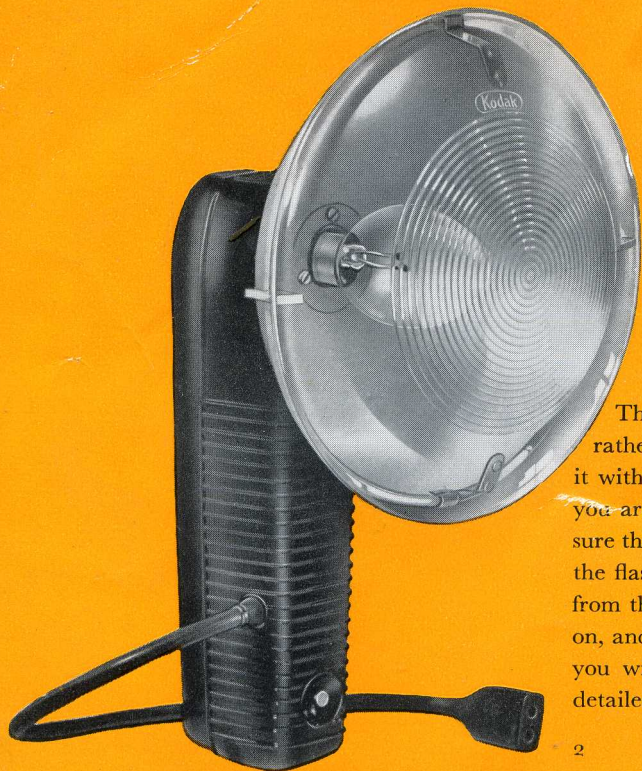


how to use your

Kodak

flashholder MODEL II

read before using
the flashholder equipment



Kodak

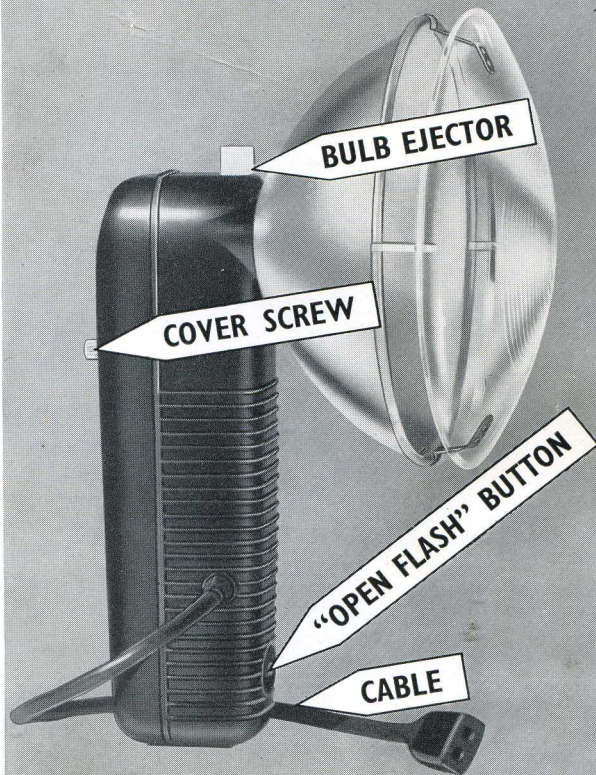
MODEL II *flashholder*

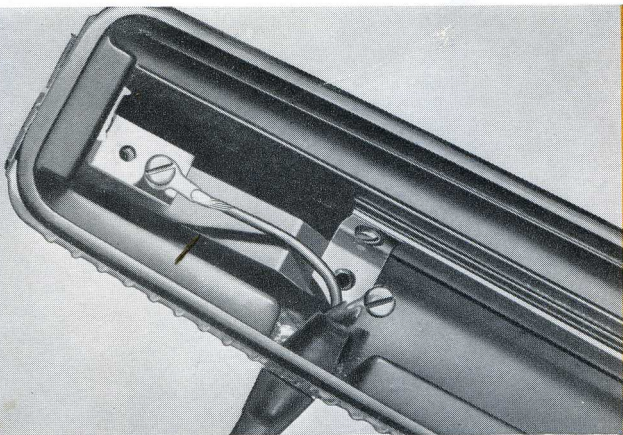
This flash equipment is so versatile that there is rather a lot to be said about making full use of it with various cameras, films, and flashbulbs. If you are new to 'flash', we suggest you first make sure that you know how to connect up and handle the flashholder (pages 4 to 7). Then start working from the simplified advice given on page 9. Later on, and after you have seen your first 'flashsnaps', you will be able to appreciate better the more detailed information that follows.

