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The Digital Display
Photographic
Operations Manual

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THE DIGITAL DISPLAY
PHOTOGRAPHIC OPERATIONS
MANUAL

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ABSTRACT

Designed as an introduction to the use of the camera equipment as well as a convenient reference when needed, the Digital Display Photographic Operations Manual is intended for both present users and those who wish to become acquainted with the digital display's photographic operations. This manual is a comprehensive guide to using the various cameras associated with the display. It includes a description of the cameras, the photocopy unit, the films used, and processes involved in producing either color or black & white imagery from the digital display.

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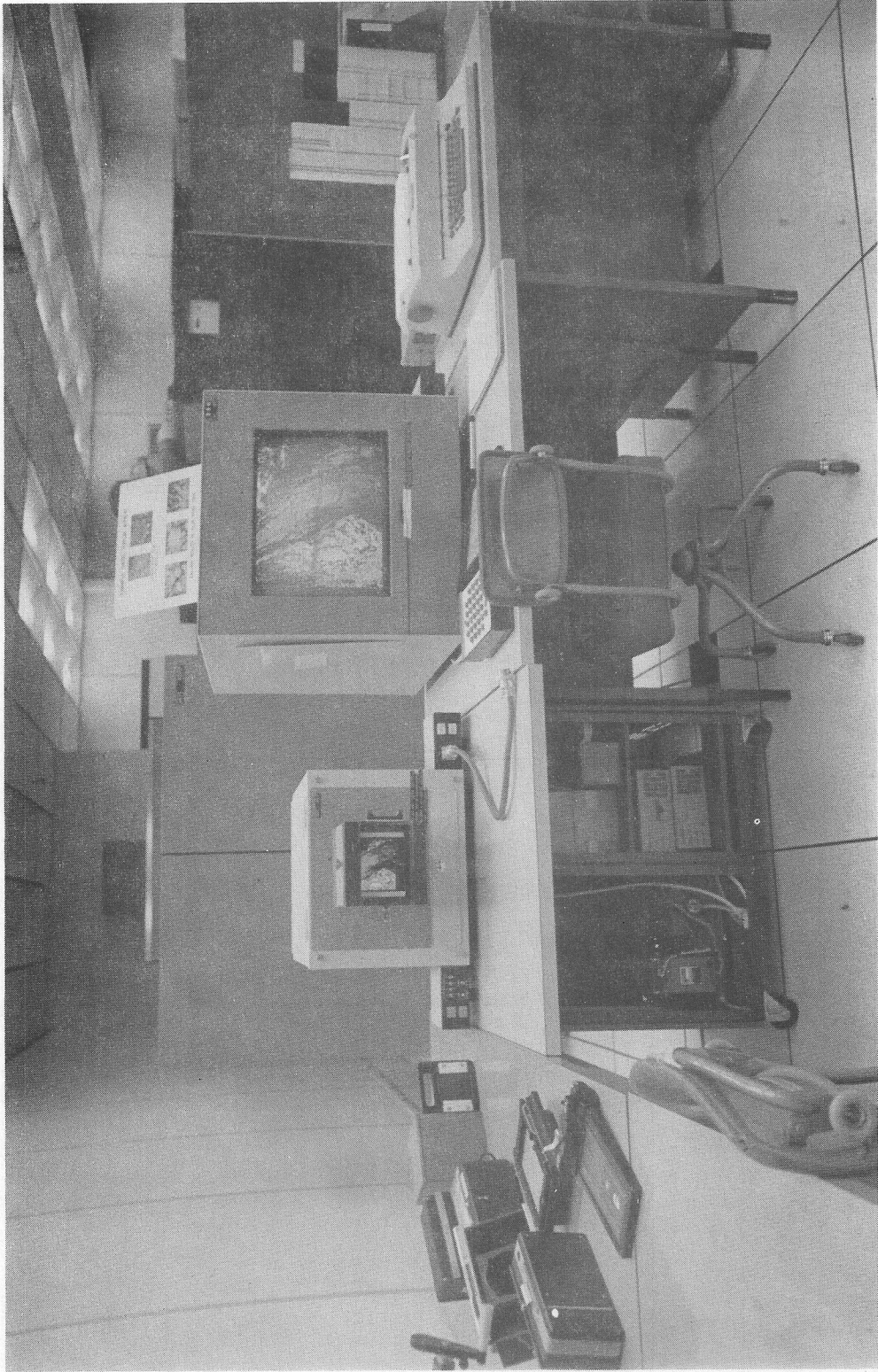


Figure 1-1
The Digital Display Area and Equipment

1.0 THE EQUIPMENT

(Figure 1-1)

To produce hardcopy imagery of the scene on the digital display screen, the photocopy unit (PCU) is employed. (See Figure 1-2) This unit is, in effect, a smaller version of the main display screen showing the same image in miniature. The front of the PCU has a hinge and mount for attaching the various camera units in order to photograph the image being displayed. There are two basic cameras, one for 35mm film and the other for Polaroid packs and 4 x 5 single exposure film.

1.1 THE 35mm CAMERA

Refer to Figure 1-3 while reading the following description.

1.1.1 Description

The camera consists of two parts: (1) the lens unit which mounts directly onto the photocopy unit and (2) the camera back or magazine which houses the film. When loading film into the camera, only the magazine is necessary.

1.1.2 ATTACHING THE UNITS

(Figure 1-4)

To attach the lens unit to the photocopy unit, hold the lens section firmly and, depressing the tabs on the right side of the camera (which pull the two prongs into the adaptors), insert the adaptors into the corresponding holes on the PCU as shown. Release the tabs to secure the prongs in place. The quick disconnect latch on the left side of the photocopy unit latches onto the pin on the camera to hold it firmly in place. To check the lens setting, only this latch needs to be released. The power control cable prongs fit into the receiver in only one direction on the right side of the lens unit. Push the plug in firmly and screw the fitting tightly in place.

To attach the camera back to the lens unit, slide the back into the horizontal grooves from the right side of the lens unit. Be certain to push the magazine in all the way to prevent possible blurring of color images. Attach the 6-pin connector on the bottom of the magazine to the receptacle on the bottom of the lens section. Screw firmly in place. Always be certain the dark slide (which fits in the left side) is covering the camera back aperture as in Figure 1-3 when the magazine is exposed.

