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UGLOOK

A Program for Viewing  
Graphic Elements Produced by the  
Unified Graphics System

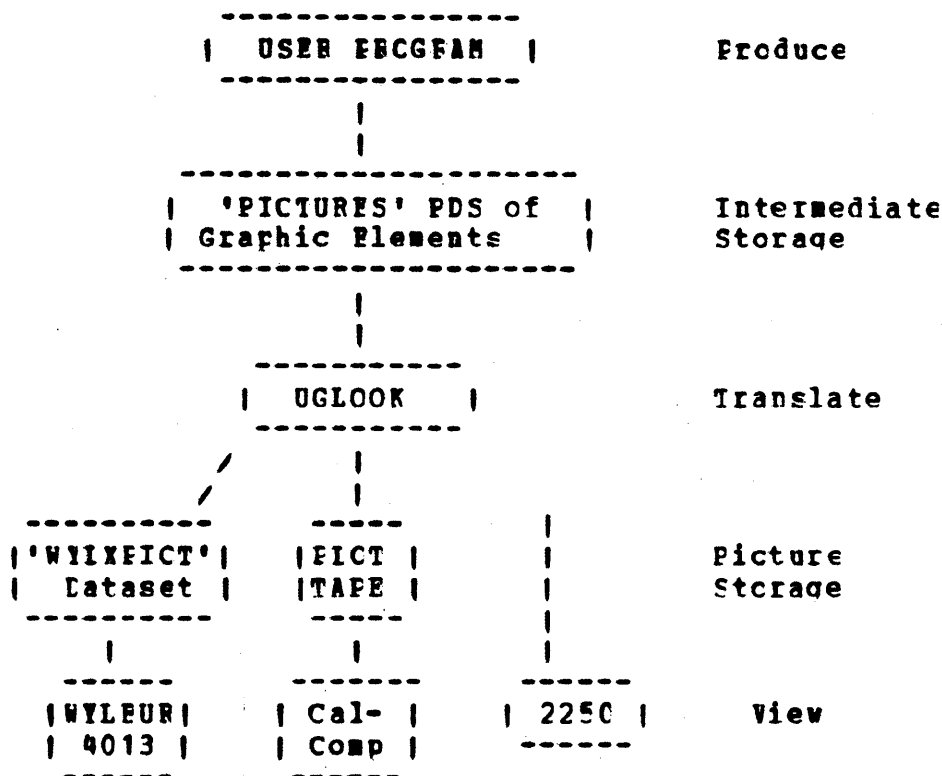
Roger Chaffee

## Introduction

UGLCCR is a program for making static pictures on an IBM 2250 'scope, a Techtronix 4013 terminal, or on Cal-Comp. Input is a PDS containing graphic elements made by the Unified Graphics System (CGTM. No. 143). The user can control picture selection and scaling. There are two modes of operation. In interactive mode (on the 2250), control input is from the device keyboard, and pictures are displayed immediately. In batch mode (the 4013 running under WYLBUR, or Cal-Comp), control is by data cards, and the program translates from the device-independent Unified Graphics elements to a dataset of device instructions which can be plotted later.

The process is similar to using the Cal-Comp Tape 'Quick-Look' Program (CGTM No. 152). The advantages are, first, that output can be made for the Techtronix 4013 running under WYLBUR, and, second, that intermediate picture storage is by UG elements. This is more efficient than the step-by-step instructions that control a Cal-Comp plotter, and there is no loss of detail in translating from intermediate storage to the final display. The disadvantage, compared to the 'Quick-Look' route, is that the original program must use the UG package. Programs which use the SLAC Cal-Comp package (FLOT1, etc.) can't make the necessary graphic elements.

A more direct route is for the original program to make 4013 pictures with the UG package. These can be directly displayed on a WYLBUR 4013 terminal. This two-step process--PRODUCE and VIEW--is the simplest method of graphic display at SLAC, and may be all you need. The three-step process--PRODUCE, TRANSLATE, and VIEW--gives the options of changing sizes and expanding portions of a picture, and allows selection of pictures for final Cal-Comp plotting without re-running the original program.

Flow ChartUser Program

The User Program must create a "PICTURES" PDS whose members contain UG elements, as described in the UG writeup. The dataset should be opened, from a FORTRAN program, by the statement CALL UGOPEN('DISKPDS',ID). Each new picture should be started by the statement CALL UGPICT('CLEAR',0).

```

JCL for the PDS could be
//PICTURES DD DSN=WYI.GG.UUU.your library.name,
//  DISP=(NEW,CATLG),
//  UNIT=2314,VOI=SER=SC001,SPACE=(TRK,(5,1,3)),
//  LCP=(RECFM=U,BLKSIZE=4000)

```

Display on the 2250

The following JCL will work:

```
//UUUNLOCK JOB UUU$GG,CLASS=O,REGION=76K
//JOBELIB DD DSN=WYL.CG.RCB.UGXLIB,DISP=SHR
// EXEC ICADGC
//SYSLIB DD
// DD
// DD
// DD DSN=WYL.CG.FCB.UGFLIB,DISP=SHR
//SYSLIN DD DSN=WYL.CG.RRC.LOADMODS(UGTC2250),DISP=SHR
//PICTURES DD DSN=WYL.CG.UUU.vour.library.name,DISP=SHR
//SCOPE50 DD UNIT=OD1
```

The PICTURES dataset must be a PDS whose members contain UG elements, as described above.

