

Comparison between old and "new" Kodak Technical Pan films

by Ohad Drucker

After finding a stock of about 1000 very old Tech Pan 35mm rolls, I took 10 rolls for a start and began experimenting with them. They proved to be OK but without a through comparison I could know nothing about how their age influenced their characteristics. So here is my through comparison. The old Tech Pan is of 1994 expiration date while the new one is of 2004 expiration date. My estimate – the old one is about 15 years old while the new one is about 5 years old. The new one came from Canada, walked proudly through few x-ray checks and as far as I know was not kept refrigerated. The old one was not kept refrigerated during the last years, but it was bought from the Israeli Air Force (don't tell anyone) and may be there it was refrigerated - I really can't know.

First – sight differences

1. Both emulsions are light blue. After prolonged exposure to light and air, the old emulsion turns dark cyan while the new one turns light magenta.
2. The frame numbers on the old film are darker than on the new one. The arrows between the frames look completely different – the old one has triangles and the new one – regular arrows.
3. The cartridge and the outer box are completely different.

Exposing and processing

For exposure I've used an old Nikkormat FT with an old but excellent Nikon 50mm f/2 lens. I have made two sessions of exposure and development – in the first one the two films were exposed exactly the same way in EI 64 and both were developed together in the same tank and chemicals for 9.5 minutes in HC110 1:26 24 deg C. In the second session again the two films were exposed the same way, now in EI 200 and developed together for 8 min in HC110 dil B 24 deg C. Some frames were exposed 0.5 stop different from their counterparts on the other film in order to get the same light meter needle position. I hope these changes only compensated the sun's motion between the exposures.

Results

The first session gave me 3 frames really worth comparing closely.

1. Obviously more contrast on the new film but no more speed
2. More contrast on the new film.
3. Pretty confusing – slightly more contrast on the old film.

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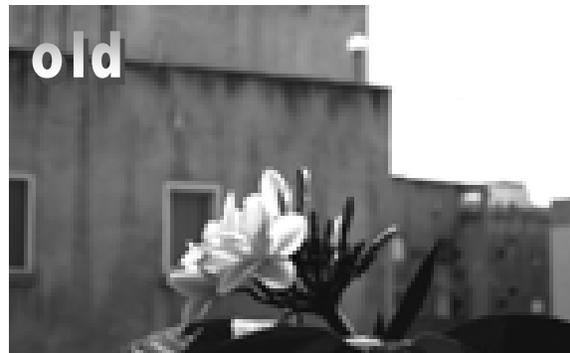


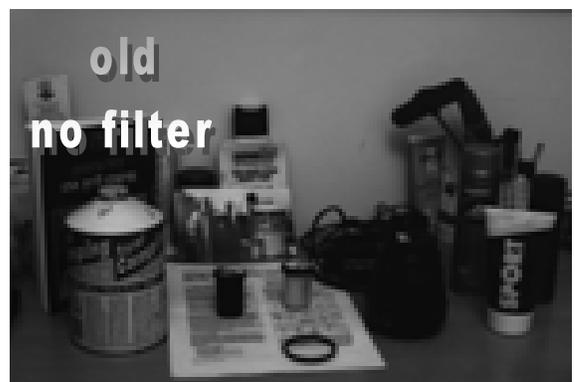
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The second session gave me 7 frames worth comparing. All of those frames were darker and had more contrast on the old film. 2 frames I took with a 25A red filter proved to be much darker and with much more contrast on the old film. The differences proved to be dramatic and I suspect even more so with red light.







Although I've made efforts for the scans to present the real picture, I've added them for demonstration only. The differences I've described are obvious when comparing the negatives side by side.

Conclusions

1. My practical conclusion – I can use those old films without any hesitation. Using them for astrophotography seems to be better than using the new ones, since the old ones have more speed, contrast and may be even red sensitivity when developing for ultra high contrast.
2. The new emulsion has slightly higher contrast only when developing the film for high contrast, probably because the old one has lost some of its contrast after all those years.
3. The old emulsion, when developing for ultra high contrast, has significantly higher speed, contrast and probably also red sensitivity.
4. Probably, Kodak have changed the emulsion, and the first-sight differences I've described at the beginning support this idea.

This comparison was done at home with very cheap and simple procedures, and is strictly not scientifically accurate. I will be more than happy to hear about your results with old and new Tech Pan films and others. I have made this comparison only to satisfy my own curiosity.

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