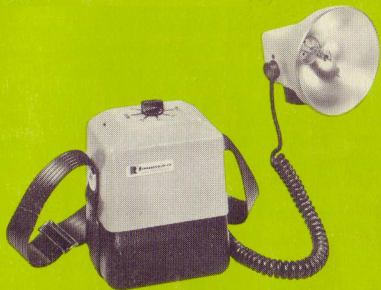


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Stroboflash[®] Models I,II,IV
Guidebook

graflex[®]



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Welcome...

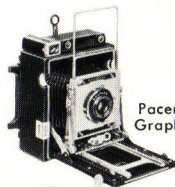
welcome to many years of productive ownership of the finest portable electronic flash unit made.

No matter in what field of photography your interest lies, your Stroboflash unit will serve you well . . . helping you get the results you want.

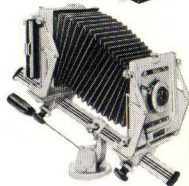
Graflex' 70 years' reputation for making quality-first photographic equipment is your assurance of having selected the finest.

"Graflex," "Graphic," "Graflite," and "Stroboflash," are registered Trademarks of Graflex, Inc., Rochester, N. Y.

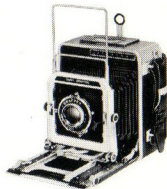
OTHER MEMBERS OF THE GRAFLEX FAMILY



Pacemaker
Graphic 45



Graphic
View II



Super Graphic

STROBOFLASH® I PORTABLE ELECTRONIC FLASH UNIT

LAMPHEAD



5 ft. KOILED KORD

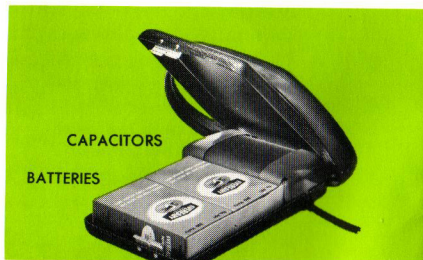


POWER PACK

RUBBER BATTERY
CASE ADAPTER



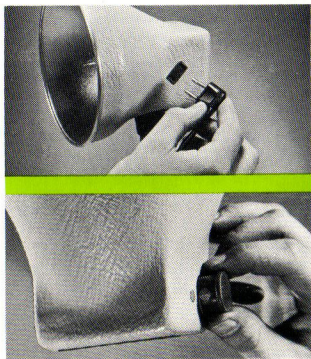
L-BRACKET



CAPACITORS

BATTERIES

TURNING THE UNIT ON



First, connect the shutter cord between the lamphead and the synchronizer fitting on camera or shutter. If the unit repeatedly flashes, without being tripped, reverse polarity of the cord and mark it for future reference.

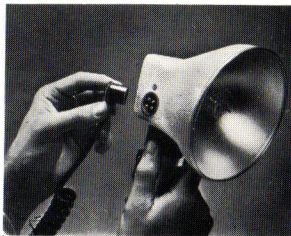
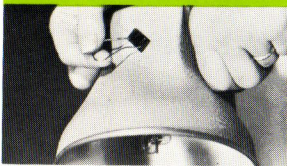
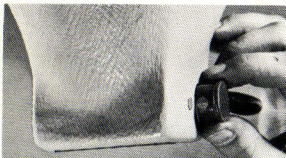
Simply insert the Power Koiled Kord Plug into the four contact socket on the lamphead, observing polarity by *matching the two red dots*. This closes the circuit between the batteries and the capacitors, and the unit is "On" ready to use.

SPECIFICATIONS

Energy Storage—nominal 50 watt-sec.
Flash Duration—approx. 1/1400 sec.
Guide Numbers (see Guide No. Table—Page 34)
Recycling Time—approx. 3 sec. with fresh batteries
Extensions—1 accepted

Power Pack Weight—3 lbs. 2 oz.
Power Pack Size—5 1/2" x 8 3/4" x 1 5/8"
Equipped with rubber battery case adapter and lamphead to mount on Graflite or similar flash unit battery cases.
Uses two 240-volt batteries—Cat. No. 2097

TURNING THE UNIT OFF



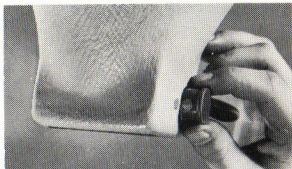
Merely remove the power plug from the lamphead and the unit is off. Unless the unit is to be out of use for a number of hours, there is no necessity for unplugging the power cord from the lamphead, since idling drain on the batteries resulting from the unit being "on" is very small; slightly more than the equivalent of about 1 flash for every hour it is left "on" (plugged in).

CHECKING THE STROBOFLASH I

With the Power Cord plugged into the lamphead, short together the contacts in the standard two terminal socket on the other side of the lamphead. The current available at this socket is very small so a bent paper clip or piece of wire may be used safely to flash the unit. A push button is not provided for this purpose because it might cause accidental test firing or invite excessive test firing.

Warning: Never touch contacts in the four-terminal plug that comes from the power pack! This plug carries 450 volts!

CHANGING THE STROBOFLASH | BATTERIES



- 1** Remove the power plug from the lamphead.

Warning: Never open the power pack nor attempt to change batteries while the power cord is connected to the lamphead!



- 2** Loosen the rubber binding from around the edge of the power pack.



- 3** Separate the two halves of the power pack and remove the old batteries.



- 4** Install fresh batteries, matching up the terminals of the batteries with the male prongs of the terminal strip. (Notice the (+) terminals have larger circular openings than the (-) terminals to insure proper installation.)

Dispose of old batteries so they won't be tampered with. They may still contain a sufficient amount of voltage to cause an electrical shock.

