

TITLE: NOB/BE 1 Application Installation Handbook

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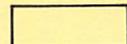
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Corresponds to NOS/BE LV530 release. Deletes all of old section 7 (777/IGS); deletes all of old section 8 (SIMSCRIPT 1.5 Version 3); updates old section 9 (TIGS Product Options) and rennumbers it section 7; deletes TOTAL UNIVERSAL 1 in old section 10 and rennumbers the remainder as section 8; rennumbers old section 11 to section 9. This edition obsoletes all previous editions.



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**NOS/BE 1  
APPLICATION INSTALLATION  
HANDBOOK**

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**CDC<sup>®</sup> COMPUTER SYSTEMS:  
CYBER 70 SERIES MODELS 72/73/74  
6000 SERIES COMPUTER SYSTEMS  
CYBER 170 SERIES COMPUTER SYSTEM  
CYBER 170-700 SERIES MODELS 720/730/  
750/760/770**

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750/760/770**



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**INSTALLATION AND MODIFICATION**

This handbook presents information pertaining to the installation of applications software under NOS/BE. While the information in this handbook describes the application installation, users should reference the "Introduction" to NOS/BE Installation Handbook for additional information.

The application products presented are intended for use only as described in this handbook. Control Data cannot be responsible for the proper functioning of undescribed features or parameters.

**RELEASE TAPES**

The following application products are available under NOS/BE:

<u>Application</u>	<u>Tape</u>	<u>Section</u>
APEX III Out-of-Core System 1	PL45	2
APEX III Mixed Integer Programming Option	PL51	2
APEX III Matrix Reduction Option	PL52	2
APEX III Parametrics Option	PL53	2
APT IV 2	PL59A	3
GPSS V/6000 1.3	PL35	4
IMSL 7	PL87	5

<u>Application</u>	<u>Tape</u>	<u>Section</u>
PERT/TIME 2	PL85	6
TIGS 1	PL86A	7
Tektronix 401X Post Processor under TIGS	PL86B	7
CDC 795 Post Processor under TIGS	PL86D	7
CHROMATICS 1599 Post Processor	PL86E	7
TOTAL Universal 2	PL75	8
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**RELATED DOCUMENTATION**

The following manuals contain relevant information on NOS/BE and/or the application products described in this handbook.

<u>Title</u>	<u>Publication No.</u>
NOS/BE Installation Handbook	60494300
APEX III Reference Manual	76070000
Application Executive Reference Manual	17322200
APT IV V2 Reference Manual	17326900
APT IV Internal Maintenance Specification	
Beginning Graphics Users Guide	76077300
Data Handler Reference Manual	17322100
GPSS V/6000 General Information Manual	84003900
IMSL Reference Manual (Volumes 1-2)†	SMD150043
PERT/TIME General Information Manual	60133300
PERT/TIME Reference Manual	60133600
TIGS V1 Reference Manual	60455940
TOTAL Universal Reference Manual	76070300

† These manuals may be ordered by title from Control Data Corporation, Software Manufacturing and Distribution, 4201 North Lexington Avenue, St. Paul, Minnesota 55112.

**APEX-III OUT-OF-CORE SYSTEM 1**

**RELEASE DESCRIPTION**

APEX-III Out-of-Core System 1 runs under the NOS/BE operating system. The FORTRAN Extended compiler is required for compiling APEX-III. APEX-III Out-of-Core System 1 is designed to execute from permanent files.

**Hardware Requirements**

APEX-III Out-of-Core System 1 requires the same minimum hardware configuration as NOS/BE except that a minimum field length of 100K octal is required to compile the system and a minimum of 64K octal is required to execute APEX-III.

**Deficiencies**

None.

**Release Materials**

APEX-III Out-of-Core System 1 resides on the tape known as PL45, in either 7-track (800 bpi) or 9-track (800 or 1600 cpi) format, has label OOCAPEXIII1P2 and contains nine binary files.

- File 1 - installation and verification deck in UPDATE PL form,
- File 2 - empty,
- File 3 - empty,
- File 4 - source code in UPDATE PL form,
- File 5 - empty,
- File 6 - sample output from the Out-of-Core System verification run,
- File 7 - sample output from the Mixed Integer Programming verification run,
- File 8 - sample output from the Matrix Reduction verification run, and
- File 9 - sample output from the Parametrics verification run.

A listing of the installation and verification deck (APEXC1) may be obtained from PL45 by executing the following job:

```

LIST, ( MT1
      HD1
      PE1 ).
ACCOUNT. (Supply valid ACCOUNT card.)

LABEL(OLDPL,R,L=OOCAPEXIII1P2, D=( HY
      HD
      PE ),
      VSN=APXOOC)
UPDATE(F,*==,L=7)
7/8/9
6/7/8/9
    
```

**INSTALLATION PARAMETERS**

None.

**INSTALLATION AND VERIFICATION PROCEDURE**

APEX-III Out-of-Core System 1 is installed and verified by executing deck APEXC1 contained on the first file of PL45. For those installations that have available any of the APEX-III options, deck APEXC1 may also be used to install and verify the APEX-III Out-of-Core System 1 with any combination of the APEX-III Mixed Integer Programming Option (MIP), APEX-III Matrix Reduction Option, and APEX-III Parametrics Option.

The deck APEXC1 performs three functions:

1. Reads the APEX-III Out-of-Core System from PL45, merging any APEX-III Options to be installed with the Out-of-Core System, compiles the combined system, and installs an executable file of the APEX-III system on a permanent file named APEXIII with the ID = APEX.
2. Makes a verification run for the Out-of-Core System and each option installed.
3. Copies sample verification run output from the release tape to OUTPUT for use in validating correct execution of the verification run(s).

This job deck also creates three permanent files which are needed when one uses the APEX-III USER feature. (Reference the APEX-III Reference Manual for detailed information.) For those installations where the USER feature is used infrequently, it may be desirable to maintain these three files on magnetic tape rather than permanent files. These three files are described below:

<u>Name</u>	<u>ID</u>	<u>Contents</u>
APEXPL	APEX	Partial APEX-III source code. Contains APEX-III COMMON regions and subroutines QBUFFER, QGET, QUSER, and QUSERDA.
APEXOV	APEX	Relocatable binary code of APEX-III overlay drivers.
APEXRL	APEX	Relocatable binary code of remaining APEX-III subroutines.

The deck APEXC1 contains UPDATE IF,DEF directives to simplify installation. The names used by these directives and their meaning when DEFINED are as follows:

Name	Effect on Installation Job
MT	Uses 7-track magnetic tapes.
HD	Uses 9-track, 800 cpi, magnetic tapes.
PE	Uses 9-track, 1600 cpi, magnetic tapes.
MIP	APEX-III Mixed Integer Programming Option is installed with APEX-III Out-of-Core System 1.
RED	APEX-III Matrix Reduction Option is installed with APEX-III Out-of-Core System 1.
PAR	APEX-III Parametrics Option is installed with APEX-III Out-of-Core System 1.
CYB176	Required when installing on a CYBER 176.

APEXC1 may be extracted from PL45 and submitted for execution via the following job. Note that APEXC1 requires a change for execution. A valid ACCOUNT card must be supplied.

```
INST, { MT1
        HD1
        PE1 }
```

ACCOUNT. (Supply valid ACCOUNT card.)

```
LABEL(OLDPL,R,L=OOCAPEXIIIIV1P2, D= { HY
                                         HD
                                         PE } ,
      VSN=APXOOC)
```

REQUEST, COMPILE, \*Q .

UPDATE(Q, \*==,D,8)

ROUTE(COMPILE,DC=IN)

7/8/9

=IDENT,INST

```
=DEFINE { MT
          HD
          PE }
```

=DEFINE MIP (If Mixed Integer Programming Option.)

=DEFINE RED (If Matrix Reduction Option.)

=DEFINE PAR (If Parametrics Option.)

=DEFINE CYB176 (If installing on a CYBER 176.)

=D,APEXC1.8

ACCOUNT. (Supply valid ACCOUNT card.)

=C,APEXC1

7/8/9

6/7/8/9

#### Error Messages

A nonfatal loader error will be encountered in loading the APEX-III system. The error message is of the form:

```
NE4102///DUPLICATE ENTRY POINT NAME-EXIT
PROGRAM NAME —— FORSYS=
LAST FILE ACCESSED - FORTRAN
```

Errors of any other form should be investigated.

## APEX-III MIXED INTEGER PROGRAMMING OPTION (MIP)

### RELEASE DESCRIPTION

The APEX-III Mixed Integer Programming Option runs under NOS/BE when installed with APEX-III Out-of-Core System 1. The FORTRAN Extended compiler is required for compiling and updating APEX-III MIP. APEX-III MIP is designed to execute from permanent files.

### Hardware Requirements

APEX-III MIP requires the same minimum hardware configuration as NOS/BE except that a minimum field length of 100K octal is required to compile the system and a minimum of 64K octal is required for execution.

### Deficiencies

None.

### Release Materials

The APEX-III MIP resides on the tape known as PL51. PL51, in either 7-track (800 bpi) or 9-track (800 or 1600 cpi) format, has label MIPAPEXIIIIV1P2 and contains six binary files.

File 1 - empty,  
File 2 - empty,  
File 3 - empty,  
File 4 - source code in UPDATE PL form,  
File 5 - empty, and  
File 6 - empty.

### INSTALLATION PARAMETERS

None.

### INSTALLATION AND VERIFICATION PROCEDURE

The APEX-III MIP must be installed with APEX-III Out-of-Core System 1. The installation deck, APEXC1, on the APEX-III Out-of-Core System 1 tape, known as PL45, is used to install and verify the MIP Option. The name MIP is defined for the UPDATE IF,DEF directives in deck APEXC1 to merge the MIP Option with the Out-of-Core system.

(Reference "Installation and Verification Procedure" for APEX-III Out-of-Core System 1 for details of installation and expected error messages.)

## **APEX-III MATRIX REDUCTION OPTION (REDUCE)**

### **RELEASE DESCRIPTION**

The Apex-III Matrix Reduction Option runs under the NOS/BE operating system when installed with APEX-III Out-of-Core System 1. The FORTRAN Extended compiler is required for compiling and updating APEX-III REDUCE. APEX-III REDUCE is designed to execute from permanent files.

### **Hardware Requirements**

APEX-III REDUCE requires the same minimum hardware configuration as NOS/BE except that a minimum field length of 100K octal is required to compile the system and a minimum of 64K octal is required for execution.

### **Deficiencies**

None.

### **Release Materials**

The APEX-III Matrix Reduction Option resides on the tape known as PL52. PL52, in either 7-track (800 bpi) or 9-track (800 or 1600 cpi) format, has label REDAPEXIII1P2 and contains six binary files.

File 1 - empty,  
File 2 - empty,  
File 3 - empty,  
File 4 - source code in UPDATE PL form,  
File 5 - empty, and  
File 6 - empty.

### **INSTALLATION PARAMETERS**

None.

### **INSTALLATION AND VERIFICATION PROCEDURE**

The APEX-III Matrix Reduction Option must be installed with APEX-III Out-of-Core System 1. The installation deck, APEXC1, on the APEX-III Out-of-Core System 1 tape, known as PL45, is used to install and verify the REDUCE Option. The name RED is defined for the UPDATE IF,DEF directives in deck APEXC1 to merge the REDUCE Option with the out-of-core system.

(Reference "Installation and Verification Procedure" for APEX-III Out-of-Core System 1 for details of installation and expected error messages.)

## **APEX-III PARAMETRICS OPTION**

### **RELEASE DESCRIPTION**

The APEX-III Parametrics Option runs under the NOS/BE operating system when installed with APEX-III Out-of-Core System 1. The FORTRAN Extended compiler is required for compiling and updating APEX-III Parametrics. APEX-III Parametrics is designed to execute from permanent files.

### **Hardware Requirements**

APEX-III Parametrics requires the same minimum hardware configuration as NOS/BE except that a minimum field length of 100K octal is required to compile the system and a minimum of 64K octal is required for execution.

### **Deficiencies**

None.

### **Release Materials**

The APEX-III Parametrics Option resides on the tape known as PL53. PL53, in either 7-track (800 bpi) or 9-track (800 or 1600 cpi) format, has label PARAPEXIII1P2 and contains six binary files.

File 1 - empty,  
File 2 - empty,  
File 3 - empty,  
File 4 - source code in UPDATE PL form,  
File 5 - empty, and  
File 6 - empty.

### **INSTALLATION PARAMETERS**

None.

### **INSTALLATION AND VERIFICATION PROCEDURE**

The APEX-III Parametrics Option must be installed with APEX-III Out-of-Core System 1. The installation deck, APEXC1, on the APEX-III Out-of-Core System 1 tape known as PL45, is used to install and verify the Parametrics Option. The name PAR is defined for the UPDATE IF,DEF directives in deck APEXC1 to merge the Parametrics Option with the out-of-core system.

(Reference "Installation and Verification Procedure" for APEX-III Out-of-Core System 1 for details of installation and expected error messages.)

## RELEASE DESCRIPTION

APT IV Version 2 (APT IV 2) is a numerical control language processor designed to generate cutter location coordinates. The user has the capability to fully describe the part to be machined and then drive the tool along the chosen path. The output from APT IV 2 is a verification listing and a file for input to a post processor. APT IV 2 has all the capabilities of APT IV in addition to new language features and extensions.

APT IV 2 runs under the NOS/BE operating system on a CDC host computer having at least 65,000 words of central memory.

## RELEASE MATERIALS

APT IV 2 resides on the tape known as PL59A. This release tape contains six files:

File 1 - installation/maintenance program library.

File 2 - absolute modules of the APT IV 2 system. The file should be placed on the system library if the user does not wish to modify the APT IV processor. File 3 of PL59A was used to make file 2.

File 3 - relocatable binary records of all routines needed for the standard mode; included are the binary records, COD4, PRD4, PTR4, POO4 and COO4 which are produced by the LOAD COMPLEX. This file is ready to be loaded by the host computer system and will produce the absolute modules contained on file 2.

