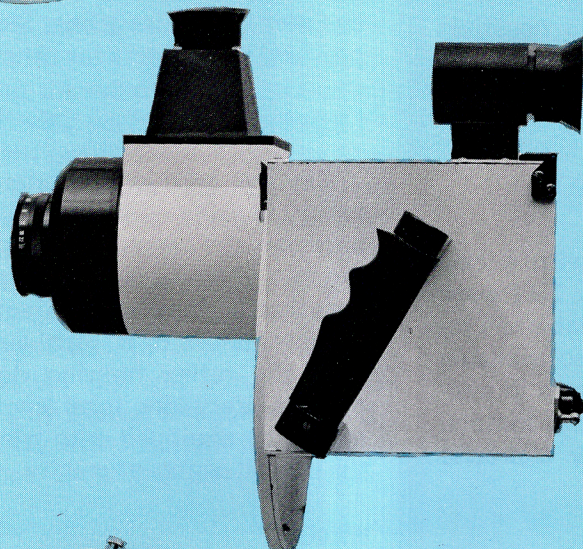
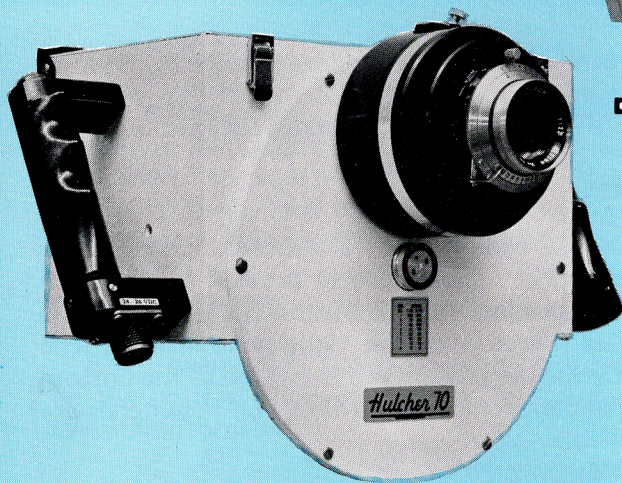


ONE



TWO



THREE



HULCHER 70, MODEL 123

A MULTI-PURPOSE 70MM
SEQUENCE CAMERA

- * Takes $2\frac{1}{4}'' \times 2\frac{1}{4}''$ or $2\frac{1}{4}'' \times 2\frac{1}{2}''$ pictures.
- * One picture at a time or up to 50 per second.
- * Weighs $8\frac{1}{2}$ pounds.
- * Holds 100 feet of film — 150 feet thin base. (600 ft. magazine also available)
- * Focuses with calibrated lens mounts, also available with full reflex focusing.
- * Shutter speeds from $1/25$ of a second to $1/10,000$ of a second.
- * Eight shutter speeds for each frame rate.
- * Operates from small 24 V.D.C. battery attached, or separate power pack.
- * Accepts any lens capable of covering full 70mm format.
- * Reasonable custom modifications.
- * Unique principle of operation proven over 24 years of successful service.

HULCHER 70, Model 123

A MULTI-PURPOSE 70MM SEQUENCE CAMERA

Check These Outstanding Features on

FILM

This camera uses 70mm perforated film supplied on 100' spools (150' thin base). 70mm film is available in ASA I (477) or ASA II (475) type perforations. The 475 or military standard perforations are the same as standard 35mm perforated film. The 477 or commercial type has larger, wider spaced perforations. The camera may be supplied to use either type or both types by simply purchasing an additional film sprocket. Perforated 70mm film is available in a wide range of emulsions for both color and black and white photography.

FRAME SIZE

This camera is available for producing negatives $2\frac{1}{4}'' \times 2\frac{1}{4}''$ or $2\frac{1}{4}'' \times 2\frac{1}{2}''$. The Hulcher 70mm cameras are the only sequence cameras available for use with either type film perforations.

SEQUENCE FRAME RATES

The standard cameras are equipped with a two speed governor providing 5 & 10 or 10 & 20 frames per second. Other combinations are available on request. A special four speed governor is also available on special order to provide other frame rates in multiples of 5 up to 50 a second with special motors. Frame rates are accurately controlled by a precise centrifugal electric governor.

EXPOSURE RANGE

A highly efficient variable opening, rotary disc shutter, operating close to the focal plane serves to expose the film. Eight fixed openings provide eight shutter speeds for each individual frame rate. For example, at 10 frames per second, it provides 1/50, 1/100, 1/250, 1/500, 1/750, 1/1000, 1/1500, and 1/2000 of a second exposure. This is accomplished simply by pulling out on a knurled knob and rotating to the desired setting. An exposure table of shutter speeds at the various frame rates is conveniently mounted at the front of the camera, just below the shutter adjustment.

FOCUSING

The standard camera is focused by means of lenses calibrated in feet. When used primarily for aerial

photography, focus is set on infinity.

The camera may also be ordered with full reflex focusing. This consists of a full size front surface mirror and ground glass screen. The mirror is placed in the light path by a manually operated lever. The mirror is automatically returned electrically to operating position when the camera is started. This allows for accurate composing and focusing even at close-up ranges and completely eliminates parallax.

