IT'S BEEN FIVE years since Cibachrome-A hit the market. We ran a seven-page test report in the May, 1976 issue of this magazine.

Now, Cibachrome-A II is here. It replaces the old material, just as a new chemistry, P-30, replaces P-12.

There are many similarities between new and outgoing materials and working methods. But there are important improvements and changes.

Thanks to an innovative self-masking technique, Cibachrome-A II offers colour accuracy closer to the original transparency. The self-masking deals with imperfections intrinsic to all image-forming dyes.

Ilford Limited claim: 'Colours...are more brilliant - purer blues, richer greens, more saturated yellows and oranges, and brighter reds'.

Total process time for the new materials is just 30 seconds longer than with Cibachrome-A: 12 mins plus those 30 secs. Reason: there is a rinse stage between development and bleaching. Two points are especially notable. Each main step of the process needs the same amount of time, and there is no longer a need for Neutralizer. When the used chemicals are added together (dump them in a plastic container), they self-neutralize.

How Cibachrome is a silver dye-bleach process, providing excellent image stability. The colour image is recorded on three emulsion layers - blue-sensitive, green-sensitive and red-sensitive. When each layer is developed, a negative silver image results.

The material contains dyes for each emulsion layer. In the second process step, bleaching, each dye is bleached according to the quantity of silver in the developed image. Fixation, the next step, dissolves any leftover silver - which is cleared from the print during the final step, washing.

Pack

In the shops, Cibachrome-A II paper comes in a new-look package. Format is vertical, and packs of both paper and chemistry have illustrations.

Cibachrome-A II print material is on sale in glossy (code: CPSA.1K) and pearl (CRCA.44M) varieties. It's possible to order a display film version (code: CTD.F7).

On the back of each pack is an expiry date. On my 10 sheet, 8x10 inch sample, it read 'Jul 1983'. There is also that ever-valuable table of recommended filtrations for a number of popular reversal films.

This is just one of the plus points about Cibachrome. One checks the table, sets the filtration and likely as not, gets a really acceptable print first time around.

Here are the values which were applicable to the sample examined:

<table>
<thead>
<tr>
<th>Kodachrome</th>
<th>Ektachrome</th>
<th>Agfachrome</th>
<th>FujiChrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y 30</td>
<td>30</td>
<td>25</td>
<td>38</td>
</tr>
<tr>
<td>M 00</td>
<td>00</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>C 20</td>
<td>15</td>
<td>10</td>
<td>15</td>
</tr>
</tbody>
</table>

These are CC (Kodak) values. So, if you were using a Durat enlarger - its filtration rated in Durst values - you'd modify those. For instance, 30CC translates to 20 Duras; 20CC to about 13 Duras.

It's possible to buy Cibachrome-A filters. These are made in 8-9cm square size, suitable for the filter drawers of many enlargers.

Incidentally, Ilford market a processing drum, as well as a Cibachrome-A manual. In addition, they offer retouching dyes, a motor base for the drum, exposure monitor, multi-mask printing frame and a contact-print frame.

In brief

- Direct-reversal colour print material
- Colour fidelity better than Cibachrome-A
- New chemistry
- Easy filtration
- Glossy and Pearl surfaces

Box

The chemistry comes in a different-shaped box - less wide, but taller. There are five bottles a sachet and an instruction leaflet.

I encountered no problems in making-up the stock solutions. Bottles 1A and 1B, developer, are mixed with water (straight from the cold tap, if necessary).

Bleach is made up from water at 25°C to 30°C plus sachet 2A and bottles 2B and 2C. Part 2A consists of granules, and one can feel their presence under the stirring rod until they dissolve. (That took about 2 minutes, but Ilford suggest stirring them in for about 3 minutes.)

Fixer requires the addition of bottle number 3 to water.

Naturally, the usual precautions should be taken against contamination between solutions - and of the photographer! The darkroom should be well-ventilated, too.

P-30 is available in 1-litre and 2-litre kits; and, separately, as 5 litres.

The concentrates, as bought, have a shelf life of about a year if kept in full bottles; the granules will be usable for five years, if kept dry. But working strength solutions last well less. Developer and bleach, stored in full, glass bottles, will keep for eight weeks. In part-full but tightly-capped bottles, four weeks is the limit. Fixer, in a full or part-full bottle, will survive for 6 months.

Time/Temperature

Ilford suggest 24°C for standard processing temperature, and offer this table of process times for temperatures of 20°C, 22°C, 24°C, 26°C and 28°C. Intermediate values are cared for by the fact that there is a latitude of ±1°C.

20°C 22°C 24°C 26°C 29°C
Develop 4 3 2 2 2
Rinse 3 3 3 3 3
Bleach 4 3 2 2 2
Fix 4 3 3 3 2
Wash 4 3 3 2 2

Total time* 16 14 12 10 8

*Fifteen seconds draining time must be added to each main step.

The table is a little more specific than that given with Cibachrome-A chemistry, which listed only three temperatures. And there is now this convenient fact of times being equal for develop, bleach and fix.

Ilford recommend a minimum solution quantity of 75 ml, regardless of print drum, for an 8x10 inch print. For two, double it. I used a Jobo 4531, with 90 to 100 ml for one print, 160 ml for two.

