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Bell & Howell

Filmo Topics

January 1931
Announcing—The Filmophone

...a Portable Sound Movie Outfit

- Bell & Howell has done it first... and best! The Filmophone, expertly built around the famous Filmo 57 Projector, is a complete sound movie outfit from Projector to Loud Speaker, and is contained in two medium-sized easily carried "suitcases." The special Projector motor drives the turntable by a flexible shaft acting on a precision-cut worm and fiber gear. Absolutely no lost motion to affect synchronization. A unique two-stage power amplifier and a high-quality dynamic loud speaker deliver a tone quality of startling fidelity and clarity. The pickup is of finest quality. And best of all is the hand-microphone with which you can explain a silent movie, or interpose your own voice during a "talkie" while the picture continues. Your own Filmo Projector can quickly be adapted for use with the Filmophone. Write for special literature on the Filmophone. Ask for Folder No. 38-F.

- Felix goes "talkie"! And if you don't think an animated cartoon can talk, just put one of these Felix sound films on your Filmophone and have the best laugh you've had in years. Each subject, complete on one 400 foot reel with a 16-inch sound disc, $35.

Felix in ONE GOOD TURN. Felix, as usual, finds himself in a peck of trouble, and is saved by friendly Brother Fox. When Br. Fox gets into trouble, Felix comes to the rescue.

Felix in FALSE VASES. Felix breaks his wife's Chinese vase, and speedily heads for China to get one to replace it. He gets the vase, all right... but... well, you'll have to see it and hear it.

Felix in OCEANTICS. Felix wins his way to the sailors' hearts with his singing and dancing. But the ship's goat gets jealous. What these two do to one another is almost too much. Plenty of sound!

Felix in TEE TIME. Felix hires a substitute to keep up the piano practice at home. Then he goes out to play golf, and what not. All with full and complete sound effects.

... and here are the talking films!

- Famous UFA Features in Sound

- The Filmo Library includes fifty of the internationally famous UFA sound films. The sound, in the form of voice accompaniment by leading educators, is supplied on one 16-inch disc, with a duplicate disc included. Each subject on one 400 foot reel, complete, $60. Other types of sound movies in Filmo Library.

MERCURY, VENUS, MARS. This is part of the fascinating UFA astronomical series on the planets. Its interest is heightened by a novel trip to the planets in an ingenious machine.

AFRICA. Here is a travel and geographical film centered about native life in the South African gold mines.

TINY HOUSEKEEPERS. This is the life story of the hamster, a mole-like rodent which lives underground. The habits and modes of life of this interesting creature are strikingly portrayed.

KINGS OF THE AIR. This is the fascinating story of the Serpent Eagle and the Imperial Eagle. Close-ups of the nests, the young, and the majestic birds in flight.

BELL & HOWELL CO., 1842 Larchmont Ave., Chicago, III.
New York, Hollywood, London (B & H Co., Ltd.) Established 1907
FILMO TOPICS is published in the interests of personal motion picture makers to help them get the best possible results in every phase of cinematographic work. Photographs and accounts of movie-making activities of general news or instructive interest will be welcomed by the Editor, as will suggestions as to subjects which you would like to see discussed in FILMO TOPICS.

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Edwin A. Reeve - Editor

We, the personal movie makers of the world, looking back over our work of the past year, must modestly admit that we’re pretty good. But, to be perfectly frank, we must also admit that we could do better. Therefore, toward the end that our 1931 movie work may fully evidence all our inherent ability and reflect all our acquired experience, we do hereby resolve that throughout 1931 we will:

Formulate a working plan before starting to shoot each spool of film.

Be sure, before pressing the button, that our lens diaphragms and focusing scales are correctly set.

Hold our Filmos steadily, avoiding unnecessary tilting and titling, and performing these motions slowly and smoothly when they are necessary.

Avoid filming moving subjects from close by when they are passing at right angles to our cameras’ direction of vision. We’ll shoot such subjects from an oblique angle and so avoid blurred, jumpy pictures.

Take more close-ups of the people who are featured in our films. Work toward getting sequences of long shot, medium shot, and close-up rather than single, haphazard shots.

Strive for natural actions rather than posed pictures. We’ll take story-telling pictures and shun the “movie snapshots” in which the subjects face our cameras as though we were a firing squad.

Title and edit our films before letting our friends see them.

These are the movie makers’ New Year resolutions, and may each and every one of us keep them in mind throughout the year!
FILMING EUROPE'S BEST SKI JUMPERS

Movie making on the famous Holmenkollen Hill during International Sports Week in Norway

FRED H. HARRIS
Treasurer, National Ski Association of America

WHEN suddenly asked to go to Oslo, Norway, to represent the National Ski Association and the 1932 Winter Olympic Games Committee at the Congress of the International Ski Federation, February 24-26, 1930, one of my first thoughts was to take along my Filmo Camera.

At Oslo during the Winter Sports Week, I had the opportunity of filming a number of scenes which have proved to be of interest to our ski enthusiasts in this country. There were not only Special International ski races and jumping contests but the annual local 17 Kilometre and 50 Kilometre cross country ski races and the final big jumping event on Sunday. The latter was held on the famous Holmenkollen Hill two miles north of the city. Although we have many larger ski jumps in the United States, the Holmenkollen Hill is so steeped in splendid tradition that it is undoubtedly the best known ski jump in the world. The presence of the best jumpers from all over Europe made it a red-letter day.

As ski jumping and ski races are among the most difficult subjects to film, perhaps an account of the technique which I found successful will benefit those who wish to take movies of this coming National winter pastime.

First I established the location by getting scenes in Oslo, the headquarters of the events. Pictures of animated groups, showing the native sports costumes, proved to be of interest. Then, as an introduction, I showed the crowds on their way to the events. Groups could be seen starting for the ski jump as early as eight in the morning, although the contest was not to start until 1:00 P. M. On their backs were the comfortable army knapsacks containing lunches and pots for cooking coffee. At the entrance to the tunnel of the electric railroad, thousands on thousands of people stood in line for as long as two hours. This modern railroad winds its picturesque way through snow laden evergreens up and up above the city, skirting steep slopes until the valley appears far below. On trails and roads paralleling the railroad, another army of people strode happily along on foot. As many of the people carry their skis, which cannot possibly be taken inside the cars, the railroad provides racks on the outside where the skis can be placed and quickly strapped on. A movie scene of the people disembarking, showing a car literally bristling with hundreds of pairs of skis, was a worthwhile shot.

All along the various trails leading to the natural amphitheatre where the jumping hill is located were outdoor coffee stands. Shots of one or two of these, and of groups of boys and girls eating their own lunches in the snow, gave local color. The crowds filing through the spruce woods gave a feeling of expectancy. Such scenes took us to the big jump itself.

I took one scene of the jump from a distance as a few practice jumps were being made to test the condition of the snow. Then I took other shots closer up.

As the members of the Royal Norwegian Family are great ski enthusiasts and since Crown Prince Olaf was sponsor for the meet, what could be a better introduction to the contest itself than a movie scene of the arrival of King Haakon and the Queen, followed by Prince Olaf and
Princess Martha? This the Filmo faithfully recorded.

As soon as the Royal Party was seated, the meet was officially opened. There's action aplenty in ski jumping! The Filmo will reproduce it for you. Start shooting just as the jumpers leave the top of the trestle high above. Follow them down as they increase their speed, get them as they make their spring from the edge of the take-off, show their form and position through the air, how they make the landing and then, if successful, how they shoot out on the outrun to complete the "ride" with a beautifully executed Christiania swing. I did this by "panoraming" the jumper all the way, taking the pictures from near the judges' stand and 40 feet to one side of the take-off. Shooting birds on the wing or trap-shooting is good practice for this. As the jumper leaves the take-off at a speed of nearly 60 miles an hour, it is not easy to keep him always in the center of the finder. On many of the big ski jumping courses in this country you cannot see the jumper all the way from near the take-off, so such a panoram shot is not always possible. A good effect can be secured with a telephoto lens from far out on the outrun at the foot of the hill, but I would not advise this unless a tripod is used. If using the ordinary lens, work at an oblique angle. Don't attempt to get skiers jumping directly across in front of you as you will only get a blur.

A very good effect can be obtained by sitting directly under the take-off and filming the jumpers as they shoot out into space. Follow them down steadily until they disappear from sight. Keep the camera running until they reappear on the outrun far below. If you can get a spill, it will add to the interest. I was fortunate enough to get a picture of a Czechoslovakian jumper as he turned a complete forward somersault and landed on his head.

The place of honor on the take-off was given to Thorleif Haug and Bergendahl, former winners of the coveted King's Prize. They are considered as the two greatest all around skiers the world has produced. A shot of these men was therefore in order. Later, when all the former King's Prize Winners—a very small and select group—were lined up for a photo, I felt lucky to have the Filmo handy. Among the famous jumpers filmed were Alf Andersen and Sigmund Rudd, winners at the 1928 Olympic Games at St. Moritz, and others so good that they will undoubtedly compete in the first Winter Olympic Games ever to be awarded to the United States. These games will be held at Lake Placid, New York, in February, 1932. Filmo owners should be there!

As scenes of a succession of ski jumps would grow monotonous, it is best to break up the action. In between times take close-ups of the judges. Get pictures of the measuring men as they record the length of the jumps. I took one scene of the tribune for the delegates to the International Ski Congress showing the different costumes of the delegates from eighteen nations. As the Military Patrol Ski Race had drawn many military officials, the different military uniforms were easily distinguished.

With a 4-inch telephoto, I was able to secure a splendid close-up of the Prince. He is a good ski jumper himself, having ranked as high as fourth in the steepest of competitions, and is extremely popular.

It is well to take scenes from different viewpoints. A scene at the top of the hill showing the jumpers waxing their skis added human interest. I then climbed to the top of the trestle and "shot" the jumpers from the time they started until they finished their rides far below. The telephoto lens gave an interesting effect from this point. And who could resist taking a scene of the sea of humanity occupying every available inch of the huge, evergreen-framed natural amphitheatre?

I went down to the landing slope and saw the finish of the meet from there. When the last jumper, an 18 year old Reidar Andersen, furnished a most spectacular climax by breaking the Holmenkollen Hill record with a splendid leap of 52 metres (170 feet) the crowd broke into pand- (Continued on page nine)
ONE THOUSAND AND THREE THOUSAND

MOVIE PHOTOGRAPHS
TAKEN IN

SICILY, ITALY and FRANCE

BEAUTY

VARIETY

CONTRASTS

HUMAN

DEATH

ACTION

SIGHTS

HISTORY

RELIGION

ON SEA AND LAND

including

Dungeons, Dragons, Bats, Dogs, Doxies, Doxies, Doorways, Domes and Dungeons.

Cathedrals, Castles, Churches, Churches and Churches,

Arkham, Altars, Archives, Amphithraths, Andowns, Amoons, Arcs, Archies, Arctic, Andromedas and Avantsets.

Farms, Fuses, Fuzions, Festivals, Festivals, Fuzions, Flights, Fins, Fish, Films, Fives, Flashes, Fuegos, Fuegos, Flights, Fuegos, Fuegos.

Pitts, Threes, Pikes, Pilots, Pilots, Pikes, Pikes, Pikes, Pilots, Pilots, Pikes, Pilots.

Premo, French, Fuses, Fuzions, Fuzions and Festivals.

Gardens, Gardens, Gardenia, Greens, Greens.

Gates, Gates, Gardens, Gardenia, Greens.

Virtuans, Moderns, Movements, Natives, Natives, Natives, Natives.

Moorishes, Musicians and Musicians.

Cortes, Cocks, Cows, Cows, Cows, Cakes, Cakes, Cakes.

Cavemen, Cavemen, Cocks, Cocks, Cocks, Chicans, Chicans, Chicans.

Gaylords, Gaylords, Gaylords, Gaylords.

Guests, Guests, Guests, Guests.

Guineas, Guineas, Guineas and Guineas.

Droughts, Guineas, Guineas, Guineas, Guineas, Guineas, Guineas.

Pitfalls, Pitches, Pitches, Pitches, Pitches, Pitches, Pitches.

Pitfalls, Pitches, Pitches, Pitches, Pitches, Pitches, Pitches.


Tortures, Tortures, Tortures, Tortures, Tortures, Tortures, Tortures.

Tortures, Tortures, Tortures, Tortures, Tortures, Tortures, Tortures.

Tenses, Tenses, Tenses, Tenses, Tenses, Tenses, Tenses.

Tenses, Tenses, Tenses, Tenses, Tenses, Tenses, Tenses.

Yokes, Yokes, Yokes, Yokes, Yokes, Yokes, Yokes.

Yokes, Yokes, Yokes, Yokes, Yokes, Yokes, Yokes.

Electrions, Electro, Electro, Electro.

Cart besides the paper or meaning mark.

The impossible Cavern of Cosmic Fluctuation will possibly be presented by

ERNST DUDLEY CHASE, of Washington, Mass.

IN PERSON

SEE THEM! SEE THEM! SEE THEM!

Let Showmanship Be Used at Home

The art of making your own theater audiences want to come again

If you have had such an experience, you'll want to be sure that never do your friends feel the same way about your shows. Here, then, are some suggestions which will interest you—which will help make them want more when you say the show is over, and which will make them accept with sincere pleasure when you invite them in for another show.

“Sell” your films to them. That is, tell enough about your films to create a real desire to see them. Ernest Dudley Chase, Filmo owner in Winchester, Mass., does this with clever, printed invitations. See the illustrations on this page. The same appeal can be put into an oral invitation. Consider your films from the standpoint of your friends’ interests, then tell them a little about what they can expect to see that they’ll like.

Have your “theater” all arranged before your guests arrive—projector set up, threaded, and focused, screen properly placed, chairs located so as to give everyone a comfortable view of the screen, and films out of their cans and piled near the projector in the order in which they are to be shown. Films should be edited, titled, and wound on 400 foot reels. They should be inspected in advance for weakened splices, and, of course, rewound to be ready for instant use.

The projector’s lens, condenser, and aperture should be well cleaned, and an extra belt and projection bulb should be at hand for emergency use. See that the machine is set for AC or DC operation, according to the nature of your electric current supply.

Use a good projection screen with ample reflective power. Much picture quality is lost when screen substitutes are employed. Place the screen so that it may be seen from every chair. Remember this guide: a 2-inch projection lens gives the correct size picture for viewing from near the projector. Do not attempt to show too large a picture—those seated near the screen will not see it comfortably. If the screen is placed higher than the projector in order to give an unobstructed view, tilt it forward as much as the projector is tilted upward. This will result in brighter pictures, for the major volume of light will then be reflected directly back toward the audience rather than the ceiling.

When you come to the end of a reel, cover the lens with your hand to prevent a glare of light on the screen as the trailer runs through. (Using opaque trailers and leaders makes this unnecessary.) Do not turn on the room lights while you change reels—that’s hard on eyes accustomed to semi-darkness. Have a pilot light on your projector, or a dim shaded table light near by, or pull out the projector’s condenser and let the light shine through the condenser opening. Or thread in the dark—it’s easy for anyone who has had some experience.

Let your radio or phonograph play soft music during the show. Often you can use selections which are appropriate to the pictures being shown. Then too, music eliminates other sounds from notice. Of course if you have a sound film reproducer, like the Filmmophone, you need take off your hat to no theater magnate.

In selecting films for an entertainment, strive for variety in subject matter. Follow the plan of the professional showman as to the order in which the films appear. Get the program off to a fast start with several short subjects, as a comedy and an educational or news film. The feature film of the evening should come last.

And our concluding advice is—stop before your audience has had enough. Then they’ll want to come again.
FROM CAPE TO CAIRO

A movie maker’s journey with his Filmo 70-D over Rhodes’ dream route

J. W. ALBRIGHT

SEVERAL years ago, a fellow traveler in Central America showed me a Filmo 70-D and explained its dependability and ease of operation. My wife and I were then on route to South America where we toured the interior, and crossed and recrossed the Andes five times. The year previously we had visited New Zealand, Australia, and the South Sea Islands. It will always be a source of regret that we failed to carry a Filmo on either of these trips. Many interesting experiences might now be screened, and our part in them lived over again.

When preparing to follow the dream-route from Cape to Cairo of the great British empire-builder in Africa, Cecil John Rhodes, I remembered the recommendation of my friend in Central America. As a result, a Filmo 70-D, with Cooke 1" F 3.5, 1" F 1.8, 2" F 3.5, and 4" F 4.5 lenses, 2x, 4x, and 6x color filters, an exposure meter, and a Prismatic Eye accompanied us.

The Prismatic Eye proved useful in taking natives and others who would have turned their backs or become fighting mad had they known they were being photographed. Perhaps eighty per cent of the exposures were made with the 1" F 3.5 lens. The 1" F 1.8 was, however, often invaluable around sunset or in dark places where much desired pictures would have been impossible without it. The 2" lens was of course used for closeups.

We sailed from Southampton on November 29, arriving at Capetown on my birthday, December 16. This picturesque city it built on Table Bay at the foot of Table Mountain, the ascent of which is a popular trip. The last stage is made by aerial tram in a cage, or “skip,” as it is locally called. Swinging in mid-air hundreds of feet above huge, dangerous rocks, our hearts did not, I am sure, beat so smoothly as the Filmo 70-D purred in taking a picture of the passing skip.

On the famous Hundred Mile Drive, during which a stop is made at the Cape of Good Hope, we secured a good picture of the meeting of the two oceans—the Atlantic and the Indian.

At Port Elizabeth we visited the Shang Tuin, or Snake Park, and had the novel experience of photographing the Kaffir keeper, heavily gloved and booted, handling such venomous African snakes as the cobra and the adder. The 2" lens was used when the keeper spread the jaws of a cobra wide open, and showed its deadly fangs. And this lens was used again when, some distance away, the keeper allowed a large python to coil itself around his body, taking care to keep arms free and a good grip on the snake’s neck and middle body.

By sea to Durban, where the picturesque Zulus, perhaps the most intelligent and progressive of South African natives, certainly the most shapely and attractive, are always popular subjects with the camera. Then through lovely Natal and across the Transvaal veld to Johannesburg, near which the great reef mines of the Rand still produce annually over half of the total gold output of the world.

Up to this point the 4" lens had been used so little that it appeared, in the language of Potash (or was it Perlmutter?) to be “more of a liability than an asset.” But now it paid its way for the whole journey in a single day! We made a side trip on the Lourenco Marques railway to Kruger National Park, a big game reserve sequestered and maintained by the South African government. It contains over 8,000 square miles, and provides an ideal refuge for many thousands of African wild animals.

The amateur photographer is amazed at the impassivity of many of these animals upon approach of a motor car. They stand gazing at it with perhaps as much curiosity as the Filmo 70-D observed them.

(Continued on page twelve)
Left—Lila Lee taking a Filmo close-up of Conrad Nagle during a moment between scenes in the Radio Pictures studio. Many famous screen stars, directors, and professional cinematographers find Filmo movie making a pleasant hobby, and one that helps them in their daily work.

Below—Sir Ricardo Rivera Schreiber, K.B.E., Minister for Peru in Quito, Senator, using his Filmo at the Peruvian Legation.

Frank Howard, Johnstown, Pennsylvania, as he took farewell scenes with his Filmo upon leaving for a trip around the world. World cruises, or travels of a briefer nature, have annually become more and more to be cinematic cruises, until now you may see Filmos in the hands of a great many travelers.

Galli-Curci and her husband, Homer Samuels, had their Filmo with them, as they so often do, when they struck this pose for the news photographer atop their New York Hotel.
Burton Holmes, noted pioneer travelog film producer, globetrotter and lecturer, who has found this Bell & Howell Professional Camera an ever-dependable ally on many a journey.

Below—Captain Gibbon of the S.S. Duchess of Bedford turns the Filmo on two of his fair passengers—Miss Martha Merriam (left) of Chattanooga and Miss Imojeanne Campbell of Pittsburgh.

Sir William Letts, K.B.E., was the guest of honor at a great War Dance held at Johannesburg, and of course recorded the colorful ceremony with his Filmo. He is seen here talking with the dance leader just after the action had stopped.

John W. Eddy, Seattle, and Arthur Rarig, Filmo dealer in that city, discussing the use of the 6 inch telephoto lens on the Filmo Camera. With Joshua Green, Mr. Eddy is now hunting and filming in Africa.
Frank Howard, Johns-town, Pennsylvania, as he took farewell scenes with his Filmo upon leaving for a trip around the world. World travelers, as travel of a brisker nature, have annually become more and more to be cinematic empires, until now you may see Filmos in the hands of a great many travelers.

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John W. Eddy, Seattle, and Arthur Barige, Filmo dealer in that city, observing the use of the 6 inch telephoto lens on the Filmo Camera. With Joshua Green, Mr. Eddy is now hunting and filming in Africa.
Titling Your Films

No. 4. Trick Titles

Sooner or later every movie maker feels an urge to try his hand at making trick titles. Not that anyone would want to caption an entire film with such titles. But they can often be used effectively, either to give variety and emphasis or because they are especially appropriate to the scenes which are to follow.

For the person who has ample time to experiment or to do involved work, there is practically no limit to the unique effects which can be obtained. This is indicated by the long chapters on trick title work in books on movie making and was proved by the professional producers in the pre-talking days. However, most topics readers, we believe, will be more interested in those trick title methods which can be executed quickly and with equipment they already have or can readily obtain. So we offer here several trick title ideas which meet these specifications.

The first is the burning title, and credit for this idea is due to T. W. Harron, Filmo user in San Francisco. The effect which Mr. Harron secured was that of the title forming itself on the screen from smoke, flames, and ashes which came from below and gradually grew into a solid background upon which the wording was spelled out. This bit of magic was accomplished in the B & H Character Title Writer. To duplicate it, proceed as follows:

Letter or write the desired wording upon a piece of thin paper. Place this upside down in the card holder of your Character Title Writer. Expose enough film to permit reading the title. Allow one-half second for each word. Then light the paper with a match applied at the top (that is, the bottom of the title paper,) keeping the camera running until the entire sheet has burned or the remaining fragments have fallen from the title card holder. After processing, cut out this upside down film strip, turn it end for end, and splice it into your finished film. When projected, the first line of your title will be the first to appear from the flames, then the second, and so on until the title is complete.

To get a different effect, light the upside down paper at the bottom center (which will be the top center of the title). The fire will burn much more rapidly, so it will be wise to set the camera for double (32) speed. When reversed by cutting out, turning, and splicing, the flames will start to build up the title from the bottom corners and finish at the top center.

Still another variation is to make your title disappear in flames. To do this, place it right side up in the Title Writer card holder, expose sufficient film for easy reading, and then light it either at the top or bottom. Felix Schmidt, Chicago amateur producer of "Red Hot Roses," did this in effect when he filmed the burning of a paper rose as his opening scene.

A unique title which is so easy to make with the Character Title Writer that it can hardly be called a trick is the one which shows the fingers and pen actually writing the wording, finishing a cartoon sketch, or inscribing the writer's signature. For writing or drawing during filming, the Title Writer is supported at an angle by its metal legs. The hand reaches the title card through the U-shaped opening, and the camera is operated while the writing is done and until the pen has been slowly withdrawn. (See the circular illustration on the inside back cover of this issue.) This stunt has many useful applications. The writing of a brief letter or post card may be shown. Guests may write their autographs as titles for scenes you've taken of them. Your own signature may be worked into a trade mark title as shown in Figure 1, which you can use to identify all your film productions. Your travel route may be traced onto a map (as is done on the map on page four) while the camera films the ever-lengthening line. Your pen can pause at each spot of interest where you stopped and took movies. Cut the title at these spots in editing, splice in the scenes taken at that place, then go back to the map to show your next jump, splice in more scenes, and so on. When filming a hand as it writes or draws pictures, operate your Filmo at half (8) speed. The speed of writing will then be doubled in projection, and the sketcher's pen will skim skillfully over the projection screen.

Always interesting is the title in which jumbled letters, of their own accord, gradually move into place to spell out the wording. This is another of the tricks which are accomplished by placing the title card upside down with respect to the camera.

Improvise a way to stand your Character Title Writer up vertically, with the card holder down. This can be done by screwing a board 9 1/2 inches wide and about 13 inches long to the concave end of the baseboard, or by mounting, at the sides of a board of the size just specified, triangular pieces of wood with just space enough between their vertical edges to accommodate the thickness of the Title Writer baseboard. The improvised base must be long enough to provide for the overhanging weight of the mounted camera. Another method, if you are not inclined toward wood-working, is merely to stand the Title Writer vertically in the center of a small table and run a cord from the camera base to each corner of the table, tying it snugly to the leg.
The Title Writer bulbs, being of the projection type, cannot be burned in a horizontal position without risk of burning them out. So replace them with two 60-watt or two 100-watt ordinary mazda bulbs. Using 60-watt bulbs, set your lens at F 3.5; 100-watt bulbs, F 4.5.

So much for the arrangements. Now you are ready to insert the title backgrounds—black cards or dark photographs, and arrange the movable letters—"soup alphabets" from the grocery store or gummed paper letters from a stationer. Place the title background in the card holder upside down if it has any top and bottom, spell out your wording upside down, and start the camera. When it has run one-half second for each word (but not less than three seconds no matter how short your title) start tapping the side of the card holder with a pencil or ruler. Keep doing this for several seconds more, running the camera as you tap, until the letters are well scattered about. Or you can move the letters by blowing gently. The resulting film strip, after processing, is turned end to end to give the previously described effect when projected. Figures 2 and 3 show the title effects at the beginning and end of this process.

By slanting the entire outfit enough to give the card a slight slope the letters may be made to slide off the card entirely as you tap. The effect is that of the letters appearing from the screen at the top or bottom, according to which way you sloped the card, and sliding down or up to take their correct place and permit the title to be read.

If you want the title to be read first and then have the letters scatter, do the filming with the title right side up.

What simple title tricks have you devised and used? We hope you'll write and tell us about them, so we can pass them on through the columns of *Filmo Topics*. Next month we'll write about making titles with wooden block letters, a subject which many have asked us to cover.

Filming Ski Jumpers
(Continued from page three)

When you first saw this issue of *Filmo Topics*, you undoubtedly stopped to admire the beautiful snow scene on the cover. Such subjects offer the Filmo enthusiast some of the most striking possibilities for interest-compelling motion pictures. In order to assist you enhance your library by such beautiful shots, we will analyze this and some of the other fine snow pictures in this issue. Then we hope that you will go out and duplicate or better these results.

First, the combination of panchromatic film and a filter is sine qua non. In addition, your exposure must be perfect. In the accompanying frozen waterfall picture, perfect exposure has made it easy to distinguish the granular structure of the snow in the foreground as compared with the glassy smoothness of the ice. In photographing a scene as on the cover, your B & H Photometer should be used to determine the correct exposure for the shadows on the snow. This results in rendering the shadows in a beautiful, soft, transparent way, and gives a suggestion of the snow's granularity in the brilliantly lighted portions.

In photographing a distant scene like the mountain view on page three, the Photometer should be used to take the exposure on the brightest portions of the snow. This means that the human figures are almost silhouetted and that the sky is quite dark in comparison. Possibly a scene like this could have had little more exposure, but a slight under-exposure, as was used, gives the effect of twilight and is really very impressive.

In the frozen waterfall scene, the Photometer reading should be taken on the shadowed portion of the ice so as to get nice detail in the icicles there. A 4x filter should be used if the sun is low and fairly weak or a 6x and possibly even a heavier filter might have to be used if the sun is strong. Notice how dark in comparison is the hillside to the left rear of this scene—everything has been subordinated to the ice mass which, of course, is the point of interest.

Beautiful effects can be obtained by shooting against the light. In scenes like this, you practically photograph only the reflections from the highlights of the snow and let the shadows take care of themselves. Here again, the Photometer is invaluable, as it permits taking the desired reading on the highlights.

Very often in winter we see the most gorgeous sunsets. Could you think of anything more beautiful than a Kodacolor picture of glowing winter sunset reflected on the snow? Here also your Photometer will be invaluable, as it will enable you to decide whether to use your No. 1 or 2 neutral density filter. If you should see such a sunset it would be a good idea to film it once with each neutral density filter. Even if one of your scenes is under-exposed there undoubtedly will be enough highlights in color to give a beautiful effect. As a matter of fact, such scenes are often deliberately filmed with two exposures to get two different effects.

Suitable subjects are available at your very door at this time of the year, for there is a peculiar fascination and an enchantment in the most commonplace subjects when they are covered with a mantle of ice. There is every reason, you see, to get out your trusty Filmo and capture some of winter's transient beauties.
Film Control in the Channel

Article No. 13 of the "Facts About Filmo" Series, explaining how film is accurately registered at the Filmo Projector's Aperture

JOSEPH A. DUBRAY

In conclusion, the preceding article of this series we pointed out the necessity, in a projector, of protecting the film surface from the marring which friction would cause. To be fully successful in every respect, the mechanism of the projector's film channel must be designed not only to provide extremely accurate film registration at the aperture but freedom from film-damaging friction as well. How these requirements are met in the Filmo Projector will be told in this article.

In considering the matter of placing each successive frame of film accurately at the aperture, it must be remembered that this precise positioning must be maintained in not one or two but three planes—vertical, lateral, and longitudinal. Lack of accuracy in vertical registration would result in jerky, unsteady screen pictures and even in visible frame lines—the bottom of one picture showing above the top of another. Failure to achieve perfect lateral registration would be evidenced by sidewise movement on the screen, while inaccurate longitudinal registration would produce out-of-focus pictures. The film channel mechanism of the Filmo Projector provides for precise registration in all three planes, doing this in a most ingenious way—in a way which results in kindly treatment of the film. The only pressure exerted on the film is applied along the side, rather than on the flat surface. At one side of the aperture the film edge rests against the stationary guide rails G, Figure 1. On the other side of the aperture the tension springs T exert a carefully calculated pressure which holds the film against the guide rails. Thus lateral registration is secured and the film is held stationary before the aperture A while the shuttle tooth C is withdrawn for its return trip to engage with the next perforation.

Vertical registration is, of course, aided by the efficiency of the guide rails and tension springs in overcoming momentum, but is primarily controlled by the shuttle tooth. The work of this tooth is very light, since the commonly employed method of exerting heavy back pressure upon the film surface is not used in the Filmo Projector. Therefore the shuttle tooth has merely to guide the film on its path through the channel. The action of this tooth was fully described in Filmo Topics for November. It engages the perforation with a straight forward (not a clawing) movement, and is of such size that it practically fills the perforation. Before it has acquired its full downward speed it begins to move the film. Therefore there is no sudden striking of the perforation edge which would tend to cause wear on the film. The placing of the shuttle tooth right beside the aperture and the accurate mechanical control of its motion (see November Filmo Topics article) result in perfect vertical registration.

Longitudinal registration must also be precisely accomplished. That is, the film must be maintained in an exact position with regard to the focal plane of the projection lens. Any forward or backward motion would result in a screen image lacking in sharpness, or "breathing" in and out of focus. This registration is secured by spring actioned rails (R, Figure 2) which are a part of the projection lens carrier.

Before threading the projector, the lever D, Figure 3, is raised to bring the lens carrier forward. This permits inserting the film in its channel. Then the lever is brought down again to reset the lens carrier in operating position. This automatically brings the rails to such a distance from the aperture plate that they permit free passage of the film, with sufficient clearance to eliminate friction. Still the clearance is scant enough to prevent the film from running in a plane outside the permissible tolerances of the projection lens. The only possible contact with the film surface is on its margins. One of the two spring rails, as may be seen in Figure 2, is slotted to permit the passage of the shuttle tooth. The spring action of both is calculated to permit the double thickness of film found at splices to pass through the channel without effort.

The projector's clearance is adjustable by means of an easily accessible screw (not...
Prince of Wales Has Private Show of His African Animal Movie

Reprinted from Chicago Tribune

LONDON—The Prince of Wales has adopted a new role—film impresario. Last night at Balmoral Castle he gave a cinema entertainment consisting of films, most of the photography by himself, descriptive of his "big game hunt with a camera, in Uganda and the Sudan." The prince, in addition to lecturing about his own films, worked the projection himself, assisted by the Duke of Gloucester. The audience included King George, Queen Mary, their guests, and members of the royal household.

The pictures dealt with the game of the countries visited—elephants, rhinoceri, giraffes, and crocodiles moving in their natural habitat. The prince made explanatory comments as the animals appeared on the screen. The show lasted an hour.

Another item about the prince's movie exhibitions appeared in the Chicago Tribune since the one reprinted above. It told of his having shown his African films in South London before 700 former servicemen, and quoted him as saying that he hoped the spectators would "get some of the enjoyment at seeing the pictures which I got by taking them." The films in question were undoubtedly made with a Bell & Howell camera, as the Prince of Wales has a Filmo 70, an Eyemo, and also a B & H professional camera. The prince also uses his Filmo in connection with another hobby—golf, and is reported to have filmed Bobby Jones when the champion was playing in Scotland last summer. He has obtained a complete set of super-slow motion films of famous stars in action.

What the Filmo Guarantee Means

Filmo owners who call at any Bell & Howell office, headquarters or branch, on matters of service or adjustments on their equipment, invariably depart with a new conception of the Filmo guarantee. They learn by first hand experience that this guarantee is more than a collection of promising words neatly printed within a fancy border on the back page of a catalog. They discover that the Filmo guarantee means that every customer must be thoroughly satisfied with his equipment before we are satisfied. And they say that if they'd known we'd take such pains to make every last detail right, they'd have come to see us sooner.

Filmo owners who ride their hobby in winter as well as in summer will find much of interest to them in the January issue of Movie Makers Magazine, the official organ of the Amateur Cinema League. For this number is largely devoted to winter work—editing, titling, movie making under artificial lights, etc. And of course there is material for the winter traveler, too. Copies of this issue may be had from most Filmo dealers or from the Amateur Cinema League offices, 105 W. 40th St., New York City.
From Cape to Cairo

(Continued from page five)

osity as the occupants display in gazing
at them, exactly as if they were trying
to satisfy themselves what manner of strange
new beast had appeared. But open a door
to get out, and they are usually off and
away in a jiffy. All day long we had an
exciting time shooting wildbeest, koe-
does, waterbok, zebras, ostriches, and
other denizens of the park, including a
fine band of fourteen of the beautiful
sable antelope. The 4" telephoto was
aimed with deadly effect from the rear
seat of our automobile, the distance
nearly always being too great for lenses
of shorter focal length.

On our way back from Kruger Park, we
visited the largest diamond mine in the
world, the Premier, a great open cut 600
ft. deep. Three thousand Kaffirs were at
work drilling blast holes, breaking up
lumps of hard blue clay in which the
diamonds are found, and loading dump
cars to be hauled to the crushers and
treating plant above. The 4" telephoto
was used for distance, and the other
three lenses each did their bit. The 1"
speed lens was brought into action when
the meter disclosed that blast smoke had
made the upper portion of the pit too
dark for slower lenses.

It would extend this article to impracticable
limits to point out the exceptional
opportunities we had for taking distinctive
pictures. On the Lualaba or Upper
Congo river, in the Belgian Congo, in
Tanganyika Territory, in Kenya, Uganda,
and the southern Sudan, the native life is
very interesting. There are not to my
knowledge any other areas in the world
today, accessible on a beaten track by
the ordinary methods of modern transporta-
tion, where the native life is as thor-
oughly primitive and striking as in por-
tions of Uganda and the Sudan. Some of
the tribes wear no clothing whatever, hunt
big game quite successfully with old-
fashioned spears and bows and arrows,
and do not know what money is.

On the White Nile, on which we sailed
from the head of navigation at Juba to
Khartoum, a distance of 1100 miles, hippo-
potami and crocodiles abounded. Hippos
are funny, playful creatures. They could
be sighted a long distance ahead. Hearing
the steamer, they would sink slowly down
in the water until nothing was visible ex-
ccept their flat, ugly faces. Once a big
fellow rose right out of the water within
range of the 4" telephoto, and a much
prized picture was secured.

Lost Equipment

Filmo 70 Camera
No. 17410—N. Y. C. Garages, Inc., 327
W. 37th St., New York City.
No. 22194—Fred W. Alwert, 1854 Web-
ster Ave., Chicago.
No. 53524—Richard J. Finnegan, Editor,
Chicago Daily Times, Chicago.
No. 57711-70D — Mayfair Playthings
Store, 9 E. 57th St., New York City.
No. 62369—Conrad P. Kline, 1015 Sum-
mit Ave., Bronx, New York City.

Filmo 75 Cameras, Silver Birch
No. 46749—Notify Bell & Howell Co.,
Chicago.
No. 47828—Pathescope Co. of the N. E.,
Inc., 438 Stuart St., Boston.
No. 48326—Mayfair Playthings Store, 9
E. 57th St., New York City.

Filmo Projectors
No. 19287—Notify Bell & Howell Co.,
Chicago.
No. 47509—John L. Parkins, 2722 Ave.,
K. Brooklyn, New York.

Film
Several reels of valuable 16 mm. film on
leprosy—Dr. F. J. Pinkerton, Honolulu,
Hawaii.

Do You Keep Filmo Topics?

If so, here is the ideal filing method. Place
each 1931 copy in this binder after you've read it.
The year's volume will be a valuable reference book
on personal movie making—with every article
instantly available. In rich, deep red fabric leather
covering, $1.50 postpaid.

BELL & HOWELL COMPANY
1842. Larchmont Ave., Chicago

Questions and

• Answers •

Conducted by

R. Fawn Mitchell

Q. In using the Filmo Enlarger, what allow-
ance is made for different densities of
the original picture?
A. This is best taken care of by adjusting
the rheostat, though a stronger condenser
can be used. We have adjusted the En-
larger so that with the regular 75/75 con-
denser, perfect enlargements will be ob-
tained with the regular projector from
good originals. While it is possible to en-
large originals that are not so good, they
cannot be very satisfactory. If they are
important enough to warrant enlarging,
then a variable resistance projector should be
used to get the best out of them.

Q. How are there any special precautions to
be taken in developing films exposed in
the Enlarger?
A. Yes. It seems to be the unfortunate
custom of amateur photo finishers to force
the development of negatives. It is impor-
tant that negatives made in the En-
larger be not forced; if anything, they
should be slightly under-developed to get
a thin, clean negative. If best results are
desired, this point should be firmly
stressed to the photo finisher.

