

## Printing Instructions Table of Contents

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### **How To Convert Black & White Camera Ready Hard Copy Documents to Printing Press Plates Using a Scanner, Computer with Adobe Photoshop, Laser Printer, and Metal Plate Exposure Box.**

*Warning Note: This document is 33 pages in length because it gives detailed step by step procedures so a novice working alone can hopefully catch on and learn the procedure with the least amount of frustration.*

**An easier and cheaper method** - Having to have a graphics arts camera, a darkroom, light sensitive negative film, and chemistry that goes bad and may be hazardous waste is no longer necessary to the small printer operating out of his or her garage or home. The computer will convert photographs into halftones necessary for the offset printing press, and no stripping of negatives into masks or having to fill in unwanted pin holes in developed negatives. Accurate registration of the laser film image to the metal plate is assured by using two pins made from sawed off #20D carpenter's nails the size of the "pinbar" fastening holes in the metal plate, after laser film has been punched using a hand held leather and plastic hole punch for a 5/32" hole. To adapt the document to a particular offset printing press, one will need to know the "plate bend" for the press, and the

“gripper bite” or non printable area where the input paper grippers on the impression cylinder of the press hold the paper to pull it through (1/4 to 3/8”).

**Equipment used to do this:** Pentium 4 1.6 GHZ CPU PC computer running Windows XP Professional with Adobe Photoshop CS 2, and Adobe Acrobat Professional8 or higher installed, and 1 Gigabyte of RAM memory. Canoscan FB1200s 1200 by 1200dpi optical resolution Scanner with a high dynamic range of 3.2. The software for this scanner has a “Twain” driver that allows one to access the scanner through the Adobe Photoshop program. HP 5000 tabloid monochrome laser printer with parallel port to USB cable for connection to computer. Acorn brand 12” by 20” laser film. Positive Development metal plates. A Nu Arc Ultra Plus flip top platemaker with a 3000 watt mercury vapor light bulb. This machine runs on 220 volts AC power.

**The Original or Hard Copy Document/Artwork** - The tract or artwork to be converted should not have jagged edges on the lettering when viewed with a 10x printer’s magnifying loop, and the pictures should be photographs and not made of dots. The paper color should be white, but lighter pastel colored paper will work if a document is not camera ready art, but a printed copy. All previously printed artwork should be line art and not halftones made of dots because scanning pictures made of halftone or stochastic dots can result in an unwanted “moiré” pattern in the pictures. Also, black text will be better than light colored text. Ideally, one would want to make a new document using a page layout program like Adobe Indesign where you type new text and import/place separately scanned photographs or pictures from a digital camera into “picture boxes” in the page layout program. That way one can plan for a 5% white halftone dot in the heavy solids or shadow areas of the ready to print picture, and 5% black dots in the highlight areas. Also, the file size of the created document would be smaller than that of a scanned document. Using an OCR (optical character recognition) software such as Omnipage Professional would allow one to convert scanned text of common languages with standard “romance” alphabet characters (e.g., English, French, German, Spanish) to fresh text without retyping the document, and in some cases could take a

complicated Adobe Indesign hardcopy printed document and convert it into a Microsoft Word computer document all in one step! **The problem is that some languages like Oriya, a province of India, have rare fonts that may not even be on computer yet, so they can't be retyped by non professional desktop publishers. These are documents that have to be reproduced by high quality scanning.**

It should be noted here that laser printers naturally make better printable halftone dots when they come with a Postscript printer driver. The HP5000 printer software allows custom adjustment of halftone curves when printing the laser film. Most inkjet printer print smaller "stochastic dots" because they don't come with postscript computer software drivers, and the small dots are dissolved away by the caustic/acidic plate developer chemistry. Even if one buys an aftermarket "rip" software that makes halftone dots for the inkjet printer, the new inkjets with pigment based rather than dye based inks don't print or dry well on just any kind of film positive or overhead transparency material. The one disadvantage of the laser printer is that it doesn't make as dark a solid where a lot of toner is laid down. One can try to get around this by not designing documents with large solid areas of color, or by making the area a "screen" of dots rather than a solid.

**Scanning the document** – *The steps listed from here on are detailed to make it easier to follow.*

Turn on the scanner and computer and open the Adobe Photoshop CS2 Program.

Place the artwork or original face down on the clean scanner glass in the upper right hand corner of the glass, and close the lid.

In Photoshop, click on the "File" pull down menu at the top left and go down to "import" then across to the name of the scanner you are using. The "twain" driver opens the software window for the software that came with the scanner.

In the scanner software window (not Photoshop), choose "Grayscale" & "1200dpi". Click on the "scan" button. If you are not using the whole area of the scanner glass, you may want to click on preview and draw a marquee around just the area you want to scan. After scan is complete, the document appears in Photoshop. 1200dpi makes the file size of the finished document over 100 megabytes per letter size page, but when it is

converted to a “press quality” Adobe Acrobat PDF document, the file size goes down to about 2 megabytes per page with good quality, but a small enough file size to post the document on a website for quick free downloading, reading, and use by other printers using Adobe Acrobat Reader versions 5-9 which anyone can download for free from the [www.adobe.com](http://www.adobe.com) website. If one wants to add text to a scanned document such as adding a website address, or changing a mailing address, this would be done in Photoshop before making the PDF.

In Photoshop, at the pull down menus across the top, click on “image”, go down to “adjustments”, then across to “levels”. In the window that opens, use the white arrow slider at the right to slide to the left to eliminate unwanted background image until the background behind text is white. Scanned photographs that are not line art should have some dots in the highlight or white areas which can be seen by using the magnifying glass tool in the tools pallet and clicking to enlarge the image; or go to “view” in the pull down menu, then down to “zoom in”. Next, make the image darker for the solids, by sliding the black arrow on the left (in the ‘levels” window) to the right. If you slide too far, the characters of a foreign alphabet may plug up.

Get rid of unwanted black border marks on the document by using the marquee tool to draw a box around the whole image you want to keep (starting in the upper left corner next to the edge of the good image, click the left mouse button and hold the button down while dragging at an angle down and right until the dashed box covers the whole image you want to keep, but not the unwanted border. Release the mouse button. In the pull down menu across the top of the Photoshop program, select “image” and go down to “crop”.

Now it is time to get rid of all other unwanted background such as dirt specks on the scanner glass. For this, magnify the document to about 400% and use the hand tool or scroll bars along the sides of the program to move the document to the top left corner. In the tool pallet, pick the “eraser” tool and adjust the size/diameter of the erasing circle using the brush button near the top left corner of the program. The darkness of the tool and sharpness can also be selected there. Using the scroll bars, slowly move the document sideways and then down to find unwanted

image. Place the cursor circle over the unwanted image and click to delete it or click and drag for image that is larger than the diameter of the circle. To delete larger areas, one can draw a marquee box using the marquee tool and press delete. If the area becomes black instead of white, go to “edit” then “undo” in the pull down menu. Then go to the bottom left of the tools pallet and click so as to switch the overlapping white and black squares. If you find a black area of good image that needs more black in it, click on and use the “paint brush” tool in the tools pallet.

Now it's time to straighten the image, usually done by putting a blue line from the ruler at the margins just at the bottom of a line of text in the document. First make sure the ruler margins are showing. If they are not, go to “view” in the pull down menu then down to “rulers”. Move the mouse pointer into the ruler area and click and drag into the document area and a blue line is pulled out to the point you want it (at the bottom of a line of text), then release the left mouse button. If the document is crooked, the document needs to be “rotated”. In the pull down menu, go across to “image” and then down to “rotate canvas” and then across to “arbitrary” In the new window that opens up click on either “clockwise” or “counterclockwise” and type in the amount as a decimal that you want the document to rotate, then click the “ok” button. The normal amount of rotation is usually less than 1%. If the document consists of quadrants of material corresponding to pages of text in a cut and folded document, the different final pages (now being displayed as one sheet) can be rotated individually by drawing a marquee dotted line box around just the area you want to straighten, then going to across to “edit” in the pull down menu, then down to “transform”, then across to “rotate”.

