

# AFCTN Test Report 94-083

AFCTB-ID  
94-092



## Technical Raster Transfer

Using:



OC-ALC/TILDOS EDCARS' Data

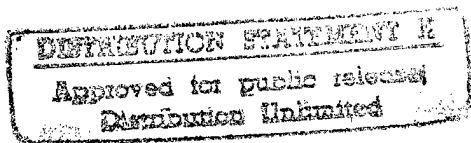


MIL-R-28002A (Raster)



Quick Short Test Report

24 June 1994



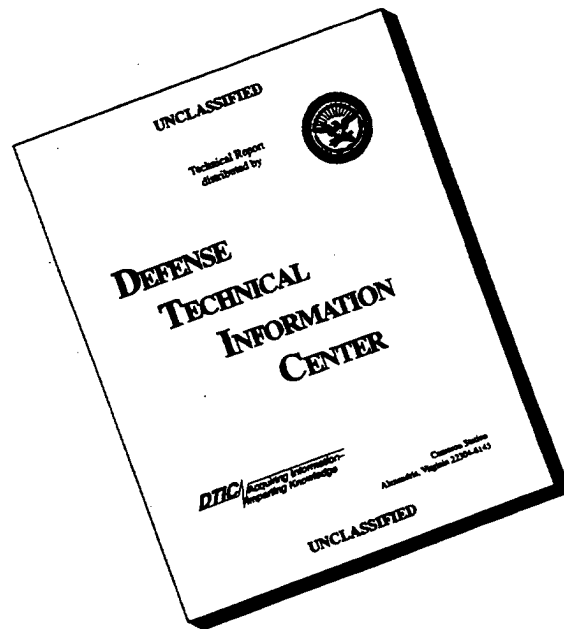
19960822 114



Prepared for  
Electronic Systems Center  
Air Force CALS Program Office  
HQ ESC/AV-2  
4027 Colonel Glenn Hwy Suite 300  
Dayton OH 45431-1672

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AFCTN Test Report  
94-083

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**Technical Raster Transfer**  
**Using:**  
**OC-ALC/TILDOS EDCARS' Data**

**MIL-STD-1840A**  
**MIL-R-28002A (Raster)**

**Quick Short Test Report**

**24 June 1994**

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# Air Force CALS Test Bed

## *Notification of Test Results*

22 July 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

### **O'Neil & Associates, Inc.**

Identified as follows:

|                 |  |
|-----------------|--|
| Title:          | <b>Technical Publication TO 12R2-2A-1661</b> |
| Program:        | <b>MILSTAR</b>                               |
| Program Office: | <b>ESC/MSL</b>                               |
| Contract No.:   | <b>F19628-89-C-0131</b>                      |
| QSTR No.:       | <b>AFCTB-ID 94-096</b>                       |

Received on the following media:     **9-Track Tape**

The results of the QSTR evaluation are as follows:

|                             |             |
|-----------------------------|-------------|
| MIL-STD-1840A Standard:     | <b>Fail</b> |
| MIL-STD-1840A Media Format: | <b>Fail</b> |
| MIL-D-28000A IGES:          | <b>Fail</b> |
| MIL-M-28001B SGML:          | <b>Fail</b> |
| MIL-R-28002A Raster:        | <b>Pass</b> |
| MIL-D-28003 CGM:            | <b>Pass</b> |

Formal results with associated disclaimer are documented and available from the AFCTB.

**Air Force CALS Test Bed  
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Dayton, OH 45431-1672  
Phone: 513-257-3085     FAX: 513-257-5881**

## Contents

|        |  |    |
|--------|--|----|
| 1.     | Introduction.....                      | 1  |
| 1.1.   | Background.....                        | 1  |
| 1.2.   | Purpose.....                           | 2  |
| 2.     | Test Parameters.....                   | 3  |
| 3.     | 1840A Analysis.....                    | 5  |
| 3.1.   | External Packaging.....                | 5  |
| 3.2.   | Transmission Envelope.....             | 5  |
| 3.2.1. | Tape Formats.....                      | 5  |
| 3.2.2. | Declaration and Header Fields.....     | 7  |
| 4.     | IGES Analysis.....                     | 8  |
| 5.     | SGML Analysis.....                     | 8  |
| 6.     | Raster Analysis.....                   | 8  |
| 7.     | CGM Analysis.....                      | 9  |
| 8.     | Conclusions and Recommendations.....   | 10 |
| 9.     | Appendix A - Tapetool Report Logs..... | 11 |
| 9.1.   | Tape Catalog.....                      | 11 |
| 9.2.   | Tape Evaluation Log.....               | 12 |
| 9.3.   | Tape File Set Validation Log.....      | 17 |
| 9.4.   | Other Tape Reading Logs.....           | 20 |