Q. Can negatives made with the Enlarger
be enlarged still further?
A. Yes. Enlargements up to 4 x 5 can
readily be made from good originals; we
have seen some excellent enlargements
up to 5 x 7.

Q. Is any particular type of paper recom-
manded for these enlargements?
A. Any good grade of enlarging paper
can be utilized. The richest results will
be obtained if a silk surfaced, buff colored
paper is used. This is also recommended
for direct contact prints from these nega-
tives, as the silk surface breaks up the
slight tendency to grain and the buff stock
adds richness.

Q. What is "grain"?
A. The image in a film is made up of small
clumps of silver embedded in the
gelatine emulsion. When the picture is
enlarged on the screen, these clumps be-
come more or less noticeable. This con-
stitutes the "grain" in the film—the
smaller the clumps the finer the grain.
Make sure of a good picture
... then improve it with Titling, Editing and a B & H Extra Bright Screen

B & H Character Title Writer
- Maybe you're artist enough to get away with a movie without titles. But we'll gamble that you could improve your films a lot with the kind of titles you can make on a B & H Character Title Writer. ($36 complete, with title cards, pen and white ink, 165 watt Mazda bulbs, and focusing device). Other titling outfits, $7.50 to $15.00.

B & H Film Editor
- Editing film is like putting punctuation in a sentence... it's as important as the subject of the film itself. A Picture Viewer, Rewinder, and Splicer all in one compact device make the B & H Film Editor the most usable piece of 16 mm. equipment you could own. $40, complete. Combination Rewinder and Splicer, $14. Splicer $7.50.

B & H Extra Bright Screen
- This snow scene will reproduce in delightfully beautiful quality because the Filmo operator is using a B & H Color Filter to screen out undesirable violet rays which would cause a flat, washed-out appearance. The B & H Combination Filter Set, consisting of 2x, 4x, and graduated filters is only $3.75. Other filters for every Filmo lens.

Write for new Filmo Catalog No. 38-C, describing these and many other aids to better movies
Mr. John T. McCutcheon’s Filmo, purchased more than six years ago, has accompanied its famous owner on scores of jaunts into the dim and unknown places of the earth. The excellence of Mr. McCutcheon’s movies reflects the constant dependability of the Filmo that made them... a Filmo that is working as perfectly today as the day it was made.

Like the finest watches, the finest of motor cars, Filmo’s value is appraised by what it will do and how long it will continue to do it. To say that no Filmo has ever worn out is the conclusive answer to the question of its performance, its stamina. That is why Filmo Personal Movie Cameras and Projectors are the first choice of discerning movie makers the world over.

You would expect no one to make a better movie camera than Bell & Howell, manufacturers for nearly a quarter of a century of professional studio cameras for the major film producers of the world. Filmo unquestionably fulfills this expectation, from the moderately priced Filmo 75 at $92 and up, to the versatile Filmo 70-D at $245 and up. Ask your dealer for a demonstration, or write for Booklet No. 38—it’s full of fascinating information about personal movies.

A NEW FILMO PROJECTOR!

with unexcelled light intensity
375-Watt 75-Volt Illumination

An engineering feat of major proportions gives to the movie-maker the new Filmo 57-GG Projector with the first 75 volt, 375-watt lamp ever to be used in projecting 16 mm. motion pictures.

In your home, the new Filmo 57-GG Projector will reproduce 16 mm. movies on the screen with a brilliance and a clarity scarcely to be imagined without actually experiencing the phenomenon. For as powerful and brilliant as is the 250-watt Filmo Projector illumination, the illumination of the new Filmo 57-GG Projector exceeds it by 41 per cent (foot candle rating).

The new projector operates on either alternating or direct current, without the use of a step-down transformer, converter or other bulky equipment. The regulation Filmo safety screen shutter and cooling system are retained.

The intense illumination of the new projector gives new and startling brilliance to Kodacolor pictures and permits projecting them on a larger than ordinary screen.

A new pedestal hinge lock and an entirely new type of carrying case make their appearance with the new Projector.

The New Filmo 57-GG Projector comes regularly equipped with variable voltage resistance and voltmeter, with case, at $260. Other models of Filmo Projectors previously purchased may be equipped with this 75-volt, 375-watt illumination at nominal cost. Write for complete details.
Filmo Topics is published in the interests of personal motion picture makers to help them get the best possible results in every phase of cinematographic work. Photographs and accounts of movie-making activities of general news or instructive interest will be welcomed by the Editor, as will suggestions as to subjects which you would like to see discussed in Filmo Topics.

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Edwin A. Reeve - Editor

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Here's assurance to Filmo Projector owners who prize their personal films—and who does not? A stock model Filmo Projector was recently subjected to a trying endurance test—its periodical trial to see how many times it will pass film through its mechanism without that film showing wear. Strictly speaking, you might say that this was a film endurance test, but actually it was a severe test of the precision with which the mechanism handled the film.

The Filmo Projector again did itself credit—it drew the film loop through its mechanism 19,300 times. Subsequent examination of the film showed wear which was due not to the shuttle tooth but to the sprocket teeth. It is to be expected that the results of sprocket teeth contacts would become apparent first, for they necessarily engage with the perforations with a rolling motion. The precise construction and well controlled, in-and-out motion of the shuttle tooth prevented it from leaving any sign of its contact with the film. The Filmo side tension system which relieves the shuttle tooth from all heavy pulling work was also a contributing factor here.

Especially noteworthy was the fact that there was little or no scratching visible on the film after it had passed through the mechanism 19,300 times.

Surely a projector which can handle the same film 19,300 times is a good one for you to use for showing films which, once damaged, you could never retake. For how many years would elapse before you and your descendants would show a film that many times?
Filmos Which Work For a Living

Life isn’t a constant round of recreation for every Filmo Camera and Projector. Many of these instruments are asked to work for a living. And the types of work they do are as varied and interesting as are the duties of those Filmos whose sole task is that of entertaining their owners. The four pictures on this page represent a few working Filmos on the job.

A Filmo 70-A Camera taking scenes for an industrial film in Argentina. The operator is Carlos P. Mayer, Advertising Manager of G. F. Alsteel Company, Buenos Aires. This is but one of many Filmo Cameras which engage in commercial work.

Filmo movies make school days alluring at the demonstration school of the National College of Education, Evanston, Illinois. The lad is threading the Filmo Projector with a self-made film.

In Tokyo, Japan, the photographer found a Filmo Projector busily showing sound pictures to a group of school children.

Filming operations in Kodacolor is the work of this Filmo 70-D Camera, shown with its owner, Dr. Harold A. Peck, Albany, New York. Shown at the Clinical Congress of the American College of Surgeons in October, Dr. Peck’s first Kodacolor film of an operation attracted much attention and was accredited with being the first successful picture of its type to be made under artificial light.
WE BRING OUT THE OLD ONES

Spending an afternoon with our family films of years ago proves a fascinating pastime

JEAN J. HEATHER

Ted at eleven—absorbed in an athletic career

YESTERDAY was one of those cold, gray Sundays which Illinois sometimes produces in winter. The motor cars on the drive passed like ghosts in the fog. We had all gone trooping in after a brief walk as far as the country club, and found the cheerful blaze of our log fire most welcome. I use the word “trooping” advisedly, for, besides Dad (my husband) and myself, there were our six “children,” included in which were my older son’s wife and Lyn, their little eight-year-old girl. So three generations were represented.

Ted, who is nineteen and in his second year at Northwestern, is a Filmo fan, just like Dad. The two of them had spent most of the morning in their impromptu studio in the basement, editing and titling the movies they had made at the country club winter sports matches last week. They now suggested that we all repair to the studio and watch the movies. The day of the matches had been clear and sunny, and the pictures had turned out beautifully, including a reel of Kodacolor.

We proved to be such an enthusiastic audience that Dad suggested we have some more movies. “How would you all like to see what you looked like and what you were doing eight years ago?” asked Dad. We’d all been so busy making new movies that we hadn’t stopped to look at the old ones, and the suggestion was met with enthusiasm. So Dad got out some B & H humidor cans from a section of his cabinet labeled “1923,” and we were soon launched on one of the most interesting afternoons we’d ever had.

The first reel Dad had titled, “Psychic, Jr., at Nature’s Mirror,” and there was Lyn, splashing in her little bathtub, at the mature age of ten months. Her curly hair was twisted into a soapy Kewpie peak, and she looked up from her fascinated paddling of the water every once in a while to grin delightfully at Dad, who was taking the movies. After her bath her mother had put her in her little crib, but Lyn, still full of pep, was peering through the crib bars, and trying to raise herself to standing position on her plump little legs. Every time she tumbled she raised a surprised little face, and then smiled most engagingly. Finally she did stand right up, and we all exclaimed in surprise. We’d forgotten that exciting climax.

There was another reel which Dad had made the same day, that summer in 1923. My son and his wife and the baby were out on the lawn in front of their first little house. They had put Lyn on a blanket, and were playing with her. Grandfather and Grandmother (Dad’s parents) were in that reel, too, and we all commented on how good it was to see them. They have been in California for nearly a year, and we are getting anxious to have them home again. Dad had taken some pictures of the house, inside and out, and of the little flower garden. I saw my son and his wife exchanging precious little glances over these reminders of things never to be forgotten.

The next few reels were made both by Dad and Margie, who was then nineteen, and like Ted now, in her second year at Northwestern. “Is that what the hot coed was wearing in ‘23?” remarked Ted scathingly, after the first few feet. The clothes were rather amusing, the girls’ dresses being long and tight, and the hats of the beplumed, beflowered, mushroom type. But Margie looked sweet and pretty and happy, and we enjoyed amazingly watching her playing tennis and golf, riding horseback with her friend, swimming, and having a good time generally. There were some football pictures in this group of reels, made at games which we’d all attended. And there were pictures of a garden wedding of two of Margie’s friends, which Dad had made. Margie asked Dad to make her several enlargements, as she wanted to send them to the people who appeared with her in the pictures, knowing they would be as interested as she.

(Continued on page twelve)

Lyn as she was eight years ago—and as she appears today
Filming Alaskan Explorations

The “Glacier Priest,” head of the Department of Geology, Santa Clara University, California, tells of his Eyemo movie making experiences on the Alaska Peninsula

Bernard R. Hubbard, S.J.

Wild, forbidding, and as yet mainly unexplored, the Alaska Peninsula constitutes one of the major rifts of the earth. In past ages pressure from below the oceans lifted up the sea bottom until the water-laid sedimentary rocks were pushed up into mountain ridges on the very summits of which one can pick up fossil shells and fossil sea animals. These sedimentary mountains were rent asunder for hundreds of miles by volcanic extrusions which elbowed them outward toward the seas and raised their own fierce peaks high into the air, rent asunder from smoking 11,000-foot Spurr volcano, at the beginning of the great rift, for a distance of over 500 miles as the crow flies to the flaming 9,000-foot Shishaldin and mighty Pogronmi, guarding the southern end of this land mass at Unimak Pass. From this point the Aleutian Islands, themselves the peaks of submarine volcanoes, stretch 1,200 miles toward Asia.

For the past three years I have spent the exploring season, in company with a few husky Santa Clara University athletes, on the Alaska Peninsula to capture its scenic wonders on film and to study its geological secrets. We have never received the backing typical of highly heralded modern explorers but have succeeded in penetrating regions a bit too tough for large expeditions. This necessitates carrying all of our material on our backs, as a pack train could not take the usual route of our treks. We necessarily scale cliffs, ford quicksand rivers, and hack our way with great effort over treacherous glaciers.

The young men who have been accompanying me, especially the quartette last summer, Roderick Chisholm, Kenneth Chisholm, Charles Bartlett, and James Barron, are of the “battleship beam and displacement” type and trudge uncomplainingly under packs that weigh well over 100 pounds. In making up our equipment at the end of the school year by pooling our common funds and buying accordingly, the first consideration in selecting various items is lightness and efficiency. When deciding to add motion pictures to our trip the choice of camera finally settled on the Eyemo as combining various advantages indispensable to the explorer. Compact and light, we found its greatest asset was the ease and certainty with which one can follow a moving object through the telescope finder.

One cannot expect to find the technical (Continued on page eleven)


**WINTER MOVIE MAKING**

Current cinematic offerings in the north and south—and how to make the most of them

The B & H Photometer will permit you to determine this specific exposure, for with this instrument you see the important part of the subject as you take the reading.

The use of panchromatic film and a color filter is recommended for snow scenes, as this procedure helps materially to reduce the excessive contrast and render accurately the crystalline texture and fine shadow details of the snow. See the article "Snow Cinematography" on page 9 of January Filmo Topics for more information on this matter of technique.

Winter sports involve fast action, and accordingly should not be filmed from close by with the action occurring at right angles to the camera direction. Take up a viewpoint which will permit recording rapidly moving objects as they pass obliquely toward or away from the camera. The article on page 2 of January Filmo Topics contains many suggestions on filming ski jumpers—suggestions which are fully as applicable to recording the other winter action sports as well.

Other subjects for your Filmo are abundant in winter. The winter outdoor play of your children certainly warrants a reel or two of film, showing them coasting and skating, building a snow man in the yard, and engaged in an epic snowball battle. Plan your shots in advance as much as possible so that they may be arranged with titles into a little story. Remember to take plenty of closeups and short shots.

Perhaps you’d enjoy adding to your library a topical film portraying your city in winter’s grip, showing, for instance, a snowstorm and its consequences. Your scenes might include the storm itself, taken from your window or outdoors, then go on to show your own household and the city in general crawling out from under the heavy snow. Take scenes around your home and in the parks of the snow-laden foliage, scenes of the shovelling off of the home walks. A laugh may be injected by showing the dog or a youngster

(Continued on page nine)

“Now who’s the best fisherman?” the young lady is probably asking, and the Filmo doesn’t need a talkie attachment to get the dialogue

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Joseph A. Sadony, Jr., White Lake, Michigan, finds winter movie scenes well worth going after in the North Woods. This Filmo 70-D enthusiast is manager of the Nufer-Adams Playhouse in Whitehall, Michigan.
THE LOG OF AN ANCIENT EYEMO

M. E. DIEMER, PH. D.

Director, University Photographic Laboratory, Madison, Wisconsin

Photographs by the Author

MY Bell & Howell Camera was the fifth instrument of its kind to pass the rigid inspection and appear in the hands of its user. That was away back in November, 1925, before the days of talkies, widies, and chrome of one kind and another, but when what was lacking in sound and color had to be compensated for by continual originality and effort on the part of cameramen.

The then new camera’s first job was filming one of the most unusual football games ever played in the Big Ten. Wisconsin met Iowa at Iowa City in a snow storm so dense and furious that visibility was limited to one half the width of the field, with wind so forceful that punts would frequently come down back of the kicker. This was no place for telephoto lenses and a top stadium placement, because the spectacular shots were those of pig skin giants silhouetted against a pure white background into which they would tumble and dive, only to emerge with a tar and feather appearance, shake themselves, and line up again in squad formation. Cold, wet, and bad light. What more could a cameraman pray not to have! Yet my Eyemo brought home the film.

Since that time this camera has had one overhauling at which time the mechanism was placed in a new case with the heavier spring drive. It has traveled about eighty thousand miles during the past two years and has operated under the greatest contrasts of conditions—temperatures from thirty degrees below zero in the northern Wisconsin woods in winter, to one hundred and forty degrees above zero in the jungles of East Africa. From the extreme dryness of the Valley of the Kings to the high humidity of Java and Bali. From the glare of the tropical sun to the softness of the arctic moon. It knows Paris, London, New York, and Rio de Janeiro, and it also knows some of the most out of the way places in the world.

For instance—Tristan da Cunha lies about midway between South America and Africa and is populated by about one hundred and fifty people to whom a yearly cruise ship is the most frequent visitor. They are isolated from the rest of the world by nearly fifteen hundred miles of water, and one missionary is the only cultural influence that has come to them in nearly a century. Due to marine health regulations, passengers of this cruise ship are not allowed to land on the island, but the natives are permitted to come on board for several hours, during which time they are banqueted to food which is a great contrast to their yearly diet of penguin eggs, fish, and potatoes. However, members of the crew go ashore to land supplies which foreign benevolent
organizations have dispatched to these needy people.

Taking advantage of this opportunity, one of these men was hastily instructed in the operation of the Eyemo. A full roll of film was threaded in, the lens diaphragm was taped at the proper aperture, and final instructions were given to "hold it steady." The results were very gratifying indeed, although the man knew nothing about photography.

Travel photography frequently presents difficulties which must be overcome "on the spot" and without waste of time in pondering on what to do next, because special trains, cruise ships, and auto caravans dislike very much to be delayed for pictorial reasons. Most scenes must be shot "on the run" with no opportunity for setting up a complicated or heavy apparatus, and one glance at a situation must determine how and where to photograph.

On a recent trip into South and Central Africa the special train which was chartered for the party was delayed two days on account of railway strikes. Consequently, time at the destination, which was Victoria Falls, was shortened to one and one-half days. Fifteen hours to cover this spectacular beauty spot of the world which we had traveled thousands of miles to see! Victoria Falls can be seen from many miles distant because of the great clouds of mist which rise from a six thousand foot wall of water pouring into a chasm over four hundred feet deep. Natives call it the "Smoke That Thunders," but a photographer is warranted in calling it "Smoke That Troubles," because these vortex driven mists are as wet and penetrating as a hot shower bath. In the Rain Forest jungle which thrives opposite the main cataract of the falls the drenchings subside momentarily and the sun breaks through to form a thousand rainbows. With it all is the deep roar of falling waters, the cries of baboons, and the color of myriads of wild gladiolas.

The Eyemo went through the Rain Forest wrapped in a rubber coat, which, by the way, was exactly as much as clothed its operator. At opportune moments the lens was uncovered and scenes made until it was necessary to rewind the mechanism.

Anyone who takes either an Eyemo or Filmo on long jaunts where great climatic contrasts are encountered and hundreds of feet of film are exposed, must remember that his camera is being subjected to different usage from week-end holiday trips and back yard "kiddie" scenes. A motion picture mechanism will not run without oil, and it cannot run if dust, sand, and paper chips from leader strips are allowed to accumulate in the spool chambers. Sooner or later these dirt will make their way into the mechanism where they generally choke or "jam" the gears. When serious troubles occur, they can usually be traced to carelessness or indifference to mechanical operation.

Photography of native life in different parts of the world calls for diplomacy, caution, and cleverness on the part of a cameraman, and the more inconspicuous he manages to be, the more and better scenes will be possible. Where tourists are frequent, the natives know what it is all about, and a large tripod-mounted camera calls for much "hak-hehsh" before action goes on. Where natives are superstitious they get under cover at the sight of a camera pointed toward them.

If they are disagreeable they will wave kerchiefs or other cloths directly in front of the photographer. In any instance the difficulties are minimized by using a right-angle finder (Prismatic Eye) and your wife as an accomplice out in front.

Mr. and Mrs. Die- 
mer with their Eye-
mo at the Great 
Wall of China

Dancers of the charming island of 
Bali, Malay Archipelago

Left—Four per cent of the population 
of Tristan da Cunha, lonely island 
group in mid-Atlantic
Titling Your Films

No. 5. Using Block Letters

First, a word about the characters themselves. They come in sets of 102 letters and 17 numerals, and are 2 1/2 inches high. Those which require it are weighted so that they will stand upright, or you can lay them down flat if you wish. Sets may be had in natural white wood or in red, green, or blue, as you choose. Here are colored letters for your Kodacolor titles!

When we started this series of articles on title making and filming, in October, 1930, Filmo Topics, we reviewed briefly the many different ways by which titles are made. One of these methods, and a simple one, involves the use of block letters. Since then, we have received many letters from Filmo users asking for more information about this title making method. Here it is—or as much of it as space limitations permit our publishing.

The block letter method has become very popular, not only because it does not call for skill at hand lettering, but also because it offers a great variety of title effects. Then too, it is an ideal way of making color titles for Kodacolor films. Block letter titles may be made as simply or as elaborately as you wish. Our list of the title effects which can be and have been easily accomplished with these letters is, in fact, so extensive that to cover it in one article we will have to be brief in regard to each different method. Which reminds us of the one about the chap who wrote a very long letter and, at the end, explained its length by saying that he hadn't had time to write a short letter. So it looks as though we would have to spend some time on this article. If we omit one of your methods, please write us about it.

The simplest way to use these letters is to lay them out on a flat surface under natural or artificial light, get directly above them with your Filmo, and shoot. If you want to use a tripod to aid in accurate framing and to achieve steadier pictures, stand the letters up on a flat surface with the line which is to be read first placed the farthest from the camera, or lay the letters flat upon an inclined surface, doing the filming in either case with the camera tilted downward, usually as much as will be permitted by your tripod tilting head. The relative position of camera and tripod, as well as the screen effect, are shown in the illustrations above. Sight through your viewfinder to get the effect and to secure proper spacing of the lines of letters. Shift the elements about until composition and perspective are satisfactory. Use your exposure meter to determine the correct exposure, and then press the button. Allow from one-half to one second for each word.

As block letter titles will cover a rather small area, the distance from camera to title will ordinarily be less than the closest distance of sharp focus of the 1" f 3.5 universal focus lens. Therefore a focusing mount lens is a necessity. When working at five feet or less from the title, make allowance for the distance which the viewfinder of your camera is offset from the lens, so as to center the title accurately on the film.

Since it is seldom if ever desired to reverse colors in titles made with block letters, reversal film is recommended.

Attractive "art titles" are very easily made by arranging the letters in combination with other objects—colorful objects if you are making Kodacolor titles. The accompanying illustrations are an example of the type of title. Objects suggestive of the title's subjects are the most commonly used—for instance, objects connected with the hobby or interests of the person introduced by the title or characteristic of the place or event so introduced. An early title in a travel film, for instance, could be embossed with travel folders and maps. Still picture enlargements can also be used effectively in connection with these letters.

Most people prefer to have the letters themselves the brightest in color or illumination so that they will stand out clearly rather than have to compete for attention with striking, brilliantly lighted or light colored objects which enter into the composition.

Interesting effects are achieved by setting up the letters on a shiny surface which will reflect their forms.

Many animation effects which will lend interesting variety to your films can be produced with these letters. A person's hand may be shown placing the last few letters of the title or changing a letter or two to vary the meaning while the title is being filmed. Or, by stopping the camera (mounted upon a tripod), making the desired changes, and then starting the camera again, the letters may be made to appear and disappear as by magic.

Another group of animation effects are those which are accomplished by reverse motion. Set the letters up as usual, expose sufficient film on them to permit easy reading, doing this with the camera held upside down. Then, while the camera is kept running, knock the letters down by drawing a dark thread or string across the set-up, beginning knocking them
January 1932

down at the end of the title and con-
continuing until the letters of the first word
have fallen over. After processing, cut out
this film strip, turn it end for end, and
splice it back into the film. The screen
effect—the letters, one by one, will spring
into an upright position automatically
and, after all have risen, the complete
title will remain on the screen for a brief
period, to permit easy reading.

Another interesting effect is accomplished
by the same method but by tumbling the
letters into the middle of the title area
by encircling them with a string and
drawing up on the loop thus formed.

We recently saw some Kodacolor titles
which included a unique and easily
accomplished. The maker had provided
himself with block letter title sets in
several colors. After the complete title
in one color had been upon the screen
for a short time, a wave of another color
began to pass over the title from begin-
ing to end, a letter at a time. This was
accomplished simply by first making a
brief exposure of the entire title in one
color. Then the camera was stopped,
the first letter replaced by its duplicate in
the other color, a few frames of film ex-
posed, the camera stopped, a second let-
ter replaced by its duplicate in the other
color, more film exposed, and so on. In
trying this be sure that you place the
newly titled letters in exactly the same
position to avoid any jump on the screen.
Make a mark on the table top if necessary.

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New Filmo Catalog

The new Filmo Catalog is a ver-
table handbook for the 16 mm. film
user. Many of its
pages are devoted
to not selling Filmo
equipment but to
brief, pertinent,
instructional articles
packed with facts on such sub-
tects as the use
of color filters and of artificial lights, the
making of titles, and the whole range of
personal movie problems. Thus the catalog
offers not only the equipment required
to perform every operation of personal
moviedom, but also helpful information
on how to select and use this equipment.

Ask your dealer for a copy of this new
catalog—or write Bell & Howell for it.

behind the worker, putting the snow back
on the walk, in the course of innocent play,
almost as fast as it is removed. Follow
this with scenes from farther afield—
pedestrians, automobiles, and street cars
struggling through the drifts, snow-cov-
ered trains puffing into the station, the
city's snow-removal gangs and machines
at work, and anything else which is typ-
cal of the season.

Comedy effects can readily be worked in-
to such a film. For instance, a youngster
could be shown dragging his sled over the
bare, newly shoveled sidewalk to protest
against this destruction of his sledding
place. The worker could signify asser-
tion begin to replace the snow on the
walk. You can accomplish this by filming
the normal walk-clearing operation with
the camera upside down. After process-
ing, cut out this scene, turn it end for
end, and splice it back into the film. On
projecting, the snow will be seen to fly
onto the shovel and be carefully laid
over the walk to unmarred perfection.
You'll think of many other ways to use
this reverse action method in filming win-
ter sports. Let your imagination work on
whatever subjects you expect to shoot!
A scene taken as you race down a hill on
a toboggan is sure to prove interesting.

If you are at all artistically inclined, mak-
ing a film of winter's scenic beauties will
appeal to you. The best time for this is
right after a fresh snowfall, before the
snow has lost its delicate fluffiness and
brilliant sparkle and before it has fallen
from the trees and shrubs. In such films,
action being absent or negligible, selec-
tion of subject matter and perfection of
photographic technique are the ways to
success. Correct exposure is especially
important, and the use of an exposure
meter, such as the B&H Photometer, is
urged, as well as the use of panchromatic
film and a filter.

On sunny winter days, beautiful natural
color films may be made with Filmos
equipped for Kodacolor work. Here again
it is best to use an exposure meter, as it is
not always easy to estimate the light
values of a snowy landscape.

Will a part of your winter be spent in the
south? If so, it is hardly necessary for us
to dwell upon what you'll find there to
film, for most of us seem to keep our cam-
eras busy away from home even though
we sometimes overlook worthwhile sub-
jects virtually on our own grounds.

If you are using Kodacolor film in your
Filmo you'll be entranced by the riot of
color in the tropics and sub-tropics, and
will bring back beautiful color films of
brilliant southern foliage, flowers, of
orange groves, and of sunsets over painted
waters.

Your action pictures will include, per-
haps, sea fishing, cruising, motor boat
racing, swimming, golf, tennis, and other
sports, all against beautiful and, to northern
eyes, different backgrounds. These will
be fascinating films whether shot in
black and white or Kodacolor.

You'll be filming under unfamiliar light
and atmospheric conditions, so use care
in order to do justice to your subjects.
The sun will beat down in full strength,
and ordinarily you should expose as in
summer in the north. Some days in the
south, however, the air carries a high
content of water vapor which acts as an
invisible filter. Then the light may seem
normally brilliant to the eye, but its pho-
tographic value is lower and greater ex-
posure is required. Hawaii is notoriously
deceptive in this way. Another day, the
southern sunlight may deceive you into
cring on the side of overexposure, so use
your Photometer to be sure of getting the
best results.

Out on the sea, where you'll probably go
to fish, you will get the full value of the
tropic sun plus much light reflected from
the water. You will do best here to use
panchromatic film and a filter at least as
dense as 4x, with your lens well
stopped down to avoid over-exposure. An-
other unfamiliar light condition to com-
bet with your Photometer!

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Movie Makers Magazine

DO you read Movie Makers? If not, you
should, for it is a magazine that will bene-
fit anyone who is at all seriously interested
in personal movies. The Amateur Cinema
League, 105 W. 40th St., New York City,
whose official organ this publication is,
offers to send you an introductory copy
free. We suggest that you write now for
the February issue, which features sound
pictures as well as winter travel filming
in the north and south.
Making Filmo Projection Lamps

"Facts About Filmo" No. 14, explaining the design and manufacture of the Filmo Projector's little seen but tremendously efficient light source

E. W. Beggs
Commercial Engineering Department, Westinghouse Lamp Company

Editor's Note:—The current announcement of the new Filmo 75-G Projector with its 250-watt lamp brings the subject of projector light source to the fore. It should be appropriate, then, to consider the lamp itself. Bell & Howell engineers have been working in extremely close collaboration with the lamp manufacturers, not only in the development of more powerful projection lamps but in the improvement of lamp quality to insure the Filmo owner getting absolutely the finest possible projection results. It is safe to say that into these particular lamps is put more careful workmanship than is found in any other type of lighting equipment. The permissible tolerances are extremely close. Consideration of this article in conjunction with the announcement of the new lamp should help the Filmo owner to appreciate just what constitutes the lamp of which he expects and receives so much and which demands so little of his attention.

The amateur movie maker threads his film into the projector and turns the switch. Generally he takes the powerful little electric lamp for granted if it does its job correctly. These lamp bulbs are rarely a source of trouble, and the old follower of home movies knows that they are markedly better today than they ever were before. He may be interested to know why.

Projection lamps are made of practically the same materials as are lamps used for ordinary lighting purposes, but in their design and manufacture there are five major requirements which, with the ordinary lamp, are of only minor importance. The light source filament of projection lamps must not only consume exactly so many watts at certain specified volts to emit so much light, but it must also be formed to an exact shape and size. During its life this shape and size must be accurately maintained or the picture brightness and uniformity of illumination will be inadequate. Such requirements, which do not, of course, exist in such an exacting degree relative to general lighting lamps; demand undreamed-of care in producing and selecting the tungsten filament wire and in forming it into light sources.

The tungsten filament of the Bell & Howell projection lamps operates at about one-half the temperature of the sun itself—approximately 6000° Fahrenheit. This is exceedingly hot, as one will understand when recalling that water boils at 212°. At this terrific temperature thousands of degrees beyond the melting point of iron and tremendously hotter than the melting point of any other metal or alloy known to science, even tungsten is quite soft. Only because of special crystalline structures which these filaments develop, can the original form of the light source be maintained. These special structures are affected by adding minute traces of certain other metals to the tungsten.

In connection with the light source form it is interesting to note that although extreme accuracy is now being obtained in the finished lamp, the conditions under which this is carried out are unusual to industry. After the filament is wound into a coil and the coil bent into its form, mounted on the spider-like lamp stem, and sealed inside the bulb, it is beyond all human influence. If the crystal structure is imperfect, if the strain introduced in the filament at coiling, bending, or mounting are not entirely removed, or if any distorting force exists inside the lamp, nothing can be done about it because it is sealed within a glass envelope.

Besides the light source shape and size there is its location to consider. If it is not exactly in focus and if the filaments are not exactly aligned with each other and with the optical system, the illumination will be faulty. So that this condition may not occur, the lamp maker measures, at every operation, every part that goes into the lamp. The filament, the supports, the current lead-in wires, the glass parts of the stem, and, finally, the finished mount, are all made with precision. The
mount is sealed into the bulb at a predetermined point by means of special jigs which form the glass while it is molten.

The quality of the glass of the bulb, particularly in front of and behind the light source, is another refinement which projection lamps have come to require but which other lamps, in general, do not need. This glass is quite similar to the well-known Pyrex glass. With it, it is possible to bring the filament quite close to the bulb wall without melting the glass, and consequently, close to the projector lens, which results in increased brightness of the picture. Also, the Filmo projection lamp maker must use only bulbs which are free from pits, "seeds," and other defects.

After the filament is sealed into the glass bulb, traces of air are removed and replaced by chemically pure nitrogen gas. Moisture, oil vapor, and other substances which might attack the filament are driven off the glass and metal surfaces by direct flames played on the bulbs during this "exhaust" operation. The exhaust tube is sealed, closing the filament in forever. The regular threaded lamp base is then perfection of the movie studio in a rough, dangerous, exploring film. In glacier and mountain climbing a tripod is out of the question. Here the Eyemo possesses a decided advantage as it can be held very steady for difficult shots. Explorers of the luxury class who later bolster up their field shots by "studio faking a la Hollywood" can undoubtedly put out a technically more advantageous film. But, with the recent exposure of so much of this studio work in travel adventure films, the reaction of the interested public has been that, even with a few minor imperfections in it, an honest film showing scenes taken on the actual field pleases more than the made up "travel" thrills of the studio.

In our Alaska work we carried a tripod for the accessible portions of the exploration journey and had a novel invention for the ice and cliff work. An Alpine ice pick is as useful and necessary to a mountain climber as a monkey's tail is to the simian! One of my student co-explorers bored a hole into the solid steel head of my pick and threaded an ordinary quarter-inch bolt so that the final product was a threaded bit of steel two inches long.

A rounded screw fits into the hole in the ice pick when it is not to be used for photography. When a scenic effect comes up on a glacier or cliff the ice pick is grounded in the snow and the two-inch bolt is threaded into its seat. The Eyemo is threaded onto the projecting thread

The lamps are shipped with the screw bases to the Bell & Howell Company where they are provided with B & H prefocusing rings to insure accurate location of the light source in the precise Filmo Projector. These rings seat against a machined ring in the lamp housing, automatically functioning to focus the filament exactly.

Editor's Note:—When the lamps are received at the Bell & Howell factory they are again lighted individually. Then, for the purpose of correctly attaching the prefocusing ring, they are placed in a special, B & H developed fixture, shown here in use. Sighting through the windows of this fixture, the operator shifts the lamp until its filaments line up accurately in all three planes with the fine cross-wire guides. Then, locking the lamp firmly in that correct position, he solders on the prefocusing ring, which the fixture holds correctly in respect to the lamp base until the solder has hardened. The lamp is then ready for use in the Filmo Projector. The position of the filaments is such that they are exactly on the axis of the optical system of reflector, condenser, and lamp, as well as in true focal position. And the small tongue on the prefocusing ring fitting into the groove in the projector's lamp base seat, insures correct insertion of the lamp in the projector.

Projection lamps with their special requirements concerning filament wire, light source position, bulb quality, and basing accuracy, in addition to the requirements of ordinary incandescent lamps, have challenged the skill of the lamp maker. Each year his ability to perform "miracles" has been enlarged, and today the Bell & Howell projection lamp stands highly perfected for its exacting duty, the pride of the manufacturer and, he hopes, the satisfaction of those fortunate thousands who are privileged to make and project personal motion pictures.

Filming Alaskan Explorations
(Continued from page four)

Once in rounding a cliff while making our way to the head of an uncharted inlet on the Alaska Peninsula, we unexpectedly ran onto two cub bears playing on the beach. While two of the men held rifles in reserve in case mother bear put in an appearance, I followed the cubs—for over an hour, getting them climbing cliffs, digging in the sand, putting on a boxing bout, and engaging in various other capers. The finder of the Eyemo is the best possible for such an emergency, as the camera position must be changed so continuously that a tripod would be impossible to use. The results were excellent and constitute one of the most interesting episodes of the reel.

Again in climbing to an eagle's nest to obtain motion pictures of the young birds the quick action of the finder was indispensable in a situation that demanded one eye on the subject matter and the other on the infuriated parent birds that were circling and swooping at the invading cameraman!
Questions and
• Answers

Conducted by

R. Fawn Mitchell

Q. How is Kodacolor film spliced?
A. Exactly the same as ordinary film. The only difference is that the film is wound with the emulsion side in—the opposite way to ordinary film, so it must be turned over before splicing to place the emulsion side up.

Q. A duplicate print from reversal film is shown the opposite way to the original. How can they be spliced together?
A. Lay the original reversal film in the splicer with the emulsion up, cut it, but do not scrape it. Then set the duplicate print with the emulsion down, cut it and also do not scrape it. It is then a simple matter to cement the celluoid side of each film together, there being, of course, no necessity to scrape the emulsion.

Q. Can Kodacolor titles be made with the title writer?
A. Yes. It is necessary to reverse the ratio diaphragm so that part covering the blue segment now covers the red. This compensates for the different quality of the light. It is also advisable to run the camera at half speed in order to get sufficient illumination.

Q. Does the continued use of the B & H Film Cleaner affect the film emulsion in time?
A. No. The film cleaning fluid is absolutely harmless to the emulsion. It simply removes the surface dirt and oil.

Q. Why is the B & H Film Cleaner arranged to run at such a low speed?
A. It is not desirable to operate it too fast because satisfactory cleaning at high speed would involve undue strain and wear on the film. Then again, it is desirable to clean slowly to permit full evaporation of the cleaning fluid after the film leaves the cleaner attachment and before it is removed.

Q. Is it really necessary to use the special lens cleaning outfit, or will an ordinary linen handkerchief do?
A. Optical glass, such as is used in photographic lenses, is extremely soft as compared to ordinary window glass or even to eye glasses. It is quite easy to scratch a lens with one's finger nail, so that the comparative softness of the glass can be fully appreciated. While photographic lenses can be cleaned satisfactorily in the ordinary manner by exercising care, there is no question as to the advisability of using the special equipment now available to clean them to the best advantage without any risk of their getting scratched.

We Bring Out the Old Ones
(Continued from page three)

Then Ted, at eleven, was “leading man” for awhile. The years seemed to slip away, and our tall, slim boy of nineteen was once a rosy, husky youngster, much absorbed in a highly athletic career.

Dad had taken pictures of him with his playmates, in their early attempts at football, baseball, skating, and track. Ted was very fond of dogs, and had two. There were some amusing pictures of the dogs dashing around our grounds, and of Ted in his first attempts at horseback riding, that made all of us laugh.

Next came the pictures of our 1923 Thanksgiving, with Grandmother and Grandfather, all the children, and some of the aunts and uncles and cousins, at our festive board, with its glistening turkey. And there were Christmas pictures at our house and our son’s, Philippa, our younger daughter, was then four, and there were some pictures of her beside the Christmas tree, being very busily domestic. She had wanted above all else a wash-tub and wringer, that Christmas, and Santa Claus had brought them. She had been given a trunkful of new clothes for her dolls, and promptly washed them all. Dad showed us some more pictures of her, taken in the summer, some of them at the beach, where she paddled delightfully in the water and had a great time on the teeter-totters and swings.

We had done some traveling that year, and Dad showed us pictures of Philippa and Ted, Margie, herself, and me up on the Mountain in Montreal, and in the interesting old streets of Quebec. We had also journeyed down through New England, and many were the good times and good friends the pictures recalled. It started us on a train of delightful reminiscence which lasted through the evening. We had had a most interesting and happy time glancing back for awhile into one of the years gone by. It made us feel that we still had the year with us, whenever we wanted it; that we had kept it, not lost it. I believe all of us would vote our personal movies our most precious treasures. I know Dad and I do.

