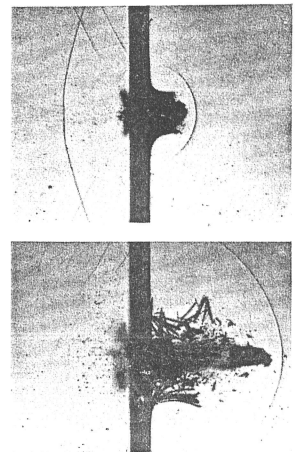


ly bright subject for best photographic results. The camera has been used and successfully used in the study of explosives.

The Bowen RC-3 camera is similar to RC-4; using the principle of the rotating mirror, but containing no shutter. It consists of a field lens, horizontal narrowslit, condensing lens, rotating mirror film four inches wide by 42 inches.

The field lens focuses the object under study on or along the slit of the mirror. The condensing lens behind the



Waves created by a travelling bullet penetrating a one fourth inch sheet of plywood are clearly shown above. Note the echo shock wave recording on left of each photo.

directs that slice of the object on the mirror, from which it is reflected onto the film placed in an arc of the mirror.

The film and the slit are conjugate so the object focused on the slit is also focused in a narrow line across the film. The usefulness of the RC-3 camera lies in its ability to show one-dimensional motion continuously as a function of time.

Microtime Photography
Explanation of synchronized microtime photography is briefly described in re-

lease by the Navy, which first explains the shutter operation as follows:

"Ordinary light consists of a random mixture of electro magnetic vibrations of no directional preference. When the vibrations exist in only one direction, the light is said to be plane polarized. Polarizers are materials which transmit light, the vibrations of which are in one direction only—all other vibrations are suppressed.

"Elliptically polarized light is the most general type of polarized light. Plane polarized and circular polarized light are special cases of elliptically polarized light. The state of polarization of light may be altered in several ways; in the Kerr cell, electrically induced optical activity is used to alter at will the state of polarization of light passing through it.

"The two polarizers are set for minimum transmission and at 45° to the electrode axis with no voltage applied to the electrodes, the plane polarized light from the first polarizer is completely extinguished by the second polarizer and no light passes through the shutter arrangement. The application of voltage to the Kerr cell electrodes A-A' causes alternation in the state of polarization of the transmitted light; consequently the light transmitted by the second polarizer depends upon the voltage applied to the electrodes. The effective open time of the shutter is therefore limited to the rapidity with which the voltage can be applied to and removed from the cell electrodes."

Kerr Cell and Camera

A simple combination of a Kerr cell shutter and a conventional still camera may be used to obtain photographs with effective exposure times as short as thousandths of a millionth of a second, the Navy discloses. The effective exposure times obtainable with such a camera are determined by the voltage forming system, and are readily adjustable by means of plug-in type networks. Accuracy of timing pulses is monitored or checked by a special high speed oscillograph—which is capable of indicating time differences of two or three billionths of a second.

IMPROVED SAFETY FILM ANNOUNCED BY KODAK

A new type of film base, adopted by Eastman Kodak Company for manufacture of much of its "safety" motion-picture film, was described last month before the national convention of the Society of Motion Picture Engineers in Santa Monica, California.

Charles R. Fordyce, superintendent of Manufacturing Experiments at Kodak Park, the company's sensitized-product plant in Rochester, N. Y., told the Society's meeting that since early in 1946 Kodak has replaced acetate propionate safety film support with a new, improved "high acetyl" acetate type.

He pointed out that Kodak has conducted research on safety film since the early 1920's and developed the first good safety film for its introduction of "home movies" in 1923.

The company's continued research brought a major improvement in safety film quality in 1937 when a change was made to cellulose acetate propionate base. Development of the present improved "high acetyl" formula is the result of extensive research since that time.

Essentially, the new film is made by retaining chemical "acetyl groups" which in the earlier process were washed away.

Fordyce said that considerable experimental work has been done on the new film to test it as a possible substitute for cellulose nitrate film, which is widely used for professional motion-pictures.

"In addition to experimental tests," he said, "the new film has been carefully watched through limited commercial trade use. Special prints of several feature pictures were circulated through film exchanges in different parts of the country.

"In these tests, for which alternate reels of safety and nitrate film were used in each print, satisfactory quality was obtained in every respect."

Safety film generally is slow-burning, in contrast with nitrate film which burns rapidly.