File 4 - program library in UPDATE format. Following the YANK\$\$\$ deck, the first 67 decks, TAPEOP through ZSSPICT, are common decks called by one or more of the succeeding decks. The next 16 decks, LLDM through LBCDBIN, are the LOAD COMPLEX. The next deck, LLCDATA, is data used by the LOAD COMPLEX routines. The next 93 decks, TAPT4T through TLCANON, are the TRANSLATOR. The next 378 decks, XAPT4E through XTRANSF57 are the EXECUTION COMPLEX. The next 45 decks, CAPT4C through CTAPEWT are the CLEditor. The last 18 decks, PAPT4P through PTAPEWT are the POST EXEC.

File 5 - sample part program. Job control cards are provided for correct operation with system overlays resident in the system library, permanent files, or user library.

File 6 - listing of the sample job, not including the dayfile.

## INSTALLATION REQUIREMENTS

The system has four general modes of operation:

1. Standard mode - offers all capabilities except parametric and sculptured surfaces. This mode requires approximately 115,000<sub>g</sub> words of field length to build the system and for execution.
2. Parametric surface mode - offers all capabilities of the standard system plus the added features of parametric surface processing. This mode does not include sculptured surface processing. Approximately 115,000<sub>g</sub> words are required to build the system and (115,000<sub>g</sub> plus the length of the FORTRAN parametric surface routines) words for execution.
3. Sculptured surface mode - offers all capabilities of the standard system plus the added features of sculptured surfaces processing. This mode does not include parametric surface processing. Approximately 135,000<sub>g</sub> words are required to build and execute the system.
4. Parametric and sculptured mode - both parametric and sculptured surface processing may be used. Approximately 135,000<sub>g</sub> words are required to build the system and (135,000<sub>g</sub> plus the length of the FORTRAN parametric surface routine) words for execution.

## INSTALLATION OPTIONS

The user may choose one of four modes:

Parametric surface,  
Sculptured surface,  
Parametric and sculptured surface, and  
Neither parametric nor sculptured surface.

The release system operates with neither parametric nor sculptured surfaces.

In addition to the above mode, the user may choose one of three residences for the APT system:

System library,  
Permanent files, or  
User library.

The released system operates from the system library.

The user may wish to have local modifications incorporated.

## INSTALLATION PROCEDURES

The following control cards may be used to obtain a listing of the installation decks from PL59A:

```

LIST, { MT1
      { HD1 .
      { PE1
ACCOUNT.
LABEL(OLDPL,R,L=APT4V2, D= { HY
                           { HD }, VSN=PL59A)
                           { PE }
UPDATE(F,*=$$$$ ,L=A1247)
7/8/9
6/7/8/9
  
```

The following DEFINE options are specifiable in the installation decks:

```

{ STANDARD
  COMPLEX
  { SYSTEM,
  { PERMFILE, } { SSSURF, } { PARSURF } } { HY
                                           { HD
                                           { PE
  
```

## STANDARD APT SYSTEM INSTALLATION

The standard APT IV 2 system is on file 2 of the release tape, PL59A. The standard APT system is installed into the host computer operating system via an EDITLIB (SYSTEM). The standard APT system does not include parametric or sculptured surfaces.

The selection of the standard APT system precludes the selection of any and all other parameters except MT/NT. The UPDATE deck to perform the installation of the standard system is as follows:

```

STAN, { MT1
      { HD1 .
      { PE1
ACCOUNT.
LABEL(OLDPL,R,L=APT4V2, D= { HY
                           { HD }, VSN=PL59A)
                           { PE }
REQUEST(COMPILE,*Q)
UPDATE(Q,*=$$$$ ,D,8)
ROUTE(COMPILE,DC=IN)
7/8/9
$IDENT,DECKSEL
$DELETE,STANDECK.13 (To change ACCOUNT
                    cards as needed.)
ACCOUNT.
$DEFINE, { HY
         { HD
         { PE
$DEFINE,STANDARD
$COMPILE,STANDECK
6/7/8/9
  
```

If the user selects to install the standard system, the user must be prepared to do system EDITLIBs.

One of the following tape densities must be defined to install APT:

```

HY      7-TRACK,800BPI
HD      9-TRACK,800BPI
PE      9-TRACK,1600CPI
  
```

## MODIFICATION OF THE LOAD COMPLEX ROUTINES

The deck COMPLEX may be used to modify the five relocatable decks produced by the LOAD COMPLEX. The names of the decks are COD4, PRD4, PTR4, POO4, and COO4. Once the user modifications are determined and inserted, the deck COMPLEX compiles the LOAD COMPLEX routines LLDM through LBCDBIN. The deck LCCDATA, which is to be modified by the user, is the input data for the LOAD COMPLEX execution. The output, five FORTRAN BLOCK DATA routines, is then compiled and the relocatable decks replace their counterparts on file 3 of the new release tape.

Next, the user should complete the installation of the APT system by running a second job to specify any other installation option.

### NOTE

Use of the COMPLEX option precludes the use of the standard option in this next job.

The deck SOURCDK will be used to complete the installation using the output tape of the previous job as the OLDPL for this next job.

A sample procedure to install modifications to the LOAD COMPLEX routines is as follows:

```

COMPLX, { MT1.
        { HD1.
        { PE1
ACCOUNT.
LABEL(OLDPL,R,L=APT4V2, D= { HY
                           { HD }, VSN=PL59A)
                           { PE }
REQUEST(COMPILE,*Q)
UPDATE(Q,*=$$$$ ,D,8)
ROUTE(COMPILE,DC=IN)
7/8/9
$IDENT,COMPMOD
$DELETE,COMPLEX.10 (To change ACCOUNT
                   cards as needed.)
ACCOUNT.
  
```

```

$DEFINE, { HY
           HD
           PE }
$DEFINE, COMPLEX
$INSERT, COMPLEX.70
*IDENT, COMPLX
*INSERT, LITL.43
C I MODIFIED THIS WITH A COMMENT CARD
                        (Insert mods here as needed.)
*COMPILE, LITL
$INSERT, COMPLEX.74
*IDENT, LCMOD
*DELETE, LLCDATA.2 (Insert mods to LLCDATA
                    here as needed.)
, (15 spaces) 1000
*COMPILE, LLCDATA
$COMPILE, COMPLEX
6/7/8/9

```

Before proceeding to the next job, review the results of this job to be sure that the intended modifications have been made correctly.

## NONSTANDARD APT SYSTEM INSTALLATION

To perform nonstandard installation, the user:

Must not select the option standard and  
Must not select the option COMPLEX during  
this run.

The user may, however, have selected COMPLEX for the previous run to generate a new input tape for this job.

The DEFINE options available for a nonstandard installation are:

```

{ SYSTEM,
  PERMFILE, } { SSSURF, } { PARSURF, } { HY
  USERLIB,   }           }           } { HD
                                           }
                                           }
                                           } { PE

```

The user may select only one of SYSTEM, PERMFILE or USERLIB to specify whether the APT system is installed in the system library, as permanent files or as a user library.

The deck SOURCDK is used to install the nonstandard APT system.

In addition to selecting the type of residency, the user may DEFINE:

1. SSSURF - the sculptured surface feature is installed.
2. PARSURF - the parametric surface feature is installed.

Local modifications may be installed (no DEFINE needed) by inserting the mods into SOURCDK at the obvious place (look at the listing of SOURCDK at line 170).

Any combination of the above may be installed.

## SAMPLE INSTALLATION RUNS

To install APT with parametric surfaces into the system library:

```

INSTAL, { MT1
          HD1
          PE1 }
ACCOUNT.
LABEL(OLDPL,R,L=APT4V2, D= { HY
                             HD
                             PE }, VSN=PL59A)
REQUEST(COMPILE,*Q)
UPDATE(Q,*=$$$$,D,8)
ROUTE(COMPILE,DC=IN)
7/8/9
$IDENT, SELECDK
$DELETE, SOURCDK.10 (To change ACCOUNT cards
                    as needed.)
ACCOUNT.
$DEFINE, { HY
           HD
           PE }
$DEFINE, SYSTEM
$DEFINE, PARSURF
$COMPILE, SOURCDK
6/7/8/9

```

To install APT with sculptured surfaces, parametric surfaces, PSRs and local modifications onto permanent files:

```

INSTAL, { MT1
          HD1
          PE1 }
ACCOUNT.
LABEL(OLDPL,R,L=APT4V2, D= { HY
                             HD
                             PE }, VSN=PL59A)
REQUEST(COMPILE,*Q)
UPDATE(Q,*=$$$$,D,8)
ROUTE(COMPILE,DC=IN)
7/8/9
$IDENT, SELECDK
$DELETE, SOURCDK.10 (To change ACCOUNT cards
                    as needed.)
ACCOUNT.
$DEFINE, { HY
           HD
           PE }
$DEFINE, SSSURF
$DEFINE, PARSURF

```

```

$DEFINE,PERMFILE
$INSERT,SOURCDK.127
*INSERT,TCILOUT.4
C MODIFY TCILOUT WITH A COMMENT CARD; A
SAMPLE LOCAL MOD
*COMPILE,TCILOUT
$COMPILE,SOURCDK
6/7/8/9

```

## VERIFICATION PROCEDURE

To obtain a listing of the verification job, run the following procedure:

```

LIST, { MT1
      HD1
      PE1 }
ACCOUNT.
LABEL(PL59A,R,L=APT4V2, D= { HY
                           HD
                           PE }, VSN=PL59A)
SKIPF(PL59A,4,17)
COPYBF(PL59A,OLDPL)
UPDATE(F,*=$$$$ , L=A1247)
6/7/8/9

```

The DEFINE options in the verification job coincide with the method under which APT was installed (i.e., STANDARD, SYSTEM, USERLIB, PERMFILE). Choose only one of these options when running the verification job.

To run the verification job, assuming APT was installed on permanent files, execute the following procedure:

```

PERMAMP, { MT1
          HD1
          PE1 }
ACCOUNT.
LABEL(PL59A,R,L=APT4V2, D= { HY
                           HD
                           PE }, VSN=PL59A)
SKIPF(PL59A,4,17)
COPYBF(PL59A,OLDPL)
REQUEST(COMPILE,*Q)
UPDATE(Q,*=$$$$ , D,8)
ROUTE(COMPILE,DC=IN)
7/8/9
$IDENT,SELECDK
$DELETE,VERIFY.3 (To change ACCOUNT cards
                  as needed.)
ACCOUNT.
$DEFINE,PERMFILE
$COMPILE,VERIFY
6/7/8/9

```

The verification job is a sample APT IV part program with neither parametric nor sculptured surfaces. The output from this job should be compared to file 6 of PL59A. File 6 can be printed with a COPYSBF.

**RELEASE DESCRIPTION**

**HARDWARE REQUIREMENTS**

A minimum field length of 100K octal is required to load GPSS V1.3. Once loaded, it requires a minimum field length of 45K octal to execute. Other requirements are the same as the minimum hardware configuration for NOS/BE.

**RELEASE MATERIALS**

The release materials for GPSS V are included on the release tape PL35. The release tape contains six files:

- File 1 - GPSS V installation job decks GPS1 and GPS2 in UPDATE format,
- File 2 - GPSS V Preloaded absolute binaries,
- File 3 - GPSS V relocatable binaries,
- File 4 - GPSS V program library in UPDATE format,
- File 5 - Empty and
- File 6 - Sample output from the model executed by GPS1 and GPS2.

**INSTALLATION PROCEDURES**

File 1 of PL35 contains the installation/verification decks, GPS1 and GPS2.

GPS1 updates the GPSS V program library (file 4), reassembles the system, and installs the preloaded absolute binaries on a direct access permanent file named GPSS.

GPS2 installs the preloaded absolute binaries from file 2 on a direct access permanent file named GPSS.

GPSS V runs from a local file. It cannot be executed from the running system. The local file name for GPSS V must be GPSS.

GPS1 and GPS2 execute a GPSS model as part of the installation/verification process. After execution of the model, sample output from the model on file 6 of PL35 is listed for comparison to validate correct installation of GPSS.

GPS1 and GPS2 may be obtained from PL35 by executing a job of the following form:

```
EXTRACT,CM45000,T100, { MT1
                      HD1
                      PE1 }
```

ACCOUNT. (Supply valid ACCOUNT card.)

```
LABEL(PL35,R,L=GPSSV1P3,VSN=PL35,D= { HY
                                         HD
                                         PE } )
```

```
UPDATE(Q,P=PL35,*==,C=PUNCH)
```

7/8/9

```
=IDENT,INST
```

```
=DEFINE { HY
          HD
          PE }
```

```
=/ UPDATE CARDS TO MODIFY INSTALL DECKS
GO HERE.
```

```
=C { GPS1
    GPS2 }
```

6/7/8/9

If a card punch is not available or if the user desires to execute either GPS1 or GPS2 directly from PL35, the following three cards should be substituted for the UPDATE card in the previous deck:

```
REQUEST(COMPILE,*Q)
UPDATE(Q,P=PL35,*==)
ROUTE(COMPILE,DC=IN)
```

To list GPS1 or GPS2 as they appear on PL35, a job of the following form should be executed:

```
LIST,CM45000,T100, { MT1
                    HD1
                    PE1 }
```

ACCOUNT (Supply valid ACCOUNT card.)

```
VSN(TAPE=PL35)
```

```
LABEL(TAPE,R,L=GPSSV1P3,D= { HY
                              HD
                              PE } )
```

```
UPDATE(Q,L=A12347,*==,P=TAPE)
```

7/8/9

```
=IDENT,INST
```

```
=C GPS1
```

```
=C GPS2
```

6/7/8/9

The user should check the lists and add valid ACCOUNT information.