10. Appendix B - Detailed Raster Analysis.....21

    10.1. File D001R001.....21

        10.1.1. Output HiJaak Pro.....21

    10.2. File D001R002.....22

        10.2.1. Output RxHighlight.....22

## 1. Introduction

### 1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALs) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALs standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALs initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

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## 1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze OC-ALC/TILDOS' interpretation and use of the CALS standards in transferring technical Raster data. OC-ALC/TILDOS used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on two 9-track magnetic tapes.

The stated purpose of the test was to determine the source of errors that prevented the tapes from being read by the EDCARS system.

## 2. Test Parameters

**Test Plan:** AFCTB 94-092

**Date of Evaluation:** 24 June 1994

**Evaluator:** George Elwood  
Air Force CALS Test Bed  
DET 2 HQ ESC/AV-2P  
4027 Colonel Glenn Hwy  
Suite 300  
Dayton OH 45431-1672

**Data Originator:** Lisa F. Maranon  
OC-ALC/TILDOS  
3001 Staff Dr  
Tinker AFB OK 73145-3041  
(405) 736-2336  
(DSN) 336-2336

**Data Description:** Technical Raster Test  
5 Raster files

**Data Source System:** 1840

**HARDWARE** HP Apollo

**SOFTWARE** Auto-trol

Raster

**HARDWARE** HP Apollo

**SOFTWARE** Auto-trol

**Evaluation Tools Used:**

**MIL-STD-1840A (TAPE)**

SUN 3/280

AFCTN Tapetool v1.2.10 UNIX

XSoft CAPS/CALS v40.4

PC 486/50

AFCTN Tapetool v1.2.10 DOS

**MIL-R-28002 (Raster)**

HP 735

InterCAP X-Change v7.82

SUN SparcStation 2

Carberry CADLeaf Plus v3.1

AFCTN validg4

AFCTN xrastb.sun4

IGES Data Analysis (IDA) IGESView v3.0

PC 486

Inset Systems HiJaak v2.1

Expert Graphics RxHighlight v1.0

**Standards**

**Tested:**

MIL-STD-1840A

MIL-R-28002A

### 3. 1840A Analysis

#### 3.1 External Packaging

The tapes arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was not marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tapes were not enclosed in a barrier bag or barrier sheet material as required by MIL-STD-1840A, para. 5.3.1.2. One of the tape's reel was missing the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Some 9-track tape units require this BPI to be set manually. The packing lists showing all files recorded on the tapes were missing.

#### 3.2 Transmission Envelope

The 9-track tapes received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

##### 3.2.1 Tape Formats

The first tape, marked from Boeing, was run through the AFCTN *Tapetool* v1.2.10 utility. Eleven notes were reported while evaluating the contents of the tape labels. Four were "Invalid record size encountered" errors, and seven were partial block notes. All of the errors are shown in Appendix A, Section One and Two, of the Tape Import Log.

Four of the notes related to the tape label Record Length field for Type D files. Type D files contain variable length records that do not span blocks. All of the Type D files written on the tape were flagged with an illegal value for Record Length. The D001 file was expected to be Type D according to MIL-STD-1840A. The AFCTN *Tapetool* Software is expecting a value of 260 in the Record Length field but encountered a record length of 256. MIL-STD-1840A para. 5.2.1.3 requires the variable record size to be a maximum of 256 bytes. ANSI X3.27 para. 7.2.3 further states that the





#### 4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included in this evaluation.

#### 5. SGML Analysis

No Standard Generalized Markup Language (SGML) files were included in this evaluation.

#### 6. Raster Analysis

The first tape contained five Raster files. All files were evaluated using the AFCTN *validg4* utility. This program reported all five files meet the CALS MIL-R-28002A specification.

The files were read into the AFCTN *xrastb.sun4* viewing utility. No problems were noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The Raster files were read into Carberry's *CADLeaf* software and displayed without a reported error.

The files were read and displayed using IDA's *CALSVIEW* without a reported error.

