



PAILLARD S.A.
Sainte-Croix (Switzerland)



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D8L CAMERA • INSTRUCTION MANUAL



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he name of Paillard-Bolex is known throughout the world as a hallmark of technical perfection and precision craftsmanship.

our camera, of course, includes a photo-electric cell which is situated behind the lens. In addition it has other, even newer features. A **highly sensitive galvanometer** further improves its handling qualities, and, a perfected **rewinding system** enables you to achieve outstanding visual effects.

ith Paillard-Bolex equipment you also buy the service that lies behind the product, for Paillard is backed by a world-wide organisation that can offer expert service facilities almost everywhere. The Paillard-Bolex Authorised Dealer plaque is a signpost to better service and has only been established after long years of experience in both the amateur and professional fields — and it matches in all ways the excellence of the products themselves. Should you write to a Paillard-Bolex distributor or dealer, do not forget to mention the serial number of your camera, engraved on the base.



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Pages

Foreword	2
Get to Know Your Camera	4
How to Load Your Camera - Winding	6
Film Footage Counter	8
How to Invert Your Film and Unload Your Camera	9
Filming Speeds	10
Release Selector	11
Viewfinder	12

CONTENTS

Parallax Correction	13
Lenses	14
Distance Setting	16
The Depth of Field	17
Variable Shutter	18
Fade-in	19
Fade-out - Lap Dissolve - Rewinding the Film	20
To Produce a Lap Dissolve	21
Setting the Diaphragm	22
Checking the Galvanometer Adjustment	26
Some Words of Advice before Shooting	27
Filters - Lens Hoods	28
Upkeep	29
Exposure Times	31
18-5 Projector	32

Viewfinder
setting (page 12)

Release selector
(page 11)

Filming speed
setting (page 10)

Control of variable
shutter (page 10)

Rewinding hand-
crank lodging
(page 20)

Notch symbol \square
indicating film
plane inside camera

Winding key
(page 6)

Release
Cable release
socket

Serial number

Socket for trigger
handle, wriststrap
or tripod

Field adapter control
(page 12)

Cell control trigger
(page 23)

Galvanometer (page 23)

Setting for galvanometer
guide-mark (page 24)

Mobile indicator (page 24)

Adjustable guide-mark
(page 24)

Shooting lens (page 14)

Additional lens (page 14)

Turret

GET TO

KNOW YOUR
CAMERA

Viewfinder (page 12)

Film footage counter (page 8)

First and second loading
indicator (page 8)

Door lock (page 8)

Index number calculator
(page 22)

Your D & L Camera has been delivered equipped with:

- 1 lens (at least)
- 1 empty take-up spool
- 2 turret caps
- 1 depth-of-field chart for each lens supplied

HOW TO LOAD YOUR CAMERA

Before loading your camera, try out the important controls without film: winding, release selector, filming speeds, variable shutter, rewinding, functioning of the built-in lightmeter, release. Familiarize yourself with your camera in order to avoid wasting film. While it is not difficult to operate the camera, a certain amount of experience is necessarily required for good results.

Important — When your camera is not loaded, never let it run at more than 32 f.p.s., as this could cause damage to the mechanism.

WINDING

Lift the winding key and move it back and forth until a definite stopping point is reached. The motor is now fully wound and will run off about 7 ft. of film. This gives you about 31 seconds of filming at a speed of 18 frames per second.

To prevent the motor running down during an important shot it is advisable to re-wind after every shooting.

To avoid any risk of fogging the film, the camera should be loaded in the shade, or better, in semi-darkness.

TO OPEN THE CAMERA

Lift up theinged semi-circular ring, turn it to position O and lift the door.



TO INSERT THE FILM IN THE CAMERA

Place the open camera with the hinged door towards you and open the pressure-pad by moving the lever (fig. 1).

Remove the empty spool from the camera.

Hold the full spool in your right hand in such a manner that the film cannot become loose. Unwind about 10 inches of film, and slip the full spool on its spindle, guiding the film through the gate as illustrated (fig. 2).

Close the pressure-pad by pushing the lever while holding the full spool in its place with your right hand (fig. 3). (A safety device makes it impossible to shut the door unless the pressure-pad is closed.)

Now take the empty spool with the side marked I facing you and insert the end of the film into the slit which is below the mark I (fig. 4). Wind 2 to 3 turns of film on the spool, turning it in a clockwise manner.

Place the take-up spool on its spindle either way round (fig. 5).

The dark, shiny side of the film must be facing towards you, and the light side towards the lenses.



Before closing the camera door, press the release for a fraction of a second to check that film is running correctly.

