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**OPERATING INSTRUCTIONS**

**Ultrabeelit<sup>®</sup>**

*Butkus US*

**Mono Jet**

**LIFETIME ELECTRONIC FLASH**

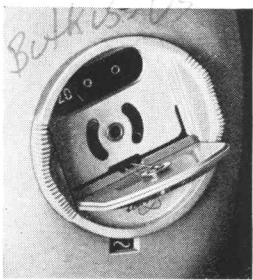
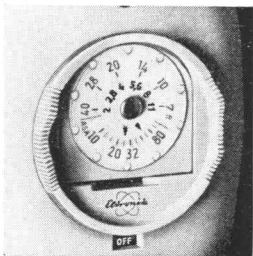
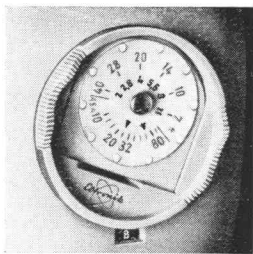
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## 1. Technical data

Wiring:	Transformation of energy through vibrator, constant light output by automatic transistorized monitoring circuit
Guide number:	about 140 black-and-white ASA 80 about 56 color film ASA 32
Color Temperature:	about 5600° K
Number of flashes:	per charged battery: about 40-50
Flash sequence:	battery: about 9-10 sec A-C: about 12 sec
Angle of illumination:	about 60° for normal or semi-wide angle
Line voltages:	110...125 volts and 220 volts A-C (40-60 cycles) automatic charger built-in
Battery:	Lifetime sealed nickel-cadmium cells, chargeable, 3,6 volts
Weight:	about 1,9 lbs.
Dimensions:	about 7 <sup>1</sup> / <sub>8</sub> x 4 x 2 <sup>5</sup> / <sub>8</sub> inches.



## 2. Ultrablitz MONO JET photography is so simple

The switch-ring incorporates all switching possibilities and has three positions:

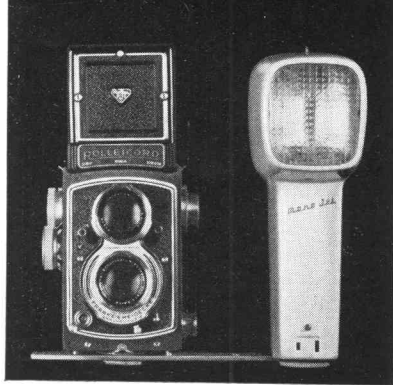
◀ Battery operation "ON"  
(soft buzzing sound is heard)

◀ "OFF"  
Battery and A-C

◀ Charging and A-C  
"ON"

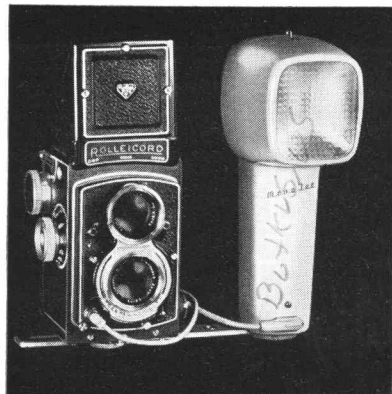
Ready for operation when red light lights up.

To flash: release camera shutter or, for open flash, press red button on front of handle.



Place MONO JET on bracket and fasten to camera.

Connect MONO JET with camera via synchronizing cable.  
Set camera synchronizing lever at "X" and speed to about 1/100 sec; if focal plane shutter is used, check manufacturers specification for correct shutter speed.





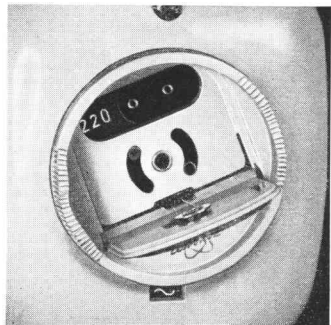
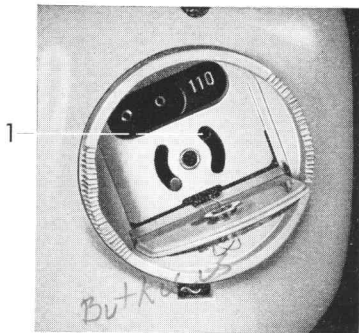
For transporting hang camera carrying strap on MONO JET. Turn switching to "OFF". Other ways of carrying: Pull camera strap through attached snap hook of unit – or hang MONO JET on special straps – or place camera and MONO JET with accessories in carrying case.

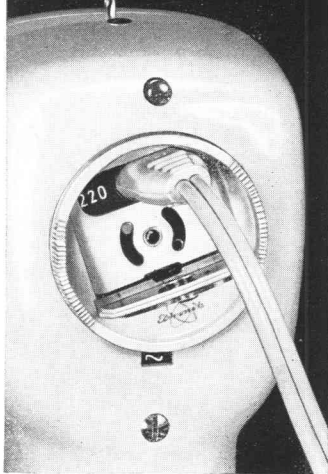
**Note:** When taking a series of shots the MONO JET can remain turned on. The automatic transistorized monitoring circuit cuts off the current after reaching the full flash capacity. This conserves battery power and assures you at uniform full output.

### 3. Recharging and A-C operation

MONO JET is built **only** for A-C current or battery operation. Before plugging in, turn switch-ring to left and flap opens automatically. Insert a sharp pointed object into the opening (1) and adjust voltage by sliding up or down as required (220 or 110/125 V to 110).

**DANGER!** The MONO JET may not be used on D-C current! Use only standard Ultrablitz A-C cord as listed on page 16 as accessory.





To switch unit, connect A-C cable with a normal household electric socket. When this has been done, the actual charging of the battery begins. That's all – nothing else is necessary. The red signal lights up and shows you that the battery is being charged. At the same time, you can flash as often as you like – this will not discharge the battery.

To turn off, just pull plug out of electric socket. The built-in battery is sealed air-tight and requires no servicing. The sequence of flashes tells you whether the battery is fully charged or not. The flash sequence is defined as the time interval which elapses between flash and lighting up of red signal:

approx. 10 sec = fully charged

approx. 18 sec = half charged

approx. 30 sec = completely down

At the very latest, battery should be recharged when flash interval is down to 30 seconds. In this case, a full charge will take about 14 hrs. The battery is not damaged, however, if it is left uncharged for longer periods of time.

An occasional overcharge is not damaging. The battery has an exceptionally long life of about 400 to 500 recharges. If by mistake the mechanism is left turned on for a long period of time, the battery will discharge and vibrator will no longer operate. In general, this will not ruin the battery, but up to 60 hrs may be required for a new charge. It will then be back to full capacity after 2 to 3 normal discharge cycle with a 14 hrs. recharge for each.

#### **4. Reforming the Storage Condenser**

When flash has not been used for several weeks, it is best to plug it in an electric socket for 20 to 30 minutes. This will reform the electrolyte condenser and the unit will reach its full flash power again.

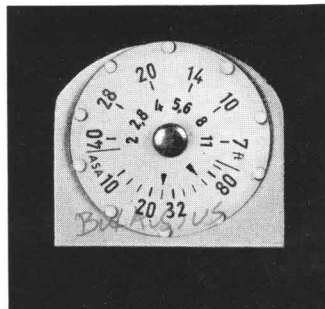
## **5. Automatic transistorized monitoring circuit**

The transistor-relay-circuit of the MONO JET saves the battery and automatically keeps light output constant. When making pictures it is not necessary to turn off the unit to save battery. Just as soon as the MONO JET has been turned on, the automatic control takes over the job of regulating flash condenser voltage thus securing an ever constant light power. At the same time, this automatic mechanism cuts off battery current just as soon as full flash power has been reached, increasing the actual number of flashes available. This automatic control has the great advantage of making it possible to keep the MONO JET in constant operation. This means that it is always ready to work and you won't have to miss that once-in-a-lifetime-shot.

