Achieving Overprint in Digital Print Maps

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Companion guides to this are;

- A Course Planner's Simple Guide to Achieving Best Digital Print

- A Digital Press Operator's Guide
to Process Orienteering Maps

Content

- IOF and Overprint
- OCAD and PDF
- Condes and PDF
- Condes and EPS
- Postscripts

- This guide is intended for printing with commercial printeries.
- Credit is due to Jim Russell for key contributions to this guide and Kathy Liley for diligent proofing.

ISOM 2000 & Overprint

This ISOM being over 10 years old, overprint is considered only for CMYK **offset** printing.

Nowadays, we can achieve overprint on many digital presses.

Note: **transparency** is **not** the same as **overprint**.

Overprinting

With traditional spot colour printing inks are physically printed on top of each other. It is possible to simulate the same with four-colour printing technique, and this optimises legibility and gives a colour appearance as close to traditional spot colour printing as possible. To achieve this effect in four-colour offset printing, information underlying (in the spot colour printing order described in 3.5.1) a specific spot colour should not be blocked out (erased / printed white) completely, but should be blended in to produce a new colour for printing.

The use of overprinting effect with 4-color offset printing is recommended for the following solid colors:

- 100 % Violet
- 100 % Black
- 100 % Brown
- 100 % Blue
- 100 % Green
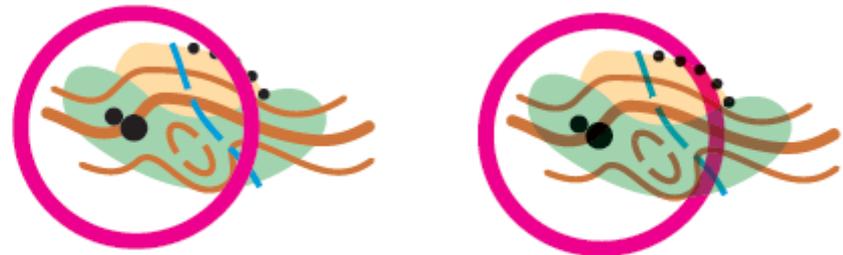
Illustration: Contours in dense vegetation printed in 4-colours. Overprinting effect in the right illustration.

OCAD & PDF Overview

OCAD

- Tick **Overprint** column of course purple in the colour table
- **Export PDF**

Prepress

- Digital press operator sets on **Composite Overprint** in EFI Fiery RIP *Command Work Station*
- Or in equivalent Creo or other RIP management software

OCAD Overprint

No.	Name	CMYK (process) colors							Spot colors						
		Cyan	Magenta	Yellow	Black	O	Trans.		Black	Blue	Brown	Green	Yellow	Purple	G
14	All color separations	100	100	100	100		100		100	100	100	100	100	100	1
33	Purple 100%	30	100	0	0	✔	100							100	
39	Purple (start,controls,lines)	30	100	0	0	✔	100							100	
36	Red	0	70	100	0		100								
17	Purple 50%	0	50	0	0		100							50	
18	Purple 20%	0	20	0	0		100							20	

When using overprint effect, course purple (#39 here) does not have to be under other colour layers.

Note this colour table also has out-of-bounds purple (#33) with overprint effect. But if underlying detail diminishes the visibility of that warning symbol, then turn off overprint for that colour.

Condes 8 & PDF Overview

Condes

- Apply **Application** settings for Postscript printers
- Tick **Overprint effect** in **Course Layout | Setup Overprint**
- Set course purple to RGB 204 0 255
- Apply settings in **Print Setup**
- **Print to Adobe** (or other) **PDF** (map with course overlaid)

Prepress

- Digital press operator sets on **Composite Overprint** in EFI Fiery RIP *Command Work Station*
- Or in equivalent Creo or other RIP management software

