**HP Colour LaserJet Fading Fix**

[****](http://www.reeves-hall.net/wp-content/uploads/2008/02/hp-color-laserjet-2605dn-1-with-dirty-mirrors-23-feb-2008-large.jpg)[****](http://www.reeves-hall.net/wp-content/uploads/2008/02/hp-color-laserjet-2605dn-2-with-cleaned-mirrors-23-feb-2008-large.jpg)**The Problem Illustrated (and incentive to fix it):**

Here is a “before” and an “after” set of photos.

Notice how the “before” image appears washed out and with a distinctive green tint. What magenta (red) there is in the photo is concentrated in the middle; the edges are even more green.

The “after” image looks, well, wonderful.

**Some Background and The Usual Warnings**

[](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680037-large.JPG)My HP Color LaserJet 2605dn printer is about 16 months old. A few months ago, I noticed that the pictures it printed started looking washed out. I tried changing the magenta cartridge, for all photos seemed to have a green cast. That did absolutely nothing. I figured as much, as the “HP Easy Printer Care” program, and the printer’s internal web pages, said there were several hundred pages left to go on all my cartridges.

[**Updating the firmware**](http://h20000.www2.hp.com/bizsupport/TechSupport/ProductList.jsp?lang=en&cc=us&prodTypeId=18972&prodSeriesId=1140727&taskId=135) also failed to fix the problem. Resetting the printer to its default settings also accomplished little.

I tried recalibrating the printer (see step 24, below) to no avail. *NOTE: try this first yourself just in case it is the problem with your printer – will save you all the trouble in steps 1 to 23!*

Thankfully, an Internet search [**turned up an article on FixYa**](http://www.fixya.com/support/t203256-no_magenta_printing_out) that described the problem exactly. A Google search on “2605 faded colors” also shows articles about it at HP’s website (you’ll have to look at the cached versions of the pages as it seems you need to log in to HP in order to see the actual articles).

Don Thompson wrote a wonderful article on fixing this issue which he put on the [**HP support forum**](http://forums11.itrc.hp.com/service/forums/bizsupport/questionanswer.do?threadId=1206579&admit=109447626+1263227302087+28353475); I have obtained his permission to include it here in this article – its what I followed all those years ago to fix my printer for the first time.

>> [**Fading Red Tones on Color LaserJet 2600s by Don Thompson 2007**](http://www.reeves-hall.net/wp-content/uploads/2008/02/Fading-Red-Tones-on-Color-LaserJet-2600s-by-Don-Thompson-2007.pdf)

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An example of how an image is "written" onto the photoreceptive drum in a laser printer.

The problem is this: dust on the [**‘beam alignment lenses (mirrors)**](http://en.wikipedia.org/wiki/Laser_printer#How_it_works)‘ which are buried deep within the printer – the dust prevents the laser light reflecting off of them properly and thus toner is not collected up and put onto your printout.

If you attempt this repair feat, then:

1. Make sure your warranty is up;
2. Try cleaning the plastic reflectors behind each toner cartridge first ([**see Kevin’s comment**](http://www.reeves-hall.net/tech-gadgets/fixing-washed-out-colour-on-hp-color-laserjet-2605/comment-page-2/#comment-1995) below)
3. Try recalibrating the printer (see step 24, below)
4. Consider calling HP and asking them about any service notes on this problem
	* ~~rumour has it~~ there is one which may get you a free replacement printer
	* *update on 4 Mar 2008:* ***confirmed with HP support in UK that they will pickup, fix and return your printer (or a refurbished one) free***
	* *update on 10 Nov 2008:* ***be sure to tell HP you are calling for the “fading” fix***
	* call 0870-8422339, choose option 2 and then 3, and state your printer serial number
	* or, call cheaper on **01344-36000** then ask for technical support for printers
	* (thanks to [**Say No To 0870**](http://www.saynoto0870.com/search.php) for the cheaper phone number!)
5. Set aside several hours without screaming kids around;
6. Be confident in your technical abilities;
7. Don’t rush; and,
8. Be very observant of where things are before taking them out.

I took photos at each step of this process for two reasons:

1. to put them on this page to aid you; and,
2. to refer to them when putting the printer back together to make sure everything was as it should be.

**Be Warned:**

1. You may screw something up and be left with a non-functioning printer. e.g. you might pull a bit too much on a wire and it breaks;
2. There are high-voltages inside the printer – You must unplug the printer from the mains before starting any work on the printer; and,
3. You undertake all this at your own risk.
4. I did this on my 2605dn (twice!) and I only hazard a wild guess that it will work on similar models (like 2600, 2605n, 2605dtn, …)

(Gosh, you think I grew up in North America or something – over here in Europe we just get stuck into things and damn the consequences!)