## 6. Stop Computer and Guide Numbers

### Stop Computer

Whenever daylight or constant sources of artificial light are available, correct exposure is regulated by means of shutter speed and stop. However, if the very short electronic flash is used, correct exposure can only be regulated by the diaphragm stop. The stop computer offers an easy way of ascertaining correct stop. If you are using black and white film, set black arrow at value corresponding to sensitivity of film used (for example: ASA 25), use red arrow for color film. Proper stop value (5.6) is then read at the distance (example: 14 ft.)



## Guide Number

If the stop computer is not sufficient, that is to say, if sensitivity of your film is higher or lower than values on computer, proper stop value can be calculated from the guide number (see page 11) or as follows:

$$\frac{\text{guide number}}{\text{distance}} = \text{stop} \quad (\text{for example: for ASA 320 film } \frac{280}{50} = 5.6)$$

Distance is measured in ft. between lamp and subject. The guide number is, of course, only an approximation. It is governed by the light output of the MONO JET and by the film sensitivity, however, it also depends on the brightness of subject, size and brightness of room and method of developing. Guide numbers indicated are averages calculated for normal size rooms with light walls. If you are taking pictures outdoors, in large halls, or of bright, reflecting objects at long distances, be sure to open shutter 1 or 2 stops more than required by mathematical calculation or stop computer. Also, if the distance is under 8 ft., use a larger shutter opening (i. e. 1 stop larger for a distance of 3 ft.)

### Guide number table

Black - white		Color		
ASA	Guide number		ASA	Guide number
32	90	Kodachrome	10	32
50	110			
64	125	Ektachrome	32	56
80	140			
100	160	Anscochrome	32	56
125	180			
160	200	Super-Anscochrome	100	100
200	225			
250	250	High speed Ektachrome	160	125
500	330			

### Guide table for use of MONO JET with POLAROID film

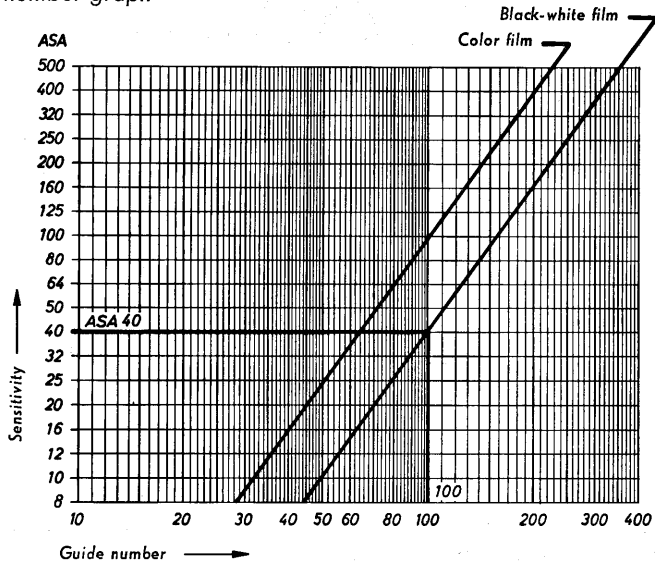
Guide number	Polaroid film	At the following distances, use Lens opening						
		3 Ft	5 Ft	7 Ft	9 Ft	13 Ft	17 Ft	
90	Type 41 ASA 100	No. 7 or EV 16	No. 6 or EV 15	No. 5 or EV 14	No. 4 or EV 13			
115	Type 42 ASA 200	No. 8 or EV 17	No. 7 or EV 16	No. 6 or EV 15	No. 5 or EV 14	No. 4 or EV 13		
160	Type 44 ASA 400		No. 8 or EV 17	No. 7 or EV 16	No. 6 or EV 15	No. 5 or EV 14	No. 4 or EV 13	

Guide number varies for color and black and white film, although they may have the same sensitivity. Using the guide number graph at the right, guide numbers for every type of film can be ascertained in the following manner: Find the sensitivity of your film on the left hand scale, follow it horizontally until it intersects the line for the type of film you are using (color or black and white). The proper guide number is then located on the horizontal scale directly below the point of intersection.

## **7. Film and developing**

The MONO JET light corresponds to daylight of 5600° K. Therefore, use only daylight film for color pictures. For black and white pictures we recommend panchromatic film with normal developing. An especially high quality of brilliant, finely graduated negatives can be obtained by using a modern rapid developer. Values indicated refer to normal developing time.

# Guide number graph



## **8. Hints for better snapshots with your MONO JET**

Direct light from the front often causes pictures to be flat and uninteresting. More effective lighting effects and a more plastic impression can be obtained if the flash is placed away from the camera to the side or above subject. The loss of light caused by this may be compensated by opening the shutter more. Synchronizing extension cable can be bought from your camera dealer. The MONO JET has a variety of advantages when used as an additional source of light. When the weather is dull, the flash can substitute for sunshine. It can brighten up the shadows – especially important for color photography – and correct too sharp contrasts. Here is an example for choosing the proper stop:

A distance of 10 ft. and guide number 80 would call for stop 8. For the general lighting, the light meter requires an exposure of  $1/25$  sec. with above stop. Set camera at this speed. Instead of stop 8, set shutter to 11. Thereby the flash brilliancy will have the same effect as daylight. Increasing of speed reduces the influence of daylight.

## 9. Service and Guarantee

If these instructions are followed, the ULTRABLITZ MONO JET will give good service for many years. Should your ULTRABLITZ at any time fail to function properly, consult your MONO JET dealer or a branch of Allied Impex Corp., 300 Fourth Ave., New York 10, N. Y., sole authorized importers for the USA (see import certificate).

Your MONO JET is guaranteed for six months subject to the conditions in the guarantee which is enclosed with every unit. If your MONO JET is returned for repairs, it should be accompanied by the guarantee. Otherwise repairs can not be made free of charge. Please read the terms of the guarantee carefully. *But never*

## **10. Optional Equipment**

A-C connecting cord

Straight camera bracket

Bounce light bracket

"E" clamp (for attaching MONO JET to Press type camera or "E" type bracket)

Straight synchronizing cord

Coiled synchronizing cord

Photocell (for use as remote slave) to be announced

Ultrablitz Manual

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**OPERATING INSTRUCTIONS**

*Elektronik*

**COMET**

*Butkus-us*

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## 1. Technical data

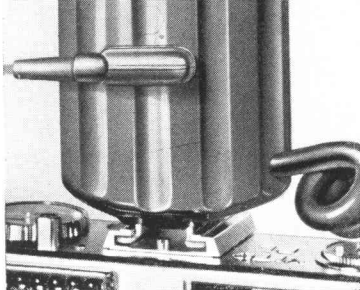
### Guide numbers

Film	ASA	Guide Number*
Black-white	20	62
	32	80
	50	88
	64	100
	80	125
	100	150
	125	175
	160	200
	200	255
	250	300
300	350	
500	400	
Color	Kodachrome	32
	Ektachrome	45-55
	Super Anscochrome	75-85

2

\* The guide numbers are calculated for normal developing time, but may vary due to location.