Condes Application Settings

Shown status of highlighted items is critical.
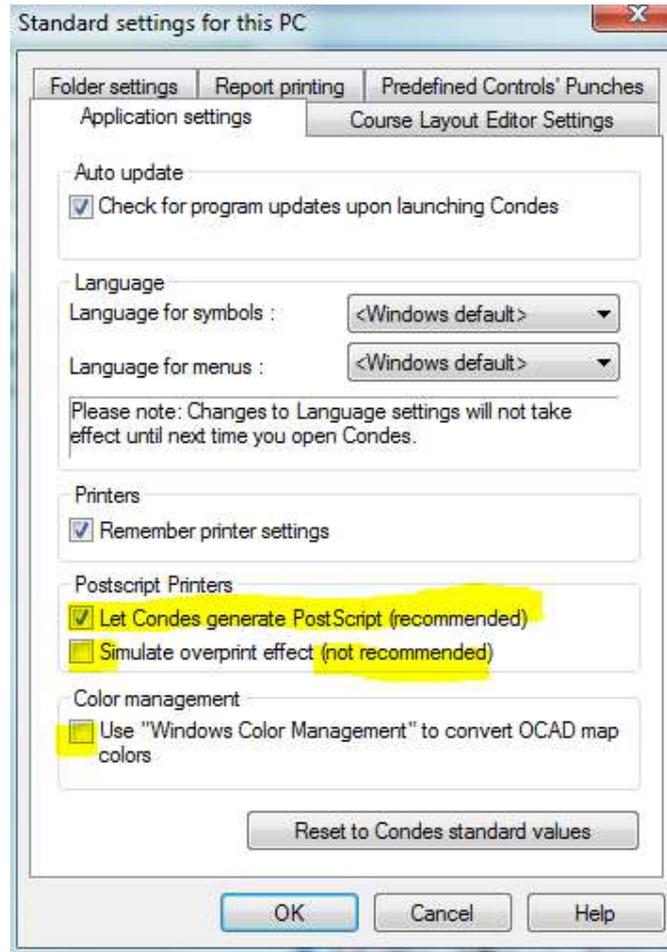
Simulate overprint effect is for home printers and will not produce highest quality print

Condes Setup Overprint

Print (menu top row) | Maps with courses | Setup overprint

This could also be setup stickily in
Course Layout | Setup Overprint

Condes Print Setup Settings

Print (menu top row) | Maps with courses | Print Setup
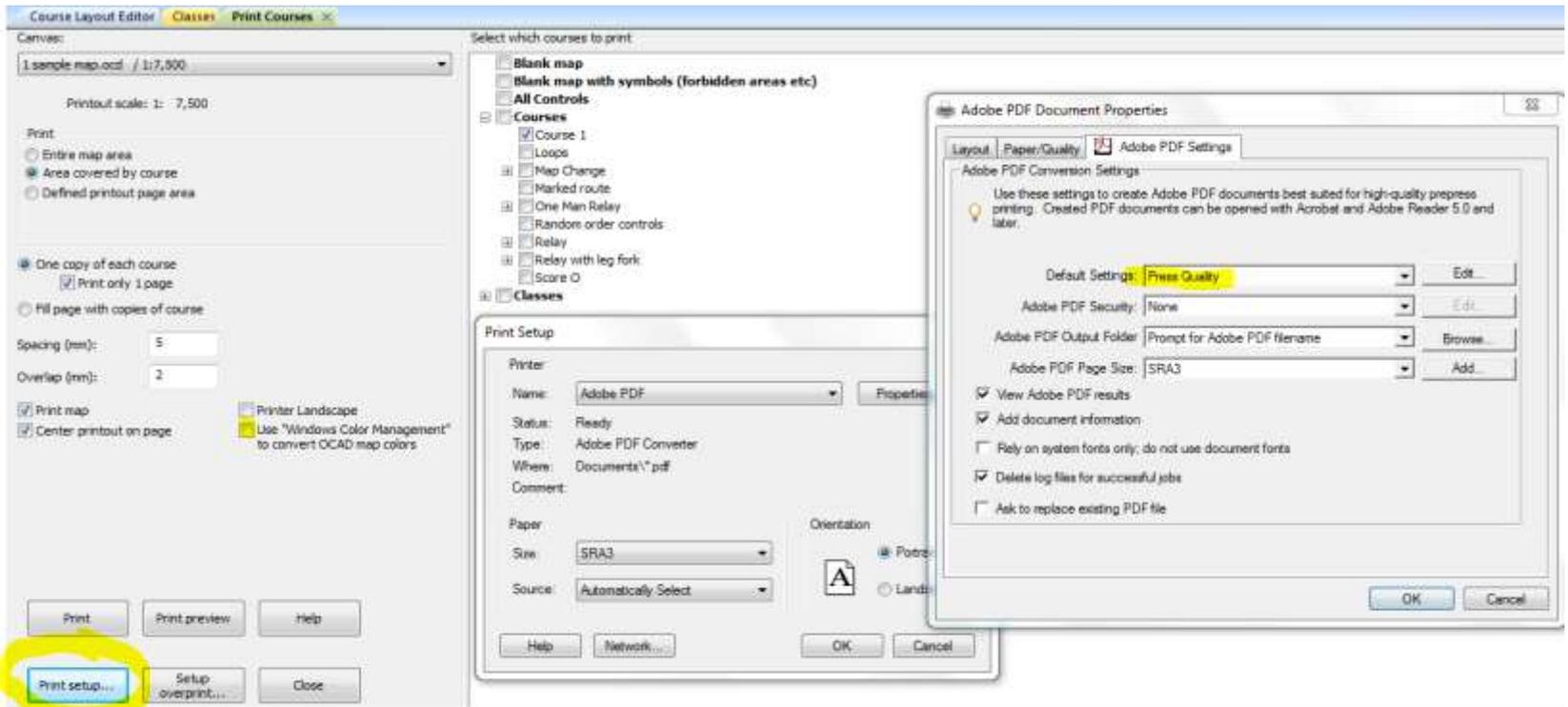
See **Postscripts** section for other PDF writers