**Elapsed Time:**

I started at 15h30 and got to the optical box at 17h16 — just under two hours; but I was taking photos along the way.

Reassembly started right after cleaning at 17h30 and finished about an hour later (I took a break for dinner and putting my kids in the bath and to bed), so this is approximate.

**Preparation:**

1. Clear space on a desk and give yourself some room to work;
2. Send your young kids to grandma’s (older ones can stay but only if they promise to help);
3. Ask your wife/husband/partner to make you a lovely cup of tea.

**Tools needed:**

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| --- | --- |
| A Phillips screwdriver (the one with the cross-shaped end) | [Philips screwdrivers](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680284-large.JPG) |
| A pair of pincers to grab screws that are a bit too tucked away to grab with your fingers | [Pincers](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680287-large.JPG) |
| A label maker; I have a [**Brother PT-65 P-touch “Home & Hobby”**](http://welcome.solutions.brother.com/bsc/public/us/us/en/model_top/p-touch/65eus.html?reg=us&c=us&lang=en&prod=65eus) | [Brother PT-65 P-touch label maker](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680288-large.JPG) |
| Scissors (to cut your labels to a tiny size, to fit on the cable connectors) | [Scissors](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680294-large.JPG) |
| Cotton swabs (“Q-tips”) | [Cotton swabs](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680293-large.JPG) |

**Before You Start:**

Please ensure you have tried the other things listed above first! Perhaps a quick [**clean of the plastic reflectors**](http://www.reeves-hall.net/tech-gadgets/fixing-washed-out-colour-on-hp-color-laserjet-2605/comment-page-2/#comment-1995) behind each toner cartridge is all you need.