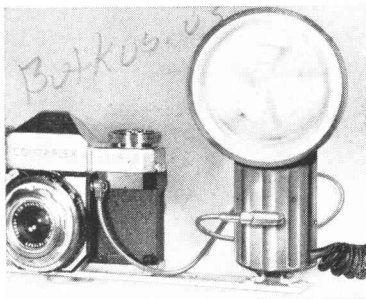
Electric energy:	about 40 Ws
Color temperature:	about 5600° K.
Number of flashes:	per charged accumulator about 40—50
Flash sequence:	accumulator      plug-in 12—15 sec.      10—12 sec.
Flash speed:	1/2000 sec.
Angle of illumination:	about 50°
Line voltages:	110—125 volts AC (40—60 cycles) charger built-in
Weight:	about 2,1 lbs. with flash head
Dimensions:	about $5\frac{9}{10} \times 4\frac{1}{3} \times 1\frac{9}{10}$ inches.



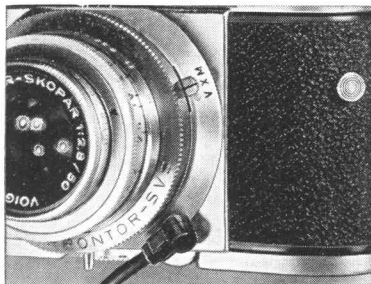
## 2. ULTRABLITZ COMET flash photography is so simple

### a) *Accumulator operation*

◀ Push the flash head with the spring-loaded foot into the shoe on your camera or

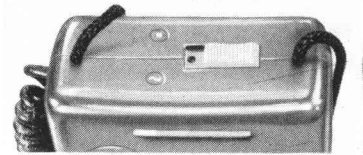


◀ mount it on the universal bracket (special accessory) and screw this to your camera.

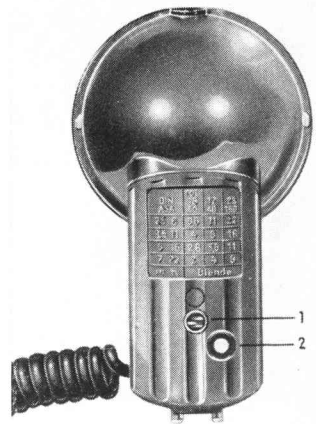




◀ Plug the synchronizing cord into the camera and set the synchronizing lever to "X". Set the shutter to about 1/100 sec. (with focal plane shutters see camera handbook).

To switch on: Press the operation switch on the upper side of the unit to its outward position so that the red dot will be visible.

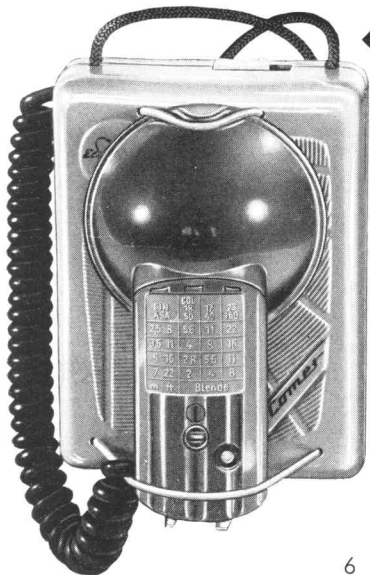


Red signal light (1) indicates readiness for flashing. To flash: release the camera shutter or for open-flash press the red hand release knob (2).



To switch off: Remove operation switch back to position  






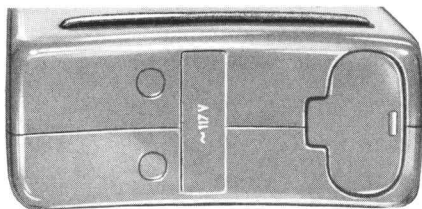
For carrying, disconnect the flash head from the camera and fix the head on the case by means of the rubber cords.

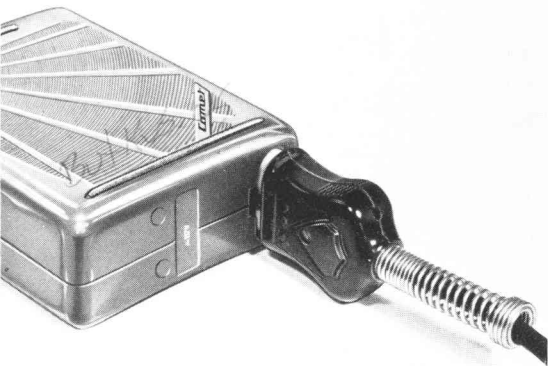
**Important note:** Switch off the unit after taking a flash picture, to avoid unnecessary drain on the accumulator. To leave it switched on needlessly for one minute is equivalent to the loss of one flash.

## b) A-C operation

The unit is provided for 110, 117, 125 volts A-C operation. No change of voltage is necessary within the unit. Any ordinary line cord (as it is used to connect an electric iron) may also be used to connect the unit to the wall socket. The line cord is connected to the unit by inserting it into a special socket which is accessible after removing a sliding plate under the unit itself. With A-C operation the operation switch must be in position 

When you insert the line plug into the wall socket the unit will be switched on. The red signal light indicates readiness for operation. With A-C operation the equipment is switched off by withdrawing the line cord from the wall socket.






### 3. Charging the accumulator

Just the same procedure as is required for A-C operation. No further operation is necessary. The nickel-cadmium accumulators are gasproof and they do not need any maintenance.

There will occur no damage if you keep your accumulator uncharged even during extended periods. However, it should be always recharged in order to maintain its full output of flashes. The state of charge of the accumulator

can be checked by the time of flash sequence. After the accumulator is recharged completely the time of flash sequence is 12...15 sec. After 20 flashes it will increase to 20 sec. If the time of flash sequence is more than 20 sec., it will be advisable to recharge the equipment. Recharging of a completely discharged accumulator will be completed after about 14 hours. Over-charging the accumulator occasionally will not damage the cells.

#### 4. Re-formig the storage condensers

After a period of a few weeks without use, we recommend running the unit from  $\frac{1}{4}$  to  $\frac{1}{2}$  hour plugged into A-C. The operation switch should meanwhile be set to . This procedure, without flash operation, will re-form the storage condensers, so that you will get the maximum number of flashes per accumulator charge.

#### 5. Guide number and setting of diaphragm

The guide number is determined by the light output of the ULTRABLITZ unit. The required aperture can be calculated with the aid of this guide number with the following formula:

$$\text{stop} = \frac{\text{guide number}}{\text{range}}$$

(The range quoted is from the flash lamp to the subject).

The stop table numbers as given in the table can serve only as a general guide, e. g. for medium-sized, bright rooms.

The aperture should be increased by one or two stops for out-door flashing, in large halls or at great distance from reflecting areas. If the distance is shorter than 8 ft. a greater diaphragm should be taken, e. g. at a distance of 3 ft. take the next larger stop.

## **6. Film and developing**

ULTRABLITZ light is equivalent to daylight of 5600° K. Therefore always use daylight film for color exposures. For black-and-white exposures, it is best to use panchromatic film with a normal developing. Very satisfactory negatives meeting the highest requirements as to a favorable gradation will be obtained by the use of modern rapid developers. The indicated values are calculated for a normal time of developing.

