

POPULAR PHOTO-  
GRAPHY

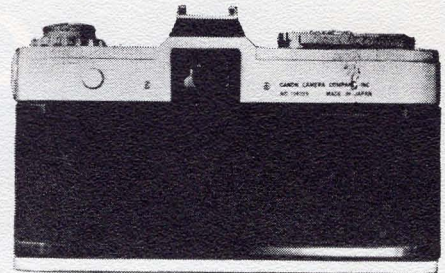
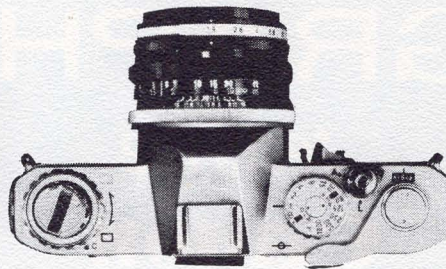
*tests the*  
**Canon**  
*PELLIX QL*

APRIL 1968 ISSUE



# POPULAR PHOTOGRAPHY LABORATORY REPORT

## CANON PELLIX QL



### PHASE I INSTRUMENT READOUTS

(See preceding test for explanation of resolution charts)

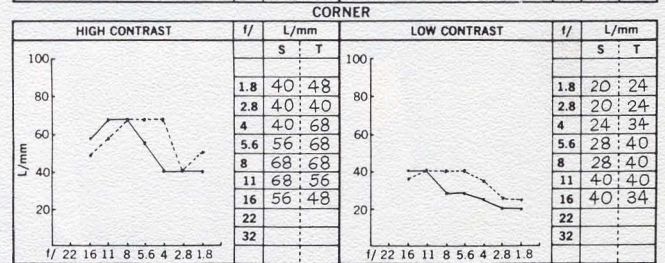
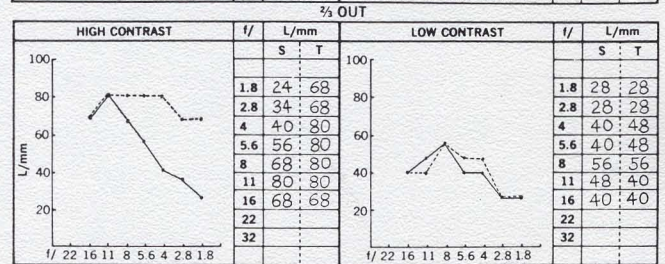
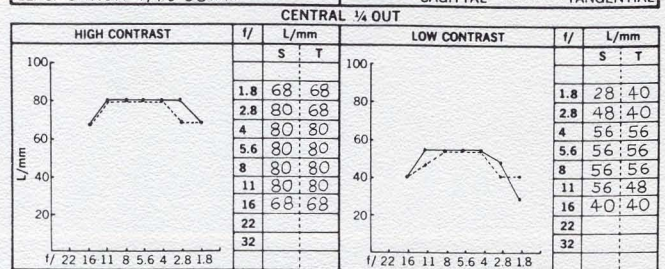
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#### MISCELLANEOUS DATA

ITEM:	CANON PELLIX QL				SER. #	106029			
FUNCTION	PRE-TORTURE				POST TORTURE				
FOCUSING SYSTEM:	SINGLE-LENS REFLEX WITH FIXED PELLICLE MIRROR								
Range:	2' - ∞				2' - ∞				
Accuracy over range:	∞	5M	1M		∞	5M	1M		
	OK	OK	OK		OK	OK	OK		
SHUTTER TRIP:	343 GM.				332 GM.				
SHUTTER TRAVEL:	1.75 MM.				1.75 MM.				
SELF TIMER:									
Minimum:	6 SECS.				6 SECS.				
Maximum:	10 SECS.				10 SECS.				
VIEWFINDER:	SEE FOCUSING SYSTEM								
Framing Accuracy:	OK				OK				
Parallax Corrected:	N.A.				N.A.				
SYNCHRONIZATION:	STANDARD PC OUTLET								
Flashbulb:	OK				OK				
Stroke:	OK				OK				
Contact Resist.:	0.3 Ω				0.3 Ω				
Insulation:	OK				OK				

