A few tips for dealing with Paillard-Bolex H cameras

Simon Wyss, November 6th, 2023

What was not mentioned in the manuals

Good cleaning. Do it the right way. That is to have the shutter closed. Give the main spring some tension so that the mechanism is halted by the derailleur and the shutter stopped in front of the aperture. The shutter prevents dust and dirt from hitting the rear of the glass prism of reflex models. Remove the pressure plate assembly. Now you can clean the film canal with brushes. I recommend childrens' toothbrushes or the heads of electric toothbrushes. You can even use a vibrating electric toothbrush, yet all of them must be fresh, NEVER USED WITH TOOTHPASTE! Be careful when using bottleneck brushes with a wire core. Round brushes with a plastic core are preferable.

You can moisten a brush with ethanol. Pound the brush off before going in. Dust that drops inside the mechanism is less harmful than everything you have to remove from the reflex prism. As a Bolex lover you will have your camera serviced periodically, every five years, if you're really using it. The technician will clean out all debris during the service.

What they also didn't speak of is the possibility of lubricating some parts of the mechanism. You can oil the spool spindles and a number of shafts in their left-hand bearings, left hand as seen from behind the camera towards the scene.

- **One drop** of a heavy way oil can be given down between the spring washer and the spool spindle while the mechanism is turning. I recommend doing that *before* you go on a shoot. Wipe off excess.
- One or two drops of **an acid and resin free sewing machine oil** can be given down along the one-to-one drive shaft, mechanism at halt. That is the fastest turning shaft closer to the front of models from serial number 210601 on. It bears a red dot placed excentrically on its face in most cases. The oil will go down into and through a ball bearing right behind the bushing that surrounds the shaft. Beyond the ball bearing it will run further along the shaft until it reaches and lubricates its drive gear. To this end leave the camera lying on the lid for two minutes.
- The clutch group's left-hand shaft end is accessible. It lies in line with the winding crank axle. After removal of the pressure plate and the claw cover the shaft end of an intermediate gear can be seen. Rub in some grease to both shafts by pressing your fingertip on while the mechanism is running. It is not wrong to give a drop of oil down along the winding crank axle, on its outside.

The Paillard-Bolex H cameras belong on tripods. Believe me. I've been working with them since nearly forty years. The H was advertised and is misunderstood as a handheld camera but you work against yourself when you hold it up in front of you. It is too heavy and too complicated. Free yourself from the weight for intuitive manipulation. It's a mechanical apparatus that needs a spiral steel spring wound up, a turret swivelled around, a speed knob adjusted at times, a single-frame function switch flipped occasionally, lenses focused, diaphragm rings turned, filters put on or off, bellows pushed in and out, the side finder parallax knob acted upon. The H is a versatile camera but it requires frequent manipulation. Accustom yourself to fumbling it to where you want to have it. A sturdy support relieves from strains. Whether you have a standard or a reflex model, you're still better off with a tripod in the cold and in darkness. The side finder will be the only means that helps you discern enough of a scene at night. Without at least one bright

or shiny object in the scene the reflex finder is almost useless. The view is too dim. For trick work, when you disengage the clutch, a solid setup is essential and then it's about the frame counter, a cable release, perhaps a variable shutter control, a fader, an electric motor, magazines and the magazine motor, to say nothing of the cables, a crystal accessory, and a power pack, if not a transformer comes to use.

The original style

When the H appeared it was unclear which way filmers would go, slowly and contemplating the beautiful world or hastily in constant need for news. You like the winding crank underway but the first models also featured a key that folds down to the camera body. The key is screwed into the mainspring core on left-hand M 5 threads. Since the original construction provided a so-called going barrel the spring can be re-wound, constantly retensioned during takes. The entire film load may thus be exposed uninterruptedly. 100 feet last four minutes and ten seconds at 16 frames per second. To turn the key can be awkward at times. A flexible shaft imposes itself. For follow shots an assistant will work the flexible shaft.

To turn or grind down the teeth of sprocket rollers is barbaric. Have rollers swapped by a technician, retain the removed pair. Your serviceman will be able to put them back anytime later, if needed.