Using PDF-XChange

Condes 8 & EPS Overview

Condes
- Tick **Overprint effect** in **Course Layout | Setup Overprint**
- Set course purple to RGB 204 0 255
- **Export EPS** (map with course overlaid)

Prepress
- Digital press operator sets on **Composite Overprint** in EFI Fiery RIP *Command Work Station*
- Or in equivalent Creo or other RIP management software

Condes 8 Overprint

This selection provides the same effect as ticking Overprint in OCAD colour table.

If importing course to OCAD, check that the Condes purple which is inserted into the colour table, has Overprint ticked

Condes 8 Export EPS

Export EPS is an easy means of getting a high resolution vector map file from Condes. You can view it in Adobe Acrobat.

Or the very low cost IrfanView image viewer with Postscript add-in. Check the add-in info for location of required GhostScript download.

Export courses as Encapsulated PostScript (EPS)

Select which courses to export

Blank map

Canvas:

Export

irfanview.com

Postscripts

Checking the PDF you created

You can check your PDF for overprint, smooth vector art and embedded fonts.

Open your PDF in Adobe Reader. Zoom in to 800% or 1600% and locate a control circle or control line that has blue, brown or black underneath it.

The upper image has no overprint.

The lower image shows overprint where circled. It is clearly visible on the brown. It is visible over the blue/green overlap and just visible through the circled piece of black.

There are no jagged edges so this must be vector art. If there are jaggies then you have saved a raster image.

A logo in a vector map might be raster if brought in via OCAD 10 background map function. Print it at map scale to ensure it will look alright.

Finally, select **File | Properties | Fonts** and you should see your fonts are embedded.

Cannot see overprint? Select **Edit | Preferences | Page Display**.
Ensure **Use Overprint Preview** is set to **Always.**
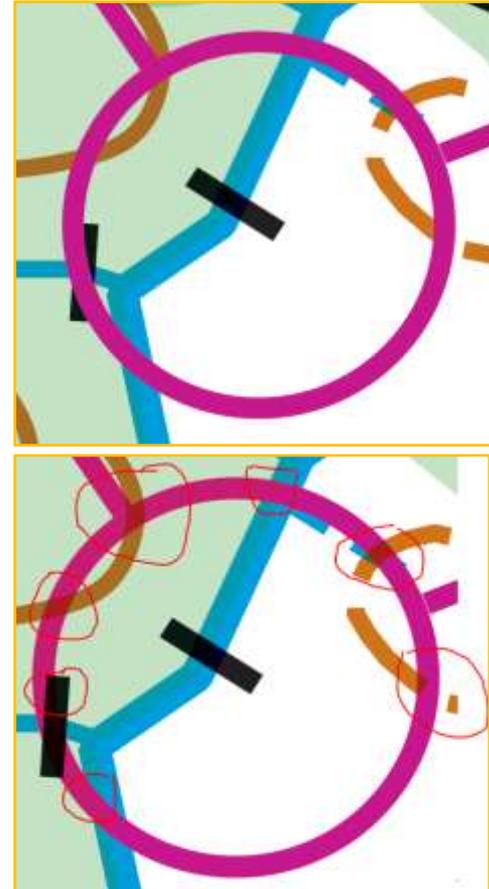
PDF Writers

- **Condes**. Preceding instructions produce high precision vector art PDFs. But for **Overprint** you need Acrobat or a capable PDF Writer.

