters.

NOTE: The low and high troop numbers are omitted if given net type code applies to all troops for one net type number.

File Description: Edited Deployment Data File (10)

File Name: EDTDPL Logical Unit: 5

Mode/Type: BCD Record Length: 84 characters (2 records
for each equipment)

Origin: EDIT (8)

Used By: ANAM (9) : EOCLSEE (22)

TABLE III. EDITED DEPLOYMENT DATA FILE (10)

Data Description	Field Size	Field Position	Remarks
<u>Record 1</u>			
Security classification	1	1	0 = unclassified, 1 = confidential, 2 = secret, 3 = top secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Net number	10	2-11	A unique 10-digit code assigned to each net. Digits 1-6 indicate the net type number and 7-10 indicate the troop number of the net control station (NCS).
Net sequence number	3	12-14	A 3-digit sequence number of equipments in the net as assigned by the supplier.
Frequency	8	15-22	Assigned frequency in kHz, right-justified.
Net type code	6	23-28	A 6-character alphanumeric code assigned to indicate the net type category. The characters indicate proponent (1), employment (2), echelon (3), category (4), and function (5). Character 6 specifies fine distinctions within the group described by the first 5 characters.
Data set code	1	29	1 = friendly corps C-E, 2 = friendly TACAIR C-E, 3 = theater army, 4 = friendly EW, 5 = opposing forces C-E, 6 = opposing forces EW, 7 = test system items, 8 = TACAIR EW (unintentional), 9 = intentional interference (friendly army or opposing forces EW), 0 = intentional interference (TACAIR EW).

TABLE III. EDITED DEPLOYMENT DATA FILE (10) (CONT)

Data Description	Field Size	Field Position	Remarks
Net sequence ID number	4	30-33	A 4-digit net sequence ID number assigned in CONVERT <u>1</u> to identify each equipment in the deployment: 0001-1999 for transmitters, 2000-7999 for receivers, and 8000-9999 for receivers
Latitude	6	34-39	Latitude in ten-thousandths of a degree, right-justified. Referenced to new origin input to EDIT <u>8</u> to insure that all equipments are in the first (northeast) quadrant.
Longitude	7	40-46	Longitude in ten-thousandths of a degree, right-justified. Referenced to new origin input to EDIT <u>8</u> to insure that all equipments are in the first (northeast) quadrant.
Aircraft height	5	47-51	Subfield 47-50: Height (in meters) of aircraft above ground. All zeros if aircraft is on the ground. Blank if not aircraft. Subfield 51: Multiplier N, used to multiply aircraft height by 10 ^N ; N = 0, 1, 2, 3, ...
Antenna code	3	52-54	A 3-digit code assigned to each antenna type.
Antenna polarization	1	55	A 1-character alphabetic code to indicate type of polarization. H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.

TABLE III. EDITED DEPLOYMENT DATA FILE 10 (CONT)

Data Description	Field Size	Field Position	Remarks
Antenna azimuth angle	6	56-61	Subfield 56-58: Lower limit of scan. Subfield 59-61: Upper limit of scan. Expressed in degrees clockwise from true north, not greater than 360°. For stationary antennas, both are equal. Blank for omnidirectional antennas.
Antenna elevation angle	6	62-67	Subfield 62-64: Lower limit of scan. Subfield 65-67: Upper limit of scan. Expressed in degrees upward from horizontal (00-90° and 270°-360°). Blank for omnidirectional antennas.
Antenna structural height	3	68-70	Height of antenna in tenths of a meter.
Power output	5	71-75	Power transmitted in dBm, right-justified.
Area code	1	76	A 1-character alphabetic code assigned to designated deployment areas.
Number of channels	2	77-78	Blank
	3	79-81	The number of channels assigned for this equipment component. Blank if single-channel. During EDIT 8, subfield 79 is changed to 5 or greater if the net is encrypted.
	3	82-84	A 3-character alphanumeric code assigned to this equipment component.
Record 2 Major equipment code	2	1-2	A 2-character alphanumeric code assigned to this

TABLE III. EDITED DEPLOYMENT DATA FILE (10) (CONT)

Data Description	Field Size	Field Position	Remarks
Major equipment code (cont)			major equipment class.
Modulation code	2	3-4	A 2-digit code indicating modulation type. 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
R/T code	1	5	A 1-character alphabetic code: R = receiver, T = transceiver, X = transmitter.
Posture code	1	6	A 1-character alphabetic code indicating the combat posture of the unit to which the operator is assigned. N = normal, H = heavy, L = light, R = reserve, P = priority, K = nuclear, S, T, and W = special assignments.
Operator name	14	7-20	Standard name assigned to the operator, left-justified.
Operator troop number	4	21-24	A 4-digit number indicating the unit to which the operator is assigned.
Net control station code	1	25	A 1-digit code indicating the status of the station. 0 = NCS, 1 = out-station (not NCS).
Organization name	18	26-43	Name of the troop numbered unit to which the operator is assigned.
Vehicle code	3	44-46	A 3-character alphanumeric code assigned to the

TABLE III. EDITED DEPLOYMENT DATA FILE (10) (CONT)

Data Description	Field Size	Field Position	Remarks
Vehicle code (cont)			vehicle.
Radar pulse repetition rate	4	47-50	Subfield 47-49: Pulses per second, right-justified with leading zeros. Subfield 50: Exponent N, used to multiply value in 47-49 by 10 ^N to designate a high pulse rate whose value exceeds 999; N = 0, 1, 2, 3, ... 9.
Number of DF targeted	1	51	Count of DF targeted in a net by EWMOD 7 (maximum = 3). Appears only in DF equipment records; blank or zero otherwise.
Special targeting code	1	52	Code inserted by EWMOD 7 during analysis processing; field is blank prior to analysis processing. For X, 1 = jammer; for R, 4 = intercept receiver; 1, 2, 3, = DF.
Net name	28	53-80	Standard name assigned to this net type, left-justified.
System ID code	2	81-82	Code indicating type of system in which the equipment operates. TF = TACFIRE, TS = tactical operations system (TOS), MM = missile minder, etc.
COMSEC equipment code	2	83-84	Code indicating type of COMSEC device associated with the end item-component combination. Blank if unsecured.

File Description: Antenna Summary Data File 12

File Name: ANTENA Logical Unit: 4

Mode/Type: BCD Record Length: 5 characters

Origin: EDIT 8

Used By: ANTENNA 12

TABLE IV. ANTENNA SUMMARY DATA FILE (12)

Data Description	Field Size	Field Position	Remarks
Antenna code	1	1	Blank
Antenna polarization	3	2-4	A 3-digit code assigned to each antenna type.
	1	5	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.

File Description: Equipment Class Summary File (11)
File Name: EQCLAS Logical Unit: 8
Mode/Type: BCD Record Length: 28 characters
Origin: EDIT (8)
Used By: MISEQIP (16)

TABLE V. EQUIPMENT CLASS SUMMARY FILE (11)

Data Description	Field Size	Field Position	Remarks
Component code	3	1-3	A 3-character alphanumeric code assigned to this equipment component.
Major equipment code	2	4-5	A 2-character alphanumeric code assigned to this major equipment class.
Modulation code	2	6-7	A 2-digit code indicating modulation type: 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
Number of channels	3	8-10	The number of channels assigned for this equipment component, if applicable. If equipment is encrypted, 500 has been added to number of channels to indicate it is encrypted.
Low frequency	8	11-18	The lowest frequency (in kHz) at which this equipment is deployed.
High frequency	8	19-26	The highest frequency (in kHz) at which this equipment is deployed.
Equipment function code	2	27-28	A 2-digit code indicating how this equipment functioned in the subject deployment: 01 = transmitter only, 10 = receiver only, 11 = both transmitter and receiver.

EDIT, 137777.	LLOYD EDIT/ANAM	5
1) USER(99, USER ID **)		
2) CHARGE(1, WA000, N)		
3) COMMENT.		
4) COMMENT.		
5) COMMENT.		
6) COMMENT.		
7) COMMENT.		
8) VSN(RAWDPL=AAAA, EDITDEPL=8888, EQSMRY=CCCC)		
9) RESOURC(PE=1, DL=1)		
10) GET(1, PMDDPU=1, PMDDPU/NA)		
11) MAP(PART)		
12) UPDATE(P=1, PMDDPU=0)		
13) UNLOAD(1, PMDDPU)		
14) FIN(1, R=3, PL=999999, B=EDIT)		
15) FIN(1, R=3, PL=999999, B=ANAM, S=CPCTEXT)		
16) ATTACH(ULDMF=GENTLMS/PN=DATA, R=DL, NA)		
17) GET(1, NETYP=NTPCSS/PN=DATA, R=DL, NA)		
18) LABEL(RAWDPL, R, PO=R, NT=D, PE=L, TASKNAME)		
19) EDIT.		
20) UNLOAD(RAWDPL, TAPE2, NETYP)		
21) LABEL(EDITDEPL, W, PO=W, NT=D, PE=L, TASKNAME)		
22) COPYCF(EDITDPL, EDITDEPL)		
23) UNLOAD(EDITDEPL)		
24) REMIND(EDITDPL)		
25) REMIND(EQCLAS, ANTENA, LSTOPL)		
26) COPYSBF(EQCLAS, OUTPUT)		
27) COPYSBF(ANTENA, OUTPUT)		
28) COPYCF(LSTOPL, OUTPUT)		
29) REMIND(EQCLAS, ANTENA)		
30) LABEL(EQSMRY, R, PO=R, NT=D, PE=L, TASKNAME)		
31) COPYCF(EQCLAS, EQSMRY)		
32) COPYCF(ANTENA, EQSMRY)		
33) RETURN(EQSMRY)		
34) RETURN(EQCLAS, ANTENA, LSTOPL)		
35) COPYCF(OUTPUT, TAPE7)		
36) REMIND(TAPE7)		
37) ANAM.		
38) RETURN(EDITDPL)		
39) 7-8-9 CARD		
40) 7-8-9 TASK CHANGES FOR EDIT (IF ANY)		
41) 7-8-9 TASK CHANGES FOR ANAM (IF ANY)		
42) *COMPLETE EDIT, AREACD, LSTPG, ANAM, PGS		
43) 7-8-9 CARD		
44) EDIT TASK NAME	SECRET	1 26 YES
45) AREACLS FC		
46) INSERT AREA CODE DATA CARDS		
47) 7-8-9 CARD		
48) ANAM TASK NAME	SECRET	1 OLOMF
49) 7-8-9 CARD		
50) 6-7-8-9 CARD		

Figure 7. EDIT/ANAM control card listing.

TABLE VI. EDIT COMPUTER LISTING

73/74	OPT-1	FIN 4.8+498	00/07/28. 15.39.19	PAGE 1
1	PROGRAM EDIT(RAWDPL,EDITDPL,LSIDPL,EXCLAS,TAPE2,INPUT,OUTPUT, 1 ANTENA=1001,NETTY=1001, 2 TAPE1=INPUT,TAPE3=RAWDPL,TAPE5=EDITDPL,TAPE7=LSIDPL, 3 TAPE3=EXCLAS,TAPE4=ANTENA,TAPE6=NETTY)			
5	FILE CONTENTS AND USES:			
10	TAPE1(INPUT): EDIT CONTROL CARD AND AREA DATA CARDS IN THAT ORDER.			
15	TAPE3(RAWDPL) UNEDITED DEPLOYMENT DATA. (SEE NOTE) TAPE5(EDITDPL) THE EDITED DEPLOYMENT DATA INPUT TO EQCLSF AND ANAM. (SEE NOTE) TAPE6(NETTY) MASTER NETTYPE CODE FILE TAPE7(LSIDPL) IF THE LIST OPTION IS SELECTED, A LISTING OF THE EDITED DEPLOYMENT IS WRITTEN ON THIS FILE. IT MUST BE COPIED TO OUTPUT TO BE SEEN.			
20	OUTPUT: REMARKS AND ERROR OR WARNING MESSAGES. TAPE4(ANTENA) CENSUS OF ANTENNA TYPE(CODE/POLARIZATION) TAPE6(EQCLAS) CENSUS OF EQUIPMENT CLASSES IN THIS DEPLOYMENT TO BE USED AS INPUT TO EQUIP- MENT CLASS CHECK PROGRAM.			
25	TAPE2: INTERNAL FILE USED TO HOLD DATA TO BE COPIED TO THE REMARKS FILE AT RUN END.			
30	NOTE: EACH INPUT RAW DEPLOYMENT FILE IS PROCESSED SEPARATELY AND THE OUTPUT FROM EACH BEGINS ON A NEW EDITED DEPLOYMENT FILE.			
35	CONTROL CARD 1: CUL 1-4 11-40 41-60 61-65 66-67			
40	74-75			
45	78-80			
50				
55	CONTROL CARD 2: CUL 1-7 11-73			

TABLE VI. EDIT COMPUTER LISTING (CONT)

TABLE VI. EDIT COMPUTER LISTING (CONT)

TABLE VI. EDIT COMPUTER LISTING (CONT)

TABLE VI. EDIT COMPUTER LISTING (CONT)

[illegible]

TABLE VI. EDIT COMPUTER LISTING (CONT)

TABLE VI. EDIT COMPUTER LISTING (CONT)

[illegible]

TABLE VI. EDIT COMPUTER LISTING (CONT)

TABLE VI. EDIT COMPUTER LISTING (CONT)

PROGRAM EDIT	73/74	CP1-1	FTN 4.8+498	80/07/28. 15.39.19
C				
460			IF(IICMSEC.EQ.0)GO TO 54	CRYPT10 9
			IF(METNAME(4).EQ.T4DBLK.DK.METNAME(4)).EQ.2M...OR.	CRYPT10 10
			1 METNAME(4).EQ.2M...OR.METNAME(4).EQ.2M...500.501	CRYPT10 11
465			54 IF(.NOT.CRYPT10)GO TO 500	CRYPT10 12
			501 CONTINUE	EDIT 241
			ICMNL=ICMNL+500	CRYPT10 13
			KYCT=KYCT+1	PRNTA 5
470			500 ENCODE(10,510,MCHNL)ICMNL	EDIT 243
			510 FORMAT(110)	PRNTA 6
			IF(MCHNL.EQ.10H 1000)MCHNL=IWOBLK	EDIT 245
			AREA CODE VS DATA SET CODE CHECK.	EDIT 246
				EDIT 247
				EDIT 248
				EDIT 249
				EADPERM 1
			IF(INAREA.EQ.0)UTAREA) GO TO 5808	EDIT 252
			520 IF(AREACL((INAREA))-IRF)530,540,550	EDIT 253
			530 IF(ENEMY.AND..I0SET.EQ.1H5.OR...NOT.ENEMY.AND..I0SET.EQ.1H6)58,5808	EDIT 255
475			540 IF(ENEMY.AND..I0SET.EQ.1H4.OR...NOT.ENEMY.AND..I0SET.LE.1H3.OR.	EADPERM 2
			4 I0SET.LE.1H4)59,5808	EDIT 256
			550 IF(I0SET.EQ.1H7)GOTO 58	EDIT 257
			5808 IF(UCT.GT.57)CALL PRTPG	EDIT 257
			PRINT 5010,INMET,INMETC,ISERN,INUPM,INX,INV,INAREA,INAREA,	FINEDIT 66
			4 AREACL((INAREA)),I0SET	EDIT 259
480			5810 FORMAT(9, AREA CODE=DATA SET CODE DISCREPANCY: 9,A6,1X,R4,1X,A1,	FINEDIT 67
			1 1X,A4,2X,A10,A4,9 (9,17,9,9,18,9)9,14,9(9,RL,9),RL,9 DATA SET	FINEDIT 68
			2 -(9,A1,9),9)	FINEDIT 69
			MERR(9)=MERR(9)+1	EDIT 263
			UCT = UCT + 1	EDIT 264
485			WRITE EDITED DEPLOYMENT EQUIPMENT RECORD (2 RECORDS)	COMMENTS 77
				COMMENTS 78
				COMMENTS 79
490			58 WRITE(5,616)INSEC,INET,INSEQ,INREQ,NCODE,I0SET,ISERN,IOX,IOY,	FINEDIT 70
			1 INACT,INANT,IOY1,IOY2,INAREA,MCHNL,INCOMP,INMC,RRTCO,	FINEDIT 71
			2 IMPUSIR,INUPM,INPND,INCS,INORG,IOY4,IEWMETNAME	FINEDIT 72
495			6161 FORMAT(1,A10,A3,A8,A6,A1,A4,16,17,A3,A4,2A10,RL,2X,R3,A3,2A2,2A1,	FINEDIT 73
			1 A10,2A1,A1,A10,A4,A7,A2,3A10,A21	FINEDIT 74
			IF(INTCO.ME.ARRIDCODE(110,9060,IOHY2)1PRR	EDIT 271
			9060 FORMAT(9X,15)	100CT73 18
			IF(.NOT.LISTING)GOTO 8014	EDIT 271
500			IF MAKING OPTIONAL DEPLOYMENT LISTING, WRITE 1-LINE	COMMENTS 80
			EQUIPMENT RECORD	COMMENTS 81
				COMMENTS 82
				COMMENTS 83
			IF (LINECT-CT.55) GO TO 40043	EDIT 272
			CALL PRTPG	EDIT 273
			WRITE(7,40000)INET,INMET,METNAME,NCODE	NIYPHFA 67
505			40000 FORMAT(37A,A6,1X,A4,2X,A10,A2,4X,9(9,R6,9),9 - CONTINUED ->	NIYPHFA 68
			1 //)	NIYPHFA 69
			LINECT = LINECT + 2	EDIT 276
510			40043 LINECT = LINECT + 1	EDIT 277
			IFLG=17)JHLK	100CT73 19
			IF(INCS.EQ.NCCODE(1))IFLG=1AST	100CT73 21
			DECODE(10,9050,IOHY2)INANTHI,INPRR	100CT73 22
			FORMAT(24,A3,R5)	100CT73 23
			WRITE(7,40005)INSEC,INAREA,INX,INV,INACT,IOY1,IOY2,IOY2,	100CT73 25
			1 INANT,INANT,INMC,INNEOC,INCOMP,NCMNL,IOY4,INUPM,RRTCO,ISERN,	FINEDIT 75
			2 IMPUSIR,INUPM,INCS,IFLG,INTRND,INORG,I0SET	100CT73 25

TABLE VI. EDIT COMPUTER LISTING (CONT)

TABLE VI. EDIT COMPUTER LISTING (CONT)

PROGRAM EDIT	7374	OPT-1	FTN 4.8+408	80/07/28, 15.39.19	PAGE
695					
696					
695					
700					
705					
710					
715					
720					
725					
730					
735					
740					

TABLE VI. EDIT COMPUTER LISTING (CONT)

SUBROUTINE	AREACD	73774	JPT=1	FTN 4.8+498	80/07728. 15.39.19	PAGE 1
1						
5						
10						
15						
20						
25						
30						
35						
40						
45						
50						
55						

TABLE VI. EDIT COMPUTER LISTING (CONT)

SUBROUTINE	AREACD	73/74	01-1	FTN 4.0498	80/07/28. 15.39.19	PAGE	2
60	240	FORMAT(0,---	AREA CODE HEADER OUT OF ORDER OR AREA CODE >63.0)		AREACD	55	
	250	INCT=999			AREACD	56	
		CALL PRTPG			AREACD	57	
		STOP # ERRJ(S) IN AREA CODE DATA #			FINEEDIT	97	
	260	NAREA=NAREA+1			AREACD	59	
		NP(NAREA)=J			AREACD	60	
		IF(NAREA.NE.IAREA)GOTO 260			AREACD	61	
65		DO 310 I=1,N			AREACD	62	
		HEAD(1,210)IAREA,K,LAT,LON			AREACD	63	
		IF(1CT-GE.55)CALL PRTPG			AREACD	64	
		LCT=LCT+1			AREACD	65	
		PRINT 210,IAREA,K,LAT,LON			AREACD	66	
70		IF(IAREA.EQ.NAREA.AND.K.EQ.1)GOTO 280			AREACD	67	
		PRINT 270			AREACD	68	
	270	FORMAT(0,---	AREA CODE DATA OUT OF ORDER.0)		AREACD	69	
		GOTO 250			AREACD	70	
	280	IF(IJ.LI.1000)GOTO 300			AREACD	71	
75		PRINT 290			AREACD	72	
	290	FORMAT(0 100 MANY DATA POINTS READ.0)			AREACD	73	
		GOTO 250			AREACD	74	
	300	X(IJ)=LON-NRFLON			AREACD	75	
		Y(IJ)=LAT-NRFLAT			AREACD	76	
80	310	J=J+1			AREACD	77	
		X(IJ)=X(JFIRST)			AREACD	78	
		Y(IJ)=Y(JFIRST)			AREACD	79	
		JFIRST=J+1			AREACD	80	
		GOTO 200			AREACD	81	
85	320	INAREA=NAREA+1			AREACD	82	
		NP(INAREA)=J			AREACD	83	
		J=J-1			AREACD	84	
		PRINT 4,NAREA,J,INAREA,INAREA			AREACD	85	
		FORMAT(17.0 AREAS READ.0,15.0 DATA POINTS STORED. NEXT AVAILABLE			AREACD	86	
90		0 AREA 15.0,13.0 (0.01.0.0)			AREACD	87	
		CALL PRTPG			AREACD	88	
		RETURN			AREACD	89	
		END			AREACD	90	

TABLE VI. EDIT COMPUTER LISTING (CONT)

SUBROUTINE	LSTPG	73/74	OPF=1	FTN 4.0+498	80/07/20, 15.39.19	PAGE	1
1							
5							
10							
15							
20							
25							
30							
35							
40							
45							
50							
55							

PAGE 2

HO/07/28. 15.34.19

FTN 4.84498

UPT-1

73/74

SUBROUTINE LSTPG

LCT-2
RETURN
END

60

PRNTA 22
LSTPG 52
LSTPG 70

SECTION 2 - PROGRAM ANAM 9

2.1 PURPOSE

Program ANAM 9 determines what needed information is missing from an existing file of net matrices (master net value source file) and generates the information necessary to update this file for a particular deployment.

2.2 PRINCIPAL FUNCTIONS

Program ANAM, shown in figure 8, accepts as input the edited deployment data file from program EDIT and the master net value source file. The program checks the edited deployment file against the net value source file and outputs printed information describing nets, operators, and security classifications that are missing or contain errors in the master net value source file. The printed information is furnished to military scientists who determine the necessary update information. The principal functions of program ANAM are as follows:

- a. Compares net type numbers and operator names contained in the edited deployment data file with net type numbers and operator names contained in the master net value source file.
- b. Generates new net matrix records for any net types contained in the edited deployment data file but not in the master net value source file.
- c. Generates new operator name records whenever an operator name is encountered in a normal communications net of the deployment and is not in the net type matrix for that net.
- d. Produces an output listing of all new net matrices and new operator name records resulting from input of the edited deployment data file. These latter records are incomplete because of a lack of net and link value information.

2.3 INPUT/OUTPUT DESCRIPTION

Input to program ANAM consists of a program control card, the edited deployment data file, and the master net value source file. Output consists of a listing of incomplete nets and output messages.

2.3.1 Input Format

The format of input data is given in the following figure and tables:

- a. Program control card, figure 9, page 2-5.
- b. Master net value source file 13, table VII, page 2-9.
- c. Edited deployment data file 10, table VIII, page 2-16.

2.3.2 Output Format

All output is a formatted listing. No cards or files are required.

2.4 PROCESS DESCRIPTION

a. Program ANAM uses 130000g words of central memory for execution. Its function is to determine missing information or errors in the master net value source file by comparison with the edited deployment file.

b. An equipment record is read from the edited deployment file. Equipments operating as jammers, intercept receivers, or direction finders (EW) are skipped. The net type code is used to access the appropriate data block(s) in the master net value source file, and the data are read into memory.

c. The security classification of the edited deployment record is then compared to the security classification of the matching net value source record. If the security classification code of the edited deployment record is higher, the security classification of the net value record is then set equal to the larger value.

d. The operator name of the edited deployment record is compared to the operator names of the stored records. If the name is found, a new deployment record is read. If the operator name is not found, the necessary deployment data information is added to the stored net value source record. When all edited deployment records of this net type have been processed (a different net type code is encountered), the stored net value source records are written on an intermediate file if new operators were found.

e. If the net type code of the edited deployment record cannot be found on the net value source file, a new net type is organized and stored from the edited deployment record and the next record is read from the edited deployment file. When all records of this net type have been processed, the stored net is written on the intermediate file. After all records of the edited deployment file have been processed, the intermediate data file is sorted. This file is then printed to provide information for updating the master net value source file.

2.5 PROGRAM OPERATION

Figure 10, page 2-21, is a listing of all system and UPDATE control cards needed to execute ANAM for a typical computer run.

2.6 LIMITATIONS

The program can accept a maximum of 120 different operator names per net type and a maximum of 55 link codes per operator name.

2.7 RUNNING TIME

Running time is estimated at 1 minute of central processing time per 200 nets.

2.8 COMPUTER PROGRAM LISTING

Table IX, page 2-22, contains a complete computer program listing for ANAM and associated subroutines PGS and DSMF, annotated to aid in the understanding of the program functioning.

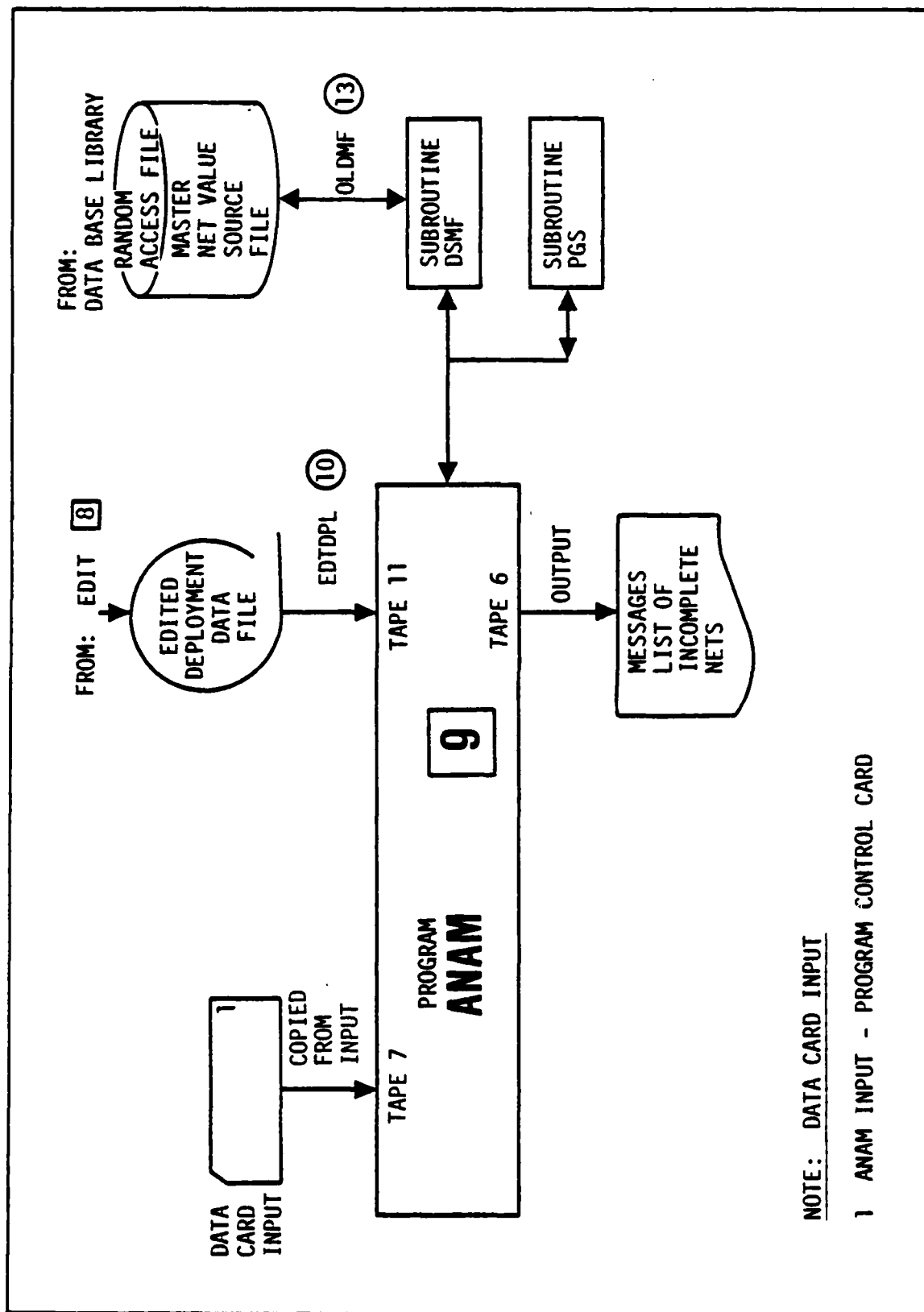


Figure 8. Program ANAM, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-10	A10	KARDID	ANAMbbbbbb must be entered in this field.
2	11-40	3A10	TITLE	Title to be output as part of page headings.
3	41-60	2A10	ICLASS	Security classification to appear in page headings. Cannot be blank.
4	61-65	I5	NFILES	The number of files of input deployment data. If blank, 1 is assumed.
5	71-75	A5	INFILE	Enter logical file name of random access master file to be read (usually OLD MF).

Figure 9. ANAM input, program control card.

INTENTIONALLY BLANK

File Description: Net Value Source File (13)

File Name: OLDMF Logical Unit: OLDMF

Mode/Type: BCD Record Length: 80 characters

Origin: Previous run of UPDATMF (10)

Used By: ANAM (9) ; UPDATMF (10) ; LINK (23)

Notes:

1. The net value source file is a name-accessible random file. The net type code name, with a sequential block index appended, is used to access a data block. Every net type code requires a set of general net type data called the header record. In addition, each normal communications net type code (category = 0) requires a set of data called an operator record for each unique operator. Both of these record types are 80 characters in length. The records are packed 8 to a block and, depending upon the number of operators in the net type, data for the net type code may consist of 1 to 15 data blocks, each of which contains 640 characters. A partially filled data block is padded with blanks.

The general record/block format is as follows:

BLOCK 1	
Record 1	Header data record
2	Data record-operator 1
3	Data record-operator 2
4	Data record-operator 3
5	Data record-operator 4
6	Data record-operator 5
7	Data record-operator 6
8	Data record-operator 7

BLOCK 2	
Record 1	Data record-operator 8
2	Data record-operator 9
3	Data record-operator 10
4	Data record-operator 11
5	Data record-operator 12
6	Data record-operator 13
7	Data record-operator 14
8	Data record-operator 15

Block 2 is repeated, if necessary, to contain all operators, to a total of 15 blocks. Actually, most of the normal communications

Net Value Source File (13) (Cont)

net types require no more than one or two blocks. All other kinds of net type codes are limited to one block that contains only the header data record and enough blanks to fill the block.

2. When updating the random access net value source file, it is necessary to access each record, update as indicated, then write the record on the new random access net value source file. In order to do this, a sequential index file is maintained for each random access version created. The logical file name of the index file for input is OLDNXD (internal program file name is TAPE2) and NEWNDX (internal program file name is TAPE3) for output. Both these files are used only in program UPDATMF. The format of the sequential index file is given at the end of the format for the net value source file in table VII.

TABLE VII. NET VALUE SOURCE FILE (13)

Data Description	Field Size	Field Position	Remarks
<u>Header Data Record</u>			
Net type code	6	1-6	A 6-character alphanumeric code assigned to indicate the net type category. The characters indicate proponent (1), employment (2), echelon (3), category (4), and function (5). Character 6 specifies fine distinctions within the group described by the first 5 characters.
Number of operators	4	7-10	Number of operators plus 1 in this net type category; right-justified.
Record identifier	1	11	Contains the digit 0 to identify a net type header record.
Net value	3	12-14	A 3-digit number indicating the relative tactical importance of the net type (range = .001-.990).
Net duty cycles (range = .01-.99)	2	15-16	A 2-digit number assigned as the net duty cycle for <u>normal</u> combat posture.
		17-18	A 2-digit number assigned as the net duty cycle for <u>light</u> combat posture.
	2	19-20	A 2-digit number assigned as the net duty cycle for <u>heavy</u> combat posture.
	2	21-22	A 2-digit number assigned as the net duty cycle for <u>reserve</u> combat posture.

TABLE VII. NET VALUE SOURCE FILE (13) (CONT)

Data Description	Field Size	Field Position	Remarks
Net duty cycles (cont)	2	23-24	A 2-digit number assigned as the net duty cycle for <u>priority</u> combat posture.
	2	25-26	A 2-digit number assigned as the net duty cycle for <u>nuclear delivery</u> combat posture.
	2	27-28	Spare for special assignment.
	2	29-30	Spare for special assignment.
	2	31-32	A 2-digit number assigned as the net duty cycle for <u>nuclear warning</u> combat posture.
Minimum cull distance	4	33-36	Minimum length, in meters, for links to be formed. If no cull is to be made on minimum link length, this field contains 0000. Minimum cull distance must be less than maximum cull distance.
Maximum cull distance	3	37-39	Maximum length, in kilometers, for links to be formed. If no cull is to be made on maximum link length, this field contains three blanks. Maximum cull distance must be greater than minimum cull distance.
Category code	1	40	A 1-digit code indicating the category of the net type as follows: 0 = normal communications net with different link values for different pairs of operators, 1 = radio relay or data link net. Each transmitter is linked with every receiver (normally, only one of each in a net) with link values equal to the net value multiplied by a weight factor associated with the posture

TABLE VII. NET VALUE SOURCE FILE (13) (CONT)

Data Description	Field Size	Field Position	Remarks
Category code (cont)			code of the transmitter: 2 = warning net, or other net where all links have the same value and transmitters share time in the net equally, 3 = radar net, where transmitters are linked only with their own receivers and no culling on distance is made, and 4 = obsolete nets, which are bypassed in linking.
Net name	28	41-68	A 28-character (or smaller) alphanumeric name assigned to each net type; left-justified.
		69-72	Blank
Intelligence factor	3	73-75	A 3-digit number indicating the intelligence value of the net to opposing forces (range = 00.1-99.9).
Security classification	1	76	A 1-digit code indicating the highest security classification ever assigned in prior deployments to equipments in this net type: 0 = unclassified, 1 = confidential, 2 = secret, 3 = top secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Class of service	3	77-79	A 3-digit code indicating class and subclass of service. The first digit (position 77) is assigned to class of service: 1 = area/system, 2 = command, 3 = traffic, 4 = information, 5 = survey, 6 = logistics, 7 = intelligence, 8 = fire support, 9 = noncommunications, 0 = Intertheater and major headquarters. The second

TABLE VII. NET VALUE SOURCE FILE 13 (CONT)

Data Description	Field Size	Field Position	Remarks
Class of service (cont)			and third digits (positions 78-79) are assigned to subclasses of service that indicate the type of net within each major class of service. (This field is not presently used and may not be up-to-date.)
Operator Data Record			
Net type code	6	1-6	A 6-character alphanumeric code assigned to indicate the net type category. The characters indicate proponent (1), employment (2), echelon (3), category (4), and function (5). Character 6 specifies fine distinctions within the group described by the first 5 characters.
Record identifier	1	7	Contains the digit 1 to identify an operator record.
Operator name	14	8-21	Standard alphanumeric name assigned to each operator; left-justified. Contains 1 to 14 characters, with characters 13 and 14 reserved to differentiate between like operators (i.e., pilot 1 and pilot 2). In this file, characters 13 and 14 are blank, since such distinction is not desired.
Matrix line number	2	22-23	A 2-digit sequential line number assigned to each operator when added to the matrix. Two operators

TABLE VII. NET VALUE SOURCE FILE (13) (CONT)

Data Description	Field Size	Field Position	Remarks
Matrix line number (cont)			who have the same function may be assigned the same line number.
Link factor code	1	24-78	A 1-digit code (0 to 9) indicating the relative importance of a link between two distinct operators. A zero prohibits the operators from linking under any conditions. Data must be entered for each operator combination between the operator being treated and all prior operators in the matrix. The number of link factor codes must equal the matrix line number for the operator.
<u>Sequential Index File</u> (used only by program UPDATMF)			
Net type code	3	1-3	Blank
	6	4-9	A 6-character alphanumeric code assigned to indicate the net type category. The characters indicate proponent (1), employment (2), echelon (3), category (4), and function (5). Character 6 specifies fine distinctions within the group described by the first 5 characters.
Block sequence flag	1	10	A = block 1, B = block 2, ..., N = block 14, and O = block 15. Each net type code may have as many as 15 blocks of data.
NOTE: This data record is repeated for <u>each</u> data block entry in the random access net value source file.			

INTENTIONALLY BLANK

File Description: Edited Deployment Data File (10)
File Name: EDTDPL Logical Unit: 11
Mode/Type: BCD Record Length: 84 characters (2 records
for each equipment)
Origin: EDIT (8)
Used By: ANAM (9) ; EQCLSFF (22)

TABLE VIII. EDITED DEPLOYMENT DATA FILE (10) (CONT)

Data Description	Field Size	Field Position	Remarks
Net sequence ID number	4	30-33	A 4-digit net sequence ID number assigned in CONVERT (1) to identify each equipment in the deployment: 0001-1999 for transmitters, 2000-7999 for transceivers, and 8000-9999 for receivers
Latitude	6	34-39	Latitude in ten-thousandths of a degree, right-justified. Referenced to new origin input to EDIT (8) to insure that all equipments are in the first (northeast) quadrant.
Longitude	7	40-46	Longitude in ten-thousandths of a degree, right-justified. Referenced to new origin input to EDIT (8) to insure that all equipments are in the first (northeast) quadrant.
Aircraft height	5	47-51	Subfield 47-50: Height (in meters) of aircraft above ground. All zeros if aircraft is on the ground. Blank if not aircraft. Subfield 51: Multiplier N, used to multiply aircraft height by 10 ^N ; N = 0, 1, 2, 3, ...
Antenna code	3	52-54	A 3-digit code assigned to each antenna type.
Antenna polarization	1	55	A 1-character alphabetic code to indicate type of polarization. H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.

TABLE VIII. EDITED DEPLOYMENT DATA FILE (10) (CONT)

Data Description	Field Size	Field Position	Remarks
Antenna azimuth angle	6	56-61	Subfield 56-58: Lower limit of scan. Subfield 59-61: Upper limit of scan. Expressed in degrees clockwise from true north, not greater than 360°. For stationary antennas, both are equal. Blank for omnidirectional antennas.
Antenna elevation angle	6	62-67	Subfield 62-64: Lower limit of scan. Subfield 65-67: Upper limit of scan. Expressed in degrees upward from horizontal (0°-90° and 270°-360°). Blank for omnidirectional antennas.
Antenna structural height	3	68-70	Height of antenna in tenths of a meter.
Power output	5	71-75	Power transmitted in dBm, right-justified.
Area code	1	76	A 1-character alphabetic code assigned to designated deployment areas.
	2	77-78	Blank
Number of channels	3	79-81	The number of channels assigned for this equipment component. Blank if single-channel. During EDIT 8 , subfield 79 is changed to 5 or greater if the net is encrypted.
Component code	3	82-84	A 3-character alphanumeric code assigned to this equipment component.
<u>Record 2</u>			
Major equipment code	2	1-2	A 2-character alphanumeric code assigned to this

TABLE VIII. EDITED DEPLOYMENT DATA FILE (10) (CONT)

Data Description	Field Size	Field Position	Remarks
Major equipment code (cont)			major equipment class.
Modulation code	2	3-4	A 2-digit code indicating modulation type. 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
R/T code	1	5	A 1-character alphabetic code: R = receiver, T = transceiver, X = transmitter.
Posture code	1	6	A 1-character alphabetic code indicating the combat posture of the unit to which the operator is assigned. N = normal, H = heavy, L = light, R = reserve, P = priority, K = nuclear, S, T, and W = special assignments.
Operator name	14	7-20	Standard name assigned to the operator, left-justified.
Operator troop number	4	21-24	A 4-digit number indicating the unit to which the operator is assigned.
Net control station code	1	25	A 1-digit code indicating the status of the station. 0 = NCS, 1 = out-station (not NCS).
Organization name	18	26-43	Name of the troop numbered unit to which the operator is assigned.
Vehicle code	3	44-46	A 3-character alphanumeric code assigned to the

TABLE VIII. EDITED DEPLOYMENT DATA FILE (10) (CONT)

Data Description	Field Size	Field Position	Remarks
Vehicle code (cont)			vehicle.
Radar pulse repetition rate	4	47-50	Subfield 47-49: Pulses per second, right-justified with leading zeros. Subfield 50: Exponent N, used to multiply value in 47-49 by 10^N to designate a high pulse rate whose value exceeds 999; N = 0, 1, 2, 3, ... 9.
Number of DF targeted	1	51	Count of DF targeted in a net by EWMOD 7 (maximum = 3). Appears only in DF equipment records; blank or zero otherwise.
Special targeting code	1	52	Code inserted by EWMOD 7 during analysis processing; field is blank prior to analysis processing. For X, 1 = jammer; for R, 4 = intercept receiver; 1, 2, 3, = DF.
Net name	28	53-80	Standard name assigned to this net type, left-justified.
System ID code	2	81-82	Code indicating type of system in which the equipment operates. TF = TACFIRE, TS = tactical operations system (TOS), MM = missile minder, etc.
COMSEC equipment code	2	83-84	Code indicating type of COMSEC device associated with the end item-component combination. Blank if unsecured.

2

Figure 10. ANAM/EDIT control card listing.

TABLE IX. ANAM COMPUTER LISTING

[illegible]

TABLE IX. ANAM COMPUTER LISTING (CONT)

TABLE IX. ANAM COMPUTER LISTING (CONT)

PAGE 3 30/07/28. 15.39.34

PAGE 3

```

115      DO 151 LL=1,1
151      IF(OP3.EQ.OPA(LL).AND.OP4.EQ.OPB(LL))GO TO 160
      IF (L.L.E.119) GO TO 15100
40000  WRITE (6,40001) JNET, OP3, OP4, INRT
40001  FORMAT(90 MORE THAN 119 OPERATORS FOR *,A6,2X,A10,A6,A1)
      IPC1 = IPC1 + 1
      IF (IPCT.GT.53) CALL PGS
      GO TO 153
C
C      ADD NEW OPERATOR TO THIS NETTYPE
15100  L=LL+1
      INEWOP=1
      OPAIL=OP3
      OPBIL=OP4
      ILL(LL)=3K200
      DO 1 J=1,6
      ADIL(J)=8LK2
      IRT(LL)=0
C
C      SET FLAG SHOWING WHETHER OPERATOR IS X, R, OR ROTH
135      C
C
160      IF(INRT.EQ.X)IRT(LL)=IRT(LL)+0.X2
      IF(INRT.EQ.R)IRT(LL)=IRT(LL)+0.R2
      IF(INRT.EQ.OTH)IRT(LL)=2RXR
      GO TO 153
C
C      THE DEPLOYMENT NET TYPE IS NOT THE SAME AS THE PREVIOUS ONE
C      (END OF NET). DUMP OUT ANY CHANGES TO THE PREVIOUS NET TYPE
C      AND PROCEED WITH NEW NET TYPE.
145      C
65      IF(IJULU.EQ.0)GO TO 444
      IF(NEWNET.EQ.0)GO TO 992
C
C      PREVIOUS NETTYPE WAS A NEW NETTYPE. O/P ALL OPERATORS
150      C
      ICODE=1H1
      ITYPE=5
      ILINE=3K200
      DO 991 I=1,LK
      WRITE(7)IMNET, ICODE, ILINE, OPC(I), OPD(I), IRT2(I), (8LK2, J=1,8), ITYPE
991      CONTINUE
      NEWNET=0
      IMCT=0
      NETOLD=0
      GO TO 666
160      IF(INEWOP.EQ.0)GO TO 666
C
C      NEW OPERATORS ADDED TO EXISTING NETTYPE. HAS ORIGINAL NETTYPE
C      DATA BEEN INPUT BEFORE. IF YES, GO TO 651
165      C
      INEWOP=0
      DO 993 I=1,NETTOT
      IF(IJULU.EQ.NETIABL(I))GO TO 651
993      CONTINUE
C
C      OUTPUT HEADER AND OPERATOR RECORDS FOR EXISTING NETTYPE
170      C

```

TABLE IX. ANAM COMPUTER LISTING (CONT)

TABLE IX. ANAM COMPUTER LISTING (CONT)

PROG-NAM	ANAM	73/74	OPT-1	FTN 4,8498	00/07/28. 15.39.34	PAGE	5
230				1 JAU0.A5.3X.A4/* MASTERFILE CONTAINS INDEX ERRORS FOR THIS NET*	NTYPH8 99		
				IPCT=IPCT+3	NTYPH8 100		
	240			READ(11,40)ISS,NTYPE,LNET,IDSET	NTYPH8 10		
				IF(OF(11)600,241	FINANAM 16		
235				241 IF(NTYPE.EQ.NINE)GO TO 701	NINIRAU 6		
				READ(11,152)INRT,JP3,UP4,MCNAME	NTYPH8 104		
				INCT=INCT+1	NTYPH8 105		
				IF(LNET.EQ.JNET)GO TO 240	NTYPH8 106		
				JNET=LNET	NTYPH8 107		
				DECODE(1,2,155)ISS	NTYPH8 11		
				GO TO 154	NTYPH8 108		
240				242 WRITE(6,16)JNET	NTYPH8 109		
				16 FORMAT(10NET TYPE *,A6,*) IS AN OBSOLETE NET IN THE MASTERFILE*/	NTYPH8 110		
				1 * DEPLOYMENT RECORDS WILL BE DROPPED IN LINKING*	NTYPH8 111		
				IPCT=IPCT+3	NTYPH8 112		
				IF(IPCT.GE.54)CALL PGS	NTYPH8 113		
245				GO TO 240	NTYPH8 114		
				23 IF(LOCAT.EQ.1H4.AND.JNET.EQ.KNET)GO TO 242	NTYPH8 115		
				INENOP=3	NTYPH8 116		
				IF(LHOLD.EQ.0)GO TO 98	NTYPH8 117		
				IBLOCK=1	DECFIL 19		
250				LEND=7	DECFIL 20		
				IF(LEND.GT.LHOLD)LEND=LHOLD	DECFIL 21		
				M=1	DECFIL 22		
				I=0	DECFIL 23		
255				206 I=I+1	DECFIL 24		
				M=M+1	DECFIL 25		
				DECODE(18,20,IN(1,M))INFOPCO,KDDO,OPA(1),OP8(1),ILL(1),(AD(1,J),	DECFIL 26		
				1 J=1,6)	DECFIL 27		
260				20 FORMAT(A6,A1,A10,A2,2X,A2,5A10,A5)	DECFIL 28		
				IF(KDDO.NE.1H1.UR.MFOPCO.NE.NTCINIGO TO 17	DECFIL 29		
				IF(1)=0	DECFIL 30		
				IF(1.LT.LEND)GO TO 206	DECFIL 31		
				IF(LEND.GE.LHOLD)GO TO 98	DECFIL 32		
				IBLOCK=IBLOCK+1	DECFIL 33		
265				INADDR=INADDR.AND.1514).OR.(ADDRCF(1BLOCK)	DECFIL 34		
				CALL DSYFMRQ,INADDR,INERR)	DECFIL 35		
				IF(INERR.NE.0)STOP 206	DECFIL 36		
				LEND=LEND+8	DECFIL 37		
				IF(LEND.GT.LHOLD)LEND=LHOLD	DECFIL 38		
				M=0	DECFIL 39		
270				GO TO 206	DECFIL 40		
				17 WRITE(6,25)KMLT,KDDO,OPA(1),JP3(1),ILL(1),(AD(1,J),J=1,6)	NTYPH8 123		
				25 FORMAT(3X,30MATRIX OUT OF ORDER FOR FOLLOWING INFO./	ANAM 147		
				1 3X,A6,A1,2X,A10,A4,A2,5A10,A5)	NTYPH8 124		
				IPCT = IPCT + 2	ANAM 149		
275				IF (IPCT.GT.54) CALL PGS	ANAM 150		
				GO TO 240	NTYPH8 125		
				C DEPLOYMENT NET TYPE DOES NOT EXIST ON MASTERFILE. SET UP	ANAM 155		
				C NECESSARY UPDATE DATA RECORDS	NTYPH8 126		
280				C 53 IF (MMET.EQ.JNET)GO TO 70	NTYPH8 127		
				C INITIALIZE AT FIRST RECORD OF NETTYPE	NTYPH8 128		
				C	ANAM 158		
				C	COMMENTS 165		
				C	COMMENTS 166		
295				C 332 NAME=1-1	COMMENTS 167		
					05DEC73 26		

TABLE IX. ANAM COMPUTER LISTING (CONT)

TABLE IX. ANAM COMPUTER LISTING (CONT)

TABLE IX. ANAM COMPUTER LISTING (CONT)

[illegible]

TABLE IX. ANAM COMPUTER LISTING (CONT)

DSMF STORAGE ALLOCATION.		BINARY CONTROL CARDS.		COMPASS 3.6-490.		H0/07/20. 15.39.43.		PAGE	1
ADDRESS	LENGTH	IDENT	DSMF						
0	57221	END							
57221									
		BLOCKS	TYPE	ADDRESS	LENGTH				
		PROGRAM*	LOCAL	0	57221				
		INDATA	COMMON	0	101				
		OUTDATA	COMMON	0	101				
ENTRY POINTS.									
		DSMF	22*	E	72*				
EXTERNAL SYMBOLS.									
		IOIR	IOIR	CPC					

TABLE IX. ANAM COMPUTER LISTING (CONT)

TABLE IX. ANAM COMPUTER LISTING (CONT)

DSMF	COMPASS 3.6-440.	80/07/20. 15.34.43.	PAGE	3
30 0301000034 *	2R	KL,OPT	DSMF	16
31 10611	dx6	X1	DSMF	17
32 5160000001 *	SAB	INFILE	DSMF	18
33 5110000001 *	OPEN	INFILE,ALTER,RECALL	DSMF	19
34 5111000003	S41	W1+J	FTNDSMF	44
35 0311000037 *	S41	X1	FTNDSMF	45
36 53050	M2	X1,OPUT	DSMF	21
37 10611	S45	ISAVE	FIXERR	6
38 0400000022 *	S40	X5	FIXERR	7
39 5160000103 *	EQ	W0,80,DSMF	DSMF	22
40 5160000012 *	dx6	X1	DSMF	23
41 5110000012 *	S46	OUTFILE	DSMF	24
42 5150000103 *	OPEN	OUTFILE,ALTER,RECALL	DSMF	25
43 0400000022 *	S45	ISAVE	FIXERR	6
44 6140000001	S40	X5	FIXERR	9
45 5111000001	EQ	80,80,DSMF	DSMF	26
46 0545000034 *	S84	80+1	DSMF	27
47 0100000000 X	S85	X1	DSMF	28
48 5150000103 *	S41	81+1	FTNDSMF	46
49 53050	S42	X1	FTNDSMF	47
50 0400000022 *	dx6	X2	DSMF	30
51 6140000002	NE	84,85,RO	DSMF	31
52 0545000075 *	S46	M+2	DSMF	32
53 5160000000 *	S46	W1,OUT OUTFILE, /SAMPLE /	DSMF	33
54 43700	S45	ISAVE	FIXERR	10
55 0100000000 X	S40	X5	FIXERR	11
56 5110000104 *	EQ	80,80,DSMF	DSMF	34
57 63110	S84	2	DSMF	35
58 53710	NE	84,85,CL	DSMF	36
59 5150000103 *	S46	M+2	DSMF	37
60 5140000001	M47	0	DSMF	38
61 10655	RCADIN	INFILE, /SAMPLE /	DSMF	39
62 5111000002	S41	ARGA	FIXERR	12
63 5150000103 *	S01	X1	FIXERR	13
64 0400000022 *	S41	81+2	FTNDSMF	1
65 6140000105 *	S47	X1	FTNDSMF	2
66 5154000002	S45	ISAVE	FIXERR	14
67 53610	EQ	80,80,DSMF	DSMF	41
68 10644	S44	TABX	FTNDSMF	49
69 5111000001	S45	84+1	FTNDSMF	50
70 53610	S46	84+2	FTNDSMF	51
71 0400000022 *	dx6	X5	FTNDSMF	52
72 00000000000000000000	S41	81	FTNDSMF	3
73 43405	S46	X1	FTNDSMF	4
74 0400000072 *	dx6	X4	FTNDSMF	54
75 11714	S41	81+1	FTNDSMF	5
76 20416	S45	ISAVE	FIXERR	16
77 11714	S40	X5	FIXERR	17
78 21711	EQ	80,80,DSMF	FTNDSMF	56
79 20416	DATA	0	DSMF	42
80 11714	M14	5	DSMF	43
81 21711	L14	168	DSMF	44
82 21711	847	81+14	DSMF	45
83 21711	847	118	DSMF	46
84 21711	847	80,80,E	DSMF	47

TABLE IX. ANAM COMPUTER LISTING (CONT)

DSMF	COMPASS 3.6-490.	80/07/20. 15.34.43.	PAGE 4
75 5110000012 *	CL	WRITER	DSMF 48
77 5110000012 *		CLOSE	DSMF 49
101 5150000103 *		SAS	FIXERR 18
53050		S40	FIXERR 19
102 04000000022 *		EO	DSMF 50
103	1	ISAVE	DSMF 50
104	1	ARGA	FIXERR 20
105	27345	FA84	FIXERR 21
27452	27345	BSSZ 12005	DSMF 51
57017	101	BSSZ 12005	DSMF 52
57120	101	BSS 65	DECFIL 5
57221	101	BSS 65	DECFIL 6
		END	DSMF 55
433000 CM	STORAGE USED	266 STATEMENTS	28 SYMBOLS
	MODEL 73 ASSEMBLY	1.975 SECONDS	105 REFERENCES

TABLE IX. ANAM COMPUTER LISTING (CONT)

USMF SYMBOLIC REFERENCE TABLE.		COMPASS 3.6-49H. 80/07/28. 15.39.43. PAGE 5									
ARGA	104	PROGRAM*	2/49 S	3/33	4/07 L						
CL	75	PROGRAM*	3/29	4/01 L							
CPC	0	EXTERNAL*	3/05	3/14	4/02	4/03					
DSMF	22	PROGRAM*	2/35 E	2/39 L			3/27	3/39	3/51	4/05	
E	72	PROGRAM*	2/36 C	2/38	3/52 L						
INFILE	1	PROGRAM*	2/37 L	3/03 S	3/04	3/33					
IURR	0	EXTERNAL*	3/32								
IURW	0	EXTERNAL*	3/24								
ISAVE	103	PROGRAM*	2/46 S	3/08	3/14	3/25	3/37	3/49	4/03	4/06 L	
M	47	PROGRAM*	3/23 S	3/24 L							
N	56	PROGRAM*	3/30 S	3/32 L							
NDX	65	PROGRAM*	2/54	3/40 L							
UPUJT	37	PROGRAM*	3/07	3/11 L							
UPT	34	PROGRAM*	3/01	3/05 L							
OUTFILE	12	PROGRAM*	2/38 L	3/12 S	3/13	3/25	4/01	4/02			
KU	54	PROGRAM*	3/22	3/28 L							
R4	44	PROGRAM*	2/55	3/17 L							
SCP-2N	0		3/05 D	3/05	3/14 D	3/14	4/02 D	4/02	4/03 D	4/03	
SCP-9ACL	1		3/05 D	3/05	3/14 D	3/14	4/02 D	4/02	4/03 D	4/03	
SCP-90	150		3/04 D	3/05	3/13 D	3/14	4/02 D	4/02	4/03 D	4/03	
IAHX	105	PROGRAM*	2/38	3/40	4/08 L						
IABY	27452	PROGRAM*	2/39	4/09 L							
ZANK	0	OUTDATA	2/39	2/43 L							
ZINK	57017	PROGRAM*	2/38	2/38	2/39	2/38	4/10 L				
ZUNK	0	INDATA	2/38	2/41 L							
ZUNK	57120	PROGRAM*	2/39	2/39	2/39	2/39	4/11 L				

SECTION 3 - PROGRAM UPDATMF 10

3.1 PURPOSE

Program UPDATMF 10 adds to the data in the old net value source file those records found to be missing and outputs a new updated net value source file.

3.2 PRINCIPAL FUNCTIONS

Program UPDATMF, shown in figure 11, accepts as input the old net value source file and update cards with net link weight data that have been added by military scientists. The program outputs an updated net value source file for later use in program LINK 23. The principal functions of program UPDATMF are as follows:

- a. Inserts data contained in update data cards into proper records in the updated net value source file. Prints out error remarks to identify defective input data. These data cards must be sorted in ascending order on columns 1-7.
- b. Tests the content of output data against established standards and ranges of values and prints out net type matrices found to be deficient or defective.
- c. Prints out the image of every net type matrix in the updated net value source file (formatted). Any matrix having deficient or defective data (see para b above) will contain an asterisk (*) in column 8 of the net header record. This column is normally blank.
- d. Writes out updated net value source file.

3.3 INPUT/OUTPUT DESCRIPTION

Input to program UPDATMF consists of a program control card, two types of data cards, and the old net value source file. Output consists of the updated net value source file for input to program LINK 23, a printout of the formatted updated net value source file, and remarks identifying defective input data.

3.3.1 Input Format

The format of input data, including information necessary to punch input data cards for program UPDATMF, is given in the following figures and table:

- a. Program control card, figure 12, page 3-5.
- b. Net type header update card 14, figure 13, page 3-6.
- c. Operator update card 14, figure 14, page 3-8.
- d. Net value source file 13, table X, page 3-11.

3.3.2 Output Format

The format of output from program UPDATMF is given in the updated value source file (13), table X, page 3-11.

3.4 PROCESS DESCRIPTION

a. Program UPDATMF is written in FORTRAN EXTENDED for processing on the CDC CYBER 172 computer and requires 1300008 words of central memory for execution.

b. The program reads in an update record card and then reads a record from the old net value source file. The net type code on the update card is then tested against the net type code of the old net value source record. If the net type code of the update card is larger, the old net value source record is written on the updated net value source file and a new record is read from the old net value source file.

c. If the net type code of the old net value source file is larger than the net type code of the update record, all information on the update record is written on the updated net value source file and a new update record is read. This procedure adds new net types to the updated net value source file that are not presently in the old net value source file.

d. If the net type code of the old net value source file is equal to the net type code of the update record, the code number and row number of the update record are tested to determine the mode of updating required. The procedure for updating is summarized as follows:

(1) Code Number Equals 0, No New Net Type Indicated. The program updates the net header record of the net type being processed. Information on the net header record of the old net value source file being processed is replaced by the new information on the update record.

(2) Code Number Equals 6, New Net Type Indicated. The program produces a new net type containing the same information as an old net type (except net type code and any indicated data changes). A message is printed out to inform the user that this has been done and to warn that the updated net value source file must be sorted before being used again.

(3) Code Number Equals 1. The program adds an operator record to the net type being processed. The record being added is inserted either after the record with the same row number as that on the update record or before the next larger row number, if the row number of the update record is not presently being used. All information contained on the update record is added to the net type being processed.

(4) Code Number Equals 2. The program updates the operator record from the old net value source file with the same row number and operator name as the update record. All information on the operator record of the old net value source file is replaced by the information on the update record.

(5) Code Number Equals 3. The program deletes the operator from the net type being processed with the same row number and operator name as the update record.

(6) Code Number Equals 5. The program deletes the net type being processed. All information associated with this net type is dropped.

e. A complete listing of the updated net value source file is produced.

3.5 PROGRAM OPERATION

Figure 15, page 3-16, is a listing of all system and UPDATE control cards necessary to execute UPDATMF for a typical computer run.

3.6 LIMITATIONS

The program is limited to a maximum of 120 operator names for a net type and a maximum of 55 link value codes for an operator.

3.7 RUNNING TIME

Running time is estimated at 1 minute of central processing time per 200 net types processed.

3.8 COMPUTER PROGRAM LISTING

Table XI, page 3-17, contains a complete program listing for UPDATMF and associated subroutines PAGEPRT and DSMF, annotated to aid in the understanding of the program functioning.

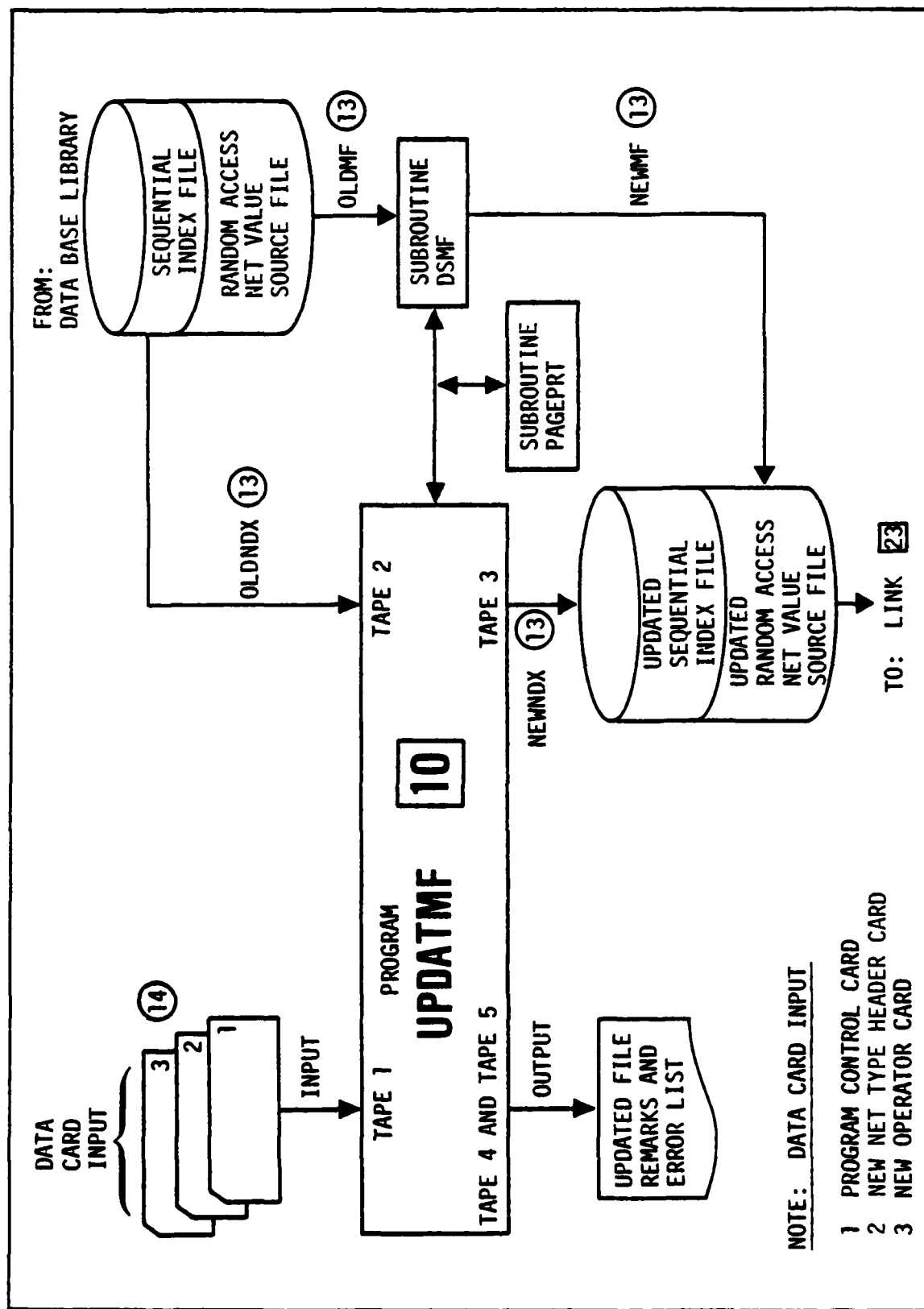


Figure 11. Program UPDATMF, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-10	A10	IDDATA	UPDATMFbbb. This field must be specified.
2	11-40	3A10	TITLE	Title to be output on page headings.
3	41-60	2A10	ICLASS	Security classification to be output on page headings. Cannot be blank.
4	61-65	A5	INFILE	Logical file name of random access master file to be read and updated; usually OLD MF..
5	66-70	A5	OUTFILE	Logical file name of updated random access master file to be written; usually NEW MF.

Figure 12. UPDATMF input, program control card.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-6	A6	KNET	Net type code.
2	7	A1	KCODE	Code number: 0 = Net type header update 5 = Delete net 6 = Create similar net type
3	8	A1	IGNORED	Blank
4	9-11	A3	KNV	Net value.
5	12-13	A2	KDC(1)	Duty cycle, normal combat posture.
6	14-15	A2	KDC(2)	Duty cycle, light combat posture.
7	16-17	A2	KDC(3)	Duty cycle, heavy combat posture.
8	18-19	A2	KDC(4)	Duty cycle, reserve combat posture.
9	20-21	A2	KDC(5)	Duty cycle, priority combat posture.
10	22-23	A2	KDC(6)	Duty cycle, nuclear delivery combat posture.
11	24-25	A2	KDC(7)	Duty cycle, spare.
12	26-27	A2	KDC(8)	Duty cycle, spare.
13	28-29	A2	KDC(9)	Duty cycle, nuclear warning posture.
14	30-33	A4	KMIN	Minimum cull distance; 0000 if no cull is to be made.

Figure 13. UPDATMF input, net type header update card (14).

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
15	34-36	A3	KMAX	Maximum cull distance; *** if no cull is to be made.
16	37	A1	KCAT	Category code.
17	38-65	2A10,A8	KNAME	Net name.
18	66-69			Blank
19	70-75	A6	KNUNET	70-72 if intelligence factor or 70-75 if new net type code.
20	76	A1	KSEC	Security classification.
21	77	A1	KCLSVC	First digit of class of service (not presently used).
22	78-79	A2	KSUBCL	Second and third digits of class of service (not presently used).
23	80	A1	MAYBE	Blank, unless specified otherwise.
<u>REMARKS:</u>				
To add a new net type, fill in all fields.				
To add a new net type identical to a net type presently in the old net value source file, columns 1-6 = net type code of existing type, column 7 = 6, and columns 70-75 = net type code of type to be created.				
To change the data for any field other than intelligence factor (columns 70-72), insert new data only in appropriate fields.				
To update one or more fields in an existing net type, columns 1-7 = net type code and column 7 = 0. Insert new data only in those fields to be updated.				
To delete a net type, columns 1-6 = net type code and column 7 = 5.				

Figure 13. UPDATMF input, net type header update card 14 (cont).

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-6	A6	KNET	Net type code.
2	7	A1	KCODE	Code number: 1 = Add operator 2 = Operator update 3 = Delete operator
3	8-9	A2	KRT	Old line number if the line number for existing operator is to be changed; otherwise, blank.
4	10-21	A10,A2	KOP	Operator name.
5	22-23			Blank
6	24-25	A2	KLINE	Line number.
7	26-80	5A10,A5	KDTA	Link factor codes. There must be as many codes as the line number.
<u>REMARKS:</u>				
To add a new operator, fill in all fields.				
To change link factor codes for an existing operator, columns 1-6 = net type code, column 7 = 2, columns 10-23 = operator name, columns 24-25 = line number, and columns 26-80 (as many as needed) = new link factor codes.				
To change link factor codes and line number of an existing operator, columns 1-6 = net type code, column 7 = 2, columns 8-9 = old line number, columns 10-23 = operator name, columns 24-25 = new line number, and columns 26-80 (as many as needed for new line number) = new link factor codes.				
To delete an operator, columns 1-6 = net type code, column 7 = 3, columns 10-23 = operator name, and columns 24-25 = line number.				

Figure 14. UPDATMF input, operator update card (14) .

File Description: Net Value Source File (13)

File Name: OLDMF Logical Unit: OLDMF

Mode/Type: BCD Record Length: 80 characters

Origin: Previous run of UPDATMF (10)

Used By: ANAM (9) ; UPDATMF (10) ; LINK (23)

Notes:

1. The net value source file is a name-accessible random file. The net type code name, with a sequential block index appended, is used to access a data block. Every net type code requires a set of general net type data called the header record. In addition, each normal communications net type code (category = 0) requires a set of data called an operator record for each unique operator. Both of these record types are 80 characters in length. The records are packed 8 to a block and, depending upon the number of operators in the net type, data for the net type code may consist of 1 to 15 data blocks, each of which contains 640 characters. A partially filled data block is padded with blanks.

The general record/block format is as follows:

BLOCK 1	
Record 1	Header data record
2	Data record-operator 1
3	Data record-operator 2
4	Data record-operator 3
5	Data record-operator 4
6	Data record-operator 5
7	Data record-operator 6
8	Data record-operator 7

BLOCK 2	
Record 1	Data record-operator 8
2	Data record-operator 9
3	Data record-operator 10
4	Data record-operator 11
5	Data record-operator 12
6	Data record-operator 13
7	Data record-operator 14
8	Data record-operator 15

Block 2 is repeated, if necessary, to contain all operators, to a total of 15 blocks. Actually, most of the normal communications

Net Value Source File (13) (Cont)

net types require no more than one or two blocks. All other kinds of net type codes are limited to one block that contains only the header data record and enough blanks to fill the block.

2. When updating the random access net value source file, it is necessary to access each record, update as indicated, then write the record on the new random access net value source file. To do this, a sequential index file is maintained for each random access version created. The logical file name of the index file for input is OLDNDX (internal program file name is TAPE2) and NEWNDX (internal program file name is TAPE3) for output. Both of these files are used only in program UPDATMF. The format of the sequential index file is given at the end of the format for the net value source file in table X.

TABLE X. NET VALUE SOURCE FILE (13)

Data Description	Field Size	Field Position	Remarks
<u>Header Data Record</u>			
Net type code	6	1-6	A 6-character alphanumeric code assigned to indicate the net type category. The characters indicate proponent (1), employment (2), echelon (3), category (4), and function (5). Character 6 specifies fine distinctions within the group described by the first 5 characters.
Number of operators	4	7-10	Number of operators plus 1 in this net type category; right-justified.
Record identifier	1	11	Contains the digit 0 to identify a net type header record.
Net value	3	12-14	A 3-digit number indicating the relative tactical importance of the net type (range = .001-.990).
Net duty cycles (range = .01-.99)	2	15-16	A 2-digit number assigned as the net duty cycle for <u>normal</u> combat posture.
		17-18	A 2-digit number assigned as the net duty cycle for <u>light</u> combat posture.
	2	19-20	A 2-digit number assigned as the net duty cycle for <u>heavy</u> combat posture.
	2	21-22	A 2-digit number assigned as the net duty cycle for <u>reserve</u> combat posture.