Now close the door and fasten it by turning the semi-circular ring to F. Push the ring back so that the single point mark is uncovered to indicate that the film is on its first 25 ft. run.

N. B. When the first half of your double-run film has been exposed, turn the film over in order to expose the other half.

FILM FOOTAGE COUNTER

The film footage counter on the back of the camera automatically indicates the amount of film that has been exposed.

The film being loaded, the letters **ft.** (feet) will appear behind the window, because the indicator automatically returns to the starting point when the pressure-pad lever is operated in the course of loading or unloading the camera.

Press the release and run the film until the figure 0 appears opposite the white notch. The 4 ft. film leader has now been run off.



HOW TO INVERT YOUR FILM

An audible end of film signal indicates that the full length of the film has now been exposed (the indicator shows 25 ft.). The spool should now be turned over to expose the other half of the film.

Proceed as follows:

The motor should be allowed to run until 10 clicks of the audible warning signal have been counted. The trailer is now fully wound on the take-up spool.

Open the camera out of the direct rays of the sun, as otherwise there is a risk that the film may be partly fogged.

The two spools may then be taken out and the camera can be reloaded by placing the full spool on the upper (film feed) spindle, with the side marked II uppermost.

After closing the camera door, push the semi-circular ring back so as to leave the 2 points uncovered to indicate that the film is on its second 25 ft. run.

HOW TO UNLOAD YOUR CAMERA

When the film has been fully exposed, the original Paillard-Bolex spool supplied with the camera, now on the upper spindle, will be empty again.

Remove the full spool, observing the same caution as you did while inverting the film. Send it to the processing laboratory in accordance with the manufacturer's instructions.



FILMING SPEEDS

The speed control dial has seven settings — 12, 16, 18, 24, 32, 48 and 64 frames per second.

The usual filming speed nowadays is 18 frames per second. It replaces 16 f.p.s. as the international standard for filming as well as for screening. Movements are thereby reproduced with more clarity and without dazzle, and if a magnetic sound track is to be added to the film, the sound will be purer and clearer. The increase in the consumption of film is negligible.

When the film is projected at normal speed, films shot at a slower speed (12 f.p.s.) produce an illusion of accelerated motion on the screen, while films shot at higher speeds (24/64 f.p.s.) will produce a slow motion effect.

To set filming speed, turn speed control dial to corresponding setting in front of the notch.

Do not forget that altering the filming speed necessitates a change of diaphragm. Therefore, adjust the galvanometer guidemark (see page 23).

RELEASE SELECTOR

According to the effect desired, use either normal, continuous running or single-frame exposures. These are controlled by the release selector which also locks the camera:

① Locked camera

Normal position when the camera is not in use.

② Single-frame exposure

Used for titles, cartoons, scientific films, trick effects, particularly extreme speed-ups (clouds, sunsets, comical effects, etc.).

The exposure is made as the release is pressed.

③ Normal running

Normal filming position. The camera runs as long as you press the release.

④ Continuous running

When the camera is running normally, push the release selector downwards. The camera will run as long as the motor is wound. Used mainly for self-filming.

Cable Release: see page 4.

Exposure times: see table page 31.





VIEWFINDER

The viewfinder allows you to choose the framing best suited to the scene to be shot.

The viewfinder is continuously adjustable by means of a knob to match the field covered by lenses of 12.5 (standard) to 36 mm (telephoto) focal length.

Because the needles of the galvanometer only appear perfectly sharp at the 12.5 mm setting, frames corresponding to the focal lengths of 25 mm (outer frame) and 36 mm (inner frame) have been engraved on the aperture to permit you to determine the exact field of view for telephoto lenses even when the viewfinder control button is left on position 12.5.

The lever (L) (field adapter) controls an additional lens placed inside the galvanometer housing. When in vertical position, it adjusts the viewfinder field to match the field of a wide angle lens while the viewfinder control button remains on position 12.5.

The circle which then shows inside the field of view serves as a reminder that the additional lens is in action.

To adapt the viewfinder for movie makers who wear glasses, the viewfinder eyepiece can be replaced by a special lens. Any enquiries should be addressed to the Paillard-Bolex distributor through your dealer, specifying the strength required in diopters.

PARALLAX CORRECTION

The area covered by the lens is slightly different from the area seen by the viewfinder: this difference is called parallax. Parallax becomes noticeable in shots taken at short distances (i. e. less than 5 ft. with a standard lens). For exact correction of the parallax, use a parallax corrector prism over the galvanometer aperture. Four parallax corrector prisms are supplied in pairs, either for 25 and 50 cm or for 1 and 2 ft. (30 and 60 cm). The subject to be filmed can also be framed with the help of the upright and the table of the Paillard-Bolex 8 mm titler.