STROBOFLASH II PORTABLE ELECTRONIC FLASH UNIT

LAMPHEAD

10 ft. KOILED KORD

POWER PACK

RUBBER BATTERY
CASE ADAPTER



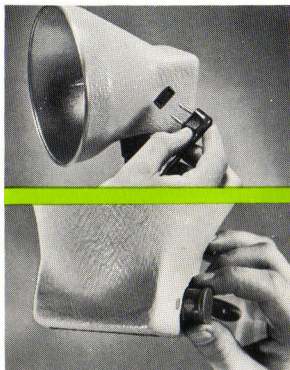
L-BRACKET

CAPACITORS

BATTERIES
(Optional)



TURNING THE UNIT ON



First, connect the shutter cord between the lamphead and the synchronizer fitting on camera or shutter. If the unit repeatedly flashes, without being tripped, reverse polarity of the cord and mark it for future reference.

Simply insert the Power Koiled Kord Plug into the four contact socket on the lamphead, observing polarity by *matching the two red dots*. This closes the circuit between the batteries and the capacitors, and the unit is "On" ready to use.

SPECIFICATIONS

Nominal Energy Storage—100 watt-sec.

Flash Duration—approx. 1/1000 sec.

Guide Nos. (see Guide No. Table—Page 34)

Recycling Time—approx. 4 sec. with fresh batteries.

Extensions—1 to 3 accepted

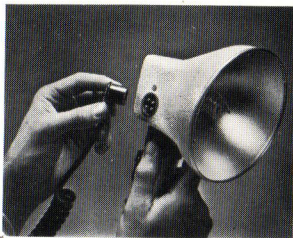
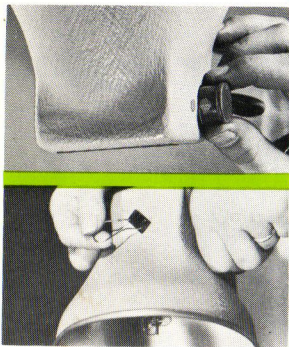
Power Pack Weight—7 lbs. 8 oz.

Power Pack Size—6½" x 7" x 4½"

Equipped with rubber battery case adapter and lamphead to mount on Graflite or similar flash unit battery cases.

Uses two 225-volt batteries—Cat. No. 2092

TURNING THE UNIT OFF



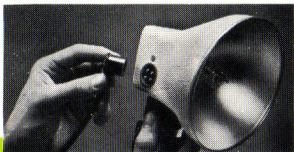
Merely remove the power plug from the lamphead and the unit is off. Unless the unit is to be out of use for a number of hours, there is no necessity for unplugging the power cord from the lamphead, since idling drain on the batteries resulting from the unit being "on" is very small; slightly more than the equivalent of about 1 flash for every hour it is left "on" (plugged in).

CHECKING THE STROBOFLASH II

With the Power Cord plugged into the lamphead, short together the contacts in the standard two terminal socket on the other side of the lamphead. The current available at this socket is very small so a bent paper clip or piece of wire may be used safely to flash the unit. A push button is not provided for this purpose because it might cause accidental test firing or invite excessive test firing.

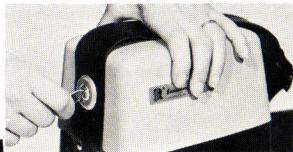
Warning: Never touch contacts in the four-terminal plug that comes from the power pack! This plug carries 450 volts!

CHANGING THE STROBOFLASH II BATTERIES



- 1** Remove the power plug from the lamphead.

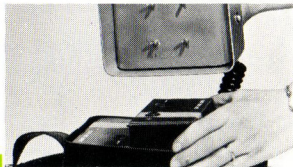
Warning: Never open the power pack nor attempt to change batteries while the power cord is connected to the lamphead!



- 2** With a coin or screwdriver turn the screw on either end of the power pack counterclockwise to remove the plate and screw.



- 3** Remove the top half of the power pack by pulling upward. *Warning: Do Not tamper with the power pack top. It contains 450 volts! Send to a Service Center for servicing.*



- 4** Insert new batteries into bottom half of the power pack with the terminals of batteries facing together.

Dispose of old batteries so they won't be tampered with. They may still contain a sufficient amount of voltage to cause an electrical shock.

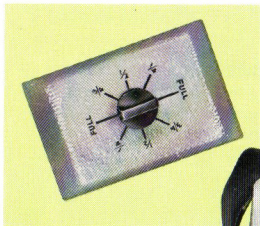
STROBOFLASH IV

PORTABLE ELECTRONIC FLASH UNIT

LAMPHEAD



4-WAY POWER SELECTOR



10 ft. KOILED KORD



POWER PACK



CAPACITORS



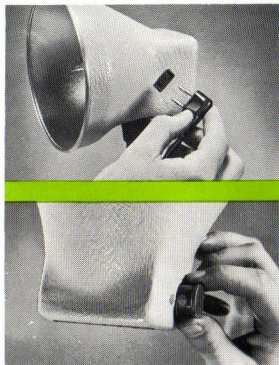
BATTERIES (Optional)

RUBBER BATTERY
CASE ADAPTER



L-BRACKET

TURNING THE UNIT ON



First, connect the shutter cord between the lamphead and the synchronizer fitting on camera or shutter. If the unit repeatedly flashes, without being tripped, reverse polarity of the cord and mark it for future reference.

Simply insert the Power Koiled Kord Plug into the four contact socket on the lamphead, observing polarity by *matching the two red dots*. This closes the circuit between the batteries and the capacitors, and the unit is "On" ready to use.

IMPORTANT!

Wait at least 3 seconds after turning unit on or after flashing before rotating the 4-way Selector located on top of the power pack. *Failure* to observe this may result in damage to the switch.

SPECIFICATIONS

Selector Setting	¼	½	¾	full
Nominal watt-seconds	50	100	150	200
Flash Duration (approx.)	1/1200	1/800	1/600	1/400
Recycling Time (approx.) with fresh batteries	2 sec.	4 sec.	7 sec.	9 sec.
Maximum No. Extensions accepted	1	3	4	6

Power Pack Weight—9 lbs. 8 oz.