The files were read into and displayed using IDA's *IGESVIEW* and *IGESVIEW for Windows* without a reported error.

The files were read into Inset Systems' *HiJaak for Windows* without a reported error. File D001R001 was printed.

The files were read using InterCAP's *X-Change* without a reported error.

---

The Raster files were converted using Rosetta Technologies' *Prepare* without a reported error. The resulting files were read into Rosetta Technologies' *Preview*, displayed and printed.

The Raster files were imported into Expert Graphics' *Rx-Highlight* and displayed without a reported error. File D001R002 was printed.

The Raster files, on tape one, meet the CALS MIL-R-28002A specification.

## **7. CGM Analysis**

No Computer Graphics Metafile (CGM) files were included in this evaluation.

## 8. Conclusions and Recommendations

The physical structure of the first tape from OC-ALC/TILDOS meets the requirements defined in MIL-STD-1840A. The Document Declaration file on this tape had two reported errors and does not meet the requirements defined in MIL-STD-1840A.

The second tape was not a valid tape and contained no usable data. It does not meet the CALS MIL-STD-1840A requirements.

The Raster files, on tape one, meet the CALS MIL-R-28002A specification.

The tapes submitted by OC-ALC/TILDOS do not meet the CALS MIL-STD-1840A requirements.

---

## 9. Appendix A - Tapetool Report Logs

### 9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

- MIL-STD-1840A (1987) - Automated Interchange of Technical Information
- ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes  
for Information Interchange
- ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Jun 24 10:55:30 1994

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set077

Page: 1

| File Name   | File Type            | Record<br>Format/<br>Length | Block<br>Length/Total | Selected/<br>Extracted |
|---|----------------------|-----------------------------|-----------------------|------------------------|
| D001  | Document Declaration | D/00256                     | 02048/000001          | Extracted              |
| *** NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size<br>encountered. Header => 256, Expected => 260  |                      |                             |                       |                        |
| *** NOTE (ANSI X3.27; 8.5.2.6) - Record Length for Recording Format Type D<br>shall be the maximum length of a Measured Data Unit (MDU).  |                      |                             |                       |                        |
| *** NOTE (ANSI X3.27; 7.2.3) - A variable length record shall be contained<br>in an MDU. An MDU consists of a four byte Record Control Word (RCW)<br>followed immediately by the variable record. |                      |                             |                       |                        |
| *** NOTE (ANSI X3.4) - A Record Control Word shall consist of four characters<br>that express the sum of the lengths of the RCW and the variable record.  |                      |                             |                       |                        |
| D001R001  | Raster               | F/00128                     | 02048/000037          | Extracted              |
| D001R002  | Raster               | F/00128                     | 02048/000018          | Extracted              |
| D001R003  | Raster               | F/00128                     | 02048/000018          | Extracted              |
| D001R004  | Raster               | F/00128                     | 02048/000012          | Extracted              |
| D001R005  | Raster               | F/00128                     | 02048/000007          | Extracted              |

Catalog Process terminated with 0 error(s), 0 warning(s), and 4 note(s).

## 9.2 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Jun 24 10:55:24 1994

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1ATTC01

3

Label Identifier: VOL1  
Volume Identifier: ATTC01  
Volume Accessibility:  
Owner Identifier:  
Label Standard Version: 3

\*\*\* NOTE (ANSI X3.27; 8.3.1.8) - The Label Standard Version should be 4 to  
represent the current level of ANSI X3.27.

HDR1D001

00010001000100 94062 94062 000000

Label Identifier: HDR1  
File Identifier: D001  
File Set Identifier:  
File Section Number: 0001  
File Sequence Number: 0001  
Generation Number: 0001  
Generation Version Number: 00  
Creation Date: 94062  
Expiration Date: 94062  
File Accessibility:  
Block Count: 000000  
Implementation Identifier:

---

HDR2D0204800256

00

Label Identifier: HDR2  
Recording Format: D  
Block Length: 02048  
Record Length: 00256  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

Actual Block Size Found = 375 Bytes.

\*\*\* NOTE - Last block was incomplete. Short blocks are  
proned to be interpreted as noise by some tape drives.  
Tape Label => 2048, Actual => 375, Block Number => 1

Number of data blocks read = 1.