**Disassembly and Cleaning:**

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| **Step 1:**[Rear of HP Color LaserJet 2605dn](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680040-large.JPG)Unplug printer from the mains and detach your USB or Ethernet cable; take out the paper tray and all the cartridges (this makes the printer lighter and easier to handle). |
| **Step 2:**[HP 2605dn: paper tray cover](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680045-large.JPG)[HP 2605dn: paper holder tray](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680100-large.JPG)Turn the printer around to look at its back. Remove the paper tray cover at the bottom and the paper holder tray at the top. Both just pull off. |
| **Step 3:**[HP 2605dn: screws to undo to remove back panel and circuit board](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680082-large.JPG)Undo the screws on the back panel, including the one just below the USB and Ethernet ports. Put these screws into their own pile (later you will have another pile for all the screws you take out of the inner panel. Its a handy trick to help you ensure you put back all the screws you take out. |
| **Step 4:**[HP 2605dn: tilting back panel to remove](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680054-large.JPG)Pull the back panel off gently by holding it at the bottom and tilting it out and up. |
| **Step 5:**[HP 2605dn: photo of circuit board in back of printer](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680061-large.JPG)Take a photo of the circuit board and wiring — you’ll want to refer to it when putting things back together, just to be sure you have done it all correctly! |
| **Step 6:**[HP 2605dn: pull right-hand side panel off](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680090-large.JPG)[HP 2605dn: right-hand side under the cover](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680091-large.JPG)Pull the right-hand side (as looking at printer from front) panel off, again it tilts upwards – note the way it slots and clips in (the middle plastic guide at the top of the panel). Remember that for when it comes time to slide it back on later. Gawk at the wonders of the printer. The reason for taking this panel off was to make it easier to pull out the wires from the back later; and because if you’re dismantling the printer, you might as well see how the whole thing looks naked. :-) |
| **Step 7:**[HP 2605dn: undo screw on left-hand side](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680116-large.JPG)[HP 2605dn: pull left-hand side beige panel piece off](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680118-large.JPG)Start taking off the cover of the left-hand side by first undoing the screw that is recessed in the handle/indentation at the bottom of the left-hand side’s panel. Then, pull the beige panel piece off, leaving the larger, grey panel piece for now. |
| **Step 8:**[HP 2605dn: pull left-hand side grey panel piece off](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680121-large.JPG)[HP 2605dn: photo of circuit board on left side of printer](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680129-large.JPG)Okay, now take off that grey panel piece by tilting it up and sliding it off (it has the same mechanism as the other side). Gawk again at the wonders of your printer. This is the high-voltage side. If you didn’t unplug your printer as I told you to, then you will be now convulsing on the floor and sporting a new hairdo. |
| **Step 9:**[HP 2605dn: make labels for all the cables to identify their connector](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680159-large.JPG)Squint when really close to the circuit board on the back of your printer and you will see that each cable goes into a connector that is labelled something like “J106″. You will soon be taking these cables out and later you will want to put them back in – at the same place!So, print out labels which you can attach to the cables. My label maker let me print out super-small letters and on two lines. You want small labels because the connectors are not that big. Here’s what I printed out (the ? or Enter or Return key is used to tell the label maker to go to the next line):J106 J104 J103 J102 J101?J108 J107 J105 J110(My label maker wouldn’t let me print out any more than that in one go; so, being lazy, I didn’t bother labeling the very last cable connector).Then, use scissors to cut each connector name out. |
| **Step 10:**[HP 2605dn: label each cable connector](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680169-large.JPG)Now, pull each cable connector out, one at at time, and put the correct label onto it.Note that the purple cables are attached to a plastic block (some black, some white) which is pushed into a plastic holder, like a small box – think of a baseball with purple strings sitting snugly in a glove.Pull firmly on the purple cables (perhaps wiggling *slightly* side to side) near to where they go into the plastic block, this should remove the block from its plastic holder. Do not use tools, for fear of pulling out individual cables, or worse, pulling off the outter plastic box, instead of the block in which the purple cables are (as Piper, [**in the comments below**](http://www.reeves-hall.net/fixing-washed-out-colour-on-hp-color-laserjet-2605/#comment-826), did). |
| **Step 11:**[HP 2605dn: close-up of data cable at top-left of back panelâ€™s circuit board](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680133-large.JPG)[HP 2605dn: pull off data cables and unscrew the hidden screw](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680155-large.JPG)Carefully detach the data cables, too, and unthread them from the plastic holder (you will soon be taking off the plastic holders). The data cables to the circuit board on the right side of the back panel also pull out quite easily and reveal a hidden screw! I didn’t bother labelling these as the data cables all stayed in the right order when disconnected. |
| **Step 12:**[HP 2605dn: cable tray at top of back panel](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680180-large.JPG)Gently pull out all the cables from the two black cable trays. You’ll see that there are three layers of cables: thicker power cables in their own clips, and two bunches of thinner purple cables with some zip fasteners around them every so often. Its a bit of a (un-)weaving exercise… |
| **Step 13:**[HP 2605dn: pull out the cable trays at top of back panel](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680187-large.JPG)Pull the empty trays to the side to unfasten them and then take them out completely – be sure no stray wire gets snagged by them! |
| **Step 14:**[HP 2605dn: unscrew at left side of back panel](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680145-large.JPG)[HP 2605dn: unscrew at bottom of back panel](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680150-large.JPG)Unscrew the back panel – no need to undo the two circuit boards themselves – they are both attached to a larger metal panel. Note that there is one screw that is in horizontally on the top-left (this is why you took off the side panel!). Note that your printer may not have the extra memory card inserted as I have in mine (see picture). |