#### RESOLUTION

CAMERA: CANON PELLIX QL	SERIAL: #	105028	
LENS: CANON f/1.8 50mm	SAGITTAL	----- TANGENTIAL	



### PHASE II IN-USE TESTS

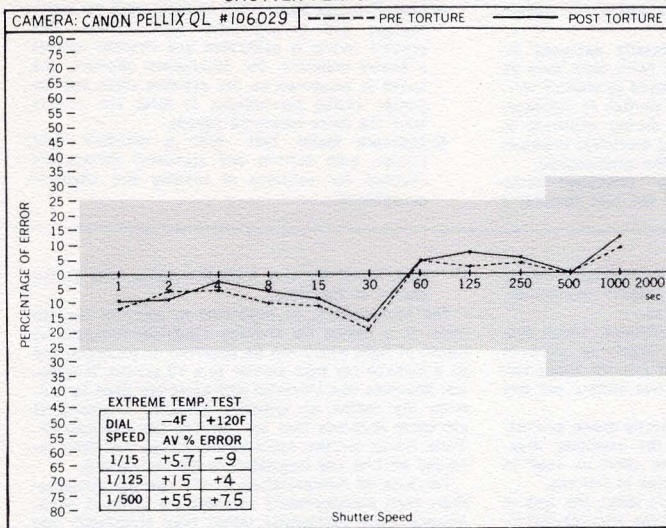
As an old-time Canon user, I have followed the evolution of the present-day products with more than passing interest. For years Canonflexes were my regular working tools and everyday companions, and brought in the majority of my income. Two of them accompanied me to the South Pole, and I am one of the apparently few photographers who absolutely loved the smooth and convenient bottom-wind lever, and mourned its passing. But pass it did, and today's Canonflex has other features to take its place.

The Canon Pellix QL is a highly refined and sophisticated piece of equipment. Its most striking and unusual

feature, of course, is the fixed, semi-transparent mirror—a pellicle—in place of the "standard" flip-flop mirror. The main aim of this arrangement is to eliminate entirely the vibration caused by the mirror's flipping up an instant before the exposure is made. This is obviously a great advantage, especially when shooting at slow shutter speeds, using a light tripod, or mounting the camera on a microscope, telescope, or other optical instrument.

Using a pellicle yields another advantage, a "bonus" in the form of reduced noise when making an exposure. There's no doubt about it—the Pellix QL is quieter than other SLR's. You can tell the difference, even at a dis-

