UNDERDOGS

SELF PUBLISHING TIPS: OFFSET PRINTING (PART 1)

March 24, 2014 — Made by *Joumana Medlej*

Comic authors today benefit from increased choice in terms of how to publish. Digital publishing, i.e. webcomics, are the obvious and nearly-universal choice both for those who wish to print at some point an those who don't intend to. Print-on-demand (PoD), similarly, makes it possible for everyone to make their work available as a book; and despite its many limitations it's still much better than no possibility at all. Digital printing and various means offered by copy centers also present opportunities for enterprising artists to print small runs of books at a relatively modest cost, with more control over the final product than PoD allows. But the most exciting development, as far as I'm concerned, is that today sites like Kickstarter give everyone a chance to access good old offset printing, which this post is dedicated to. Here I'd like to discuss a number of things to know, to do, and to avoid in order to make the most out of offset printing, based on my personal training and experience printing comics and other books with various printers (with a lot of trial and error.)

So, given its cost and the fact you'll have to stock the books, why bother with offset printing in the first place? Because nothing out there matches the possibilities and quality it offers. You get to pick the paper type, weight, color, size and to control the quality of the result. If you fancy it, you can include inserts, die-cuts or special inks. For printing books, it is far superior to anything else out there. It all depends on how much you see your final product as a beautiful object to be kept. It is also necessary if you have a mind to get your book into bookshops (though that's a matter I won't go into right now).

If there's even the remote chance you might go the offset route when your comic is completed, it is best to work for offset from the very beginning.

Print Resolution

Never work under 300 dpi. That is the lower limit of what is acceptable for a good printed result, despite the fact PoD accepts resolutions as low as 150 dpi (which tells you something about the relative quality of PoD!) Many recommend working at 600 dpi, which is a good idea for a black and white comic, but unnecessary for color (the printer will just convert it down), especially if it's more than your computer can handle. My printer, for instance, recommends I give him 350dpi files, and the result is incredibly sharp, much sharper even than I can preview on my screen.

Never ever work at a low resolution and size it up before printing. That's an absurdity, it completely misses the point and you'll end up with ugly digital artifacts on your pages, as if you'd taken a jpeg from the net and sized it up. If you decide to print a comic you've created at low-res you will have to redo it for it to be suitable (as I had to do with my senior year project – the lesson sticks!) So don't get into that bad habit. Always work in high-res.

Color Space

We probably all know this, but in a nutshell: light-based color is worked in an RGB space (Red, Green, Blue), while pigment-based color requires a CMYK space (Cyan, Magenta, Yellow, Black). This means that a comic made to be seen on a screen is in RGB, but to be printed, it needs to be in CMYK.

What to do about this? There are 2 possible approaches:

First, you can work in CMYK from the beginning. This is fine if you're not publishing online; you'll notice some Photoshop features and filters are disabled in this mode, but this should not be a problem because you'll be working with paper in mind. However, if, like me, you want to have your pages available online and they need to look as good on a screen as they will on paper, this is not ideal: CMYK pages tend to look duller on screen, even after the automatic conversion to RGB when saved as a .jpg format or whatnot.

If on the other hand, you work in RGB, you get all the benefits of that format, but will have to convert before printing. This can work, but **don't, seriously *DON'T* convert your pages to CMYK yourself**. You will have no idea what you've done to your work until the printed book arrives. Such a conversion will add black to all your colors. In the best case scenario it'll mean the colors are not what you intended, but if your work is dark to begin with, this can be disastrous. Since you're working with a printer, there is no need whatsoever for you to do this yourself. Send the printer your flattened RGB files as .psd* and let their professionals convert them as needed. They will apply the necessary profile and make the needed adjustments so that the printed page is as close as the one on your screen as it possibly can be. In any event, more often than not you're getting charged for "color correction" even if you try to do this job yourself, because they always have to do something to your files before sending to print.

(By the way, if you go this route, leave the text on a separate layer. If it's black on white, they'll want to strip it from all channels other than black, so that it prints solely as black, or "K" in the offset process. Otherwise, it'll print as some combination of all four colors and the slightest registration error will make it look fuzzy.)

If you really want to do this yourself and have managed to convince the printer not to bill for color correction, at the very least you need to ask them for a color profile. You will have to convert your pages to that color profile, not to plain CMYK, for the conversion to happen with the least possible loss. This profile is a special file format (normally ".icc") and should be saved where you won't misplace it. To apply it, open the file you wish to convert and, in Photoshop, use *Edit/Convert to Profile*. Navigate to and select your profile; you'll be asked whether to flatten the document. I recommend flattening so that any blend modes you have don't go all funky on you. Save as a copy, and review the page for anything that may need re-saturating (that will usually be light effects, as they suffer the most from losing the white of a light source for the white of paper).