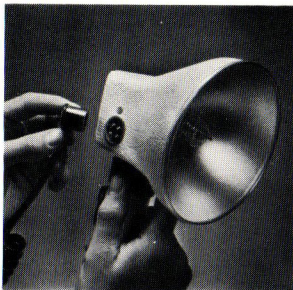
Power Pack Size—4 ½" x 6 ¼" x 8 ⅞"

Equipped with rubber battery case adapter and lamphead to mount on Graflite and similar flash unit battery cases.

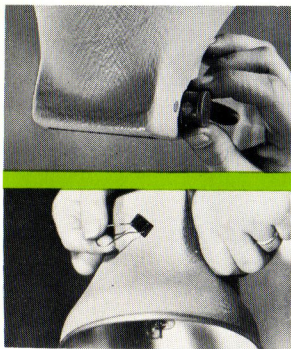
Uses two 225-volt batteries—Cat. No. 2092.

Guide Numbers (See Guide No. Table)

TURNING THE UNIT OFF



Merely remove the power plug from the lamphead and the unit is off. Unless the unit is to be out of use for a number of hours, there is no necessity for unplugging the power cord from the lamphead, since idling drain on the batteries resulting from the unit being "on" is very small; slightly more than the equivalent of about 1 flash for every hour it is left "on" (plugged in).



CHECKING THE STROBOFLASH IV

With the Power Cord plugged into the lamphead, short together the contacts in the standard two terminal socket on the other side of the lamphead. The current available at this socket is very small so a bent paper clip or piece of wire may be used safely to flash the unit.

A push button is not provided for this purpose because it might cause accidental test firing or invite excessive test firing.

Warning: Never touch contacts in the four-terminal plug that comes from the power pack! This plug carries 450 volts!

CHANGING THE STROBOFLASH IV BATTERIES



- 1** Remove the power plug from the lamphead.

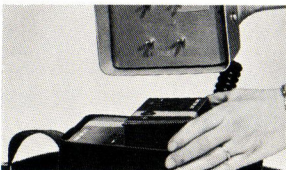
Warning: Never open the power pack nor attempt to change batteries while the power cord is connected to the lamphead!



- 2** With a coin or screwdriver turn the screw on either end of the power pack counterclockwise, to remove the plate and screw.



- 3** Remove the top half of the power pack by pulling upward. *Warning: Do not tamper with the power pack top. It contains 450 volts. Send to a Service Center for servicing.*



- 4** Insert new batteries into bottom half of the power pack with the terminals of batteries facing together.

Dispose of old batteries so they won't be tampered with. They may still contain a sufficient amount of voltage to cause an electrical shock.

MOUNTING THE LAMPHEAD



Fig. 1

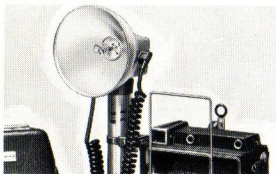


Fig. 2

The unique design of the Strobflash lamphead and the standard accessories included in each unit permits mounting on most any type of camera.

The tripod socket on the bottom of the lamphead (Fig. 1) enables mounting on standard flat brackets, or tripods.

The rubber battery case adapter included as standard equipment with your unit enables the lamphead to be conveniently mounted on the top of a standard battery case such as the Graflite or Graflite Jr. (Fig. 2).

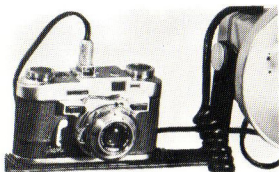


Fig. 3

The accessory L-Bracket permits mounting the lamphead on those cameras not equipped with a standard battery case (Fig. 3).

RECYCLING TIME

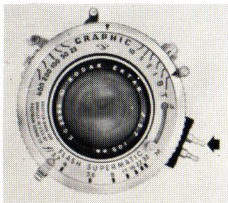
Recycling time is the length of time it takes for the batteries to recharge the capacitors, before the unit is ready to fire again. This time will vary according to the age and usage of the batteries, however the amount of light per flash will not drop appreciably as the batteries age.

SYNCHRONIZING YOUR STROBOFLASH UNIT

Triggering Method: The triggering method is completely electronic and since no relays are involved, the flash occurs at almost the instant the circuit is closed. Very little current flows in the trip circuit (less than 100 microamperes) permitting the use of delicate built-in shutter contacts without fear of damage. These contacts must be adjusted so that the circuit closes at the moment the shutter blades are wide open.

Between the Lens Shutters: Most shutters and cameras are now provided with contacts for electronic flash and function perfectly with STROBOFLASH.

Graphex and Rapax Shutters: With the “X” type, simply connect the trip lead from the unit to the two prongs provided on the shutter. Tripping the shutter will trip the unit in proper synchronization. If the shutter is of the fully synchronized type providing for use of regular flash bulbs also, be sure the indicator is set to the “X” or “O” (not “OFF”) position.



Kodak or Flash Supermatic Shutter: With the “X” type, simply connect the trip lead to the two prongs provided. If the shutter is of the fully synchronized type, cock the shutter in the usual fashion but **DO NOT COCK THE SYNCHRONIZER PORTION**. Watch polarity.

Kodak Synchron Rapid 800: Set selector on “X”

Graphic Synchron Compur: Set the M-X lever at “X”

Prontor SVS: Set the synchronizer control lever at “X.” If self timer (“V” setting) is used “X” synchronization is produced.

Compur and other M-X shutters: Set the M-X lever at “X”

Ilex Synchronized Shutter: Set adjuster to red dot or “X” position. Watch polarity.

Custom Built Contacts: Many older non-synchronized shutters may be modified by competent camera repairmen to incorporate the “X” contacts necessary to synchronize with Stroboblast . See your Graflex Dealer.

