

**Honeywell  
Auto/Strobonar 460**

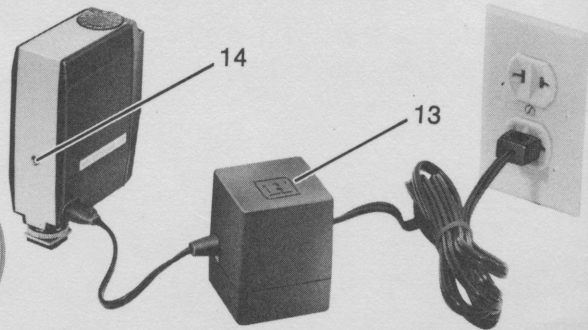
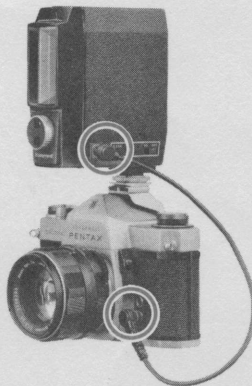
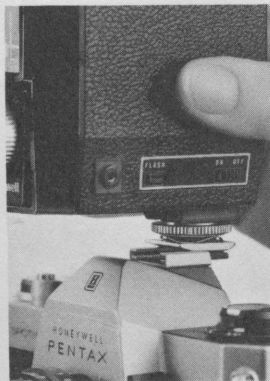
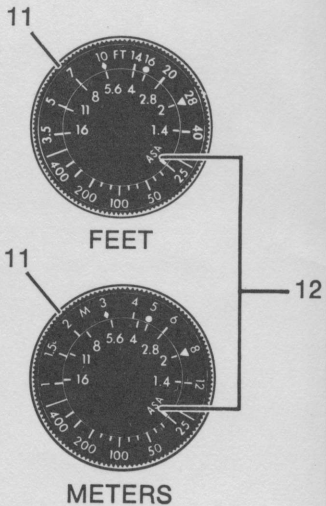
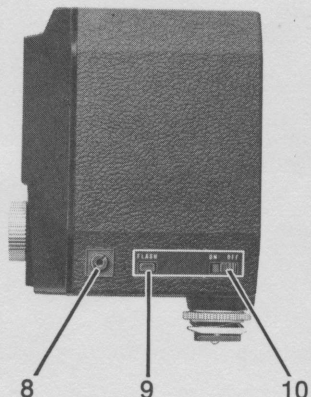
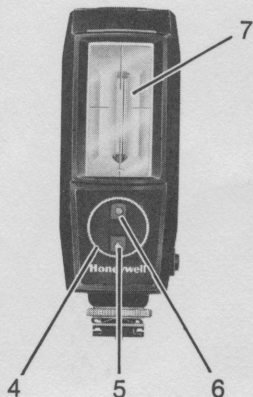
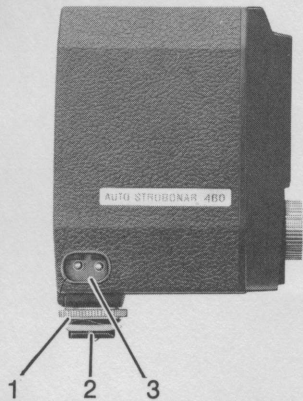
*23 Dec 1960 - Jerusalem*

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## Open this flap

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## Nomenclature

1. Mounting foot
2. Center contact
3. Charger receptacle
4. Automatic selector knob
5. Automatic range symbols
6. Automatic sensor
7. Lens
8. Shutter cord receptacle
9. Open flash button
10. Battery switch
11. Calculator
12. ASA index
13. Rapid charge unit
14. Ready light

A manual containing instructions in English, French, German and Spanish languages may be obtained by writing to the address below.

Pour obtenir le manuel contenant le mode d'emploi en anglais, en français, en allemand et en espagnol, prière d'écrire à l'adresse ci-dessous:

Ein Handbuch mit den Anweisungen auf Englisch, Französisch, Deutsch und Spanisch ist auf Wunsch erhältlich. Diesbezügliche Anfragen bitte an folgende Adresse richten:

Puede solicitarse un manual de instrucciones en alemán, español, francés e inglés escribiendo a la siguiente dirección:

### **HONEYWELL INC.**

Photographic Products Division  
Customer Services

P.O. Box 1010

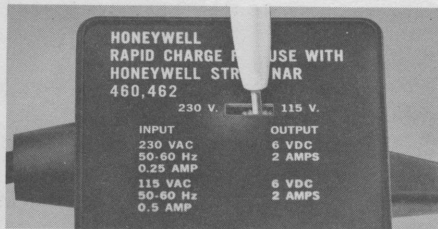
Littleton, Colorado 80120 U.S.A.

