BATTERY TEST:
Set: ASA 100 and "bulb" on speed knob (see illustration #3)

Push exposure meter on/off switch up to energize meter.

If battery is good, exposure meter needle will jump to "underexposure" (-) position.
UNSCREW AND REMOVE LENS.
REMOVE FOUR SCREWS AND LIFT OFF BOTTOM PLATE
SHUTTER COCKED
The mirror cocking lever drives the mirror tensioning lever toward the rear of the camera during the cocking cycle -- just opposite to the cocking direction in the design shown in Illustrations 6 and 7.
To replace the counter cover, first open the camera back. The counter dial then returns to its starting position under spring tension. Close the camera back and cock and release the shutter twice. Replace the counter cover with its index aligned with the "0" calibration.
VARIATION: In earlier models, the counter dial return spring is underneath the counter dial —- the spring unwinds when you lift off the counter dial. In later models, such as the camera shown, the spring acts internally on the counter shaft — the spring remains inside the wind lever shaft assembly.
UNSCREW RETAINING NUT AND LIFT OFF COUNTER HOUSING

COUNTER HOUSING

SPECIAL TOOL FOR REMOVING RETAINING NUT --
USE SPECIALLY-THINNED MULTISPAN TIPS, 0.4mm X 1.0mm
1 - REMOVE THREE SCREWS

2 - TURN BAYONET RETAINING SPRING UNTIL ITS LUGS ALIGN WITH THE CUTOUTS IN WIND LEVER SEAT

3 - LIFT OFF BAYONET RETAINING SPRING AND WIND LEVER
REMOVE WIND LEVER DUST SEAL

IF YOU REPLACE WIND LEVER DUST SEAL UPSIDE DOWN, ITS CUT OUT WILL NOT ALIGN WITH SLOT FOR WIND LEVER PIN
REASSEMBLY: To replace the speed knob calibration plate, first turn the speed knob until the shutter delivers "bulb." Then, seat the speed knob calibration plate with its "B" calibration aligned with the index.

Set speed knobs to "bulb" prior to disassembly — "bulb" is always a good reference setting.

CAUTION: The compression spring for the speed knob (illustration 16) pushes the speed knob calibration plate up as you remove the screw.
REASSEMBLY: Make certain the tab on the underside of the film speed dial passes into the slot in the speed knob -- see Illustration 16.
REASSEMBLY

To replace the speed knob, seat its slot over the tab on the potentiometer turning ring — see Illustration 19.

1 - LIFT OUT COMPRESSION SPRING

SLOT IN SPEED KNOB FOR TAB ON FILM SPEED DIAL

2 - LIFT OFF SPEED KNOB

COILS OF SMALLER DIAMETER GO UP

3 - Open the camera back by pulling up on the rewind knob. Wedge the forked end of the rewind shaft with the handle-end of your tweezers and unscrew the rewind knob.
1 - Unscrew Retaining Ring

2 - Lift off Film Type Reminder Dial

Rewind shaft may be left in place for convenience in opening the camera back.
NOTE: The cable release pin (inside the release button) is loose once you remove the top cover plate.
CdS CELLS LEAD WIRES
- NOTE COLOR CODE ...

... WHICH CORRESPONDS WITH COLOR CODE PAINTED ON CORNER OF POTENTIOMETER

VALUES OF CdS CELLS AT EV 4:
BLUE  --  13 K
RED    --  11 K
WHITE  --  8 K
1 - REMOVE DELAYED-ACTION COCKING LEVER SCREW AND LIFT OFF DELAYED-ACTION COCKING LEVER

2 - PEEL BACK (OR REMOVE) RIGHT AND LEFT FRONT LEATHERETTE
CAUTION: There are spacers under the front plate to adjust the lens-to-film distance and the parallelism of the lens mounting ring — some of the spacers may stay with the camera body and some may adhere to the front plate. The spacers, at the screw positions, vary in size and position according to the individual camera — be sure to return the spacers to their proper positions.