Focal Plane Shutters: These shutters must be synchronized at the speed at which the entire film area is exposed, usually around 1/30 second. With a Speed Graphic camera, use the “Time” setting and trip the shutter twice. With the Super D Graflex camera, set the shutter tension at H, the shutter at “O” and leave the IT bar at I (instantaneous). Trip the mirror in the normal way. The camera will produce an exposure of approximately 1/5 second, during which time the Stroboblast will fire exposing the entire film.

CHECKING SYNCHRONIZATION

Synchronization can be checked by observing the shutter blades with the light of the flash. Connect your Strobflash and place the shutter between your eye and the flash tube. Look through the shutter; cock at the desired speed, with diaphragm wide open. Since the light is intense it may be desirable to cover the lamphead with a piece of red paper, handkerchief or other material, to decrease the intensity for viewing. Snap the shutter.

If you observe a full circle of light (Fig. 1), your shutter is properly synchronized.

If you observe a pinwheel pattern (Fig.

2), the shutter blades are in the process of opening or closing, meaning the flash was too early or too late. The camera is not in synchronization.

If no light is observed, the camera has extremely poor synchronization or the shutter was not cocked.

For cameras that do not have removable backs (Fig. 3), synchronization can be checked by placing a piece of paper coated with phosphorescent paint in the focal plane. Removing the paper in a semi-dark room, the paint's glow will indicate if the shutters are synchronized.

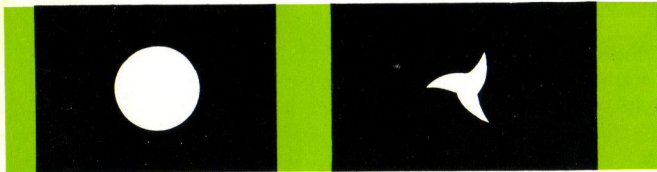


Fig. 1—Synchronized

Fig. 2—Not Synchronized

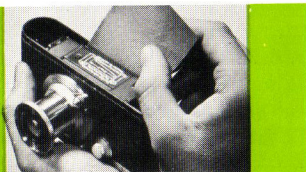


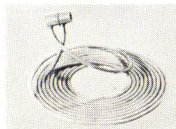
Fig. 3—Checking Synchronization of cameras without removable backs.

MULTIPLE LAMP OPERATION

WITH ONE POWER PACK

Strobeflash 20 ft. extension cords may be used to connect the power pack to several lamps. Firing any one of them will fire them all. The duration of each flash is also proportionately reduced. When one extension is used to connect two lampheads, there is no appreciable loss of total light—light is divided between the lampheads, 60% to the lamphead on the camera and 40% to the extension lamphead.

When two extensions are used (total of 3 lampheads), a slight loss of light equal to approximately $\frac{1}{2}$ stop of the total light output occurs. The light is divided as follows: 50% to normal head (nearest power pack), 30% to nearest extension, and 20% to farthest extension. **CAUTION**—To avoid arcing and pitting of contact posts and connecting plugs:



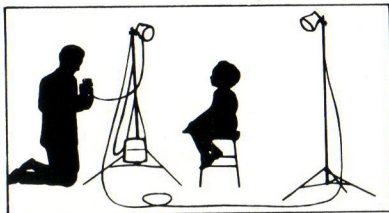
Graflex 20' extension cords can be stacked, permitting any number of cords to be connected at any junction for many lighting arrangements. Fits four-wire safety circuits used in all Strobeflash units. Cat. No. 2050.

ATTACHING

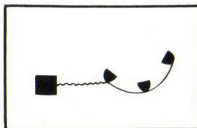
- 1—FIRST, attach the lamp heads to the extension cord.
- 2—LAST, attach the extension cord to the power cord.

DETACHING

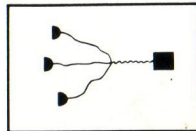
- 1—FIRST, disconnect the extension cord from the power cord.
- 2—LAST, disconnect the lamp heads from the extension cord.



Strobeflash multiple flash using one extension light.



Strobeflash multiple flash using two 20' extension cords, three lampheads in multiple in-line arrangement.



Strobeflash multiple flash using three 20' extension cords and three lampheads in a "Y" arrangement.

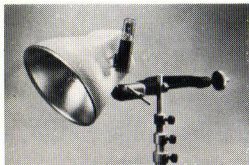
STROBOFLASH FOR SLAVE OPERATION



Slave operation set-up.

The very low idling current (current consumed from the batteries when the unit is “on”) makes Stroboflash an excellent slave unit. The unit can be set up and left unattended for hours. This is a particularly fine feature for greater area coverage or multiple flash lighted pictures. Slave operation is easily accomplished by means of a simple low-cost photo-electric tube attachment. Insert the phototube assembly into the trip socket on the lamp head in place of the sync cord from the camera.

The tube should point upward to the rear with the concave photo sensitive side rotated toward the triggering light source. If a direct “line-of-sight” between photo tube and triggering source is inconvenient, direct the photo tube at a surface that will reflect light from the triggering source. This will assure positive firing of the “slave,” especially at relatively large distances. If the phototube is placed in direct sunlight or close to fluorescent tubes, it may become temporarily “fatigued” and fail to trip the Stroboflash.



The phototube will permit perfect synchronization up to 100 feet (depending upon ambient light conditions) without connecting trip leads. A Stroboflash with phototube can be triggered with any other electronic unit and will flash in synchronization. It can also be triggered with any flash lamp.

Stroboflash lamphead equipped with phototube.

"PAINTING" A SCENE WITH STROBOFLASH

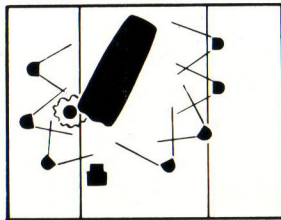
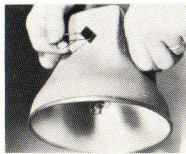
Stroboflash can be used to fully illuminate an area of any size—either interior or night exterior.