Now it is time to adjust the information on the individual pages to look centered, and to allow for the needed “gripper bite” or no print area where the printing press bites onto the paper to pull it through the printing cylinders. First print out a copy of the document and fold it to look like the finished cut and folded tract or document. Go to “file” on the pull down menu, then “print one copy”. Determine which areas of text or image need to move to look centered, and by how much. To do this, you will need blue line guides pulled out of the rulers and into the center of the document. On a letter size sheet in the “portrait” mode, for example, click inside the left

margin ruler area and drag out a blue line to the 4 1/4" point by watching the top ruler as you drag the line. If the press requires a 3/8" gripper bite, then draw two more lines out and put one 3/8" before and 3/8" after the 4 1/4" center mark. Do the same with the length of the document. Now pull down two more blue lines from the top margin ruler and place one 3/8" down from the top of the document, and the other 3/8" (or less if you are trying to get a church address to fit at the bottom. You now have four quadrants/areas in which to center the text or graphics.

Move the information in a quadrant on the page by drawing a dashed box around the area you want to move using the marquee tool in the top left corner of the tools pallet. Next, with the outline box still showing, click on the "move" tool to the right of the "marquee tool in the tools pallet. Now you can use the arrow keys on the keyboard to move the selected area by small increments, or, perhaps, with the move tool selected, you can click the left mouse button and drag the image to where you want it. This second method is faster, but a coarser adjustment.

If you like, to get a more realistic view of your adjustments, you can print out more single copies ("file" in pull down menu, then "print one copy"), and cut and fold the paper to see if the final size document looks good.

It is time now to add the plate bend where the metal plate for the printing press leaves the solid metal backing of round the plate cylinder, and curves around to attach to the clamp, "pinbar" pins, or slotted pins to which attach and hold down the plate. Different presses have different plate bend dimensions. I will use 7/8" for demonstration purposes.

The document on the computer screen is shorter than the length of the metal plate, so the canvas size surrounding the document has to be enlarged from a letter size to a legal or tabloid size. Here I will enlarge it to 12" by 20" size since that is the maximum laser film size my HP5000 monochrome laser printer can make, and that is the size of the Acorn brand laser film I ordered. If your laser printer won't print a tabloid or larger size sheet, it will still print the document, but clip off the excess which is ok since there is no document in that area (extending beyond legal size). It is important to note here that most laser printers have a no print margin also which is usually 3/16" to 1/4". By using the 12" by 20" laser film, the document will work in burning a plate for any press that can print a full

bleed tabloid (11" by 17") sheet providing the gripper margin and plate bend are ok for that press.

Make the canvas size of the Photoshop document larger by going to "view" in the pull down menus, then to "canvas size". In the new window that opens up type in the width and height of the film positive you plan to use to make a metal plate or the maximum size paper/film your laser printer can handle. For example, I also have a Lanier lp126cn color laser printer. For that I would type in 8.5 "inches" for width, and 20 "inches for height, then click "ok" to close that window.

Now click in the top ruler and drag down two more blue lines, one at a time, setting the first one at the plate bend measurement for your press (for example, 7/8"). The second blue line will be for the gripper bite or no print top margin area of the document being printed. This blue line will be placed the additional distance of the gripper bite beyond the plate bend line. On my Hamada 550 2 color press, the gripper margin is 5/16+", so my second blue line will go down 7/8" + 5/16" or at 1 3/16". When the canvas size was enlarged, the document should have stayed centered side to side, but now the top margin is too much and the scanned document image needs to be moved up so the highest point of image in the document is at the same point it was before the canvas size of the document was increased to the laser film size or the maximum printable width of your laser printer. To do this, use (click on) the "marquee" tool in upper left corner of the tools pallet, and move the mouse cursor/point to the upper left corner of the image and click and drag down and to the right to make a dashed outline box that covers the whole image in the document, but not the white space beyond the image.

Now click on the move tool in the tools pallet and use only the "up" arrow key on the keyboard to move the document up until the uppermost part of the image/text is the same measurement down from the blue line gripper bend mark as the distance from the top of the document to the beginning of image/text before you enlarged the canvas size. You can also determine this distance by measuring it with a ruler on a printed copy you made of the document before the canvas size was enlarged to the film positive size. When you have adjusted the image up, the image must not extend beyond the gripper margin limit blue line you made.

**Adding Text or New Contact Information to the Document** - The Photoshop program has a text tool in the tools pallet which allows you to draw a "text box" by clicking and dragging with the mouse, then typing in the box starting where the flashing cursor is located. When the text box is highlighted or has squares at the corners, it can be moved using the arrow keys on the keyboard, or enlarged by clicking and dragging on one of the little boxes around the perimeter. The task bar above the pull down menus allows you to select the point size of the type, the type of font, and the sharpness of the lettering (this is how you get a bold face type?). When you make a text box, a second layer with a "T" in it appears in the layers pallet. When working on the non text parts of the document, one must click on "background" in the "layers" pallet in order to do the work. On the last document I scanned, I only needed to add the website address (something new that didn't exist years ago when the document was first designed and printed). In this case, I had to experiment to find a font or typeface and sharpness that matched the existing text. I also had to adjust the position of just the scanned address before adding the website address so that the end result (all the address text together) would look centered in its area of the page. Remember also that you need to have at least 1/8" of space from the bottom of the address to the bottom of the printed sheet; otherwise, if your cutter is off or the registration of your printing press not accurate, you might not have enough bottom margin on the finished printed, cut and folded tract or document. I moved just the scanned address information text by drawing a marquee around it with the "marquee" tool, and then using the move tool and keyboard arrows to move the address where I wanted it to look the best and to make room for the additional line of text (the website address). If you are adding so much information that it won't all fit, you should draw a marquee around the whole address, then press the "delete" key on your computer keyboard to eliminate that area of image without moving the rest of the document out of position or alignment. Then draw a text box in the cleared area and select a condensed (e.g., Arial Narrow) typeface, or a smaller size type point size to get more information in the same space. However, if type smaller than 6 point size is used, it may not print clearly on some laser printers, and it may be too small for some people to read without glasses.



## **Work and Tumble, or Work and Turn – Laying out a Document so it Prints with One Press Plate Instead of Two Plates.**

A four page tract with a cut and folded size of 4 ¼” wide by 5 ½” tall can be made to print “2 up” (two per letter size sheet) on one, rather than two printing plates, by making it a work and tumble. The same is true of a “4 up” smaller tract with a finished size of 2 ¾” wide by 4 ¼” tall by making it a “work and turn”. Making one or the other means that only one printing plate is used, and when the paper is turned or tumbled 180 degrees, the backside of the sheet can be printed with accurate registration of the image without having to adjust the press plate cylinder to make a new alignment of the image.

To make a work and tumble from a single finished 4 ¼” wide by 5 ½” tall tract, open the tract flat and scan the outsides, and then the insides as a second scan. When scanning the inside, scan it upside down. The two scans will be two documents or windows in Photoshop and you should be able to select “select” from the pull down menu, then go down to “all”, then select “edit” from the pull down menu and go down to “cut”. The document or image disappears and goes to the “clipboard” on the computer where you can’t see it. Then go to the other document or the scan of the outside and make sure the canvas size is letter or legal or tabloid size by going to “image” in the pull down menu, then down to “canvas size”, then changing the dimensions there to make enough room for the hidden image that will be “pasted” into the document on a separate “layer” from the “clipboard”. In the first scan of the outside of the tract, after you have adjusted the canvas size, go to “edit” in the pull down menus, then down to “paste”. The inside part of the tract appears along with the outside, but has to be moved into position. In the “layers” pallet make sure the new layer (not “background”) is blue or selected or “highlighted”. Use the “move” tool in the upper right hand corner of the tools pallet, then use the keyboard arrow keys to move the document into position using the blue lines you placed at the center of the document as a guide. A simpler approach is to scan two unfolded identical tracts together at the same time with the inside of the second tract against the scanner glass and upside down below the outside facing normally above it with the two tracts held together with clear tape in the area beyond the image where the two tracts touch each other.