how the flashholder works

When the electrical circuit in the Flashholder is completed, a dry battery housed in the plastic body fires the flashbulb. This gives a single flash of light intense enough to give a well-exposed photograph, and brief enough to prevent normal subject movement from showing as a blur. Most modern cameras have flash-synchronized shutters. These have plugs or sockets to which the Flashholder can be connected by means of the appropriate cable. When the shutter is operated, its internal contacts complete the circuit and cause the bulb to fire during the brief time that the shutter is fully open.

Even with cameras that cannot be connected to the Flashholder, the bulb can be fired independently by pressing the red button at the bottom of the Flashholder. This 'open-flash' technique (see page 11) only applies after dark or in very dim light.





*getting the
flashholder ready*

FITTING THE CABLE TO THE FLASHHOLDER

Your dealer will advise you which of the available types of 'Kodak' Flashholder Cable is needed to connect the Flashholder with your camera.

Undo the knurled cover screw in the back of the Flashholder case, and lift off the back. Remove the two screws from the brass contact strips. Insert the

cable through the hole at the side of the Flashholder and push in the tapered rubber sleeve until it is centred firmly in the hole. Fit the screws through the terminal tags on the ends of the cable lead (as shown above) and screw them back into the contacts. You are then ready to put in the batteries.

FITTING THE BATTERIES

This Flashholder must be fitted with two dry cells, both pointing the same way. Ever-Ready U.11, Vidor 0011, Drydex T.15, or equivalent dry cells are suitable. Cells must be in first-class condition. Unless they are fresh, they are liable to cause bad synchronizing, or may even fail altogether to fire the flashbulb. Never let exhausted dry cells stay in the Flashholder.

To test the battery, insert a 6-volt, 3-watt cycle headlamp bulb (S.C.C.) in place of a flashbulb. Press the red button of the Flashholder, and if the bulb glows fairly brightly (although not, of course, as brightly as if it were operated from a 6-volt battery), the battery will be found to fire flashbulbs satisfactorily.

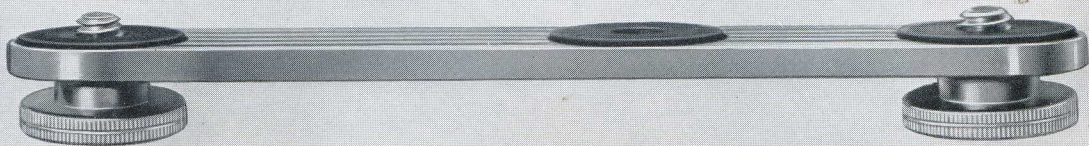
Powered by a miniature hearing-aid 22½-volt battery, the compact and efficient 'Kodak' Flashpack can be fitted in place of the above battery. It will fire several hundred more flashbulbs, with much more certainty, than will two 1.5-volt cells. *But do not test a Flashpack by the above method.*



attaching the flashholder to camera

The 'Kodak' Flashholder Model II can be securely fixed, by means of the 'Kodak' Flashholder Camera Bracket, to any hand-camera having a tripod bush. This bracket (see below) has three holes so placed that the Flashholder can be positioned to the best advantage in relation to the camera. Using the knurled

thumb-screws, attach the bracket by means of one hole to the tripod bush on the camera, and by one of the other holes to the threaded socket in the base of the Flashholder. The tripod may then be screwed to the third hole if required. Note these points when fixing the Flashholder and camera on the bracket:



- 1 The Flashholder should be positioned so that it does not foul the camera controls.
- 2 It should not obscure the view-finder.
- 3 It is usually preferable for the reflector to be above the level of the camera lens.

See that the connecting cable does not pass in front of the camera lens. This can best be prevented by leading it behind and beneath the Flashholder bracket instead of directly from Flashholder to flash contacts. Whichever method of connection is adopted, see that it does not impose any strain on the cable at the point where it enters the Flashholder or connects to the camera.