## INSTALLATION PARAMETERS

For maximum efficiency, several installation options are provided to configure GPSS V to individual installations. To select an option, an update \*DEFINE option name card should be included in the configuration run. Options are:

<u>Option</u>	<u>Definition</u>
CRM	All I/O requests will be processed by the CYBER record manager. If not selected, standard CIO requests will be used. CYBER record manager will be used for I/O on the following files: INPUT, OUTPUT, JOBTA1, JOBTA2, and JOBTA3. All internal file operations on files not available to the HELP block user still use CIO directly for speed purposes.
CP64	Code will be optimized for a 6400 type processor. If not selected, a 6600 type processor is assumed.
XJOP	Monitor requests will be executed via the XJ instruction. If not selected, the XJ instruction is not used.
IMUL	Integer multiply hardware is installed.
FILELOAD	If defined, the preloader will create a random file containing the overlays. This version of GPSS cannot be placed on the system, but must be run from a permanent file. However, the field length required to start a GPSS run is reduced to what is needed to load the (0,0) overlay plus the longest primary overlay, which is about 30K instead of approximately 75K to 105K when FILELOAD is not defined. No ECS load options are available when FILELOAD is defined.
REPRIEVE	If defined, the error termination printout section is executed when GPSS execution is halted due to operator drop, exceeding CP or I/O time limit, or exceeding mass storage limit. Thus, the results of the simulation up to the point at which GPSS execution is halted for one of the above reasons is printed. If REPRIEVE is not defined, GPSS execution is halted without an error termination printout.

<u>Option</u>	<u>Definition</u>
FTRACE	If defined, then in addition to the standard one-line trace of GPSS V/6000, the current transaction is also listed. This option slows down a simulation which uses the TRACE feature by a factor of 2 to 10 depending upon the amount of tracing done. It also increases the minimum field length for all runs by 2 to 3K.
LISALL	If defined, LIST and UNLIST cards are listed on the output file when encountered. Otherwise, they are never listed.
CRM, XJOP, IMUL, and REPRIEVE are included by default in the install deck GPS1.	
Other parameters that may be changed for an installation are the operating system name and installation name. Cards of the following type may be used as input to update to change these parameters:	
	*D,SYS-CYB.54,SYS-CYB.55 OPSYSTEM MICRO 1,,\$NOS/BE 1.X\$ INSTALL MICRO 1,,\$installation name\$

### NOTES AND CAUTIONS

The deck GPSSTXT on the source OLDPL (file 4) of PL35 contains documentation which is an overview of the system. It is not required but may be helpful for the user to obtain a listing of GPSSTXT by assembling it using COMPASS.

When loading GPSS V, five nonfatal errors are noted. These errors are of the form:

DUPLICATE ENTRY POINT NAME - INIT

Errors of any other form should be investigated.

## RELEASE DESCRIPTION

IMSL 7 (International Mathematical and Statistical Library, Version 7) consists of more than 400 FORTRAN functions and subprograms. IMSL 7 is on PL87.

## HARDWARE REQUIREMENTS

IMSL 7 requires the minimum hardware configuration for NOS/BE.

## NOTES AND CAUTIONS

The installation process does not provide program listings. If a program listing is needed (it is very long), the FTN card in the install deck may be appropriately modified (remove L=0).

## RELEASE MATERIALS

IMSL 7 resides on the tape known as PL87. PL87 is a program library in UPDATE format. It has the following characteristics: 7-track (800 bpi) or 9-track (800 or 1600 cpi), binary recording mode, eight files:

- File 1 - install deck in UPDATE OLDPL format,
- File 2 - empty file,
- File 3 - empty file,
- File 4 - program deck in UPDATE OLDPL format,
- File 5 - verify job control language deck in UPDATE OLDPL format,
- File 6 - expected verify output ((COPYBF,OUTPUT) format),
- File 7 - verify program deck in UPDATE OLDPL format, and
- File 8 - deleted routines from Version 6 in UPDATE PL format (included for conversion purposes).

## INSTALLATION PROCEDURES

The procedures for the installation of IMSL 7 are outlined in the following four steps.

### STEP 1.

This step includes:

- Installation deck,
- Verification deck, and
- Expected verify output.

### NOTE

The user must supply appropriate job and accounting cards.

JOB,  $\left\{ \begin{array}{l} \text{MT1} \\ \text{HD1} \\ \text{PE1} \end{array} \right\}$ .

ACCOUNT. (Supply appropriate accounting data.)

REQUEST(TAPE,  $\left\{ \begin{array}{l} \text{MT} \\ \text{NT} \end{array} \right\}$ ,  $\left\{ \begin{array}{l} \text{HY} \\ \text{HD} \\ \text{PE} \end{array} \right\}$ , VSN=IMSLIB,E)

REWIND(TAPE)

UPDATE(P=TAPE,F,D,8,I=DUMMY,\*=/,L=7)

REWIND(TAPE)

SKIPF(TAPE,4,17)

UPDATE(P=TAPE,F,D,8,\*=/,L=7,R,I=DUMMY)

REWIND(TAPE)

SKIPF(TAPE,5,17)

COPYBF(TAPE,OUTPUT,1)

6/7/8/9

### STEP 2.

Installation characteristics are:

- Permanent file name = IMSLIB, and
- Public access rights (ID=PUBLIC).

JOB,  $\left\{ \begin{array}{l} \text{MT1} \\ \text{HD1} \\ \text{PE1} \end{array} \right\}$ .

ACCOUNT. (Supply appropriate accounting data.)

REQUEST(TAPE,  $\left\{ \begin{array}{l} \text{MT} \\ \text{NT} \end{array} \right\}$ ,  $\left\{ \begin{array}{l} \text{HY} \\ \text{HD} \\ \text{PE} \end{array} \right\}$ , VSN=IMSLIB,E)

REQUEST(COMPILE,\*Q)

UPDATE(P=TAPE,F,D,8,\*=/)

ROUTE(COMPILE,DC=IN)

7/8/9

/IDENT IMSL (Optional.)

/DEFINE NOSBE (Required.)

Note that one of the following three tape parameters is required.

/DEFINE MT (7-track, 800 bpi.)  
/DEFINE NT (9-track, 800 cpi.)  
/DEFINE NTPE (9-track, 1600 cpi.)

/DELETE IMSLIL.XX (Required.)

JOB,  $\left\{ \begin{array}{l} \text{MT1} \\ \text{HD1} \\ \text{PE1} \end{array} \right\}$ , T1200. (Supply appropriate job and account information.)

ACCOUNT.

6/7/8/9

STEP 3.

Refer to the following:

JOB, {  
MT1  
HD1  
PE1

ACCOUNT. (Supply appropriate accounting data.)

REQUEST(TAPE, {  
MT  
NT}, {  
MT1  
HD1  
PE1}, VSN=IMSLIB,E)

SKIPF(TAPE,4,17)

REQUEST(COMPILE,\*Q)

UPDATE(P=TAPE,F,D,8,\*=/,R=C)

ROUTE(COMPILE,DC=IN)

7/8/9

/IDENT IMSL (Optional.)

/DEFINE NOSBE (Required.)

One of the following three tape parameters (required):

/DEFINE MT (7-track, 800 bpi.)  
/DEFINE NT (9-track, 800 cpi.)  
/DEFINE NTPE (9-track, 1600 cpi.)

/DELETE IMSLVL.XX (Required.)

JOB, {  
MT1  
HD1  
PE1}, T300. (\*,\*,\*) accounting data.  
(Supply appropriate job and account information.)

ACCOUNT.

6/7/8/9

STEP 4.

Do a minimal visual comparison of the expected verify output and the actual verify output.

NOTE

A large number of routines from Version 6 have been replaced by other named routines in Version 7. No name conflicts exist. If the old routines are needed, add the following card to the data record in the Step 2 job:

/DEFINE IMSL6

## RELEASE DESCRIPTION

The following job installs PERT/TIME executable binary on a permanent file:

### HARDWARE CONFIGURATION

PERT/TIME requires a minimum hardware configuration with at least 65K (octal) central memory, three tape units, and the other minimum equipment required by NOS/BE.

### RELEASE MATERIALS

PERT/TIME is on release tape PL85. PL85 contains PERT2P0 as file ID in HDR1 and six files:

- File 1 - installation deck program library in UPDATE format,
- File 2 - PERT/TIME in absolute binary format,
- File 3 - PERT/TIME in relocatable binary format,
- File 4 - source PL in UPDATE format,
- File 5 - empty, and
- File 6 - empty.

### LIMITATIONS

Because the file names TAPE1 through TAPE7 are used internally, no user file name may be TAPE 1 through 7.

### INSTALLATION PROCEDURES

Release tape PL85 contains PERT/TIME. To get a listing and a punched-card copy of the installation decks from the first file of PL85, run a job similar to the following (if a card punch is not on-line, the decks must be keypunched by hand):

```
JOB statement, { MT1
                { HD1
                { PE1 } .

ACCOUNT information
VSN(TAPE=PL85)

LABEL(TAPE,R,L=PERT2P0,D= { HY
                           { HD
                           { PE } )

UPDATE(F,L=A12347,P=TAPE)
REWIND(COMPILE)
COPYBF(COMPILE,PUNCH)
7/8/9
6/7/8/9
```

```
JOB statement, { MT1
                { HD1
                { PE1 } .

ACCOUNT information
VSN(TAPE=PL85)

LABEL(TAPE,R,L=PERT2P0, { HY
                          { HD
                          { PE } )

REQUEST(PERT78,*PF)
SKIPF(TAPE,1,17)
COPYBF(TAPE,PERT78)
CATALOG(PERT78,ID=PERT78)
6/7/8/9
```

To execute from the release tape PL85, run a job similar to the following:

```
PERT,T1000, { MT1
             { HD1
             { PE1 } .

ACCOUNT information
VSN(TAPE=PL85)

LABEL(TAPE,R,L=PERT2P0, { HY
                          { HD
                          { PE } )

SKIPF(TAPE,1,17)
COPYBF(TAPE,PERT78)
PERT78.
7/8/9 }
6/7/8/9 } PERT networks
```

If a master data tape is made, insert the following after the LABEL statement:

```
REQUEST TAPE6,MT.
```

If an old master data tape is input and a new master data tape saved, insert the following after the LABEL statement.

```
REQUEST TAPE4,MT.   OLD MASTER
REQUEST TAPE6,MT.   NEW MASTER
```

If either option is used the MT1 job card parameter must be increased. An entry must be placed on the Y-card for each additional tape used.

Successive PERT/TIME networks may be processed by batching as follows (a higher FL will be required):

K  
L  
M  
X  
Y  
W  
A  
.  
.  
.  
A  
Z  
K  
L  
.  
.  
Z

PERT BATCHED NETWORKS

(Input for each network starts with the K control card and ends with the Z control card.)

The following job compiles and installs PERT/TIME from the source PL to a permanent file:

JOB statement,  $\left\{ \begin{array}{l} MT1 \\ HD1 \\ PE1 \end{array} \right\}$  .  
ACCOUNT information  
VSN(TAPE=PL85)  
LABEL(TAPE,L=PERT2P0,  $\left\{ \begin{array}{l} HY \\ HD \\ PE \end{array} \right\}$  )  
SKIPF(TAPE,3,17)  
UPDATE(F,P=TAPE,R)  
UNLOAD(TAPE)  
REWIND(COMPILE)  
REQUEST(PERT78,\*PF)  
FTN(I=COMPILE,B=PERT,L=0)  
LOAD(PERT)  
NOGO(PERT78)  
CATALOG(PERT78,ID=PERT78)  
7/8/9  
6/7/8/9

**TIGS 1 OVERVIEW**

**RELEASE DESCRIPTION**

TIGS 1 (Terminal Independent Graphics System Version 1) runs under NOS/BE and INTERCOM (Version 5) to provide the user with both a remote interactive graphic capability in graphic mode and a time-sharing capability in interactive mode.

TIGS 1 consists of a preprocessor and a post processor. The preprocessor writes a neutral display file (NDF) that is then traversed by the post processor to produce graphics output to a specific terminal. A non-NDF, limited-interaction subset of TIGS is also available. This subset is called Beginning TIGS (BTIGS).

The TIGS subroutines are callable from user application programs that are written in FORTRAN Extended.

The operation of TIGS 1 under NOS/BE requires the installation of INTERCOM and all associated products.

**Hardware Configuration**

The minimum hardware configuration required by NOS/BE and INTERCOM is required to support TIGS 1.

Under INTERCOM, the site address for a terminal operating in synchronous mode must be 160g for BCD and 161g for ASCII. The site address is irrelevant for the terminal operating in asynchronous mode.

**RELEASE MATERIALS**

The TIGS 1 release requires both the preprocessor magnetic tape, PL86A, and an appropriate post processor tape. Refer to the individual post processor sections for installation, verification, and terminal operation of TIGS 1.

**TIGS 1 PREPROCESSOR**

The TIGS 1 preprocessor resides on the tape known as PL86A. PL86A has the following characteristics: 7-track (800-bits per inch (bpi)) or 9-track (800 or 1600 characters per inch (cpi)), binary recording mode, TIGSPRE as the file ID in the HDR1 label, and the following six files.

- File 1 - empty,
- File 2 - empty,
- File 3 - empty,
- File 4 - TIGS 1 preprocessor source code program library in UPDATE format,
- File 5 - empty, and
- File 6 - empty.

**TEKTRONIX 401X POST PROCESSOR OPTION**

**RELEASE MATERIALS**

The Tektronix 401X post processor runs under NOS/BE when installed with the TIGS 1 preprocessor.

The Tektronix 401X post processor resides on the tape known as PL86B. PL86B is a program library in UPDATE format and has the following characteristics: 7-track (800 bpi) or 9-track (800 or 1600 cpi), binary recording mode, TIGSTEK as file ID in HDR1 label, and the following six files.

- File 1 - installation job program library in UPDATE format,
- File 2 - empty,
- File 3 - empty,
- File 4 - TIGS 1 Tektronix post processor source code program library in UPDATE format,
- File 5 - verification program in UPDATE PL format, and
- File 6 - empty.

**NOTES AND CAUTIONS**

All limitations applicable to NOS/BE and INTERCOM also apply to TIGS 1 with the Tektronix 401X post processor.

All TIGS 1 subroutines are callable from application programs that have been written in FORTRAN Extended.

A CDC synchronous interface (Tektronix product number 021-0135-01) is required on each Tektronix terminal to communicate in synchronous mode with the 255X host communications processor.

Communications between the terminal and the central site are supported for TIGS 1 with the Tektronix 401X post processor according to table 7-1.