When you go to make a final “save as” from the “file” pull down menu to give the document a name and a location on your hard drive where you can find it in the future, you may want to go to “layers” in the pull down menu and go down to “flatten image”. This will merge the layers into one to make the document a smaller file size before you make a PDF of it for e-mailing to someone; but there may be the disadvantage of not being able to edit the text you added.

One last scanning tip. You may be able to use “filter” in the pull down menu, then go down to “sharpen” and magnify your image before you do this and see if the edges of your text in the scanned image are made smoother or less blurry.

### **Making a PDF (Adobe Acrobat Reader) Document from a Photoshop, Page layout, or Microsoft Office document**

Why? – A 1200dpi quality scanned image is over 100 megabytes per letter size page which is too large to send as an e-mail attachment or to post on a website where it would take an abnormal amount of time to upload or download. The same document, converted to a “press quality” PDF format is universally acceptable to any computer having the Adobe Acrobat Reader program available for free as a short download from the [www.adobe.com](http://www.adobe.com) website. One can even get permission from Adobe to distribute the reader program with your PDF documents to save the recipient from having to download it from adobe (in cases where they might not have internet access to do the download, the program can be transferred in a camera flash memory card, a thumb drive, portable hard drive, CD, or DVD.) Also, without the full version of Acrobat, one can only open the document and not alter the text content by typing. Also, using the full version necessary to make the conversion to a PDF, can allow the creator to insert an invisible text box in which the recipient who has only the limited Acrobat Reader, to click in the area of that box and type in a custom address or Church contact information for his local area where the tracts are being distributed. I will not cover that here as I have done it in the past, but now consider it too time consuming to figure out again. To perform the following conversion to PDF one will need the full version of Adobe Acrobat, or an equivalent such as Scan Soft PDF maker that comes with the Omnipage Professional OCR program.

Open the program that created the document (e.g. Photoshop, Jasc Paint Shop Pro, Adobe Indesign, Microsoft Word, Word Perfect, Quark Xpress, Adobe Pagemaker), then open the document to be converted to PDF. Go to "File" in the pull down menu, then down to "Print" In the window that opens, for the printer, choose Adobe PDF (usually at the top of the list). In the same window, click on the "properties" button. When the new window opens, you should be on the "Adobe PDF Settings" tab. Under "default settings" choose "Press Quality". In the list of checked boxes on the left, uncheck the box "Rely on system fonts only; do not use document fonts". Doing this prevents the receiving computer from being unable to display typed fonts in the document that are not installed on the receiving computer. Click on the "layout" tab and choose either "portrait" or "landscape". Now click on the "Paper/Quality" tab then click on the "black and white" bullet or circle next to the words. Click on the "advanced" button. In the new window make sure the highest output quality of your laser printer is selected. In my case, my scanned document was 1200 dpi and my HP5000 monochrome tabloid size laser printer can output 1200dpi, so I selected "1200dpi". Also, select the paper size of the document you are converting (letter, legal, tabloid, or "postscript custom page size" if Photoshop "canvas size" of your document was enlarged to 12" by 20". The "Edit Custom Page Size" button will open a window where you can type in the exact dimensions.

At this point you need to decide if the PDF document will be used to print on a laser printer or to make a film positive from which a metal plate will be made for the printing press. For making a laser film positive, we need to do a "flip horizontal" or select "yes" under "mirror output" in the typed list under "Postscript Options" (a drop down list which is opened by clicking on the check box to the left with a "+" sign in it if the additional options aren't showing. "Mirror image" makes the typing "read wrong" or backwards. When the film positive is flipped over to read right for exposing the metal plate, the toner is now on the bottom of the film, closer to the metal surface to eliminate any fuzziness or magnification caused by the thickness of the film if the toner were on top of the film. Click on the "Ok" button to close the window. Now the "Print" window is showing. Click on the "print" button. The computer starts making the PDF document and then a window opens

for you to give a name to the document and choose a place on the hard drive of your computer (or an external hard drive attached to the computer. To keep the computer's main "C" drive from getting overloaded, keeping the operating system and programs on the main drive is recommended, while storing all documents on a high speed external hard drive (7200rpm with a "firewire", "USB 2.0", or "SATA" interface/ cable).

When the PDF document has been created, your computer will open the Adobe Acrobat program and then the newly created PDF document so you can check it for clarity and accuracy of reproduction. If you use the drop down menu and go to "Document Properties" you will see that the file size of the document is now only a few megabytes!

Note: I encountered a problem where the two color separations made in making a PDF from Adobe Indesign CS2 showed unwanted "artifacts" bulging out from the edges of a few words of magenta text. This was not a fault of Acrobat Professional, but something in the color separations part of the Indesign print software. I could make a composite CMYK or RGB color PDF from the same Indesign document and the type was ok, but then some parts of the artwork on that page (the cement between the bricks) was missing. Evidently, making a perfect PDF isn't always guaranteed so checking the PDF you made in the Acrobat program is recommended.

### **Using the Full Version of the Adobe Acrobat Computer Program to Make a Text Box in a Document so Recipients having only the Free Acrobat Reader, can Type a Custom Address / Contact Information in the Box**

The Standard Acrobat Reader (now in version 9) is a free download from the Adobe website [www.adobe.com](http://www.adobe.com). It allows one to open PDF documents, and to fill in form documents like tax papers with type in the box or on the line "fields". The full version (e.g., Acrobat 8 Professional) allows one to make these type in the blank space fields. One can also, it appears, if he has a full version OCR (Optical Character Recognition software like Abby Fine Reader or Omnipage Pro) to export PDF (Adobe Acrobat) documents back into a word processing program where they can be edited.

Here I am showing you how to use the full version of Acrobat to make a hidden text box for a Church address or contact information in a white area at the end of a tract. Then recipient of the document can, with only the

Acrobat Reader, click in that area, see a flashing text insertion “cursor” appear, then type lines of pre determined point size text with the ability to make each line a regular, **bold** or *italicized* style. It won’t matter whether the adding an address capability is being done to a document made in a page layout program before it was converted to PDF, or whether it was made by scanning a hard copy document into Adobe Photoshop then turning it into a PDF.

Begin by Opening the full version of Acrobat. Here I am using version 8 Professional.

In the pull down menu, go to “File” then “Open” then locate and open the PDF document you wish to create a “hidden” add text box in. For my test, I went to the [www.tracts4u.com](http://www.tracts4u.com) website and opened the “KYF 2<sup>nd</sup> ed 96 percent” document because on the first “signature” (first page of the document) on the back page of the tract booklet there is a black box with “Complements of:” in it – a designated place for a Church address.

In the pull down menus across the top of the Acrobat 8 Professional program, I went to “Tools” then down to “Fields”, then to the right and down to “Text Field Tool”. Clicking on “Text Field Tool” changes the mouse pointer arrow or cursor into a set of small cross hairs.

Move the cross hairs cursor to where you want to draw a box for inserting text, then left click the computer mouse and drag down and across and let go when the box is the size you want. The box will now have the words “Text 1” in it. Click once inside the box and the box will turn a red color. You can resize the box by moving the cursor over one of the little red squares on the perimeter of the box then clicking the mouse and dragging that line in or out to resize the box. Clicking and dragging diagonally on a corner of the box enlarges or shrinks the box proportionally (the width and height move by the same amount).