### Stop table

Feet		8	12	15	20	30	40	50
Black-White	32	10	6,3	5,6	4	2,8	2	1,4
	50	11	8	6,3	4,5	3,5	2,8	2
	80	16	11	8	6,3	4,5	3,5	2,8
	125	22	16	11	8	5,6	4,5	3,5
	200	32	22	16	11	8	5,6	4
	300	45	32	22	16	11	8	5,6
Color	10	3,5	2,8	2	1,4			
	32	5,6	4	2,8	2	1,4		
	100	8	6,3	5,6	4	2,5	2	1,4
	200	16	11	8	5,6	4	2,8	2
	ASA	Diaphragm stop						

## 7. ULTRABLITZ COMET is always with you

Owing to its convenient shape and small weight you can easily carry your COMET unit with you wherever you will go. If you hide the COMET in the pocket of your jacket you can do the flashing like a magician, as only the camera and the small high-performance flash lamp are visible. Whether the equipment is carried in a lady's handbag, in a suitcase, in the pocket of your jacket or overcoat or whether it is carried with a shoulder sling strap under or over your clothing the COMET will never bother you and it will be **always with you**.



## **8. Special Hints for obtaining even better shots with the ULTRABLITZ COMET**

Pictures shot with frontal light often are very flat. You can obtain a more effective illumination and a more plastic effect when you direct the light upon the object from the side or from above. The loss of illuminating power may be compensated by increasing the diaphragm aperture.

In cloudy weather ULTRABLITZ COMET will contribute often extra illumination and it is possible to get the same effect as in sunlight. Sharply contrasting illumination when shooting against the light can also be softened in this way, and this is very important especially for color photography, as too sharp contrasts will be softened too.

The following is a practical example:

At a range of 12 feet suppose the right stop is 8 taking 96 as guide number. For the general lighting you find an exposure time of 1/25 sec. for f 8 with an exposure meter. Set your camera to this exposure time. Then if you set the diaphragm to 11, the supplementary flash will have about the same photographic effect as the daylight. The shorter the exposure time is set, the more the effect of outside illumination will diminish.

## 9. Service and Guarantee

If these instructions are properly followed, the ULTRABLITZ COMET will perform well for many years to come. In the event, however, that your ULTRABLITZ should at any time fail to function properly, the camera store where the ULTRABLITZ COMET was purchased should be consulted, or Allied Impex Corp., 17 West 17th Street, New York 11, N.Y., sole factory-authorized importer (see import certificate).

The ULTRABLITZ COMET is guaranteed by us, through our representative for six months in accordance with the conditions set forth in the guarantee certificate enclosed with the COMET. Whenever the COMET is returned for repairs, it must be accompanied by the guarantee certificate, as otherwise our representative will have to charge for the repair. The terms of the

*The following special accessory for the ULTRABLITZ COMET unit is recommended:*

**Universal Camera Bracket,**

*to be screwed to your camera if this is without any shoe to take up the flash head.*

Distr. **Allied Impex Corporation**

17 West 17th Street, **New York 11, N. Y.**

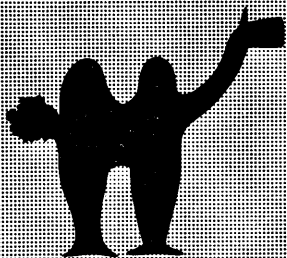


**OPERATING INSTRUCTIONS**

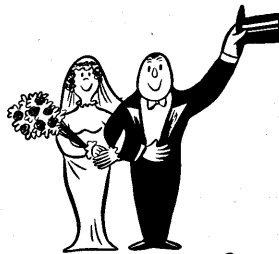
# *Ultraleitz*

*Butkus vs*

*Cornet OK*



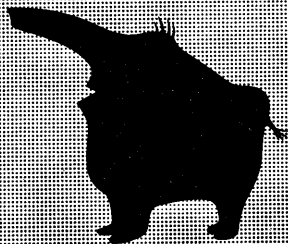
WITHOUT



G. Poni

WITH

**Ultralite**



G. Poni

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## 1. Flashing without ballast

The CORNET OK doubles your pleasure with the camera. Its small, elegant shape enables it to fit your camera ideally. You only have one "photographic unit" — no additional instrument and no leads to get in the way any more.

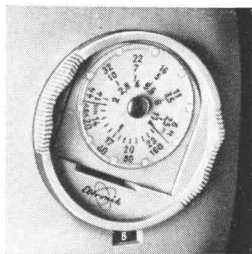
CORNET OK gives you unhindered movement, ready to flash at any time. The automatic control allows you to dispense with constant supervision, and you can devote your entire attention to your camera and the subject of the picture.

CORNET OK is absolutely simple to operate, and if you follow the tips in this booklet it will reward you with constant efficiency and long life.



## 2. Technical data

Wiring:	Transformation of energy through vibrator, constant light output by automatic transistorized monitoring circuit
Guide numbers:	92...105 Black-white 17° DIN (40 ASA) 46... 53 Colour 18° DIN (50 ASA)
Colour temperature:	approx. 5600° K.
Number of flashes:	per accumulator charge approx. 40...50
Time between flashes:	9...10 sec. accumulator operation approx. 12 sec. mains operation
Flash duration:	1/2000 sec.
Light angle:	approx. 60°
Mains voltages:	alternating current 110...125 and 220 V, 40...60 cycles, built-in charger
Battery:	3.6 V nickel-cadmium accumulators (without maintenance)
Weight:	790 grams, less than 28 ozs, complete
Dimensions:	approx. 7 <sup>5</sup> / <sub>8</sub> x 4 <sup>1</sup> / <sub>8</sub> x 2 <sup>7</sup> / <sub>8</sub> inches



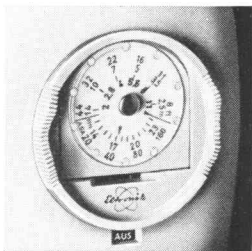
### 3. Ultrablitz CORNET OK photography is so simple

The switch-ring incorporates all switching possibilities and has three positions:

**"B"**

**Battery operation**

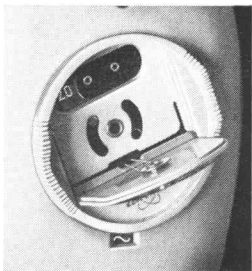
**"on"** (quiet buzz)



**"Aus"**

**Battery and mains  
operation "off"**

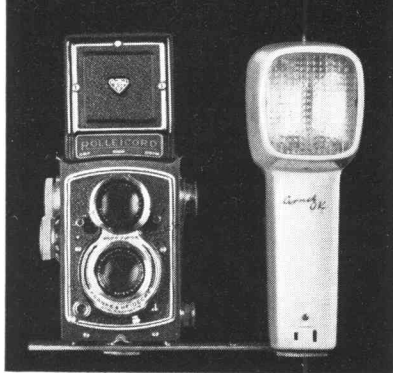
Ready for operation when  
red signal lamp lights up.



**"~"**

**Charging and  
mains operation  
"on"**

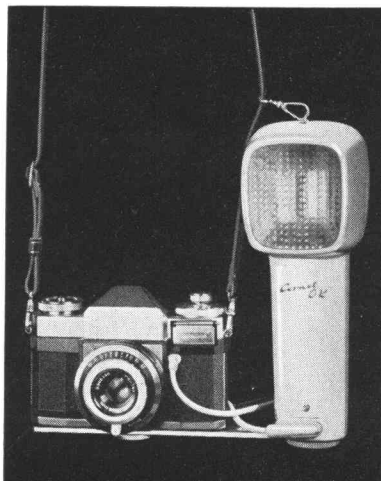
To flash: release camera  
shutter or, for open flash,  
press red button on front  
of handle.