**TABLE 7-1. TIGS/TEKTRONIX COMMUNICATIONS CAPABILITIES**

Communications Mode	Baud Rate
Synchronous	2000 to 4800
Asynchronous	300 to 9600

## INSTALLATION DESCRIPTION

The installation of TIGS 1 with the Tektronix 401X post processor allows the user to generate any combination of a TIGS library (TEKLIB) to be used when segmenting or overlaying TIGS, a TIGS library (TEKSFL) without segment or overlay capabilities, and a BTIGS library (TEKBGN).

The TIGS segment/overlay loader library, TEKLIB, can be used in those situations where memory requirements of graphic applications exceed the available NOS/BE field length. The user can employ the segment/overlay loader library, TEKLIB, in conjunction with the CYBER loader to segment or to overlay a graphic application and thereby reduce memory requirements. Note that the use of the segment/overlay loader library, TEKLIB, without segmentation or overlays greatly increases an application program field length requirement. The segment/overlay loader library, TEKLIB, must be used if an old neutral display file is to be accessed by the application program.

The basic nonsegment/nonoverlay loader library, TEKSFL, can be used for graphic applications with memory requirements that do not exceed the NOS/BE available field length.

Only one library, TEKBGN, is provided for BTIGS. Since BTIGS has no neutral display file, a special segment/overlay loader library is not required for neutral display file access.

TEKLIB is installed by default by the installation job. TEKSFL is installed by the installation job by specifying =DEFINE,BASICLDR as an UPDATE directive. TEKBGN is installed by the installation job by specifying =DEFINE,BTIGSLIB as an UPDATE directive. Installation of TEKLIB may be suppressed by specifying =DEFINE,NOSEGLDR as an UPDATE directive.

## CONFIGURATION DEFAULTS

Users may also wish to specify installation defaults for terminal type, baud rate, tablet availability and hardcopy unit availability. If the same configuration is used repeatedly, specification of the installation default will minimize the question/answer session during TIGS 1 initialization. When the installation defaults are to be used, only a single Y response is required during initialization. Installation defaults are specified using =DEFINE directives in UPDATE (see step 2 of the "Installation Procedure").

## INSTALLATION VERIFICATION

An installation verification program, TEKVFY, relocatable binary is always generated by the installation procedure. Operation of the installation verification program is described under the heading "Verification Procedure" in this document.

## NEUTRAL DISPLAY FILE CONVERSION

All TIGS 1.0, 1.1, and 1.2 neutral display files must be modified by a conversion program before they can be used by a TIGS 1.3 application program. The conversion program is installed by the installation job by specifying =DEFINE,NDFCONV as an UPDATE directive. The conversion program consists of two binary files: (CFGEN and CFUTIL). The conversion program files are cataloged under ID=TIGS. Instructions on running this program are

given in the TIGS 1.3 Reference Manual under Appendix E "Operating System Dependencies". This program does not apply to BTIGS.

## SEGMENTATION

Users may wish to provide segmentation for their application and TIGS 1. To aid the user in doing this, a skeleton segment directives source file is provided during the TIGS 1 installation procedure. The segment directives source file is cataloged under permanent file name TEKDIR,ID=TIGS. Instructions on segmentation are given in the TIGS Reference Manual under Appendix E - "Operating System Dependencies." These segment directives do not apply to BTIGS.

## GRAPHICS CLASS

Execution of TIGS 1 with the Tektronix 401X post processor requires a graphics PP routine in NOS/BE. The PP routine, GCC-Change Program to Graphics Classification, gives the calling program graphics classification for the duration of program execution and returns the page width and length to the calling routine. GCC is installed as part of the NOS/BE installation. No graphics activity should be attempted if GCC has not been installed.

## INSTALLATION PROCEDURE

The procedure for installation of TIGS 1 with the Tektronix 401X post processor is outlined in the following two steps.

### Step 1.

This step generates UPDATE(L=7) listings of the installation job and the verification program.

The installation job is file 1 on the Tektronix 401X post processor release tape (PL86B). File 1 is a program library in UPDATE format with = (equals) as the master control character. The verification program is file 5. File 5 is a program library in UPDATE format with \* (asterisk) as the master control character.

Perform an UPDATE run against file 1 of PL86B to obtain the sequence number which corresponds to any control card which must be modified for installation. An L=7 listing of the installation job and verification program may be obtained by executing the following procedure:

```
LISTI,T10,CM65000, {MT1} (7-track, 800 bpi.)
                   {HD1} (9-track, 800 cpi.)
                   {PE1} (9-track, 1600 cpi.)
```

```
ACCOUNT(*) (Supply appropriate accounting
            information.)
```

```
LABEL(TIGSPL,R,L=TIGSTEK,VSN=PL86B,
```

```
D= {HY} { } (7-track, 800 bpi.)
    {HD} {,N=US} (9-track, 800 cpi.)
    {PE} {,N-US} (9-track, 1600 cpi.)
```

```
COPYBF(TIGSPL,OLDPLT)
```

```
SKIPF(TIGSPL,3,17)
```

```
COPYBF(TIGSPL,OLDPLV)
```

```

UNLOAD(TIGSPL)
UPDATE(Q,P=OLDPLT,C=0,L=7,*==,U)
UPDATE(Q,P=OLDPLV,C=0,L=7,U)
7/8/9
=IDENT,LIST1
=C,TIGS1
7/8/9
*IDENT,LIST2
*C,TIGS2
6/7/8/9

```

Step 2.

This step installs a desired combination of the following permanent files: TIGS/BTIGS library (or libraries), verification program relocatable binary, neutral display file conversion program files, and a source file of segment loader directives.

The job (EXTRACT), described in this step, performs a full UPDATE on file 1 of the Tektronix post processor release tape, (PL86B), modifying the installation job program library with the appropriate accounting information and DEFINE UPDATE directives required for installation. Route the resulting installation job to the NOS/BE input queue by executing the following procedure. NOTE: Only the Tektronix post processor release tape (PL86B) is required for the EXTRACT job, but both the Tektronix post processor release tape (PL86B) and the TIGS 1 preprocessor release tape (PL86A) are required for the installation job routed to the NOS/BE input queue.

```

EXTRACT,T10,CM65000, { MT1 } (7-track, 800 bpi.)
                    { HD1 } (9-track, 800 cpi.)
                    { PE1 } (9-track, 1600 cpi.)

```

```

ACCOUNT(*) (Supply appropriate accounting
            information.)

```

```

LABEL(TIGSPL,R,L=TIGSTEK,VSN=PL86B,

```

```

D= { HY } { } (7-track, 800 bpi.)
    { HD } { ,N=US } (9-track, 800 cpi.)
    { PE } { ,N=US } (9-track, 1600 cpi.)

```

```

COPYYBF(TIGSPL,OLDPL)

```

```

UNLOAD(TIGSPL)

```

```

REQUEST(COMPIL, *Q)

```

```

UPDATE(F,*==,L=17,D,8)

```

```

ROUTE(COMPIL,DC=IN)

```

```

7/8/9

```

```

=IDENT,INSTALL

```

```

=DEFINE, { HY } (7-track, 800 bpi.)
          { PE } (9-track, 1600 cpi.)

```

(Default is 9-track, 800 cpi (HD).)

```

=DEFINE,BASICLDR (This is an optional UPDATE
                  directive. If the user wishes to
                  install a TIGS basic (nonseg-
                  ment/nonoverlay) loader li-
                  brary (TEKSFL), the =DEFINE,
                  BASICLDR directive must be
                  included as part of the
                  UPDATE (see table 7-2).)

```

```

=DEFINE,BTIGSLIB (This is an optional UPDATE
                  directive. If the user wishes to
                  install a BITGS library (TEK-
                  BGN), the =DEFINE, BTIGSLIB
                  directive must be included as
                  part of the UPDATE (see table
                  7-2).)

```

```

=DEFINE,NOSEGLDR (This is an optional UPDATE
                  directive. If the user wishes to
                  suppress the installation of a
                  TIGS segment/overlay loader
                  library (TEKLIB), the =DEFINE,
                  NOSEGLDR directive must be
                  included as part of the
                  UPDATE. Suppressing TEKLIB
                  also causes the TIGS segment
                  loader directives source file
                  (TEKDIR) to be suppressed.)

```

```

=DEFINE,NOBG (This is an optional UPDATE
              directive. If the user wishes to
              suppress the installation of
              Beginning Graphics (BG) as part
              of the full TIGS library, the
              =DEFINE,NOBG directive must
              be included as part of the
              UPDATE.)

```

```

=DEFINE,NOHANDLR (This is an optional UPDATE
                  directive. If the user wishes
                  to suppress the installation
                  of the Data Handler as part
                  of the TIGS library, the
                  =DEFINE,NOHANDLR
                  directive must be included
                  as part of the UPDATE.)

```

```

=DEFINE, { A4006 } (asynchronous 4006)
          { S4010 } (synchronous 4010)
          { A4010 } (asynchronous 4010)
          { S4014 } (synchronous 4014)
          { A4014 } (asynchronous 4014)
          { S4014EGM } (synchronous 4014 with
                       enhanced graphics module)
          { S4016 } (synchronous 4016)
          { A4016 } (asynchronous 4016)

```

(Specify the installation default terminal type. This default may be overridden at run time by answering the initialization questions individually. If none of the above terminal types is defined, an asynchronous 4014 with enhanced graphics module will be established as the installation default.)

```

=DEFINE, { BAUD300 } (Specify the installation de-
                    { BAUD2000 } fault baud rate. This default
                    { BAUD2400 } may be overridden at run
                    { BAUD4800 } time by answering the initial-
                    { BAUD9600 } ization questions individually.
                    If none of the above baud
                    rates is defined, 1200 baud
                    will be established as the
                    installation default.)

```

=DEFINE, TABLET (Specify whether or not a tablet is available. This default may be overridden at run time by answering the initialization questions individually. If a tablet is not defined, the installation default will be no tablet.)

=DEFINE, HARDCOPY (Specify whether or not a hardcopy device is available. This default may be overridden at run time by answering the initialization questions individually. If a hardcopy device is not defined, the installation default will be no hardcopy device.)

=DEFINE, NDFCONV (This is an optional UPDATE directive. If the user wishes to install the neutral display file conversion program, the =DEFINE, NDFCONV directive must be included as part of the UPDATE. Two binaries (CFGEN and CFUTIL) are installed.)

=D, TIGS1.10

ACCOUNT( ) (The user must modify the installation job program library with appropriate accounting information. The dummy ACCOUNT card sequence number, 10, was obtained from the compile file listing resulting from step 1. of the "Installation Procedure.")

6/7/8/9

TABLE 7-2. LIBRARIES INSTALLED USING SPECIFIC DEFINE COMBINATIONS

Libraries Defines	TEKLIB	TEKSFL	TEKBGN
NONE	Yes	No	No
BASICLDR	Yes	Yes	No
BTIGSLIB	Yes	No	Yes
BASICLDR BTIGSLIB	Yes	Yes	Yes
NOSEGLDR BASICLDR	No	Yes	No
NOSEGLDR BTIGSLIB	No	No	Yes
NOSEGLDR BASICLDR BTIGSLIB	No	Yes	Yes

## VERIFICATION PROCEDURE

Run the verification program, cataloged as permanent file TEKVfy by the installation job, to verify the proper installation of TIGS 1. The verification program may be run as follows:

1. Refer to the "Terminal Operating Procedures" to properly set up the terminal.
2. Log in to NOS/BE with a valid user name and password.
3. If a segment/overlay loader library (TEKLIB) was not installed, go to step 12.
4. Attach the segment/overlay loader library permanent file and declare TEKLIB a library:

ATTACH(TEKLIB, ID=TIGS)  
LIBRARY(TEKLIB)

5. Attach the verification program permanent file and execute the verification program:

ATTACH(TEKVfy, ID=TIGS)  
TEKVfy.

6. The terminal operator will be asked if the installation defaults are to be accepted. † If the installation defaults are correct for terminal type and baud rate, the operator may type a Y and skip to step 11. If the defaults are not correct, the operator must type an N and do steps 7 through 10.
7. The operator will be asked to enter the terminal type. Enter the number that corresponds to the terminal in use (figure 7-1).
8. The terminal operator will be asked to enter the baud rate (figure 7-1). Enter the baud rate in use.
9. The terminal operator will be asked if the tablet is to be used (figure 7-1). Enter N. The tablet is not required for the verification program.
10. The terminal operator will be asked if a hardcopy unit is available (figure 7-1). Enter N. The verification program does not require the availability of a hardcopy unit.
11. The terminal screen will be cleared and figure 7-2 will be displayed if terminal type 4 through 9 was selected in step 7. Figure 7-3 will be displayed if terminal type 1, 2 or 3 was selected.
12. If a basic (nonsegment/nonoverlay) loader library (TEKSFL), was not installed, then go to step 16.
13. Attach the basic (nonsegment/nonoverlay) loader library permanent file and declare TEKSFL a library:  
  
ATTACH(TEKSFL, ID=TIGS)  
LIBRARY(TEKSFL)
14. Attach the verification program and execute the verification program:  
  
ATTACH(TEKVfy, ID=TIGS)  
TEKVfy.

† The initialization questions can be overridden by supplying a subroutine ZPIQST(ITERM, IBAUD, ITABL, IHC) to provide the values for each parameter (see TIGS Reference Manual).

15. Repeat steps 6 through 11 to verify the basic (nonsegment/nonoverlay) loader library (TEKSFL).
16. If a BTIGS library (TEKBGN) was not installed, go to step 20.
17. Attach the BTIGS library permanent file and declare TEKBGN a library:
 

```
ATTACH(TEKBGN,ID=TIGS)
LIBRARY(TEKBGN)
```
18. Attach the verification program and execute the verification program:
 

```
ATTACH(TEKVFY,ID=TIGS)
TEKVFY.
```
19. Repeat steps 6 through 11 to verify the BTIGS library, (TEKBGN).
20. Purge any unnecessary files generated during the installation or verification of TIGS 1.
21. Log off when finished.

