Backlighting the Opencockpits MCP

The Opencockpits MCP, whilst very good value, has the drawback that there is no backlighting. Various forum articles have suggested using small incandescent bulbs, carefully positioned, however, I felt that was a lot of work.

I have tried a different approach, using orange strip leds, obtained from

http://www.rapidonline.com/SearchResults.aspx?kw=56-0484

The first step is to carefully dismantle the MCP to get at the main pcb behind the fascia plate. The only tricky part is removing the knobs. These are cunningly fixed and you need to remove the knob end cap and undo the hidden screw before pulling off the knob. See photo below

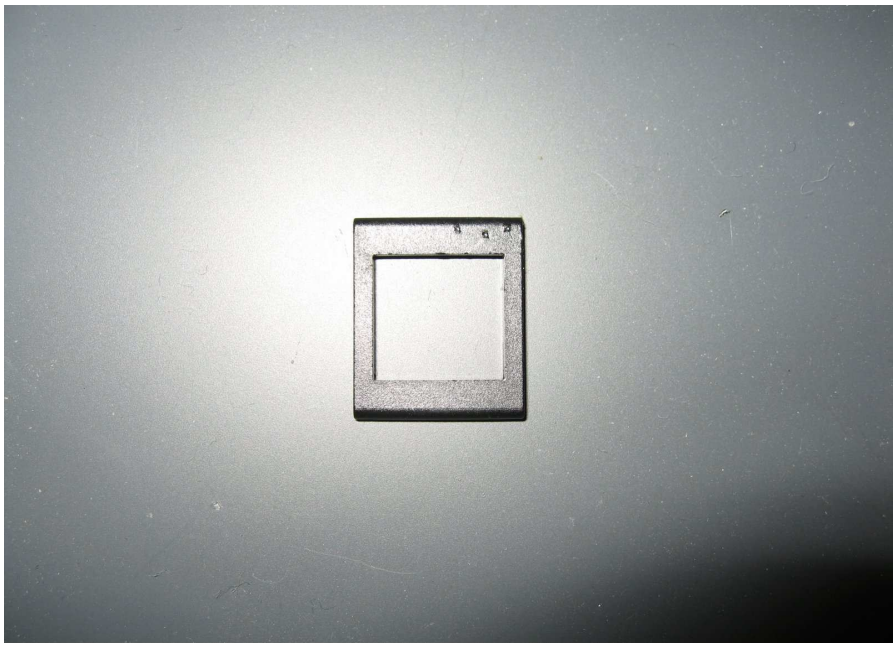
Another tricky item to release is the surround to the master AP disconnect switch (thanks to Ron for raising this!). To release the fascia from the switch you need to prise out the square black surround collar. To do this push down on the top of the collar then gently pull it out from the bottom – this will unclip it from the metal fixings.

A/P switch before dismantling showing black collar surround to switch

Black collar released from clip

Black collar totally removed

Black Collar to switch

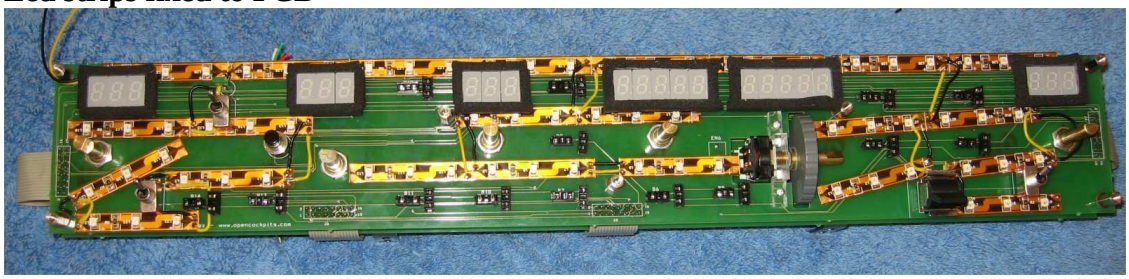


Finally you can undo the screws holding the fascia plate to the stand off pillars and retaining nuts on the switches etc, then remove the fascia plate

Then carefully position the strips to illuminate the fascia lettering – it is best to have a spare strip of 3 leds always powered up so that you can test the various positions to best effect. Then remove the adhesive backing and affix the strips. The various strips should be wired up to each other in a daisy chain fashion ie + from one strip to positive on another etc, with the negative wired similarly. Always solder the strips to each other on the top pads, being careful not to damage or spread solder onto the MCP PCB.

The black edging around the 7 seg displays is adhesive foam strip, used to prevent light bleed around the displays

