

***Nikon***



*Photomic* - **T** **Finder**

**SUPPLEMENT TO INSTRUCTIONS**

# CONTENTS

1. General photography . . . . .	2
2. Close-ups . . . . .	11
3. Copying . . . . .	13
4. Slide copying . . . . .	17
5. Photomicrography . . . . .	19
6. General precautions . . . . .	22

# 1. General Photography

The Photomic-T Finder, which permits viewing the picture field covered by the lens being used and at the same time measuring the average brightness within the picture field, will assure photographers of the correct exposure in almost all situations. However, in special cases where the picture field includes an unusually bright light source or where a noticeably brighter or darker area than the main subject to be photographed, occupies  $1/3$  or more area in the viewfield, the measurement will unavoidably be influenced by such a condition, so that a correct exposure cannot be obtained for the intended subject.

In order to get proper results some compensation will be necessary, while the exposure is being measured. This compensation is especially important when color slide film is used.

Fortunately, in the Photomic-T Finder Through-The-Lens system, the extent of the exposure measurement coincides exactly with the picture field. Consequently, there is no difficulty in performing such compensation.

If the photographer has no intention of taking pictures of the sky, snow or any other light source itself as the main subject, the compensation is as follows:

- ◆ When a bright area, for example, the sky, snow, a white subject, a window viewed from the interior, etc. or a dark area, for example, a shadow, a black surface, etc. occupies more than  $1/3$  of the picture field, move the camera, or get closer to the subject, so that in either case such an area is reduced to less than  $1/3$  of the whole finder viewfield. Set the exposure by centering the meter needle and then resume your original position and view.

- ◆ **When any intense light such as of the sun, incandescent or fluorescent lamp, etc. is included in the picture field, it is necessary for the same reason as before, to deflect the direction of the camera or to approach the subject to be photographed, so that such a light source may not appear in the finder field while the exposure is being measured.**

In the following examples you will find a sufficient explanation of the above described compensation methods.

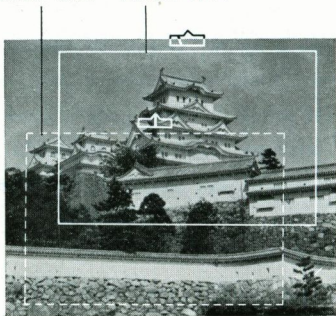
## Examples :

### ◆ Deflecting the direction of the camera

In the illustrations here the areas outlined by the dotted lines show the finder view-field changed so as to cover less than 1/3 of the unusually bright or dark part or to exclude the light source from the viewfield during the exposure measurement.

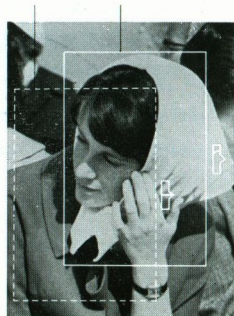
#### A. Area of the sky

Measurement area    Picture area



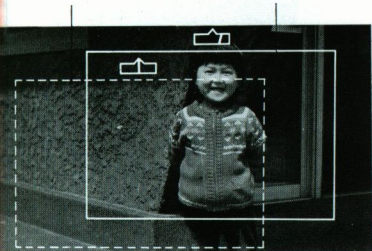
#### B. Bright area

Measurement area    Picture area



C. Shaded area

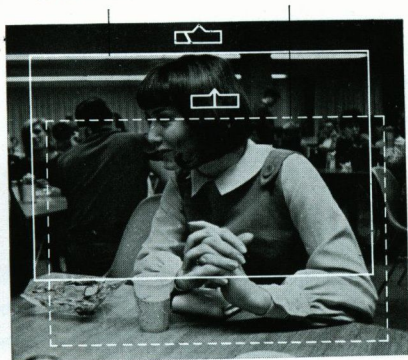
Measurement area      Picture area



D. Fluorescent light

Picture area

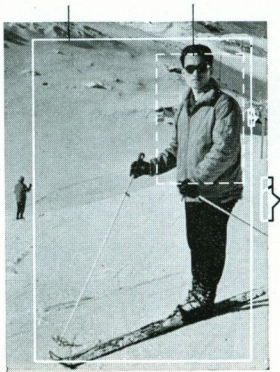
Measurement area



◆ Approaching the intended main subject

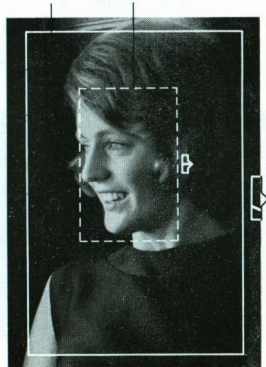
E. Area of snow

Picture area Measurement area



F. Black area

Picture area Measurement area



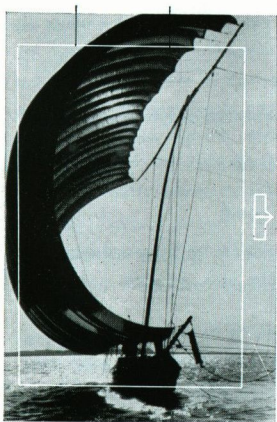


## ◆ Special cases:

To photograph a silhouette, however, in against-the-light photography, there is no need for such compensation as mentioned heretofore. See the example G.