TABLE X. NET VALUE SOURCE FILE (13) (CONT)

Data Description	Field Size	Field Position	Remarks
Net duty cycles (cont)	2	23-24	A 2-digit number assigned as the net duty cycle for <u>priority</u> combat posture.
	2	25-26	A 2-digit number assigned as the net duty cycle for <u>nuclear delivery</u> combat posture.
	2	27-38	Spare for special assignment.
	2	29-30	Spare for special assignment.
	2	31-32	A 2-digit number assigned as the net duty cycle for <u>nuclear warning</u> combat posture.
Minimum cull distance	4	33-36	Minimum length, in meters, for links to be formed. If no cull is to be made on minimum link length, this field contains 0000. Minimum cull distance must be less than maximum cull distance.
Maximum cull distance	3	37-39	Maximum length, in kilometers, for links to be formed. If no cull is to be made on maximum link length, this field contains three blanks. Maximum cull distance must be greater than minimum cull distance.
Category code	1	40	A 1-digit code indicating the category of the net type as follows: 0 = normal communications net with different link values for different pairs of operators, 1 = radio relay or data link net. Each transmitter is linked with every receiver (normally, only one of each in a net) with link values equal to the net value multiplied by a weight factor associated with the posture

TABLE X. NET VALUE SOURCE FILE (13) (CONT)

Data Description	Field Size	Field Position	Remarks
Category code (cont)			code of the transmitter: 2 = warning net, or other net where all links have the same value and transmitters share time in the net equally, 3 = radar net, where transmitters are linked only with their own receivers and no culling on distance is made. and 4 = obsolete nets, which are bypassed in linking.
Net name	28	41-68	A 28-character (or smaller) alphanumeric name assigned to each net type; left-justified.
		69-72	Blank
Intelligence factor	3	73-75	A 3-digit number indicating the intelligence value of the net to opposing forces (range = 00.1-99.9).
Security classification	1	76	A 1-digit code indicating the highest security classification ever assigned in prior deployments to equipments in this net type: 0 = unclassified, 1 = confidential, 2 = secret, 3 = top secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Class of service	3	77-79	A 3-digit code indicating class and subclass of service. The first digit (position 77) is assigned to class of service: 1 = area/system, 2 = command, 3 = traffic, 4 = information, 5 = survey, 6 = logistics, 7 = intelligence, 8 = fire support, 9 = noncommunications, 0 = intertheater and major headquarters. The second

TABLE X. NET VALUE SOURCE FILE (13) (CONT)

Data Description	Field Size	Field Position	Remarks
Class of service (cont)			and third digits (positions 78-79) are assigned to subclasses of service that indicate the type of net within each major class of service. (This field is not presently used and may not be up-to-date.)
<u>Operator Data Record</u>			
Net type code	1	80	Blank
	6	1-6	A 6-character alphanumeric code assigned to indicate the net type category. The characters indicate proponent (1), employment (2), echelon (3), category (4), and function (5). Character 6 specifies fine distinctions within the group described by the first 5 characters.
Record identifier	1	7	Contains the digit 1 to identify an operator record.
Operator name	14	8-21	Standard alphanumeric name assigned to each operator; left-justified. Contains 1 to 14 characters, with characters 13 and 14 reserved to differentiate between like operators (i.e., pilot 1 and pilot 2). In this file, characters 13 and 14 are blank, since such distinction is not desired.
Matrix line number	2	22-23	A 2-digit sequential line number assigned to each operator when added to the matrix. Two operators

TABLE X. NET VALUE SOURCE FILE (13) (CONT)

Data Description	Field Size	Field Position	Remarks
Matrix line number (cont)			who have the same function may be assigned the same line number.
Link factor code	1	24-78	A 1-digit code (0 to 9) indicating the relative importance of a link between two distinct operators. A zero prohibits the operators from linking under any conditions. Data must be entered for each operator combination between the operator being treated and all prior operators in the matrix. The number of link factor codes must equal the matrix line number for the operator.
	2	79-80	Blank
<u>Sequential Index File</u> (used only by program UPDATMF)			
	3	1-3	Blank
Net type code	6	4-9	A 6-character alphanumeric code assigned to indicate the net type category. The characters indicate proponent (1), employment (2), echelon (3), category (4), and function (5). Character 6 specifies fine distinctions within the group described by the first 5 characters.
Block sequence flag	1	10	A = block 1, B = block 2, ..., N = block 14, and O = block 15. Each net type code may have as many as 15 blocks of data.
NOTE: This data record is repeated for each data block entry in the random access net value source file.			

	UPDATMF,13777.	LLOYD UPDATE MASTERFILE	5
(1)	USER(00 USER 10 00)		
(2)	CHARGE(14000,N)		
(3)	CJWCMF.		
(4)	COMMENT. TASK NAME		
(5)	COMMENT. UPDATMF		
(6)	COMMENT.		
(7)	COMMENT.		
(8)	GET(IPMDDPU-IPMDDPU/NA)		
(9)	MAP(PART)		
(10)	UPDATE(P-IPMDDPU,0)		
(11)	UNLOAD(IPMDDPU)		
(12)	FIN(1,R-3,PL-999999,0-UPDATMF,S-CPCTEXT)		
(13)	PURGE(OLDHMF5/PM-DATA,R-DL,NA)		
(14)	ATTACH(OLDHMF-GENHMF5/PM-DATA,R-DL,NA)		
(15)	ATTACH(NEWMF-BLNKMF5/M-V,PM-DATA,R-DL,NA)		
(16)	GET(OLDHMF-GENHMF5/PM-DATA,R-DL,NA)		
(17)	UPDATMF.		
(18)	REPLACE(OLDHMF-OLDHMF5/PM-DATA,R-DL,NA)		
(19)	REPLACE(NEWHMF-GENHMF5/PM-DATA,R-DL,NA)		
(20)	CHANGE(OLDHMF5-GENHMF5/PM-DATA,R-DL,NA)		
(21)	CHANGE(OLDHMF5-BLNKMF5/PM-DATA,R-DL,NA)		
(22)	000 INSERT CONTROL CARD TO DEFINE AN EMPTY DIRECT ACCESS SECRET DATA		
(23)	000 FILE WITH PFN BLNKMF5. THIS FILE MUST BE AVAILABLE FOR THE NEXT		
(24)	000 SUCCEEDING RUN OF UPDATMF.		
(25)	CATLIST(LO-F,PM-DATA,R-DL,NA)		
(26)	7-8-9 CARD		
(27)	0/ TASK CHANGES FOR UPDATMF (IF ANY)		
(28)	*COMPILE UPDATMF,PAGEPRT		
(29)	7-8-9 CARD		
(30)	UPDATMF TASK NAME SECRET		
(31)	000 INSERT UPDATE DATA CARDS HERE		
(32)	7-8-9 CARD		
(33)	6-7-8-9 CARD		
			OLDHMFNEWMF

Figure 16. UPDATMF control card listing.

TABLE XI. UPDATMF COMPUTER LISTING

	7/7/74	UPI=1	FTN 4.8+498	30/07/74	15.39.46	PAGE	1
1			PROGRAM UPDATMF (JLONDX,NEWNDX,INPUT,OUTPUT,TAPE5,TAPE1=INPUT, TAPE2=JLONDX,TAPE3=NEWNDX,TAPE4=OUTPUT,TAPE6)				
5			FILE CONTENTS AND USES:				
10			TAPE1(INPUT): UPDATMF CONTROL CARD AND COMPLETED UPDATE CARDS PARTIALLY PUNCHED BY ANAM.				
15			TAPE2(JLONDX) INDEX TO THE OLD MASTERFILE TO BE UPDATED				
20			TAPE3(NEWNDX) INDEX TO THE NEW UPDATED MASTERFILE				
25			TAPE4(OUTPUT): A LISTING OF THE NEW UPDATED MASTER FILE FOLLOWED BY A LISTING OF THE UPDATE CARDS AND REMARKS, WARNING AND ERROR MESSAGES.				
30			INTERMEDIATE FILE: TAPE5 HOLDS THE UPDATE CARD LISTING AND THE REMARKS, WARNING AND ERROR MESSAGES UNTIL THE END OF THE RUN.				
35			TAPE6 HOLDS THE SORTED UPDATE CARD FILE				
40			CONTROL CARD 1:				
45			CUL 1-7				
50			11-40				
55			41-60				
60			61-65				
65			66-70				
70			UPDATE (CARD ID)				
75			TITLE FOR PAGE HEADINGS				
80			SECURITY CLASSIFICATION				
85			LOGICAL FILE NAME OF RANDOM ACCESS OLD				
90			MASTER FILE TO BE READ (USUALLY OLD MF)				
95			LOGICAL FILE NAME OF RANDOM ACCESS UPDATED				
100			MASTER FILE TO BE OUTPUT (USUALLY NEW MF)				
105			UPDATE DATA CARD TYPES--				
110			NET HEADER RECORD:				
115			CUL 1-6				
120			7 (RECORD ID)				
125			NETTYPE CODE				
130			0 - ADD OR MODIFY HEADER RECORD				
135			5 - DELETE ALL DATA FOR THIS NETTYPE				
140			6 - DUPLICATE DATA FOR THIS NETTYPE AND ASSIGN TO NEW NETTYPE CODE GIVEN IN CULS 70-75				
145			NET VALUE				
150			9-11				
155			12-13				
160			14-15				
165			16-17				
170			18-19				
175			20-21				
180			22-23				
185			24-25				
190			26-27				
195			28-29				
200			30-33				
205			34-36				
210			37				
215			NET VALUE				
220			NET DUTY CYCLE, NORMAL POSTURE				
225			NET DUTY CYCLE, LIGHT POSTURE				
230			NET DUTY CYCLE, HEAVY POSTURE				
235			NET DUTY CYCLE, RESERVE POSTURE				
240			NET DUTY CYCLE, PRIORITY POSTURE				
245			NET DUTY CYCLE, NUCLEAR DELIVERY POSTURE				
250			NET DUTY CYCLE, SPARE				
255			NET DUTY CYCLE, SPARE				
260			NET DUTY CYCLE, NUCLEAR WARNING POSTURE				
265			MINIMUM DISTANCE CULL VALUE (0000=NO MIN)				
270			MAXIMUM DISTANCE CULL VALUE (***=NO MAX)				
275			CATEGORY CODE OF NETTYPE				
280			0-NORMAL COMMUNICATIONS (REQUIRES OPERATORS)				
285			1-RADIO RELAY OR DATA LINK				
290			2-WARNING NET				
295			3-RADAR NET				
300			4-OBSOLETE OR INAPPROPRIATE FOR LINKING				
305			NET NAME				
310			38-65				

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

PAGE 4

90/07/28. 15.39.46

FIN 4.8.440

JPI-1

PROGRAM UPDATMF

7/3/74

```

1010 FORMAT(10,*,*,A6,2A1,A3,9A2,A4,A3,A1,2A10,A8,4X,A6,2A1,A2,A1)
      KMKCT-KMKCT+1
      IF INET-GE-KMLAST)GOTO 104

```

```

1020 WRITE(15,1030)

```

```

1030 FORMAT(9,ERRR) ABOVE UPDATE CARU IS OUT OF ORDER.*/

```

```

      KMKCT-KMKCT+2
      IF INET-GE-55)CALL RMKSPG

```

```

      NERR=NERR+1

```

```

1100 GOTO 1000

```

```

104 IF INCODE-EQ-12RU-OR-KCODE-EQ-IFIVE-OR-KCODE-EQ-1H6)GOTO 106

```

```

      C

```

```

      NOT A HEADER CARD. BACKSPACE, REREAD IN FORMAT FOR OPERATOR

```

```

      C

```

```

      C

```

```

      C

```

```

      BACKSPACE 6

```

```

      READ(6,105)KGET,KCODE,KRT,KOP,KLINE,KOTA

```

```

105 FORMAT (A6,A1,A2,A10,A4,A2, 5A10,A5)

```

```

      GOTO 110

```

```

      C

```

```

      C

```

```

      C

```

```

106 CONTINUE

```

```

      IF INSEC-EQ-1H 14SEC=1H0

```

```

      KCL SVC-KSUBCL-14

```

```

110 IF INET-NE-0)GOTO 300

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      C

```

```

      FNUDMF 20
      UPDATMF 60
      UPDATMF 61
      UPDATMF 62
      UPDATMF 63
      UPDATMF 64
      UPDATMF 65
      UPDATMF 66
      UPDATMF 67
      CNUNET 2
      CUNETS 233
      CUNETS 234
      CUNETS 235
      CUNETS 236
      SRTINPT 13
      SRTINPT 14
      UPDATMF 71
      UPDATMF 72
      CUNETS 237
      CUNETS 238
      CUNETS 239
      CNUNET 3
      NTPMFC 1
      NTPMFC 2
      UPDATMF 75
      CUNETS 240
      CUNETS 241
      CUNETS 242
      CUNETS 243
      NTPMFP 27
      DECFL 50
      FNUDMF 21
      DECFL 51
      DECFL 52
      NTPMFP 30
      DECFL 53
      FNUDMF 22
      NTPMFP 33
      NTPMFP 34
      NTPMFP 35
      NTPMFP 36
      NTPMFP 37
      NTPMFP 38
      NTPMFP 39
      DECFL 55
      DECFL 56
      DECFL 57
      DECFL 58
      NTPMFP 41
      NTPMFP 42
      NTPMFP 43
      FNUDMF 23
      NTPMFP 45
      FNUDMF 24
      NTPMFP 47
      DECFL 60
      NTPMFP 48

```

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

PROGRAM	UPDATMF	73/74	UPT-1	FIN 4.0-498	90/07/28. 15.39.46	PAGE	5
230					UPDATMF 82		
					UPDATMF 83		
					COMENTS 244		
					COMENTS 245		
					COMENTS 246		
235					UPDATMF 84		
					UPDATMF 85		
					UPDATMF 86		
					UPDATMF 87		
					UPDATMF 88		
					FINUDMF 25		
240					UPDATMF 90		
					UPDATMF 91		
					UPDATMF 92		
					UPDATMF 93		
					UPDATMF 94		
					UPDATMF 95		
245					UPDATMF 96		
					NTYMPF 49		
					COMENTS 247		
					COMENTS 248		
250					COMENTS 249		
					DECFIL 61		
					DECFIL 62		
					DECFIL 63		
					DECFIL 64		
					DECFIL 65		
255					DECFIL 66		
					DECFIL 67		
					DECFIL 68		
					DECFIL 69		
					DECFIL 70		
260					DECFIL 71		
					DECFIL 72		
					DECFIL 73		
					DECFIL 74		
					DECFIL 75		
					DECFIL 76		
					DECFIL 77		
					DECFIL 78		
					DECFIL 79		
270					DECFIL 80		
					DECFIL 81		
					DECFIL 82		
					DECFIL 83		
					DECFIL 84		
					DECFIL 85		
275					DECFIL 86		
					UPDATMF 109		
					COMENTS 250		
					COMENTS 251		
280					COMENTS 252		
					UPDATMF 110		
					COMENTS 253		
					COMENTS 254		
285					COMENTS 255		
					COMENTS 256		

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

PROGRAM UPDATMF 7/3/74 UPT-1 FTN 4,944d 00/07/20. 15.39.46 PAGE 6

```

KOUTPMT=1H*
KDATA1=10H*FATAL DA
KDATA2=10H*FATAL DA
IF (KOUTCAT.NE.1H*HOLD) GO TO 30011
ENCDEF(42,30011,KFAC) KOUTNET,KOUTINV,KOUT10C,KOUTINT,KOUTMIN,
* KOUTCLS,KOUTSUD,KOUTMAX,KOUTSEC,KOUTCAT
30011 FORMAT (A6,A3,A2,A3,A4,A1,A2,A3,A2A1)
30012 DECODE (42,30012,KFAC) (LKFAC(J),J=6,47)
30013 FORMAT(6R,44A1)
IF (LKFAC(6).LT.1RA.OR.LKFAC(6).GT.1R4) GO TO 30053
DO 30010 J=7,11
IF (LKFAC(J).LT.1RA.OR.LKFAC(J).GT.1R4) GO TO 30053
30010 CONTINUE
DO 30013 J=12,39
IF (LKFAC(J).LT.1ZRO.OR.LKFAC(J).GT.1H9) GO TO 30053
30013 CONTINUE
IF (KOUTMAX.EQ.1H1) GO TO 30015
DO 30014 J= 43, 45
IF (LKFAC(J).LT.1ZRO.OR.LKFAC(J).GT.1H9) GO TO 30053
30014 CONTINUE
ENCDEF(6,30016,KFAC(54)) KOUTMAX,13ZRO
30016 FORMAT (2A1)
ENCDEF(16,30017,LKFAC(55)) 13ZRO,KOUTMIN
30017 FORMAT(2A4)
IF (LKFAC(55).GE.LKFAC(54)) GO TO 30053
IF (LKFAC(46).LT.1ZRO.OR.LKFAC(46).GT.1H6) GO TO 30053
IF (LKFAC(47).LT.1ZRO .OR.LKFAC(47).GT.1H4) GO TO 30053
IF (KOUTCAT.NE.1H0) GO TO 30041
IF (KOUTCAT.EQ.1H0.AND.LHOLD.EQ.0) GO TO 30053
IF (10P(1,1).EQ.5H0UMY.AND.LHOLD.EQ.1) GO TO 30041
J=0
30018 J=J+1
30019 IF (11LINE(J).NE.2HXX) GO TO 30023
IF (J.NE.LHOLD) GO TO 30020
LHOLD=LHOLD+1
GO TO 30024
30020 K1=LHOLD-1
DO 30022 K=J,K1
MFR1(K)=MFR1(K+1)
10P(K,1)=10P(K+1,1)
10P(K,2)=10P(K+1,2)
11LINE(K)=11LINE(K+1)
DO 30021 K2=1,6
10TA(K2,K)=10TA(K2,K+1)
30022 CONTINUE
LHOLD=LHOLD+1
GO TO 30019
30023 IF (J.LT.LHOLD) GO TO 30018
30024 CONTINUE
11LINE=J
DO 3005 J=1,LHOLD
IF (11LINE(J).EQ.1BL) GO TO 30053
IF (11LINE(J).EQ.2HXX) GO TO 3005
IF (1BL.EQ.10P(J,1)) GO TO 30053
10LER=11LINE(J).A.00777777777777777777
IF (10LER.GT.9R9 .OR.10LER.LT.9R0
.OR.11LINE(J).GE.2H01) GO TO 30053
IF (11LINE(J).LT.2H01 .AND.11LINE(J).GE.2H01) GO TO 30053

```

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

PROGRAM	UPDATMF	73/74	OPT-1	FIN 4.0+498	80/07/20. 15.39.46	PAGE	7
345	IF (ILINE(J).LT.2H 1 .OR. ILINE(J).GT.2H 9) GO TO 30053				UPDATMF	140	
	30051 DECIDE (2,30052,ILINE(J)) ILIND				UPDATMF	141	
	30052 FORMAT (12)				UPDATMF	142	
	IF (ILIND.GT.55) ILIND= 55				UPDATMF	143	
	DECIDE(15,30054,10TA(1,J)) (LKFA(L),L-1,55)				01DEC73	4	
	30054 FORMAT (55A1)				UPDATMF	145	
	DO 30055 L= 1,ILIND				UPDATMF	146	
350	IF (LKFA(L).LT.12RD .OR. LKFA(L).GT.1M9) GO TO 30053				UPDATMF	147	
	IF(LKFA(L).EQ.1M9)INER=1				NTYPMS	6	
	30055 CONTINUE				UPDATMF	148	
	IF (ILIND.EQ.55) GOTO 3005				UPDATMF	149	
	ILIND=ILIND+1				01D-C73	5	
355	DO 30060 L=ILIND,55				01DEC73	6	
	IF(LKFA(L).NE.1BL)GO TO 30053				01DEC73	7	
	30060 CONTINUE				01DEC73	8	
	3005 CONTINUE				UPDATMF	151	
	IF(INER.NE.0)GO TO 30041				NTYPMS	7	
360	KOUTPT=1BL				NTYPMS	8	
	KDATA1=10M+AND LKF				NTYPMS	9	
	KDATA2=10HAC +9 ***				NTYPMS	10	
	GO TO 30053				NTYPMS	12	
365	C NO ERRORS FOUND. SET ERROR FLAG TO BLANKS				COMENTS	257	
	C				COMENTS	258	
	C				COMENTS	259	
370	30041 KOUTPT=1BL				SCOPE34	3	
	KDATA1=KDATA2=1BL				01DEC73	9	
	30053 IF(KOUTPT.NE.1BL)INFLAG=NFLAG+1				NTYPMFP	61	
	NTYPT=NTYPT+1				UPDATMF	157	
	IF (1KPRCT + LHOLD + 2).GE.55) CALL PAGEPT				UPDATMF	159	
	C PRINT NETYPE CODE HEADER FOR VISIBILITY ANALYSIS				COMENTS	260	
	C				COMENTS	261	
	C				COMENTS	262	
375	WRITE(4,302)KOUTNCF,12RD,KOUTPT,KOUTNV,KOUTDC,KOUTHM,KOUTMAX,				UPDATMF	160	
	1 KOUTCAT,KOUTAME,KOUTINT,KOUTSEC,KOUTCLS,KOUTSUB,KDATA1,KDATA2				01DEC73	10	
	302 FORMAT(10,40,2A1,A3,9A2,4,A3,A1,2A10,A8,4,A6,2A1,A2,10X,2A10)				FINUDMF	26	
	KPRCT= KPRCT + 2				UPDATMF	163	
	LEND=0				DECFIL	49	
380	IF(KOUTPT.NE.1BL)GO TO 30070				NTYPMS	13	
	C				COMENTS	263	
	C				COMENTS	264	
	C				COMENTS	265	
385	IF NO ERRORS, MOVE UPDATED HEADER TO RANDOM FILE WRITE AREA				DECFIL	40	
	ENCODE(69,7,70T(2,1))12RD,KOUTNV,KOUTDC,KOUTHM,KOUTCAT,				FINUDMF	27	
	1 KOUTNCF,13L,KOUTINT,KOUTSEC,KOUTCLS,KOUTSUB				DECFIL	91	
	OUTA00R=(KOUTNET.AND.151X)				DECFIL	93	
	IUPCT=LHOLD+1				DECFIL	94	
	ENCODE(110,9,70T(1,1))KOUTNET,IUPCT				DECFIL	95	
	NTCOUT=(KOUTNET.AND.151X).OR.1AURCF(1)				DECFIL	96	
390	WRITE(3,401)NTCOUT				DECFIL	97	
	MRO=1				DECFIL	98	
	1BLCK=0				NTYPMFP	67	
	IOUT=IOUT+1				NTYPMFP	68	
395	30070 IF(KOUTCAT.NE.12RD.AND.KOUTCAT.NE.1BL)GO TO 3081				UPDATMF	165	
	IF(LHOLD.EQ.0)GOTO 3081				COMENTS	266	
	C SET UP OPERATUM RECORDS FOR OUTPUT TO RANDOM FILE				COMENTS	267	
	C				COMENTS	268	
	C				UPDATMF	166	
	LOUT=0						

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

PROGRAM	UPDATMF	73/74	DPI-1	FIN 4.8.498	80/07/28. 15.39.46	PAGE	0
400	IRU = 1				UPDATMF	167	
	LEND=7				DECFIL	94	
	IF (LEND.GT.LHOLD) LEND=LHOLD				DECFIL	100	
	M=1				DECFIL	101	
	L=0				DECFIL	102	
405	306 L=L+1				DECFIL	103	
	M=M+1				DECFIL	104	
	IRHOLD = 2H22				UPDATMF	169	
	DO 305 J=1,LHOLD				UPDATMF	170	
410	304 IF (ILINE(J).GE. IRHOLD) GO TO 305				UPDATMF	171	
	IF (ILINE(J).EQ.2HXX .OR. MFTT(J).EQ.2HXX) GO TO 305				UPDATMF	172	
	IRHOLD = ILINE(J)				UPDATMF	173	
	IRU = J				UPDATMF	174	
	305 CONTINUE				UPDATMF	175	
	IF (ILINE(IRU).EQ.2HXX .OR. MFTT(IRU).EQ.2HXX) GO TO 3064				DECFIL	105	
415	MFTT(IRU) = 2HXX				UPDATMF	177	
	J = IRU				UPDATMF	178	
	LOUT = LOUT+1				UPDATMF	179	
	IF (LOUT.NE.100) GO TO 3050				UPDATMF	180	
	WRITE(4,3051)				UPDATMF	181	
420	3051 FORMAT(5H ***** MORE THAN 99 OPERATORS FOR THIS NET TYPE.				UPDATMF	182	
	*,7(11H))				UPDATMF	183	
	KPRCT=KPRCT+1				PRNTC	1	
	WRITE(5,3052) KOUTNET				UPDATMF	185	
425	3052 FORMAT(10H WARNING: MORE THAN 99 OPERATORS FOR NET TYPE *,A6,*,*)				UPDATMF	186	
	KRMCT = KRMCT + 2				UPDATMF	187	
	IF (KRMCT.GT.53) CALL RMSPG				UPDATMF	188	
	N6199=N6199+1				UPDATMF	189	
	C				COMENTS	269	
430	C				COMENTS	270	
	PRINT OPERATOR RECORDS FOR VISIBILITY ANALYSIS				COMENTS	271	
	3050 WRITE(4,3053) KOUTNET, IOP(J,1), IOP(J,2), ILINE(J), (IDTAIL(J), I=1,6)				NTYPMFP	69	
	3053 FORMAT(1X,A0,*,1 *,A10,A4,A2,5A10,A5)				FINUDMF	28	
	KPRCT = KPRCT + 1				UPDATMF	195	
	IF (KPRCT.GE.55) CALL PAGEPR				UPDATMF	196	
435	IF (KOUTNET.NE.181) GO TO 3064				DECFIL	106	
	C				COMENTS	272	
	C				COMENTS	273	
	C				COMENTS	274	
	C				COMENTS	275	
440	ENCODE(78,8,OUT(1,M)) KOUTNET, IONE, IOP(J,1), IOP(J,2), ILINE(J),				DECFIL	107	
	1 (IDTAIL(J), I=1,6)				DECFIL	108	
	LOUT=LOUT+1				DECFIL	109	
445	3064 IF (L.LT.LEND) GO TO 306				DECFIL	110	
	3061 IF (KOUTNET.NE.181) GO TO 3063				DECFIL	111	
	C				COMENTS	276	
	C				COMENTS	277	
	C				COMENTS	278	
450	IF (LOCK=18LOC+1				DECFIL	112	
	OUTADDR=(OUTADDR.AMD.151X).OR.1AORCF(18LOCK)				DECFIL	113	
	CALL OS9F(MR2,OUTADDR)				DECFIL	114	
	3063 IF (LEND.GT.LHOLD) GO TO 3062				DECFIL	115	
	LEND=LEND+8				DECFIL	116	
	IF (LEND.GT.LHOLD) LEND=LHOLD				DECFIL	117	
	M=0				DECFIL	118	
455	GO TO 306				DECFIL	119	
	3062 IF (1.MFT.MUNET) GO TO 200				NTYPMFP	79	

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

PROGRAM	UPDATMF	73/74	UPF-1	FTM 4.8+498	80/07/28, 15.39.46	PAGE	9
460	C			CREATING A NEW NETTYPE LIKE LAST NETTYPE OUTPUT. GO TO 3501	COMMENTS 279		
	C			KOUTNET=KNUNET	COMMENTS 280		
	C			NUMET=.F.	CUMENTS 281		
				IF (LHOLD.EQ.0)GO TO 3501	UPDATMF 199		
				DO 330 J=1,LHOLD	CNUMET 4		
				J30 MFT(J)=1BL	CNUMET 5		
465				GOTO 3501	CNUMET 6		
				320 IF (MNET.CJ.KMET) GO TO 350	CNUMET 7		
				IF (KCODE.EQ.120)GO TO 321	UPDATMF 200		
				WRITE(5,926)	UPDATMF 201		
470	926			FORMAT(10,ERRON: ABOVE CARD HAS NO MATCHING MASTER FILE ENTRY.*/)	CNUMET 8		
				KRMKCT=KRMKCT+2	UPDATMF 203		
				IF (KRMKCT.GE.53) CALL RMKSPG	UPDATMF 204		
				MERR=MERR+1	UPDATMF 205		
				GO TO 100	UPDATMF 206		
475	321			BACKSPACE 2	UPDATMF 207		
	C				UPDATMF 208		
	C			ADDING A NEW NETTYPE TO MASTERFILE FROM UPDATE CARDS.	UPDATMF 209		
	C			SET OUTPUT AREA TO BLANKS	COMMENTS 282		
	C				COMMENTS 283		
	C				COMMENTS 284		
	C				COMMENTS 285		
480	322			MNET=KNET	UPDATMF 214		
				LHOLD=.O	UPDATMF 215		
				KOUTNET=KOUTNV=KOUTINT=KOUTMIN=KOUTMAX=KOUTCAT=KOUTSEC=KOUTCLS=	01DEC73 14		
				1 KOUTSUB=1BL	01DEC73 15		
				DO 3210 I=1,9	01DEC73 16		
485	3210			KOUTDC(I)=1BL	01DEC73 17		
				DO 3211 I=1,3	FINUDMF 29		
	3211			KUWNAME(I)=1BL	01DEC73 19		
				ILINE(I)=1BL	01DEC73 20		
				KOUTNET=MNET	UPDATMF 216		
490	C				COMMENTS 286		
	C			COME HERE TO CREATE NEW NETTYPE OR UPDATE EXISTING NETTYPE	COMMENTS 287		
	C				COMMENTS 288		
495	330			IF (KNET.EQ.NINE) GO TO 429	UPDATMF 217		
				IF (KCODE.NE.FIVE)GOTO 35001	UPDATMF 218		
				A 5 FOR KCODE MEANS DELETE THE MATCHING NET TYPE ENTRY.	UPDATMF 219		
				1=RT=9	UPDATMF 220		
				GO TO 100	UPDATMF 221		
500	35001			IF (KCODE.EQ.120)GO TO 35002	CNUMET 9		
				IF (KCODE.NE.140)GO TO 350	CNUMET 10		
				NUMET=.F.	CNUMET 11		
				GO TO 3001	CNUMET 12		
505	35002			CONTINUE	CNUMET 13		
	C				COMMENTS 289		
	C			MUVE UPDATE DATA TO OUTPUT AREA FOR HEADER. THEN, GO READ	COMMENTS 290		
	C			NEXT UPDATE RECORD	COMMENTS 291		
509	C				COMMENTS 292		
	C			IF (KNUMET.NE.1BL)KOUTINT=KNUNET	UPDATMF 224		
510	3501			CONTINUE	CNUMET 14		
				IF (KNV.NE.1BL) KOUTNV=KNV	UPDATMF 226		
				IF (KCAT.NE.1BL) KOUTCAT=KCAT	UPDATMF 227		
				DO 351 J=1,7	UPDATMF 228		
	351			IF (KDC(J).NE.1BL) KOUTDC(J)=KDC(J)	UPDATMF 229		
				IF (KNAME(I).EQ.1BL) GO TO 353	UPDATMF 230		
				DO 352 J=1,3	FINUDMF 31		

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

PROGRAM	UPDATMF	73774	OPT-1	FIN 4.8+490	90/07/20. 15.39.46	PAGE	10
515		352 KOUAME (J) = KNAME(J)			UPDATMF 232		
		353 IF (KSEC-NE-10L) KOUTSEC= KSEC			UPDATMF 233		
		IF (KCLSVL-NE-10L) KOUTCLS= KCLSVL			UPDATMF 234		
		IF (KSUMCL-NE-10L) KOUTSUM= KSUMCL			UPDATMF 235		
		IF (KMIN-NE-10L) KOUTMIN = KMIN			UPDATMF 236		
520		IF (KMAX-EO-10L) GO TO 100			UPDATMF 237		
		IF (KMAX-EO.3H+00) KMAX=10L			UPDATMF 238		
		KOUTMAX = KMAX			UPDATMF 239		
		GO TO 100			UPDATMF 240		
		360 IF (KCODE-NE-10L) GO TO 365			UPDATMF 241		
525		C MOVE NEW OPERATOR DATA TO OUTPUT AREA. THEN, GO READ NEXT			COMENTS 293		
		C UPDATE RECORD			COMENTS 294		
		C			COMENTS 295		
		C			COMENTS 296		
530		IF (LHOLD-LT-1L) GO TO 361			UPDATMF 242		
		WRITE(5,961)			UPDATMF 243		
		961 FORMAT(' ERROR: MORE THAN 119 OPERATORS FOR THIS NET. ABOVE OPE			UPDATMF 244		
		RATOR WAS DROPPED.')			UPDATMF 245		
		KRMCT=KRMCT+2			UPDATMF 246		
		IF (KRMCT-GE-53) CALL RMKSPG			UPDATMF 247		
		MEM=MEMR+1			UPDATMF 248		
535		GO TO 100			UPDATMF 249		
		361 IRO= LHOLD - LHOLD + 1			UPDATMF 250		
		IF (IRO) = 10L			UPDATMF 251		
		IOP(IRO,1) = KOP(1)			UPDATMF 252		
		IUP(IRO,2) = KOP(2)			UPDATMF 253		
540		ILINE (IRO) = KLINE			UPDATMF 254		
		DO 363 J = 1,6			UPDATMF 255		
		363 IDTAIJ,IRO)=KOTAIJ)			UPDATMF 256		
		GO TO 100			UPDATMF 257		
		C FIND MATCHING OPERATOR IN EXISTING DATA			COMENTS 297		
545		C			COMENTS 298		
		C			COMENTS 299		
		365 IF (KRT-EO-10L) GO TO 3651			UPDATMF 258		
		KRMHUL=KLINE			UPDATMF 259		
		KLINE= KRT			UPDATMF 260		
550		KRT= KRT+1			UPDATMF 261		
		3651 DO 366 I=1,LHOLD			UPDATMF 262		
		IF (KOP(1)-NE-IOP(1,1)) GO TO 366			UPDATMF 263		
		IF (KOP(2)-NE-IOP(1,2)) GO TO 366			UPDATMF 264		
		IF (KRT(1)-EO.2HFF) GO TO 366			UPDATMF 265		
555		IF (KLINE-EO-ILINE(I)) GO TO 368			UPDATMF 266		
		366 CONTINUE			UPDATMF 267		
		WRITE(5,367)			UPDATMF 268		
560		367 FORMAT(' ERROR: ABOVE OPERATOR CARD COULD NOT BE MATCHED.')			UPDATMF 269		
		KRMCT=KRMCT+2			UPDATMF 270		
		IF (KRMCT-GE-53) CALL RMKSPG			UPDATMF 271		
		MEM=MEMR+1			UPDATMF 272		
		GO TO 100			UPDATMF 273		
565		368 IF (KCODE-NE-10L) GO TO 3681			UPDATMF 274		
		C SET FLAG TO DELETE OPERATOR, READ NEXT UPDATE RECORD			COMENTS 300		
		C			COMENTS 301		
		C			COMENTS 302		
		ILINE(I)=2HFF			UPDATMF 275		
		GO TO 100			UPDATMF 276		
570		C UPDATE EXISTING OPERATOR. READ NEXT UPDATE RECORD			COMENTS 303		
		C			COMENTS 304		

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

PROGRAM	UPDATMF	73/74	UPT-1	FTN 4.8+498	00/07/20. 15.39.46	PAGE	12
630	WRITE(6,991) 991 FORMAT(0,134(1H+))2H *132X,1H+2H *5X,*JARNING: FAULTY MASTER 1 FILE CREATED. JOB MUST BE RERUN AFTER ERRORS ARE CORRECTED. SEE 2 LISTING FOR FLAGGED DATA ERRORS*6X,1H+2H *132X,1H+2H *5X, 3 *ALL DATA DELETED--REPEAT--ALL DATA DELETED FOR NET TYPES WITH FA 4IAL DATA ERRORS. UPDATE CARDS FOR ENTIRE NET ARE REQUIRED.*4X, 5 1H+2H *132X,1H+2H *5X,*NET TYPES WITH NO LINK FACTOR *9 WERE 6 OUTPUT AS PRINTED. ONLY UPDATES TO INDIVIDUAL OPERATORS IN ACTI 7E NETS ARE REQUIRED.*3X,1H+2H *132X,1H+2H *5X,*ENTRIES WITH E 8RRORS IN UPDATE CARDS WERE IGNORED. CORRECTED UPDATE CARDS ARE RE 9QUIRED.*40X,1H+2H *132X,1H+1X,134(1H+)) CALL REMARK(33H *** ERRORS DETECTED BY UPDATMF.) 990 CONTINUE WRITE(6,995)10UT,NIYPC1 995 FORMAT(0,2110,* MASTER FILE RECORDS #RITTEN*/111,* NET TYPES ON N 1EN MASTER FILE*) END	NIYPMFS 17 NIYPMFS 18 NIYPMFS 19 NIYPMFS 20 NIYPMFS 21 NIYPMFS 22 NIYPMFS 23 NIYPMFS 24 NIYPMFS 25 NIYPMFS 26 NIYPMFS 27 FINUDMF 37 NIYPMFS 29 NIYPMFS 98 NIYPMFS 99 NIYPMFS 100 UPDATMF 320					
635							
640							

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

SUBROUTINE	PAGEPRT	7/3/74	UPD=1	FIN 4.8+498	80/07/28.	15.39.46	PAGE	1
1								
5	C							
10								
15								
20	C							
25	C							
30								
35								

```

SUBROUTINE PAGEPRT
COMMON/UPDFCUN/KPRFLG,KPRICT,IPRTPG,KRMKFLG,KRMKCT,IRMKPG,
+ ICLASS(2),TITLE(3)
INTEGER TITLE
IF(KPRFLG.EQ.1)GOTO 6
LNSPC=1H-
WRITE(4,3)LNSPC,TITLE,ICLASS,IPRTPG
3 FORMAT(1,'UPDATMF OUTPUT FOR: ',3A10,13X,'NEW MASTER FILE',13X,
1 2A10,13X,'PAGE',16/)
4 FORMAT(1,'UPDATMF OUTPUT FOR: ',3A10,13X,'NEW MASTER FILE',13X,
+ 2A10,13X,'PAGE',16//)
IF(KPRFLG.EQ.3)RETURN
6 LNSPC=1H1
IPRTPG = IPRTPG + 1
KPRICT = 2
WRITE(4,4)LNSPC,TITLE,ICLASS,IPRTPG
RETURN

ENTRY RMKSPG
IF(KRMKFLG.EQ.1)GOTO 13
LNSPC=1H-
WRITE(5,7)LNSPC,TITLE,ICLASS,IRMKPG
7 FORMAT(1,'UPDATMF OUTPUT FOR: ',3A10,27X,'PAGE',16)
5 IF(KRMKFLG.EQ.3)RETURN
13 LNSPC=1H1
IRMKPG = IRMKPG+1
KRMKCT = 2
WRITE(5,5)LNSPC,TITLE,ICLASS,IRMKPG
RETURN
END

```

PAGEPRT 2
 PAGEPRT 3
 PAGEPRT 4
 PAGEPRT 5
 PAGEPRT 6
 PAGEPRT 7
 PRNTC 2
 PRNTC 3
 PRNTC 4
 PRNTC 5
 PAGEPRT 10
 PAGEPRT 11
 PAGEPRT 12
 PAGEPRT 13
 PAGEPRT 14
 PAGEPRT 15
 PAGEPRT 16
 PAGEPRT 17
 PAGEPRT 18
 PAGEPRT 19
 PAGEPRT 20
 PAGEPRT 21
 PAGEPRT 22
 PAGEPRT 23
 PRNTC 6
 PRNTC 7
 PRNTC 8
 PAGEPRT 26
 PAGEPRT 27
 PAGEPRT 28
 PAGEPRT 29
 PAGEPRT 30
 PAGEPRT 31
 PAGEPRT 32
 PAGEPRT 33

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

PAGE 1

COMPASS 3-6-498. 80/07/28. 15.39.59.

USMF
STORAGE ALLOCATION.

ADDRESS LENGTH
0 57221
57221

BINARY CONTROL CARDS.

IDENT USMF
END

BLKCS	TYPE	ADDRESS	LENGTH
PRJGRAM*	LOCAL	0	57221
INDATA	COMMON	0	101
OUTDATA	COMMON	0	101

ENTRY POINTS.

DSMF	22+	E	72+

EXTERNAL SYMBOLS.

IORR	IORW	CPC

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

DSMF	COMPASS 3.6-498.	80/07/20. 15.30.59.	PAGE	3
30 0301000034 +	10611			16
31 5160000001 +				17
32 5110000001 +				18
34 5111000003	53110			19
35 0311000037 +	5150000103 +			45
36 53050	0400000022 +			21
37 10611	5160000012 +			6
40 5110000012 +				7
42 5150000103 +	53050			22
43 0400000022 +				23
44 6140000001	63510			24
45 5111000001	53210			25
46 0545000034 +	10622			8
47 0130000000 X	5160000051 +			9
52 5150000103 +	53050			26
53 0400000022 +				27
54 6140000002	0545000075 +			28
55 5160000060 +	43700			46
56 0100000000 X				47
61 5110000104 +	63110			31
62 5111000002	53710			32
63 5150000103 +	53050			33
64 0400000022 +				10
65 6140000105 +	5144000001			11
66 5154000002	10655			34
67 53610	56110			35
70 53610	5111000001			36
71 0400000022 +	53050			37
72 000000000000000000				38
73 63405	20410			39
74 0400000072 +	21711			12
				13
				14
				15
				41
				49
				50
				51
				52
				3
				4
				54
				5
				6
				16
				17
				56
				42
				43
				44
				45
				46
				47

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

DSMF	COMPASS 3.6-498.	80/07/20. 15.39.59.	PAGE
75 5110000012 +	CL	WRITER OUTFILE,,RECALL	48
77 5110000012 +	CL	CLUSE OUTFILE,,RECALL	49
101 5150000103 +	SA5	ISAVE	18
53050	SAO	X5	19
102 0400000022 +	EQ	80,80,DSMF	50
103	1	1,AVE	20
104	1	ARGA	21
105	27345	1ABX	51
27452	27345	1ABY	52
57017	101	ZINK	5
57120	101	ZUNK	6
57221	END	END	55
433008 CM	STORAGE USED	266 STATEMENTS	28 SYMBOLS
	MODEL 73 ASSEMBLY	1.966 SECONDS	105 REFERENCES

TABLE XI. UPDATMF COMPUTER LISTING (CONT)

COMPASS 3.6-444. 80/07/23. 15.34.59. PAGE 5

USMF SYMBOLIC REFERENCE TABLE.

ARGA	104	PROGRAM*	2/49 S	3/33	4/07 L				
CL	75	PROGRAM*	3/29	4/01 L					
CPC	0	EXTERNAL*	3/05	3/14	4/02	4/03			
USMF	22	PROGRAM*	2/35 E	2/34 L	3/10	3/16	3/39	3/51	4/05
E	72	PROGRAM*	2/36 E	2/38	3/52 L	3/57			
INFILE	1	PROGRAM*	2/37 L	3/03 S	3/04	3/33			
IORR	0	EXTERNAL*	3/32						
IJRW	0	EXTERNAL*	3/26						
ISAVE	103	PROGRAM*	2/46 S	3/08	3/14	3/25	3/37	4/03	4/06 L
M	47	PROGRAM*	3/23 S	3/24 L					
N	56	PROGRAM*	3/30 S	3/32 L					
NUX	65	PROGRAM*	2/54	3/40 L					
OPOUT	37	PROGRAM*	3/07	3/11 L					
OPT	34	PROGRAM*	3/01	3/05 L					
OUTFILE	12	PROGRAM*	2/38 L	3/12 S	3/13	3/25	4/01	4/02	
RD	54	PROGRAM*	3/22	3/28 L					
R4	44	PROGRAM*	2/55	3/17 L					
SCP-ZN	0		3/05 D	3/05	3/14 D	3/14	4/02 D	4/03 D	4/03
SCP-VKCL	1		3/05 D	3/05	3/14 D	3/14	4/02 D	4/03 D	4/03
SCP-70	150		3/04 D	3/05	3/13 D	3/14	4/02 D	4/03	
TABX	105	PROGRAM*	2/38	3/40	4/08 L				
TABY	27452	PROGRAM*	2/39	4/09 L					
ZANK	0	OUTDATA	2/39	2/43 L					
ZINK	57017	PROGRAM*	2/38	2/38	2/38	2/38	4/10 L		
ZONK	0	INDATA	2/38	2/41 L					
ZUNK	57120	PROGRAM*	2/39	2/39	2/39	2/39	4/11 L		

SECTION 4 - PROGRAM NTYPGEN 11

4.1 PURPOSE

Program NTYPGEN 11 is used to (1) determine what needed information is missing from an existing net type code master file or (2) update an existing file by adding new data records or modifying data records presently contained in the master net type code file.

4.2 PRINCIPAL FUNCTIONS

Program NTYPGEN, shown in figure 16, has as input a program control card, net type code update cards or the unique net data file from CONVERT 1, and the master net type code file. Depending upon the type of input, the program checks the unique net file against the master file and outputs printed information identifying net types that are missing or contain discrepancies in the master net type file, or it produces an updated master net type code file for input to EDIT 8. The principal functions of program NTYPGEN are as follows:

a. Option 1 - identifies missing or erroneous data in an existing master net type code file.

(1) Compares net type numbers in the unique net data file with net type numbers in the master net type code file.

(2) Outputs a list of any net type numbers that are missing in the master file.

(3) Compares net names in the unique net file with net names in the master file.

(4) Outputs a list of net names in the unique net file that do not match net names in the master net type code file.

b. Option 2 - updates an existing master net type code file.

(1) Inserts, in proper sequence, data contained in update cards for new net types.

(2) Deletes data records for obsolete net types.

(3) Modifies net type codes in existing net type code records.

(4) Outputs an updated master net type code file, a listing of the new file in net number sort, and a listing of the new file in net type code sort.

4.3 INPUT/OUTPUT DESCRIPTION

Input to program NTYPGEN, depending upon the type of run, consists of update data cards or the unique net data file, along with the master

net type code file. Output includes either a list of missing or erroneous net types or two listings of the updated file--one sorted in ascending order on net number and one sorted in ascending order on net type code.

4.3.1 Input Format

The format of input data for program NTYPGEN is given in the following figures and tables:

- a. Program control card, figure 17, page 4-5.
- b. Update data card (16), figure 18, page 4-6.
- c. Unique net data file (3), table XII, page 4-8.
- d. Master net type code file (15), table XIII, page 4-10.

4.3.2 Output Format

Format for the updated master net type code file created by program NTYPGEN is given in table XIII, page 4-10.

4.4 PROCESS DESCRIPTION

Program NTYPGEN is written in FORTRAN EXTENDED for processing on the CDC CYBER 172 computer and requires 100000₈ words of central memory for compilation and execution.

a. Option 1 - identifies missing or erroneous data in an existing master net type code file.

(1) A net type record is read from the unique net data file and compared to the master net type code file. If a match is not found, the unique net record is written to the list of missing net types. If a match is found, the net names for the matching records are compared. If they agree, processing continues to the next record on the unique net file. If they do not agree, both net names are output to the list of net name discrepancies and the program proceeds to the next unique net data record.

(2) This process continues until the entire unique net data file has been checked.

b. Option 2 - updates an existing master net type code file.

(1) An update data card is read and matched for net type number against the old master net type code file. If no match is found, the update record is inserted in proper sequence as an addition to the updated master net type code file. If a match is found and the net type code field

of the update card is blank, the existing record is deleted from the updated file. If the net type code field is not blank, the data on the update card replace the data in the existing record when output to the updated file.

(2) This process is repeated until both the update card file and the old master file have been completed and a new master net type code file is produced.

4.5 PROGRAM OPERATION

Figure 19, page 4-11, is a listing of all system and UPDATE control cards necessary to execute NTYPGEN for a typical computer run.

4.6 LIMITATIONS

There are no limitations in program NTYPGEN.

4.7 RUNNING TIME

Running time is estimated at 1 minute per 100 update cards.

4.8 COMPUTER PROGRAM LISTING

A complete computer listing of program NTYPGEN is shown in table XIV, page 4-12, together with associated subroutines OUTFILE and MATCH, annotated to aid in the understanding of the program functioning.

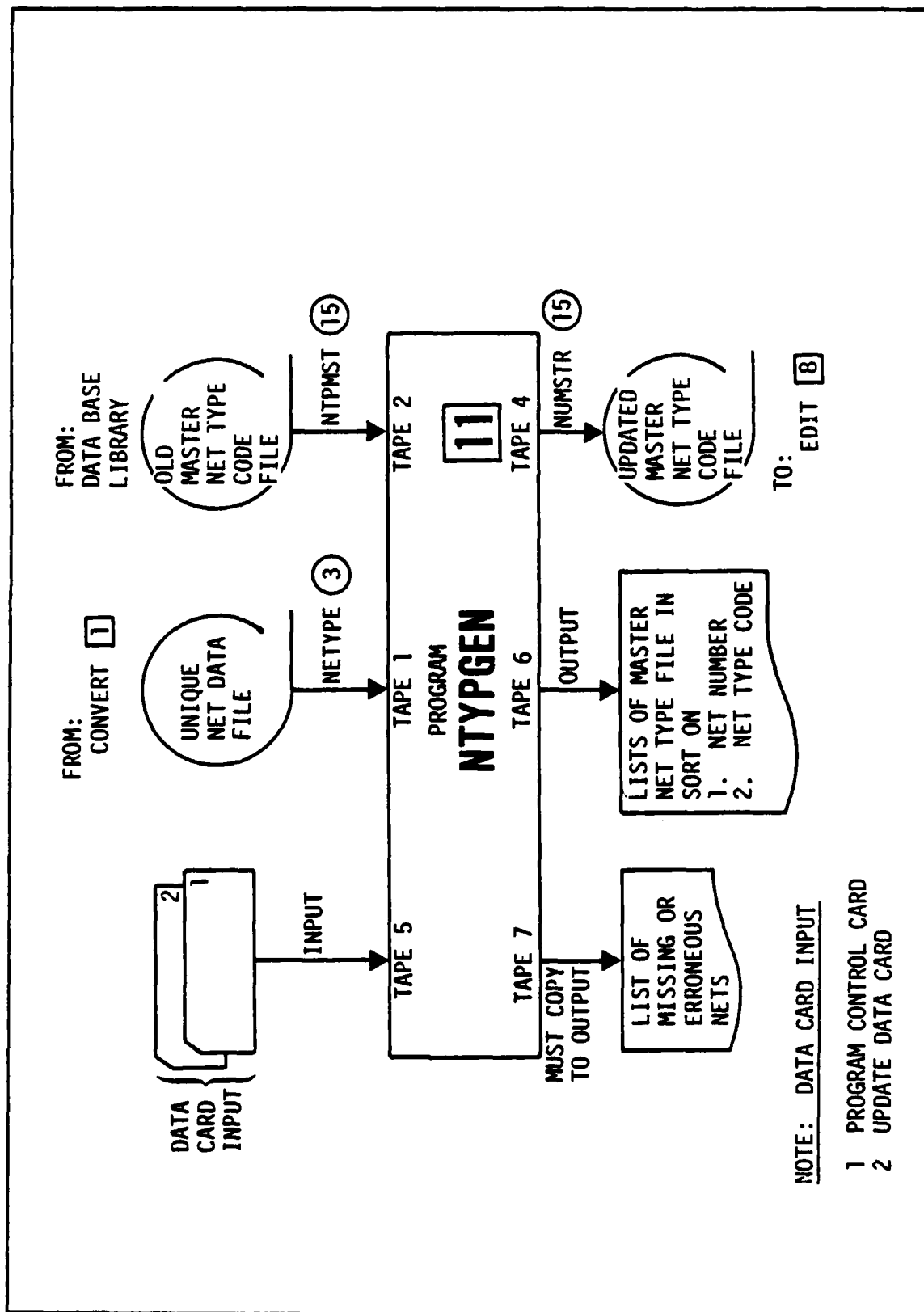


Figure 16. Program NTYPGEN, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL.</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-20	2A10	CLASS1, CLASS2	Security classification of data to be included in page headings.
2	21-30	A10	DATE	Current date to be included in page headings.
3	31-40	A10	IPRNT	PRINT ONLY. Field must be as shown if the program is run only to print the existing master net type code file.

Figure 17. NTYPGEN input, program control card.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-6	I6	NETNO	The first 6 digits of the net number.
2	7-10	I4	LTRP	The lower boundary of the troop range associated with the net number for this net type code.
3	12-15	I4	MTRP	The upper boundary of the troop range associated with the net number for this net type code.
4	16-43	2A10,A8	NAME(1),(2), (3)	The net name associated with the net number for this net type code.
5	46-51	R6	NTYPE	Net type code.

NOTES: 1. To delete, fill in fields 1-3.
2. To add new entry, fill in fields 1-5.
3. To modify an existing entry, fill in fields 1-3 and 4 or 5, or both.
4. The low and high troop numbers are omitted if a given net type code applies to all troops for one net type number.

Figure 18. NTYPGEN input, update data card (16) .

File Description: Unique Net Data File (3)
File Name: NETYPE Logical Unit: 1
Mode/Type: BCD Record Length: 43 characters
Origin: CONVERT 1
Used By: NTYPGEN 11

TABLE XII. UNIQUE NET DATA FILE (3)

Data Description	Field Size	Field Position	Remarks
Net number	10	1-10	A unique 10-digit code assigned to each net. Digits 1-6 indicate the net type number and 7-10 indicate the troop number of the net control station (NCS).
Net name	5	11-15	Blank
	28	16-43	Standard name assigned to this net type; left-justified.
	7	44-50	Blank

File Description: Master Net Type Code File (15)

File Name: NTPMST/NUMSTR Logical Unit: 2/4

Mode/Type: BCD Record Length: 51 characters

Origin: Data base file maintained by NTYPGEN (11)

Used By: NTYPGEN (11) ; EDIT (8)

Note: This file is sorted in ascending order on columns 1-10.

TABLE XIV. NTPGEN COMPUTER LISTING

```

PROGRAM NTPGEN      73/74   UPT-1      FIN 4.84498      80/07/28. 13.58.02      PAGE 1

1  PROGRAM NTPGEN(NETTYPE,NTPMST,NUMSTR,INPUT,OUTPUT,TAPEL=NETTYPE
5  1,TAPE2=NTPMST,TAPE3,TAPE4=NUMSTR,TAPE5=INPUT,TAPE6=OUTPUT,TAPE7)
COMMON /CONTENTS/ICOUNT(1),NIN,NOUT
COMMON /DATA/NETIN(1),LIRP(1),NIRP(1),NAME(1,3,7),NETYPE(17)
LOGICAL EOD,EUL
INTEGER CHPT,DELETE,REPLACE,SPLIT
INTEGER CLASS1,CLASS2,DATE,DATADR,HEADR(4)
DATA HEADR/10HNET TYPE ,10HNET NUMBE,10HCODE SORT),10HR SORT)
1/
10 DATA COPY,INSERT,DELETE,NUENTRY,REPLACE,MODIFY,SPLIT,DATADR,MODKEY
171,2,3,4,5,6,7,8,9/
DATA NTPCL,NETIN/140/
NAME(1,7)=10HNO ENTRY
NAME(2,7)=10H THESE NET
NAME(3,7)=8HS *
NTPBL=6R
NTPLE=7J= 10H
NIN=NUIN=NUP=0
EUL=EUD=.F.
10000 FORMAT(1H1,20X,0SUMMARY OF NET NAME MISMATCH*)
C----- IF CC 31-40 = PRINT ONLY THEN SKIP UPDATE SECTION
C-----
25 READ(5,10000)CLASS1,CLASS2,DATE,IPRNT
FORMAT(410)
IF(IPRNT.EQ.10HPRINT ONLY) GO TO 901
CALL SASUR(180)
CALL SMFILE(1,OUTPUT,PCODED,3,5,NUME)
CALL SMFILE(1,OUTPUT,PCODED,3,4,REWIN)
CALL SKEY (1,1,10,0,DISPLAY,PCOBOL6,PA)
CALL SMEND
DO 10 I=1,9
10 ICOUNT(1)=0
K=3
C
C C NDATA ENTITIES INDEXED BY K ARE:
C NET TYPES FROM DEPLOYMENT IF K=1
C FROM OLD MASTERFILE IF K=2
C UPDATES (FROM INPUT) IF K=3
C TO OUTPUT OR NEW MASTERFILE IF K=4
C MASTERFILE ENTITIES, TROUP NO K=5
C RANGE BLANK (SAVED) K=6
C MISCELLANEOUS SAVED DATA K=6
C
C 20 HEAD (K,10J20) NETIN(K),LIRP(K),NIRP(K),NAME(1,K),NAME(2,K),NAME(3
1,K),NETPL(K)
10020 FORMAT (16,14,1X,14,2A10,AN,2X,R6)
IF(EOD(K)) GO TO
30 NETIN(K)= 1000000*K
GO TO 45
40 IF(K.EQ.2) NIN=NIN+1
IF(K.EQ.3) NUP=NUP+1
45 IF(K.EQ.2)MODKEY=9
IF(LIRP(K).NE.0.AND.MIRP(K).EQ.0) MIRP(K)=LIRP(K)

```

TABLE XIV. NTPGEN COMPUTER LISTING (CONT)

PROGRAM	NTPGEN	73/74	OPT=1	FIN 4.8+496	80/07/24. 13.58.02	PAGE	2
60	IF(LTRP(1).GT.MTRP(1)) GO TO 190 IF(INEIND(2).LT.NETNU(3)) GO TO 100 IF(INEIND(2).GT.NETNU(3)) GO TO 150 IF(LTRP(2).EQ. 0) GO TO 90 IF(LTRP(3).EQ. 0) GO TO 150 IF(MTRP(2).LT.LTRP(3)) GO TO 100 IF(LTRP(2).GT.MTRP(3)) GO TO 150 IF(LTRP(3).LE.LTRP(2).AND.MTRP(3).GE.MTRP(2)) GO TO 200 IF(LTRP(2).LT.LTRP(3)) GO TO 250 GO TO 170 90 IF(LTRP(3).EQ.0) GO TO 200 100 K=2 IF(INEIND(2).GT.1000000) GO TO 300 IF(INEIND(2).NE.0) GO TO 120 GO TO 20 120 IF(MODKEY.EQ.SPLIT) GO TO 180 IF(MODKEY.EQ.MODIFY) GO TO 260 CALL OUTFILE(COPY,2,2) GO TO 300 130 K=3 IF(NTYPE(3).EQ.MTYPBL) GO TO 230 CALL OUTFILE(INSERT,3,3) GO TO 300 170 IF(NTYPE(3).EQ.MTYPBL) GO TO 230 MODKEY=MODIFY LTRP(6)=LTRP(2) LTRP(2)=MTRP(3)+1 MTRP(6)=MTRP(2) GO TO 150 180 CALL OUTFILE(SPLIT,2,6) K=2 MODKEY=4 GO TO 300 190 CALL OUTFILE(DATA,6,K,4) GO TO 20 200 IF(NTYPE(3).EQ.MTYPBL) GO TO 220 210 CALL OUTFILE(REPLACE,3,2) K=3 NETNU(2)=0 GO TO 300 220 IF(LTRP(2).EQ.LTRP(3).AND.MTRP(2).EQ.MTRP(3)) GO TO 280 IF(LTRP(2).LE.LTRP(3)) GO TO 230 IF(INEIND(6).NE.NETNU(2)) GO TO 230 IF(LTRP(6).EQ.LTRP(3).AND.MTRP(2).EQ.MTRP(3)) GO TO 270 230 K=3 CALL OUTFILE(MODIFY,3,3) GO TO 20 250 IF(NTYPE(3).EQ.MTYPBL) GO TO 230 IF(MTRP(3).LT.MTRP(2)) GO TO 290 K=2 LTRP(6)=LTRP(2) MTRP(6)=MTRP(2) MTRP(2)=LTRP(3)-1 260 CALL OUTFILE(MODIFY,2,6) GO TO 300 270 LTRP(2)=LTRP(6) 280 CALL OUTFILE(DELETE,2,2)	54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110					

TABLE XIV. NTPGEN COMPUTER LISTING (CONT)

PAGE 3

00/07/28. 13.58.02

FTN 4.8499

DPT=1

PROGRAM NTPGEN

73/74

```

115      K=3
      METND(2)=0
      GO TO 20

240      K=2
      ADDKEY =SPLIT
      LTRP(6)=METP(3)+1
      METP(6)=METP(2)
      METP(2)=LTRP(3)-1
      CALL OUTFILE(SPLIT,2,2)
      300 IF (METND(1).EQ.METND(K)) GO TO 340
      IF (METND(1).EQ.0) GO TO 320
      IF (METND(1).EQ.1000001) GO TO 900
      310 IF (METND(1).EQ.METND(5)) GO TO 390
      C NO MATCH FOR THIS DEPLOYMENT NET NUMBER
      CALL NOMATCH(1)
      320 READ (1,10320) METND(1),LTRP(1),NAME(1,1),NAME(2,1),NAME(3,1)
      10320 FORMAT(16,I4,5X,A10,A10,A8)
      IF (EOP(1)) 330,330
      330 METND(1)=1000001
      GO TO 300
      340 IF (METND(1).EQ.METND(K)) GO TO 360
      350 IF (MODKEY.EQ.SPLIT) GO TO 20
      IF (K.EQ.3) GO TO 20
      CALL OUTFILE(INSERT,3,3)
      METP(2)=METP(6)
      LTRPSAV=LTRP(6)
      LTRP(6)=LTRP(2)
      LTRP(2)=LTRPSAV
      K=3
      GO TO 300

165      360 IF (LTRP(K).NE.0) GO TO 370
      METND(5)=METND(K)
      NAME(1,5)=NAME(1,K)
      NAME(2,5)=NAME(2,K)
      NAME(3,5)=NAME(3,K)
      METP(5)=METP(K)
      GO TO 20

170      370 IF (LTRP(1).LT.LTRP(K)) GO TO 310
      IF (LTRP(1).GT.LTRP(K)) GO TO 350
      CALL MATCH(K)
      GO TO 320
      380 CALL MATCH(5)
      GO TO 320

180      900 WRITE (6,10400) (COUNT,METP,MOUT
10900 FORMAT (10,I7,0 UPDATE ACTIONS,70 COPIED INSERTED DELETED *,
1 IN (OLD DB) UPDATES OUT/3X,3(16,4X),0X,3(16,4X))
      CALL MATCH(7)
      IF (MUP.EQ.0) GO TO 950
      IPAGE=0
      ENDFILE 4
      METND 4
      K=4
      J=4
      GO TO 900

175      C----- HERE WHEN PRINT ONLY FROM ORIGINAL MASTER FILE
      901 K=2

```

TABLE XIV. NTPGEN COMPUTER LISTING (CONT)

```

PROGRAM NTPGEN 7/3/74 OPT=1 FIN 4.8+498 80/07/28. 13.58.02 PAGE 4

J=4
IPAGE=0
909 IASK=1H
LASTIN=0
910 IPAGE=IPAGE+1
10910 WRITE (6,10910) CLASS1,CLASS2,HEADR(J-2),HEADR(J),DATE,IPAGE
10910 FORMAT ('19,20X,2A10// NET TYPE CODE FILE 2,2A10// AS OF 9,10,60X,
1107// NET NUMBER TROOP RANGE NET NAME 9,8X,9 NET TYPE
2//)
90935 I=1,50
914 IF(I=0) 915,920
915 WRITE (6,10915)
10915 FORMAT ('+')
GO TO 935
920 READ(K,10920)MEIND,12D1G,IREST
10920 FORMAT(16,R4,1X,R4,3A10,R1,R1,R4)
IF(I=0) 925,930
925 EOD=F.
GO TO 915
C---- CHECK IF PRINT ONLY
930 IF(I=0) ME=10HPRINT ONLY) GO TO 933
C---- CHECK IF 2ND CHARACTER IS NUMERIC
IF(12D1G.EQ.1R2) GO TO 933
IF(12D1G.EQ.1R3) GO TO 933
IF(12D1G.EQ.1R4) GO TO 933
IF(12D1G.EQ.1R5) GO TO 933
IF(12D1G.EQ.1R6) GO TO 933
IF(12D1G.EQ.1R7) GO TO 933
IF(12D1G.EQ.1R8) GO TO 933
IF(12D1G.EQ.1R9) GO TO 933
GO TO 914
933 IF(LASTIN.LT.0) GO TO 934
IASK=1H
IF(MEIND(2).NE.5H) GO TO 934
C---- CHECK IF LAST NET (W/O TROOP NO.) IS THE SAME AS THIS NET
IF(MEIND(1).EQ.LASTIN) IASK=1H
LASTIN=MEIND(1)
934 WRITE(6,10930)MEIND,12D1G,IREST,IASK
10930 FORMAT(9A,16,5X,R4,6-0,R4,2X,2A10,AB,2X,1X,R1,R4,4X,A1)
935 CONTINUE
WRITE (6,10935) IPAGE,CLASS1,CLASS2
10935 FORMAT ('117A,110/60X,2A10)
IF (L=0) 940,910
940 IF (L=0) 940,950
950 EOL=.TRUE.
EOD=.F.
C---- CHECK IF PRINT ONLY
IF(I=0) ME=10HPRINT ONLY) GO TO 959
REIND=2
CALL SMSORT(60)
CALL SMFILE(SORT,PCODED,2,PREWIND)
CALL SMFILE(OUTPUT,PCODED,3,PREWIND)
CALL SMCT(156,1,6,0,40ISPLAY,PCORJL6,44)
CALL SMPT(RETAIN)
CALL SMEND
GO TO 980

```

TABLE XIV. NTYPGEN COMPUTER LISTING (CONT)

PROGRAM	NTYPGEN	7374	UPI-1	FIN 4.8+598	80/07/29. 13.58.02	PAGE	5
230	959	REWIND 3					
		REWIND 4					
		CALL SMSORT(50)					
		CALL SMFILE(ASUKT, CODED, 4, REWIND)					
		CALL SMFILE(OUTPUT, CODED, 3, REWIND)					
235		CALL SMKEY(6, 1, 5, 0, DISPLAY, C080C0C, 44)					
		CALL SMJPT(RETAIN)					
		CALL SHEND					
	980	K=3					
		J=3					
		IASK=1H					
240		LASIN=-1					
		IPAGE=0					
		GO TO 910					
	990	REWIND 7					
		REWIND 1					
		REWIND 2					
245		STOP					
		END OF JOB					
		END					

10FEB78 54
NTYPGEN 199
NTYPGEN 190
NTYPGEN 191
NTYPGEN 192
NTYPGEN 193
NTYPGEN 194
NTYPGEN 195
10FEB78 55
10FEB78 56
10FEB78 57
10FEB78 58
NTYPGEN 197
NTYPGEN 198
NTYPGEN 199
NTYPGEN 200
NTYPGEN 201
NTYPGEN 202
NTYPGEN 203

TABLE XIV. NTPGEN COMPUTER LISTING (CONT)

SUBROUTINE	OUTFILE	73/74	UPI-1	FIN 4.8+498	80/07/24. 13.50.02	PAGE	1
1	SUBROUTINE	OUTFILE(KEY,K,J)					NTPGEN 204
	COMMON	/NDATA/NCINJ(7),LIRP(7),MTRP(7),NAME(3,7),NTYPE(7)					NTPGEN 205
	COMMON	/CONFS/ICOUNT(9),NIN,NOUT					NTPGEN 206
5	INTEGER	WJRD(8),CCC					NLSYSZ 2
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 208
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 209
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 210
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 211
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 212
10	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 214
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 215
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 216
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 217
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 218
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 219
15	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 220
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 221
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 222
20	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 223
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 224
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 225
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 226
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 227
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 228
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 229
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 230
35	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 231
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 232
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 233
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 234
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 235
40	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 236
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 237
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 238
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 239
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 240
45	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 241
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 242
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 243
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 244
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 245
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 246
50	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 247
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 248
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 249
	DATA	WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8),WJRD(8)					NTPGEN 250

TABLE XIV. NTYPEGEN COMPUTER LISTING (CONT)

PAGE 1

80/07/78. 13.58.02

FTN 4.84499

SUBROUTINE MATCH 7/7/74 UPT-1

```

1  SUBROUTINE MATCH(K)
   COMMON /NDATA/NETNO(7),LTRP(7),MTRP(7),NAME(3,7),NTYPE(7)
   DIMENSION NAMES(3,20),NCT(20),LTRPS(20),MTRPS(20)
5  DATA NETPS,M-NETS/0,0,0,0,MSGW/0/
   IF(MSGN.EQ.1) GO TO 5
   MSGN=1
   GO TO 150
5  IF(NETNO(1).NE.NETS) GO TO 100
   IF(NTYPE(K).NE.NETPS) GO TO 100
10  GO TO 40
   ENTRY NMATCH
   IF(MSGN.EQ.2) GO TO 20
   MSGN=2
   GO TO 100
15  IF(NETNO(1).NE.NETS) GO TO 150
   DO 10 I=1,3
   IF(NAME(I,K).NE.NAME(I,1)) GO TO 40
10  CONTINUE
   NCT(1)=NCT(1)+1
   RETURN
20  DO 60 J=1,M
   DO 50 I=1,3
   IF(NAME(I,1).NE.NAMES(I,J)) GO TO 60
50  CONTINUE
   IF(LTRP(1).LT.LTRPS(J)) LTRPS(J)=LTRP(1)
   IF(LTRP(1).GT.MTRPS(J)) MTRPS(J)=LTRP(1)
   NCT(J)=NCT(J)+1
   RETURN
30  CONTINUE
   IF(M.EQ.20) GO TO 80
   M=M+1
   LTRPS(M)=LTRPS(M)-LTRP(1)
   DO 70 I=1,3
   NAMES(I,M)=NAME(I,1)
70  CONTINUE
   NCT(M)=1
   RETURN
80  NOTER=NOTER+1
   RETURN
90  IF(M.LE.1) GO TO 115
   WRITE (7,10100) NETS,LTRPS(1),MTRPS(1),NAMES(1,1),I=1,3,NCT(1),
   & NETPS,NOTER
10100 FORMAT (4X,NET NAME MISMATCH FOR NET NUMBER 4,16,215,2X,3A10,14,2X,
   & I6,110)
45  DO 110 J=2,M
   WRITE (7,10101) LTRPS(J),MTRPS(J),NAMES(1,J),I=1,3,NCT(J)
10101 FORMAT (40X,215,2X,3A10,14)
110  CONTINUE
115  IF(MSGN.EQ.2) GO TO 170
   DO 120 I=1,3
   NAMES(I,1)=NAME(I,K)
120  CONTINUE
   LTRPS(1)=10000
   MTRPS(1)=0
   M=1
   NETS=NETNO(K)
   NETPS=NTYPE(K)

```

PAGE 2

80107128. 13.58.02

0640R-5 N13

1.1.1

WOLFE PUBLISHING

```

NCT(1) = 0
NOTHER=0
GO TO 40
150 IF(M.EQ.0) GO TO 100
WRITE (7,10150) NETS,LTRPS(1),MTRPS(1),(NAME$1,1),I-1,3),NCT(1),
1MOTHER
10150 FORMAT (6H ***** * NU NET TYPE FOR NET NUMBER *,I6,2I5,2X,3A1
10,14,9X,110)
IF(M.GE.2) GO TO 101
160 IF(MSGN.EQ.-1) GO TO 115
170 DO 180 I=1,3
NAME$(1,1)=NAME(1,1)
180 CONTINUE
LTRPS(1)=LTRP(1)
MTRPS(1)=LTRP(1)
NCT(1)=1
M=1
NETS=NETND(1)
NETPS=0
NOTHER=0
RETURN
END

```

SECTION 5 - PROGRAM ANTENNA 12

5.1 PURPOSE

Program ANTENNA 12 ascertains whether antenna data are missing from the master general antenna data file and outputs a file of required antenna data for use in later processing.

5.2 PRINCIPAL FUNCTIONS

Program ANTENNA, shown in figure 20, uses as input the antenna code summary file and the master general antenna data file. It determines if any needed data are missing from the master file and outputs the required general antenna data file. The principal functions of program ANTENNA are as follows:

- a. Searches master general antenna data file for each antenna code in the deployment summary file.
- b. Outputs a list of any missing antenna codes.
- c. Outputs a file of required general antenna data for later processing.

5.3 INPUT/OUTPUT DESCRIPTION

Input to program ANTENNA includes a program control card, the antenna code summary file, and the master general antenna data file. Output consists of the required general antenna data file and a listing of any antenna codes not found in the master file.

5.3.1 Input Format

The format of input data is as follows:

- a. Program control card, figure 21, page 5-4.
- b. Antenna code summary file 12, table XV, page 5-6.
- c. Master general antenna data file 17, table XVI, page 5-8.

5.3.2 Output Format

The format of the required general antenna data file 18 is shown in table XVII, page 5-12.