In the exterior photograph (right), a Stroboflash II “painted” a night accident scene. A Speed Graphic was placed on a tripod at the driver’s eye level. The shutter was set on time and opened. The photographer walked through the scene, firing the Stroboflash from 20 to 30 feet from the car at intervals of 7 feet (see diagram). He then returned to the camera and closed the shutter.

Shorting together the contacts in the standard two-terminal trip cord socket in the lamphead, either with a bent paper clip, or piece of wire, will activate the Stroboflash unit.

Interior shots can be taken in the same manner. The flash is aimed at each part of the walls, ceiling or furnishings you want illuminated. The need for changing flash bulbs, extension cords and other accessories associated with ordinary flash pictures is eliminated.

In both types of photography, the photographer must be careful never to appear directly between the camera lens and the area being lighted. Also, the flash must always be pointed away from the camera lens so as not to cause flare.

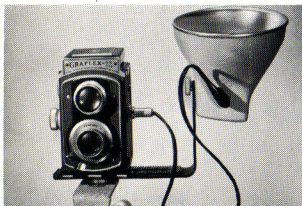


OPEN FLASH FOR SPECIAL SHOTS

When it is desired to synchronize the flash with special action (say the breaking of an egg), two trip lead wires can be positioned so that the falling object will bring them together momentarily. The room should be darkened somewhat to prevent ghost images, the shutter opened by the photographer, and the flash will occur when the object hits the contacts. The shutter is then closed by the photographer.

Multiple exposure photographs may be made by open flash in a darkened room. Flash the unit repeatedly with the subject in different positions, or flash several units in quick succession for rapid action. Be sure to arrange the Strobflash units so they will not light the background. Edge-lighting is usually best.

BOUNCE LIGHTING



Bounce lighting approximates the effects of natural lighting. Rather than aiming the light directly at the subject, it is reflected or bounced from ceiling or walls

A quick method of estimating the correct exposure: add the distance between flash lamp and reflecting surface, and between the reflecting surface and subject; divide the sum into the normal guide number to obtain the f /stop. Increase the exposure one f /stop for small, light-colored rooms*; by two stops for medium colored rooms*; by four stops in dark colored rooms* or distance shots.

Some photographers tilt the lamphead upward so that the light will bounce from the ceiling to the subject. It should be remembered that light will be reflected at an angle equal to the angle of incidence. Others may prefer to direct the lamphead toward a side wall or other reflecting surface to obtain the desired effect. In many cases, it will be found desirable to direct the lamphead in such a way as to have the background illuminated by the “bounce” light and the foreground illuminated by the “spill” light from the edge of the reflector. This “spill” is often used deliberately for close-ups to reduce the intensity of shadows under the nose and chin and under the eyes.

*Note: This refers to the general color or reflectivity of the room and not to the amount of illumination in it.

CARING FOR CAPACITORS

If Stroboflash electronic flash units are allowed to remain idle several weeks or more, the electrolytic capacitors will likely become “deformed” and introduce a heavy drain on the batteries when the unit is turned “on” again.

In order to keep your Stroboflash in top condition and to obtain the most flashes from a set of batteries, the following procedure should be followed:

1 UNITS NOT USED FOR SEVERAL WEEKS OR UNITS KNOWN TO HAVE “DEFORMED” CAPACITORS. The battery booster (page 29) will form the capacitors in about 1 hour.

2 NEW UNITS OR UNITS KNOWN TO BE IN GOOD CONDITION. Simply plug Stroboflash Power Pack into Stroboflash head for about 1 hour twice a month. A small drain on the batteries equivalent to approximately one flash for each hour of idling is taken from the batteries when the unit is left plugged in continuously.

Owners of several units should rotate their use, rather than keep one as a “spare.”



**(UNDER NO CIRCUMSTANCES REMOVE A CAPACITOR FROM THE UNIT.
RETURN TO YOUR NEAREST GRAFLEX SERVICE CENTER FOR SERVICING.)**



STROBOFLASH I BATTERIES

The batteries (Cat. No. 2097) are especially designed 240-volt dry batteries offering fast recycling time between flashes. Two of these batteries are used in the Stroboflash I and are connected in

series to give 480 volts. A set of Stroboflash I batteries provides from 1000 to 1500 flashes, if used within their normal rated life, approximately 6 months from date of manufacture.

STROBOFLASH II AND IV BATTERIES

The 225-volt (Cat. No. 2092) high voltage dry batteries used in Stroboflash II and IV are also custom-built for extra-rugged, long life. Each battery contains 150 cells containing a special chemical mix. They are carefully sealed against drying out, moisture-protected, and will stand up under rugged use. Two of these batteries are used in the Stroboflash II

and IV, connected in series to give 450 volts.

If used within the normal rated life of 9 months from date of manufacture, when installed in the Stroboflash II, a pair of these batteries will give up to 2,000 flashes; installed in the Stroboflash IV, up to 1,000 flashes or more, depending upon the selector setting.

THE PROPER CARE OF YOUR BATTERIES

Batteries that won't be used for a period of time should be stored in a cool, dry place, between 40° and 65° F. They should be given the same care as film and may be stored in a refrigerator.

Do Not leave the batteries exposed to high temperatures, as encountered in the trunk of an automobile parked in the hot sun. This will result in rapid cell deterioration, resulting in fewer flashes from a set of batteries than would be obtained

from properly cared for batteries.

Cold weather will not injure the batteries but will retard the chemical action, resulting in a longer recycling time. When the batteries reach room temperature, recycling time will return to normal.

Freezing will not harm the batteries, but they must be brought to normal temperature for operation. *DO NOT* place batteries near a heater or radiator for quick thawing.

EFFECTIVE USE OF BATTERIES

It is normal for batteries consumed in the first four months of operation to give more flashes than batteries consumed over a period of a year.