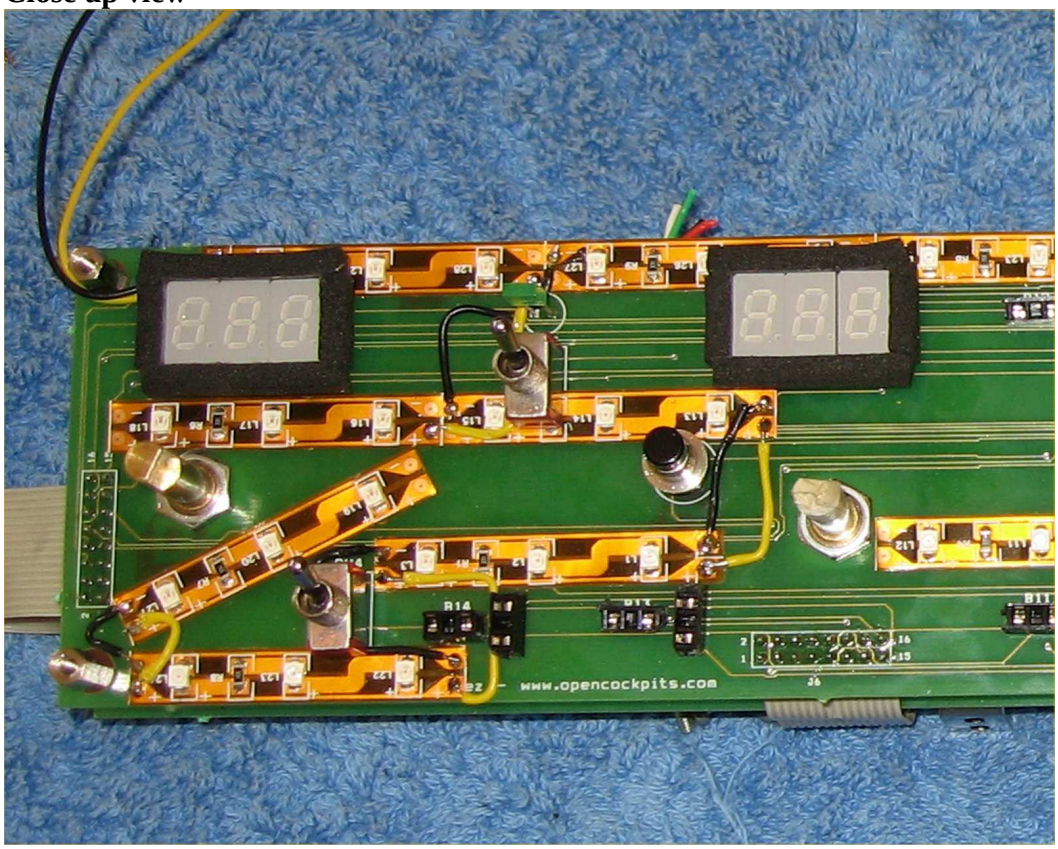
Led strips fixed to PCB



I actually have more backlighting than is required, however, it is better that way and the lighting level can be reduced by using a cheap Led dimmer available on Ebay here

http://www.ebay.co.uk/itm/LED-Light-Dimmer-Brightness-Adjustable-Control-Controller-DC-12V-8A-Bright-Lamp-/160661226335?pt=AU_Lighting_Fans&hash=item256827c35f

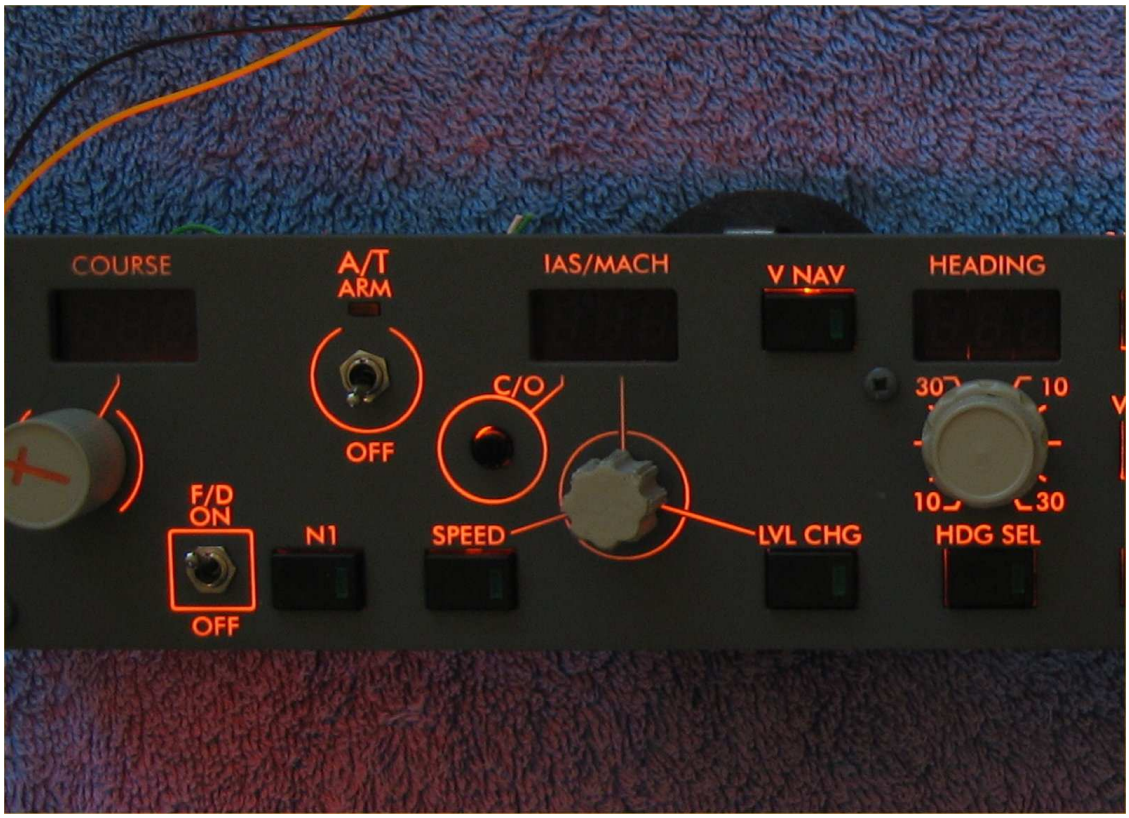
Close up view



The layout I used works ok, except the “COURSE” lettering could have benefitted from another led strip – it does not pay to be frugal ☺

The finished result

A close up view



A larger picture showing the MIP and good colour match with the FDS Integrated Back Lighting

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