Now “double click” the mouse in the box, and a new window opens titled “Text Field Properties”. Under the “General” tab, next to “Form field:”, select “Visible”.

Now click on the “Appearance” Tab. The “Border Color” and “Fill Color” settings should have a red slash through the check box. I selected “6 point” for “Font Size” since the KYF address box is so small. I was able to get 4 lines of text in that area using 6 point. For “Font” I selected

“Helvetica”. If your computer doesn’t have Helvetica, “Arial may be more common, and “Arial Narrow” allows more text to be put on a line. For type color I selected “Black” since people printing a document on a monochrome (black only) printer, can’t print a color; (even though the computer may create it, but it would turn from a color to a gray when printed on a monochrome printer).

Go to the “Options” tab in the “Text Field Properties” window and check only the boxes “Multi-line”, “Allow Rich Text Formatting”, and “Check Spelling”. Also Choose one of the three text block alignment options: left, center, right. On the KYF document, I chose “Left”. On other larger tracts with more room for an address, like the “Why John 3:16?” Spanish version located under the “Products” tab of the [www.tracts4u.com](http://www.tracts4u.com) website, I would choose “Center”.

Click on the next tab, “Actions”, I left the settings as is with “Mouse Up” and “Execute a File”.

On the next tab, “Format”, I left it as is with “None” showing.

On the last two tabs, “Validate” and “Calculate”, I left them as is with a green dot in “Filed is not validated”.

Now Test if you can type in the box you made. First click on the “I beam/black arrow” button at the top of the Acrobat program to make the red/black text insertion box you made go into hiding. This changes the mouse pointer/cursor into an “I beam” for inserting text.

Place the “I beam” cursor in the upper left corner of where your hidden text box starts, and a flashing text insertion point appears. Type something on the first line. I typed in “HIS Print Media Ministries”. I decided I wanted this to be bold face type, so, before I began typing, I right clicked the mouse at the place the cursor was flashing and a drop down menu opened and I moved the cursor down to “Text Style”, then to the right and clicked on “bold”. When I typed the first line it was done in bold. I didn’t want the second line to be bold, but regular. At the end of the first line I typed in, I hit the “Enter” key on the keyboard, and the cursor moved to the beginning of the next line. If the cursor doesn’t move when you do this and the computer speaker makes a noise, use the “Down Arrow” key on the computer keyboard. At that point I right clicked the mouse and went down

to “Text Styles” again, then across to “Clear Formatting”. The rest of the lines I types were regular typeface.

Now you can see that the text goes in the appropriate hidden box. You may want to print a copy of that page of the document to make sure the text box you made doesn’t print with the text and that the text does print.

Now click and drag across the text you inserted as a test and press the “delete” key on the keyboard. Go to “File” in the pull down menu and “save” the changes to the document you made. If you want to go back and make changes to your hidden text box in the full version of Acrobat, you will have to go to “Tools” on the pull down menus, then down to “Fields”, then across to “Text Field Tool” When you click on that the hidden text box(s) in the document will be come visable and you can double click in them and edit them.

Note: I tried to make the add text box visible, but not printable when opened in Acrobat Reader, but I couldn’t do it. Therefore you will have to tell the recipient of the document that: 1. there is a hidden text insertion box there. 2. One must click in that area with the mouse pointer (it turns into an “I beam” when moved into the area of the hidden text box) to start typing. 3. To change the style of the type (regular, bold, Italic, etc.), one must right click on the flashing cursor on that line, then go down to “Type Style” and across to desired selection; or click and drag over the line of type after it has been typed, then right click and go down to “Type Style”.

### **Making a Laser Film Positive from a Computer Document**

The laser printer must be connected to the computer and turned on. One will use the “bypass tray” for the thicker and larger laser film material. The following steps will be based on the HP5000. In the page layout, word processing, or Photo processing program, Choose the “File” pull down menu and go down to “print”. In the “printer” window that opens, under “Name” select from the list “HP Laserjet 5000 PS. You want to use the postscript level 3 driver if one is available for your computer as it allows you to do the “flip horizontal” and make decent size and dark enough “halftone dots” that convert photographs to printable medium. Click on the “properties” button. You should be in a new window on the “Layout” tab.

Select either “portrait” or “landscape”, print only on one side. Click on the “Paper/Quality” tab. IN the new window, next to “Media Source” select “Tray 1 manual”. Next to “Media”, choose “cardstock”. Click on the “Advanced” button and select the highest quality settings, for example, “Pro Rez 1200”. If the document you are printing from is not a PDF that is already a read wrong or “flip horizontal” document as you look at it on the computer screen, then you will want to select, under “Postscript Options”, “Mirrored Image: Yes”. Click the “Ok” button to close the window. Click the next window’s “Ok” button to send the document to the printer.

Open and fold out the manual feed trays (input and output) on the turned on and warmed up printer, then insert the film positive material down to the paper stop and adjust the paper side guides so the paper is not loose in the tray.

Press the green “Go” button. How long the printer takes to receive and process the information from the computer and begin printing depends on the speed of the CPU processor chip in the printer, the amount of RAM memory installed, the type of connection to the computer (a Category 5 network connection with a crossover cable to a single computer or a hub for multiple computers, or a USB to parallel converter cable will be faster than a parallel to parallel connection. Some modern computers no longer have a “parallel printer port”). I have the maximum 100 megabytes of RAM in the HP5000. Even so, in the past, on a slower computer (900 MHZ CPU), with only a Parallel to Parallel connection, a high quality scanned prison art document that was over 100 megabytes in file size, sometimes took over 30 minutes to print a single page! The HP5000 is a slower printer because it was made in about 2002 and only has a 166MHZ speed CPU.

Check the printed film positive for darkness of image, especially in heavy solid areas, and for detail in the highlight areas of images (there should be some dots throughout the white areas of artwork, but not in the background of text unless someone purposely typed text over a screened or picture background). The Image can be darkened by spraying the toner side of the film with either White Rain brand hair spray, or Krylon brand clear satin acrylic (item number 1919?) The spray fuses the toner together to make it darker, but using too much can make the image fuzzy. Trying to darken the solids with a Sharpie black marking pen doesn’t seem to help as the



slight difference in shades of black between the toner and the pen can show on the exposed and developed metal plate. The manufacture of the metal plate developer chemistry told me one could put “Rubylith” or a piece of golden rod masking sheet over the solid black area to keep it from being exposed in the platemaker. On positive development metal plates, areas not exposed to the bright exposure light don’t soften and dissolve out by the developer chemistry.

Look also for unwanted or stray toner particles in the printed film positive/laser film. They can probably be removed by scraping them off with a safety razor blade or Xacto brand knife.

Note: If the text is dark on the film positive, but the “halftones” (pictures converted to press printable medium by using dots), are lacking a sufficient amount of dots (5%) in the highlight areas, one might want to go back to the finished Photoshop document made from a scanned image and draw a marquee around just the picture using the mouse and marquee tool. Then just that area or picture can be darkened to make more dots in the highlight area by using the adjustment sliders found under the “Image” pull down menu, then “Adjust Levels”. On documents where the picture was “placed” for a stored place on the computer into a “picture box” in a page layout program like Adobe Indesign, one can go to the “Links” pallet, locate the image you want to adjust, click on it to select it, then click on the arrow in the upper right corner of the Links pallet and go down to “unembed file”. Then go to “edit original” and click on it. The Photoshop or picture editing program will open, then the image so you can adjust it. After making the desired adjustments in the photo editing program, go to “File” and down to “save” to save the new version where it is being saved on your computer’s hard drive. When you do this, the result automatically shows in Adobe Indesign. Then go back to the links pallet, click on the arrow in the upper right corner, and go down to and click on “embed file”. Doing this makes sure all images stay with the document and don’t have to be sent in a separate folder along with the document, when sending the document to someone else.