A large number of flashes in a few hours may increase recycling time somewhat. A night's rest will restore faster cycling time. If this is not convenient, two alternatives exist.

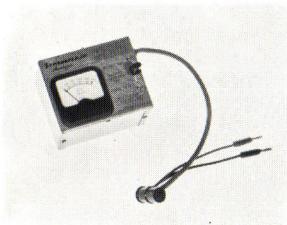
1. Use the "Rest System" which is alternately using two sets of batteries.
2. Use a Strobflash Battery Booster, which will "depolarize" the batteries in a few hours, bringing them back to normal operation. It may be used while the batteries are actually in service.

WHEN TO REPLACE BATTERIES

Batteries are approaching the end of their useful life when, after a 12 hour rest, the shortest time between two consecutive

flashes exceeds five seconds (Strobflash I and II) and ten seconds (Strobflash IV with selector on "Full" position).

BE SURE WITH A STROBOFLASH BATTERY ANALYZER



Analyzer

The Strobflash Battery Analyzer gives a four-way positive check on the operating condition of the batteries and capacitors.

The tests consist of:

1. Battery Voltage Test
2. Battery Load Test
3. Capacitor Test
4. Recycling Test

TO GET NEW BATTERIES

Stop at your nearest Graflex dealer . . . or send a check or money order (consult latest price list) to the nearest Service Center listed in the back of the Instruction Manual. Your order will be mailed promptly via Parcel Post.

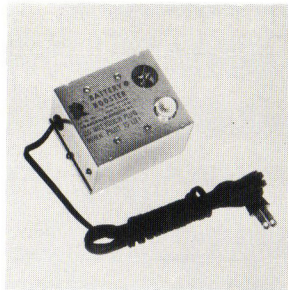
Carefully check the batteries you receive for physical damage from shipment such as dents or bulges. Although these batteries are specially designed and built for ruggedness and durability, a sharp blow, especially in the corners, may result in permanent damage. Check them in a Strobflash unit or with an SR Battery Analyzer. If they do not operate properly, enter a claim with the transportation agency first, then notify your source immediately.

SR BATTERY BOOSTER EXTENDS BATTERY LIFE

The SR Battery Booster will increase the number of flashes in Stroboflash I, II and IV units. For instance, the number of flashes per set of batteries can be increased up to 3000 for a Stroboflash II by using the SR Battery Booster.

The SR Battery Booster is not a charger in the sense of an automobile battery charger. It will not recharge well-used batteries back to their original usefulness. Rather, it is a device to help you obtain maximum energy from the battery *during* its useful life.

To receive maximum service from a set of batteries it is most important to use the SR Battery Booster in the following manner:



- 1.** The Booster must be used from the *beginning* of the life of the battery. Maximum boosting cannot be achieved with batteries approaching the end of their useful lives. Batteries in this condition must be used immediately after the boosting period.
- 2.** For best results the Booster must be used *promptly* after each period of extended use. The Power Pack should be connected to the Booster for 10 minutes for each time the unit was flashed. Allow 1 flash for each hour the unit was connected; for instance, if the Stroboflash was connected for four hours, 40 minutes' boosting will be required plus 10 minutes for each flash. Overnight boosting is usually adequate.
- 3.** When the Stroboflash has been out of service several weeks or more, the Booster should be used to reform the electrolytic capacitors in addition to boosting the batteries (see page 25).

An added feature of the SR Battery Booster is that it is possible to flash the Stroboflash and boost the batteries simultaneously by connecting the Booster to 110-120 volt 60 cycle AC. This requires the use of a 20' extension cord.

Caution: Do not leave booster connected to Stroboflash Power Pack unless plugged into 110 volt AC and pilot light is on.



TROUBLE SHOOTING

NON-FIRING OF UNIT

Check the shutter for synchronization and the trip cord to make sure of proper contact. Try tripping the unit by shorting the trip cord socket in the lamphead with a short piece of wire or a bent paper clip. If it fires, the trouble is in the shutter or trip cord.

Disconnect the Power Cord from the lamphead. Check the fuse located under the plastic tab in the capacitor half of the Stroboflash II, III and IV units. The Stroboflash I does not require this fuse.

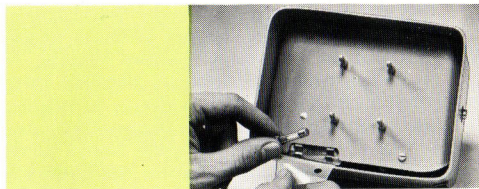
FLASHTUBE LIFE

The tube is warranted for:

Stroboflash I—10,000 flashes

Stroboflash II—10,000 flashes

Stroboflash IV—5,000 flashes



CONTINUAL FIRING WITHOUT TRIGGERING FROM THE CAMERA

First, reverse the trip cord in its socket. If this doesn't correct the firing, check for a short in the trip cord or shutter contacts.

If the trouble cannot be found, have your dealer send the unit prepaid to the nearest Graflex Service Center.

Warning: Never touch contacts in the four-terminal plug that comes from the power pack! This plug carries 450 volts!

PROTECTING YOUR STROBOFLASH FROM MOISTURE

It is a good practice to moisture-proof the highly sensitive trip circuit of your Strobflash every 3-4 months. This should be done to eliminate any erratic flashing of the Strobflash which may occur under extremely high humidity conditions or from suddenly taking the unit from a cold to a warm atmosphere.