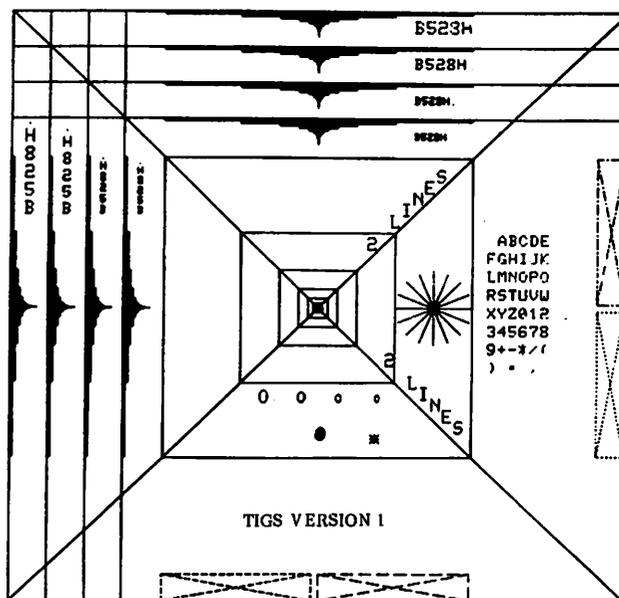


Figure 7-2. Figure Displayed on Terminal Types 4 through 9

COPYRIGHT CONTROL DATA CORP. 1980

INSTALLATION DEFAULT VALUES ARE  
 7 4014 W/EGM ASYNCHRONOUS  
 1200 BAUD  
 NO TABLET AVAILABLE  
 NO HARD COPY AVAILABLE  
 DO YOU ACCEPT THESE DEFAULTS (Y/N)  
 N

ENTER TERMINAL TYPE  
 1 4006 FSYNCHRONOUS  
 2 4010 SYNCHRONOUS  
 3 4010 ASYNCHRONOUS  
 4 4014 SYNCHRONOUS  
 5 4014 ASYNCHRONOUS  
 6 4014 W/EGM SYNCHRONOUS  
 7 4014 W/EGM ASYNCHRONOUS  
 8 4016 SYNCHRONOUS  
 9 4016 ASYNCHRONOUS  
 ?

ENTER BAUD RATE, 300,1200,2000,2400,4800,9600  
 1200

IS TABLET GOING TO BE USED (Y/N)  
 N

IS HARD COPY UNIT AVAILABLE (Y/N)  
 N

Figure 7-1. Acceptable Tektronix Defaults

#### RUNNING THE NDF CONVERSION PROGRAM

Any neutral display file (NDF) created under TIGS version 1.0, 1.1, or 1.2 will need a one-time conversion in order to be used by TIGS version 1.3. The conversion program should be installed as part of the TIGS installation procedure. The following job should be run in either interactive or batch mode.

```
ATTACH,OLDNDF,pfname,ID=id,PW=password.
(1.0,1.1, or 1.2 NDF must be local file OLDNDF)
ATTACH,OLDLIB,pfname,ID=TIGS,MR=1.
(attach library under which the old NDF was created)
LIBRARY,OLDLIB.
(declare it as a library)
ATTACH,CFGEN,ID=TIGS,MR=1.
(attach the old NDF to conversion file program)
CFGEN.
(generates conversion file on TAPE1)
ATTACH,NEWLIB,pfname,ID=TIGS,MR=1.
(attach TIGS version 1.3 library)
LIBRARY,NEWLIB.
(declare it as a library)
ATTACH,CFUTIL,ID=TIGS,MR=1.
(attach the conversion file to version 1.3 program)
REQUEST,NEWNDF,*PF.
(request version 1.3 NDF as a permanent file)
CFUTIL.
(generate version 1.3 NDF on local file NEWNDF)
CATALOG,NEWNDF,pfname,ID=id,PW=password.
(make the version 1.3 NDF a permanent file)
```

Since the neutral display file is not associated with any one post processor, the libraries OLDLIB and NEWLIB may be for any TIGS post processor. However, OLDLIB must be a version 1.0, 1.1, or 1.2 library; and NEWLIB must be a version 1.3 library.

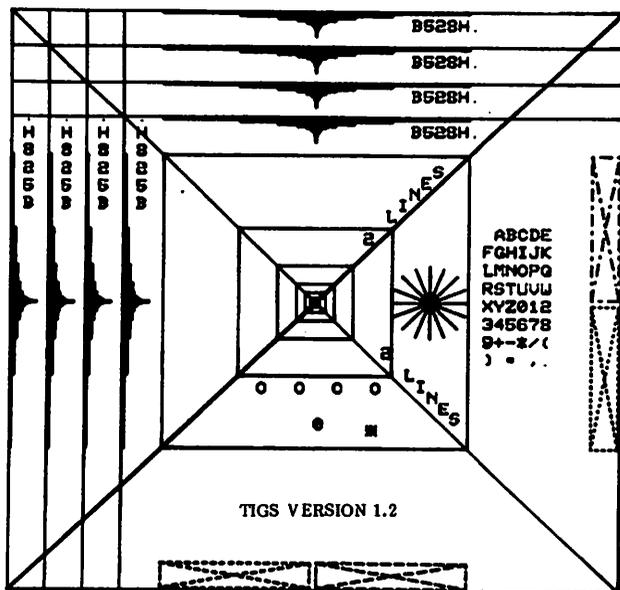


Figure 7-3. Figure Displayed on Terminal Types 1, 2, or 3

## TERMINAL OPERATING PROCEDURES

### Tektronix 4006 Terminal

The Tektronix 4006 terminal operating procedures are as follows:

1. Turn the terminal power on by turning the POWER switch, located at the rear of the display unit, to the ON position.
2. Allow the terminal to warm up.
3. Press the PAGE key to erase the screen and to position the cursor to home position (the upper left-hand corner of the screen).
4. Select the appropriate transmit and receive baud rates using the baud rate switches located at the rear of the display unit.
5. The setting of the FULL/HALF DUPLEX switch located at the rear of the display unit is NOS/BE installation dependent.
6. Turn the modem power on and verify that the modem is connected to the terminal.
7. Dial the appropriate telephone number.
8. INTERCOM Version 5 requires the user to press the RETURN key after the terminal is polled before it will respond with a LOGIN message.

### Tektronix 4010/4014 Terminals With Synchronous Interface

Tektronix 4010 and 4014 terminals (equipped with Control Data Synchronous interface) synchronous/asynchronous operating procedures are as follows:

1. Turn the terminal power on.
  - Tektronix 4010 terminal: The POWER switch is located beneath the keyboard at the top of the pedestal stand. The red POWER indicator, located at the top of the keyboard, will illuminate when power has been applied to the terminal.
  - Tektronix 4014 terminal: The POWER switch is located at the front lower right-hand corner of the pedestal stand. The green POWER indicator, located on the upper left-hand corner of the keyboard, will illuminate when power has been applied to the terminal.
2. Allow the terminal to warm up.
3. Press the PAGE key to erase the screen and to position the cursor to home position (the upper left-hand corner of the screen).
4. Set the ASCII/ALT switch to the ASCII position.
5. Select the appropriate baud rate switch settings. The switch should select the EXT position if the terminal is to be used for synchronous communications at 2000, 4800, or 9600 baud. Otherwise, the terminal baud rate switch setting will correspond to the baud rate in use.
  - Tektronix 4010 terminal: Select the appropriate transmit and receive baud rates using the baud rate switches located at the rear of the pedestal stand.
  - Tektronix 4014 terminal: Select the appropriate baud rate using the baud rate switch located at the rear of the pedestal stand.
6. The setting of the FULL/HALF DUPLEX switch is NOS/BE installation dependent.
7. Set the CODE EXPANDER switch to one of the following positions:
  - Synchronous mode communications: Turn the switch ON.
  - Asynchronous mode communications: Turn the switch OFF.
8. The following keyboard operations establish proper operating mode:
  - Synchronous mode communications: Place the terminal in local mode. Press the SHIFT key. While the SHIFT key is pressed, press the RESET PAGE key. Place the terminal in line mode and repeat the keyboard procedure.
  - Asynchronous mode communications: Place the terminal in local mode. Press and keep depressed the SHIFT key. Press and keep depressed the CNTL key. While both the SHIFT and CNTL keys are pressed, press the P key. Place the terminal in line mode.
9. Dial the appropriate telephone number.
10. INTERCOM Version 5 requires the user to press the RETURN key after the terminal is polled before it will respond with a LOGIN message.

## Tektronix 4010/4014 Terminals Without Synchronous Interface

If the Tektronix 4010 and 4014 terminals are not equipped with the Control Data synchronous interface option, then the terminal can be operated in asynchronous mode only.

The Tektronix 4010 and 4014 terminals asynchronous mode operating procedures are essentially the same as for the synchronous mode operating procedures. However, step 8 of the synchronous mode operating procedures can be omitted. No special keyboard operations are required to establish mode switching since the terminals will always be in asynchronous mode when not equipped with the Control Data synchronous interface option.

## CDC 795 POST PROCESSOR OPTION

### RELEASE MATERIALS

The CDC 795 post processor runs under NOS/BE when installed with the TIGS 1 preprocessor.

The CDC 795 post processor resides on the tape known as PL86D. PL86D is a program library in UPDATE format and has the following characteristics: 7-track (800 bpi) or 9-track (800 or 1600 cpi), binary recording mode, TIGSCDC as file ID in HDR1 label, and the following six files:

- File 1 - installation job program library in UPDATE format,
- File 2 - empty,
- File 3 - empty,
- File 4 - TIGS 1 CDC 795 post processor source code program library in UPDATE format,
- File 5 - verification program in UPDATE PL format, and
- File 6 - empty.

### Notes and Cautions

All limitations applicable to NOS/BE and INTERCOM also apply to TIGS 1 with the CDC 795 post processor.

All TIGS 1 subroutines are callable from application programs that have been written in FORTRAN Extended.

Communications between the terminal and the central site are supported for TIGS 1 with the CDC 795 post processor according to table 7-3.

TABLE 7-3. TIGS/CDC 795 COMMUNICATIONS CAPABILITIES

Communication Mode	Baud Rate
Asynchronous	1200 300

### INSTALLATION DESCRIPTION

The installation of TIGS 1 with the CDC 795 post processor allows the user to generate any combination of a TIGS library (CDCLIB) to be used when segmenting or overlaying TIGS, a TIGS library (CDCSFL) without segment or overlay capabilities, and a BTIGS library (CDCBGN).

The segment/overlay loader library (CDCLIB) can be used in those situations where memory requirements of graphic applications exceed the available NOS/BE field length. The user can employ the segment/overlay loader library (CDCLIB) in conjunction with the CYBER loader to segment or to overlay a graphic application and thereby reduce memory requirements. Note that use of the segment/overlay loader library (CDCLIB) without segmentation or overlays increases an application program field length requirement.

The basic (nonsegment/nonoverlay) loader library (CDCSFL) can be used for graphic applications with memory requirements that do not exceed the NOS/BE available field length.

If the use of a previously created old TIGS 1.3 NDF (Neutral Display File) is required, then the library (CDCLIB) must be used. See section 8 of the TIGS Reference Manual for further details.

Only one library (CDCBGN) is provided for BTIGS. Since BTIGS has no neutral display file, a special segment/overlay loader library is not required for neutral display file access.

CDCLIB is installed by default by the installation job. CDCSFL is installed by the installation job by specifying =DEFINE,BASICLDR as an UPDATE directive. CDCBGN is installed by the installation job by specifying =DEFINE,BTIGSLIB as an UPDATE directive. Installation of CDCLIB may be suppressed by specifying =DEFINE,NOSEGLDR as an UPDATE directive.

### CONFIGURATION DEFAULTS

Users may also wish to specify installation defaults for lightpen availability, forcestick availability, tablet availability, hardcopy unit availability, and terminal error display availability. If the same configuration is used repeatedly, specification of the installation defaults will minimize the question/answer session during TIGS 1.3 initialization. When the installed defaults are to be used, only a single Y response is required during initialization. Installation defaults are specified using =DEFINE directives in UPDATE (see step 2 of the "Installation Procedure").

### INSTALLATION VERIFICATION

An installation verification program (CDCVfy) relocatable binary is always generated by the installation procedure. Operation of the installation verification program is described under the heading "Verification Procedure".

### NEUTRAL DISPLAY FILE CONVERSION

All TIGS 1.0, 1.1, and 1.2 neutral display files must be modified by a conversion program before they can be used by a TIGS 1.3 application program. The conversion program is installed by the installation job by specifying =DEFINE,NDFCONV as an UPDATE directive. The conversion program consists of two binary files: (CFGEN and CFUTIL). The conversion program files are cataloged under ID=TIGS. Instructions on running this program are given in the TIGS 1.3 Reference Manual under Appendix E - "Operating System Dependencies." This program does not apply to BTIGS.

## SEGMENTATION

Users may wish to provide segmentation for their application and TIGS 1.3. To help the user do this, a skeleton segment directives source file is cataloged under permanent file name CDCDIR, ID=TIGS. Instructions on segmentation are given in the TIGS Reference Manual under Appendix E - "Operating System Dependencies." These segment directives do not apply to BTIGS.

## GRAPHICS CLASS

Execution of TIGS 1 with the CDC 795 post processor requires a graphics PP program in NOS/BE. The PP routine, GCC-Change Program to Graphics Classification, gives the calling program graphics classification for the duration of program execution and returns the page width and length to the calling routine. GCC is installed as part of the NOS/BE installation. No graphics activity should be attempted if GCC has not been installed.

## INSTALLATION PROCEDURE

The procedure for installing TIGS 1 with the CDC 795 post processor is outlined in the following two steps.

### Step 1.

This step generates UPDATE(L=7) listings of the installation job and the verification program.

The installation job is file 1 on the CDC 795 post processor release tape (PL86D). File 1 is a program library in UPDATE format with = (equals) as the master control character.

The verification program is file 5. File 5 is a program library in UPDATE format with \* (asterisk) as the master control character.