G.

Picture area    Measurement area

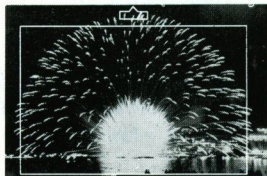


## Examples of other cases

- H. Film speed: ASA 100  
Shutter speed: 1/30 sec.  
Aperture of lens: F/2.8



- I. Film speed: ASA 100  
Shutter speed: Bulb  
Aperture of lens: F/5.6



## **Some substitutive methods**

If the subject cannot be approached for any reason, one of the following substitutive methods may be used:

### **◆ Choosing another nearby subject**

If there is any nearby subject of about the same brightness, that is, illuminated the same way by the same light source, point the camera toward this, only during the exposure measurement. For example, when making a portrait in the sunshine against the sky, but the person to be taken cannot be approached close enough, center the meter needle while pointing the camera toward another person who stands or is placed near the photographed, under the same lighting conditions.

### **◆ Measuring the brightness of the palm of your hand**

Keeping the camera pointed in the direction of the subject to be photographed, place your hand in front with the palm faced toward the lens, so that only your palm fills the viewfield of the finder.

It is not necessary to focus the lens to the palm. But it is important that the palm is illuminated exactly the same way as the subject to be photographed. For example, when the subject is in the shade, the palm should also be in the shade.

However, since the palm usually reflects a little more light than general subjects, exposure measured in this way will result in slight underexposure. Therefore, the measured exposure should be increased by one stop, in other words, by using the next slower shutter speed or by opening the lens aperture one stop wider.

#### ◆ Measuring the brightness of any white subject

Instead of the palm of the hand, a white subject such as white paper or white handkerchief can be used. Place it in front of the lens, so as to fill the finder viewfield. In this case the measured exposure should be increased by two stops.

See the example E on p. 7. The correct exposure for the person in the snow has been obtained by increasing the measured exposure by two stops.



## 2. Close-Ups

To determine the correct exposure in close-up photography, that is, closer to the subject than the closest focusing distance of the lens on the camera, proceed as follows, using the Nikon close-up attachments listed below :

- Close-up Attachment Lenses
- Extension Ring Model E2
- Extension Ring Set Model K
- Bellows Focusing Attachment



With the Close-up Attachment Lenses attached on the front of the camera lens, the regular full-aperture measuring method is used in the same way as where no attachment lens is used.

With the Extension Ring E<sub>2</sub>, Extension Ring Set K or Bellows Focusing Attachment, the exposure is determined by the stop-down measuring method.

There are, in addition, lenses specifically designed for close-ups: Micro-Nikkor Auto 55 mm F/3.5 and Nikkor 135 mm F/4 with short mount. For determination of the correct exposure with the Micro-Nikkor Auto in close-ups, refer to the "Instructions for Using Nikon F Photomic-T" and the "Instructions for Using Photomic-T Finder". This lens permits from infinity down to the distance for 1/2 reproduction ratio. By adding the extension ring M between the lens and the camera, reproduction ratios up to 1× are obtained.

The Nikkor 135 mm F/4 is designed for exclusive use on the Bellows Focusing Attachment and permits focusing from infinity down to the distance for the reproduction ratio of 1×. To attach the lens to the Bellows, adapter tube BR-1 is required.

### 3. Copying

Originals to be reproduced may generally be classified into two types:

Class 1. photographs, pictures and continuous tone materials,  
all with some tonal gradations.

Class 2, documents or line drawings with little or no gradation  
and therefore of strong contrast.

#### ◆ For Class 1 (originals with gradations)

Determine exposure in the same way as in general photography.

#### ◆ For Class 2 (originals of strong contrast)

It is a basic principle that the exposure measurement is performed by a material with the white area by far larger than the dark, and at the same time with the following compensation. Therefore, no matter whether document or line drawing has a white or black ground, the measurement should be made by a material with black figures or letters on the white ground.

The compensation is made by increasing the exposure (see the table on p. 15). It is convenient to bring the maximum aperture figure (when the full-aperture measuring method is used) or the red dot (when the stop-down measuring method is used) on the max. aperture scale to a film speed number (ASA) decreased by as many marks as shown in the parentheses in the table, before determining exposure.

If this range of compensation, however, should extend beyond that of the ASA dial scale, use an alternative means, that is, to enlarge the aperture of the lens or lower the shutter speed by as many stops as shown on the next page meter needle is obtained.

Film	Color reversal, Color negative, Panchromatic generally used
Increase of exposure (Decrease of film speed)	Increase $1\frac{1}{2}$ stops (Decrease 4 marks)

For example, when a film with a film speed ASA 100 is used, the figure 40, that is 4 marks smaller, is to be set. Then, center the meter needle to determine exposure.