### SHUTTER PERFORMANCE

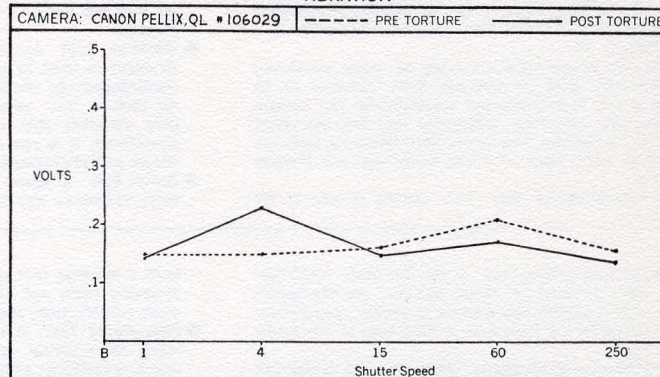


### METER SPECIFICATIONS

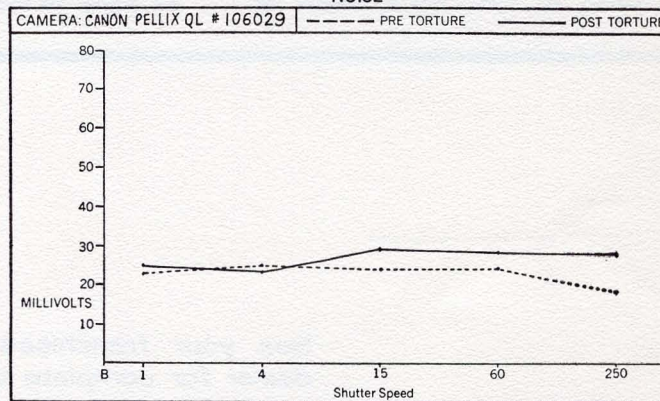
CAMERA:	CANON PELLIX QL #106029
TYPE:	Built-in Cds; through-lens
ACCURACY:	O.K. over entire sensitivity range
ANGLE OF ACCEPTANCE:	Spot meter; varies with lens used. With 50mm lens, 14°
PARALLAX:	None
RESPONSE DISCRIMINATION:	Good
SCALE LEGIBILITY:	Good
METER MOVEMENT BALANCE IN VARIOUS CAMERA POSITIONS:	Good
ASA RANGE:	25-1600
ZEROING PROVISION:	No
BATTERY TEST:	Yes
ACCESSORIES:	Booster

New USASI standards (formerly ASA) for shutter speed accuracy are shown by the shaded area on the Shutter Performance chart. Tests included extra checks at 1/15, 1/125, 1/500. Speeds, noise, and vibration are checked before and after torture tests by means of 'scope traces.

### VIBRATION



### NOISE



No standards exist for noise and vibration, but comparative levels will become evident when charts for several cameras are compared with each other. Vibration and noise levels were checked pre- and post-torture at the shutter speeds shown here on the appropriate charts.

tance. When shooting inconspicuously (or trying to) or when working with wildlife, the advantage is considerable. Photographers who have been wedded to rangefinder cameras for years will be especially thankful for this feature. They are getting all the advantages of an SLR, while retaining much of the quiet efficiency of their old rangefinder boxes. Confirmed SLR users will be pleasantly surprised by the "new sound" of the Pellix QL.

But there's a price attached to every good thing in this world, and this is no exception. The price we pay here is in terms of light—the "mirror" is always in position, sending an image to the viewfinder, and consequently less

light reaches the film. In normal use this is no particular disadvantage, and easily compensated for; but when shooting in dim available-light situations, this could become a problem. Under identical conditions, with the same lens, the Pellix may require you to use a slower shutter speed. If you do lots of low-light shooting, the Pellix is not for you. For the rest of us, this light loss should pose no particular problem.

In handling and using the Pellix, I was favorably impressed with the size and placement of the controls. Click-stops are firm enough so they won't be shifted accidentally. The prism is smaller than most, and gives

## CANON PELLIX QL

a nice low profile to the top deck. An accessory shoe on top of the prism housing will prove convenient. The microprism finder screen is very good, and a rectangular area shows what part of the image the meter is reading. The collar-lock bayonet lens mount is smooth, strong, and convenient to use. All scales and numbers are clear and legible, the tripod socket is centered, the winding lever retracts for compactness, and the Quick-Load system is an absolute joy to use. Furthermore, it does not wind film in the usual reverse-curl manner, and so puts less strain on the film and avoids breakage or cracking in very cold weather.

The combined self-timer and preview lever is well located, convenient to find and operate. Because of meter linkages, you cannot turn the shutter dial directly from the highest speed to the lowest—but you normally wouldn't want to anyhow. The camera has a good complement of "anti-goof" interlocks to help us avoid some common mistakes.

I found the Canon Pellix very pleasant and easy to hold and use, and I could locate controls with no trouble, without even glancing at the camera. But then, my hands are on the large side, and I wondered how small-handed people might get along. So I located a slick young chick, with slick-young-chick-sized hands, and had her use the Pellix. She handled it as easily as I had, operated it smoothly and without a trace of fumbling. "It's groovy," she reported. "Do I get to keep it?"

Sorry about that. I saw it first.—*Russ Kinne*



Quiet action of Pellix shutter (without mirror slap) does not frighten small, shy subjects.

