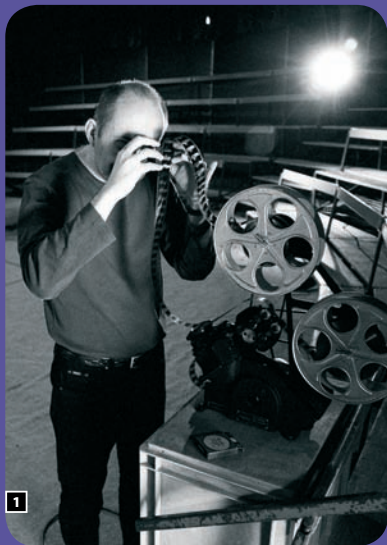


Chaplin's camera still being used



Charlie Chaplin hand cranked his Bell & Howell 2709 well into the 1930s, resisting talkies for artistic reasons, and was probably the last person to use the archetypal Hollywood camera for principal photography of a feature film.

Now, in an age in which three-year-old cameras are considered out of date, Carlo Piaget, award-winning producer, animator and aficionado of traditional film techniques, has put fresh 35mm Kodak stock through his unmodified 90-year-old 2709 camera and created *Circus*, a 10-minute "sketch."

The famous camera was dismantled and painstakingly restored down to the smallest detail at Piaget's workshop. He also located flawless Cooke Speed Panchro 24mm, 35mm and 50mm lenses, a Bausch & Lomb 75mm lens and original accessories. "It was a thrill to see the camera coming back to life," he says.

Piaget first met Chaplin's son Eugène at the beginning of the new century. "A decisive encounter", he recalls. "The camera restoration was in progress and Eugène had become artistic manager of Nock Circus. Our meeting was too much of a coincidence and sparked the idea of making a film to demonstrate the compatibility between silent era equipment and modern film. Eugène was decisive in making *Circus* a reality."

Circus opens in a foggy city as an agitated man is distracted by his mobile phone. He stumbles and

finds himself pulled into a seemingly deserted circus. He glimpses a dancer, then a magician (Eugène Chaplin) hypnotises him via a spiral of zoetrope images. When the man wakes up, the circus has vanished but a circular mark on the ground and the music on his phone prove that his experience wasn't a dream.

Piaget determined that the grey tones of the opening scene would change to blue after the man's fall. The dancer and magician sequences would be in warm sepia-amber tones. The return to reality would be in full colour, as would the subsequent explanatory sequence about Chaplin's camera, with its commentary by French actor Jean Berger.

90 year old 2709 camera

Piaget intended to hire a cameraman for the 10-day shoot, but after hand-cranking day after day for weeks to check the camera's performance and fine-tune its mechanism, he decided that in addition to directing he would also act as cameraman. As *Circus* would be screened at the rate of 24 pictures per second, the basic cranking speed was three turns per second – exposing eight frames at each turn. Cranking by hand allowed instant variations of speed to fine-tune the pace of each particular scene or action; speeds from 16fps to 26fps were usually used.

"Loading the first roll of film into the camera was pure magic – and



"Loading the first roll of film into the camera was pure magic – and that magic continued for 90 minutes."

that magic continued for 90 minutes' worth of black-and-white and colour stock," says Piaget. "The camera was a terrific shooting 'beast'; not a single frame slipped, not one perf missed and there was not a single scratch or line on the emulsion, which is also testament to Kodak stocks' extremely high physical qualities."

Piaget didn't attempt to imitate the look of the silent era by "artificially destroying" the stock; instead, he used KODAK PLUS-X and KODAK DOUBLE-X "in an artistic way. You can't rely on colour to separate the visual elements so you have to use your brain. For example, the circus tent's canvas had blue and red triangular patterns of equal density that translated into identical values

of grey on the panchromatic KODAK PLUS-X. After testing various blue and red filters, I selected an old 23A red filter to eliminate the blue rays and distinguish the patterns. It brightened the red triangles, which were pointing upwards like pyramids, and darkened the blue ones pointing downwards in a reverse effect. It also brought out the clouds and the whole image gained in contrast and dynamism."

Artificial fog created many interesting variations in the lighting which was thus shaped through different levels of diffusion. "For that reason, I didn't use any artificial light except the sun, and had reflectors at hand for some light compensations. Reflectors were used extensively in the old days too!" muses Piaget.

The man was front-lit while he advanced and the dancer was exclusively shot with backlight, the sun behind her. KODAK PLUS-X was used for the exteriors and the lens had to be stopped down to f11 or even f16; sometimes Piaget even closed the shutter by half which contributed to a subtle eerie effect on the dancer's movements. "The exposure is shorter and there's less blur in the moving parts, which has produced a very slight 'staccato' type of visual perception."

KODAK PLUS-X and DOUBLE-X

"I used the sheerest black stockings over the front of the Bell & Howell matte box to create a surrealistic visual ambience in the dance sequence," continues Piaget. "By varying the tension I could 'shape' the effect and cut a hole where no diffusion was required. It acted as a binder between the visual elements that would otherwise have been too



harsh, softening the contrast without flattening the image and producing a nice glow." Piaget also used a glass from a large format slide mount; its anti-Newton surface gave an intense glow, while retaining sharpness of detail.

The circus interior was dark blue and absorbed a large amount of light, while the lighting in the centre of the ring was a little too direct. "We spent the first day rigging supplementary lights across and around the ring to lower the contrast and enable us to capture the 'walls', rows of seats and other details on KODAK DOUBLE-X." Despite this, Piaget had to shoot at

f2.8. "Depth of field became critical and my assistant sometimes had to follow focus – something seldom attempted in the silent era," he says.

Piaget had long wanted to print black-and-white negatives onto colour stock and work on the colour balance to create a wide palette of monochrome tints. "That way the sound track is unaffected and the results can be repeated exactly from print to print. The 'mask' on black-and-white negative is a cold grey, while the colour negative's mask is orange, so in order to compensate for the difference and achieve a neutral grey with a printing light of 25-25-25 (CMY), it's necessary to place a filter in front of the printer's lamp house. I tested the process and determined the range of colour and behaviour of the stocks by shooting Kodak grey scales on KODAK PLUS-X. I then gave a basic list of printing lights to the lab" explains Piaget, for whom timing, gamma and colour balance are no mystery after many years of advertising, animation and duplication work.

sepia; exact opposite colours that are also exact opposites (complementary) on the so-called 'chromatic circle!' There was very little margin for Piaget to compensate for differences in exposure. "Small corrections of only +/- 5 lights were possible, depending on the density of the negative." Wanting to "carry the baby all the way", Piaget had work prints made. "Making telecine from positives is regarded as inferior, but although one might lose some shadow detail in the transfer, the loss was minimal in comparison to electronically simulating the 'toning' process from the negative. Every foot of film was checked in projection and on my Moviola machines and then telecine was made from the work prints only to allow final editing on the computer."

"Shooting *Circus* was an almost organic experience and the moment when Charlie's son first appeared in the viewfinder of his father's camera will stay in my mind forever," Piaget exclaims. "Others have shot films with old equipment, but with more or less modified cameras and newer lenses. This particular camera, the lenses and accessories are all 100% genuine. This little film is a love story between two objects of different ages and a good example of film's universal compatibility."



Chromatic circle

"My final basic printing lights were 43-30-18 for blue and 18-30-43 for