Re-usable

P-30 is basically 'one-shot': use and dump chemistry as you go. Yet it's possible to partially re-use P-30. I didn't do this, because my test sample consisted of only 10 sheets. But the chemistry instructions include Table 4, which shows the necessary ratio between fresh and used-once solution. Print 1 would need 75 ml of fresh solution; print 2 would need 40 ml of fresh plus 35 ml of solution saved from processing the first print. And so on.
illford caution that 'a small loss of quality may be noticed when working to the highest standard', but point out that there is a near-doubling of solution capacity. Up to 24 8 x 10 prints may be handled with 1 litre, against the 13 obtained by 'one-shot' only.

Method
It would have been perfectly possible to have worked at 20°C. But, for this test, I set up my Jobo TBE tempering box (to maintain exact solution temperature) and my Jobo CPE motorised base. This, too, has a thermostatically controlled water bath, and accepts the Jobodrum 4531.
Again, I could have rolled the drum by hand—the 4531, or my Paterson and Beseler colour print drums. But I wanted to make precise comparisons between old and new Cibachrome, and the Jobo aids helped in that aim.
In the event, the minimum temperature to which I could set the TBE tempering box turned out to be an actual 28°C—maximum for the 'old' process, P-12.
I made up P-12 chemistry, storing it in the 1-litre containers of the TBE, and selected a number of 35mm Kodachromes and Ektachromes. The Durst-modified filtration values on the Cibachrome-A paper packet were set on my Durst M605 Color enlarger, and a test print showed that 7 secs, f/8 was just right for an BX magnification. Filtration was 13C (cyan) for Kodachrome, 10C for Ektachrome.
I'll bypass all the details of the P-12 process, except to say that it, too, consists of Develop, Bleach and Fix steps, plus a wash. Like Cibachrome-A II, the earlier material can be stood or hung to dry—or can be finished with a hair-drier.
My style of working, as far as possible, was the same for both processes.

Bouncing girl was a Kodachrome original, printed for 7 secs, f/8.
P-30

During P-12, I'd kept unchanged the enlarger settings of elevation and focus. They stayed that way throughout P-30.

For Cibachrome-A II, I used the same transparencies, printing them through a Durst Neonon 50mm f/2.8 lens.

It's possible to use a very dim safelight with Cibachrome-A II. But 'dim' is the word, and I find it just as well to work in total darkness - and for total safety. The first thing to do, however, was to set the filtration on the enlarger: 20Y, 13C. I set the lens to f/8, then opened the paper packet.

Inside is a silver inner packet, stiffened with two pieces of card between which is the sensitive material. Which is the emulsion side of the paper? Rub a fingernail gently across the surface: the one which 'whispers' is the base, the reverse. Or feel the label on the inner packet: the emulsion side faces the label.

I used an L-shaped piece of card to make four test exposures on the first sheet of C-ll. Then, slipping the paper into my Jobodrum, capping it, I turned on the light.

My first C-ll print was of the Shell Oil fire engine. Surprisingly, the first print was underexposed in all four quarters. A second test print with somewhat more exposure began to yield results. At that point, at least two of the exposures on the quartered 8 x 10 test were acceptable - but I wanted the highlights to match those of the same transparency I'd printed a day before on the old Cibachrome paper. Another test, and I had a perfect match.

I'd learned already that the latitude of Cibachrome-A II was better than with Cibachrome-A. This was to be evidenced emphatically with my second print, the transcontinental truck.

The original transparency, a Kodachrome, was contrasty but detailed. The Cibachrome-A print just barely held detail in highlights and shadows. But with Cibachrome II, there was a surprising improvement. When I made a C-ll print which matched the highlights of the C-A print, the gain in shadow detail was immediately apparent. When I made a C-ll which matched the shadows in the C-A print, the C-ll's highlight detail was complete to the point of being a little flat.

Colour

These and other checks showed that Cibachrome-A II's contrast is lower, its latitude greater. Colour? Comparing the two materials/processes, I had kept religiously to the filtrations recommended on the packets of paper. In the event, I found that the new material's rendition of blues, red, yellows and oranges was an easily-observed improvement. Yellows and greens seemed 'cleaner'. And resolution was about the same - superb. as always.

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I carefully hung the washed prints to dry - then finished them with a hair-drier. That takes considerably more time than when drying, say, black-and-white RC papers. And beware: the surface of new Cibachrome seems just as prone to accidental damage as the old. Treat the material with great care when it's damp, or you'll find how easily the emulsion departs the base.

When wet, Cibachrome-A II has a faint reddish tinge. This vanishes when the paper is dry, and colour balance is best assessed at that point.

Conclusions

Cibachrome-A II is distinctly better than C-A. Further, Cibachrome is still 'way ahead of the competition'. Images look sharper: colours are truer.

The P-30 process can be run at pleasingly low temperatures, and is simplicity itself. As if all that were not enough, there is that filtration guide on every packet. I said it five years ago: it is the colour printing process.

Far left: Old time fire trucks were shot on Kodachrome 64. This print was made on 'old' Cibachrome. 8X magnification.

Centre: Cibachrome II was used for this print. Exposure was based on highlights. There is more detail here, in shadow areas and the reds are closer to those in the original subject.

Left: Demonstration of new material's latitude. L-shaped card was used to make exposure test (20Y, 13C filtration). From top left, clockwise, exposures of 10, 15, 20 and 30 seconds were given.