Before removing the front plate, you can precheck the alignment to verify the correct spacers. Make appropriate notes for correcting the spacers if desirable.
SETSCREW ADJUSTMENT FOR RELEASE STROKE OVERTRAVEL (ADJUST FOR 0.3MM OVERTRAVEL AFTER THE MIRROR RELEASES)

VARIATION: In earlier models, the overtravel adjustment is made by shifting the position of the shutter actuator plate.
ADJUSTMENT: Adjust the eccentric collar after loosening its retaining screw. Cock and release the delayed-action escapement at the one-second setting. After the exposure, the mirror should return to the "viewing" position at the same time the release shaft returns to the "ready" position.
REMOVE TWO SCREWS AND LIFT OUT DELAYED-ACTION ESCAPEMENT.

NOTE THAT UPPER DELAYED-ACTION ESCAPEMENT RETAINING SCREW IS COUNTERSUNK.
"X" SYNC CONTACTS

ADJUST "X" SYNC AT 1/60 SECOND BY REFORMING TOP "X" CONTACT

"X" CONTACT CLOSING CAM AND OPENING CURTAIN HOLDING CAM (ATTACHES TO OPENING CURTAIN WIND GEAR)

OPENING CURTAIN LATCH ENGAGES "X" CONTACT CLOSING CAM IN THE COCKED POSITION (SEE ILLUSTRATION 33)

SHUTTER RELEASED
- In some models, you can disconnect wire on top of circuit board by loosening screw holding horseshoe connecting lug.

Unsolder black wire (positive battery wire to exposure meter).
1 - REMOVE TWO SCREWS AND 
LIFT OFF EXPOSURE INDEX 
SELECTOR DISC

2 - LIFT OFF POTENTIOMETER 
TURNING RING (IN SOME 
MODELS, THE POTENTIOMETER 
TURNING RING REMAINS 
ATTACHED TO THE POTENTIOMETER 
ASSEMBLY)

REASSEMBLY: The shorter tab on the potentiometer turning ring passes into the slot in the potentiometer -- see Illustration 37. With the speed selector set to "bulb," replace the exposure index selector disc (countersunk screw holes facing up) with its teeth facing the pentaprism.
1 - LOOSEN SCREW AND DISCONNECT BLUE GROUND WIRE

2 - REMOVE THREE SCREWS HOLDING POTENTIOMETER ASSEMBLY

SLOT FOR POTENTIOMETER TURNING RING
1 - REMOVE THREE SCREWS HOLDING FINDER ASSEMBLY

2 - LIFT OFF FINDER AND EXPOSURE METER AS ONE UNIT

COCKING LEVER MAY BE MOVED SLIGHTLY TO FACILITATE
ADJUSTMENT: Adjust the focusing screen with the camera fully assembled — remove only the lens. Reaching through the lens opening with a long screwdriver, turn the setscrews \textbf{IN} (to raise the focusing screen) or \textbf{OUT} (to lower the focusing screen). The three setscrews allow you to adjust the focus at the edges — as well as at the center — of the focusing screen.
DETACH "FP" CONTACT ASSEMBLY FROM MIRROR CAGE BY REMOVING THESE TWO SCREWS.

(OR - LEAVE "FP" CONTACT ASSEMBLY IN PLACE AND UNSOLDER WIRES)
NOTE: In earlier models, remove the top mirror cage positioning screws and the shutter actuator plate before lifting out the mirror cage.

REMOVE THESE TWO SCREWS AND LIFT OUT MIRROR CAGE

(IN SOME MODELS, THIS MIRROR CAGE RETAINING SCREW IS COUNTERSUNK)
TIMING OF MIRROR RETURN GEAR:
WITH THE SHUTTER COCKED, THE PIN ON THE MIRROR RETURN GEAR POINTS TO THE LOWER PIVOT OF THE PALLET CONTROL ROD.