# Know your Auto/Strobonar

<b>Power Source</b> .....	<b>Flash Speed Automatic</b> .....
..... Rechargeable, nickel	..... 1/70,000 to about 1/3,000 second
..... cadmium batteries	<b>Flash Speed Manual</b> .....
<b>Charger Input Voltage</b> .....	..... about 1/3,000 second
..... 104 to 129 VAC, 50-60 Hz	<b>Recycle Time</b> .....
..... 208 to 258 VAC, 50-60 Hz	..... Less than 9 seconds to ready
<b>Battery Conditioning</b> .....	..... light with charged batteries
..... (Before first use) Charge for 3 hours	<b>Angle of Coverage</b> .....
<b>Flashes per Charge (Average)</b> .....	..... 50 degrees horizontal and vertical
..... 10 after 5 minutes of charging	<b>Color Temperature</b> .....
..... 25 after 20 minutes of charging	..... Approximately noon daylight
..... 50 after 2 hours of charging	<b>Automatic Sensor Measuring Angle</b> .....
..... 60 after 3 hours of charging	..... about 20 degrees
<b>Guide Number</b> .....	<b>Shutter Synchronization</b> .....
..... Automatic .....	..... Between-the-lens shutters .....
..... Not applicable	..... X-sync all speeds
..... Manual (English) .. 56 for ASA 25 film	..... Focal plane shutters .....
..... Manual (Metric) .. 17.1 for ASA 25 film	..... X-sync — usually 1/60 second.
<b>Automatic Setting — Choice of Three Lens</b>	<b>Shutter Cord</b> .....
<b>Settings for each Film Speed</b> .....	..... 12 inches (30 cm) long with
..... For Example: ASA 25, Choice of	..... interchangeable PC (DIN) connector
..... ◆f/5.6, ●f/3.5 or ▲f/2.0	<b>Weight</b> ... Less than 13 ounces (370 grams)
<b>Automatic Shooting Ranges</b>	<b>Size</b> ..... 3.4" deep x 1.6" wide x 3.9" high
<b>(All Film Speeds)</b> .....	..... (4.6" including foot)
..... when set at:	..... 86.3mm deep x 40.6mm wide x 99mm
..... ◆-2 to 10 feet — .6 to 3 meters	..... high (116.8mm including foot)
..... ●-3 to 16 feet — .9 to 5 meters	
..... ▲-4 to 28 feet — 1.2 to 8.5 meters	

## First – Set charger voltage

Your Honeywell Rapid Charge unit can be used to charge the built-in nickel cadmium batteries on either 115 volt AC (standard U.S.A.) or 230 volt AC (many European and other countries). Set the charger voltage selector on the bottom of your rapid charge unit to match the line voltage you will use. Use a ballpoint pen or similar object, position in the slots as shown, to set the voltage selector.



**CAUTION:** The charger voltage selector must be set to the voltage you are using to prevent damage to your charger.

A wall outlet AC adapter may be necessary in some countries to adapt the two-prong plug on your charger to the AC wall outlet. The adapter may vary from country-to-country or within a particular country.

## Before you use your unit the first time

Charge the nickel cadmium batteries for three hours and form the storage capacitor.

**To charge**, set the voltage selector as described above. Connect the charger as shown on page 3 and set the Battery switch (10) to OFF.

**To form the capacitor**, set the Battery switch (10) to ON, and fire the flash about 5 times by pressing the Open Flash button (9). Wait about 30 seconds between flashes.

**NOTE:** When operating the charger at 90 to 100 volts AC (Japan), set the Voltage Selector to 115V. The number of flashes per minute of charge will be less than shown in the chart on page 7.

## Use your unit frequently

Your Auto/Strobonar thrives on frequent use. Use it often. If you can't, charge the batteries and form the capacitor as described on page 6 at least once every 30 days. If you don't use your 460 for several weeks, it is normal for the batteries to lose some of their charge and the storage capacitor to deform. A deformed capacitor causes longer recycle time for the first few flashes and less flashes per battery charge. If you are in a hurry, form the storage capacitor by using your Auto/Strobonar in your photographic situation. Just remember that your recycle time will be longer for the first few flashes.

