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PROGRAM MAINTENANCE MANUAL FOR MACCS DATA SYSTEM VOLUME II. OPH--ETC(U).  
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M00027-74-C-0099

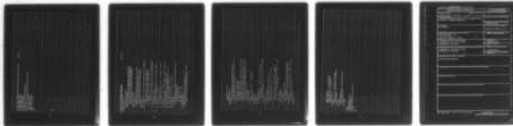
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**PROGRAM MAINTENANCE MANUAL  
FOR MACCS DATA SYSTEM  
VOLUME II: OPHRRS PROCEDURES**

December 1974

Prepared for  
COMMANDANT OF THE MARINE CORPS  
DEPARTMENT OF THE NAVY  
under Contract M00027-74-C-0099

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2551 Riva Road  
Annapolis, Maryland 21401  
Publication 1302-01-3-1361

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## SECTION 1. GENERAL DESCRIPTION

### 1.1 PURPOSE

The objective for writing this Program Maintenance Manual for OPHRRS of MACCS DATA is to provide the maintenance programmer personnel with the information necessary to effectively maintain the program system.

### 1.2 SYSTEM APPLICATION

This procedure consists of two subprocedures, ADRECS and ADHRRS. Subprocedure ADRECS, comprised of two IBM utility routines, CDTAPE and MRGHRS, is run when new operate hour records are added to the existing operate hours tape. Subprocedure ADHRRS, consisting of a COBOL program, EDTAPE, is run when additional hours are added to the records on the existing operate hours tape.

### 1.3 EQUIPMENT ENVIRONMENT

Main computer: IBM System/370  
Three tape drives  
1 disk drive  
1 card reader  
1403 line printer

### 1.4 PROGRAM ENVIRONMENT

This procedure does not interact with any other procedures.

### 1.5 CONVENTIONS

Not applicable

## SECTION 2. SYSTEM DESCRIPTION

### 2.1 GENERAL DESCRIPTION

Subprocedure ADRECS accepts card data to be merged and sorted with the existing operate hours tape. Subprocedure ADHRRS, which is run once every three months, adds data to the existing operate hours tape. Appendix A gives the flowchart for procedure OPHRRS.

### 2.2 DETAILED DESCRIPTION

Procedure: OPHRRS

Subprocedure: ADRECS  
Programs: CDTAPE, MRGHRS  
Subprocedure: ADHRRS  
Program: EDTAPE

2.2.1 CDTAPE

- A. Program Title: CDTAPE
- B. Function: Stores new operate hours data on tape
- C. Storage: 2K bytes core
- D. Files: One tape drive, one card reader
- E. Branching: N/A
- F. Entry: Load tapes on proper drives.
- G. Input: Cards
- H. Exit: CDTAPE is followed by MRGHRS.
- I. Linkage: N/A
- J. Output: Tape
- K. Response to errors: Reload.
- L. Restrictions: N/A
- M. Permanency: CDTAPE is the required initial program run in procedure OPHRRS for data.
  
- N. Associated Programs: None
- O. Major Operations: New operate hours data is stored from cards to tape.

2.2.2 MRGHRS

- A. Program Title: MRGHRS
- B. Function: Merges and sorts new operate hours data with old data
- C. Storage: Disk
- D. Files: 3 tape drives
- E. Branching: N/A
- F. Entry: MRGHRS follows CDTAPE.
- G. Input: Tapes
- H. Exit: Unload and label output tape.
- I. Linkage: N/A
- J. Output: Tape
- K. Response to errors: Check for bad tape. Ignore warnings on disk overflow.
  