1 - REMOVE SCREW AND LIFT OFF MIRROR RETURN GEAR
2 - LIFT OFF MIRROR COCKING LEVER
3 - LIFT OFF TEFLON SLEEVE
To operate shutter:

- cock the shutter -- note the curtain overlap during the cocking cycle
- hold down the release shaft and push the opening curtain latch toward the back of the camera
ADJUSTMENT: The pallet must disengage from the star wheel at 1/15 second --- and at the end of every slow exposure (1/8 second through 1 second)
REMOVE TWO SCREWS AND LIFT OFF TRIPOD SOCKET
CAUTION: Keep the camera upright as you remove the speed control bridge. Three parts are loose once the speed control bridge is lifted from the camera body. These are: the release cam, ILLUSTRATION 58, the spring on top of the retard rod, ILLUSTRATION 59, and the pallet control cam follower, ILLUSTRATION 59.
UNdERSIDE OF SPEED CONTROL BRIDGE

RETArd CONtROl LEVeR

sLOW-SPeed CAM FOllOwER

pALLET CONTROL CAM

sHAFT ON RELEASE CAM FITS THROUGH CENTER HOLE (SEE ILLUSTRATION 58)

HOLE IN REtARD CONTROL LEvER FITS OVER TOP PIVOT OF REtARD ROd (SEE ILLUSTRATION 59)

BUlB CONTROL CAM

BUlB CUT OUT
(The type "B" release cam has this identification hole in its base)

NOTE: If the shutter has a type "A" release cam — and the 1/1000 second shutter speed is too fast while the 1/125 second is too slow — switch to a type "B" release cam.

NOTICE: That slot in release cam fits over pin on opening curtain wind gear (see Illustration 59)
BRAKE LEVER ADJUSTMENT: Adjust the braking action at 1/60 second (the speed control bridge must be assembled, as shown in the next illustration). You can see opening curtain bounce either on the Comparascope or visually by watching the back of the focal-plane aperture during the release cycle. On the Comparascope, opening curtain bounce appears as a dip in the trace before the shutter starts to close. Visually, opening curtain bounce appears as a gray shadow at the closing side of the focal-plane aperture.

Adjust the brake lever adjustment screw (from the back of the camera, as shown in the next illustration) to eliminate bounce; then, turn the brake lever adjustment screw an additional 1/4 turn. After adjusting the bounce, recheck the curtain travel time and the shutter speeds.
OPENING CURTAIN BRAKE ADJUSTMENT (SEE ILLUSTRATION 60)

SLOW-SPEED ADJUSTMENT (SEE ILLUSTRATION 105)

OPENING CURTAIN WIND GEAR STOP PLATE ADJUSTMENT (SEE ILLUSTRATION 100)

- ADJUSTMENTS SHOWN ARE SEALED WITH RED LACQUER

ADJUSTMENTS ON BACK OF CAMERA
SHUTTER COCKED

OPENING CURTAIN WIND GEAR CONTACTS SHUTTER COCKED INDICATOR HERE

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1</td>
<td>RELEASE SHUTTER</td>
</tr>
<tr>
<td>2</td>
<td>REMOVE WIND LEVER</td>
</tr>
</tbody>
</table>
1 - REMOVE NUT
(USE THE SPECIAL THIN SCREWDRIVER PROVIDED)

2 - LIFT OFF RELEASE PLATE

(SOME MODELS HAVE AN "E"-RING HERE)
1 - DISCONNECT SHUTTER COCKED INDICATOR SPRING

2 - REMOVE SCREW AND LIFT OUT SHUTTER COCKED INDICATOR
1 - REMOVE SCREWS AND LIFT OFF WIND LEVER SEAT STOP PLATE

2 - DISCONNECT WIND LEVER RETURN SPRING ... WHILE LIFTING OFF WIND LEVER SEAT

CAUTION: There is initial tension on the wind lever return spring. Once you remove the wind lever seat stop plate, you will lose this initial tension. There are approximately 3 1/2 turns of initial tension on the spring which can be replaced during reassembly.
- In some models, the wind lever seat has a ridge around the edge ...