\*\*\*\*\* Tape Mark \*\*\*\*\*

EOF1D001                    00010001000100 94062 94062 000001

<<<< PART OF LOG FILE REMOVED HERE >>>>

\*\*\*\*\* Tape Mark \*\*\*\*\*

Actual Block Size Found = 2048 Bytes.

\*\*\* NOTE - Last block was incomplete. Short blocks are  
proned to be interpreted as noise by some tape drives.  
Tape Label => 2048, Actual => 768, Block Number => 37

Number of data blocks read = 37.

\*\*\*\*\* Tape Mark \*\*\*\*\*

EOF1D001R001                00010002000100 94062 94062 000037

<<<< PART OF LOG FILE REMOVED HERE >>>>

\*\*\*\*\* Tape Mark \*\*\*\*\*

Actual Block Size Found = 2048 Bytes.

\*\*\* NOTE - Last block was incomplete. Short blocks are  
proned to be interpreted as noise by some tape drives.  
Tape Label => 2048, Actual => 896, Block Number => 18

Number of data blocks read = 18.

\*\*\*\*\* Tape Mark \*\*\*\*\*

EOF1D001R002                   00010003000100 94062 94062 000018  
                                  <<<<< PART OF LOG FILE REMOVED HERE >>>>>

\*\*\*\*\* Tape Mark \*\*\*\*\*

Actual Block Size Found = 2048 Bytes.

\*\*\* NOTE - Last block was incomplete. Short blocks are  
proned to be interpreted as noise by some tape drives.  
Tape Label => 2048, Actual => 256, Block Number => 18

Number of data blocks read = 18.

\*\*\*\*\* Tape Mark \*\*\*\*\*

EOF1D001R003                   00010004000100 94062 94062 000018  
                                  <<<<< PART OF LOG FILE REMOVED HERE >>>>>

\*\*\*\*\* Tape Mark \*\*\*\*\*

Actual Block Size Found = 2048 Bytes.

\*\*\* NOTE - Last block was incomplete. Short blocks are  
proned to be interpreted as noise by some tape drives.  
Tape Label => 2048, Actual => 1536, Block Number => 12

Number of data blocks read = 12.

\*\*\*\*\* Tape Mark \*\*\*\*\*



---

\*\*\*\*\* Tape Mark \*\*\*\*\*

Actual Block Size Found = 2048 Bytes.

\*\*\* NOTE - Last block was incomplete. Short blocks are  
proned to be interpreted as noise by some tape drives.  
Tape Label => 2048, Actual => 1152, Block Number => 7

Number of data blocks read = 7.

\*\*\*\*\* Tape Mark \*\*\*\*\*

EOF1D001R005                    00010006000100 94062 94062 000007

Label Identifier: EOF1  
File Identifier: D001R005  
File Set Identifier:  
File Section Number: 0001  
File Sequence Number: 0006  
Generation Number: 0001  
Generation Version Number: 00  
Creation Date: 94062  
Expiration Date: 94062  
File Accessibility:  
Block Count: 000007  
Implementation Identifier:

EOF2F0204800128

00

Label Identifier: EOF2  
Recording Format: F  
Block Length: 02048  
Record Length: 00128  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

\*\*\*\*\* Tape Mark \*\*\*\*\*

##### End of Volume ATTC01 #####

##### End Of Tape File Set #####

Deallocating /dev/rmt0...

Tape Import Process terminated with 0 error(s), 0 warning(s),  
and 7 note(s).

---

## 9.3 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Fri Jun 24 10:55:30 1994

MIL-STD-1840A File Set Evaluation Log

File Set: Set077

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: Boeing Test

srcdocid: MIL-STD-1840A Sample Raster Images

srcrelid: NONE

chglvl: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid change level encountered.

\*\*\* NOTE (MIL-STD-1840A; 5.1.1.2) - Change level should be the word ORIGINAL or a Revision Number followed by a Change Level Number followed by a Change Level Date. They should be separated by a comma or space.

dteisu: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid date format encountered.

\*\*\* NOTE (MIL-STD-1840A; 5.1.1.2) - Date Format shall be a four digit year followed by a two digit month followed by a two digit day.

dstsys: EDCARS

dstdocid: MIL-STD-1840A Sample Raster Images

dstrelid: NONE

dtetrn: 19940120

dlvacc: NONE

filcnt: R5

ttlcls: Unclassified

doccls: Unclassified

doctyp: Unclassified

docttl: Auto-trol conversion to CALS group 4

2 error(s), 0 warning(s), and 2 note(s) were encountered  
in Document Declaration File D001.