LENSES



12-13 mm



5.5-6.5 mm



25-36 mm



25-36 mm

The turret of your camera takes a wide range of standard-mount lenses:

- **standard lenses (12.5 or 13 mm)** for use in normal circumstances;
- **wide-angle lenses (5.5 to 6.5 mm)** used for filming general views, or shots where space is limited (monuments, indoor subjects, etc.). The perspective is increased by using these lenses;
- **telephoto lenses (25 to 36 mm)**, for shooting at great distances. These lenses also give excellent results in close-ups.

The lenses can be interchanged. However, it is preferable to screw wide-angle lenses in the seat indicated by an engraved dot.

Screw the lenses into their mount, holding them by the fastening ring A.



Another ring adjusts the diaphragm; in other words, it controls the amount of light which passes through the lens and exposes the film.

Some lenses have a third ring which is used for focusing.

The handling of the diaphragm ring gets easier with a **control lever**.

This device is available from your Paillard-Bolex dealer.

To complete your optical equipment, Paillard-Bolex offers you zoom lenses (Pan Cinor 40), optical attachments such as Möller anamorphic lenses, filter sets and lens hoods.

DISTANCE SETTING

The outstanding quality of lenses and film makes it possible to achieve remarkable sharpness in 8-mm filming. In sunny weather, with a standard lens set at 6 ft, you can obtain a sharp picture from approximately 3 ft. to infinity.



In order to obtain the best results when using a lens with an adjustable focusing mount, we advise you to estimate the average distance at which the subject will be filmed and to adjust the focusing ring of the lens accordingly.

On the Kern-Paillard lenses, a red number indicates the distance most frequently used, which will give you the maximum sharpness from foreground to background in average circumstances.

For close-ups it is, however, necessary to set the exact distance between subject and film. This is also advisable when filming with a telephoto lens or with the lens diaphragm wide open. (For example: distance of 3 ft. or less and diaphragm set to 2.8 or less.)

The distances are measured from the film plane (see page 4).

The depth of field, that is to say the zone in which the subject is sharp, varies according to the lens focal length, diaphragm aperture and filming distance.



Visifocus Scale



Mobile Compass

With a long focal length lens, open diaphragm or short filming distance the depth of field is **small**.

With a short focal length lens, closed diaphragm or long filming distance the depth of field is **large**.

On most lenses, a depth-of-field scale indicates the limits within which the filmed subject will be sharp. The illustrations show two Kern-Paillard lenses, one with the "Visifocus" scale (orange dots) and the other with the "mobile compass" (white curve).

Lenses are always supplied with a depth-of-field chart.

VARIABLE SHUTTER

Your camera is equipped with a variable shutter. By reducing the opening angle, the film exposure time is reduced proportionately without changing the filming speed.

The control lever can be moved while filming, or it can be set in one of the positions shown on illustration opposite.

The shutter can be locked in the open and half-closed positions by pushing the grooved slide (a on illustration opposite) in the direction of the arrow.

Exposure times for different settings of the variable shutter and for different filming speeds are listed in the table on page 31.

open



half-closed



closed



stop




USE of the VARIABLE SHUTTER

- 1 If the light is particularly strong (reflection from snow or water), the variable shutter can be adjusted so that exposure is reduced and the use of a neutral density filter becomes unnecessary.
- 2 A wide-open diaphragm eliminates unwanted backgrounds, yet with the variable shutter half-closed, the exposure remains correct.
- 3 The variable shutter increases picture sharpness of moving subjects by reducing the exposure time. This is particularly true for films shot at 32 f.p.s. or more (slow motion). On the other hand, if filmed at normal or slower speeds with the variable shutter half-closed, the rapidly moving subject will seem jerky when projected.
- 4 The variable shutter allows you to produce a number of professional effects, e.g.:


a) FADE-IN

A fade-in is made by gradually lighting up a shot to make it go from dark to normal brightness on the screen.

To produce a fade-in, start from the position as illustrated: (lever at extreme right notch - Letter S = Stop); press the release and turn the shutter lever smoothly all the way down (symbol  opposite the notch) and continue filming. As a rule, this operation should not take more than about 2 seconds.

N. B. The camera will not start while the shutter control lever is in the position illustrated (lever at extreme right)

b) FADE-OUT

A fade-out is a gradual darkening of the shot until it has disappeared completely. To produce a fade-out, the same procedure as for a fade-in is carried out in reverse. Start with the shutter lever in a horizontal position (symbol  opposite the notch) and then move it slowly up until the camera stops.



c) LAP DISSOLVE

A lap dissolve is unquestionably one of the most pleasing transitional effects between two sequences and is made by superimposing a fade-in on a fade-out; thus, a remarkably soft transition is achieved.