After You’ve Read

Filmo Topics...

... slip it into this convenient, attractive binder, so that it will always be available for reference. Metal rods are provided, one to hold each 1931 issue of Filmo Topics. Order your binder now, before any of your Topics issues become misplaced. The cost? Very little for a binder of its quality. Only $1.50 Postpaid

Bell & Howell Company
1842 Larchmont Ave., Chicago

Lost Equipment

Filmo 70 Cameras
No. 12833—Lou Davis, 161 W. 54th St., New York City.
No. 16283—J. S. Morgan, 2515 W. 84th Place, Los Angeles, Calif.
No. 19693—D. E. Gamble, 10301 S. Hoyne Ave., Chicago, Ill.
No. 49503—Miss Helen Lown, 21 Fifth St., Great Neck, L. I.
No. 52613—Francis Hendricks Co., Inc., 339 S. Warren St., Syracuse, N. Y.
No. 54184—Starkweather & Williams, Inc., 47 Exchange Place, Providence, R. I.

Filmo 75 Cameras
No. 42921—Mrs. Lois Dean, 12 Dobbs Terrace, Searson, N. Y.

Filmo Projector

 Cooke Lenses
NEW—a B & H Photometer for "still" camera requirements

At right, the new "Still" Photometer. Easy to carry, fits the hand, always ready for use.

With but a revision in its scale readings, the B & H Photometer, first introduced for gauging exposure for Filmo movie cameras, is now presented for use with "still" cameras. The "matched illumination" feature of the Photometer is retained intact, as well as the utter simplicity of its operation.

The new "Still" Photometer gives the user not only scientifically correct exposure readings, expressed in terms of diaphragm openings, but also gives accurately co-related readings for shutter speeds, emulsion factors, and filter factors. Lens stops from F 1 to F 32 are given, with shutter speeds from 1/250th of a second. Emulsion factors from "ordinary" to "ultra-rapid", and filter factors from 1 x to 5 x are also given.

The simplicity and speed of determining correct exposures is startling. There is no interpolating to do. You press a button, sight through the eyepiece directly upon your object, and turn the dial until the electric filament matches the illumination reflected from your object. Then, you take your lens stop readings direct for any shutter speed you wish to use—or a shutter speed reading for any required lens stop.

If you are using a filter, move the filter factor ring and the new lens stop is read instantly. Modification for different emulsions is obtained in the same way.

Write for literature on the new B & H Photometer for use with "still" cameras. B & H Photometer for still cameras (model B), $20 with case, $17.50 without case. Model A, for Filmo cameras, same prices.

Your Precious Films . . . Safe! in a Filmador

Not until your films break from brittleness and shrink from dryness do you begin to appreciate the full value of keeping films in good condition. Don't wait until your films have deteriorated to get a Filmador, the scientific thermo-humidor that seals humidity into your films. Has inner humidifier and outer thermo-container. Holds three 400 ft. reels. Ruggedly built of heavy-gauge aluminum, $5.00.

Sound and Silent Films from the Filmo Library

UFA Talking Films
Each on one 400 ft. reel with voice-accompaniment sound disc, $5.00
Tropical Birds, A strangely beautiful sound picture of bird life in the valley of the Amazon. Reminiscent of the gorgeous descriptions of tropical birds in the writings of W. H. Hudson, world-famous naturalist and author.

An African Adventure, A fascinating visit to some of the lesser known native villages of the wilds of Africa. Household and civic customs pictured in excellent detail.

Birds of the Beach, No fashionable ocean resort boasts such an interesting colony of inhabitants as are shown in these sound movies of life among birds of the beach.

Sons of the Sun-God, The Peruvian Indian and his worship of the sun are strikingly portrayed in this sound movie of life among the Incas.

UFA Silent Films
Each on one 400 ft. reel, $2.00
The Monarch of the Glen, One of the famous UFA natural history films, showing the life of the deer in all its fascinating detail.

Remnants of the Past, Like a visit to the Stone Age is this excellent portrayal of the present direct descendants of prehistoric mammals.

Pets and Pests, This UFA presentation is a portrait gallery of mankind's pets. From many parts of the world have been drawn together a group of interesting creatures.

The School for Eagles, This film showing how aviators are trained for safe flying is a fascinating subject for young and old. Both ground and air-work are pictured.

Gen. Milton J. Foreman, soldier and world-traveler, has put his Filmo, now more than five years old, to the severest test, carrying it on his extensive travels throughout the world. It has served him loyally, like the veteran it is, giving him reel after reel of theater-clear movies with never a balk, never a failure.

More than 20 years ago, the first Bell & Howell Professional studio cameras entered active service. They are still in use. And Filmo, the Bell & Howell personal movie camera, is carrying on this tradition.

Year after year, Filmo ruggedness and stamina have laughed at gruelling days in the tropic sun or arctic cold, at tumbles over dizzy mountain cliffs, at high dives into swirling waters. Ask the explorer, the sportsman, the world-traveler. He will tell you that you can't wear out a Filmo, either by use or abuse. Its makers' 25 years of experience in the professional movie equipment field gives Filmo its long life, its dependability, and its ability to take supremely beautiful movies. And with all its watch-like precision, it costs no more to own a Filmo. Models as low as $92. Ask your dealer to show you the Filmo, or write for Booklet No. 38.

This New Filmo Illumination gives 41% greater brilliance

The startling screen brilliance and clarity accomplished with the new Filmo 57-GG Projector establish a new standard of projection results in 16 mm. movies. The new 375 watt, 75 volt illumination system, appearing for the first time in any 16 mm. projector, gives 41% more light than the standard Filmo 250 watt Projector.

In addition to the improvement in monochrome projection, the new Filmo 57-GG Projector permits the projection of Kodacolor movies on larger than ordinary screens, and gives unparalleled brilliance to the colors.

The Filmo 57-GG Projector accomplishes 375 watt, 75 volt, illumination without the slightest change in the major mechanical features of the standard Filmo Projector. Operating on either direct or alternating current, neither the use of a step-down transformer, converter, or other bulky equipment is necessary. The regular Filmo screen safety shutter and fan cooling system are retained.

The new projector comes equipped with variable voltage resistance and voltmeter, with case, at $260. Filmo Projectors previously purchased may be equipped with 375 watt illumination at nominal cost. Write for complete details.

The B & H Extra Bright SCREEN

The satisfaction you receive from movies projected in your own home is measured not a little by the projection screen you use. The B & H Extra Bright Screen has no equal for brilliant, theater-quality reproduction, owing to its specially developed reflective surface. Particularly for Kodacolor, which requires a super-reflective surface, does the Extra Bright Screen reveal its special characteristics. The projection surface of this screen folds in for protection while in use, and its feet fold parallel with frame for easy storage.

Two sizes: 20 x 27 inch, $21, 30 x 40 inch, $39.

March FILMO Library Releases

UFA Sound Films

Each on 400 ft. reel with sound disc in duplicate, $60

The Evolution of the Universe. The fascinating story of the planets, effectively presented by moving models.
The Palace of Honey. A most interesting and complete story of the life of the bee.
The Persian Wedding. The marriage ceremony in a Mohammedan land.
The Disappearing Jungle. An interesting and educational film on the white man's transformation of the African jungle.
The Sacred Scarab. The strange habits and life story of the beetle of the Egyptian hieroglyphics.

UFA Silent Films

Each on one 400 ft. reel, $50

Assorted sketches. A delightfully entertaining and instructive film about the animals and their families.

Mothers and Mothers. Motherhood differs in many ways, but not in devotion. This film shows the care animals bestow on their young.

Tally-Ho! Showing the real sport that lies behind riding to the hounds.

Venice. A beautiful travelog, portraying the city of lagoons and old palaces.

Primitive Housekeeping. Life in a village of Amazonian Indians.

Meaning. This is one of the most exciting films in the Filmo Library—the story of the survival of the fittest in the animal kingdom.

A NEW B & H PHOTOMETER FOR "STILL" CAMERAS

Ten seconds is all it takes to get a scientifically accurate exposure reading for "still" camera requirements with the new Model B Photometer. Sighting directly upon your object, you turn the dial until the electric filament matches the intensity of the light reflected from the object. Then you take your reading, in terms of lens stops, shutter speeds, filter factors, and emulsion factors. Lens stops from 5 to 32, and shutter speeds from 32 seconds to 1/1000th of a second are given. Designed and constructed with characteristic Bell & Howell precision, the new Model B Photometer has its basis in the laboratory method of gauging light intensity. It is the finest instrument for its purpose now presented for the use of the "still" photographer.

A Model for Filmos

The Model A Photometer is for use with Filmo Personal Movie Cameras. It operates in exactly the same way as Model B, but with its suitably calibrated scales gives less stops readings for the various Filmo Camera operating speeds. Either model, $175.00 without case, $20 with case. Write for literature.

BELL & HOWELL

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FILMO TOPICS is published in the interests of personal motion picture makers to help them get the best possible results in every phase of cinematographic work. Photographs and accounts of movie-making activities of general news or instructive interest will be welcomed by the Editor, as will suggestions as to subjects which you would like to see discussed in FILMO TOPICS.

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Edwin A. Reeve - Editor

MARCH is one of the "in-between" months on the movie maker's calendar. Spring, we hope, will be promising soon to appear when this issue reaches you. Her appearance has been promised, for that matter, all through the so-called winter where we are. (Southern California papers please copy.) Already we are developing a taste for summer travel literature... are writing scenario outlines for the films we plan to produce on our summer vacations.

It's a great pastime—this planning summer movie making, and it should receive its rightful share of your time now, too. But don't forget your films which still lie unedited and innocent of titles. Will you be apt to get at these indoor operations after spring finally does come? Probably not. The end of March should find you with a clean slate, that is, with all previously taken films whipped into perfect, finished form.

By the way, before you start titling those films, read the article on page eight of this issue. It offers a number of trick title ideas, some of which, at least, you will want to try.

Already we are starting to give you articles which should prove helpful as you use your camera this Spring and Summer. "Composition in Motion Pictures," on page four, contains facts which will apply to any film you produce. Issues to come will be devoted largely to helping you get more pleasure from your Filmo during the warm months. How would you like to help the editor plan these issues? You can do it in a few minutes, and win his gratitude, by writing to tell him what subjects you'd like to see covered in the coming issues of Topics.
Filmo Joins the Army

How motion pictures helped keep Battery "A"
15th Coast Artillery, in the "Excellent" Class

CAPTAIN A. C. CLEVELAND
Coast Artillery Corps, U. S. Army

My first experience with Filmo was in August, 1927. I wonder now why I delayed so long. (Most Army people will readily guess!) At that time I was commanding Battery "A," 15th Coast Artillery, stationed at Fort Kamehameha, Hawaii. Since the Battery fund was in a satisfactory condition, and the Battalion Commander approved, I bought a Filmo camera and projector for the organization. Our shots were quite good from the very first foot, and I was accordingly surprised to find that movies are easier to take than still pictures. I tried a few pictures of members of the Battery, and when the men saw them projected they showed more interest for at first they had regarded the camera as a toy. The older soldiers were a bit more difficult, particularly the hard-boiled First Sergeant (bless you, Bray, you kept that outfit in the "Excellent" class.)

The camera was first used for sports, as the inter-battery basketball league (outdoor) had just started. The first of these pictures were very effective in showing me that the camera should be "panoramed" slowly. I soon learned camera technique at little expense of film. The first projection, put on in the day-room of the barracks, was a success. A representative of the Filmo distributors in Honolulu came out to give us any needed assistance and brought along some professional films to add to the show. Thereafter it developed that the men were not adverse, to say the least, to being Filmo'd. The best argument is to see one's image on the screen.

Battery "A" was probably stronger and more interested in swimming than other forms of athletics. Our Regiment had won the post meet, and then the Battery cleaned up in the inter-battery affair. This made it desirable to challenge a battery team from Waikiki. We now had the Filmo, and it got us some fine shots of that meet. The opponents showed us some really first-class swimming, as well as sportsmanship, and defeated us. But the pictures of our men doing their best for the Battery always got a hand.

The Filmo was now established, and the men wanted more. Since it was touch and go among the various organizations in attaining excellence in Infantry drill, I took shots of different squads doing the manual of arms and foot movements. Their projection showed me something in reactions. One man spoke up, "Did I do that?" Others made various comments, mostly to the effect that they would show me next time. And they did. From then on a general "perking up" was noticeable whenever the camera was in the vicinity, and I had it near by most of the time. Not only did the improvement include the motions of drill, but it also was manifest in the dress of the men. They became more particular in the wearing of their hats and ties, and in the polishing of buttons and other bright metal. Some of those who had been revealed unfavorably at the first showing came to me later and asked for an opportunity to be photographed again, in an effort to picture themselves as they thought they really were. This was done and the results were gratifying. By that it is meant that the men put forth greater efforts in the drill and thus attained higher standards.

During the small arms firing season the use of Filmo aided considerably in showing and correcting faulty positions, especially in rapid fire, and therefore in producing good scores when firing for record. The Battery was divided into several teams, with previously qualified experts as coaches. Cash prizes were offered to high men and winning teams, including coaches. When the rifle season was concluded we had a smoker in the barracks, and the prizes were presented to the winners by the Regimental Commander in person. A shot of each team, with coaches, was flashed on the screen, showing the men's names, score attained, and native states. And the individual winners...
of the first three places were of course featured. Ice cream, cake, coffee, and smokes added to the success of the program. It might be recorded that the afore-said First Sergeant had now completely capitulated, not the least forceful of arguments being a record of his prowess with the rifle. The outfit was now 100% for Filmo motion pictures.

Up to this time the problem of making titles for the various scenes had been solved simply by using white chalk on a blackboard. The purchase of better means had been deferred until the success of the venture was assured. We now bought a Bell & Howell Title Writer, which gave complete satisfaction. The possibilities of making artistic and attractive titles with this equipment we found to be limited only to the ability and ingenuity of the user.

While Infantry drill, small arms training, and sundry other activities bring out a certain amount of interest during their respective periods and offer consequent opportunities for taking movies, the Coast Artillery soldier looks forward with greatest alertness to his annual big gun target practice. Now he prepares to fire at targets that actually move, in the air or on the sea. Since the score attained in this "shoot" determines the rating of his outfit, and an "Excellent" gives him the right to wear the red "E" on his sleeve for a year, this soldier is bound to be alert. So we took moving pictures of drill at the guns. In order to ram a half-ton projectile into a twelve-inch gun, then a powder charge weighing nearly three hundred pounds, and trip and fire within less than thirty-five seconds per shot, there must be teamwork. A gun crew of twenty men, most of them moving at a run—nobody trips up or turns the wrong way, and— it's not much use bothering to figure the score! Our Filmo helped to cut down the time and to show lost motions. One or two projections of a gun crew at drill did a lot in the way of showing Private Doe that he was holding up the team by passing to the left instead of to the right. (He was an Englishman.) He was convinced when he saw himself on the screen, and his mates also saw it that he didn't repeat. This could not have been shown clearly.

Filmos are also used at Camp Grant, Illinois. This one is in the hands of Mrs. Roy Keenan, the wife of Major General Roy Keenan. Left—General Charles P. Summerall, Former Chief of Staff, U. S. Army. Right—Major General William Lassiter

Sergeant Lockyear has also used his Filmo at Ft. Sheridan, filming various Army maneuvers including such scenes as this one of the 3rd Field Artillery in action

Lieutenant George W. Goddard, Director of The School of Aerial Photography, U. S. Air Force, at Chanute Field, Rantoul, Illinois, has used a B & H Eyemo Camera for several years for official aerial cinematography

The big day came. Fine weather and good visibility. The gun crews worked better than I'd ever seen them do before. They beat the required minimum of time, and got sufficient hits to achieve the highest score on that post. The Filmo equipment paid for itself in the short space of five minutes. And the men wore the red "E" for another year.

We used the Filmo camera and projector to take and show interesting movies of many other subjects—scenes of the men on the beach, in a tent camp, around the barracks, in all manner of poses. They always got attention. We had shows in the day-room once or twice a month. We frequently rented professional films, which we found could be obtained very reasonably, and many of these were well-known feature productions.

The next time I am assigned to command a battery, I hope to have Filmo to use throughout the training each year. I know it will pay for itself in recreational value and in producing interest among the men. Of some 6,000 feet of film taken, I doubt if there have been more than fifty that were not good photographically, and we took them in all kinds of weather, with the ordinary F 3.5 lens.
**Composition In Motion Pictures**

Once you have mastered the important matters of correct exposure and focus, have learned how to hold the camera rock-steady, and have acquired a knack for continuity, your next step in making your pictures more pleasing to yourself and your audiences is to inform yourself on the essentials of good composition and to apply this knowledge to every scene.

Good composition merely means arranging the elements of the picture in a pleasing way which, in turn, means arranging them according to artistic principles. But in movie making, you may object, you usually have to take your subjects largely as you find them, and do not often have a chance to do much shifting of the elements. True as this is, there is still every opportunity to achieve good composition. A camera position a few paces to the left or right, forward or backward, or a slight upward or downward tilt of the camera, and the change from artistic failure to success is accomplished. If you use a Filmo Camera you have an excellent tool for judging the composition of your scenes, for the spyglass viewfinders shows a brilliant, upright image of just what the film will record. Excluded is all vision of anything else. Hence the slogan “what you see, you get—with Filmo.” So study each scene through the viewfinder as you experiment to see the effects of various camera positions and angles.

Now, what are these artistic principles of good composition and how can they be applied to personal movie making? Let’s start with this fact—in every pleasing picture there must be a principal subject. It is the reason for taking the picture, and it must be handled so that it attracts and holds attention. That is, it must be given emphasis. This may be done in a number of ways, several and even all of which are often used in a single picture.

Placing the principal subject properly in the picture area is one way of giving it prominence. Follow the rule of the division of thirds. That is, imagine the picture area divided into equal sections by two horizontal and two vertical lines. The four points of intersection are the “strong” points for the principal subject. In practice it is perhaps easier to work with this modification of the rule—have the principal subject slightly displaced at a diagonal from the center of the picture.

Emphasis may also be given by selecting your viewpoint so that lines lead toward the subject and so that lines which would lead out of the picture are not included. Distracting lines should be avoided, as they cause the eye to wander confusedly.

Contrast of color values is another means toward your end. Often a slight shift of viewpoint or of a mobile subject will permit showing a light colored subject against a dark background or adjacent to the darkest mass of the picture, or vice versa, helping powerfully to make it the true center of interest. For instance, a sunlit figure will stand out prominently against a background of shaded foliage.

The fact that the primary object can usually be made the one of most striking motion is also a factor giving emphasis.

Simplicity of general design is always desirable. This does not mean that much fine detail is incompatible with an artistic picture. It merely means that light and dark areas should be well massed.

(Continued on page twelve)

Navajos weaving a rug in Canyon de Chelly, Arizona. This photograph illustrates many of the principles of composition discussed in this article. The woman and her loom, the principal subject, are in a strong position at the “division of thirds.” Her dark figure stands out in contrast with its lighter background. She receives further emphasis by being in motion and from the fact that the vertical lines of the warp and the sloping dark line of the cliff lead the eye toward her. The large mass of the principal subject is balanced by the smaller, darker figure at the right, toward which the vague vertical lines of the cliff lead the eye. The man’s shadow leads toward the women, aiding the triangular composition of the principal subjects which contrasts with the rectangular nature of the secondary objects. Differential focusing, aided by the plainness of the background and the side lighting, make the foreground objects stand out clearly.
A NATURALIST “GOES FILMO”...

and produces motion pictures of bird life which are employed in Audubon Society educational work

IMPORTANT among the activities of the New Jersey Audubon Society is the work of creating a greater, more general appreciation of the state’s native bird life. Until recently the pictorial tools used in this educational work consisted of still pictures. But now, thanks to the endeavors and ability of Beecher S. Bowdish, Demarest, N. J., Secretary-Treasurer of the Society, a comprehensive collection of 16 mm. motion picture films has been added to the lecture material.

It was only a little more than a year ago that Mr. Bowdish added a Filmo 70-C turret head camera to his bird photographing outfit, which had previously included the fine battery of still cameras that a naturalist so often owns. As Mr. Bowdish had already gained an enviable reputation for knowledge of birds and their habits and for his ability to photograph bird life, it was to be expected that his motion pictures would be of a high order. This expectation has materialized, and some especially desirable bird life films were obtained last summer. Off Brant Beach on the New Jersey coast is an island nesting colony of common and roseate terns and black skimmers. This colony is protected by the Audubon Society and by warden service—protection which is particularly desirable because the island is the northernmost known nesting place of the black skimmers. Some seventy pairs of these birds, with a few pairs of roseate terns and about fifteen hundred pairs of common terns, had an exceptionally successful season last year, due to the protection. Mr. Bowdish took advantage of this opportunity to produce some excellent movies of the birds rearing their families.

The cameraman engaged in such work has a task cut out for him. His films, to serve their educational purpose, must make a strong appeal. They must show graphically how the birds contribute to the welfare of mankind, both by delighting the eye and by protecting food supplies through the destruction of insect and rodent pests. Mr. Bowdish has ably accomplished this task, and his films are at work arousing public interest in creating sanctuaries for wild life in locations suited for the purpose.

Some bird movies, Mr. Bowdish informs us through his Filmo dealer, J. C. Reiss, Newark, N. J., are best taken from a blind in order that shy subjects may be portrayed behaving naturally. Other bird studies are taken by means of the Remote Control, which permits Mr. Bowdish to start and stop his camera from a distance. He regards this device as one of great value to the naturalist-cinematographer. Telephoto lenses, too, are important in this class of work.

Mr. Bowdish is enthusiastic about the Filmo Camera for his purposes and finds keen pleasure in his trips afield with it. Its small size and light weight, he says, adapt it ideally for nature photography. He also reports that the Filmo Projector is proving itself to be just the thing for his and the Society’s use, as it admirably meets the needs of the sizeable audiences before which the films are so often shown.
Foujita, the famous Japanese-Parisian painter, as he arrived in New York on the French Line motor-ship "Lafayette" to spend several months in the United States exhibiting his work and gathering material. His Filmo 70-A Camera was apparently a constant companion on this trip. Foujita's paintings have been accorded considerable attention in the newspapers and are noteworthy for their blending of oriental and occidental influences.

Believe it or not, this portrait of a very young man is an enlargement from 16 mm. film. Its maker, Mr. Ralph Emerson of Wilshire Home Movies, Los Angeles, attributes its fine quality largely to the fact that perfect exposure was given to the original film scene of his son. He used a B&H Photometer to determine this correct exposure.

Arthur Menken, photographer of the recent Dickey Orinoco Expedition, with his B&H Eyemo Camera. He writes: "I chose the Eyemo on the strength of several years' very satisfactory use of the Filmo... exposed 5,000 feet of film under every possible condition and got pictures impossible to obtain with other equipment. The Eyemo gave perfect results throughout.
Senators at Washington shown movies of outdoor and wild game preservation Senator Frederick C. Wal-ter, who is seen standing before the Filmo Projector. Left to right, Senator Tydings (Md.), Beck (S. D.), Hawse (Mo.),cott (Conn.), Hebert (R. I.), Smith (S. C.), and Pitman (Nev.)

A B&H Filmophone presenting the sound picture, "An Investment in America's Prosperity," produced for Administrative and Research Corp., New York, sponsors of Corporate Trust Shares. This 16 mm. talkie is employed by dealers throughout the U. S. as an aid in selling these shares. Fifty Bell & Howell portable sound movie units are used in this work.

Left—In Kyoto, Japan, the J. Osaka & Co. cameraman caught a Fox Movietone News crew in action, filming a Japanese hair dressing sequence on the Miyako Hotel roof. Side by side work a B&H Professional Camera, silenced for sound recording and manned by April Varges, and the personal Filmo 70-D of Paul A. Heise, sound man. The nearer 70-D is being used by an Osaka representative

J. W. Robbins, of Williams, Brown & Earle, Philadelphia, has taken many thousand feet of 16 mm. medical pictures. He is seen here at work with his Filmo 70-DA Camera in a large bronchoscopic clinic in Philadelphia.
FILMO NEWS PICTORIAL...

Arthur Monkay, photographer of the current 'Hitler Germany Expedition,' with his FILMO Cinematograph. He writes: 'The Eymou given the strength of the BS 20 years' experience use of the Eymou in film and 20 feet of film under every possible condition and any other statement. The Eymou gave perfect results throughout.'

Fujita, the famous Japanese-Pakistan painter, as he posed in New York on the Filmo's Fine Camera. "Lafayette" is viewed several months in the United States exhibiting life work and without mention, the FILMO 35 Camera, his commission. This trip, Fujita's paintings have been received consistently, the newsprint and are invaluable for their viewing of oriental and accidental Killikers.

Left—Senator Osawa Jr., Moscow with his FILMO Camera at hand, the S. K. President, Senator Biggs, in the left, San Francisco film. In 1931 he started taking pictures which, by FILMO equipment in times sufficient to meet the expenses of a six months' tour.

Right—Filmmakers at Washington giving story movies of outdoor film and still great presentation by Senator Frederick C. West, Chairman of the Film Preservation. Left to right: Senator To Jo (S. D.) House (Ill.), Senator J. Hepburn (R. L.), Smith (N. C.), and Pittman (N. C.)

A FILMO Phuncamasth presenting the sound picture. 'No Incident' in America's Prosperity,' produced by "Incubator" Photographic, New York, sponsors of American Film Studios. This 16 mm, talkie is employed in theaters throughout the U.S. as an aid in selling the albums. "Do Re Mi" and "Broadway Melody" are next in this week. A MILLO Filmphame presenting the sound picture. 'No Incident' in America's Prosperity,' produced by "Inubator" Photographic, New York, sponsors of American Film Studios. This 16 mm, talkie is employed in theaters throughout the U.S. as an aid in selling the albums. "Do Re Mi" and "Broadway Melody" are next in this week.
FILMO TOPICS readers have taken over the greater part of the pleasant task of writing this month’s title making article. Every one of the five title ideas presented here came to us recently from Filmo owners who have been following this series and—obviously—doing some ingenious experimental work. To them our thanks for the co-operative spirit which prompted them to write us so that you could benefit from their experience. To you our hope that these ideas will find an appropriate place in your own films and that you, in turn, will write to tell us about your best title tricks so that we may pass them on to others. That’s what Filmo Topics is for—an interchange of ideas to help each Filmo owner constantly to progress in his cinematic work. And now it’s time to declare the meeting open for discussion. Let the first contributor take the floor—or rather, the typewriter.

Here’s a new one from T. W. Harron, San Francisco, who has been a Topics contributor for years and has proved himself to be especially productive of unique ideas. He writes, “I have another title trick to add to your collection. Using the B & H Character Title Writer, start the camera and, with pen and ink, write the title on the card from above, upside down. On receiving the film back from the laboratory, cut out this section and, turning it end for end, splice it back in so that the title will be right side up on the screen. The effect is amusing.”

We agree with Mr. Harron. The effect is amusing. The pen seems to wipe out the wording, starting at the end of the title and working back until it has all disappeared. In making a title this way, start the camera with the blank card in the card holder and expose film for a second or two before the fingers and pen enter the picture area. After the wording is written, withdraw the pen slowly and continue to run the camera until you have exposed about one foot of film for every five words. This will make it possible for your audience to read the title through to the end before the pen starts there with its mysterious erasing effect. On such titles many people prefer to operate the Filmo at half (½) speed, as this doubles the speed with which the pen writes, or, in this case, erases.

Contributor No. 2 is William J. Crebs, Los Angeles, who offers another interesting title trick which will puzzle your audience and which is appropriate for films dealing with desert travel, beach activities, and other subjects. “Print the message on a title background, using glue instead of ink. Sprinkle the background with sand, covering it completely. With camera focused, lights placed, and an electric fan ready to serve as a wind machine, all is set. Then as the camera clicks the wind rolls the loose sand away, revealing the message in sand letters. By turning the title board upside down for filming, the strip may be reversed after proceeding, thus giving the title first. Then the sand comes from the side to wipe out the message.”

Since the sand is light colored, a dark background should be used to give the necessary contrast. This will call for using reversal film, to avoid the reversing of colors which occurs when a title film is developed as a negative.

A related title making stunt is described as follows by Ralph V. Haile, Cincinnati. “A pleasing surprise can be accomplished by using granulated sugar or flour for title filming, flour being preferable as it makes smoother letters. The procedure is to use the B & H Character Title Writer held vertically. (Editor’s Note: For suggestions on arranging this, see article No. 4 of this series, in Filmo Topics for January.) Form the letters upside down, using a slightly moistened camel hair brush to clear around them so a good black background is obtained. Press the camera starting button, read the title rapidly, then start tapping the card. The flour will spread out all over the card. When the film is processed and turned around the letters seem to flow into shape.”

This idea of composing titles upside down in relation to the camera is certainly a useful one, and there seems to be no end to its applications. Nash Walters, East Orange, N. J., has also employed this technique effectively. We’ll let him tell you about his method.
“In the January issue of Filmo Topics you described a method of making animate titles with alphabet soup letters. I have been making titles such as these for some time, and have found an interesting and startling method of making these titles spell themselves out. Set up the complete title as you wish it to appear on the screen, but upside down to the camera. Shoot the title, stop the camera, remove the last letter, expose a few frames, remove the next letter, expose a few frames, and so on until all the letters have been removed.”

The screen effect—the letters appear one by one, starting at the beginning of the title, until the wording is complete, when the entire title remains upon the screen for a moment. In filming this type of title it will be sufficient to give the complete title about half as much footage as you normally would—that is, six inches instead of one foot for every five words. If your title is a long one you may want to speed up the spell-in process. To do this remove a word at a time, running the camera for about one-half second between removals. Or you can remove an entire line at a time, exposing for about two seconds between removals.

E. W. Burt, Chestnut Hill, Mass., produced a time animate title for a nature film. “The wording,” he writes, “was printed on the card and the Title Writer was tilted at an angle. A large beetle was stupified with ether and placed on the edge of the card. Soon the beetle regained its activity and started to walk across the card. The camera was started and the film filmed as the beetle moved over it.”

Movie makers in the United States have no corner on title ideas. A most useful one came to us from J. Cullen Ayerza, who is connected with the Argentine Consulate in Toulouse, France. The object of this method is to use photographs for title backgrounds without defacing the photographs themselves. Mr. Ayerza explains the technique as follows:

“I write the title upon glass, using white paint sizing, and then place the glass over a photograph made on cream paper so as to get greater contrast between the letters and the background. The photograph can be an enlargement from the film to be titled. As the lettering is done on glass, the same picture may be used for several titles. In a travel film, for instance, one may utilize one characteristic photograph for all the titles for each city. Those who do not care to do hand lettering may use white paper gummed letters. For filming, the title may be so placed in relation to the light source (sun or artificial) that the letters cast shadows on the photograph, giving more relief.”

Other methods of making titles with pictorial backgrounds were explained in the December issue.

In April Filmo Topics we will tell about one or more devices which Filmo owners have improved for making “climbing” titles—titles which move upward across the screen as the audience reads them. It is well to know how to make these titles, for sooner or later everyone finds occasions to use more wording than a single title card will accommodate.

Now that we are nearing the end of this series we broadcast the last call—until next autumn—for contributions, questions, and suggestions concerning title making. If there are any phases of title work which you’d like to see discussed in an early issue, please write us about them now, before we “sign off” of this topic for the summer. And when you write, we’ll appreciate it if you’ll also tell us what subjects you’d like to see discussed in the spring and summer issues. Thank you.

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If You Don’t Like Public Speaking . . .

If you don’t like public speaking, but are called upon nevertheless, why not use the plan about which Frederick R. Roberts, New York, wrote us recently? When he was called upon the lights went out, and upon the screen flashed a picture of him at a banquet table. He laid down his cigar, bowed, and launched into his talk. The guest of honor was shown, and titles put over points which the pictures could not. The concluding scenes showed Mr. Roberts sitting down, reclaiming his cigar, and starting to smoke. Then the room lights were turned on, revealing the recent “speaker” sitting there just as he had appeared in the motion picture. This occurred in 1926. Soon movie makers in a similar predicament will resort to talkies rather than titled silent pictures.

“Boy! You should have seen the one that got away!”
THE FILMO PROJECTOR’S OPTICAL SYSTEM

“Facts About Filmo” No. 15, explaining how the greatest possible portion of the lamp’s illumination is transmitted to the screen

JOSEPH A. DUBRAY

In February Filmo Topics E. W. Beggs told of the meticulous care with which Filmo Projector lamps are made in order to secure extreme brilliancy of illumination and, at the same time, ruggedness of construction which gives the lamps long life. Now that we understand the character of the lamp itself, it is interesting to study the optical system developed by Bell & Howell engineers and opticians for the purpose of taking full advantage of the light energy generated by the incandescent filaments of the lamp.

The optical system can be divided into two distinct parts: first, a condensing system, the mission of which is to collect as many as possible of the light rays emitted in every direction by the lamp and transmit these rays evenly upon the picture at the aperture; second, the projection lens, which forms upon the screen a greatly magnified image of the illuminated picture frame. Though each part answers a different purpose they are closely related, as we shall see.

Last month’s article explained how an accurately fixed position is attained not only of the projection lamp as a whole but of the filaments within the lamp. Precise construction of the lamp itself and the utmost accuracy in attaching the prefocusing ring bring the filaments, when the lamp is placed in the Filmo Projector, into a definite, accurately fixed position, squarely facing the condensing system. This accurate placing reduces to a minimum the number of light rays which cannot be collected by the condensing system.

Figure 1 illustrates more clearly than words can do how the path of light rays is controlled in the Filmo Projector. The rays which travel toward the condenser are shown by full lines. It is seen that they are converged toward a point within the projection lens. This point coincides as nearly as possible with the optical center of the lens or, better, with its principal nodal point. The rays of light (shown by dotted lines) which travel in a direction opposite to that of the condenser are turned back by a suitably designed reflector and made to enter the condenser. Thus they concur to increase the amount of the light passing through the film to the screen.

Now that the main principles of the function of the condensing optical system have been outlined, we may consider in more detail the particular function of each element. The reflector is a highly polished mirror, ground to an accurately calculated curvature and placed at such distance from the lamp filaments that it reflects the greatest possible amount of light rays. The high efficiency of the reflector used in the Filmo Projector can be seen by withdrawing the projection lens and starting the Projector, not having any film threaded in it.

Under these conditions a bright image of the lamp filaments will be seen on the screen and also another image slightly fainter than the first. If the set screw holding the reflector in position is loosened so that the reflector can be rotated, it will be seen that the filament image formed by the reflector can be displaced on the screen. A position will be found at which this fainter image is the sharpest and at which its different filament elements will enmesh between the brighter condenser-formed filament images. Figure 2 shows different stages of setting. At the best adjustment the two images show a negligible difference in brilliancy. The difference is due largely to the fact that the reflected light rays must pass two additional times through the glass of the lamp tube, experiencing a slight absorption in the process. The accuracy with which the reflector is made and the care spent in the manufacturing of the lamp account for the truly remarkable eveness of screen illumination.

The function of the condenser is, as its
name implies, to collect the light rays and converge them at a point coinciding as closely as possible with the optical center of the projection lens. By designing the condenser to do this efficiently the light energy generated by the lamp has been taken advantage of to the greatest possible extent. The condenser consists of two plano-convex lenses set so that their convex surfaces face each other. Great care is taken in selecting and grinding the glass and in mounting the elements to secure extremely accurate alignment and the greatest possible aperture for the desired focal length.

The projector’s aperture, though not part of the optical system, is worth mentioning because of the meticulous accuracy with which it is aligned in the Filmo Projector with respect to reflector, lamp filament, condenser, and projection lens. Its position is so carefully calculated that practically all the light transmitted by the condenser is utilized. In a previous article it was shown that intelligent originality of design and extreme accuracy of construction have made a framing device unnecessary on the Filmo Projector. The elimination of such a device has permitted placing the projector aperture (and, therefore, each picture frame) at such distance from the condenser that its circle of useful illumination merely covers the area of the picture frame. In other words, the diameter of the luminous spot at the aperture is a mere trifle greater than the diagonal of the picture. This could not be the case were a framing device used, as this would make it necessary to place the projector’s aperture in a position permitting a leeway of movement up and down. This would obviously entail the sacrifice of a good amount of the light rays transmitted by the condenser.

We arrive, now, at the projection lens. The same exact care that is exercised in the design and manufacture of photographic lenses is also employed in the case of Filmo projection lenses. It would be out of place to attempt, in this article, a detailed explanation of the optics of projection. A large aperture permitting the greatest possible light transmission together with flatness of field, and a critical correction of the spherical aberrations are the main attributes required of a projection lens. The choice of the glasses and grinding, polishing, and assembling them in their mount require the same care, and the permissible tolerances are as infinitesimally small, as in the designing and manufacturing of the best and most costly photographic lenses.

The luminosity of the projection lens is obviously one of its most desirable attributes and full advantage of the perfection in design and construction would not be taken if the converging beam of light transmitted by the condenser did not fill the lens’ relative aperture. Hence the relation between the condensing system and the lens.

All the conditions which secure the best possible projection have been taken into consideration in designing the optical system of the Filmo Projector. This system, through its simplicity of arrangement and accuracy of design and manufacture, together with the previously described shutter mechanism, insures the greatest possible screen brilliancy for any given wattage of the projection lamp. Notable is the fact that the system is direct. There is no loss of light by the use of direction-changing prisms or mirrors.

This article would not be complete without mention of the Filmo Projector optical system for Kodacolor pictures. A very close relation exists between the Kodacolor photographic lens and the Kodacolor projection lens. This is due to the fact that the tiny lenticular grooves embossed in the base of the film are part of both the photographic and the projection optical systems. These lenticular embossings “pick up,” so to speak, the virtual image of the Kodacolor filter formed by either the photographic or the projection lens. Since the dimensions and optical properties of the embossings are constant, provision had to be made to have the virtual image of the filter formed at exactly the same position with respect to the embossings. The projection lens has a longer focal length than the Kodacolor lated focal length between the standard condenser and the film.