## Battery Charging

The Honeywell battery saving circuit lets you charge the batteries for weeks without damage. It is good practice to charge the batteries after each use. Always recharge batteries if the ready light (14) takes 30 seconds or longer to turn on. Above all, try at least once every 30 days to charge the batteries.

Minutes of Charge	5	10	20	30	45	60	120	180
Flashes (Average)	10	15	25	30	36	40	50	60

The batteries degrade when they are not charged periodically or if they are stored at temperatures above 95 degrees Fahrenheit (35 degrees Centigrade). Therefore, always charge the batteries for at least 24 hours if you are not getting the number of flashes listed in the chart above. The 24-hour charge conditions the batteries for normal rapid charge use.

**ALWAYS DISCONNECT** the charger from your Auto/Strobonar when you have completed charging. This is required to keep the batteries from discharging needlessly through the circuitry in the charger.

**AVOID STORING OR CHARGING** your Strobonar at temperatures in excess of 95 degrees Fahrenheit (35 degrees centigrade). To do so will cause the batteries to accept a limited charge in the times recommended (see page 5). To obtain normal battery operation again, charge for at least three hours at temperatures below 95 degrees.

**WARNING:** Do not operate your Auto/Strobonar if the ready light takes 30 seconds or more to glow. To do so may damage the batteries. Charge the batteries and then operate your Auto/Strobonar.

## Attaching to camera

If your camera has a built-in accessory shoe, mount your Strobonar to the accessory shoe and tighten the knurled nut on the mounting shoe. Cameras equipped for cordless flash have a center contact in the accessory shoe. In this case, there is no need to connect the shutter cord included with your 460.

If there is no contact in the accessory shoe, just connect the shutter cord by inserting the 100 jack into receptacle (8). Connect the end with the removable tip connector to the X-sync terminal of your camera. Tip connectors are available for a variety of cameras (see your dealer). A standard PC (DIN) tip is supplied.

If your camera does not have an accessory shoe, use one of the many Honeywell brackets available from your dealer.

## Setting shutter speed

Use X-synchronization (zero delay). If your camera has a between-the-lens shutter it will synchronize at all speeds. If it has a focal plane shutter, it will synchronize only at slower speeds, generally up to 1/60 second. Check your camera instruction manual.

# Taking pictures automatically

1. Turn Calculator dial (11) until the ASA number of film is opposite the ASA index (12).
2. Choose the f/stop that gives you the depth of field and/or range you want opposite one of the three symbols (◆, ●, ▲) on the outer ring of the Calculator (11). You have a choice of three stops for each different film speed. The maximum shooting range for each stop appears opposite the symbol.

**EXAMPLE:** If you are using a film speed of ASA 25 you can shoot at either ◆ f/5.6 (2 to 10 feet or .6 to 3 meters), ● f/3.5 (3 to 16 feet or .9 to 5 meters), or ▲ f/2.0 (4 to 28 feet or 1.2 to 8.5 meters).

3. Turn Selector (4) between its stops until the symbol opposite your selected stop on calculator appears in the lower window of the selector. BE CAREFUL NOT TO FORCE SELECTOR AGAINST STOPS. THE TRIANGLE (▲) IS THE LIMIT WHEN ROTATED CLOCKWISE. THE MANUAL (M) IS THE LIMIT WHEN ROTATED COUNTERCLOCKWISE. IF YOU ARE AGAINST THE STOP, JUST FIND THE SYMBOL YOU WANT BY TURNING IN THE OPPOSITE DIRECTION.

4. Set your camera lens to your selected f/stop.
5. Set Battery switch (10) to ON.
6. Shoot your picture after the ready light (14) comes on. Within the range of your selected f/stop, your subject will receive correct exposure automatically – with no bothersome adjustments or calculations.

# Taking pictures in manual mode using calculator

1. Turn the automatic Selector (4) counterclockwise until Manual (M) appears in the lower window of the Selector.
2. Turn Calculator (11) until ASA film speed is opposite ASA index (12).
3. Check the distance from the flash to your subject, using the camera range finder or some other convenient method. Remember it is flash-to-subject distance that counts, not camera-to-subject distance.
4. Set the f/stop on your camera that appears opposite the flash-to-subject distance on the calculator (11).
5. Switch the Battery switch (10) to ON and take your picture after the ready light comes on.