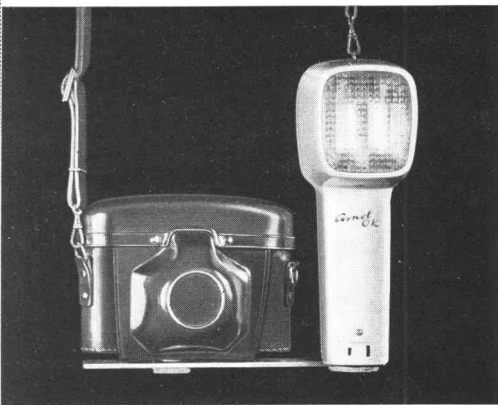


Place CORNET OK on bracket and fasten to camera.

Connect CORNET OK with camera via synchronizing cable.

Set camera synchronizing lever at "X" and speed to about 1/100 sec; if focal plane shutter is used, check manufacturers specification for correct shutter speed.





For transporting hang camera carrying strap on CORNET OK. Turn switch-ring to "AUS". Other ways of carrying: Pull camera strap through attached snap hook of unit — or hang CORNET OK on special straps — or place camera and CORNET OK with accessories in carrying case.

**Note:** When taking a series of shots the CORNET OK can remain turned on. The automatic transistorized monitoring circuit cuts off the current after reaching the full flash capacity. This conserves battery power and assures

6 you an uniform full output.

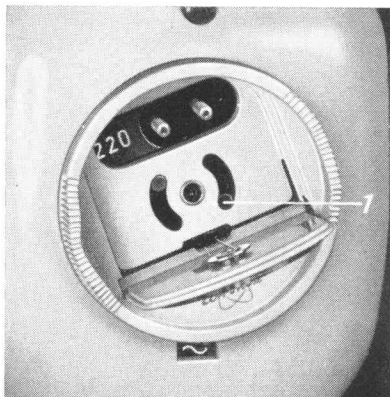
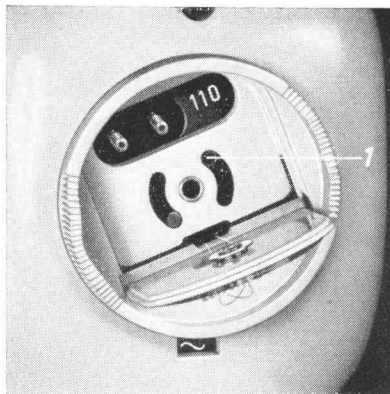
#### 4. Recharging and A-C operation

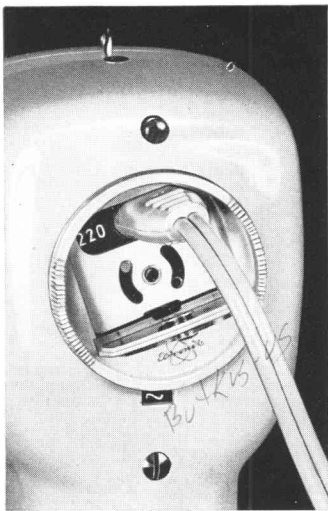
CORNET OK is built only for A-C current or battery operation. Before plugging in, turn switch-ring to left and flap opens automatically. Insert a sharp pointed object into the opening (1) and adjust voltage by sliding up or down as required (220 or 110/125 V to 110).

**Danger!** The CORNET OK may not be used on D-C current! Use only standard Ultrablitz mains cable as listed on page 16 as accessory.

**To switch unit,** connect mains cable with a normal household electric socket. When this has been done, the actual charging of the battery begins. That's all — nothing else is necessary. The red signal lights up and shows you that the battery is being charged. At the same time, you can flash as often as you like — this will not discharge the battery.

**To turn off,** just pull plug out of electric socket.





The built-in battery is sealed air-tight and requires no servicing. The sequence of flashes tells you whether the battery is fully charged or not. The flash sequence is defined as the time interval which elapses between flash and lighting up of red signal:

approx. 10 sec = fully charged

approx. 18 sec = half discharged

approx. 30 sec = completely discharged

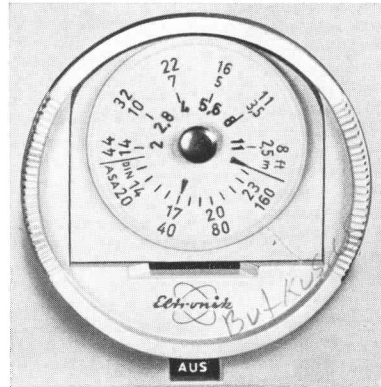
At the very latest, battery should be recharged when flash interval is down to 30 seconds. In this case, a full charge will take about 14 hrs. The battery is not damaged, however, if it is left uncharged for longer periods of time.

An occasional overcharge is not damaging. The battery has an exceptionally long life of about 400 to 500 recharges. If by mistake the mechanism is left turned on for a long period of time, the battery will discharge and vibrator will no longer operate. In general, this will not ruin the battery, but up to 60 hrs may be required for a new charge. It will then be back to full capacity after 2 to 3 normal discharge cycle with a 14 hrs. recharge for each.

## **5. Reforming the Storage Condenser**

When flash has not been used for severc. weeks, it is best to plug it in an electric socket for 20 to 30 minutes. This will reform the electrolyte condenser and the unit will reach its full flash power again.

## 6. Aperture Computer and Guide Numbers



### Aperture Computer

Whenever daylight or constant sources of artificial light are available, correct exposure is regulated by means of shutter speed and aperture. However, if the very short electronic flash is used, correct exposure can only be regulated by the aperture. The aperture computer offers an easy way of ascertaining correct aperture. If you are using black and white film, set black arrow at value corresponding to sensitivity of film used (for example: ASA 40), use red arrow for colour film. Proper aperture value (5.6) is then read at the distance (example: 16 ft.)

## Guide Number

If the aperture computer is not sufficient, that is to say, if sensitivity of your film is higher or lower than values on computer, proper aperture value can be calculated from the guide number (see page 13) or as follows:

$$\frac{\text{guide number}}{\text{distance}} = \text{aperture (for exemple: for ASA 320 film } \frac{280}{50} = 5.6)$$

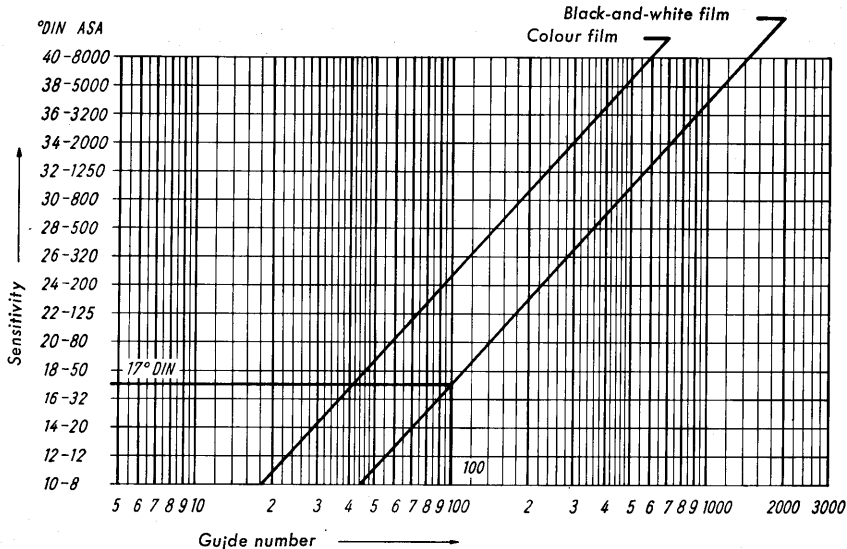
Distance is measured in ft. between lamp and subject. The guide number is, of course, only an approximation. It is governed by the light output of the CORNET OK and by the film sensitivity, however, it also depends on the brightness of subject, size and brightness of room and method of developing. Guide numbers indicated are averages calculated for normal size rooms with light walls. If you are taking pictures outdoors, in large halls, or of bright, reflecting objects at long distances, be sure to open shutter 1 or 2 stops more than required by mathematical calculation or aperture computer. Also, if the distance is under 8 ft., use a larger shutter opening (i. e. 1 stop larger for a distance of 3 ft.)