The Flashholder can be used without being connected to the camera at all if the 'open flash' mode of operation described on page 11 is adopted.

choosing and using a flashbulb

DIFFERENT KINDS OF FLASHBULBS

Use either flashbulbs which have bayonet metal caps, with a single centre contact, or capless flashbulbs with their special adapters. Flashbulbs of different light outputs are available. The more powerful bulbs allow flash pictures to be taken at greater distances, or with smaller lens apertures, than with the smaller bulbs. This is all dealt with in the advice on the following pages.

Flashbulbs are also often grouped in classes according to the time delay between the closing of the shutter contacts and the peak brilliance of the

flash. All flashbulbs listed in this booklet are Class M (medium delay). Some adjustable camera shutters have alternative synchronizing settings that correspond to other classes. Most modern box cameras are suitable for flashsnaps with Class M bulbs – the advice on the next page assumes such a camera.

FITTING AND REMOVING FLASHBULBS

Unclip the diffusing screen and swing it open. Insert the bulb, or adapter for capless bulbs, so that the pins on the cap engage with the slots in the bulb holder. Push it straight in without twisting, until it clicks.

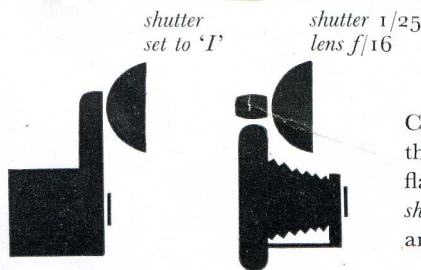
Occasionally, a flashbulb may shatter when it is fired. To guard against this contingency, the diffusing screen must always be securely closed before using the equipment.

After firing, open the diffusing screen, and eject the used bulb by a sideways movement of the lever at the rear of the reflector (or, in the case of capless bulbs, by pushing the ejector on the adapter) – be careful, the bulb will be hot.

your first flashsnaps

You can expect reasonable flashsnaps of average subjects (as in your own home) with *any* 'Kodak' roll film and *any* flashbulb which will fit the Flashholder – but, for choice, load up with 'Verichrome' Pan Film and note the advice given in the following pages.

If the camera is not stated to be suitable for Class M bulbs use a 5 or 25 type flashbulb, and do not attempt to photograph large or distant subjects.

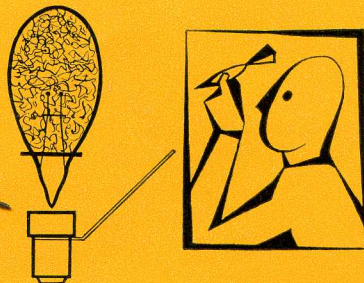


Connect the Flashholder to the camera before inserting the flashbulb, and *make sure the shutter is closed*. This obviates any risk of a premature flash.

BEST FOR CLOSE-UPS

4 to 8 ft

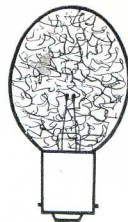
No.1 or PFI 'capless' in special adapter



BEST FOR GROUPS LARGER ROOMS AND OUT OF DOORS

8 to 16 ft.

No.5 or PF5 (*capless*) or PF25



flashsnaps with simple cameras

With cameras having fixed shutter speed and lens opening, the exposure obtained depends only on the distance between flash and subject.

The distance which will give the *best* flashsnaps depends mostly upon the kind of film and flashbulb in use. You may use any of the black-and-white 'Kodak' Films for flashsnaps. But the highest speed films are more suitable for use out-of-doors at night than for close-up flashsnaps indoors.

Basic exposure advice is given on the previous page. For more consistent exposures, and to give good negatives that will ensure good enlargements, keep the flash-to-subject distance within the limits given on page 11. *Set the camera shutter to 'I'.*

OUTDOORS AT NIGHT

Use the recommendations in the table (page 11), and try to keep to the middle of each range of distances. For outdoor flashsnaps at night, the required flashbulb-to-subject distances may only be obtainable by using Kodak 'Tri-X' Film in conjunction with No.5 or PF25 flashbulbs.

IN DAYLIGHT

Follow the distance recommendations for indoor flashsnaps (using the 'I' setting only). For delightful pictures of subjects sunlit from behind, use flashlight to illuminate the shadow side. Shield the camera lens from direct sunlight.