**Making a Positive Development Metal Plate for an Offset Printing Press, from Toner Imaged Laser Film**

Note: One can use what are called “Laser Plates” for short run jobs that don’t require exact registration between multiple colors. These plates are made from polyester with a coating. Since these plates can’t have pinbar fastening holes before they go through the laser printer, one would have to buy a “pinbar” hole plate puncher which costs between \$179 and \$400, or have a press with a spring clamp on the plate cylinder for attaching the plate. The tail end of the material could be held down by putting glue from a “glue stick” between the plate and the plate cylinder of the press. Aluminum stiffener strips are available to stick to the top edge of these plates so they last longer. They last for 2,000 copies and could do up to 20,000 copies if they are baked or heat treated after being imaged in a laser printer. The polyester plates used to require special fountain solution, but don’t now. A solution rubbed on the surface removes unwanted stray toner. The “ph” or acid/alkaline” state of the fountain solution used to have to be kept at exactly 4.5 to keep the background (non printing area) from picking up ink, but I am told they are less fussy now. Also, finger prints could be made on these plates if the printed surface was touched just after the plate came out of the laser printer while it was still warm.

I like the positive development metal plates for two color presses as the metal plates can be reused, and can run 40,000 copies and possibly up to a million copies if they are baked for 3 minutes at 450 degrees in an oven after they have been exposed and developed. A deletion pen is made for removing unwanted image such as color registration marks, and the two colors stay registered together since the aluminum material doesn’t stretch. These positive development metal plates must not come in contact with alcohol which dissolves the image. Certain brand plate cleaners other than FPC could be a danger here.

### **Registering the Film Positive to the Metal Plate During Exposure**

Since the plate bend and gripper margin were included in making the document on the computer, align the top edge of the film positive with the top of the metal plate (One that has prepunched “pinbar” holes along both top and bottom edges).

Now center the plate over the film or vice-versa depending on which is larger, and use two pieces of clear tape to tape the two together after

aligning them. Put the tape in the “plate bend” or “pinbar” area at the top where the tape won’t affect the exposure area.

To avoid the need for using the clear tape when making additional plates in the future from the same film positive, use a hand held plastic/cardboard/leather hole puncher to punch through the two outermost holes in the top of the metal plate that overlap the film positive. Shorten two #20D carpenter’s nails to about ¼” long and taper the leading edges and insert them from the underside of the metal plate and through the two holes you punched in the laser film. Not all metal plates can be imaged on both sides, so have the emulsion side of the plate facing up and the toner side of the film positive facing down against the emulsion. Then, when you view the image, it will be read right and not backwards. Since the plates are light sensitive, they should not be left out in room light for long periods, especially before being exposed. Store them in a dark place.

### **Calibrating the Platemaker**

The platemaker exposure time needs to be calibrated for the brand of positive development plates being used. The objective is to make as short an exposure time that will make a good solid and yet have dots in a lightly screened tint area, and have the developer chemistry dissolve out all exposed or unwanted background in about 30 seconds. Leaving the developer solution on the plate surface too long could disolve out highlight halftone or screen/tint dots, or could eventually dissolve the surface of the aluminum! The plate manufacturer should be able to furnish an exposure guide made on a small section of laser film with a rectangular box that is solid black and a box with a light screen in it (made by using fewer dots). I cut up an unexposed plate into sections the size of the piece of film positive and tried various exposure times until I got what I wanted. On my NuArc model Ft26V3UP Ultra-Plus Flip Top Platemaker (operating on a designated 220 volt outlet with a 3,000 watt mercury vapor bulb), this turned out to be an exposure time of 1.8 units.

Open the glass lid and clean it on both sides.

Turn on the machine. Place the taped or pinned together new plate (emulsion side up) and film positive (toner side down) on the rubber mat in the center. Close and secure the glass lid. Turn on the vacuum pump until the gauge reads as high as it wants to go, 20 to 30 in. Hg. Being normal.

Push down on the locking lever and swivel the vacuum frame 180 degrees until it locks in place.

Punch in the determined exposure time on the keypad (1.8 units with this machine), and then press the "T" button on the pad to start the exposure. You will hear the additional noise (above the vacuum pump) of the transformer as the light comes on and gets bright as seen through the cracks of the vacuum frame. The orange exposing light on the control panel is lit. When the exposure is finished (you hear a click), flip the vacuum frame around again until it locks in place, turn off the vacuum, open the lid, take out the exposed plate and film positive, and separate the two. During this time, the plate should not be exposed to bright light.

### **Developing the Exposed Plate**

The *Positive Plate Developer BP* is made by Process Solutions, Inc. in East Longmeadow, Maine, USA. A customer service employee told me I could apply it with a 4 x 4" cotton pad using circular motions. It could be poured into a tray and the plate floated in the tray, and then the solution put in a different container and capped. A portion of fresh developer would be added to the used solution to keep it strong. Developing time takes about 30 seconds and is achieved when all the unwanted background (non image area) has been dissolved away. I like the hand whipping application better as it seems to use less solution. When the used solution takes too long to develop a plate (it begins to eat into the surface of the aluminum if left on the plate too long) it can be put down the drain while diluting or mixing it with water. When the image has been removed by the developer, wash the plate off with running water, then dry it off. I used a hair dryer. I was told that some positive plates (blue colored coating?) can be baked for three minutes in an oven preheated to 450 degrees which extends the run life of the plate to as many as a million copies or impressions before it wears out. If one is going to try and bake the plate after putting a finisher/preserver on it first to keep it from oxidizing before running it on a press, then a different solution than the FPC (finisher/Preserver/Cleaner) I ordered should be used. I decided to use a high heat hand held electric dryer like the one that came with my shrink wrapping machine, and heat it beyond evaporating the moisture off, and then put the FPC on with a cotton pad as a preservative from oxidation. If the aluminum oxidizes, it will develop spots on the metal

surface that will pick up ink during printing. It is my belief that these positive development plates are still somewhat light sensitive even after being exposed and developed and preserved, so they should not be stored in a brightly lighted area.

### **Converting a Previously Printed Hard Copy Two Color Tract to Computer/Digital Medium then to Two Color Separations for Printing Press Reprinting**

The previous article was on converting a black and white hard copy document to computer so as to print to a laser printer or inkjet or make film positives from which to make metal printing plates for an offset printing press. Now I go a step further, taking a two color previously printed tract and converting it to digital for printing on a color laser printer or inkjet, then separating the colors for two printing plates, converting them to a black or grayscale, to reproduce it on an offset printing press. Ideally, one should start with camera ready artwork and scan that at 1200 by 1200 dpi or higher quality to make a digital document. Since my color laser printers don't really print over 1200 dpi, the 1200dpi Canon scanner from the year 2000 or so seems adequate. One could scan the graphics art negatives made from the camera ready artwork using a regular flatbed scanner, but if the pictures have already been converted to dots by using a halftone screen when the pictures were converted to a printable medium using the photographic darkroom process, then trying to scan that negative picture made of halftone dots to make more dots to make it digital, could cause an undesirable conflict of dots "more" pattern. Some scanner software has a "descreen" option check box that helps prevent this. It should be noted that scanning regular non half tone negatives of pictures requires a special scanner with a lid that has a backlite in it. A regular photographic negative made up of silver halides, or a 35mm slide would be too contrasty if scanned on a regular scanner. Using the camera ready art would probably mean that the two colors of a two color document for a two color press already had the colors separated and the parts of the document where the darker color prints over a knockout in the underlying color would have a built in "trap" or slight overlap of the top color, such as a black lettering title, to accommodate any misregistration of the two colors while printing which

would result in an unwanted white gap or outline between the two colors where they meet.

