

THE LABRELY SYSTEM "PLANIPHOTE".

*Apparatus for Aerial Photography constructed by the Etablissements Jules RICHARD,
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(Extract from the *Revue d'Optique Théorique et Instrumentale*, Paris, December, 1929)

The growing importance of aerial photography in the realm of cartography has revealed the need for the creation of instruments the characteristics of which correspond to the following tendencies:—

1. Weight of camera and of sensitive emulsion carrier to be as small as possible;
2. Outer dimensions much reduced for use in small aircraft;
3. Ability to take a large number of clichés without change of magazine (plate or film-holder);
4. Automatic or hand exposure.

The "Planiphote" apparatus fulfils all of these requirements, as is shown by its characteristics which are as follows:—

- Size: $18 \times 24 \frac{m}{m}$. (7.1 \times 9.4 ins.). Useful portion of image: $165 \times 225 \frac{m}{m}$ (6.5 \times 8.8 ins.).
- Emulsion carrier: Pathé film, "Topo" type, width $178 \frac{m}{m}$ (7 ins.), characterised by the almost complete absence of distortion, even after treatment.
- Capacity: Magazine of 200 views, $18 \times 24 \frac{m}{m}$, interchangeable during flight.
- Outer dimensions: Length $32 \frac{m}{m}$ (12.6 ins.), width $30 \frac{m}{m}$ (11.8 ins.), height $52 \frac{m}{m}$ (20.5 ins.).
- Weight with suspension and distance-control devices: 26.500 kgs. (58.4 lb.).
- Objective: focal length 30 or $50 \frac{m}{m}$; aperture: $f/4.5$ or $f/5.7$.
- Shutter: of the LABRELY type (inter-lens high luminosity shutter). Speeds: 1/250, 1/300, 1/350 second.
- Automatic or hand worked.

The shutter is worked in the following manner:

Very thin metallic blades, overlapping each other like the slats of a Venetian blind, give the necessary exposure by rotating 90° about their longitudinal axes which are perpendicular to the optical axis; the high luminous power is obtained by means of a special device which holds the blades in the position parallel to the optical axis during a very considerable interval compared with the duration of the opening and shutting operations.

The film is kept flat by the following method:

At the instant of exposure, the film, held between two super-imposed rectangular frames, is pressed by these frames against a third frame inside the other two so that tension is produced in the focal plane of the objective and in all directions within this plane.

DISTRIBUTOR-REGULATOR.

The exposure regulator is covered by a quite recent patent; it spaces successive views with an accuracy very much greater than that required in practice. It is held in place on the base by means of a strap and a milled headed screw.

SUSPENSION.

The suspension allows the apparatus to rotate about its optical axis and to tilt about an axis perpendicular thereto which, as a rule, is parallel to the axis of the aircraft. This suspension greatly facilitates taking of oblique views at any angle of tilt and enables the drift, when photographing vertically, to be corrected.