...but in models without this ridge, position the pawls as shown (the pawls are held by their springs) for ease in reassembly.
LIFT OFF MAIN WIND GEAR (NO TIMING INVOLVED)
REMOVE THREE SCREWS AND LIFT OFF WIND LEVER SHAFT ASSEMBLY

COUNTER DIAL RATCHET PAWL AND SPRING BENEATH RETAINER MAY LIFT WITH WIND LEVER SHAFT ASSEMBLY
1 - Disconnect counter dial ratchet pawl spring

2 - Lift off retaining collar

3 - Lift off counter dial ratchet pawl (washer underneath)

4 - Lift off counter dial coupler lever
The counter dial ratchet pawl is available in three different sizes.
NOTE: There is a black spacer under the brake lever. Thin brass washers may also be used to adjust the clearance of the brake lever. Replace as disassembled.
1 - LIFT OUT CLUTCH LATCH

2 - LIFT OFF UPPER SECTION OF CLUTCH GEAR
1. Disconnect bulb lever spring.
2. Unscrew bulb lever nut.
3. Hold closing curtain latch spring away from post.

... while lifting off bulb lever and closing curtain latch.
TO REMOVE RELEASE SHAFT:

1 - REMOVE SCREW AND DELAYED-ACTION ECCENTRIC COLLAR (SEE ILLUSTRATION 31 FOR ADJUSTMENT)

2 - REMOVE TWO SCREWS AND SHUTTER ACTUATOR PLATE

3 - REMOVE SETSCREW (SEE ILLUSTRATION 30 FOR ADJUSTMENT PROCEDURE)

CONT'D NEXT ILLUSTRATION
4 - REMOVE E-RING AND WASHER

5 - LIFT OUT RELEASE SHAFT TOWARD TOP OF CAMERA — REMOVE THE RELEASE SHAFT SPRING WHILE LIFTING OUT THE RELEASE SHAFT
1 - REMOVE TWO SCREWS HOLDING OPENING CURTAIN WIND GEAR STOP PLATE
(NOTE LOCK WASHER AND FLAT WASHER UNDER LONG-HEAD SCREW AND
LOCK WASHER UNDER REGULAR SCREW)

2 - LIFT OFF OPENING CURTAIN WIND
GEAR STOP PLATE

3 - LIFT OUT INTERMEDIATE
REDUCTION GEAR

4 - LIFT OUT OPENING CURTAIN WIND
GEAR ("X" CONTACT CLOSING CAM
IS NOW LOOSE -- DURING REASSEMBLY,
REPLACE "X" CONTACT CLOSING CAM
WHILE INSTALLING OPENING CURTAIN
WIND GEAR)
LATCHING AND COUPLING (TO OPENING CURTAIN WIND GEAR) LUG

RETARD DRIVING LUG

LIFT OFF CLOSING CURTAIN WIND GEAR
REMOVE TWO SCREWS AND LIFT OUT CURTAIN GUIDE
1 - LOOSEN WORM SETSCREWS
(SEALED WITH RED LACQUER)

2 - TURN WORMS COUNTERCLOCKWISE TO
LET OFF INITIAL TENSIONS — WORMS
MAY BE REMOVED WHEN TOTAL TENSION
IS RELEASED
-- HOLD TAKE-UP ROLLERS CENTRAL SHAFTS STATIONARY AT TOP OF CAMERA

-- AND UNSCREW WORM GEARS (LEFT-HAND THREADS) FROM BOTTOM OF CAMERA
Lift out the take-up rollers — note the spacers at the top ends of the take-up rollers and the loose teflon guide roller at the top end of the opening curtain take-up roller (see Illustration 93 for the positions of the rollers and spacers).
REMOVE THREE SCREWS AND LIFT OFF LOWER WINDING ROLLERS SUPPORT PLATE
LIFT OFF SPACERS AT LOWER ENDS OF WINDING ROLLERS (SEE ILLUSTRATION 93 FOR POSITIONS)

"W6" WASHERS MAY BE ADDED HERE TO ADJUST ENDPLAY (0.1MM - 0.19MM) OF PINION SHAFTS
1 - REMOVE TWO SETSCREWS AND PULL OPENING CURTAIN PINION SHAFT OUT TOWARD TOP OF CAMERA