The two drawbacks of the scanning method of making a new tracts are:

1. I could not figure out how, in Adobe Photoshop, to get the one color to trap over the underlying color. When this is created from scratch on the computer in a page layout program like Adobe Indesign, there is built in trapping, or also as an option in Photoshop, but only when working in the CMYK mode. After several different unsuccessful attempts to create a trap, I found a solution. The trap or overlap of colors where they touch each other when printed on a two color printing press should be about  $1/32$ " , maybe as little as  $1/64$ ". The Photoshop help pull down menu notes that too much overlap could result in the mixing of the colors. Adobe Photoshop traps colors by expanding the border of the underlying lighter color where it meets the darker color printed on top of it or in the white space "knockout created for the second color so the two colors of wet ink don't mix and allow that mixed color to migrate back to the two separate printing heads or units through the common blanket cylinder that both plate cylinders print to. When one has made a separate document or document page or image of just the underlying of the two colors, one can use the "rubber stamp" tool in the tools pallet of Adobe Photoshop to add the  $1/32$ " more color where the two colors meet. Select the rubber stamp tool and a very small brush size in the brushes pallet at the top left of the Photoshop program window. With the computer mouse, move the cursor to an area at the edge of where you want to add or expand the border of the underlying color by  $1/32$ " to create the overlap or trap when printing on the printing press. Then hold the "Alt" key down on the keyboard and click the mouse. A sample of the document color in that area is selected. Now move the round cursor or brush to the border and click and drag in short strokes to add  $1/32$ " of the same color. If the area where the two colors meet is a straight line, then select the "Marquis" tool and with the mouse draw a narrow rectangle over the color to be expanded, near the edge. Go to "Edit", then down to "Copy", then do a "Paste". Now use the arrow keys on the keyboard and you can move the pasted area over until the border is expanded by the  $1/32$ " desired amount.
2. The lettering will not be as sharp when scanned, as when printed directly at the printer's highest

resolution. **The problem is that most computers don't have all the fonts for foreign languages, and even if they did, one would have to have a different keyboard or virtual onscreen keyboard to type that font/ language.** One answer is to find out what foreign language fonts are on your computer, and if necessary, put the Windows XP Professional operating system installation disk in the computer and install the Asian and Middle Eastern fonts. Then someone in one of these foreign countries for which you have the font, can type the tract on their computer and email it to you as a Notepad, Word Pad, or Microsoft Office Word document, and you can copy the text out of Word and paste it into a text box in the Adobe Indesign page layout program. When you have designed the tract, you can use the full version of Adobe Acrobat to make a PDF of the document and send it back to the translator as an e-mail attachment so they can proof it for errors and approve it for printing.

In working with a two color preprinted hard copy document being converted to computer or digital medium to then reprint the tract on a color laser printer, Inkjet, or make film positives then metal plates for printing press printing, one should start by making sure the two colors are known pantone matching system colors and they are a uniform solid or screen. Digital screens have a uniform patten of white dots inserted in the sold to make it a "screen", that will appear lighter or a "shade" of the solid color. As an example of a tract that was converted to digital, see Who Is Jesus? In Hebrew posted on the tracts4u.com website. The two colors are a PMS 185 red for the one printing plate, and a PMS Reflex Blue screened back to about 15% so the title stands out better and less blue ink is used. The savings in cyan toner when printing this on a color laser printer will be greater using the screen than a solid PMS color.

First scan the two color artwork part of the document (that cannot be recreated by typing in a page layout program because it is a foreign language you don't have the font or keyboard for). I scan all text at the highest resolution my scanner can do, which is 1200 dpi and I use the color mode. The scanner software is accessed through File and then Import in the Adobe Photoshop program, then choosing the scanner hooked up to the computer. When the color artwork appears in Photoshop, the two colors must first be made uniform throughout the art piece, and the

scanned image must be sized to fit in the appropriate allocated space when laying out the document later in Photoshop. Using the Who is Jesus document as an example, I clicked on the magic wand tool to select it, then used the mouse to put the cursor over the red Hebrew text of the title. I then held down the "Alt" key on the keyboard and clicked the mouse in the red area. Some or all of the red title form the particular letter clicked on is selected. How much of it is selected is determined by the "tolerance" slider at the top of the Photoshop program window. By selecting "Similar" in the "select" pull down menu, or by holding down the shift key and clicking with the mouse in all remaining red areas, one can get all the red selected without selecting the color next to or adjoining it. With all the red selected, click on the paint bucket tool in the Photoshop tools pallet. Go down with the cursor to the overlapping white and black squares at the bottom of the tools pallet and double click. This will open up the "color libraries" window of available colors. Choose "solid" and "pantone", the find and click on #185 red. The red appears in place of one of the two squares at the bottom of the tools pallet. Click ok to close the colors pallet. Now move the Paint Bucket cursor with the mouse into one of the lettering areas where the selected document/ artwork red shows movement. Make sure the tolerance and opacity settings at the top in Photoshop are at 100%. Begin clicking in the red areas until the previous or existing red has been replaced with the new more uniform PMS 185 red. Now go to "Select" then down to "Deselect"

Now use the Magic Wand tool to select the blue screen and then use "Similar" from the "Select" pull down menu, along with adjusting the tolerance slider until all or most of the blue is selected. When the document was scanned, some of the blue text printed on the back of the cover page showed up and could not be satisfactorily adjusted out using "Adjustments" then "Levels". I am trying to get the blue screened background color to be one uniform blue and not show any of the text from the printing on the inside of the tract on the backside of the cover page. Hopefully one can get all the blue but no red title selected and then use the paint bucket tool and replace all the blue at once. I couldn't accomplish that, so I fixed the remaining darker blue areas from the text on the backside showing through by using the rubber stamp tool and picking the



lighter blue by holding down the shift key and clicking the mouse and then stamping for painting over the darker blue with the lighter blue with short clicks and strokes. Dragging too long with the tool cursor could begin to paint another color as the area that is selecting a color sample is off to the side as a cross hairs and moves along with the cursor, and if that cross hairs goes over the white of one of the question marks in this document, then the cursor begins to paint white where I want blue so I have to stop and reselect by the shift key and mouse click a new sample of the lighter blue I want before continuing to click and drag to paint further.

Once the two colors (PMS 185red and Reflex Blue screened back to 15% using the opacity slider) on the document cover are smooth and uniform, they are ready to be deleted individually (or, changed to white) to separate the color into two documents for two separate offset press printing plates. To do this, use the magic wand tool and the Alt key on the keyboard to select the color to be removed then press delete. If you don't get all of it the first try, then click again on other parts of that color until only the one color is left.

Now the 1200 dpi quality colored artwork is sized to fit in the allotted cover space in the Photoshop legal size layout document that hasn't been created yet. I want this cover to bleed to the edge on all four sides after the document is printed, folded and trimmed. I have to allow for a press gripper bite of at least 5/16" plus 1/16" trim off of art on the top bottom, and gripper edge (the narrow end of the sheet of paper being fed into the printing press). The side of the artwork that touches the fold must extend about 1/32" around the edge of the fold to make up for inconsistencies on the folding machine's accuracy from fold to fold. After achieving the desired artwork dimension (in this case of the Hebrew tract, 3 11/32" wide by 4" high), I got to Image and down to Image size in Photoshop and type in the dimensions I want, trying to get what I want without changing the relationship or scale between the width and height. Now the artwork is ready to be copied and pasted into a new Photoshop layout document for printing on a color laser printer. The text is scanned at 1200 dpi and turned into black if it is a colored ink to save toner. The change to black is made by going to Adjustments and then down to Adjust Levels in Photoshop after doing Adjustments, Mode, Grayscale. Greatly enlarging the document will

allow one to see when the text is black, but the edges not fuzzy. The “Eraser” tool is used in the Photoshop tool pallet to erase unwanted marks. When the opposite color square is clicked on at the bottom of the tools pallet, then one can use the eraser tool to add black to fix missing black in letters. Changing the Photoshop document from a CMYK or RGB scanned image to a Grayscale, works for the screened blue, but possibly lightens the shade of the screen, and lightens the original reflex blue lettering. The text that is now a grayscale is darkened using the sliders in the Photoshop program found by going down the “Image” pull down menu to “Adjust Levels”. For the Red lettering the magic wand tool is used to select each portion of red, then pouring in black to replace it using the Paint Bucket tool.