Furthermore, refer to the precautions given on p. 22.



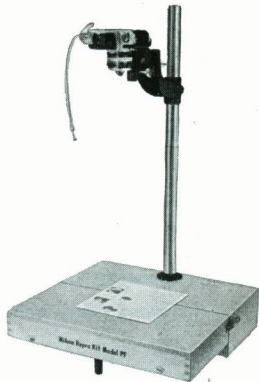
### ◆ Apparatus useful for copying

The Nikon Repro Kit Model PF, as illustrated, is a convenient accessory.

The best lens for copying purposes is the Micro-Nikkor Auto 55 mm F/3.5. It is not recommended to use the normal lens Nikkor Auto 50 mm F/1.4 or 55 mm F/1.2, or 58 mm F/1.4, but rather the Nikkor 50 mm F/2, because of its higher image quality insofar as close-ups are concerned.

No extension ring or close-up attachment is needed for the Micro-Nikkor Auto 55 mm F/3.5.

Since the normal lens such as 50 mm F/2 does not permit a reproduction ratio larger than 1/10, when used alone, extension rings or close-up attachment lenses are required for copying in general.



## 4. Slide Copying

Slide copying is the making of reproductions from original slides or negative films.

◆ **Determining exposure for reproducing images with continuous tone gradations (ordinary photographic films)**

Determine exposure in the same way as in general photography.

◆ **Determining exposure for reproducing images with strong contrast (documents or line drawings)**

In the same way as in the reproduction of photographic prints (see above) the following compensation depending upon the slide to be copied is necessary.

When copying a slide with transparent ground

Film	Color reversal, Color negative, Panchromatic generally used
Increase of exposure (Decrease of film speed (ASA))	Increase 1 1/2 stops (Decrease 4 marks)

When copying a slide with transparent figures or letters on the dark ground

Film	Color reversal, Color negative, Panchromatic generally used
Decrease of exposure (Increase of film speed (ASA))	Decrease 1 1/2 stops (Increase 5 marks)

Furthermore, refer to the general precautions given on p. 22.

◆ **Apparatus required:**

The use of the slide copying adapter in conjunction with the Bellows Focusing Attachment (see p. 11) is recommended. Depending upon the lens being used, the magnification range will be different. For full details, refer to the "Instructions for Using Nikon Bellows Focusing Attachment"

## 5. Photomicrography

### ◆ Determination of exposure in photomicrography

Move the aperture pin at the bottom of the Photomic T Finder to the right until it clicks in position, the figure 1.4 appearing in the aperture window of the Finder.

Center the meter needle, by turning the shutter speed dial on the camera or changing the brightness of the illumination. Make compensation by increasing the exposure as follows.

Film	Color reversal, Color negative, Panchromatic generally used
Increase of exposure (Decrease of film speed (ASA))	Increase 1~2 stops (Decrease 4 marks)

It is furthermore necessary when using the Microflex FMF, to make the microscope image visible in the finder viewfield of the camera, while the exposure is being measured. After determining the correct shutter speed, set this speed on the shutter of the Microflex FMF. Since the Photomic-T Finder has no provision for a "T" shutter setting, use a cable release, with the shutter speed on the Photomic-T Finder set at "B-2".

#### ◆ Apparatus to be used

The three photomicrographic attachments as indicated in the table (see next page) are available for use on the Nikon F camera. For low magnification, the use of the C-type finder screen is recommended.

Photomicrographic attachments	Microscopes	
	Nikon products	Others
Nikon Microflex model FMF	Model-S microscope with trinocular or vertical monocular eyepiece tube, Stereoscope microscopes, Polarizing microscope(POH)	Biological microscopes with vertical eyepiece tube with standard outer diameter of 25 mm.
Microscope Adapter for Nikon F (for low magnification)	Same as above	Same as above
	Note : When using a high eyepoint eyepiece, the universal eyepiece adapter and the connecting ring are required.	
Nikon Macrophotographic Equipment (for low magnification)	Microscope model S or model S-Ke	

## 6. General Precaution in Copying and Photomicrography

- When using a color reversal film which generally has a narrow latitude, it is recommended that another picture, at least, be taken in addition to the one exposed according to the previous description.

When the subject gives a somewhat brighter impression, take another picture with one stop more exposure.

On the contrary, when the subject is of a darker nature, take another picture with one stop less exposure.

- The micro-copying film (not cited in the previous description) gives in general various results depending upon the emulsion number and other variable factors such as type of developer, time, temperature of development, etc. In this case it is advisable to make trial exposures.
- In order to minimize vibration, use of a cable release is advisable. At high magnification where no vibration is permissible, exposure can be made by switching the illuminator on and off, instead of using the shutter in the camera.
- For further details on the Nikon close-up attachments heretofore mentioned, refer to their instructions supplied with them.



**NIPPON KOGAKU K.K.**

**TOKYO, JAPAN**

**Printed in Japan**

(66. 6. AO) B