### SPECIFICATIONS

**CAMERA TYPE:** 35-mm SLR with built-in, through-lens CdS meter. **VIEW-FINDER:** Eye-level system using pentagonal prism. Waist-level viewer available. **NORMAL LENS:** 50-mm *f*/1.8. Fully automatic pre-set aperture built in. **Shutter:** 1/1,000-1 sec and B, single pivot dial focal-plane shutter. **FLASH SYNCHRONIZATION:** Synchronizing possible for FP and X contacts and FP class, M class, F class and speedlight. **SELF-TIMER:** Built-in. **FILM TRANSPORT:** Single-operation winding lever. **FILM LOADING:** Back cover opening and closing, using only cartridge. Canon QL mechanism speeds loading. **FILM COUNTER:** Self-resetting type. **PRICE:** with 50-mm Canon *f*/1.8 lens, \$299.95.

## ■ PHASE III STRIPDOWN

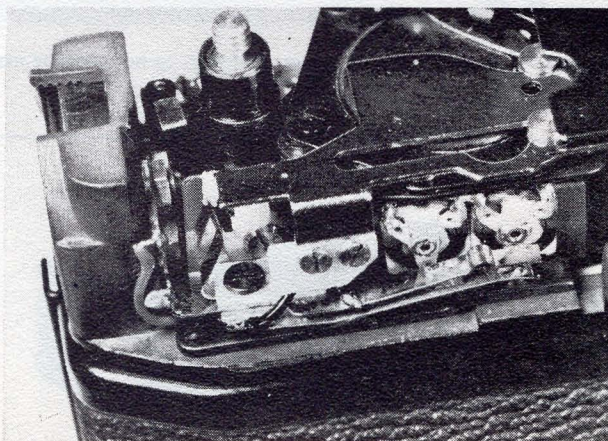
Stripdown of the Canon Pellix QL proved that choice of materials, finish, and care of assembly and ease of access for repairs are all good, although the synthetic leather covering had to be peeled from the camera's front for access. Provision for adjustments was judged good for all camera functions, and frequently needed adjustments can be made without major stripdown. Ease of replacement of key parts (such as pellicle) and sealing against dirt and dust were considered good.

A check of the pellicle for uniform thickness (essential for optical fidelity) was made by observing interference patterns; uniformity was commendable. The use of ball bearings on high-speed shafts of the shutter, however, was considered a practice not worth its cost, despite the excellence of the bearings.