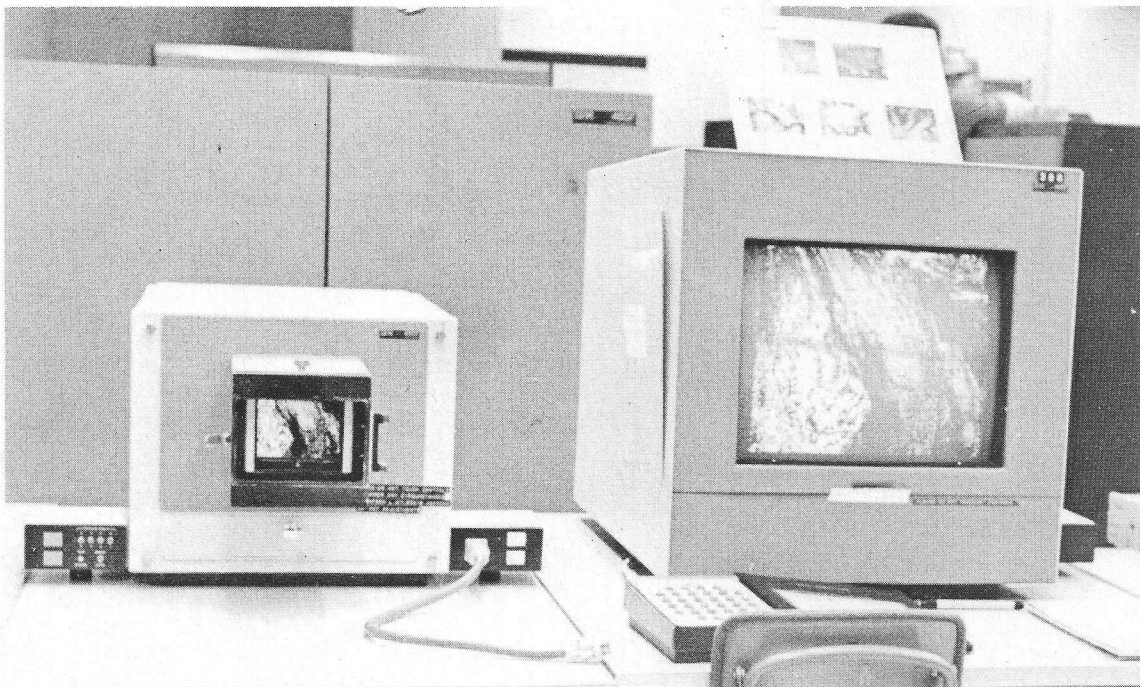
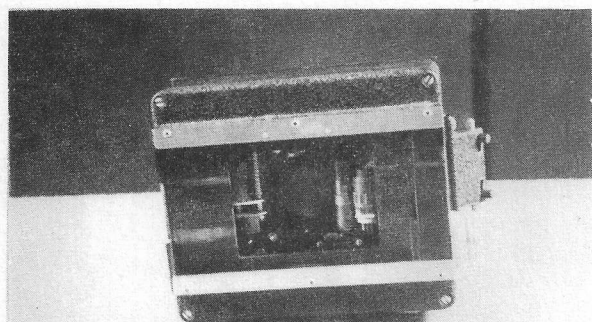