Guide number varies for colour and black and white film, although they may have the same sensitivity. Using the guide number graph at the right, guide numbers for every type of film can be ascertained in the following manner: Find the sensitivity of your film on the left hand scale, follow it horizontally until it intersects the line for the type of film you are using (colour or black and white). The proper guide number is then located on the horizontal scale directly below the point of intersection.

## **7. Film and developing**

The ULTRABLITZ light corresponds to daylight of 5600° K. Therefore, use only daylight film for colour pictures. For black and white pictures we recommend panchromatic film with normal developing. An especially high quality of brilliant, finely graduated negatives can be obtained by using a modern rapid developer. Values indicated refer to normal developing time.

# Diagram of guide numbers (for feet)



## **8. Automatic transistorized monitoring circuit**

The transistor-relay-circuit of the CORNET OK saves the battery and automatically keeps light output constant. When making pictures it is not necessary to turn off the unit to save battery. Just as soon as the CORNET OK has been turned on, the automatic control takes over the job of regulating flash condenser voltage thus securing an ever constant light power. At the same time, this automatic mechanism cuts off battery current just as soon as full flash power has been reached, increasing the actual number of flashes available. This automatic control has the great advantage of making it possible to keep the CORNET OK in constant operation. This means that it is always ready to work and you won't have to miss that once-in-a-lifetime-shot.

## 9. Special hints for obtaining even better snapshots with the Ultrablitz CORNET OK

Front lighting often results in flat pictures. Better pictures, showing the effect of depth, can be obtained by placing the flash lamp some distance to the side or above the camera, but still aimed at the subject. The slight loss in effective light can be compensated by opening the aperture of the lens a little. Suitable extensions for the synchronising lead can be obtained from any photographic dealer.

The ULTRABLITZ considerably extends your field of photography by enabling you to brighten deep shadows, especially necessary for colour film. Under dull conditions a flash provides "sunlight" while when photographing against the light (contre-jour) it smoothes out excessive contrasts.

An example of calculating the correct aperture:

At a distance of 12,5 feet the guide number 100 gives an aperture of f 8.

For the available general light, the exposure meter indicates an exposure of  $\frac{1}{25}$  sec. at f 8.

Set the shutter to  $\frac{1}{25}$  sec. and the aperture to f 11 instead of f 8.

In this way the flash will have about the same effect as the available light.

By reducing the exposure time, the effect of the available light is reduced.

## 10. ULTRABLITZ Service

In spite of the small size the Ultrablitz CORNET OK is reliable and of a high performance and does not need any maintenance. The CORNET OK is the most up-to-date model, made on modern equipment, and has been most carefully tested.

If you are dissatisfied with the performance of your Ultrablitz CORNET OK equipment at any time, please turn to the dealer from whom you have bought it or turn to the representatives of our company in your country. The ULTRABLITZ WORLD SERVICE will be glad to help and advise you, wherever you are.

Please send the complete equipment for servicing and indicate type and serial number of equipment together with detailed information about all troubles you experienced with the equipment. Experience has shown that this is necessary for proper servicing your ULTRABLITZ.

<b>Supplied with</b>	<i>Mains cable for charging</i>	KA 185/1x
<b>CORNET OK:</b>	<i>Synchronising cable</i>	KA 184/1x
	<i>Camera bracket</i>	TG 256/1z

<b>Special accessories</b>	<i>Universal camera bracket</i>	TG 275/1z
<b>recommended:</b>	for securing CORNET OK to camera	



**OPERATING INSTRUCTIONS**

# Ultrabeitz

*Balkonus*

**J E T II**

**Caution:**

High voltage is passing through the flash lamp cable and plug. To first discharge the unit by pressing the open flash button before any removal of cords.

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## 1. Technical data

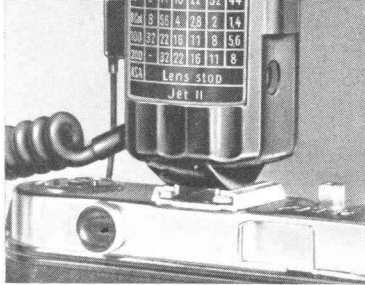
Electric energy:            about 80 Ws (full power)  
                                  about 40 Ws (half power)

Color temperature:        about 5600° K.

Number of flashes:	per charged	per set of
	accumulator	dry cells
	about 200	about 90 (full power)
	about 350	about 160 (half power)

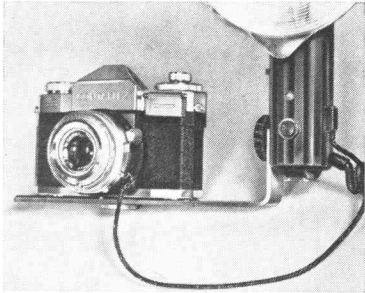
Flash sequence:	accumulator	dry cells	plug-in
	7	10—20	8 sec. (full power)
	3,5	6—12	4 sec. (half power)

Flash speed:	1/1000 sec. at full power 1/2000 sec. at half power
Guide number:	250 black-and-white film 100 ASA 65 Ektachrome daylight color (full power, standard angle)
Angle of illumination:	standard 50°, wide 80°, adjustable
Line voltages:	110/117 and 220 volts AC (40—60 cycles)
Accumulator:	4 V, Sonnenschein Type 2 BI 2
Dry cells:	4, each 1.5-volt Bright Star No. 10, Size D, or Pertrix No. 222 (leak proof) or No. 221
Weight:	about 4.6 lbs.
Dimensions:	8—1/2×5—3/4×2—1/2 inches

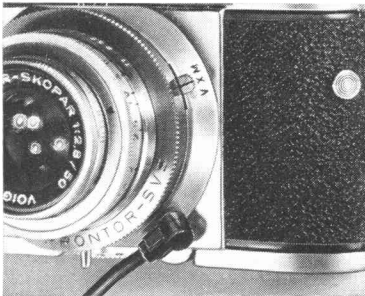


## 2. ULTRABLITZ JET II flash photography is so simple

◀ Push the flash head with the spring-loaded foot into the shoe on your camera or

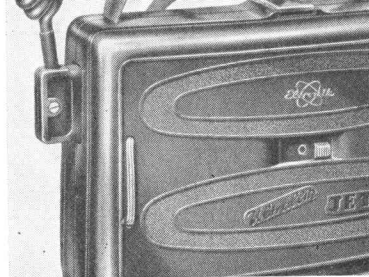


◀ mount it on the universal bracket and screw this to your camera

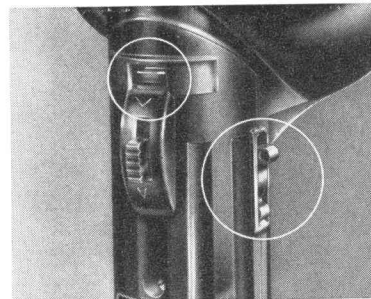


◀ Plug the synchronizing cord into the flash head and into the camera and set the synchronizing lever to "X". Set the shutter to about 1/100 sec. (with focal plane shutters see camera handbook).