- L. Restrictions: N/A
- M. Permanency: MRGHRS follows CDTAPE.
- N. Associated Programs: None
- O. Major Operations: CDTAPE and MRGHRS produce an updated operate hours tape for the TYQ-1, TYQ-2, TYQ-3, and TPS-32 systems

2.2.3 EDTAPE

- A. Program Title: EDTAPE
- B. Function: Adds additional operate hours to the current master tape
- C. Storage: 18647 bytes core, disk
- D. Files: Two tape drives, card reader, line printer

- E. Branching: N/A
- F. Entry: Load tapes, card reader
- G. Input: Tape, cards
- H. Exit: Unload and label output tape; save printer output.
- I. Linkage: N/A
- J. Output: New tape, printer listing
- K. Response to errors: Check end-of-file for tape and card stream; reload.
- L. Restrictions: N/A
- M. Permanency: EDTAPE is the single program run for procedure OPHRRS except as specified in 2.2.1M. above.
- N. Associated Programs: None
- O. Major Operations: EDTAPE produces an updated operate-hours tape.

### SECTION 3. INPUT/OUTPUT DESCRIPTIONS

#### 3.1 GENERAL DESCRIPTION

Input to procedure OPHRRS is a deck of data cards used to produce an updated master tape containing operate-hours data.

#### 3.2 CHARACTERISTICS OF THE SYSTEM DATA

##### 3.2.1 General Characteristics

The input and output tapes of OPHRRS are unlabeled and accessed only by tape drive.

##### 3.2.2 Organization and Detailed Description

- A. Record Layout: See Appendix B.
- B. Sections: Each physical record contains 25 logical records.
- C. Fields: See Appendix B.
- D. Tags/Labels: See Appendix B.
- E. Size: Each input record contains 80 bytes of alphameric data.
- F. Range: N/A
- G. Expansion: N/A