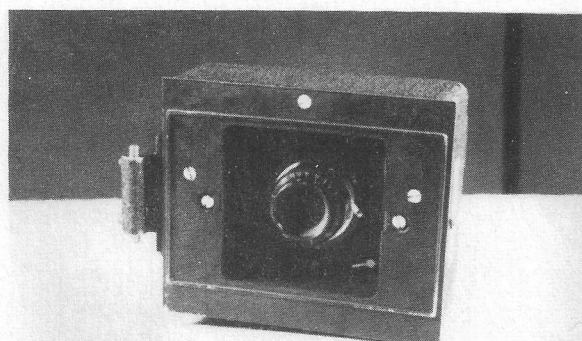
Figure 1-2
The Photocopy Unit

The Lens Unit

Back



Front



The Film Magazine

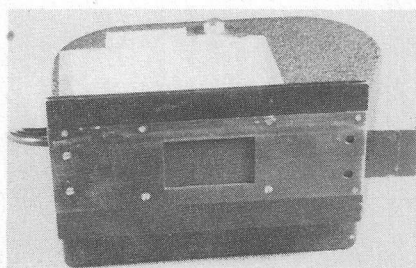


Figure 1-3
The 35mm Camera System

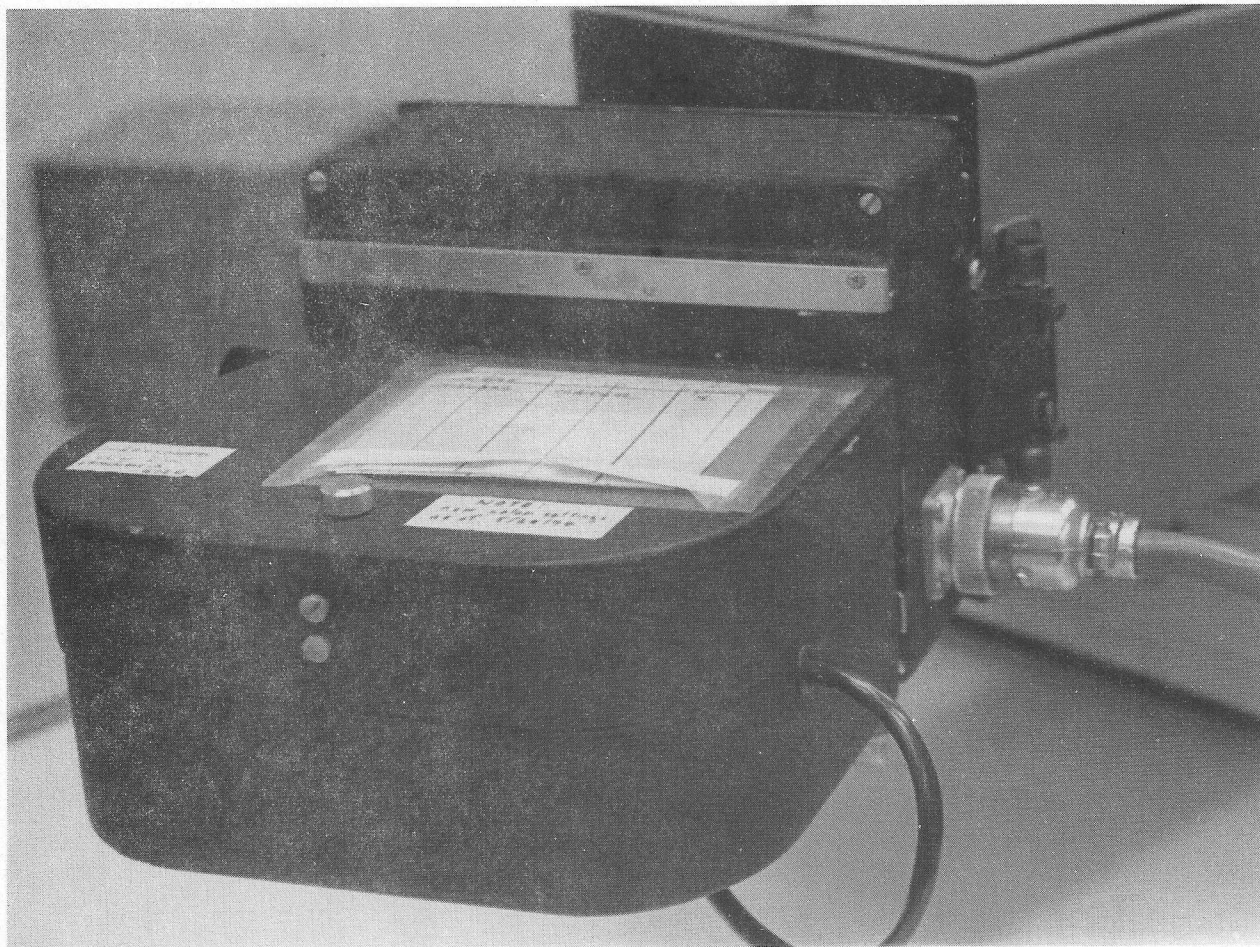


Figure 1-4
Attaching the 35mm Camera

1.2 THE POLAROID AND 4 x 5 CAMERAS

Refer to Figure 1-5 while reading the following description.

1.2.1 DESCRIPTION

There are five parts to the 4 x 5 system. They include: (1) the lens unit to which two different camera backs can be mounted; (2) the Polaroid Polapack camera back which holds eight-exposure packs of either black and white or color film or (3) the 4 x 5 single exposure back. This back can use either Polaroid film by means of (4) the Polaroid attachment, or 4 x 5 sheets of film using (5) the sheet film holder which can store two exposures at a time. Both types of film can be used to produce either black and white or color images.

1.2.2 ATTACHING THE UNITS

To attach the lens unit the same procedure is used as for the 35mm. To mount either the single film or the Polapack back simply slide the desired unit in place at the back of the lens section as for the 35mm. There is no electrical connector between the Polaroid unit and its camera backs.

1.2.2.1 THE SINGLE FILM BACK

To load either the single exposure Polaroid or sheet film into the film holder, slide the holder under the translucent plate on the right side of the single film back. This section is on a spring hinge which pulls up easily to admit the film holder and then automatically grips the holder firmly in place. Be certain the film holder is inserted all the way.

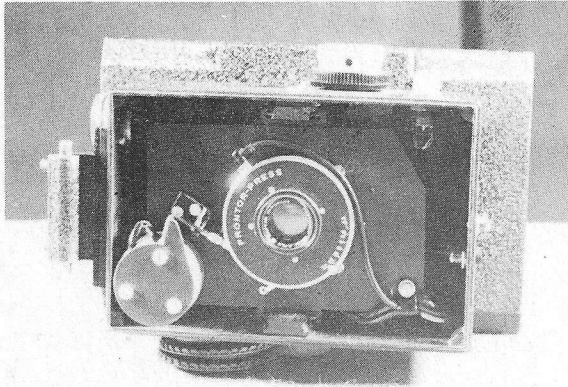
1.2.2.2 THE POLAPACK CAMERA BACK

To mount this magazine, pull back the tab key on the top of the camera back (See Figure 1-5) and slide the magazine into place on the lens unit as for the 35mm camera back. The notch on the lens unit should line up with the number 7 on the magazine. The tab should be released at this point thus locking the Polaroid back in place.

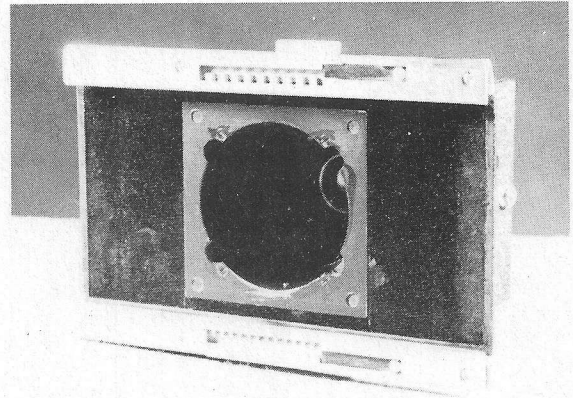
To load either color or black or white polapacks, push the tab on the bottom right hand side of the camera back to the left. This causes the film door to spring open. If an old cartridge is still in the back, remove it and simply slip in the new pack with the cardboard protected side facing toward the lens unit. Close the film door making certain that the black paper tab from