Now it is time to make a legal size landscape orientation document with no printing blue layout grids used to assemble the scanned and cleaned pieces into a document looking like the original with the cover art positioned for a three edge trim so it bleeds to all four sides after folding, and the columns of text have proper equal margins of about  $\frac{1}{4}$ ” all around, centering these columns in the four panels created by the two folds made in the printed, and trimmed (with the paper cutter) document. In Adobe Photoshop, go to the “File” pull down menu, then to “New”. Type in the document dimensions for a legal size sheet since this Hebrew tract is laid out two per legal size sheet. Width is 14” and height is 8.5”. Left margin is  $\frac{5}{16}$ ” which is the minimum gripper bite found on many printing presses. The other three margins are set to  $\frac{1}{4}$ ”. In the pull down menu, click on “View and go down to “Rulers” to show rulers in the top and left margins. With the mouse pointer in the ruler area, click and drag out blue lines that are placed as layout guides that do not show when printed. From the left margin, put one at  $\frac{3}{8}$ ” which is where the document will start after a  $\frac{1}{16}$ ” bleed is trimmed off the face of the cover. (note: The Hebrew language reads from right to left so in this document the cover is placed on the left end rather than the right end.) Now we need to divide the area between the  $\frac{3}{8}$ ” line and the  $13\frac{3}{4}$ ” into four equal quadrants or parts. Each quadrant will be approximately  $3\frac{11}{32}$ ” wide. Put a line in the middle, then two more half way at the  $\frac{1}{4}$  and  $\frac{3}{4}$  distance. Now put additional blue lines  $\frac{1}{4}$ ” to each side of these blue lines. This makes side margin guidelines for

the four columns of text that will be “placed” into the document from where they are stored in a common folder on the computer. Don’t forget a blue line at  $\frac{3}{4}$ ” from “0” mark. This is to center the text column printed on the back of the cover panel. Now place horizontal blue lines by clicking and dragging them out of the top ruler margin. Place one at  $4 \frac{3}{16}$ ” and another at  $4 \frac{7}{16}$ ” These are the trim marks for bottom of the cover to make it bleed off the edge of the trimmed tract after printing. Now place two more trim blue lines for the top of the cover (there are two because document is two per sheet – a “work and turn”). The first goes at  $5/16$ ” and the lower one at  $8 \frac{3}{16}$ ”. Two more lines go  $\frac{1}{4}$ ” in from the ones you just placed to give top and bottom margins for the columns of text to be placed. Pull down two more blue lines and place them  $\frac{1}{4}$ ” from the two horizontal blue lines that were placed  $1/16$ ” from the center of the document. Now go to “File” and then “Save As” and name the document, saving it to the Who Is Jesus? Hebrew Tract folder you previously created. I named it “WIJ Hebrew 2 up 4 clr lizr printer”.

Now we “place” the parts into the document. Go to “File” and down to “Place”. Browse to the folder and then color cover document you saved on the computer. Click ok and the cover is put into the layout, but not in the proper position. While the cover is still selected, use the keyboard arrow keys to move the color cover to the upper left quadrant. When in position, there will be a  $1/16$ ” trim area at the top, bottom of the artwork, and left side. In other words, the cover artwork edge at the top with stop at the blue line  $5/16$ ” down from the top of the document window. The right side of the cover may have to be stretched by clicking on the little square in the middle of the right edge black line and dragging that line to the right  $1/32$ ” so it slightly extends beyond the first quarter panel fold blue line that has two  $\frac{1}{4}$ ” blue lines on either side of it. This extra width will prevent white showing when the folder accuracy varies from tract to tract. When the cover is fitted in the surrounding markers (the left marker is the  $5/16$ ” margin marker line which may be a purple color), double click on it and click yes and it becomes part of the layout document.

Now go to “File” then “Place” again and browse to the 3 columns of text that go next to the cover you finished placing. Look at the document in the scanner to make sure you have the right text portion. When you place this

piece of image, it may not be the right size (it may be too large) You then have to use the hand tool or “View” and “Zoom Out” to find the bottom right corner of the image you are placing. Then put the mouse pointer on the lower corner, click, hold the shift key down with a finger from the other hand and drag the corner at a diagonal up and left to make the document smaller. Make the left of the three text columns the right size width to fit in the quadrant adjoining the cover art. The arrow keys will move all three columns of text together as they are one image. Double click on the image to deselect it so it becomes part of the document and stays in place. To center the second column of text, use the Marquis tool in the upper left corner of the tools pallet. With the mouse, click and drag a dotted square around the second column of Hebrew text. Now go to “Edit” in the pull down menu then down to “transform” and to the right to “scale”. Now that column can be moved into position inside the four blue line guideline boundaries in the third quadrant over from the left, using the arrow keys on the keyboard. If the width needs to be changed slightly, you can click and drag on the small square on the line at right. When the text is in place double click on it or go to “Select” in the pull down menu and then down to “deselect”. If the text appears to be crooked, you can place the mouse cursor at a corner and click and rotate the text to straighten it. Now draw a marquis around the third column of text and move it into position and then “deselect it”.

The lower half of the document has four quadrants and the text is placed upside down with the column with the title on the left end below the cover art. Placing the remaining text upside down makes the document a work and turn which allows printing two tracts per sheet from the same set of printing plates on the press, with only a 180 degree flip of the paper on the short edge and using the same gripper edge used in printing the first side. (cover image into press first). To verify that the cover and text columns are properly centered in their quadrants with approximately  $\frac{1}{4}$ ” of white space surrounding each column, it is best to print a two sided copy on a color laser printer, trim the document on a hand operated paper shear, then fold it and use the marquis tool and “Free Transform” to move the column images separately for best fit and look. Make sure the image on the cover goes to at least the center of the right folded edge. If not, use “Free

Transform” and make the document a bit wider by dragging the right side of the cover art to the right slightly. You will find that a regular size had paper cutter can’t cut down the 14” length of the legal size document unless you first fold it in half. Save the perfected document