- PDF-Xchange is FREE to home users for a limited time. digbig.com/5bfnrp (link on MapSport)

Condes 8 Course Purple
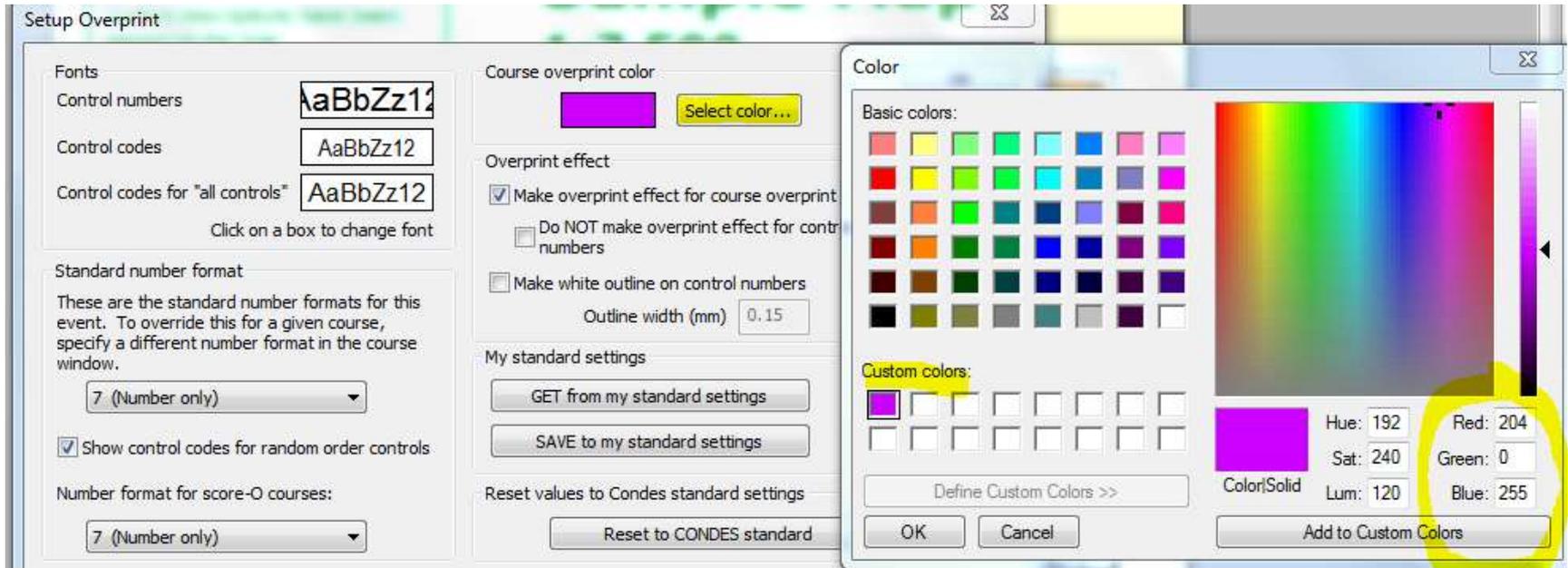
In test printing Bush Rangers '09 maps, Jim and Ken discovered that some RGB purple combos would not produce overprint effect.

RGB 204 0 255 (= CMYK 20 100 0 0) does work.

ISOM Overprint Spec

ISOM 2000 p7 specifies that overprint be used in CMYK print for these colours;

- Violet

- Black

- Brown

- Blue

- Green.

These are usually ticked in a new OCAD file as at right.

| No.	Name	CMYK (process) colors				O	Trans.	
		Cyan	Magenta	Yellow	Black			
14	All color separations	100	100	100	100		100	
33	Purple 100%	30	100	0	0	✔	100	
39	Purple (start,controls,lines)	30	100	0	0	✔	100	
36	Red	0	70	100	0		100	
17	Purple 50%	0	50	0	0		100	
18	Purple 20%	0	20	0	0		100	
29	Green for Ski-O	91	0	83	0	✔	100	
0	Black	0	0	0	100	✔	100	
32	White for road under construct.	0	0	0	0		100	
15	Street infill	0	28	50	9.5		100	
30	Street infill 30%	0	17	30	5.5		100	
25	Street borderlines	0	0	0	100	✔	100	
31	Street borderlines 50%	0	0	0	50		100	
2	Blue	87	18	0	0	✔	100	
3	Blue 50%	43.5	9.5	0	0		100	
20	Blue 20%	17.5	3.5	0	0		100	
4	Brown	0	56	100	18	✔	100	
12	Yellow 100%/Green 50%	38	27	100	0		100	
13	White for green	0	0	0	0		100	
38	Blue (marsh)	87	18	0	0	✔	100	
6	Green	76	0	91	0	✔	100	
37	Green 100%/Black 50%	76	0	91	50		100	
7	Green 60%	45.5	0	54.5	0		100	
8	Green 30%	23	0	27.5	0		100	
19	Black 50%	0	0	0	50		100	
1	Black 30%	0	0	0	30		100	
11	Black 20%	0	0	0	20	✔	100	
5	Brown 50%	0	28	50	9.5		100	