The Lens Unit

Front



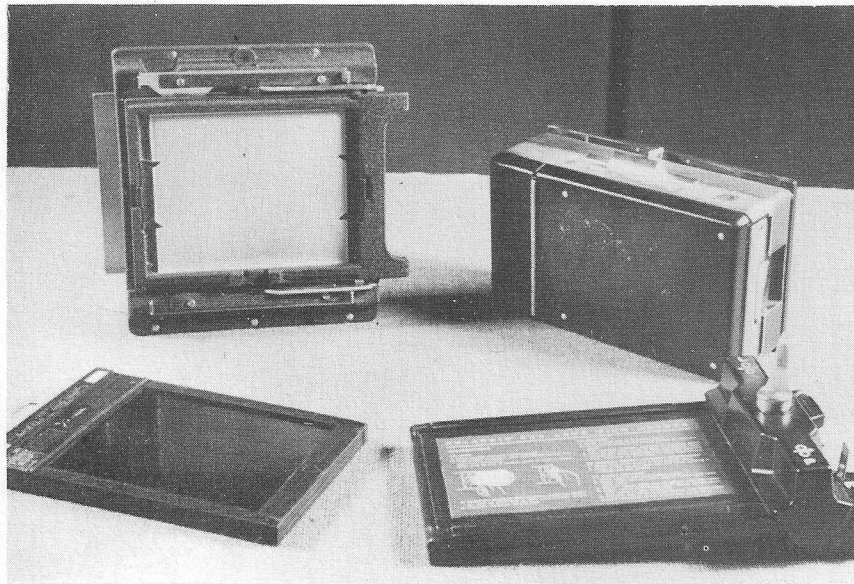
Back



The Magazine

4x5 Attachment

Polapack back



4x5 Sheet Film Holder

4x5 Polaroid Film Holder

Figure 1-5
The Polaroid Camera System

the film pack is protruding from the right side of the camera back. The door will click thus locking it into position. Pull the black tab out of the camera back. A white tab should appear in its place marked with the number "1" indicating the first exposure. The film is now ready to be used.

If you are switching the type of film, you may need to remove a partially used pack from the Polaroid back. Remove the film as you would an empty cartridge and place it in the film box provided near the display. The first exposure will be lost but the remaining are still good. You may also remove and keep your own unused portions in this manner, storing them with your name in the film box or keeping them with you.

In order to preserve the first exposure as well, it would be necessary to remove the old pack from the camera back in a darkroom or using the dark bag in the cabinet to the right of the terminal. The film pack must be placed into a light-free container until ready to load into the camera again under darkroom conditions.

2.0 THE FILM

This section discusses the kinds of film standard in usage for the digital display. Their availability and usage is also indicated.

2.1 BLACK AND WHITE

There are 5 types of black & white film generally available for use with the digital display. They are Plus X (35mm) standard Polaroid, pack and single exposure. Positive-Negative Polaroid (same types) and 4 x 5 sheet film. They are discussed below.

2.1.1. 35mm

35mm black and white film also known as Plus X, Pan Film or PXP, usually comes in 6 foot rolls consisting of approximately 36 exposures.

2.1.2. POLAROID

Polaroid film comes in two forms suitable for our camera system: the polapack and the single exposure film.

2.1.2.1. POLAPACK FILM

These packs consist of eight exposures each and may be obtained from the pictorial interface supervisor or the full-time senior computer operators. Film type 107 is generally used. This film produces immediate hardcopy imagery without any negative. However, there is a new film type (105) available which produces a high quality negative when a fixer is applied in addition to the hardcopy image as in type 107. The film and fixer may be obtained from the pictorial interface supervisor.

There may be film already in the camera before you go to take your pictures. In that case, you may finish the pack already in the camera. First you should check the white tab protruding from the right side of the camera to see what film type is in it. If you do not want the type of film in the camera, then the pack should be removed and your own film inserted. For polaroid polapack loading procedures, see section 1.2.2.2. It is advisable to obtain as many packs as you feel you may be using during a session (or over the weekend) in advance. Up to five packs may be requested at a time.

2.1.2.2. INDIVIDUAL POLAROID EXPOSURES

Single polaroid exposures of the same type as polapacks may be used. In addition, the special positive-negative film

(type 55) is also available in this form. It produces an instant hardcopy image as well as a negative for future use when a fixer is applied to it immediately after shooting it. Further information concerning this kind of film can be obtained from the pictorial interface supervisor.

2.1.3. SHEET FILM

4x5 sheet film is generally used instead of 35mm when only a few images are needed quickly. It also produces better enlargements (most noticeably 8x10s). Also, the original image is generally of better quality than 35mm. Both sheets should be used for the same image with the same settings so the photographic lab can under- or overdevelop the second if the first developed image is not at the right exposure. To have this film loaded, see one of the photographic staff or the pictorial interface supervisor.

2.2. COLOR

The types of color film available for regular usage on the display are: 35mm (Ektachrome-X), standard polaroid (pack and single exposure), and 4x5 sheet film (Ektachrome-X). These are discussed in detail in the following sections.

2.2.1. 35mm

The film commonly used is Ektachrome-X. Color transparencies, mounted in 2x2 slide form, are the resulting product. From them, enlarged prints of good quality can be made. This film may be loaded by the pictorial interface supervisor, the photographic staff or one of the trained computer operators.

2.2.2. POLAROID

2.2.2.1. COLORPACK FILM

Similar to the black and white polapack, this film produces eight 3 1/4" x 4 1/4" immediate hardcopy images. The advantage of the colorpack is an instant color picture which can serve as a check of your camera or color settings for image quality. However, no negative is produced for future work with the image. Also, the cost is high compared to 35mm film and processing. These film packs may be obtained from the pictorial interface supervisor or the full-time senior computer operators as with the black and white polapacks.

2.2.2.2. INDIVIDUAL POLAROID EXPOSURES

This film is basically the same as the eight exposure cartridge and is used as discussed for black and white film in section 2.1.2.2. It has the advantage of allowing one exposure at a time.

2.2.3. SHEET FILM

As with the black and white single exposures, this kind of film is used to produce higher quality (better resolution) images than the 35mm. The instructions and explanations are the same as for the black and white sheets (section 2.1.3.).

3.0. DIGITAL IMAGE PHOTOGRAPHY

This section discusses all the information needed to produce both black and white as well as color imagery using the digital display.

3.1. GENERAL PROCEDURES

3.1.1. SETTING THE F-STOP

(Figure 3-1)

Unlatch the hinge on the left side of the photocopy unit and check the lens to see if the F-stop is set to the number listed on the camera setting sheet posted on the digital display bulletin board. For the 35mm lens, the diamond on the second dial from the outside of the lens unit should point to the desired setting on the outer dial. Turn the outer dial to properly position the setting. Close the camera unit and secure the latch. For the polaroid lens, turn the dial until the desired setting is positioned beneath the arrow located at the lower right side of the dial.

3.1.2. SETTING THE REFRESHES

(Figure 3-2)

Check the exposure setting on the photocopy unit for the proper number of refreshes. The numbers are in binary code. The figure shows several examples of commonly used exposure settings. They range from 1 refresh (the first switch on the right pushed down and all other up), which is the shortest exposure time, to a maximum exposure length of 16 refreshes (all switches pushed up in the zero position).