First, clean the areas to be protected with carbon tetrachloride or trichloroethylene (DO NOT INHALE FUMES) and apply a *thin* coat of Dow Corning No. 4 Silicone Compound to these areas:

1. Surface of outlet on lamphead.*
2. Male and female ends of shutter cord plug.*
3. Plugs on power cord and extension cords.*

4. Surfaces adjacent to camera shutter cord connector.*

** (Caution: Do not apply silicone to socket holes or any surface making electrical contact with another surface such as plug pins, prongs or posts on shutter.)*

If the unit is to be constantly exposed to extreme humidity or moisture conditions, it is recommended that the lamphead housing be removed and the following parts treated:

1. Wafer base of flashtube (both sides).**
2. Trigger tube socket (both sides).**
3. Under portion of trip socket.**
4. Back end of 4-prong plug.**

(THIS WORK SHOULD BE DONE BY YOUR GRAFLEX DEALER OR SOMEONE EXPERIENCED IN THE MAINTENANCE OF ELECTRONIC FLASH EQUIPMENT.)

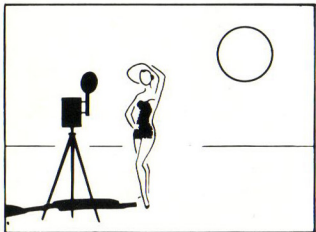
SELECTING GUIDE NUMBERS

A guide number is used to help determine the exposure at any lamp-to-subject distance. The guide number divided by the lamp-to-subject distance will give the correct f /stop. If the f /stop is known, as in daylight flash fill-in (see diagram), the lamp-to-subject distance can be determined by dividing the guide number by the f /number. For example, if the meter reading on the subject indicates an exposure of $f/11$ at $1/50$ second and the guide number is known to be 200, then by dividing the guide number of 200 by the f /number of 11 gives a lamp-to-subject distance of approximately 18 feet for a 1:1 balance.

To use flash as main light move the Strobflash closer or use a faster shutter speed. To use flash as fill-in only, move farther away or use smaller diaphragm, compensating for daylight by using slower shutter speed.

Guide numbers, as the name implies, are for you to use in determining aperture settings to suit your personal camera equipment and processing procedures. There are too many variables entering into the techniques of photographers and film development to supply completely accurate guide numbers. Manufacturing tolerances in films, lenses, and shutters, plus type of surroundings and individual preferences in type of negative or transparency . . . all have an influence on guide number determination. In the final analysis, personal guide numbers must be developed to meet each individual photographic requirement.

For good flash pictures the light must be evenly spread over the full picture area. The guide numbers suggested for Strobflash are based upon the Strobflash lamphead's ability to spread a soft, even light over a full 60° to cover evenly the field included on the negative exposed in a camera fitted with a normal focal length lens.



DETERMINING YOUR PERSONAL GUIDE NUMBERS

Due to the many variables entering into the determination of guide numbers, it is best to determine your own.

To do this, take a picture using the Stroboflash Guide Number listed for the film you are using. Next, make two more exposures at an f /stop over and under your original shot.

Develop the negatives to produce the type of result you prefer. Select the f /stop which produced the best exposure. By multiplying this f /stop by the distance in feet from lamp to subject, you can determine your personal guide number.

(Ex.) The best negative with a given film was produced at $f/11$ at lamp-subject distance of 20 feet. Multiplying the two numbers ($11 \times 20 = 220$), your guide number is 220.

Be sure to keep exact records of f /numbers used, lamp-to-subject distances, surrounding reflective surfaces, development times and temperatures, and any other information that has a bearing on the results of your test.

FILTERS FOR COLOR

The light from Stroboflash closely approximates the color temperature of sunlight, 6100° Kelvin. This also approximates the color temperature for which daylight color films are balanced.

In most cases it is not necessary to use a filter with daylight color films, although if slightly warmer tones are desired a filter such as the 81C, UV-16 or C $\frac{1}{4}$ may be used.

In many cases the film manufacturer encloses in each package filter recommendations for electronic flash.

YOUR GRAFLEX WARRANTY:

To the initial retail purchaser of Graflex merchandise:

Skilled craftsmen have produced the Graflex merchandise you have purchased. They have built into it a level of quality and performance which will insure your enjoyment of its use.

Graflex merchandise is warranted by Graflex and the Graflex Dealer from whom you purchased the same, to be free from faulty materials and workmanship, except as hereinafter set forth. If any time during your first year of ownership, (90 days in the case of any electronic components and parts, including without limitation, tubes and projection lamps), any servicing is necessitated by faulty material or workmanship, it will be provided (or the equipment replaced at our option) without charge except for transportation charges by your nearest Graflex Service facility. Returns for servicing should be made through your Graflex Dealer; or if this is not convenient, the merchandise should be carefully packed in a stiff container with adequate packing (not excelsior). Attach name and address and any *specific instructions* to the package, which should be adequately secured and fully insured.

THIS WARRANTY IS NOT APPLICABLE:

- A. To Graflex merchandise which in our judgment has been damaged, abused, or requires replacement of parts due to wear and tear from use, or for any reason other than faulty materials and workmanship. Such merchandise will be serviced at factory-established rates.
- B. To Graflex merchandise which has been tampered with or serviced by persons other than Graflex approved personnel.
- C. If adaptations or accessories of other than Graflex recommendations have been made or attached.
- D. Where the Graflex merchandise bears serial numbers, if it has not been registered with Graflex by means of the attached registration card or appropriate substitute within 60 days from date of purchase.

No liability is assumed for film which is damaged or is unsatisfactory for any reason (due to equipment malfunction or otherwise), nor is Graflex, Inc., obligated to replace such film.

EXCEPT AS EXPRESSLY SET FORTH HEREIN NO OTHER WARRANTIES ARE MADE BY GRAFLEX OR YOUR GRAFLEX DEALER WITH RESPECT TO GRAFLEX MERCHANDISE, INCLUDING, WITHOUT LIMITATION, WARRANTIES AS TO FITNESS FOR A PARTICULAR PURPOSE AND OF MERCHANTABILITY. No liability is assumed for expenses or damages resulting from interruptions in operation of equipment, nor for incidental or consequential damages of any nature.

In order that we may be able to pursue our continuing program of product improvement, Graflex reserves the right to make changes in design, or add improvements to any product without incurring any obligation to include such revisions in equipment previously produced.