Plug the flash head cable into the case and set the power selector to full (O) or half (D) power.

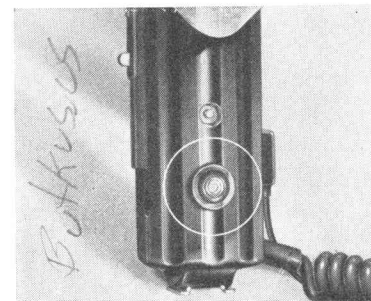


Press the on-off switch on the lamp handle until the red dot shows (there is a slight buzzing tone when the equipment is "on"). The signal lamp lights up as soon as the unit is ready for flashing.



To flash: a) release the camera shutter

b) for open-flash press the red hand release knob.





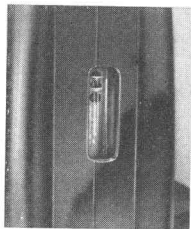
Switch the unit off with the switch on the lamp handle (the red dot is hidden when the unit is "off").

For carrying, disconnect the flash head from the camera and fix the head on the case.

**Important note:** Switch off the unit after taking a flash picture, to avoid unnecessary drain on the accumulator. To leave it switched on needlessly for one minute is equivalent to the loss of one flash.

The accumulator is fully charged if all three floats are at the top of the float tube. If one or more floats have sunk, recharge the accumulator (see section 7).

6

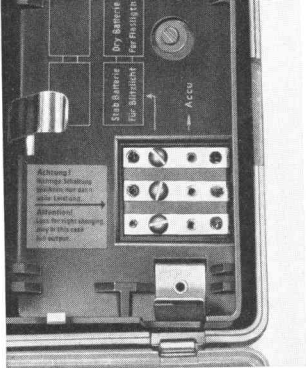


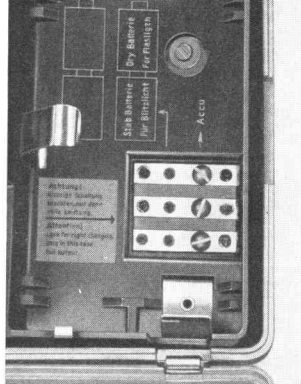
### 3. Kind of operation

The ULTRABLITZ JET II unit is provided for dry cell, accumulator or A-C operation. Before opening the unit pull plug and disconnect flash head cord from unit.

#### a) Dry cell operation

Be sure that unit is turned on dry cell operation. The three screws must be inserted in the left row of the battery storage, while the right row remains open. Four batteries are clamped in the unit between the springs and contact strips so that all small contact caps are showing upwards as it is shown in the battery storage of the diagram. Insert first left top cell and push it strongly against the upper spring, then insert the cell below, afterwards the right top cell and finally the last below. The selector cramp (a) must be

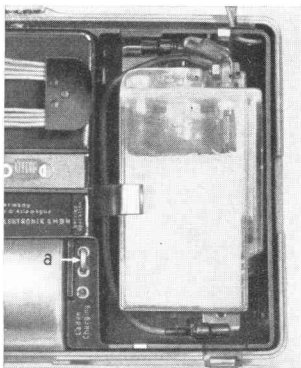




set to "Operation". (How it is done see section 8)  
Switching on and off is done by a switch on the torch.

#### *b) Accumulator operation*

For the operation with accumulator the above mentioned three screws must be screwed in the right row of holes of the battery storage, then you can insert the accumulator so that the accumulator window with its float tubes is showing towards the control window. Connect short lead of the accumulator with upper contact and the long lead with the lower contact. The power selector cramp (a) must be set to "Operation". Switching on and off is done by a switch on the torch.

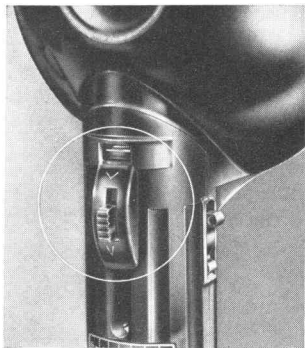


### c) A-C operation

The line voltage selector lever is set to 220 volts by the factory. If the local line voltage does not correspond to the pre-set voltage of the factory remove the cover plate and set the voltage selector lever to the corresponding voltage. Pull plug out of jacks and pass it outside the case through the opening in the cover and replace the cover. The unit is **turned on** by inserting the plug to the line socket. (There is no buzzing tone to be heard). The switch on the torch has no effect in A-C operation. Signal light shows readiness for operation. With A-C operation the unit can only be **switched off** by withdrawing the connector plug from the line socket. For transportation wind up line cord in the unit and insert plug into the jacks. (The unit is now again ready for battery operation).



## 4. Adjusting angle of illumination



By switching the small lever on the flash head, the angle of illumination can be changed from  $50^{\circ}$  to  $80^{\circ}$ . Press the lever in slightly and then switch to desired position. Distribution of light is very uniform and well adapted to photographic requirements in both positions. Rule:

Standard and telephoto lenses angle  $50^{\circ}$ , setting  $\nabla$

Wide-angle lens angle  $80^{\circ}$ , setting  $\nabla$

## 5. Selection of lighting power

Power selection is another way of adopting the unit to particular requirements. At full power and short range, overexposure can occur, especially on high speed black-and-white film. In that case use half-power. For color, always use full power. The power selector has two positions:



full power



half power

It is best for your unit to operate the power selector slowly and immediately after flashing. Remember that a set of dry cells or the accumulator will yield considerably more flashes at half power than at full power. Also, a considerably more rapid flash sequence is permissible. Photographically, changing from half to full power amounts to a gain of one diaphragm stop; or, under otherwise equivalent conditions, 50 % more depth can be lighted.

## 6. Setting of diaphragm: stop table, guide number

In ULTRABLITZ photography, exposure is generally controlled entirely with the diaphragm adjustment of the camera. A simple table can be given for various ranges and film sensitivities, and this table appears on the flash lamp. Range is measured from the lamp to the object. Under the range, for example 22 feet, opposite the film being used, for example 50 ASA, find the proper diaphragm setting, in this case 8.

Values are rounded off to simplify the table.

Note that the stop table on the flash head is planned for comparatively long developing time of black-and-white films.

Satisfactory negatives will be obtained if films are developed 20—25 % longer than normal. The color film taken as a basis is Ektachrome reversible daylight film. The stop table is for full flash power and standard angle of illumination of 50°. For half power, open the diaphragm one more stop than called for in the table. The wide-angle setting calls for a further opening of diaphragm aperture by one stop.

The proper stop may also be quickly calculated:

$$\text{Stop} = \frac{\text{guide number}}{\text{range}}$$

Guide Numbers: To determine the guide number of any film simply check the chart for the ASA index number of the film you are using as given by the manufacturer, the flash guide number will be found under the column heading of the unit you are using. This number is to be used as a guide only as units will vary due to condition of the condensers and reflector.

### Guide numbers

Film	wide-angle 80°		standard angle 50°	
	Half power	Full power	Half power	Full power
<i>Black-white</i> *) 32 ASA	70	100	100	140
50	90	130	130	180
64	100	140	140	200
80	115	160	160	225
100	125	175	175	250
125	140	200	200	280
160	160	230	230	320
200	175	250	250	350
250	200	280	280	400
500	280	400	400	560
<i>Color Kodachrome</i>	25	35	35	50
<i>Ektachrome</i>	32	45	45	65
<i>Ansochrome</i>	32	45	45	65
<i>Super Ansochrome</i>	56	78	78	110

\*) The guide numbers for black-white film are calculated for 50 % over development as is normal on all negatives taken with electronic flash.