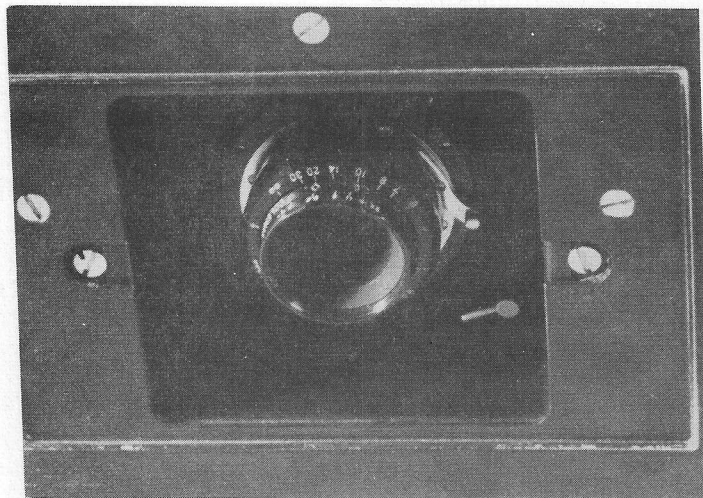
3.1.3. OTHER PHOTOCOPY UNIT CONTROLS

(Figure 3-3)

Located on the photocopy control box are the manual shutter and advance buttons as well as the film expose lamp and mode switch. Their functions are described below:

1. Shutter - Pressing the shutter button exposes the film for the amount of time determined by the number of refreshes selected. It is only pressed once for standard black and white pictures. For color images, multiple exposures are required. The number of exposures is posted on the wall by the display. The shutter and advance functions work independently of each other; therefore, it is possible to use as many shutter openings as necessary without advancing the film.

35mm



Polaroid

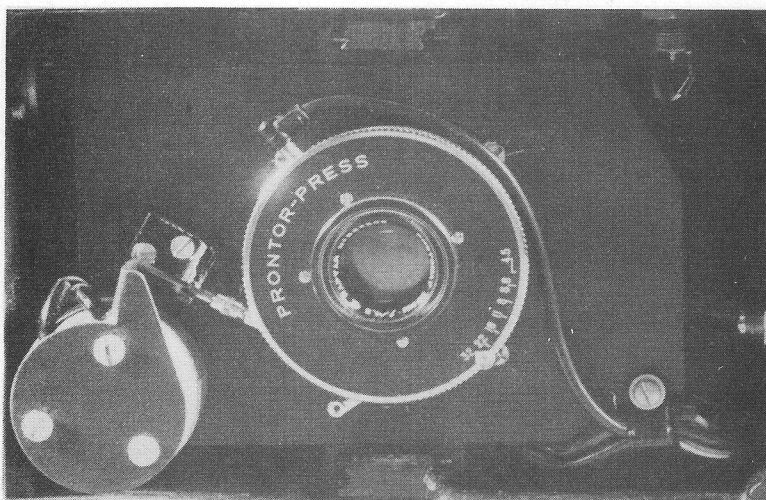
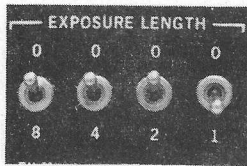
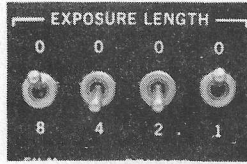


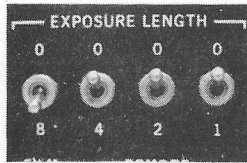
Figure 3-1
Setting the F-Stop



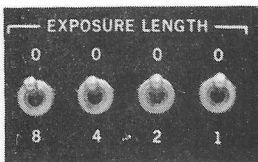
1 Refresh



6 Refreshes



8 Refreshes



16 Refreshes

Figure 3-2
Setting the Refreshes

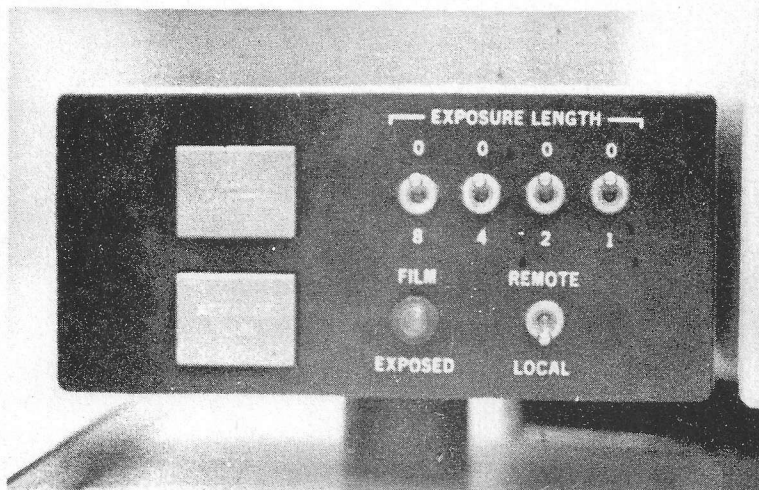


Figure 3-3
The Photocopy Unit Control Box

2. Advance - Once the desired image has been completed, the film must be advanced manually by pressing the advance button. This applies only to the 35mm film. The polaroid polapacks are "advanced" as described in section 1.2.2.2. The single exposure films need no advancing, but are simply removed after the exposure has been taken.
3. Film Exposed Lamp - After the shutter button has been pushed, the film exposed lamp glows. It will remain lit until the advance button is pushed. This serves as a check to see if your film has been advanced after each picture.
4. Mode Switch - In general, this switch should be set in the local position; otherwise, the camera will not operate. The only time the remote setting is used is when the PHOTO program is automatically operating the 35mm camera.

3.1.4. OPERATIONS CHECKLIST

When the desired image is on the screen, ready to be photographed:

1. Check your lens setting (F-stop).
2. Check the number of refreshes.
3. Be certain the camera and magazine are firmly locked in place.
4. Pull the dark slide (figure 1-3) out far enough to expose the film.
5. Insert color filters if necessary (see section 3.3.1.3.).
6. Be certain the filter holder door is secured.
7. Operate the shutter the required number of times.
8. Advance film when the image is complete. For color film, steps 5-7 must be followed three times (once for each filter-image combination) before the film is advanced.

3.2. BLACK AND WHITE PHOTOGRAPHY

This section gives a thorough description of the techniques involved in producing black and white digital imagery.