Perform an UPDATE run against file 1 of PL86D to obtain the sequence number which corresponds to any control cards which must be modified for installation. An L=7 listing of the installation job and verification program may be obtained by executing the following procedure:

```
LISTI,T10,CM65000.
```

```
ACCOUNT(*)          (Supply appropriate ac-
                    counting information.)
```

```
LABEL(TIGSPL,R,L=TIGSCDC,VSN=PL86D,
```

```
D= { HY } { } (7-track, 800 bpi.)
    { HD } { ,N=US } (9-track, 800 cpi.)
    { PE } { ,N=US } (9-track, 1600 cpi.)
```

```
COPYBF(TIGSPL,OLDPLT)
```

```
SKIPF(TIGSPL,3,17)
```

```
COPYBF(TIGSPL,OLDPLV)
```

```
UNLOAD(TIGSPL)
```

```
UPDATE(Q,P=OLDPLT,C=0,L=7,*==,U)
```

```
UPDATE(Q,P=OLDPLV,C=0,L=7,U)
```

```
7/8/9
```

```
=IDENT,LIST1
```

```
=C,TIGS1
```

```
7/8/9
```

```
*IDENT,LIST2
```

```
*C,TIGS2
```

```
6/7/8/9
```

### Step 2.

This step installs a desired combination of the following permanent files: TIGS/BTIGS library (or libraries), installation verification program in relocatable binary, neutral display file conversion program files, and a source file of CDC 795 post processor segment loader directives.

Perform a full UPDATE on file 1 of the CDC 795 post processor release tape (PL86D), modifying the installation job program library with the appropriate accounting information and DEFINE UPDATE directives required for installation. Route the resulting installation job to the NOS/BE input queue by executing the following procedure. NOTE: Only the CDC 795 post processor release tape (PL86D) is required for the EXTRACT job, but both the CDC 795 post processor release tape (PL86D) and the TIGS 1 preprocessor release tape (PL86A) are required for the installation job routed to the NOS/BE input queue.

```
EXTRACT,T10,CM65000.
```

```
ACCOUNT(*)          (Supply appropriate accounting
                    information)
```

```
LABEL(TIGSPL,R,L=TIGSCDC,VSN=PL86D,
```

```
D = { HY } { } (7-track, 800 bpi)
     { HD } { ,N=US } (9-track, 800 cpi)
     { PE } { ,N=US } (9-track, 1600 cpi)
```

```
COPYBF(TIGSPL,OLDPL)
```

```
UNLOAD(TIGSPL)
```

```
REQUEST(COMPILE,*Q)
```

```
UPDATE(F,*==,L=17,D,8)
```

```
ROUTE(COMPILE,DC=IN)
```

```
7/8/9
```

```
=IDENT,INSTALL
```

```
=DEFINE, { HY } (7-track,800 bpi.)
          { PE } (9-track, 1600 cpi.)
```

```
=DEFINE,BASICLDR (Optional UPDATE directive.
                  If the user wishes to install a
                  basic (nonsegment nonover-
                  lay) library (CDCSFL), the
                  =DEFINE,BASICLDR
                  directive must be included as
                  part of the UPDATE (table
                  7-4).)
```

**=DEFINE,BTIGSLIB** (This is an optional UPDATE directive. If the user wishes to install a BTIGS library (CDCBGN), the =DEFINE,BTIGSLIB directive must be included as part of the UPDATE (table 7-4).

**=DEFINE,NOSEGLDR** (This is an optional UPDATE directive. If the user wishes to suppress the installation of a TIGS segment/overlay loader library (CDCLIB), the =DEFINE,NOSEGLDR directive must be included as part of the UPDATE. Suppressing CDCLIB also causes the TIGS segment loader directives source file (CDCDIR) to be suppressed.

**=DEFINE,NOBG** (This is an optional UPDATE directive. If the user wishes to suppress the installation of Beginning Graphics (BG) as part of the full TIGS library, the =DEFINE,NOBG directive must be included as part of the UPDATE.)

**=DEFINE,NOHANDLR** (This is an optional UPDATE directive. If the user wishes to suppress the installation of the Data Handler as part of the TIGS library, the =DEFINE,NOHANDLR directive must be included as part of the UPDATE.)

**=DEFINE,LIGHTPEN** (Optional UPDATE directive. If the user has a lightpen and wishes to declare its existence, add this directive as part of the UPDATE. This default may be overridden at run time by answering the initialization questions individually. If not defined, no lightpen is assumed.)

**=DEFINE,FORSTICK** (Optional UPDATE directive. If the user has a forystick and wishes to declare its existence, add this directive as part of the UPDATE. This default may be overridden at run time by answering the initialization questions individually. If not defined, no forystick is assumed.)

**=DEFINE,TABLET** (Optional UPDATE directive. If the user has a tablet and wishes to declare its existence, add this directive as part of the UPDATE. This default may be overridden at run time by answering the initialization questions individually. If not defined, no tablet is assumed.)

**=DEFINE,HARDCOPY** (Optional UPDATE directive. If the user has a hardcopy and wishes to declare its existence, add this directive as part of the UPDATE. This default may be overridden at run time by answering the initialization questions individually. If not defined, no hardcopy is assumed.)

**=DEFINE,ERDISPLAY** (Optional UPDATE directive. If the user wants the terminal error display enabled (this is recommended), add this directive as part of the UPDATE. This default may be overridden at run time by answering the initialization questions individually. If not defined, no errors will be displayed on the terminal screen.)

**=DEFINE,NDFCONV** (This is an optional UPDATE directive. If the user wishes to install the neutral display file conversion program, the =DEFINE,NDFCONV directive must be included as part of the UPDATE. Two binaries (CFGEN and CFUTIL) are installed.)

TABLE 7-4. LIBRARIES INSTALLED USING SPECIFIC DEFINE COMBINATIONS

Libraries Defines	CDCLIB	CDCSFL	CDCBGN
NONE	Yes	No	No
BASICLDR	Yes	Yes	No
BTIGSLIB	Yes	No	Yes
BASICLDR BTIGSLIB	Yes	Yes	Yes
NOSEGLDR BASICLDR	No	Yes	No
NOSEGLDR BTIGSLIB	No	No	Yes
NOSEGLDR BASICLDR BTIGSLIB	No	Yes	Yes

=D,TIGS1.10  
ACCOUNT(\*)

(Modify the installation job program library with appropriate accounting information. The dummy account card sequence number, 10, was obtained from the L=7 file listing resulting from step 1 of the "Installation Procedure.")

6/7/8/9

**VERIFICATION PROCEDURE**

Run the verification program, which is permanent file CDCVFY,ID=TIGS, created by the installation procedure job, to verify the proper installation of TIGS 1. The verification program may be run as follows:

1. Refer to "Terminal Operating Procedures" section to properly set up the terminal.
2. Log in to NOS/BE with a valid user name and password.
3. If a segment/overlay library (CDCLIB) was not installed, go to step 12. Attach the verification program and segment/overlay loader library. Declare the library to the system:

```
ATTACH(CDCVFY,ID=TIGS)
ATTACH(CDCLIB,ID=TIGS)
LIBRARY(CDCLIB)
```

4. Execute the verification program:

```
CDCVFY.
```

5. The terminal operator will then be asked if the installation defaults are to be accepted.† If the defaults are correct for lightpen, forestick, tablet, hardcopy unit and error display, the operator may type a Y and skip to step 11. If the defaults are not correct, the operator must enter N and follow the subsequent steps (figure 7-4).
6. The terminal operator will be asked if a lightpen is available (figure 7-4).

**INSTALLATION DEFAULT VALUES ARE**

```
LIGHTPEN IS NOT AVAILABLE
FORCESTICK IS AVAILABLE
TABLET IS NOT AVAILABLE
HARD COPY UNIT IS AVAILABLE
ERROR DISPLAY IS ENABLED
```

DO YOU ACCEPT THESE DEFAULTS (Y/N)

```

      N
IS LIGHTPEN AVAILABLE (Y/N)
      Y
IS FORCESTICK AVAILABLE (Y/N)
      N
IS TABLET AVAILABLE (Y/N)
      Y
IS HARD COPY UNIT AVAILABLE (Y/N)
      N
SHOULD ERROR DISPLAY BE ENABLED (Y/N)
      Y
```

Figure 7-4. Acceptable CDC 795 Defaults

7. The terminal operator will be asked if a forestick is available (figure 7-4).
8. The terminal operator will be asked if a tablet is available (figure 7-4).
9. The terminal operator will be asked if a hardcopy unit is available. Enter N. The verification program does not require the availability of a hardcopy unit (figure 7-4).
10. The terminal user will be asked if the error display should be enabled. Enter Y (figure 7-4).
11. Figure 7-5 will be displayed.
12. If a basic (nonsegment/nonoverlay) loader library, CDCSFL, was not installed, go to step 16.
13. Attach the verification program and the nonsegment/nonoverlay loader library. Declare the library to the system:

```
ATTACH(CDCVFY,ID=TIGS)
ATTACH(CDCSFL,ID=TIGS)
LIBRARY(CDCSFL)
```

14. Execute the verification program:

```
CDCVFY.
```

15. Repeat steps 5 through 11 to verify the nonsegment/nonoverlay loader library, CDCSFL.

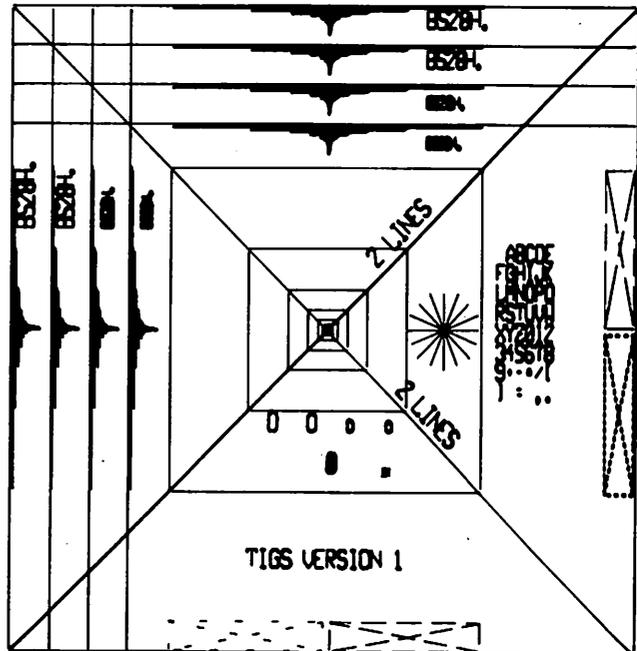


Figure 7-5. Figure Displayed on the CDC 795 Terminal

† The initialization questions may be overridden by supplying a subroutine ZPIQST(ILPEN,IFSTCK,ITABL,IHC,IERDIS) to provide values for each parameter (see TIGS Reference Manual).

16. If a BTIGS library (CDCBGN) was not installed, go to step 20.
17. Attach the verification program and the BTIGS library. Declare the library to the system:
 

```
ATTACH(CDCVFY,ID=TIGS)
ATTACH(CDCBGN,ID=TIGS)
LIBRARY(CDCBGN)
```
18. Execute the verification program:
 

```
CDCVFY.
```
19. Repeat steps 5 through 11 to verify the BTIGS library, CDCBGN.
20. Purge all unnecessary files generated during the installation or verification of TIGS 1.
21. Log off the system by entering LOGOUT when finished.

### RUNNING THE NDF CONVERSION PROGRAM

Any neutral display file (NDF) created under TIGS version 1.0, 1.1, or 1.2 will need a one-time conversion in order to be used by TIGS version 1.3. The conversion program should be installed as part of the TIGS installation procedure. The following job should be run in either interactive or batch mode.

```
ATTACH,OLDNF,pfname,ID=id,PW=password.
(1.0,1.1, or 1.2 NDF must be local file OLDNDF)
ATTACH,OLDLIB,pfname,ID=TIGS,MR=1.
(attach library under which the old NDF was created)
LIBRARY,OLDLIB.
(declare it as a library)
ATTACH,CFGEN,ID=TIGS,MR=1.
(attach the old NDF to conversion file program)
CFGEN.
(generates conversion file on TAPE1)
ATTACH,NEWLIB,pfname,ID=TIGS,MR=1.
(attach TIGS version 1.3 library)
LIBRARY,NEWLIB.
(declare it as a library)
ATTACH,CFUTIL,ID=TIGS,MR=1.
(attach the conversion file to version 1.3 program)
REQUEST,NEWNDF,*PF.
(request version 1.3 NDF as a permanent file)
CFUTIL.
(generate version 1.3 NDF on local file NEWNDF)
CATALOG,NEWNDF,pfname,ID=id,PW=password.
(make the version 1.3 NDF a permanent file)
```

Since the neutral file is not associated with any one post processor, the libraries OLDLIB and NEWLIB may be for any TIGS post processor. However, OLDLIB must be a version 1.0, 1.1, or 1.2 library; and NEWLIB must be a version 1.3 library.

### TERMINAL OPERATING PROCEDURES

The CDC 795 operating procedures are as follows:

1. Turn the terminal power on by pushing in the ON/OFF button on the front of the display and flipping the 0/1 switch, located on the front panel of the controller unit, to 1.

2. Push the LOCAL button on the front panel of the controller unit to bring up a test pattern on the display screen.
3. Press the carriage return key on the keyboard to bring down the test pattern. A BOM will appear in the center of the screen. Then depress Y followed by carriage return. A TTY F will appear at the top of the screen indicating that the terminal is in teletype emulation mode.
4. Switch the terminal to half duplex by depressing the function key labeled F1.
5. Turn the modem power on and verify that the modem is connected to the terminal.
6. Dial the appropriate phone number.
7. INTERCOM 5 requires the user to press the RETURN key after the terminal is polled before it will respond with a LOGIN message.

### CHROMATICS 1599 POST PROCESSOR OPTION

#### RELEASE MATERIALS

The Chromatics 1599 post processor runs under NOS/BE when installed with the TIGS 1 preprocessor.

The Chromatics 1599 post processor resides on the tape known as PL86E. PL86E is a program library in UPDATE format and has the following characteristics: 7-track (800 bpi) or 9-track (800 or 1600 cpi), binary recording mode, TIGSCHM as file ID in HDR1 label, and the following six files.