5.4 PROCESS DESCRIPTION

- a. Program ANTENNA is written in FORTRAN EXTENDED for processing on the CDC CYBER 172 computer and requires 100000₈ words of central memory for compilation and execution.

b. The program control card, read from INPUT, contains the security classification of the data and a descriptive title to be included in page headings for output.

c. After initializing, the program reads an antenna code from the deployment summary file and checks to see if the code is presently in the master general antenna data base file. If the code is missing, a message is written to output, and processing continues to the next antenna code. If the code is found, the matching data record from the master file is output to the required general antenna data file. This process is continued until all antenna codes in the deployment summary have been processed.

5.5 PROGRAM OPERATION

Figure 22, page 5-14, is a listing of all system and UPDATE control cards necessary to execute ANTENNA for a typical computer run,

5.6 LIMITATIONS

There are no program limitations in program ANTENNA.

5.7 RUNNING TIME

Running time is estimated at 1 minute per 100 input antenna codes.

5.8 COMPUTER PROGRAM LISTING

Table XVIII, page 5-16, contains a complete computer listing for program ANTENNA, annotated to aid in the understanding of the program functioning.

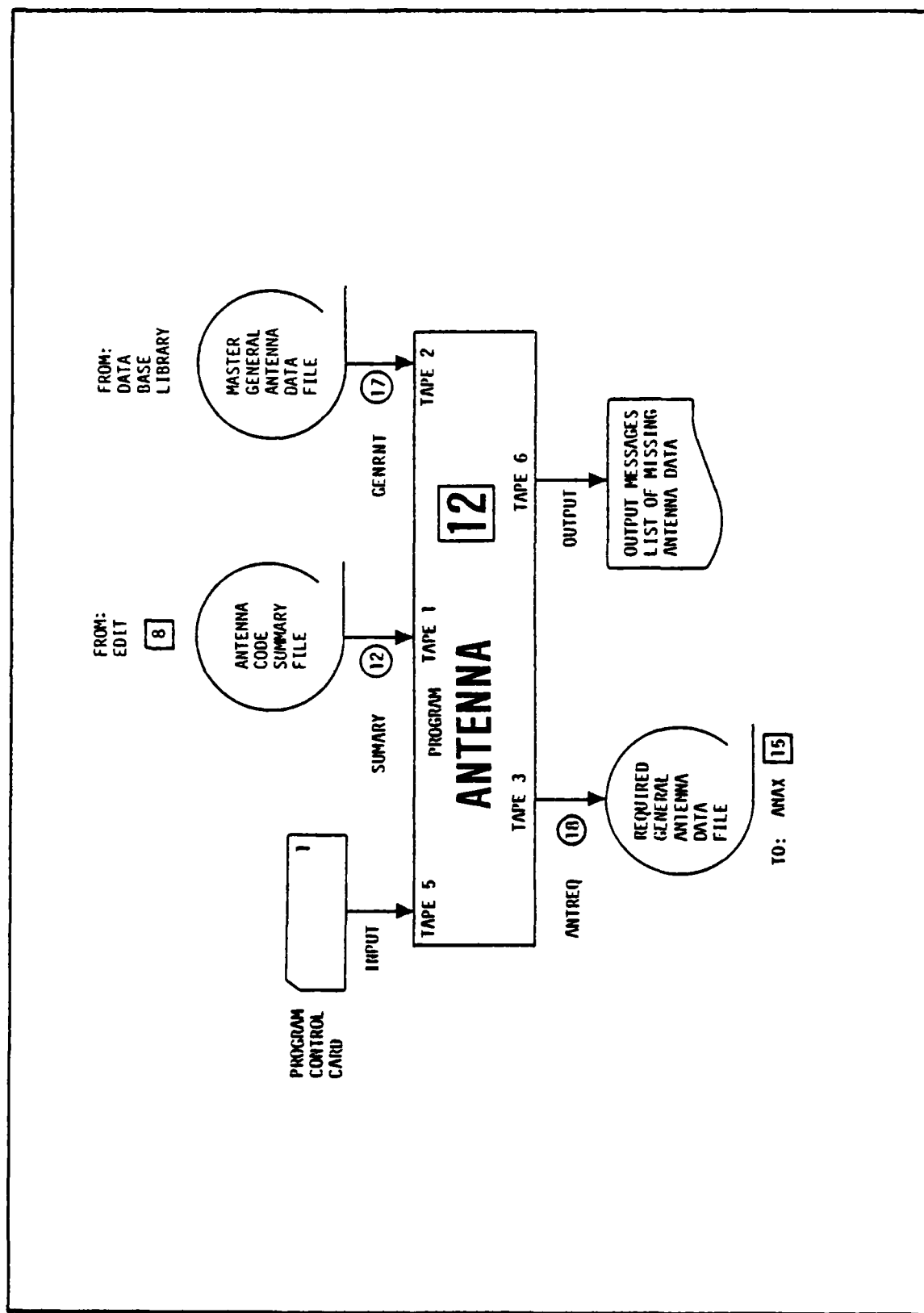


Figure 20. Program ANTENNA, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-10	A10	CLASS	Security classification.
2	11-30	2A10	TITLE	Title to be used in page headings for output.

Figure 21. ANTENNA input, program control card.

File Description: Antenna Summary Data File (12)
File Name: SUMARY Logical Unit: 1
Mode/Type: BCD Record Length: 5 characters
Origin: EDIT (8)
Used By: ANTENNA (12)

TABLE XV. ANTENNA SUMMARY DATA FILE (12)

Data Description	Field Size	Field Position	Remarks
Antenna code	1	1	Blank
	3	2-4	A 3-digit code assigned to each antenna type.
	1	5	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.

File Description: Master General Antenna Data File (17)
File Name: GENRNT Logical Unit: 2
Mode/Type: BCD Record Length: 72 characters
Origin: Data base file maintained by GANTUP (13)
Used By: ANTENNA (12) ; GANTUP (13)

TABLE XVI. MASTER GENERAL ANTENNA DATA FILE (17)

Data Description	Field Size	Field Position	Remarks
Antenna code	3	1-3	A 3-digit code assigned to each antenna type.
Antenna polarization	1	4	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.
Frequency	1	5	Blank
	8	6-13	Frequency (in kHz) down to which this set of data applies.
	1	14	Blank
Maximum antenna gain	4	15-18	Maximum possible gain for this antenna in tenths of a dB.
	1	19	Blank
Antenna nomenclature	15	20-34	Descriptive name of this antenna.
Security code	1	35	0 = unclassified, 1 = confidential, 2 = secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Directionality code	1	36	A 1-character code to indicate whether or not the antenna is directional: D = directional, N = nondirectional.

TABLE XVI. MASTER GENERAL ANTENNA DATA FILE (17) (CONT)

Data Description	Field Size	Field Position	Remarks
Antenna length	6	37-42	Length of antenna in thousandths of a foot, if applicable; otherwise, blank.
Antenna radius	4	43-46	Radius of antenna in thousandths of an inch, if applicable; otherwise, blank.
Antenna description	26	47-72	General description of type of antenna.

INTENTIONALLY BLANK

File Description: Required General Antenna Data File (18)

File Name: ANTREQ Logical Unit: 3

Mode/Type: BCD Record Length: 72 characters

Origin: ANTENNA (12)

Used By: ANAX (15)

Note: This file is sorted in ascending order on columns 1-4 and
in descending order on columns 6-13.

TABLE XVII. REQUIRED GENERAL ANTENNA DATA FILE (18)

Data Description	Field Size	Field Position	Remarks
Antenna code	3	1-3	A 3-digit code assigned to each antenna type.
Antenna polarization	1	4	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.
Frequency	1	5	Blank
	8	6-13	Frequency (in kHz) down to which this set of data applies.
	1	14	Blank
Maximum antenna gain	4	15-18	Maximum possible gain for this antenna in tenths of a dB.
	1	19	Blank
Antenna nomenclature	15	20-34	Descriptive name of this antenna.
Security code	1	35	0 = unclassified, 1 = confidential, 2 = secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Directionality code	1	36	A 1-character code to indicate whether or not the antenna is directional: D = directional, N = nondirectional.

TABLE XVII. REQUIRED GENERAL ANTENNA DATA FILE (18) (CONT)

Data Description	Field Size	Field Position	Remarks
Antenna length	6	37-42	Length of antenna in thousandths of a foot, if applicable; otherwise, blank.
Antenna radius	4	43-46	Radius of antenna in thousandths of an inch, if applicable; otherwise, blank.
Antenna description	26	47-72	General description of type of antenna.

```

( 1) MISEQIP,13777.
( 2) USER(00 USER ID 00)
( 3) CHARGE(10000000)
( 4) COMMENT. TASK NAME
( 5) COMMENT. MISEQIP/OVERLAP/ANTENNA
( 6) COMMENT.
( 7) COMMENT.
( 8) VNTIEQSMRY=AAA,REQDATA=BBB
( 9) RESOURCPE=1,OL=1
(10) GET(CALSUM=CLSHRYU/JIN,NA)
(11) GET(EQIPCKU=EQIPCKU/NA)
(12) MAP(PART)
(13) UPDATE(P=EQIPCKU,Q)
(14) UNLOAD(EQIPCKU)
(15) FIN(1,N=3,PL=999999,B=MISEQIP)
(16) FIN(1,N=3,PL=999999,B=OVERLAP)
(17) FIN(1,N=3,PL=999999,B=ANTCOMP)
(18) LABEL(EQSMRY,R=PD,R=MT,D=PE,L=TASKNAME)
(19) COPYCF(EQSMRY,EQSUM)
(20) COPYCF(EQSMRY,SUMARY)
(21) UNLOAD(EQSMRY)
(22) REWIND(EQSUM,SUMARY)
(23) 000 GET INDIRECT ACCESS SECRET EQUIPMENT CLASS DATABASE FILE
(24) 000 GET INDIRECT ACCESS SECRET GENERAL ANTENNA DATABASE FILE
(25) MISEQIP.
(26) COPYSBF(EQIP,OUTPUT)
(27) UNLOAD(EQIP,SUM)
(28) COPYSBF(EQREQ,OUTPUT)
(29) REWIND(EQREQ)
(30) COPYCRL(OUTPUT,IN)
(31) REWIND(IN)
(32) OVERLAP.
(33) UNLOAD(1,N=TAPE3,TAPE4,CALSUM)
(34) COPYSBF(AMATK,OUTPUT)
(35) REWIND(AMATK)
(36) ANTCOMP.
(37) COPYSBF(GENRNT,OUTPUT)
(38) UNLOAD(SUMARY,GENRNT)
(39) COPYSBF(AMTR,OUTPUT)
(40) REWIND(AMTR)
(41) LABEL(REQDATA,P)=J,NT,D=PE,L=TASKNAME)
(42) COPYCF(EQREQ,REQDATA)
(43) COPYCF(AMATK,REQDATA)
(44) COPYCF(AMTR,REQDATA)
(45) REWIND(REQDATA)
(46) 7-8-9 CARU
(47) 00 TASK CHANGES FOR MISEQIP (IF ANY)
(48) 00 TASK CHANGES FOR OVERLAP (IF ANY)
(49) 00 TASK CHANGES FOR ANTENNA (IF ANY)
(50) 00 CUMPILE MISEQIP/OVERLAP/ANTENNA

```

Figure 22. ANTENNA (MISEQIP/OVERLAP/ANTENNA) control card listing.

(51)	7-8-9	CARD	
(52)	SECRET	DEPLOYED	
(53)	8c		
(54)	7-8-9	CARD	
(55)	SECRET	TRUE	
(56)	7-8-9	CARD	
(57)	SECRET	TASK NAME	
(58)	7-8-9	CARD	
(59)	6-7-8-9	CARD	

QSGNOXF

Figure 22. ANTENNA (MISEQIP/OVERLAP/ANTENNA) control card listing (cont).

TABLE XVIII. ANTENNA COMPUTER LISTING

PAGE 1

80/07/28. 13.57.04

FTN 4.8*498

PROGRAM ANTENNA 73/74 OPT-1

```

1  PROGRAM ANTENNA(INPUT,OUTPUT,SUMARY,GENRMT,ANTREQ,TAPE1-SUMARY,
2  TAPE2-GENRMT,TAPE3-ANTREQ,TAPE5-INPUT,TAPE6-OUTPUT)
3  DIMENSION TITLE(2),IANT(7)
4  INTEGER TITLE,ANTS,PULS,ANTG,POLG
5  LOGICAL OUTPUTS,ENDGSH
6  NPAGE=0
7  LINE=70
8  LSTANTS=0
9  LSTPULS=0
10 ENDGSH=.F.
11 CALL SMSORT(40)
12 CALL SMFILE(ASORT,CODED,2)
13 CALL SMFILE(OUTPUT,CODED,2)
14 CALL SMKEY(1,1,4,0,DISPLAY,COBOL6,PA)
15 CALL SMKEY(6,1,8,0,DISPLAY,COBOL6,PD)
16 CALL SMJPT(RETAIN)
17 CALL SMEND
18 REWIND 2
19 CALL SMSORT(1,0)
20 CALL SMFILE(ASORT,CODED,1)
21 CALL SMFILE(OUTPUT,CODED,1)
22 CALL SMKEY(2,1,4,0,DISPLAY,COBOL6,PA)
23 CALL SMEND
24 REWIND 1
25 HEAD (5,1000) CLASS,TITLE
26 1000 FORMAT (3A10)
27 READ (2,1010) ANTG,POLG,IANT
28 1010 FORMAT (A3,R1,6A10,A8)
29 10 READ (1,1020) ANTS,PULS
30 1020 FORMAT (11A,A3,R1)
31 IF (EOF(1))GO,15
32 15 IF (ENDGSH) GO TO 60
33 IF (ANTS.EQ.3H 1) GO TO 10
34 IF (ANTS.EQ.LSTANTS.AND.PULS.EQ.LSTPULS) GO TO 10
35 LSTANTS=ANTS
36 LSTPULS=PULS
37 OUTPUTS=.F.
38 20 IF (ANTG.EQ.ANTS.AND.POLG.EQ.PULS) GO TO 30
39 IF (ANTG.LT.ANTS.OR.(ANTS.EQ.ANTS.AND.POLG.LT.PULS)) GO TO 40
40 IF (ANTG.GT.ANTS.OR.(ANTS.EQ.ANTS.AND.POLG.GT.PULS)) GO TO 50
41 WRITE (6,1030) ANTG,POLG,ANTS,PULS
42 1030 FORMAT (10 FAILED IF TESTS *,2(A3,3H,R1,7X))
43 GO TO 10
44 30 WRITE (3,1010) ANT,POL,IANT
45 OUTPUTS=.T.
46 40 READ (2,1010) ANTG,POLG,IANT
47 IF (EOF(2))GO,20
48 50 IF (OUTPUTS) GO TO 10
49 LINE=LINE+1
50 IF (LINE.LT.60) GO TO 60
51 WRITE (6,1040) CLASS,CLASS,TITLE,NPAGE
52 1040 FORMAT (10H,62X,A10/102X,A10/10X*MISSING ANTENNA DATA FOR *,2A10,
53 1 70X*PAGE*15//10X*ANTENNA CODE*/6X*AND POLARITY*/)
54 LINE=6
55 60 WRITE (6,1050) ANTS,PULS
56 1050 FORMAT (10X,A3,R1)
57 GO TO 10

```

FTNANTA 1
FTNANTA 2
14MAR74 2
FTNANTA 3
ANTENNA 7
ANTENNA 8
ANTENNA 9
ANTENNA 10
ANTENNA 11
ANTENNA 12
SRTADD 1
SRTADD 2
SRTADD 3
SRTADD 4
SRTADD 5
SRTADD 6
SRTADD 7
SRTADD 8
SRTADD 9
SRTADD 10
SRTADD 11
SRTADD 12
SRTADD 13
SRTADD 14
ANTENNA 13
ANTENNA 14
14MAR74 3
14MAR74 4
ANTENNA 17
ANTENNA 18
FTNANTA 4
ANTENNA 20
ANTENNA 21
ANTENNA 22
ANTENNA 23
ANTENNA 24
ANTENNA 25
ANTENNA 26
ANTENNA 27
ANTENNA 28
ANTENNA 29
ANTENNA 30
ANTENNA 31
14MAR74 5
ANTENNA 33
14MAR74 6
FTNANTA 5
ANTENNA 36
ANTENNA 37
ANTENNA 38
ANTENNA 39
SRTADD 15
ANTENNA 41
ANTENNA 42
ANTENNA 43
ANTENNA 44
ANTENNA 45

46	ANTIENNA
47	ANTIENNA
48	ANTIENNA
16	SRTADD
17	SRTADD
18	SRTADD
19	SRTADD
6	FINANTIA

SECTION 6 - PROGRAM GANTUP 13

6.1 PURPOSE

Program GANTUP 13 adds new data records or modifies data records presently contained in the master general antenna data file.

6.2 PRINCIPAL FUNCTIONS

Program GANTUP, shown in figure 23, accepts as input the old master general antenna data file, along with general antenna update data cards, and outputs an updated master general antenna data file for use in program ANTENNA 12. The main functions of program GANTUP are as follows:

- a. Inserts, in proper sequence, data contained in update cards for new general antennas.
- b. Deletes data records for old general antennas.
- c. Modifies data fields in existing general antenna records.
- d. Prints updates, errors, and a listing of the updated master general antenna data file.

6.3 INPUT/OUTPUT DESCRIPTION

Input to program GANTUP includes a program control card, update data cards, and the old master general antenna data file. Output is the updated master general antenna data file for input to program ANTENNA 12.

6.3.1 Input Format

Formats for input to program GANTUP are given in the following figures and table:

- a. Program control card, figure 24, page 6-4.
- b. Update data card 19, figure 25, page 6-5.
- c. Master general antenna data file 17, table XIX, page 6-8.

6.3.2 Output Format

The format of the updated master general antenna data file created by program GANTUP is given in table XIX.

6.4 PROCESS DESCRIPTION

- a. Program GANTUP is written in COBOL for processing on the CDC CYBER 172 computer and requires 60000₈ words of central memory for execution.

b. The update data card file is read in and sorted in ascending order on antenna code and polarity (columns 1-4) and in descending order on frequency (columns 6-13).

c. An update record is read and checked for type of update. If a new antenna is to be added, the update record is inserted in the proper sequence in the updated master general antenna data file. For a deletion, the entire record is removed from the updated file. To modify one or more fields, the matching record is found on the old master file and the new data are inserted in the record output to the updated antenna file.

d. This process is repeated until all the updated cards have been completed and the updated master general antenna data file is output.

6.5 PROGRAM OPERATION

Figure 26, page 6-10, is a listing of all system and UPDATE cards necessary to execute GANTUP for a typical computer run.

6.6 LIMITATIONS

There are no program limitations in program GANTUP.

6.7 RUNNING TIME

Running time is estimated at 1 minute per 100 update records.

6.8 COMPUTER PROGRAM LISTING

A complete computer listing of program GANTUP is presented in table XX, page 6-11, annotated to aid in the understanding of the program functioning.

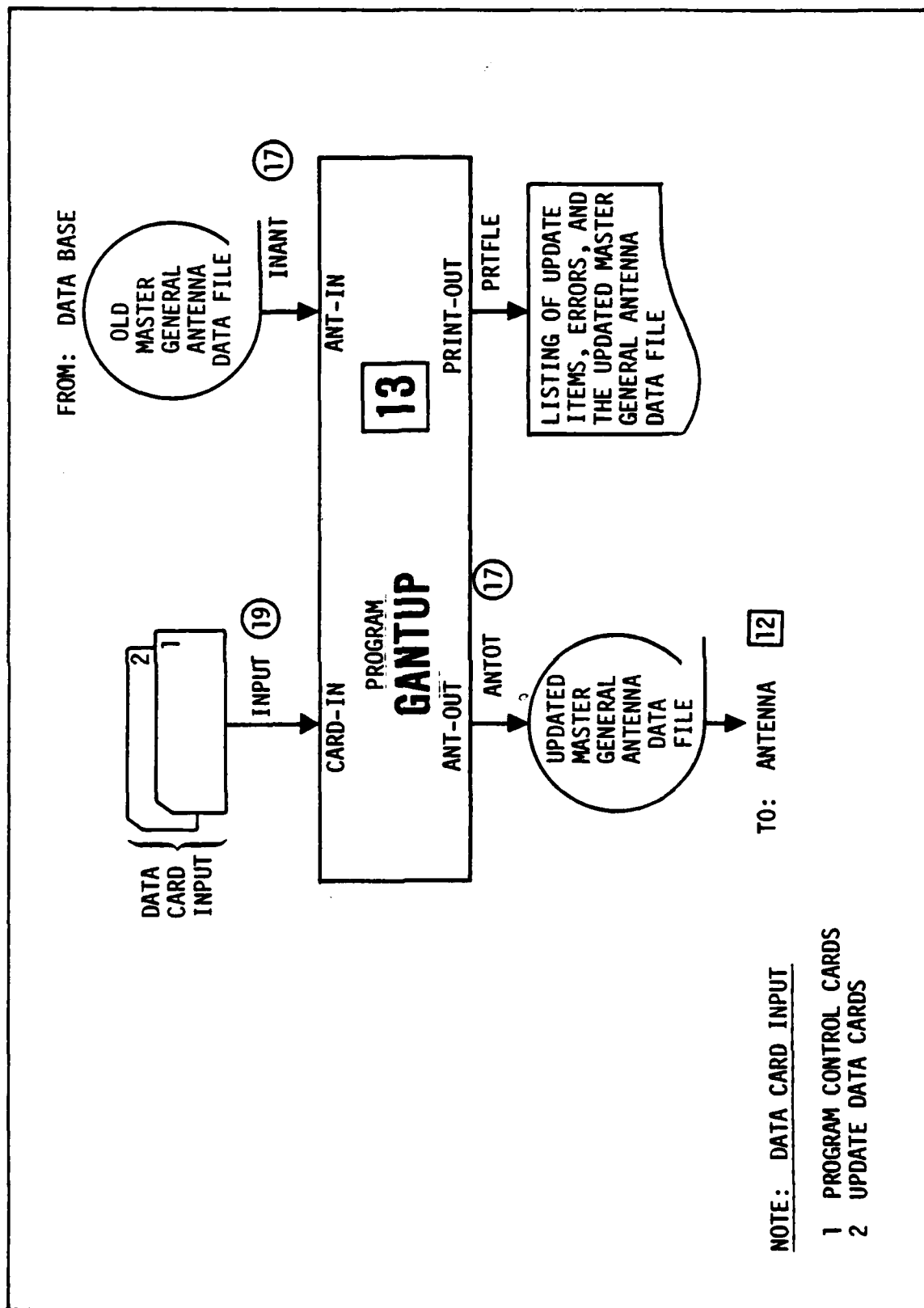


Figure 23. Program GANTUP, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-4		CD-TYP	CLAS. Must be exactly as shown for card ID.
2	6-17		CD-DTA	Security classification to be included in page headings. Must not be blank.

Figure 24. GANTUP input, program control card.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-3	A3	S-1	A 3-digit code assigned to each antenna type.
2	4	A1	S-2	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.
	5			Blank
3	6-13	A8	S-3	Frequency (in kHz) down to which this set of data applies.
	14			Blank
4	15-18	A4	S-4	Maximum possible gain for this antenna in tenths of a dB.
	19			Blank
5	20-34	A10,A5	S-5	Descriptive name of this antenna.

Figure 25. GANTUP input, update data card (19) .

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
6	35	A1	S-6	0 = unclassified, 1 = confidential, 2 = secret, 3 = top secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
7	36	A1	S-7	A 1-character code to indicate whether or not the antenna is directional: D = directional, N = nondirectional.
8	37-42	A6	S-8	Length of antenna in thousandths of a foot, if applicable; otherwise, blank.
9	43-46	A4	S-9	Radius of antenna in thousandths of an inch, if applicable; otherwise, blank.
10	47-72	2A10,A6	S-10	General description of type of antenna.

REMARKS:

To add a new antenna, columns 1-72 must be used.
 To delete all members of a set, fill in columns 1-4.
 To delete one member of a set or to modify the frequency or gain fields of an existing member of a set, fill in columns 1-18.
 To modify any field or fields other than frequency or gain for an existing set, fill in columns 1-4 and any fields to be modified in columns 20-72.

Figure 25. GANTUP input, update data card (19) (cont).

File Description: Master General Antenna Data File (17)
File Name: INANT/ANTOT Logical Unit: ANT-IN/ANT-OT
Mode/Type: BCD Record Length: 72 characters
Origin: Data base file maintained by program GANTUP (13)
Used By: ANTENNA (12) ; GANTUP (13)

NOTE: This file is sorted in ascending order on columns 1-4 and
in descending order on columns 6-13.

TABLE XIX. MASTER GENERAL ANTENNA DATA FILE (17)

Data Description	Field Size	Field Position	Remarks
Antenna code	3	1-3	A 3-digit code assigned to each antenna type.
Antenna polarization	1	4	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.
Frequency	1	5	Blank
	8	6-13	Frequency (in kHz) down to which this set of data applies.
	1	14	Blank
Maximum antenna gain	4	15-18	Maximum possible gain for this antenna in tenths of a dB.
	1	19	Blank
Antenna nomenclature	15	20-34	Descriptive name of this antenna.
Security code	1	35	0 = unclassified, 1 = confidential, 2 = secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Directionality code	1	36	A 1-character code to indicate whether or not the antenna is directional: D = directional, N = nondirectional.

TABLE XIX. MASTER GENERAL ANTENNA DATA FILE (17) (CONT)

Data Description	Field Size	Field Position	Remarks
Antenna length	6	37-42	Length of antenna in thousandths of a foot, if applicable; otherwise, blank.
Antenna radius	4	43-46	Radius of antenna in thousandths of an inch, if applicable; otherwise, blank.
Antenna description	26	47-72	General description of type of antenna.

	JGR	GEN ANT UPDATE
(1)	GANTUP,T777	
(2)	USER(00 USER ID 00)	
(3)	CHARGE(NA000,N)	
(4)	COMMENT.	
(5)	COMMENT. TASK NAME	
(6)	COMMENT. GEN ANT UPDATE	
(7)	COMMENT.	
(8)	GET(ANT-GANTUP,NA)	
(9)	UPDATE(P-ANT,Q)	
(10)	COBOL511-COMPILE,8-GANT	
(11)	GET(LINANT-ALLGENS)	
(12)	FILE(LINANT,BT-C,RT-Z,FL-00)	
(13)	FILE(ANTOT,BT-C,RT-Z,FL-00)	
(14)	GANT.	
(15)	REPLACE(LINANT-GENORPS)	
(16)	REPLACE(ANTOT-ALLGENS)	
(17)	7-8-9 CARD	
(18)	*/ TASK CHANGES FOR GANTUP (IF ANY)	
(19)	*COMPILE GANTUPD	
(20)	7-8-9 CARD	
(21)	CLAS SECRET	
(22)	000 UPDATES FOR GENERAL ANTENNA DATA GO HERE	
(23)	7-8-9 CARD	
(24)	6-7-8-9 CARD	

Figure 26. GANTUP control card listing.

TABLE XX. GANTUP COMPUTER LISTING

CDC CARD 5.3 - LEVEL 498	SOURCE LISTING OF GANTUPD	AUT- 66/CDC/CDCS1	80/07/29. 11.49.47.	PAGE	1
1	IDENTIFICATION DIVISION.				2
2	PROGRAM-10. GANTUPD.				3
3	AUTUM. RASMUSSEN.				4
4	DATE-COMPILED. JULY 29, 1980				5
5	*REMARKS. THIS PROGRAM WILL UPDATE THE ANTENNA FILE AND THEN				6
6	* PRODUCE A PRINTED REPORT OF THE UPDATED ANTENNA FILE.				7
7	ENVIRONMENT DIVISION.				8
8	CJNFIGURATION SECTION.				9
9	SOURCE-COMPUTER. 6500.				10
10	OBJECT-COMPUTER. 6500.				11
11	SPECIAL-NAMES.				12
12	ADDITIONAL IS OLP.				13
13	INPUT-OUTPUT SECTION.				14
14	FILE-CONTROL.				15
15	SELECT CARD-IN ASSIGN TO INPUT.				16
16	SELECT ANT-IN ASSIGN TO INANT.				17
17	SELECT ANT-OT ASSIGN TO ANTOT.				18
18	SELECT SORT-FILE ASSIGN TO DISK2.				19
19	SELECT PRINT-OUT ASSIGN TO OUTPUT.				20
20	DATA DIVISION.				21
21	FILE SECTION.				22
22	FD CARD-IN				23
23	LABEL RECORDS ARE OMITTED				24
24	DATA RECORD IS COIN.				25
25	01 COIN.				26
26	02 CD-TYP PIC X(4).				27
27	02 FILLER PIC X(11).				28
28	02 CO-OTA PIC X(75).				29
29	FD ANT-IN				30
30	LABEL RECORDS ARE OMITTED				31
31	DATA RECORD IS ANTIM.				32
32	01 ANTIM.				33
33	02 A-1 PIC X(103).				34
34	02 A-2 PIC X(101).				35
35	02 FILLER PIC X(101).				36
36	02 A-3 PIC X(108).				37
37	02 FILLER PIC X(101).				38
38	02 A-4 PIC X(104).				39
39	02 FILLER PIC X(101).				40
40	02 A-5 PIC X(115).				41
41	02 A-6 PIC X(101).				42
42	02 A-7 PIC X(101).				43
43	02 A-8 PIC X(106).				44
44	02 A-9 PIC X(104).				45
45	02 A-10 PIC X(126).				46
46	FD ANT-OT				47
47	LABEL RECORDS ARE OMITTED				48
48	DATA RECORD IS ANTOU.				49
49	01 ANTOU.				50
50	02 A01 PIC X(103).				51
51	02 A02 PIC X(101).				52
52	02 FILLER PIC X(101).				53
53	02 A03 PIC X(108).				54
54	02 FILLER PIC X(101).				55

PAGE 2

80/07/29. 11.49.47.

ADPT- 66/CDC/CDCS1

SOURCE LISTING OF GANTUPD

DOC CODE 5.3 - LEVEL 408

55	02 A04	PIC X(4).	GANTUPD	55
56	02 FILLER	PIC X(01).	GANTUPD	56
57	02 A05	PIC X(15).	GANTUPD	57
58	02 A06	PIC X(01).	GANTUPD	58
59	02 A07	PIC X(01).	GANTUPD	59
60	02 A08	PIC 999V99.	GANTUPD	60
61	02 A09	PIC 9999.	GANTUPD	61
62	02 A010	PIC X(26).	GANTUPD	62
63	SD S0MT-FILE		GANTUPD	63
64	DATA RECORD IS SRT-REC.		GANTUPD	64
65	01 SRT-REC.		GANTUPD	65
66	02 SRT-KEY.		GANTUPD	66
67	03 S-1	PIC X(3).	GANTUPD	67
68	03 S-2	PIC X(1).	GANTUPD	68
69	08 VAL-S2	VALUE # # #A# THRU #E# #V# #H#.	GANTUPD	69
70	03 FILLER	PIC X(1).	GANTUPD	70
71	03 S-3	PIC X(8).	GANTUPD	71
72	08 VAL-S3	VALUE SPACE #00000000# THRU #99999999#.	GANTUPD	72
73	02 FILLER	PIC X(01).	GANTUPD	73
74	02 S-F4-F10.		GANTUPD	74
75	03 S-4	PIC X(04).	GANTUPD	75
76	03 FILLER	PIC X(01).	GANTUPD	76
77	03 S-5	PIC X(15).	GANTUPD	77
78	03 S-6	PIC X(01).	GANTUPD	78
79	08 VAL-S6	VALUE # # #0# THRU #5#.	GANTUPD	79
80	03 S-7	PIC X(01).	GANTUPD	80
81	08 VAL-S7	VALUE # # #N# #D#.	GANTUPD	81
82	03 S-8	PIC X(06).	GANTUPD	82
83	08 VAL-S8	VALUE # # #01# THRU #99#	GANTUPD	83
84		# #001# THRU #999#	GANTUPD	84
85		# #0001# THRU #9999#	GANTUPD	85
86		#00001# THRU #99999#.	GANTUPD	86
87	03 S-9	PIC X(04).	GANTUPD	87
88	08 VAL-S9	VALUE # # #01# THRU #999#	GANTUPD	88
89		#0001# THRU #9999#.	GANTUPD	89
90			GANTUPD	90
91			GANTUPD	91
92			GANTUPD	92
93	03 S-10	PIC X(26).	GANTUPD	93
94	FD PRINT-OUT		GANTUPD	94
95	LABEL RECORDS ARE LIMITED		GANTUPD	95
96	REPORTS ARE CARD-RPT ANT-RPT.		GANTUPD	96
97	WORKING-STORAGE SECTION.		GANTUPD	97
98	77 CI-CD	PIC 9(7) VALUE ZERO.	GANTUPD	98
99	77 CI-DEL	PIC 9(7) VALUE ZERO.	GANTUPD	99
100	77 CI-ADD	PIC 9(7) VALUE ZERO.	GANTUPD	100
101	77 CI-CHG	PIC 9(7) VALUE ZERO.	GANTUPD	101
102	77 CI-ALN	PIC 9(7) VALUE ZERO.	GANTUPD	102
103	77 CI-AUT	PIC 9(7) VALUE ZERO.	GANTUPD	103
104	77 CI-EN	PIC 9(7) VALUE ZERO.	GANTUPD	104
105	77 CI-UERR	PIC 9(7) VALUE ZERO.	GANTUPD	105
106	77 CI-SRT	PIC 9(7) VALUE ZERO.	GANTUPD	106
107	77 S-USED	PIC X(1) VALUE #9#.	GANTUPD	107
108		PIC X(20) VALUE SPACE.	GANTUPD	108

COLUMN	1	2	3	4	5	6	7	8
1	1	2	3	4	5	6	7	8
2	1	2	3	4	5	6	7	8
3	1	2	3	4	5	6	7	8
4	1	2	3	4	5	6	7	8
5	1	2	3	4	5	6	7	8
6	1	2	3	4	5	6	7	8
7	1	2	3	4	5	6	7	8
8	1	2	3	4	5	6	7	8
9	1	2	3	4	5	6	7	8
10	1	2	3	4	5	6	7	8
11	1	2	3	4	5	6	7	8
12	1	2	3	4	5	6	7	8
13	1	2	3	4	5	6	7	8
14	1	2	3	4	5	6	7	8
15	1	2	3	4	5	6	7	8
16	1	2	3	4	5	6	7	8
17	1	2	3	4	5	6	7	8
18	1	2	3	4	5	6	7	8
19	1	2	3	4	5	6	7	8
20	1	2	3	4	5	6	7	8
21	1	2	3	4	5	6	7	8
22	1	2	3	4	5	6	7	8
23	1	2	3	4	5	6	7	8
24	1	2	3	4	5	6	7	8
25	1	2	3	4	5	6	7	8
26	1	2	3	4	5	6	7	8
27	1	2	3	4	5	6	7	8
28	1	2	3	4	5	6	7	8
29	1	2	3	4	5	6	7	8
30	1	2	3	4	5	6	7	8
31	1	2	3	4	5	6	7	8
32	1	2	3	4	5	6	7	8
33	1	2	3	4	5	6	7	8
34	1	2	3	4	5	6	7	8
35	1	2	3	4	5	6	7	8
36	1	2	3	4	5	6	7	8
37	1	2	3	4	5	6	7	8
38	1	2	3	4	5	6	7	8
39	1	2	3	4	5	6	7	8
40	1	2	3	4	5	6	7	8
41	1	2	3	4	5	6	7	8
42	1	2	3	4	5	6	7	8
43	1	2	3	4	5	6	7	8
44	1	2	3	4	5	6	7	8
45	1	2	3	4	5	6	7	8
46	1	2	3	4	5	6	7	8
47	1	2	3	4	5	6	7	8
48	1	2	3	4	5	6	7	8
49	1	2	3	4	5	6	7	8
50	1	2	3	4	5	6	7	8
51	1	2	3	4	5	6	7	8
52	1	2	3	4	5	6	7	8
53	1	2	3	4	5	6	7	8
54	1	2	3	4	5	6	7	8
55	1	2	3	4	5	6	7	8
56	1	2	3	4	5	6	7	8
57	1	2	3	4	5</			

TABLE XX. GANTUP COMPUTER LISTING (CONT)

COC C000L 5.3 - LEVEL 498 SOURCE LISTING OF GANTUPD AOPT= 66/CDC/CDCS1 80/07/29. 11.49.47. PAGE 3

109	01 DATT.		GANTUPD	110
110	02 DT-YV PIC X(02).		GANTUPD	111
111	02 DT-NM PIC X(02).		GANTUPD	112
112	02 DT-00 PIC X(02).		GANTUPD	113
113	01 ER-POS.		GANTUPD	114
114	02 ER-POS1 PIC X(3).		GANTUPD	115
115	02 ER-POS2 PIC X(1).		GANTUPD	116
116	02 ER-POS3 PIC X(8).		GANTUPD	117
117	02 ER-POS4 PIC X(4).		GANTUPD	118
118	02 ER-POS5 PIC X(15).		GANTUPD	119
119	02 ER-POS6 PIC X(1).		GANTUPD	120
120	02 ER-POS7 PIC X(1).		GANTUPD	121
121	02 ER-POS8 PIC X(6).		GANTUPD	122
122	02 ER-POS9 PIC X(4).		GANTUPD	123
123	02 ER-POS10 PIC X(26).		GANTUPD	124
124	01 HEAD-L2.		GANTUPD	125
125	02 FILLER PIC X(03) VALUE #ANTA.		GANTUPD	126
126	02 FILLER PIC X(05) VALUE SPACE.		GANTUPD	127
127	02 FILLER PIC X(03) VALUE #ANT#.		GANTUPD	128
128	02 FILLER PIC X(05) VALUE SPACE.		GANTUPD	129
129	02 FILLER PIC X(09) VALUE #FREQUENCY#.		GANTUPD	130
130	02 FILLER PIC X(05) VALUE SPACE.		GANTUPD	131
131	02 FILLER PIC X(04) VALUE #GAIN#.		GANTUPD	132
132	02 FILLER PIC X(27) VALUE SPACE.		GANTUPD	133
133	02 FILLER PIC X(03) VALUE #SECA.		GANTUPD	134
134	02 FILLER PIC X(04) VALUE SPACE.		GANTUPD	135
135	02 FILLER PIC X(03) VALUE #DIR#.		GANTUPD	136
136	02 FILLER PIC X(05) VALUE SPACE.		GANTUPD	137
137	02 FILLER PIC X(06) VALUE #LENGTH#.		GANTUPD	138
138	02 FILLER PIC X(05) VALUE SPACE.		GANTUPD	139
139	02 FILLER PIC X(06) VALUE #RADIUS#.		GANTUPD	140
140	01 HEAD-L3.		GANTUPD	141
141	02 FILLER PIC X(01) VALUE SPACE.		GANTUPD	142
142	02 FILLER PIC X(04) VALUE #CODE#.		GANTUPD	143
143	02 FILLER PIC X(04) VALUE SPACE.		GANTUPD	144
144	02 FILLER PIC X(03) VALUE #POL#.		GANTUPD	145
145	02 FILLER PIC X(07) VALUE SPACE.		GANTUPD	146
146	02 FILLER PIC X(03) VALUE #KHZ#.		GANTUPD	147
147	02 FILLER PIC X(10) VALUE SPACE.		GANTUPD	148
148	02 FILLER PIC X(02) VALUE #DB#.		GANTUPD	149
149	02 FILLER PIC X(07) VALUE SPACE.		GANTUPD	150
150	02 FILLER PIC X(12) VALUE #NOMENCLATURE#.		GANTUPD	151
151	02 FILLER PIC X(09) VALUE SPACE.		GANTUPD	152
152	02 FILLER PIC X(02) VALUE #CD#.		GANTUPD	153
153	02 FILLER PIC X(05) VALUE SPACE.		GANTUPD	154
154	02 FILLER PIC X(02) VALUE #CO#.		GANTUPD	155
155	02 FILLER PIC X(06) VALUE SPACE.		GANTUPD	156
156	02 FILLER PIC X(02) VALUE #FT#.		GANTUPD	157
157	02 FILLER PIC X(09) VALUE SPACE.		GANTUPD	158
158	02 FILLER PIC X(02) VALUE #IN#.		GANTUPD	159
159	02 FILLER PIC X(08) VALUE SPACE.		GANTUPD	160
160	02 FILLER PIC X(11) VALUE #DESCRIPTION#.		GANTUPD	161
161	01 CRPT-H.		GANTUPD	162
162	02 FILLER PIC X(32) VALUE #UPDATES FOR MASTER ANTENNA FILE #.		GANTUPD	163

COLUMN 1 2 3 4 5 6 7 8
 123456789012345678901234567890123456789012345678901234567890

TABLE XX. GANTUP COMPUTER LISTING (CONT)

CDC COROL 5.3 - LEVEL 490 SOURCE LISTING OF GANTUPD AOPT= 66/COC/COC51 80/07/29. 11.49.47. PAGE 4

```

163 01 CRPT-H2.
164 02 FILLER PIC X(34) VALUE #ERRORS ENCOUNTERED WHILE UPDATING#.
165 01 URPT PIC X(50) VALUE SPACE.
166 01 URPT-1.
167 02 FILLER PIC X(26) VALUE #ATTEMPT TO ADD RECORD WITH#.
168 02 FILLER PIC X(16) VALUE # INCOMPLETE DATA#.
169 REPORT SECTION.
170 RD CARD-RPT
171 PAGE LIMIT IS 62 LINES
172 HEADING 1
173 FIRST DETAIL 11
174 LAST DETAIL 58
175 FOOTING 60.
176 01 TYPE IS PAGE HEADING.
177 02 LINE 1.
178 03 COLUMN 050 PIC X(20) SOURCE CLAS1.
179 03 COLUMN 100 PIC X(04) VALUE #PAGE#.
180 03 COLUMN 105 PIC ZZZZ9 SOURCE PAGE-COUNTER OF CARD-RPT.
181 02 LINE PLUS 2.
182 03 COLUMN 036 PIC X(40) SOURCE CRPT-H.
183 03 COLUMN 080 PIC X(02) SOURCE DT-MM.
184 03 COLUMN 082 PIC X(01) VALUE #7#.
185 03 COLUMN 083 PIC X(02) SOURCE DT-DD.
186 03 COLUMN 085 PIC X(01) VALUE #4#.
187 03 COLUMN 086 PIC X(02) SOURCE DT-YY.
188 02 LINE PLUS 1.
189 03 COLUMN 004 PIC X(130) SOURCE HEAD-L2.
190 02 LINE PLUS 1.
191 03 COLUMN 003 PIC X(130) SOURCE HEAD-L3.
192 02 LINE PLUS 1.
193 03 COLUMN 004 PIC X(102) VALUE ALL #--#.
194 02 LINE PLUS 1.
195 03 COLUMN 040 PIC X(15) VALUE #CAND COLUMNS OF#.
196 03 COLUMN 056 PIC X(20) VALUE #DATA ON UPDATE CARDS#.
197 02 LINE PLUS 1.
198 03 COLUMN 004 PIC X(03) VALUE #1-3#.
199 03 COLUMN 013 PIC X(01) VALUE #4#.
200 03 COLUMN 020 PIC X(04) VALUE #6-13#.
201 03 COLUMN 034 PIC X(05) VALUE #15-18#.
202 03 COLUMN 044 PIC X(05) VALUE #20-34#.
203 03 COLUMN 065 PIC X(02) VALUE #35#.
204 03 COLUMN 072 PIC X(02) VALUE #36#.
205 03 COLUMN 080 PIC X(05) VALUE #37-42#.
206 03 COLUMN 091 PIC X(05) VALUE #43-46#.
207 03 COLUMN 101 PIC X(05) VALUE #47-72#.
208 02 LINE PLUS 1.
209 03 COLUMN 004 PIC X(102) VALUE ALL #--#.
210 01 DETAIL -C1 TYPE IS DETAIL LINE PLUS 2.
211 02 COLUMN 004 PIC X(03) SOURCE S-1.
212 02 COLUMN 013 PIC X(01) SOURCE S-2.
213 02 COLUMN 020 PIC X(08) SOURCE S-3.
214 02 COLUMN 034 PIC X(05) SOURCE S-4.
215 02 COLUMN 044 PIC X(05) SOURCE S-5.
216 02 COLUMN 065 PIC X(01) SOURCE S-6.

```

COLUMN 1 2 3 4 5 6 7 8
12345678901234567890123456789012345678901234567890

TABLE XX. GANTUP COMPUTER LISTING (CONT)

CDC COBOL 5.3 - LEVEL 4-90 SOURCE LISTING OF GANTUPD AOPT= 66/CDC/CDCS1 80/07/79. 11.49.47. PAGE 5

```

217 02 COLUMN 072 PIC X(31) SOURCE S-7. GANTUPD 218
218 02 COLUMN 080 PIC X(104) SOURCE S-8. GANTUPD 219
219 02 COLUMN 091 PIC X(104) SOURCE S-9. GANTUPD 220
220 02 COLUMN 101 PIC X(26) SOURCE S-10. GANTUPD 221
221 01 DETAIL-C2 TYPE IS DETAIL LINE PLUS 1. GANTUPD 222
222 02 COLUMN 004 PIC X(103) SOURCE ER-POS1. GANTUPD 223
223 02 COLUMN 013 PIC X(101) SOURCE ER-POS2. GANTUPD 224
224 02 COLUMN 020 PIC X(108) SOURCE ER-PJS3. GANTUPD 225
225 02 COLUMN 034 PIC X(104) SOURCE ER-PJS4. GANTUPD 226
226 02 COLUMN 044 PIC X(113) SOURCE ER-PJS5. GANTUPD 227
227 02 COLUMN 065 PIC X(101) SOURCE ER-POS6. GANTUPD 228
228 02 COLUMN 072 PIC X(101) SOURCE ER-POS7. GANTUPD 229
229 02 COLUMN 080 PIC X(106) SOURCE ER-POS8. GANTUPD 230
230 02 COLUMN 091 PIC X(104) SOURCE ER-PJS7. GANTUPD 231
231 02 COLUMN 101 PIC X(126) SOURCE ER-POS10. GANTUPD 232
232 01 DETAIL-C3 TYPE IS DETAIL LINE PLUS 1. GANTUPD 233
233 02 COLUMN 010 PIC X(50) SOURCE URPT. GANTUPD 234
234 01 TYPE IS PAGE FOOTING LINE 61. GANTUPD 235
235 02 COLUMN 050 PIC X(120) SOURCE CLAS1. GANTUPD 236
236 02 COLUMN 100 PIC X(104) VALUE 'PAGE#'. GANTUPD 237
237 02 COLUMN 105 PIC ZZZZ9 SOURCE PAGE-COUNTER OF CARD-RPT. GANTUPD 238
238 RD ANT-RPT GANTUPD 239
239 PAGE LIMIT IS 62 LINES GANTUPD 240
240 HEADING 1 GANTUPD 241
241 FIRST DETAIL 7 GANTUPD 242
242 LAST DETAIL 58 GANTUPD 243
243 FOOTING 60. GANTUPD 244
244 01 TYPE IS PAGE HEADING. GANTUPD 245
245 02 LINE 1. GANTUPD 246
246 03 COLUMN 050 PIC X(120) SOURCE CLAS1. GANTUPD 247
247 03 COLUMN 100 PIC X(104) VALUE 'PAGE#'. GANTUPD 248
248 03 COLUMN 105 PIC ZZZZ9 SOURCE PAGE-COUNTER OF ANT-RPT. GANTUPD 249
249 02 LINE PLUS 2. GANTUPD 250
250 03 COLUMN 038 PIC X(126) VALUE 'GENERAL ANTENNA FILE AS OF#'. GANTUPD 251
251 03 COLUMN 065 PIC X(102) SOURCE DT-MM. GANTUPD 252
252 03 COLUMN 067 PIC X(101) VALUE 'Y#'. GANTUPD 253
253 03 COLUMN 068 PIC X(102) SOURCE DT-DD. GANTUPD 254
254 03 COLUMN 070 PIC X(101) VALUE 'Y#'. GANTUPD 255
255 03 COLUMN 071 PIC X(102) SOURCE DT-YY. GANTUPD 256
256 02 LINE PLUS 1. GANTUPD 257
257 03 COLUMN 004 PIC X(1130) SOURCE HEAD-L2. GANTUPD 258
258 02 LINE PLUS 1. GANTUPD 259
259 03 COLUMN 003 PIC X(1130) SOURCE HEAD-L3. GANTUPD 260
260 01 DETAIL-A1 TYPE IS DETAIL LINE PLUS 1. GANTUPD 261
261 02 COLUMN 004 PIC X(103) SOURCE AD1. GANTUPD 262
262 02 COLUMN 013 PIC X(101) SOURCE AD2. GANTUPD 263
263 02 COLUMN 020 PIC X(108) SOURCE AD3. GANTUPD 264
264 02 COLUMN 034 PIC X(114) SOURCE AD4. GANTUPD 265
265 02 COLUMN 044 PIC X(113) SOURCE AD5. GANTUPD 266
266 02 COLUMN 065 PIC X(101) SOURCE AD6. GANTUPD 267
267 02 COLUMN 072 PIC X(101) SOURCE AD7. GANTUPD 268
268 02 COLUMN 080 PIC ZZZ.ZZZ SOURCE AD8. GANTUPD 269
269 02 COLUMN 071 PIC Z.ZZZ SOURCE AD7. GANTUPD 270
270 02 COLUMN 101 PIC X(126) SOURCE AD10. GANTUPD 271

```

TABLE XX. GANTUP COMPUTER LISTING (CONT)

CDC CODE 5.3 - LEVEL 490
 SOURCE LISTING OF WANTUPD
 AOPT= 66/CDC/CDCS1
 80/07/29, 11.49.47. PAGE 6

271	01 TYPE IS PAGE FOOTING LINE #1.		GANTUPO	271
272	02 COLUMN 050 PIC X(20) SOURCE CLAS1.		GANTUPO	272
273	02 COLUMN 100 PIC X(04) VALUE #PAGE#.		GANTUPO	273
274	02 COLUMN 105 PIC ZZZZ9 SOURCE PAGE-COUNTER OF ANT-RPT.		GANTUPO	274
275	01 TYPE IS REPORT FOOTING.		GANTUPO	275
276	02 LINE PLUS 5.		GANTUPO	276
277	03 COLUMN 002 PIC X(22) VALUE # DATA CARDS IN	#.	GANTUPO	277
278	03 COLUMN 025 PIC X(07) SOURCE CT-CD.		GANTUPO	278
279	02 LINE PLUS 1.		GANTUPO	279
280	03 COLUMN 002 PIC X(22) VALUE # DATA CARDS IN ERROR	#.	GANTUPO	280
281	03 COLUMN 025 PIC X(07) SOURCE CT-ER.		GANTUPO	281
282	02 LINE PLUS 1.		GANTUPO	282
283	03 COLUMN 002 PIC X(22) VALUE # DATA CARDS TO SORT	#.	GANTUPO	283
284	03 COLUMN 025 PIC X(07) SOURCE CT-SRT.		GANTUPO	284
285	02 LINE PLUS 1.		GANTUPO	285
286	03 COLUMN 002 PIC X(22) VALUE #ANTENNA RECS IN	#.	GANTUPO	286
287	03 COLUMN 025 PIC X(07) SOURCE CT-AIN.		GANTUPO	287
288	02 LINE PLUS 1.		GANTUPO	288
289	03 COLUMN 002 PIC X(22) VALUE #ANTENNA RECS DELETED	#.	GANTUPO	289
290	03 COLUMN 025 PIC X(07) SOURCE CT-DEL.		GANTUPO	290
291	02 LINE PLUS 1.		GANTUPO	291
292	03 COLUMN 002 PIC X(22) VALUE #ANTENNA RECS ADDED	#.	GANTUPO	292
293	03 COLUMN 025 PIC X(07) SOURCE CT-ADD.		GANTUPO	293
294	02 LINE PLUS 1.		GANTUPO	294
295	03 COLUMN 002 PIC X(22) VALUE #ANTENNA RECS CHANGED	#.	GANTUPO	295
296	03 COLUMN 025 PIC X(07) SOURCE CT-CHG.		GANTUPO	296
297	02 LINE PLUS 1.		GANTUPO	297
298	03 COLUMN 010 PIC X(20) VALUE #ERRORS DURING UPDATE#.		GANTUPO	298
299	03 COLUMN 036 PIC X(07) SOURCE CT-UERR.		GANTUPO	299
300	02 LINE PLUS 1.		GANTUPO	300
301	03 COLUMN 002 PIC X(22) VALUE #ANTENNA RECS OUT	#.	GANTUPO	301
302	03 COLUMN 025 PIC X(07) SOURCE CT-AUT.		GANTUPO	302
303	PROCEDURE DIVISION.		GANTUPO	303
304	*****		GANTUPO	304
305	*****		GANTUPO	305
306	*****		GANTUPO	306
307	*****		GANTUPO	307
308	* THIS IS THE MAIN SECTION OF THE PROGRAM - IT USES THE COBOL		GANTUPO	308
309	*SORT WHICH HAS AN INPUT PROCEDURE WHICH READS CARDS AND AN OUTPUT		GANTUPO	309
310	*PROCEDURE WHICH UPDATES THE ANTENNA FILE - IT ALSO PERFORMS THE		GANTUPO	310
311	*ROUTINES FOR THE REPORT AND AUDITS.		GANTUPO	311
312	*		GANTUPO	312
313	MAIN SECTION.		GANTUPO	313
314	PRCJ-CRDS.		GANTUPO	314
315	SORT SORT-FILE ON ASCENDING KEY S-1 S-2		GANTUPO	315
316	DESCENDING KEY S-3		GANTUPO	316
317	INPUT PROCEDURE IS READ-CARDS		GANTUPO	317
318	OUTPUT PROCEDURE UPDAT-ANT.		GANTUPO	318
319	PERFORM REPRT-ANT.		GANTUPO	319
320	STOP RUN.		GANTUPO	320
321	----		GANTUPO	321
322	*		GANTUPO	322
323	*****		GANTUPO	323
324	*****		GANTUPO	324
325	*****		GANTUPO	325

[illegible]

TABLE XX. GANTUP COMPUTER LISTING (CONT)

80/07/29, 11.49.57.	PAGE
379	GANTUPD 380
380	GANTUPD 381
381	GANTUPD 382
382	GANTUPD 383
383	GANTUPD 384
384	GANTUPD 385
385	GANTUPD 386
386	GANTUPD 387
387	GANTUPD 388
388	GANTUPD 389
389	GANTUPD 390
390	GANTUPD 391
391	GANTUPD 392
392	GANTUPD 393
393	GANTUPD 394
394	GANTUPD 395
395	GANTUPD 396
396	GANTUPD 397
397	GANTUPD 398
398	GANTUPD 399
399	GANTUPD 400
400	GANTUPD 401
401	GANTUPD 402
402	GANTUPD 403
403	GANTUPD 404
404	GANTUPD 405
405	GANTUPD 406
406	GANTUPD 407
407	GANTUPD 408
408	GANTUPD 409
409	GANTUPD 410
410	GANTUPD 411
411	GANTUPD 412
412	GANTUPD 413
413	GANTUPD 414
414	GANTUPD 415
415	GANTUPD 416
416	GANTUPD 417
417	GANTUPD 418
418	GANTUPD 419
419	GANTUPD 420
420	GANTUPD 421
421	GANTUPD 422
422	GANTUPD 423
423	GANTUPD 424
424	GANTUPD 425
425	GANTUPD 426
426	GANTUPD 427
427	GANTUPD 428
428	GANTUPD 429
429	GANTUPD 430
430	GANTUPD 431
431	GANTUPD 432
432	GANTUPD 433

COLUMN	1	2	3	4	5	6	7	8
1234567890	1	2	3	4	5	6	7	8
2345678901	2	3	4	5	6	7	8	9
3456789012	3	4	5	6	7	8	9	0
4567890123	4	5	6	7	8	9	0	1
5678901234	5	6	7	8	9	0	1	2
6789012345	6	7	8	9	0	1	2	3
7890123456	7	8	9	0	1	2	3	4
8901234567	8	9	0	1	2	3	4	5
9012345678	9	0	1	2	3	4	5	6
0123456789	0	1	2	3	4	5	6	7
1234567890	1	2	3	4	5	6	7	8
2345678901	2	3	4	5	6	7	8	9
3456789012	3	4	5	6	7	8	9	0
4567890123	4	5	6	7	8	9	0	1
5678901234	5	6	7	8	9	0	1	2
6789012345	6	7	8	9	0	1	2	3
7890123456	7	8	9	0	1	2	3	4
8901234567	8	9	0	1	2	3	4	5
9012345678	9	0	1	2	3	4	5	6
0123456789	0	1	2	3	4	5	6	7
1234567890	1	2	3	4	5	6	7	8
2345678901	2	3	4	5	6	7	8	9
3456789012	3	4	5	6	7	8	9	0
4567890123	4	5	6	7	8	9	0	1
5678901234	5	6	7	8	9	0	1	2
6789012345	6	7	8	9	0	1	2	3
7890123456	7	8	9	0	1	2	3	4
8901234567	8	9	0	1	2	3	4	5
9012345678	9	0	1	2	3	4	5	6
0123456789	0	1	2	3	4	5	6	7
1234567890	1	2	3	4	5	6	7	8
2345678901	2	3	4	5	6	7	8	9
3456789012	3	4	5	6	7	8	9	0
4567890123	4	5	6	7	8	9	0	1
5678901234	5	6	7	8	9	0	1	2
6789012345	6	7	8	9	0	1	2	3
7890123456	7	8	9	0	1	2	3	4
8901234567	8	9	0	1	2	3	4	5
9012345678	9	0	1	2	3	4	5	6
0123456789	0	1	2	3	4	5	6	7
1234567890	1	2	3	4	5	6	7	8
2345678901	2	3	4	5	6	7	8	9
3456789012	3	4	5	6	7	8	9	0
4567890123	4	5	6	7	8	9	0	1
5678901234	5	6	7	8	9	0	1	2
6789012345	6	7	8	9	0	1	2	3
7890123456	7	8	9	0	1	2	3	4
8901234567	8	9	0	1	2	3	4	5
9012345678	9	0	1	2	3	4	5	6
0123456789	0	1	2	3	4	5	6	7
1234567890	1	2	3	4	5	6		

TABLE XX. GANTUP COMPUTER LISTING (CONT)

CUC CUBDL 5.3 - LEVEL 498 SOURCE LISTING OF GANTUPD AOPT= 66/CDC/CDCS1 80/07/29. 11.49.47. PAGE 9

```

433 FLD-4-10.
434 IF S-F4-F10 = SPACE
435 MOVE ## TO S-USED
436 ADD 1 TO CT-DEL
437 PERFORM GET-ANT
438
439 ELSE
440 PERFORM UPD-FIELDS
441 PERFORM RIN-SRT.
442
443 * RETURN SORTED DATA CARD IMAGES
444
445 * MIN-SRT.
446 IF S-USED = SPACE PERFORM ADD-ANT.
447 RETURN SORT-FILE AT END MOVE HIGH-VALUES TO SRT-REC.
448 MOVE SPACE TO S-USED.
449
450 * READ ANTENNA FILE
451 GET-ANT.
452 READ ANT-IN AT END MOVE HIGH-VALUES TO ANTIN.
453 IF ANTIN NOT = HIGH-VALUES ADD 1 TO CT-ANT.
454
455 * WRITE NEW ANTENNA RECORD (UPDATED OR NO ACTION)
456 JT-ANT.
457 MOVE ANTIN TO ANTOUT.
458 WRITE ANTOUT.
459 ADD 1 TO CT-AJT.
460
461 * WRITE NEW ANTENNA RECORD (ADD RECORD)
462 ADD-ANT.
463 MOVE SPACE TO ERR-POS.
464 IF S-1 = SPACE MOVE ## TO ER-POS1.
465 IF S-2 = SPACE MOVE ## TO ER-POS2.
466 IF S-3 = SPACE MOVE ## TO ER-POS3.
467 IF S-4 = SPACE MOVE ## TO ER-POS4.
468 IF S-5 = SPACE MOVE ## TO ER-POS5.
469 IF S-6 = SPACE MOVE ## TO ER-POS6.
470 IF S-7 = SPACE MOVE ## TO ER-POS7.
471 IF S-10 = SPACE MOVE ## TO ER-POS10.
472
473 IF ERR-POS = SPACE
474 PERFORM WT-ADD
475 ELSE
476 GENERATE DETAIL-C1
477 GENERATE DETAIL-C2
478 MOVE UPRT-1 TO URPT
479 GENERATE DETAIL-C3
480 ADD 1 TO CT-UEAR.
481
482 WT-ADD.
483 MOVE SRT-REC TO ANTOUT.
484 WRITE ANTOUT.
485 ADD 1 TO CT-AJT.
486 ADD 1 TO CT-ADD.
487
488 * CHANGE ALL NON BLANK FIELDS
489 UPD-FIELDS.
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

```

CUC CUBDL 5.3 - LEVEL 498 SOURCE LISTING OF GANTUPD AOPT= 66/CDC/CDCS1 80/07/29. 11.49.47. PAGE 9

TABLE XX. GANTUP COMPUTER LISTING (CONT)

CDC CONUL 5.3 - LEVEL 408 SOURCE LISTING OF GANTUPD AOPT- 46/CDC/CDCS1 80/07/29. 11.49.47. PAGE 10

```

487 IF S-4 = " "
488   MOVE SPACE TO A-4
489 ELSE
490   IF S-4 NOT = SPACE
491     MOVE S-4 TO A-4.
492   IF S-5 = " "
493     MOVE SPACE TO A-5
494   ELSE
495     IF S-5 NOT = SPACE
496       MOVE S-5 TO A-5.
497   IF S-6 = " "
498     MOVE SPACE TO A-6
499   ELSE
500     IF S-6 NOT = SPACE
501       MOVE S-6 TO A-6.
502   IF S-7 = " "
503     MOVE SPACE TO A-7
504   ELSE
505     IF S-7 NOT = SPACE
506       MOVE S-7 TO A-7.
507   IF S-8 = " "
508     MOVE SPACE TO A-8
509   ELSE
510     IF S-8 NOT = SPACE
511       MOVE S-8 TO A-8.
512   IF S-9 = " "
513     MOVE SPACE TO A-9
514   ELSE
515     IF S-9 NOT = SPACE
516       MOVE S-9 TO A-9
517   IF S-10 = " "
518     MOVE SPACE TO A-10
519   ELSE
520     IF S-10 NOT = SPACE
521       MOVE S-10 TO A-10.
522   MOVE " " TO S-USED.
523   ADD 1 TO CT-CHG.
524   CLS-ANT.
525   TERMINATE CARD-RPT.
526   CLOSE ANT-IM.
527   CLOSE ANT-UT.
528   *-----
529   *-----
530   *-----
531   *-----
532   *-----
533   * THIS SECTION PRODUCES A REPORT OF UPDATED ANTENNA FILE
534   *
535   REPORT-ANT SECTION.
536   OPN-FLS.
537   OPEN INPUT ANT-UT.
538   INITIATE ANT-RPT.
539   PERFORM RD-ANT.
540
GANTUPD 488
GANTUPD 489
GANTUPD 490
GANTUPD 491
GANTUPD 492
GANTUPD 493
GANTUPD 494
GANTUPD 495
GANTUPD 496
GANTUPD 497
GANTUPD 498
GANTUPD 499
GANTUPD 500
GANTUPD 501
GANTUPD 502
GANTUPD 503
GANTUPD 504
GANTUPD 505
GANTUPD 506
GANTUPD 507
GANTUPD 508
GANTUPD 509
GANTUPD 510
GANTUPD 511
GANTUPD 512
GANTUPD 513
GANTUPD 514
GANTUPD 515
GANTUPD 516
GANTUPD 517
GANTUPD 518
GANTUPD 519
GANTUPD 520
GANTUPD 521
GANTUPD 522
GANTUPD 523
GANTUPD 524
GANTUPD 525
GANTUPD 526
GANTUPD 527
GANTUPD 528
GANTUPD 529
GANTUPD 530
GANTUPD 531
GANTUPD 532
GANTUPD 533
GANTUPD 534
GANTUPD 535
GANTUPD 536
GANTUPD 537
GANTUPD 538
GANTUPD 539
GANTUPD 540
GANTUPD 541

```

COLUMN 1 2 3 4 5 6 7 8
 123456789012345678901234567890123456789012345678901234567890

TABLE XX. GANTUP COMPUTER LISTING (CONT)

CDC COMOL 5.3 - LEVEL 498	SOURCE LISTING OF GANTUPD	ADPT- 66/CDC/COCS1	80/07/24. 11.49.47.	PAGE	11
541	PERFORM GEN-RPT UNTIL ANTOUT = HIGH-VALUES.		GANTUPD	542	
542	TERMINATE ANT-RPT.		GANTUPD	543	
543	GO TO CLS-FLS.		GANTUPD	544	
544	GEN-RPT.		GANTUPD	545	
545	INSPECT ADD REPLACING ALL SPACE BY ZERO.		GANTUPD	546	
546	INSPECT ADD REPLACING ALL SPACE BY ZERO.		GANTUPD	547	
547	GENERATE DETAIL-AL.		GANTUPD	548	
548	PERFORM RD-ANT.		GANTUPD	549	
549	RD-ANT.		GANTUPD	550	
550	READ ANT-OI AT END MOVE HIGH-VALUES TO ANTOUT.		GANTUPD	551	
551	-----		GANTUPD	552	
552	CLS-FLS.		GANTUPD	553	
553	CLOSE ANT-UT.		GANTUPD	554	
554	CLOSE PRINT-OUT.		GANTUPD	555	
555	-----		GANTUPD	556	
556	*****		GANTUPD	557	
557	*****		GANTUPD	558	

COLUMN 1 2 3 4 5 6 7 8
 123456789012345678901234567890123456789012345678901234567890

SECTION 7 - PROGRAM DANTUP [14]

7.1 PURPOSE

Program DANTUP [14] adds new data records or modifies data records presently contained in the master directional antenna data file.

7.2 PRINCIPAL FUNCTIONS

Program DANTUP, shown in figure 27, uses as input the old master directional antenna data file, together with directional antenna update data cards, and produces an updated master directional antenna data file for input to program ANAX [15]. The primary functions of program DANTUP are as follows:

- a. Inserts, in proper sequence, data contained in update cards for new directional antennas.
- b. Deletes data records for old directional antennas.
- c. Modifies data fields in existing directional antenna records.

7.3 INPUT/OUTPUT DESCRIPTION

Input to program DANTUP includes a program control card, update data cards, and the old master directional antenna data file. Output is the updated master directional antenna data file for use in program ANAX [15]. A listing of the output file is obtained by copying the file LSTOUT to OUTPUT.

7.3.1 Input Format

Formats for input to program DANTUP are given in the following figures and table:

- a. Program control card, figure 28, page 7-4.
- b. Update data card (20), figure 29, page 7-5.
- c. Master directional antenna data file (21), table XXI, page 7-8.

7.3.2 Output Format

The format of the updated master directional antenna data file produced by program DANTUP is given in table XXI.

7.4 PROCESS DESCRIPTION

a. Program DANTUP is written in COBOL for processing on the CDC CYBER 172 computer and requires 100000₈ words of central memory for compilation and execution.

b. The update data card file is read and sorted in ascending order on antenna code, polarity, and elevation angle (columns 1-4 and 13-15) and in descending order on frequency (columns 5-12).

c. An update record is read and checked for type of update. If a new antenna is to be added, the update record is inserted in the proper sequence in the updated master directional antenna data file. For a deletion, the entire record is removed from the updated file. To modify one or more fields, the matching record is found on the old master file and the new data are inserted in the record output to the updated antenna file.

d. This process is repeated until all the update cards have been completed and the updated master directional antenna data file is output.

7.5 PROGRAM OPERATION

Figure 30, page 7-10, is a listing of all system and UPDATE cards necessary to execute DANTUP for a typical computer run.

7.6 LIMITATIONS

There are no program limitations in program DANTUP.

7.7 RUNNING TIME

Running time is estimated at 1 minute per 100 update cards.

7.8 COMPUTER PROGRAM LISTING

A complete computer listing of program DANTUP is shown in table XXII, page 7-11, annotated to aid in the understanding of the program functioning.

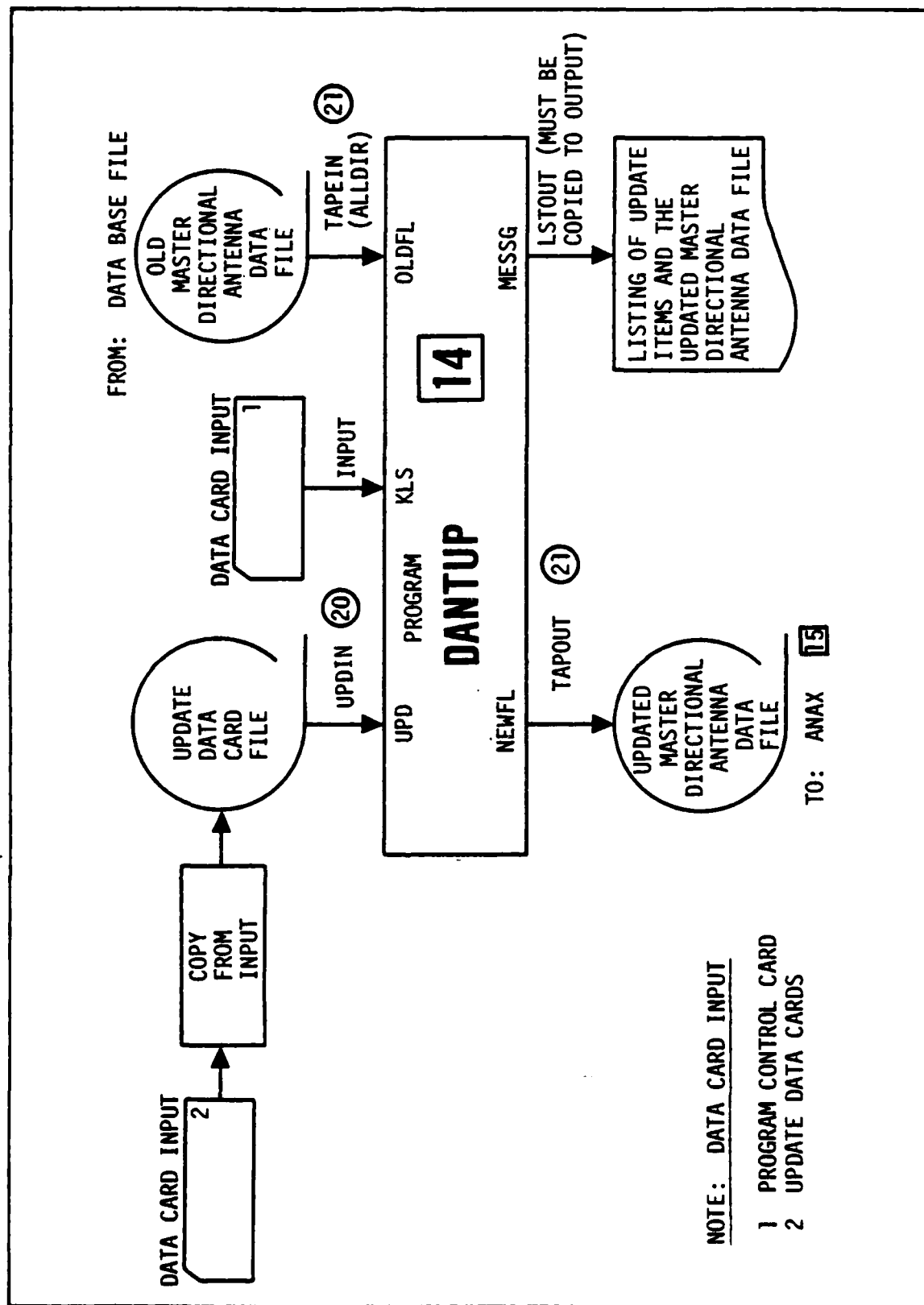


Figure 27. Program DANTUP, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-12	A10,A2	CLASS	Security classification to be included in page headings. Must not be blank.