3.2.1. CAMERA USAGE

Camera settings are posted on the bulletin board by the digital display. The following sections give information about producing images for each of the various types of film and camera equipment used.

3.2.1.1. 35mm

Any picture taken within the F-stop range indicated should produce good results. See section 3.1 on proper settings. After each picture taken, please enter the appropriate information on a black and white film log sheet (see section 5.0).

3.2.1.2. POLAROID (POLAPACK OR INDIVIDUAL EXPOSURES)

The F-stop setting is approximate and may vary with different scenes. If a change in setting is needed, see section section 4.0 "How to Correct Under or Overexposed Images". After the shutter button is pressed, pull out the white paper on the right side of the camera. Start timing now. When time is up, pull the finished image away from the paper. Coat the image immediately using the grey tube of fixer enclosed with each pack. If a pack was previously loaded, the tube should be near the display. Allow sufficient time for the image to dry before storing (at least several minutes). Polaroid images are for your personal use. No record needs to be kept of them.

The individual polaroid films use the same settings as the polapack. However, the film is inserted into the individual polaroid holder (see Figure 1-5) following the procedure described on the polaroid holder. The holder is then loaded into the 4x5 camera back as for sheet film in section 3.2.1.3. The film is then ready to be used.

3.2.1.3. FILM SHEETS

Both sheets should be exposed to the same image using the same settings (see section 2.1.3.). To expose the first film, turn the L-shaped latch to release the dark slide nearest to the lens unit and pull that slide out. Notice that both slides have a silver edge on their right edge facing away from the center of the film holder. This implies that the film is unexposed. After you have removed the slide and pushed the shutter button, replace this dark slide with the silver edge toward the center of the holder (black edge facing out). By following this procedure, the photographic staff will know whether or not the film has been exposed.

To expose the second sheet, remove the film holder from the back and flip it over so that the unexposed sheet is facing toward the lens unit. Repeat the process followed for the first exposure. Turn the L-shaped latches on the right side of the holder to secure both slides. Return the film holder to the photographic lab for development. Be sure to leave your name, film type, and exposure information (F-stop, refreshes) with it.

3.3. COLOR ENHANCED PHOTOGRAPHY

This section gives a complete description of the techniques involved in producing color digital imagery from the digital display.

3.3.1. GENERAL PROCEDURES

Section 3.1 on general procedures applies to color imagery; however, the color process is somewhat more involved since three filter-channel combinations are necessary to produce one image. The following is an explanation of the special techniques involved in producing a color image.

3.3.1.1. THE THREE-STEP PROCESS

There are basically three stages involved in taking a single color image. These correspond to the three filter-channel combinations mentioned above. They are as follows:

- A. Blue Filter - A channel corresponding to the blue-green range of the spectrum is chosen to be displayed on the screens. In ERTS data, channel 1 (MSS band 4, .5-.6 micron) would be the proper channel. When the data is displayed, the blue filter is inserted and the shutter is operated the required number of times as described on the digital display bulletin board. The film is not advanced yet.
- B. Green Filter - A channel corresponding to the green-red range of the spectrum should be displayed as the filter is being loaded. Channel 2 (MSS band 5, .6-.7 micron) of ERTS data is used. The shutter should be pressed the required number of times.
- C. Red Filter - The same procedure is followed as for parts A and B using a red filter and a channel in the near infrared region of the spectrum. Either channel 3 or 4 of ERTS data (MSS bands 6 and 7, .7-.8 micron and .8-1.1 micron respectively) can be used.

After all three stages are completed, the film can be advanced. It makes no difference what order the three steps are done in as long as the proper filter-channel combination and corresponding shutter (exposure) settings are used.

3.3.1.2. THE F-STOP SETTING

The F-Stop will remain the same for all three sequences; however, it does vary between 35mm and polaroid photography. The proper settings are listed on the information sheet by the digital display. It may be necessary to revise these from time to time, so be certain to check them before each session.

3.3.1.3. THE FILTERS

(Figure 3-4)

To load the color filters into the camera unit, first check the dark slide to see that it is covering the aperture. Open the door on the top of the black photocopy unit mount by turning the latch and lifting. Inside you will see vertical grooves just wide enough for the filter casing to fit snugly inside. Remove the first desired filter from the wooden filter box and, gripping it by the handle on top, slide it down between the grooves until you hear it click in place. Screw down the lid securely. You are now ready to shoot the first channel.

3.3.1.4. THE ENTIRE COLOR IMAGE OPERATION

- A. Adjust the F-Stop and refresh settings as indicated.
- B. Pull the dark slide out as far as the vertical etched line (approximately 6 inches).
- C. Display a channel of data while inserting the proper filter.
- D. Press the shutter button the required number of times for this channel.
- E. Remove the filter.
- F. Enter the next channel of data and repeat steps C through E.
- G. After all three channels have been photographed, advance the film.