- File 1 - installation job program library in UPDATE format,
- File 2 - empty,
- File 3 - empty,
- File 4 - TIGS 1 Chromatics post processor source code program library in UPDATE format, verification program in UPDATE PL format, and
- File 6 - empty.

#### Notes and Cautions

All limitations applicable to NOS/BE and INTERCOM also apply to TIGS 1 with the Chromatics 1599 post processor.

All TIGS 1 subroutines are callable from application programs that have been written in FORTRAN Extended.

Communications between the terminal and the central site are supported for TIGS 1 with the Chromatics 1599 post processor according to table 7-5.

TABLE 7-5. TIGS/CHROMATICS COMMUNICATIONS CAPABILITIES

Communications Mode	Baud Rate
Asynchronous	300 to 9600

## INSTALLATION DESCRIPTION

The installation of TIGS 1 with the Chromatics 1599 post processor allows the user to generate any combination of a TIGS library, CHMLIB, to be used when segmenting or overlaying TIGS, a TIGS library, CHMSFL, without segment or overlay capabilities, and a BTIGS library, CHMBGN.

The TIGS segment/overlay loader library, CHMLIB, can be used in those situations where memory requirements of graphic applications exceed the available NOS/BE field length. The user can employ the segment/overlay loader library, CHMLIB, in conjunction with the CYBER loader to segment or to overlay a graphic application and thereby reduce memory requirements. Note that the use of the segment/overlay loader library, CHMLIB, without segmentation or overlays greatly increases an application program field length requirement. The segment/overlay loader library, CHMLIB, must be used if an old neutral display file is to be accessed by the application program.

The basic nonsegment/nonoverlay loader library, CHMSFL, can be used for graphic applications with memory requirements that do not exceed the NOS/BE available field length.

Only one library, CHMBGN, is provided for BTIGS. Since BTIGS has no neutral display file, a special segment/overlay loader library is not required for neutral display file access.

CHMLIB is installed by default by the installation job. CHMSFL is installed by the installation job by specifying =DEFINE,BASICLDR as an UPDATE directive. CHMBGN is installed by the installation job by specifying =DEFINE,BTIGSLIB as an UPDATE directive. Installation of CHMLIB may be suppressed by specifying =DEFINE,NOSEGLDR as an UPDATE directive.

## CONFIGURATION DEFAULTS

Users may also wish to specify installation defaults for baud rate and hardcopy unit availability. If the same configuration is used repeatedly, specification of the installation default will minimize the question/answer session during TIGS 1 initialization. When the installation defaults are to be used, only a single Y response is required during initialization. Installation defaults are specified using =DEFINE directives in UPDATE (see step 2 of the "Installation Procedure").

## INSTALLATION VERIFICATION

An installation verification program, CHMVFY, relocatable binary is always generated by the installation procedure. Operation of the installation verification program is described under the heading "Verification Procedure" in this document.

## NEUTRAL DISPLAY FILE CONVERSION

All TIGS 1.0, 1.1, and 1.2 neutral display files must be modified by a conversion program before they can be used by a TIGS 1.3 application program. The conversion program is installed by the installation job by specifying =DEFINE,NDFCONV as an UPDATE directive. The conversion program consists of two binary files: CFGEN and CFUTIL. The conversion program files are cataloged under ID=TIGS. Instructions on running this program are given in the TIGS 1.3 Reference Manual under Appendix E "Operating System Dependencies". This program does not apply to BTIGS.

## SEGMENTATION

Users may wish to provide segmentation for their application and TIGS 1. To help the user do this, a skeleton segment directives source file is provided during the TIGS 1 installation procedure. The segment directives source file is cataloged under permanent file name CHMDIR,ID=TIGS. Instructions on segmentation are given in the TIGS Reference Manual under Appendix E - "Operating System Dependencies." These segment directives do not apply to BTIGS.

## GRAPHICS CLASS

Execution of TIGS 1 with the Chromatics 1599 post processor requires a graphics PP routine in NOS/BE. The PP routine, GCC-Change Program to Graphics Classification, gives the calling program graphics classification for the duration of program execution and returns the page width and length to the calling routine. GCC is installed as part of the NOS/BE installation. No graphics activity should be attempted if GCC has not been installed.

## INSTALLATION PROCEDURE

The procedure for installation of TIGS 1 with the Chromatics 1599 post processor is outlined in the following two steps.

### Step 1.

This step generates UPDATE(L=7) listings of the installation job and the verification program. The installation job is file 1 on the Chromatics 1599 post processor release tape, (PL86E). File 1 is a program library in UPDATE format with = (equals) as the master control character. The verification program is file 5. File 5 is a program library in UPDATE format with \* (asterisk) as the master control character.

Perform an UPDATE run against file 1 of PL86E to obtain the sequence number that corresponds to any control card that must be modified for installation. An L=7 listing of the installation job and verification program may be obtained by executing the following procedure:

```
LISTI,T10,CM65000, { MT1 } (7-track, 800 bpi.)
                   { HD1 } (9-track, 800 cpi.)
                   { PE1 } (9-track, 1600 cpi.)
```

```
ACCOUNT(*) (Supply appropriate accounting
            information.)
```

```
LABEL(TIGSPL,R,L=TIGSCHM,VSN=PL86E,
```

```
D= { HY } { ) } (7-track, 800 bpi.)
   { HD } { , N=US } (9-track, 800 cpi.)
   { PE } { , N=US } (9-track, 1600 cpi.)
```

```
COPYBF(TIGSPL,OLDPLT)
```

```
SKIPF(TIGSPL,3,17)
```

```
COPYBF(TIGSPL,OLDPLV)
```

```
UNLOAD(TIGSPL)
```

```
UPDATE(Q,P=OLDPLT,C=0,L=7,*==,U)
```

```
UPDATE(Q,P=OLDPLV,C=0,L=7,U)
```

7/8/9  
 =IDENT,LIST1  
 =C,TIGS1  
 7/8/9  
 \*IDENT,LIST2  
 \*C,TIGS2  
 6/7/8/9

Step 2.

This step installs a desired combination of the following permanent files: TIGS/BTIGS library (or libraries), verification program relocatable binary, neutral display file conversion program files, and a source file of segment loader directives.

The job (EXTRACT), described in this step, performs a full UPDATE on file 1 of the Chromatics post processor release tape, PL86E, modifying the installation job program library with the appropriate accounting information and DEFINE UPDATE directives required for installation. Route the resulting installation job to the NOS/BE input queue by executing the following procedure.

NOTE

Only the Chromatics post processor release tape (PL86E) is required for the EXTRACT job, but both the Chromatics post processor release tape (PL86E) and the TIGS 1 preprocessor release tape (PL86A) are required for the installation job routed to the NOS/BE input queue.

EXTRACT,T10,CM65000, { MT1 } (7-track, 800 bpi.)  
 { HD1 } (9-track, 800 cpi.)  
 { PE1 } (9-track, 1600 cpi.)

ACCOUNT(\*) (Supply appropriate accounting information.)

LABEL(TIGSPL,R,L=TIGSCHM, VSN=PL86E,

D= { HY } { } (7-track, 800 bpi.)  
 { HD } { ,N=US } (9-track, 800 cpi.)  
 { PE } { ,N=US } (9-track, 1600 cpi.)

COPYBF(TIGSPL,OLDPL)

UNLOAD(TIGSPL)

REQUEST(COMPILE,\*Q)

UPDATE(F,\*=,L=17,D,8)

ROUTE(COMPILE,DC=IN)

7/8/9

=IDENT,INSTALL

=DEFINE, { HY } (7-track, 800 bpi.)  
 { PE } (9-track, 1600 cpi.)

(Default is 9-track, 800 cpi (HD).)

=DEFINE,BASICLDR (This is an optional UPDATE directive. If the user wishes to install a TIGS basic (nonsegment/nonoverlay) loader library, CHMSFL, the =DEFINE, BASICLDR directive must be included as part of the UPDATE (table 7-6).)

=DEFINE,BTIGSLIB (This is an optional UPDATE directive. If the user wishes to install a BITGS library, CHMBGN, the =DEFINE, BTIGSLIB directive must be included as part of the UPDATE (table 7-6).)

=DEFINE,NOSEGLDR (This is an optional UPDATE directive. If the user wishes to suppress the installation of a TIGS segment/overlay loader library (CHMLIB), the =DEFINE, NOSEGLDR directive must be included as part of the UPDATE. Suppressing CHMLIB also causes the TIGS segment loader directives source file, CHMDIR, to be suppressed (table 7-6).)

=DEFINE,NOBG (This is an optional UPDATE directive. If the user wishes to suppress the installation of Beginning Graphics (BG) as part of the full TIGS library, the =DEFINE,NOBG directive must be included as part of the UPDATE.)

=DEFINE,NOHANDLR (This is an optional UPDATE directive. If the user wishes to suppress the installation of the Data Handler as part of the TIGS library, the =DEFINE,NOHANDLR directive must be included as part of the UPDATE.)

=DEFINE. { BAUD300 } (Specify the installation default baud rate. This default  
 { BAUD2400 } may be overridden at run  
 { BAUD4800 } time by answering the initial-  
 { BAUD9600 } ization questions individually. If none of the above baud rates is defined, 1200 baud will be established as the installation default.)

=DEFINE,HARDCOPY (Specify whether or not a hardcopy device is available. This default may be overridden at run time by answering the initialization questions individually. If a hardcopy device is not defined, the installation default will be no hardcopy device.)

=DEFINE,NDFCONV (This is an optional UPDATE directive. If the user wishes to install the neutral display file conversion program, the =DEFINE,NDFCONV directive must be included as part of the UPDATE. Two binaries (CFGEN and CFUTIL) are installed.)

=D,TIGS1.10

ACCOUNT() (The user must modify the installation job program library with appropriate accounting information. The dummy ACCOUNT card sequence number, 10, was obtained from the compile file listing resulting from step 1 of the "Installation Procedure.")

6/7/8/9

TABLE 7-6. LIBRARIES INSTALLED USING SPECIFIC DEFINE COMBINATIONS

Libraries Defines	CHMLIB	CHMSFL	CHMBGN
NONE	Yes	No	No
BASICLDR	Yes	Yes	No
BTIGSLIB	Yes	No	Yes
BASICLDR BTIGSLIB	Yes	Yes	Yes
NOSEGLDR BASICLDR	No	Yes	No
NOSEGLDR BTIGSLIB	No	No	Yes
NOSEGLDR BASICLDR BTIGSLIB	No	Yes	Yes

**VERIFICATION PROCEDURE**

Run the verification program, cataloged as permanent file CHMVFY by the installation job, to verify the proper installation of TIGS 1. The verification program may be run as follows:

1. Refer to the "Terminal Operating Procedures" to properly set up the terminal.
2. Log in to NOS/BE with a valid user name and password.
3. If a segment/overlay loader library (CHMLIB) was not installed, go to step 10.

4. Attach the segment/overlay loader library permanent file and declare CHMLIB a library:

ATTACH(CHMLIB,ID=TIGS)  
LIBRARY(CHMLIB)

5. Attach the verification program permanent file and execute the verification program:

ATTACH(CHMVFY,ID=TIGS)  
CHMVFY.

6. The terminal operator will be asked if the installation default is to be accepted. † If the installation default is correct for baud rate, the operator may type a Y and skip to step 9. If the default is not correct, the operator must type an N and do steps 7 and 8.

7. The terminal operator will be asked to enter the baud rate (figure 7-6). Enter the baud rate in use.

8. The terminal operator will be asked if a hardcopy unit is available (figure 7-6). Enter N. The verification program does not require the availability of a hardcopy unit.

9. The terminal screen will be cleared and figure 7-7 will be displayed.

10. If a basic (nonsegment/nonoverlay) loader library, CHMSFL, was not installed, then go to step 14.

11. Attach the basic (nonsegment/nonoverlay) loader library permanent file and declare CHMSFL a library:

ATTACH(CHMSFL,ID=TIGS)  
LIBRARY(CHMSFL)

12. Attach the verification program and execute the verification program:

ATTACH(CHMVFY,ID=TIGS)  
CHMVFY.

13. Repeat steps 6 through 9 to verify the basic (nonsegment/nonoverlay) loader library (CHMSFL).

14. If a BTIGS library, CHMBGN, was not installed, go to step 18.

15. Attach the BTIGS library permanent file and declare CHMBGN a library:

ATTACH(CHMBGN,ID=TIGS)  
LIBRARY(CHMBGN)

16. Attach the verification program and execute the verification program:

ATTACH(CHMVFY,ID=TIGS)  
CHMVFY.

17. Repeat steps 6 through 9 to verify the BTIGS library (CHMBGN).

18. Purge any unnecessary files generated during the installation or verification of TIGS 1.

19. Log off when finished.

† The initialization questions can be overridden by supplying a subroutine ZPIQST(IBAUD,IHC) to provide the values for each parameter (see TIGS Reference Manual).

## RUNNING THE NDF CONVERSION PROGRAM

Any neutral display file (NDF) created under TIGS version 1.0, 1.1, or 1.2 will undergo a one-time conversion in order to be used by TIGS version 1.3. The conversion program used should be installed as part of the TIGS installation procedure. The following job should be run in either interactive or batch mode.

```
ATTACH,OLDNF,pfname,ID=id,PW=password.
    (1.0,1.1, or 1.2 NDF must be local file OLDNDF)
ATTACH,OLDLIB,pfname,ID=TIGS,MR=1.
    (attach library under which the old NDF was created)
LIBRARY,OLDLIB.
    (declare it as a library)
ATTACH,CFGEN,ID=TIGS,MR=1.
    (attach the old NDF to conversion file program)
CFGEN.
    (generates conversion file on TAPE1)
ATTACH,NEWLIB,pfname,ID=TIGS,MR=1.
    (attach TIGS version 1.3 library)
LIBRARY,NEWLIB.
    (declare it as a library)
ATTACH,CFUTIL,ID=TIGS,MR=1.
    (attach the conversion file to version 1.3 program)
REQUEST,NEWNDF,*PF.
    (request version 1.3 NDF as a permanent file)
CFUTIL.
    (generate version 1.3 NDF on local file NEWNDF)
CATALOG,NEWNDF,pfname,ID=id,PW=password.
    (make the version 1.3 NDF a permanent file)
```

Since the neutral display file is not associated with any one post processor, the libraries OLDLIB and NEWLIB may be for any TIGS post processor. However, OLDLIB must be a version 1.0, 1.1, or 1.2 library, and NEWLIB must be a version 1.3 library.