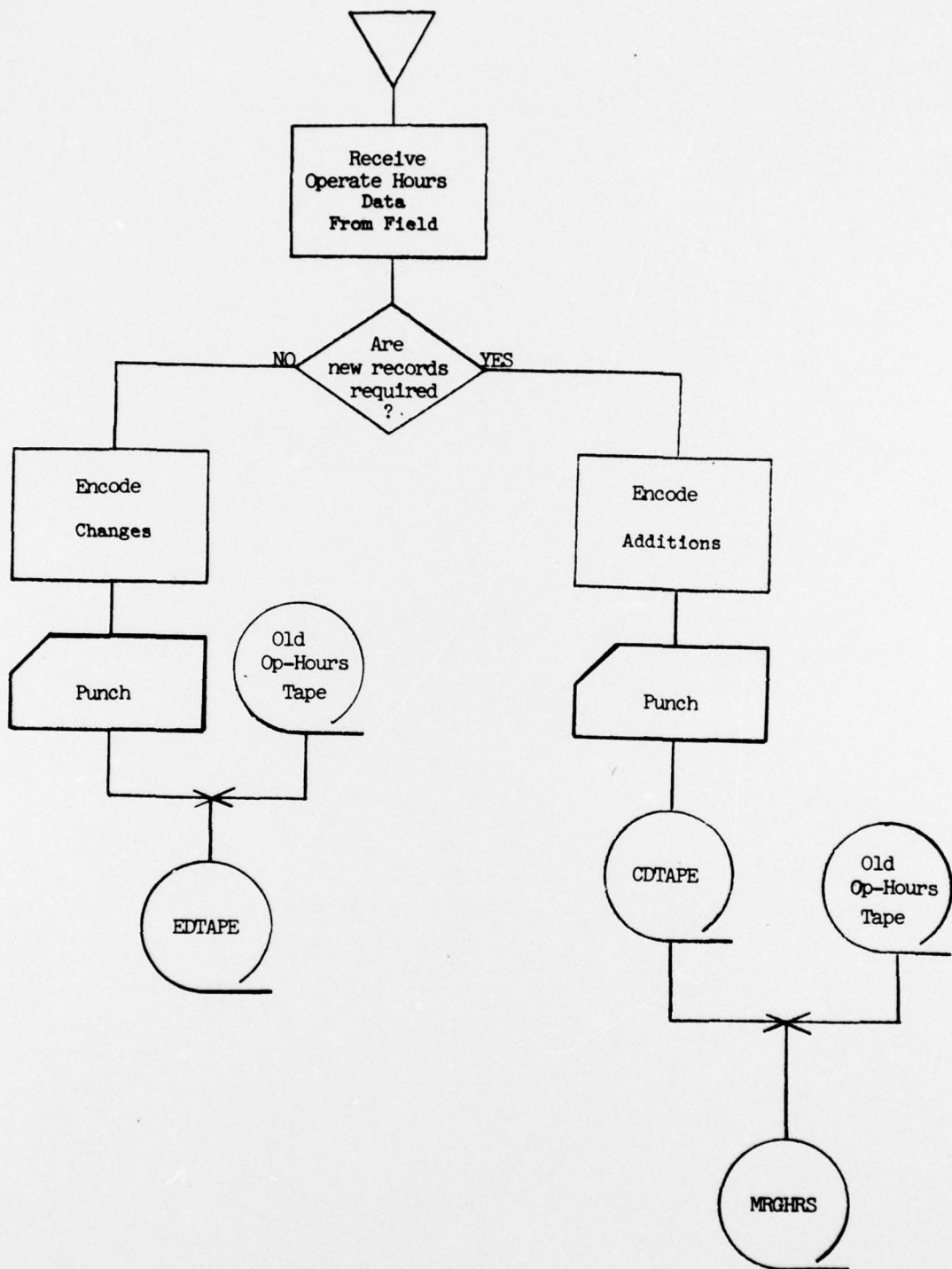
#### 3.3 TABLES

This procedure contains no tables.



SECTION 4. PROGRAM ASSEMBLING, LOADING, AND MAINTENANCE

No special procedures are associated with OPHRRS. Source listings are provided in Appendix C.



