FoMRHI Comm. 1993 **John Downing**

Low Cost Infra Red 'X-ray' Imaging – Part 3 - Post Script.

These additional near IR tests may be of interest and of some practical use. The test card employed for the reflected IR test, reported in part 2, is printed on one side – the card itself being a substantial 0.4 mm thick, sufficient to block any transmitted visible wavelength light from passing through. However, if the test card is illuminated from behind with incandescent light source (or, alternatively, IR lighting) the hidden detail printed on the card under these transmitted light conditions becomes significantly clearer with near IR imaging (see Fig 1)
The attached images were taken with the modified Vivitar camera fitted with an IR pass filter, the test card illuminated from behind with a table lamp fitted with a 60 watt incandescent light bulb.
The disadvantage of higher wattage incandescent lighting is that the heat generated might cause damage to sensitive subject matter with prolonged exposure. However, similar results – although more localised - may be obtained with 'cool' low voltage, high intensity 'Krypton' flashlight illumination.

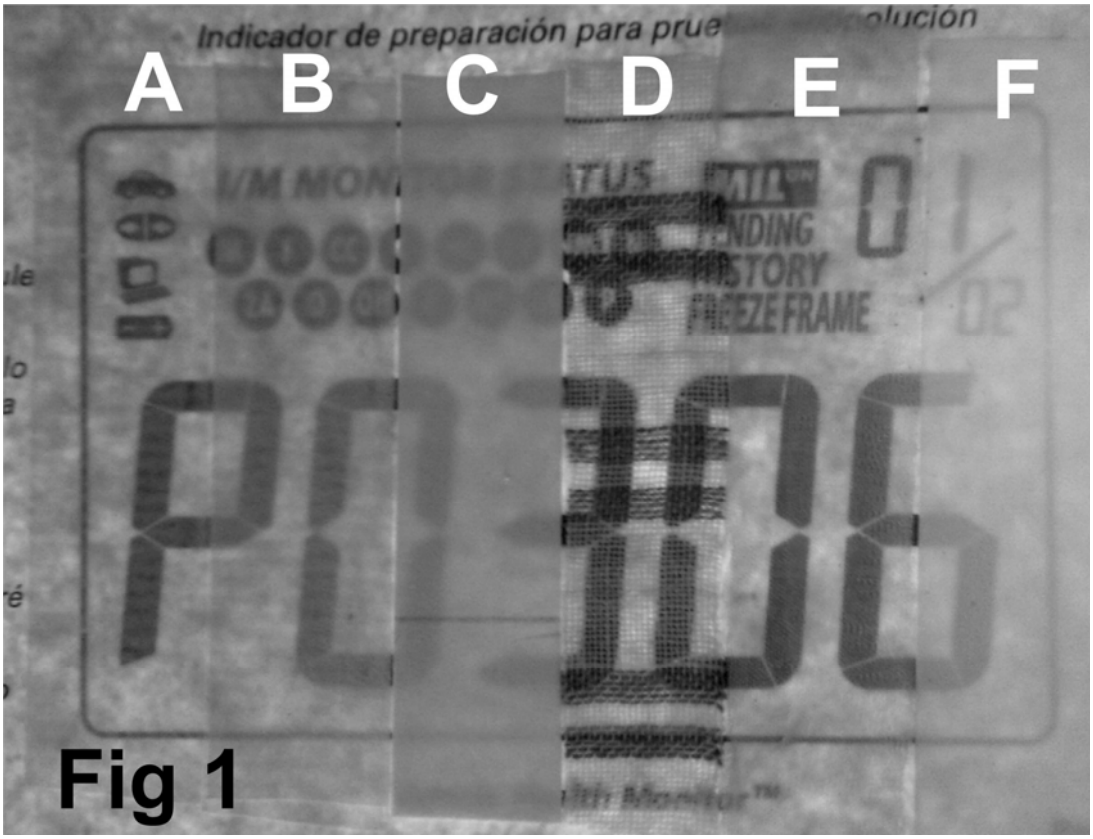

Fig 1

In order to evaluate the depth of penetration of near infra red wavelength light through thicker material the 0.4 mm thick test card was clipped to a piece of quarter sawn Sitka spruce sound board material 2.5 mm thick. Under the same transmitted light conditions it can be seen in Fig 2 that the hidden printed detail on the card is still clearly visible – although rather faintly under the 0.3 mm thick card sample C. However, this is still an improvement compared to the reflected light IR images reported in Part 2 of this Comm.

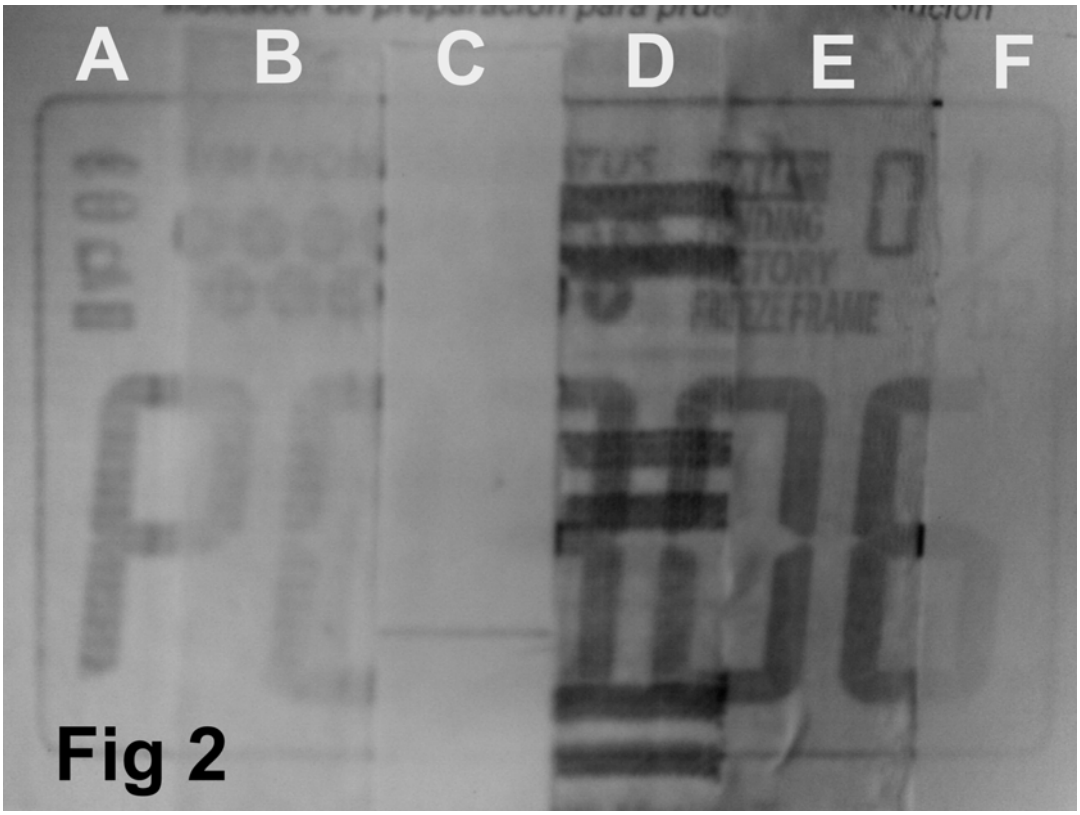

Fig 2

Note that when working with near IR imaging the focus of the camera must be adjusted to compensate for the longer wavelength of IR relative to visible light – not a problem, however, for this basic, manual focus, camera conversion.