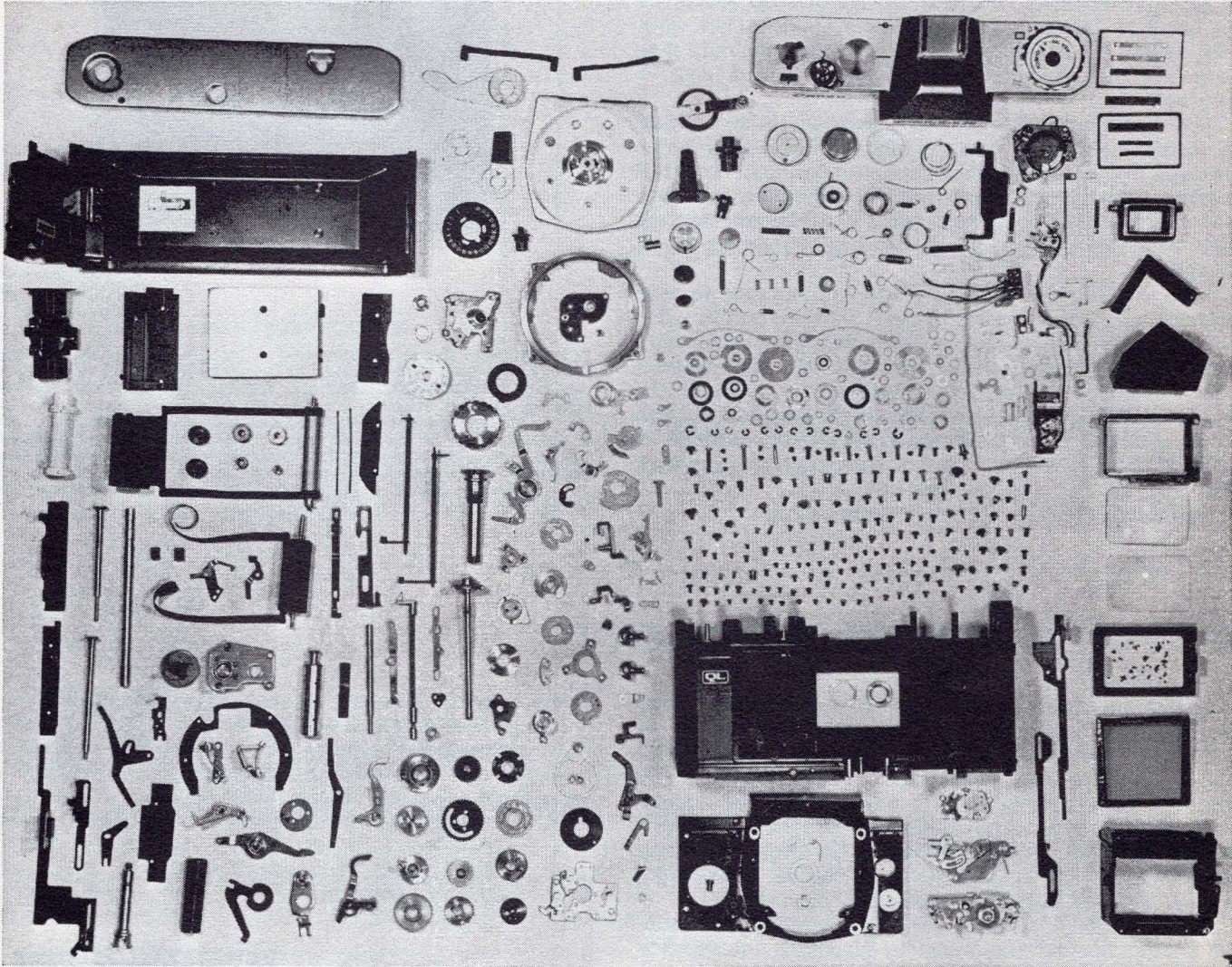
The stripdown test revealed many washers had been used in manufacturing the Canon Pellix QL—on bearings, shafts, gears. This could mean either of two things: that parts as manufactured didn't fit right and needed "shims" for better fit, or else that the camera was designed to be hand-fitted to insure "just-right" fit for all parts. The latter is an expensive practice, but no corner-cutting was evident in camera assembly. Many washers were thin and the camera could have functioned without them, so the conclusion was that the Pellix is carefully assembled by a maker concerned about holding tight tolerances in manufacture. Most screws are steel with effective sealants on the threads. However, it was felt that rubber pads on take-up spool could dry out in time, possibly causing a failure in the camera's featured quick-loading system. And white plastic sprockets were puzzling on this camera. Plastic sprockets are cheaper to make than those of ma-

chined metal. But why on the well-made Pellix QL?

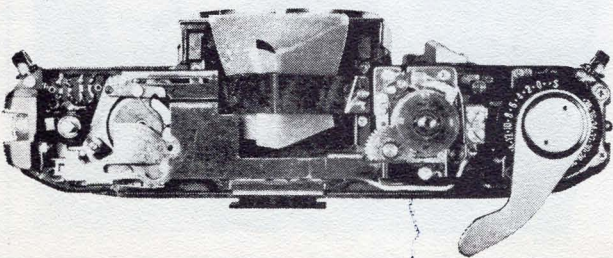
The general conclusion, nevertheless, is that the Pellix QL is undoubtedly a top-rank camera. Its over-all approach to design and construction, attention to small but worthwhile details (special, tough metal bearings in the strap lugs, for instance) speak well for it.—*Norman Goldberg*



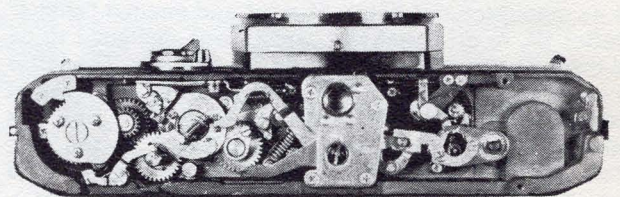
Meter circuit components include two potentiometers (shown in circle at the right) which are adjustable for accuracy.