Figure 28. DANTUP input, program control card.

<u>FIELD NO.</u>	<u>CARD COL.</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-3	I3	CFLD-01	A 3-digit code assigned to each antenna type.
2	4	A1	CFLD-02	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.
3	5-12	F8.0	CFLD-03	Frequency (in kHz) down to which this set of data applies.
4	13-15	F3.0	CFLD-04	Elevation angle in degrees.
5	16	A1	CFLD-05	Security code: 0 = unclassified, 1 = confidential, 2 = secret, 3 = top secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
6	17-18	I2	CFLD-06	Number of azimuth points for this set of data.
7	19-21	F3.0	CFLD-07	Azimuth angle (1), in degrees.
8	22-23	F2.0	CFLD-08	Deterioration of maximum gain (1) due to antenna orientation, in dB.
9	24-26	F3.0	CFLD-09	Azimuth angle (2).
10	27-28	F2.0	CFLD-10	Deterioration of maximum gain (2).
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.

(SEE NOTES ON FOLLOWING PAGE)

Figure 29. DANTUP input, update data card (20) .

FIELD NO.	CARD COL	BCD FORMAT	MNEMONIC	FIELD DESCRIPTION

29	74-76	F3.0	CFLD-29	Azimuth angle (12).
30	77-78	F2.0	CFLD-30	Deterioration of maximum gain (12).

NOTES:

1. Fields 7 and 8 are repeated for a minimum of 3 and a maximum of 12 azimuth angles per set of data. Azimuth angles must be entered in increasing order and must contain data for 0°, 180° (maximum value), and at least one other angle.
2. If processing multiple elevation angles, the angles must be entered in increasing order with one set of azimuth/gain data for 0°, one set for 360°, and one set for at least one other angle in the range 0°-90° or 270°-360°, to a maximum of 20 elevation angles. (This option is not presently available.)
3. To add a new antenna, columns 1-78 must be used.
4. To delete all members of a set, fill in columns 1-4.
5. To delete one member of a set, fill in columns 1-15.
6. To insert one or more new azimuth/gain combinations in an existing record, fill in columns 1-15 and as many azimuth/gain fields as needed beginning in column 19.
7. To modify the gain field for an existing azimuth value, fill in columns 1-15. Enter the existing azimuth value in columns 19-21 and the new gain value in columns 22-23.
8. To delete one azimuth/gain combination in an existing record, fill in columns 1-15. Enter the existing azimuth value in columns 19-21 and leave columns 22-23 blank.

Figure 29. DANTUP input, update data card (20) (cont).

File Description: Master Directional Antenna Data File (21)
File Name: TAPEIN (ALLDIR)/TAPOUT Logical Unit: OLDFL/NEWFL
Mode/Type: BCD Record Length: 78 characters
Origin: Data base file maintained by DANTUP 14
Used By: DANTUP 14 ; ANAX 15

Notes:

1. This file must be sorted in ascending order on columns 1-4 and in descending order on columns 5-12.
2. If processing multiple elevation angles, the angles must be in increasing order with one set of azimuth/gain data for 0° , one set for 360° , and one set for at least one other angle in the range 0° - 90° or 270° - 360° , to a maximum of 20 elevation angles. (This option is not presently available.)

TABLE XXI. MASTER DIRECTIONAL ANTENNA DATA FILE (21)

Data Description	Field Size	Field Position	Remarks
Antenna code	3	1-3	A 3-digit code assigned to each antenna type.
Antenna polarization	1	4	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic code to represent any other unique polarization.
Frequency	8	5-12	Frequency (in kHz) down to which this set of data applies.
Elevation angle	3	13-15	Elevation angle in degrees.
Security code	1	16	0 = unclassified, 1 = confidential, 2 = secret, 3 = top secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Number of azimuth points	2	17-18	Number of azimuth data points for this set.
Azimuth angle (1)	3	19-21	Azimuth angle in degrees.
Gain deterioration (1)	2	22-23	Deterioration of maximum gain due to antenna orientation in dB.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
(See note on following page)			

TABLE XXI. MASTER DIRECTIONAL ANTENNA DATA FILE (21) (CONT)

Data Description	Field Size	Field Position	Remarks
Azimuth angle (12)	3	74-76	Azimuth angle in degrees.
Gain deterioration (12)	2	77-78	Deterioration of maximum gain due to antenna orientation in dB.
NOTE: Azimuth angle and gain deterioration fields are repeated for a minimum of 3 and a maximum of 12 azimuth angles per set of data. Azimuth angles must be in increasing order and must contain data for 0°, 180° (maximum value), and at least one other angle.			

```

( 1) DANTUPD,T400.
( 2) USE RI ** USER ID **
( 3) CHARGE(WA000,N)
( 4) COMMENT.
( 5) TASK NAME
( 6) COMMENT. DIR ANT UPDATE
( 7) COMMENT.
( 8) GET(COIP-EQIP-KU/UN-BILLIE,NA)
( 9) UPDATE(P-EQIP,0)
(10) COBOL5(I-COMPILE,B-DANTUP)
(11) GET(TAPEIN-ALLDIRS)
(12) FILE(UPDIN,BT-CRT-Z,FL-80)
(13) FILE(TAPEIN,BT-C,RT-Z,FL-80)
(14) FILE(TAPUT,BT-C,RT-Z,FL-80)
(15) COPYCN(INPUT,UPDIN)
(16) DANTUP.
(17) COPYCF(ILSTOUT,OUTPUT)
(18) REPLACE(TAPEIN-DIRBKPS)
(19) REPLACE(TAPUT-ALLDIRS)
(20) 7-8-9
(21) *// TASK CHANGES FOR DANTUP (IF ANY)
(22) *COMPILE DANTUP
(23) 7-8-9
(24) *** DIRECTIONAL ANTENNA UPDATE CARDS GO HERE
(25) 7-8-9
(26) SECRET
(27) 7-8-9
(28) 6-7-8-9

```

Figure 30. DANTUP control card listing.

TABLE XXII. DANTUP COMPUTER LISTING

CDC CUBOL 5.3 - LEVEL 490	SOURCE LISTING OF DANTUP	AUPT- 66/CDC/CDCS1	80/07/28. 13.57.16.	PAGE 1
1 IDENTIFICATION DIVISION.				
2 PROGRAM-10. DANTUP.				2 DANTUP
3 ENVIRONMENT DIVISION.				3 DANTUP
4 CONFIGURATION SECTION.				4 DANTUP
5 SOURCE-COMPUTER. 6500.				5 DANTUP
6 OBJECT-COMPUTER. 6500.				6 DANTUP
7 INPUT-OUTPUT SECTION.				7 DANTUP
8 FILE-CONTROL.				8 DANTUP
9 SELECT KLS ASSIGN TO INPUT.				9 DANTUP
10 SELECT UPD ASSIGN TO UPDIN.				10 DANTUP
11 SELECT OLDFL ASSIGN TO TAPEIN.				11 DANTUP
12 SELECT NEWFL ASSIGN TO TAPOUT.				12 DANTUP
13 SELECT MESSG ASSIGN TO OUTPUT.				13 DANTUP
14 SELECT SORT-FILE ASSIGN TO SORTFIL.				14 DANTUP
15 DATA DIVISION.				15 DANTUP
16 FILE SECTION.				16 DANTUP
17 FD KLS				17 DANTUP
18 DATA RECORD IS CLASS-REC				18 DANTUP
19 LABEL RECORD IS OMITTED.				19 DANTUP
20 01 CLASS-REC.				20 DANTUP
21 02 KLAS				21 DANTUP
22 02 FILLER				22 DANTUP
23 02 UPD				23 DANTUP
24 DATA RECORDS ARE CANO-IN. SETEST				24 DANTUP
25 LABEL RECORD IS OMITTED.				25 DANTUP
26 01 CANO-IN.				26 DANTUP
27 02 UPOREC.				27 DANTUP
28 03 CFLO-01				28 DANTUP
29 03 CFLO-02				29 DANTUP
30 03 CFLO-03				30 DANTUP
31 03 CFLO-04				31 DANTUP
32 03 CFLO-05				32 DANTUP
33 03 CFLO-06				33 DANTUP
34 03 CN-AZIM REDEFINES CFLO-06 PICTURE 99.				34 DANTUP
35 03 CAZIM-FLD OCCURS 12 TIMES.				35 DANTUP
36 04 CAZIM				36 DANTUP
37 04 CGAIN				37 DANTUP
38 02 FILLER				38 DANTUP
39 01 SETEST.				39 DANTUP
40 02 SETFLO				40 DANTUP
41 02 BLNK				41 DANTUP
42 02 OLDFL				42 DANTUP
43 DATA RECORDS ARE OLDREC, OLDSET-REC				43 DANTUP
44 LABEL RECORD IS OMITTED.				44 DANTUP
45 01 OLDREC.				45 DANTUP
46 02 OFLO-01				46 DANTUP
47 02 OFLO-02				47 DANTUP
48 02 OFLO-03				48 DANTUP
49 02 OFLO-04				49 DANTUP
50 02 OFLO-05				50 DANTUP
51 02 OFLO-06				51 DANTUP
52 02 ON-AZIM REDEFINES OFLO-06 PICTURE 99.				52 DANTUP
53 02 GAZIM-FLD OCCURS 12 TIMES.				53 DANTUP
54 03 GAZIM				54 DANTUP

TABLE XXII. DANTUP COMPUTER LISTING (CONT)

COC CARD 5.3 - LEVEL 498 SOURCE LISTING OF DANTUP ADPT- 66/CDC/CDCS1 80/07/28. 13.57.16. PAGE 2

```

55      03 UGAIN          PICTURE XX.
56      01 ULOSET-REC.
57      02 ULOSET          PICTURE X(15).
58      02 FILLER          PICTURE X(63).
59      FD MERFL
60      DATA RECORDS ARE NEWREC, WRTREC
61      LABEL RECORD IS OMITTED.
62      01 NEWREC.
63      02 NFLO-01          PICTURE XXX.
64      02 NFLO-02          PICTURE X.
65      02 NFLO-03          PICTURE X(10).
66      02 NFLO-04          PICTURE XXX.
67      02 NFLO-05          PICTURE X.
68      02 NFLO-06          PICTURE XX.
69      02 NM-AZIM REDEFINES NFLO-06 PICTURE 99.
70      02 NAZIM-FLO OCCURS 12 TIMES.
71      03 NAZIM          PICTURE XXX.
72      03 NGAIN          PICTURE XX.
73      01 WRTREC.
74      02 F01          PICTURE XXX.
75      02 F02          PICTURE X.
76      02 F03          PICTURE X(10).
77      02 F04          PICTURE XXX.
78      02 F05          PICTURE X.
79      02 F06          PICTURE XX.
80      02 F07          PICTURE XXX.
81      02 F08          PICTURE XX.
82      02 F09          PICTURE XXX.
83      02 F10          PICTURE XX.
84      02 F11          PICTURE XXX.
85      02 F12          PICTURE XX.
86      02 F13          PICTURE XXX.
87      02 F14          PICTURE XX.
88      02 F15          PICTURE XXX.
89      02 F16          PICTURE XX.
90      02 F17          PICTURE XXX.
91      02 F18          PICTURE XX.
92      02 F19          PICTURE XXX.
93      02 F20          PICTURE XX.
94      02 F21          PICTURE XXX.
95      02 F22          PICTURE X.
96      02 F23          PICTURE XXX.
97      02 F24          PICTURE XX.
98      02 F25          PICTURE XXX.
99      02 F26          PICTURE XX.
100     02 F27          PICTURE XXX.
101     02 F28          PICTURE X.
102     02 F29          PICTURE XXX.
103     02 F30          PICTURE XX.
104     FD MESSG
105     DATA RECORD IS PRT
106     LABEL RECORD IS OMITTED.
107     01 PRT
108     50 SORT-FILE

```

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXII. DANTUP COMPUTER LISTING (CONT)

COC CARDOL 5.3 - LEVEL 400 SOURCE LISTING OF DANTUP AOPT- 66/CDC/CUCS1 60/07/28. 13.57.16. PAGE 3

```

109 DATA RECORD IS SORT-REC.
110 01 SORT-REC.
111 02 KEY-AREA.
112 03 FIRST-KEY PICTURE XXXX.
113 03 THIRD-KEY PICTURE X(8).
114 03 SECOND-KEY PICTURE XXX.
115 02 FILLER PICTURE X(65).
116 WORKING-STORAGE SECTION.
117 77 ON-SWITCH PIC X VALUE SPACE.
118 01 OLDSTOP PICTURE XXX VALUE #BEF.
119 01 DELTEST PICTURE X(6) VALUE #WRITE #.
120 01 DELSAV PICTURE X(6) VALUE SPACE.
121 01 SUNC PICTURE 99.
122 01 SUBS PICTURE 99.
123 01 SUB2 PICTURE 99.
124 01 SUB3 PICTURE 99.
125 01 COUNTS.
126 02 MODS PICTURE 9(4).
127 02 ADDS PICTURE 9(4).
128 02 DELETES PICTURE 9(4).
129 02 PG-CT PICTURE 9(4).
130 02 LIN-CT PICTURE 9(4).
131 01 SAVREC.
132 02 SFLO-01 PICTURE XXX.
133 02 SFLO-02 PICTURE X.
134 02 SFLO-03 PICTURE X(3) VALUE #EMPTY #.
135 02 SFLO-04 PICTURE XXX.
136 02 SFLO-05 PICTURE X.
137 02 SFLO-06 PICTURE XX.
138 02 SN-AZIM RED-FLD OCCURS 12 TIMES.
139 02 SAZIM-FLD OCCURS 12 TIMES.
140 03 SAZIM PICTURE XXX.
141 03 SGAIN PICTURE XX.
142 01 MSG-OUT.
143 02 BAD-CARD.
144 03 FILLER PICTURE X VALUE SPACE.
145 03 B-MESG PICTURE X(40).
146 02 CARD-OUT.
147 03 FILLER PICTURE X VALUE SPACE.
148 03 CRD-FRM PICTURE X(78).
149 03 FILLER PICTURE X(5) VALUE SPACE.
150 03 BEF-AFT PICTURE X(6).
151 02 BEF PICTURE X(6) VALUE #BEFORE#.
152 02 AFT PICTURE X(6) VALUE #AFTER #.
153 02 COUNTOUT.
154 03 FILLER PICTURE X(6) VALUE #MODS #.
155 03 MODCNT PICTURE ZZZ9.
156 03 FILLER PICTURE X(15) VALUE #.
157 03 ADDCNT PICTURE ZZZ9.
158 03 FILLER PICTURE X(16) VALUE #.
159 03 DELCNT PICTURE ZZZ9.
160 01 LIST-LINE.
161 02 FILLER PICTURE X VALUE SPACE.
162 02 FOL PICTURE XXX.

```

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXII. DANTUP COMPUTER LISTING (CONT)

CDC CORREL 5.3 - LEVEL 438 SOURCE LISTING OF DANTUP AOP1- 66/CDC/CDCS1 80/07/28. 13.57.16. PAGE 4

163	02 F02	PICTURE X.	VALUE SPACE.	DANTUP	163
164	02 FILLER	PICTURE X(10).		DANTUP	164
165	02 F03	PICTURE X	VALUE SPACE.	DANTUP	165
166	02 FILLER	PICTURE XXX.		DANTUP	166
167	02 F04	PICTURE X	VALUE SPACE.	DANTUP	167
168	02 FILLER	PICTURE X.		DANTUP	168
169	02 F05	PICTURE X.	VALUE SPACE.	DANTUP	169
170	02 FILLER	PICTURE X.		DANTUP	170
171	02 F06	PICTURE XX.	VALUE SPACE.	DANTUP	171
172	02 FILLER	PICTURE XXX.		DANTUP	172
173	02 F07	PICTURE XXX.	VALUE SPACE.	DANTUP	173
174	02 FILLER	PICTURE X.		DANTUP	174
175	02 F08	PICTURE XX.	VALUE SPACE.	DANTUP	175
176	02 FILLER	PICTURE XXX.		DANTUP	176
177	02 F09	PICTURE X.	VALUE SPACE.	DANTUP	177
178	02 FILLER	PICTURE XX.		DANTUP	178
179	02 F10	PICTURE XXX.	VALUE SPACE.	DANTUP	179
180	02 FILLER	PICTURE XXX.		DANTUP	180
181	02 F11	PICTURE X	VALUE SPACE.	DANTUP	181
182	02 FILLER	PICTURE XX.		DANTUP	182
183	02 F12	PICTURE XXX.	VALUE SPACE.	DANTUP	183
184	02 FILLER	PICTURE XXX.		DANTUP	184
185	02 F13	PICTURE X	VALUE SPACE.	DANTUP	185
186	02 FILLER	PICTURE XX.		DANTUP	186
187	02 F14	PICTURE XXX.	VALUE SPACE.	DANTUP	187
188	02 FILLER	PICTURE XXX.		DANTUP	188
189	02 F15	PICTURE X	VALUE SPACE.	DANTUP	189
190	02 FILLER	PICTURE XX.		DANTUP	190
191	02 F16	PICTURE XXX.	VALUE SPACE.	DANTUP	191
192	02 FILLER	PICTURE XXX.		DANTUP	192
193	02 F17	PICTURE X	VALUE SPACE.	DANTUP	193
194	02 FILLER	PICTURE XX.		DANTUP	194
195	02 F18	PICTURE XXX.	VALUE SPACE.	DANTUP	195
196	02 FILLER	PICTURE XXX.		DANTUP	196
197	02 F19	PICTURE X	VALUE SPACE.	DANTUP	197
198	02 FILLER	PICTURE XX.		DANTUP	198
199	02 F20	PICTURE XXX.	VALUE SPACE.	DANTUP	199
200	02 FILLER	PICTURE XXX.		DANTUP	200
201	02 F21	PICTURE X	VALUE SPACE.	DANTUP	201
202	02 FILLER	PICTURE XX.		DANTUP	202
203	02 F22	PICTURE XXX.	VALUE SPACE.	DANTUP	203
204	02 FILLER	PICTURE XXX.		DANTUP	204
205	02 F23	PICTURE X	VALUE SPACE.	DANTUP	205
206	02 FILLER	PICTURE XX.		DANTUP	206
207	02 F24	PICTURE XXX.	VALUE SPACE.	DANTUP	207
208	02 FILLER	PICTURE XXX.		DANTUP	208
209	02 F25	PICTURE X	VALUE SPACE.	DANTUP	209
210	02 FILLER	PICTURE XX.		DANTUP	210
211	02 F26	PICTURE XXX.	VALUE SPACE.	DANTUP	211
212	02 FILLER	PICTURE XXX.		DANTUP	212
213	02 F27	PICTURE X	VALUE SPACE.	DANTUP	213
214	02 FILLER	PICTURE XX.		DANTUP	214
215	02 F28	PICTURE XXX.	VALUE SPACE.	DANTUP	215
216	02 FILLER	PICTURE XXX.		DANTUP	216

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXII. DANTUP COMPUTER LISTING (CONT)

CDC COBOL 3.3 - LEVEL 498	SOURCE LISTING OF DANTUP	ADPT- 66/CDC/CDCS1	08/07/78, 13.57.16.	PAGE	5
217	02 F29	PICTURE XXX.	DANTUP	217	
218	02 FILLER	PICTURE X	DANTUP	218	
219	02 F30	PICTURE XX.	DANTUP	219	
220	01 HEADERS.		DANTUP	220	
221	02 HEAD-1.		DANTUP	221	
222	03 PG-ROT	PICTURE X	DANTUP	222	
223	03 FILLER	PICTURE X(64) VALUE SPACE.	DANTUP	223	
224	03 KLAS1	PICTURE X(12).	DANTUP	224	
225	02 HEAD-2.		DANTUP	225	
226	03 PG-TOP	PICTURE X	DANTUP	226	
227	03 FILLER	PICTURE X(64) VALUE SPACE.	DANTUP	227	
228	03 KLAS2	PICTURE X(12).	DANTUP	228	
229	03 FILLER	PICTURE X(40) VALUE SPACE.	DANTUP	229	
230	03 FILLER	PICTURE X(5) VALUE PAGE.	DANTUP	230	
231	03 PG-WRT	PICTURE ZZZ9.	DANTUP	231	
232	02 HEAD-3.		DANTUP	232	
233	03 FILLER	PICTURE X(19) VALUE #CODE	DANTUP	233	
234	03 FILLER	PICTURE X(19) VALUE #S NO	DANTUP	234	
235	03 FILLER	PICTURE X(19) VALUE #	DANTUP	235	
236	03 FILLER	PICTURE X(19) VALUE #	DANTUP	236	
237	03 FILLER	PICTURE X(19) VALUE #TH-GAIN SETS	DANTUP	237	
238	02 HEAD-4.		DANTUP	238	
239	03 FILLER	PICTURE X(19) VALUE # POL	DANTUP	239	
240	03 FILLER	PICTURE X(19) VALUE #C PT	DANTUP	240	
241	03 FILLER	PICTURE X(19) VALUE #Z GA	DANTUP	241	
242	03 FILLER	PICTURE X(19) VALUE #GA	DANTUP	242	
243	03 FILLER	PICTURE X(19) VALUE #GA	DANTUP	243	
244	03 FILLER	PICTURE X(19) VALUE #A	DANTUP	244	
245	03 FILLER	PICTURE X(19) VALUE #	DANTUP	245	
246	PROCEDURE DIVISION.		DANTUP	246	
247	SORT-IT SECTION.		DANTUP	247	
248	SRT-1.		DANTUP	248	
249	SORT SORT-FILE ON ASCENDING KEY FIRST-KEY, SECOND-KEY		DANTUP	249	
250	ON DESCENDING KEY THIRD-KEY		DANTUP	250	
251	INPUT PROCEDURE IS IMP-1		DANTUP	251	
252	OUTPUT PROCEDURE IS OUT-1.		DANTUP	252	
253	GO TO UPD-PROC.		DANTUP	253	
254	IMP-1 SECTION.		DANTUP	254	
255	OPEN-IN.		DANTUP	255	
256	OPEN INPUT UPD.		DANTUP	256	
257	1-1.		DANTUP	257	
258	HEAD UPD AT END GO TO 1-2.		DANTUP	258	
259	IF CFLO-03 EQUALS SPACE MOVE #99999999 TO CFLO-03.		DANTUP	259	
260	INSPECT CFLO-03 REPLACING ALL # BY #0P.		DANTUP	260	
261	MOVE CARD-IM TO SORT-REC.		DANTUP	261	
262	RELEASE SORT-REC.		DANTUP	262	
263	GO TO 1-1.		DANTUP	263	
264	1-2.		DANTUP	264	
265	CLOSE UPD.		DANTUP	265	
266	OUT-1 SECTION.		DANTUP	266	
267	OPEN-OUT.		DANTUP	267	
268	OPEN OUTPUT UPD.		DANTUP	268	
269	0-1.		DANTUP	269	
270	RETURN SORT-FILE RECORD AT END GO TO J-2.		DANTUP	270	

CDC COBOL 3.3 - LEVEL 498 SOURCE LISTING OF DANTUP ADPT- 66/CDC/CDCS1 08/07/78, 13.57.16. PAGE 5

TABLE XXII. DANTUP COMPUTER LISTING (CONT)

CDC COMUL 5.3 - LEVEL 490 SOURCE LISTING OF DANTUP AOPT= 66/CDC/CDCS1 80/07/20. 13.57.16. PAGE 6

```

271 MOVE SORT-REC TO CARD-IN.
272 IF CFLO-03 EQUALS 999999999 MOVE SPACE TO CFLO-03.
273 WRITE CARD-IN.
274 GO TO 0-1.
275
276 0-2. CLOSE UPD.
277 UPD-PRUC SECTION.
278 START-IT.
279 OPEN INPUT KLS.
280 OPEN INPUT UPD.
281 OPEN INPUT OLDFL.
282 OPEN OUTPUT MEVEL.
283 OPEN OUTPUT MESSG.
284 READ KLS AT END MOVE 1ND CLASS CARD TO PRT WRITE PRT
285 CLOSE KLS
286 CLOSE UPD
287 CLOSE OLDFL
288 GO TO FINAL-END.
289
290 MOVE KLAS TO KLAS1, KLAS2.
291 CLOSE KLS.
292 MOVE ZERO TO COUNTS.
293 MOVE SPACE TO B-MESG.
294 ADD 1 TO PG-CT MOVE PG-CT TO PG-WRT MOVE HEAD-2 TO PRT
295 WRITE PRT.
296
297 OLDFEAD.
298 IF OLDFSTOP IS NOT EQUAL TO PENDING READ OLDFL AT END
299 MOVE HIGH-VALUE TO OFLO-01, OFLO-02
300 MOVE LOW-VALUE TO OFLO-03
301 MOVE PENDING TO OLDFSTOP.
302 INSPECT OFLO-03 REPLACING ALL # BY #0#.
303 INSPECT OFLO-04 REPLACING ALL # BY #0#.
304
305 UPDREAD.
306 READ UPD AT END GO TO RUNOUT.
307
308 UPDCHK.
309 INSPECT CFLO-04 REPLACING ALL # BY #0#.
310 IF OFLO-01 IS LESS THAN CFLO-01 PERFORM SKEP GO TO UPDCHK
311 ELSE
312 IF OFLO-01 IS GREATER THAN CFLO-01 GO TO UPT.
313 IF OFLO-02 IS LESS THAN CFLO-02 PERFORM SKEP GO TO UPDCHK
314 ELSE
315 IF OFLO-02 IS GREATER THAN CFLO-02 GO TO UPT.
316 IF OFLO-03 IS EQUAL TO CFLO-03
317 GO TO MATCH-CHK.
318 IF CFLO-03 IS EQUAL TO SPACES
319 MOVE #1# TO DM-SWICH
320 GO TO MATCH-CHK.
321 IF OFLO-04 IS LESS THAN CFLO-04 PERFORM SKEP GO TO UPDCHK
322 ELSE
323 IF OFLO-04 IS GREATER THAN CFLO-04 GO TO UPT.
324 IF OFLO-03 IS GREATER THAN CFLO-03 PERFORM SKEP GO TO UPDCHK.
325
326 UPT.
327 IF SETFLO EQUALS OLDFSET GO TO MATCH-CHK.
328 IF CFLO-01 = SPACE
329 GO TO CFLDERR
330
331
332
333
334

```

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXII. DANTUP COMPUTER LISTING (CONT)

CDC COBOL 5.3 - LEVEL 490 SOURCE LISTING OF DANTUP AOPT= 66/CDC/CDCS1 90/07/28. 13-57.16. PAGE 7

```

325 ELSE
326 IF CFLO-02 = SPACE
327 GO TO CFLOERR
328 ELSE
329 IF CFLO-03 = SPACE
330 GO TO CFLOERR
331 ELSE
332 IF CFLO-04 = SPACE
333 GO TO CFLOERR.
334 PERFORM CRD-TST-1 THRU CRD-TST-2.
335 ADD 1 TO ADDS.
336 PERFORM ADD-A-REC.
337 PERFORM PRT-CHG.
338 GO TO UPDREAD.
339
340 CFLOERR.
341 MOVE ILLEGAL BLANK FIELD IN 1 THRU 64 TO B-MESG.
342 PERFORM BCROUT.
343 GO TO UPDREAD.
344 ADD-A-REC.
345 IF SFLO-03 IS NOT EQUAL TO *EMPTY * AND
346 DELSAV IS NOT EQUAL TO *DELETE* AND
347 DELTEST IS NOT EQUAL TO *MATCH * AND
348 DELTEST IS NOT EQUAL TO *DELETE*
349 WRITE NEWREC FROM SAVREC.
350 MOVE DELTEST TO DELSAV.
351 MOVE UPDREC TO SAVREC MOVE *WRITE * TO DELTEST.
352 MATCH-CHK.
353 IF DELTEST IS NOT EQUAL TO *MATCH * PERFORM ADD-A-REC.
354 MOVE OLDREC TO SAVREC.
355 MOVE *MATCH * TO DELTEST.
356 IF DN-SWICH IS EQUAL TO *1* AND
357 BLNK EQUALS SPACE
358 PERFORM REC-DEL
359 PERFORM OLDREAD ELSE GO TO 336-OVER.
360 IF OFLO-01 IS EQUAL TO CFLO-01 AND
361 OFLO-02 IS EQUAL TO CFLO-02
362 GO TO MATCH-CHK.
363 MOVE * * TO DN-SWICH.
364 GO TO UPDREAD.
365 336-OVER.
366 IF BLNK EQUALS SPACE PERFORM REC-DEL GO TO MATCH-EX.
367 PERFORM CRD-TST-1.
368 PERFORM SEL-MOD VARYING SUBC FROM 1 BY 1 UNTIL
369 IF CFLO-05 IS NOT EQUAL TO SPACE MOVE CFLO-05 TO SFLO-05.
370 PERFORM PRT-CHG.
371 ADD 1 TO MODS.
372 MOVE SAVREC TO OLDREC.
373 MATCH-EX.
374 EXIT.
375 READUPD.
376 GO TO UPDREAD.
377 SEL-MOD.
378 IF CAZIM (SUBC) IS NOT NUMERIC OR

```

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXII. DANTUP COMPUTER LISTING (CONT)

CDC COROL 5.3 - LEVEL 498 SOURCE LISTING OF DANTUP ADPT- 66/CDC/CDCS1 80/07/28. 13.57.16. PAGE 8

```

379 CAZIM (SUBC) IS NOT LESS THAN #101#
380 MOVE #0AD VALUE IN AZIMUTH TO 8-MESG
381 DISPLAY # # CAZIM (SUBC)
382 ADD 1 TO LIN-CT
383 GO TO FORGET-IT.
384
385 MOVE ZERO TO SUBS.
386 PERFORM SRCH THRU SRCH-EX.
387
388 SNCH.
389
390 ADD 1 TO SUBS.
391 IF SAZIM (SUBS) IS LESS THAN CAZIM (SUBC) GO TO SRCH ELSE
392 IF SAZIM (SUBS) IS GREATER THAN CAZIM (SUBC)
393 PERFORM ADD-IT
394 GO TO SRCH-EX.
395
396 IF CGAIN (SUBC) EQUALS SPACE PERFORM DELETE-IT
397 GO TO SRCH-EX.
398
399 MOVE CGAIN (SUBC) TO SGAIN (SUBS).
400 SRCH-EX.
401 EXIT.
402 FORGET-IT.
403 MOVE OLDREC TO SAVREC.
404 PERFORM BCRDOUT.
405 MOVE SPACE TO 8-MESG.
406 GO TO UPDREAD.
407
408 CRD-TST-1.
409 PERFORM SPC-ZER VARYING SUBC FROM 1 BY 1 UNTIL
410 SUBC IS GREATER THAN CH-AZIM.
411
412 CRD-TST-2.
413 IF ZERO IS NOT EQUAL TO CAZIM (1) OR
414 CGAIN (1) IS NOT NUMERIC OR
415 CAZIM (CN-AZIM) IS NOT EQUAL TO #100#
416 MOVE #ILLEGAL FIRST OR LAST VALUES TO 8-MESG
417 PERFORM BCRDOUT GO TO UPDREAD.
418
419 PERFORM SEQ-CHK VARYING SUBC FROM 2 BY 1 UNTIL
420 SUBC IS GREATER THAN CH-AZIM.
421
422 SPC-ZER.
423 IF CAZIM (SUBC) IS NOT EQUAL TO SPACE
424 INSPECT CAZIM (SUBC) REPLACING ALL # BY #0#.
425 IF CGAIN (SUBC) IS NOT EQUAL TO SPACE
426 INSPECT CGAIN (SUBC) REPLACING ALL # BY #0#.
427
428 SEQ-CHK.
429 SUBTRACT 1 FROM SUBC GIVING SUB2.
430 IF CAZIM (SUBC) IS NOT NUMERIC OR
431 CGAIN (SUBC) IS NOT NUMERIC OR
432 CAZIM (SUBC) IS NOT GREATER THAN CAZIM (SUB2)
433 MOVE #NOT NUMERIC OR OUT OF SEQUENCE TO 8-MESG
434 PERFORM BCRDOUT GO TO UPDREAD.
435
436 ADD-IT.
437 IF SN-AZIM EQUALS 12
438 MOVE #TOD MANY AZIMUTH VALUES TO 8-MESG
439 GO TO FORGET-IT.
440
441 ADD 1 TO SN-AZIM.
442 PERFORM EXPND VARYING SUB2 FROM SN-AZIM BY -1 UNTIL
443 SUB2 IS EQUAL TO SUBS.
444 MOVE CAZIM (SUBC) TO SAZIM (SUBS).

```

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXII. DANTUP COMPUTER LISTING (CONT)

CDC C080L 5.3 - LEVEL 490	SOURCE LISTING OF DANTUP	ADPT- 66/CDC/CDCS1	80/07/20. 13.57.16.	PAGE	9
433	MOVE CGAIN (SUBC) TO SGAIN (SUBS).				DANTUP 405
434	EXPND.				DANTUP 406
435	SUBTRACT 1 FROM SUB2 GIVING SUB3.				DANTUP 407
436	MOVE SAZIM (SUB3) TO SAZIM (SUB2).				DANTUP 408
437	MOVE SGAIN (SUB3) TO SGAIN (SUB2).				DANTUP 409
438	DELETE-IT.				DANTUP 410
439	IF SN-AZIM EQUALS 3				DANTUP 411
440	MOVE #TOD FC# AZIMUTH VALUES TO 0-MESG				DANTUP 412
441	GO TO FORGET-IT.				DANTUP 413
442	PERFORM CMTRCT VARYING SUB2 FROM SUBS BY 1 UNTIL				DANTUP 414
443	SUB2 IS EQUAL TO SN-AZIM.				DANTUP 415
444	MOVE SPACE TO SAZIM (SN-AZIM), SGAIN (SN-AZIM).				DANTUP 416
445	SUBTRACT 1 FROM SN-AZIM.				DANTUP 417
446	CMTRCT.				DANTUP 418
447	ADD 1 SUB2 TO SUB3.				9JUN80 23
448	MOVE SAZIM (SUB3) TO SAZIM (SUB2).				DANTUP 420
449	MOVE SGAIN (SUB3) TO SGAIN (SUB2).				DANTUP 421
450	SKEP.				DANTUP 422
451	PERFORM ADD-A-REC.				DANTUP 423
452	MOVE OLDREC TO SAVREC.				DANTUP 424
453	PERFORM OLDREC.				DANTUP 425
454	BCRDOUT.				DANTUP 426
455	MOVE UPDREC TO CRD-FRM MOVE SPACE TO BEF-AFT.				DANTUP 427
456	MOVE BAD-CARD TO PRT WRITE PRT.				DANTUP 428
457	MOVE CARD-OUT TO PRT WRITE PRT.				DANTUP 429
458	ADD 3 TO LIN-CT.				DANTUP 430
459	IF LIN-CT IS GREATER THAN 56 PERFORM HDRS.				DANTUP 431
460	REC-DEL.				DANTUP 432
461	ADD 1 TO DELETES.				DANTUP 433
462	MOVE #DELETES TO DELTEST.				DANTUP 434
463	PRT-CMG.				DANTUP 435
464	MOVE OLDREC TO CRD-FRM MOVE BEF TO BEF-AFT.				DANTUP 436
465	MOVE CARD-OUT TO PRT WRITE PRT.				DANTUP 437
466	MOVE SAVREC TO CRD-FRM MOVE AFT TO BEF-AFT.				DANTUP 438
467	MOVE CARD-OUT TO PRT WRITE PRT.				DANTUP 439
468	MOVE SPACE TO PRT WRITE PRT.				DANTUP 440
469	ADD 3 TO LIN-CT.				DANTUP 441
470	IF LIN-CT IS GREATER THAN 56 PERFORM HDRS.				DANTUP 442
471	HDRS.				DANTUP 443
472	ADD 1 TO PG-CT MOVE PG-CT TO PG-VRT.				DANTUP 444
473	MOVE HEAD-1 TO PRT WRITE PRT.				DANTUP 445
474	MOVE HEAD-2 TO PRT WRITE PRT.				DANTUP 446
475	MOVE ZERO TO LIN-CT.				DANTUP 447
476	LSTHD.				DANTUP 448
477	MOVE HEAD-3 TO PRT WRITE PRT.				DANTUP 449
478	MOVE HEAD-4 TO PRT WRITE PRT.				DANTUP 450
479	MOVE SPACE TO PRT WRITE PRT.				DANTUP 451
480	ADD 4 TO LIN-CT.				DANTUP 452
481	RUNOUT.				DANTUP 453
482	PERFORM ADD-A-REC MOVE #EMPTY # TO SFLO-03.				DANTUP 454
483	IF OLDSTOP EQUALS #END# GO TO END-IT.				DANTUP 455
484	IF DELSAV IS NOT EQUAL TO #DELETE# WRITE NEWREC FROM OLDREC.				DANTUP 456
485	READ OLDFL AT END GO TO END-IT.				DANTUP 457
486	GO TO RUNOUT.				DANTUP 458

COLUMN 1 2 3 4 5 6 7 8
12345678901234567890123456789012345678901234567890

TABLE XXII. DANTUP COMPUTER LISTING (CONT)

CDC C080L 5.3 - LEVEL 490 SOURCE LISTING OF DANTUP AOPT= 66/CDC/CDCS1 80/07/28. 13.57.16. PAGE 10

```

487 END-IT.
488 MOVE MUJDS TO MUJDCNT.
489 MOVE ADDS TO ADDCNT.
490 MOVE DELETES TO DELCNT.
491 MOVE COUNTOUT TO PRT WRITE PRT.
492 CLOSE UPD CLOSE OLDPL CLOSE NEWFL.
493 PERFORM HORS THRU LSTHD.
494 OPEN INPUT NEWFL.
495 FILIST.
496 READ NEWFL AT END GO TO FINAL-END.
497 INSPECT MFLD-03 REPLACING LEADING #0# BY # #.
498 MOVE CORRESPONDING WRTREC TO LIST-LINE.
499 WRITE PRT FROM LIST-LINE.
500 ADD 1 TO LIN-CT.
501 IF LIN-CT IS GREATER THAN 56 PERFORM HORS THRU LSTHD.
502 GO TO FILIST.
503 FINAL-END.
504 MOVE HEAD-1 TO PRT WRITE PRT.
505 CLOSE NEWFL CLOSE MESSU.
506 STOP RUN.

```

DANTUP 459
 DANTUP 460
 DANTUP 461
 DANTUP 462
 DANTUP 463
 DANTUP 464
 DANTUP 465
 DANTUP 466
 DANTUP 467
 DANTUP 468
 9JUN80 24
 DANTUP 470
 DANTUP 471
 DANTUP 472
 DANTUP 473
 DANTUP 474
 DANTUP 475
 DANTUP 476
 DANTUP 477
 DANTUP 478

COLUMN 1 2 3 4 5 6 7 8
 123456789012345678901234567890123456789012345678901234567890

SECTION 8 - PROGRAM ANAX [15]

8.1 PURPOSE

Program ANAX [15] ensures that all required directional antenna data have been provided and prepares these data for use by program REVIIP [28] .

8.2 PRINCIPAL FUNCTIONS

Program ANAX, shown in figure 31, accepts as input the master directional antenna data file and the required general antenna data file. The program checks to insure that directional antenna data are provided for all directional antennas in the general antenna data file. The program outputs a binary file of condensed directional antenna data for use in program REVIIP [28] , and a binary file containing all general antenna data for use in LAUX [25] and IGAUX [26] . The principal functions of program ANAX are summarized as follows:

- a. Accepts as input the general antenna data file and reads all directional antenna data required.
- b. Accepts an option control switch (sense switch 1) that allows selection of antenna data either at zero degree only or at varying elevations. However, if this option is selected, significant changes to the program must be made to allow for processing more than one elevation angle. In addition, arrays must be redimensioned in subroutine ANTIN (program REVIIP [28]) to accept data for multiple elevation angles.
- c. Checks to insure that all required directional antenna data have been supplied.
- d. Checks to insure that directional antenna data contain no detectable errors.
- e. Outputs a compact file of required directional antenna data.
- f. Outputs a binary file of required general antenna data.

8.3 INPUT/OUTPUT DESCRIPTION

Input to program ANAX consists of the master directional antenna data file and the required general antenna file. The program outputs two files of antenna data (general and directional) and a printout of any errors in the data, or missing directional antenna data.

8.3.1 Input Format

The formats of input data are given in the following tables:

- a. Required general antenna data file (18) , table XXIII, page 8-6.
- b. Master directional antenna data file (21) , table XXIV, page 8-10.

8.3.2 Output Format

The formats of output data files for program ANAX are given in the following tables:

- a. General antenna binary data file (22) , table XXV, page 8-14.
- d. Directional antenna binary data file (23) , table XXVI, page 8-16.

8.4 PROCESS DESCRIPTION

a. Program ANAX is written in FORTRAN EXTENDED for processing on the CDC CYBER 172 computer and uses 100000₈ words of central memory for compilation and execution.

b. The program reads and outputs each general antenna data record onto the general antenna binary data file. At the same time, a census is made of all directional antenna codes needed in the deployment being processed. The program then reads the directional antenna data one set at a time and tests for errors. If no errors are discovered, the program tests sense switch 1 and accepts or ignores antenna elevation data accordingly. A switch is set if matching data are found for an antenna type code in the deployment. The program then writes a binary record that contains the required elements of the data set. This process is repeated until all input data have been processed. A check is made to see if matching directional data are available for all deployment types, and if they are error-free. If the data are error-free, the program takes its normal exit; if not, a list of erroneous or missing types is written and the program terminates.

8.5 PROGRAM OPERATION

Figure 32, page 8-18, is a listing of all system and UPDATE control cards necessary to execute ANAX for a typical computer run.

8.6 LIMITATIONS

There are no limitations imposed by the program.

8.7 RUNNING TIME

The program will run the maximum number of antennas allowed in program REVIIP [28] in not more than 5 minutes.

8.8 COMPUTER PROGRAM LISTING

Table XXVII, page 8-19, contains a complete computer program listing for program ANAX, annotated to aid in the understanding of the program functioning.

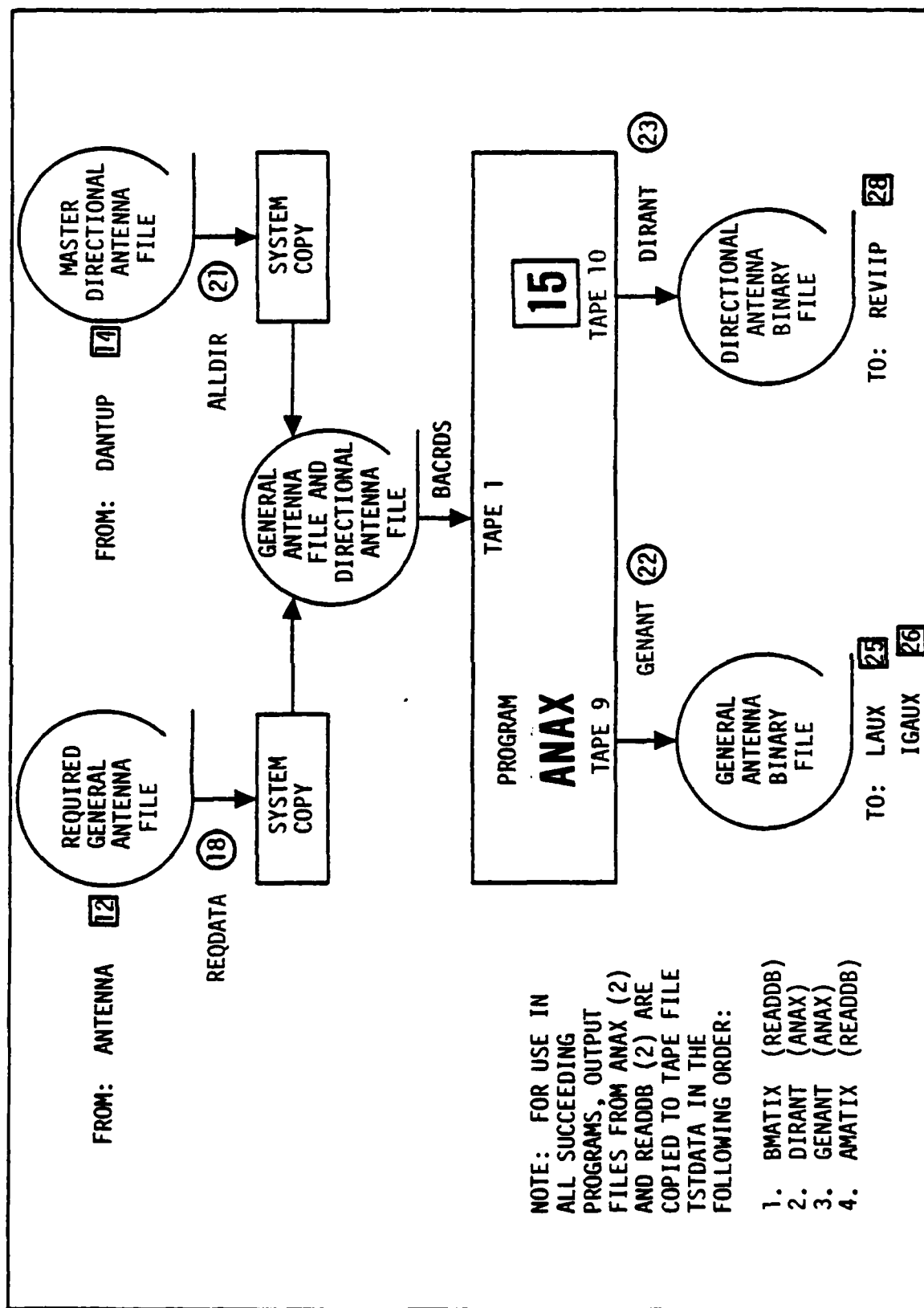


Figure 31. Program ANAX, functional block diagram.

INTENTIONALLY BLANK

File Description: Required General Antenna Data File (18)
File Name: BACRDS (file 1) Logical Unit: 1
Mode/Type: BCD Record Length: 72 characters
Origin: ANTENNA (12)
Used By: ANAX (15)

Note: This file is sorted in ascending order on columns 1-4
and in descending order on columns 6-13.

TABLE XXIII. REQUIRED GENERAL ANTENNA DATA FILE (18)

Data Description	Field Size	Field Position	Remarks
Antenna code	3	1-3	A 3-digit code assigned to each antenna type.
Antenna polarization	1	4	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.
Frequency	1	5	Blank
	8	6-13	Frequency (in kHz) down to which this set of data applies.
	1	14	Blank
Maximum antenna gain	4	15-18	Maximum possible gain for this antenna in tenths of a dB.
	1	19	Blank
Antenna nomenclature	15	20-34	Descriptive name of this antenna.
Security code	1	35	0 = unclassified, 1 = confidential, 2 = secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Directionality code	1	36	A 1-character code to indicate whether or not the antenna is directional: D = directional, N = nondirectional.

TABLE XXIII. REQUIRED GENERAL ANTENNA DATA FILE (18) (CONT)

Data Description	Field Size	Field Position	Remarks
Antenna length	6	37-42	Length of antenna in thousandths of a foot, if applicable; otherwise, blank.
Antenna radius	4	43-46	Radius of antenna in thousandths of an inch, if applicable; otherwise, blank.
Antenna description	26	47-72	General description of type of antenna.

INTENTIONALLY BLANK

File Description: Master Directional Antenna Data File (21)

File Name: BACRDS (file 2) Logical Unit: 1

Mode/Type: BCD Record Length: 78 characters

Origin: Data base file maintained by DANTUP 14

Used By: DANTUP 14 ; ANAX 15

Notes:

1. This file is sorted in ascending order on columns 1-4 and in descending order on columns 5-12.
2. If processing multiple elevation angles, the angles must be in increasing order with one set of azimuth/gain data for 0° , one set for 360° , and one set for at least one other angle in the range 0° - 90° or 270° - 360° , to a maximum of 20 elevation angles. (This option is not presently available.)

TABLE XXIV. MASTER DIRECTIONAL ANTENNA DATA FILE (21)

Data Description	Field Size	Field Position	Remarks
Antenna code	3	1-3	A 3-digit code assigned to each antenna type.
Antenna polarization	1	4	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic code to represent any other unique polarization.
Frequency	8	5-12	Frequency (in kHz) down to which this set of data applies.
Elevation angle	3	13-15	Elevation angle in degrees.
Security code	1	16	0 = unclassified, 1 = confidential, 2 = secret, 3 = top secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Number of azimuth points	2	17-18	Number of azimuth data points for this set.
Azimuth angle (1)	3	19-21	Azimuth angle in degrees.
Gain deterioration (1)	2	22-23	Deterioration of maximum gain due to antenna orientation in dB.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
(See note on following page)			

TABLE XXIV. MASTER DIRECTIONAL ANTENNA DATA FILE (21) (CONT)

Data Description	Field Size	Field Position	Remarks
Azimuth angle (12)	3	74-76	Azimuth angle in degrees.
Gain deterioration (12)	2	77-78	Deterioration of maximum gain due to antenna orientation in dB.
NOTE: Azimuth angle and gain deterioration fields are repeated for a minimum of 3 and a maximum of 12 azimuth angles per set of data. Azimuth angles must be in increasing order and must contain data for 0°, 180° (maximum value), and at least one other angle.			

INTENTIONALLY BLANK

File Description: General Antenna Binary File (22)
File Name: GENANT Logical Unit: 9
Mode/Type: Binary Record Length: 7 words
Origin: ANAX (15)
Used By: LAUX (25) ; IGAUX (26)

TABLE XXV. GENERAL ANTENNA BINARY FILE (22)

Data Description	Format To Print	Word Position	Remarks
Antenna code	I3	1	A 3-digit code assigned to each antenna type.
Antenna polarization	R1	2	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.
Frequency	I8	3	Frequency (in kHz) down to which this set of data applies.
Maximum antenna gain	I4	4	Maximum possible gain for this antenna in tenths of a dB.
Directional indicator	R1	5	A 1-character code to indicate whether or not the antenna is directional: D = directional, N = nondirectional.
Antenna length	I6	6	Length of antenna in thousandths of a foot, if applicable; otherwise, blank.
Antenna radius	I4	7	Radius of antenna in thousandths of an inch, if applicable; otherwise, blank.

File Description: Directional Antenna Binary File (23)
File Name: DIRANT Logical Unit: 10
Variable, depending upon
Mode/Type: Binary Record Length: data available
Origin: ANAX 15
Used By: REVIIP 28

TABLE XXVI. DIRECTIONAL ANTENNA BINARY FILE (23)

Data Description	Format To Print	Word Position	Remarks
Antenna code	I3	1	A 3-digit code assigned to each antenna type.
Frequency	F12.0	2	Frequency (in Hz) down to which this set of data applies.
Antenna polarization	R1	3	A 1-character alphabetic code to indicate type of polarization: H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.
Number of elevation data points	I3	4	A count of the number of elevation angles for which data are available. At present, only one elevation angle, 0°, is used. However, a maximum of 20 is allowed.
Number of azimuth data points	I3	5	A count of the number of azimuth angles for which data are available, with a maximum of 12.
Elevation angle (1)	F4.0	6	The first (and, at present, the only) elevation angle (0°).
NOTE: Word 6 is repeated for each elevation angle for which data are available between 0°-90° and 270°-360°, to a maximum of 20. The count in word 4 includes word 6 and word m.			
Elevation angle (1)	F4.0	m	The last elevation angle (360°).

TABLE XXVI. DIRECTIONAL ANTENNA BINARY FILE (23) (CONT)

Data Description	Format To Print	Word Position	Remarks
Azimuth angle (1)	F4.0	m+1	The first azimuth angle (0°).
NOTE: Word m+1 is repeated for each azimuth angle for which data are available between 0° and 180°. The count in word 5 includes word m+1 and word n.			
Azimuth angle (J)	F4.0	n	The last azimuth angle (180°).
Gain deterioration (1,1)	F3.0	n+1	Deterioration of maximum gain in dB due to antenna orientation for elevation angle (1) and azimuth angle (1).
NOTE: Word (n+1) is repeated in order, which gives the gain deterioration for each elevation angle for azimuth angle (1).			
Gain deterioration (I,J)	F3.0	k	Deterioration of maximum gain in dB due to antenna orientation for elevation angle (I) and azimuth angle (J).

```

( 1) READDB,11777.
( 2) USER( ** USER ID **)
( 3) CHARGE(WA000,M)
( 4) COMMENT.
( 5) COMMENT. TASK NAME
( 6) COMMENT. READDB/ANAX
( 7) COMMENT.
( 8) VSN(REQDATA=AAA,TSIDATA=BBB)
( 9) RESOURC(PE=1,OL=1)
(10) *** GET INDIRECT ACCESS SECRET MASTER B-CURVE DATABASE FILE
(11) COPYCF(BMASTER,BACRDS)
(12) UNLOAD(BMASTER)
(13) LABEL(REQDATA,M,PD=M,NT,D=PE,L=TASKNAME)
(14) COPYCF(REQDATA,OUNY)
(15) COPYCF(REQDATA,BACRDS)
(16) COPYCF(REQDATA,BACRDS)
(17) UNLOAD(REQDATA,OUNY)
(18) *** GET INDIRECT ACCESS SECRET DIRECTIONAL ANTENNA DATABASE FILE
(19) COPYCF(ALLDIR,BACRDS)
(20) UNLOAD(ALLDIR)
(21) REWIND(BACRDS)
(22) COPYSBF(BACRDS,OUTPUT)
(23) COPYSBF(BACRDS,OUTPUT)
(24) COPYSBF(BACRDS,OUTPUT)
(25) COPYSBF(BACRDS,OUTPUT)
(26) REWIND(BACRDS)
(27) GET(IPM1IPU-IPM1IPU/NA)
(28) MAP(PART)
(29) UPDATE(IP-IPM1IPU,Q)
(30) UNLOAD(IPM1IPU)
(31) FIN11,R-3,PL-9999999,8=READDB)
(32) FIN11,R-3,PL-9999999,8=ANAX)
(33) READDB.
(34) ANAX.
(35) LABEL(TSIDATA,M,PD=M,NT,D=PE,L=TASKNAME)
(36) COPYBF(BMATIX,TSIDATA)
(37) COPYBF(OLIRANT,TSIDATA)
(38) COPYBF(IGENANT,TSIDATA)
(39) COPYBF(ANATIX,TSIDATA)
(40) RETURN(TSIDATA)
(41) 7-8-9 CARD
(42) *7 TASK CHANGES FOR READDB (IF ANY)
(43) *7 TASK CHANGES FOR ANAX (IF ANY)
(44) *CUMPILE READDB,ANAX
(45) 7-8-9 CARD
(46) -70 NO
(47) 7-8-9 CARD
(48) 6-7-8-9 CARD

```

Figure 32. ANAX control card listing.

TABLE XXVII. ANAX COMPUTER LISTING

PROGRAM ANAX	73/74	DPT-1	FTN 4.0+498	80/07/29. 10.50.45	PAGE	1
1			PROGRAM ANAX(BACRDS,GENANT,DIRANT,OUTPUT,TAPE1=BACRDS, TAPE9=GENANT,TAPE10=DIRANT)	C2FIN2 18 C2FIN2 19 08MAY79 84 08MAY79 85 08MAY79 86 08MAY79 87 08MAY79 88 08MAY79 89 08MAY79 90 15OCT73 98 15OCT73 99 15OCT73 100 C2FIN2 20 15OCT73 102 15OCT73 103 C2FIN2 21 08MAY79 91 15OCT73 106 15OCT73 107 15OCT73 108 15MAR74 1 08NOV77 5 C2FIN2 22 C2FIN2 23 C2FIN2 24 15OCT73 110 C2FIN2 25 C2FIN2 26 C2FIN2 27 C2FIN2 28 C2FIN2 29 C2FIN2 30 C2FIN2 31 C2FIN2 32 C2FIN2 33 C2FIN2 34 C2FIN2 35 78OUT 1 23MAY75 1 ANAX 12 ANAX 13 C2FIN2 36 15OCT73 119 15OCT73 120 15OCT73 121 78OUT 2 78OUT 3 08MAY79 92 08MAY79 93 08MAY79 94 78OUT 4 78OUT 5 C2FIN2 37 C2FIN2 38 08MAY79 95 08MAY79 96 08MAY79 97		
5			PROGRAM ANAX VERIFIES THAT EVERY DIRECTIONAL ANTENNA IN THE GENERAL ANTENNA FILE HAS DATA IN THE DIRECTIONAL ANTENNA FILE AND THAT THESE DATA ARE VALID. IT OUTPUTS IN BINARY FORMAT THE GENERAL ANTENNA FILE AND THE DIRECTIONAL ANTENNA FILE REQUIRED FOR A TASK			
10			FILE CONTENTS AND USES:			
15			TAPE1(BACRDS): GENERAL ANTENNA DATA AND DIRECTIONAL ANTENNA DATA IN THAT ORDER IN TWO RECORDS/FILES. TAPE9(GENANT): THE PROCESSED GENERAL ANTENNA DATA FOR INPUT TO LAUX AND IGAUX. (BINARY) TAPE10(DIRANT): THE PROCESSED DIRECTIONAL ANTENNA DATA FOR INPUT TO REV1IP. (BLOCKED BINARY)			
20			DIMENSION ELEV(20),AZIM(20,12),GAIN(20,12) DIMENSION APOL(1000),INAM(1000),IS4(1000) INTEGER ANT,ANMG,ANTO,ANTL,ARAD,0 INTEGER ANAM,ANMSV,APOL,POL,POLSV INTEGER ERRORS(3,7) DATA ERRORS/10NDIRECTIONNA,10ML DATA MIS,4MSINE, 1 10HELEVATION,10HVALUES OUT,9H OF ORDER, 2 10HEXORR IN M,10H0, OF AZIM,7H POINTS, 3 10HFIRST ELEV,10HATION NOT, 4HZERO, 4 10HFIRST AZIM,10HUTH NOT 2E,2H0D, 5 10HAZIMUTH VA,10HVALUES OUT 0,7HF ORDER, 6 10HLAST AZIM,10HUTH NOT 180,2H,0, 7 10HLAST ELEV,10HUTH NOT 3,4H00,0, 8 10HAZIM POINT,10HS VARY WIT,9HMIN ELEVS/ DATA IEJF/O/ DATA IZERD/O/ DATA D,ICOUNT,NERA/1RD,0,0/ DATA KNT/O/ 1 FORMAT(11X,4X,1, 15X,F11.0,3I3) 2 FORMAT(11X,4X,F4.1,6(F4.1,F6.2)/(12X,6(F4.1,F6.2))) 9 FORMAT(13,RL,F8.0,F3.0,1X,12,12(F3.0,F2.0)) TURN ON SENSE SWITCH 1 TO PROCESS ELEVATION DATA. CALL SSWITCH(1,TELEV) 1 = 1 202 CALL ERRSET(KOUNT,50) READ GEN ANT DATA RECORD HEAD(1,01)INAM(1),APOL(1),ANTF,ANMG,ANTO,ANTL,ARAD IF(KOUNT,57,0) GO TO 2001 8 FORMAT(13,RL,14,19,14,14,17X,RL,16,14) IF(EOF(1)) 200,201 CHANGE -0 TO 1,3 AND WRITE GEN ANT BINARY RECORD			
25						
30						
35						
40						
45						
50						
55						

TABLE XXVII. ANAX COMPUTER LISTING (CONT)

PAGE 2

80/07/29. 10.40.45

FIN 4.8+498

OPT=1

PROGRAM ANAX

7/7/74

201

ANTL=ANTL+1ZER0

ARAD=ARAD+1ZER0

WRITE(1)INANT(1),APOL(1),ANIF,ANMG,ANTO,ANTL,ARAD

KNT=KNT+1

IF ANTO.NE.DIGIT0 202

IF ANT IS DIRECTIONAL, SAVE CODE, POL, AND FLAG

ISW(1)=1

I=I+1

GO TO 202

203 NUM=I-1

OUTPUT MESSAGE TO CHECK GEN ANT ARRAY SIZE IN LAUX
AND IGAUX

PRINT 88,KNT

88 FORMAT(9,110,9 GENERAL ANTENNAS. MAXIMUM ALLOWED IN LAUX AND IGA

LAUX IS 449.8)

ENDFILE →

REWIND →

250 I=0

11 I=I+1

CALL ERKSEIKUNT,50)

READ DIR ANT DATA RECORD

READ(1,1)ANAM,POL,FREQ,CLEV(11),NUZ,(AZIM(11,K),GAIN(11,K),K=1,
1 NUZ)

IF KUNT.GT.0) GO TO 2031

IF IEUF(11) 30,510

30 IF I11.EQ.1100 TO 20

IEUF=1

GO TO 102

IF ERROR 78, REREAD RECORD, PRINT DATA, GO TO NEXT
RECORD

2001 BACKSPACE 1

READ(1,5)I17H

5 FORMAT(8A10)

PRINT 6,178

6 FORMAT(80,8A10)

GO TO 250

CONVERT FREQ TO HERTZ FOR REVITP USE

510 FREQ=FREQ*1000.0

IF I11.NE.1100 TO 700

SAVE ANT DATA FROM FIRST RECORD OF A SET

ANAMSV=ANAM

POLSV=P3L

FREQSV=FREQ

NUZSV=NUZ

C2FIN2

C2FIN2

PACKIGA

23MAY75

150C173

03MAY77

08MAY79

08MAY79

150C173

ANAX

ANAX

ANAX

08MAY79

08MAY79

08MAY79

08MAY79

23MAY75

08NOV77

150C173

150C173

19MAR74

19MAR74

780UT

08MAY79

08MAY79

08MAY79

08MAY79

19MAR74

19MAR74

19MAR74

19MAR74

08MAY79

08MAY79

08MAY79

08MAY79

03MAY77

ERR0R78

ERR0R78

ERR0R78

ERR0R78

ERR0R78

08MAY79

08MAY79

08MAY79

19MAR74

19MAR74

19MAR74

08MAY79

08MAY79

08MAY79

19MAR74

19MAR74

19MAR74

19MAR74

08MAY79

08MAY79

08MAY79

TABLE XXVII. ANAX COMPUTER LISTING (CONT)

PROGRAM	ANAX	73/74	OPT-1	FTN 4.0+498	10.40.45	PAGE	3
115	C			CHECK IF THIS ANT IS REQUIRED. IF NOT, GO TO 703	08MAY79	119	
	C			AND SKIP ALL DATA RECORDS IN THE SET	08MAY79	120	
	C				08MAY79	121	
120				DO 203 I=1,NUM	ANAX	38	
				IF(PUL.NE.APOL(I).OR.ANAM.NE.INAM(I))GO TO 203	ANAX	39	
				ISV(I)=0	ANAX	40	
				INED=1	150CT73	130	
				203 CONTINUE	150CT73	131	
				IF(INED.EQ.0)GO TO 703	ANAX	43	
125				ICOUNT=ICOUNT+1	ANAX	44	
					ANAX	45	
	C			CHECK IF FIRST ELEV AND AZI ANGLES ARE 0 DEG, IF AZI	08MAY79	122	
	C			ANGLES ARE IN ASCENDING ORDER, AND IF LAST AZI ANGLE	08MAY79	123	
	C			IS 180 DEG. FLAG ANY ERRORS AND SKIP ANT SET. IF	08MAY79	124	
	C			NO ERRORS, READ NEXT RECORD OF THIS SET.	08MAY79	125	
130	C				08MAY79	126	
				IF(ELEV(I).NE.0)GO TO 1040	08MAY79	127	
				IF(AZIM(I).NE.0)GO TO 1050	19MAR74	25	
				DO 14 K=2,NJZ	19MAR74	26	
135				IF(AZIM(I,K).LE.AZIM(I,K-1))GO TO 1060	19MAR74	27	
				14 CONTINUE	19MAR74	28	
				IF(AZIM(I,NJZ).NE.180.0)GO TO 1070	19MAR74	29	
				GO TO 11	19MAR74	30	
140	C			READ) AND IGNORE ALL CARDS IN THE CURRENT SET.	150CT73	31	
	C			703 CALL ERSET(KOUNT,50)	150CT73	141	
				READ(1,9)ANAM,POL	78OUT	142	
				IF(KOUNT.GT.0) GO TO 2001	78OUT	9	
				IF(EOF(1)) 20,704	C2FTN2	10	
145				704 IF(ANAM.EQ.ANAMS).AND.POL.EQ.POLSV)GO TO 703	19MAR74	42	
				BACKSPACE 1	19MAR74	33	
				GO TO 250	150CT73	146	
					19MAR74	34	
	C			IS THIS DATA FOR THE SAME SET	08MAY79	128	
150	C			700 IF((ANAM.NE.ANAMS).OR.(POL.NE.POLSV).OR.(FREQ.NE.FREQSV))GO TO	08MAY79	129	
				1 101	08MAY79	130	
	C				19MAR74	35	
	C			SAME SET. CHECK IF ELEV ANGLES ARE ASCENDING AND IF	08MAY79	36	
	C			AZI ANGLES MATCH ANGLES FOR FIRST RECORD OF THE SET.	08MAY79	131	
	C			GO READ NEXT RECORD.	08MAY79	132	
155				IF(ELEV(I).LE.ELEV(I-1))GO TO 1020	08MAY79	133	
				IF(INU.NE.NUZZSV)GO TO 1030	08MAY79	134	
				DO 12 J=1,NUZ	08MAY79	135	
160				IF(AZIM(I,J).NE.AZIM(I,J-1))GO TO 1040	19MAR74	37	
				12 CONTINUE	19MAR74	38	
				GO TO 11	19MAR74	39	
					19MAR74	40	
					19MAR74	41	
					19MAR74	42	
165	C			END OF DATA FOR THIS ANT SET	04MAY79	136	
	C				08MAY79	137	
				101 BACKSPACE 1	08MAY79	138	
				102 MUL=11-1	19MAR74	43	
					19MAR74	44	
170	C			CHECK IF LAST ELEV ANGLE IS 360 DEGREES.	08MAY79	139	
	C				08MAY79	140	
	C				08MAY79	141	

TABLE XXVII. ANAX COMPUTER LISTING (CONT)

PROGRAM	ANAX	73/74	OPT-1	FIN 4-R+498	80/07/29, 10.40.45	PAGE
175	C			IF PROCESSING ELEV ANGLE=0 DEG ONLY (NORMAL TYPE),	08MAY79	142
	C			SET NUL=1 AND OUTPUT DIR ANT RECORD.	08MAY79	143
	C				03MAY79	144
				IF INUL=GE.2-AND-ELEVINUL).NE.360.0160 TO 1080	19MAR74	45
				IF (ELEV.E3-2) NUL=1	19MAR74	46
				WRITE(10)ANMSV,FREQSV,POLSV,NUL,NUZSV,(ELEV(J),J=1,NUL),	19MAR74	47
				(GAZIM(1,K),K=1,NUZSV),((GAIN(J1,K1),J1=1,NUL),K1=1,NUZSV)	19MAR74	48
				IF (ELEV.E3.1160 TO 20	19MAR74	49
				GO TO 250	19MAR74	50
180	C				08MAY79	145
	C			PICK UP INDEX TO APPROPRIATE ERROR MESSAGE. THEN,	08MAY79	146
	C			GO SKIP ERRONEOUS ANT SET.	08MAY79	147
	C				08MAY79	148
195				1020 ISW(INEED)=2	15OCT73	159
				GO TO 703	19MAR74	51
				1030 ISW(INEED)=3	15OCT73	161
				GO TO 703	19MAR74	52
				1040 ISW(INEED)=4	15OCT73	163
				GO TO 703	19MAR74	53
				1050 ISW(INEED)=5	15OCT73	165
				GO TO 703	19MAR74	54
				1060 ISW(INEED)=6	15OCT73	167
				GO TO 703	19MAR74	55
				1070 ISW(INEED)=7	15OCT73	169
				GO TO 703	19MAR74	56
				1080 ISW(INEED)=8	15OCT73	171
				GO TO 250	19MAR74	57
				1090 ISW(INEED)=9	15OCT73	173
				GO TO 703	19MAR74	58
200	C			COME HERE AT END OF DIR ANT DATA FILE	08MAY79	149
	C				08MAY79	150
	C				08MAY79	151
205				20 ENDFILE 10	15OCT73	174
				REVIEW 10	15OCT73	175
				IR=0	ANAX	107
	C			PRINT LIST OF MISSING DIR ANT AND REASON WHY	08MAY79	152
	C				08MAY79	153
	C				08MAY79	154
210				00 212 I=1,NUN	ANAX	108
				IF (ISW(1).EQ.0) GO TO 212	15OCT73	176
				IF (IR.NE.0) GO TO 213	ANAX	110
				PRINT 210	ANAX	111
				210 FORMAT(9I) DIRECTIONAL ANTENNA DATA MISSING FROM DATA BASE:*/**	15OCT73	177
				, CUDL POLARIZATION REASON)	15OCT73	178
215				IR=1	ANAX	112
				213 JJ=ISW(1)	15OCT73	179
				PRINT 211,INAM(1),APOL(1), (ERRORS(J,JJ),J=1,3)	15OCT73	180
				211 FORMAT(18,10X,21,10X,3A10)	PACKTGA	6
				NEER=NEER+1	15OCT73	182
220				212 CONTINUE	ANAX	114
	C			OUTPUT MESSAGE TO CHECK DIR ANT ARRAY SIZE IN REV1P	08MAY79	155
	C				08MAY79	156
	C				08MAY79	157
225				PRINT 99,ICOUNT	ANAX	115
				99 FORMAT(9,9I10,*, DIRECTIONAL ANTENNAS. MAXIMUM ALLOWED IN REV1P(A	09NOV77	9
				INTIM) IS 249.9)	09NOV77	10
	C				08MAY79	158

TABLE XXVII. ANAX COMPUTER LISTING (CONT)

PROGRAM ANAX	73/74	UPT-1	FIN 4.8+498	80/07/24. 10.40.45	PAGE	5
230	C	IF INERR.EJ.OJ.GOTU 500	OUTPUT APPROPRIATE TERMINATION MESSAGE AND END.	08MAY79 159		
	C	PRINT 900,NEER		08MAY79 160		
		900 FORMAT(01.0.3H *0.13,* ANOMALIES DETECTED BY ANAX.0)		15OCT73 185		
		STOP 152		C2FIN2 43		
235		500 PRINT 901		C2FIN2 44		
		901 FORMAT(0.0 ANOMALIES DETECTED BY ANAX.0)		21APR80 2		
		END		C2FIN2 46		
				C2FIN2 47		
				ANAX 121		

SECTION 9 - PROGRAM MISEQIP [16]

9.1 PURPOSE

Program MISEQIP [16] compares the equipment summary file output by EDIT [8] with the master equipment class file and identifies any items missing from the master equipment file.

9.2 PRINCIPAL FUNCTIONS

Program MISEQIP, shown in figure 33, accepts as input the equipment summary file output by EDIT, the master equipment class code assignment file, and the data cards required for processing. It produces as output a listing of deployed equipments missing from the master equipment file and an extract of the master equipment code assignment file based on the deployment of interest. The principal functions of MISEQIP are summarized as follows:

- a. Identifies any deployed equipments missing from the master equipment class code assignment file.
- b. Compiles an extract of matched equipments from the master equipment file based on a summary of the equipments in the deployment being processed.
- c. Flags equipments in the extract to indicate any that are (1) to be deleted from the analysis or (2) to be processed as interferers only.
- d. Substitutes deployment frequency range for master file frequency range, if this option is specified for the output file.

9.3 INPUT/OUTPUT DESCRIPTION

Input to program MISEQIP consists of two program control cards, the equipment class summary file, and the master equipment class code assignment file. Output consists of a listing of any deployed equipments missing from the master equipment class file and an extract of the master equipment file containing data for all matched equipments required by the subject deployment. This file is used as input to programs OVERLAP [18] and EQCLSFF [22].