Finally, whichever way you go, I highly recommend requesting hi-res color proofs for a few key pages. This is the only way to see, on paper, the exact colors as they will come out, and to catch any problem before it's too late. Printers may or may not charge for these, but this is not something I would try to economize on. You may not need more than 3 or 4 pages: the cover, the darkest and lightest pages in the book, and maybe a random one or one from a sequence where color scheme is particularly important.

Page Size

As a rule, comic artists who work on paper always draw at a much larger size than will be printed. This is only logical, as there's a limit to how fine one can draw and ink, and the scaling down process is very favorable to any kind of line work: small defects disappear and the whole is tightened. This also applies to artists who work digitally, despite the zooming function that makes it possible to work at a very small scale. Working at 150% or 200% of your final printed size can really sharpen your result – if that is what you desire, of course. Another distinct advantage is that you never know when you're going to want a larger version of a page, either to sell as a poster, or to exhibit, or other unexpected things. I've had to exhibit pages on a number of occasions by now, and I was really glad to have applied this policy from the beginning.

On the other hand, this can sometimes cause real problems as well, so be careful. You may end up drawing too finely for your chosen printing method if you start at too large a scale and then reduce it. Visually, we're not supposed to see small details clearly: as objects shrink or become more distant, so the amount of details in them drops for the human eye, and it looks very odd when that is not observed. On paper it happens naturally due to the limits of drawing at a tiny size – on a digital canvas, you must be careful to keep the overall balance in sight at all times.

Page Position

This is where the publishing platform influences the very writing of the comic (but only one of the ways in which it can.) As this is not applicable online, it tends to become a lost art, but the importance of page position comes to the fore when a webcomic makes it to print and lacks this consideration. In a book, a page is never isolated, but is either on the right or the left side of a spread. A story is enhanced by proper planning for this, and weakened by its neglect. A basic rule is to keep cliffhangers at the bottom of the right-hand page (the *recto*, or odd-numbered page), so that the reader doesn't discover what happens before they turn the page. All surprises and, if possible, changes of location, should go on the left-hand pages (the *verso*, or even-numbered page). The turning of the page acts as a scene cut, which is why in a similar vein some things are best kept within a spread, which works as a unified time and space – especially if those moments take up just two pages. Splash pages are particular instances where you have no choice at all, you have to work it so the previous page is odd-numbered. This planning takes place at the writing and sequencing stage, and I often find myself having to condense a sequence or expand one because certain pages absolutely need to be odd or even. Commercial comics have often just inserted advertisements where needed, if they even take that into account. If you're taking your webcomic to print and find yourself with some awkward page positioning and nothing you can do about it now, you could consider inserting a pinup or some other non-disruptive full-page art (more creative solutions are possible!) – just make sure to insert it somewhere the pause makes sense, such as at the moment of a change of location.

In part 2 we'll continue with number of pages, margins and bleeds, and choice of paper.

You can see more of Joumana Medlej's work at http://www.malaakonline.com/.

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5 Responses to "Self Publishing Tips: Offset Printing (Part 1)"

Bill Taylor March 25th, 2014

Fantastic article, especially those page/position sections, as planning for those needs to happen in the early stages and a lot of people don't catch that stuff until it's too late.

Reply

Vincent March 25th, 2014

So, this article recommends CMYK for those who want printed comics, and RGB for digital comics. If you have experience in both, which would be ideal for working with comics published digitally, then sold in print for anyone interested? Maybe you already answered this in the article, not sure, but I would like to know how online comics can be printed with no or minimal loss in quality. Thanks.

Reply

Dan Hale March 29th, 2014

Another good thing to know is the Gamut warning feature in Photoshop (I believe InDesign has a similar feature) that shows the areas that are out of print range. Really good for going in and desaturating specific colors in any problem areas.

Reply

Fish March 29th, 2014

This is a great tutorial Joumana submitted to http://majnouna.deviantart.com in 2011. But if it's possible, please do something about the article formatting : The infos are really interesting, but the final result is not so easy to read.

Reply

Shawn Booth October 17th, 2014

Part 2?

Reply

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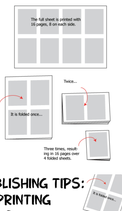
SELF-PUBLISHING TIPS: OFFSET PRINTING, PART 2

April 11, 2014 – Made by Joumana Medlej

Continued from part 1, which covered resolution, color space, page size and position.