Appendix A. Logic Flow of Procedure OPHRRS

TAPE RECORD FORMAT

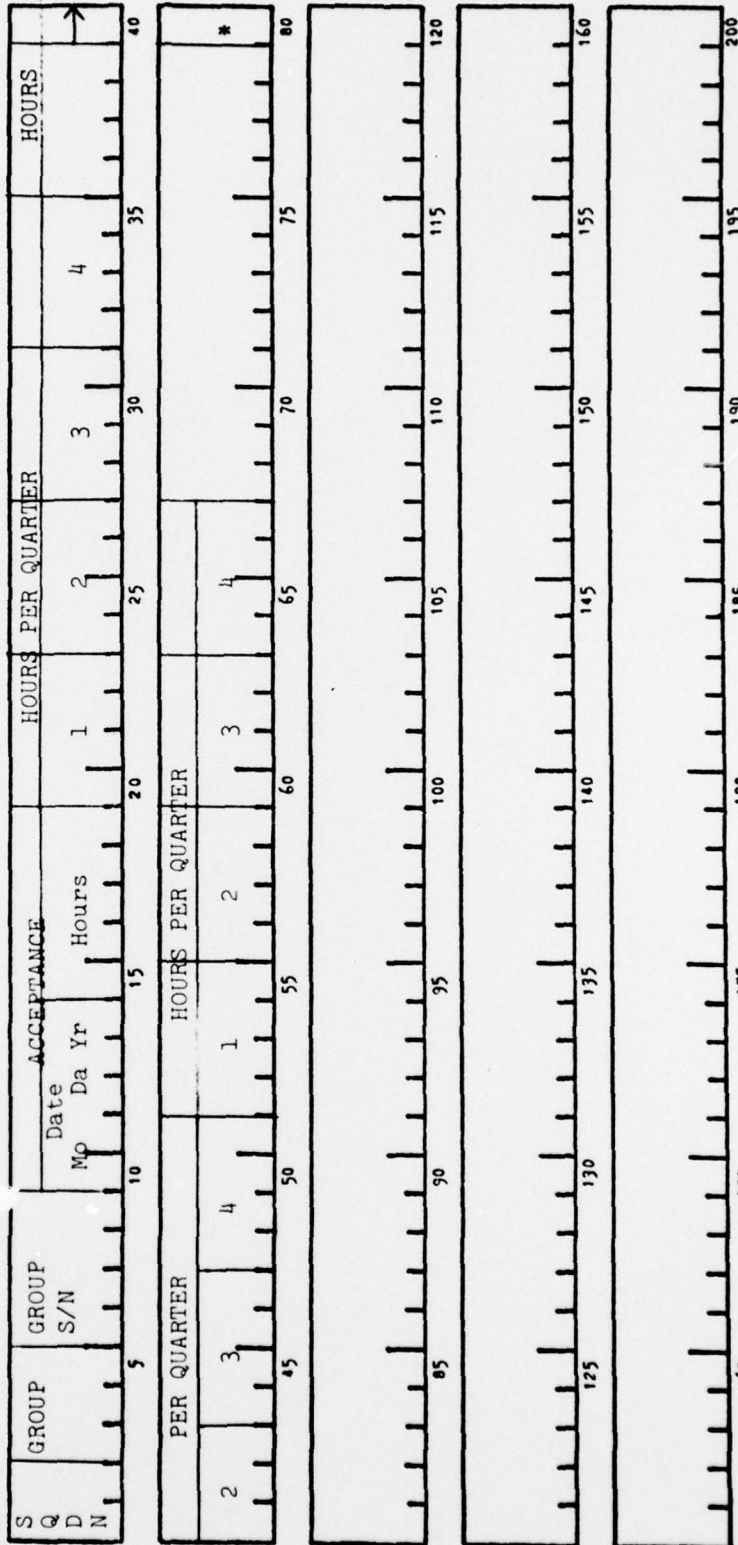
FILE NAME OPHRRS RECORD LENGTH 80 PAGE      OF      DATE     

FILE NUMBER      BLOCKING FACTOR 25

PARITY  EVEN  ODD      PAD W/9's  YES  NO      STANDARD  NON-STANDARD  NCHC

CAP  3/4"       TAPE MARK  YES  NO      HEADER  TRAILER

REMARKS: \* Enter A if 1966, 1967, 1968      Enter C if 1972, 1973, 1974  
 B if 1969, 1970, 1971      Enter D if 1975, 1976, 1977



OPHRRS SOURCE LISTINGS

C-1 CDTAPE

C-2 MRGHR

C-3 EDTAPE

APPENDIX C

C-1

] // JOB 1302-01 CDTAPE CARD-TAPE UTILITY (80/2000)

CRD 292

// ASSIGN SYS005,X'292'

// ASSIGN SYS004,X'00C'

// UPST OC100000

// EXEC CDTF

// UCT TP,FF,A=(90,80),B=(80,2000),I1,DR,R1

// END

//\*

/E

C-1 CDTAPE

C-2

90,91 93

// JOB 1302-01 MRGHRM MERGE NEW OPERATE HOURS DATA WITH OLD DATA

// ASSIGN SYS002,X'290'  
// ASSIGN SYS003,X'291'  
// ASSIGN SYS001,X'293'  
// ASSIGN SYS004,X'131'  
// DLBL SORTK1,00  
// EXTENT SYS004,999999,1,0,100,2000  
// EXEC SORT

SORT FIELDS=(1,5,A,80,1,A),FORMAT=BI,WORK=1,FILES=2  
RECORD TYPE=F,LENGTH=80  
INPFIL BLKSIZE=2000  
OUTFIL BLKSIZE=2000  
OPTICN LABEL=(U,U,U)