The alteration in design of the lens and the necessity of directing the light rays through the Kodacolor film embossings at the same angle at which they meet the film in the camera necessitated an alteration in the design of the condensing system. For convenience of operating, this alteration was made by interposing an auxiliary condenser of carefully calcu-

Figure 3—Filmo Projector optical system for Kodacolor picture projection

Next month’s article of this series will deal with the generation and distribution of the electrical power necessary for the running of the Filmo Projector.

**Movie Makers Magazine**

**ARE** you seeking new things to film and new and better ways to film your familiar subjects? Do you feel an urge to produce films that are different? If your answer is yes, we urge that you get a copy of *Movie Makers* for March, for its feature articles will gratify your wishes. Among the alluring titles of these articles are: Toytown Topicals, Building Plots to Fit the Shots, Underwater Shots, Posing the Family, Tricks to Try, and A Movie Maker Goes to the Movies. *Movie Makers* is the official organ of the Amateur Cinema League. A sample copy will be sent free upon request to this organization at 105 W 40th St., New York City.
Composition in Motion Pictures
(Continued from page four)

hodge-podge of highlights and shadows or of strong but poorly composed lines makes a picture distracting and displeasing. A foreground, for instance, may be full of detail. Yet, if it is in shade and the principal subject beyond is more brilliantly illuminated, its detail will be subdued and in dark tones which will give contrast and depth to the picture.

Differential focusing is another means of subduing subsidiary details and giving force to the main subject. The larger the lens aperture you use the less your depth of sharp focus. This property of all photographic lenses can often be advantageously employed. In close-ups, for instance, the subject (on which you will focus critically) can be placed several feet from the background which will be thrown into soft focus so that it will not compete for attention. Even in long shots background detail may be softened by focusing for the principal subject. But do not try to subdue foreground details by throwing them out of focus, for the effect will be unnatural and displeasing.

Air is also a softener of details, particularly when it is misty, as in the early morning. Usually objects far away, regardless of how clear the day, lose detail in proportion to their distance. The fading away of objects into softer and softer tones according to their distance permits getting into your pictures what is known as aerial perspective or, in other words, depth—a third dimension.

Balance is a major consideration in any attempt at good composition. In taking a hillside scene, for instance, all the lines may slope downward and out of the picture. Attention will follow these lines out unless something is placed near the edge to stop the glance. That something may be an opposing line of another distant hill, a tree, bush, or large rock, or a house, animal, or human figure. A change of camera viewpoint or angle is often all that is necessary to secure good balance.

The placing of dominant lines in the picture area should also be considered. Here again the “rule of thirds” applies. Rather than have the horizon across the center, tilt your camera slightly up or down to place the horizon about one-third the distance from the top or bottom lines, depending upon the nature of your subject. Similarly, it is better to have strong vertical lines toward the edges than in the center of the picture.

Masses call for being balanced, just as do lines. Bi-symmetrical balance is neither necessary nor often desirable. A small dark mass toward one edge of the picture will serve to balance a large mass of a lighter tone near the other edge. A large mass slightly displaced from the center will be balanced by a smaller mass of the same tone placed farther from the center. This is the time-honored “steel-yard” principle, and hardly calls for more discussion.

The accompanying photograph illustrates some of the principles upon which we have touched, and you will find it helpful to study it and its explanatory caption. As you go about your movie making you will find many scenes which do not, at first glance, seem to offer an opportunity to apply these principles. Don’t rant at what we have said as a lot of impractical theory until you have looked through your Filmo viewfinder at the subject from several angles and distances. You will soon find that some of these art fundamentals can be used in filming almost any scene that is worth your film and time.

Lost Equipment

Filmo 70 Cameras
Nos. 17453 and 63003—Notify Bell & Howell Co., Chicago.

Filmo 70-D Cameras
No. 56060—Mr. Harry R. Lippitt, 119-37 Metropolitan Ave., Queens, L. I., N. Y. No. 140144 (70-DA)—Notify Bell & Howell Co., Chicago.

Filmo 75 Cameras
Nos. 38712, 44802, 45235, 46316—Notify Bell & Howell Co., Chicago.

Eyemo Camera
No. 2159—The Photographic House, Milwaukee, Wis.

Filmo Projectors
No. 17220—Dr. Will G. Sheffer, San Jose, Calif.
No. 22348—The Eagle-Picher Lead Co., 437 Hastig St., N. E., Minneapolis, Minn.
No. 14870—American Hoist & Derrick Co., Los Angeles, Calif.
No. 51396—Notify Bell & Howell Co., Chicago.
No. 60794—Mr. Harry R. Lippitt, 119-37 Metropolitan Ave., Queens, L. I., N. Y.

Questions and Answers
Conducted by
R. Fawn Mitchell

Q. When my film was received from the laboratory, it had a lot of spots which my Film Cleaner failed to remove.
A. These drying spots, as they are called, must be removed by the laboratory. They are so embedded in the surface of the emulsion that the comparatively small cleaner cannot remove them. A professional cleaning and buffing machine must be employed. The B & H Film Cleaner is designed only to remove the surface dirt, not spots which are ingrained in the film.

Q. How much allowance in exposure should be made for photographing clouds from airplanes?
A. The amount depends upon the light existing at the time, which is more or less dependent on the altitude, etc. Brilliantly illuminated clouds at an average altitude would require a 4x filter and the lens stopped down one or two points from the setting which would be used for a normal subject on the ground.

Q. How much allowance would you make for photographing one plane from another?
A. This can be considered as approximately the same type of subject as the previous one unless the airplane is fairly close, when you would set the lens at the normal opening and use a 4x filter.

Q. What difference in exposure is there in taking an airplane view of the ground?
A. This depends upon the color of the ground, the amount of dust and water vapor in the air, the direction and intensity of the light, the height and speed of the plane, and upon the angle of view—whether straight down or oblique. So many conflicting factors are involved that the use of a Photometer is recommended as being the easiest and surest manner of determining the correct exposure.

Q. What lens should be used for photographing from the air?
A. This also depends on the height of the plane and the amount of view that it is desired to include. The 70-D is the favorite camera for this type of work as it permits picking, at an instant's notice, the lens which best suits the circumstances. The finder will show you exactly how much view each lens will include, solving the problem of lens selection.
How to make titles as easily as any outdoor movie shot

It is actually easier to make titles with the B & H Character Title Writer than to take ordinary movie shots. The problems of exposure and focusing are eliminated. The camera is automatically aligned on a special base. Type-written or hand-lettered titles may be used, or the hand may be filmed while actually writing the title. Press the button, count your footage, and that’s all there is to do. And you do it sitting at a table! The complete Character Title Writer, with case, is $36.

The Right Tools for Film Editing

For editing and rearranging your film and for splicing in titles, the B & H Film Editor is your excellent servant. It illuminates and magnifies the film for easy inspection, and the splicer block is conveniently located below, with geared rewind arms on either side. The Film Editor complete is $40. Combination Rewinder and Splicer, mounted on the same base but without picture viewer, may be had for $14. Splicer alone is $7.50. All make the strong B & H diagonal splice. Write for special literature on title making and film editing equipment.

Make “Stills” from your movies

One of the cleverest devices in personal moviedom is the Filmo Enlarger, with which you can make 2½" x 3½" prints from any frame in your 16 mm. movie films. A fleeting expression in the baby’s face, a shot of someone in action recordable only with a personal movie camera—these you may have in regular “still” pictures with the aid of the Filmo Enlarger. The device, used with your Filmo Projector, makes “still” negatives which you may have developed and printed at any photo finishing shop. Price, $28.50 complete with film pack, film pack adapter, and special 75-75 condenser.

The Before-and-After Story of Clean Films

The B & H Film Cleaner removes the last particle of dust and oil from your 16 mm. films, leaving them bright and clear for perfect projection. Cleaning may be done during projection. Cleaner attaches to Filmo Projector in a moment. Moistened tapes, fed by wicks saturated with scientific cleaning liquid, do the work quickly and automatically. The Film Cleaner, complete, $13.50.

This, the third Filmo Personal Movie Camera ever to leave the Bell & Howell factory, is still operating perfectly in the hands of its owner, R. D. Forgan, Esq., of Highland Park, Ill. and Cape Cod, Mass. Inside its smooth-worn case there remain years of dependable service—as full of satisfaction as those which have gone before.

The Filmo Personal Movie Camera qualifies as a "tradition" in the lives of thousands of owners. In recording the fast moving events of life, it holds the significant things apart and preserves them—alive and in action. In its supremely beautiful photography, and the ease with which it operates, Filmo is remembered as a family institution not likely to be cast aside. But best of all is Filmo's continued perfect operation through year after year of steady use. What you see, you get—with Filmo.

Anyone may thrill to the pleasures of Filmo ownership—anyone may make movies with it, and there are models within reach of every pocketbook. From the Filmo 75 at $92, to the amazingly flexible and versatile Filmo 70 DA, with its three lens turret, seven film speeds, and its handy critical focuser, at $270 and up, there is a watch-like precision, long life, and dependable operation whose value is far in excess of the modest cost. Ask your dealer to show you the several models of Filmo Cameras and Projectors, or write for the fascinating Booklet No. 38 for the story of personal movies.
Complete Kodacolor Equipment for Filmo Personal Movie Cameras and Projectors

The Cooke Special F 1.8 Lens
This spring, give your movies the added appeal of full natural color. Kodacolor movies taken with Filmo and the Cooke Special F 1.8 lens have such beauty that you'd think them hard to take. But they're not — no more so than black and white pictures.

And, in addition to being ideally corrected for Kodacolor, the Cooke Special F 1.8 lens is one of the finest speed lenses ever made for regular black and white work.

The Cooke Special F 1.8 lens, complete with Kodacolor filters, may be had for either the Filmo 70 or Filmo 75 Camera at $82.50. If you already have this lens you need only the Kodacolor filter set, at $29.50, to equip your camera completely for Kodacolor.

Projection Lens Assembly
For showing Kodacolor movies with any Filmo Projector, the special projection lens assembly, including a special condenser, is all that is required.

You have but to replace your monochrome projection lens with the Kodacolor projection lens assembly to project movies in color of startling depth, clarity, and brilliance. The Filmo projection lens assembly for Kodacolor, complete with filters and special condenser, is $35. Without condenser (for Filmo Projectors without extra slot), $30.

- For those Coveted Long Shots!

Scarcey a day passes without an opportunity for a telephoto shot. This fascinating part of movie making is made even more pleasurable with the use of Cooke Telephoto Lenses, whose excellent design and craftsmanship insure the highest quality photography. A full range of lenses for every requirement of telephotography is available, from the 2-inch F 3.5 up to the 6-inch F 4.5. Mountings may be had for either Filmo 70 or Filmo 75 Cameras. One of the most used Cooke telephotos is the 4-inch F 4.5 at $60 for Filmo 70-A Cameras, or $55 for Filmo 70-D and 75. Write for complete information.

- Filter Out the Poor Pictures

B & H Filter Set
A good filter on your lens will improve practically every scene you take, and will frequently mean the whole difference between good and poor quality. The duplex mount, which replaces the sunshade on the regular Cooke 1-inch F 3.5 lens, is supplied with a slide containing two and 4x filters, and also a graduated slide. This versatile and popular filter set, complete, is $5.75.

Filters for Other Lenses
Both uniform and graduated filters are supplied for practically every size and kind of Filmo Camera lens, making available to every movie maker, regardless of his lens equipment, effective filters of the highest quality. Prices range from $2.50 to $7.65. Write for complete description and folder telling when and how to use color filters.

- Clean Your Lenses!

Along with any advice to keep lenses clean must go a warning to use care in selecting the cleaning materials. The B & H Lens Cleaning Kit was developed to fill the need for perfectly safe and dependable lens cleaning materials. You'll never damage a lens with this outfit, and its frequent use will insure sharp, clear pictures such as no soiled lens could produce. Complete with liquid, brush, and special tissue and linen, $1.50.

Four Good Reasons for a Remote Control
You can—
1. Get into the picture yourself.
2. Shoot from cramped or dangerous places.
3. Shoot animal life and other subjects unobserved.
4. Direct action and run the Filmo, too.

Price, with ten feet of tubing, $4.50.
IT'S getting serious, this problem of writing a month in advance about the things you could expect to film when the current issue of Filmo Topics reaches you. A month ago we said something in this space about spring promising soon to appear. And now, when that issue has no more than been put into the mail, we are looking out of the window into a blizzard which has already brought a foot or so of snow down upon the "spring" landscape. So who knows what April will be like?

We're optimistic, however, about the possibilities of getting some nice Kodacolor reels in April. If you haven't gone in for Kodacolor before, we hope that you'll do so this year, and there's no time like early spring to start. After having taken movies in black and white for several years and still pictures in black and white for many years more, one is apt to become so accustomed to seeing his subjects without color that he hardly feels the need for a color process.

We are quick to concede that black and white is more satisfactory than an inferior color process. But, once you have seen the beautifully lifelike motion picture portraits that you can take, via Kodacolor and your Filmo, of your wife and children, your home grounds with the first spring flowers in bloom, and your week-end outings, you'll be a confirmed natural color movie fan if we miss our guess.

As you read the articles in this issue, particularly Mrs. Gleason's on filming children and Mr. Nelson's on European travel films, imagine the allure of such scenes in true natural color. Give Kodacolor a chance to show you what it can add to your 1931 films. It might surprise you!

United States prices are quoted in Filmo Topics.
In other countries prices are necessarily higher.
TAKING MOVIES OF CHILDREN
MARION NORRIS GLEASON

It is not very difficult to make a motion picture of your own child that will be amusing and delightful to the family. Perhaps the photographic quality is not first class and there may be little of general interest in the film, but your own child is there, alive and natural, and that alone makes the picture precious.

However, many parents have been trying to make motion pictures of their children that will not only be valuable in the family film library, but of such intrinsic cinematographic worth that they will interest the impartial observer as well. When these amateurs ask what they can do to make their children’s films more interesting they are usually told that they need to add a story content to their pictures. To those who understand what a “story content” means this is excellent advice, but for the amateur to whom the phrase represents plot, drama, or a photoplay the advice is discouraging and useless. As a rule they do not want to take the time or trouble to produce a photoplay. They only want more charming and interesting pictures of their children.

Story content is a difficult and subtle term to define. Newspapers use the same phrase and a reporter is successful when he can inject that quality into his material and bring in a “story” instead of an uninteresting news item. In amateur motion pictures the story element is achieved by adding a planned bit of action which turns what otherwise might be a dull and uninteresting film into one that is vivid and arresting. This requires a reasonably good photographic technique, imagination, resourcefulness, and patience. Even very simple action in such a picture must be worked out and rehearsed, but in the end when the film is projected the extra time and trouble spent in its making will be found well worth while.

Perhaps I can make the idea clearer with illustrations. Suppose you want to make a picture of your boy playing baseball with the neighborhood gang. If you go out and expose a few feet of film of the boys in the midst of their game you may make a good picture but it will not have any story content. If you can persuade the boys to have an argument over a point in the game, which culminates in a free-for-all fight, you will add interest to your picture. You can add still more interest by having another end the fight by arriving on the scene with a plate full of cookies, or better still, sliced watermelon. With plenty of close-ups you should have a corking good picture with an amusing story content.

Your little girl holding her doll will make an attractive picture but there will be no story element in it. Show her giving her pet doll a birthday party, tucking napkins under bisque and rag necks, pouring tea and perhaps asking grace before starting the meal and you will have a story picture.

I have been adding new actors to my children’s films by using their old dolls strung up like marionettes with strings tied to their feet, hands, heads and arms. Our oldest Teddy Bear is the best actor because he is the limpest about the arms and legs. The idea is very simple to carry out and most amusing in a picture. The only necessities are the strings and a
screen behind your set over which the puppeteer who operates the bear or doll may lean. The frame of the picture will cut out such mechanics. The idea of the tea party is even more amusing if Teddy walks into the set himself, is greeted by his mistress who helps him to his chair, ties his napkin around his neck and admonishes him to bow his head for grace, all of which he can do very well with the help of the overhead strings.

Even the simple study of a little girl in her rocking chair can be made into an unusual picture if her rag doll comes running to her, climbs up on her lap and puts her arms lovingly around her mistress' neck, all quite possible with the helpful strings. If the little girl can discover a cut which she kisses to make "all well" and then administers first aid with a rag wrapped around the ailing spot you will very nearly get an emotional reaction to your picture from your audience when you show it. And the children will be delighted.

A picture of a child sailing his toy boat in a brook can be made to interest a variety of motion picture enthusiasts—the scenic artist, the table top cinematographer, the one who delights in illustrating poems, and the parent who wants a good picture of his child. Start with a shot of the youngster launching his boat in the little brook. An eddy carries it down stream. Make a series of views as near as you can get to the boat as it sails along, over rapids, around rocks, caught in some weeds or whirling slowly in a tiny maelstrom. Alternate these shots with views of the child running along the bank, always trying to reach the escaped toy, but each time missing it as the little boat sails on. At last against the loveliest background you can find have him gather his boat into harbor, and end with a close-up of the boy with his boat in his arms.

This picture illustrates both Stevenson's "Where go the Boats" and "The Brook" by Tennyson.

Children and flowers are so lovely together that there is little needed to make them more attractive, but there are bits of action which can add charm to this combination. Close-ups of massed blooms which are suddenly parted to allow a smiling child's face to peep through are surprising and irresistible. Hollyhocks lend themselves ideally to this idea. The lavender butterfly and the orange butterfly weed are seductive enough to the gay insects to keep them within range while a baby tries to catch them. The dandelion is a homely little flower with very little camera charm, but when you film it's ripe head with its fluffy seeds being blown away by a youngster who wants to know "what o'clock" you get a winning picture like the one to the left.

That brings me to another means of adding interest to your children's pictures. (Continued on page twelve)

MARK ROYER PHOTO

"Dandelion, tell me what o'clock!" An interesting picture because it tells a story

Story telling group pictures, made indoors or out, are also invaluable family records. This one of three generations is particularly priceless
Filming The Flappers

How a girls’ summer camp director produced and used Filmo motion pictures

Leslie W. Lyon

Photographs by the Author

When business becomes a pleasure, then the Utopian combination has been discovered. A glance over the record of expenditures under the heading of “movie equipment” in my ledger convinces me that I have been using my Filmo Camera and Projector, and all the film and accessories which I find listed there, for business purposes only. And yet I am aware that that use has been one of my greatest sources of pleasure.

To understand this fully, you must know that Mrs. Lyon and I own and direct a private camp for girls, Minne-Wonka Lodge, at Three Lakes, Wisconsin. And if you can find anything which lends itself more beautifully to amateur filming than a girls’ camp, you will be going some. There we have beauty, youth, and action—lots of each, and a background of lakes and forests that would make a Hollywood director green with envy. So the cards are stacked from the very start.

The camp has just seen its tenth season, and it has been filmed continuously and persistently during the past five seasons. So much so that the director is repeatedly caricatured as always having some kind of a camera tucked away on his person, if not carried openly. The filming has been a marked success from the beginning, both from the photographic and publicity standpoints. Parents naturally are particular about where they send their girls during the summer, and although many of them do visit the camp in person before enrolling their daughters with us, it is obviously impossible for most of them to do so. So with the Filmo Projector and a few reels of film we proceed to take the camp to the girl’s home where she and her parents may see just what it is like.

It will be apparent at once that this method of presenting a summer camp and its varied program has many advantages. Almost the entire range of camp activities can be shown in a comparatively short time without interruption. Carefully planned titles may be made to point out important details of the action and are

ings are necessarily the background of the action, and this feature may be made most effective indeed if carefully planned.

Now five years of filming of this interesting life could hardly fail to teach important lessons to the director-cameramen. I was fortunate in the beginning in that I had taken pictures of the “still” variety since I was a younger of fifteen or sixteen. Experience with several folding cameras, a large view camera, and a reflex camera had taught me at least the rudiments of exposure and of composition. It was easy to master the much simpler technique of the Filmo with only one thing to adjust, the stop. But I had much to learn in regard to what to take and where to take it from in order to make my pictures tell an interesting story.

My first idea was that, if I took all the activities of camp, just as they happened. I could later edit these scenes into a connected story which would just naturally interest the audience as it did me. Because of the variety of activities in a camp and because of the inherent interest in much of the action, I much confess that I succeeded fairly well in making my first summer’s films tell an interesting story. But I had to use some rather long titles to tell what could have been told in pictures. So I began to study the technique of making movies as distinguished from stills. The key to the situation seemed to be continuity, obtained with the minimum of titles. A title, in other words, is to be considered as a

(Continued on page eleven)
MR. FULLER AND HIS FILMO ABROAD

A traveler tells of filming Europe

PAUL B. NELSON
Photographs courtesy of The Travel Guild, Inc.

The author with his Filmo 70-A

Mr. Fuller, "Guess I'll run down and get my Filmo. That's just what I need to put a little more kick into the ocean part of my movies."

The gull very obligingly followed close in the wake of the good ship, the Canadian Pacific "Empress of Australia," now just two days from Montreal, while Mr. Fuller went below for his camera. And as if sensing the situation, the bird gracefully spread its white wings and looked squarely at the camera as Fuller reeled off five extra feet, just to make sure.

"Say, Fuller," his deck-chair neighbor shouted as the cinema photographer put the rubber cap over his lens, "come over here and tell me something about this amateur movie business. See you're one of those fiends, too. Can you really make good moving pictures with that little do-funny you have there?"

"Sure," said Fuller, as he settled his tweed-clad 200 pounds in an adjacent deck-chair. "It's the easiest thing you know. Why, I've had this Bell & Howell Filmo for over two years now and have taken some of the best amateur moving pictures you've ever seen—nearly 3,000 feet of film this summer alone—everything from the Lowenbraukeller to the top of the Eiffel Tower. I've our whole trip to Europe right down in my state-room—all canned up in a few tin film boxes. When we get back to Cincinnati, I'll have it all developed, patch in a few titles, and presto, we'll live the whole summer over again—in an hour or so."

"Hm mmm, hardly believe it," replied the traveler in the next chair, whom we'll call Smyth. "I've always thought it was a lot of fuss and fooling around. Still you seem to know all about it. A friend of mine back home has been trying to sell me a Filmo for a long time. And you know, I'm almost tempted to buy it after listening to you. Just how do you get such good films and have so much fun making them?" This was the chance that Fuller had long been waiting for. He lit his new London Dunhill, settled back in his deck-chair, and started:

"First of all, if you expect to get interesting movies in Europe, you must carry your Filmo with you all the time. You never can tell when there'll be a parade or celebration or when you'll run into some quaint bit of native life that will tell more about the country than movies of all the cathedrals and public buildings put together. A Filmo is light, compact, and easy to carry, so I took mine along every blessed place we went.

"And let me give you a tip: always carry an extra reel of film. I've never forgotten the time we were at Windsor Castle one afternoon and the King rode back from Ascot. Just at the right moment the sun came up over the castle walls, along came all the King's horses and all the King's men—but when the King rode into focus, I was out of film."

Fuller's face was stern. "Let me repeat," he said, "always have an extra reel of film in your camera case when you're going places. And if you're filming something important, be sure there's enough footage in your camera to take it all."

"But don't you have a lot of trouble with guards, customs officials and so on?" queried Smyth.

"Very little," said Fuller. "They tell me there used to be a little nuisance about going into some countries with a movie camera—England mostly. I think. You used to have to put up a deposit. But now so many travelers carry Filmos that the officials are used to seeing them. Besides, (Continued on page eleven)
Townsend Godsey, director of public information for the Missouri Game and Fish Department, in an unposed picture, the result of his becoming entangled with the trigger string while preparing to make a self-photo. Filmo Cameras and accessories are used to produce films on conservation subjects and state parks. These films are widely shown through the Missouri Film Loan Library.

Judging from the labels on the case, Norman Foster and his B & H Eyemo Camera have been going places and seeing things. This picture was taken when the Paramount star returned from his recent freighter trip around the world, a trip which he can now re-live at will by projecting his eight reel travel film.

Right—A B&H Filmsophone engaged in showing a sales training sound picture dealing with soda fountain operation to a group of Coca-Cola Company district and service managers at a recent convention in Los Angeles. The Filmsophone, announced only a few months ago, is already serving a number of sales organizations and is selling a great variety of products.
General Milton J. Foreman with the new Filmo 70-D Camera which recently took the place of his original Filmo 70-A purchased over five years ago. As a soldier and world-traveler, Gen. Foreman gave his original Filmo strenuous service on a number of extensive trips, most recent of which was a Hamburg-American world cruise, and is looking forward to getting even better pictures on his next journey because of the greater flexibility of his new camera.

Edward R. Armstrong, Wilmington, Delaware, inventor of the Seadrome or floating airport for trans-Atlantic plane service, who has been a Filmo owner for several years, is shown in this first photograph of his latest Seadrome model. Milton H. Hill of Butlers', Inc., Filmo dealers in Wilmington, has been working with Mr. Armstrong in making Filmo movies of the models.

No Filmo Topics photo page would be complete if it did not give you a glimpse of Filmo's big brother, the B&H Studio Camera, at work. So here it is, Mary Kornman, whom you may remember as former leading lady of "Our Gang," has grown up to sixteen and is being given a screen test in the Hal Roach Studio by Charley Chase and his director, Warren Doane.

Right—Filming the start of a mountain climbing expedition on Mt. Rainier. Perhaps we're rushing the season a little in publishing this picture in April, but we couldn't resist giving you a taste of the cine opportunities awaiting those Filmo owners who will go to the mountains this summer.
FILMO TOPICS

April 1931

FILMO NEWS
PICTORIAL

Judson from the label on the case, Norman Gay and his B & H Keystone camera have been using glass and silvered tubes. This picture was taken when the experiment was started from the top of the El Capitan mountain, which he was unable to climb by projection his eight foot sound film.

Tommaso Casale, director of public information for the Missouri Game and Fish Department, in an impromptu picture, the result of his becoming entangled with the trigger string while preparing to make a self-motion. Film cameras and accessaries are used to produce films on conservation subjects and state parks. These films are widely shown through the Missouri Film East Library.

Emanuel H. Armstrong, Wilmington, Delaware, winner of the Schlesinger & Ritzinger award for Amateur Films, is known to Shafter people who had looked at his unique picture. Armstrong has been making films on the models and has been busy with his camera ever since. This month, he took this first photograph of his latest Schlesinger model.

Miss Hamilton, owner of an amusement park in Wilmington, has been working with Mr. Armstrong in making Films series of the models that he has been working with Mr. Armstrong in making films on the models.

Right—A new Filmophone exposed in showing a video cylinder sound picture during mock-filming on the Missouri Film East Library.

No Filmophone picture could be complete if it did not give you a glimpse of Film's big brother, the B & H Studio Camera, at work. No. here it is, Mary Korneman, whose name you may remember from another leading lady of "Our Gang." She has grown up to sixteen and has won her screen test in the Hall Race, Atlanta by Shirley Chase and as Miss Hussey.

Right—Filming the start of a mountain climbing expedition for Mr. Korneman. Perhaps we're missing the shots a little in publishing this picture, but we couldn't resist giving you a taste of the fine opportunities awaiting those Film owners who will go to the mountains this summer.
Titling Your Films

No. 7. Making “continuous strip” titles

Before getting into our discussion of several ways of making “climbing,” “moving,” or “continuous strip” titles, we’d like to say a little about this type of movie title so that you won’t misunderstand the constructors’ and our feelings on the subject. All who had a part in preparing this article agree, we are sure, that titles too long for a single card should ordinarily be rewritten more briefly. Long titles, as well as too many titles, have no place in most films.

However, there are special occasions when long titles are necessary and desirable. If you expect never to need such titles, we invite you to stop reading here, hoping that you have benefited from the preceding six articles in this series and that you will pardon us for devoting this last article to the interests of those who have unusual problems to solve—medical men, for instance, for it is from a doctor that the following explanation comes.

We’ll let Richard B. Stout, M.D., Madison, Wisconsin, tell how he built and uses an inexpensive “moving title” board. Reference to Figures 1 and 2 will help you visualize the outfit as you read.

“Confronted with the necessity of titling a moving picture illustrating certain technical processes, it was found necessary to make use of several titles of one hundred words, or more, each. Rather than project several single frame still titles in succession, it was thought advisable to use ‘climbing’ titles. A title board, as illustrated, was constructed for the purpose of making such titles.

“A local tinsmith made a title holder 4½ inches wide and 12 inches long, of 16 gauge galvanized iron, bending the metal lengthwise over the edges to form a ½ inch guard, spaced from the back about 1/16 inch. This allows the title to be slipped in behind the guards and held perfectly flat against the back. A track was made of another piece of galvanized iron bent to form grooves through which the title holder would slide easily, ½ inch copper wire was bent into pulley supports and soldered to each end of the track. Another piece of wire was bent into a small crank. Holes were drilled through the sides of the track and in the middle of each end of the title holder. A strong linen cord was then wound several times around the crank shaft, brought up around the wires at each end, and tied tightly to each end of the title holder. It was found best to use a cord of small diameter to facilitate smooth operation. Turning the crank pulls the title holder up or down the track.

“A small wooden frame was then constructed to support a Filmo Camera, 12 inches from the title and two 250-watt lamps with suitable shades were fastened to the stand. The compensating prism which is supplied with the B & H Character Title Writer was used to center the field quickly.” (The Title Writer itself could be used as the camera support. Its projection type lamps, however, should not be burned in a horizontal position. Swinging their reflectors back slightly makes it possible to replace them with Mazda lamps of 100 watt size).

“The titles were printed on strips of paper 4½ inches wide, slipped into the title holder and so placed that the top four or five lines appeared in the finder. The camera was allowed to run till the operator had time to read to the bottom of the frame, then the crank was turned at such a speed that the title was moved up the distance of one line during the time required to read that line.

“Positive film was used and developed in an all hydroquinone developer used for x-ray films, thus producing very pleasing, evenly moving negative titles.”

Figure 1—Dr. Stout’s moving title board in operation during the filming of a “climbing” title. Widely spaced camera supports allow free access from behind when writing or making animated drawings.

Figure 2—A close-up showing the construction of Dr. Stout’s title holder and track.

Figure 3—Mr. Weisner’s continuous strip title filming attachment for his B & H Character Title Writer.

Other Filmo owners have devised their own methods of filming these “climbing” titles. Two interesting methods which require less elaborate preparations than the one explained above were previously described in Filmo Topics. We’ll reprint the descriptions here for the benefit of those who did not see them before.

H. R. Weisner, Minneapolis, built a
continuous strip attachment (Figure 3) to slip over the card holder of his B & H Character Title Writer. Finding that the two card rests near the bottom of this holder interfered with the passage of the strip, Mr. Weisner removed the card rests, enlarged the holes a trifle, and made two small metal hangers which hook into these holes and are bent up to support the title card. Then, when a continuous strip title is to be filmed, these hangers are removed.

The continuous strip title is passed under the wire guide at the bottom of the frame, and is threaded into the slot in the roller. The camera is started and sufficient film is exposed so that the first five or six lines may be read slowly. Then the crank is turned smoothly and steadily, bringing the following lines into view at an easy reading speed, until the entire title has been filmed.

About Projector Demonstrations

If you are at all interested in buying a new projector, you will give serious consideration to the light volume that it affords, particularly if you expect to use the machine for showing Kodacolor pictures or for showing black and white pictures on a large screen. And, since you will express your desire for powerful illumination, you will undoubtedly be given comparative demonstrations. Such demonstrations may be affected by many factors, and an understanding of these will aid you in making a wise choice.

Obviously a true comparison of the screen brilliance afforded by various projector models is only obtainable when each machine is operated under the same normal conditions, with the same perfect condition of cleanliness and adjustment prevailing through the group to be compared. The importance of so conducting the demonstration becomes forcibly evident when it is known how great a change in screen brilliance is caused by departures from perfect, normal operating conditions.

A reflector slightly out of adjustment, an aged or thumb-marked projection lamp, dust, grease, or finger prints on condenser or lens elements—each of these is a factor which can cause a visible decrease in screen brilliancy. And operating one machine at a few volts under its lamp's capacity while the other is given an overload of a few volts can in itself cause a difference of 25% in light intensity!

So, when you are shown projector illumination comparisons, be as sure as you can that each machine is given every chance to show what it can do. Then and only then can you choose wisely.

Outdoor Films Offered to Vacationists

The 1931 motion picture film catalog of Canadian National Railways, recently published, lists and reviews more than forty films dealing with vacations, fishing, and hunting in Canada. These films are available free from local offices of the railroad to those who are considering vacations in Canada. The Editor has seen some of these films and recommends their use as the ideal way of learning in advance just what is offered by the outing place one has in mind.

All these films are available in 16 mm. size, and we understand that Filmo Projectors may also be had in connection with the films. The Canadian National film catalog, in addition to being interesting as a source of vacation information, is notable as an indication of highly successful commercial application of Filmo 16 mm. equipment. It is also interesting to know that these films were all made with B & H Eyemo Cameras, which might be called 35 mm. versions of Filmo.

Walter J. Engel, New York, developed an even simpler accessory for his B & H Character Title Writer to permit filming continuous strip titles. His device, shown in Figure 4, consists of a $3\frac{1}{2}$ x $3\frac{1}{2}$ inch card of brown leather-grained paper, decorated with white paper strips as shown. Through two slits in this card is inserted a strip of black or dark red paper on which the long title is lettered.

To film the title, the card with slip inserted is placed in the card holder of the Title Writer. The camera is started with the first line of the title located slightly below the white border strip, just as one would film an ordinary title card. Then, after ample time has been allowed to read the visible part of the title, the sliding strip is pulled up slowly and evenly while the camera continues to run. Reading the title slowly while pulling it up will insure sufficient film footage.

A Convenient Temporary Splice

Here's a way of making a temporary splice to facilitate going on with the show when a splice pulls apart during projection. It's so simple and so useful that when dealer Bud Luce of Lansing, Michigan, told us about it we wondered how we failed to think of it long ago.

Bring the parted film ends together. With scissors or pocket knife cut each strip half way through at a point about one-half inch from the end. Make this cut from one side of one strip and from the other side of the other, as shown at the top in the illustration. Interlock the two cuts, shown half done in the lower part of the illustration. The film may now be wound onto the take-up reel.
PROJECTION LAMPS COMPARED

Article No. 16 of the "Facts About Filmo" series, discussing the various types of lamps used in 16 mm. projection

R. FAWN MITCHELL

Since the introduction of the new 375 watt, 75 volt lamp, a great number of questions have been asked concerning both the theoretical and practical advantages of this new lamp. For this reason an analysis of the factors involved in the use of an incandescent lamp for projecting motion pictures seems in order, to show just what the various lamps will do.

In a projection optical system, one of the chief requirements is that the projection lens be uniformly filled with light emanating from a light source (the lamp filament). To accomplish this, the condensers must be so designed that an image of the filament is produced within the projection lens. This image must be of sufficient size to fill the lens. (The image of the filament is focused actually at the nodal plane of admission of the projection lens).

In carbon arc lamps we deal with a small spot of light, the image of which, in order to fill the projection lens, must be magnified a great number of times. However, since the intensity of an arc is very high, a very bright image is produced within the projection lens in spite of the magnification.

With the Tungsten filament, the case is different. Tungsten cannot be brought to as high a degree of incandescence as a carbon arc. Consequently Tungsten filament produces a light source which is nowhere near equal in intensity to the arc and therefore does not permit of the same enlargement of the image at the projection lens. To make up for this deficiency, a filament must be made larger in area in order that it will not be necessary to enlarge its image excessively. In other words, the larger the source of a given intensity, the greater the light intensity within the lens.

The accompanying sketches give a comparison of the factors involved in using a 20 volt, 250 watt lamp and the 375 watt, 75 volt lamp. Figure 1 illustrates the use of a 20 volt lamp, which has but two filaments. It will be seen that the image of these two filaments will have to be enlarged many times in order to fill the lens with light.

Figure 2 illustrates the condition existing when a 75 volt lamp is used. This lamp has six filaments so that they do not have to be magnified anywhere near as much in order to fill the lens. It is obvious from this that the six filament lamp should concentrate far more light than the 20 volt lamp. Of course the 20 volt 250 watt filament, because it is designed to carry 12.5 amperes of current as against the 5 amperes carried by the 50 volt 250 watt and the 75 volt 375 watt filament, is considerably heavier and can be operated at a higher temperature; consequently it produces a slightly whiter light than the 50 volt 250 watt and the 75 volt 375 watt filaments. However, even allowing for this difference, it is easy to see that the 375 watt lamp still concentrates more light in the projection lens than the 20 volt.

Because of this color difference, in making visual comparisons it appears that the light of the 20 volt 250 watt lamp is more intense than that of the 50 volt 250 watt. Actually the light flux of the former is equal to that of the latter when measured with a photo-cell foot candle meter. The same meter shows that the 75 volt 375 watt lamp produces 41 percent greater light intensity than either the 20 volt 250 watt or the 50 volt 250 watt lamp.

The visual test is confusing because of the slight color difference. When projecting the 20 volt 250 watt lamp alongside of the 75 volt 375 watt lamp, the former will appear gray in comparison with the latter.

Regarding current consumption, the following can be said. Disregarding transformer losses, the 20 volt lamp consumes 250 watts of current. The 50 volt 250 watt lamp operated on 110 volts in series with a resistance, requires 550 watts of current, 300 watts of which is dissipated through the resistance.

The 75 volt 375 watt lamp also consumes 550 watts at 110 volts; however, only 175 watts is dissipated through the resistance. The foregoing indicates that the 50 volt and 75 volt lamps consume approximately twice the current required by the 20 volt lamp. This, however, is offset by the advantage of being able to operate both the 50 and 75 volt lamps either on direct or alternating current. To arrange a 20 volt 250 watt lamp so that it could be operated on both alternating and direct current, the transformer would have to be replaced with a series rheostat which would have to of impractically large size. Under this arrangement the lamp would require 1375 watts of current at 110 volts.

It is hoped that this analysis of the comparative advantages and disadvantages of the different types of lamps will enable the owner to appreciate just what has been done to improve the results that he can obtain with his Filmo Projector.
Filming the Flappers
(Continued from page four)

necessary evil, to be avoided if possible. And how to avoid it? Well, there's the rub. A planned and carefully written scenario for one thing; more close-ups for another.