9.3.1 Input Format

The format of input data, including information necessary to punch input data cards for program MISEQIP, is given in the following figures and tables:

- a. Program control card, figure 34, page 9-5.
- b. Use code data card, figure 35, page 9-6.

c. Equipment summary file (11) , table XXVIII, page 9-8.

d. Master equipment class code assignment file (24) , table XXIX, page 9-10.

9.3.2 Output Format

The format of output from program MISEQIP is given in the required equipment file (25) , table XXX, page 9-14.

9.4 PROCESS DESCRIPTION

a. Program MISEQIP is written in FORTRAN EXTENDED for processing on the CDC CYBER 172 computer. It requires 100000₈ words of central memory for compilation and execution.

b. The master equipment class code assignment file is read into storage.

c. The program reads in two data cards containing the security classification, frequency range option, and use code values indicating equipments to be flagged for deletion or special handling.

d. Input data are processed as follows:

(1) An equipment record read from the equipment summary file is matched on the first 10 characters against the stored master equipment file. If a match is found and the deployment frequency range is within the master tuning range, the equipment record is written to the required equipment output file. If the frequency assignment is not within the equipment tuning ranges, a tuning mismatch item is noted on the standard output file and the record is also output to the required equipment file.

(2) If the 10-character match is unsuccessful, the missing equipment list is written containing the first 10 characters of the equipment summary file.

(3) This process is repeated until all data on the equipment summary file have been processed. If any equipment is missing from the master equipment file, the required equipment file is flagged as being incomplete.

9.5 PROGRAM OPERATION

Figure 36, page 9-17, is a listing of all system and UPDATE control cards necessary to execute MISEQIP for a typical computer run.

9.6 LIMITATIONS

There are no program limitations.

9.7 RUNNING TIME

Running time is estimated at 5 minutes per 500 input equipment summary records.

9.8 COMPUTER PROGRAM LISTING

Table XXXI, page 9-19, contains a complete computer listing for program MISEQIP and subroutine NEWPG, annotated to aid in the understanding of the program functioning.

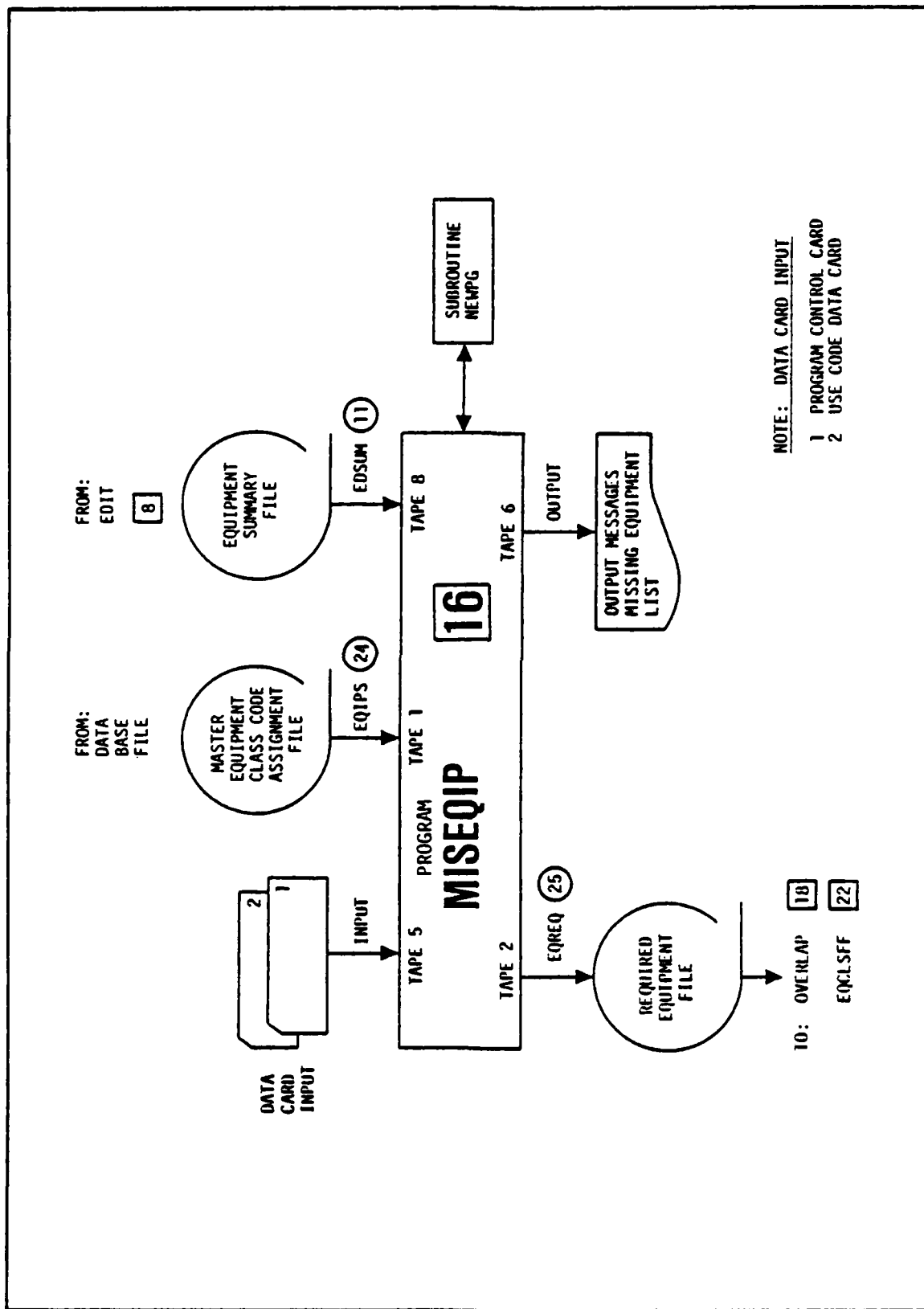


Figure 33. Program MISEQIP, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-10	A10	KLASS	Security classification to appear in page headings.
2	11-20	A10	IOPT	Frequency range option. If DEPLOYEDbb is left-justified in the field, the frequencies written out to the required equipment file are from the equipment summary file; otherwise, the frequencies will be the tuning range from the master equipment file

Figure 34. MISEQIP input, program control card.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1	A1	USECD(1)	Alpha character indicating use code for equipments to be deleted from analysis. Use codes may be in any order in card columns 1-40. May include blanks which are ignored.
2	2	A1	USECD(2)	
.	.	.	.	
.	.	.	.	
.	.	.	.	
40	40	A1	USECD(40)	Alpha character indicating use codes for equipments to be processed as interferers only in the analysis. (This code, in effect, deletes receivers.) Codes may be in any order in card columns 41-80. May include blanks which are ignored.
41	41	A1	USECD(41)	
42	42	A1	USECD(42)	
.	.	.	.	
.	.	.	.	
80	80	A1	USECD(80)	

NOTE: Use codes are defined as follows: B = broadcast/television, C = communications, D = direction finding, E = fixed frequency emergency guardband, I = intercept/ESM, J = jammer/ESM, M = sensors, N = navigation aids, O = orderwire, Q = miscellaneous special purpose, S = detecting/range bearing (radar), V = sensor data link, X = IFF, Y = security monitoring (COMSEC, etc.), Z = special electronic warfare (EW). Other codes are assigned as needed.

Figure 35. MISEQIP input, use code data card.

File Description: Equipment Class Summary File (11)
File Name: EDSUM Logical Unit: 8
Mode/Type: BCD Record Length: 28 characters
Origin: EDIT (8)
Used By: MISEQIP (16)

TABLE XXVIII. EQUIPMENT CLASS SUMMARY FILE (11)

Data Description	Field Size	Field Position	Remarks
Component code	3	1-3	A 3-character alphanumeric code assigned to this equipment component.
Major equipment code	2	4-5	A 2-character alphanumeric code assigned to this major equipment class.
Modulation code	2	6-7	A 2-digit code indicating modulation type: 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
Number of channels	3	8-10	The number of channels assigned for this equipment component, if applicable. If equipment is encrypted, 500 has been added to number of channels to indicate it is encrypted.
Low frequency	8	11-18	The lowest frequency (in kHz) at which this equipment is deployed.
High frequency	8	19-26	The highest frequency (in kHz) at which this equipment is deployed.
Equipment function code	2	27-28	A 2-digit code indicating how this equipment functioned in the subject deployment: 01 = transmitter only, 10 = receiver only, 11 = both transmitter and receiver.

File Description: Master Equipment Class Code Assignment File (24)
File Name: EQIPS Logical Unit: 1
Mode/Type: BCD Record Length: 80 characters
Origin: Basic data file maintained by ECUPDT
Used By: MISEQIP 16 ; ECUPDT 17

TABLE XXIX. MASTER EQUIPMENT CLASS CODE ASSIGNMENT FILE (24)

Data Description	Field Size	Field Position	Remarks
Component code	1	1	Blank
Major equipment code	3	2-4	A 3-character alphanumeric code assigned to this equipment component.
Modulation code	2	5-6	A 2-character alphanumeric code assigned to this major equipment class.
Number of channels	2	7-8	A 2-digit code indicating modulation type: 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
Component nomenclature	3	9-11	The number of channels assigned for this equipment component, if applicable. If subfield 9 > 5, the equipment is encrypted.
Major equipment nomenclature	15	12-26	Name of the component associated with this component code.
Low tuning range limit	15	27-41	Name of the major equipment associated with this major equipment code.
High tuning range limit	8	42-49	Lowest frequency (in kHz) to which this equipment will tune.
	8	50-57	Highest frequency (in kHz) to which this equipment will tune.
	1	58	Blank

TABLE XXIX. MASTER EQUIPMENT CLASS CODE ASSIGNMENT FILE (24) (CONT)

Data Description	Field Size	Field Position	Remarks
Use code	1	59	A 1-character alphabetic code indicating the use type of equipment: B = broadcast/television, C = communications, D = direction finding, E = fixed frequency emergency guardband, I = intercept/ESM, J = jammer/ESM, M = sensors, N = navigation aids, O = orderwire, Q = miscellaneous special purpose, S = detecting/range bearing (radar), V = sensor data link, X = IFF, Y = security monitoring (COMSEC, etc.), Z = special electronic warfare (EW). Other codes are assigned as needed.
Force code	1	60	Blank
	1	61	A 1-character alphabetic code indicating force type: B = BLUE (friendly), R = RED (enemy).
	1	62	Blank
XY code	2	63-64	A 2-character alphabetic code indicating equipment type: XX = transmitter only, XY = transmitter, YY = receiver only.
New equipment class	1	65	Blank
	9	66-74	Expanded equipment class for future development. Not presently used.
	1	75	Blank

TABLE XXIX. MASTER EQUIPMENT CLASS CODE ASSIGNMENT FILE (24) (CONT)

Data Description	Field Size	Field Position	Remarks
Equipment class code (last 5 of 6 digits)	5	76-80	A 5-digit code assigned to indicate the equipment class when the data set code is attached as the first of a total of 6 digits. The final 5 digits are assigned as follows: <u>Subfield 76.</u> Modulation code: 1 = F3 = 33, 2 = A3 = 13, 3 = A3A or A3J = 14, 4 = F1 = 31, 5 = F9 = 36, 6 = P0 = 50, 7 = P9 = 58, 8 = A2 or A9 = 18 or 12, 9 = A1 = 11, 0 = special or other. <u>Subfield 77.</u> Bandwidth: For modulation codes 1-5 and 8, 9, 0: 1 = narrow, 2 = medium, 3 = wide, 4 = very wide; for modulation codes 6 and 7: 5-9 and 0 indicate different "B" matrices. <u>Subfield 78-79.</u> Sequence number: 00-99 = final specific equipment designator within modulation code and bandwidth. <u>Subfield 80:</u> Siting preference: 1 = normal, 2 = normal, 3 = airborne radar, 4 = ground radar, 5 = preferred, 6 = airborne nonradar, 7 = radio relay (LOS), 8 = nap of the earth, 9 = tropo-scatter, 0 = satellite.

File Description: Required Equipment File (25)
File Name: EQREQ Logical Unit: 2
Mode/Type: BCD Record Length: 81 characters
Origin: MISEQIP 16
Used By: OVERLAP 18 ; EQCLSFF 22

TABLE XXX. REQUIRED EQUIPMENT FILE (25)

Data Description	Field Size	Field Position	Remarks
Component code	1	1	Blank
Major equipment code	3	2-4	A 3-character alphanumeric code assigned to this equipment component.
Modulation code	2	5-6	A 2-character alphanumeric code assigned to this major equipment class.
	2	7-8	A 2-digit code indicating modulation type: 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
Number of channels	3	9-11	The number of channels assigned for this equipment component, if applicable. If subfield 9 > 5, the equipment is encrypted.
Component nomenclature	15	12-26	Name of the component associated with this component code.
Major equipment nomenclature	15	27-41	Name of the major equipment associated with this major equipment code.
Low tuning range limit	8	42-49	Lowest frequency (in kHz) to which this equipment will tune.
High tuning range limit	8	50-57	Highest frequency (in kHz) to which this equipment will tune.
	1	58	Blank

TABLE XXX. REQUIRED EQUIPMENT FILE (25) (CONT)

Data Description	Field Size	Field Position	Remarks
Use code	1	59	A 1-character alphabetic code indicating the use type of equipment: B = broadcast/television, C = communications, D = direction finding, E = fixed frequency emergency guard-band, I = intercept/ESM, J = jammer/ESM, M = sensors, N = navigation aids, O = orderwire, Q = miscellaneous special purpose, S = detecting/range bearing (radar), V = sensor data link, X = IFF, Y = security monitoring (COMSEC, etc.), Z = special electronic warfare (EW). Other codes are assigned as needed.
Force code	1	60	Blank
	1	61	A 1-character alphabetic code indicating force type: B = BLUE (friendly), R = RED (enemy).
	1	62	Blank
XY code	2	63-64	A 2-character alphabetic code indicating equipment type: XX = transmitter only, XY = transceiver, YY = receiver only.
New equipment class	1	65	Blank
	9	66-74	Expanded equipment class for future development. Not presently used.
	1	75	Blank

TABLE XXX. REQUIRED EQUIPMENT FILE (25) (CONT)

Data Description	Field Size	Field Position	Remarks
Equipment class code (last 5 of 6 digits)	5	76-80	A 5-digit code assigned to indicate the equipment class when the data set code is attached as the first of a total of 6 digits. The final 5 digits are assigned as follows: Subfield 76. Modulation code: 1 = F3 = 33, 2 = A3 = 13, 3 = A3A or A3J = 14, 4 = F1 = 31, 5 = F9 = 36, 6 = P0 = 50, 7 = P9 = 58, 8 = A2 or A9 = 18 or 12, 9 = A1 = 11, 0 = special or other. Subfield 77. Bandwidth: For modulation codes 1-5 and 8, 9, 0: 1 = narrow, 2 = medium, 3 = wide, 4 = very wide; for modulation codes 6 and 7: 5-9 and 0 indicate different "B" matrices. Subfield 78-79. Sequence number: 00-99 = final specific equipment designator within modulation code and bandwidth. Subfield 80: Siting preference: 1 = normal, 2 = normal, 3 = airborne radar, 4 = ground radar, 5 = preferred, 6 = airborne nonradar, 7 = radio relay (LOS), 8 = nap of the earth, 9 = tropo-scatter, 0 = satellite.
	1	81	A 1-character alpha code to flag equipments for special handling. Slash (/) = delete equipment from analysis, asterisk (*) = process for interferers only; otherwise, blank.

LLOYD MISEQIP/OVERLAP/ANTENNA S

```

( 1) MISEQIP,13777.
( 2) USER( ** USER ID **)
( 3) CHARGE( MA000,N)
( 4) COMMENT.
( 5) COMMENT. TASK NAME
( 6) COMMENT. MISEQIP/OVERLAP/ANTENNA
( 7) COMMENT.
( 8) VSN(EOSMRY=AAA,REODATA=BBB)
( 9) RESU( CPE=1,DL=1)
(10) GET(CALSUM=CLSMRY/UN-JIM,NA)
(11) SET(EQIPCKU=EQIPCKU/NA)
(12) MAP(PART)
(13) UPDATE(P=EQIPCKU,3)
(14) UNLOAD(EQIPCKU)
(15) FTN(1,R=3,PL=9999999,B=MISEQIP)
(16) FTN(1,R=3,PL=9999999,B=OVERLAP)
(17) FTN(1,R=3,PL=9999999,B=ANTCOMP)
(18) LABEL(EQSMRY,R,PD=R,NT,D=PE,L=TASKNAME)
(19) COPYCF(EQSMRY,EDSUM)
(20) COPYCF(EQSMRY,SUMARY)
(21) UNLOAD(EQSMRY)
(22) RE4IND(EDSUM,SUMARY)
(23) *** GET INDIRECT ACCESS SECRET EQUIPMENT CLASS DATABASE FILE
(24) *** GET INDIRECT ACCESS SECRET GENERAL ANTENNA DATABASE FILE
(25) MISEQIP.
(26) CUPYSBF(EQIPS,OUTPUT)
(27) UNLOAD(EQIPS,EDSUM)
(28) CUPYSBF(EQIPS,OUTPUT)
(29) REMIND(EQEQ)
(30) CUPYCN( INPUT,IN)
(31) REMIND(IN)
(32) OVERLAP.
(33) UNLOAD(IN,TAPE3,TAPE4,CALSUM)
(34) CUPYSBF(AMATRQ,OUTPUT)
(35) REMIND(AMATRQ)
(36) ANTCOMP.
(37) CUPYSBF(GENRNT,OUTPUT)
(38) UNLOAD(SUMARY,GENRNT)
(39) CUPYSBF(ANTREQ,OUTPUT)
(40) REMIND(ANTREQ)
(41) LABEL(REODATA,4,PD=W,NT,D=PE,L=TASKNAME)
(42) COPYCF(EQEQ,REODATA)
(43) COPYCF(AMATRQ,REJDATA)
(44) COPYCF(ANTREQ,REJDATA)
(45) 4TURN(REODATA)
(46) 7-8-9 CARD
(47) 9/ TASK CHANGES FOR MISEQIP (IF ANY)
(48) 9/ TASK CHANGES FOR OVERLAP (IF ANY)
(49) 9/ TASK CHANGES FOR ANTENNA (IF ANY)
(50) 9/ COMPILL MISEQIP,OVERLAP,ANTENNA

```

Figure 36. MISEQIP (MISEQIP/OVERLAP/ANTENNA) control card listing.

(51)	7-8-9	CARD
(52)	SECRET	DEPLOYED
(53)	BE	
(54)	7-8-9	CARD
(55)	SECRET	TRUE
(56)	7-8-9	CARD
(57)	SECRET	TASK NAME
(58)	7-8-9	CARD
(59)	6-7-8-9	CARD

QSGHDXF

Figure 36. MISEQIP (MISEQIP/OVERLAP/ANTENNA) control card listing (cont).

PROGRAM MISJIP

9-19

PROGRAM MISTQIP 73/74 DPF-1

9-20

PROGRAM MISEQIP 73/74 UPI-1

9-21

TABLE XXXI. MISEQIP COMPUTER LISTING (CONT)

PAGE 4

80/07/28. 13.56.53

FIN 4.8+498

OPT=1

PROGRAM MISEQIP

73/74

```

C      LIST TUNING RANGE MIS-MATCH ITEMS
C
C

```

175

```

C      390 WRITE(6,*)EQUIP,(DEPLY(2,1),I=3,4)
C      4 FORMATT(10),TUNING MIS-MATCH(2,4),0-----AVAILABLE-----0/1X,2R5,
C      1 21A10(A5),2R8,211A,11),1X,A2,1X,A9,1X,A5/41X,0-----REQUIRED-----0/
C      2 41X,2R8)

```

180

```

C      LINE=LINE+5
C      IF(LINE.GT.25)CALL NEWPG(KLASS,LINE)
C      ERF LG=.TRUE.
C      IF(LEND.NE.2160 TO 275

```

185

```

C      HERE TO END JOB
C
C

```

190

```

C      900 REWIND 1
C      END FILE 2
C      REWIND 2
C      REWIND 8
C      IF(ERFLG)904,901

```

195

```

C      901 WRITE(6,902)
C      902 FORMATT(10)QND -NRDAS DETECTED BY MISEQIP*)
C      904 CALL NEWPG(KLASS,9999)
C      END

```

```

MISEQIP 183
MISEQIP 184
MISEQIP 185
MISEQIP 186
MISEQIP 187
SMALCOR 57
SMALCOR 58
SMALCOR 59
SMALCOR 60
SMALCOR 61
MISEQIP 191
MISEQIP 192
MISEQIP 193
FINNSQP 14
MISEQIP 195
MISEQIP 196
SMALCOR 61
MISEQIP 198
MISEQIP 199
MISEQIP 200
MISEQIP 201
MISEQIP 203
MISEQIP 205
TAPFMT1 24
TAPFMT1 25
TAPFMT1 26
TAPFMT1 22
MISEQIP 218

```

TABLE XXXI. MISEQIP COMPUTER LISTING (CONT)

SUBROUTINE NAME	7374	OPT-1	FIN 4.01400	00/0772H. 13.56.53	PAGE	1
1						
5						
10						
15						
20						

SUBROUTINE NAMEPG(K,L)

THIS SUBROUTINE PROVIDES PAGING AND CLASSIFICATION FOR PRINTED OUTPUT

L INPUT = 9999 PRINT BOTTOM OF PAGE ONLY
L INPUT = 0 PRINT TOP OF PAGE ONLY
L INPUT = ANY OTHER NUMBER PERFORM NORMAL PAGING

DATA IPAG/1/
IF(L.EQ.0)GO TO 10
WRITE(16,1)K
1 FORMAT(1,63K,A10)
IF(L.EQ.9999)RETURN
10 WRITE(16,2)K,IPAG
2 FORMAT(1H1,63K,A10,54X,14)
IPAG=IPAG+1
L=1
RETURN
END

MISEQIP 219
MISEQIP 220
MISEQIP 221
MISEQIP 222
MISEQIP 223
MISEQIP 224
MISEQIP 225
MISEQIP 226
MISEQIP 227
MISEQIP 228
MISEQIP 229
MISEQIP 230
MISEQIP 231
MISEQIP 232
MISEQIP 233
SMALCOR 62
MISEQIP 235
MISEQIP 236
MISEQIP 237
MISEQIP 238
MISEQIP 239
MISEQIP 240
MISEQIP 241

SECTION 10 - PROGRAM ECUPDT 17

10.1 PURPOSE

Program ECUPDT 17 adds new data records or makes changes to the data records presently contained in the master equipment class code assignment file.

10.2 PRINCIPAL FUNCTIONS

Program ECUPDT, shown in figure 37, accepts as input the old master equipment class file, together with equipment class update cards, and outputs an updated master equipment class file for use in program MISEQIP 16. The principal functions of program ECUPDT are as follows:

- a. Inserts, in proper sequence, data contained in update cards for new equipments.
- b. Deletes data records for old equipments.
- c. Modifies data fields in existing equipment records.
- d. Prints updates, errors, and the updated master equipment class code assignment file in various selected sort orders.

10.3 INPUT/OUTPUT DESCRIPTION

Input to program ECUPDT consists of two program control cards, update data cards, and the old master equipment class file. Output is the updated master equipment class file for input to program MISEQIP 16. A report section generates a listing of updates, errors, and the new equipment class file in various sorts.

10.3.1 Input Format

The format of input data for program ECUPDT is given in the following figures and table:

- a. Program control card, figure 38, page 10-4.
- b. Print option card, figure 39, page 10-5.
- c. Update data card 26, figure 40, page 10-6.
- d. Master equipment class code assignment file 24, table XXXII, page 10-10.

10.3.2 Output Format

(24) The format of the updated master equipment class code assignment file, output by program ECUPDT, is given in table XXXII, page 10-10.

10.4 PROCESS DESCRIPTION

a. Program ECUPDT is written in COBOL for processing on the CDC CYBER 172 computer and requires 100000_g words of central memory for execution.

b. The program reads all the update records into storage and sorts them on the first 10 characters in the record.

c. Each update record is compared in order with the old master equipment class file. If no match is found, the update record is added to the updated master equipment class file. If a match is found, all fields on the update are checked for modifications and the modified record is output to the updated file. If there is a match but no modifications, the record is deleted from the updated file. This procedure is repeated until all updates have been processed and the updated master equipment class file is completed. Data are edited for validity and an error report is generated. The new updated file is then printed.

10.5 PROGRAM OPERATION

Figure 41, page 10-13, is a listing of all system and UPDATE cards necessary to execute ECUPDT for a typical computer run.

10.6 LIMITATIONS

There are no program limitations.

10.7 RUNNING TIME

Running time is estimated at 1 minute per 100 update records.

10.8 COMPUTER PROGRAM LISTING

Table XXXIII, page 10-14, is a complete computer listing of program ECUPDT, annotated to aid in the understanding of the program functioning.

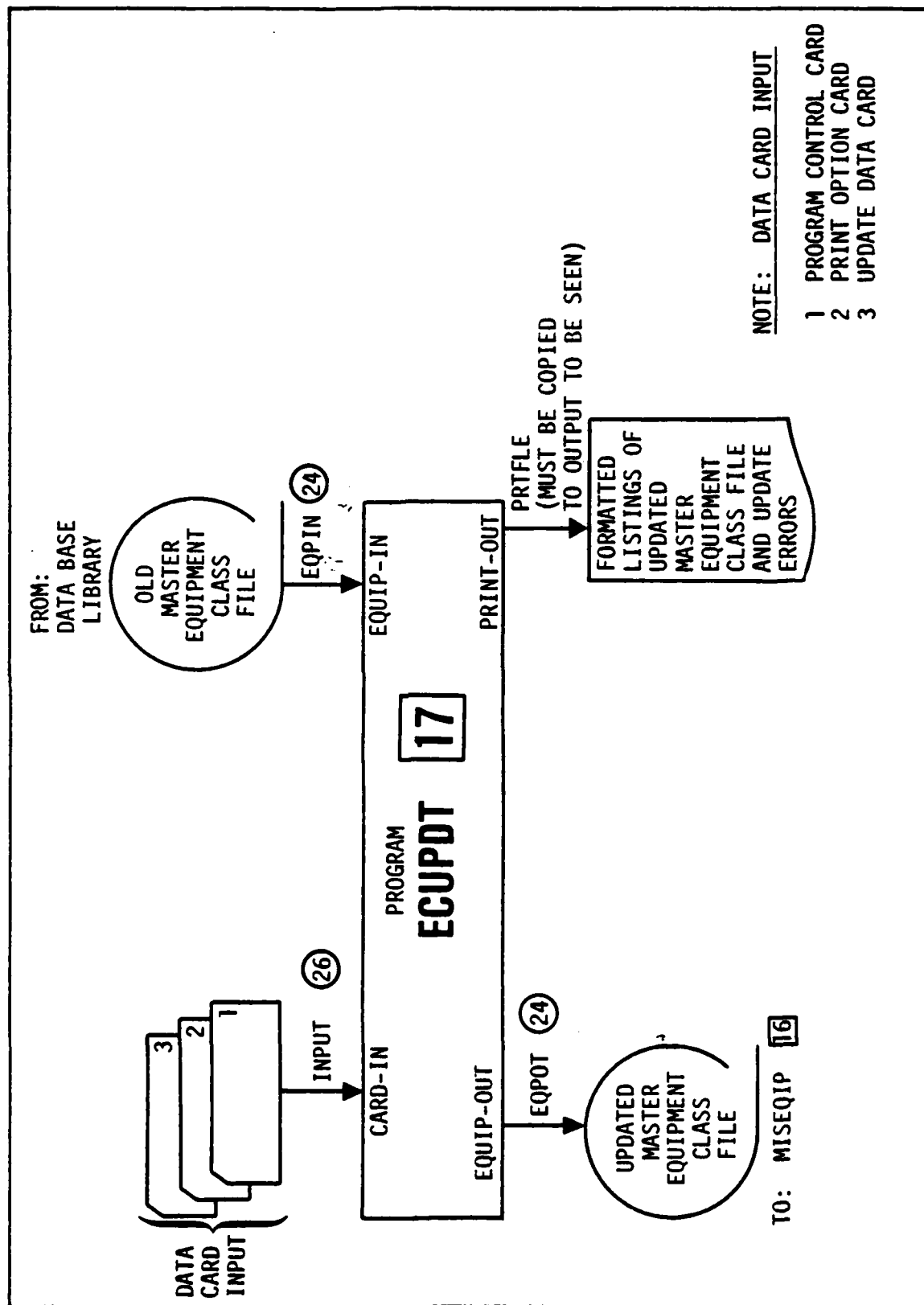


Figure 37. Program ECUPDT, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-4	A4	CD-TYP	CLAS. Must be as shown to identify card type.
2	6-25	2A10	CD-DTA	Security classification of data to be used in page headings.

Figure 38. ECUPDT input, program control card.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-4	A4	CD-TYP	REPT. Must be as shown to identify card type.
2	6	A1	R-NUM(1)	A 1-digit code (1 to 7) specifying the sort order for up to 7 alternate printed versions of the master equipment class code assignment data file. The codes and corresponding sort order from major to minor data fields are as follows:
3	8	A1	R-NUM(2)	
4	10	A1	R-NUM(3)	
5	12	A1	R-NUM(4)	
6	14	A1	R-NUM(5)	1 = Equipment class code, component code, major equipment code, modulation code, number of channels.
7	16	A1	R-NUM(6)	2 = Component nomenclature, component code, major equipment code, modulation code, number of channels.
8	18	A1	R-NUM(7)	3 = Component code, major equipment code, modulation code, number of channels.
				4 = Major equipment nomenclature, component code, major equipment code, modulation code, number of channels.
				5 = Low limit of tuning range, component code, major equipment code, modulation code, number of channels.
				6 = Modulation code, component code, major equipment code, number of channels.
				7 = Major equipment code, component code, modulation code, number of channels.

Figure 39. ECUPDT input, print option card.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-3	A3	S-1	A 3-character alphanumeric code assigned to the equipment component.
2	4-5	A2	S-2	A 2-character alphanumeric code assigned to the major equipment class.
3	6-7	A2	S-3	A 2-digit code indicating modulation type: 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
4	8-10	A3	S-4	The number of channels assigned for this equipment component, if applicable. If subfield 8 > 5, the equipment is encrypted.
5	11-25	A10,A5	S-5	Nomenclature of the equipment associated with this component code.
6	26-40	A10,A5	S-6	Nomenclature of the equipment associated with the major equipment code.
7	41-48	A8	S-7	Lowest frequency (in kHz) to which this equipment will tune.
8	49-56	A8	S-8	Highest frequency (in kHz) to which this equipment will tune.
9	58	A1	S-9	A 1-character alphabetic code indicating the use type of equipment: B = broadcast/television, C = communications, D = direction finding, E = fixed frequency emergency guardband, I = intercept/ESM, J = jammer/ESM, M = sensors,

Figure 40. ECUPDT input, update data card (26) .

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
9 (cont)				N = navigation aids, O = orderwire, Q = miscellaneous special purpose, S = detecting/range bearing (radar), V = sensor data link, X = IFF, Y = security monitoring (COMSEC, etc.), Z = special electronic warfare (EW). Other codes are assigned as needed.
10	60	A1	S-10	A 1-character alphabetic code indicating force type: B = BLUE (friendly), R = RED (enemy).
11	62-63	A2	S-11	A 2-character alphabetic code indicating equipment type: XX = transmitter only, XY = transceiver, YY = receiver only.
12	65-73	A9	S-12	Last 9 digits of expanded equipment class number. (Not presently used.)
13	75-79	A5	S-13	Last 5 digits of equipment class number.

NOTES:

- To add new equipments, fill in all fields.
- To modify old equipments, fill in data for fields to be modified and columns 1-10.
- To delete old equipments, fill in columns 1-10 only.

Figure 40. ECUPDT input, update data card (26) (cont).

INTENTIONALLY BLANK

File Description: Master Equipment Class Code Assignment File (24)
EQUIP-IN/
File Name: EQPIN/EQPOT Logical Unit: EQUIP-OUT
Mode/Type: BCD Record Length: 80 characters
Origin: Basic data file (GENEC3) maintained by ECUPDT
Used By: MISEQIP 16 ; ECUPDT 17

Note: The file is sorted in ascending order on characters 2-11.

TABLE XXXII. MASTER EQUIPMENT CLASS CODE ASSIGNMENT FILE (24)

Data Description	Field Size	Field Position	Remarks
Component code	1	1	Blank
Major equipment code	3	2-4	A 3-character alphanumeric code assigned to this equipment component.
Modulation code	2	5-6	A 2-character alphanumeric code assigned to this major equipment class.
Number of channels	2	7-8	A 2-digit code indicating modulation type: 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
Component nomenclature	3	9-11	The number of channels assigned for this equipment component, if applicable. If subfield 9 > 5, the equipment is encrypted.
Major equipment nomenclature	15	12-26	Name of the component associated with this component code.
Low tuning range limit	15	27-41	Name of the major equipment associated with this major equipment code.
High tuning range limit	8	42-49	Lowest frequency (in kHz) to which this equipment will tune.
	8	50-57	Highest frequency (in kHz) to which this equipment will tune.
	1	58	Blank

TABLE XXXII. MASTER EQUIPMENT CLASS CODE ASSIGNMENT FILE (24) (CONT)

Data Description	Field Size	Field Position	Remarks
Use code	1	59	A 1-character alphabetic code indicating the use type of equipment: B = broadcast/television, C = communications, D = direction finding, E = fixed frequency emergency guardband, I = intercept/ESM, J = jammer/ESM, M = sensors, N = navigation aids, O = orderwire, Q = miscellaneous special purpose, S = detecting/range bearing (radar), V = sensor data link, X = IFF, Y = security monitoring (COMSEC, etc.), Z = special electronic warfare (EW). Other codes are assigned as needed.
Force code	1	60	Blank
	1	61	A 1-character alphabetic code indicating force type: B = BLUE (friendly), R = RED (enemy).
	1	62	Blank
XY code	2	63-64	A 2-character alphabetic code indicating equipment type: XX = transmitter only, XY = transceiver, YY = receiver only.
New equipment class	1	65	Blank
	9	66-74	Expanded equipment class for future development. Not presently used.
	1	75	Blank

TABLE XXXII. MASTER EQUIPMENT CLASS CODE ASSIGNMENT FILE (24) (CONT)

Data Description	Field Size	Field Position	Remarks
Equipment class code (last 5 of 6 digits)	5	76-80	A 5-digit code assigned to indicate the equipment class when the data set code is attached as the first of a total of 6 digits. The final 5 digits are assigned as follows: Subfield 76. Modulation code: 1 = F3 = 33, 2 = A3 = 13, 3 = A3A or A3J = 14, 4 = F1 = 31, 5 = F9 = 36, 6 = P0 = 50, 7 = P9 = 58, 8 = A2 or A9 = 18 or 12, 9 = A1 = 11, 0 = special or other. Subfield 77. Bandwidth: For modulation codes 1-5 and 8, 9, 0: 1 = narrow, 2 = medium, 3 = wide, 4 = very wide; for modulation codes 6 and 7: 5-9 and 0 indicate different "B" matrices. Subfield 78-79. Sequence number: 00-99 = final specific equipment designator within modulation code and bandwidth. Subfield 80: Siting preference: 1 = normal, 2 = normal, 3 = airborne radar, 4 = ground radar, 5 = preferred, 6 = airborne nonradar, 7 = radio relay (LOS), 8 = nap of the earth, 9 = tropo-scatter, 0 = satellite.

	JGR	EQUIP CLASS UPDATE	S
(1)	ECUPDT, T777.		
(2)	USER ID **		
(3)	CHARGE (MA000.N)		
(4)	COMMENT.		
(5)	COMMENT.		
(6)	COMMENT.		
(7)	COMMENT.		
(8)	COMMENT.		
(9)	COMMENT.		
(10)	COMMENT.		
(11)	COMMENT.		
(12)	COMMENT.		
(13)	COMMENT.		
(14)	COMMENT.		
(15)	COMMENT.		
(16)	COMMENT.		
(17)	COMMENT.		
(18)	COMMENT.		
(19)	COMMENT.		
(20)	COMMENT.		
(21)	COMMENT.		
(22)	COMMENT.		
(23)	COMMENT.		
(24)	COMMENT.		
(25)	COMMENT.		
(26)	COMMENT.		

Figure 41. ECUPDT control card listing.

TABLE XXXIII. ECUPDT COMPUTER LISTING

CDC COMJL 3.3 - LEVEL 498 SOURCE LISTING OF ECUPDT ADPT- 66/CDC/CDCS1 80/07/29. 13.25.42. PAGE 1

1	IDENTIFICATION DIVISION.	ECUPDT	2
2	PROGRAM-10. ECUPDT.	ECUPDT	3
3	AUTHOR. RASMUSSEN.	ECUPDT	4
4	DATE-COMPILED. JULY 29, 1980	ECUPDT	5
5	ENVIRONMENT DIVISION.	ECUPDT	6
6	CONFIGURATION SECTION.	ECUPDT	7
7	SOURCE-COMPUTER. 6500.	ECUPDT	8
8	SUBJECT-COMPUTER. 6500.	ECUPDT	9
9	SPECIAL-NAMES.	ECUPDT	10
10	ADDITIONAL IS ULP.	ECUPDT	11
11	INPUT-OUTPUT SECTION.	ECUPDT	12
12	FILE-CONTROL.	ECUPDT	13
13	SELECT CARD-IN ASSIGN TO INPUT.	ECUPDT	14
14	SELECT EQUIP-IN ASSIGN TO EQUIP.	ECUPDT	15
15	SELECT EQUIP-OUT ASSIGN TO EQUIP.	ECUPDT	16
16	SELECT PRINT-OUT ASSIGN TO PRINTER.	ECUPDT	17
17	SELECT SORT-FILE ASSIGN TO DISK1.	ECUPDT	18
18	SELECT SORT-WRK ASSIGN TO DISK2.	ECUPDT	19
19	DATA DIVISION.	ECUPDT	20
20	FILE SECTION.	ECUPDT	21
21	FD CARD-IN	ECUPDT	22
22	LABEL RECORDS ARE OMITTED	ECUPDT	23
23	DATA RECORD IS COIN.	ECUPDT	24
24	01 COIN.	ECUPDT	25
25	02 CO-TYP PIC X(04).	ECUPDT	26
26	02 FILLER PIC X(1).	ECUPDT	27
27	02 CO-DTA PIC X(20).	ECUPDT	28
28	02 FILLER PIC X(55).	ECUPDT	29
29	FD EQUIP-IN	ECUPDT	30
30	LABEL RECORDS ARE OMITTED	ECUPDT	31
31	DATA RECORD IS EQUIP.	ECUPDT	32
32	01 EQUIP.	ECUPDT	33
33	02 FILLER PIC X(01).	ECUPDT	34
34	02 E-1 PIC X(03).	ECUPDT	35
35	02 E-2 PIC X(02).	ECUPDT	36
36	02 E-3 PIC X(02).	ECUPDT	37
37	02 E-4 PIC X(03).	ECUPDT	38
38	02 E-5 PIC X(15).	ECUPDT	39
39	02 E-6 PIC X(15).	ECUPDT	40
40	02 E-7 PIC X(04).	ECUPDT	41
41	02 E-8 PIC X(04).	ECUPDT	42
42	02 FILLER PIC X(01).	ECUPDT	43
43	02 FILLER PIC X(01).	ECUPDT	44
44	02 FILLER PIC X(01).	ECUPDT	45
45	02 E-10 PIC X(01).	ECUPDT	46
46	02 FILLER PIC X(01).	ECUPDT	47
47	02 E-11 PIC X(02).	ECUPDT	48
48	02 FILLER PIC X(01).	ECUPDT	49
49	02 E-12 PIC X(01).	ECUPDT	50
50	02 FILLER PIC X(01).	ECUPDT	51
51	02 E-13.	ECUPDT	52
52	03 E-13A PIC X(01).	ECUPDT	53
53	03 E-13B PIC X(01).	ECUPDT	54
54	03 E-13C PIC X(02).	ECUPDT	55

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

CDC CUBOL 5.3 - LEVEL 498 SOURCE LISTING OF ECUPDT AUP1- 66/CDC/CDCS1 03/07/23. 13.25.42. PAGE 2

```

55 03 E-130 PIC X(11).
56 FU EQUIP-OUT
57 LABEL RECORDS ARE OMITTED
58 DATA RECORD IS EUPDT.
59 01 EUPDT.
60 02 FILLER PIC X(11).
61 02 E1 PIC X(10).
62 02 E2 PIC X(10).
63 02 E3 PIC X(10).
64 02 E4 PIC X(10).
65 02 E5 PIC X(10).
66 02 E6 PIC X(10).
67 02 E7 PIC X(10).
68 02 E8 PIC X(10).
69 02 FILLER PIC X(11).
70 02 E9 PIC X(10).
71 02 FILLER PIC X(11).
72 02 E10 PIC X(10).
73 02 FILLER PIC X(11).
74 02 E11 PIC X(10).
75 02 FILLER PIC X(11).
76 02 E12 PIC X(10).
77 02 FILLER PIC X(11).
78 02 E13.
79 03 E13A PIC X(11).
80 03 E13B PIC X(11).
81 03 E13C PIC X(10).
82 03 E13D PIC X(10).
83 FU PRINT-OUT
84 LABEL RECORDS ARE OMITTED
85 REPORTS ARE CARD-NPT EQUIP-RPT AUDITS.
86 01 SORT-WRK
87 DATA RECORD IS SORT-WRK.
88 01 SORT-WRK.
89 02 FILLER PIC X(11).
90 02 F-KEY.
91 03 W01 PIC X(10).
92 03 W02 PIC X(10).
93 03 W03 PIC X(10).
94 03 W04 PIC X(10).
95 02 W05 PIC X(10).
96 02 W06 PIC X(10).
97 02 W07 PIC X(10).
98 02 W08 PIC X(10).
99 02 FILLER PIC X(11).
100 02 W09 PIC X(10).
101 02 FILLER PIC X(11).
102 02 W10 PIC X(10).
103 02 FILLER PIC X(11).
104 02 W11 PIC X(10).
105 02 FILLER PIC X(11).
106 02 W12 PIC X(10).
107 02 FILLER PIC X(11).
108 02 W13 PIC X(10).
109 02 FILLER PIC X(11).

```

COLUM: 1 2 3 4 5 6 7 8
12345678901234567890123456789012345678901234567890

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

CDC COMUL 5.3 - LEVEL 478 SOURCE LISTING OF ECUPDT AOPT= 66/CDC/CDCS1 80/07/29. 13.25.42. PAGE 3

109	02 W13.		ECUPDT	110
110	03 W13A PIC X(01).		ECUPDT	111
111	03 W13B PIC X(01).		ECUPDT	112
112	03 W13C PIC X(02).		ECUPDT	113
113	03 W13D PIC X(01).		ECUPDT	114
114	03 W13E PIC X(01).		ECUPDT	115
115	03 W13F PIC X(01).		ECUPDT	116
116	03 W13G PIC X(01).		ECUPDT	117
117	03 W13H PIC X(01).		ECUPDT	118
118	03 W13I PIC X(01).		ECUPDT	119
119	03 W13J PIC X(01).		ECUPDT	120
120	03 W13K PIC X(01).		ECUPDT	121
121	03 W13L PIC X(01).		ECUPDT	122
122	03 W13M PIC X(01).		ECUPDT	123
123	03 W13N PIC X(01).		ECUPDT	124
124	03 W13O PIC X(01).		ECUPDT	125
125	03 W13P PIC X(01).		ECUPDT	126
126	03 W13Q PIC X(01).		ECUPDT	127
127	03 W13R PIC X(01).		ECUPDT	128
128	03 W13S PIC X(01).		ECUPDT	129
129	03 W13T PIC X(01).		ECUPDT	130
130	03 W13U PIC X(01).		ECUPDT	131
131	03 W13V PIC X(01).		ECUPDT	132
132	03 W13W PIC X(01).		ECUPDT	133
133	03 W13X PIC X(01).		ECUPDT	134
134	03 W13Y PIC X(01).		ECUPDT	135
135	03 W13Z PIC X(01).		ECUPDT	136
136	03 W14A PIC X(01).		ECUPDT	137
137	03 W14B PIC X(01).		ECUPDT	138
138	03 W14C PIC X(01).		ECUPDT	139
139	03 W14D PIC X(01).		ECUPDT	140
140	03 W14E PIC X(01).		ECUPDT	141
141	03 W14F PIC X(01).		ECUPDT	142
142	03 W14G PIC X(01).		ECUPDT	143
143	03 W14H PIC X(01).		ECUPDT	144
144	03 W14I PIC X(01).		ECUPDT	145
145	03 W14J PIC X(01).		ECUPDT	146
146	03 W14K PIC X(01).		ECUPDT	147
147	03 W14L PIC X(01).		ECUPDT	148
148	03 W14M PIC X(01).		ECUPDT	149
149	03 W14N PIC X(01).		ECUPDT	150
150	03 W14O PIC X(01).		ECUPDT	151
151	03 W14P PIC X(01).		ECUPDT	152
152	03 W14Q PIC X(01).		ECUPDT	153
153	03 W14R PIC X(01).		ECUPDT	154
154	03 W14S PIC X(01).		ECUPDT	155
155	03 W14T PIC X(01).		ECUPDT	156
156	03 W14U PIC X(01).		ECUPDT	157
157	03 W14V PIC X(01).		ECUPDT	158
158	03 W14W PIC X(01).		ECUPDT	159
159	03 W14X PIC X(01).		ECUPDT	160
160	03 W14Y PIC X(01).		ECUPDT	161
161	03 W14Z PIC X(01).		ECUPDT	162
162	03 W15A PIC X(01).		ECUPDT	163

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

CDC CIBUL 5.3 - LEVEL 49H SOURCE LISTING OF ECUPDT ADPT= 66/COC/COC51 00/07/21. 13.25.42. PAGE 4

```

163 03 FILLER PIC X(101).
164 03 S-13.
165 04 S-13A PIC X(101).
166 00 VAL-S13A VALUE # #
167 00# THRU #9#.
168 04 S-13B PIC X(101).
169 00 VAL-S13B VALUE # #
170 00# THRU #9#.
171 04 S-13C PIC X(102).
172 00 VAL-S13C VALUE # #
173 00# THRU #99#.
174 04 S-13D PIC X(101).
175 00 VAL-S13D VALUE # #
176 00# THRU #2#.
177 00# THRU #5#.
178 00# THRU #9#.
179
180 WORKING-STORAGE SECTION.
181 77 CT-CD PIC 9(7) VALUE ZERO.
182 77 CT-EIN PIC 9(7) VALUE ZERO.
183 77 CT-EOT PIC 9(7) VALUE ZERO.
184 77 CT-CMG PIC 9(7) VALUE ZERO.
185 77 CT-ADD PIC 9(7) VALUE ZERO.
186 77 CT-DEL PIC 9(7) VALUE ZERO.
187 77 CT-ERR PIC 9(7) VALUE ZERO.
188 77 S-USED PIC X(11) VALUE #.
189 77 CT-ERR PIC 9(7) VALUE ZERO.
190 77 CT-ERR PIC 9(7) VALUE ZERO.
191 77 CT-ERR PIC 9(7) VALUE ZERO.
192 77 CT-ERR PIC 9(7) VALUE ZERO.
193 01 DATE.
194 02 DT-VV PIC X(102).
195 02 DT-WM PIC X(102).
196 02 DT-DD PIC X(102).
197 01 REPT-TYP.
198 02 R-TYP OCCURS 7 TIMES INDEXED BY R.
199 03 R-NUM PIC X(11).
200 03 FILLER PIC X(11).
201 01 ER-POS.
202 02 ER-POS3 PIC X(2).
203 02 ER-POS4 PIC X(3).
204 02 ER-POS5 PIC X(15).
205 02 ER-POS6 PIC X(15).
206 02 ER-POS7 PIC X(10).
207 02 ER-POS8 PIC X(10).
208 02 ER-POS9 PIC X(11).
209 02 ER-POS10 PIC X(11).
210 02 ER-POS11 PIC X(12).
211 02 ER-POS12.
212 03 ER-POS13A PIC X(11).
213 03 ER-POS13B PIC X(11).
214 03 ER-POS13C PIC X(12).
215 03 ER-POS13D PIC X(11).
216 01 SRT-TYP-TAI.
217 02 FILLER PIC X(20) VALUE #EQUIPMENT CLASS #.

```

COLUMN 1 2 3 4 5 6 7 8
12345678901234567890123456789012345678901234567890

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

CDC CUBOL 5.3 - LEVEL 498 SOURCE LISTING OF ECUPDT ADPT- 66/CDC/CDCS1 00/07/29. 13.25.42. PAGE 5

```

217 02 FILLER PIC X(20) VALUE #COMPONENT NAME #. ECUPDT 218
218 02 FILLER PIC X(20) VALUE #COMPONENT CODE #. ECUPDT 219
219 02 FILLER PIC X(20) VALUE #MAJOR SYSTEM NAME #. ECUPDT 220
220 02 FILLER PIC X(20) VALUE #LOW FREQUENCY #. ECUPDT 221
221 02 FILLER PIC X(20) VALUE #MODULATION CODE #. ECUPDT 222
222 02 FILLER PIC X(20) VALUE #MAJOR EQUIPMENT CODE #. ECUPDT 223
223 01 SRT-TXT REDEFINES SRT-TYP-TXT. ECUPDT 224
224 02 SRT-TXT OCCURS 7 TIMES. ECUPDT 225
225 03 SRT-TYPE PIC X(20). ECUPDT 226
226 01 CRPT-M. ECUPDT 227
227 02 FILLER PIC X(20) VALUE #UPDATES FOR MASTER EQUIPMENT #. ECUPDT 228
228 02 FILLER PIC X(11) VALUE #CLASS FILE #. ECUPDT 229
229 01 CRPT-M2. ECUPDT 230
230 02 FILLER PIC X(34) VALUE #ERRORS ENCOUNTERED WHILE UPDATING#. ECUPDT 231
231 01 URPT PIC X(50) VALUE SPACE. ECUPDT 232
232 01 URPT-1. ECUPDT 233
233 02 FILLER PIC X(26) VALUE #ATTEMPT TO ADD RECORD WITH#. ECUPDT 234
234 02 FILLER PIC X(16) VALUE #INCOMPLETE DATA#. ECUPDT 235
235 REPORT SECTION. ECUPDT 236
236 RD CARD-RPT ECUPDT 237
237 PAGE LIMIT IS 62 LINES ECUPDT 238
238 HEADING 1 ECUPDT 239
239 FIRST DETAIL 12 ECUPDT 240
240 LAST DETAIL 58 ECUPDT 241
241 FOOTING 60. ECUPDT 242
242 01 TYPE IS PAGE HEADING. ECUPDT 243
243 02 LINE 1. ECUPDT 244
244 03 COLUMN 050 PIC X(20) SOURCE CLAST. ECUPDT 245
245 03 COLUMN 100 PIC X(104) VALUE #PAGE#. ECUPDT 246
246 03 COLUMN 105 PIC ZZZZ SOURCE PAGE-COUNTER OF CARD-RPT. ECUPDT 247
247 02 LINE PLUS 2. ECUPDT 248
248 03 COLUMN 036 PIC X(40) SOURCE CRPT-M. ECUPDT 249
249 03 COLUMN 040 PIC X(102) SOURCE DT-MM. ECUPDT 250
250 03 COLUMN 082 PIC X(101) VALUE #/#. ECUPDT 251
251 03 COLUMN 083 PIC X(102) SOURCE DT-DD. ECUPDT 252
252 03 COLUMN 085 PIC X(101) VALUE #/#. ECUPDT 253
253 03 COLUMN 086 PIC X(102) SOURCE DT-YY. ECUPDT 254
254 02 LINE PLUS 2. ECUPDT 255
255 03 COLUMN 010 PIC X(104) VALUE #COMP#. ECUPDT 256
256 03 COLUMN 016 PIC X(105) VALUE #MAJRA#. ECUPDT 257
257 03 COLUMN 023 PIC X(105) VALUE #MODUL#. ECUPDT 258
258 03 COLUMN 030 PIC X(103) VALUE #NO.#. ECUPDT 259
259 03 COLUMN 038 PIC X(109) VALUE #COMPONENT#. ECUPDT 260
260 03 COLUMN 055 PIC X(115) VALUE #MAJOR EQUIPMENT#. ECUPDT 261
261 03 COLUMN 072 PIC X(103) VALUE #LDA#. ECUPDT 262
262 03 COLUMN 081 PIC X(104) VALUE #LDA#. ECUPDT 263
263 03 COLUMN 091 PIC X(103) VALUE #USE#. ECUPDT 264
264 03 COLUMN 077 PIC X(105) VALUE #FORCE#. ECUPDT 265
265 03 COLUMN 104 PIC X(102) VALUE #AYA#. ECUPDT 266
266 03 COLUMN 111 PIC X(109) VALUE #EQUIPMENT#. ECUPDT 267
267 02 LINE PLUS 1. ECUPDT 268
268 03 COLUMN 010 PIC X(104) VALUE #CODE#. ECUPDT 269
269 03 COLUMN 016 PIC X(105) VALUE #EQUIP#. ECUPDT 270
270 03 COLUMN 023 PIC X(104) VALUE #C-IDE#. ECUPDT 271

```

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

CDC CU80L 5.3 - LEVEL 498 SOURCE LISTING OF ECUPDT AUPT= 66/CDC/COCS1 80/07/29. 13.25.42. PAGE 6

271	03 COLUMN 030 PIC X(06) VALUE #CHANLS#.	ECUPDT 272
272	03 COLUMN 038 PIC X(12) VALUE #NOMENCLATURE#.	ECUPDT 273
273	03 COLUMN 055 PIC X(12) VALUE #NOMENCLATURE#.	ECUPDT 274
274	03 COLUMN 072 PIC X(06) VALUE #TUNING#.	ECUPDT 275
275	03 COLUMN 081 PIC X(06) VALUE #TUNING#.	ECUPDT 276
276	03 COLUMN 091 PIC X(04) VALUE #CODE#.	ECUPDT 277
277	03 COLUMN 097 PIC X(04) VALUE #CODE#.	ECUPDT 278
278	03 COLUMN 111 PIC X(05) VALUE #CLASS#.	ECUPDT 279
279	02 LINE PLUS 1.	ECUPDT 280
280	03 COLUMN 016 PIC X(04) VALUE #CODE#.	ECUPDT 281
281	03 COLUMN 072 PIC X(05) VALUE #RANGE#.	ECUPDT 282
282	03 COLUMN 081 PIC X(05) VALUE #RANGE#.	ECUPDT 283
283	03 COLUMN 111 PIC X(04) VALUE #CODE#.	ECUPDT 284
284	02 LINE PLUS 2.	ECUPDT 285
285	03 COLUMN 010 PIC X(03) VALUE #1-3#.	ECUPDT 286
286	03 COLUMN 016 PIC X(03) VALUE #4-5#.	ECUPDT 287
287	03 COLUMN 023 PIC X(03) VALUE #6-7#.	ECUPDT 288
288	03 COLUMN 030 PIC X(04) VALUE #8-10#.	ECUPDT 289
289	03 COLUMN 038 PIC X(05) VALUE #11-25#.	ECUPDT 290
290	03 COLUMN 055 PIC X(05) VALUE #26-40#.	ECUPDT 291
291	03 COLUMN 072 PIC X(05) VALUE #41-48#.	ECUPDT 292
292	03 COLUMN 081 PIC X(05) VALUE #49-56#.	ECUPDT 293
293	03 COLUMN 091 PIC X(02) VALUE #58#.	ECUPDT 294
294	03 COLUMN 097 PIC X(02) VALUE #60#.	ECUPDT 295
295	03 COLUMN 104 PIC X(05) VALUE #62-63#.	ECUPDT 296
296	03 COLUMN 111 PIC X(05) VALUE #75-79#.	ECUPDT 297
297	01 DETAIL-C1 TYPE IS DETAIL LINE PLUS 2.	ECUPDT 298
298	02 COLUMN 010 PIC X(03) SOURCE S-1.	ECUPDT 299
299	02 COLUMN 016 PIC X(02) SOURCE S-2.	ECUPDT 300
300	02 COLUMN 023 PIC X(02) SOURCE S-3.	ECUPDT 301
301	02 COLUMN 030 PIC X(03) SOURCE S-4.	ECUPDT 302
302	02 COLUMN 038 PIC X(15) SOURCE S-5.	ECUPDT 303
303	02 COLUMN 055 PIC X(15) SOURCE S-6.	ECUPDT 304
304	02 COLUMN 072 PIC X(04) SOURCE S-7.	ECUPDT 305
305	02 COLUMN 081 PIC X(08) SOURCE S-8.	ECUPDT 306
306	02 COLUMN 091 PIC X(01) SOURCE S-9.	ECUPDT 307
307	02 COLUMN 097 PIC X(01) SOURCE S-10.	ECUPDT 308
308	02 COLUMN 104 PIC X(02) SOURCE S-11.	ECUPDT 309
309	02 COLUMN 111 PIC X(05) SOURCE S-13.	ECUPDT 310
310	01 DETAIL-C2 TYPE IS DETAIL LINE PLUS 1.	ECUPDT 311
311	02 COLUMN 001 PIC X(09) VALUE #ERROR###.	ECUPDT 312
312	02 COLUMN 023 PIC X(02) SOURCE ER-PJ53.	ECUPDT 313
313	02 COLUMN 030 PIC X(03) SOURCE ER-PJ54.	ECUPDT 314
314	02 COLUMN 038 PIC X(15) SOURCE ER-PJ55.	ECUPDT 315
315	02 COLUMN 055 PIC X(15) SOURCE ER-PJ56.	ECUPDT 316
316	02 COLUMN 072 PIC X(03) SOURCE ER-PJ57.	ECUPDT 317
317	02 COLUMN 081 PIC X(04) SOURCE ER-PJ58.	ECUPDT 318
318	02 COLUMN 091 PIC X(01) SOURCE ER-PJ59.	ECUPDT 319
319	02 COLUMN 097 PIC X(01) SOURCE ER-PJ60.	ECUPDT 320
320	02 COLUMN 104 PIC X(02) SOURCE ER-PJ61.	ECUPDT 321
321	02 COLUMN 111 PIC X(05) SOURCE ER-PJ62.	ECUPDT 322
322	01 DETAIL-C3 TYPE IS DETAIL LINE PLUS 1.	ECUPDT 323
323	02 COLUMN 010 PIC X(20) SOURCE UNPT.	ECUPDT 324
324	01 TYPE IS PAGE FINISHING LINE 61.	ECUPDT 325

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

CDC C080L 2.3 - LEVEL 498 SOURCE LISTING OF ECUPDT ADPT- 66/CDC/CDCS1 80/07/29. 13.25.42. PAGE 7

325	02 COLUMN 050 PIC X(20) SOURCE CLAS1.	ECUPDT	326
326	02 COLUMN 100 PIC X(04) VALUE #PAGE#.	ECUPDT	327
327	02 COLUMN 105 PIC ZZZ9 SOURCE PAGE-COUNTER OF CARD-RPT.	ECUPDT	328
328	40 EQUIP-RPT	ECUPDT	329
329	PAGE LIMIT IS 62 LINES	ECUPDT	330
330	HEADING 1	ECUPDT	331
331	FIRST DETAIL 10	ECUPDT	332
332	LAST DETAIL 58	ECUPDT	333
333	PUTTING 60.	ECUPDT	334
334	01 TYPE IS PAGE HEADING.	ECUPDT	335
335	02 LINE 1.	ECUPDT	336
336	03 COLUMN 060 PIC X(20) SOURCE CLAS1.	ECUPDT	337
337	03 COLUMN 110 PIC X(04) VALUE #PAGE#.	ECUPDT	338
338	03 COLUMN 115 PIC ZZZ9 SOURCE PAGE-COUNTER OF EQUIP-RPT.	ECUPDT	339
339	02 LINE PLUS 2.	ECUPDT	340
340	03 COLUMN 030 PIC X(27) VALUE #MASTER EQUIPMENT CLASS CODE#.	ECUPDT	341
341	03 COLUMN 058 PIC X(21) VALUE #ASSIGNMENT FILE AS OF#.	ECUPDT	342
342	03 COLUMN 080 PIC X(02) SOURCE DT-MR.	ECUPDT	343
343	03 COLUMN 082 PIC X(01) VALUE #A.	ECUPDT	344
344	03 COLUMN 083 PIC X(02) SOURCE DT-DD.	ECUPDT	345
345	03 COLUMN 085 PIC X(01) VALUE #A.	ECUPDT	346
346	03 COLUMN 086 PIC X(02) SOURCE DT-YY.	ECUPDT	347
347	02 LINE PLUS 2.	ECUPDT	348
348	03 COLUMN 050 PIC X(07) VALUE #SORT BY#.	ECUPDT	349
349	03 COLUMN 058 PIC X(20) SOURCE SRT-TYPE (S).	ECUPDT	350
350	02 LINE PLUS 2.	ECUPDT	351
351	03 COLUMN 015 PIC X(09) VALUE #COMPONENT#.	ECUPDT	352
352	03 COLUMN 036 PIC X(12) VALUE #MAJOR SYSTEM#.	ECUPDT	353
353	03 COLUMN 057 PIC X(05) VALUE #MODUL#.	ECUPDT	354
354	03 COLUMN 064 PIC X(03) VALUE #NO#.	ECUPDT	355
355	03 COLUMN 073 PIC X(12) VALUE #TUNING RANGE#.	ECUPDT	356
356	03 COLUMN 092 PIC X(03) VALUE #USE#.	ECUPDT	357
357	03 COLUMN 098 PIC X(05) VALUE #FORCE#.	ECUPDT	358
358	03 COLUMN 105 PIC X(02) VALUE #A#.	ECUPDT	359
359	03 COLUMN 111 PIC X(09) VALUE #EQUIPMENT#.	ECUPDT	360
360	02 LINE PLUS 1.	ECUPDT	361
361	03 COLUMN 010 PIC X(04) VALUE #CODE#.	ECUPDT	362
362	03 COLUMN 016 PIC X(12) VALUE #NOMENCLATURE#.	ECUPDT	363
363	03 COLUMN 033 PIC X(04) VALUE #CODE#.	ECUPDT	364
364	03 COLUMN 033 PIC X(12) VALUE #NOMENCLATURE#.	ECUPDT	365
365	03 COLUMN 057 PIC X(04) VALUE #CODE#.	ECUPDT	366
366	03 COLUMN 064 PIC X(06) VALUE #CHAMLS#.	ECUPDT	367
367	03 COLUMN 072 PIC X(03) VALUE #LOW#.	ECUPDT	368
368	03 COLUMN 082 PIC X(04) VALUE #HIGH#.	ECUPDT	369
369	03 COLUMN 092 PIC X(04) VALUE #CODE#.	ECUPDT	370
370	03 COLUMN 094 PIC X(04) VALUE #CODE#.	ECUPDT	371
371	03 COLUMN 104 PIC X(04) VALUE #CODE#.	ECUPDT	372
372	03 COLUMN 111 PIC X(05) VALUE #CLASS#.	ECUPDT	373
373	01 DETAIL-11 TYPE IS DETAIL LINE PLUS 1.	ECUPDT	374
374	02 COLUMN 010 PIC X(03) SOURCE #01.	ECUPDT	375
375	02 COLUMN 016 PIC X(15) SOURCE #05.	ECUPDT	376
376	02 COLUMN 033 PIC X(02) SOURCE #02.	ECUPDT	377
377	02 COLUMN 033 PIC X(15) SOURCE #06.	ECUPDT	378
378	02 COLUMN 057 PIC X(02) SOURCE #03.	ECUPDT	379

COLUMN 1 2 3 4 5 6 7 8
12345678901234567890123456789012345678901234567890

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

80/07/29. 13.25.42. PAGE 9

ADPT- 66/CDC/CDCS1

SOURCE LISTING OF ECUPDT

CDC CUBOL 5.3 - LEVEL 4.48

PROCEDURE DIVISION.

MAIN SECTION.

PROC-CARD.

 SORT SORT-FILE ON ASCENDING KEY S-1 S-2 S-3 S-4 S-5-13

 INPUT PROCEDURE IS READ-CARDS

 OUTPUT PROCEDURE IS UPDATE-EOP.

 PERFORM REPORT-EJP.

 STOP RUN.

READ-CARDS SECTION.

OPEN-CARD.

 ACCEPT DATA FROM DATE.

 OPEN INPUT CARD-IN.

 OPEN OUTPUT PRINT-OUT.

 INITIATE CARD-RPT.

 PERFORM RD-CO.

 PERFORM GET-CARD UNTIL COIN = HIGH-VALUES.

 GO TO CLS-CARD.

GET-CARD.

 IF CO-TYP = #CLAS# MOVE CO-DIA TO CLAS

 ELSE

 IF CO-TYP = #REPT# MOVE CO-DIA TO REPT-TYP

 ELSE

 PERFORM DATA-CRD.

DATA-CRD.

 ADD 1 TO CT-CO.

 MOVE SPACE TO S-WCDDCI.

 MOVE COIN TO S-WCDDTA.

 GENERATE DETAIL-CL.

 MOVE SPACE TO ERR-PUS.

 IF NOT VAL-S3 MOVE ### TO ER-POS3.

 IF NOT VAL-S4 MOVE ### TO ER-POS4.

 IF NOT VAL-S7 MOVE ##### TO ER-POS7.

 IF NOT VAL-S8 MOVE ##### TO ER-POS8.

 IF NOT VAL-S9 MOVE ### TO ER-POS9.

 IF NOT VAL-S10 MOVE ### TO ER-POS10.

 IF NOT VAL-S11 MOVE ### TO ER-POS11.

 IF NOT VAL-S13A MOVE ### TO ER-POS13A.

 IF NOT VAL-S13B MOVE ### TO ER-POS13B.

 IF NOT VAL-S13C MOVE ### TO ER-POS13C.

 IF NOT VAL-S13D MOVE ### TO ER-POS13D.

 IF ERR-PUS = SPACE

 RELEASE SRT-REC

 ADD 1 TO CT-SRT

 ELSE

 GENERATE DETAIL-C2

 ADD 1 TO CT-ERR.

RD-CO.

 READ CARD-IN AT END MOVE HIGH-VALUES TO COIN.

CLS-CARD.

 TERMINATE CARD-RPT.

 CLOSE CARD-IN.

UPDATE-EJP SECTION.

OPEN-FILES.