END  
/\*  
//\*

C-2 MRGHRM

```
// JOB 1302-01 EDTAPE MAKE CORRECTIONS
// OPTION LINK,MODUMP,NOXREF,NOLISTX
// ASSIGN SYS004,X'130'
// EXEC FCCEBL
```

```
IDENTIFICATION DIVISION.
PROGRAM-ID. EDIT69.
```

```
REMARKS. UPDATE AICAL FILE USING CARDS WITH TAPE RECORD
NUMBERS IN COLUMNS 1-5, BEGINNING COLUMN NUMBERS IN
COLUMNS 6-7, ENDING COLUMN NUMBERS IN COLUMNS 8-9,
AND NEW DATA FOR THOSE COLUMNS IN COLUMNS 10-80.
```

```
ENVIRONMENT DIVISION.
INPUT-OUTPUT SECTION.
FILE-CONTROL.
```

```
SELECT WORKFILE ASSIGN TO SYS001-DA-2314-S-SORTMK1.
SELECT CRD ASSIGN TO SYS004-UR-25408-S.
SELECT REC3IN ASSIGN TO SYS011-UT-2400-S-AVIMP.
SELECT REC3OUT ASSIGN TO SYS012-UT-2400-S-AVOUT.
```

```
DATA DIVISION.
```

```
FILE SECTION.
SD WORKFILE DATA RECORD IS SRTRC, LABEL RECORDS ARE STANDARD.
```

```
01 SRTRC.
```

```
02 CARDRECNO PIC S(17), USAGE COMPUTATIONAL-3.
02 SRTRECCOL PIC S(12), USAGE COMPUTATIONAL-3.
02 SRTRECCOL PIC S(13), USAGE COMPUTATIONAL-3.
02 SRTYDATA.
```

```
03 SRTCHAR OCCURS 71 TIMES, INDEXED BY SRTINDX, PIC X(11),
CRD LABEL RECORDS ARE OMITTED, DATA RECORD IS CARD-IMAGE.
```

```
01 CARD-IMAGE.
```

```
02 FILLER PIC X(180).
```

```
FD REC3IN LABEL RECORDS ARE OMITTED, DATA RECORD IS INREC,
BLOCK CONTAINS 25 RECORDS.
```

```
01 INREC.
```

```
02 FILLER PIC X(180).
```

```
FD REC3OUT LABEL RECORDS ARE OMITTED, DATA RECORD IS OUTREC,
BLOCK CONTAINS 25 RECORDS.
```

```
01 OUTREC.
```

```
02 OUTCHAR OCCURS 80 TIMES, INDEXED BY OUTNDX, PIC X(11).
```

```
WORKING-STORAGE SECTION.
```

```
77 ENDTEMP PIC S(99), USAGE COMPUTATIONAL, SYNC.
```

```
77 TAPERECNO PIC S(17), USAGE COMPUTATIONAL-3, VALUE 0.
```

```
77 DIFF PIC S(13), USAGE COMPUTATIONAL-3.
```

```
77 END-IND PIC X, VALUE 'C'.
```

```
77 ORPRECNO PIC S(17), USAGE COMP-3, VALUE 0.
```

```
01 UPDATE-CARD.
```

```
02 12COLS.
```

```
03 NCHAR OCCURS 9 TIMES INDEXED BY UPDNDX, PIC X(11).
```

```
02 3FIELDS REDEFINES 12COLS.
```

```
03 UPD-REC PIC 9(1).
```

```
03 UPD-BEG PIC 9(2).
```

```
03 UPD-END PIC 9(2).
```

```
02 UPD-DATA.
```

```
03 UPD-CHAR PIC X(171).
```

```
PROCEDURE DIVISION.
```

```
OPEN INPUT REC3IN, CRD, OUTPUT REC3OUT.
```

```
SET WORKFILE ASCENDING KEY CARDRECNO, INPUT PROCEDURE
```

```
READ-CARDS, OUTPUT PROCEDURE UPDATE-TAPE.
```

