

Use of DrawPerfect Software to Modify and Annotate Graphs Produced by SAS/GRAPH

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The purpose of this paper is to demonstrate how easy it is to change and annotate SAS/GRAPH plots. First, we will demonstrate how the plot would look if we created it in SAS/GRAPH and sent it directly to a Hewlett Packard LaserJet III*. Note in the 'goptions' that the device was set to HPLJS2, the acronym for the laser jet printer, and the name of the file that contains the plot was GANGASAS.PLT. Note also that the log indicates that it took 1.33 minutes to create the plot which is

printed in the default, rotation=portrait, form. This plot is in Fig. 1.

We used PROC G3D with the SCATTER option to create this graph. We wanted three different symbols to appear on each needle. Technically, this is impossible, but you can create three needles that are offset by a very small amount so that the three needles look like one. This is the reason for the AMNTS=AMNTS+.001; and AMNTS=AMNTS+.002; statements in the program.

PROGRAM

```
Goptions reset=all;
* goptions device=vga;
goptions dev=HPLJS2 gaccess='sasgastd>GANGASAS.PLT' gsfmode=replace
      gsflen=4096 promptchars='000001000000000000'x handshake=hard;
goptions cback=white;
data ganga;
  input cond treat amnts bsg stab flow mc mtv Dunwt vma vfa;
  IF COND=1 THEN SHAPEVAL='STAR';
  IF COND=2 THEN DO;
    SHAPEVAL='CUBE';
    AMNTS=AMNTS+.001;
  END;
  IF COND=3 THEN DO;
    SHAPEVAL='PYRAMID';
    AMNTS=AMNTS+.002;
  END;
cards;
1 1 3      2.197      5752  15      0.1      13.6      136.98      19.88      31.54
. . .      .      .      .      .      .      .      .      .
. . .      .      .      .      .      .      .      .      .
. . .      .      .      .      .      .      .      .      .
3 3 6      2.166      4929  19      1.9      12.05      132.62      23.86      49.49
PROC SORT;
  BY AMNTS TREAT COND;
PROC MEANS NOPRINT;
  BY AMNTS TREAT COND;
  ID SHAPEVAL;
  VAR MC;
  OUTPUT OUT=A MEAN=MCAVE;
PROC G3D;
  SCATTER AMNTS*TREAT=MCAVE/YTICKNUM=4 XTICKNUM=3 GRID SHAPE=SHAPEVAL;
run;
```

LOG

NOTE: The PROCEDURE G3D used 1.33 minutes.

If you change the device name to the acronym for a Hewlett Packard plotter, the plot can be retrieved into DrawPerfect for modification and annotation. We set the 'dev=COLORPRO' and saved the output file as GANGA2.PLT in the 'goptions'. Note in the log that it now took

24.00 seconds to create the file. We retrieved the plot into DrawPerfect and printed it without any modifications on a laser printer to create Fig. 2. Now the default for the rotation is landscape, and the lines in the graph itself are darker than before.

PROGRAM

```
Goptions reset=all;
* goptions device=vga;
goptions dev=COLORPRO gaccess='sasgastd>GANGA2.PLT' gsfmode=replace
gsflen=4096 promptchars='00000100000000000'x handshake=hard;
goptions cback=white;
data ganga;
input cond treat amnts bsg stab flow mc mtv Dunwt vma vfa;
IF COND=1 THEN SHAPEVAL='STAR';
IF COND=2 THEN DO;
  SHAPEVAL='CUBE';
  AMNTS=AMNTS+.001;
END;
IF COND=3 THEN DO;
  SHAPEVAL='PYRAMID';
  AMNTS=AMNTS+.002;
END;
cards;
1 1 3 2.197 5752 15 0.1 13.6 136.98 19.88 31.54
. . . . .
. . . . .
. . . . .
3 3 6 2.166 4929 19 1.9 12.05 132.62 23.86 49.49
PROC SORT;
  BY AMNTS TREAT COND;
PROC MEANS NOPRINT;
  BY AMNTS TREAT COND;
  ID SHAPEVAL;
  VAR MC;
  OUTPUT OUT=A MEAN=MCAVE;
PROC G3D;
  SCATTER AMNTS*TREAT=MCAVE/YTICKNUM=4 XTICKNUM=3 GRID SHAPE=SHAPEVAL;
run;
```

LOG

NOTE: The PROCEDURE G3D used 24.00 seconds.