ECUPDT 434
ECUPDT 435
ECUPDT 436
ECUPDT 437
ECUPDT 438
ECUPDT 439
ECUPDT 440
ECUPDT 441
ECUPDT 442
ECUPDT 443
ECUPDT 444
ECUPDT 445
ECUPDT 446
ECUPDT 447
ECUPDT 448
ECUPDT 449
ECUPDT 450
ECUPDT 451
ECUPDT 452
ECUPDT 453
ECUPDT 454
ECUPDT 455
ECUPDT 456
ECUPDT 457
ECUPDT 458
ECUPDT 459
ECUPDT 460
ECUPDT 461
ECUPDT 462
ECUPDT 463
ECUPDT 464
ECUPDT 465
ECUPDT 466
ECUPDT 467
ECUPDT 468
ECUPDT 469
ECUPDT 470
ECUPDT 471
ECUPDT 472
ECUPDT 473
ECUPDT 474
ECUPDT 475
ECUPDT 476
ECUPDT 477
ECUPDT 478
ECUPDT 479
ECUPDT 480
ECUPDT 481
ECUPDT 482
ECUPDT 483
ECUPDT 484
ECUPDT 485
ECUPDT 486
ECUPDT 487

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

CDC COROL 5.3 - LEVEL 498	SOURCE LISTING OF ECUPDT	ADPT- 66/CDC/CDCS1	80/07/29. 13.25.42.	PAGE	10
487	UPEN INPUT EQUIP-IN.		ECUPDT	488	
488	UPEN INPUT EQUIP-OUT.		ECUPDT	489	
489	MOVE CRPT-12 TJ CMPT-H.		ECUPDT	490	
490	INITIATE CARD-RPT.		ECUPDT	491	
491	PERFORM RTN-SRT.		ECUPDT	492	
492	PERFORM GET-EQP.		ECUPDT	493	
493	PERFORM EJP UNTIL EQPIN = HIGH-VALUES.		ECUPDT	494	
494	IF SRT-REC NOT = HIGH-VALUES		ECUPDT	495	
495	PERFORM RTN-SRT UNTIL SRT-REC = HIGH-VALUES.		ECUPDT	496	
496	GO TO CLS-EJP.		ECUPDT	497	
497	TEST FIELD 1		ECUPDT	498	
498	EQP.		ECUPDT	499	
499	IF E-1 < S-1		ECUPDT	500	
500	PERFORM AT-EQP		ECUPDT	501	
501	PERFORM GET-EQP		ECUPDT	502	
502	ELSE		ECUPDT	503	
503	IF E-1 > S-1		ECUPDT	504	
504	PERFORM RTN-SRT		ECUPDT	505	
505	ELSE		ECUPDT	506	
506	PERFORM FLD-2.		ECUPDT	507	
507	TEST FIELD 2		ECUPDT	508	
508	FLD-2.		ECUPDT	509	
509	IF E-2 < S-2		ECUPDT	510	
510	PERFORM AT-EQP		ECUPDT	511	
511	PERFORM GET-EQP		ECUPDT	512	
512	ELSE		ECUPDT	513	
513	IF E-2 > S-2		ECUPDT	514	
514	PERFORM RTN-SRT		ECUPDT	515	
515	ELSE		ECUPDT	516	
516	PERFORM FLD-3.		ECUPDT	517	
517	TEST FIELD 3		ECUPDT	518	
518	FLD-3.		ECUPDT	519	
519	IF E-3 < S-3		ECUPDT	520	
520	PERFORM AT-EQP		ECUPDT	521	
521	PERFORM GET-EQP		ECUPDT	522	
522	ELSE		ECUPDT	523	
523	IF E-3 > S-3		ECUPDT	524	
524	PERFORM RTN-SRT		ECUPDT	525	
525	ELSE		ECUPDT	526	
526	PERFORM FLD-4.		ECUPDT	527	
527	TEST FIELD 4		ECUPDT	528	
528	FLD-4.		ECUPDT	529	
529	IF S-4 = SPACE AND S-5-13 = SPACE		ECUPDT	530	
530	ADD 1 TO CT-DEL		ECUPDT	531	
531	MOVE *** TO S-USED		ECUPDT	532	
532	PERFORM GET-EJP		ECUPDT	533	
533	ELSE		ECUPDT	534	
534	IF E-4 < S-4		ECUPDT	535	
535	PERFORM AT-EQP		ECUPDT	536	
536	PERFORM GET-EQP		ECUPDT	537	
537	ELSE		ECUPDT	538	
538	IF E-4 > S-4		ECUPDT	539	
539	PERFORM RTN-SRT		ECUPDT	540	
540	ELSE		ECUPDT	541	

CDC COROL 5.3 - LEVEL 498 SOURCE LISTING OF ECUPDT ADPT- 66/CDC/CDCS1 80/07/29. 13.25.42. PAGE 10

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

CDC CUBOL 5.3 - LEVEL 498 SOURCE LISTING OF ECUPDT ADPI- 66/CUC/CDCS1 80/07/29. 13.25.42. PAGE 11

```

541 * TEST FIELDS 5-13.
542 FLD-5-13.
543 IF 5-5-13 = SPACE
544     MOVE *** TO S-USED
545     ADD 1 TO CI-DEL
546     PERFORM GET-EOP
547
548 ELSE
549     PERFORM UPD-FIELDS
550     PERFORM RTN-SRT.
551
552 * RETURN SORTED DATA CARDS
553 RTN-SRT.
554 IF S-USED = SPACE PERFORM ADD-EOP.
555 RETURN SRT-FILE AT END MOVE HIGH-VALUES TO SRT-REC.
556 MOVE SPACE TO S-USED.
557 READ EQUIPMENT FILE
558
559 * GET-EOP.
560 READ EQUIP-IN AT END MOVE HIGH-VALUES TO EOPIN.
561 IF EOPIN NOT = HIGH-VALUES ADD 1 TO CI-EIN.
562 * WRITE NEW EQUIPMENT RECORD (UPDATED OR NO ACTION)
563 WT-EOP.
564 MOVE EOPIN TO EOPOT.
565 WRITE EOPOT.
566 ADD 1 TO CI-LOT.
567 * WRITE NEW EQUIPMENT RECORD (ADD RECORD)
568 ADD-EOP.
569 MOVE SPACE TO ERN-POS.
570 IF 5-5 = SPACE MOVE ***** TO ER-POS5.
571 IF 5-6 = SPACE MOVE ***** TO ER-POS6.
572 IF 5-7 = SPACE MOVE ***** TO ER-POS7.
573 IF 5-8 = SPACE MOVE ***** TO ER-POS8.
574 IF 5-9 = SPACE MOVE ***** TO ER-POS9.
575 IF 5-10 = SPACE MOVE ***** TO ER-POS10.
576 IF 5-11 = SPACE MOVE ***** TO ER-POS11.
577 IF 5-12 = SPACE MOVE ***** TO ER-POS12.
578 IF ERN-POS = SPACE
579     PERFORM AT-ADD
580 ELSE
581     GENERATE DETAIL-C1
582     GENERATE DETAIL-C2
583     MOVE UNIT-1 TO URPI
584     GENERATE DETAIL-C3
585     ADD 1 TO CI-UEER.
586
587 * AT-ADD.
588 MOVE SRT-REC TO EOPOT.
589 WRITE EOPOT.
590 ADD 1 TO CI-EOT.
591 ADD 1 TO CI-ADD.
592 * UPDATE ALL EQUIPMENT FIELDS WITH NON BLANK DATA CARD FIELDS
593 UPD-FIELDS.
594 IF 5-5 = **
595     MOVE SPACE TO E-5
596 ELSE
597     IF 5-5 NOT = SPACE

```

COLUMN 1 2 3 4 5 6 7 8
12345678901234567890123456789012345678901234567890

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

CDC CUBUL 5.3 - LEVEL 498 SOURCE LISTING OF ECUPDT ADPT- 66/CDC/CDCS1 80/07/29. 13.25.42. PAGE 12

```

595      IF S-6 = "0"      MOVE S-5 TO E-5.
596      MOVE SPACE TO E-6
597      ELSE
598      IF S-6 NOT = SPACE
599      MOVE S-6 TO E-6.
600      IF S-7 = "0"
601      MOVE SPACE TO E-7
602      ELSE
603      IF S-7 NOT = SPACE
604      MOVE S-7 TO E-7.
605      IF S-8 = "0"
606      MOVE SPACE TO E-8
607      ELSE
608      IF S-8 NOT = SPACE
609      MOVE S-8 TO E-8.
610      IF S-9 = "0"
611      MOVE SPACE TO E-9
612      ELSE
613      IF S-9 NOT = SPACE
614      MOVE S-9 TO E-9.
615      IF S-10 = "0"
616      MOVE SPACE TO E-10
617      ELSE
618      IF S-10 NOT = SPACE
619      MOVE S-10 TO E-10.
620      IF S-11 = "0"
621      MOVE SPACE TO E-11
622      ELSE
623      IF S-11 NOT = SPACE
624      MOVE S-11 TO E-11.
625      IF S-12 = "0"
626      MOVE SPACE TO E-12
627      ELSE
628      IF S-12 NOT = SPACE
629      MOVE S-12 TO E-12.
630      MOVE "0" TO S-USED.
631      ADD 1 TO CT-CHG.
632      CLS-EQP.
633      TERMINATE CARD-RPT.
634      CLOSE EQUIP-IN.
635      CLOSE EQUIP-OUT.
636      REPORT-EQP SECTION.
637      RPT-EQP.
638      PERFORM SRT-RPT VARYING R FROM 1 BY 1
639      UNTIL R > 7 OR R-NUM (R) = SPACE.
640      GO TO END-RPT.
641      SRT-RPT.
642      IF R-NUM (4) = "1"
643      SORT SORT-FILE IN ASCENDING KEY
644      S-13 S-1 S-2 S-3 S-4
645      USING EQUIP-OUT GIVING SORT-WRK
646      PERFORM GEN-RPT
647      ELSE
648

```

COLUMN 1 2 3 4 5 6 7 8
123456789012345678901234567890123456789012345678901234567890

TABLE XXXIII. ECUPDT COMPUTER LISTING (CONT)

CDC CUBUL 5.3 - LEVEL 528 SOURCE LISTING OF ECUPDT ADPT= 66/CDC/CDCS1 80/07/29. 13.25.42. PAGE 13

```

649 IF R-NUM (R) = #2#
650   SORT SORT-FILE ON ASCENDING KEY
651     3-5 S-1 S-2 S-3 S-4
652   USING EQUIP-OUT GIVING SORT-WRK
653   PERFORM GEN-RPT
654 ELSE
655   IF R-NUM (R) = #3#
656     SORT SORT-FILE ON ASCENDING KEY
657       S-1 S-2 S-3 S-4
658     USING EQUIP-OUT GIVING SORT-WRK
659     PERFORM GEN-RPT
660 ELSE
661   IF R-NUM (R) = #4#
662     SORT SORT-FILE ON ASCENDING KEY
663       S-6 S-1 S-2 S-3 S-4
664     USING EQUIP-OUT GIVING SORT-WRK
665     PERFORM GEN-RPT
666 ELSE
667   IF R-NUM (R) = #5#
668     SORT SORT-FILE ON ASCENDING KEY
669       S-7 S-1 S-2 S-3 S-4
670     USING EQUIP-OUT GIVING SORT-WRK
671     PERFORM GEN-RPT
672 ELSE
673   IF R-NUM (R) = #6#
674     SORT SORT-FILE ON ASCENDING KEY
675       S-3 S-1 S-2 S-4
676     USING EQUIP-OUT GIVING SORT-WRK
677     PERFORM GEN-RPT
678 ELSE
679   IF R-NUM (R) = #7#
680     SORT SORT-FILE ON ASCENDING KEY
681       S-2 S-1 S-3 S-4
682     USING EQUIP-OUT GIVING SORT-WRK
683     PERFORM GEN-RPT.
684   GEN-RPT.
685   OPEN INPUT SORT-WRK.
686   MOVE R-NUM (R) TO S.
687   INITIATE EQUIP-RPT.
688   PERFORM RD-WRK.
689   PERFORM G-W UNTIL SORT-WRK = HIGH-VALUES.
690   TERMINATE EQUIP-RPT.
691   CLOSE SORT-WRK.
692   RD-WRK.
693   READ SORT-WRK AT END MOVE HIGH-VALUES TO SORT-WRK.
694   W-R.
695   GENERATE DETAIL-EL.
696   PERFORM RD-WRK.
697   END-RPT.
698   INITIATE AUDITS.
699   GENERATE DETAIL-A.
700   TERMINATE AUDITS.
701   CLOSE PRINT-OUT.

```

COLUMN 1 2 3 4 5 6 7 8
12345678901234567890123456789012345678901234567890

SECTION 11 - PROGRAM OVERLAP 18

11.1 PURPOSE

Program OVERLAP 18 identifies all possible interfering transmitters for each receiver in a given deployment, checks the master equipment call summary file for omissions, and extracts required call summary data for receivers and interferers for use in later processing.

11.2 PRINCIPAL FUNCTIONS

Program OVERLAP, shown in figure 42, accepts as input the required equipment file for the deployment being analyzed, the master equipment call summary file, and a program control card to determine all potential interfering transmitters for each receiver class. The program compares each receiver-interferer combination with the master equipment call summary file, makes a summary of all matches on 3, 2, 1, or 0 digits of the interferer ID code, and outputs the extracted required equipment call summary file. The principal functions of program OVERLAP are as follows:

- a. Identifies all transmitters with frequency ranges overlapping the frequency range of a given receiver.
- b. Checks the master equipment call summary to see if these interferers match on 3-, 2-, 1-, or 0-digit items presently in the master file.
- c. Makes an extract of the master equipment call summary file for receivers and interferers to be used in later programs.

11.3 INPUT/OUTPUT DESCRIPTION

Input to program OVERLAP consists of a program control card, the required equipment file, and the master equipment call summary file. Output consists of the required equipment call summary file, plus a summary by receiver equipment class of equipment class code assignment data and equipment call summary data categorized by 3-, 2-, 1-, and 0-digit matches for interferers.

11.3.1 Input Format

The format for input data is as follows:

- a. Program control card, figure 43, page 11-5.
- b. Required equipment file 25 , table XXXIV, page 11-8.
- c. Master equipment call summary file 27 , table XXXV, page 11-12.

11.3.2 Output Format

The format of the required equipment call summary file (28) , output from program OVERLAP, is given in table XXXVI, page 11-16.

11.4 PROCESS DESCRIPTION

a. Program OVERLAP is written in FORTRAN EXTENDED for processing on the CDC CYBER 172 computer. It requires 100000₈ words of central memory for compilation and execution.

b. The program reads the program control card that specifies security classification of the output data and an option indicator to permit the output of complete equipment description records for 2- and 1-digit interferer equipment ID matches, if set to TRUE.

c. The required equipment file is read and separated into two files--one for transmitters and one for receivers. These two files are sorted on equipment class code, and the sorted transmitter file is read into core storage.

d. After initializing, the program processes input data as follows:

(1) All receiver equipments with the same equipment class code are read, and tuning range limits are determined for this equipment class.

(2) The master equipment call summary file is searched for data for this equipment class. If a match is not found, an information message is written to output. When a match is found, each transmitter is processed in sequence.

(3) If the transmitter frequency is outside the tuning range limits of the receiver class, proceeds to the next transmitter.

(4) For transmitters operating within the tuning range limits of the receiver, searches the table of interferer codes in the call summary data for a match on all three digits. If a match is found, adds the interferer code to the table of 3-digit matches. If no match is found, tries to match on the first two digits only, and adds to the table of 2-digit matches if successful. If this fails, searches for a match on the first digit only and adds to the table of 1-digit matches.

(5) Repeats steps (3) and (4) until all transmitters have been processed.

(6) Outputs summary data for this receiver class including 3-, 2-, 1-, and 0-digit match tables and complete equipment description records for interferers matching on less than three digits. Complete record output for 2- and 1-digit matches is under OPTION control (see program control card).

(7) Writes call summary data to required equipment call summary file.

(8) Repeats steps (1) through (7) until all receiver classes are processed.

(9) Outputs any messages concerning unusual conditions encountered.

11.5 PROGRAM OPERATION

Figure 44, page 11-18, is a listing of all system and UPDATE control cards necessary to execute OVERLAP for a typical computer run.

11.6 LIMITATIONS

Program OVERLAP is presently set up to handle a maximum of 700 unique transmitter equipments in a deployment. The number of receiver equipments in the same equipment class is limited to 50, with no more than 5 multiple frequency ranges. The tables for 3-, 2-, 1-, and 0-digit matches are limited to 1, 11, 101, and 500, respectively, for each type. The maximum number of interferer codes in the call summary for one receiver class is 30.

11.7 RUNNING TIME

Running time is estimated at 10 minutes per 500 equipments, about evenly divided between transmitters and receivers.

11.8 COMPUTER PROGRAM LISTING

A complete computer listing for program OVERLAP and subroutine NEWPG is shown in table XXXVII, page 11-20, annotated to aid in the understanding of the program functioning.

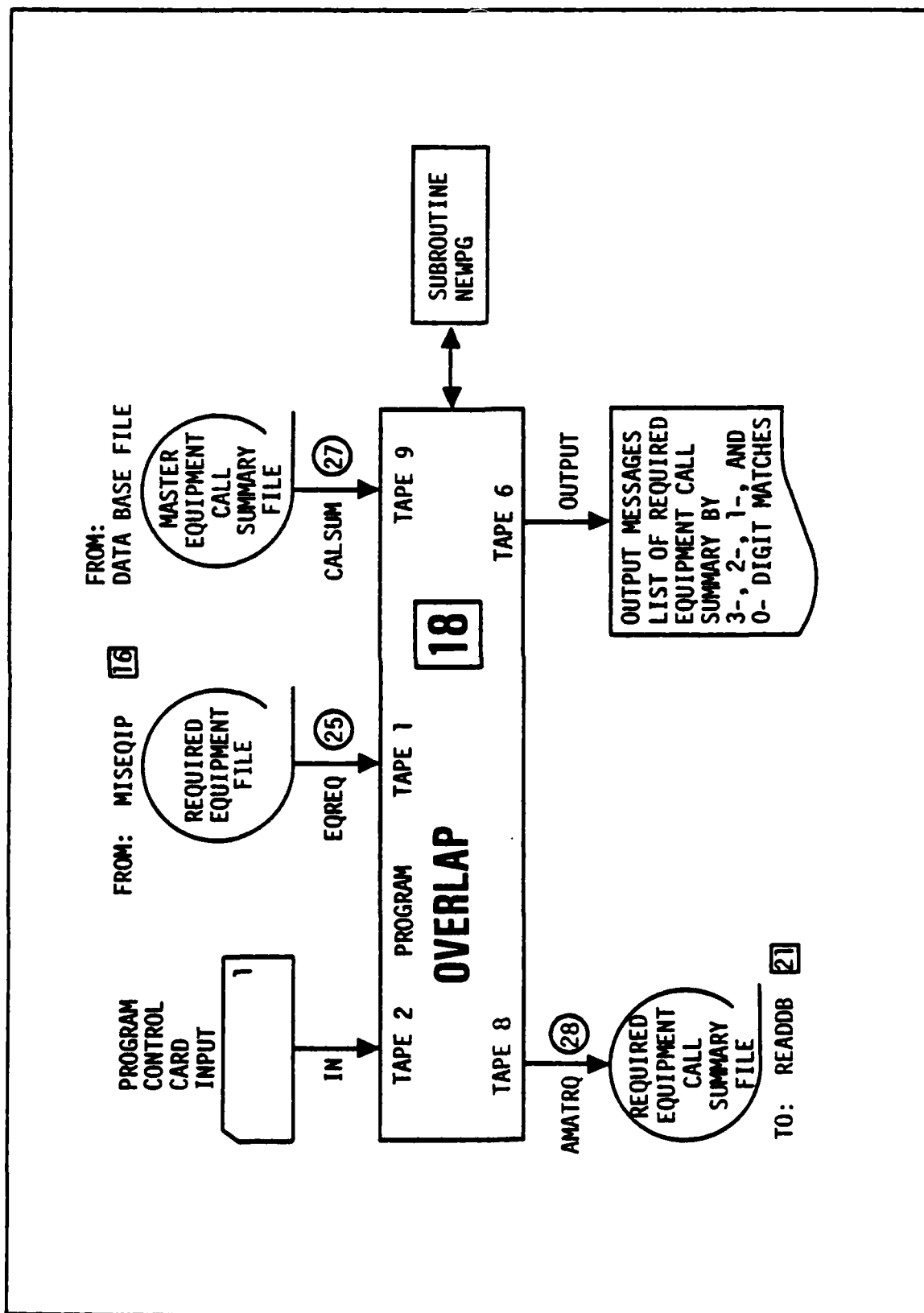


Figure 42. Program OVERLAP, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-10	A10	KLASS	Security classification to be output in page headings.
2	11-20	L10	OPTION	Option indicator (true or false) for output of complete records for 2- and 1-digit matches.

Figure 43. OVERLAP input, program control card.

INTENTIONALLY BLANK

File Description: Required Equipment File (25)
File Name: EQREQ Logical Unit: 1
Mode/Type: BCD Record Length: 81 characters
Origin: MISEQIP 16
Used By: OVERLAP 18 ; EQCLSFF 22

TABLE XXXIV. REQUIRED EQUIPMENT FILE (25)

Data Description	Field Size	Field Position	Remarks
Component code	1	1	Blank
Major equipment code	3	2-4	A 3-character alphanumeric code assigned to this equipment component.
Modulation code	2	5-6	A 2-character alphanumeric code assigned to this major equipment class.
	2	7-8	A 2-digit code indicating modulation type: 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
Number of channels	3	9-11	The number of channels assigned for this equipment component, if applicable. If subfield 9 > 5, the equipment is encrypted.
Component nomenclature	15	12-26	Name of the component associated with this component code.
Major equipment nomenclature	15	27-41	Name of the major equipment associated with this major equipment code.
Low tuning range limit	8	42-49	Lowest frequency (in kHz) to which this equipment will tune.
High tuning range limit	8	50-57	Highest frequency (in kHz) to which this equipment will tune.
	1	58	Blank

TABLE XXXIV. REQUIRED EQUIPMENT FILE (25) (CONT)

Data Description	Field Size	Field Position	Remarks
Use code	1	59	A 1-character alphabetic code indicating the use type of equipment: B = broadcast/television, C = communications, D = direction finding, E = fixed frequency emergency guard-band, I = intercept/ESM, J = jammer/ESM, M = sensors, N = navigation aids, O = ordnance, Q = miscellaneous special purpose, S = detecting/range bearing (radar), V = sensor data link, X = IFF, Y = security monitoring (COMSEC, etc.), Z = special electronic warfare (EW). Other codes are assigned as needed.
Force code	1	60	Blank
	1	61	A 1-character alphabetic code indicating force type: B = BLUE (friendly), R = RED (enemy).
	1	62	Blank
XY code	2	63-64	A 2-character alphabetic code indicating equipment type: XX = transmitter only, XY = transceiver, YY = receiver only.
New equipment class	1	65	Blank
	9	66-74	Expanded equipment class for future development. Not presently used.
	1	75	Blank

TABLE XXXIV. REQUIRED EQUIPMENT FILE (25) (CONT)

Data Description	Field Size	Field Position	Remarks
Equipment class code (last 5 of 6 digits)	5	76-80	A 5-digit code assigned to indicate the equipment class when the data set code is attached as the first of a total of 6 digits. The final 5 digits are assigned as follows: <u>Subfield 76.</u> Modulation code: 1 = F3 = 33, 2 = A3 = 13, 3 = A3A or A3J = 14, 4 = F1 = 31, 5 = F9 = 36, 6 = P0 = 50, 7 = P9 = 58, 8 = A2 or A9 = 18 or 12, 9 = A1 = 11, 0 = special or other. <u>Subfield 77.</u> Bandwidth: For modulation codes 1-5 and 8, 9, 0: 1 = narrow, 2 = medium, 3 = wide, 4 = very wide; for modulation codes 6 and 7: 5-9 and 0 indicate different "B" matrices. <u>Subfield 78-79.</u> Sequence number: 00-99 = final specific equipment designator within modulation code and bandwidth. <u>Subfield 80:</u> Siting preference: 1 = normal, 2 = normal, 3 = airborne radar, 4 = ground radar, 5 = preferred, 6 = airborne nonradar, 7 = radio relay (LOS), 8 = nap of the earth, 9 = tropo-scatter, 0 = satellite.
	1	81	A 1-character alpha code to flag equipments for special handling. Slash (/) = delete equipment from analysis, asterisk (*) = process for interferers only; otherwise, blank.

File Description: Master Equipment Call Summary (27)
File Name: CALSUM Logical Unit: 9
Mode/Type: BCD Record Length: 68 characters
Origin: Data base file maintained by programs AMCSMNT and CALLSM
Used By: OVERLAP (18) ; AMCSMNT (19)

TABLE XXXV. MASTER EQUIPMENT CALL SUMMARY FILE (27)

Data Description	Field Size	Field Position	Remarks
Receiver ID code	5	1-5	The middle 4 digits of the 6-digit equipment class code, right-justified. The middle 4 digits uniquely identify the equipment type.
"A" value	8	6-13	Threshold value of $\hat{S}$ (in dBm), the desired RF signal level, for 50 percent probability of satisfactory operation in the absence of interference other than receiver noise. Expressed in hundredths of a dBm.
Variance of "A"	5	14-18	Variance parameter (in dB^2) of a Gaussian distribution function that is fitted to the function relating the probability of satisfactory operation to $\hat{S}$, in the absence of interference other than receiver noise. Expressed to nearest tenth of a dB^2 .
Number of expected interferer classes	2	19-20	The number of expected interferer classes for this receiver equipment class, presently limited to 30.
Interferer equipment class (1)	3	21-23	The 2nd, 3rd, and 4th digits of the 6-digit class code for one potential interferer equipment class for this receiver.
Scoring curve ID (1)	3	24-26	The ID number of the "B" matrix scoring curve to be used for scoring interferer equipment class (1) and this receiver.
(See note on following page)			

TABLE XXXV. MASTER EQUIPMENT CALL SUMMARY FILE (27) (CONT)

Data Description	Field Size	Field Position	Remarks
NOTE: The last two data items (interferer equipment class and scoring curve ID) are repeated for up to 8 equipments per record ending in field position 68. If there are more than 8 expected interferer classes, data are continued in the next record in the same format (field positions 1-20 are identical and interferer class (9) starts in positions 21-23, etc.). This procedure is followed for a maximum of 30 interferer classes for each receiver ID code. The number of records for each receiver ID code is a function of the number of expected interferer classes (field positions 19-20). The maximum number of records is 4, with 8 interferer classes per record to the maximum of 30.			

INTENTIONALLY BLANK

File Description: Required Equipment Call Summary File (28)
File Name: AMATRQ Logical Unit: 8
Mode/Type: BCD Record Length: 68 characters
Origin: OVERLAP (18)
Used By: READDB (21)

TABLE XXXVI. REQUIRED EQUIPMENT CALL SUMMARY FILE (28)

Data Description	Field Size	Field Position	Remarks
Receiver ID code	5	1-5	The middle 4 digits of the 6-digit equipment class code, right-justified. The middle 4 digits uniquely identify the equipment type.
"A" value	8	6-13	Threshold value of $\hat{S}$ (in dBm), the desired RF signal level, for 50 percent probability of satisfactory operation in the absence of interference other than receiver noise. Expressed in hundredths of a dBm.
Variance of "A"	5	14-18	Variance parameter (in dB^2) of a Gaussian distribution function that is fitted to the function relating the probability of satisfactory operation to $\hat{S}$, in the absence of interference other than receiver noise. Expressed to nearest tenth of a dB^2 .
Number of expected Interferer classes	2	19-20	The number of expected interferer classes for this receiver equipment class, presently limited to 30.
Interferer equipment class (1)	3	21-23	The 2nd, 3rd, and 4th digits of the 6-digit class code for one potential interferer equipment class for this receiver.
Scoring curve ID (1)	3	24-26	The ID number of the "g" matrix scoring curve to be used for scoring interferer equipment class (1) and this receiver.
(See note on following page)			

TABLE XXXVI. REQUIRED EQUIPMENT CALL SUMMARY FILE (28) (CONT)

Data Description	Field Size	Field Position	Remarks
NOTE: The last two data items (interferer equipment class and scoring curve ID) are repeated for up to 8 equipments per record ending in field position 68. If there are more than 8 expected interferer classes, data are continued in the next record in the same format (field positions 1-20 are identical and interferer class (9) starts in positions 21-23, etc.). This procedure is followed for a maximum of 30 interferer classes for each receiver ID code. The number of records for each receiver ID code is a function of the number of expected interferer classes (field positions 19-20). The maximum number of records is 4, with 8 interferer classes per record to the maximum of 30.			

```

( 1) MISEQIP,T3777.
( 2) USER(00 USER ID 00)
( 3) CHARGE(1WA000,N)
( 4) COMMENT. TASK NAME
( 5) COMMENT. MISEQIP/OVERLAP/ANTENNA
( 6) COMMENT.
( 7) COMMENT.
( 8) VSNCEQSMRY=AAAA,REQDATA=0000
( 9) RESOURC(PE=1,OL=1)
(10) GETICALSUM=CLSMRY/UN=JIM,NA)
(11) GETIEQPCU=EQIPCKU/NA)
(12) MAP(PART)
(13) UPDATE(P=EQIPCKU,0)
(14) UNLOAD(EQIPCKU)
(15) FIN(1,R=3,PL=999999,8=MISEQIP)
(16) FIN(1,R=3,PL=999999,8=OVERLAP)
(17) FIN(1,R=3,PL=999999,8=ANTCOMP)
(18) LABEL(EQSMRY,N,PD=R,NT,D=PE,L=TASKNAME)
(19) COPYCF(EQSMRY,EDSUM)
(20) COPYCF(EQSMRY,SUMARY)
(21) UNLOAD(EQSMRY)
(22) REWIND(EDSUM,SUMARY)
(23) 000 GET INDIRECT ACCESS SECRET EQUIPMENT CLASS DATABASE FILE
(24) 000 GET INDIRECT ACCESS SECRET GENERAL ANTENNA DATABASE FILE
(25) MISEQIP.
(26) COPYSBF(EQIPS,OUTPUT)
(27) UNLOAD(EQIPS,EDSUM)
(28) COPYSBF(EQREQ,OUTPUT)
(29) REWIND(EQREQ)
(30) COPYCR(INPUT,IN)
(31) REWIND(IN)
(32) OVERLAP.
(33) UNLOAD(IN,TAPE3,TAPE4,CALSUM)
(34) COPYSBF(AMATRO,OUTPUT)
(35) REWIND(AMATRO)
(36) ANTCOMP.
(37) COPYSBF(LENHNT,OUTPUT)
(38) UNLOAD(SUMARY,GENRNT)
(39) COPYSBF(ANTREQ,OUTPUT)
(40) REWIND(ANTREQ)
(41) LABEL(REQDATA,N,PD=V,NT,D=PE,L=TASKNAME)
(42) COPYCF(ONE3,REQDATA)
(43) COPYCF(AMATRO,REQDATA)
(44) COPYCF(ANTREQ3,REQDATA)
(45) RETURN(REQDATA)
(46) 7-8-9
(47) 00 TASK CHANGES FOR MISEQIP (IF ANY)
(48) 00 TASK CHANGES FOR OVERLAP (IF ANY)
(49) 00 TASK CHANGES FOR ANTENNA (IF ANY)
(50) *COMPILE MISEQIP,OVERLAP,ANTENNA

```

Figure 44. OVERLAP (MISEQIP/OVERLAP/ANTENNA) control card listing.

(51)	7-8-9	CARD	
(52)	SECRET	DEPLOYED	
(53)	BE		QSGNOXF
(54)	7-8-9	CARD	
(55)	SECRET	TRUE	
(56)	7-8-9	CARD	
(57)	SECRET	TASK NAME	
(58)	7-8-9	CARD	
(59)	6-7-8-9	CARD	

Figure 44. OVERLAP (MISEQIP/OVERLAP/ANTENNA) control card listing (cont).

TABLE XXXVII. OVERLAP COMPUTER LISTING

73/74 OPT-1

FTN 4.0+498

80/07/29. 13.56.57

PAGE 1

```

1  PROGRAM OVERLAP(REQD,IN,OUTPUT,TAPE1=EQREQD,TAPE2=IN,TAPE3,TAPE4,
1  TAPE6=OUTPUT,CALSUM,TAPE9=CALSUM,AMATQ,TAPE8=AMATQ)
*****
2  C THIS PROGRAM WILL FORM SETS OF RECEIVERS BY EQUIPMENT CLASS
3  C AND, FOR EACH SET, WILL IDENTIFY TRANSMITTERS WHOSE FREQUENCY
4  C RANGE OVERLAPS THAT OF THE RECEIVERS. FOR THOSE THAT OVERLAP
5  C THE PROGRAM WILL CHECK THE CALL SUMMARY TO SEE IF THE TRANS-
6  C MITTER EQUIPMENT CLASS CAN CURRENTLY BE MATCHED ON THREE, TWO,
7  C ONE OR NO DIGITS.
8  C
9  C INPUT CONSISTS OF:
10 C A. PARAMETER CARD ON FILE IN
11 C COL.1-10 CLASSIFICATION OF OUTPUT
12 C COL.11-20 OPTION INDICATOR (TRUE OR FALSE) FOR OUTPUT
13 C OF COMPLETE RECORDS FOR TWO AND ONE DIGIT
14 C MATCHES
15 C B. FILE OF TRANSMITTERS SORTED BY EQUIPMENT CLASS ON FILE
16 C TAPE3. THESE ARE IN THE FORMAT OF THE GENERAL EQUIPMENT
17 C CLASS FILE. PROGRAM OVERLAP PRODUCES SEPARATE FILES OF
18 C TRANSMITTERS AND RECEIVERS, EACH OF WHICH IS THEN SORTED.
19 C C. FILE OF RCVRs SORTED BY EQUIPMENT CLASS ON FILE TAPE4.
20 C THESE ARE IN THE FORMAT OF THE GENERAL EQUIPMENT CLASS
21 C FILE.
22 C D. FILE OF CALL SUMMARY DATA ON FILE CALSUM. THIS IS IN
23 C STANDARD CALL SUMMARY FORMAT.
24 C
25 C OUTPUT CONSISTS OF:
26 C A. LISTING ON FILE OUTPUT. FOR EACH SET OF RECEIVERS, THE
27 C EQUIPMENT CLASS CARDS FOR THEM, THE CALL SUMMARY FOR THE
28 C EQUIPMENT CLASS, THE EQUIPMENT CLASSES OF THE TRANS-
29 C MITTERS THAT HAVE MATCHES IN THE CALL SUMMARY ON THREE,
30 C TWO OR ONE DIGITS, THE EQUIPMENT CLASS CARDS OF THE
31 C TRANSMITTERS THAT MATCH ON NO DIGITS (AND OPTIONALLY,
32 C THOSE THAT MATCH ON TWO OR ONE) AND THE EQUIPMENT CLASS
33 C CARDS OF ANY RECEIVERS THAT HAVE NO CALL SUMMARY ENTRIES
34 C WILL BE LISTED.
35 C B. FILE OF EXTRACTED CALL SUMMARY DATA FOR A TASK ON FILE
36 C AMATQ.
37 C
38 C PROGRAM LIMITS: NUMBER OF TRANSMITTERS - 700
39 C NUMBER OF RECEIVERS IN THE SAME
40 C NUMBER OF TRANSMITTERS IN CALL SUMMARY - 100
41 C RECORD FOR ONE RECEIVER CLASS - 30
42 C NUMBER OF ANY ONE KIND OF MATCHES ON A
43 C CALL SUMMARY ENTRY - 50
44 C NUMBER OF EQUIPMENT CLASS CARDS TO BE
45 C PRINTED FOR ONE KIND OF MATCH - 200
46 C NUMBER OF MULTIPLE FREQUENCY RANGES - 5
47 C
48 C NOTE--IN THIS PROGRAM, EQUIPMENT CLASS MEANS THE MIDDLE FOUR
49 C DIGITS OF THE SIX DIGIT EQUIPMENT CLASS CODE FOR RCVRs, OR
50 C DIGITS 2,3, AND 4 FOR AMTRs. TWO DIGIT MATCHES ARE ON THE
51 C FIRST TWO OF THE THREE DIGITS, ONE DIGIT MATCHES ARE ON THE
52 C FIRST DIGIT OF THE 3 DIGITS FOR AMTRs.

```

```

51 THE FREQUENCY RANGES USED WILL BE EITHER THE TUNING
52 RANGES OR THE DEPLOYED FREQUENCY RANGES,DEPENDING ON
53 WHICH RANGE IS ON THE EQUIPMENT CLASS CARDS INPUT TO THE
54 PROGRAM OVERLAP. THE PROGRAM WILL HANDLE MULTIPLE FRE-
55 QUENCY RANGES (UP TO 5) FOR ONE EQUIPMENT CLASS AND WILL
56 VOTE THIS ON THE OUTPUT.
57
58 *****
59
60 DIMENSION TEQCL(30),CURVE(30),IGO(501),EQUIP(50,10),NAME(7),
61 1 TRANS(700,10),KNT(7),MG3(30),MG3L(501),IG2(30,11),IG2L(501),
62 2 IGL(30,101),IG1L(501)
63 DIMENSION TUNRL(5),TUNRH(5)
64 DIMENSION EQUIP(10)
65
66 INTEGER EQUIP,XY,REQCL,TEQCL,CURVE,EOCL,TEND,ECL3,ECL2,ECL1,TRANS,
67 1 RECMAX,TRANMAX
68 INTEGER EQUIP,BLANK
69 INTEGER YY
70 INTEGER STAR1,STAR2
71 INTEGER A,B
72
73 LOGICAL OPTION,EOFSW,RECSW
74 LOGICAL NQREAD
75 LOGICAL READS4
76 LOGICAL NUCLSH
77
78 COMMON IG2,IG2L,IG1,IG1L
79 COMMON IGO,EQUIP,TRANS
80 COMMON/CDM/LINE,NPAGE,KLASS
81 COMMON MG3,MG3L
82
83 DATA (BLANK=55558)
84 DATA (EOFSW=.F.), (RECSW=.F.)
85 DATA (READSW=.F.)
86 DATA (RECMAX=50), (TRANMAX=700), (NMAXL=501)
87 DATA (NQREAD=.F.)
88 DATA (MAXTUN=5), (INTUNR=1)
89 DATA (NAME=4HIGO ,4HIG1 ,4HIG1L ,4HIG2 ,4HIG2L ,4HIG3 ,4HIG3L)
90 DATA (YF=31318), (ISLASH=1H/), (LAST=1H*)
91 DATA (XY=30318), (NPAGE=0), (NEQCL=0)
92
93 C READ INPUT PARAMETERS
94
95 READ (2,1000) CLASS,OPTION
96 FORMAT (A10,I10)
97 REWIND 2
98
99 C READ EQUIPMENT CLASS DATA, SEPARATE INTO TRANSMITTERS AND
100 RECLIVERS
101
102 5 READ (1,1010) EQUIP,ICD
103 FORMAT(I1,4A10,2I8,A5,R2,I1,4Y,I1,5,A1)
104 IF (EOFL1) GO TO 7
105 7 IF (EQUIP(8).EQ.BLANK.UR,ICD.EQ.ISLASH) GO TO 5
106 IF (EQUIP(9).EQ.YY.AND.ICD.EQ.LAST) GO TO 5
107 READSW=.T.
108
109
110
111
112

```

TABLE XXXVII. OVERLAP COMPUTER LISTING (CONT)

PAGE 3

80/07/28. 13.56.57

FTN 4.8+408

PROGRAM OVERLAP 73774 UPT-1

```

115 IF (LQIP(1)-17) 10,15,17
10 WRITE (4) EQUIP
GO TO 5
15 WRITE (2) EQUIP
WRITE (4) EQUIP
GO TO 5
17 WRITE (2) EQUIP
GO TO 5
20 CONTINUE
IF (READSW) 21,310
21 CONTINUE

C SORT TRANSMITTERS AND RECEIVERS ON EQUIPMENT CLASS

CALL SMSORT(110)
CALL SMFILE(PSORT,1,BINARY,4,PREWIND)
CALL SMFILE(POUTPUT,1,BINARY,3,PREWIND)
CALL SKEY(191,1,10,0,INTEGER)
CALL SMEND
CALL SMSORT(110)
CALL SMFILE(PSORT,1,BINARY,2,PREWIND)
CALL SMFILE(POUTPUT,1,BINARY,4,PREWIND)
CALL SKEY(191,1,10,0,INTEGER)
CALL SMEND

C READ SORTED TRANSMITTER FILE

140 I=0
I=1
25 I=1+1
IF (1.61-TRANSMAX) GO TO 30
READ (3) (TRANS(I),J=1,10)
IF (EOF(3)) 30,25

C INITIALIZE AND READ FIRST RECEIVER RECORD

30 TEND=1-1
REWIND 3
I=1
N21=11
N11=101
N1L=MMAXL
N2L=MMAXL
READ (4) (EQUIP(I,J),J=1,10)
TUNRL(1)=0.995+EQUIP(1,5)
TUNRL(1)=1.005+EQUIP(1,6)
LEQCL=0
STAR1=1

C READ NEXT RECEIVER RECORD

40 READ (4) (EQUIP(I+1,J),J=1,10)
IF (EOF(4)) 70,50

C GROUP RECEIVERS WITH LIKE EQUIPMENT CLASSES

50 IF ((EQUIP(1,10)/10)-EQUIP(I+1,10)/10) GO TO 80
IF (EQUIP(1,10)-EQUIP(I+1,10)) GO TO 80
I=I+1

```

OVERLAP 113
OVERLAP 114
OVERLAP 115
OVERLAP 116
OVERLAP 117
OVERLAP 118
OVERLAP 119
OVERLAP 120
OVERLAP 121
OVERLAP 122
OVERLAP 123
OVERLAP 124
OVERLAP 125
OVERLAP 126
FTNOLAP 19
FTNOLAP 20
FTNOLAP 21
FTNOLAP 22
FTNOLAP 23
FTNOLAP 24
FTNOLAP 25
FTNOLAP 26
FTNOLAP 27
FTNOLAP 28
OVERLAP 135
OVERLAP 136
OVERLAP 137
OVERLAP 138
OVERLAP 139
OVERLAP 140
FTNOLAP 29
OVERLAP 142
OVERLAP 143
OVERLAP 144
OVERLAP 145
OVERLAP 146
OVERLAP 147
NEWSYS1 6
NEWSYS1 7
OVERLAP 150
OVERLAP 151
OVERLAP 152
OVERLAP 153
OVERLAP 154
OVERLAP 155
OVERLAP 156
OVERLAP 157
OVERLAP 158
OVERLAP 159
OVERLAP 160
FTNOLAP 30
OVERLAP 162
OVERLAP 163
OVERLAP 164
OVERLAP 165
14JAN77 2
OVERLAP 166

TABLE XXXVII. OVERLAP COMPUTER LISTING (CONT)

PROGRAM OVERLAP	73/74	OPT-1	FTN 4.8*498	80/07/29. 13.56.57	PAGE	4
175	C	IF (11.GE.REC MAX) GO TO 290		OVERLAP 167		
		EXTEND FREQUENCY RANGE OR ADD NEW ONE IF NECESSARY		OVERLAP 168		
	60	TL=0.75*EQUIP(1,5)		OVERLAP 169		
		TH=1.005*EQUIP(1,6)		OVERLAP 170		
	DO 62 J=1,NTUNR			OVERLAP 171		
	IF (TH.GE.TUNRL(J).AND.TL.LE.TUNRH(J)) GO TO 67			OVERLAP 172		
	62 CONTINUE			OVERLAP 173		
180	NTUNR=NTUNR+1			OVERLAP 174		
	IF (NTUNR.LE.MAXTUN) GO TO 65			OVERLAP 175		
	MTUNR=MAXTUN			OVERLAP 176		
	WRITE (6,1015) MAXTUN			OVERLAP 177		
185	1015 FORMAT (10 MORE THAN *12* FREQUENCY RANGES.)*			OVERLAP 178		
	GO TO 40			OVERLAP 179		
	65 TUNRL(NTUNR)=TL			OVERLAP 180		
	TUNRH(NTUNR)=TH			OVERLAP 181		
	GO TO 40			OVERLAP 182		
190	67 IF (TL.LI.TUNRL(J)) TUNRL(J)=TL			OVERLAP 183		
	IF (TH.GT.TUNRH(J)) TUNRH(J)=TH			OVERLAP 184		
	GO TO 40			OVERLAP 185		
195	C	END OF RECEIVER FILE SWITCH SET		OVERLAP 186		
	70 EOFSW=.1.			OVERLAP 187		
		INITIALIZE FOR NEW SET OF RECEIVERS		OVERLAP 188		
200	80 MEQCL=EQUIP(1,10)/10			OVERLAP 189		
	DO 97 J=1,7			OVERLAP 190		
	KNT(J)=0			OVERLAP 191		
	97 CONTINUE			OVERLAP 192		
	IG0(1)=MG3L(1)=IG2L(1)=IG1L(1)=1			OVERLAP 193		
205	IF (EQUIP(1,10).EQ.99999) GO TO 110			OVERLAP 194		
	DO 95 J=1,30			OVERLAP 195		
	MG3(J)=1H			MATCH3 7		
	IG2(J,1)=1			14JAN77 4		
	IG1(J,1)=1			14JAN77 5		
210	DO 85 K=2,M2T			NEWSYS1 8		
	IG2(J,K)=10H			EQCL68 6		
	85 CONTINUE			OVERLAP 197		
	DO 90 K=2,M1T			NEWSYS1 9		
	IG1(J,K)=10H			OVERLAP 199		
215	90 CONTINUE			OVERLAP 200		
	95 CONTINUE			NEWSYS1 10		
	DO 91 K=2,M MAXL			OVERLAP 204		
	IG2(LK)=IG1L(K)=MG3L(K)=1H			OVERLAP 205		
	91 CONTINUE			NEWSYS1 11		
	NUCLSW=.F.			OVERLAP 207		
220	C	FIND MATCHING EQUIPMENT CLASS IN CALL SUMMARY FILE		OVERLAP 208		
				NEWSYS1 12		
				OVERLAP 209		
				NEWSYS1 13		
				NEWSYS1 14		
				OVERLAP 220		
				OVERLAP 221		
				OVERLAP 222		
				OVERLAP 223		
225	100 IF (REQCL.EQ.99999) GO TO 110			OVERLAP 223		
	IF (NUCLEAU) 104,102			14JAN77 7		
	102 READ(9,1020) REJCL,A,B,NT,(REQCL(J),CURVE(J),J=1,8)			14JAN77 6		
	1020 FORMAT(1X,14,A10,A3,12,8(13,A3))			FTNDLAP 31		
	IF (EOF(9)) 270,103			EQCL68 7		
				FTNDLAP 32		

TABLE XXXVII. OVERLAP COMPUTER LISTING (CONT)

PAGE 5

80/07/28, 13.56.57

FTN 4.8+498

PROGRAM OVERLAP 73/74 OPT-1

```

230      103 IF (N1-LE-8) GO TO 105
          READ(9,102,1) (IEOCL(J),CURVE(J),J=1,NT)
          102> FORMAT(120X,8(13,A3))
          IF (LUF(9)) 270,105
235      104 MOREAD=.F.
          105 IF (MEOCL-MEOCL) 100,120,110
          110 DO 115 I=1,I
          MPAGE=MPAGE+1
          WRITE (3,1030) (EQUIP(I,J),J=1,10),MPAGE
          1030 FORMAT(1X,4A10,2I8,A5,R2,1X,A9,1X,15,14)
          115 CONTINUE
          IF (EQUIP(I,10).NE.99999) MOREAD=.T.
          MDCLSM=.T.
          120 CONTINUE

240      C      FOR SET OF RECEIVERS, LOOP THROUGH ALL TRANSMITTERS
          DO 180 J=1,TEND

245      C      CHECK FREQUENCY RANGE OF TRANSMITTER AGAINST ALL RANGES FOR
          C      RECEIVERS. IF IT DOES NOT OVERLAP ANY, IGNORE IT.
          DO 122 K=1,NTUNR
          IF (TUNRL(K).LE.TRANS(J,6).AND.TUNRH(K).GE.TRANS(J,5)) GO TO 124
          122 CONTINUE
          GO TO 180

250      C      CHECK FOR THREE DIGIT MATCH IN CALL SUMMARY
          125 IF (MDCLSM) GO TO 142
          ECL3=TRANS(J,10)/100
          DO 125 K=1,NT
          IF (ECL3.EQ.EOCL(K)) GO TO 150
          125 CONTINUE

255      C      CHECK FOR TWO DIGIT MATCH IN CALL SUMMARY
          ECL2=ECL3/10
          DO 130 K=1,NT
          IF (ECL2.EQ.(EOCL(K)/10)) GO TO 160
          130 CONTINUE

260      C      CHECK FOR ONE DIGIT MATCH IN CALL SUMMARY
          ECL1=ECL2/10
          DO 140 K=1,NT
          IF (ECL1.EQ.(EOCL(K)/100)) GO TO 170
          140 CONTINUE

265      C      TRANSMITTER DOES NOT MATCH ANY EQUIPMENT CLASS IN CALL SUMMARY
          C      ADD IT TO ZERO DIGIT TABLE
          142 NO-IGO(1)=1
          IF (NO-LE-MAXL) GO TO 145
          KNT(1)=KNT(1)+1
          GO TO 130
          145 CONTINUE

```


TABLE XXXVII. OVERLAP COMPUTER LISTING (CONT)

PROGRAM OVERLAP	7/74	UPI-1	FTM 4.8+498	80/07/28. 13.56.57	PAGE
290	ICG(11)=NO ICG(10)=J GO TO 180			OVERLAP 285 OVERLAP 286 OVERLAP 287 OVERLAP 288 OVERLAP 289 OVERLAP 290 NEWSYS1 15 MATCH3 17 MATCH3 18 OVERLAP 293 NEWSYS1 16 NEWSYS1 17 NEWSYS1 18 NEWSYS1 19 NEWSYS1 20 NEWSYS1 21 NEWSYS1 22 NEWSYS1 23 MATCH3 30 MATCH3 31 NEWSYS1 24 NEWSYS1 25 OVERLAP 294 OVERLAP 295 OVERLAP 296 OVERLAP 297 OVERLAP 298 OVERLAP 299 OVERLAP 300 OVERLAP 301 OVERLAP 302 OVERLAP 303 OVERLAP 304 NEWSYS1 26 OVERLAP 306 OVERLAP 307 OVERLAP 308 OVERLAP 309 NEWSYS1 27 OVERLAP 311 OVERLAP 312 OVERLAP 313 NEWSYS1 28 NEWSYS1 29 OVERLAP 316 OVERLAP 317 OVERLAP 318 OVERLAP 319 OVERLAP 320 OVERLAP 321 OVERLAP 322 OVERLAP 323 OVERLAP 324 OVERLAP 325 OVERLAP 326 NEWSYS1 30 OVERLAP 328	
295	C ADD TRANSMITTER TO THREE DIGIT TABLE				
300	150 CONTINUE ECL3=ECL3+1000000 ENCODE(10,1040,EQCL)ECL3 1040 FORMAT (110) IF(EQCL-EQ-MG3(K))GO TO 156 IF(MG3(K))-EQ-1M 160 TO 155 WRITE(6,151)EQCL,MG3(K),EQCL 151 FORMAT(00,14.4,2(5X,020)) STOP 151 155 MG3(K)=EQCL 156 M3L=MG3L(1)+1 IF(M3L-LE-MMAXL)GO TO 157 KNT(7)=KNT(7)+1 GO TO 180 157 MG3L(1)=M3L MG3L(M3L)=J GO TO 180				
305	C ADD TRANSMITTER TO TWO DIGIT TABLES				
310	160 M2=IG2(K,1) ECL3=ECL3+1000000 ENCODE (10,1040,EQCL) ECL3 DO 161 L=2,M2 IF (EQCL-EQ.IG2(K,L)) GO TO 166 161 CONTINUE M2=M2+1 IF (M2-LE-M2I)GO TO 165 KNT(4)=KNT(4)+1 GO TO 180 165 IG2(K,1)=M2 IG2(K,M2)=EQCL 166 M2L=IG2L(1)+1 IF (M2L-LE-MMAXL) GO TO 167 KNT(5)=KNT(5)+1 GO TO 180 167 IG2L(1)=M2L IG2L(M2L)=J GO TO 180				
315					
320					
325	C ADD TRANSMITTER TO ONE DIGIT TABLES				
330	170 M1=IG1(K,1) ECL3=ECL3+1000000 ENCODE (10,1040,EQCL) ECL3 DO 171 L=2,M1 IF (EQCL-EQ.IG1(K,L)) GO TO 176 171 CONTINUE M1=M1+1 IF (M1-LE-M1I)GO TO 175 KNT(2)=KNT(2)+1				
335					
340					

TABLE XXXVII. OVERLAP COMPUTER LISTING (CONT)

PROGRAM OVERLAP	73/74	OPT=1	FIN 4.8+498	80/07/28. 13.50.57	PAGE 7

[illegible]

TABLE XXXVII. OVERLAP COMPUTER LISTING (CONT)

PROGRAM OVERLAP	73/74	UPT-1	PTN 4.8+498	80/07/28, 13.56.57	PAGE	8
403	3200	FORMAT(F8.2) DECODE(03,3202,B)DHVAR 3202 FORMAT(F3.1) WRITE(6,3203)DMAVAL,DHVAR 3203 FORMAT(/+ CALL SUMMARY A VALUE = +,F12.2,+ VARIANCE OF A = +,F5.1) LINE=LINE+2 189 CONTINUE WRITE (6,1090) (TEOCL(K),CURVE(K),K=K1,K2) 1090 FORMAT(/+ CALL SUMMARY +15(R3,A3,1X)/) LINE=LINE+3 IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2) WRITE(6,1110)(NG3(K),K=K1,K2) 1110 FORMAT(+ 3 DIGITS +15(R3,4X)) LINE=LINE+1 IF (LINE.GT.60) CALL NEWPG(NEOCL,STAR2,NEOCL,STAR2) N2=0 DO 190 K=K1,K2 IF (IG2(K,1).GT.N2) N2=IG2(K,1) 190 CONTINUE L=2 WRITE (6,1120) (IG2(K,L),K=K1,K2) 1120 FORMAT (+ 2 DIGITS +15(R3,4X)) L=L+1 IF (L.GT.N2) GO TO 199 195 WRITE (6,1125) (IG2(K,L),K=K1,K2) 1125 FORMAT (144,15(R3,4X)) GO TO 192 199 LINE=LINE+N2 IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2) N1=0 DO 200 K=K1,K2 IF (IG1(K,1).GT.N1) N1=IG1(K,1) 200 CONTINUE L=2 WRITE (6,1130) (IG1(K,L),K=K1,K2) 1130 FORMAT (+ 1 DIGIT +15(R3,4X)) L=L+1 IF (L.GT.N1) GO TO 209 205 WRITE (6,1125) (IG1(K,L),K=K1,K2) GO TO 202 209 LINE=LINE+N1 IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2) 210 CONTINUE	MATCH3 36 MATCH3 37 MATCH3 38 MATCH3 39 MATCH3 40 MATCH3 41 MATCH3 42 OVERLAP 384 OVERLAP 395 MATCH3 44 OVERLAP 389 NEWSYS1 36 NEWSYS1 37 NEWSYS1 38 MATCH3 56 OVERLAP 390 OVERLAP 391 OVERLAP 392 OVERLAP 393 OVERLAP 394 OVERLAP 395 OVERLAP 396 OVERLAP 397 OVERLAP 398 OVERLAP 399 OVERLAP 400 OVERLAP 401 OVERLAP 402 OVERLAP 403 OVERLAP 404 OVERLAP 405 OVERLAP 406 OVERLAP 407 OVERLAP 408 OVERLAP 409 OVERLAP 410 OVERLAP 411 OVERLAP 412 OVERLAP 413 OVERLAP 414 OVERLAP 415 OVERLAP 416 OVERLAP 417 CLSMRY 6 CLSMRY 7 CLSMRY 8 CLSMRY 3 CLSMRY 4 FINOLAP 36 LOCLOB 12 CLSMRY 11 FINOLAP 37 FINOLAP 38 OVERLAP 418 OVERLAP 419 OVERLAP 420 OVERLAP 421			
405						
410						
415						
420						
425						
430						
435						
440						
445						
450						
455						

TABLE XXXVII. OVERLAP COMPUTER LISTING (CONT)

PAGE 9

80/07/28. 13.56.57

FTM 4.8498

PROGRAM OVERLAP 73/74 OPT-1

```

1140 FORMAT(0 COMPLETE RECORDS FOR POTENTIAL INTERFERERS *)
LINE=LINE+2
IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2)
WRITE (6,1060)
LINE=LINE+3
IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2)
IF (INCLSH) GO TO 250
IF (OPTION) 219,250
219 WRITE (6,5260)
5260 FORMAT(0 3 DIGITS*)
LINE=LINE+2
IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2)
L3=NG3(1)
IF (L3.EQ.1) GO TO 5265
DO 5261 L=2,L3
M=MG3(L)
WRITE (6,1070) (TRANS(M,J),J=1,10)
LINE=LINE+1
IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2)
5261 CONTINUE
5265 CONTINUE
220 WRITE (6,1150)
1150 FORMAT(0 2 DIGITS*)
LINE=LINE+2
IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2)
L2=LG2(1)
IF (L2.EQ.1) GO TO 235
DO 230 L=2,L2
M=LG2(L)
WRITE (6,1070) (TRANS(M,J),J=1,10)
LINE=LINE+1
IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2)
230 CONTINUE
235 CONTINUE
WRITE (6,1160)
1160 FORMAT(0 1 DIGIT*)
LINE=LINE+2
IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2)
L1=LG1(1)
IF (L1.EQ.1) GO TO 245
DO 240 L=2,L1
M=LG1(L)
WRITE (6,1070) (TRANS(M,J),J=1,10)
LINE=LINE+1
IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2)
240 CONTINUE
245 CONTINUE
250 WRITE (6,1170)
1170 FORMAT(0 0 DIGITS*)
LINE=LINE+2
IF (LINE.GT.60) CALL NEWPG (NEOCL,STAR2,NEOCL,STAR2)
L0=LG0(1)
IF (L0.EQ.1) GO TO 261
DO 260 L=2,L0
M=LG0(L)
WRITE (6,1070) (TRANS(M,J),J=1,10)
LINE=LINE+1

```

OVERLAP 422
OVERLAP 423
OVERLAP 424
OVERLAP 425
OVERLAP 426
OVERLAP 427
OVERLAP 428
MATCH3 57
MATCH3 58
MATCH3 59
MATCH3 60
MATCH3 61
NEWYS1 39
MATCH3 64
MATCH3 65
NEWYS1 40
MATCH3 67
MATCH3 68
MATCH3 69
MATCH3 70
MATCH3 71
OVERLAP 430
OVERLAP 431
OVERLAP 432
OVERLAP 433
NEWYS1 41
OVERLAP 436
OVERLAP 437
NEWYS1 42
OVERLAP 439
OVERLAP 440
OVERLAP 441
OVERLAP 442
OVERLAP 443
OVERLAP 444
OVERLAP 445
OVERLAP 446
OVERLAP 447
NEWYS1 43
OVERLAP 450
OVERLAP 451
NEWYS1 44
OVERLAP 453
OVERLAP 454
OVERLAP 455
OVERLAP 456
OVERLAP 457
OVERLAP 458
OVERLAP 459
OVERLAP 460
OVERLAP 461
OVERLAP 462
OVERLAP 463
OVERLAP 464
OVERLAP 465
OVERLAP 466
OVERLAP 467

TABLE XXXVII. OVERLAP COMPUTER LISTING (CONT)

PROGRAM OVERLAP	73/74	UPF-1	FIN 4.8+498	80/07/24. 13.56.57	PAGE	10
515			IF (LINE-31.60) CALL NEWPG (NEQCL,STAR2,NEQCL,STAR2)	OVERLAP 468		
			260 CONTINUE	OVERLAP 469		
520			C OUTPUT MESSAGES CONCERNING EXCESS NUMBERS OF EQUIPMENTS	OVERLAP 470		
			261 IF (.NOT.RECSW) GO TO 262	OVERLAP 471		
			LINE = LINE+5	OVERLAP 472		
			IF (LINE-31.60) CALL NEWPG (NEQCL,STAR2,NEQCL,STAR2)	OVERLAP 473		
			WRITE (6,1172)	OVERLAP 474		
			1172 FORMAT (51/)	OVERLAP 475		
525			WRITE (6,1173) RECMAX,NEQCL	OVERLAP 476		
			1173 FORMAT (1X,15* RECEIVERS WITH EQUIPMENT CLASS *,14/)	OVERLAP 477		
			262 RECSW=F.	OVERLAP 478		
			DO 263 J=1,7	OVERLAP 13		
			K=KNT(J)	OVERLAP 480		
			IF (K.EQ.0) GO TO 263	MATCH3 72		
530			N=0	OVERLAP 482		
			IF (J.EQ.2) N=N1-1	OVERLAP 483		
			IF (J.EQ.4) N=N2-1	MEMSYS1 45		
			IF (MOD(J,2).EQ.1) N=NMAX1-1	MEMSYS1 46		
			WRITE (6,1175) N,NAME(J),K	MEMSYS1 47		
535			1175 FORMAT (1X,15* EQUIPMENTS FROM TABLE *A* WERE PRINTED.* 1 * THERE WERE *15* MORE FOR WHICH THERE WAS NO ROOM IN THE* 2 * TABLE.*/)	OVERLAP 485		
			263 CONTINUE	OVERLAP 486		
540			C INITIALIZE FOR NEXT SET OF RECEIVERS	OVERLAP 487		
			265 IF (EDFSW) GO TO 266	OVERLAP 488		
			266 DO 267 J=1,10	OVERLAP 489		
			EQUIP(1,J)=EQUIP(1+1,J)	OVERLAP 490		
545			267 CONTINUE	OVERLAP 491		
			I=1	OVERLAP 492		
			NTUNR=1	OVERLAP 493		
			TUNRL(1)=0.995*EQUIP(1,5)	OVERLAP 494		
			TUNRH(1)=1.005*EQUIP(1,6)	OVERLAP 495		
550			GO TO 40	OVERLAP 496		
			C ERROR - END OF CALL SUMMARY	OVERLAP 497		
			270 REQCL=9999	OVERLAP 498		
			GO TO 110	OVERLAP 499		
555			C ERROR - TOO MANY RECEIVERS FOR SET	OVERLAP 500		
			290 RECSW=.1.	OVERLAP 501		
560			I=49	OVERLAP 502		
			GO TO 40	OVERLAP 503		
			C OUTPUT LIST OF RECEIVERS WITH NO MATCHING CALL SUMMARY	OVERLAP 504		
565			300 CONTINUE	OVERLAP 505		
			MPAGE=0	14JAN77 9		
			I=1	14JAN77 10		
			WRITE(3,1030)(EQUIP(1,J),J=1,10),MPAGE	OVERLAP 516		
			ENDFILE 3	OVERLAP 517		
			NEWIND 3	OVERLAP 518		
570				OVERLAP 519		
				MEMSYS1 48		
				OVERLAP 521		
				OVERLAP 522		
				OVERLAP 523		
				OVERLAP 524		
				OVERLAP 525		
				MEMSYS1 49		
				MEMSYS1 50		
				MEMSYS1 51		
				MEMSYS1 52		
				OVERLAP 526		

PROGRAM OVERLAP 73/74 OPI-1

527	UOVERLAP	NEWYS1	55
528	ENDF	NEWYS1	56
529	UOVERLAP	NEWYS1	57
530	ENDF	NEWYS1	58
531	UOVERLAP	NEWYS1	59
532	ENDF	NEWYS1	60
533	UOVERLAP	NEWYS1	61
534	ENDF	NEWYS1	62
535	UOVERLAP	NEWYS1	63
536	ENDF	NEWYS1	64
537	UOVERLAP	NEWYS1	65
538	ENDF	NEWYS1	66
539	UOVERLAP	NEWYS1	67
540	ENDF	NEWYS1	68
541	UOVERLAP	NEWYS1	69
542	ENDF	NEWYS1	70
543	UOVERLAP	NEWYS1	71
544	ENDF	NEWYS1	72
545	UOVERLAP	NEWYS1	73
546	ENDF	NEWYS1	74
547	UOVERLAP	NEWYS1	75
548	ENDF	NEWYS1	76
549	UOVERLAP	NEWYS1	77
550	ENDF	NEWYS1	78
551	UOVERLAP	NEWYS1	79
552	ENDF	NEWYS1	80
553	UOVERLAP	NEWYS1	81
554	ENDF	NEWYS1	82
555	UOVERLAP	NEWYS1	83
556	ENDF	NEWYS1	84
557	UOVERLAP	NEWYS1	85
558	ENDF	NEWYS1	86
559	UOVERLAP	NEWYS1	87
560	ENDF	NEWYS1	88
561	UOVERLAP	NEWYS1	89
562	ENDF	NEWYS1	90
563	UOVERLAP	NEWYS1	91
564	ENDF	NEWYS1	92
565	UOVERLAP	NEWYS1	93
566	ENDF	NEWYS1	94
567	UOVERLAP	NEWYS1	95
568	ENDF	NEWYS1	96
569	UOVERLAP	NEWYS1	97
570	ENDF	NEWYS1	98
571	UOVERLAP	NEWYS1	99
572	ENDF	NEWYS1	100

TABLE XXXVII. OVERLAP COMPUTER LISTING (CONT)

SUBROUTINE	NEWPG	73/74	UPT=1	FIN 4.0.498	80/07/20. 13.56.57	PAGE	1
1			SUBROUTINE NEWPG (N,I,M,J)		OVERLAP	544	)
			DIMENSION STAR(2)		OVERLAP	545	)
5			INTEGER CCC,STAR		OVERLAP	546	)
			COMMON/CDM/LINE,NPAGE,KLASS		OVERLAP	547	)
10			DATA (STAR=10M ,10M*****)		OVERLAP	548	)
			CCC=1M2		OVERLAP	549	)
			WRITE (6,1000) CCC,KLASS,M,STAR(1),NPAGE		OVERLAP	550	)
			1000 FURNAT(1,63X,A10,20X,REC.EQ-CLASS *,14,1X,A8,1X,*,PAGE NO. *,15)		OVERLAP	551	)
			CCC=1M		OVERLAP	552	)
15			NPAGE=NPAGE+1		OVERLAP	553	)
			WRITE (6,1000) CCC,KLASS,M,STAR(J),NPAGE		OVERLAP	554	)
			LINE=2		OVERLAP	555	)
			RETURN		EQCL68	14	)
			END		NEWSYS1	62	)
					OVERLAP	558	)
					OVERLAP	559	)
					OVERLAP	560	)
					OVERLAP	561	)
					OVERLAP	562	)

SECTION 12 - PROGRAM AMCSMNT 19

12.1 PURPOSE

Program AMCSMNT 19 adds new data records or makes changes to data records presently contained in the master equipment call summary file.

12.2 PRINCIPAL FUNCTIONS

Program AMCSMNT, shown in figure 45, uses as input the old master equipment call summary file, together with call summary update cards, and outputs an updated master equipment call summary file for use in program OVERLAP 18. The primary functions of program AMCSMNT are as follows:

- a. Inserts, in proper sequence, data contained in update cards for new call summaries.
- b. Deletes data records for old call summaries.
- c. Modifies data fields in existing call summary records.

12.3 INPUT/OUTPUT DESCRIPTION

Input to program AMCSMNT includes update data cards and the old master equipment call summary file. The data card input file must be sorted first in ascending order on receiver class code (columns 3-6), second in ascending order on R/T code (column 1), third in descending order on card sequence (column 2), and finally in ascending order on card order (columns 69-70). Output is the updated master equipment call summary file for input to program OVERLAP 18. A special print program CALLSM is used to produce a listing of the output file.

12.3.1 Input Format

The format of input data for program AMCSMNT is given in the following figures and table:

- a. Transmitter update card 29, figure 46, page 12-4.
- b. Receiver update cards 29, figure 47, page 12-5.
- c. Master equipment call summary file 27, table XXXVIII, page 12-10.

12.3.2 Output Format

The format of the updated master equipment call summary file output by program AMCSMNT is given in table XXXVIII.

12.4 PROCESS DESCRIPTION

a. Program AMCSMNT is written in FORTRAN EXTENDED for the CDC CYBER 172 computer and requires 60000₈ words of central memory for execution.

b. An update record is read, and the type of update is determined.

c. For a receiver call summary to be added, the update record is inserted in the proper sequence in the updated master equipment call summary file. For a deletion, the entire record is removed from the updated master file. To change the value of A and its variance, the matching call summary is found, and the new data inserted are in the record output to the updated call summary file.

d. For transmitter data updates, the matching receiver call summary record is found. For an add-on, the new transmitter data are inserted following the referenced transmitter, and the record is output to the updated file. For a deletion, data for the referenced transmitter are deleted from the output records. To change individual data values, the new data replace those for the referenced transmitter in the output record.

e. This process is repeated until all the updates have been completed and the updated master equipment call summary file is output.

12.5 PROGRAM OPERATION

Figure 48, page 12-12, is a listing of all system and UPDATE cards necessary to execute AMCSMNT and its print program CALLSM for a typical computer run.

12.6 LIMITATIONS

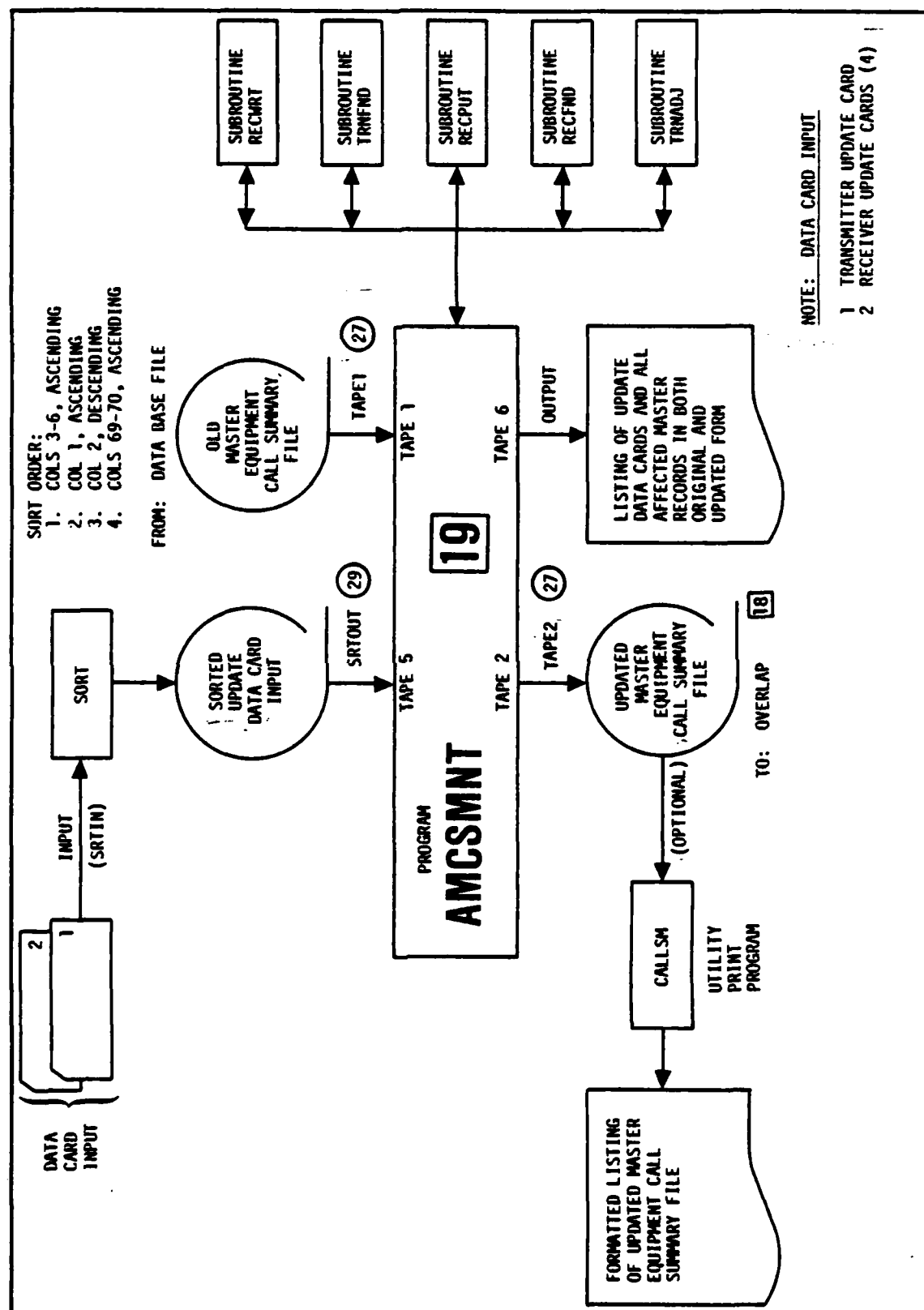
There are no program limitations other than defined field and record size for the master equipment call summary file.

12.7 RUNNING TIME

Running time is estimated at 1 minute per 100 update records.

12.8 COMPUTER PROGRAM LISTING

A complete computer listing of program AMCSMNT, its subroutines (RECWRT, TRNFND, RECPUT, RECFND, and TRNADJ), and program CALLSM is presented in table XXXIX, page 12-13, annotated to aid in the understanding of the program functioning.



<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1	R1	TEST1	"T" for transmitter change.
2	2	R1	TEST2	A 1-character alphabetic code indicating type of change: A = New transmitter class code and curve number will be inserted following the referenced transmitter class code and curve number in the record for the given receiver class code. C = New transmitter class code and curve number will replace the referenced transmitter class code and curve number in the record for the given receiver class code. D = The referenced transmitter class code and curve number will be deleted from the record for the given receiver class code. A new transmitter class code and curve number are not required.
3	3-6	I4	REC1	Receiver class code.
4	7-9	A3	REFTRN	Referenced transmitter class code.
5	10-12	A3	TRNEW	New transmitter class code.
6	13-15	A3	CRVNEW	New curve number.
7	69-70			Sequence number for all code A cards for a given receiver class code. Sequence number 01 is processed first, card 02, second, card 03, third, etc.

Figure 46. AMCSMNT input, transmitter update card (29) .

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
<u>CARD 1</u>				
1	1	R1	TEST1	"R" for receiver change.
2	2	R1	TEST2	A 1-character alphabetic code indicating type of change: A = New receiver class code will be added in sequence to the new master data file along with the transmitter data found on cards 2, 3, and 4. C = New A and sigma A value in card columns 11-23 will replace these values in the record for the given receiver class code. Requires card 1 only, columns 1-6 and 11-23. D = Receiver class will be deleted. Requires card 1 only, columns 1-6.
3	3-6	I4	REC1	Receiver class code.
4	7-8	I2	ITRAN	Number of sets of transmitter data to be added ($1 \leq \text{number} \leq 30$).
5	9-10	A2	T1	Blank
6	11-23	A10,A3	T2,T3	Columns 11-18 = A value in hundredths of a dBm; column 19-23 = σ_A^2 in tenths of a dB ² .
7	69-70			"01" for card 1.
<u>CARD 2</u> (Required if code = A on card 1)				
1	1			"R" for receiver change.

Figure 47. AMCSMNT input, receiver update cards (29) .

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
2	2			"9" for card 2.
3	3-6			Receiver class code.
4	7-9	A3	RECOUT(1,1)	Transmitter class code 1.
5	10-12	A3	RECOUT(2,1)	Curve number 1.
6	13-15	A3	RECOUT(1,2)	Transmitter class code 2.
7	16-18	A3	RECOUT(2,2)	Curve number 2.
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
22	61-63	A3	RECOUT(1,10)	Transmitter class code 10.
23	64-66	A3	RECOUT(2,10)	Curve number 10.
24	69-70			"02" for card 2.
<u>CARD 3</u> (Required if number of sets > 10 on card 1)				
1	1			"R" for receiver change.
2	2			"8" for card 3.
3	3-6			Receiver class code.
4	7-9	A3	RECOUT(1,11)	Transmitter class code 11.

Figure 47. AMCSMNT input, receiver update cards (29) (cont).

<u>FIELD NO.</u>	<u>CARD COL.</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
5	10-12	A3	RECOUT(2,11)	Curve number 11.
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
22	61-63	A3	RECOUT(1,20)	Transmitter class code 20.
23	64-66	A3	RECOUT(2,20)	Curve number 20.
24	69-70			"03" for card 3.
<u>CARD 4</u> (Required if number of sets > 20 on card 1)				
1	1			"R" for receiver change.
2	2			"7" for card 4.
3	3-6			Receiver class code.
4	7-9	A3	RECOUT(1,21)	Transmitter class code 21.
5	10-12	A3	RECOUT(2,21)	Curve number 21.
.	.	.	.	.
.	.	.	.	.
22	61-63	A3	RECOUT(1,30)	Transmitter class code 30.
23	64-66	A3	RECOUT(2,30)	Curve number 30.
24	69-70			"04" for card 4.