The cut-away turret keeps the camera slim when in normal position. The H-16, model M made from 1955 on, is always slim, it has no turret. It has a long lens-mounting thread. This enables you to bring in shim washers to move a long-threaded lens a little further out. That way you can enter the macro field just adjacent to the shortest distance your lens allows to be focused to. The early Kern-Paillard and some Wollensak lenses feature long threads. I sell such washers. For critical focusing the accessory CADIL or CADRO can be used before loading the camera. An important remark I must make here: CADRO and CADIL are dangerous for the polished film rails, the ground glass prism can scratch them. Actually, the glass prism should be polished and the focuser used with a piece of frosted leader stock. Paillard failed here.

When they began marketing the H cameras fitting lenses were available from Meyer, Leitz, Zeiss, Laack, Goerz, Schneider, Rüo, Taylor-Hobson, Ross, Wray, Dallmeyer, Berthiot, Kern, Wollensak, Gundlach, ILEX, Kodak, and Graf. A compact and lightweight unit was the idea, based on small lenses. The H camera in combination with a heavy zoom lens becomes unwieldy and a contradiction to the turret that then needs to be clamped up to the front plate.

The younger style

began in 1963. Since then the cameras have a large rectangular base incorporating three tapped tripod bushes and after a short series the 1-1 shaft of the mechanism reaching out on the right-hand side. A crystal controlled or a mains synchronous electric motor can be attached to act on the 1-1 shaft. Apart from a number of restrictions the H turns into an instrument for sound work. The restrictions are

1. noise of the film transport but that can be reduced.
2. A dim view of the scene with reflex models when lens stopped down. That can be overcome.
3. 100-ft. film capacity until serial number 226000 (REX-4), and an
4. insecure frame counter due to internal slip. That problem can be solved, too.

What a truly professional cinematographic camera offers

is a lens mount that allows optics to be put on again and again with great accuracy. What I mean is

- the lens gets centered relative to the camera interface within 0,01 mm or four ten thousandths of an inch in all directions and
- the rear of the lens is protected by the camera.

Both demands were not answered by Paillard & Cie. Even the PL mount of Arnold & Richter used with professional equipment and very expensive lenses includes errors of up to 0,06 mm in total or ± 0,03 mm radially. That is not good enough when we compare to clamping chucks mounted on metal lathe spindles. Those are positioned within less than 0,01 mm repeatedly. Naturally they must since they're spun around at 2500 rotations per minute and faster. The Paillard-Bolex H was conceived as a mass product. Manufactured it was in long series, 90,000 examples sold, I estimate. A thread mount cannot center a lens because threads never center. Radial play in every direction is always present, else it wouldn't be possible to screw two parts together. The Bell & Howell A and B mounts afford a fit between camera and lens, cleverly executed to minimise radial play. It was used also with the Victor camera models 3, 4, and 5.

There *are* ways of eliminating all play from threads. One of them involves a permanent change to the threads of the turret plate. Yet, here we enter the salon of developed engineering that entails no cheap solutions. On request I can add that to your camera. Price on demand

The H-9 and the H-8

Only about 100 examples were made for the Pathé 9.5-mm. film. They were sold between 1936 and 1945. As a Ninefiver you may wish to acquire one. Be advised that quite some work may be necessary to overhaul it. But then it's probably the best 9.5-mm. camera. I own serial number 8000. Serious competition came from ETM, Beaulieu, Pathé, Ditmar, and Argus-Thames.

The H-8 appeared in March of 1938. For many years it was the only Double-Eight film camera that holds 100-foot spools. H-8s are more demanding what concerns lubrication of the mechanism than the H-16s and H-9s. So be prepared for a costly restoration eventually, if you cling to a given example. My favourite H-8 model is the S, made from 1963 on. That camera can be driven by crystal-controlled or mains synchronous electric motors and it can be equipped with D-mount lenses of all sorts, via adapters with C-mount optics or even more exotic items. Its critical focuser is preciser than the reflex finder, increasingly so at very short distances, and it is much brighter because it receives 100 percent of the light coming from the lens. Together with a rackover support it lets you frame and focus precisely until an object touches the lens. A camera and a rackover should be adjusted to each other during a service.

The H-16 Reflex and H-8 Reflex are more apt to bright light conditions. You frame and focus through the open lens, then stop down according to a measurement, and shoot. They will force you to work at a somewhat slower pace but that can lead to better pictures.

If you're rather after lighthearted fun, pick a different, smaller, simpler camera.

To round this off, please cut the film head in an arrow form precisely the way Paillard discouraged to do. Automatic threading will then always work faultlessly. Believe me.