Once the plot was in DrawPerfect we deleted the labels for the axes using the DELETE and SELECT ITEM features in the Edit menu. We created new labels and the text part of the legend using the TEXT LINE in the Draw menu, the BASE FONT in the Fonts menu, and the SELECT ITEM, MOVE, and ROTATE features in the Edit menu.

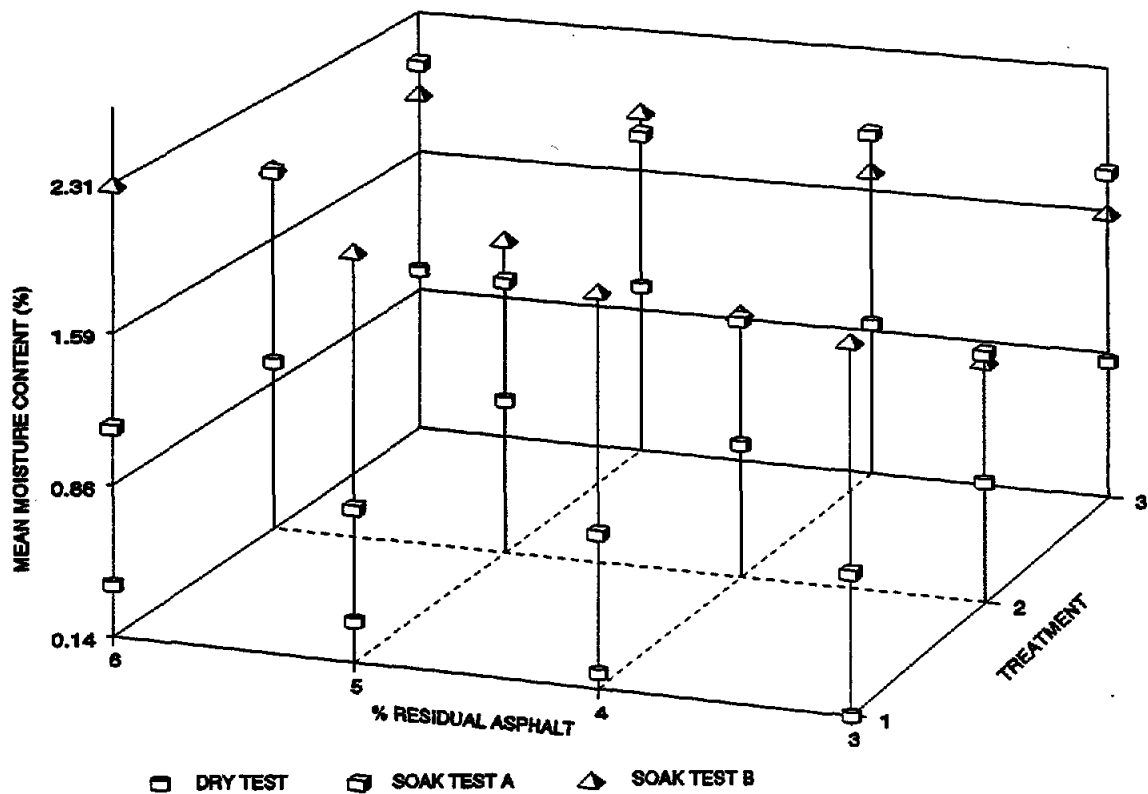
The font and font size were changed for the numbers on the axes using the MODIFY feature in the Edit menu along with the BASE FONT in the Fonts menu. The symbols for the legend were copied from the graph itself using the SELECT AREA and the COPY features of the EDIT menu. The resultant graph is in Fig. 3.

The graph (GANGA02.PLT) was imported into a USER BOX of a designated size in WordPerfect*. The USER BOX definition was as follows:

Definition: User Box

- 1 - Filename GANGA02.PLT
- 2 - Contents Graphic
- 3 - Caption
- 4 - Anchor Type Paragraph
- 5 - Vertical Position 0"
- 6 - Horizontal Position Right
- 7 - Size 6.33" wide x 4.45" (high)
- 8 - Wrap Text Around Box Yes
- 9 - Edit

Selection: 0



This facilitates making the graph the size you want and while inserting it into text. The graph can be rotated

in WordPerfect and captions can be added to it.