2 - REMOVE SMALL SETSCREW FROM CLOSING CURTAIN PINION SHAFT COLLAR

3 - REMOVE SETSCREW AND PULL CLOSING CURTAIN PINION SHAFT OUT TOWARD TOP OF CAMERA

4 - REMOVE CURTAINS
93

Curtains Assembled
TO REMOVE WIND SHAFT:

1 - REMOVE SCREW

2 - LIFT OFF RETAINER PLATE

3 - LIFT OFF MIRROR COCKING ADJUSTMENT PLATE

4 - DISCONNECT REWIND BUTTON LATCH SPRING

5 - REMOVE SCREW AND LIFT OFF SPRING, REWIND BUTTON LATCH, SPACER, AND IDLER GEAR

6 - REMOVE E-RING AND LIFT OFF IDLER GEAR
7 - HOLD WIND SHAFT GEAR STATIONARY WITH A MULTISPAN WRENCH (SEE NEXT ILLUSTRATION) ... AND UNSCREW LOWER WIND GEAR WITH A SECOND MULTISPAN WRENCH
8 - DISCONNECT RESET LEVER SPRING AND LIFT OFF RESET LEVER RETAINER

9 - LIFT OFF RESET LEVER

10 - REMOVE THREE SCREWS AND LIFT OUT WIND SHAFT
(take-up spool is now loose and may be removed from back of camera)

NOTE: The take-up spool is in three separate sections -- the two end pieces and the center section. The slots in the center section (which receive the film leader) must be toward the bottom of the camera during reassembly. Also, note the positions on the spring steel and fiber washers on the end pieces.
AFTER REPLACING CURTAINS, PUT TWO TURNS OF TENSION ON THE CLOSING CURTAIN AND 1 3/4 TURN ON THE OPENING CURTAIN FOR ALIGNMENT PURPOSES.
Turn the closing curtain winding roller until the lead edge of the closing curtain bar is 6.3mm behind the edge of the focal-plane opening, as shown.
Temporarily install the closing curtain latch/bulb lever assembly. When the closing curtain wind gear is held by the closing curtain latch/bulb lever assembly, the lead edge of the closing curtain should be aligned as shown in the previous illustration. Adjust the timing between the closing curtain wind gear and the closing curtain pinion shaft until you have the proper distance.

Unlike earlier Pentax models and the current H1A, the closing curtain should NOT creep into the aperture at the one-second setting.

You may find it easier to time the opening curtain wind gear if you once again remove the closing curtain latch/bulb lever assembly. Time the opening curtain wind gear to the opening curtain pinion shaft for the proper curtain overlap during the cocking cycle. Ideally — especially when installing new curtains which tend to stretch — the overlap should be 0.1mm greater than one bar.
TURN THE WIND SHAFT GEAR CLOCKWISE UNTIL THE COUNTER DIAL ACTUATOR POINTS TO THE CENTER OF POST

YOU SHOULD NOW HAVE A 0.2MM GAP BETWEEN THE OPENING CURTAIN WIND GEAR LUG AND THE STOP PLATE — ADJUST THE POSITION OF THE OPENING CURTAIN WIND GEAR STOP PLATE (IF NECESSARY) BY TURNING ITS SETSCREW (SEE ILLUSTRATION 61)

CLUTCH CAM (NOTE SLOT FOR CLUTCH LATCH)

COCK THE SHUTTER BEFORE REASSEMBLING CLUTCH GEAR
With the shutter cocked, you should have a 0.2mm gap between the side of the clutch latch and the side of the upper section of the clutch gear -- if necessary, you may file the side of the slot in the upper section of the clutch gear to obtain the proper gap. Compare the gap shown below with the gap in the shutter-released position, Illustration 76.
The pin on the mirror cocking adjustment plate should point to the post as shown. Note that you have a tolerance of 5° on either side of the center of the post; however, it's preferable to have the pin pointing slightly to the right of the post center rather than to the left. If the pin does not align as shown, switch to one of the four other mirror cocking adjustment plates available.