And so during the summer of 1929 we elected a committee of girls and counsellors and together we wrote the scenario. The principals were elected from among the girls and a screen test made to determine who were to take the leading parts. The scenario was to depict in two 400 foot reels the adventures of a girl, Jerre by name, during the course of a camp day. Certain comedy features were incorporated and there were elements of surprise and climax. The pictorial backgrounds were carefully worked out, the acting was carefully directed and rehearsed, and several unusual lighting effects were planned. Two Filmo Cameras were available, equipped with a total of four lenses of varying speed and focal length, and panchromatic film was used throughout, much of the time with a filter. Few retakes were necessary. The film was carefully edited and a great deal of pains was given to the preparation of the few necessary titles. The loss in editing was not more than 30 feet. Scenic backgrounds were used for the opening and closing titles, triple exposures being used in both cases. The Bell & Howell Title Writer was a great convenience in this work and fade-ins and fade-outs were accomplished by means of a variable rheostat in series with the lamps. The iris was also used on some titles. In many ways this is the most interesting part of the whole procedure.

The first showing of the completed film to the girls was on the occasion of the annual camp reunion in March, and the comments of the girls and parents who were present were most enthusiastic. Naturally, the film was interesting to those who had taken part in its production. Even had it been less satisfactory, it still would have held the interest of the girls, and possibly of their parents also. But in order to interest parents and girls who were strangers to the camp, the film had to be good. The great weakness of my previous attempts had been that a number of girls had been shown in one scene and an entirely different group of girls in another scene. There were too many characters for the stranger to get acquainted with, and no particular girl could be followed through the whole film. This results in lost interest. The audience wants to get acquainted with a few girls by seeing them repeatedly in the film, and the identity of the supporting cast is not important. The supporting cast, which in this case was sometimes the entire camp, is very important, however, in making up the setting and the atmosphere in which the film story takes place.

While I do not consider my experience unique, I am hoping that this recital of my mistakes and successes may be of some interest and help to others who are trying to get the most out of their movie equipment.

Mr. Fuller Abroad
(Continued from page five)

once Europeans understand that these cameras won't be sold inside their borders they merely smile. I always open up my case and tell the customs men just what I have there—and you know, when you treat customs men like human beings, they play ball with you. About the only irregularity now is that if you make films in Italy and have them developed within the country, you have to show them to some of Mussolini's inspectors. But it's foolish to have all your films developed in Europe anyway. I usually have one reel or so processed at the first, just to check up on the light, but then wrap up the rest in newspaper and carry them in the bottom of my large portmanteau.

"Mrs. Fuller and I traveled on one of those House Parties, operated by the Travel Guild of Chicago. Take it from me, that's the surest way to see Europe, especially the first time. We didn't have to worry about tickets, baggage, or anything, and so I had my hands free all the time to make movies. Our tour covered all the high spots and we didn't miss a thing. We rode in a very comfortable motorcoach.

"The worst fault about most amateur movies is the panoramic, or "panning" as they call it. Take a tip from me. When you take a broad expanse of landscape or a group of public buildings, move your camera very slowly and steadily throughout the line of vision. See, like this—"

And, picking up his Filmo, Fuller swept the broad decks and part of the blue St. Lawrence. There were two gulls to the larboard now, but he guessed he had enough sea-gull footage anyhow and so he continued:

"The same applies to vertical photography. Hold the camera steady and move it slowly. Your movie should record exactly what your eye sees and in order that your eye is attracted to the various highlights of the scene.

"Suppose you're walking outside an old castle. Before you lies a beautiful stretch of wooded land. In the background are crumbling walls and parapets. You should have people in every picture if possible. Well, this will make a good picture, for, say, it's Saturday afternoon and the walk is crowded. All right. Get at some distance so that your angle will not be too sharp and your picture distorted. The first thing you see is the villagers. Then the old walls of the castle. Your eye wanders from parapet to parapet, to the moat, to that turret . . . then back to earth again. Where is this castle? All right, we'll give it a setting. There are the rolling hills in the distance, a small lake, and over there the village, etc.

"And that." Fuller was enthusiastic. "Is the way to shoot that scene—just the way your eye saw it. You might practice the entire continuity once or twice, looking through the finder of the camera without exposing any film.

"Don't let that term, composition, scare you. Anybody who can hang a picture on the wall in the right place can understand the elements of composition.

"'Framing' is one of the most fascinating sports of all. By that I mean getting your camera into such a position that arches, gates, trees, etc., are between it and the object to be photographed and thus 'frame' the picture. This all requires a little practice but you'll be surprised how much it adds to your movies.

The way I learned most of what I know about picture-taking was by practicing in my backyard when I first got my camera. Then every time Mrs. Fuller and I went any place back home, we took the Filmo along. When I had the first few reels developed, George Jones, who sold me the machine, criticized them and almost made me a little mad, but I'm glad he did. Otherwise, I'd never have taken such good films as I did this summer."

Fuller had finished. With a triumphant look he turned to his neighbor. Smyth was asleep. And it was exactly like Fuller to pull out his Filmo and take a 10 foot close-up of Smyth with his mouth open, snoring!
Oil Your Filmo 70-D!

HOW long has it been since you oiled your Filmo 70-D Camera? The instrument has undoubtedly been kept in your heated home during the winter, and, if you have not used and oiled it frequently, is very likely in need of a drop or two of oil right now. Soon you will be taking more movies than you did during the winter, and the camera, with its high speed, precise mechanism, cannot serve you at its best if operated when its bearings are dry.

As the instruction book explains, Filmo 70-D should be oiled before using when it has lain unused for thirty days or more. It should also be oiled after every five or six rolls of film are exposed. Five oil holes are provided, one in the center of the turret head (reached by prying out the small capped pin which plugs it) and four in the mechanism plate beneath the film spools. Each hole should receive one or two drops of the special Filmo Camera Oil at the intervals stated above. Careful lubrication will insure long, trouble-free life for your camera.

Lost Equipment

Filmo 70 Cameras
No. 15028—John F. Fleming, 1344 Beacon St., Brookline, Mass.
No. 55658, 70-D—J. D. Larkin, III, c/o Larkin Company, Buffalo, N. Y.
No. 59394, 70-D, with the following Cooke lenses: 1 inch F 3.5, Foc. No. 182594; 1 inch F 1.8, No. 192863; 3½ inch F 3.3, No. 188633. Notify Bell & Howell Co., Chicago.
No. 140149, 70-D, with the following lenses: No. S91731—Zeiss, 1 inch F 4.0; No. 177145—Cooke, 2 inch F 3.5; No. 204763—Cooke, 4 inch F 4.5. Notify Bell & Howell Co., Chicago.

Filmo 75 Camera
No. 42964—Dr. Gilbert J. Rich, 33-24 Eighty-sixth St., Jackson Heights, L. I., N. Y.

Filmo Projector
No. 67159—Notify Bell & Howell Co., Chicago.

The depth to which Filmo terminology engrains itself among fans is shown in a figure of speech employed by C. R. Barnickol, basketball coach at Lane Technical High School, Chicago, who writes: "Since the time I last saw you I’ve been busier than a B & H shutter at 64 frames per second."

Taking Movies of Children

(Continued from page three)

A mediocre film can be given zest and humor frequently by the addition of a clever title. There has recently appeared a very popular still of a funny little girl with her mouth wide open in a howl of wrath. The picture is good but not unusual, yet the title, “Broadcasting” goes with it makes the whole thing extremely amusing. The picture of the child and the dandelion gains much with the added title “What o’clock,” as well as the popular one of the youngster counting the daisy petals and saying, “She loves me, she loves me not.”

In our zest for adding story interest I feel that the amateur is overlooking one phase of children’s cinematography that is most important. In still photography, although we merrily clock off our snapshot shots and cherish the results, we seek a professional when we want a really beautiful portrait of our youngsters. For some reason or other the professional studio photographers have not invaded the 16 mm. field to any great extent. Probably they realize that most amateur motion picture cameras have a fast enough lens to permit amateur indoor portrait work in motion that can compare favorably with studio work. I am turning to this type of pictures of my children in preference to the action films. There is one corner in my living room where the light is adequate, and every so often I make a carefully composed picture of each child, including little more than the head and shoulders and with just enough motion to give it life. Sometimes I pose two of them together, sometimes I add the dog, but always the idea is to get a fine portrait study that I can keep. When they are unusually good I have a duplicate made and put away for the children to own when they grow older.

Recently I have tried making group studies, which I do not find too difficult to light with the help of a sheet thrown over a screen to reflect the light on the side of the group away from the window.

My loveliest one is of the children’s grandmother reading to them as they cluster around her. Even an added story interest couldn’t make this film more beautiful to us now, and in years to come, when perhaps there won’t be a grandmother to read to the boys, the original will find its place in our safe deposit box among our most prized possessions.

Questions and Answers

Conducted by R. Fawn Mitchell

Q. Can dissolve be made with the Filmo Camera?
A. Dissolves can be made by turning down the iris diaphragm of the lens. Many people prefer the effect given by the iris vignetter, which is a combination of iris and dissolve.

Q. Can lap dissolve be made?
A. Yes, if the camera is equipped with a hand crank. This installation permits backing up the film about one foot, permitting a satisfactory lap dissolve being made.

Q. Can I install a hand crank on my camera?
A. No, this has to be done at the factory.

Q. Can special shutters, say having an opening of about 10°, be fitted to the Filmo Camera?
A. Yes, these can be fitted at the factory. Once fitted, they are permanent. We do not recommend owners attempting to change the shutter themselves.

Q. In showing my pictures, the light is dim on one side of the screen. What is the trouble?
A. The lamp has probably been incorrectly placed in the projector. It is important that the little tongue on the centering ring of the lamp engage the corresponding slot in the lamp house. If this is not done, the lamp will not be aligned correctly.

Q. What is the best way to take Kodacolor pictures through a glass bottom boat?
A. Conditions vary so much that it is almost impossible to give accurate information. One person advises that such scenes need more exposure than normal views and another advises that they need less. However, we feel certain that the B & H Photometer would be the ideal thing to use as it would give you the correct exposure under the conditions involved, so that you would be able to determine whether you would have to use your neutral density filters, or perhaps on the other hand, set your camera at half speed. The Photometer would also show if it would be possible to get Kodacolor pictures under the existing light conditions.
New Brilliance for Kodacolor
with the powerful 375-Watt Filmo 57-GG Projector

This new Filmo Projector, which is taking personal moviedom by storm, achieves its brilliant projection results with a newly designed 375-watt lamp which gives 41% more light than 250-watt illumination systems. The advantage to Kodacolor projection is readily imagined. Not only are the colors reproduced with an entirely new brilliance and clarity, but the power of the illumination makes it possible to project the pictures to larger than ordinary size. Any movie maker interested in movies in color (and who is not?) should investigate the new Filmo 57-GG Projector. Its contribution to your monochrome projection will be just as startling.

The only basic change in Filmo 57-GG is the new illumination system. All the other familiar, time-tested features are retained. In spite of its great light power, Filmo 57-GG may be used either on A, C, or D C. without any additional equipment. The Filmo 57-GG Projector for monochrome projection is $2.60; Filmo 57-GG-3, complete for Kodacolor and monochrome, is $2.95. Both prices include new improved case and pedestal pivot lock.

375-Watt illumination for previous Filmo models

The 375-watt illumination system used in the new Filmo 57-GG Projector was so designed that any previous Filmo Projector model may be equipped with this more powerful system at the Bell & Howell factory. Your machine, after this conversion, will have the same illuminating power as the new Model 57-GG. The cost of installing the 375-watt system is $5.50, with moderate additional charges for installing the essential new style fan and perforated safety shutter on earlier models not so equipped.

• Exact Exposure—Quicker—than you can guess at it

The simplicity of the B & H Photometer properly accompanies its accuracy. More accurate exposure readings could not be obtained except with elaborate laboratory instruments. So, when you get a perfect exposure reading in ten seconds, as you can with the Photometer, you have about all that science has to offer for solving the exposure problem. Write for full details of the Photometer, Model A, for Filmo Cameras. Costs but $17.50 ($20 with case).

Model B, for "Still" Photography

Practically the same instrument as the Model A Photometer for Filmo is the Model B for "still" photography. It is scaled to give you less stop readings at any shutter speed, and in addition, gives readings for filter factors and emulation speeds. Same price as Model A.

• Now! Critical Focusing through the Lens with image magnified

There is no reason to envy the chap with a reflex "still" camera when you want critical focus with a Filmo. For in the B & H Critical Focuser you have the same assurance of needle-sharp focus and the same ease of operation, plus an image magnification of 25 diameters! The Critical Focuser is a built-in feature of the Filmo 70-DA Camera, but can be placed on any Filmo 70-D Camera at the Bell & Howell factory at a cost of $30. You swing the lens into place, focus it, and swing it back over the aperture. Nothing could be simpler—nothing more exact. Write for full description.

• A Rock-Steady Tripod with perfect pam-tilt head

Many unkind things have been said about tripods at one time or another. So Bell & Howell set out to make one that would do its job and win applause. The result is the B & H All-Metal Tripod, strong enough to support a 15-pound man, light enough to carry about with ease, and with a pam-tilt head of unique design and pleasing smoothness and latitude of movement. Adjustable leg length with adequate maximum height, rigidity at any extension, and provision for either independent or combined pan and tilt movements are some of the features of this tripod. Write for descriptive folder. Price, $26. With zipper-type leather case, $48.50.

April FILMO Library Releases

UFA Sound Releases
Each on one 300 ft. reel with duplicate sound discs, $60

The Motherly Oak. A fascinating nature study of the amazing variety of animals to be found sheltered by the common oak.

Jewels of the Sea. A submarine garden is disclosed as a group of living animals, sea-anemones, Sleeping Beauty. The effect of the Tsetse fly's bite in human blood seen in the microscope.

An Ancient Art. The technique of a modern sculptor followed by the camera as he models a bust of himself.

Amazing Animal Habits. The fish that builds a nest of twigs, the spider and its traps, and other ingenious animals and their habits.

UFA Silent Releases
Each on one 600 ft. reel, $50

Treacherous Waters. The most dangerous fish, the Piranha of the Amazon.


Gribby Pups. A splendid and enjoyable film showing the dogs which serve the hunters.

A Visit to Mother Nature. Interesting things seen in a hike over the countryside.

Polite Manners in Abyssinia. Life and customs of this interesting country.

What you see, you get—with Filmo

Carter Harrison, Jr. owns this veteran Filmo. He has put it to every conceivable test since it was acquired in 1923. In Turkey, along the Mediterranean, and throughout Western Europe, it has served its owner. His father, Carter Harrison, Sr., former Mayor of Chicago, has used it in his travels in China, Africa, and India. This Filmo has an unblemished record of dependable performance...a record it will successfully defend for years to come.

A patron at the camera counter of a large store was once heard to remark, as he held a Filmo camera in his hands, "This is solid, life-time stuff!" A layman can see the value in a Filmo before he ever owns one. For its sturdy construction and the precision of its parts at once suggest the years of trouble-free service which lie within.

Have you ever held a Filmo in your hands, examined it closely? To the trained eye of the amateur, there is a distinct lure in its finely made mechanism, its extremely simple operation. It is a camera that invites you to test it under every conceivable photographic condition...a camera that has your confidence, even before you test it. It is a product of Bell & Howell, makers for more than 24 years of the professional cameras used by the world's major film producers.

Filmo Cameras may be had for as low as $92. We shall be pleased to send full information and description on request. Ask for Booklet No. 38. Or call at your nearest Filmo dealer's.

A NEW LOW PRICE

*- for FILMO 70-A *

the original Personal Movie Camera

$140

Filmo 70-A Camera prices are reduced from $180 to $140 for the model with Cooke 1-inch F 3.5 universal focus lens. With 1" F 1.8 lens, the new price is $175. Kodacolor filters may be added later for $15. Since its first appearance, Filmo 70-A has led the personal movie world in its rare precision and workmanship, its constant dependability, its ability to take supremely beautiful movies even in the hands of the newest beginner. And it has led in popularity and in international acceptance as the finest camera money could buy, Filmo 70-D only excepted.

Equipped for Kodacolor — $190

The Filmo 70-A fully equipped for Kodacolor is reduced from $237.50 to $190. This camera’s 36° wider shutter angle and its 8-frame secondary film-speed permit of added exposure time and so make it possible to take Kodacolor pictures even under comparatively adverse light conditions. These factors, together with the special color correction of the Cooke 1-inch F 1.8 speed lens, make Filmo 70-A unrivaled for taking movies in color. Write for full information.

- The Filmo 57-GG 375 Watt Projector
unexcelled for Kodacolor

The new 375-watt Filmo Projector has distinguished itself particularly in showing Kodacolor movies, startling its owners and observers with the amazing brilliance and larger screen image made possible by its special 75 volt, 375-watt lamp. Operates either on alternating or direct current. No converters, transformers or other bulky equipment required. Gives 41% more light than 250-watt systems, according to actual laboratory tests. You’ll be surprised at the improvement in your films when projected on this machine. Write for special folder on the Filmo 57-GG Projector. Fully equipped for Kodacolor, $295. For black and white pictures, $260.

Cooke 1-inch F 1.8 Speed

- Lens for Kodacolor

With the addition of Kodacolor filters, the Cooke 1-inch F 1.8 speed lens is converted instantly from one of the most efficient lenses for black and white work into an especially corrected lens for Kodacolor which gives perfect definition at full aperture. Complete with Kodacolor filters, for either Filmo 70 or 75 Cameras, $75. Without filters, $60.

B & H Extra Bright Screen
for Kodacolor

The new B & H Extra Bright Screen derives its name from the splendid service it performs. And in Kodacolor movies this "extra-bright" effect is most emphatically brought out. The special surface processing of the screen gives a depth and luster to Kodacolor attainable on no other type of screen. The 20 x 27 inch size is $31.00; 30 x 40 inch size, $39.00.

- New! Pathe 16 mm. Sound Films! Filmo Library Releases for May

William Boyd, Grantland Rice, Aesop’s Cartoon Fables! Who among movie lovers does not thrill at the names! This month, to every movie maker, scores of these splendid Pathe sound films are offered. In the Grantland Rice Sportlight series there are eighteen subjects, and there are eighteen Aesop’s Fables, too. Then there are thirteen two-reel Pathé comedies, two Vagabond travel subjects, eight news reel reviews, and seven big features, such as "The Sophomore," with Eddie Quillan, and "The Flying Fool" and "The Leatherneck" with William Boyd. These Pathé sound films are $4.50 per reel, including sound disc. Write for full list.

Filmo Topics is published in the interests of personal motion picture makers to help them get the best possible results in every phase of cinematographic work. Photographs and accounts of movie-making activities of general news or instructive interest will be welcomed by the Editor, as will suggestions as to subjects which you would like to see discussed in Filmo Topics.

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Edwin A. Reeve, Editor

United States prices are quoted in Filmo Topics.
In other countries prices are necessarily higher.

Naturally you seek action subjects for your Filmo. And action subjects you will find now in abundance. In the field of sports, golf is in decided favor as a personal movie subject, not merely because of the cinematic possibilities of the game but because movies of one's stroke provide an ideal means of correcting faults and thus cutting the score. In fact, the Professional Golfers' Association is now definitely recommending that pros teach golf with movies.

Movies of tennis, track events, diving, and in fact of any athletic sport of this or any season are also well worth filming not only as action pictures but as an unrivaled means of studying form and technique.

Well taken movies of races are always interesting, and the season for outdoor speed events of all kinds has now begun. Pitted against worthy competitors are fleet horses, graceful yachts, multi-cylindered motor boats, speedy youths on cinder tracks, oarsmen, and racing automobiles—to say nothing of your children on their roller skates and bicycles.

If you are an admirer of nature, the season will often tempt your Filmo from its case. Topical film making will no doubt appeal to you, as subjects for such films are many. Why not make a reel of skies and cloud formations, or one of streams and waterfalls, animals and their young, the development of a family of young birds (which you can probably film in your own yard), or the succession of flowers from spring to autumn—flowers at home or flowers afield? Such films, especially if done in Kodacolor, will be a perpetual source of pleasure to you and your friends.
TAKING KODACOLOR MOVIES

Color everywhere! And you can easily capture all the season's hues with your Filmo

What will you take movies of this spring? The children as they romp and play? Your week-end tours? Sunny afternoons at the country club, the beach, on the bridle path, sailing before a spanking breeze? Thrilling races, ball games, track meets? The succession of blooms in your garden? Hikes afield to enjoy nature at her fresh green best? A fishing trip?

Any or all of these subjects will tempt you to record them in color. You can portray their form in still pictures, their form and motion in the usual black and white movies, and their form, motion, and color in Kodacolor movies that you can easily take with your Filmo. Why take only two steps of the three when taking the third will result in your getting records almost as real as life itself?

Look around at some of your spring movie subjects. Notice how much color adds to the beauty of everything you would film. Is it enough to record, in varying tones of grey, the rosy, suntanned faces, the gayly colored clothes, the brilliantly painted toys of your youngsters? Will a black and white rendition of a spring outing in the country treat Dame Nature with entire fairness? How well satisfied will you be with one color movies of a colorful afternoon on the beach? Nine times out of ten, color plays its part in prompting you to film a scene. So why not film it in color, just as you see it? Then your films will really show you again just what pleased you so much originally.

Your opportunity to take color movies is envied. It is something not to be lightly cast aside. The professional motion picture producer can make color movies—but only at considerable expense and only by one of several two-color processes. Kodacolor is a three-color process. It is available only for 16 mm. film, and the Kodacolor film costs only half again as much as the regular reversal film, only 20% more than panchromatic reversal film. The film cost is the only cost, once you have equipped your Filmo Camera and Projector for Kodacolor, and this does not call for a large investment. Surely the reward of color in your films is worth its slight additional cost.

To take Kodacolor pictures, you need only add a Cooke Special 1" F 1.3 lens to your kit (if you already have this lens you're almost equipped for Kodacolor now), supplement the lens with the Kodacolor filter set, which was recently reduced in price, load your Filmo with Kodacolor film, and go out after those color subjects that have tempted you for so long.

When exposed, your Kodacolor film is processed at the laboratory at no extra cost and returned to you ready to project. Then you replace the regular Filmo Projector lens with the lens and filter assembly for Kodacolor, and you're ready to see color movies so realistic and so beautiful that you'll wish you'd gone in for Kodacolor long ago.

Here are a few facts which will help you in Kodacolor work. When the Kodacolor filter is placed on your Filmo Camera lens it locks the lens diaphragm wide open. You cannot change the diaphragm setting—the lens stop—as you do in black and white work. Because the three-color Kodacolor filter absorbs considerable light, sunlight is required in spite of the large working aperture of the lens.

But sunlight varies, you will say, and surely some exposure control must be employed. Right you are. Two "neutral density" filters are supplied as part of the Kodacolor filter set. If the light is such that F 16 to F 22 would be required for black and white work, use neutral density filter No. 1. For light necessitating F 22 or less, use filter No. 2. These filters are to be screwed into the front of the Kodacolor filter. If your Photometer gives a reading between F 8 and F 16, no neutral density filter is needed. If the meter reads F 5.6 to F 8, double the exposure by cutting the camera speed in half—that is, set it to run at 8 frames per second.

Your Filmo 70-A or 70-D Camera is especially suited for Kodacolor work because its 216" shutter admits approximately 20% more light than most camera shutters. This is an important advantage, as it is evident from the foregoing remarks that light is a vital factor to success in Kodacolor work.

(Continued on page eleven)
TRY IT, ANYWAY

M. E. DIEMER, PH. D.
Director, University of Wisconsin Photographic Laboratory
Photographs by the Author

What makes your personal films so precious and interesting? Sometimes it is beauty, where nature, glorifying lighting, and careful technique have been joined and are so pleasingly reflected by the screen. Sometimes it is thrilling or unusual action. Sometimes it is the animated portrayal of dear ones. More often, however, your films represent far more than pictures—they recall moods, situations, pleasantries, and "atmospheres" which could not possibly be committed to silver and celluloid.

When you pay an admission to the motion picture theater you rightfully demand perfect photography, trained acting, and faultless sound reproduction. Your appreciation and enjoyment depends upon how thoroughly these factors can artificially create an atmosphere of reality. Your own films have this greatest quality—reality—in spite of defiance of any photographic and artistic shortcomings they may have.

Your films are first of all for yourself, not only in the capacity of a diary, but in that greater pleasure which comes from sharing one's experiences with family and friends. Therefore it is not always the perfectly photographed scenes which mean the most in interest and enjoyment. This is especially true of travel films, and I feel that in my many years of motion picture experience there are numerous illustrations which bear out this philosophy. Here are a few such illustrations.

Figure 1 is an actual moonlight scene on the Yukon river, taken at normal speed and F 3.5. Ordinarily such scenes are "fakes" in that under certain atmospheric conditions the evening sun or rippling waters photograph with good moonlight effect. While there are more artistic possibilities in framing and polishing such "fakes," there is not that soft realism of the moon itself which awakens memories and revives the romance of the Arctic summer night. It is possible to photograph such scenes in other latitudes if the filming is done toward the east just as the sun is setting and when the moon is low enough to be included in the picture with the horizon and foreground.

Figure 2 is an illumination scene the effect of which is lost in a still picture. At carnival time the streets of Buenos Aires are festooned for miles with vari-colored incandescent lamps arranged in fanciful designs. The streets are filled with a gaily clad and hilarious populace through which a continuous procession of open automobiles slowly panorams. A film scene was made from a moving automobile in the hope that some of the illuminated designs would photograph. They did, and as a "movie" the result was a surprise because the forward motion of the car produced a stereoscopic effect which caught the carnival spirit of that night. As a suggestion try for this "realism" of night life out around Fifth Avenue and Broadway.

(Continued on page nine)
The Amateur Emulates The Pro

The Filmo user now goes about his close-up work as well prepared as the Hollywood cameraman

When the professional cinematographer prepares to film a scene with his B & H Studio Camera, he revolves the camera turret head a half turn to place the focusing unit the lens will use on that scene. Then, so that he won't make his adjustments from a point to one side of the photographic aperture, he shifts the entire camera sidewise on a precision track. That done, he sees that the camera is set to include just the desired area and focuses his lens. Next he returns the lens to the photographic aperture by revolving the turret, then shifts the camera sidewise back to its photographic position. The result is that his pictures are accurately framed and sharply focused.

For the general run of 16 mm. work the extremely critical preparatory work permitted by the professional's tripod head accessory is not required. Consequently, in the early days of personal movie making there was little or no desire on the part of Filmo users to have such an accessory for their cameras and tripods. Recently, however, there has developed a great body of movie makers who are doing much fine close-up work and who have envied the professional his ideal equipment for such work.

The Filmo 70-DA Camera, with its turret head, its accurate viewfinder just to the left of the lens aperture, and its critical focuser to the right of the aperture, gave these workers an instrument which went far toward solving their mechanical problems and facilitating their work. The next logical development was obviously a sliding camera mount on the order of that used by the professional, which would permit placing first the viewfinder and then the critical focuser precisely in the photographic position. Such a device is now available in the form of the Focusing Alignment Gauge, announced in the advertisement on the inside back cover of this issue. It is the purpose of this article merely to discuss some of its many uses so that you may be better able to consider its value in the sort of movie work you are doing.

First, you couldn't use the Focusing Alignment Gauge if you never use a tripod or other rigid support for your Filmo 70-A or 70-D Camera. You don't need it if your scenes are confined, say, to those you can film satisfactorily with the regular 1 inch F 3.5 universal focus lens. It won't help you shoot scenery or comparatively distant action. Its true value is found when it is used for close-up work—for small subjects, miniature sets, titles, and similar purposes.

Let's consider the use of the gauge in title filming. If you use the B & H Character Title Writer for every title you don't need the gauge, because the Title Writer provides fully for aligning and focusing for its one established distance. If you film title cards of varying sizes with Filmo 70-DA you would use the gauge as follows. Mount the title card vertically before the camera. Move the camera to the right on the gauge track to place the viewfinder in the photographic lens position. Sighting through the viewfinder, move the camera backward or forward, raise it or lower it, move it to one side or the other, until your title card is framed just as you want it in the viewfinder. This done, you will have insured the title being correctly placed on the film, without any need to allow for the offsetting of the viewfinder. Be sure, from now on, that the camera is not moved.

Now for the focusing. Probably the distance between the lens and title card will be intermediate between lens focusing scale markings. Still you know that guessing is not good enough. Particularly when a large lens aperture is used. Revolve the turret to bring the lens before the critical focuser. Shift the camera to the extreme left of the gauge track. This will place the lens so that it may be focused on the center of the card. Focus it carefully, then return the lens to the photographic aperture, shift the camera to photographic position on the slide, and shoot. You'll get a perfectly framed, critically focused title—and do it in a lot less time than it has taken to tell it.

To double exposure work the gauge makes a distinct contribution. It aids materially in getting perfect registration of the two shots. Furthermore, it facilitates getting equally critical focus on each of the two exposures—and nothing is more disastrous in such scenes than to have one exposure fuzzy and the other sharp.

The physician, surgeon, dentist, and scientist finds that most of his vocational movie work calls for large film images of small subject matter, and that, whether he uses a wide angle or a telephoto lens, absolutely sharp focus is vital to the success of his picture. He also finds that the less area he includes the more careful he must be in framing, lest important material be omitted from one side of the picture. The Focusing Alignment Gauge will be of especial value to such workers, in overcoming both focusing and framing problems and assuring the successful recording of scenes which often offer only one chance of being filmed.

The naturalist who films small (Continued on page twelve)
WHEN you travel by air, you will undoubtedly want to record your trip with your Filmo. Unless you have done a lot of aerial movie making you will be confronted with new and unusual photographic conditions. Yet you will be especially anxious to get as perfect as possible a film record of the trip because of the very fact that makes this form of work strange to you—because flying is a comparatively new and therefore unusually interesting mode of travel.

To give you aerial movie making advice from a well informed source we cross-examined Charlie Ford, editor of the Chicago Daily News-Universal Screen Service, who seems to be as much at home with his Eyemo in the cockpit of a plane as in his well equipped darkrooms. We don’t know off-hand how many thousand feet of film Mr. Ford has taken from the air, but we do know that his counsel, which comprises most of that given in this article, is based upon firsthand, successful experience.

Panchromatic film, says Mr. Ford, should be used exclusively, and is particularly necessary over a city or manufacturing district. Regular film will not get satisfactory pictures if there is any haze or smoke in the air, and a certain amount of haze is present anywhere, city or country, “except about one day in a million.” Panchromatic film, used with the right filter and given the correct exposure, will give you the definition you are after.

Like other professionals, Mr. Ford uses an aero filter. This filter is quite similar to the 4x filters sold for Filmo Camera lenses, which have a factor of 2x (necessarily doubling the exposure) when used with panchromatic film. Do not expect the “pan” film to do the haze-penetrating job alone; give it the necessary aid of a filter. When flying over water use a 6x filter (“pan” film factor, 3x) as more correction is required than when flying over land.

Ordinarily aerial work, particularly from high up, calls for smaller diaphragm openings than ground work. Just how much less exposure to give is a problem which no generality can answer. There is so much variation in atmospheric and light conditions, altitude and terrain, and appearances are so deceptive, that the safest procedure is to use an exposure meter, such as the B & H Photometer, just as you would do under unusual conditions on the ground. Of course the flying speed is so great that you may not be able to take a reading upon a given area and still have time to film it, but at least you can take a reading which will serve as a base for mental modification if conditions change quickly.

After he has decided on the best stop to use, Mr. Ford tapes the diaphragm ring in that position so that it won’t be shifted by vibration. When a change is required the tape is quickly removed and replaced.

The light and atmospheric conditions are best for aerial work between 9:30 AM and 3:30 PM, though it, like the newsreel man, you must shoot when you can. You can’t afford to be too particular. Passenger planes, like news events, wait for no cinematographer. Angling light, as contrasted with the overhead light of noon on a summer day, gives highlights and shadows to objects on the ground and provides the desired relief.

The question of altitude is closely related to the matters of camera angle and camera speed. You can take movies from any height provided the air is clear enough so that you can see your subject from that elevation. Of course the higher you are the smaller ground details will be and the more use you’ll have for a telephoto lens in order to get pictures of some significance.

The less area your lens takes in the more apt you are to get blurred pictures if the camera is pointed straight down. To shoot straight down with the 47 mm. Eyemo lens (about equivalent to the 1-inch lens on your Filmo) the plane must be at least 400 feet high and the camera operated at double speed. Mr. Ford says. The more the camera angle is away from the vertical, the less chance there is of blurred pictures, particularly if the camera is pointed forward rather than at right angles to the line of flight.

Speaking of camera speeds, Mr. Ford recommends double speed, 32 frames per seconds, for aerial work as it minimizes the effect of the plane’s vibration. In concluding, he advises 48 speed for very rough air.

In cabin planes it is better to shoot through an open window than through the glass used in such windows. Keep your camera inside, for even though you may be able to keep the wind from tearing it from your hands and dropping it as a gift to some landowner below, you’ll probably be unable to hold it steady enough outside to get a scene of any value. Hold the camera in your hands and do not rest it against any part of the plane. Then your arms will absorb the plane’s vibration.

So much for the mechanics of aerial movie making. Another prerequisite of success in this, as in any type of film, is continuity and human interest. You won’t be satisfied with a mere collection of scenes showing the earth far below, how-

(Continued on page eleven)
Has your golf pro taken slow-motion movies of your stroke? Probably he'll soon offer to show you your faults with Filmo movies rather than try to tell you about them, for the pros are rapidly adopting the slow-motion movie method of golf instruction. The photo above, taken in Miami, shows Ed Newkirk using his Filmo 70 Camera to record the stroke of a pupil of John Brophy.

Below—Something new, novel, and appropriate in birthday party invitations is this one prepared by S. J. Solomon, New York City, and received with delight by friends of his daughter Joan. For what child wouldn't thrill at the prospect of attending the party the invitation describes?

Charley Chase, popular Hal Roach star, pictured with his Filmo 75 Camera just before he left Hollywood recently on an extended vacation trip, taking his camera with him. Like so many of the prominent figures in the professional film industry, Mr. Chase has become an enthusiastic Filmo user.
Bob Leiger, Educational Department, Pennsylvania State Game Commission, using his B & H Eyemo Camera to picture State Game Commissioners as they filled paper bags with grain preparatory to dropping the feed from the air for hungry game birds. Later Mr. Leiger went up in a plane to film the dropping of the bags. The films were circulated throughout the state to show how birds are cared for through the winter.

In oval—Guests of Mr. and Mrs. Oscar Strom, Chicago, at their host's Miami Beach estate, were entertained with talkies shown with the B & H Filmoscope. Filmo dealer J. R. Willis (left), Miami Beach, is seen explaining the sound picture reproducer to Mr. and Mrs. Strom.

Below—Three Canadians taking movies in unison at St. Pierre, Martinique, West Indies—and they all use B & H Cameras! Roy Tash of Associated Screen News, Montreal, is at the professional camera. The Filmo users are H. L. Marcuis, St. John, N. B., (left) and Dr. Otto Marcuse, Montreal.

Quin Ryan, manager of radio station WGN and popular radio announcer, taking Filmo movies in Havana where the Ryans spent their honeymoon, Mrs. Ryan was Miss Roberta Nangle of the Chicago Tribune staff.
Filmo News Pictorial

FILMO TOPICS

MAY 1931

Have your golf club ready to show off your skills... Probably he'll want to offer to show you your faults with a Filmo camera rather than try to tell you about the fundamentals of golf instruction. The photo above, taken in Paris, shows Ed New York using his Filmo 20 camera to record the strike of a golf ball against the wall.

Below—Something new, neat, and appropriate for birthday party invitations is this one prepared by N. J. Solomon, New York City, for the birthday of his daughter Joan. For what child would not revel in the prospect of attending the party where the invitation director?

Charles Chase, president of Filmo Chicago, views the projection of a color film. He is a member of the professional film industry, and has become an enthusiastic Filmo user.

Below—Three Canadians taking movies in union at St. Pierre, Montreal. From left to right, C. P. Connolly, West Bedfords; Ed. J. Reardon, St. Jean; and Mr. Reardon. The films were all in color and had been taken while the union was on strike.

In the center of the photo, Miss Joan Fielding, Chicago, takes her birthday picture at the Filmo plant. She is one of the many girls who have been baptised by the Filmo film—lately even including the sound film. Miss Fielding has become an enthusiastic Filmo user.

Below—A Filmo camera in action at the Filmo plant. The camera is being used to record the strike of a golf ball against the wall.

Big Movie Birthday Party

Jan 31, 1931

I'll be eight years old. Come at three o'clock to 69 West 140 Street. We'll see movies, and make movies, and have plenty to eat...

Joan Solomon

Osie Myan, manager of radio station WGN and producer of radio shows, taking Filmo movies in his home where the film was shown to the employees. He is the husband of Miss Helen Myan, actress and radio star.
WE had planned to let the April article on title making conclude this series. However, so much interest has been expressed in the articles and so many valuable contributions have been received that we seriously doubt that Filmo Topics readers would want us to drop the subject until at least a few more articles have been published. How much longer we will continue the series now depends upon how many more articles will be required to pass on to you the best of the many ideas which have already come to the editor’s desk and which promise to keep on coming in a steady stream.

Novel, unusual titles without end have evidently been conceived and used by Filmo owners. Here are a few such ideas from J. R. Griffith, Niagara Falls, N. Y., who writes: “I find that the average audience pricks up its ears and feels that it is going to see something worth while if there is plenty of action in an introductory leader, even if it only has the unscrambling of letters to form a title.

“People are rather disappointed if the end of the picture comes on suddenly without ‘The End’ being spelled out. Even a toy train with ‘End of Reel 3’ written on it and filmed as it is drawn away into the distance suffices to amuse the average amateur movie audience, especially if a vignetter is used at the same time to make the image smaller and smaller as the train disappears. Another way is to write ‘The End’ on a toy balloon, deflate it, and take a picture of it while it is being blown up until it bursts.”

In January Topics we explained how to make “unscrambling titles” with soup alphabet letters, while the method of getting the same effect with wooden Block Letters was discussed in the February article. Mr. Griffith’s toy train idea is simple as to technique. Just hang a small card, lettered “The End,” on the rear of the train, set up your Filmo on the track perhaps a foot behind the last car (the Filmo Pocket Tripod, a disc with camera mounting screw, is convenient for such camera positions), focus on the sign, and then film and follow focus as the train is moved slowly away. If you use artificial lights for this shot the train will become more and more under-exposed, and hence darker and darker, as it draws away from the camera, thus automatically giving you a gradual fade-out in brilliance as well as in letter size.