Number of pages:

While diversification of printing techniques means this is no longer always an issue, it remains an issue to be aware of when using offset printing. I am talking about the fact that the number of pages in a book needs to be a multiple of 16. This is due to the way offset printing, which makes use of large plates, works:



These signatures of 16 pages are bound together to form a book of 32, 48, 64 etc pages.

Based on the above, let's clarify: *to get your money's worth*, the number of pages needs to be a multiple of 16, because you're paying for 16 pages at a time anyway. The plates represent the biggest part of the cost, and one 16-page signature in full color requires no less than 8 plates (1 for each of the 4 CMYK colors for each of the 2 sides of the sheet). No matter how much or how little contents there is, a 16-page signature must be produced using these 8 plates. There are ways to reduce this, for instance by having every other page blank or a single color, or using special plates, but this really requires working with the printer and I won't attempt to suggest them here – if you're interested, it's as simple as asking your printer "What can I change to cut printing costs?" In any event, a 36-page book and a 48-page book cost the same, which is 3 signatures, but the 36-page costs us wasting 12 whole pages. They won't show up as blank pages because the printer will remove them, but if you're printing 1000 copies, that's 12,000 wasted pages you paid for! If the number of pages isn't a multiple of 4, however, there will be blank pages by necessity.

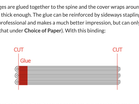
This is why it's important to have an inking of how many pages your story will take up. If it runs just a little over a multiple of 16, it's worth condensing it a little to save you a whole signature's expense. If it falls a little short of one, plan for bonus contents to fill up those pages. Make sure to take metacontents into account, as well; these are the extra pages that contain items such as the title page, indicia, cataloging-in-print information, and so on (the title alone can eat up to 4 pages) and anything else that needs to be included like appendices and so forth (in my case, this included the language notes on the last page as well). Thus, comic pages plus metacontents should be equal to a multiple of 16.

If you're publishing a series, planning is even more important as it's a good idea to keep all volumes the same number of pages. If printing cost varies greatly from one to the other, they will have to be priced differently, and also, different page counts will cause weight to vary, and this means shipping cost will also vary. Believe me, you don't want to have this kind of complication within the same series when you sell it on your website or send it to bookshops. This is assuming, of course, that you're not an eccentric billionaire making comics in your spare time. When expenditure is not an issue, such rules can be ignored…

Margins and bleeds:

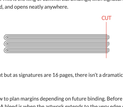
In a printed page, the inner edge gets eaten up by binding and the outer edge by cropping. Exactly how depends on binding type:

– *Saddle stitch* is when the book is folded down and stapled, as is the case with floppies. Note I don't recommend this at all because it looks so cheap, but if your book is too thin for other types of binding, you may have no choice. In any case, this is what happens with this binding:



Notice how much more of the inner pages get cut than the outer pages. If your margins are just enough, they may look fine on the first pages, but near the middle of the book they'll get very thin and some of the art may even be cut. On the other hand, the inner margins are fine throughout, as this binding allows the book to open almost flat at any page.

– *Perfect binding* is when pages are glued together to the spine and the cover wraps around that, allowing for a title to be printed on the spine if thick enough. The glue can be extracted by sideways stapling, but that is quite hidden. It looks cleaner, more professional and makes a much better impression, but can only be used starting from a certain thickness (more on that under **Choice of Paper**). With this binding:

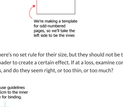


The damage to the outer margins is much less, because pages are put together in smaller signatures (fewer are folded together). On the inside, however, there's a slight cut just to remove the thickness of the fold, and a full 0.5 cm eaten up by glue and by the fact you can't open the pages fully without breaking the spine. This is where the inner margins need to be given ample space. My advice would be to always aim and work for this type of binding: a graphic novel has nothing to gain from saddle stitch, and if it's too short or flimsy for perfect binding it may not be worth the expense of offset printing – best wait to have several chapters and print something more substantial.

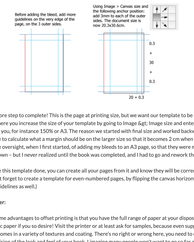
– Let me also mention *hardcover binding*, though this is not usually affordable without a successful Kickstarter campaign or some other funding. This is the king of commercial bindings, with signatures stitched together so the book is flat and even when closed, and opens neatly anywhere.

The outer edge of the pages is cut but as signatures are 16 pages, there isn't a dramatic effect as with saddle stitch.