How is it done?

Although the variable shutter is essential for this, it alone is not enough. A special rewinding system has to be provided.

REWINDING THE FILM

Engage the small hand crank in its lodging (see illustration page 4), and turn clockwise.

As each frame passes, you will hear a clicking sound. Five frames are rewound with each turn of the hand crank. You may rewind sixty frames or so without affecting the correct running for your film.

Before starting, check that the spring motor is not fully wound up.

The footage counter subtracts automatically the length of film that has been rewound.



To produce a lap dissolve, proceed as follows:

- End shooting by a fade-out of 2 seconds.
- Disengage the motor by moving the control lever slightly to the left (position « closed »).
- Rewind 24, 32, 36 or 48 frames corresponding respectively to a filming speed of 12, 16, 18 or 24 f.p.s.
- Frame the second scene.
- Press the release knob, and make a fade-in of the same length as the previous fade-out*.
- Continue filming.

* It will usually be sufficient to count « hundred and one, hundred and two » for each operation.

SETTING THE DIAPHRAGM

Setting the diaphragm of your camera is as easy as it is accurate, thanks to a lightmeter with built-in photo-electric cell
an index number calculator (on the lid of your camera).

a) Reading the index number calculator

- Set the calculator for the sensitivity rating of your film by means of the slide (a). Calibration is both for ASA and for °DIN.
- If you are using a PAN CINOR 40 lens, you will find the index numbers on the lower right-hand side of the calculator. If you are using a fixed focus lens (5.5 - 36 mm), read from the lower left-hand side.
- Read the index number corresponding to the setting of your variable shutter:

shutter open 
shutter $\frac{1}{2}$ closed 




You need not worry about your galvanometer setting as long as you film at the same speed and with the same shutter opening. All you have to do to ensure correct exposure is to press the cell control trigger before each filming.

EXAMPLE:

Colour film 10 ASA
Fixed focus lens (5.5 - 36 mm)
Variable shutter open.



- Bring the figure 10 into the upper window of the calculator facing the inscription ASA
- Take reading from lower left-hand side of calculator (5.5 - 36 mm)
- The reading corresponding to the symbol  is
index number 4.

With the same film and shutter setting, the index number for a PAN CINOR lens would be 7.

IMPORTANT

The black triangle on the mobile disc must always be within the limits of the thick black half-circle of the fixed outer crown.

CAUTION

When setting the diaphragm, see that you do not inadvertently cover the lens with your hand or any other object.

For single frame exposures set the galvanometer dial as follows:

- Variable shutter open (): index number against the speed of 12 f.p.s.
- Variable shutter half closed (): index number against the speed of 16 f.p.s.

These positions of the galvanometer dial should be used regardless of the filming speed setting.

CHECKING THE GALVANOMETER ADJUSTMENT

The galvanometer is shockproofed and carefully adjusted at the factory. Nevertheless, it is advisable to check it from time to time for accuracy and to correct it, if required.

— Cover the lens or, if no lens is mounted on the camera, close the lens opening of the turret by means of a plug.

— Hold camera vertically (normal shooting position).

— Bring black triangle of the mobile disc exactly in front of the identical black triangle on fixed crown (see illustration).

The galvanometer indicator should be superimposed exactly on the red guide-mark.

If this is not the case, **slightly** turn the adjusting screw inside the galvanometer housing by means of a fine screw-driver.



SOME WORDS OF ADVICE BEFORE SHOOTING

Hold your camera **straight** and **firm**. If you follow a moving object, steady the camera against something; film slowly and without jolts. Preferably use a trigger handle and, in some cases, a tripod. The latter must be used with telephoto and variable focus lenses.

Remember that it is **the movement** of the subject which will make your film look alive and interesting. Change your shooting angle frequently. Remember that close-ups produce the best effect. Do not waste film on long-distance shots — 5 seconds are usually enough.

Make it a habit to **rewind** your camera after each take — even a short one.

When taking **indoor shots**, use "artificial light" type film.

In outside **night shots** do not rely too much on the lightmeter reading. Open the diaphragm completely and film at 12 f.p.s.





FILTERS

You can improve your movies by using Paillard-Bolex filters with mounts corresponding to ASA standards, series 4, 5.

For black and white film

Yellow, neutral and anti-UV filters

For colour film

Neutral, anti-UV and conversion filters.