Conversions. — If your film sensitivity is not given on the ASA scale, use the following conversion table (estimate intermediate values):

ASA	Weston	Scheiner USA	Scheiner European	DIN (in . . . /10°)
10	6	15	21	11
20	12	18	24	14
40	24	21	27	17
80	50	24	30	20
160	100	27	33	23
320	200	30	36	26

## 7. Film and developing

JET II light is equivalent to daylight (5600° K.). Therefore always use daylight (negative or reversible) film for color exposures. The guide numbers for color film cannot be determined from the ASA values specified for it. For black-and-white exposures, it is best to use panchromatic film, not too soft. Usually a fine-grained equalizing developer is advisable. Very fine-grained developers are not recommended because the gradation is often too flat. Black-and-white film is usually developed 20—25 % longer. Reversible color film will not permit lengthening of developing time.

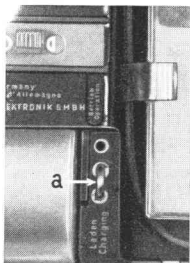
## 8. Care and Maintenance

### a) Dry cells

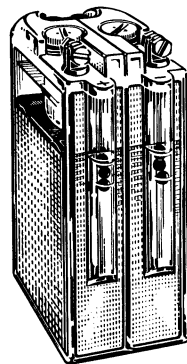
Be sure that contact caps and metal bottoms are always clean and bright. The same applies to the contact springs in the unit. Worn out batteries should be removed immediately as otherwise the contact springs may be damaged from chemical decomposition.

### b) Recharging the accumulator

A thorough care and maintenance of the accumulator ensures proper functioning at all times. As soon as one or several floats have sunk to the bottom the accumulator should be recharged. Recharging is very simple. Set the selector cramp to "Charging". (This is done by lifting and turning the selector cramp to the position "Charging"). Then plug the line cord connector plug of the unit into the line socket and charging starts immediately. Recharging is completed after 3 hours when black floats are swimming at the top.

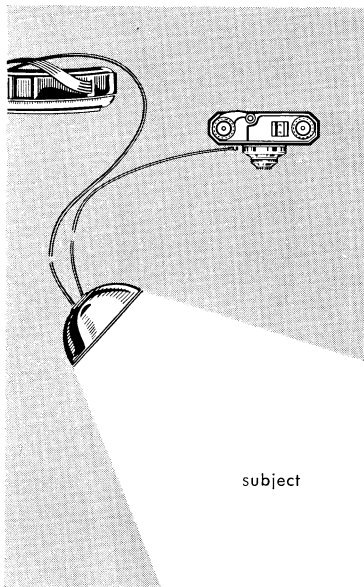


Recharging of a completely discharged accumulator will be completed after 16 hours. Even during extended periods of disuse, the accumulator should be recharged every three weeks in order to maintain its full output. After charging check the acid level at once, which must not exceed the upper mark, otherwise the accumulator ceases to be spill-proof. If the acid level has dropped below the lower mark, top it up with distilled water until the level reaches the upper mark and recharge it again for  $\frac{1}{2}$  hour. (Follow properly instructions of Sonnenschein-Type booklet).



### **c) *Re-forming the storage condensers***

After a period of a few weeks without use, we recommend running the unit from  $\frac{1}{4}$  to  $\frac{1}{2}$  hour plugged into A-C. The power selector should meanwhile be set to full power. This procedure, without flash operation, will re-form the storage condensers, so that you will get the maximum number of flashes per accumulator charge.



## 9. Special Hints

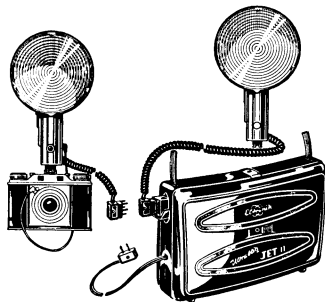
### a) *Side lighting*

It is often very desirable not to attach the flash to the camera, but to direct the light upon the object from the side or from above. Suitable extension cords for the synchronizing cord are obtainable at your dealer's. If the light is aimed at the ceiling (bounce light), a very soft diffuse lighting is obtained. The ceiling should be white and not too high. The loss of illumination is considerable, and the proper diaphragm setting may be found only by trial and error method.

## **b) Supplementing daylight (fill-in)**

In cloudy weather, JET II will contribute often indispensable extra illumination, and in close-ups it is possible to get the same effect as in sunlight. Sharply contrasting illumination when shooting against the light can also be softened in this way. The following is a practical example:

At a range of 16 feet and full flash power, suppose the right stop is 11. For the general lighting (cloudy weather), you find an exposure time of  $1/25$  sec. for f11 with an exposure meter. Set your camera to this exposure time. Then if you set the diaphragm to 16, the supplementary flash will have about the same photographic effect as the daylight. The shorter the exposure time is set, the more the effect of outside illumination will diminish and the supplementary lighting from the flash, directed at the object from one side, for example, will be more effective.



### c) *Extension flash*

An extra flash head affords additional lighting possibilities with combinations of front and side, front and top, front and back lighting. Insert the connector of the main lamp into that of the extension lamp, and then plug both into the unit. The extra lamp may be held by an assistant or mounted on a tripod with the angle bracket.

The flash power is divided about equally between the two lamps. The stop table and guide number will give some idea of the proper choice of diaphragm. As a rule, the diaphragm aperture should be somewhat larger than when a single frontal lamp is used.

### d) *Open flash method*

If you occasionally want to take flash exposures with a camera that has no synchronizer connection, you can operate the flash with the red button on

the head. Set the camera shutter to T (time exposure). Make the exposure in this sequence: open shutter — flash — close shutter. You can use the same method to light large objects with several flashes. The camera must of course be set on a tripod. Note that to gain one diaphragm stop, you must always double the number of flashes, for example:

Number of flashes	1	2	4	8	16
Diaphragm	4	5.6	8	11	16

## 10. With photocell as servo flash

With the aid of the ELTRONIK-photocell (special equipment) the ULTRA-BLITZ JET II is converted into an automatically working servo flash, which is most useful on many occasions. Without any connecting cables you can release the servo flash by any other flash unit over distances up to 60 ft. Accumulator or A-C operation as well as half or full power is possible.

## **11. Service and guarantee**

If these instructions are properly followed, the JET II ULTRABLITZ will perform well for many years to come. In the event, however, that your ULTRABLITZ should at any time fail to function properly, the camera store where the JET II ULTRABLITZ was purchased should be consulted, or Allied Impex Corp., 17 West 17th Street, New York 11, N. Y., sole factory-authorized importer (see import certificate).

The JET II ULTRABLITZ is guaranteed by us, through our representative, for six months in accordance with the conditions set forth in the guarantee certificate enclosed with the JET II. Whenever the JET II is returned for repairs, it must be accompanied by the guarantee certificate, as otherwise our representative will have to charge for the repair. The terms of the guarantee should be carefully studied.

The following special accessories for the **ULTRABLITZ JET II** unit are recommended:

**Camera Bracket,**  
**Second flash lamp** with bracket and auxiliary plug,  
**Photocell** as "Servo Flash"

Distr. **Allied Impex Corporation**  
17 West 17th Street, **New York 11, N. Y.**