| **Step 15:**[HP 2605dn: pull out the back panel with the circuit boards](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680188-large.JPG)Pull out the back panel with the two circuit boards on it. Be sure that no cable is snagged, or left attached. |
| **Step 16:**[HP 2605dn: optical box behind the back panel circuit boards](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680191-large.JPG)Ah-ha! There it is! That is the optical box we’ve been working so hard to find! Three more screws and we’ll have it… |
| **Step 17:**[HP 2605dn: shinny metal screw covers on bottom of printer](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680194-large.JPG)[HP 2605dn: screw reveal beneath shinny metal cover on bottom](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680195-large.JPG)Okay, you found the two screws holding the optical box at the top; but where is the third screw that I mentioned?Tip: tip the printer so you look at the bottom of it, where the paper tray usually goes.See them? Two shinny plates. They bend when you pinch them with your fingers. Now, on my printer there was a screw beneath just one of them. Feel lucky? Which one will you take off? Were you lucky? Or maybe your printer has a screw underneath both…The screw holds the bottom part of the optical box. Take out the third (and maybe forth) screw. |
| **Step 18:**[HP 2605dn: remove data cables from optical box](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680199-large.JPG)Gently lift up the optical box and remove the pair of data cables that go to it. Again, I didn’t bother labeling these as they stayed in the same position/order and wouldn’t get muddled up when I reassembled everything. |
| **Step 19:**[HP 2605dn: unscrew optical box cover](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680219-large.JPG)Pull out the optical box and undo the screw that is in the middle of it. Be careful – there’s a spring in the box. Take off the cover and… |
| **Step 20:**[HP 2605dn: inside the optical box](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680223-large.JPG)[HP 2605dn: close-up of one of the mirrors inside the optical box](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680227-large.JPG)[HP 2605dn: clean the mirrors](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680246-large.JPG)At last! There are the filthy mirrors that are the cause of this nightmare. If only HP has seen fit to seal this optical box then none of this would have been necessary…Okay, that wasn’t really a step, it was just some soap-boxing. Here is the real step 20:*Clean the mirrors using dry cotton swabs!* |
| **Step 21:**[HP 2605dn: optical box showing circuit boards (back of lasers)](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680233-large.JPG)[HP 2605dn: lasers inside optical box](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680260-large.JPG)[HP 2605dn: look, clean mirrors](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680249-large.JPG)Gawk at the wizardry of the optical box, its lasers and your nice shiny mirrors. Play with the flaps that cover the laser openings — don’t loose that spring which is between the flap mechanism that covers the laser diodes and the optical box. |
| **Step 22:**[HP 2605dn: close-up of reassembled cable trays with cables](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680272-large.JPG)Reverse everything and put it all back together again. Simple. Ha!Be sure that you seat the optical box back exactly right – ie. don’t leave it loose![HP 2605dn: reassembled back panel and cables](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680271-large.JPG)Putting those cables back in the plastic trays is the most challenging. Just remember to put the two bundles of purple wires in first (the largest bunch, which splits at the right side to go up and down, should be at the very back of the tray; the other bunch on top of it; and finally the power cables should fit into their special holders at the very edge of the trays).[HP 2605dn: close-up of reassembled data cable at top-left of back panelâ€™s circuit board](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680273-large.JPG)Note carefully how to feed the data cable around the tray at the left side.Double check that you haven’t pinched any cables around corners, etc.Did you use up all the screws? I sure hope so, otherwise you’ll have to undo everything to find out where you missed them… |
| **Step 23:****Underside of the printer; note the black grill on top left - that's the air intake for the fan.**Underside of the printer; note the black grill on top left - that's the air intake for the fan.(optional) On the first anniversary of this page, and my second go at cleaning the mirrors (yup, they got dirty enough in the one year to warrant going through this lot all again), I decided to slap on a homemade air filter to the fan intake.Make sure you don’t have the paper tray installed; and then tip the machine onto its front, so that you are looking at the underside of it. You’ll see a black grill or grate.**Vaccuum cleaner bag cut to fit over the grill, so it acts as an air filter.**Vaccuum cleaner bag cut to fit over the grill, so it acts as an air filter.Get yourself a vacuum cleaner bag and cut it to fit over that grate. Use some cellotape to stick it in place. You may very well have to do as I did and cut little slits in the bag so it fits over the silly extruding bits of plastic. If I haven’t already said it, I’ll say it now: this printer is over engineered!Now tip the printer back to its normal position and install the paper tray. |
| **Step 24:**[HP 2605dn: force a recalibration via printerâ€™s web server](http://www.reeves-hall.net/wp-content/uploads/2008/02/hp-color-laserjet-2605dn-4-calibrate-now-large.jpg)Re-load the ink cartridges; paper and plug everything back in.You must now recalibrate the printer (this aligns all the lasers so the colours match up and don’t give you a blurry photo print).You can navigate your way through the printer’s front panel menu to force a calibration:* Press the check mark key (screen shows “Main Menu – Reports”)
* Press right arrow key (“Main Menu – System Setup” shown)
* Press the check mark key (“System Setup – Language” is now shown)
* Press the right arrow key twice (“System Setup – Print Quality” is shown)
* Press the check mark key twice (“Calibrate Color – Calibrate Now”)
* Press the check mark key (“Press [v] to calibrate now”)
* Press the check mark key (calibration begins)

Alternatively, you can use the printer’s built-in web server over the Ethernet port to force an immediate recalibration (sorry, don’t know what you do via USB). |
| **Step 25:**[p1680281-large.JPG](http://www.reeves-hall.net/wp-content/uploads/2008/02/p1680281-large.JPG)(optional) Unconnected Connectors and An Interesting Button…[HP 2605dn: Output when press Test button](http://www.reeves-hall.net/wp-content/uploads/2008/02/hp-color-laserjet-2605dn-3-output-when-press-test-button-large.jpg)While you had the covers off and the circuit boards exposed, did you notice that there are a few unconnected connectors and a “test” button?One connector is “IOT” and the other is “MCPU Writer”.After I reassembled and plugged everything in, I pressed the “test” button. I got a boring printout of colour lines. |
| **Step 26:**Please leave a comment below to say if this page helped you; or, if any steps were unclear. Happy colour printing! |