To determine the exposure index, use the sensitivity rating of the film (e.g. 16 ASA for Kodachrome type A) and not the sensitivity as corrected for the filter (e.g. 10 ASA for Kodachrome type A with conversion filter).

Regardless of the filter or lens hood used, no correction need be made. The Paillard-Bolex photo-electric cell automatically takes account of any filter fitted to the lens.



LENS HOODS

These attachments protect the lens from direct light, which would cause spots on your film. They are therefore indispensable for filming with half-side light.

UPKEEP

CAMERA

Do not, in any circumstances, take the camera mechanism apart. Should you do so, you lose any rights under the manufacturer's guarantee.

The interior of the camera must be kept absolutely clean.

A certain amount of gelatine and dust may sometimes be left in the gate and on the pressure-pad after a length of unexposed film has been run through.

For cleaning the interior of the camera proceed as follows:

1. Open the pressure-pad, as shown on page 7, fig. 1.
2. Remove the pressure-pad by pulling it towards you.
3. Using a clean cloth twisted around the end of a small wooden stick, clean the pad and gate gently, particularly around the taking aperture. If the gelatine deposit is sticky and hard to remove, moisten the cloth slightly, wiping well afterwards to ensure absolute dryness.
4. Put the pressure-pad back in place by carefully introducing it at an angle (see illustration). Check if it is in its correct position by pushing it against the gate with your finger. Removing the finger will release the pressure and the pad should open, even if your camera is turned towards the ground.
5. Close the pressure-pad by pushing the lever back into position.





LENSES

The outer surfaces of the lenses should be kept absolutely clean. For cleaning them, use a special soft tissue-paper sold in photo stores. Lenses should not be constantly rubbed, as this might damage the anti-reflex coating.

Always put the lens caps on the lenses between shots. When the camera is not used for some time, put the lenses away in their Paillard-Bolex cases which are protected against humidity. Special care should be taken to avoid getting dust or finger prints on the glass surfaces (perspiration is harmful to glass).

LUBRICATION

Like a high-quality watch, the camera rarely needs to be lubricated. When new, it contains a reserve of grease and oil sufficient for 2 to 3 years. Thereafter it is advisable to turn in the camera to a Paillard-Bolex distributor for fresh lubrication.

CARE OF CAMERA IN TROPICAL REGIONS

Certain precautions must be taken to protect both camera and film against heat and humidity.

Airtight boxes and protective chemicals for your camera are available on the market. **Be extra careful with your equipment when in tropical regions.**

EXPOSURE TIMES

Filing Speed	Variable Shutter Open		Variable Shutter Half-Closed	
	Normal or Continuous Running	Single-Frame Exposure	Normal or Continuous Running	Single-Frame Exposure
12 f.p.s.	1/29 sec.	1/27 sec.	1/58 sec.	1/64 sec.
16	1/38	1/30	1/76	1/75
18	1/43	1/30	1/86	1/75
24	1/58	1/30	1/116	1/75
32	1/76	1/30	1/152	1/75
48	1/116	1/30	1/232	1/75
64	1/152	1/30	1/304	1/75

By setting the variable shutter control approximately mid-way between the half-closed and the closed positions, the exposure time is again reduced by half. It will then be approximately:

1/150 sec. at 16 f.p.s.
1/300 sec. at 32 f.p.s., etc.

THE PAILLARD-BOLEX 18-5 PROJECTOR

Once you have finished shooting, you will be anxious to screen the film. Handle it carefully — it is valuable. To be sure of avoiding mishaps, choose a projector which is of the same high quality and as accurate as your camera. **The Paillard-Bolex 18-5 Projector is the ideal partner for your camera.**

18-5: this formula stands for outstanding performances in filming as well as in screening. The slow speed of 5 f.p.s. and the normal speed of 18 f.p.s. are equally at your disposal. The optical equipment is of the highest quality. Lenses of three focal lengths are available: 15 mm, 20 mm and 25 mm, all with 1:1.3 apertures.

This projector excels by its easy handling qualities, its high power and its absolutely smooth running.

Ask your dealer for a demonstration — it will convince you.



We would recommend you to shoot a roll of film and check the results before filming a holiday trip or other important occasion. This will allow you to become familiar with your camera and will show you if you are correctly following the indications in this instruction manual. When in doubt, see your retailer for advice or help.

WARNING:

If service covered by guarantee is required, the equipment must be returned to the official Paillard-Bolex Distributor in the country concerned. For convenience' sake, it can be handed to a Bolex Dealer with instructions for its return to the official Paillard-Bolex Distributor, who alone is authorised to carry out this service.