The warranties hereinbefore expressly set forth are made only to the *original retail purchaser*. Graflex's liability under the within warranty is limited to repair or replacement as hereinbefore provided.

SERVICE FACILITIES:

Graflex Approved Service Stations are conveniently located in all major cities. Contact your Graflex Dealer or write to the Manager, Graflex Service Sales, for the address of the Graflex Approved Service Station nearest you.

Record below such serial numbers as your equipment bears for your insurance file and future reference.

Serial Nos.....

GRAFLEX, INC., Rochester, N. Y. 14603

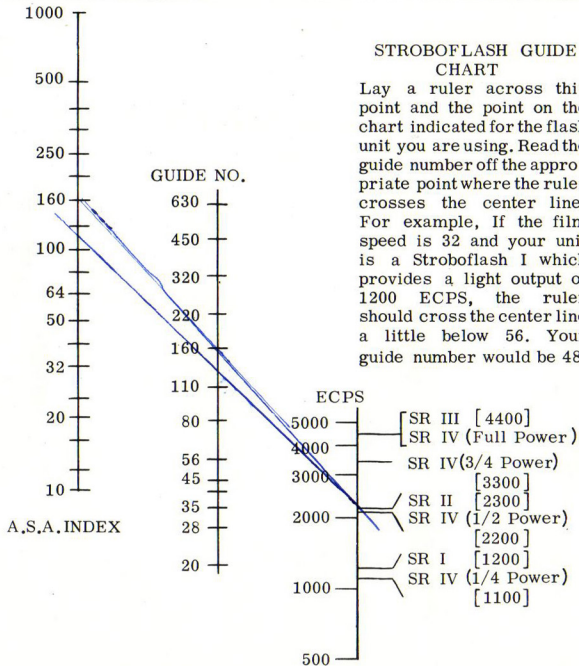
SUGGESTED GUIDE NUMBERS WITH STROBFLASH

E.C.P.S. is proposed Effective Candle Power Seconds method of rating electronic flash units. Guide numbers based on square root of .063 x E.C.P.S. x Film Speed. Watt seconds

rating is nominal.

Start with these numbers to determine the guide number that will give you the type of transparency or negative you prefer.

	I	II		IV		III-IV
Daylight ASA Film Speed	50 Watt Seconds 1200 E.C.P.S.	100 Watt Seconds 2300 E.C.P.S.	1/4 Power Setting 50 Watt Seconds 1100 E.C.P.S.	1/2 Power Setting 100 Watt Seconds 2200 E.C.P.S.	3/4 Power Setting 150 Watt Seconds 3300 E.C.P.S.	Full Power 200 Watt Seconds 4400 E.C.P.S.
10	27	38	27	37	45	53
25	43	60	41	56	72	83
32	49	68	45	66	81	94
40	55	76	53	74	91	105
50	61	85	59	83	102	118
60	67	95	65	91	110	130
80	77	105	74	105	130	150
100	87	120	83	120	140	165
150	105	145	100	140	180	200
200	120	170	115	165	200	235
300	150	210	140	200	250	290
400	175	240	165	235	290	330
500	194	270	185	260	330	370
650	220	300	210	300	370	425
800	250	330	240	330	400	460
1,000	280	390	260	370	450	525
1,600	350	480	330	475	575	665
3,000	480	660	460	650	790	900

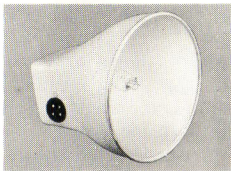


STROBOFLASH ACCESSORIES



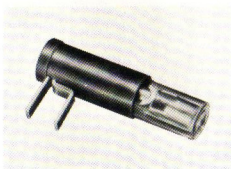
STROBOFLASH IV POWER PACK TOP

This accessory easily converts the battery compartments of Stroboflash II and III for Stroboflash IV performance. An example of the tremendous versatility obtainable in all Stroboflash units at a minimum investment. Also available is a Power Pack Top for Stroboflash II.



STROBOFLASH LAMPHEAD

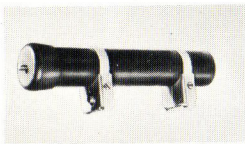
Additional lampheads may be obtained for use as an extension on the 20' extension cord. A lamphead with a power pack can be equipped with a phototube for "slave" operation. The Stroboflash lamphead is used interchangeably on all Stroboflash units.



PHOTOTUBE ASSEMBLY

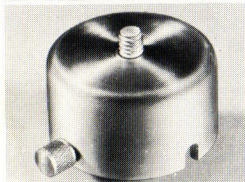
Eliminates need for long extension or trigger cords in slave operation. Insert phototube into the trip socket on lamphead and rotate concave surface of the tube in direction of triggering light.

STROBOFLASH ACCESSORIES (CONT.)



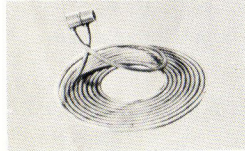
MOUNTING TUBE

Shown with Graflite heavy duty top and bottom battery case clamps and rubber adapter. For attachment to press cameras.



METAL BATTERY CASE ADAPTER

Made of aluminum for durability, it features a lock screw that firmly attaches the lamphead to the battery case.



EXTENSION CORDS

The 20' extension cord permits multiple lamp operation from the Strobflash Power Pack. The light output is apportionately divided among the number of lamps used. Firing any lamp will cause the firing of all the lamps.

Strobflash extension plugs can be stacked, permitting any number of cords to be connected at any junction for many lighting arrangements, including "Y" and multiple in-line arrangements.

STROBOFLASH I HOLSTER

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Rochester, New York 14603

Western Division:

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Hollywood, California 90038

Midwest Service Department:

1345 Diversey Parkway
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Graflex of Canada Limited:

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Toronto 1, Ontario, Canada



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Equipment Corporation