EFI Command Work Station

⭐ Critical settings
for your
printery's press
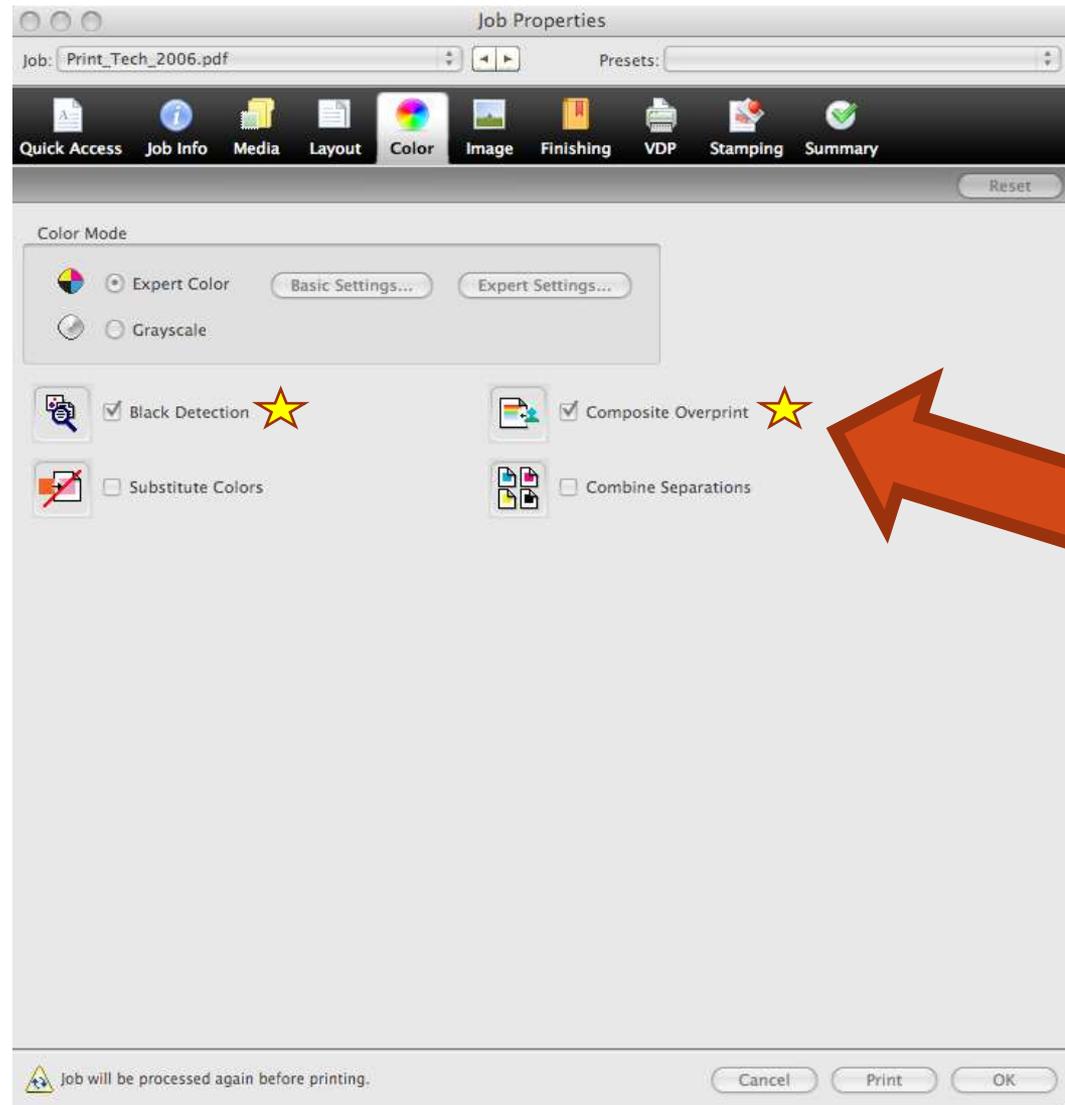
Footnote

- ISOM mandates overprint effect for course purple.
- Recent IOF literature appears to assume that it is achievable for digital print only via complex workarounds.
- Working with Jim Russell in preparing Bush Rangers '09 course maps for printing, Jim noticed that some test prints had overprint effect for course purple.
- We nailed the relevant settings for EPS files.
- I thought overprint should also be possible from PDF files but had no incentive to investigate until recently asked to help with ACTOA WRE maps.
- Eureka! And it is so easy. Despite the lack of reference in IOF literature, I would be surprised if others haven't discovered this also.

The End

Thunderplump. 28 Sep 2011. Melbourne's heaviest rainfall in 25 years.   Ken Dowling