VIEWFINDERS

Unique optical type viewfinder allows operator to keep both eyes wide open, one eye sees a bright white frame indicating area being photographed. The other eye sees the entire scene. Simply changing the reticle provides viewfinders for other focal length lenses.

LENSES

Bayonet type lens mounts provide for accurate and rapid changing of lenses. Standard lens is a 4" f 4.5, however, the camera may be equipped with any lens capable of covering the 70mm format. Short lenses (less than 5" focal length) require the use of calibrated mounts. Lenses of 5" focal length or longer when used with the reflex housing do not require calibrated mounts. Very long focal length lenses require that the mount be equipped with tripod receptacle located at the overall center of gravity.

WEIGHT

This camera in its standard form weighs 8½ pounds, less lens and film. A 100 foot roll of film weighs 1 pound. The camera is constructed entirely of metal.

HANDLES

Two space type handles are located close to the center of gravity and angled to provide for comfortable hand tracking. A push button ON-OFF switch is located at the top of the right hand handle. The receptacle for the power cord is located at the bottom of the handle. Remote control ON-OFF switches are also available.

POWER

Power to operate the camera is provided by a small high torque D.C. motor. The standard camera operates from 24-28 V.D.C. Current required depends on the frame rate for which the camera is designed. Approxi-

the HULCHER 123

Approximately three (3) amps are needed to operate the camera at 10 frames per second. The camera may be supplied on special order, to operate from other power sources.

BATTERIES

The camera will operate from any battery source of 24-28 V.D.C., having enough capacity. Sealed lead dioxide rechargeable batteries in stainless steel cases are available from the Hulcher Company. A power rectifier to operate the camera directly from 115 V, 60 HZ, power is also available.

UNIQUE FILM TRANSPORTING SYSTEM

The unique operating mechanism of the Hulcher 70, Model 123 camera advances each new frame rapidly and smoothly without the use of any reciprocating parts. Only four basic moving parts are involved, all of which rotate at a constant preset speed. Only the film loop starts and stops for each picture. The motor drives a shaft on which is mounted the shutter and two gears, one of which drives the sprocket, and the other the rotating film advance roller. There are no small or intricate parts. All bearings are heavy duty type ball bearings or oilless bearings. The film is held flat against stainless steel guides at the top and bottom and is held flat along the sides by special felt guides providing high film plane stability with resultant high resolution. The film is stopped while the picture is being made.

CONSTRUCTION

The entire camera is constructed of high strength aluminum alloy, heliarc welded and anodized. Precision gears are used throughout. Simplicity of the operating mechanism and careful design has resulted in a rugged, lightweight, highly reliable instrument.

TRIPOD MOUNT

A 1/4", twenty (20) standard tripod mount is located on the bottom of the camera. A 3/8" mount is also available if ordered.

FINISH

The standard camera has a baked on black wrinkle finish. A hand rubbed baked on white finish for use in desert type environment is available, on special order, as are other colors.



AVAILABLE MODIFICATIONS

TIMING LIGHTS

This camera is available with two timing lights which mark the edges of the film with a small hairline exposure. Light emitting diodes are used and are individually wired to a receptacle on the rear of the camera.

FIDUCIAL MARKS

This camera may be equipped with four accurately located fiducial markers. They are located in the exact center at the top and bottom and each side of the format. They produce a wedge shaped pointed image on the negatives.

HEATERS

Thermostatically controlled heaters may be installed in this camera. They can be supplied for various voltages and are useful when operating the camera at very low temperatures.

SINGLE FRAME PULSE

This camera can be modified to make one picture at a time as fast as the switch is pressed and released and still be able to operate as a regular sequence

camera. When so modified, it has a switch to set for the single or sequence mode. When operating in the single frame mode, the frame rate selector is set on the ten frame per second rate. This provides for the same eight shutter speeds as obtained when operating at ten frames per second. This modification includes a three pin receptacle which allows the camera to operate from an intervalometer or any remote push button. It also allows for remote sequence operation at any sequence speed.

400' FOOT MAGAZINE ADAPTER

When longer film runs are required the camera may be equipped with an adapter to allow it to operate from a 400' magazine. 400' foot magazines are also available from the Hulcher Company. The magazine adapter also includes a special cover plate so that the camera may still be operated from the 100' spools.

ELECTRONIC FAST REPEATING FLASH

An electronic flash synchronization switch and necessary wiring may be installed. This will enable the camera to be operated in conjunction with the Hulcher Company's Sequi-Strobe fast repeating electronic flash. It may also be operated with other fast repeating or single frame strobe lights.

In addition to the Model 123 camera the Hulcher Company manufactures a line of 35mm sequence cameras ● 35mm Geophysical Streak Cameras ● High Speed 70mm sequence cameras with frame rates to 75 frames per second including 400 ft. magazine ● Sequence cameras which take 2¼" x 5" frame sizes ● 35mm and 70mm portable film processing units ● Fast repeating electronic flash units ● Special projectors for viewing film made with Hulcher cameras.

The Hulcher Company specializes in designing and manufacturing special photographic instrumentation and in modifying its' standard equipment for specialized application.

Inquiries concerning your specific requirements will be given careful consideration.

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