## TERMINAL OPERATING PROCEDURES

### Chromatics 1599

Chromatics 1599 terminal operating procedures are as follows:

1. Turn the terminal power on by pressing the POWER switch, located at the front of the display unit.
2. Allow the terminal to warm up.
3. Press the RESET key followed by the BOOT key. This bootstraps the terminal software.
4. Press the ESC escape key and type in the baud rate selection. The baud rate selections are as follows:

R04	300 baud
R07	1200 baud
R09	2400 baud
R0B	4800 baud
R0C	9600 baud

5. Press the ESC escape key and type an H. This selects half duplex communications.
6. Turn the modem power on and verify that the modem is connected to the terminal.
7. Dial the appropriate phone number.
8. INTERCOM Version 5 requires the user to press the RETURN key after the terminal is polled before it will respond with a LOGIN message.

INSTALLATION DEFAULT VALUES ARE

1200 BAUD

NO HARD COPY AVAILABLE

DO YOU ACCEPT THESE DEFAULTS (Y/N)

N

ENTER BAUD RATE. 300.1200.2400.4800.9600

3

IS HARD COPY UNIT AVAILABLE (Y/N)

N

Figure 7-6. Acceptable Chromatics Defaults

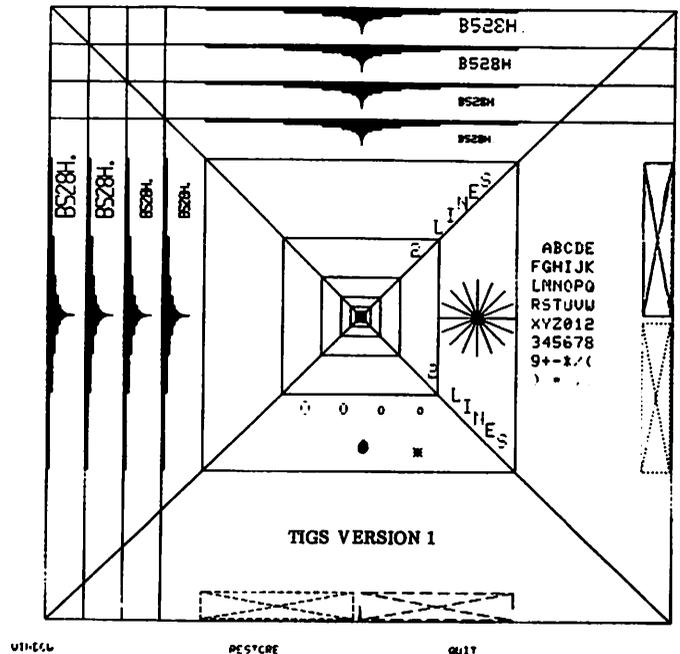


Figure 7-7. Figure Displayed on Chromatics 1599 Terminal

## TOTAL UNIVERSAL 2

### RELEASE DESCRIPTIONS

TOTAL Universal 2 consists of the following relocatable binaries:

**DBGEN** (Data base generation program)—this program reads user-prepared DEBL statements and generates COMPASS source statements which in turn produce the data base descriptor module.

**DBFMT** (Data set format program)—this program reads format parameter statements, and, utilizing a data base descriptor module, preformats the data sets.

**DATBAS** (Data base interface module)—this module serves as an interface between the user application program and the TOTAL and data base descriptor modules.

**TOTAL** (Data base management module)—this module provides the data management capability of the system, interpreting and executing the various DML commands from the user application program.

**DBRCV** (Data base recovery module)—this module, optional in use, provides the ability to recover record images from the TOTAL logging file.

**TOTUTIL** (TOTAL utilities)—this program provides TOTAL users with a generalized utility package capable of performing file loading/unloading, statistics, and other data base functions.

These files are to be installed on the user's permanent file library.

### Hardware Requirements

TOTAL Universal 2 can be maintained and run on the same minimum hardware requirements as NOS/BE.

### Deficiencies

None.

### RELEASE MATERIALS

TOTAL UNIVERSAL 2 release materials are contained on program library tape PL75. PL75 has the following characteristics: labeled, 7-track (800 bpi) or 9-track (800 or 1600 cpi), binary recording mode, TOTALU2P0 as file ID in HDR1 label. PL75 contains seven files:

- File 1 - installation and verification deck in UPDATE format,
- File 2 - empty,
- File 3 - five TOTAL relocatable binaries: DBGEN, DBFMT, DATBAS, TOTAL, DBRCV,
- File 4 - source code for TOTAL utilities in UPDATE format,
- File 5 - empty,
- File 6 - COBOL compilation output from the validation job, and
- File 7 - execution output from the validation job.

### INSTALLATION PROCEDURES

Installation consists of the following steps:

1. Determine UPDATE directives to modify the install deck (as described in the next section).
2. Create the following job to call the install/validate job from the install tape and submit it as a batch job:

JOB/ACCOUNT. (Supply valid JOB/ACCOUNT card.)

LABEL,TOT,R,L=TOTALU2P0,D=  $\left\{ \begin{array}{l} \text{HY} \\ \text{HD} \\ \text{PE} \end{array} \right\}$ , VSN=PL75.

REQUEST,COMPILE,\*Q.

UPDATE,Q,\*=\$\$\$\$P=TOT,L=F.

ROUTE,COMPILE,DC=IN.

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UPDATE directives

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3. Validate the install/validate job output against the sample output copied from the install tape.

## INSTALLATION PARAMETERS

Following are the UPDATE directives to be used as described in the previous section. All options are shown and explained.

\$IDENT INST

{ \$DEFINE HY } { (7-track 800 bpi) }  
{ \$DEFINE HD } { (9-track 800 cpi) }  
{ \$DEFINE PE } { (9-track 1600 cpi) }  
Select one to correspond to the installation tape density.

\$DELETE INSTALL.2,INSTALL.3

JOB/ACCOUNT CARD. (Supply valid JOB/ACCOUNT card.)

\$COMPILE INSTALL

## INSTALLATION JOB

The installation/validation job performs the following:

1. Issues LABEL card to have install tape assigned to job.
2. REQUEST's permanent file space for the five TOTAL files, copies them from tape to the permanent files, and catalogs the permanent files as in the following example:

CATALOG,DBGEN,ID=TOTAL.

3. Compiles TOTAL utilities and creates the relocatable binary on the permanent file TOTUTIL.

4. Validation is begun by defining a data base using DBGEN.
5. The test data base is formatted with DBFMT.
6. Sample data is placed in the data base with a COBOL program, and retrievals are performed. DATBAS and TOTAL are verified in this phase.
7. DBRCV is run against the data base for its validation.
8. The TOTAL utilities are validated by executing the statistics option.
9. Finally, the sample output of the install/validation job is copied from the install tape to output for verification.

## FILES CREATED

The installation/validation job creates the following permanent files with ID=TOTAL and no passwords assigned:

DBGEN	}	Five TOTAL binaries
DBFMT		
DATBAS		
TOTAL		
DBRCV		
TOTUTIL	}	- TOTAL utility binary
CUSTDB		- Validation DBMOD
CUCUST	}	Validation data base files
CUINVF		

The user should ensure that these files will not conflict with already existing files prior to installation.

## RELEASE DESCRIPTIONS

TOTAL/ATHENA consists of four relocatable binaries:

ATB1	} Modules that interface with the TOTAL data base management system.	
ATB2		
ATRP		the Report Writer module.
ATPLT		the Plotter module.

## HARDWARE REQUIREMENTS

TOTAL/ATHENA can be maintained and run on the same minimum hardware requirements as NOS/BE.

## SOFTWARE REQUIREMENTS

TOTAL Universal 2 must be installed before TOTAL/ATHENA installation is attempted.

## INSTALLATION PROCEDURES

PL62 contains six files:

File 1 - install deck in UPDATE format,

File 2 - empty,

File 3 - four relocatable binaries:

-ATB1	} TOTAL/ATHENA query update binaries,
-ATB2	
-ATRP	TOTAL/ATHENA Report Writer, and
-ATPLT	TOTAL/ATHENA Plotter;

File 4 - TOTAL/ATHENA, Report Writer, and Plotter source code deck in UPDATE format,

File 5 - demonstration decks in UPDATE format:

-TOTAL/ATHENA,  
-REPORT WRITER  
-PLOTTER, and  
-TEXT INFORMATION;

File 6 - sample output from demonstration jobs.

Installation consists of the following steps:

- Choose the UPDATE directives that are required in step 2 to modify the install deck.
  - Select a DEFINE,MT or DEFINE,NT or DEFINE, NTPE for install tape processing.
  - Select a DEFINE,BINARY or DEFINE,SOURCE. For execution of TOTAL/ATHENA, Report Writer and Plotter compiled binaries, select the DEFINE,BINARY. For users to compile their own copies of TOTAL/ATHENA, Report Writer

and Plotter, select the DEFINE,SOURCE control directive.

- Select DEFINE,DEBUG if COBOL DEBUG mode is desired.

- Create and submit for batch processing the following job to call the install deck from the install tape:

```
JOB, {MT1
      {HD1
      {PE1} .
```

ACCOUNT.

```
LABEL,ATH,R,L=TOTALATHENA,D= {HY
                                {HD
                                {PE}
```

VSN=PL62.

REQUEST,COMPILE,\*Q.

UPDATE(Q,P=ATH,L=F,\*=/)

ROUTE(COMPILE,DC=IN)

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/ID INST

```
/DEFINE {MT (7 TRACK TAPE)
         {NT (9 TRACK TAPE) } (Select MT, NT or
         {NTPE}                NTPE)
         (9 TRACK TAPE - 1600 cpi)
```

```
/DEFINE {SOURCE}                (Select BINARY or
         {BINARY}                SOURCE)
```

[/DEFINE,DEBUG]

/DELETE INSTALL.2,INSTALL.3

```
JOBNAME, {MT1
          {HD1
          {PE1} .                (Choose)
```

ACCOUNT. (Insert correct ACCOUNT here.)

/D INSTALL.103,INSTALL.104

```
JOBNAME,T200, {MT1
               {HD1
               {PE1} .          (Choose)
```

ACCOUNT. (Insert correct ACCOUNT here.)

/COMPILE INSTALL

6/7/8/9

- Verify that the output from the demonstration job matches the listing of the install tape sample output file. Verify that the output obtained from interactively executing the ATHENA plotter matches the output listed in the demonstration job text file.

## INSTALLATION JOB

The installation jobs perform the following:

- Issue LABEL to have PL62 assigned to job.
- For installation of the binary files (/DEFINE, BINARY), the install job defines the two TOTAL

ATHENA files, the Report Writer and Plotter files, and copies them from release PL62 to the permanent files. No passwords are assigned.

3. For the user to compile binaries from source code (/DEFINE,SOURCE) the install job defines the two TOTAL/ATHENA files, the Report Writer file and Plotter file, copies and updates the source code from tape to disk and compiles the source code generating TOTAL/ATHENA, Report Writer and Plotter binaries.
4. A TOTAL/ATHENA demonstration is begun by defining a data base using DBGEN (TOTAL module).
5. A test data base is formatted with DBFMT (TOTAL module).
6. Sample data is placed in the data base with TOTAL/ATHENA and then TOTAL/ATHENA retrievals and functions are performed.
7. A TOTAL/ATHENA Report Writer demonstration is then processed with SUBSET and COMMAND file data supplied on the install tape.
8. A TOTAL/ATHENA plotter demonstration should then be run interactively by the installer. The plotter data base and a text file of instructions to the installer is supplied on the install tape. The needed files are cataloged by the installation job, and the text file of instructions is printed out following the ATHENA Report Writer demonstration.

When the plotter verification is complete, the installer should compare all the demonstration output with the expected output which was copied from the install tape.

This job lists the install deck as it appears on file 1 of PL62:

```
JOBNAME, { MT1
           { HD1
           { PE1 } .
```

ACCOUNT.

```
LABEL(ATH,R,L=TOTALATHENA,D= { HY
                               { HD
                               { PE } ,
```

VSN=PL62)

```
UPDATE(Q,L=F,P=ATH,*=/)
```

7/8/9

```
/ID ATHLIST
```

```
/COMPILE INSTALL
```

6/7/8/9

## DEMONSTRATION JOB

The demonstration deck in UPDATE format includes the demonstration job and the necessary input records to the demonstration job. The demonstration job performs these operations:

1. Generates a TOTAL DBMOD and formats a TOTAL data base.
2. Creates and executes the TOTAL/ATHENA query/update executable binary.
3. Executes the TOTAL/ATHENA report generator module.
4. Defines and copies a TOTAL/ATHENA plotter SUBSET file.
5. Prints a text file that describes how to verify the TOTAL/ATHENA plotter.

This job lists the demonstration deck as it appears on file 5 of the install tape:

```
JOBNAME, { MT1
           { HD1
           { PE1 } .
```

ACCOUNT.

```
LABEL(ATH,R,L=TOTALATHENA,D= { HY
                               { HD
                               { PE } ,
```

VSN=PL62)

```
SKIPF,ATH,4,17.
```

```
UPDATE(Q,L=F,P=ATH,*=$$$$,R)
```

7/8/9

```
$ID ATHLIST
```

```
$COMPILE TADEMO
```

6/7/8/9

### NOTE

The binary files on this release were generated on a non-CMU CYBER system.

# COMMENT SHEET

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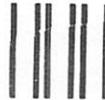
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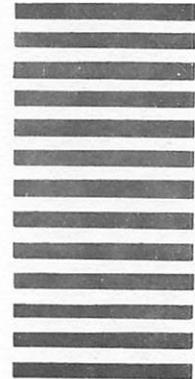


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