Commenting on the extensive laboratory test, Fordyce said that results with the new safety film show that:

Low shrinkage of the new safety base will keep the film free from "buckle" and the resulting in-and-out of focus images on the motion-picture screen.

The tensile strength, rigidity, and flexibility of the "high acetyl" films are more like nitrate film than earlier safety films.

Greater resistance to effects of moisture and humidity means less processing trouble as well as less film distortion.

Projection quality, which is better than earlier safety films, is equal to nitrate film in screen steadiness and appearance.

New cements, manufactured especially for use with the new film, will also make satisfactory splices with the older types of safety film and with nitrate film.

"Television & Film Industry"

(Continued from Page 193)

1000 channel allocations in 456 cities. Now let's assume that 5 years from now—or you name the time, but it is inevitable—these 1000 stations are on the air and that they follow the current broadcast pattern. Let's say they carry chain material for the same 5 hours, and that one-half of 2½ hours is 10 hours per day—times 365 days gives 3650 hours of film.

That, gentlemen, comes to 1825 two-hour features or 14600 15-minute shorts or its equivalent—plus all of the additional film material, the chains and the 500 remaining independents will use, which is not network originated.

Now, I'm sure your imagination is as good as mine, so use your own figures. Discount mine or double them—it's a whale of a lot of film production. And I ask you, isn't that something for all segments of the motion picture industry to consider seriously? It will require far more film, more technicians, more talent, and more equipment than exists today.

I can think of no problem that all of us can look forward to with such high enthusiasm and opportunity!

Colour Subject Available

A two reel film in Technicolor, titled "Colour," is now available to amateur movie clubs from British Information Services, 30 Rockefeller Plaza, New York, 20, N. Y.

Although not basing its premise on color motion pictures, it describes the nature of color and its many uses, and studies graphically the great chemical industry and development of modern synthetic dyes.

Kodak Declares Dividend

Quarterly dividend of 35 cents per share on common stock of Eastman Kodak Company was declared May 18th by board of directors, who also voted regular \$1.50 per share dividend on preferred stock. All officers were re-elected at the same meeting.

Floor Stand for Large Screens

Daylight Screen Company of Chicago announces a new floor stand for larger size projection screens up to nine by 12 feet. Model is completely collapsible, and weighs only 18 pounds.

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DU PONT NATIONAL RADIO BROADCAST SALUTES CINEMATOGRAPHY BY NICHOLAS MUSURACA, A.S.C.

Signal recognition of the outstanding photography by Nicholas Musuraca, A.S.C. on the George Stevens production for RKO Radio Pictures, "I Remember Mama," was accorded the Director of Photography by E. I. du Pont de Nemours & Company on latter's Cavalcade of America program broadcast nationally over 153 stations of NBC on evening of May 17th.

Irene Dunne, star of "I Remember Mama," was star of the Cavalcade of America dramatic presentation, "Queen of Heart-

break Trail" on the coast-to-coast radio presentation.

In the closing remarks, the announcer finished the broadcast by stating: "Irene Dunne can now be seen in the George Stevens production for RKO Radio Pictures, 'I Remember Mama.' Miss Dunne's celebrated charm has been beautifully photographed in this production on DuPont Superior 2 negative by Cinematographer Nicholas Musuraca."

The broadcast was heard nationally by 13,000,000 persons, according to the Hooper rating.

McNabb Re-Elected B & H President

J. H. McNabb was re-elected president and treasurer of Bell & Howell Company at annual meeting of company last month. Vice presidents for the ensuing year include: A. S. Howell, J. H. Booth, B. E. Stechbart, H. W. Haun, H. W. Remerscheid, E. S. Lindfors, and C. E. Phillimore.

Company report disclosed record net sales of \$18,083,325 for 1947. Production was at an all-time high, but consumer demand continued to exceed the capacity output.

New Kodak 8 MM Projector Has 400 Foot Magazine

An improved model of the famous Kodascope Eight-90 projector—the Eight-90A—is announced by Eastman Kodak Company. Featuring 400-foot reel capacity, the new projector will permit showings up to 30 minutes in length without necessity of changing reels.

Taller base and extended reel arms are main difference over the popular Eight-90. The new projector has Lumenized Kodak Projection Ektaonon Lens 1 inch f/1.6; 750 watt lamp; and carrying case.



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