Found file: D001R001

Extracting Raster Header Records...

Evaluating Raster Header Records...

srcdocid: DL123456789            99999AA            FL 00010001UMFEHN  
dstdocid: 123456789  
txtfilid: NONE  
figid: NONE  
srcgph: NONE  
doccls: U  
rtype: 1  
rorient: 000,270  
rpelcnt: 010188,007366  
rdensty: 0300  
notes: Auto-trol conversion to CCITT Group 4

Saving Raster Header File: D001R001\_HDR  
Saving Raster Data File: D001R001\_GR4

Found file: D001R002  
Extracting Raster Header Records...  
Evaluating Raster Header Records...

srcdocid: DL223456789            99999AA            FL 00010001UMFEHN  
dstdocid: 223456789  
txtfilid: NONE  
figid: NONE  
srcgph: NONE  
doccls: Unclassified  
rtype: 1  
rorient: 000,270  
rpelcnt: 003103,002364  
rdensty: 0300  
notes: Auto-trol conversion to CCITT Group 4

Saving Raster Header File: D001R002\_HDR  
Saving Raster Data File: D001R002\_GR4

Found file: D001R003  
Extracting Raster Header Records...  
Evaluating Raster Header Records...

srcdocid: DL323456789            99999AA            FL 00010001UMFEHN  
dstdocid: 323456789  
txtfilid: NONE  
figid: NONE  
srcgph: NONE  
doccls: Unclassified  
rtype: 1  
rorient: 000,270  
rpelcnt: 003077,002318  
rdensty: 0300

---

notes: Auto-trol conversion to CCITT Group 4

Saving Raster Header File: D001R003\_HDR  
Saving Raster Data File: D001R003\_GR4

Found file: D001R004  
Extracting Raster Header Records...  
Evaluating Raster Header Records...

srcdocid: DL423456789            99999AA            FL 00010001UMFEHN  
dstdocid: 423456789  
txtfilid: NONE  
figid: NONE  
srcgph: NONE  
doccls: Unclassified  
rtype: 1  
rorient: 000,270  
rpelcnt: 003074,002311  
rdensty: 0300  
notes: Auto-trol conversion to CCITT Group 4

Saving Raster Header File: D001R004\_HDR  
Saving Raster Data File: D001R004\_GR4

Found file: D001R005  
Extracting Raster Header Records...  
Evaluating Raster Header Records...

srcdocid: DL523456789            99999AA            FL 00010001UMFEHN  
dstdocid: 523456789  
txtfilid: NONE  
figid: NONE  
srcgph: NONE  
doccls: Unclassified  
rtype: 1  
rorient: 000,270  
rpelcnt: 003053,002307  
rdensty: 0300  
notes: Auto-trol conversion to CCITT Group 4

Saving Raster Header File: D001R005\_HDR  
Saving Raster Data File: D001R005\_GR4

Evaluating numbering scheme...  
No errors were encountered during numbering scheme evaluation.  
Numbering scheme evaluation complete.

Checking file count...

No errors were encountered during file count verification.  
File Count verification complete.

A total of 2 error(s), 0 warning(s), and 2 note(s) were  
encountered in Document D001.

A grand total of 2 error(s), 0 warning(s), and 2 note(s) were  
encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

## 9.4 Other Tape Reading Logs

```
/cals/caps/Bin/read1840A: --- Read declaration file 'D001' ---  
/cals/caps/Bin/read1840A: writing data file  
'aftb9492/MIL-STD-1840ASam/MIL-STD-1840ASam1.R.cci'.  
/cals/caps/Bin/read1840A: writing data file  
'aftb9492/MIL-STD-1840ASam/MIL-STD-1840ASam2.R.cci'.  
/cals/caps/Bin/read1840A: writing data file  
'aftb9492/MIL-STD-1840ASam/MIL-STD-1840ASam3.R.cci'.  
/cals/caps/Bin/read1840A: writing data file  
'aftb9492/MIL-STD-1840ASam/MIL-STD-1840ASam4.R.cci'.  
/cals/caps/Bin/read1840A: writing data file  
'aftb9492/MIL-STD-1840ASam/MIL-STD-1840ASam5.R.cci'.  
-- declaration file indicates 0 files of type T  
-- declaration file indicates 0 files of type G  
-- declaration file indicates 0 files of type H  
-- declaration file indicates 0 files of type Q  
-- declaration file indicates 5 files of type R  
-- declaration file indicates 0 files of type C  
-- declaration file indicates 0 files of type X  
-- declaration file indicates 0 files of type P  
-- declaration file indicates 0 files of type Z
```