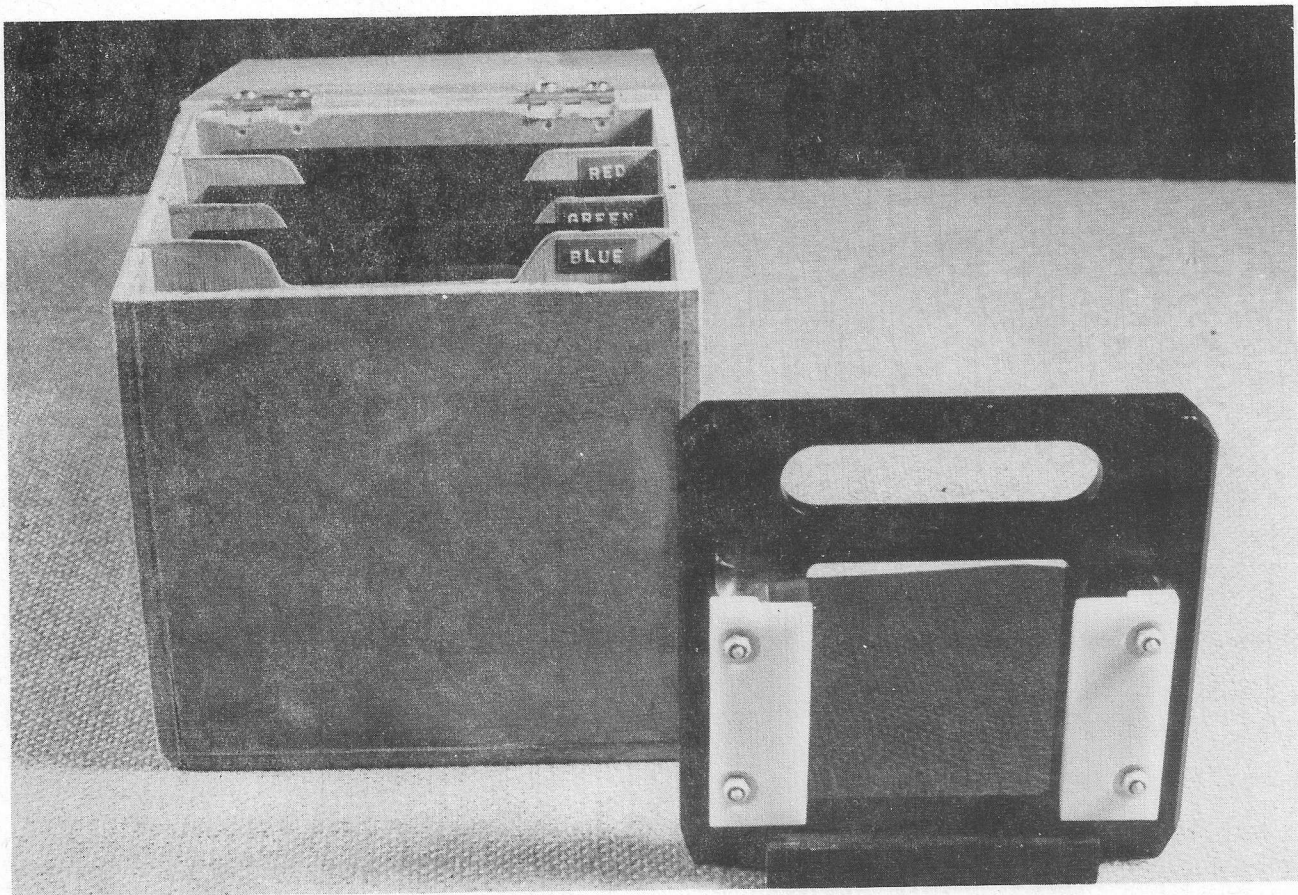
During this operation, it is very important that the camera unit (particularly the film magazine) is not jiggled or moved any more than necessary. If the film is displaced at all from its position at the beginning of the process, the final image will be blurred.

3.3.2. PHOTOGRAPHING CLASSIFICATION RESULTS

There is a separate program for photographing classification results known as PHOTO. For complete instructions regarding the operation of this program, see LARS Program Amendment 649.

The basic photography for PHOTO is no different from the procedure for color enhanced images. Any of the camera units can be used. However, instead of specifying a certain channel to be displayed for each filter, the program will display automatically an appropriate grayscale for each filter to produce the colors which you specify for each class of your results. The possible colors and corresponding numbers are on the information sheet by the display.

Filter Box



Filter Holder

Figure 3-4
The Color Filters

Under the PHOTO program, the 35mm camera can be used either manually, as for regular color enhanced images, or automatically, where the program operates the shutter and advance buttons. When the automatic sequence is used, the mode switch on the photocopy control box (see section 3.1.3., number 4) must be set to remote. For all other cases, the local mode is used.

3.3.3. CAMERA USAGE

Camera settings are posted on the bulletin board by the digital display. The following sections give information about producing images for each of the various types of film and camera equipment used.

3.3.3.1. 35mm

Using the color procedure given above, refer to section 3.2.1.1. for proper usage of the 35mm camera. For each image taken, be certain to enter the appropriate information in the color 35mm film log, section 5.0. Also be certain to mark the total number of exposures used on the exposure sheet on top of the film magazine.

3.3.3.2. POLAROID (COLORPACK AND INDIVIDUAL)

Following the preceding color procedure, refer to section 3.2.1.2. for proper usage of the polaroid equipment. No coating is necessary for the color polaroid images. You may also find it helpful to read about proper development time in the colorpack instructions.

3.3.3.3. FILM SHEETS

Follow the same procedure described for 35mm color film. Also, read section 3.2.1.3. on loading and exposing sheet film.

4.0 HOW TO CORRECT UNDER- OR OVEREXPOSED PICTURES

For 35mm imagery, the settings listed on the digital display bulletin board should hold for all imagery. However, if by using these settings, your images seem to be improperly exposed, please bring them to the pictorial interface supervisor.

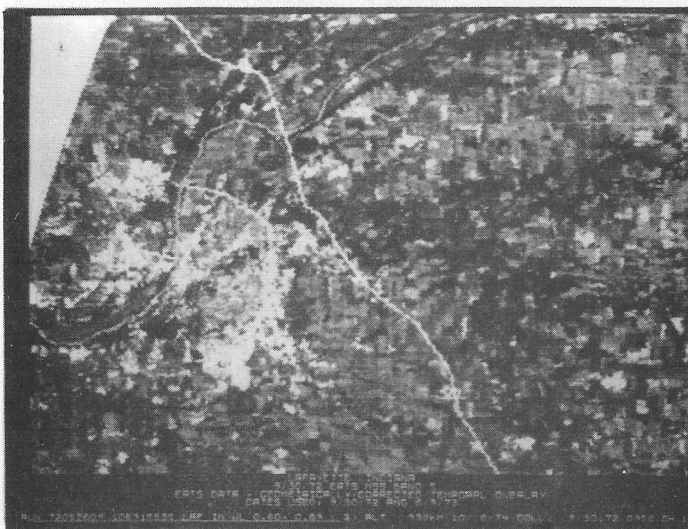
For polaroid pictures, the exposures required may vary from one scene to another. As figure 4-1 shows, if your image is too dark, or underexposed, set the F-stop to a slightly lower number. For example, if the original setting was $f32^+$ (example A), try resetting it to $f32$ (example B). If the image is too light, or overexposed, (example C) change the setting to a higher number for the correct exposure. The proper setting should fall between $f22$ and the highest setting possible, beyond $f32$. If your image must be exposed beyond this range, please contact the pictorial interface supervisor.

Poor results may also be caused by a faulty pack of film, in which case you should contact the pictorial interface supervisor to be reimbursed for the pack.