To blow up the toy balloon to the bursting point while the camera records its growth and sudden demise, a tube had best be used to keep the air supply (high power or, better, a tire pump or a compressed air tank) out of the picture area.

Richard S. Hodgson, Dover, Mass., has also been doing some clever work with animated titles. He writes: “A short time ago I photographed some winter sports at our country club and featured a few trick titles... One title... represented in a joking way the superiority of the men over the women in a certain winter sport. Although the title would be taken as a joke in itself I thought a little animation might help it out so I ended the title by an exclamation mark which jumped up and down on its dot throughout the filming of the title. Then, after the title was easily read, the exclamation mark completely encircled the wording from the end of the sentence to the beginning and then went down each line of letters. Each time it came to a letter, that letter would disappear and the mark would go on to the next letter.

“This of course was done by exposing about two frames of film and moving the exclamation mark along. After the letters had entirely gone the exclamation mark went back to its point where it began jumping again. I then took my left hand and moved it across the face of the title board as though to catch the exclamation mark, which immediately started to move in the same direction as my hand, both hand and exclamation mark leaving the title board completely black in the end.

“The effect was rather novel for it looked as though the exclamation mark was delighted with the superiority of man in this particular title and, after dancing around and wiping off the letters, it was so pleased with its performance that it began dancing on its point again until my hand put a stop to this.”

Mr. Hodgson did not mention the equipment employed nor its arrangement, but probably the simplest way to make an animated title of the sort he describes would be to use one of the movable letter title outfits, such as the B & H Title Board with its celluloid letters or the Sewah Title Outfit with its metal letters. In either case the title would best be laid flat and the camera arranged pointing down from directly above it.

The “stop motion” trick (exposing a frame or two, moving an object by hand, exposing another frame or two, and so on) has many possibilities in title making as well as in giving the power of movement to inanimate objects in general and in speeding up slow-moving action. Mr. Hodgson used “stop motion” in filming a clock to denote a specified lapse of time between two scenes. “I set up my camera,” he explains, “and exposed two or three frames once every half minute until ten minutes had passed on the clock. On

(Continued on page nine)
NEW BUILDING FOR HOLLYWOOD BRANCH

The Bell & Howell Company's Hollywood branch will soon be housed in a spacious new building, construction of which has already been started. The new structure, which will be located on 240 feet of recently acquired property on Loma Avenue, Hollywood, will be two stories in height and will be topped by a distinctive tower.

Both amateur and professional motion picture makers will be well served by the facilities and personnel of the new structure. A projection theater seating more than one hundred will be a feature of the building, and several Filmo projection rooms will be provided, among them a sound proof room for showing 16 mm. sound pictures in demonstrating the Filmoophone and another room for showing Kodacolor pictures. Service, display, and sales facilities will be complete for both 16 mm. and 35 mm. equipment.

An engineering division which will be accommodated in the new building will collaborate with motion picture studios and laboratories on the coast in still further advancing the phenomenal technical progress of the industry. The engineering laboratory will be made one of the finest of its kind in the country, with a personnel especially selected from the best talent of the Bell & Howell main offices and plants in Chicago and of the firm's branch offices, and with ideal equipment.

Figure 4 is a night scene photographed with only the footlights which surrounded an open air stage. Here was a chance shot which even a professional I would have bet on. The subject is a Siamese dance which could not be obtained at any other time, and better lighting equipment was not available. Had the costumes been of the usual highly colored fabrics, this attempt would have failed, but the brilliant silver and gold embroideries which the dancers wore became a myriad of mirrors with surprising brilliancy. The scene could not be perfect photographically, but it has "reality" which recalls the grace, beauty, and rhythm of oriental dances.

Although as a professional I use 35 mm., negative in my B & H Eyemo Camera, the same results are equally possible for the amateur who uses good 16 mm. equipment and reliable film. The accompanying illustrations are from enlargements from my 35 mm. negatives.

Strive for proper exposure, careful framing, effective lighting, interesting action, steadiness and balance—but not to an extent that discourages an attempt of the unusual, speculative, or impromptu scene. There will be disappointments, but the satisfaction of one success will compensate for many failures. Try it, anyway!

Titling Your Films
(Continued from page eight)

the screen, of course, the hands of the clock take only a couple of seconds to travel the ten minutes."

Next month's article will give some contributed methods of making titles with moving picture backgrounds—a subject which we're sure you will find well worth looking into and experimenting with.

Keep your lenses and filters clean—always. Dusty, fingermarked lenses and filters cause flat, dull, inferior pictures.
THE FILMO PROJECTOR "POWER PLANT"

"Facts About Filmo" No. 17, explaining what makes the wheels go round

R. FAWN MITCHELL

In this article we shall review the motor and other electrical units by which the Filmo Projector is operated. Naturally the motor is a most important part as it is responsible for driving the projector at a steady speed, year in and year out, with the absolute minimum of attention.

The motor is especially important when the projector is used with the Filmophone, because the motor must not only drive the projector at the correct speed, but must also drive the turntable of the Filmophone at exactly the correct speed. When we are told that the human ear is sensitive to a variation of less than 1% in the pitch of any sound, we can appreciate just how well the motor (and intermediate gearing) must function.

In addition to the above mentioned requisites, the Filmo Projector motor must be quiet, must operate interchangeably on alternating and direct current, and must run equally well backward and forward.

The motor used has been specially developed to Bell & Howell specifications and represents the result of careful research and construction. Figures 1 and 2 show the essential electrical units of the Filmo Projector, and Figure 3 shows how the motor, lamp, and direct current resistance are set into the machine.

The field coils D are set in the specially shaped pole pieces E and this unit is inserted in the motor housing. The armature (with the fan removed) is set in from the back. (Note, in Figure 3, the ball bearings in which the motor shaft runs. These ball bearings insure continued smooth operation without the necessity of lubricating the motor bearings.)

Next the cap at the back of the motor housing is set in place. When this is done, the brushes I ride on the commutator C. (The rear ball bearing can be seen behind the brushes.) The leads of the field coil D are clamped by the clips visible on the reversing switch blades G. This reversing switch is operated by the lever J which projects out through the rear of the cap. Note the springs F which are responsible for the "snap", which this reversing switch has. All in all, this combination motor cap and reversing switch is a very compact and rugged piece of work.

The variable resistance shown at K is the one used with the new 375 watt lamp. The extremely compact construction is evident. This resistance has to dissipate 175 watts (about ¼ horsepower) in the form of heat to enable the 75 volt 375 watt lamp to operate at the correct rating. The resistance coils are very carefully set in a special cap of porcelain composition. This cap, incidentally, is the result of nearly four years' effort to procure something that would meet our extremely rigid requirements.

Now, it so happens that when a "universal" motor, as the Filmo Projector motor is termed, is operated on direct current or on 25 cycle alternating current, it runs quite a bit faster than it does on 50 or 60 cycle alternating current. To compensate for this difference, the small supplementary coil L, Figure 1, is inserted in the motor housing crosswise beneath the motor shaft, as shown in Figure 3, where it will get the maximum cooling. A small switch M, Figure 2, is provided in the switch box under the motor housing to shunt this coil in or out of circuit. This switch is operated by the button N on the switch box cover. The other side of this button is shown at O, from which it is easy to see how the switch is operated when the button is turned.

Careful examination of Figure 2 will show...
how much thought and care has been put into the design of the switch box. When the cap P is removed to replace the lamp, it can be seen how the two rings which supply current to the lamp are cast into the bakelite switch box as integral parts together with the other terminals shown in Figure 2.

Indicative of the refinements evident everywhere in the design is the arrangement of the plug terminals Q. These are arranged so that if anyone inadvertently trips over the cord it will become detached from the projector, saving the machine from possible damage.

The highest grade voltmeter obtainable completes the electrical equipment of the projector. The 375 watt voltmeter model is calibrated in red at the 50 and 75 volt marks because the variable resistance unit is constructed to permit both the new 75 volt 375 watt and the 50 volt 250 watt lamps being used interchangeably in the same machine.

While not strictly pertaining to the power plant of the projector, the clutch mechanism is best considered at this point. Figure 4 shows the essential clutch parts. The clutch lever, shown at the left, is familiar enough. This lever pivots at the bearing X so that the little roller Y pulls the plunger R, Figures 2 and 4, in and out. The illustration on page 10 of November, 1930, Filmo Topics shows at A the position of the gear W, Figures 2 and 4, relative to the rest of the mechanism. The roller Y, Figure 4, can just be distinguished behind the shaded area A.

The clutch consists of three little jaws U which are held in the split ring unit S by the spring T. When the clutch lever is disengaged, the plunger R is pushed down into the clutch assembly forcing the blades U apart so that they clear the ring V.

When the clutch is engaged, the lever roller Y pulls out the plunger R. The spring T closes the blades U together so that the ends ride on the ring V. This pressure causes the gear W to revolve, thereby transmitting the power to the rest of the mechanism. Figure 3 shows the slotted ends of the shaft in which the three blades U engage—the ring unit S merely holds them in position.

The plunger R is made with a double cone, as is clearly visible in Figure 4, which gives a positive snap action when the clutch is operated. The whole clutch unit is very compact and gives a reliable, positive action over extended periods without attention.

Motor and lamp house removed to show the arrangement of condenser, motor bearing, and D. C. coil

Parts comprising the clutch unit

Taking Kodacolor Movies
(Continued from page two)

As you know, the larger the lens stop used the more careful one has to be in focusing. In taking Kodacolor pictures the F 1.8 lens is used "wide open," so be sure to focus each scene carefully, particularly your close-ups.

Little need be said about projecting Kodacolor pictures. For best results an especially fine surfaced screen is important (the B & H Extra Bright Screen is recommended). But, as this type of screen is also ideal for black and white pictures, using Kodacolor does not mean that you need have two screens. As for picture size, possibilities depend upon the illuminating power of the projector. Plenty of light is needed here, as in taking the color pictures, if a good sized screen image is to be projected. The 375-watt lighting system of the new Filmo 57-GG Projector (with which system your Filmo may be equipped) permits showing brilliant Kodacolor pictures in larger sizes than were formerly practical.

Subsequent issues of Filmo Topics will tell more about Kodacolor movie making. But in the meantime we hope that you'll let the process show you what it could do in adding the beauty and interest of true natural colors to your films.

Filming As You Fly
(Continued from page five)

ever interesting and varied the country may be. So get other shots, too, which will permit you to build up a complete story of your trip—a story which, when flashed on the screen for your friends to see, will interest them as much as the actual trip did you.

As a title, film the sign which tells your plane's destination and time of departure. Film the attendants as they load the baggage into the plane. Get a scene, if you are there early enough, of another plane as it takes off and gains altitude. Splice this scene in after those which show your own party entering the plane and after the effective shot forward from the cabin window as the ship, after speeding over the ground, gradually rises, bringing more and more of the landscape within the angle of your lens.

The scenes you take of the ground below can well be varied as to camera angle, some being largely of the earth, others including considerable of the sky with its cloud formations. Still further variety can be gained by filming the passengers as they gaze through the windows or otherwise pass the time.

The thrilling sensation of landing should be filmed also, and with that you will have a well-rounded film that will virtually take you and your friends into the air again whenever you wish to fly.

An occasional oiling of your camera is important to its continued dependable operation. Filmo 70-D, especially, should be lubricated according to the instruction book after every five or six rolls of film are used and not less often than every thirty days.
A Gift Suggestion

HAVE you a wedding or graduation gift to select soon? June is almost here, you know. Wouldn’t the graduate or the bride welcome a Filmo outfit about as enthusiastically as anything you could give? Your Filmo gift would be used constantly, would give pleasure year after year, would serve to make vivid records of life’s new chapter. It is the sort of a gift that is remembered always.

The Amateur Emulates the Pro

(Continued from page four)

forms of animal or plant life, the industrial cinematographer who takes close-ups of small products and confined operations, the research worker with his diversified ciné problems, all will find the Focusing Alignment Gauge a valuable addition to their Filmo equipment.

Even in filming close-ups of your friends, at three or four feet from your camera, the gauge can be used to advantage to avoid any possibility of amputating an ear or making indistinct a face that you intended to render clearly and sharply.

Lost Equipment

Filmo 70 Cameras
No. 21085—Alice E. Buff, 23 Cheshire St., Jamaica Plain, Boston. Lost in New York City.
No. 26239—William M. Mortimer Co., 90 Maiden Lane, New York City.
No. 41489—Double speed. Lyon & Healy, Inc., Cleveland.
No. 58020—Notify Bell & Howell Company.
No. 62115—70-D, without case. Eastman Kodak Stores, 223 Park Ave., Baltimore.

Filmo 75 Camera
No. 46817—James W. Brine Co., Boston.

Filmo 57 Projector

Eyemo Cameras
No. 4118 — Ately Truss Wheel Co., Chicago.
No. 4837—71-C, with Cooke 47 mm. F 2.5, 3½" F 3.3, and 6" F 4.5 lenses and filters. Ately Truss Wheel Co., Chicago.

B & H Photometers
No. 2487—Notify Bell & Howell Co.
No. 4303—Notify Bell & Howell Co.

Questions and Answers

Conducted by
R. Fawn Mitchell

Q. Can the Filmophone be used with 35 mm. projectors as well as with the Filmo?
A. Yes. If a record is made to synchronize with the 16 mm. reduced print, it will still be in perfect synchronism with a 35 mm. print from the same negative. The necessary mechanical couplings are available for connecting the Filmophone with a number of 35 mm. portable projectors.

Q. Can the regular Filmo 70-A Camera be changed to the super-speed or the 70-D models?
A. No. These special models involve fundamental changes in design, though they are fitted into the same or practically the same frame.

Q. In trying out the Photometer, I failed to get the same neutral setting as my friend did. Is there anything wrong?
A. No, probably not. There is a considerable variation in different people's eyesight, and also a certain amount of variation in the eyesight of any one person at different times. If you will check further, you will doubtless find that both you and your friend will get the same exposure reading on the subject because when you take the reading, all errors, including variations in the battery, lamp, etc., and also the variations in individual eyesight, are automatically cancelled out. The Photometer is, to our knowledge, the only meter that has this correction for variations in eyesight.

Q. Are there any precautions necessary in using the Kodacolor lens on a turret?
A. Yes. It is advisable to use the lens in the same turret opening all the time to insure the filters being aligned vertically without the necessity of changing them each time.

Q. Can stereoscopic movies be taken with the Filmo?
A. No, nor with any other movie camera, amateur or professional. While there have been a lot of claims made, no one has succeeded yet in obtaining stereoscopic movies.

Q. What are the requirements of 16 mm. films for enlargements?
A. They should be of the highest possible quality, with a full range of contrast, free from scratches, dirt, or other markings.
The B & H Focusing Alignment Gauge for precision movies with Filmo . . . .

Sighting, focusing, and filming on the same axis

The Focusing Alignment Gauge automatically brings the Filmo 70-DA viewfinder and critical focuser exactly into the lens photographic position. Close-ups of every kind, including scientific subjects and titles, are thus framed precisely as desired on the film. The Gauge is fastened to the tripod head and the camera fastened to the gauge slide in but a moment. The slide carries the camera back and forth with effortless ease, automatically locking it in the desired positions. Correct design and precise construction insure perfect accuracy even with the longest of telephoto lenses.

The B & H Focusing Alignment Gauge, for use on the B & H All-Metal Tripod or any other tripod with standard thread, $2.1.

- B & H All-Metal Tripod

The rigidity and precision of the B & H All-Metal Tripod makes it unexcelled for critical work of all kinds, as well as for general all-round movie making. The pan and tilt bearings are large and free-moving, and operate independently or together. Self-locking tubular steel legs provide the greatest rigidity. Leg tips are supplied with rubber caps for use indoors or on hard surfaces. Safety chain prevents accidental upsetting. Write for literature. Tripod alone $36. Zipper-type leather case $12.50.

- LITTLE ACCESSORIES THAT DO BIG THINGS -

Iris Vignetter  Lens Modifier  Filmo Duplicator  Prismatic Eye  Remote Control

- Makes your movie scenes fade-out or fade-in at the turn of a dial; mattes available in heart, binocular, keyhole, and three other shapes. Fits 1" F 3.5 and 1" F 1.8 Filmo lenses. Vignetter, $10.50; Six mattes, $7.50.

- A distorting lens that pulls the whole world out of shape while you film it; great for grotesque dream or nightmare effects. Lens Modifier (fits regular 1" F 3.5 Filmo 70 Camera lens) $13.50.

- Another fan-maker. Causes the image to be doubled on the film. A person filmed with Duplicator has a “twin” mimicking every move. Filmo Duplicator (fits standard F 3.5 Filmo 70 and 75 lens) $4.50.

- ‘Shoot around a corner’ with the Prismatic Eye and take movies of persons without their suspecting you. Enables you to take movies at right angles to your line of sight. Prismatic Eye, $5.00.

- A squeeze of the bulb gives you complete control of Filmo 70 starting button from 10 feet away. Remote Control $4.50.

Here is another veteran of sea, air, and desert—one of the two Filmos which Mr. H. Earl Hoover, vacuum cleaner manufacturer, keeps always at hand on his wide travels—one for color, the other for monochrome. This camera, after nearly 7 years of steady use, runs as smoothly and efficiently as the day it left the factory.

What you see, you get—with Filmo


PERSONAL MOVIE CAMERAS AND PROJECTORS
The FILMO 75
fully equipped for
Kodacolor
$149.50
the lowest priced
Kodacolor-equipped movie camera

Here it is—neat, compact, efficient, finely made—the Filmo 75 equipped to take movies in color at a price appreciably lower than any other camera. Always ready for use with its new jewel-like Cooke F 1.8 speed lens and Kodacolor filters, the Filmo 75 is as dependable and as capable of fine photography as any other Filmo Camera. Choice of three colors. Comes complete with case. Write for folder. Bell & Howell Co., 1842 Larchmont Ave., Chicago, Illinois.

Cooke Telephoto Lenses
These are fine English-made lenses for long distance photography, their precision guaranteeing sharp definition over the full aperture. In focal lengths from the 2-inch F 3.5 at $60 up to the 6-inch F 4.5 at $95. One of the most popular is the 4-inch F 4.5 at $60. When for Filmo 70-D or Filmo 75, each is $5 less.

Filmo Library Releases for June
Five new Pathe 16mm, sound releases at $15 per 100 ft. reel with sound disc are announced this month.

Grantland Rice Sportlights
BIG TEN CHAMPIONS . . . Training circus animals in Florida winter quarters. One reel.
Aesop's Fables
WESTERN WHOOPPEE . . . A cartoon comedy, with a western villain in everything. One reel.
GOOD OLD SCHOOL DAYS . . . Cartoon animals, dancie and all, combined with children's songs. One reel.
Seven Reel Feature

New Sport Case for Filmo 70-D
Smart in appearance, sturdily bound in leather, this new Filmo sport case is covered in imported Toile Basque, a tough canvas-like fabric with striping in blue and orange. Size B, for Filmo 70-D with 4-inch lens, $25. Size C, for 6-inch lens, $30.
Filmo Topics is published in the interests of personal motion picture makers to help them get the best possible results in every phase of cinematographic work. Photographs and accounts of movie-making activities of general news or instructive interest will be welcomed by the Editor, as will suggestions as to subjects which you would like to see discussed in Filmo Topics.

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Edwin A. Reeve - Editor

With summer and its vacations just ahead, we have tried to select for this issue of Filmo Topics material which you will find of the greatest immediate interest and benefit. We hope that you will approve of the selections we have made.

In his article "Movie Treasure Hunts" Dr. Esenwein gives some valuable suggestions on vacation movie objectives. Harvey F. Morris tells an interesting story of the production of "Backward Boys," a comedy film such as any parent would be proud to produce and exhibit. "The A B C of Filmo Lenses" contains information which the beginner should read before sallying forth to perpetuate his vacation in motion pictures.

Summer is an ideal season for Kodacolor movie making, so on pages six and seven we offer some suggestions which we hope will help the Kodacolor workers among you. The last of the series, "Titling Your Films," appears in this issue, and its subject, "Moving Picture Backgrounds," deserves some thought in connection with your vacation films. Then, if you are a golfer, you will want to read the article on page nine which tells about a new method of taking points off of a golf score.

United States prices are quoted in Filmo Topics. In other countries prices are necessarily higher.

Publishers may reprint, with credit, all articles and illustrations except those carrying special credit lines. When possible, electrotypes or photographs will be furnished upon request.
The King and Queen of Siam at a football game between Siamese and Cochinchinese teams. King Prajadhipok is an enthusiastic movie maker, using a comprehensive collection of Filmo equipment which was recently augmented by the purchase of a new Filmo Projector while His Majesty was in New York.

Left—William Krippner, in camp in British Columbia, inspects the Filmo with which he shoots more game than with a rifle. Stretched for drying is the skin of a silver-tip grizzly bear which he had recently shot. Mr. Krippner deals in Filmo equipment and imported guns in New York City.

The Nawab Sahib Bahadur of Palanpur, Indian Ruling Prince, is another royal Filmo movie maker, as are so many of the Princes of India. His Highness is shown above with his new Filmo 70-D Camera.

Right—Miss Betty Hopping watching Ross Ambler Curran using his Filmo 70-D Camera at Del Monte, California, filming the final game of the Pacific Coast High Goal Handicap. Miss Hopping's father and brother, Earl Hopping, Sr. and Jr., played on opposing sides.
Movie Treasure Hunts

Have a definite motion picture objective on your summer vacation this year

J. Berg Esenwein

The best place to go for that vacation is where the best movie subjects are to be found. So far, Mr. John Filmo Fan will probably agree. And it is likely that the younger members of the family would also be happy in such a choice, because in spots where the best pictures lie—in cool mountain fastnesses, by waterways great and small, in playgrounds of all sorts, and even on the edges of our great American desert country—there is not only beauty, but plenty of fun for youths of any vintage, from those who were born in 1860 down to the toddler class.

Personally—and I have no business or professional connections with cameradon to bias me—I should as quickly think of going to Vacation Land unaccompanied by my check book as without the fascinating company of my Filmo. That is why all those who are like-minded are concerned to know what this or that possible holiday ground may offer pictorially. Yet it may surprise many to have it said that there are, usually near at hand, unique movie-making opportunities if one will but seek them out. Several of these are to be outlined, but any fertile mind can find scores of others equally fascinating.

The first thing in planning a Movie Treasure Hunt on our vacation is to recognize the fact that it is wise to set up a definite picture-objective. Happiness is not always to be run across—sometimes it must be run down. The same is true of good pictures.

How about duplicating the “stunt” which some friends worked out successfully last year—that of making fishing the theme of the pictures taken on their vacation? What a movie record that made—and can make for you if fishing is among your hobbies! And the beauty of the idea is that it need not be confined to a single trip or to any one type of fishing, but may be begun, as this one was, with the opening of the brook trout season, carried through the summer holiday at the sea shore, and even on into the season for muskalonge and, later, fishing through the ice. Not only were scenic beauties included in this series of films, but human-interest material was woven through it all, from the selection and packing of paraphernalia to the arrival on the streams and lakes. Some of the views of fly and bait casting made these movies especially distinctive.

It requires but little constructive imagination to plan a series of sporting scenes that would make a record rich in memories for the participants and full of entertainment for the friends who enjoy your movies. For example, the same men who worked out the interesting series of scenes on streams, lakes, and ocean are now laying plans for movies of a hunting expedition in the late autumn.

Are you planning for a vacation in your automobile this summer? If so, do you realize what a fascinating time you can have by routing your journey so that you may visit and film some of the great zoological collections of the country? This, to be sure, will be only part of what you will want to do, but from personal experience I can assure you that the whole family will enjoy seeing these animal movies being made. During the summer months the zoos will be at their best, both in loveliness of setting and because the animals will then be out of doors and filmed all the more easily.

Let me suggest that you take time to search for viewpoints that will show the animals in as nearly their natural habitats as possible, without showing the artificiality of bars and cages. This can often be accomplished, for it is becoming more and more the custom to build caves and hills, pools and runways for the animals and fowls so as to simulate their native haunts. Most animal keepers are proud of their charges and make great pets of some of them. It will pay to take some of these men into your confidence, and sometimes a few “smokes” will work wonders in getting them to help you film the animals at their best.

A famous Bishop of Massachusetts is a great lover of gardens and has a lovely one on his own estate. Last summer, on

(Continued on page twelve)
WELL, Henry what would you like to do tonight? Henry was a ten-year-old cousin and it was the last night of his two weeks' visit with us. With some embarrassment he replied, "Let's see 'Backward Boys'!" I believe it or not, Henry had already seen this home-made movie every night of his stay—thirteen times!

It is the veriest platitude to say that parents enjoy seeing their children on the screen or that children like to see themselves on the screen. But when the actors are other people's children it is sometimes quite a different story—unless these children are shown in unusual surroundings or doing unusual things. If you can introduce some element of mystery, or best of all, what children call "magic," you will have a home-made movie that everyone will enjoy.

It is not hard to produce such a film. "Backward Boys" was made without difficulty in our own home and yard. The whole scenario was planned from the viewpoint of how it would look on the screen when projected backward—run wrong end to. The entire picture was made with the camera held upside down. The developed film was then threaded on the reel wrong end to and projected just like any other picture.

The film, after preliminary titles and introductory close-ups of the actors, shows the two boys asleep in bed. They yawn and stretch, throw back the bed-clothes, and make a startling backward leap into the middle of the room. One takes off his pajama coat and as he holds it in his hand it falls up just as it left the laundry.

They start to dress. The next few scenes and many others later in the film are based on the principle that when you give momentum to an inanimate object before the camera and then project the picture backward, the object seems to come to life. The boys beckon to their stockings hanging on the back of a chair, and the stockings fly into their hands. They beckon to shoes, and the shoes slide across the floor to their feet. What the boy actually did, of course, was to take off the stockings and toss them over the back of the chair, and, balancing the shoe loosely on his toes, give it a little kick to send it sliding across the floor, then beckon to it. The action was carefully practiced before being filmed.

Next we see a boy vigorously scrubbing his face with a wash cloth. At the start his face is clean, at the end it is grotesquely dirty. Breakfast follows. The action in this sequence was very simple. The boys were seated side by side at the table. The lights were turned on and one lad poured milk from a glass pitcher into a glass tumbler and drank it. The other took a banana from the fruit dish, peeled down the skin as he ate, and spread out the empty skin on his plate. Then he took a heaping teaspoon of sugar, held it well above his cereal, let it pour down slowly, then displayed the empty spoon. You can imagine how all this looks when the action is reversed in the projecting.

Out in the yard, other simple bits of action were filmed—a boy sliding down a chute, digging up shovelfuls of sand and throwing them over into a corner of the sandbox, throwing empty boxes and a shovelful of sticks and stones into an ashcan, sitting on a dark automobile robe and whistling splinters of wood from a stick, riding a bicycle. All these simple things become "magic" when the action is reversed on the screen.

This was the action as filmed for the going to school sequence: The boys and their dog came trotting down the street toward the camera and sprang up the steps to the porch. Then the cameraman took a new location in a corner of the porch and clicked away while they took off their hats and threw them into a chair. One boy took half a dozen envelopes from his pocket and tossed them on the porch table so that they slid and spread out. The other threw three books into a chair. Then each stripped off his leather coat and threw it down. One boy in his excitement threw his hat clear over the porch rail, but on the screen this proved to be all the better. Once more, surprising effects were secured by giving momentum to inanimate objects and filming them with the camera upside down.
To get away from too hackneyed an opening title I located the camera on the driveway facing the open garage door and placed the boys against the back wall, one carrying a card with the word "Backward" on it, the other a card bearing the word "Boys." The stars walked slowly toward the camera and stopped about five feet in front of it. As reversed on the screen, they grow smaller and vanish into the darkness. For the final title, I wrote "The End" on a card with the camera taking the action. As shown on the screen in reverse this is a nice final touch, the letters being wiped out, after reading time has been allowed, leaving the card blank in the end.

Children like rhymes, so I used two line jingles for all the sub-titles. For ex-

(Continued on page twelve)

The A B C Of Filmo Lenses

THIS article, as its headline indicates, is written for those who have only recently acquired a Filmo and who are not familiar with the "F" system of lens diaphragm markings.

If your Filmo 70 Camera lens has only one movable ring bearing figures it is what is known as a universal focus lens. Universal focus means fixed focus—that is, that no adjustment is necessary to film subjects at varying distances from the camera. This lens has some limitations for very short distances which we will discuss later.

The one number-bearing movable ring on the standard lens is marked as follows: 3.5, 4.5, 5.5, 8, 11, and 16. A black dot is placed on the pin at the center of the camera head. Locate this on your camera, or refer to Figure 1. Turn the number-bearing ring until the figure 3.5 falls opposite the black dot. As you do this, notice that the metal leaves of an iris diaphragm well down within the lens open until, when 3.5 falls opposite the black dot, they are opened to their maximum. When the lens is set this way it admits the greatest possible amount of light. Hence this is the setting to use when the light is very dull.

Now turn the numbered ring, which we have seen may be called the diaphragm control ring, slowly in the opposite direction and watch the diaphragm close until at 16 only a small opening remains. This is the setting to use when the light is very strong, as on the beach or water, for obviously only a comparatively few rays of the brilliant light need be admitted to the film.

The figures 3.5, 4.5, etc., are termed "stops," and would be preceded by the letter "F" if space permitted. As you turn back, now, from F 16 to F 3.5, each stop admits twice as much light as the preceding one. F 11 admits twice as much as F 16, F 8 twice as much as F 11, and so on. (An exception is that F 4.5 is an intermediate stop admitting only 50% more light than F 5.5. F 3.5 admits 2 1/2 times as much light as 5.5 does.)

Remember that the larger the stop figure, the smaller the opening of the iris diaphragm. It's an inverse proposition—that is the thing to remember. This will make it clearer. F 16 means that the diaphragm opening is 1/2 the focal length of the lens, F 8 that the opening is 1/4 of the focal length, etc. Figure 4 shows the relative sizes of the diaphragm openings at each of the stop settings, and helps toward getting a mental picture of what goes on as you turn the control ring.

The question of which stop to use for any particular scene and light condition is well answered by the exposure chart supplied with each Filmo Camera. A reliable exposure meter, such as the B & H Photometer, is an even better means of determining which stop to use, or, in other words, how much exposure to give.

Figure 2 shows the focusing scale at the front of the 1 inch F 3.5 focusing mount lens, a lens which many choose with their Filmos rather than the universal focus lens. The latter should not be used for subjects closer than 10 feet because it will not record them in sharp focus. The focusing mount lens may be set for these small distances and thus used for taking close-ups—people's faces alone, for instance. Setting the focusing scale correctly is merely a matter of measuring or estimating the distance from camera head to subject, then turning the focusing ring until the figure indicating the distance in feet falls opposite the white index mark just inside the focusing ring. In Figure 2 the lens is set for the shortest working distance—one foot.

Since much of the quality of your pictures will depend upon the correct setting of the lens, it will pay you well to understand that lens thoroughly and be careful to set it properly for each scene.
**Suggestions to Kodacolor Users**

Getting the best results in the natural color films you take with your Filmo this summer

With the vacation season almost upon us, and with many of us planning to take Kodacolor movies on our summer holiday, it seems appropriate to devote some thought to this increasingly popular division of Filmo work. Wherever and however we spend our vacations, movies in full natural color will probably give us far more vivid records of what we see and do than movies in black and white. This is only logical, for color contributes so much to the appeal of scenic beauty and to summer activities of all kinds. If you are sceptical, film a few scenes both in Kodacolor and in black and white, and let this chart help you in choosing color combinations for your Kodacolor scenes. Contrasting colors are at opposite ends of the diameters. Harmonizing colors are adjacent on the circumference. Other harmonizing colors are those produced by lightening or greying the raw colors—thus buff harmonizes with orange.

Bryce Canyon—a sun-splashed gorge of weird pink, buff, and white rock formations—provides beautiful scenes for the Kodacolor equipped Filmo.

Perhaps you will tour the southwest this summer. What a subject for color movies is the Grand Canyon, and Bryce and Zion Canyons! Here nature has outdone herself in setting the stage for your Kodacolor-equipped Filmo. Then you'll visit the pueblo villages and find more colorful subjects among the Indians and their dwellings. And you'll find Kodacolor film well used at dude ranch or mountain lodge, at lakeshore camp or seaside hotel, in the north woods or on a lake cruise. The friends you make will best be remembered if filmed in color. Color movies of the children as they thrill at each new sight will have all that you could ask in realism.

Last month, in the article "Taking Kodacolor Movies," we dealt with the technique of Kodacolor work in so far as the equipment and its manipulation is concerned. So we won't go thoroughly into that again. If you will follow the simple instructions which accompany every Kodacolor filter set you'll get results. However, this will bear repeating, for it is most important. Be sure that each Kodacolor shot is lighted brilliantly enough to make it successful. Measuring the light with your B & H Photometer is the safest and surest practice. If the meter reads F 5.6, set your Filmo 70 to run at half (8) speed, as that doubles the...
Colors complementary to the primaries are shown by the color chart on the opposite side of the circle. This also applies to the intermediate colors, shown by green lines, and their complementaries. Complementary colors provide color contrast. Powerful, striking effects are obtained by selecting scenes with large masses of complementary colors in juxtaposition. Tropical scenery is typical of this type. Equally beautiful though perhaps less striking scenes may be obtained by using harmonious colors, which are indicated adjacent to each other on the circumference of the chart. For instance, where yellow is predominant, combine with it the harmonizing colors, orange or yellow-green.

Also, by subdued the colors with grey, the same principles of color contrast can be employed, though in a less striking manner. The amount of "greyness" in a color gives what may be considered as the colored equivalent of the half tones in a black and white picture. Such subdued colors are valuable as supporting colors to the main color theme. As a general rule, the more vivid colors reproduce best in Kodacolor, but exquisite pastel effects can also be obtained. The Grand Canyon on a slightly hazy day is a Kodacolor subject of the latter kind.

Many find it wise to have two Filmo cameras — one for Kodacolor, one for black and white pictures. Then shots in either can be made at a moment's notice.

The blue green of the sea, with white nesting gannets against a grey-brown cliff—Quebec's coast offers this Kodacolor subject.

exposure time. If it reads F 8 or F 11, use normal (16) speed; F 16 to F 22, neutral density filter No. 1; F 22 or beyond, neutral density filter No. 2. If your camera is a Filmo 75, the light must be such as to give a reading of F 11 or F 16. Use neutral density filter No. 1 only when the meter reads F 22 or beyond.

To care in exposure regulation add careful focusing of the lens for the distance of the principal subject from the camera, and the lens, filter, film, and camera will do the rest. To focus for Kodacolor with the Filmo 70-DA Camera's Critical Focuser or with the Filmo Focusing Microscope, the left and right of the focusing device will be unsharp. When focusing, note that the left side is your left and the right side is your right. The left side will be called the near side, and the right the far side. To focus, focus with your left eye and adjust the diopter wheel (on the left side) with your right hand. If you are not aware of this, you may find your shots inconspicuous. Do not let this happen.

By focusing correctly, you will ensure a sharp and distinct image on the screen of the film. This is essential to the success of your shots.

Avoid deep, dark shadows on your Kodacolor subjects. They'll record as black masses void of detail. Avoid the darker olive greens. To these colors the film is not quite so sensitive as to the others. Broad masses of color record better than fine details, due to the fact that the image is laid on the film in bands, each representing a color, by the minute cylindrical lenses which are embossed upon the film itself. Take close-ups of a few small flowers, for instance, rather than long shots of a mass of them. Close-ups are more interesting than long shots, generally speaking, by any film process, and should usually be used at least to supplement long shots. Follow your long shots by close-ups of their faces.

When a choice is possible, Kodacolor pictures can be made more beautiful by using care in color selection, combination, and arrangement in the picture area. This can often be done by discriminating selection from the available subject matter and background, striving for good color harmony or color contrast. Nature uses her myriad colors with such consummate taste that you need only choose the scenes which please you most, and select a viewpoint from which your lens will include the desired area. But in this selection from nature, in as choosing colors for subjects over which you have more control, some knowledge of color relations is helpful even to one who has inherently good artistic taste. The accompanying chart provides a very convenient guide in selecting pleasing, tasteful color combinations.

The three primary colors, red, blue, and yellow, are shown by the heavy black lines on the chart. The three colors on your Kodacolor filter are red, blue, and green, as these are the plus primaries with which color by transmission is concerned. However, color in your Kodacolor pictures as they are reflected from the screen is best considered from the basis of the minus primaries, red, blue, and yellow, just as are the colors in painting, interior decorating, and other arts.
Titling Your Films

No. 9. Moving Picture Backgrounds

Here are the contributions on making titles with moving picture backgrounds which we promised last month to give you in this June issue. And this article, without any doubt about it this time, will conclude the series. But we'll go into the subject of titles again next autumn and those whose ideas have not yet been published will have their day then. We've a fine collection of material to begin using in October, thanks to you.

E. J. Andell, Chicago, has hit upon a simple but effective way of getting moving picture backgrounds in his titles. He spells out the desired lettering with white gummed letters on the plate glass door of his car, maneuvers the car into position to get the desired view, opens the door and shoots through it. The lens is first focused on the letters, then slowly readjusted to bring the view beyond into sharp focus. This is a good one to try out now, and if you like the effect you can no doubt use the plan many times on your vacation tour this summer.

From Edward S. Weyl, Philadelphia, comes an interesting explanation of another motion picture background title making method which, while not so simple as Mr. Andell's, provides a great deal more latitude and permits doing the title filming long after the background has been shot. Mr. Weyl's method consists of copying a scene with his Filmo Camera as it is projected upon a lettered title card. He explains the technique as follows:

"Select from your finished films a scene which in its composition, tone, and length is suitable to the title which you wish to make. Set up your Character Title Writer. At a slightly higher level and a little to the left or right of the camera, at a distance just a little more than twice the distance of the camera from the title card holder, set up your projector, using the standard 2-inch projection lens. Insert a blank white card in the title card holder. Without photographing, first project the selected scene upon this card. The frame will be slightly larger than the frame of the picture which will finally be photographed. Be sure the camera is not casting a shadow upon the card. Determine in what part of the projected scene you are going to place the words of the title. Project the scene again without photographing, this time indicating with light pencil marks on the white card, while you are projecting, the limits within which you are going to confine your title words.