Figure 47. AMCSMNT input, receiver update cards (29) (cont).

INTENTIONALLY BLANK

File Description: Master Equipment Call Summary File (27)
File Name: TAPE1/TAPE2 Logical Unit: 1/2
Mode/Type: BCD Record Length: 68 characters
Origin: Data base file maintained by programs AMCSMNT and CALLSM
Used By: OVERLAP [18] ; AMCSMNT [19]

TABLE XXXVIII. MASTER EQUIPMENT CALL SUMMARY FILE (27)

Data Description	Field Size	Field Position	Remarks
Receiver ID code	5	1-5	The middle 4 digits of the 6-digit equipment class code, right-justified. The middle 4 digits uniquely identify the equipment type.
"A" value	8	6-13	Threshold value of $\hat{S}$ (in dBm), the desired RF signal level, for 50 percent probability of satisfactory operation in the absence of interference other than receiver noise. Expressed in hundredths of a dBm.
Variance of "A"	5	14-18	Variance parameter (in dB^2) of a Gaussian distribution function that is fitted to the function relating the probability of satisfactory operation to $\hat{S}$, in the absence of interference other than receiver noise. Expressed to nearest tenth of a dB^2 .
Number of expected interferer classes	2	19-20	The number of expected interferer classes for this receiver equipment class, presently limited to 30.
Interferer equipment class (1)	3	21-23	The 2nd, 3rd, and 4th digits of the 6-digit class code for one potential interferer equipment class for this receiver.
Scoring curve ID (1)	3	24-26	The ID number of the "B" matrix scoring curve to be used for scoring interferer equipment class (1) and this receiver.
(See note on following page)			

TABLE XXXVIII. MASTER EQUIPMENT CALL SUMMARY FILE (27) (CONT)

Data Description	Field Size	Field Position	Remarks
NOTE: The last two data items (interferer equipment class and scoring curve ID) are repeated for up to 8 equipments per record ending in field position 68. If there are more than 8 expected interferer classes, data are continued in the next record in the same format (field positions 1-20 are identical and interferer class (9) starts in positions 21-23, etc.). This procedure is followed for a maximum of 30 interferer classes for each receiver ID code. The number of records for each receiver ID code is a function of the number of expected interferer classes (field positions 19-20). The maximum number of records is 4, with 8 interferer classes per record to the maximum of 30.			

```

( 1) AMCSMNT
( 2) USER(00 USER ID **)
( 3) CHARGE(MA000,N)
( 4) COMMENT.
( 5) COMMENT. TASK NAME
( 6) COMMENT. A-MATRIX UPDATE
( 7) COMMENT.
( 8) GET(EQIP-EQIPCKU/UM-BILLIE,NA)
( 9) UPDATE(P-EQIP,Q)
(10) FTM(1,N=3,8-AMCSMNT)
(11) UPDATE(P-EQIP,Q)
(12) FTM(1,R=3,8-CALLSM)
(13) UNLOAD(EQIP)
(14) COPYCRIMP,SRTOU)
(15) REMIND(SRTOU)
(16) GET(TAPE1-CLSMRYU/NA)
(17) AMCSMNT.
(18) CALLSM(TAPE2)
(19) REPLACE(TAPE1-BKPSMRU/NA)
(20) REPLACE(TAPE2-CLSMRYU/NA)
(21) 7-8-9 CARD
(22) */ TASK CHANGES FOR AMCSMNT (IF ANY)
(23) */ TASK CHANGES FOR CALLSM (IF ANY)
(24) *COMPILE AMCSMNT,CALLSM
(25) 7-8-9 CARD
(26) *** INSERT UPDATE DATA CARDS HERE
(27) 7-8-9 CARD
(28) SORT
(29) FILE, INPUT=SRIN(U),OUTPUT=SRTOU(CR)
(30) FIELD,RTCODE(1,1,DISPLAY),TYPE(2,1,DISPLAY),REOCL(3,4,DISPLAY),
(31) ,ORD(6,2,DISPLAY)
(32) KEY=REOCL(A,ASCII16),RTCODE(A,ASCII16),TYPE(D,ASCII16),ORD(A,ASCII16)
(33) END
(34) 7-8-9 CARD
(35) A-MATRIX CALL SUMMARY FILE
(36) 7-8-9 CARD
(37) 6-7-8-9 CARD

```

UNCLASSIFIED

Figure 48. AMCSMNT control card listing.

TABLE XXXIX. AMCSMNT COMPUTER LISTING

PROGRAM AMCSMNT	73/74	UPT-1	FTN 4.8+498	80/07/28. 13.57.06	PAGE 1

```

1  PROGRAM AMCSMNT(TAPE1,TAPE2,SRTOUT,OUTPUT,TAPE5=SRTOUT,
      1  (TAPE6=OUTPUT))
      C
      C THIS PROGRAM MAINTAINS THE A-MATRIX CALL SUMMARY FILE BY THE
      C INSERTION OR DELETION OF ELEMENTS IN EACH RECORD OR A COMPLETE
      C RECORD.
      C
      C TAPE 1 IS MASTER FILE INPUT
      C TAPE 2 IS MASTER FILE OUTPUT
      C TAPE 5 IS UPDATE INPUT
      C TAPE 6 IS PRINTED OUTPUT
      C
      C DIMENSION CARDIN(8), RECDUT(2,30),RECSAV(2)
      C INTEGER TEST1,TEST2
      C INTEGER CARDIN,RECDUT,RECSAV,DLANK,RCODE,11,12,13,REFTRN,TRNEW,
      1  CKNWEN,TEMP1,TEMP2,TEMP3,TEMP4
      C DATA BLANK/3H /
      C
      C SORT UPDATE CARDS
      C
      C CALL SMSORT(80)
      C CALL SMFILE(SORT,RCODE,5,REWINO)
      C CALL SMFILE(1,OUTPUT,RCODE,5,REWINO)
      C CALL SMKEY(13,1,0,ASCII16,AA)
      C CALL SMKEY(11,1,0,ASCII16,AA)
      C CALL SMKEY(12,1,0,ASCII16,AD)
      C CALL SMKEY(16,1,2,0,ASCII16,AA)
      C CALL SMEN
      C
      C INITIALIZE OUTPUT RECORD AND READ INPUT CARD.
      C
      C WRITE(6,18)
      C 10 FORMAT(1H1)
      C 11TEST=0
      C 100 DO 101 I=1,30
      C 101 J=1,2
      C RECDUT(I,1)=10H
      C 101 CONTINUE
      C READ(5,1) CARDIN
      C 1 FORMAT (D410)
      C 11=EOF(5) 900,102
      C
      C CHECK FOR RECEIVER CHANGE OR TRANSMITTER CHANGE
      C
      C 102 D1CODE(2,12,CARDIN)TEST1,TEST2
      C WRITE(6,17)TEST1,TEST2
      C 17 FORMAT(2X,11)
      C 11TEST1 .EQ.1MR) GO TO 120
      C 11TEST1 .EQ.1RT) GO TO 300
      C 110 WRITE(6,21)CARDIN
      C 2 FORMAT (1H,D410,104,16)INPUT CARD ERROR)
      C GO TO 100
      C
      C CHECK FOR ADD OR DELETE
      C
      C 120 11TEST12 .EQ.1RA) GO TO 200
      C 11TEST12.EQ.1RC) GO TO 400

```

TABLE XXIX. AMCSMNT COMPUTER LISTING (CONT)

PAGE 2

80/07/28. 13.57.06

FIN 4.8+498

PROGRAM AMCSMNT 73/74 OPT=1

```

60      C
        C
        C
        IFTEST2 .Nc.IRD) GO TO 110
        THIS IS THE RECEIVER DELETE AREA
        CALL RECFCND(CARDIN,RECOUT,RECSAV,ITRAN,ITEST)
        IF(ITEST-2)130,140,150
130      IND=1
        CALL RECWTIRECSAV,ITRAN,RECOUT,IND)
        GO TO 100
140      WRITE(6,5)CARDIN
        5 FORMAT(14,0A10,10X,17HRECEIVER NO MATCH)
        GO TO 100
70      150 WRITE(6,6)CARDIN
        6 FORMAT(14,0A10,10X,16HDEF BEFORE MATCH)
        GO TO 100
        C
        C
        C
        THIS IS THE RECEIVER ADD AREA
200      CALL RECFCND(CARDIN,RECOUT,RECSAV,ITRAN,ITEST)
        IF(ITEST-2)210,220,230
210      WRITE(6,7)CARDIN
        7 FORMAT(14,0A10,10X,16H DUPLICATE RECEIVER)
        IND=0
        GO TO 232
220      DECODE(23,8,CARDIN)RCODE,ITRAN,TL,T2,T3
        8 FORMAT(2A,4,12A2,A10,A3)
        ENCODE(19,9,RECSAV)TL,RCODE,T2,T3
        9 FORMAT(1A,4,A10,A3)
        J=1ITRAN-11/10+1
        DO 230 I=1,J
        J1=10*(I-1)+1
        J2=J1+9
        READ(5,10)((RECOUT(L,K),L=1,2),K=J1,J2)
        10 FORMAT(4X,20A3)
230      CONTINUE
        DO 231 I=1,2
        DO 231 J=1,ITRAN
        IF(RECOUT(I,J).E3.BLANK)GO TO 110
231      CONTINUE
        IND=2
232      CALL RECWTIRECSAV,ITRAN,RECOUT,IND)
        GO TO 100
        C
        C
        C
        TRANSMITTER AREA - TEST FOR ADD,CHANGE,OR DELETE
300      DECODE(15,13,CARD14)REFTRN,ITRNEW,CRVNEW
        12 FORMAT(2N1)
        13 FORMAT(6X,3A3)
        IGO=0
        IF(ITEST2.EQ.14A)IGU=1
        IF(ITEST2.EQ.1RC)IGU=2
        IF(ITEST2.EQ.1R0)IGU=3
        IF(IGU.EQ.0)GO TO 110
        IF((ITRNEW.EQ.BLANK.OR.CRVNEW.EQ.BLANK).AND.IGU.NE.3)GO TO 110
        CALL RECFCND(CARDIN,RECOUT,RECSAV,ITRAN,ITEST)
        IF(ITEST-2)312,140,150

```

TABLE XXXIX. AMCSMT COMPUTER LISTING (CONT)

PROGRAM	AMCSMT	73/74	OPT-1	FIN 4.8+498	80/07/24. 13.57.06	PAGE	3
115							
120							
125							
130							
135							
140							
145							
150							
155							
160							
165							
170							

TABLE XXXIX. AMCSMNT COMPUTER LISTING (CONT)

PROGRAM	AMCSMNT	7/74	UPT-1	FIN 4-8-498	90/07/26. 13.57.06	PAGE	4
175	C	NEWIND 2 NEWIND 5 OUTPUT CARDS 904 READ(15,11)CARDIN IF(EDF15)999,910 910 WRITE(16,16)CARDIN 16 FORMAT(11X,8A10,1X,5HINPUT) GO TO 904 999 STOP END			AMCSMNT 157 AMCSMNT 158 AMCSMNT 159 AMCSMNT 160 FINAMCS 6 AMCSMNT 162 AMCSMNT 163 AMCSMNT 164 AMCSMNT 165 AMCSMNT 166		
180							

TABLE XXXIX. AMCSMT COMPUTER LISTING (CONT)

SUBROUTINE	RECMT	73/74	OPT=1	FTN 4.8+498	80/07/28. 13.57.06	PAGE	1
1				SUBROUTINE RECMT(RECSAV,ITRAN,RECOUT,IND)	AMCSMT 167		
	C				AMCSMT 168		
	C			THIS ROUTINE PRINTS A RECORD WITH HEADING DETERMINED BY IND.	AMCSMT 169		
	C				AMCSMT 170		
5				DIMENSION HEAD(4),RECSAV(2),RECOUT(2,30)	AMCSMT 171		
				INTEGER RECSAV,RECOUT,HEAD	NEWSYS 17		
				DATA HEAD/10*DELETED,10*HADDU,10*PREVIOUS,10*CURRENT	AMCSMT 172		
				IF(IND.EQ.0)GO TO 100	AMCSMT 173		
				WRITE(6,1)HEAD(1:4),RECSAV,ITRAN,((RECOUT(I,J),I=1,2),J=1,ITRAN)	AMCSMT 174		
10				1 FORMAT(10,A10,6HRECORD/IX,A10,A6,I2,16A3/121X,16A31)	AMCSMT 175		
				2 WRITE(6,2)	AMCSMT 176		
				2 FORMAT(1H)	AMCSMT 177		
				100 RETURN	AMCSMT 178		
				END	AMCSMT 179		

TABLE XXXIX. AMCSMT COMPUTER LISTING (CONT)

SUBROUTINE TRANSND

```

1 SUBROUTINE IRFND(RCFTRM,RCOUNT,IFND,ITRAN)
C THIS ROUTINE SENDS IFND BACK EQUAL TO THE MATCHING XMIN INDEX,
C AND SETS IFND=0 IF NO MATCH.
C
5 DIMENSION RCOUNT(2,30)
INTEGER RCFTRM,RCOUNT
DO 1 IFND=1,ITRAN
  IF(RCOUNT(IFND).EQ.RETURNIGU TO 2
    1 CONTINUE
    IFND=0
    2 RETURN
    END
10

```

AMCSMNT	180
AMCSMNT	181
AMCSMNT	182
AMCSMNT	183
NEWSYS2	184
AMCSMNT	185
AMCSMNT	186
AMCSMNT	187
AMCSMNT	188
AMCSMNT	189

TABLE XXXIX. AMCSMNT COMPUTER LISTING (CONT)

SUBROUTINE	RECPUT	73/74	OPT-1	FIN	4.8+498	80/07/28.	13.57.06	PAGE	1
1	C								
	C								
5									
10									
15									
20									

```

SUBROUTINE RECPUT(RCOUT,RECSAV,IRAN)
THIS SUBROUTINE WRITES ADDED RECORDS TO THE MASTER OUTPUT.

DIMENSION RECOUT(12,30),RECSAV(12)
INTEGER RECOUT,RECSAV,REC
WRITE(2,1)RECSAV,IRAN,((RCOUT(I,J),I=1,2),J=1,8)
1 FORMAT(10,49,12,16A3)
IF(1IRAN.LE.8)GO TO 9999
J=(1IRAN-1)/8
DECODE(5,2,RECSAV)REC
2 FORMAT(11X,A4)
DO 100 I=1,J
J1=8*I+1
J2=J1+7
IF(J2.GT.30)J2=30
WRITE(2,3)REC,((RCOUT(L,K),L=1,2),K=J1,J2)
3 FORMAT(11X,A4,15X,16A3)
100 CONTINUE
9999 RETURN
END

```

AMCSMNT 190
 AMCSMNT 191
 AMCSMNT 192
 AMCSMNT 193
 NE#SYS2 14
 AMCSMNT 194
 AMCSMNT 195
 AMCSMNT 196
 AMCSMNT 197
 AMCSMNT 198
 EOCL6C 10
 AMCSMNT 200
 AMCSMNT 201
 AMCSMNT 202
 AMCSMNT 203
 AMCSMNT 204
 EOCL6C 11
 AMCSMNT 206
 AMCSMNT 207
 AMCSMNT 208

TABLE XXXIX. AMCSMNT COMPUTER LISTING (CONT)

SUBROUTINE	RECNO	73/74	UNIT-1	FTN 4.8+498	80/07/2H. 13.57.06	PAGE
1				SUBROUTINE RECNO(CARDIN,RECOUT,RECSAV,ITRAN,ITEST) THIS ROUTINE READS THE MASTER INPUT AND WRITES TO THE MASTER OUTPUT UNTIL A MATCH ON RECEIVER CLASS CODE IS EITHER FOUND OR FOUND NOT TO EXIST.	AMCSMNT 209 AMCSMNT 210 AMCSMNT 211 AMCSMNT 212 AMCSMNT 213 AMCSMNT 214 AMCSMNT 215 AMCSMNT 216 AMCSMNT 217 AMCSMNT 218 AMCSMNT 219 AMCSMNT 220 AMCSMNT 221 AMCSMNT 222 AMCSMNT 223 NEWSYS2 20 AMCSMNT 224 AMCSMNT 225 EOCL6C 12 EOCL6C 13 AMCSMNT 228 AMCSMNT 229 AMCSMNT 230 AMCSMNT 231 AMCSMNT 232 AMCSMNT 233 AMCSMNT 234 AMCSMNT 235 AMCSMNT 236 AMCSMNT 237 FINAMCS 7 EOCL6C 14 EOCL6C 15 AMCSMNT 240 AMCSMNT 241 AMCSMNT 242 AMCSMNT 243 AMCSMNT 244 AMCSMNT 245 AMCSMNT 246 AMCSMNT 247 AMCSMNT 248 AMCSMNT 249 AMCSMNT 250 AMCSMNT 251 AMCSMNT 252 AMCSMNT 253 AMCSMNT 254 AMCSMNT 255 AMCSMNT 256 AMCSMNT 257 AMCSMNT 258 AMCSMNT 259 AMCSMNT 260 AMCSMNT 261 AMCSMNT 262 AMCSMNT 263	
5				ITEST IS RETURNED AS FOLLOWS ITEST=1 - MATCH ITEST=2 - NO MATCH ITEST=3 - END OF FILE ON TAPE 1		
10				THE CONTENTS OF THE RECORD TO BE CHANGED OR DELETED ARE RETURNED IN RECOUT,RECSAV,AND ITRAN.		
15				DIMENSION CARDIN(8),RECSAV(2),RECIN(7),RECOUT(2,30) INTEGER REC1,REC2 INTEGER CARDIN,RECOUT,RECSAV,RECIN DATA REC1,REC2/0,-1/ IF (ITEST.EQ.3) GO TO 9999 DECODE(6,1,CARDIN)REC1 1 FORMAT(2X,14)		
20				1 WAS THE LAST ENTRY A MATCH		
25				IF (ITEST.NE.1) GO TO 100 IS IT STILL LOOKING FOR THE SAME RECORD		
30				IF (REC1.EQ.REC2) GO TO 400 100 READ(1,2)RECIN 2 FORMAT(6A10,A8) IF (EQU(11)9998,102 102 DECODE(15,5,RECIN)REC2 5 FORMAT(11X,14) IF (REC2-REC1)110,120,130 110 WRITE(12,2)RECIN GO TO 100 120 ITEST=1 DECODE(6,3,RECIN)RECSAV,ITRAN,((RECOUT(1,J),J=1,2),J=1,8) 3 FORMAT(10A10,A8,12,16A3) IF (ITRAN.LE.8) GO TO 9999 J=ITRAN-1)/8 DO 124 I=1,J J1=J+1 J2=J1+7 IF (J2.GT.30)J2=30 READ(1,4)((RECOUT(L,K),L=1,2),K=J1,J2) 4 FORMAT(20X,16A3) 124 CONTINUE GO TO 9999 130 ITEST=2 BACKSPACE 1 GO TO 9999		
35				ELIMINATE THIS RECORD FROM OUTPUT		
40				400 J=ITRAN-1)/8+1 DO 410 I=1,J		
45						
50						
55						

PAGE 2

12-21

TABLE XXXIX. AMCSMNT COMPUTER LISTING (CONT)

PAGE 1

80/07/28, 13-57.06

FTN 4.8+4.98

SUBROUTINE TRNADJ 73/74 OPT-1

```

1      SUBROUTINE TRNADJ(RECOUT,IFND,ITRAN,TRNEW,CRVNEW)
      C
      C      THIS ROUTINE ADDS OR DELETES A XTR SET AS IFND IS POS OR NEG, AND
      C      THE VALUE OF ITRAN IS ADJUSTED TO MATCH.
      C
5      DIMENSION RECOUT(2,30),TEMP(4)
      C      INTEGER RECOUT,TRNEW,CRVNEW,TEMP
      C      IF(IFND.LT.0)GO TO 400
      C
10     ADD AREA
      C
      C      IF(IFND.GT.0)GO TO 5
      C      RECOUT(1,1)=TRNEW
      C      RECOUT(2,1)=CRVNEW
      C      ITRAN=1
      C      GO TO 999
      C
      C      5 DO 10 J=1,2
      C      10 TEMP(J)=RECOUT(J,IFND+1)
      C      RECOUT(1,1)=TRNEW
      C      RECOUT(2,1)=CRVNEW
      C      IFND=IFND+2
      C      ITRAN=ITRAN+1
      C      IF(IFND.GT.1)ITRAN=GO TO 999
      C      DO 100 I=IFND,ITRAN
      C      DO 20 J=1,2
      C      TEMP(J,2)=RECOUT(J,I)
      C      RECOUT(J,1)=TEMP(J)
      C      TEMP(J)=TEMP(J+2)
      C      20 CONTINUE
      C      100 CONTINUE
      C      GO TO 999
      C
      C      DELETE AREA
      C
35     400 IFND=-IFND
      C      ITRAN=ITRAN-1
      C      DO 500 I=IFND,ITRAN
      C      DO 500 J=1,2
      C      RECOUT(J,1)=RECOUT(J,I+1)
      C      490 CONTINUE
      C      500 CONTINUE
      C      DO 510 J=1,2
      C      510 RECOUT(J,ITRAN+1)=10H
      C      999 RETURN
      C      END

```

TABLE XXXIX. AMCSMNT COMPUTER LISTING (CONT)

PROGRAM CALLSM	73/74	OPT=1	FIN 4,8+498	80/07/28. 13.57.14	PAGE . 1
1	PROGRAM CALLSM(CLSMRY, INPUT, OUTPUT, TAP15=INPUT, TAPE6=OUTPUT, 1 TAPE2=CLSMT)			FTNC SUM	1
	DIMENSION TITLE(4), IG(8), CRVE(3), KCLASS(2)			FTNC SUM	2
	INTEGER TITLE, RECV, AVAL1, AVAL2, SIGMA, ENTRYN, CRVE, DOT, BLANKS			CALLSM	3
5	DATA (NPAGE1=0), (NPAGE2=1), (NCOLD=0)			04JAN77	3
	DATA (DOT=IN.)			CALLSM	5
	DATA (BLANKS=10H)			CALLSM	6
	READ(5,10) TITLE, KCLASS			CALLSM	7
	10 FORMAT(6A10)			CALLSM	8
10	20 WRITE(6,25) TITLE, KCLASS, NPAGE1, TITLE, KCLASS, NPAGE2			CALLSM	9
	25 FORMAT(10A10, 4A10, 9X, 2A10, 45X, PAGE=15/010X, 4A10, 9X, 2A10,			04APR80	1
	1 45X, PAGE=15/)			CALLSM	13
	NPAGE1=NPAGE2			CALLSM	14
15	NPAGE2=NPAGE2+1			CALLSM	15
	WRITE(6,30)			CALLSM	16
	30 FORMAT(17A, 4RECVR, 4X, A VALUE, 3X, SIGMA, 3X, 4NO, OF, 29X,			04JAN77	4
	1 0IG/CURVE, 17X, CLASS, 15X, 4HA, 02, 3X, 0IG/CURVE, 17X, 0-----0,			04JAN77	5
	2 4X, 0-----0, 3X, 0-----0, 28X, 0-----0//)			04JAN77	6
	LINE=9			CALLSM	20
20	35 READ(2,40) RECV, AVAL1, AVAL2, SIGMA, ISIG, ENTRYN, (IG(1), CRVE(1), I=1,8)			04JAN77	7
	40 FORMAT(11X, A, 2X, A, 4A1, 3X, A, 2A1, A2, 16A3)			EOCL6C	16
	IF (LUF(12)0) 45			FTNC SUM	3
	45 IF (AVAL1=EQ, BLANKS) DOT=BLANKS			04JAN77	9
	IF (NCOLD=EQ, RECV) GO TO 48			CALLSM	28
25	IF (LINE=7, LT, 60) GO TO 47			04JAN77	10
	WRITE(6,25) TITLE, KCLASS, NPAGE1, TITLE, KCLASS, NPAGE2			04JAN77	11
	NPAGE1=NPAGE2			04JAN77	12
	NPAGE2=NPAGE2+1			04JAN77	13
30	WRITE(6,30)			04JAN77	14
	LINE=9			04JAN77	15
	47 CONTINUE			04JAN77	16
	WRITE(6,46)			CALLSM	29
	46 FORMAT(1)			CALLSM	30
	NCOLD=RECV			CALLSM	31
35	LINE=LINE+2			CALLSM	32
	IF (SIGMA=NE, 1H -OR, ISIG, NE, 1H) GO TO 48			04JUN75	3
	SIGMA=21 0			04JUN75	4
	ISIG=1H0			04JUN75	5
40	48 WRITE(6,50) RECV, AVAL1, DOT, AVAL2, SIGMA, DOT, ISIG, ENTRYN,			04JAN77	17
	1 (IG(1), CRVE(1), I=1,8)			04JAN77	18
	50 FORMAT(17X, A, 5X, A, 4, 2A1, 4X, A, 2, 2A1, 5X, A, 2, 8(3X, 2A3))			EOCL6C	17
	DOT=1H.			CALLSM	36
	LINE=LINE+1			CALLSM	37
	IF (LINE, LT, 60) 35, 20			CALLSM	38
45	80 REWIND 2			CALLSM	39
	WRITE(6,25) TITLE, KCLASS, NPAGE1			CALLSM	40
	END			CALLSM	41

SECTION 13 - PROGRAM BMATUP 20

13.1 PURPOSE

Program BMATUP 20 adds new data records or makes changes to data records presently contained in the master B-matrix data file.

13.2 PRINCIPAL FUNCTIONS

Program BMATUP, shown in figure 49, uses as input the old master B-matrix data file, together with B-matrix update cards, and outputs an updated master B-matrix data file for use in program READDB 21. The primary functions of program BMATUP are as follows:

- a. Inserts, in proper sequence, data contained in update cards for new B-matrix curves.
- b. Deletes data records for old B-matrix curves.
- c. Modifies data fields in existing B-matrix records.

13.3 INPUT/OUTPUT DESCRIPTION

Input to program BMATUP includes a program control card, update data cards, and the old master B-matrix data file. The data card input file must be sorted in ascending order on curve number (columns 68-70) and then on sequence number (columns 64-65). Output is the updated master B-matrix data file for input to program READDB 21 and a listing of the output file.

13.3.1 Input Format

The format of input data for program BMATUP is given in the following figures and table:

- a. Program control card, figure 50, page 13-4.
- b. B-matrix update data card 30, figure 51, page 13-5.
- c. Master B-matrix data file 31, table XL, page 13-8.

13.3.2 Output Format

The format of the updated master B-matrix data file output by program BMATUP is given in table XL.

13.4 PROCESS DESCRIPTION

- a. Program BMATUP is written in FORTRAN EXTENDED for processing on the CDC CYBER 172 computer and requires 100000₈ words of central memory for execution.

b. The program control card is read, and then all B-matrix update data cards are read and stored in memory.

c. A record is read from the master B-matrix data file and checked against the current update data card to determine the action to be taken. If the curve and/or sequence number are less than the update identifiers, the B-matrix data record is written to the updated file without change. If the curve and sequence numbers match for the two records, data for indicated fields are inserted in the record output to the updated file. If the curve numbers match and the update sequence number is zero, the record is deleted from the updated file. If the update curve number is less than the B-matrix curve number, all 21 records for a curve to be added are moved to a working array. Any initial or terminating B values less than -100 for this new curve are set to -100, and new estimates for corresponding delta B variables are determined. All 21 records for the new curve are written to the updated file.

d. This process is repeated until all the updates have been completed and the updated master B-matrix data file is output.

e. The updated master B-matrix data file is then read and a formatted listing is produced.

13.5 PROGRAM OPERATION

Figure 52, page 13-10, is a listing of all system and UPDATE cards necessary to execute BMATUP for a typical computer run.

13.6 LIMITATIONS

The number of B-matrix update cards must not exceed 649.

13.7 RUNNING TIME

Running time is estimated at 1 minute per 100 update records.

13.8 COMPUTER PROGRAM LISTING

A complete computer listing of program BMATUP is presented in table XLI, page 13-11, annotated to aid in understanding the program functioning.

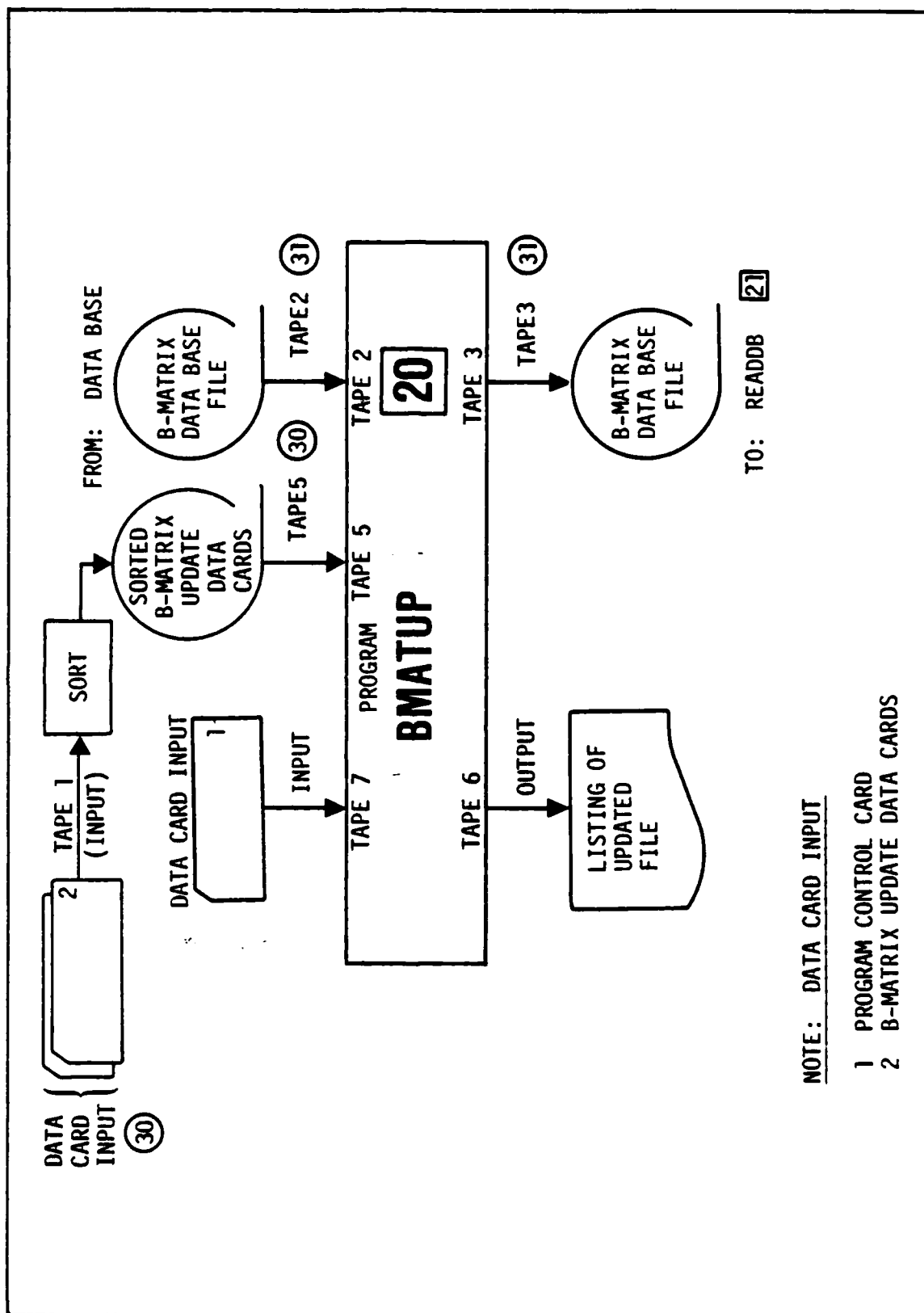


Figure 49. Program B-MATRIX UPDATE, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-30	3A10	TITLE	Title to be included in page headings.
2	31-40	A10	KLASS	Security classification of data to be included in page headings. Cannot be blank.

Figure 50. BMATUP input, program control card.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-8	A8	FREQ	Frequency interval in kHz.
2	9-14	A6	BDB	B value in dB.
3	17-22	A6	ATB	Delta B is defined as the difference between the 90 percent correct information transfer S/I and the 50-percent correct information transfer S/I. Delta B is used to estimate σ_B , the variance of the equivalent normal distribution used to approximate the true function.
4	26-62	3A10,A7	COMNT	Descriptive comments as to type of data, source, special application, etc.
5	64-65	I2	SEQ	Sequence number of cards within the curve set (range = 1 to 21).
6	68-70	I3	CRVE	Identification number for the curve set (range = 001 to 998).
7	74-80	A7	ID	Date curve data are added to master file.

(See notes on following page)

Figure 51. BMATUP input, B-matrix update data card (30) .

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
NOTES:				
1.	To delete an entire curve, enter curve number in columns 68-70 and 00 in columns 64-65.			
2.	To add a curve, fill in all fields for all 21 data cards.			
3.	To change data in fields 1-4, enter curve number in columns 68-70, sequence number in columns 64-65, and new data in field(s) to be changed.			
4.	The update data cards are sorted in ascending order on curve number (columns 68-70), then sequence number (columns 64-65).			

Figure 51. B MATUP input, B-matrix update data card (30) (cont).

File Description: Master B-Matrix Data File (31)
File Name: TAPE2/TAPE3 Logical Unit: 2/3
Mode/Type: BCD Record Length: 80 characters
Origin: Data base file maintained by BMATUP
Used By: BMATUP (20) ; READDB (21)

TABLE XL. MASTER B-MATRIX DATA FILE (31)

Data Description	Field Size	Field Position	Remarks
Frequency interval	8	1-8	Frequency difference (in kHz) between this data point and the receiver center frequency.
B value	6	9-14	B value (in dB) for this data point.
	2	15-16	Blank
Delta B	6	17-22	Delta B is defined as the difference between the 90-percent correct information transfer S/I and the 50-percent correct information transfer S/I. Delta B is used to estimate σ_B , the variance of the equivalent normal distribution used to approximate the true function.
	3	23-25	Blank
Data comments	37	26-62	Descriptive comments as to type of data, source, special application, etc.
	1	63	Blank
Sequence number	2	64-65	Sequence number of cards within the curve set (range = 1 to 21).
	2	66-67	Blank
Curve identification	3	68-70	Identification number for this B curve set (range = 001 to 998).
	3	71-73	Blank

TABLE XL. MASTER B-MATRIX DATA FILE (31) (CONT)

Data Description	Field Size	Field Position	Remarks
Data	7	74-80	Date curve data were added to master file.
NOTES: 1. There must be 21 data points for each curve sorted in increasing order on frequency interval. 2. The end-of-data record must contain 999 in columns 68-70.			

	JGR	B-MATRIX UPDATE	S
(1)	BMATRIX,1777.		
(2)	USEAL00 USER ID **)		
(3)	CHARGEIN(A000,N)		
(4)	CURRENT.		
(5)	CURRENT. TASK NAME		
(6)	COMMENT. B-MATRIX UPDATE		
(7)	COMMENT.		
(8)	FILE(TAPE1,BT-C,RT=2,FL=80)		
(9)	FILE(TAPE5,BT-C,RT=2,FL=80)		
(10)	COPYCR(INPUT,TAPE1)		
(11)	SORTMRG.		
(12)	REIND(TAPES)		
(13)	GETEQIP=EQIPCKU/JUN=0ILLIE,NA)		
(14)	UPDATE(IP=EQIP,Q)		
(15)	FMIT=COMPILE,B=BHTR,PL=75000)		
(16)	GETCMMASTER)		
(17)	BHTR(BMAS)		
(18)	REPLACE(BMAS=BKPBNTS)		
(19)	REPLACE(TAPE3=BMASTRS)		
(20)	7/8/9 CARD		
(21)	** TASK CHANGES FOR BHTRUP (IF ANY)		
(22)	*COMPILE BHTRUP		
(23)	7/8/9 CARD		
(24)	** INSERT UPDATE DATA CARDS HERE		
(25)	7/8/9 CARD		
(26)	SORT		
(27)	FILE,INPUT=TAPE1(U),OUTPUT=TAPE5(CR)		
(28)	FIELD,CURV(0,3,DISPLAY),SEQ(0,2,DISPLAY)		
(29)	KEY,CURV(A,DISPLAY),SEQ(A,DISPLAY)		
(30)	END		
(31)	7/8/9 CARD		
(32)	B-MATRIX UPDATE		**SECRET**
(33)	7/8/9 CARD		
(34)	6/7/8/9 CARD		

Figure 52. BMAUP control card listing.

TABLE XLI. BMATUP COMPUTER LISTING

PROGRAM BMTX	73/74	UPF=1	FIN 4.8+498	80/07/28. 13.58.09	PAGE 1
1	PROGRAM BMTX(TAPE2,TAPE3,INPUT,OUTPUT,TAPE5,TAPE6-OUTPUT, TAPE7-INPUT)			BMTXUP	2
	1 B-MATRIX UPDATE PROGRAM			BMTXUP	3
	C INPUT CARDS: TITLE AND CLASSIFICATION			BMTXUP	4
5	C EOF CARD			BMTXUP	5
	C TAPE5: DATA CHANGES ORIGINALLY READ FROM INPUT AND SORTED BY SEQUENCE NO. WITHIN CURVE NO.			BMTXUP	6
	C IF ENTIRE CURVE IS TO BE DELETED DATA CARD SHOULD CONTAIN CURVE NUMBER WITH A SEQUENCE NUMBER OF ZERO			BMTXUP	7
10	C LUC(1) CONTAINS THE RECORD NO. OF RECORDS THAT WERE CHANGED IN THE B-MATRIX FILE			BMTXUP	8
	C LIMITATION: NUMBER UPDATE CARDS < 650			BMTXUP	9
	C			BMTXUP	10
	C OUTPUT: UPDATED B-MATRIX FILE SORTED BY CURVE NO., SEQUENCE NO. LISTING OF UPDATED B-MATRIX FILE WITH UPDATED OR NEW DATA FLAGGED (****)			BMTXUP	11
15	C NOTE: FLAGS APPEAR ONLY IN PRINTED FILE - THEY ARE NOT INCLUDED IN TAPE-RESIDENT DATA FILE			BMTXUP	12
	C TAPE2 B-MATRIX FILE			BMTXUP	13
20	C TAPE3 UPDATED B-MATRIX FILE			BMTXUP	14
	C DIMENSION FREQ(650),BUT(650),ATB(650),SEQ(650),CRVE(650), 1 COMNT(650,4),ID(650),TITLE(3),NCOM(4),NOUT(11)			BMTXUP	15
	C DIMENSION LUC(650)			BMTXUP	16
25	C DIMENSION IFR-Q(21),IUBH(21),IATB(21),ICOMNT(21,4),ISEQ(21)			BMTXUP	17
	C DIMENSION ICRVE(21),IIO(21),IMOLD(21)			BMTXUP	18
	C INTEGER FREQ,BUT,ATB,SEQ,CRVE,COMNT,TITLE,BLANKS,STARS			BMTXUP	19
	C DATA (MPAGE1-0),(NPAGE2-1),(NOLDC-0)			BMTXUP	20
	C BLANKS=10H			BMTXUP	21
30	C ICULL=64 -100			BMTXUP	22
	C NOUT(11)=BLANKS			BMTXUP	23
	C STARS=10H*****			BMTXUP	24
	C J1=0			BMTXUP	25
	C M=0			BMTXUP	26
35	C READ (7,1000) TITLE,CLASS			BMTXUP	27
	C READ (7,1000) J			BMTXUP	28
	C READ UPDATE CARDS - STORE IN ARRAY			BMTXUP	29
	C DO 20 I=1,650			BMTXUP	30
40	C READ(5,15) FREQ(I),BUT(I),ATB(I),ICOMNT(I,J),J=1,4),SEQ(I), 1 CRVE(I),IO(I)			BMTXUP	31
	C 15 FORMAT(8A,2X,46,3X,3A10,A7,1X,12,2X,13,3X,A7)			BMTXUP	32
	C IF (EOF(5)) 25,19			BMTXUP	33
	C 18 IF (I=J=1) GOTO 20			BMTXUP	34
	C KT=I-1			BMTXUP	35
45	C IF (SEQ(KT).EQ.SEQ(I)).AND.CRVE(KT).EQ.CRVE(I)) GOTO 500			BMTXUP	36
	C 20 CONTINUE			BMTXUP	37
	C STOP 20			BMTXUP	38
	C 25 KT=I-1			BMTXUP	39
	C I=1			BMTXUP	40
50	C READ RECORD FROM B-MATRIX FILE			BMTXUP	41
	C 30 READ(2,32) N1,N2,N3,(NCOM(J),J=1,4),NSEQ,NCRVE,NID			BMTXUP	42
	C 32 FORMAT(8A,46,2X,46,3X,3A10,A7,1X,12,2X,13,3X,A7)			BMTXUP	43
	C IF (EOF(2)) 105,36			BMTXUP	44
	C MATCH TO UPDATE CARD			BMTXUP	45
55	C 36 IF(I=GT,KT) GOTO 60			BMTXUP	46
	C IF(NCRVE.EQ.CRVE(I)).AND.NSEQ.EQ.SEQ(I))GOTO 75			BMTXUP	47
	C 19 (CRVE(I).EQ.NCRVE.AND.SEQ(I).EQ.O) GOTO 30			BMTXUP	48
	C 19 (CRVE(I).GT.NCRVE) GOTO 60			BMTXUP	49

TABLE XLI. BMAPUP COMPUTER LISTING (CONT)

PAGE 2

80/07/28. 13.58.09

FIN 4.8498

OPT-1

7374

PROGRAM UNTRX

```

60      C      IF (CRVE(I).EQ.NCRVE.AND.SEO(I).GT.NSEO) GOTO 60
        DELETE CURVE WHEN SEQ(I)=0
        IF (SEQ(I).NE.0) GO TO 55
        I=I+1
        GOTO 36
65      C      ADDITION TO BMAPUP FILE
        55 IFREQ(I)=FREQ(I)
        IBD(I)=IBD(I)
        IAT(I)=IAT(I)
        ICOM(I,1)=COM(I,1)
        ICOM(I,2)=COM(I,2)
        ICOM(I,3)=COM(I,3)
        ICOM(I,4)=COM(I,4)
        ISEQ(I)=SEQ(I)
        ICRVE(I)=CRVE(I)
        ID(I)=ID(I)
75      C----- READ 20 REMAINING RECS INTO HOLDING ARRAYS
        JJH=1+20
        JJH=I+1
        JH=2
        DO 55 JOHN=JJH,JJH
        IFREQ(JH)=FREQ(JOHN)
        IBD(JH)=IBD(JOHN)
        IAT(JH)=IAT(JOHN)
        DO 57 JOHNJ=1,4
        ICOM(JH,JOHNJ)=COM(JOHN,JOHNJ)
57      CONTINUE
        ISEQ(JH)=SEQ(JOHN)
        ICRVE(JH)=CRVE(JOHN)
        ID(JH)=ID(JOHN)
        JH=JH+1
90      DO 59 JH=1,21
        IHOLD(JH)=JH
59      CONTINUE
        DO 65 JH=1,21
        IF (IBD(JH).GE.ICULL.AND.IHOLD(I).EQ.999) IHOLD(I)=IAT(JH)
        IF (IBD(JH).GE.ICULL) IHOLD(JH)=IAT(JH)
        IF (IBD(JH).LT.ICULL) IBD(JH)=ICULL
65      CONTINUE
        ISAVE=IHOLD(I)
        DO 70 JH=1,21
        IF (IHOLD(JH).NE.999) GO TO 67
        IHOLD(JH)=ISAVE
        66 WRITE(3,32) I,REQ(JH),IBD(JH),IHOLD(JH),ICOM(JH,J),J=1,4,
        1 ISEQ(JH),ICRVE(JH),ID(JH)
        M=M+1
        JI=JI+1
        LOC(JI)=M
        I=I+1
        GO TO 70
70      67 ISAVE=IHOLD(JH)
        GO TO 56
70      CONTINUE
        GO TO 36
        C      NO MATCH-WRITE ORIGINAL RECORD TO BIN SORT TAPE W/ FLAG=BLANKS
        60 WRITE (3,32) M1,M2,M3,INCOM(J),J=1,4,NSEO,NCRVE,NID

```

TABLE XLI. BMAPUP COMPUTER LISTING (CONT)

PROGRAM	BNTRX	73/74	OPT=1	FTN 4.8+498	80/07/28. 13.58.09	PAGE	3
115	C	M=M+1			BNTRXUP	71	
		CONTINUE READING B-MATRIX FILE			BNTRXUP	72	
		GO TO 30			BNTRXUP	73	
	C	TEST FOR UPDATED FIELDS			BNTRXUP	74	
120	75	CONTINUE			BNTRXUP	75	
		IF(FREQ(I).EQ.BLANKS) GO TO 80			BNTRXUP	76	
		M1=FREQ(I)			BNTRXUP	77	
		80 IF(BDB(I).EQ.BLANKS) GO TO 85			BNTRXUP	78	
		M2=BDB(I)			BNTRXUP	79	
125		85 IF(ATB(I).EQ.BLANKS) GO TO 90			BNTRXUP	80	
		M3=ATB(I)			BNTRXUP	81	
		90 IF(CUMT(I,1).EQ.BLANKS) GO TO 95			BNTRXUP	82	
		NCUM(I)=CUMT(I,1)			BNTRXUP	83	
		NCUM(2)=CUMT(I,2)			BNTRXUP	84	
		NCUM(3)=CUMT(I,3)			BNTRXUP	85	
130		NCUM(4)=CUMT(I,4)			BNTRXUP	86	
		95 IF(ID(I).EQ.BLANKS) GO TO 100			BNTRXUP	87	
		MID=ID(I)			BNTRXUP	88	
		100 WRITE (3,32) M1,M2,M3,(NCUM(I),J=1,4),NSEQ,NCRVE,MID			BNTRXUP	89	
135		M=M+1			BNTRXUP	90	
		I=I+1			BNTRXUP	91	
		J1=J1+1			BNTRXUP	92	
		LOC(J1)=M			BNTRXUP	93	
		GO TO 30			BNTRXUP	94	
		105 REWIND 2			BNTRXUP	95	
140	C	ADD ANY ADDITIONS REMAINING TO END OF TAPE3			BNTRXUP	96	
		106 IF(I.GT.KT) GO TO 120			190C178	59	
		IF(SEQ(I).NE.0) GO TO 108			190C178	60	
		I=I+1			190C178	61	
		GO TO 106			190C178	62	
145	C-----	READ INTO 21 ARRAYS			190C178	63	
		108 111-1+20			190C178	64	
		J1H=1			190C178	65	
		DO 115 JH=1,111			190C178	66	
		IF(SEQ(JH).EQ.0) JH=JH+1			190C178	67	
150		IF(BDB(JH).EQ.0) JH=JH+1			190C178	68	
		IF(ATB(JH).EQ.0) JH=JH+1			190C178	69	
		DO 110 JOHN=1,4			190C178	70	
		ICUMT(JH,JOHN)=CUMT(JH,JOHN)			190C178	71	
155	110	CONTINUE			190C178	72	
		ISEQ(JH)=SEQ(JH)			190C178	73	
		ICRVE(JH)=CRVE(JH)			190C178	74	
		110(JH)=ID(JH)			190C178	75	
		JH=JH+1			190C178	76	
160	115	CONTINUE			190C178	77	
		DO 116 JH=1,21			190C178	78	
		INHOLD(JH)=0			190C178	79	
	116	CONTINUE			190C178	80	
		DO 117 JH=1,21			190C178	81	
165		IF(BDB(JH).GE.ICULL.AND.INHOLD(I).EQ.999) INHOLD(I)=IATB(JH)			190C178	82	
		IF(BDB(JH).GE.ICULL) INHOLD(JH)=IATB(JH)			190C178	83	
		IF(ID(JH).LT.ICULL) IDB(JH)=ICULL			190C178	84	
	117	CONTINUE			190C178	85	
		ISAVE=INHOLD(I)			190C178	86	
170		DO 117 JH=1,21			190C178	87	
		IF(INHOLD(JH).NE.999) GO TO 1185			190C178	88	
		INHOLD(JH)=ISAVE			190C178	89	

TABLE XLI. BMATUP COMPUTER LISTING (CONT)

PROGRAM	BHTR	73/74	OPT-1	FIN	4.0+498	90/07/20.	13.58.09	PAGE	4
175	118	WRITE(J,32) (KREQ(JH),1808(JH),IHOLD(JH), (ICOMNT(JH,J),J=1,4),				190CT78	90		
		1 ISQ(J+1),ICRVC(JH),IED(JH)				190CT78	91		
		M=M+1				190CT78	92		
		J1=J1+1				190CT78	93		
		LOC(J1)=M				190CT78	94		
		I=I+1				190CT78	95		
		GO TO 119				190CT78	96		
180	1185	ISAVE=IHOLD(JH)				190CT78	97		
		GU TO 118				190CT78	98		
	119	CONTINUE				190CT78	99		
	120	GO TO 106				190CT78	100		
185		M=0				BHTRUP	106		
		M=0				BHTRUP	107		
		J=1				BHTRUP	108		
		LINE=60				BHTRUP	109		
		GU TO 160				BHTRUP	110		
		LIST UPDATED B-MATRIX FILE WITH CHANGES TO FILE FLAGGED				BHTRUP	111		
190	125	WRITE(6,126) TITLE,CLASS,MPAGE1,TITLE,CLASS,MPAGE2				BHTRUP	112		
	126	FORMAT(10,10X,3A10,20X,A10,55X,PAGE,15/1010X,3A10,20X,A10,				BHTRUP	113		
		1 55X,PAGE,15/)				1-MAY-30	1		
		MPAGE1=MPAGE2				BHTRUP	115		
		MPAGE2=MPAGE2+1				BHTRUP	116		
195		WRITE(6,127)				BHTRUP	117		
	127	FORMAT(3X,10CLTA F(KH21+4X,8(JH)+5X+SIGMA B*4H *+2,1dX+COMMENT+10X				BHTRUP	118		
		1 *SEQ CURVE IDENT*)				BHTRUP	119		
		WRITE(6,128)				BHTRUP	120		
200	128	FORMAT(8X,-----4X,-----5X,-----10X,-----10X				BHTRUP	121		
		1 *-----				BHTRUP	122		
		LINE=5				BHTRUP	123		
		M=1				BHTRUP	124		
205	GO TO 195					BHTRUP	125		
	135	FORMAT(10X,A0,4X,A6,7X,A6,7X,3A10,A7,4X,12,4X,13,4X,A9,2X,A4)				BHTRUP	126		
	137	FORMAT(1)				190CT78	101		
	160	READ(1,32) (NOUT(I),I=1,10)				BHTRUP	130		
		M=M+1				BHTRUP	131		
		IF(EOF(1)) GO TO 170				BHTRUP	132		
210	170	CONTINUE				CT-IN2	3		
		IF (J.GT.J1) GO TO 175				BHTRUP	134		
		IF (M.NE.LOC(J)) GO TO 175				BHTRUP	137		
		NOUT(I1)=STARS				BHTRUP	138		
		J=J+1				BHTRUP	139		
215	175	IF (NOUT(9).EQ.NOLOC) GO TO 180				BHTRUP	140		
	180	NOLOC=NOUT(9)				BHTRUP	141		
		IF (N.EQ.0) GO TO 125				BHTRUP	142		
		WRITE(6,137)				BHTRUP	143		
		LINE=LINE+2				BHTRUP	144		
		M=0				BHTRUP	145		
220	190	IF (LINE.EQ.60) GO TO 125				BHTRUP	146		
	195	WRITE(6,135) (NOUT(I),I=1,11)				BHTRUP	147		
		NOUT(I1)=BLANKS				190CT78	102		
		LINE=LINE+1				BHTRUP	149		
		GU TO 160				BHTRUP	150		
225	200	REWIND 3				BHTRUP	151		
		IF (K1.EQ.0) GO TO 310				BHTRUP	152		
		LINE=60				BHTRUP	153		
		DU 300 1= 1,XF				BHTRUP	154		
						BHTRUP	155		

TABLE XLI. BMATUP COMPUTER LISTING (CONT)

PROGRAM	BMTX	73/74	OPT=1	FTN 4.8+498	80/07/28. 13.58.09	PAGE	5
230				IF (SCQ(1),NE.0) GO TO 300 IF (LINE.LT.60) GO TO 250 WRITE (6,126) TITLE ,KCLASS,NPAGES,TITLE,KCLASS,NPAGE2 NPAGE1=NPAGE2 NPAGE2=NPAGE2+1 WRITE (6,241) 241 FORMAT (20X,'CURVE NUMBERS DELETED FROM BMATRIX FILE*//' LINE=4 250 WRITE (6,255) CMVE(1) 255 FORMAT (8X,13) LINE=LINE+1 300 CONTINUE 310 CONTINUE WRITE (6,126) TITLE,KCLASS,NPAGE1 STOP 310 500 PRINT 550,CMVE(1),SCQ(1) 550 FORMAT (1H1,'*DUPLICATE ENTRIES FOR CRVE *13* SEQ *12) STOP 550 1000 FORMAT(4A10) END			
235					BMTXUP 156 BMTXUP 157 BMTXUP 158 BMTXUP 159 BMTXUP 160 BMTXUP 161 BMTXUP 162 BMTXUP 163 BMTXUP 164 BMTXUP 165 BMTXUP 166 BMTXUP 167 BMTXUP 168 BMTXUP 169 DUPCK 5 DUPCK 6 DUPCK 7 DUPCK 8 BMTXUP 170 BMTXUP 171		
240							
245							

SECTION 14 - PROGRAM READDB (21)

14.1 PURPOSE

Program READDB (21) assembles and outputs the required call summary file and master B-matrix file in proper format for use in LAUX (25) and RITERAN (27), respectively.

14.2 PRINCIPAL FUNCTIONS

a. Program READDB, shown in figure 53, reads the B-matrix scoring data, checks to see that each set contains 21 data points, and verifies that the data are sorted in increasing order on the frequency interval field. If applicable, each curve is truncated to the minimum B-value input on the program control card. The valid B-matrix data are packed into 21 words and are written on the file BMATIX in binary records.

b. The procedure for processing receiver call summary data is similar. Each set consists of one to four records, and the data are checked for invalid or missing entries. In addition, a check is made for each curve listed in the required call summary set being processed. If no curves are missing, a maximum and minimum frequency interval is determined to establish the upper and lower boundaries of the receiver frequency susceptibility window for narrowband and wideband interferers. The valid call summary data are written onto binary file AMATIX.

c. If any type of error is encountered, READDB does not stop; rather, it attempts to find as many errors as possible and, at the end of processing, an error message is issued for each error detected.

d. When it is desirable to set up wideband interferers for special handling, the program must be altered to include specific information to identify those equipments being processed as wideband interferers.

14.3 INPUT/OUTPUT DESCRIPTION

Input to program READDB includes a program control card, the master B-matrix data file, and the required call summary file. These two files reside on the same logical file unit for input to the program. Output consists of the call summary binary file and the packed B-matrix binary file.

14.3.1 Input Format

The format of input data is given in the following figure and tables:

- a. Program control card, figure 54, page 14-5.
- b. Master B-matrix data file (31), table XLII, page 14-8.

- c. Required call summary file (28) , table XLIII, page 14-12.

14.3.2 Output Format

The format of output data is given in the following tables:

- a. Packed B-matrix binary file (33) , table XLIV, page 14-16.
- b. Call summary binary file (32) , table XLV, page 14-18.

14.4 PROCESS DESCRIPTION

a. Program READDB is written in FORTRAN EXTENDED for processing on the CDC CYBER 172 computer. It requires 100000₈ words of central memory for compilation and execution.

b. The program control card is read to set up option switches.

c. A set of B-matrix data consisting of 21 records is read and checked for detectable errors. If a lower limit for B values is indicated, all B values and corresponding frequency intervals (Δf) and delta B values are truncated appropriately. If no errors are found, the data are packed into a 21-word record, the assembled record is written on the output file, and the first and last frequency intervals (Δf) are stored in assigned arrays. This process is repeated until all B-matrix data curves are processed. Then a 9-pad is written on the output file and the file is printed.

d. A set of receiver call summary data consisting of one to four records is read and checked for errors. Any B-curve required in the call summary is flagged if the curve is missing in the B-matrix output file. The maximum and minimum frequency interval (Δf) is determined to establish the upper and lower boundaries of the receiver frequency susceptibility window for narrowband and wideband interferers. If no errors are found, the assembled record is written on the output file. This process is repeated until all call summary data are processed.

e. An error message is written that lists the curve numbers of any missing B-matrix data sets, or if the number of call summaries exceeds the maximum allowed in program LAUX (25) .

14.5 PROGRAM OPERATION

Figure 55, page 14-20, is a listing of all system and UPDATE control cards necessary to execute READDB for a typical computer run.

14.6 LIMITATIONS

The number of B-matrix data curves is limited to 998, and the number of data points per curve must be 21. For one receiver call summary, the number of interferer classes may not exceed 30.

14.7 RUNNING TIME

Running time is estimated at 30 minutes for a standard run.

14.8 COMPUTER PROGRAM LISTING

Table XLVI, page 14-21, contains a complete computer listing for program READDB, annotated to aid in the understanding of the program functioning.

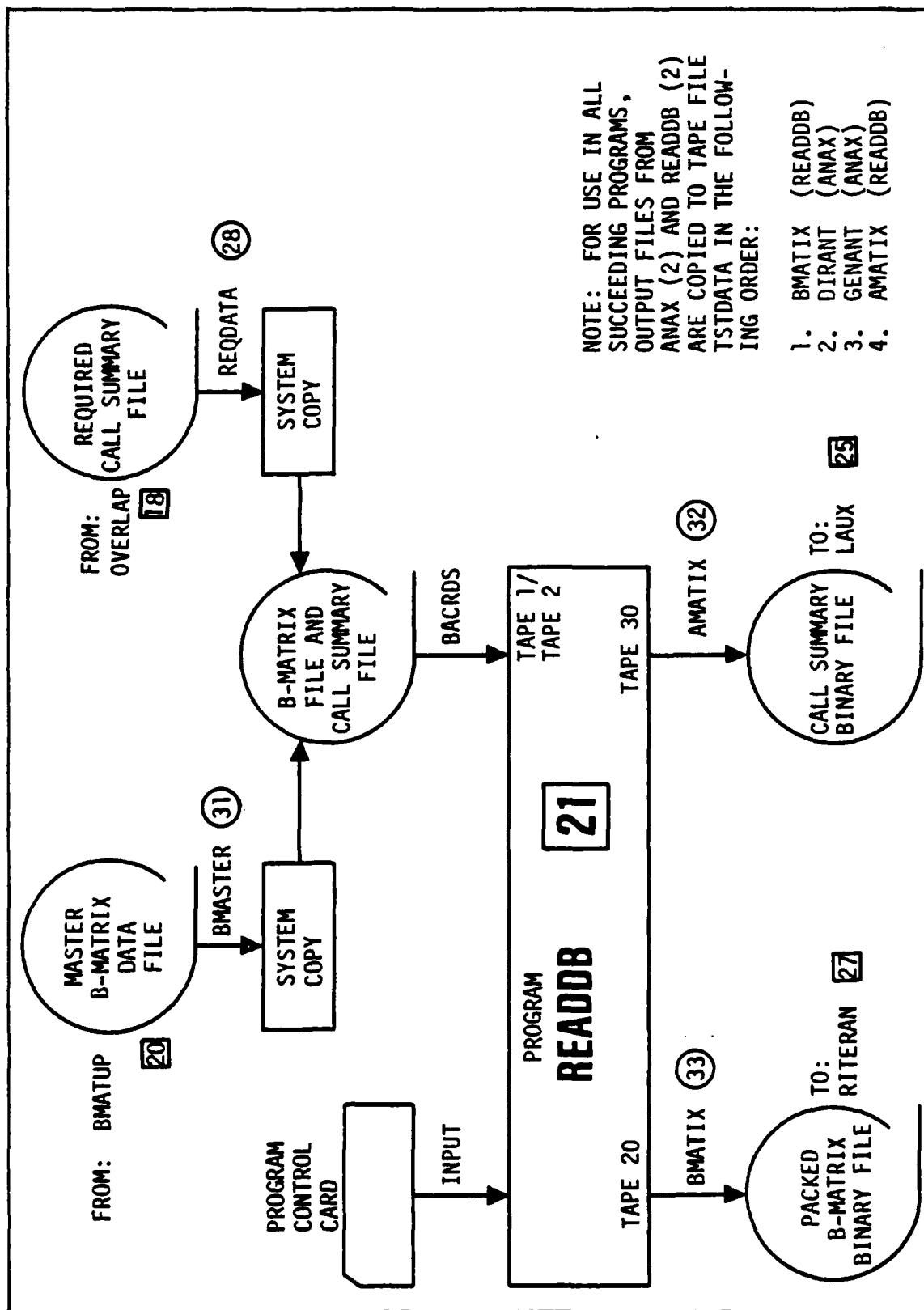


Figure 53. Program READDB, functional block diagram.

<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-10	I10	CULL	Lower limit for B value on all curves. If no lower limit is imposed, this value is blank.
2	18-20	A3	IWDBDSW	Switch indicating whether ultrawideband equipments are being processed. If yes, enter YES; otherwise, blank.

Figure 54. READDB input, program control card.

INTENTIONALLY BLANK

File Description: Master B-Matrix Data File (31)
File Name: BACRDS Logical Unit: 2
Mode/Type: BCD Record Length: 80 characters
Origin: Data base file maintained by BMATUP
Used By: BMATUP (20) ; READDB (21)

TABLE XLII. MASTER B-MATRIX DATA FILE (31)

Data Description	Field Size	Field Position	Remarks
Frequency interval	8	1-8	Frequency difference (in kHz) between this data point and the receiver center frequency.
B value	6	9-14	B value (in dB) for this data point.
	2	15-16	Blank
Delta B	6	17-22	Delta B is defined as the difference between the 90-percent correct information transfer S/I and the 50-percent correct information transfer S/I. Delta B is used to estimate σ_B , the variance of the equivalent normal distribution used to approximate the true function.
	3	23-25	Blank
Data comments	37	26-62	Descriptive comments as to type of data, source, special application, etc.
	1	63	Blank
Sequence number	2	64-65	Sequence number of cards within the curve set (range = 1 to 21).
	2	66-67	Blank
Curve identification number	3	68-70	Identification number for this B curve set (range = 001 to 998).
	3	71-73	Blank

TABLE XLII. MASTER B-MATRIX DATA FILE (31) (CONT)

Data Description	Field Size	Field Position	Remarks
Data	7	74-80	Date curve data were added to master file.
NOTES: 1. There must be 21 data points for each curve sorted in increasing order on frequency interval. 2. The end-of-data record must contain 999 in columns 68-70.			

INTENTIONALLY BLANK

File Description: Required Equipment Call Summary File (28)
File Name: BACRDS Logical Unit: 1
Mode/Type: BCD Record Length: 68 characters
Origin: OVERLAP 18
Used By: READDB 21

TABLE XLIII. REQUIRED EQUIPMENT CALL SUMMARY FILE (28)

Data Description	Field Size	Field Position	Remarks
Receiver ID code	5	1-5	The middle 4 digits of the 6-digit equipment class code, right-justified. The middle 4 digits uniquely identify the equipment type.
"A" value	8	6-13	Threshold value of $\hat{S}$ (in dBm), the desired RF signal level, for 50 percent probability of satisfactory operation in the absence of interference other than receiver noise. Expressed in hundredths of a dBm.
Variance of "A"	5	14-18	Variance parameter (in dB^2) of a Gaussian distribution function that is fitted to the function relating the probability of satisfactory operation to $\hat{S}$, in the absence of interference other than receiver noise. Expressed to nearest tenth of a dB^2 .
Number of expected Interferer classes	2	19-20	The number of expected interferer classes for this receiver equipment class, presently limited to 30.
Interferer equipment class (1)	3	21-23	The 2nd, 3rd, and 4th digits of the 6-digit class code for one potential interferer equipment class for this receiver.
Scoring curve ID (1)	3	24-26	The ID number of the "B" matrix scoring curve to be used for scoring interferer equipment class (1) and this receiver.
(See note on following page)			

TABLE XLIII. REQUIRED EQUIPMENT CALL SUMMARY FILE (28) (CONT)

Data Description	Field Size	Field Position	Remarks
NOTE: The last two data items (interferer equipment class and scoring curve ID) are repeated for up to 8 equipments per record ending in field position 68. If there are more than 8 expected interferer classes, data are continued in the next record in the same format (field positions 1-20 are identical and interferer class (9) starts in positions 21-23, etc.). This procedure is followed for a maximum of 30 interferer classes for each receiver ID code. The number of records for each receiver ID code is a function of the number of expected interferer classes (field positions 19-20). The maximum number of records is 4, with 8 interferer classes per record to the maximum of 30.			

INTENTIONALLY BLANK

File Description: Packed B-Matrix Binary File (33)

File Name: BMATIX Logical Unit: 20

Mode/Type: Binary Record Length: 22 words

Origin: READDB (21)

Used By: RITERAN (27)

Note: The last record on the file contains ID=999 and $\Delta f=99999999$.

TABLE XLIV. PACKED B-MATRIX BINARY FILE (33)

Data Description and Maximum Value	Bits	Format To Print	Word Position	Remarks
Scoring curve ID number (001-998 ₁₀)	---	I3	1	A 3-digit identification number assigned to each B-matrix scoring curve.
Scoring curve ID number (1) (001-998 ₁₀)	60-46	020	2	A 3-digit identification number assigned to each B-matrix scoring curve.
Frequency interval f (1) (+1048575 ₁₀)	45-25			The frequency difference (in kHz) between data point (1) and the center frequency of the receiver.
"B" value (1) (+2047 ₁₀)	24-13			Threshold value of $\hat{S}-\hat{I}$ (in dB), the RF S/I for 50-percent probability of satisfactory operation when $\hat{S}$ is sufficiently strong to make receiver noise negligible.
Delta B (1) (4095 ₁₀)	12-1			Delta B is defined as the difference between the 90 percent correct information transfer S/I and the 40-percent correct information transfer S/I. Delta B is used to estimate σ_B^2 , the variance of the equivalent normal distribution used to approximate the true function.
NOTES:				
1. All data are packed in integer (I) format. In each word, the left-most bit is bit 60, the right-most is bit 1. For the maximum value, the character ^ indicates the location of the decimal point, where applicable, when the data are unpacked and converted to the proper units. 2. Word 2 is repeated for each of the required 21 data points, making a total of 22 words in the binary record for one scoring curve. The 21 data points must be sorted in increasing order on the frequency interval parameter.				

File Description: Call Summary Binary File (32)
File Name: AMATIX Logical Unit: 30
Mode/Type: Binary Record Length: 38 words maximum
Origin: READDB (21)
Used By: LAUX (25)

TABLE XLV. CALL SUMMARY BINARY FILE (32)

Data Description	Format To Print	Word Position	Remarks
Receiver ID code	I5	1	The middle 3 digits of the 5-digit equipment class code, right-justified. The middle 3 digits uniquely identify the equipment type.
A	F9.2	2	Threshold value of $\hat{S}$ (in dBm), the desired RF signal level, for 50 percent probability of satisfactory operation in the absence of interference other than receiver noise. Expressed in hundredths of a dB.
Sigma A	F6.1	3	Variance parameter (in dB^2) of a Gaussian distribution function that is fitted to the function relating the probability of satisfactory operation to $\hat{S}$, in the absence of interference other than receiver noise. Expressed to nearest tenth of a dB^2 .
Minimum Δf for narrowband interferers	I8	4	Frequency interval to establish the lower boundary of the narrowband frequency susceptibility window for this receiver. Set to 1 if not applicable.
Maximum Δf for narrowband interferers	I8	5	Frequency interval to establish the upper boundary of the narrowband frequency susceptibility window for this receiver. Set to -1 if not applicable.

TABLE XLV. CALL SUMMARY BINARY FILE (32) (CONT)

Data Description	Format To Print	Word Position	Remarks
Minimum Δf for wideband interferers	I8	6	Frequency interval to establish the lower boundary of the wideband frequency susceptibility window for this receiver. Set to 1 if not applicable.
Maximum Δf for wideband interferers	I8	7	Frequency interval to establish the upper boundary of the wideband frequency susceptibility window for this receiver. Set to -1 if not applicable.
Number of expected interferer classes	I2	8	The number of expected interferer classes for this receiver equipment class, presently limited to 30.
Interferer equipment class (1) data	I6	9	The middle 3 digits of one potential interferer equipment class code followed by the 3-digit ID number of the "B" matrix scoring curve to be used for scoring interferer equipment class (1) and this receiver. The data are packed as a 6-digit integer and must be unpacked to be used.

NOTE: Word 9 is repeated for each of the expected interferer equipment classes to a maximum of 30.

LLOYD READB/ANAX

Figure 55. READDB/ANAX control card listing.