CAMERAS SYNCHRONIZED ONLY FOR CLASS F BULBS

With single-speed cameras stated to be synchronized for both Class F and Class M flashbulbs you can take flashsnaps, night and day, at the 'I' shutter setting. Class F bulbs are now obsolete. If the camera is not marked as suitable for both classes of bulbs, you will now have to use Class M bulbs at the 'I' setting, though only part of their full light will then be effective. So, with such a camera you may use No.5, or PF5 or PF25 bulbs

Keep within the flash-to-subject distances given for No.1 or PF1 bulbs.

To get the full effect from M Class bulbs, when the camera is not synchronized for them, use 'open-flash'.

COMPOSITION

If standing at the recommended distance gives too small a picture of the subject, you can move in to half the distance – but you must then dim the flash with a double thickness of white handkerchief draped over the diffusing screen. Alternatively, remove the Flashholder from the camera and use the 'open-flash' method. Get someone to fire the Flashholder from the recommended distance just after you open the shutter: you, of course, operate the camera from the position which gives the best

composition. Make sure that the camera is placed so that the flash is not going to be directly reflected back to the camera from a bright surface, e.g. mirror, picture, window, or polished ornament.

'OPEN-FLASH' TECHNIQUE

If you are using the Flashholder without any connection to the camera, you can still use any of the bulbs mentioned, and at the distances specified, provided you set the shutter to 'B' or 'T'. Then (in quick succession) open the shutter, press the red button on the Flashholder, and close the shutter. Use 'open-flash' only in the dark or in very poor light, unless the camera is firmly supported and the subject is stationary. Otherwise, in bright light a flashsnap will be blurred by movement of camera or subject while the shutter is open.

FLASH-TO-SUBJECT DISTANCES IN AN AVERAGE ROOM

	<i>'Panatomic-X'</i>	<i>'Verichrome' Pan</i>	<i>'Tri-X'</i>
No.1, PF1	4-5 ft	4-10 ft	5-16 ft
PF14	4-6 ft	4-12 ft	6-20 ft
No.5 and PF25	*4-9 ft	5-16 ft	9-28 ft

* Preferred distance is 6 ft.

the picture from a shorter distance than this, you can dim the flash with two thicknesses of white

handkerchief over the diffuser and then move in to half the distance.

FLASH-TO-SUBJECT DISTANCES IN FEET

	<i>f</i> /4.5	<i>f</i> /5.6	<i>f</i> /8	<i>f</i> /11	<i>f</i> /16	<i>f</i> /22	<i>f</i> /32
<i>'PANATOMIC-X' FILM</i>							
No.1, PF1	11	9	6 ₉	4½ 6½	3 4½	— 3	—
PF14	15	12	9	6 9	4½ 6	3 4½	— 3
No.5, PF5 or PF25	20	15	11	8	5½ 8	4 6	3 4
<i>'VERICHROME' PAN</i>							
No.1, PF1	20	15	10	7 10	5 7	3½ 5	— 3½
PF14	25	20	15	10	7 10	5 7	3½ 5
No.5, PF5 or PF25	30	25	18	13	9	6½ 9	4½ 6½
<i>'TRI-X' FILM</i>							
No.1, PF1	30	25	15	12	8	6 8	4 5½
PF14	40	30	20	15	10	8	5½ 7½
No.5, PF5 or PF25	50	40	30	20	15	10	7 10

flash with adjustable cameras

All adjustable cameras can be set so that they can be used very simply as flash 'snapshot' cameras. With the shutter set to $1/25$ second, and the lens aperture to $f/16$, you can follow the basic flash-distance recommendations given on page 9. The focusing scale should, of course, be set to the flash-to-subject distance.

With fixed aperture cameras, it is necessary to keep within the limits imposed by flashbulb-to-subject distance and frame the picture accordingly.

With adjustable cameras, however, exactly the picture you want can be composed in the viewfinder, and the lens aperture settings on the camera can then be adjusted to suit the distance from the Flashholder to the subject. With most cameras the shutter speed should be left at $1/25$ second for all flashsnaps. With further experience you will be able to try taking flash pictures at higher shutter speeds, according to the advice given in the camera instructions.