"Then remove the card and letter your title in the space which you have determined, using dead black India ink. Erase the pencil marks and reinsert the card. Project the scene again without photographing to make certain that the title is in the right place and, at the same time determine with your Photometer the proper exposure. Calculate your exposure for the background, not for the title letters. Then project the scene a final time, this time photographing as you project. Needless to say you do not use the lights of the Title Writer, the reflectors being folded down and your sole source of illumination being the projector. The irregular shape of the frame of the projected picture and the slight disproportion caused by the projector's being slightly off center will not be visible in the finished title."

Figure 1 is a title made by Mr. Weyl as explained above. The background scene was taken from the bow of a moving canoe. Figure 2 was made in very much the same way, the only difference being that the "moonlight" scene was projected upon a black title card, white lettered. "Another interesting method of making a title on a motion picture background," continues Mr. Weyl, "is to set up the camera and projector on opposite sides of a thin piece of ground glass, the projector again being a little more than twice as far from the glass as the camera. The smooth side of the glass should face the camera. The scene is projected and focused against the rough side of the ground glass and will be clearly visible on the camera side. Black gummed letters are pasted on the smooth side to form the title and the camera is focused to photograph the letters sharply. As in the previous method you photograph while you project. The result is a sharp title set off from an artistic, hazy, luminous background which has an attractive central lens flare. Great care must be exercised in centering the camera on the projected scene. If the distance between the camera and the smooth side of the ground glass is the same as the fixed distance employed in the Title Writer the Title Writer finder prism can be used."

There are other applications of this method of getting double exposure effects, according to Mr. Weyl. He describes one such application as follows: "Two halves of a menu are held together in the hands of two canoeists in the woods. The men are reminded of an earlier trip when the man who sent the menu had been with them. Their recollection of him lustily eating chicken was projected upon the menu card."

Although we are dropping the subject of title making for the summer months, write to tell us about your methods, for we'll want to publish them next autumn.
X-RAY YOUR GOLF STROKE

FORD HICKS

HAVE you ever had your golf strokes x-rayed? Well, possibly not “x-rayed,” but rather submitted to the acid test of analysis by means of the slow-motion movie camera.

Many golf players now-a-days are improving their game by the motion-picture method. Even Bobby Jones, we are told, has movies made of his strokes, and studies the pictures in order to catch possible imperfections. When Bobby was in England last year the Prince of Wales used his own Filmo Camera to “shoot” the Georgian as he played. Incidentally, it might interest you to know that Bobby himself is a Filmo owner.

The point is that a new method of teaching and learning the ancient and honorable game of golf has arrived—the movie method. This new method, besides winning the commendation of thousands of players, has been unqualifiedly endorsed by the Professional Golfers’ Association of America, composed of the best golf instructors in this country. The movie method aids the tyro and more advanced player as well.

When golf is taught via movies the motion picture camera is used to record every detail of your play in slow motion. The pictures are then studied and suggestions made to correct errors and to effect improvements. The slow motion feature makes it possible to follow every movement. Many times you will find that you were not playing the way you thought you were. The quickness of your play deceives the human eye, but it cannot elude the eye of the camera.

You can have pictures taken of your game and then study the plays yourself, or you can have your pro “diagnose” the case and advise what to do. Many pros are now equipped with Filmo Cameras to take pictures of their pupils in action. They throw these pictures on the screen and appraise the plays. Every single movement can be subjected to scrutiny and necessary curative methods prescribed. Progress in your game can be watched and traced in later pictures.

Also, as a sort of second-line auxiliary in the golf-by-movies idea, slow-motion film studies of golf stars can be projected and studied by the aspirant who wants to see how the big ones do it. The Filmo Library has a fine selection of such films, including several 16 mm. “talkies,” one of which presents interesting shots of Bobby Jones.

The movies of golf plays for diagnostic purposes are taken at 64 or 128 frames per second, both of which speeds are available in Filmo Cameras, 64 speed in the Filmo 70-D and 128 speed in the special model 70-B, which operates at that speed only. If you, like so many Filmo Topics readers, have a Filmo 70-D you are ideally equipped for golf stroke analysis film making. George Sargent, the noted pro of the Scioto Country Club, Columbus, Ohio, who has been a prime factor in the motion picture golf instruction movement, uses a Filmo, as does Al Lesperance, the well-known pro of the Westmoreland Club, in suburban Chicago. So do many other leading professional instructors. Filmo’s dependable operation even at high speeds and the quality of the pictures it takes recommend it for producing golf pictures that tell the whole story. Many a player has cut his golf score substantially by the movie method and is still shaving it down. Get out your Filmo and have your stroke “x-rayed.”

Using Telephoto Lenses

TELEPHOTO lenses do for your Filmo what binoculars do for your eyes. A four inch telephoto, for instance, will give you as big a picture of a subject at 100 feet as the regular one inch lens will at 25 feet. You’ll probably want larger pictures of many distant subjects on your vacation this year. Add a telephoto lens or two to your equipment and you needn’t pass up desirable distant subjects.

To avoid jumpy pictures, it is best to use a tripod when shooting with a telephoto, though some people, the gentleman at the right for instance, can hold the camera steadily enough for the shorter telephotos. The clearer the air the snappier telephoto shots will be. Use a color filter—it will help offset the flattening effect of atmospheric haze. Side lighting gives better depth and relief in telephoto work than front or back lighting. Guard against overexposure. It is fatal in telephoto work. If in doubt, err on the side of under exposure. Better, use your Photometer and get the exposure just right.

Bill Frey of the Johnson Motor Co. using his Filmo 70 Camera with 3 3/4 inch F 3.3 telephoto lens to film an outboard motorboat race
**Filmo Projector's Cooling System**

No. 17 of the "Facts About Filmo" Series, explaining how air helps you project pictures

R. Fawn Mitchell

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**Figure 1. Parts used in constructing the Filmo Projector fan, and the completed fan**

**Figure 2. Perforated screen safety shutter in position to protect the film while it is stopped or moving very slowly**

**Figure 3 (right). Showing the path of the air blast which automatically controls the action of the safety shutter**

The Filmo was the first projector to have a cooling system incorporated as an integral part of the machine. It still has the most efficient system of any projector—35 mm. or 16 mm. Why should a cooling system be so important? The question is readily answered.

First, the lamp used is necessarily operated at a very high temperature to get the utmost in illumination. Naturally this calls for some cooling, especially when considering the new 375-watt mazda lamp, which generates so much heat that it can only be used in a projector equipped with a highly efficient cooling system.

Second, consider the heat at the aperture. Ordinarily the film moves so fast past this point that the heat has little chance to affect it. Suppose, however, that we want to hold one frame at the aperture to project it as a "still" picture or to enlarge it with a Filmo Enlarger. If it were not for the blast of cool air directed against the film stopping would be impossible even with the old 200-watt lamp, and even more so with the 250- or 375-watt lamp.

Even with the cool air blast, the heat would cause sufficient bulging of the film at the aperture when the Filmo Enlarger is used to cause the image to be slightly out of focus. Then too, need for an extra film protective device comes from the fact that the projector may sometimes be braked down to too slow a speed to permit the air blast alone to provide sufficient cooling. These problems are solved by an exclusive type of perforated screen safety shutter which intercepts part of the light and heat until automatically lifted when the proper operating speed is reached.

The heart of the Filmo Projector cooling system is a fan—a fan which must be quiet and which must function as well when running backward as when running forward. Figure 1 shows the essential parts of this fan. A strip of aluminum (A) is "crimped" as shown (B) and then fastened between two end plates (C), as shown at D. Special machinery, designed and constructed by the Bell & Howell Engineering Laboratories, is required both to make the parts and to assemble them. In our last article we pointed out that all fans are balanced on the particular armature on which they are to be mounted. If this were not done the motor would vibrate and make an objectionable noise, to say nothing of the loss of efficiency and extra wear on the machine. The balanced fan assembly complete with armature is shown at E.
Now let us follow the blast of air after it has been generated by the fan. Figure 2 shows the fan housing and the baffles F and G. Baffle F directs the air downward and baffle G concentrates it at the aperture. Here the air blast separates.

The lesser blast forces the safety shutter up to the top of the casting and then escapes through the slot H at the top. From there it travels through the slot K, Figure 3, down L and out at the hole M. Note that this hole is only uncovered when the clutch lever is forward in the engaged position. This is how the safety shutter is controlled automatically. When the clutch lever is pushed back, the hole M is covered so that the air cannot escape through it. Under this condition the safety shutter falls and covers the aperture, protecting the film. Before leaving this phase of the machine operation, attention is directed to the clip N and guide button O, Figure 3, which hold the clutch lever tight against the side of the projector and facilitate the safety shutter action just described.

The safety shutter can be raised clear of the aperture, when the clutch is disengaged, by pressing on the safety shutter control button I, Figure 2. This action releases air through the top of the safety shutter housing, giving the air blast the outlet it must have in order to raise the safety shutter. It is only safe to do this when the lower powered 75-75 or 75-50 condenser is in the machine or, in the case of the variable resistance models, when the resistance lever is fully retarded. This feature is useful when making enlargements with the Filmo Enlarger and for showing still pictures on the screen. All this is done with the smaller portion of the divided air blast.

The main air blast is directed against the condenser and lamp and then travels up the lamphouse and out through the perforations in the top of this unit, cooling the resistance in its passage. At the same time a current of air is directed against the film at the aperture, keeping it as cool as possible and thus exercising a definite influence on its condition and life.

When threading your Filmo Projector, avoid using a loop longer than that specified in the instruction book. If the loop is excessively long the film edges will rub against the reels. Furthermore, too large an upper loop may cause splices to catch on the top edge of the aperture plate and thus be pulled apart.

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**Seasonable Hints**

**Before** shouldering your Filmo outfit and departing on your vacation, see that every piece of equipment is in first class shape. The pictures you will take are important, and a few advance preparations made now will be worthwhile insurance of good results.

Give your camera a good oiling, following the directions given in the instruction book. At the same time clean out any dust or foreign matter which may have accumulated in the film chamber and around the sprockets and film gate. See that the aperture plate and back plate are free from adhering emulsion or dirt. Wipe these polished surfaces carefully with a soft cloth, moistening it with alcohol if necessary. Your dealer will be glad to do these things for you.

Clean and polish all your lenses and color filters, using the especially prepared cleaning materials supplied in the B & H Lens Cleaning Kit ($1.50 at your dealer's). Clear, sharp pictures can only be taken through clean lenses and filters.

See your dealer before you leave town. Tell him what sort of subjects you expect to film. Perhaps he can advise you on how to get the best pictures of them. Let him check over your equipment to see if an additional Filmo accessory or two would make it possible for you to take better advantage of the picture opportunities this summer will present to you.

So much for vacation preparations. Here is a suggestion that is of interest at any time of the year. Reading the item, "A Convenient Temporary Splice," in April Filmo Topics, John S. Driver, Santa Barbara, California, wrote to tell of how he has been making temporary splices while projecting films. On a short strip of film caught under the paper belt on the Filmo Projector motor housing he keeps several paper clips of a kind called "The Vice Clip No. 1," available from any stationer. Separated film ends are overlapped and held together by one of these clips. Be sure not to project again without splicing and removing the clips.

Mr. Driver reports that he is one of the many who use two Filmo Cameras, one for Kodacolor, the other for black and white. This ever more popular plan is especially advantageous on vacations and travels, when each scene must be filmed as you come to it and when you can't wait to finish a reel of one kind of film in order to shoot the scene in the other kind. Filmo 75 with Cooke 1 inch F 1.8 lens and Kodacolor filter is an ideal second camera—and it's the lowest priced Kodacolor-equipped camera to be had!
Movie Treasure Hunts
(Continued from page three)
a vacation jaunt, he made a tour of some of the famous gardens of New England, recording with his motion picture camera this sequence of floral loveliness, shrub arrangement, and tree massing. The idea is suggestive.

Why not a tour of historic towns, with movies of the time-hallowed scenes and buildings? Or perhaps a centenary, a bi- or a tri-centennial is to be observed this summer, with pageants and out-of-door celebrations? Or what about a short visit to a great fruit farm, a unique industrial plant, a gigantic piece of construction, a lumber camp? The possibilities are endless.

Finally, let me tell of a film-sequence which proved to be both instructive and amusing. The reels comprise a series of scenes taken at a number of country clubs along a mapped-out route, the trip being planned so as to reach certain of them on days when a golf-shot exhibition was being given, in one case, and a tournament was being held, in another. It is needless to discuss the possibilities for worth-while pictures in such a Movie Treasure Hunt, but it is worth noting that excellent comedy relief was found in half a reel showing a dub foursome, whose antics in a sandtrap and on the rough were naturally funny enough to make burlesque needless. When this part of the film is run it is a "sure-fire" laugh, and when the film is reversed it's an uproar.

It is not necessary, of course, to devote an entire vacation to one type of picture, for a day or two may virtually exhaust a single subject. What is urged is the value of continuity—and of course that may be attained by cutting and splicing, when a time-sequence is lacking in the scene-taking.

However fortunate we may be in coming across vacation subjects worthy of filming, we are pretty sure to attain greater value and personal interest when we have put together, say, 100 feet on a single subject. After all, much of our Filmo fun comes from what our friends think of our pictures.

Take plenty of film with you on your vacation, especially if you are not positive that it can be obtained locally where you are going this summer.

Backward Boys
(Continued from page five)
ample. They start the day in a backward way. All they do seems wrong end to. In eating food they are extremely rude. Here's a trick in whittling a stick. They teach the sand to come to hand. Even going to school isn't done by rule.

It is well to plan the whole story first and write down all the different scenes in the order they should be taken, that is, in the reverse of the order in which they will be shown. This will simplify the editing and avoid many splices.

"Backward Boys" literally "appeals to old and young," and it is surprising to see how it puzzles even adults. One evening after we had shown the picture and had explained the method used, a friend who is considered to have a very keen mind said, "I understand all that, but what I can't understand is how you got the dog to run backward!"

Robert Kurz, Zofingen, Switzerland, wrote to tell how he produces fade-in and fade-out effects when his Filmo Isis Vignette is not at hand. To produce a fade-in he places a fingertip over the sunshade, starts the camera, and slides the finger gradually down until the lens is entirely uncovered. A fade-out at the end of a scene is accomplished by reversing the procedure.

Lost Equipment
Filmo 70-D Camera
No. 59292—John M. Wilson, Pittsburgh.

Filmo 75 Cameras
No. 43155—Filmo Co. of Central Europe, Zurich, Switzerland.
No. 46294—Mrs. Lois Dean, 12 Dobbs Terrace, Scarsdale, New York.
No. 47761—John R. Sharp, 485 Broad Ave., Leona, New Jersey.
No. 49240—D. R. Demaree, Reading, Pa. Lost at Havre de Grace, Md.

Eyemo Camera
No. 1534—in special case with the following Cooke lenses: 47 mm. F 2.5 No. 135285, 33/4" F 3.3 No. 135155, 6" F 4.5 No. 149091, and 8½" F 5.6 No. 129400, C. P. Grant, Field Museum, Chicago.

Filmo Projector
No. 51132—Ontario Motion Picture Bureau, Parliament Bldg., Toronto, Ontario, Canada.

Questions and Answers
Conducted by
R. F. W O N T H I C H E L

Q. How can moonlight effects and night scenes be produced?
A. Splendid moonlight effects can be produced by shooting toward a low sun, using a 4x filter and stopping the lens down two stops below normal.

Q. Can additional prints or negatives be made from Kodakolor film?
A. No, because of the small lenses embossed upon the back of the film and the nature of the image behind each of those lenses.

Q. Can Kodakolor film be projected as black and white pictures?
A. Yes, but the small lens embossings will appear in the form of vertical lines in the picture.

Q. My hand splicer makes excellent splices on all of my film except on one reel; on this, the splices will not hold at all.
A. The trouble that you are experiencing is probably due to the one reel being exceptionally dry. Film as dry as this should be put in a humidifier can for several days before being used as there is much danger of it chipping and breaking in the projector. Humidifying will also make it splice better. It is possible to splice dry film, but you must allow a few more minutes for the cement to soften the celluloid sufficiently to make a firm weld.

Q. How can my film be dyed?
A. Most laboratories are equipped to do this work, but the Filmo Selective Color Screen would probably add the desired color at less expense and also permit viewing the same scene in different colors if desired.

Q. How can single frames be exposed?
A. Single frames are best exposed by using speed 8 and exerting a series of quick, light taps on the starting button.

Q. Why is a fast lens, such as the F 1.5 or F 1.8, not so satisfactory at F 3.5 as a regular F 3.2 lens—in other words, why have two lenses of the same focal length?
A. A very fast lens, having a larger area of glass, has a tendency to produce internal reflections when stopped down, causing halo or flare in the picture.
41%* More Light

with the

Filmo 57-GG

375 Watt Projector

*Actual photo-electric cell tests in Bell & Howell Laboratories show that the new Filmo 375-watt lamp emits 41% more light than 250 watt systems.

The new Filmo 57-GG 375 Watt Projector recently cast a 16-foot screen image ninety feet from the booth to the stage of Orchestra Hall, Chicago. The picture was clear and brilliant from every seat. Think what this startling illumination can do for your Kodacolor pictures, giving not only new brilliance but also permitting longer projection distance and larger screen images. For your black and white films, the difference is even more striking. Write for folder. Bell & Howell Co., 1842 Larchmont Ave., Chicago, Illinois.

Cooke F 1.8 Lens for Kodacolor

This specially corrected Cooke 1-inch F 1.8 speed lens comes completely equipped for Kodacolor at the new low price of $75. Without Kodacolor filters, $60. Special models for Filmo 15 and Filmo 70-A or Filmo 70-D. As excellent for black and white work as for Kodacolor.

B & H All Metal Tripod

Sturdy tubular legs of adjustable length. Tilt and pan mechanisms may be used jointly or separately. Tripod, $96; case, $12.50.

B & H Photometer

Laboratory method of light measurement gives you this scientific exposure meter. Model A for Filmo Cameras. Model B for "still" cameras. Each $17.50; case, $2.50.

B & H Focusing Alignment Gauge

For precision photography, titles, etc. Sliding bed moves viewfinder and Critical Focuser over to aperture position for exact centering, $21.
NOW.. A NEW LOW PRICE for the famous Filmo 70-A
the original automatic personal movie camera

$140
with 1-inch F 3.5 lens

The camera that first brought the world its own personal movies as we know them today has now been reduced in price to $140. We believe that, without question, the Filmo 70-A enjoys more prominence and popularity among movie makers than any other movie camera made. And with its new low price, it is one of those values that one cannot afford to miss.

With its advanced 216° shutter, its 8- and 16-frame film speeds, and the ready interchangeability of its lenses, Filmo 70-A provides the all-round flexibility and dependability which good personal movies demand.

Equipped for Kodacolor

The added exposure-time made possible by its unique shutter and its 8-frame film speed makes the Filmo 70-A a perfect camera for Kodacolor. Equipped complete with Cooke 1-inch F 1.8 lens and Kodacolor filters, the Filmo 70-A now costs but $190; without Kodacolor filters, $175; Kodacolor filters alone, $15; Kodacolor projection lens assembly for Filmo 57 Projector, $35.

You've been thinking "Filmo" for a long time. Now is your opportunity to make that dream come true. Drop into a Filmo dealer's today and ask for a demonstration. Bell & Howell Co., 1842 Larchmont Ave., Chicago, Ill., New York, Hollywood, London (B & H Co., Ltd.) Established 1907.
This new Cooke 15 mm. F. 2.5 universal focus lens is an ideal wide angle lens for indoor shots, narrow streets, and cramped quarters. Excellent for close-ups of large objects—a necessity to the traveler. Even when wide open, gives sharp focus for everything five feet and beyond. The only lens of its focal length that can be used on the Filmo 70-D turret without unscrewing to turn turret. Price $45.

Diagram indicates the wide-angle included by the new 15 mm. lens. At 100 feet, the field is 67 feet wide as compared to the 40-foot field of the regular 25 mm. lens.

Cooke Telephoto Lens and Color Filters

Long distance photography is practical only with such finely made lenses as Cooke telephotos. Available in sizes from the 2-inch F 3.5 at $60 to the 6-inch F 4.5 at $95. Genuine glass color filters for these and other Cooke lenses make wonderful improvement in photographic quality. In uniform or graduated style, $2.50 and up. Send for Filmo lens and filter literature describing the complete and varied equipment available for helping you make the most of your movies.

Cooke F 1.8 Speed Lens and Kodacolor Filters

Precision requirements for Kodacolor movies are admirably met with the specially corrected Cooke 1-inch F 1.8 speed lens and Kodacolor filters for Filmo Cameras. A special compact model of this lens and of Kodacolor filters is made for the Filmo 75. The F 1.8 is one of the finest speed lenses ever made for black and white work. $60 for lens alone; $15 for Kodacolor filters.

Filmo Remote Control

Pressing of a bulb starts and stops Filmo 70 Cameras ten or more feet away. Used in wild life films and shots from dangerous spots, and particularly for movies of yourself by yourself. Many other uses. Complete with 10 feet of tubing. $1.50.

Bell & Howell Filmo

ON THE TYRANNY OF ONE'S ELDERS

The story of an infant's revenge

I HAVE been reading "The Human Mind." Outside the fact that it has a pretty green cloth cover (the book, I mean) I'm still a little hazy about what's to be done about it. It seems, at any rate, that as a man thinketh, so is he not, depending on what happened on the Tuesday morning following his fifth Christmas. Suffice to say that I am still hunting for the clew to my character—the one thing or combination of things that causes my inability to see with my eyes shut, and my hatred of checks with the funny little "N.S.F." signs on them, and the reason I never liked Aunt Mary or the Minister's Wife.

As I probe the dim dead past, I am conscious, at any rate, of one outstanding episode which I have traced as the direct cause of the events I am about to relate. The history of the case is briefly stated: Aunt Mary once told my mother that I was homely, and the Minister's Wife once told me that I could never be a Boy Scout because I was stoop-shouldered. Now, I am a fair-minded human being. What if I were homely; what if I were stoop-shouldered; how does that affect the course of nations? And, what is more, there never was a more homely aunt than my Aunt Mary, and no minister ever had such a stoop-shouldered wife as had this particular minister.

Well, a couple of weeks ago, Aunt Mary and the Minister's Wife stopped in for a few hours' visit on their way to some kind of convention. I'd been making the monthly movie record of the baby, and was pretty well done up. Fifty feet of action so far you needed a 128-speed Filmo to catch it. I did get some at 64 frames at that. Well, in came these two delightful (bah!) old ladies, and after fussing over the baby, getting him all jazzed up and cross, they wanted their pictures taken. And, boy, did I give them the works!

First, I had them galumphing up and down and all over the lot in the most unladylike postures you could imagine. Then I slipped a Filmo Modifier on the lens and started pulling them all out of shape like India rubber dolls. Honestly, I would have died laughing right there if I hadn't wanted to live to see the films on the screen.

"They went at it like camels . . . ."

Then, after that riot, I shot some scenes of Aunt Mary admiring the roses and the Minister's Wife admiring Aunt Mary, and the two of them admiring the fine cut glass (Kresge) of the wine goblets. Pointing to the sky, as if seeing an airplaine, I also got them to look up toward the sun. On pretense of reloading my camera, I went in and told the wife to bring them out a drink of the grape juice she was just canning. They went at it like camels after a year in the desert. And I got it all in the movie, close-ups and all.

After this series, I slipped a Filmo Duplicator on my lens and caught straight shots

(Continued on page eight)
Plots For Child Movies

Some ideas to help you produce films of the youngsters which everyone will enjoy

Marion Norris Gleason

Vacation days are here and with them comes the ideal opportunity for making the photoplay you have promised the children. The days are long, the weather good, and the children are all too ready with the question “What shall we do now?” With your Filmo Camera in hand and some idea of a scenario in mind you can answer that question to the complete satisfaction of everyone concerned, for motion picture theatricals have all the fun and excitement of the old-fashioned penny barn show, plus the thrill of novelty and the great value of permanence.

The “Filmo in hand” you probably have, but the “scenario in mind” seems to be a rarer possession. The professional screen must be to blame for the general idea among amateurs that they need an elaborate story and plot before they can attempt a motion picture production. This is a pity, for amateur photoplays can be as casual and spontaneous as a parlor charade and involve very little more work or thought.

If you wish to make your children’s picture for the amusement of the family, and have no particular artistic aspirations, you can do no better than to let the youngsters work out their own story and produce their own play, with your assistance as photographer and general advisor. The finished picture will not measure up to professional standards of beauty or perfection, but you can be assured that the results will be original, amusing, and wholly satisfactory to the producers. The children’s imaginations will help them to overlook any discrepancies in the story and will transform impromptu costumes and properties into any necessary style or shape. So let them work out these details themselves, no matter how naive and absurd their ideas may be.

Of course not all children have the creative and organizing ability to put through even a very impromptu and crude motion picture production. If your youngsters are not given to “putting on shows” you will have to help them with the story idea as well as the production. Grown-up interference will mean that you cannot have quite as casual a picture. The scenario will have to be logical and care-fully worked out, and the scene sequences of the picture thoughtfully planned, and, if possible, rehearsed.

If you want to use original plot ideas the easiest plan is to watch for and utilize dramatic material the children will unconsciously supply. A doll’s tea party your little girls are having can be turned into a juvenile melodrama of kidnapping and rescue, in which you can use your neighbors’ boys, a toy auto, and perhaps the family dog, if he can be trusted to retrieve the kidnapped doll without injuring it.

A group of children playing Indians in their Indian suits can be called into the cast of a picture of pioneer days, in which the white men and women are victorious in a battle against their red foes. Your son’s Christmas aviator’s uniform and toy airplane can be put to valuable use in a film if you will splice into the finished picture a few shots of a real plane in the sky. For plot you might have the villain and the kidnapped sweetheart overtaken by the aviator who rides through the sky to her rescue. The villain can even make use of the pirate’s costume he wore at his last party, and when you produce a picture in which the heroine is rescued from a pirate by an aviator you will have a film that will rank with “Our Gang.”
Children’s pageants provide good film fare, particularly when your own boys or girls participate. Mrs. James K. Cassedy, Drexel Hill, Pa., filming the May Queen, Esther Owen, at Upper Darby High School near Philadelphia.

comedies in popularity with your own family.

The children’s dog provided a character around which you can build several plots. There is always the lost or injured hero or heroine to be found by the faithful animal, who calls the family just in time to save the precious life. And it is surprising what a number of things a dog can appear to be doing in a film providing he has received ordinary training. If he will come when called, sit down, lie down, and bark at a command you will have an actor that will rival Rin Tin Tin in the family’s estimation. It takes a little planning in advance to decide just when and where you should call the dog to make him run and look in the right direction, but it is well worth the trouble it takes. “Old Mother Hubbard” makes an excellent picture if you have a dog who will sit up and beg. He will even paw at the door of the empty cupboard if he knows you have put a choice bit of food in there for him. A police dog makes an ideal wolf for “Red Riding Hood,” and the nursery rhyme about the little old woman whose dog doesn’t recognize her after the wicked peddler has “cut off her petticoat all round about,” makes a charming story basis for a picture of a little girl and her terrier.

Many of the nursery rhymes furnish the plot idea for very simple children’s pictures. The youngsters always enjoy Little Boy Blue with his horn, Little Miss Muffet and her home-made spider, Jack and his candle-stick, and Simple Simon and his pail. The more involved fairy stories and folk tales also can provide you with plenty of scenario ideas with which the children are familiar and which are comparatively easy to produce. Such pictures can be made best in summer vacation environments where you can find ready made sets for almost any fairy tale dramatization: woods for Little Red Riding Hood to walk through with her wolf, a quaint cabin for the grandmother’s house, and possibly real wood cutters who will come to her rescue. Hansel and Gretel can fill their baskets with real strawberries, and no set in Hollywood could provide a better cottage for the witch to hide in than they will find in the woods.

The story of Rip Van Winkle is very good for a summer vacation film where a larger group of children can be used, and the family dog will have his chance again to star in this story too.

In a number of these fairy tale dramatizations for children’s movies you can use the very simple trick of stopping the camera while any changes in costume, cast, or properties are made, and when the finished film is run off the change appears instantaneous. The fairy godmother can appear and disappear in a flash, while Cinderella can change from rags to a ball dress at a wave of the godmother’s wand. Children delight in this photographic magic, and it is so very easy to accomplish that it is worth while to hunt for stories in which it can be used. The camera must be on a tripod so that its position will be exactly the same when it is started again. Actors and objects which remain in the picture during the camera stop should hold their positions to avoid a break or jump which would tend to destroy the illusion of magic.

If your children delight in “putting on shows” they will unconsciously provide you with many movie subjects.
WHEN THE PRINCE TRAVELS IN A LINER:

The Prince of Wales entertaining his fellow-passengers on the "Oropesa," the cinematograph film he took while in Africa, is reproduced below, with his brother Prince George, who has Master Dodero, son of one of the passengers, on his knee.

WHEN he travels in a liner, it is the Prince of Wales’s request that there shall be as little formality as possible. He prefers, in fact, to be treated as an ordinary passenger. His wishes were, of course, observed in the case of his South American tour—when he was in the "Oropesa," with Prince George, at the beginning of the journey, and when he was in the "Ar lanza," in which he traveled with his brother from Rio de Janeiro to Lisbon on the return home. Not only were the Princes "ordinary passengers" in the sense they desired; but, being such passengers, they were able to indulge to the full in the usual amenities of the voyage; dancing with the rest, playing golf aboard, and so forth.

In addition, the Prince of Wales, thinking that his fellow-travelers might be amused, volunteered to give them a cinematograph show, and brought out his own Filmo Projector, in order that he might act as operator and exhibit the moving picture he took during that African tour from which he returned post-haste, owing to the illness of his father, the King. The occasion, it need hardly be said, was a great success, for "An Amateur Photographer in Africa," as the Prince calls his film, presents a fine series of "movies" of elephants, lions, rhinos, hippos, and other big game in the wild, a series which bears eloquent witness to his Royal Highness’s skill and intrepidity. Further, let it be added that the showing of the film occupied the Prince for over an hour and a half.

It may be recalled in this connection that his Royal Highness has exhibited it before—to some eight hundred men of the Kennington and North Lambeth branch of the Post-War Brotherhood and of other branches outside London—although he did not then act as operator, contenting himself with a little speech in which he expressed pleasure that his audience had appreciated the film, and added: "As a matter of fact—I say it who shouldn’t—I quite enjoyed seeing it again myself."

In our drawing the Prince is at the projector. Seated on his left is his brother, Prince George, who has Master Dodero, son of one of the passengers, on his knee,
R. H. AS A CINEMATOGRAPH OPERATOR

deck; H. R. H. exhibiting his moving picture, "An Amateur
elephants, lions, and other wild beasts with the camera
Drawing made on the R. M. S. P. Liner "Arlanza" by Bryan de Grineau.
WHEN THE PRINCE TRAVELS IN A LINER: H. R. H. AS A CINEMATOGRAPH OPERATOR

The Prince of Wales entertaining his fellow-passengers on the promenade deck, H. R. H. exhibiting his moving picture, "An Amateur Photographer in Africa," the cinematograph film he took, while on his travels in Africa, treating elephants, lions, and other wild beasts with the camera.

This entire page reproduced by permission from The Illustrated London News. Drawing made on the R. M. S. Liner "Arlington" by Bryan de Grèneau.
Why, When, and How to Use Color Filters

When we look upon a person, an object, or a scene, we see it in all its attributes of form and color. When the camera lens replaces the eye, it also sees, if we may be permitted to use this expression, that person, object, or scene in its attributes of form and color, and the image formed by the lens is a true reproduction, although reduced in size.

The photographic film, however, has only the property of registering the image in its attribute of form. The colors of the subject are rendered photographically as shades of gray which vary in density according to the action that the different colored rays have upon the sensitive film emulsion.

Of all the colors which exist in Nature, yellow appears most brilliant to the eye, while the green, blue, and violet on one side and the orange and red on the other lose brilliance according to their distance in the band or spectrum from yellow. A closer investigation proves that the impression given the eye by the orange and red colors is somewhat more vivid than that given by the green and blue colors on the opposite end of the band.

A perfect black and white photographic reproduction of a colored object should show the same relations of brilliance as are seen by the eye. But photographic emulsions do not reproduce the different colors with the same brilliance that the eye sees them. The so-called ordinary emulsions are very little sensitive to the yellow colors and not at all sensitive to the oranges and reds. On the other hand, the violets and blues have the greatest effect upon such emulsions. These ordinary emulsions are for this reason called "blue-sensitive" emulsions. They are very little used today.

By incorporating certain dyes into this blue-sensitive emulsion, its sensitivity to yellow is augmented. Film thus prepared is called "Orthochromatic," meaning that it gives a true rendition of colors. This appellation is, however, quite erroneous, since these films are not uniformly sensitive to all colors and do not register the reds. They also present a greater sensitivity to blues than that possessed by the human eye.

Later, other dyes were discovered by which photographic emulsions are made to respond also to the influence of the red colors. These emulsions are called "Panchromatic" and, effective this month, will be used almost exclusively in 16 mm. movie making.

In sensitiveness to colors, panchromatic emulsions show an increase for the yellows, oranges, and reds but their sensitiveness to the blues and violets remains unaltered and in excess of what it should be to give a photographic reproduction of colors truly corresponding to their effect upon the human eye.

It is therefore obvious that some means must be used to reduce the effects of the blue and violet colors. Color Filters provide that means.

As their name implies, the function of the color filters is to filter out the undesirable rays of light before they reach the photographic emulsion. Since the blue and violet rays are the offending ones, it is found helpful to interpose between the subject and the emulsion a material which is transparent to all the other color rays and yet lets pass through only a limited portion of the violet and blue rays. Some yellow dyes proved to be extremely effective in this respect. These dyes may be incorporated in glass during its melting, or mixed with a solution of gelatin and water.

The Bell & Howell Company recommends the use of glass filters since these present more stability and resistance to atmospheric conditions and are less subject to deterioration through handling.

It is quite essential that the use of color filters be thoroughly understood. Three main considerations are of paramount importance.

First, since the filter absorbs part of the light that comes to form an image on the film, the exposure must be increased by opening up the lens diaphragm or by using a slower shutter speed.

Second, since this absorption is limited to the violet and blue rays, the reduction in total volume of photographically valuable or "actinic" light is greater for the now practically obsolete Orthochromatic emulsion than for the Panchromatic, because the former is not so sensitive as the latter to the orange and red colors. In other words, under identical conditions...
and without a filter the violet and blue rays contribute a greater percentage of the total light energy to Orthochromatic than to Panchromatic film.

Third, with the same Panchromatic material, the necessary increase of exposure varies somewhat according to the quality of the light under which the subject is photographed.

Early in the morning the mist in the atmosphere gives a very pronounced bluish tint, especially to distant objects. A yellow filter will absorb a considerable amount of this blue light and will necessitate a greater exposure than would be necessary if we did not use a filter.

Late in the afternoon the condition is reversed. The light is very rich in orange and red radiations and since the filter does not intercept them the necessity of an increase in exposure is considerably less pronounced than in early morning.

It is customary for the manufacturer to express the necessary increase of exposure in terms of a “Filter Factor.” For instance, a filter will be called a two times filter or be said to have a “factor” of two if, under normal conditions, it requires twice the exposure that would be necessary to obtain a correctly exposed picture if the filter were not used.

Since variations of exposure in amateur motion picture cameras are controlled through the lens diaphragm, and since each diaphragm stop doubles the exposure resulting from the use of the next smaller stop, a two times filter will require that the lens be opened one stop as compared with the correct setting without a filter. Thus if our experience or exposure meter suggests that an exposure at F 11 would be correct for a certain subject, we would have to work at F 8 when using a two times filter and at F 5.5 when using a four times filter.

The glass filters which have been supplied by the Bell & Howell Company are classified by filter factors in reference to Orthochromatic film and since, as stated before, the absorption of light is more effective when using Orthochromatic than Panchromatic emulsions, the filter factor is somewhat reduced when the filters are used with Panchromatic film or with the new Supersensitive-Panchromatic film.

The Bell & Howell Company lists as standard color filters the following: Two times (2x); Four times (4x); Panchromatic (6x); Ramstein graduated filter, varying gradually from clear glass to a 3x maximum; Orthopan graduated filters, varying gradually from clear glass to a 4x maximum; the graduated filter of the B & H Combination Filter Set, varying from clear to a 6x maximum.

The following table indicates the exposure which these filters necessitate for Eastman Panchromatic and Supersensitive-Panchromatic 16 mm. film when a correct exposure without the use of any filter would be obtained at F 11.

<table>
<thead>
<tr>
<th>Film</th>
<th>No Filter</th>
<th>2x</th>
<th>3x</th>
<th>4x</th>
<th>Panchromatic Filter (6x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panchromatic</td>
<td>F 11</td>
<td>F 9</td>
<td>F 8.5</td>
<td>F 8</td>
<td>F 6.3</td>
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</table>

Note that a 2x filter, as rated for Orthochromatic film, becomes a 1.5x, the 3x a 1.75x, and the 4x a 2x when used with Panchromatic. The Panchromatic filter, which is a 6x when used with Orthochromatic film, becomes a 3x when used with Panchromatic. The stops of F 9, F 8.5, and F 6.3 are not usually to be found on amateur movie camera lenses, but a fair approximation of setting is sufficient.

The graduated filters are extremely useful when only a portion of the view presents an excess of blue light or a luminosity greatly in excess of the remainder of the scene. Consider, for example, the accompanying photographs. The foreground required more exposure than the clouds. Using the Ramstein graduated filter permitted fully exposing the foreground without overexposing the sky. This, coupled with the fact that the filter held back the blue light from the sky, making the blue record as grey, resulted in the beautifully realistic effect seen in the right hand photograph.

The graduated filters transmit all the light at the end which is of clear glass, and gradually increase in density and therefore in power of absorption until, at the other end, they become a 3x, 4x, or 6x filter (use 1/2 of these ratings with Panchromatic), as specified above the table. The setting of these filters must therefore be judged according to circumstances and according to the subject, and the exposure must ordinarily be increased according to your estimate of the minimum density of that portion of the filter which is over your lens.