TABLE XLVI. READDB COMPUTER LISTING

73/74	JPT-1	FIN 4.8+498	80/07/29. 10.40.40	PAGE 1
1	PROGRAM READDB(BACRUS,BMATX,AMATX,INPUT,OUTPUT,TAPE1-BACROS, TAPE2-BACRUS,TAPE20-BMATX,TAPE30-AMATX)		C2FIN2 1	
			C2FIN2 2	
5	PROGRAM READDB VERIFIES THAT B-MATRIX AND CALL SUMMARY DATA FOR A TASK ARE IN ORDER AND OUTPUTS A BINARY DATA FILE FOR EACH FOR USE IN LAUX, AITERAN, AND REVIIIP		08MAT79 1	
			08MAT79 2	
			08MAT79 3	
			08MAT79 4	
			08MAT79 5	
10	FILE CONTENTS AND USES:		READDB 8	
			READDB 9	
			READDB 10	
	INPUT: CONTROL CARD CONTAINING LOWER LIMIT FOR B VALUE ON ALL CURVES. (-100<LOWER B LIMIT<0)		150C173 4	
	IF NO LOWER LIMIT IS IMPOSED, SET THIS VALUE TO ZERO. FORMAT IS I10.		08MAT 1	
15	THE SECOND PARAMETER IS A SWITCH INDICATING WHETHER ULTRA-WIDEBAND EQUIP- MENTS (I.E.,TVS) ARE BEING PROCESSED. IF YES,ENTER --YES--IN COLS. 18-20 (DEFAULT IS NO).		08MAT 2	
	IF YES, CHANGE INSTRUCTIONS FOLLOWING PROGRAM STATEMENT NO.590 TO CORRECTLY IDENTIFY WIDEBAND EQUIPMENTS.		08MAT 3	
20	TAPE1(BACRUS): RAW B-MATRIX DATA AND RAW A-MATRIX DATA IN THAT ORDER IN TWO RECORDS/FILES.		15JUL44 1	
	TAPE20(AMATX): PROCESSED B-MATRIX DATA FOR INPUT TO REVIIIP. (BLOCKED BINARY)		15JUL44 2	
	TAPE30(AMATX): PROCESSED A-MATRIX DATA FOR INPUT TO LAUX. (BLOCKED BINARY)		15JUL44 3	
25			15JUL44 4	
			15JUL44 5	
30			15JUL44 6	
			15JUL44 7	
			15JUL44 8	
			C2FIN2 3	
			READDB 12	
			C2FIN2 4	
			READDB 14	
			C2FIN2 5	
			30JUN75 1	
			READDB 17	
			08MAT 5	
			08MAT 6	
			08MAT 7	
			READDB 22	
			READDB 23	
35			READDB 24	
			READDB 25	
			READDB 26	
			11AUG44 1	
			READDB 28	
			08MAT79 6	
40			08MAT79 7	
			15JUL44 10	
			08MAT 8	
			08MAT79 8	
			08MAT79 9	
			08MAT79 10	
			08MAT79 9	
			08MAT79 10	
			08MAT 9	
			08MAT 10	
			C2FIN2 7	
45			READDB 33	
			READDB 34	
			READDB 36	
			READDB 37	
			READDB 38	
			READDB 39	
			READDB 40	
50				
55				
60				
65				
70				
75				
80				
85				
90				
95				
100				
105				
110				
115				
120				
125				
130				
135				
140				
145				
150				
155				
160				
165				
170				
175				
180				
185				
190				
195				
200				
205				
210				
215				
220				
225				
230				
235				
240				
245				
250				
255				
260				
265				
270				
275				
280				
285				
290				
295				
300				
305				
310				
315				
320				
325				
330				
335				
340				
345				
350				
355				
360				
365				
370				
375				
380				
385				
390				
395				
400				
405				
410				
415				
420				
425				
430				
435				
440				
445				
450				
455				
460				
465				
470				
475				
480				
485				
490				
495				
500				

TABLE XLVI. READDB COMPUTER LISTING (CONT)

PAGE 2

10/07/72 10.40.40

FIN 4.8498

PROGRAM READDB 73/74 OPT=1

```

60      C      READ NEXT 20 RECORDS FOR A COMPLETE B-MATRIX SFI
      C      DO 300 J=2,21
      C      READ(2,1)MELF(J),B(J),DELTA(J),ID(J)
      C      IF(EUF(2)) 310,320
      C      310 PRINT 2, ID(1)
      C      2 FORMAT(10X1, SCORING DATA FOR CURVE*,14)
      C      GO TO 150

70      C      CHECK IF SAME SET
      C      320 IF(1D(J)-EJ.ID(1))GO TO 330
      C      NERR=NERR+1
      C      PRINT 2, ID(1)
      C      BACKSPACE 2
      C      GO TO 100

75      C      CHECK IF IN ASCENDING ORDER ON FREQ
      C      330 IF(MELF(J)-GE.MELF(J-1))GO TO 300
      C      IF(1D(J)GO TO 300
      C      ORDER=.T.
      C      NERR=NERR+1
      C      PRINT 3, ID(1)
      C      3 FORMAT(10X SCORING DATA FJ*,14, * OUT OF ORDER.*)
      C      300 CONTINUE
      C      IF(1D(1).LT.900)GO TO 335

80      C      CURVES 100-999 ARE RESERVED FOR A UNIQUE TYPE WHERE
      C      THE S-T-O-T RATIO DEPENDS ON THE S LEVEL (RENBASS
      C      CURVES, FOR EXAMPLE)
      C      DO 336 J=1,21
      C      B(J)=.1(J)
      C      336 CONTINUE
      C      GO TO 390
      C      335 CONTINUE
      C      IF(CULL.LE.-100.OR.CULL.EQ.0)GO TO 396

90      C      IF INPUT VALUE FOR CULL IS -100<CULL<0, TRUNCATE
      C      TAILS OF B-CURVE TO CULL VALUE
      C      IF(1D(1).LT.CULL)GO TO 340
      C      MINF=MELF(1)
      C      MINDEL=DELTA(1)
      C      JMIN=1
      C      K=1
      C      340 DO 345 J=1,20
      C      IF(1D(J).LE.CULL .AND.8(J+1).GT.CULL)GO TO 350
      C      345 CONTINUE
      C      NERR=NERR+1
      C      PRINT 340, ID(1)
      C      346 FORMAT(10X) & GREATER THAN CULL FOR CURVE *,13)
      C      GO TO 100

```

TABLE XLVI. READDB COMPUTER LISTING (CONT)

PROGRAM READDB	73/74	UPF=1	FIN 4.8+498	80/07/29. 10.40.40	PAGE
115	350	MINF=SELF(J)-(B(J)-CULL)*(SELF(J)-SELF(J+1))/(B(J)-B(J+1))		150C173 37	
		JMIN=J		150C173 38	
		MINDEL=DELTA(J+1)		8FMAT 14	
		BMIN=CULL		150C173 40	
120	360	IF (B(21).SE.CULL) GO TO 366		150C173 41	
		K=J+1		8FMAT 15	
		J=0		8FMAT 16	
		DO 365 L=4,20		8FMAT 17	
		IF (B(L).GT.CULL.AND.B(L+1).LE.CULL) J=L		8FMAT 18	
125	365	CONTINUE		150C173 44	
		IF (J.NE.0) GO TO 370		8FMAT 19	
	366	CONTINUE		8FMAT 20	
		MAXF=SELF(21)		150C173 45	
		MAXDEL=DELTA(21)		8FMAT 21	
		JMAX=21		150C173 47	
130		BMAX=B(21)		150C173 48	
		GO TO 380		150C173 51	
	370	MAXF=SELF(J)-(B(J)-CULL)*(SELF(J)-SELF(J+1))/(B(J)-B(J+1))		150C173 52	
		MAXDEL=DELTA(J)		8FMAT 22	
		JMAX=J+1		150C173 54	
135		BMAX=CULL		150C173 55	
	380	DO 390 J=1,JMIN		150C173 56	
		SELF(J)=MINF		150C173 57	
140	390	DELTA(J)=MINDEL		150C173 58	
		DO 395 J=JMAX,21		8FMAT 23	
		SELF(J)=MAXF		150C173 60	
		B(J)=BMAX		150C173 61	
	395	DELTA(J)=MAXDEL		150C173 62	
145	396	CONTINUE		8FMAT 24	
		IF (IORD=1) GO TO 397		150C173 64	
			IF NO ERRORS IN DATA, PACK DATA INTO 21 WORDS AND OUTPUT BINARY RECORD FOR THIS CURVE.	8FMAT 25	
150	DO 3960 J=1,21			8FMAT 26	
		IPACK(J)=SHIFT(I(J),45).OR. 1 (SHIFT(SELF(J),24).AND.SHIFT(MASK(21),45)).OR. 2 (SHIFT(B(J),12).AND.SHIFT(MASK(12),24)).OR.DELTA(J)		8FMAT 27	
155	3960	CONTINUE		8FMAT 28	
			SAVE FREQ RANGE VALUES AND GO READ NEXT RECORD	8FMAT 29	
160	397	CONTINUE		8FMAT 30	
		WRITE(120) (I(J),IPACK		8FMAT 31	
		I(J),SELF(1)		8FMAT 32	
		IM(1)=SELF(21)		8FMAT 33	
		GO TO 100		8FMAT 34	
165	400	HEAD(2,1)MIE		8FMAT 35	
		IF (EOF(2)) GO TO 410		8FMAT 36	
170	410	PRINT 420		8FMAT 37	
	420	FORMAT(9) B-MATRIX 9-PAD IS OUT OF ORDER.////		8FMAT 38	
	430	HEAD(2,1)MIE		8FMAT 39	
		IF (EOF(2)) GO TO 430		8FMAT 40	
			421E DUMMY RECORD ON END OF B-MATRIX OUTPUT FILE	8FMAT 41	

TABLE XLVI. READDB COMPUTER LISTING (CONT)

PAGE 4

30/07/73. 10.40.40

FTN 4.8+408

PROGRAM READDB 11/74 UPI-1

```

500 ID(1)=999
   MELF(1)=999999
   IPACKJ=SHIFT(10(1),45).OR.SHIFT(MELF(1),24)
   DO 510 J=1,21
   IPACK(J)=IPACKJ
510 CONTINUE
   WRITE (20)ID(1),IPACK
   ENDFILE 20
   REMIND 20
   IF(CULL.LE.-100).OR.CULL.EQ.0160 TO 550
C
C      IF CURVES WERE TRUNCATED, READ AND PRINT OUTPUT FILE
C      FOR ANALYSIS RECORD
C
404 READ (20)IDJ,IPACK
   IF(EOF(20)) 402,401
401 DO 4010 J=1,21
   ID(J)=SHIFT(IPACK(J),15).AND.SHIFT(MASK(15),15)
   MELF(J)=SHIFT(IPACK(J),36).AND.SHIFT(MASK(21),21)
   IF ((IPACK(J).AND.SHIFT(MASK(11),45)).NE.0) MELF(J)=MELF(J).OR.
      MASK(39)
      0(J)=SHIFT(IPACK(J),49).AND.SHIFT(MASK(12),12)
   IF(IPACK(J).AND.SHIFT(MASK(11),24)).NE.0)0(J).OR.MASK(44)
   DELTA(J)=SHIFT(MASK(12),12).AND.IPACK(J)
   IF((IPACK(J).AND.SHIFT(MASK(11),12)).NE.0)DELTA(J)=DELTA(J).OR.
      MASK(48)
4010 CONTINUE
   PRINT 503,MELF(J),0(J),DELTA(J),ID(J),J=L,21)
403 FORMAT(1X,10,16,2X,16,45X,13)
   GO TO 404
402 CONTINUE
   REMIND 20
C
C      READ CALL SUMMARY DATA RECORD
C
550 READ (1,4) NINEA,SIGMAAL,(XTAB(J),NTAB(J),J=1,8)
   4 FORMAT(15,F9.2,F5.1,12,16I3)
   IF(EOF(1)) 704,570
570 CONTINUE
C
C      SKIP ANY BLANK CARDS READ AS FIRST OF A SET.
   IF(L.EQ.0.A.XTAB(1).EQ.0160 TO 550
   ICOUNT=ICOUNT+1
   NMIS=NTAB-NATRA=0
   IF(L.GE.1.AND.L.LE.LYAK(1) TO 574
   MEAR=MEAR+1
   GO TO 620
574 LAST=7
   J1=7
C
C      READ ADDITIONAL RECORDS FOR THIS CALL SUMMARY SET
C
576 IF(L.LT.J1)GO TO 575
   J2=J1+7
   LAST=LAST+J
   READ(1,4)A,A,A,A,(XTAB(J),YTAB(J),J=J1,J2)
   J1=J1+8

```

TABLE XLVI. READDB COMPUTER LISTING (CONT)

```

PROGRAM READDB      1/3/74  UPT=1      40/07/74, 10.40.40      PAGE 5
      IF(.NOT.BLANK)571,576
571 IF(NINE.EQ.N)GO TO 576
      NERR=NERR+1
      PRINT 572,NINE,N
572 FORMAT(90 DATA CARDS FOR 9,16,* ARE SCRAMBLED OR ONE IS MISSING.
      *INVALID ID IS 9,16,*. WILL BACKSPACE AND TRY AGAIN.+)
      BACKSPACE 1
      GO TO 550
C
C      CHECK DATA FIELDS FOR ERRORS
C
575 IMIN=MIN-1
      IMAX=MAX-1
      DO 600 J=1,L
      N=NTAB(J)
C
C      GO TO 580 IF THE NTAB(J) FIELD WAS NOT BLANK.
C      IF(.NOT.BLANK)GO TO 580
      MISS=MISS+1
      GO TO 600
580 IF (N.EQ.0) GO TO 600
      IF (N.GE.1.AND.N.LE.999) GO TO 590
      NBAD=NBAD+1
      GO TO 600
590 IF (ISAVE(N).EQ.0)ISAVE(N)=5
      IF(1000000*NE.3MYES)GO TO 591
C
C      IF WIDEBAND TGS ARE BEING HANDLED SEPARATELY, DELETE
C      THE FOLLOWING 3 STATEMENTS AND INSERT CODING TO
C      IDENTIFY TGS TO BE HANDLED AS WIDEBAND.
C
      M=NTAB(J)
      IGC1=4/10
      IF(IGCL.EQ.5)GO TO 592
      IF(MOD(IGCL,10).EQ.7)GO TO 591
      IF(M.NE.17).AND.M.NE.192.AND.(M.LI.291.OR.M.GT.295))GO TO 591
C
C      SAVE DATA VALUES FOR RCVR WIDEBAND FREQ WINDOW
C
592 IF(ILJ(N).LT.IMIN)IMIN=ILU(N)
      IF(IMI(N).GT.IMAX)IMAX=IMI(N)
      GO TO 600
C
C      SAVE DATA VALUES FOR RCVR NARROWBAND FREQ WINDOW
C
591 IF(ILJ(N).LT.IMIN)IMIN=ILU(N)
      IF(IMI(N).GT.IMAX)IMAX=IMI(N)
      GO TO 600
C
C      CHECK THAT DATA IN RECORD DOES NOT EXCEED AMOUNT
C      CAPTURED.
C
      IF(L.GT.LAST) T) 515
      DO 610 J=L,LAST
510 IF(.NOT.BLATAT(J+1))NXTA=NKTR+1
515 N=NMISS+NATRA+NBAU
      IF(N.EQ.0)GO TO 560
      READDB 91
      READDB 92
      READDB 93
      READDB 94
      READDB 95
      READDB 96
      READDB 97
      READDB 98
      READDB 99
      READDB 100
      READDB 101
      READDB 102
      READDB 103
      READDB 104
      READDB 105
      READDB 106
      READDB 107
      READDB 108
      READDB 109
      READDB 110
      READDB 111
      READDB 112
      READDB 113
      READDB 114
      READDB 115

```

TABLE XLVI. READDB COMPUTER LISTING (CONT)

PROGRAM	READDB	73/74	UP1-1	FIN 4.0+4.00	80/07/29, 10.40.40	PAGE
290	C				08MAY79	67
	C			IF RECORD HAS ERRORS, PRINT MESSAGES, GO TO NEXT	08MAY79	68
	C			RECORD	08MAY79	69
					08MAY79	70
					08MAY79	71
					08MAY79	72
					08MAY79	73
					08MAY79	74
					08MAY79	75
					08MAY79	76
					08MAY79	77
					08MAY79	78
					08MAY79	79
					08MAY79	80
					08MAY79	81
					08MAY79	82
					08MAY79	83
					08MAY79	84
					08MAY79	85
					08MAY79	86
					08MAY79	87
					08MAY79	88
					08MAY79	89
					08MAY79	90
					08MAY79	91
					08MAY79	92
					08MAY79	93
					08MAY79	94
					08MAY79	95
					08MAY79	96
					08MAY79	97
					08MAY79	98
					08MAY79	99
					08MAY79	100
					08MAY79	101
					08MAY79	102
					08MAY79	103
					08MAY79	104
					08MAY79	105
					08MAY79	106
					08MAY79	107
					08MAY79	108
					08MAY79	109
					08MAY79	110
					08MAY79	111
					08MAY79	112
					08MAY79	113
					08MAY79	114
					08MAY79	115
					08MAY79	116
					08MAY79	117
					08MAY79	118
					08MAY79	119
					08MAY79	120
					08MAY79	121
					08MAY79	122
					08MAY79	123
					08MAY79	124
					08MAY79	125
					08MAY79	126
					08MAY79	127
					08MAY79	128
					08MAY79	129
					08MAY79	130
					08MAY79	131
					08MAY79	132
					08MAY79	133
					08MAY79	134
					08MAY79	135
					08MAY79	136
					08MAY79	137
					08MAY79	138
					08MAY79	139
					08MAY79	140
					08MAY79	141
					08MAY79	142
					08MAY79	143
					08MAY79	144
					08MAY79	145
					08MAY79	146

SECTION 15 - PROGRAM EQCLSFF [22]

15.1 PURPOSE

Program EQCLSFF [22] inserts coded identifiers into the records of the edited deployment data file, as required by programs LINK [23] and LAUX [25]. These identifiers are needed to select and analyze samples from the population of links generated by program LINK.

15.2 PRINCIPAL FUNCTIONS

Program EQCLSFF, shown in figure 56, accepts as input the edited deployment data file and the required equipment class file. The principal functions of program EQCLSFF are as follows:

- a. Assigns the last five digits of the 6-digit equipment class code for each equipment. The master set of codes for each equipment category is read from the required equipment class file.
- b. Assigns a 2-digit frequency band code to each equipment by using data in a program DATA statement.
- c. Alters the siting preference code for all airborne equipments except satellites (siting preference = 0) to 3 for airborne radar, to 8 for airborne equipments within 25 meters of the earth, or to 6 for all other airborne equipments.
- d. Assembles tallies of the number of receiver and transmitter records found for each of the respective equipment combinations, and prints out a tabulation of results at the end of the program.
- e. Identifies nets that have no transmitters deployed, drops all records for such nets, and prints out a count of records dropped.
- f. Prints out a summary line for each net type encountered; includes an image of each equipment class code assigned within nets of that type.
- g. Monitors the categories of equipment class codes assigned, and prints out a warning message when any given net has an unsuitable mixture of these categories.
- h. Produces as output an edited deployment file with identifiers in a format suitable for input to programs LINK [23] and LAUX [25].

15.3 INPUT/OUTPUT DESCRIPTION

Input to program EQCLSFF consists of a program control card, the edited deployment data file, and the required equipment class file. Output consists of the deployment data file with identifiers, a remarks and error list, and output messages.

15.3.1 Input Format

The format of input data to program EQCLSFF is given in the following figure and tables:

- a. Program control card, figure 57, page 15-5.
- b. Required equipment class file (25) , table XLVII, page 15-8.
- c. Edited deployment data file (10) , table XLVIII, page 15-12.

15.3.2 Output Format

The format of output from program EQCLSFF is the deployment data file with identifiers (34) , shown in table XLIX, page 15-18.

15.4 PROCESS DESCRIPTION

- a. Program EQCLSFF is written in FORTRAN EXTENDED for processing on the CDC CYBER 172 computer. It requires 60000₈ words of central memory for execution.
- b. The program reads in a program control card, the required equipment class file is then read, and the data are stored.
- c. After reading in and storing the equipment class code data, the program begins reading in the edited deployment data file, which is arranged in ascending order by net number.
- d. Each record is then examined by comparing the equipment identifiers (component and major equipment codes, modulation code, and number of channels used) with information in the equipment class code data file. When a match is found, the 5-digit code assigned to that combination (and input as part of the equipment class code data) is inserted into the last five digits of the 6-digit equipment class code for the deployment record. If a match cannot be found, identification of the record is written on the error listing, an error count is incremented, and the next record is read.
- e. An audit-trail record is kept for each net type. All 5-digit codes associated with a type are listed, and entries are flagged if more than two codes are used for a type.
- f. A frequency band code is assigned to each equipment by using data in a program DATA statement.
- g. The siting code (sixth digit of the equipment class code) is altered for all airborne equipments except satellites.

h. The program deletes data from the deployment record that are no longer necessary for processing.

15.5 PROGRAM OPERATION

Figure 58, page 15-24, is a listing of all system and UPDATE cards necessary to execute EQCLSFF for a typical computer run.

15.6 LIMITATIONS

a. The number of different modulation/equipment/number of channels combinations that can be accommodated is 1,000.

b. The audit-trail provides for a listing of up to 10 different 5-digit equipment class codes for each net type. If more than 10 should be encountered for a net type, the list will be output each time more than 10 codes have been encountered, and the cells will be set to blanks.

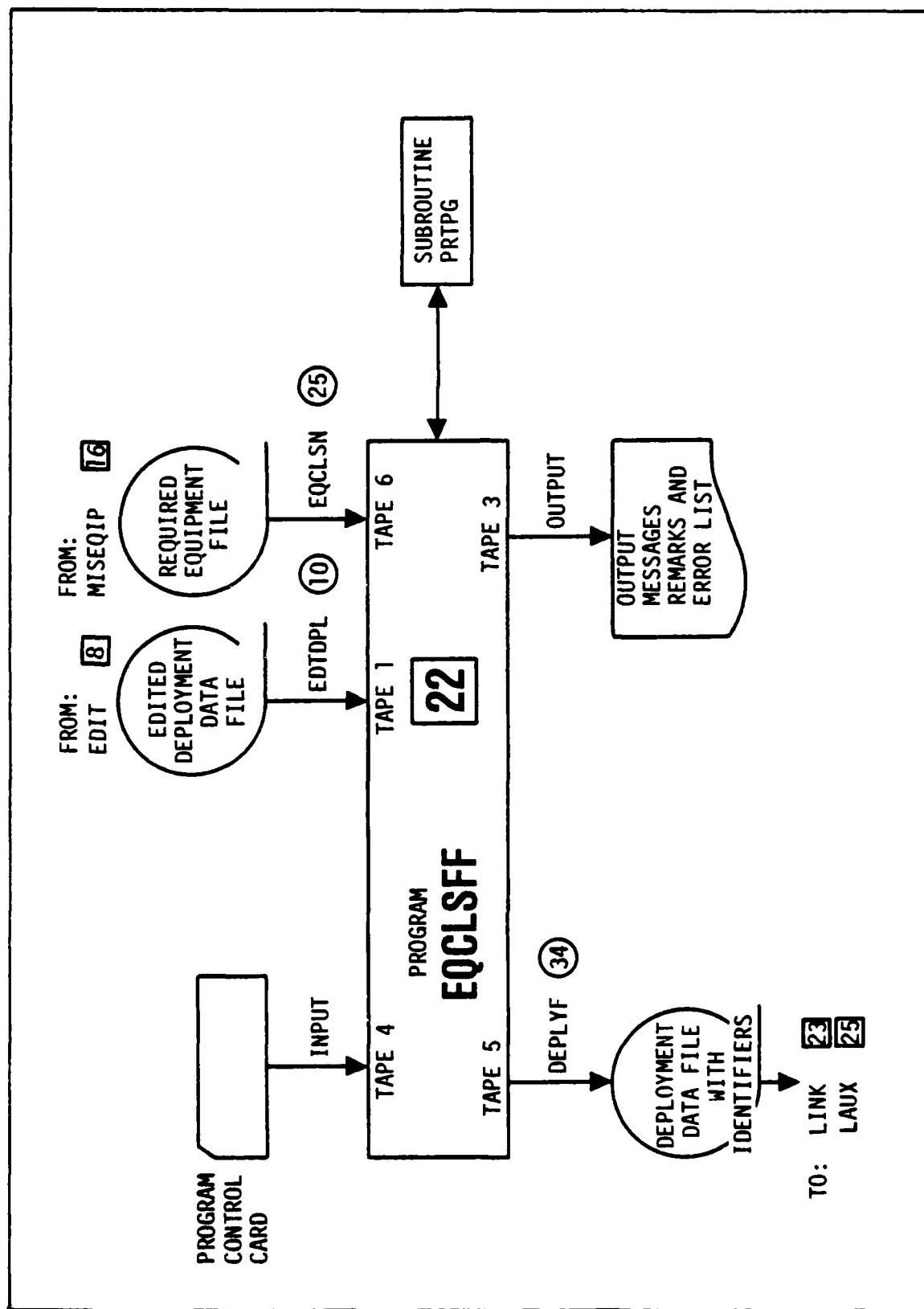
c. Upper limit values for nine frequency bands are included in a DATA statement. These may be changed to suit the requirements for a particular task.

15.7 RUNNING TIME

Running time is estimated at 1 minute of central processor time per 2,000 input records.

15.8 COMPUTER PROGRAM LISTING

Table L, page 15-25, contains a complete program listing for EQCLSFF and subroutine PRTPG, annotated to aid in the understanding of the program functioning.



<u>FIELD NO.</u>	<u>CARD COL</u>	<u>BCD FORMAT</u>	<u>MNEMONIC</u>	<u>FIELD DESCRIPTION</u>
1	1-10	A10	IDDATA	This field must contain EQCLSFFbbb.
2	11-40	3A10	TITLE	Title to be included in page headings.
3	41-60	2A10	ICLASS	Security classification to be included in page headings. This field must not be blank.
4	74-75	12	NFILES	The number of files of edited deployment data to be read.

Figure 57. EQCLSFF input, program control card.

INTENTIONALLY BLANK

File Description: Required Equipment File (25)
File Name: EQCLSN Logical Unit: 6
Mode/Type: BCD Record Length: 81 characters
Origin: MISEQIP (16)
Used By: OVERLAP (18) ; EQCLSFF (22)

TABLE XLVII. REQUIRED EQUIPMENT FILE (25)

Data Description	Field Size	Field Position	Remarks
Component code	1	1	Blank
Major equipment code	3	2-4	A 3-character alphanumeric code assigned to this equipment component.
Modulation code	2	5-6	A 2-character alphanumeric code assigned to this major equipment class.
Number of channels	2	7-8	A 2-digit code indicating modulation type: 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
Component nomenclature	3	9-11	The number of channels assigned for this equipment component, if applicable. If subfield 9 > 5, the equipment is encrypted.
Major equipment nomenclature	15	12-26	Name of the component associated with this component code.
Low tuning range limit	15	27-41	Name of the major equipment associated with this major equipment code.
High tuning range limit	8	42-49	Lowest frequency (in kHz) to which this equipment will tune.
	8	50-57	Highest frequency (in kHz) to which this equipment will tune.
	1	58	Blank

TABLE XLVII. REQUIRED EQUIPMENT FILE (25) (CONT)

Data Description	Field Size	Field Position	Remarks
Use code	1	59	A 1-character alphabetic code indicating the use type of equipment: B = broadcast/television, C = communications, D = direction finding, E = fixed frequency emergency guard-band, I = intercept/ESM, J = jammer/ESM, M = sensors, N = navigation aids, O = orderwire, Q = miscellaneous special purpose, S = detecting/range bearing (radar), V = sensor data link, X = IFF, Y = security monitoring (COMSEC, etc.), Z = special electronic warfare (EW). Other codes are assigned as needed.
Force code	1	60	Blank
	1	61	A 1-character alphabetic code indicating force type: B = BLUE (friendly), R = RED (enemy).
	1	62	Blank
XY code	2	63-64	A 2-character alphabetic code indicating equipment type: XX = transmitter only, XY = transceiver, YY = receiver only.
New equipment class	1	65	Blank
	9	66-74	Expanded equipment class for future development. Not presently used.
	1	75	Blank

TABLE XLVII. REQUIRED EQUIPMENT FILE (25) (CONT)

Data Description	Field Size	Field Position	Remarks
Equipment class code (last 5 of 6 digits)	5	76-80	A 5-digit code assigned to indicate the equipment class when the data set code is attached as the first of a total of 6 digits. The final 5 digits are assigned as follows: Subfield 76. Modulation code: 1 = F3 = 33, 2 = A3 = 13, 3 = A3A or A3J = 14, 4 = F1 = 31, 5 = F9 = 36, 6 = P0 = 50, 7 = P9 = 58, 8 = A2 or A9 = 18 or 12, 9 = A1 = 11, 0 = special or other. Subfield 77. Bandwidth: For modulation codes 1-5 and 8, 9, 0: 1 = narrow, 2 = medium, 3 = wide, 4 = very wide; for modulation codes 6 and 7: 5-9 and 0 indicate different "B" matrices. Subfield 78-79. Sequence number: 00-99 = final specific equipment designator within modulation code and bandwidth. Subfield 80: Siting preference: 1 = normal, 2 = normal, 3 = airborne radar, 4 = ground radar, 5 = preferred, 6 = airborne nonradar, 7 = radio relay (LOS), 8 = nap of the earth, 9 = tropo-scatter, 0 = satellite. A 1-character alpha code to flag equipments for special handling. Slash (/) = delete equipment from analysis, asterisk (*) = process for interferers only; otherwise, blank.
	1	81	

File Description: Edited Deployment Data File (10)
File Name: EDTDPL Logical Unit: 1
Mode/Type: BCD Record Length: 84 characters (2 records
Origin: EDIT 8 for each equipment)
Used By: ANAM 9 ; EQCLSFF 22

10

TABLE XLVIII. EDITED DEPLOYMENT DATA FILE (10) (CONT)

Data Description	Field Size	Field Position	Remarks
Net sequence ID number	4	30-33	A 4-digit net sequence ID number assigned in CONVERT <u>1</u> to identify each equipment in the deployment: 0001-1999 for transmitters, 2000-7999 for transceivers, and 8000-9999 for receivers.
Latitude	6	34-39	Latitude in ten-thousandths of a degree, right-justified. Referenced to new origin input to EDIT <u>8</u> to insure that all equipments are in the first (northeast) quadrant.
Longitude	7	40-46	Longitude in ten-thousandths of a degree, right-justified. Referenced to new origin input to EDIT <u>8</u> to insure that all equipments are in the first (northeast) quadrant.
Aircraft height	5	47-51	Subfield 47-50: Height (in meters) of aircraft above ground. All zeros if aircraft is on the ground. Blank if not aircraft. Subfield 51: Multiplier N, used to multiply aircraft height by 10 ^N ; N = 0, 1, 2, 3, ...
Antenna code	3	52-54	A 3-digit code assigned to each antenna type.
Antenna polarization	1	55	A 1-character alphabetic code to indicate type of polarization. H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.

TABLE XLVIII. EDITED DEPLOYMENT DATA FILE (10) (CONT)

Data Description	Field Size	Field Position	Remarks
Antenna azimuth angle	6	56-61	Subfield 56-58: Lower limit of scan. Subfield 59-61: Upper limit of scan. Expressed in degrees clockwise from true north, not greater than 360°. For stationary antennas, both are equal. Blank for omnidirectional antennas.
Antenna elevation angle	6	62-67	Subfield 62-64: Lower limit of scan. Subfield 65-67: Upper limit of scan. Expressed in degrees upward from horizontal (0°-90° and 270°-360°). Blank for omnidirectional antennas.
Antenna structural height	3	68-70	Height of antenna in tenths of a meter.
Power output	5	71-75	Power transmitted in dBm, right-justified.
Area code	1	76	A 1-character alphabetic code assigned to designated deployment areas.
	2	77-78	Blank
Number of channels	3	79-81	The number of channels assigned for this equipment component. Blank if single-channel. During EDIT [8] , subfield 79 is changed to 5 or greater if the net is encrypted.
Component code	3	82-84	A 3-character alphanumeric code assigned to this equipment component.
<u>Record 2</u>			
Major equipment code	2	1-2	A 2-character alphanumeric code assigned to this

TABLE XLVIII. EDITED DEPLOYMENT DATA FILE (10) (CONT)

Data Description	Field Size	Field Position	Remarks
Major equipment code (cont)			major equipment class.
Modulation code	2	3-4	A 2-digit code indicating modulation type. 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.
R/T code	1	5	A 1-character alphabetic code: R = receiver, T = transceiver, X = transmitter.
Posture code	1	6	A 1-character alphabetic code indicating the combat posture of the unit to which the operator is assigned. N = normal, H = heavy, L = light, R = reserve, P = priority, K = nuclear, S, T, and W = special assignments.
Operator name	14	7-20	Standard name assigned to the operator, left-justified.
Operator troop number	4	21-24	A 4-digit number indicating the unit to which the operator is assigned.
Net control station code	1	25	A 1-digit code indicating the status of the station. 0 = NCS, 1 = out-station (not NCS).
Organization name	18	26-43	Name of the troop numbered unit to which the operator is assigned.
Vehicle code	3	44-46	A 3-character alphanumeric code assigned to the

TABLE XLVIII. EDITED DEPLOYMENT DATA FILE 10 (CONT)

Data Description	Field Size	Field Position	Remarks
Vehicle code (cont)			vehicle.
Radar pulse repetition rate	4	47-50	Subfield 47-49: Pulses per second, right-justified with leading zeros. Subfield 50: Exponent N, used to multiply value in 47-49 by 10 ^N to designate a high pulse rate whose value exceeds 999; N = 0, 1, 2, 3, ... 9.
Number of DF targeted	1	51	Count of DF targeted in a net by EWMOD 7 (maximum = 3). Appears only in DF equipment records; blank or zero otherwise.
Special targeting code	1	52	Code inserted by EWMOD 7 during analysis processing; field is blank prior to analysis processing. For X, 1 = jammer; for R, 4 = intercept receiver; 1, 2, 3, = DF.
Net name	28	53-80	Standard name assigned to this net type, left-justified.
System ID code	2	81-82	Code indicating type of system in which the equipment operates. TF = TACFIRE, TS = tactical operations system (TOS), MM = missile minder, etc.
COMSEC equipment code	2	83-84	Code indicating type of COMSEC device associated with the end item-component combination. Blank if unsecured.

File Description: Deployment Data File with Identifiers (34)
File Name: DEPLYF Logical Unit: 5
Mode/Type: BCD Record Length: 113 characters
Origin: EQCLSFF (22)
Used By: LINK (23) ; LAUX (25)

TABLE XLIX. DEPLOYMENT DATA FILE WITH IDENTIFIERS (34)

Data Description	Field Size	Field Position	Remarks
Security classification	1	1	0 = unclassified, 1 = confidential, 2 = secret, 3 = top secret, 4 = FOUO, 5 = secret NOFORN, 6 = confidential NOFORN.
Net number	10	2-11	A unique 10-digit code assigned to each net. Digits 1-6 indicate the net type number and 7-10 indicate the troop number of the net control station (NCS).
Frequency	8	12-19	Assigned frequency in kHz, right-justified.
Area code	1	20	A 1-character alphabetic code assigned to designated deployment areas.
Frequency band code	2	21-22	A 2-digit code assigned to indicate defined frequency categories. This code is needed only if frequency category is one of the parameters selected to describe a cell for system effectiveness (SE) analysis.
Equipment class code	6	23-28	A 6-digit code assigned to indicate the equipment class. This code is usually one of the parameters selected to describe a cell for SE analysis. The 6-digit coding procedure is as follows: First digit - data set code: 1 = friendly corps C-E, 2 = friendly TACAIR C-E, 3 = theater army, 4 = friendly EW, 5 = opposing forces C-E, 6 = opposing forces EW, 7 = test system items,

TABLE XLIX. DEPLOYMENT DATA FILE WITH IDENTIFIERS (34) (CONT)

Data Description	Field Size	Field Position	Remarks
Equipment class code (cont)			8 = TACAIR EW (unintentional), 9 = intentional interference (friendly army or opposing forces EW), 0 = intentional interference (TACAIR EW). Second digit - modulation code: 1 = F3 = 33, 2 = A3 = 13, 3 = A3A or A3J = 14, 4 = F1 = 31, 5 = F9 = 36, 6 = P0 = 50, 7 = P9 = 58, 8 = A2 or A9 = 18 or 12, 9 = A1 = 11, 0 = special or other. Third digit - bandwidth: For modulation codes 1-5 and 8, 9, 0: 1 = narrow, 2 = medium, 3 = wide, 4 = very wide; for modulation codes 6 and 7: 5-9 and 0 indicate different "B" matrices. Fourth and fifth digits - sequence number: 00-99 = final specific equipment designator within modulation code and bandwidth. Sixth digit - siting preference: 1 = normal, 2 = normal, 3 = airborne radar, 4 = ground radar, 5 = preferred, 6 = airborne nonradar, 7 = radio relay (LOS), 8 = nap of the earth, 9 = troposcatter, 0 = satellite.
Latitude	6	29-34	Latitude in ten-thousandths of a degree, right-justified.

TABLE XLIX. DEPLOYMENT DATA FILE WITH IDENTIFIERS (34) (CONT)

Data Description	Field Size	Field Position	Remarks
Longitude	7	35-41	Longitude in ten-thousandths of a degree, right-justified.
Aircraft height	5	42-46	Subfield 42-45: Height (in meters) of aircraft above ground. All zeros if aircraft is on ground; blank if not aircraft.
Antenna code	3	47-49	Subfield 46: Exponent N, used to multiply aircraft height by 10^N ; N = 0, 1, 2, 3, ... A 3-digit code assigned to each antenna type.
Antenna polarization	1	50	A 1-character alphabetic code to indicate polarization. H = horizontal, V = vertical, A = +45°, D = -45°, E = elliptical, C = circular, B = vertical/horizontal, or another alphabetic character to represent any other unique polarization.
Antenna azimuth angle	6	51-56	Subfield 51-53: Lower limit of scan. Subfield 54-56: Upper limit of scan. Expressed in degrees clockwise from true north, not greater than 360°. For stationary antennas, both are equal; blank for omnidirectional antennas.
Antenna elevation angle	6	57-62	Subfield 57-59: Lower limit of scan.

TABLE XLIX. DEPLOYMENT DATA FILE WITH IDENTIFIERS (34) (CONT)

Data Description	Field Size	Field Position	Remarks
Antenna elevation angle (cont)			Subfield 60-62: Upper limit of scan. Expressed in degrees upward from horizontal (0°-90° and 270°-360°). Blank for omnidirectional antennas.
Antenna structural height	3	63-65	Height of antenna in tenths of a meter.
Power output	5	66-70	Power transmitted in dBm, right-justified. Blank for receivers.
R/T code	1	71	A 1-character alphabetic code: R = receiver, T = transceiver, X = transmitter.
Posture code	1	72	A 1-character alphabetic code indicating the combat posture of the unit to which the operator is assigned: N = normal, H = heavy, L = light, R = reserve, P = priority, K = nuclear, S, T, and W = special assignments.
Operator name	14	73-86	Standard name assigned to the operator, left-justified.
Net control station (NCS) code	1	87	A 1-digit code indicating the status of the station: 0 = NCS, other = station is not NCS.
Modulation type code	2	88-89	A 2-digit code indicating modulation type: 33 = F3, 13 = A3, 14 = A3A or A3J, 31 = F1, 36 = F9, 50 = P0, 58 = P9, 18 = A2, 12 = A9, 11 = A1. Other codes for specific types may be used occasionally.

TABLE XLIX. DEPLOYMENT DATA FILE WITH IDENTIFIERS 34 (CONT)

Data Description	Field Size	Field Position	Remarks
Deployment serial number	4	90-93	A unique 4-digit identification number assigned within a net to each equipment in the deployment.
Net sequence number	3	94-96	A 3-digit sequence number of equipments in a net assigned by the deployment supplier. Not presently used.
Number of channels/crypto indicator	3	97-99	The number of channels assigned for this equipment component, if applicable. Values above 499 indicate encrypted equipment.
Radar pulse repetition rate	4	100-103	Subfield 100-102: Pulses per second. Subfield 103: Exponent N, used to multiply pulse rate by 10^N ; N = 0, 1, 2, ... 9.
Net type code	6	104-109	A 6-character alphanumeric code assigned to indicate the net type category. The characters indicate proponent (1), employment (2), echelon (3), category (4), and function (5). Character 6 specifies fine distinctions within the group described by the first 5 characters.
Number of DF targeted	1	110	Count of DF targeted in a net by EWMOD 7 (maximum = 3). Appears only in DF equipment records; otherwise, blank or zero.
Random targeted EW switch	1	111	Code indicating intentional EW components inserted randomly into deployment for special processing: 1-4 = random EW; otherwise, blank.

TABLE XLIX. DEPLOYMENT DATA FILE WITH IDENTIFIERS (34) (CONT)

Data Description	Field Size	Field Position	Remarks
System ID code	2	112-113	Code indicates type of system in which the equipment operates: TF = TACFIRE, TS = tactical operations system (TOS), MM = missile minder, etc.

```

( 1) EQCLSFF,T37777.
( 2) USER(00 USER 10 00)
( 3) CHARGE(WA000.N)
( 4) COMMENT.
( 5) COMMENT. TASK NAME
( 6) COMMENT. EQCLSFF
( 7) COMMENT.
( 8) VSNREQDATA=AAA,EDTDL=8888,DEPLOY=CCCC)
( 9) GET(IPMOPU=IPMOPU/NA)
(10) MAPART)
(11) UPDATE(P=IPMOPU,0)
(12) UNLOAD(IPMOPU)
(13) FINI,R=3,PL=7777,8=EQCLSFF)
(14) FINI,R=3,PL=999999,8=LISNNM)
(15) LABEL(REQDATA,R,PD=R,NT=D,PE,L=TASKNAME)
(16) COPYCF(REQDATA,EQCLSN)
(17) UNLOAD(REQDATA)
(18) REVIND(EQCLSN)
(19) LABEL(EDTDL,R,PD=R,NT=D,PE,L=TASKNAME)
(20) EQCLSFF.
(21) UNLOAD(EDTDL)
(22) LABEL(DEPLOY,W,PD=W,NT=D,PE,L=TASKNAME)
(23) COPYCF(D=PLYF,DEPLOY)
(24) RETURN(DEPLOYF)
(25) REVIND(DEPLYF)
(26) LISNNM(DEPLYF)
(27) RETURN(DEPLYF)
(28) 7-8-9 CARD
(29) * TASK CHANGES FOR EQCLSFF (IF ANY)
(30) *COMPILE EQCLSFF,PRTPG,LISNNM
(31) 7-8-9 CARD
(32) EQCLSFF TASK NAME SECRET 1
(33) 7-8-9 CARD
(34) 500 1 ***SECRET*** 0 113
(35) 7-9-y CARD
(36) 6-7-8-9 CARD

```

Figure 58. EQCLSFF control card listing.

TABLE L. EQCLSFF COMPUTER LISTING

		7/3/74	UPT-1	FIN 4.8+49H	90/07/28. 15.40.02	PAGE	1
1	PROGRAM EQCLSFF (EDTOPL, EQCLSN, DEPLYF, INPUT, OUTPUT, 1 TAPE1=EDTOPL, TAPE3=OUTPUT, TAPE4=INPUT, 2 TAPE5=DEPLYF, TAPE6=EQCLSN)						
5	FILE CONTENTS AND USLS						
10	TAPE1(EDTOPL) THE EDITED DEPLOYMENT DATA FROM EDIT. TAPE3(OUTPUT): REMARKS, ERROR AND WARNING MESSAGES. TAPE4(INPUT): THE EQCLSFF CONTROL CARD. TAPE5(DEPLYF) THE OUTPUT DEPLOYMENT DATA WITH IDENTIFIERS FILE. TAPE6(EQCLSN) EQUIPMENT CLASS ASSIGNMENT DATA.						
15	NOTE: EACH INPUT FILE IS PROCESSED INDIVIDUALLY, AND ITS OUTPUT IS WRITTEN ON A SEPARATE FILE.						
20	CONTROL CARD: COL 1-7 EQCLSFF (CARD ID) 11-40 TITLE FOR PAGE HEADINGS 41-60 SECURITY CLASSIFICATION 74-75 NUMBER OF INPUT FILES (EDTOPL) (12)						
25	COMMON/EQCLCUM/ISPCR, ICLASS(2), TITLE(3), IPTCT INTEGER TITLE						
30	THESE ARRAYS PLACED IN COMMON TO REDUCE LOADING FIELD LENGTH. COMMON MWC(1000), EQNM1(1000), EQNM2(1000), NOCHAN(1000), RTLLY(1000) 1, RTLLY(1000), IEQ(1000), ICODE(1000) DIMENSION DMV(12), IEQCL(10), NETPRT(10) INTEGER BLNK, ITLLY, RTLLY, ASTSK, EQNM1, EQNM2, SC, XX, YY, RANT, DMV1, 1 RXIX, PJSTR, EXX, EJJ, EQ2 LOGICAL DFLD, BLNKEQC, GOOD DIMENSION TER(9), JTR(10)						
35	DATA IFR/1500., 1999., 76000., 174000., 225000., 400000., 1.85E6, 1 5.E6, 10.E6, JTR/2H01, 2H02, 2H03, 2H04, 2H05, 2H06, 2H07, 2H08, 2H09, 2 2H10/ DATA BLNK, ASTSK, EXX, NINES, DFLD, BLNKEQC, GOOD, NNHOLD, NERR, 1 NINUL, IDMP, IDRPT, INCT, NETCT, IDMP 2 /1H, 4H0000., 1MX, 10H9999999999, 30.F., 890/ DATA NETPRT/1000/, IEQCL/10*1H / DATA ISPCR, IPTCT/0,0/						
40	READ PROGRAM CONTROL CARD						
45	READ PROGRAM CONTROL CARD						
50	HEAD(4,2) IDATA, TITLE, ICLASS, NFILES 2 FORMAT(6A10, 13A, 12) IF (EQF(4)) 30, 35 30 CONTINUE STOP * INVALID EQCLSFF CONTROL CARD * 35 PRINT 30, IDATA, TITLE, ICLASS, NFILES 36 FORMAT(9, 9, 6A10, 10A, 15) IF (IDDATA.NE.7HEEQCLSFF.DR. (ICLASS(1).EQ.8BLNK.AND. ICLASS(2).EQ. * BLNK)) 30, 30						
55	READ REQUIRED EQUIP CLASS DATA FILE						

TABLE L. EQCLSFF COMPUTER LISTING (CONT)

PAGE 2

80/07/20. 15.40.02

FTN 4.8498

PROGRAM EQCLSFF 73/74 UPT-1

```

C
60 CALL PRPG
   I=1
   100 READ(6,1)JQNMZ(I),EQNM(I),MUDC(I),NUCHAN(I),IEQ(I),ICODE(I)
   1 FORMAT(1X,A3,2A2,A3,6A4,R5,A1)
   IF(EOF(6))2140,2000
   2000 ITLL(I)=ATLL(I)-0
   IF(ICODE(I).EQ.1H)IEQ(I)=BLNK
   WRITE(3,5)EQNM2(I),EQNM1(I),MUDC(I),NUCHAN(I),ICODE(I),IEQ(I)
   5 FORMAT(2X,A3,2(1X,A2),2X,A3,2X,A1,5X,R5)
   IPTCT=IPTCT+1
   IF(IPTCT.GE.55)CALL PRPG
   I=I+1
   IF(I.LE.100)GO TO 100
   210 READ(6,1)JQ2,JCQ1,MC,ICMNL,KCODE,INUCD
   IF(EOF(6))2140,2040
   2040 IF(OFLO)GO TO 2020
   2050 WRITE(3,2050)
   10.0)
   OFLO=.TRUE.
   NERR=NERR+1
   IPTCT=IPTCT+1
   IF(IPTCT.GE.55)CALL PRPG
   2020 WRITE(3,3)JC2,JCQ1,MC,ICMNL,KCODE,INUCD
   IPTCT=IPTCT+1
   IF(IPTCT.GE.55)CALL PRPG
   I=I+1
   GO TO 2010
   2140 I=I-1
   2150 WRITE(3,2150)I
   2160 FORMAT(0 END OF EQUIPMENT CLASS CARDS.,110.0 READ.0)
   IF(I.LE.0)NERR=1
   IF(NERR.EQ.0)GO TO 2170
   WRITE(3,2160)NERR
   2160 FORMAT(00.10.0 ERRORS IN THE EQUIPMENT CLASS ASSIGNMENT CARDS,
   00B KILLED.0)
   STOP 4 ERRORS IN EQCLASM DATA 4
   2170 CALL PRPG
   IEND=1
C
C CUME HERE TJ READ DEPLOYMENT EQUIPMENT RECORD 1
C
75 READ(1,3)ISC,MEINJ,ISEQ,IFREQ,JMO,IDSET,ISERN,XX,YY,IACFTM,RANT,
   1 DMV,IAC,ICMAN,ICOMP
   3 FORMAT(1X,A10,A3,A8,A6,A1,I4,A6,A7,A5,A4,2A10,A1,2X,2A3)
   IF(EOF(1))72,71
   71 IF(MEIND.ML.NINE)SGOTO 73
C
C GO TO NEXT FILE, IF ANY
C
READ(1,7)ISC,>C
74 FORMAT(A1/A1)
IF(EOF(1))72,77
77 STOP 77
72 ENDFILE 5
NFILES=NFILES+1
CUMENTS 319
10JAN74 9
10JAN74 10
10JAN74 11
EQCL60 1
FINEOCL 20
10JAN74 14
01APR74 1
10JAN74 15
EQCL60 2
10JAN74 17
10JAN74 18
10JAN74 19
10JAN74 20
10JAN74 21
FINEOCL 21
10JAN74 23
10JAN74 24
10JAN74 25
10JAN74 26
10JAN74 27
10JAN74 28
10JAN74 29
10JAN74 30
10JAN74 31
10JAN74 32
10JAN74 33
10JAN74 34
10JAN74 35
10JAN74 36
10JAN74 37
10JAN74 38
PRNTD 1
10JAN74 39
EQCLSFF 131
EQCLSFF 132
EQCLSFF 133
FINEOCL 22
10JAN74 40
10JAN74 41
CUMENTS 320
COMENTS 321
CUMENTS 322
FINEOCL 23
FINEOCL 24
FINEOCL 25
FINEOCL 26
EQCLSFF 145
COMENTS 323
CUMENTS 324
CUMENTS 325
MINTRK9 1
MINTRK9 2
FINEOCL 27
MINTRK9 4
MINTRK9 5
EQCLSFF 151

```

TABLE L. EQCLSFF COMPUTER LISTING (CONT)

TABLE L. EQCLSFF COMPUTER LISTING (CONT)

PAGE 4

80/07/20. 15.40.02

FIN 4.8+498

PROGRAM EQCLSFF 1/1/74 UPT-1

```

175      IPCT = IPCT + 2
179      IF (TIME EQ .NINE) GO TO 89
180      K=0
181      K=K+1
182      NSMFLG=JLNG
183      DO 712 L=1,10
184      712  EQCL(I)=BLNK
185      720  NHOLD=NETP
186      730  IF (KATX.EQ.EAX.OR.KATX.EQ.INT) GO TO 7502
187      MURA=NETND
188      7904  IORP = IORP + 1
189      GO TO 75
190      7502  NETCT=NETCT + 1
191      NHOLD=NETND
192
193      C      ASSIGN FREQUENCY BAND CODE
194      C
195      C      DECODE10,800,IFREQ)IFREQ
196      800  FORMAT(10,0)
197      DO 810 J=1,9
198      810  IF (IFREQ.EQ.LE.TFR(J)) GO TO 820
199      810  CONTINUE
200      J=10
201      820  IF (J=JFR(J))
202      C
203      C      FIND MATCHING DATA IN EQUIP CLASS DATA TO ASSIGN EQUIP CLASS
204      C      CODE
205      1000  I=IEND
206      7603  IF (ICOMP.EQ.EQNM2(I)).AND.(IMEQ.EQ.EQNM1(I)).AND.
207      1  AC.EQ.MDCC(I)).AND.(ICHAN.EQ.MDCHAN(I)) GO TO 7730
208      I=I+1
209      IF (I.EQ.I+1) I=1
210      IF (I.EQ.IEND) GO TO 7603
211      WRITE(3,2190)METND,ISERN,MC,ICOMP,IMEQ,ICHAN
212      2190  FORMAT(10,ERROR: NO MATCH FOR NET *,A10,*, SEQ *,14,*,*, MOD CODE
213      19,*,*, ICOMP *,*,*, IMEQ *,*,*, ICHAN *,*,*)
214      MERR=MERR+1
215      IPCT=IPCT+1
216      GO TO 75
217      7730  IEND=I
218      IF (IEQ(I)).NE.IH .AND. (ICODE(I)).NE.IH) GO TO 7740
219
220      C      DRJP EQUIP IF EQ CL CODE IS BLANK OR EQ IS FLAGGED TO DROP
221      C
222      C      IORP=IORP+1
223      C      BLNKEQ=.TRUE.
224      IF (KATX.EQ.EAX) GO TO 7731
225      RILLY(I)=RILLY(I)+1
226      IF (KATX.EQ.IHR) GO TO 75
227      7731  RILLY(I)=RILLY(I)+1
228      GO TO 75
229
230      C      COUNT EQUIP BY TYPE. IF EQ IS TO BE LINKED FOR IG PURPOSES
231      C      ONLY (FLAG=9), CHANGE R/T CODE AS K TO S, T TO U, X TO Y
232      C
233      7740  IF (KATX.EQ.EAX) GO TO 7710

```

TABLE L. EQCLSFF COMPUTER LISTING (CONT)

PAGE 5

80/07/28. 15.40.02

FTN 4.84498

PROGRAM EQCLSFF 73/74 UPT-1

```

230      RTLLY(III)=RTLLY(III)+1
      IF(RTX.EQ.1MT)GO TO 7712
      IF(ICODE(III).EQ.1M)RTX=1MS
      GO TO 7711
231      7712 IF(ICODE(III).EQ.1M)RTX=1MU
      GO TO 7714
232      7710 IF(ICODE(III).EQ.1M)RTX=1MY
      7714 RTLLY(III)=RTLLY(III)+1
      7711 IEQCL4=IEJ(II)
      INCI=INCI+1
      C
      C      CHANGE SITTING CODE FOR AIRCRAFT AS AIRBORNE RADAR=3,
      C      NAP-OF-THE-EARTH=8 (ALT325 METERS), ALL OTHER AIRBORNE=6
      C
240      IF(IACFTM.EQ.3M00000.DR.IACFTM.EQ.1M)GO TO 7716
      IDL=IEQCL4.AND.778
      IF(IDL.EQ.1M)GO TO 7716
      NEWD=1M6
      DECODE(5,7,IACFTM)IALI,IMULT
      7 FORMAT(14,11)
      IALI=IALI*10**IMULT
      IF(IALI.LE.25)NEWD=1R8
      IF(IDL.EQ.1M)NEWD=1R3
      IEQCL4=(IEQCL4.AND.7777777700B).OR.NEWD
      C
      C      OUTPUT RECORD TO DEPLOYMENT FILE WITH IDENTIFIERS
      C
255      7716 WRITE(15,7713)SC,AEIND,IFREQ,IAC,1F8,1DSET,IEQCL4,XX,YY,IACFTM,
      1 WANT,DNY1,RTX,PUSTR,10P1,10P2,INCS,INCS,ISERN,ISEG,ICHAN,MULTPOS,
      2 JMD,JMCO,10SY
      7713 FORMAT(1A10,A6,A1,A2,A1,A2,A1,A2,A1,A2,A1,A2,A1,A2,A1,A2,
      1 14,4,2A3,4A4,A6,2A2)
      C
      C      ADD EQCL CODE TO SUMMARY FOR NET, IF NECESSARY. IF TABLE IS
      C      FULL, PRINT AND CLEAR TABLE, THEN START NEW SUMMARY. GO READ
      C      NEXT DEPLOYMENT RECORD
      C
260      70 IF(IEQCL4.NE.IEQCL(KKK))GO TO 7801
      KMDL = KKK
      IF(RTX.EQ.1MR.OR.RTX.EQ.1MS.OR.RTX.EQ.1MT.OR.RTX.EQ.1MU)
      1 GOON=.TRUE.
      GO TO 75
261      IF (1KKK + 1).GT. K) KKK = 0
      KKK = KKK+1
      IF (KKK.NE.KMDL) GO TO 78
      KMDL = KKK + K + 1
      IF (KKK.LE.10)GO TO 7803
      C----- NET SUMMARY LINE
      7802 WRITE(13,20)KMDL,IEQCL,ASTSK
      IPCT= IPCT + 2
      IF (IPCT.GT.54) CALL PRTPG
      DO 7804 K = 2,10
      7804 IEQCL(K)=MLK
      KKK = K + KMDL + 1
      7803 IEQCL(KKK)=IEQCL4
      NETPRT(KKK)=1
      IF(RTX.EQ.1MR.OR.RTX.EQ.1MS.OR.RTX.EQ.1MT.OR.RTX.EQ.1MU)

```

TABLE L. EQCLSFF COMPUTER LISTING (CONT)

```

PROGRAM EOCLSF 7/3/74 OPT-1 FIN 4-B-498 80/07/28, 15.40.02 PAGE 6

1 GOOD=.TRUE.
  GJ TO 75

C
C HERE END OF THE JOB.
C PRINT EQ CL CODE ASSIGNMENT SUMMARY WITH COUNTS
C

89 IPTCI=55
  DD 40, JO=1,1
  IF (NLLY(JO),NLLY(JO),EQ-OIGTO 909
  IF (IPTCI-1,5)GD TO 902
  CALL PRPG
  WRITE(3,901)
  JO1 FORMAT(6X,CL EQUIPMENT ID,7X,EQ CL,6X,ORXRS,6X,THRS,/)
  IPTCI=3
  902 WRITE(3,25)EJNM2(JO),EJNM1(JO),MUDC(JO),NUCHAN(JO),IEQ(JO),
    1 NLLY(JO),NLLY(JO)
  25 FORMAT(4X,A3,2(2X,A2),2X,A3,5X,1M,4X,1X,1X,/)
  IPTCI=IPTCI+1
  909 CONTINUE
  REWIND 1
  READ 5
  IPTCI=IPTCI+3
  ISPCR = 999
  CALL P-TPG

C
C PRINT DEPLOYMENT SUMMARY MESSAGES AND TERMINATE JOB
C

  NRT(13,27)TITLE=NCT,INCT,IOBPTOI,IOBUP,HEER
  27 FORMAT(1 END OF EOCLSF PROCESSING FOR: ,3A10//111,0 NETS,0,
    2 111,0 RECORDS WRITTEN//111,0 RECORDS DROPPED FROM NETS WITHOUT TR
    3 ANSWITERS//111,0 RECORDS DROPPED ON STATUS CODE//11
    4 111,0 ERRORS ENCOUNTERED,0)
  IF (NRT,Nc,0) STOP 9 ERRORS DETECTED BY EOCLSF 9
  END
EOCLSF 331

```

SUBROUTINE PHIP6 **13/74 JPF-1**

15-31

TABLE L. EQCLSF COMPUTER LISTING (CONT)

PAGE 1

80/07/28. 15.40.10

FTN 4.8+498

PROGRAM LISTNNN 73/74 OPT=1

```

C
C MREC = NUMBER OF RECORDS TO PRINT FROM EACH FILE(DEFAULT=100)
C MFILES = NUMBER OF FILES(DEFAULT=1)
C MSTRY = NUMBER OF RECORDS TO SKIP BEFORE PRINTING (DEFAULT=0)
C LEN = LENGTH IN CHARACTERS OF RECORD TO BE PRINTED (DEFAULT=135)
C

```

```

DIMENSION IFMT(135),IFM1(72),IFM2(63)

```

```

EQUIVALENCE (IFM1(1),IFM1(1)),(IFM2(1),IFM2(73))

```

```

INTEGER RECORD(14)

```

```

DATA IFM1/10H1A1)

```

```

1 10H1A2) 10H1A3) 10H1A4) 10H1A5) 10H1A6) 10H1A7) 10H1A8)

```

```

2 10H1A9) 10H1A10) 10H1A11) 10H1A12) 10H1A13) 10H1A14) 10H1A15)

```

```

3 10H1A16) 10H1A17) 10H1A18) 10H1A19) 10H1A20) 10H1A21) 10H1A22)

```

```

4 10H1A23) 10H1A24) 10H1A25) 10H1A26) 10H1A27) 10H1A28) 10H1A29)

```

```

5 10H1A30) 10H1A31) 10H1A32) 10H1A33) 10H1A34) 10H1A35) 10H1A36)

```

```

6 10H1A37) 10H1A38) 10H1A39) 10H1A40) 10H1A41) 10H1A42) 10H1A43)

```

```

7 10H1A44) 10H1A45) 10H1A46) 10H1A47) 10H1A48) 10H1A49) 10H1A50)

```

```

8 10H1A51) 10H1A52) 10H1A53) 10H1A54) 10H1A55) 10H1A56) 10H1A57)

```

```

9 10H1A58) 10H1A59) 10H1A60) 10H1A61) 10H1A62) 10H1A63) 10H1A64)

```

```

A 10H1A65) 10H1A66) 10H1A67) 10H1A68) 10H1A69) 10H1A70) 10H1A71)

```

```

B 10H1A72) 10H1A73) 10H1A74) 10H1A75) 10H1A76) 10H1A77) 10H1A78)

```

```

C 10H1A79) 10H1A80) 10H1A81) 10H1A82) 10H1A83) 10H1A84) 10H1A85)

```

```

D 10H1A86) 10H1A87) 10H1A88) 10H1A89) 10H1A90) 10H1A91) 10H1A92)

```

```

E 10H1A93) 10H1A94) 10H1A95) 10H1A96) 10H1A97) 10H1A98) 10H1A99)

```

```

F 10H1A100) 10H1A101) 10H1A102) 10H1A103) 10H1A104) 10H1A105) 10H1A106)

```

```

G 10H1A107) 10H1A108) 10H1A109) 10H1A110) 10H1A111) 10H1A112) 10H1A113)

```

```

H 10H1A114) 10H1A115) 10H1A116) 10H1A117) 10H1A118) 10H1A119) 10H1A120)

```

```

I 10H1A121) 10H1A122) 10H1A123) 10H1A124) 10H1A125) 10H1A126) 10H1A127)

```

```

J 10H1A128) 10H1A129) 10H1A130) 10H1A131) 10H1A132) 10H1A133) 10H1A134)

```

```

K 10H1A135) 10H1A136) 10H1A137) 10H1A138) 10H1A139) 10H1A140) 10H1A141)

```

```

L 10H1A142) 10H1A143) 10H1A144) 10H1A145) 10H1A146) 10H1A147) 10H1A148)

```

```

M 10H1A149) 10H1A150) 10H1A151) 10H1A152) 10H1A153) 10H1A154) 10H1A155)

```

```

N 10H1A156) 10H1A157) 10H1A158) 10H1A159) 10H1A160) 10H1A161) 10H1A162)

```

```

O 10H1A163) 10H1A164) 10H1A165) 10H1A166) 10H1A167) 10H1A168) 10H1A169)

```

```

P 10H1A170) 10H1A171) 10H1A172) 10H1A173) 10H1A174) 10H1A175) 10H1A176)

```

```

Q 10H1A177) 10H1A178) 10H1A179) 10H1A180) 10H1A181) 10H1A182) 10H1A183)

```

```

R 10H1A184) 10H1A185) 10H1A186) 10H1A187) 10H1A188) 10H1A189) 10H1A190)

```

```

S 10H1A191) 10H1A192) 10H1A193) 10H1A194) 10H1A195) 10H1A196) 10H1A197)

```

```

T 10H1A198) 10H1A199) 10H1A200) 10H1A201) 10H1A202) 10H1A203) 10H1A204)

```

```

U 10H1A205) 10H1A206) 10H1A207) 10H1A208) 10H1A209) 10H1A210) 10H1A211)

```

```

V 10H1A212) 10H1A213) 10H1A214) 10H1A215) 10H1A216) 10H1A217) 10H1A218)

```

```

W 10H1A219) 10H1A220) 10H1A221) 10H1A222) 10H1A223) 10H1A224) 10H1A225)

```

```

X 10H1A226) 10H1A227) 10H1A228) 10H1A229) 10H1A230) 10H1A231) 10H1A232)

```

```

Y 10H1A233) 10H1A234) 10H1A235) 10H1A236) 10H1A237) 10H1A238) 10H1A239)

```

```

Z 10H1A240) 10H1A241) 10H1A242) 10H1A243) 10H1A244) 10H1A245) 10H1A246)

```

```

AA 10H1A247) 10H1A248) 10H1A249) 10H1A250) 10H1A251) 10H1A252) 10H1A253)

```

```

AB 10H1A254) 10H1A255) 10H1A256) 10H1A257) 10H1A258) 10H1A259) 10H1A260)

```

```

AC 10H1A261) 10H1A262) 10H1A263) 10H1A264) 10H1A265) 10H1A266) 10H1A267)

```

```

AD 10H1A268) 10H1A269) 10H1A270) 10H1A271) 10H1A272) 10H1A273) 10H1A274)

```

```

AE 10H1A275) 10H1A276) 10H1A277) 10H1A278) 10H1A279) 10H1A280) 10H1A281)

```

```

AF 10H1A282) 10H1A283) 10H1A284) 10H1A285) 10H1A286) 10H1A287) 10H1A288)

```

```

AG 10H1A289) 10H1A290) 10H1A291) 10H1A292) 10H1A293) 10H1A294) 10H1A295)

```

```

AH 10H1A296) 10H1A297) 10H1A298) 10H1A299) 10H1A300) 10H1A301) 10H1A302)

```

```

AI 10H1A303) 10H1A304) 10H1A305) 10H1A306) 10H1A307) 10H1A308) 10H1A309)

```

```

AJ 10H1A310) 10H1A311) 10H1A312) 10H1A313) 10H1A314) 10H1A315) 10H1A316)

```

```

AK 10H1A317) 10H1A318) 10H1A319) 10H1A320) 10H1A321) 10H1A322) 10H1A323)

```

```

AL 10H1A324) 10H1A325) 10H1A326) 10H1A327) 10H1A328) 10H1A329) 10H1A330)

```

```

AM 10H1A331) 10H1A332) 10H1A333) 10H1A334) 10H1A335) 10H1A336) 10H1A337)

```

```

AN 10H1A338) 10H1A339) 10H1A340) 10H1A341) 10H1A342) 10H1A343) 10H1A344)

```

```

AO 10H1A345) 10H1A346) 10H1A347) 10H1A348) 10H1A349) 10H1A350) 10H1A351)

```

```

AP 10H1A352) 10H1A353) 10H1A354) 10H1A355) 10H1A356) 10H1A357) 10H1A358)

```

```

AQ 10H1A359) 10H1A360) 10H1A361) 10H1A362) 10H1A363) 10H1A364) 10H1A365)

```

```

AR 10H1A366) 10H1A367) 10H1A368) 10H1A369) 10H1A370) 10H1A371) 10H1A372)

```

```

AS 10H1A373) 10H1A374) 10H1A375) 10H1A376) 10H1A377) 10H1A378) 10H1A379)

```

```

AT 10H1A380) 10H1A381) 10H1A382) 10H1A383) 10H1A384) 10H1A385) 10H1A386)

```

```

AU 10H1A387) 10H1A388) 10H1A389) 10H1A390) 10H1A391) 10H1A392) 10H1A393)

```

```

AV 10H1A394) 10H1A395) 10H1A396) 10H1A397) 10H1A398) 10H1A399) 10H1A400)

```

```

AW 10H1A401) 10H1A402) 10H1A403) 10H1A404) 10H1A405) 10H1A406) 10H1A407)

```

```

AX 10H1A408) 10H1A409) 10H1A410) 10H1A411) 10H1A412) 10H1A413) 10H1A414)

```

```

AY 10H1A415) 10H1A416) 10H1A417) 10H1A418) 10H1A419) 10H1A420) 10H1A421)

```

```

AZ 10H1A422) 10H1A423) 10H1A424) 10H1A425) 10H1A426) 10H1A427) 10H1A428)

```

```

BA 10H1A429) 10H1A430) 10H1A431) 10H1A432) 10H1A433) 10H1A434) 10H1A435)

```

```

BB 10H1A436) 10H1A437) 10H1A438) 10H1A439) 10H1A440) 10H1A441) 10H1A442)

```

```

BC 10H1A443) 10H1A444) 10H1A445) 10H1A446) 10H1A447) 10H1A448) 10H1A449)

```

```

BD 10H1A450) 10H1A451) 10H1A452) 10H1A453) 10H1A454) 10H1A455) 10H1A456)

```

```

BE 10H1A457) 10H1A458) 10H1A459) 10H1A460) 10H1A461) 10H1A462) 10H1A463)

```

```

BF 10H1A464) 10H1A465) 10H1A466) 10H1A467) 10H1A468) 10H1A469) 10H1A470)

```

```

BG 10H1A471) 10H1A472) 10H1A473) 10H1A474) 10H1A475) 10H1A476) 10H1A477)

```

```

BH 10H1A478) 10H1A479) 10H1A480) 10H1A481) 10H1A482) 10H1A483) 10H1A484)

```

```

BI 10H1A485) 10H1A486) 10H1A487) 10H1A488) 10H1A489) 10H1A490) 10H1A491)

```

```

BJ 10H1A492) 10H1A493) 10H1A494) 10H1A495) 10H1A496) 10H1A497) 10H1A498)

```

```

BK 10H1A499) 10H1A500) 10H1A501) 10H1A502) 10H1A503) 10H1A504) 10H1A505)

```

```

BL 10H1A506) 10H1A507) 10H1A508) 10H1A509) 10H1A510) 10H1A511) 10H1A512)

```

```

BM 10H1A513) 10H1A514) 10H1A515) 10H1A516) 10H1A517) 10H1A518) 10H1A519)

```

```

BN 10H1A520) 10H1A521) 10H1A522) 10H1A523) 10H1A524) 10H1A525) 10H1A526)

```

```

BO 10H1A527) 10H1A528) 10H1A529) 10H1A530) 10H1A531) 10H1A532) 10H1A533)

```

```

BP 10H1A534) 10H1A535) 10H1A536) 10H1A537) 10H1A538) 10H1A539) 10H1A540)

```

```

BQ 10H1A541) 10H1A542) 10H1A543) 10H1A544) 10H1A545) 10H1A546) 10H1A547)

```

```

BR 10H1A548) 10H1A549) 10H1A550) 10H1A551) 10H1A552) 10H1A553) 10H1A554)

```

```

BS 10H1A555) 10H1A556) 10H1A557) 10H1A558) 10H1A559) 10H1A560) 10H1A561)

```

```

BT 10H1A562) 10H1A563) 10H1A564) 10H1A565) 10H1A566) 10H1A567) 10H1A568)

```

```

BU 10H1A569) 10H1A570) 10H1A571) 10H1A572) 10H1A573) 10H1A574) 10H1A575)

```

```

BV 10H1A576) 10H1A577) 10H1A578) 10H1A579) 10H1A580) 10H1A581) 10H1A582)

```

```

BW 10H1A583) 10H1A584) 10H1A585) 10H1A586) 10H1A587) 10H1A588) 10H1A589)

```

```

BX 10H1A590) 10H1A591) 10H1A592) 10H1A593) 10H1A594) 10H1A595) 10H1A596)

```

```

BY 10H1A597) 10H1A598) 10H1A599) 10H1A600) 10H1A601) 10H1A602) 10H1A603)

```

```

BZ 10H1A604) 10H1A605) 10H1A606) 10H1A607) 10H1A608) 10H1A609) 10H1A610)

```

```

CA 10H1A611) 10H1A612) 10H1A613) 10H1A614) 10H1A615) 10H1A616) 10H1A617)

```

```

CB 10H1A618) 10H1A619) 10H1A620) 10H1A621) 10H1A622) 10H1A623) 10H1A624)

```

```

CC 10H1A625) 10H1A626) 10H1A627) 10H1A628) 10H1A629) 10H1A630) 10H1A631)

```

```

CD 10H1A632) 10H1A633) 10H1A634) 10H1A635) 10H1A636) 10H1A637) 10H1A638)

```

```

CE 10H1A639) 10H1A640) 10H1A641) 10H1A642) 10H1A643) 10H1A644) 10H1A645)

```

```

CF 10H1A646) 10H1A647) 10H1A648) 10H1A649) 10H1A650) 10H1A651) 10H1A652)

```

```

CG 10H1A653) 10H1A654) 10H1A655) 10H1A656) 10H1A657) 10H1A658) 10H1A659)

```

```

CH 10H1A660) 10H1A661) 10H1A662) 10H1A663) 10H1A664) 10H1A665) 10H1A666)

```

```

CI 10H1A667) 10H1A668) 10H1A669) 10H1A670) 10H1A671) 10H1A672) 10H1A673)

```

```

CJ 10H1A674) 10H1A675) 10H1A676) 10H1A677) 10H1A678) 10H1A679) 10H1A680)

```

```

CK 10H1A681) 10H1A682) 10H1A683) 10H1A684) 10H1A685) 10H1A686) 10H1A687)

```

```

CL 10H1A688) 10H1A689) 10H1A690) 10H1A691) 10H1A692) 10H1A693) 10H1A694)

```

```

CM 10H1A695) 10H1A696) 10H1A697) 10H1A698) 10H1A699) 10H1A700) 10H1A701)

```

```

CN 10H1A702) 10H1A703) 10H1A704) 10H1A705) 10H1A706) 10H1A707) 10H1A708)

```

```

CO 10H1A709) 10H1A710) 10H1A711) 10H1A712) 10H1A713) 10H1A714) 10H1A715)

```

```

CP 10H1A716) 10H1A717) 10H1A718) 10H1A719) 10H1A720) 10H1A721) 10H1A722)

```

```

CQ 10H1A723) 10H1A724) 10H1A725) 10H1A726) 10H1A727) 10H1A728) 10H1A729)

```

```

CR 10H1A730) 10H1A731) 10H1A732) 10H1A733) 10H1A734) 10H1A735) 10H1A736)

```

```

CS 10H1A737) 10H1A738) 10H1A739) 10H1A740) 10H1A741) 10H1A742) 10H1A743)

```

```

CT 10H1A744) 10H1A745) 10H1A746) 10H1A747) 10H1A748) 10H1A749) 10H1A750)

```

```

CU 10H1A751) 10H1A752) 10H1A753) 10H1A754) 10H1A755) 10H1A756) 10H1A757)

```

TABLE L. EQCLSFF COMPUTER LISTING (CONT)