LaserWriter: How To Fix Incorrect Margin Settings (8/95)

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TOPIC ---

A customer reported that images printed from his LaserWriter IIf are not centered on the page. A test page that was generated when he turned on his LaserWriter was shifted to the right approximately 3/16 inch.

I tested our LaserWriter IIg, and we're getting the same results as the customer.

DISCUSSION ---

Caution:
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If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

This is a common problem with LaserWriter printers when they are assembled from their engine and controller components, and it has been reported with recent shipments of LaserWriter IIf/IIg printers. The margins may be out of adjustment and may need calibration. You can do this using the PostScript setmargins operator. Here's the syntax:

```
  <yoffset>  <xoffset>  setmargins
```

Positive integers increase the top and left margins; negative numbers decrease them. Each unit is a single device pixel (1/300 inch), or roughly 1/4 point. Changes are seen only in increments of 16 on the original LaserWriter engine used with the LaserWriter and LaserWriter Plus.

The setmargins operator is in statusdict, and must be executed outside the server loop so its changes will persist across power cycles. The following PostScript code can be used as a sample -- it shifts the image up and to the left 16 and 24 pixels, respectively. It first exits the server loop and, therefore, modifies the parameters in EEPROM (Electrically Erasable Programmable Read-Only Memory) or ZPRAM (Zero Power RAM).

```
  serverdict begin 0 exitserver
  statusdict begin
```

```
  -16 -24 setmargins
```

Care should be taken with the LaserWriter, LaserWriter Plus, LaserWriter IINT, and LaserWriter IIf/IIg because their controllers store parameters in a memory device with limited writes. Though these printers can handle at least 10,000 writes (the LaserWriter IIf/IIg over 50,000), automating the process in a batch file or PostScript program can quickly shorten the life. They still will work after this occurs, but they will use default settings and any new settings will need to be downloaded after each power cycle.

By altering the margin values, you should be able to properly center the LaserWriter page image. Note that the setmargins operator has no effect on total image size; it just alters its position on the page.

The following PostScript code prints a page showing the current margin settings. You may want to print this page before you modify the original settings, though they are likely to be set to zero (for both x and y) as shipped from the factory.

Begin_Table

```
  /str 32 string def     %Define a 32 character string for later use.
  /Times-Roman findfont  %Lookup font in fontdict and push it on stack
  15 scalefont setfont   %Push size, scale, and make it the current font.
  72 700 moveto          %One inch over, and 700 72nds up.
  statusdict begin       %We'll be using two operators from statusdict.
  (Margins for )         %Push the leading text on the stack.
  show                   %Show the topmost string from the stack at 72 700.
  str                    %Push an empty string of 32 length on stack.
  printername            %Puts the LaserWriter name in the string.
  show                   %Show it.
  72 680 moveto          %Move back to 1 inch left, and down 20 points.
  margins                %Push top and left margins onto stack.
  (  Xoffset set to: )   %Push leading string onto stack.
  show                   %Show it.
  str                    %Push an empty string.
  cvs show               %Convert left margin into the string and show it.
  72 660 moveto          %Do the same thing again for the top margin.
  (  Yoffset set to: )
  show str cvs show
  clippath stroke        %Draw a frame around the page border
  showpage               %spit out the page.
```

End_Table

To download these programs, copy or type them into a text document using your favorite editor (the comments following the % characters aren't necessary). TeachText or any editor that can save as text works fine. Then use the LaserWriter Utility, version 7.0 or later, or a similar utility to download the PostScript file to your LaserWriter.

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Support Information Services

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