Example A
Underexposed
Setting: *f32+*



Example B
Correct Exposure
Setting: *f32*



Example C
Overexposed
Setting: *f22*



Figure 4-1
Correcting Polaroid Image Exposures

5.0 THE 35mm PHOTOGRAPHIC LOG

(Figures 5-1 and 5-2)

In order to keep a permanent record for LARS for all 35mm digital display imagery, please complete the form sheet devised to be used when taking photographs. This sheet requests all information pertinent to other users referring to the logs.

There are two kinds of sheets, one for color imagery and the other for black and white. The top of each sheet (the top of each half-sheet for the color log) requests basic information concerning a given run. All exposures listed under this heading should be on this particular tape and file. For each different run photographed, please use a separate sheet. Carbon paper is included with each tablet so that you can make a copy for your own record. On these sheets, an effort has been made to incorporate all information which a user would normally wish to mark down for his own reference. In this manner, there should be a minimum of additional information which a person might wish to include.

When the user's session at the terminal is finished, the log sheet(s) should be slipped into the 35mm Photographic Log envelope on the left side of the digital display unit. If only one half of a color log sheet is used, tear off the used part along the perforation and slip it into the envelope.

The total number of exposures listed on the sheet attached to the camera back must still be provided. This number serves two purposes: it insures that you lose no pictures due to being too close to the end of the film, and it facilitates processing.

The following is a brief description of some of the information requested on the sheets:

IMAGE LOCATION - state, nearest town, region, etc.

AREA HISTOGRAMMED - (lines, columns) only if information is readily available.

CLASSIFICATION RESULTS - serial applies only to LARSYS Version 2.

SCENE FEATURES - examples: farmland, mountains, prominent towns or roads, water bodies.

DATA CONDITIONS - indicate bad data by channel, may also include here cloud cover or other such pertinent data.

AREA DISPLAYED - (lines and columns)

COMMENTS - these may include additions to SCENE FEATURES and DATA CONDITIONS or any other information deemed pertinent for Black and White only.

CH - channel being used.

F/REF - F-Stop

COLOR 35mm FILM LOG

DATE 9/20/74 PROJECT Sample USER Wilson ERTS SKYLAB OTHER
 RUNN 72053600 IMAGE LOCATION Lafayette Indiana AREA HISTOGRAMMED 1,500, 10 1,500, 10
 (Classification Results V3: TAPE FILE V2: SERIAL)

| SCALE* | SCENE FEATURES | DATA CONDITIONS | AREA DISPLAYED | | COMMENTS |
|--------|-----------------------|---------------------|----------------|-----------|--------------------------|
| | | | LINES | COLUMNS | |
| 1/1 | Wabash R. I. 65 SR 52 | Ch 6 line stripping | 1,500 | 1,765 | cloud free |
| 1/1 | W. Lafayette + haf | " | 1,500 | 765, 1500 | high contrast |
| 1/4 | " | " | 100,400 | 100,480 | good images all channels |
| 1 | blank advance | | | | ch 1, 2, 3 used |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

4 Total number of frames advanced (include blank frames)
 * (Data Point/Pixel)

COLOR 35mm FILM LOG

DATE 9/20 PROJECT Sample USER Wilson ERTS SKYLAB OTHER
 RUNN 72053608 IMAGE LOCATION Lafayette Indiana AREA HISTOGRAMMED and same as displayed
 (Classification Results V3: TAPE FILE V2: SERIAL)

| SCALE* | SCENE FEATURES | DATA CONDITIONS | AREA DISPLAYED | | COMMENTS |
|--------|------------------------|-----------------|----------------------------|---------|--|
| | | | LINES | COLUMNS | |
| 1/4 | Wabash River Lafayette | good | most of available data set | | Geometrically Corrected and Temporally overlaid for 9/30/72 and 6/9/73 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

1 Total number of frames advanced (include blank frames)
 * (Data Point/Pixel)

Figure 5-2
 The 35mm Color Log - Sample Sheet

6.0 DEVELOPMENT AND PROCESSING

This section applies only to the 35mm and 4 x 5 sheet film since polaroid exposures require no additional processing. The discussion below applies to both black and white and color film.

6.1 35mm

The film is regularly taken from the camera and sent to the photographic lab at Flexlab I for development. This occurs when:

1. The end of a roll of film is reached,
2. When the type of film is due to be changed according to the 35mm film schedule posted by the digital display, and
3. When a user requests a film change or requires immediate development.

Development is usually done after several rolls (either of color or black and white film) are ready to be processed. This includes all other photography for the lab in addition to digital display imagery. Every effort will be made to process color on every Friday afternoon. Black and white film will be processed according to the photographic staffs' scheduling. In an emergency, if a user needs immediate processing of some imagery, he must first see the head of the photographic staff to find out how soon development can be done. Then, if the roll of film needs to be taken out of the camera prematurely, the user should have it done by either the pictorial interface supervisor or one of the trained computer operators.

Once the film has been developed, it will be divided according to the users who took the images (following the exposure sheet); Color film will be mounted in slide form at this point and black and white negatives placed in sheet holders. These products will then be returned to the user. If your imagery has not been forwarded to you within a week and a half after taking it, or if the wrong pictures have been forwarded to you, please contact the pictorial interface supervisor. A copy of the 35mm log sheet would be of use to the pictorial interface supervisor in locating your imagery if any problems should arise.

6.2 4 x 5 SHEET FILM

After photographing the two images per film holder, attach a piece of tape to each holder with your name, user ID and date on it. It should then be returned to the photographic lab for processing. Be certain the latches are holding the slides in place and that the silver edge of each slide is facing in.

If the images have not been returned to you within one week, please contact one of the photographic staff.

6.3 FURTHER PROCESSING

If, after receiving your imagery, you wish to have duplicates, prints, enlargements, or any other product made from them, please obtain a work order through the photographic staff.

DIGITAL DISPLAY -- PHOTOGRAPHIC PERSONNEL (October, 1974)

Computer Operations Manager

Bill Hockema

Pictorial Interface Supervisor

Leslie Wilson

Photographic Department

Dick Mroczyński - Chief

Joe Brickler

Full-Time Senior Computer Operators

Mike Collins

Doug Shields

Computer Operators trained to handle
the digital display camera equipment

Mike Collins

Bruce Eisert

Steve Frick

Wayne Kinney

Thad Pritchett

Doug Shields

Chuck Smith

Robin Steel