**Making the Two Color Document into two separate documents, one for each color.**

Use the “View” then the “Zoom In”, or the magnifying tool in the tools pallet to enlarge the document until just the two color cover art appears on the screen. In the “File” pull down menu go to “Save As”, and make a new folder titled “WIJ Hebrew 2 color press separations”. Open that folder and type in “WIJ Hebrew blue plate”, then click save or ok to close that window. Select the magic wand tool from the tools pallet. Move the mouse cursor over one of the red segments of the red Hebrew title art. Hold down the “Alt” key, and click the left mouse button. The red area is selected. Now go to “Select” in the pull down menu and go down to “Similar”. All parts of the red title lettering should now be selected. Now press the “delete” key on the keyboard and the red is dropped out and white takes its place. Go to “File” and then “Save” the blue plate document you are working on. Now the blue should be turned to gray. Click “Image in the pull down menu then “Mode” then move the cursor to the right and select “Grayscale”. Save the document again. At this point you may want to add 1/32” of additional gray screen where the blue image will touch the red when printed on a two color printing press. Not adding a “choke” might result in the possibility of a thin white outline showing between the red and blue art on the finished printed tract since in the present state of design the red title is going to be an exact fit into the white knockout in the blue background. To add the trap edge, enlarge the blue plate document to see just part of the area at a time where the blue will touch the red. Look at the original you scanned from as a guide. This particular tract is difficult because the white question marks that also border on the red don’t need to be changed, so don’t put any blue in those areas. Now select the rubber stamp tool from the tools pallet and a very small brush stroke (top left corner area of the Photoshop program window. You can get an idea of the size of the brush you choose by comparing the size of the circle cursor to the ruler markings at the top of the document. A 1/64<sup>th</sup> to 1/32<sup>nd</sup> inch diameter is desired to prevent

unwanted mixing of the two wet colors on the common blanket cylinder on the printing press. Now move the rubber stamp tool cursor alongside where you want to choke the white knockout (make it smaller so the red ink laid down after the blue slightly overlaps. Hold down the "Alt" key on the keyboard and click the mouse to select a color sample to paint with. Note that depending where you click the cursor to select a sample, a small cross hairs trails the brush as you click and drag to paint, and if this cross hairs moves over a white area of one of the white question mark on the cover, you will be painting white and not blue. You can go to "Edit" then "Undo" to revert back to a previous state. The later versions of Photoshop allow going back several steps depending on the amount of RAM memory installed on the computer being used. When you have the document artwork very enlarged, you may notice cloudiness in what you thought were pure white areas. You can use the "Eraser" tool in the tools pallet and an appropriate brush size to carefully erase this fuzz, turning that area to pure white. When you get all the white lettering areas that touch the blue choked by about 1/32", you can later print a red plate and the blue plate color separated images, overlap them with the red printed as black image under the blue screen plate printed as black but looking gray. Hold the two up to a strong light source coming from behind such as a light table, and check the overlap to make sure there is no white showing where the two colors meet.

Now we make the red plate and change the red to black. Reopen the finished and saved color laser printer document titled WIJ Hebrew 2 up 4 clr ltr. In the File pull down menu, go down to "Save As" and rename the document: WIJ Hebrew red plate 4 2 clr press. Use the Magnifying Glass tool in Photoshop, or chose "View in the pull down menu and go to "Zoom In". You want only the cover art portion of the document (the upper left quadrant) to be showing. Now choose the Magic Wand tool from the tools pallet. With the left button on the mouse, click somewhere in the blue background. If the tolerance slider is in the maximum tolerance position (set at 100%), then most if not all of the blue will be selected on the first click. Now press the "Delete" key on the keyboard and the background you selected disappears. Put the magic wand cursor over any remaining blue areas and continue clicking and deleting until all the blue is gone. Now go

to “File” then “Save”. Now move the Magic Wand tool cursor over the middle of one of the red pieces that make up the red lettering of the Hebrew title and click with the mouse. You may have to hold down the shift or alt key while clicking with the Magic Wand tool, to get the area to select. Then hold down the Shift key on the keyboard while you click on additional red pieces until the whole title is selected. An alternate method is to use the Magic Wand tool to select the red in one piece then go to “Select” in the pull down menu and down to “Similar”. Either way, when all the red is selected, switch to the Paint Bucket tool in the tools pallet. Then look at the small overlapping white and black squares at the bottom (left corner) of the tools pallet and click on them so that the black is on top of the white where the two squares overlap. Now move the Paint Bucket cursor over each selected piece of red title and click and black color pours in to replace the red. When all the red has been replaced with black, you should do another “File” then “Save”.

Now we need to get rid of the black text outside the cover quadrant as the text will be printed in Reflex Blue along with the blue part of the cover on the Blue plate. Zoom out the document until the whole document is fitting on the screen. Select the Marquis tool in the upper left corner of the tools pallet. Place the cursor “cross hairs” above and to the left of the column of text in the second quadrant to the right of the cover, then left click the mouse and holding down the button, drag at an angle down and to the right to make the dotted Marquis box around all the text you can. You will be able to get everything except the column of text in the lower left quadrant. Now press the “Delete” key on the keyboard and the image of columns of text inside the marquis disappears, leaving white space in that area. Now use the Marquis tool again to eliminate the text column directly below the cover art quadrant. Now all that should show in this document is the title lettering in the upper left quadrant, the title being black in color. In the “Layer” pull down menu, go down to and click on “merge visible” This will merge the various layers into one layer which will make the file size of the document smaller. Go again to the “File” pull down menu and click on “Save.”

Now I suggest you print out a copy on the laser printer of the black plate and the blue plate in the “black and white” mode in the printer software

window. Align the two printed sheets with the title on the underside and hold the two sheets up to a light source from behind and look through and verify that there is a trap in all the areas where the blue cover background art touches the red over title pieces. If any white gaps show, there is not enough trap and one may want to modify the blue plate cover art by adding more blue in that area using the Rubber Stamp tool. Remember when printing out these two documents on acetate to make a film positive, a laser printer will do a better job than an inkjet printer where there are screens because the laser printer uses a "Postscript" printer driver that makes bigger "halftone" like dots required for printing images on offset printing presses. Very few inkjets have a software "RIP" or Postscript driver, and without it, the dots are so small the strong developer chemistry to develop positive development aluminum plates dissolves the dots away. Also remember, when making the film positive to print the image on the acetate as a "mirror image" or, "flip horizontal", options found in the Postscript printer driver for the particular laser printer you are printing to. Evidently inexpensive laser printers don't have Postscript drivers either. "Mirror Image" puts the toner against the aluminum surface when exposing the image to the plate in a plate exposing box, so the result is a sharper image. Also, when aligning the printed film positive over the unexposed metal plate, a "plate bend" dimension (e.g., 7/8" on a Hamada 550 press) must be added between the short side of the plate and the short side beginning of the film positive material. The required gripper bite of 1/4" to 3/8" for pulling the paper through the press should already be designed into the document as the margin along the short edge of the document on one end.

### **Adding Spot Color Titles to a One Color Tract Document, or a Document with Two Color Artwork, but One Color Text**

The document worked on above, Who Is Jesus? In Hebrew has a two color cover but only one color of message or text. As an added attraction, look at the posted tract document, Why John 3:16? In this document one goes a step beyond just printing the cover artwork in two colors, to also printing the main headings of sections of text or key Bible Verses in one of the two colors. This is easily accomplished, whether in Microsoft Office Word, or Adobe Indesign by dragging over the text you don't want to show and



changing it to the color white, Then changing the color you want to black so it doesn't turn to a gray when printed as a black and white (if it was originally made in a color. For Example, if you will look at the posted document Why John 3:16 English 2 color separations for a printing press, you will see how, to the red blood plate for the cover artwork, some red parts of the text, and the "sinner's prayer" were also added by simply selecting the unwanted text and making it a white color. Doing the opposite would make text for the black plate where the red text was changed to white. By changing the color of the text, the text stays in position so the registration of the two printed colors will look as good as it does on the same type document designed for the color laser printer that prints all the colors at the same time. The Why John 3:16 was harder to do because the two colors of the cover art were separated in Photoshop, then saved as Tiff file format images and then "placed" into a "picture box" in the Adobe Indesign page layout program. To get the red blood on the red plate document to fit inside the dropped out white area made for it in the black plate document, I had to experiment by printing a black plate copy on the laser printer, then successive red plate documents on the same laser printer, selecting and moving with the keyboard arrow keys, the red blood art until, when the two overlapping printed document pages are held up to the light and one looks through the blood centers in the white knocked out area of the black artwork plate. This artwork was originally drawn with the red not touching the black, so there is no need for a "trap" or overlap of colors when making this 2 color separation for a printing press.

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