This was so you can visualize how to plan margins depending on future binding. Before getting down to preparing them, we need to discuss *bleeds*. A bleed is when the artwork extends to the very edge of the printed page. This is not a necessity, plenty of comics and graphic novels keep away from it, and they can ignore this bit. However, if your artwork contains bleeds, then it needs to extend beyond the edge of the page. Cutting is never completely accurate (we've seen how binding influences where it falls), and if the art doesn't extend enough, you can end up with a very unsightly white line on the edge of the page. The industry standard for bleeds is 3 mm (at least on my side of the ocean; that's about 1/8 of an inch in the U.S./Imperial System conversion); that's 3 mm added to the size of your printed page, on each side that will be cut. To clarify this, let's create a page template that you can then use for all the pages in your comic. If you work on paper, this is still useful for calculating measurements.



Next, decide on your margins. There's no set rule for their size, but they should not be thinner than 1.5 cm. 2 is better, and they can be much broader to create a certain effect. If at a loss, examine comics of the same size as yours. How wide are the margins, and do they seem right, or too thin, or too much?



There's one more step to complete! This is the page at printing size, but we want our template to be at working size. This is where you increase the size of your template by going to Image >> Image size and entering the value that works for you, for instance 150% or A3. The reason we started with final size and worked backward is that it's a headache to calculate what a margin should be on the larger size so that it becomes 2 cm when reduced. I made the huge overnight, when I first started, of adding my bleeds to an A3 page, so that they were much too thin once scaled down – but I never realized until the book was completed, and I had to go and rework them all!

Once you have this template done, you can create all your pages from it and know they will be correct when rescaled. Don't forget to create a template for even-numbered pages, by flipping the canvas horizontally (this will reverse the guidelines as well.)

Choice of paper:

One of the prime advantages to offset printing is that you have the full range of paper at your disposal, including special metallic paper if you so desire! Visit the printer or at least ask for samples, because even supposedly "plain white" paper comes in a variety of textures and coating. There's no right or wrong here, you need to choose based on your own vision of the look and feel of your book. I imagine many people won't want to go so far and just want simple white paper, but be at least aware of this: the standard paper types of the book industry will come at least as uncoated, coated, semi-gloss or glossy. Uncoated is like your average printer paper, fine for novels but not recommended for color work as the surface is rough and the ink will spread a little. Coated is better for fine printing, but dulls colors. Glossy is the finest but the shiny pages are distracting and they take fingerprints like nobody's business. Semi-gloss is the best compromise and will keep your colors vibrant without attracting attention to itself.

Another important consideration is the paper weight, and this is where sitting with the printer can really pay off. What is too thin, and what is too heavy? It would not be useful for me to give too many numbers, because that varies subtly with the nature of the paper, but as an example, I use 135gsm paper for my comic's contents, and 250gsm for the cover. At first I used heavier paper for both, but with the second volume my page count rose and what was a beautiful balance became very heavy and problematic. Here are things to think about:

– Heavier paper: it looks better, makes the book feel more valuable. It also makes it heavier, hence higher shipping costs. It also makes it thicker, so it quickly becomes too thick for stapling; by the same token it allows you to use perfect binding with fewer pages. Finally, thicker books mean they take up more space wherever you're stocking them.

– Lighter paper: if it's too light it feels flimsy and cheap. But if you have a lot of pages, it can make the book lighter and less onerous to ship and to stock. It can force you to use saddle stitch if your page count is low.

A printer can, upon request (if they're good with clients), make a mock-up of your book using blank paper of the weight requested, so that you can see exactly what it feels like, how thick it is, and how much it weighs. This way you can conceivably tailor a book to look as good as possible while remaining within a certain weight category, if most of your sales will be by mailing the book yourself. For the cover at least I can say that 250gsm is almost ideal for a softcover: lighter than that and it doesn't feel like a cover, heavier and it can create problems during binding. Always have your cover laminated to give it that quality finish that will also protect it.

Finally, think of the planet.

Some printers have converted to eco-friendly printing processes. They use water-based inks and plates that degrade without poisoning the environment. These printers may be a little more expensive, but that is something we owe. In the end, our work is not a necessity, and no matter how many people derive pleasure from it, printing it remains a little act of vanity that consumes paper and energy. The least we can do is give a little extra to limit the harm we do in the process.

Click here to check out Part 1 of the Offset Printing Tutorial!

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*You can see more of Joumana Medlej's work at **http://www.maisakonline.com/***

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One Response to "Self-Publishing Tips: Offset Printing, Part 2"

Arnie May 16th, 2014

OH THANK GOD! Somebody actually covered this! ALL HAIL JOUMANA!!!!
Knowing this can save you "LOTS" of money when it comes time to print.

Reply

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