## 10.2 File D001R002

### 10.2.1 Output RxHighlight

|   |  |  |                   |                                     |                       |
|---|--|--|-------------------|-------------------------------------|-----------------------|
| MODEL C-135                               |  | ITEM 01190                                     |                   | REV. LTR.                           |                       |
| PARTS LIST <b>BOEING</b>                  |  | CORPORATE OFFICES<br>SEATTLE, WASHINGTON 98124 |                   | CAGE CODE<br>82918                  | REV. DATE<br>93-04-21 |
|   |  |  |                   | PL 661-13033                        | SH 1 OF 4             |
| LIST TITLE<br>DETAILS - BATTERY HOLD DOWN |  |  | GROUP<br>AVIONICS | CONTRACT NUMBER<br>F34601-90-C-1336 |                       |

| APPLICATION LIST |               |       |               |                         | REV SYM |
|------------------|---------------|-------|---------------|-------------------------|---------|
| PART NO.         | NEXT ASSEMBLY | MODEL | SERIAL NUMBER |                         |         |
| -1               | 661-13031     | C-135 | -             | DRAWING PICTURE SHEET 1 |         |
| -2               | 661-13024     | C-135 | -             | DRAWING PICTURE SHEET 1 |         |

| REVISIONS |   |         |       |                    |
|-----------|---|---------|-------|--------------------|
| REV SYM   | DESCRIPTION OF CHANGE   | DATE    | CLASS | CHG CONTROL NUMBER |
| -         | NEW DRAWING - WBS 110GA ITEM 119. CHANGE EFF - C-135 (E0600) KFO01-KFO50. DESIGN GROUP - J. HOWELL 526-4490. MFG ENG - K. PARKER R4PP 93/03/29. QUANTITY ASSURANCE - V. ANDREO 93/04/06 | 4-21-93 |       | EA93-135A1-16      |

| ASSEMBLY BREAKDOWN LIST |                            |                             |           |   | REV SYM |
|-------------------------|----------------------------|-----------------------------|-----------|---|---------|
| QTY REQD                | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION | NOTE CODE | NOTES   |         |
| -                       | -1                         | RETAINING ROD               | - ND      | FIN F-8.07<br>STOCK .25 DIA X (11.0)<br>15-5PH ROD PER AMS5659 SOLUTION HEAT TREATED<br>HT TR 150-170 KSI PER MIL-H-6875 (BAC5619 MANDATORY FOR BOEING AND ITS SUBCONTRACTORS)  |         |
|                         |                            |                             | DP        | DRAWING PICTURE SHEET 1   |         |
|                         |                            |                             | GA        | TAG PER MIL-STD-130 (BAC5307 MANDATORY FOR INTERNAL USE BY BOEING AND ITS SUBCONTRACTORS)   |         |
| -                       | -2                         | SUPPORT TEE                 | - ND      | FIN F-12.37<br>STOCK 1.00 (1.6X1.8)<br>BAC1527-64 EXTRUSION. 15-5PH PER AMS5659 DR 1.00 INCH THICK 15-5PH BAR STOCK PER AMS5659<br>HT TR 150-170 KSI PER MIL-H-6875 (BAC5619 MANDATORY FOR BOEING AND ITS SUBCONTRACTORS) |         |
|                         |                            |                             | DP        | DRAWING PICTURE SHEET 1   |         |
|                         |                            |                             | GA        | RUBBER STAMP ALL CHARACTERS .12-.20 PER MIL-STD-130 (BAC5307 MANDATORY FOR INTERNAL USE BY BOEING AND THEIR SUBCONTRACTORS)   |         |
| -                       | D2-5000                    | PROCESS DOC                 | -         |   |         |
| -                       | MILSTD130                  | MIL STD                     | - VN      | MIL-STD-130   |         |
| -                       | 661-10004                  | SUBSTITUTION DWG            | -         |   |         |
| -                       | BAC5300                    | PROCESS SPEC                | -         |   |         |

ASSY LIST (CONTINUED ON NEXT PAGE)