The first scope display asks for the member name of the picture to lock at, and suggests the name "PICT001", which is the default name provided by UGOPEN. From there, you may

- 1.) Change the member name, using the keyboard.
- 2.) Quit, by indicating "TERMINATE" with the light pen. (Point with the light pen and press the foot pedal.)
- 3.) Proceed to the scaling display by indicating "CHANGE SIZE" with the light pen.
- 4.) Proceed to the picture display by pressing the "END" key. (Hold "ALT" and press "5".)

In the "CHANGE SIZE" display, you may change XMIN, XMAX, YMIN, and/or YMAX with the keyboard. Proceed to the picture display with the END key. The size variables control the values of PXLO, PYLO, FXHI, and FYHI, as described in the UG writeup. The default values are those in effect when the member is started in the user program. They give the values of the picture coordinates to fill the screen. For instance, if the picture coordinates run from 0. to 1. in both x and y, and new values of XMAX and YMAX are given as 0.5, the result will be that the lower left quarter of the picture fills the entire screen, and the other three-quarters of the picture is ignored.

In the picture display, return to the first display with the END key. (As always when using the 2250, if you press a key when the cursor is not present, the unit will hang up. To clear, hold down the SHIFT key and press "ALT".)

No control is provided for device limits. The picture, if it fills the rectangle defined by the picture coordinates, will fill the entire screen.

Display on the WYIBUR 4013

The following JCL will work:

```
//UNLOCK JOB UU$GG,CLASS=E,REGION=76K
//JCELIB DD DSN=WYL.CG.RCB.UGLIB,DISP=SHR
// EXEC ICADGC
//SYSLIB DD
// DD
// DD
// DD
// DD DSN=WYL.CG.RCB.UGFILE,DISP=SHR
//SYSLIN DD DSN=WYL.CG.RCB.ICADMDS(UGTC4013),DISP=SHR
//PICTURES DD DSN=WYL.GG.UUU.your.library.name,DISP=SHR
//WYIXPICT DD DSN=WYL.GG.UUU.WYL4013,DISP=(NEW,KFEP),
// VOL=SER=SC001,UNIT=2314,
// SPACE=(TRK,(5,1,3)),
// LCB=(RECFM=FB,LRECL=80,BLKSIZE=1600)
//SYSIN DD *
// UGICCK input cards, if any
//
```

This job will create the dataset "WYL.GG.UUU.WYL4013", with members PICT001, PICT002, etc., each corresponding to a member in the UGICCK input dataset. These members can be viewed from a WYIBUR 4013 terminal. Sign on to WYLEUF in the normal way, issue a USE command for the desired member, such as "USE WYL4013#PICT001 CN SC001 CLEAR", and then "list" it: "LIST UNNUMBERED".

The input cards for batch-mode UGICCK can specify scaling and member names.

Member Names

If there are no member names in the input data, then UGICCK will process members PICT001, PICT002, etc., until a member is not found, and then stop.

If an input card gives a member name of more than four letters (starting in column 1), such as "PICT001" or "PICTABC", then that member is processed and UGICCK goes on to the next input card.

If an input card gives a four-letter name, like "XXXX", in columns 1-4, this name is used as the root, and members with this root are processed, e.g. "XXXX001", "XXXX002", etc.. When a member is not found, UGICCK goes to the next input card.

Scaling

A card with "LIMI" in columns 1-4 is assumed to specify limits for the programmer space for the displays, that is for the numbers referred to as "PROGIM" in the UG writeup. Starting

at the first blank, the card is scanned for four numbers, specifying FXIO, FXIC, FXHI, and PYHI. Numbers must be separated by one or more blanks. They may contain a decimal point, but no other non-numeric character other than an initial minus sign. Any error causes a return to the default mode, as does a LIMIT card with fewer than four numbers. Limits stay in effect until they are changed or the default mode is reinstated.

The default is to take these numbers from the input dataset, which contains the PROGLM values which were in effect upon starting each individual member.

No control is provided for the device limits. The picture will fill a square as high as the screen, and shifted to the right. The left edge is used for UGLCCK messages.

### Cal-Comp Plots

Operation is identical to making Techtronic 4013 plots. The first input card specifies the device. Columns 1-7 must contain the characters "CAL/10D" or "CAL/29D". The following JCL will work:

```
//UUULCCK JCE UUU$GG,CLASS=E,REGION=76R
//*SETUP V=PLOTAP,U=TAPE7,C=BING
//JCLLIB DD DSN=WYL.CG.RCE.UGXLIB,DISP=SHR
// EXEC LOADGC
//SYSLIB DD
// DD
// DD
// DD
// DD DSN=WYL.CG.RCE.UGFILE,DISP=SHR
//SYSLIN DD DSN=WYL.CG.RCE.LCADMODS(UGTC4013),DISP=SHR
//PICTURES DD DSN=WYL.CG.UUU.your.library.name,DISP=SHR
//PICTAPE DD DSN=88PLOT,DISP=(NEW,PASS),
// VOL=SER=PICTAP,UNIT=TAPE7,LAFFI=(1,NI),
// ICE=(RECFM=U,BLKSIZE=3000,DEN=0)
//SYSIN DD *
CAL/10D
    UGLOOK input cards, if any
//
```

### Historical Note

These programs were written primarily as a tool for viewing some other graphic displays that I was working on. They could be elaborated, for instance to provide Cal-Comp plots longer than the width of the paper, but they are currently meant as a basic system to accomplish a simple job.