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*DrawPerfect is the registered trademark of the WordPerfect Corp., Orem, UT, USA.

*WordPerfect is the registered trademark of the WordPerfect Corp., Orem, UT, USA.

Figure 1. A G3D SAS/GRAPH plot printed on a laser printer

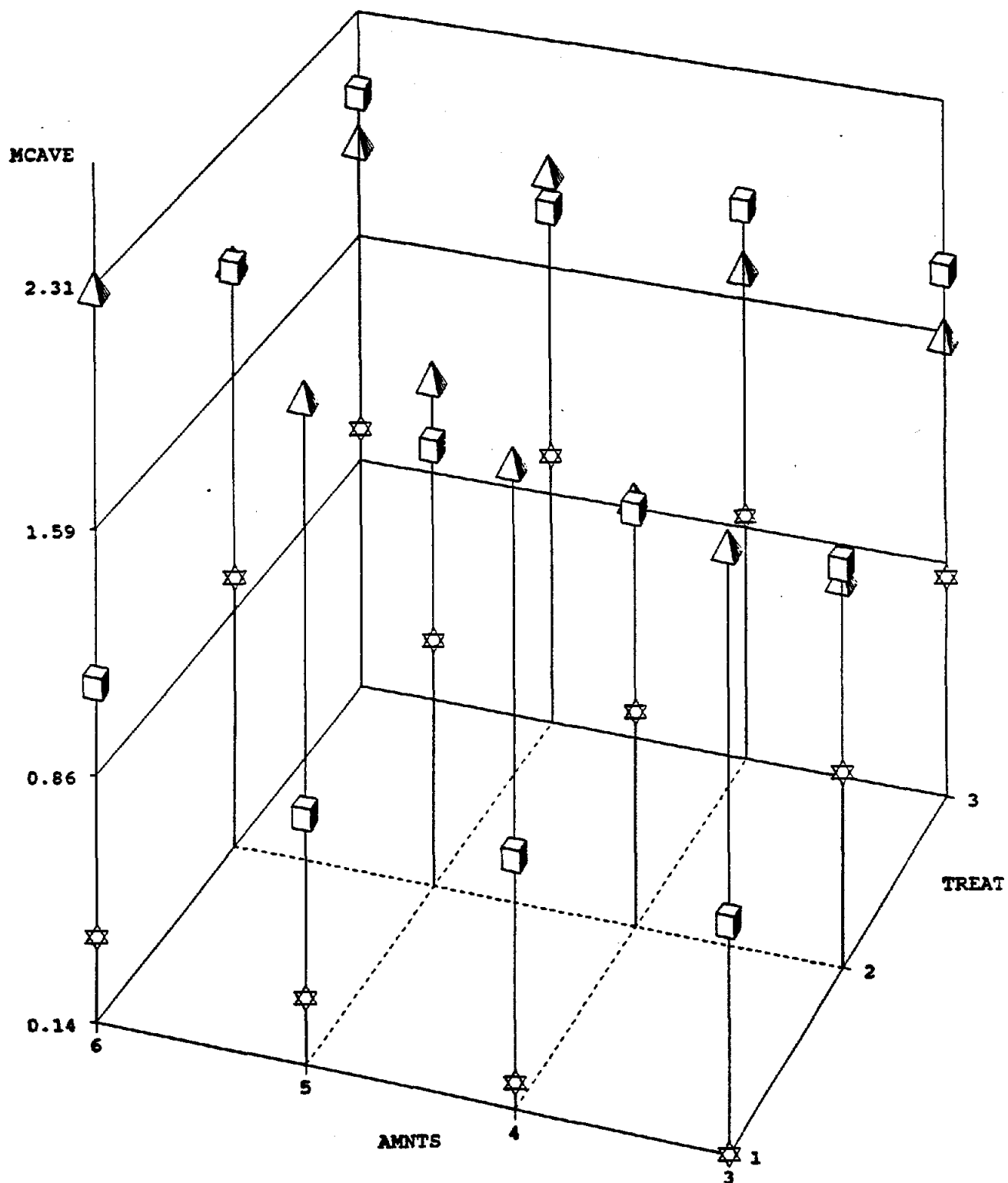


Figure 2. A G3D SAS/GRAPH plot retrieved into DrawPerfect and printed on a laser printer.