**EXAMPLE:** If you are using a film speed of ASA 25 with a flash-to-subject distance of 10 feet, (3 meters) the proper f/stop to set on your camera is f/5.6.

***NOTE:** The calculator scale and the guide number are based on averages calculated for average size rooms with light walls. If you are taking pictures in a very large room or out of doors at night, you may need to increase the exposure by one f/stop or more.*

## Accessory lens kit

**The accessory lens kit** (Cat. No. 4301) adapts your Strobolar for various picture taking situations. This kit has regular and wide-angle UV and neutral density lenses. It has a clear wide angle lens which increases the angle of coverage of the 460 to include the field of view of a 35mm wide angle lens for use on 35mm cameras. The kit also has filters for use with photo flood balanced film. The lenses can be fitted and removed in seconds.

# Taking pictures in manual mode using guide numbers

1. Turn the automatic Selector (4) counterclockwise until Manual (M) appears in the lower window of the selector.
2. Find the guide number for the film speed you are using in the table below.
3. Determine the flash-to-subject distance.
4. Divide the guide number by the flash-to-subject distance to find your f/stop setting for average exposure and set this f/stop on your camera.
5. Switch the Battery switch (10) to ON and take your picture after the ready light comes on.

**EXAMPLE:** If you are using a film speed of ASA 25 at a flash-to-subject distance of 10 feet (3 meters) the proper f/stop to set on your camera is f/5.6 (56 **divided by** 10 or 17.1 **divided by** 3). The nearest click stop on your camera is close enough for practical work.

<b>ASA</b>	25	32	40	50	64	80	100	125	160	200	250	320	400	800	1600
<b>GUIDE NO. FEET</b>	56	62	70	80	90	100	112	126	140	160	180	200	224	316	448
<b>GUIDE NO. METERS</b>	17.1	19.2	21.3	24.1	27.1	30.5	34.1	38.4	43	48.2	54.6	61	68.3	96.3	136.6

**EXAMPLE:** Your camera is loaded with fast film (assume ASA 400). You desire to shoot at a flash-to-subject distance of 7 feet (2.1 meters) and the smallest lens opening on your camera is f/16. Using the guide number method, compute an f/stop of f/32 (224 **divided by** 7 or 68.3 **divided by** 2.1). Then set your camera at f/16; install the ND #2 filter (see page 10) and the effective exposure is f/32. Thus, the ND #2 filter reduces the intensity of your Strobolar by 2 f/stops.

# Tips for using your Auto/Strobonar

**Move** in close for tight shots or back away for long shots. You can do this without changing setting when operating automatically.

**Try to line up a group** so that everyone is about the same distance from your Auto/Strobonar.

**Try** to keep your subject a few feet (about 1.5 meters) from the wall. This will keep the harsh shadows out of your pictures.

**For more pleasing results**, try to have a light, bright color a few feet from your subject.

**Avoid** shooting through doorways or against windows where objects close to your field of view may reflect light into the sensor, causing incorrect exposure.

**Bounce flash** — Use manual mode for bounce flash. Remove flash from camera and allow about two full stops more exposure to compensate for the light absorbed by the ceiling or wall under average conditions.

**Stop-Action** — The fantastic speed of your Auto/Strobonar (1/70,000 to 1/3,000 second) is excellent for such stop-action pictures as breaking a light bulb, hitting a golf ball, and bursting a balloon. Creative pictures of this type require special techniques. Usually the camera shutter is set to "B" and a simple switch (made of aluminum foil, paper clip or pieces of wire) is used to fire the flash at the moment you desire to make the exposure. Be sure to photograph your subject in a dark area and fire the flash when the shutter is open. For further information, write Customer Services.

## Outdoor use for fill-in light

Your Auto/Strobonar 460 may be used quite simply in manual mode as fill-in light when sunlight causes heavy side or front shadows. Just enough fill light should be used to soften the shadows, so more detail can be seen in the shadow areas. Of course, too much fill light will overpower the reflected sunlight and completely cancel the shadows. The amount of fill light to use depends upon your personal preference. As a starting point, use one-half of a full flash exposure for color film and one-fourth for black-and-white film.

The techniques of fill flash, although not complicated, are beyond the scope of this owner's manual. If you would like to explore this technique, write to Customer Services.



*Subject in bright sunlight without fill-in flash.*



*Strobonar fill-in softens shadows and gives crisp detail. Meter reading was taken on sunlight side of subject.*

For further information, write to: **HONEYWELL INC.**  
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