**Complete stripdown** revealed Canon Pellix QL to be carefully made, well-designed camera with only one or two minor potential weaknesses.



**Linkage arm** (behind prism) connects shutter speed dial to the built-in meter mechanism and synchronizes both actions.



**From below** such parts as transport gears, shutter release mechanism, and the automatic diaphragm control are visible.

POPULAR PHOTOGRAPHY's program of equipment testing is solidly based on its laboratory—the most up-to-the-minute installation of its kind. Our test instruments were chosen, installed, and, in many cases, custom-designed and built by Technical Consultant Norman Goldberg, head of the well-known professional camera and instrument repair service, Camcraft, Inc., of Madison, Wis.

The lab is designed to wring as many significant performance data as possible from cameras to be tested—but objectively and scientifically and without introducing subjective judgments into the laboratory report. To this end, the appropriate following tests are given to each piece of photo equipment put through the lab:

● **Autocollimator Test** This checks to see if the

camera and lens system will focus to infinity. Any focusing lens system that fails this test is rejected for further testing.

- **Trip Force and Travel Test** A custom-made device checks the pressure needed to trip the shutter and the distance through which the release travels.
- **Vibration Test** Another specially designed instrument is used to register (with help from an oscilloscope) the vibration caused by shutter, mirror release, etc., when the shutter is released. Only vibration that occurs during exposure is considered; it is converted to electrical impulses shown and photographed on the oscilloscope.
- **Noise Test** A sound "blimp" (insulated enclosure) surrounds and isolates the test camera; a

microphone sends noise information to the oscilloscope where it is made visible and photographed. Unlike the vibration test, the noise test records the total noise made by the camera from release of the shutter to return of the mirror.

- **Shutter Speed Test** This is made with the oscilloscope and a collimated light source. The scope's sweep is calibrated and checked against a known standard. For focal-plane shutters, the speed is measured on the extreme sides and the center. Listed percentages of error are derived from the three measured speeds.
- **Exposure Meter Test** With a standard light source, both built-in and accessory meters are checked for accuracy of reading and angle of acceptance.

● **Synchronization Test** A variable-delay electronic flash is used to check whether the diaphragm and/or shutter are working in proper synchronization with the light from a flash bulb or electronic flash.

● **Freezer and Incubator Tests** Our lab technician chills the test camera to -4F, then checks its shutter speeds at three settings. The camera is then heated to 120 F and checked. These temperatures represent extremes that can reasonably be expected in all but most extraordinary applications.

● **Drop Test** The camera is dropped a measured 12 inches onto a piece of carpet to simulate, for example, the fall from a car seat to the floor.

● **Shake-up Test** Norman Goldberg designed and

built a machine that vigorously vibrates cameras, stressing them and revealing loose assemblies, weak construction, and the like.

● **Rangefinder Test** A Link collimator, which provides an artificial infinity target, is used to check rangefinder accuracy at infinity. Other targets are used for checks at five meters and one meter.

● **Framing accuracy test** An exactly drawn geometric chart is photographed. The resulting negatives are checked against the chart as seen in the viewfinder for discrepancies in framing.

● **Lens Tests** After the previous tests, the lens is checked for residual aberrations and resolution, using both high- and low-contrast charts. Resolution readings are made near the center of the

lens, 2/3 of the way from the center, and at the corner of the field.

The oscilloscope, so important to many of the lab tests, is a device for showing electrical impulses as traces of light which can be observed or photographed on a cathode ray tube similar to a TV screen. Mechanical impulses like vibration and noise are used to generate (by means of specially designed transducers) electrical impulses that are fed into the oscilloscope. Their traces on the oscilloscope screen are then recorded on film and translated by lab technicians.

For ease of interpretation by the average photographer, such measurements as noise are given in oscilloscope units (millivolts) rather than translated into decibels. The former are a linear measure—that is, twice the millivolts means twice the noise level.

See your franchised Bell & Howell/Canon dealer for complete information, or write to the Bell & Howell Customer Relations Department at the address below.

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