C-3 EDTAPE

```

CLOSE REC3IN, REC3OUT.
STOP RUN.
READ-CARDS SECTION.
GET-CRD.
  READ CRD INTO UPDATE-CARD AT END GO TO LAST-CRD.
  PERFORM TEST-CHAR THRU TEST-KIT VARYING UPDNDX FROM 1 BY 1
  UNTIL UPDNDX GREATER THAN 9.
CHECK-ELDI.
  MOVE UPD-REC TO CARDRECND.
  IF CARDRECND = 0 GO TO ERR.
  MOVE UPD-REC TO SPTBEGCOL.
  IF SPTBEGCOL = 0 OR SRTBEGCOL GREATER THAN 80 GO TO ERR.
  MOVE UPD-END TO SRTENDCOL.
  IF SPTENDCOL = 0 OR SRTENDCOL GREATER THAN 80 GO TO ERR.
  SUBTRACT SRTBEGCOL FROM SRTENDCOL GIVING DIFF.
  IF DIFF LESS THAN 0 OR DIFF GREATER THAN 71 GO TO ERP.
  MOVE UPD-CHAR TO SRTCAT4.
  RELEASE SPTREC.
  GO TO GET-CRD.
ERP. DISPLAY ' *** ERROR ', CARD-IMAGE.
  GO TO GET-CRD.
LAST-CRD.
  CLOSE CPD.
EXIT-READ.
EXIT.
TEST-CHAR SECTION.
  IF NCHAR (UPDNDX) = ' ' MOVE '0' TO NCHAR (UPDNDX)
  GO TO TEST-KIT.
  IF NCHAR (UPDNDX) LESS THAN '0' OR NCHAR (UPDNDX) GREATER
  THAN '9' GO TO ERR.
TEST-KIT.
EXIT.
UPDATE-TAPE SECTION.
  RETURN WORKFILE RECORD AT END STOP RUN.
GET-TAPE.
  READ REC3IN INTO OUTREC AT END GO TO LAST-REC.
  ADD 1 TO TAPERECND.
COMP-RECNO.
  IF CARDRECNO LESS THAN TAPERECNO GO TO GET-SRTREC.
  IF CARDRECNO = TAPERECNO GO TO UPDATE-RECORD.
  IF UPD-REC = '60' AND UPD-END = '60' AND UPD-CHAR = SPACES
  GO TO GET-TAPE.
WRITE OUTREC.
  ADD 1 TO UPRECNO.
  GO TO GET-TAPE.
UPDATE-RECORD.
  MOVE SRTENDCOL TO ENDTEMP.
  SET SRTNDX TO 1.
  PERFORM MOVECHAR THRU EXIT-MOVE VARYING OUTNDX FROM
  SRTBEGCOL BY 1 UNTIL OUTNDX GREATER THAN ENDTEMP.
GET-SRTREC.
  RETURN WORKFILE RECORD AT END MOVE '1' TO END-IND, MOVE
  9999999 TO CARDRECNO.
  GO TO COMP-RECNO.
LAST-REC.

```



```

DISPLAY SPACES.
DISPLAY TAPERECNO, ' RECORDS INPUT'.
DISPLAY OPRECNO, ' RECORDS OUTPUT'.
IF END-IND = '1' GO TO EXIT-UPD.
DISPLAY SPACES.
NXT-REC.
DISPLAY ' *** NO RECORD ', CARORECNO.
RETURN MARKFILE RECCRD AT END GC TO EXIT-UPD.
GO TO NXT-REC.
EXIT-UPD.
EXIT.
MOVECHAR SECTION.
MOVE SRTCHAR (SRTNDX) TO OUTCHAR (OUTNDX).
SET SRTNDX UP BY 1.
EXIT-MOVE.
EXIT.
/*
ENTRY
// EXEC LNKEOT
// ASSGN SYS001,2,130
// DLBL SORTMK1,0
// EXTENT SYS001,111111,1,0,3280,600
// EXEC
/*
/c

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4. TITLE (and Subtitle) PROGRAM MAINTENANCE MANUAL FOR MACCS DATA SYSTEM VOLUME II: OPHRRS PROCEDURES		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER 1302-01-3-1361
7. AUTHOR(s) NOT LISTED		8. CONTRACT OR GRANT NUMBER(s) M00024-74-C-0099 <i>ML</i>
9. PERFORMING ORGANIZATION NAME AND ADDRESS ARINC Research Corp. 2551 Riva Road Annapolis, Maryland 21401		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS COMMANDANT OF THE MARINE CORPS DEPARTMENT OF THE NAVY		12. REPORT DATE December 1974
		13. NUMBER OF PAGES 9
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) COMMANDANT OF THE MARINE CORPS DEPARTMENT OF THE NAVY		15. SECURITY CLASS. (of this report)  UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
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