The following tables give recommended flash-to-subject distances in feet for a given aperture (or vice versa) with various films and flashbulbs.

The figures printed in larger type in the tables (page 13) are suitable for average subjects in large rooms or out-of-doors at night. In small light rooms, use the figures in smaller type. For dark subjects, use next larger lens aperture (e.g. $f/5.6$ instead of $f/8$).

If flash is being used to relieve shadows in outdoor pictures set the lens aperture to suit the daylight conditions and then fire the flash from the distance shown in the table for that aperture and the appropriate film and bulb. If you want to take

flash guide numbers

In some film instruction sheets, flashbulb instruction sheets and other photographic literature, will be found tables of numbers which enable suitable lens and distance settings for flash photography to be quickly calculated. These numbers are known as 'flash guide numbers'. Each combination of film and flashbulb has its own flash guide number.

Divide this flash guide number by the distance in feet from the flash equipment to the subject and you have the lens aperture (often referred to as the

f/number) to which the camera should be set. Alternatively, divide the guide number by the lens aperture that you wish to use and you have the required distance in feet from the flash to the subject.

Remember these are only 'guide' numbers, and you should determine by trial whether they give the exposure level you want when using your particular flash equipment, and in the circumstances in which you are taking pictures. Guide numbers, therefore, may not indicate exactly the same exposure as do the tables in this booklet – which refer specifically to the 'Kodak' Flashholder Model II when used in average domestic rooms.

The aperture indicated by the guide number is suitable for use in large rooms with medium-coloured decoration and furnishing. It should be reduced by one stop (e.g. $f/11$ instead of $f/8$) when the subject is light in colour and in a small brightly-decorated room. It should be increased by one stop (e.g. $f/5.6$ instead of $f/8$) if the subject is in very dark surroundings or out-of-doors at night.

flashsnaps in colour

Miniature cameras like the Kodak 'Retina' or 'Retinette' which take 'Kodachrome' Film K.135 or K.135A, or the Kodak 'Bantam' series of cameras which take 'Kodachrome' Films K.828 and K.828A, can be used to take colour flashsnaps. When your camera is loaded with daylight-type 'Kodachrome' Film, blue-coated flashbulbs must be used. When your camera has in it 'Kodachrome' Film Type A (for artificial light) then clear flashbulbs must be used in conjunction with a filter, indicated in the flash table, over the lens of your camera. It is essential to follow this advice, otherwise the colour balance of your pictures will

be upset. The tables below give recommended flash-to-subject distances in feet for given apertures with various flashbulbs. Set your shutter to 1/25 second.

'Kodachrome' Film Daylight Type no filter required

	<i>f</i> /4.5	<i>f</i> /5.6	<i>f</i> /8	<i>f</i> /11	<i>f</i> /16
1B, PF1/97	6	5	3½	—	—
5B, PF5/97, PF25/97	10	8	5½	4	—
22B, PF60/97	13	11	7½	5½	4

'Kodachrome' Film Type A with filter 81C

	<i>f</i> /4.5	<i>f</i> /5.6	<i>f</i> /8	<i>f</i> /11	<i>f</i> /16
1*, PF1	7	6	4	3	—
PF14	8	6½	4½	3½	—
5, PF5, PF25	11	9	6	4½	3

*With the No.1 bulb only, use a 'Wratten' No.81EF filter instead of the 81C.

Note: Users of the Kodak 'Bantam' Colorsnap Camera should follow the flash recommendations which are given in the camera instruction book.

IMPORTANT

*in case a flashbulb should break,
always clip the diffusing screen in
position, and never fire bulbs in an
explosive atmosphere*

KODAK LIMITED LONDON

THE 'KODAK' FLASHPACK

The 'Kodak' Flashpack is a battery-capacitor unit which exactly fills the battery compartment of the 'Kodak' Flashholder Model II. Consisting basically of a special capacitor housed in a neat plastic casing, it is powered by a miniature hearing-aid 22½-volt battery (Ever-Ready 'Batrymax' B.122, Vidor L.5521, Drydex DH522, or equivalent).

The much higher voltage used to fire the flash-bulb is an insurance against misfires caused by partly-exhausted batteries or corroded contacts. Ask your dealer for more details.

Product names quoted thus – 'Kodak' – are trade marks

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