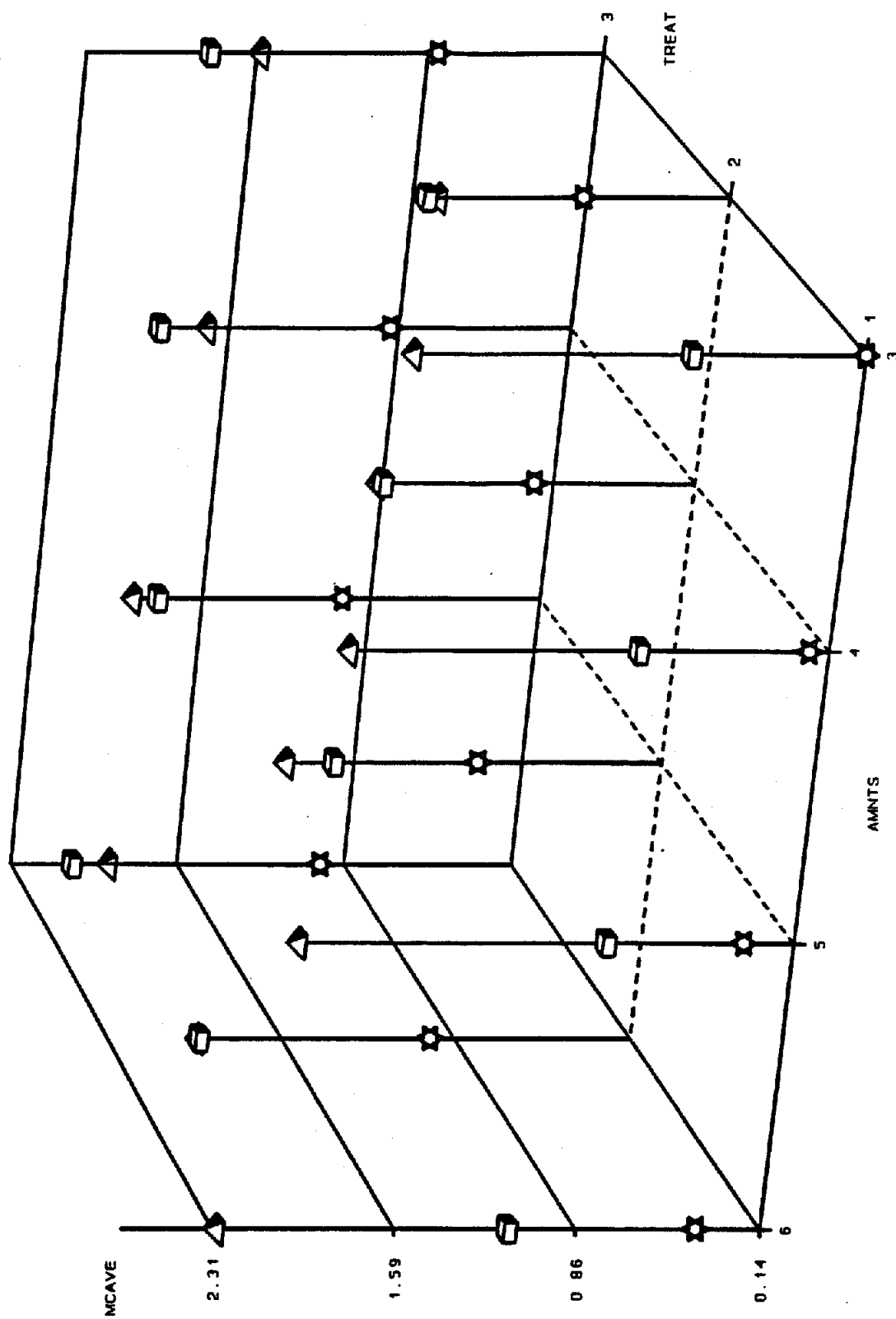


Figure 3. A G3D SAS/GRAPH plot modified by DrawPerfect and printed on a laser printer.