"That's it, Joe! Keep him interested while I get the Filmo!"
of both of them just before they scrambled into the car. Then, when they had gone, I took shots, with the Duplicator, of the roses and goblets. And, through a piece of smoked glass, I shot into the sun.

Well, my friends, to say we had a movie show the next weekend is to say nothing at all. It pains me now to think of it—I regret that I couldn’t laugh more than I did—but you know how it is. When anything is just too darned funny, you just fold up!

The whole gang was there—Mother and Dad and Jim and Ed and Betty and Aunt Mary and, of course, the Minister and said Minister’s Wife.

First, the conventional scenes. They were funny enough—two old girls trying to be gay and graceful, and I having jiggled the Filmo now and then to help things along. And pretty soon we came to the climax. First, Aunt Mary and the Minister’s Wife each take a big swig at the grape-juice. Then I fade out and back into the close-ups taken with the Modifier. Then the shout that went up nearly peeled the paper off the wall. But Aunt Mary and the Minister’s Wife just sat there. Didn’t say anything. (Call me ugly, will ya! Call me hump-backed!)

Well, the first spasm over, we went into detail with the Duplicator shots. First, the old girls looked at each other—there were two of them. Then they looked at the goblet—there were two of them. And then they looked up in the sky. There, in all their glory, were two moons! And as they walked down to their car, talking to one another, there were four of them—even after they scrambled ungracefully into the front seat.

Questions and Answers
Conducted by
R. Fawn Mitchell

Q. Why is the exposure different in summer than in winter?
A. In summer, the sun being north of the equator, the rays are more direct and travel through less atmosphere. The photographic quality of the light is therefore much stronger.

Q. Why is it that beach scenes in summer require more exposure than snow scenes in winter, assuming that both types of scenes are in the same light?
A. The entire problem is governed by the light reflected by the subject and not primarily by the light reaching the subject. Snow has a higher reflecting quality than sand, which more than makes up for the lesser original intensity of sun light in winter than in summer.

Q. Should panchromatic film be used for beach scenes?
A. Panchromatic film, especially in conjunction with a filter, will be found to give a much more pleasing rendition of the little shadows in the hollows of the sand. However, its use is not imperative, but we do recommend using a filter, irrespective of whether panchromatic or orthochromatic film is used, because the sand reflects such a high percentage of the photographically actinic rays.

Q. Can silhouettes be taken in Kodacolor?
A. Yes, some very beautiful silhouette effects can be obtained in Kodacolor. When shooting through an archway or an avenue of trees, only those parts of the subject that are in direct sunlight will show up in color; the rest will appear black and give a silhouette effect. If discretion is used in selecting the viewpoint, some particularly fine results can be obtained.

Q. Should the neutral setting of the Photometer be made indoors or outdoors when readings are to be taken on bright outdoor subjects?
A. The neutral setting on the Photometer is designed to be made under the same conditions as the readings will be taken. In bright light, the pupil of the eye contracts considerably, tending to alter the reading if the neutral setting was made indoors when the pupil of the eye was large.

On the Tyranny of One’s Elders
(Continued from page one)

And, just to make it real lively, I tacked on about 25 feet I had shot through my own windshield, showing the car wobbling back and forth across the road, with an occasional flash of landscape all mussed up with my Filmo Modifier and given an alcoholic treatment with my Duplicator.

Well, friends, don’t ask me any more details. Just come over to the house some night and see just how sweet revenge can be when done properly, and in the right spirit, and with the right equipment.

Missing Equipment
Filmo 70 Cameras
No. 50142—Bass Camera Co., 179 W. Madison St., Chicago.
No. 58057—Johnson Photo Shop, Rockford, Ill.

Filmo 75 Camera
No. 45222—Carl K. Frey, 247 Genesee St., Utica, N. Y.

Filmo Projectors
No. 1956—Columbus Photo Supply Co., 123 Columbus Ave., New York City.
No. 50499—Bass Camera Co., 179 W. Madison St., Chicago.

The Cover Illustration
This month’s cover photograph pictures movie making vacationists leaving a corral on the floor of the Yosemite Valley for a ride on High Sierra trails. The photo is reproduced here through the courtesy of the Union Pacific Railroad.
New...The Filmo Library Announces "Universal" Sound Releases

The entire range of famous 16 mm Universal Sound Releases is now available in the Filmo Library at $30 per reel, including sound disc. Seven distinct groups of subjects are included.

The Feature Group stars such famous names as Laura La Plante, Reginald Denny, Eddie Leonard and many others. Other groups are the Oswald Cartoons, featuring "The Lucky Rabbit"; Specials, featuring Benny Rubin and The Rooney; Featurettes, starring Slim Summerville, Charlie Murray, and others; Sporting Youth Series, with all-star casts; Collegian Series, with all-star casts; and Universal Comedies, starring Sunny Jim, Vernon Dent and Lew Archer.

The releases announced this month include:

**TALKIE FEATURES**

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**Oswald Sound Cartoons**

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<td>ICEMAN'S JOLTS</td>
<td>The Lucky Rabbit</td>
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<tr>
<td>Jingle Jingles</td>
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<td>WEARY WILLIES</td>
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<td>Sausage Sausages</td>
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<tr>
<td>Race Riot</td>
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<td>Oola Wall</td>
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<td>Permanent Wave</td>
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<td>Gold Turkey</td>
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<td>Pussy Willow</td>
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<tr>
<td>Nutsy Notes</td>
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**TALKIE SPECIALS**

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<tr>
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<tbody>
<tr>
<td>COHEN ON THE TELEPHONE</td>
<td>George Sidney</td>
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<tr>
<td>SWEETHEARTS</td>
<td>The Rooney</td>
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<tr>
<td>LOVE TREE</td>
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<tr>
<td>THE ACTOR</td>
<td>The Rooney</td>
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<tr>
<td>INCOME TACT.</td>
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**TALKIE Featurettes**

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<td>PARLEY VOES</td>
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</tr>
<tr>
<td>ROLLING ALONG</td>
<td>(Charlie Murray)</td>
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</tbody>
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**NEW LOW PRICES**

All $9.00, $7.50, $6.00 and $5.50silent Filmo Library subjects are now $6.00 per 100 ft. reel. 200 ft. subjects are now $12.

**Universal Sound Comedies**

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<tr>
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<td>Down to Earth</td>
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<tr>
<td>Discontented Cowboys</td>
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<td>Our La La</td>
<td>Slim Summervill</td>
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**TALKIE Sporting Youth Series**

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<td>Huckle and the Game</td>
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<td>The Takoff</td>
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<td>Live Ghosts</td>
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**TALKIE Collegians**

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<td>On Guard</td>
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<tr>
<td>Rivals</td>
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<td>Junior Luck</td>
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<tr>
<td>Cross Country Run</td>
<td>All Star Cast</td>
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**B & H All Metal Tripod**

Sturdy, firm-locking tubular legs, and an ingenious, smooth-working tilt and pan mechanism mark this finest of tripods. Tilt and pan may be operated together or separately. Tripod alone $36; leather, zipper-type case, $12.50.

**B & H Focusing Alignment Gauge**

For precision photography and titling, a sliding bed moves viewfinder and Critical Focuser to aperture position for exact centering. Fits any tripod, $81.

**375-Watt Lamp for Filmo 57-GG Projector**

The new Filmo 57-GG Projector 375-watt, 75-volt lamp, which is producing such startling results, is a genuine Mazda, carrying the approval of the Research Service of both General Electric and Westinghouse. It is this genuine Mazda lamp which is used with new variable resistance and voltmeter units in converting your 200 or 250-watt Filmo Projector into a new 375-watt 75-volt model.

BELL & HOWELL FILM
The Filmo of Mr. F. E. Wilhelm, Vice-President of the Cudahy Packing Company, has spent six fruitful years in its master's service, catching within its lens a goodly portion of these United States. Today, it is unwearied and unworn, with a lifetime of splendid movie-making still ahead.

Fine things finely made attract discerning persons as to a magnet. Filmo personal movie cameras are among these things — jewel-like in their precision, outstanding in their scientific design, and of course, famous the world over for their life-long dependability and splendid, unequaled photography.

And like most genuine values, Filmo personal movie cameras are not in the least expensive, starting in price at $92. The famous Filmo 70-A, the original automatic personal movie camera, has recently been reduced to $140, and to $190 completely equipped for Kodacolor. The Kodacolor-equipped Filmo 75 at $149.50 is the lowest priced Kodacolor-equipped movie camera on the market.

ANNOUNCING...

Da-Lite Projection Screens

with new automatic features...moderately priced

Da-LITE Screens are to be found in a large majority of the world's finest movie palaces—a professional background which explains the theater efficiency for which the Da-Lite Screen is famous. In every model compactness has been achieved with wonderful ingenuity, and yet at no point has quality been sacrificed to achieve this compactness and portability.

Da-Lite Master Screen.
(Not illustrated.) For schools, clubs, churches, institutions, etc. Comes in steel-bound fibre-case trunk. Hand crank and worm gear raise screen to full height easily and quickly. Stretching device gives theater quality surface. Beaded fabric. Prices: 6 x 8 ft., $115; 8 x 10 ft., $165; 9 x 12 ft., $195.


PATHE 16MM. SOUND FILM RELEASES
FOR AUGUST

On one 100 ft. reel, with sound discs, $15
GRANDTOWN RICE SPORTLIGHTS—Fairytale Fantasies with Farel, Collett, Armour, and Morrison in some good golf.
AUSON'S FABLES—Haunted Ship. High life on the ocean floor.
VACATION ADVENTURE STORIES—Drums of Fear. Cannibals and witch doctors in real life.

AUGUST UFA SOUND PICTURES
On one 100 ft. reel, with duplicate sound discs, $60
Poisoned Daggers. The life-cycle of the malarial mosquito.
WILD WINE APPEAL. Protecting an African village from lions.
A WORLD UNSEEN. Tiny organisms under the microscope.
BELGARIA. The Country and its Customs.

"UNIVERSAL" 16MM. SOUND RELEASES
On one 100 ft. reel, including sound discs, $30 per reel

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<td>TONIGHT AT TWELVE</td>
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<tr>
<td>ONE HISTORICAL NIGHT</td>
<td>With Reginald Owen</td>
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<td>LATE PERFORMER</td>
<td>With Conrad Veidt</td>
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<td>THE OLYMPIA CARDINALS</td>
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<td>KANYE FAIR, HARDY GARY</td>
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<td>DECEPTION'S KID</td>
<td>With Benny Rubin</td>
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<td>LOVE BIRDS</td>
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<tr>
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<td>HELLO RUSSIA</td>
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<td>NEIGHBORS</td>
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CHARLIE CHAPLIN FILMS OF YESTERYEAR
Sixteen one-reels and four two-reels—silent or sound. Silent, $30 per 100-ft. reel; with sound discs, $35 per 100-ft. reel. Write for titles.

BELL & HOWELL FILMO

Using the New Film

The new supersensitive panchromatic reversal film will work wonders—if you use it with these facts in mind

R. Fawn Mitchell

All Filmo owners are naturally interested in the recent announcement of the new supersensitive panchromatic film. It is now well known and widely recognized that panchromatic film gives a more true-to-life black and white rendition of colored subjects, especially of orange and red colors. Therefore the introduction of the new supersensitive panchromatic film and the simultaneous withdrawal of orthochromatic film from the market will undoubtedly result in a considerable improvement in Filmo users' screen results.

The characteristics of the regular panchromatic film are fairly well known. However, it will not be out of place to summarize them briefly, for you will probably be using much of this film from now on. In daylight it has the same speed as the orthochromatic film. Due to its increased color sensitivity, however, it is twice as fast as the old orthochromatic film when incandescent lighting is employed.

The new supersensitive panchromatic film, compared with orthochromatic, is twice as fast in daylight and six times as fast with incandescent light. In other words, outdoors it permits you to stop your lens down one more stop to get greater depth of focus, or to use the normal camera speed where previously you had to use half speed on account of poor light, as in early morning or near twilight. Indoors it permits you to work with one-sixth as much light as is necessary with orthochromatic film.

It is for indoor pictures that the new film will best prove its value. Refer to Figure 1.

Figure 1. Taken indoors with the new supersensitive panchromatic film at F 3.5, using normal camera speed. Article explains the illumination used.

It was taken on the new film with just average daylight filtering in through two small windows, while on the shadow side was one 60-watt bulb about ten feet away. If you have ever attempted to take a picture under these conditions even with ordinary panchromatic film, you know that you would have to use the fastest lens available and that, even then, it would be doubtful if all the detail in the shadows would be recorded. The stop used on this particular shot was F 3.5 at normal speed.

It may be of interest to explain just why the 60-watt bulb, with its high percentage of red and yellow light (ordinarily of little photographic value) is responsible for this illumination of the shadow details. The supersensitive film has about 500% greater sensitivity to red than even regular panchromatic film. It also has 200% greater sensitivity to green and 500% greater sensitivity to blue.

An interesting test was conducted with this new film to see just what it would do. In Figure 2, an ordinary 60-

(Continued on page eight)
COME quick, Dad, here’s a swell picture of a wedding. With that my sixteen-year-old son dashed around the corner of the Church of the Sacred Heart and I followed on the run. We were just in time to get a good picture of a French bridal party as they were leaving the beautiful church. It was a splendid bit of action and, since everyone is interested in a wedding, this was a “shot” that was sure to be interesting to the folks back home.

My boy and I, with two other clergymen, were tramping about Europe and everywhere we went the movie camera went along. It was with us in Moscow when we visited the Kremlin and it “shot” a Russian wedding for us in Leningrad. One of the trio had slipped off to the side and secured a good action picture as we visited with the Prime Minister of Norway on the steps of the American embassy in Oslo.

The camera was eyes for us throughout the twenty thousand mile journey. We never left our hotel without it and, whether on top of the Jungfrau, or astride bicycles in Copenhagen, or tramping over the French battlefields, it was silently and safely storing up the record of our trip.

We soon discovered that we looked at everything from the standpoint of its "picture value". When the king and queen of England rode by on their way to the re-opening of St. Paul’s we filmed the whole procession. When we stumbled, by accident, upon a great crowd down at the waterfront at Helsingfors we were interested, and when we found that they had come down to welcome four hundred and fifty Finns returning from America we were doubly interested. Some of the pictures of the homecoming greetings bring tears almost every time they are shown.

But the camera also remembers things that we did not even see. There was that Mohammedan funeral in Smyrna. When I saw it in the pictures I got an entirely new understanding of it. Some of the pic-

Sheep graze in the old moat about the ruins of Kenilworth Castle, England

A TRIP TO EUROPE EVERY WEEK

How three clergymen recorded their 20,000 mile journey in films that paid for themselves

ROY L. SMITH

Children of the Isle of Marken, Holland
A duplicate set of the entire film was made for each of the other two clergymen, so that the pictures are doing duty in three communities. We had expected to charge a small admission price when showing them in the church upon our return in order to be able to regulate the crowds. We fixed on ten cents, limited the sale of tickets, and expected to show to perhaps a thousand people. To our amazement, however, the demand was so great that the films have been shown week after week until more than three thousand have seen them in our church alone, at the ten cent rate. This paid for the film. The other preachers had much the same experience.

Then calls began to come from other churches and we began showing on a fifty-fifty basis. Not one engagement was solicited. Indeed, we have been compelled to decline almost as many invitations as we have accepted. Thus, in the first nine months following our return we have taken in enough to pay for the original film, buy a seven by nine foot beaded screen, purchase a 1000-foot capacity adaptation for the Filmo Projector to enable us to use the forty-five minute reels, and repay ourselves almost the entire trip cost of one person.

In addition to the public showings there have been many private showings in the home for invited guests, showings in the schools where our children are enrolled, at hospitals, sanitariums, etc. The result is that we make a new trip to Europe almost every week.

We use a Bell & Howell Filmo Projector with the new 375-watt lamp, a pearl-beaded screen, and lenses adapted to the size of the auditorium in which we are showing. This equipment makes it possible to show the pictures to as many as fifteen hundred people at one time. Extension arms and forty-five minute reels make it possible to show for two hours with only two changes of reels.

This ancient church in Oslo, Norway, dates back to the 11th century. How different its architecture from that of the Church of St. Basel in Moscow (left), one of Russia's oldest, built by Ivan the Terrible.
II. H. II. The Crown Prince of Sweden using his Bell & Howell Eyemo Camera. He has been an enthusiastic personal movie maker for several years.

Right—W. F. Shay, head of the Biology Dept., Normandy Schools, St. Louis, another believer in motion pictures for visual education, is shown using his Filmo 70-D on a field trip.

Anthony W. Robinson, Haverford, Pa. (kneeling) and Henry P. Boley, Philadelphia, "Filming" Josephine, three year old Chimpanzee, as she enjoys a plate of ice cream at the Philadelphia Zoological Garden. Both movie makers are officers of the Philadelphia Photographie Society.

In circle—K. Kroghsede of the well known Niels Bokk Gymnastic High School in Ollerup, Denmark, with his Filmo 75. With his new Filmo 77-GG Projector, Mr. Kroghsede shows throughout the country films made at the school with this Filmo 75. Photo by courtesy of Kongshak & Cohn, Kopenhagen, Filmo dealers for Denmark.
movies from inside his car. The photograph reproduced below shows the bracket which he had built to support his Filmo 70-D Camera just inside the windshield, where he can easily reach the camera starting button while driving. The lens is about one inch from the glass, and he notices no bad effects from shooting through the windshield, which, of course, must be kept clean. Using one of the faster film speeds minimizes any jumpiness from irregularities in the pavement. Mr. Leland reports having taken many excellent films with this device on the Redwood Highway and on other scenic roads in the west.

Stanley W. Roberts, Oriskany, New York, wrote to tell of placing his Filmo against the eyepiece of a telescope and getting a successful (proved by a film clipping attached to his letter) scene of the seals on Seal Rock, near The Golden Gate, San Francisco. As you travel this summer you will undoubtedly visit viewpoints where telescopes are mounted for the use of visitors. Try a scene as Mr. Roberts did. If you have a Filmo 70-DA Camera with the Critical Focuser you can be sure, before you shoot, of getting sharp focus.

Professor Edward S. C. Smith, Dept. of Geology, Union College, aided by his Filmo 70-A and City Sanitary Engineer Morris M. Cohn, recently completed a 750-foot film telling the complete story of how sewage is treated by the Schenectady, N. Y., half million dollar sewage disposal plant. The film is of an educational nature, its purpose being that of acquainting citizens with this phase of municipal sanitation. It has been widely shown, and "has been instrumental in bringing to the tax-payers a realization of the value of sewage treatment in the health control work of the city."

Here's a new kind of "talkie"—the "silent talkie." Our attention was called to it by E. G. Marlow Co., Dallas, Texas. The "silent talkies" have no sound track on the film, no disc record. Yet they talk. They are prepared especially for the deaf by Troy E. Hill, deputy district clerk in Dallas, on 16 mm. film, and include addresses by educators in schools for the deaf, current events, and religious subjects. The speaking is done with the fingers in the sign language. The "silent talkies" have been shown to deaf groups in a number of cities in Texas, Arkansas, and Oklahoma.
AFTER almost entirely preempting the theater screen, the “talkies” are rapidly invading the various 16 mm. film fields. Already 16 mm. sound films are widely used commercially, chiefly for sales purposes. Already they are beginning to supplement and even replace silent films for educational purposes in schools and colleges. Soon, no doubt, 16 mm. talkies will be as common in private homes as 16 mm. silent films are now. In view of these developments, many Filmo Topics readers have asked for basic facts about sound recording and reproduction. It is the purpose of this article to supply that information.

To effect an intelligent understanding of sound reproducing apparatus, it may be advisable to review briefly the nature of sound itself. We have all tossed a stone into a pool of smooth water and watched the ripples radiate from the spot where the stone struck. The size of these waves was in each case dependent upon the size of the stone. Their apparent speed of travel was always the same. In the case of sound we have an analogous condition. The source of sound (whether it be the falling of a book upon a table or the human voice) represents the stone, and the air represents the surface of the pool. In the case of sound, however, the waves travel not merely on one plane in a circular form but in all directions in the shape of spheres. When any sound whatsoever is created it sets up in the air a series or train of these waves which are actually alternate rarifications and compressions in the air. These waves, in traveling outward from their source, strike the ear drum, which is a minute diaphragm, and cause it to vibrate in harmony with the alternate rarifications and compressions.

The human ear has an enormous range. It is able to detect sounds of as low as 16 to 20 vibrations per second, which is an extremely low note. Its response to high notes extends to 18,000 vibrations per second. Regardless of the number of vibrations the speed of sound in air always remains the same, 1180 feet per second.

If we wish to preserve any sound or group of sounds, such as speech or music, we resort to what is known as recording. This may be accomplished in a number of different manners, but only one, disc recording, will be taken up to demonstrate the principles involved.

Let us start with the sound already traveling through the air. If we place a light metal diaphragm in its path, the sound waves will cause this diaphragm to vibrate in harmony with them. This is actually what is done when we sing or speak into a microphone; we cause the diaphragm of the microphone to vibrate in accordance with the impinging sound waves. In so doing the diaphragm transforms these sound waves into corresponding electrical waves having the same relative magnitude as the original sound waves. These electrical waves, or impulses, are very minute and it is necessary to magnify them in order that they may be of use, but their exact number and shape must be maintained to secure faithful reproduction. To accomplish this, we employ what is termed an audio frequency amplifier, which, like all other apparatus employed in recording and reproducing sound, must be most carefully designed in order to preserve the original balance invested in the sound by the singer or speaker.

The amplifier magnifies the feeble electrical impulses several million times. They are then fed to what is known as a recording head. This head is very similar in construction to the “pick-up” of a phonograph, the needle or cutting stylus being attached to an armature which is free to vibrate within a small coil. The varying electrical current is fed to this coil, causing the cutting stylus to vibrate in accordance with the electrical currents. When the head is suspended with the proper mechanical devices over a rotating disc of soft wax, the cutting stylus engraves a wavy path upon the smooth wax surface. This path corresponds in shape and magnitude to the original sound waves which struck the microphone diaphragm. The finished disc is dusted with an electrical conducting powder and then electro-plated. From this electro-plated disc, “master” records are made and these are used in “pressing” the finished records.

To reproduce the recorded sound we begin with the finished record and reverse the above process. The familiar pick-up is placed in the playing position and the wavering irregularities of the record groove cause the needle to vibrate in a manner corresponding to these irregularities. The vibrating needle causes a small armature to follow its motion. This armature, being mounted within a small coil, produces a minute electrical current possessing the original variations of intensity which, being far too feeble to actuate a “speaker,” is then fed to the input or an audio frequency amplifier, to be amplified, as before, several million times to bring it to a sufficient level of power to operate any desired type of “loud speaker.” As before, utmost care in design of the pick-up, amplifier, and loud speaker, must be exercised if the original tone quality is to be reproduced.

The action of the speaker is analogous to that of the recorder inasmuch as the varying electrical currents are caused to flow through a coil which is rigidly attached to the diaphragm of the speaker. In so doing the currents set up a varying magnetic field which causes the diaphragm to vibrate in accordance with the electrical impulses. This, in turn, causes the air to be moved in and out in the shape of waves which reproduce the original sound.

(Continued on page eight)
SOME time ago, the writer had the opportunity of filming acetylene gas welding in its natural color, or rather, as it is seen through a welder's goggles. As the experiences connected with this work are a little out of the ordinary, they may prove of value to other amateurs.

A preliminary test was made using an entire 50 ft. roll, exposed with a Filmo 70-D at various camera speeds, and sent to the Eastman Laboratories for processing. The results of this test were disappointing, due to the fact that the intense bluish-white color of the flame predominated. This threw the color values off balance and caused a corresponding loss of detail in the so-called “puddle” of molten metal. For this reason it became necessary to experiment with supplementary filters. Their purpose was not only to suppress the excessive blue, but also to prevent over-exposure.

It was found desirable to devise a scheme for short exposures and immediate processing, so that every test could be projected before another was attempted. This was accomplished, using the formulae prescribed by the Agfa Company for their color plates, and the results obtained were perfectly satisfactory for our needs.

The gelatine film type of filter proved the most successful, because it could be cut to the shape and size of the Kodacolor filter and held in place very conveniently by the ratio diaphragm supplied with each roll of Kodacolor film. A 9x yellow filter was found the most satisfactory when used in connection with both the neutral density filters supplied with the Kodacolor filter outfit. This combination, at a camera speed of 64 frames per second, resulted in the colors one would see through a welder's goggles. The semi-slow motion effect helped the picture considerably, as it showed very plainly the bubbling condition of the molten metal in the “puddle.”

Inasmuch as the working distance between camera and torch was only a matter of twelve inches, the camera had to be protected from the heat and flying sparks. A sheet of transite with a hole large enough to admit the lens was nailed to a frame, and this was placed in front of camera and tripod. This arrangement afforded adequate protection, but it was helped further by a fan which blew away any stray sparks.

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**SEASONABLE HINTS**

1. Use color filters. Only by doing so can you get the best results, even with panchromatic film.
2. Be sure your Kodacolor filter is in place when you use Kodacolor film. This seems an unnecessary caution, but one man was seen working on his fifth hundred foot roll of Kodacolor film and with his three-color filter still in his trunk!
3. Exhibition of various travelers’ films during the course of the cruise showed that: first showings should be private, followed by cutting and editing; more care in exposure is needed by many; many scenes are too short: pams are too frequent, too fast, and too jerky.
4. How many of these faults find their way into your films?
light. Even the 4x filter does not require the lens being opened more than one stop. The panchromatic (6x) filter used on the standard Filmo F 3.5 lenses requires the lens being opened only one and one-half stops at the most. With this filter, the film gives practically a correct black and white rendition of all colors. The above figures, of course, refer to daylight. Filters are rarely used with incandescent light.

If you have a B&H Photometer, bear in mind that it gives direct readings for exposure setting only when you are using the regular panchromatic film or the now discontinued orthochromatic film. Its readings will have to be modified when you use the new supersensitive panchromatic film. Close the lens down from the Photometer reading as follows: one stop outdoors, one and one-half stops indoors under incandescent light. Either of these modifications can be calculated automatically by the filter factor dial on the Photometer. Use the 2x mark for modifying outdoor readings, the 3x mark for modifying readings on incandescent lighted scenes.

The new supersensitive film will obviously enable Filmo owners to take fully exposed pictures indoors, very late in the afternoon, in the woods, and in other poorly lighted places where there has been up against it heretofore even with fast lenses. An entirely new field is opened up in the filming of brightly lighted street scenes at night. The Filmo 75 Camera owner will be greatly benefited. With its smaller shutter opening, the Filmo 75 will get crisp, fully exposed pictures of sur-passing brilliance with the new film, even with adverse lighting.

Questions and Answers
Conducted by R. Fawn Mitchell

Q. I have been told to reverse the ratio diaphragm in taking Kodacolor pictures indoors. What is meant by this?
A. With every roll of Kodacolor film is included a ratio diaphragm, which is intended to be placed on the rear of the Kodacolor filter. This diaphragm masks off the three color segments of the filter in different amounts and compensates for the particular color sensitivity of that emulsion. Naturally, this correction is made for the light that would ordinarily be used for picture taking, namely, sunlight. In taking interior pictures, incandescent light is nearly always employed. This light is much weaker in green and blue rays than sunlight, and much stronger in red and yellow rays. Therefore, by reversing the diaphragm, that part which ordinarily masks the blue segment of the filter now masks the red segment, and thus insures a correct color rendition in the final result.

Q. Can you “pam” with a telephoto lens?
A. Yes, if a tripod such as the Filmo Tripod is used, and care taken to move the camera extremely slowly. It is a good idea to speed up the camera to 21 pictures per second or more, as this iron out the little inequalities of “pamming” and insures the results being that much smoother.

Q. My Photometer now gives a good reading the first time I use it and then a different reading. What is the trouble?
A. The battery should be replaced. After the battery is left to stand a while, it re-cuprates so that the initial flow of current is up to standard. In an old battery, this initial current is quickly exhausted and the value drops quickly.

Sound Recording
(Continued from page six)

The magnetic force which alternately attracts and repels the cone to a permanent magnet (field coil). The diaphragm, in being vibrated by the current, produces corresponding compressions and rarefactions in the air surrounding it, thereby reproducing the original sound with all its brilliance and clarity. This is only accomplished if all the apparatus used in both recording and reproducing is properly designed and carefully adjusted.
EXTRA LIGHT FOR . . . . .

Distance Projection

with the new Cooke 4-in. Projection Lens . . .

The new Cooke 4-inch Projection lens, upholding the splendid tradition of precision workmanship in all Cooke lenses, passes upward of 25% more light than ordinary 4-inch lenses. Ideal for long auditorium throws, assembly halls and schools, and particularly effective with the new Filmo 57-GG 375 watt Projector. Price, $30.

The Cooke F1.8 Speed Lens and Kodacoolor Filters are here disassembled to show their relative size. At the left is the specially corrected 1-inch F 1.8 lens, then comes the Kodacolor filter itself (sold for Filmo under license from Eastman), and then a neutral density filter for modified exposures. Complete, $75; lens alone, $60. Special compact model for Filmo 75.

The B & H All-Metal Tripod features remarkable pan and tilt mechanisms which may be operated together or separately. A twist of the guide arm releases the head for a semi-automatic return to level position. The sturdy tubular legs are self-locking and sustain a tremendous weight, making for great rigidity. Price, $36; leather zipper type case, $12.50.

The B & H Focusing Alignment Gauge is one of the interesting refinements in accessories appreciated by critical movie makers. The camera slides laterally to bring viewfinder and focuser into aperture position for perfect alignment in title making and critical close-ups. Made like a jeweler's lathe. Fits any tripod. Price, $21.

The New Filmo 70-D Sport Case is covered in imported Toile Basque, a canvas-like fabric. Bound in genuine leather. Comes in Size "B" for camera with 4-inch lens, $25; Size "C" for 6-inch lens, $30.

BELL & HOWELL

FILMO

NO FILMO HAS EVER WORN OUT...

This Filmo 70 Camera, bought in 1925 by James R. Offield, Chicago attorney, has put in six busy years of movie making, with an excellent record of results. Mr. Offield, who now owns a Kodacolor equipped Filmo 70-D, has taken hundreds of feet of film on his travels, much of it at the Catalina Island home of his father-in-law, William Wrigley. There is no appreciable trace of wear in this veteran Filmo 70 Camera today, and there is good reason to believe that its present owner will find none six years hence.

Filmo knows few limitations in 16 mm. movie making—either in photographic conditions or the special requirements of its owners. The Filmo 70-A and Filmo 70-D Cameras are justly famous for the things they can do. And the sturdy little Filmo 75 has a history of versatility and flexibility all its own. And just now, the Filmo 75 is showing its mettle as a “vacation” camera—light, compact, precise, and a maker of movies you’d walk a long way to see. Equipped with the special Cooke F 1.8 speed lens and Kodacolor filters, it is the lowest priced color camera you can buy. And many Filmo 70-A and 70-D owners are using it as a “second” camera—always ready and loaded for movies in color.

Made by the makers of the professional studio cameras and equipment used by the major film producers of the world, Filmo reflects, in every function, the flawless movie-making with which Bell & Howell has been identified for nearly a quarter of a century.

Ask your dealer to show you the Filmo Camera, or write for the fascinating movie booklet “What you see, you get.”

Established 1907

BELL & HOWELL FILMO
Personal Movie Cameras and Projectors
Now—375-Watt Illumination for Filmo Fixed-Resistance Projectors

Until you have seen your movies with a Filmo 375-watt Projector, you can scarcely realize the amazing improvement made possible in the projection of your films. This improvement is particularly apparent with long throws, so that projection before large groups either in the home or in auditoriums, schools, or churches is greatly improved. To supply the demand which has sprung up since the Filmo 375-watt system was introduced, the Filmo FL Projector with regular fixed resistance is now made available with 375-watt, 75-volt illumination. Price, complete with drop-front case, $215; conversion of your Filmo 250-watt fixed resistance projector to 375-watt fixed resistance, $17.50.

Da-Lite Challenger Screen

(Right)—Map-style bead screen, rolling into tubular case. Complete with ingenious folding tripod. Screen can't swing on tripod. Fabric stretches taut. Prices $20 to $30 for sizes 30" x 40' to 39" x 52'.

Da-Lite Model A Screen


B&H Photometer for Filmo Cameras—You read a Photometer as you read an adding machine—and you do as little figuring. The Photometer is a scientifically accurate, direct vision, light measuring device as easy to use as your flashlight. Gives lens stops at various film speeds for Filmo 70-D, 70-A, and 75. Model A, $17.50; with case, $20.

For "Still" Photography—Ingeniously calibrated for "still" camera use, the Photometer gives you lens stop readings for any shutter speed, and also for filter factors and emulsion speeds. Direct vision. No interpolation necessary. Just sight it, set it, and read it! The price, Model B, $17.50; $20 with case.

New Cooke 3½ Projection Lens—With an aperture of F2.5, this new lens is capable of theater-brilliant reproduction on the longest throws. Especially efficient with the new Filmo 375-watt Projectors. Unmatched in accuracy, definition, sharpness, and power. Price, $27.50. Cooke 4 in. F2.8 Projection Lens, $30.
The Other Half of Movie Making

Tyler, whose films fail to hold their audience, learns from Campbell how to make box office successes.

WHAT'S wrong with this picture?" Attempting bravely to be tactful, Mrs. Tyler held up a stack of 100 foot reels and put the question of the evening to her husband. It was only 10:15, yet the last guest had departed—and there were many reels still un-screened.

The Lawson's, they recollected, had left first, mumbling something about a temporary nurse-maid who had to leave at 9:30. This was after about ten of the short reels had been shown to the accompaniment of a running fire of explanations of places and faces and with time out every four minutes for changes.

Next the Carters had gone, explaining that Charles had gone to Boy Scout meeting without his key and they'd have to be there to let him in. Shortly before they left a reel of semi-tropical scenes from Southern California had suddenly appeared when there should have been shown the conclusion of the snow-ball battle on Mt. Rainier.

The Campbells had proved to be of stronger stuff, but had had some excuse or other for leaving soon after 10:00. And it was a remark he'd overheard Campbell make to his wife, as he helped her into her car on the drive, that started Tyler to thinking along the right lines. Campbell had said, "And yet his photography is better than mine in many scenes!" Obviously something was sadly amiss with the Tyers' vacation epic. What to do? Campbell evidently knew, and Tyler by now had a strong suspicion, so several evenings later he barged in on Campbell and asked to see his vacation films. Campbell was nice about it, but he firmly refused to show them. "They aren't finished," he explained. "Yes, they've been processed and Mrs. Campbell and I have seen them, but as yet they are innocent of titles and entirely unedited. I'd rather you saw them in their finished form in a week or so."

This confirmed Tyler's hunch as to why his films hadn't, to say the least, made a hit the other evening. So he cast pride to the winds and, after apologizing for the pain he'd inflicted, asked Campbell to tell him about this business of titling and editing films. And Campbell obliged with this explanation:

"Good photography is mighty important in home movies—and you take excellent pictures, Tyler. But that's only half the job, and only half the fun. I understand that Hollywood pays some fancy salaries to its film editors—indicating that editing is rated high in importance. Films as they come from the processing station I consider not
at all as the finished product, but as raw material upon which I can advantageously put in several evenings of pleasant work. The edited films are far more entertaining even to Mrs. Campbell and me, to say nothing of our friends, than the ‘raw material’ could ever be.

I’ve found this about the simplest method of editing my films. When they come back from the processing station and before I project them even once I wind them onto 400-foot reels. This involves making only three splices, and it saves three threadings of the projector. Then I project the films so that Mrs. Campbell and I can see them for the first time. There’s always a thrill in that first ‘pre-view’, and we don’t give a thought to editing until we’ve seen the films from beginning to end.

“That done—and sometimes it’s done several times—I get down to business. Through the projector the films go again, but this time by stops and starts, so I can jot down a brief note concerning the nature of each individual scene—just a reminder which later will let me picture that scene mentally. Sometimes ideas for subtitles occur to me during this operation, and I jot them down too. The notes regarding some scenes may indicate that they are to be discarded entirely because of poor exposure, camera movement, uninteresting subject matter, or for other reasons. Other scenes, the notes may say, should be cut down to eliminate defects that affect only portions of them. Often I reverse the film so as to run the same scene through again, if the first screening has left me in doubt as to its merits.

“Next I go over the notes and rewrite them in the sequence that will best tell the story, including the final titles and subtitles in this set of notes. Usually a lot of rearranging is necessary to get the maximum entertainment from the material I’ve filmed. For instance, the trout fishing film I’m editing this week called for a lot of rearranging. In the course of a week I had shot everything you could think of pertaining to a fishing trip, from the guide waking the boys in the morning to the fish dinner at sunset. But the first screening showed us eating fish before we’d caught them, and pulling on our boots before we’d been roused from our blankets. You often have to shoot your scenes like that, as the opportunities present themselves, but it doesn’t do to leave them that way.

“These revised notes finished, I read them over and usually make minor corrections in arrangement, cut down the wording of lengthy titles, and see what titles can be eliminated by further rearrangement or by the use of close-ups. Then I number the scenes consecutively.

“When the cutting is finished I’m ready to start assembling. This is done on a 400-foot reel placed on the right hand geared rewinder of the Editor. First a couple of feet of blank film are wound on. The main title is spliced to the end of this blank leader, wound onto the reel, and cut off at the frame separating it from the next title. Next scene No. 1 is removed from its peg and spliced to the end of the main title. Be sure to do all your splicing with the emulsion side of the film up. It’s the dull side. So it goes through the film, splicing in scenes and titles in the order dictated by the notes. At the end I splice another piece of blank film for a trailer, to protect the last scene. Then I rewind the whole film and project it—and get as big a kick from seeing it all edited and titled as I did when it first came back from the laboratory.

“Usually I’ll make a few refinements after seeing an edited film for the first time. And when that is done I have something that I’m proud to show to anyone. The film tells its own story. No explanations from me are necessary. No apologies need be made, because all the shots that failed are cut out. We all take a few poor scenes along with the good, but there’s no law that says we are obliged to keep them.

“Get yourself a title making outfit and one of these editing and splicing gadgets, Tyler, and you can build up a mighty interesting story from those vacation scenes you showed us the other evening. You’re a good hand with the camera, but, frankly, you’ve only half done your job, and you’ve only had half the fun of movie making. Try my method on those films and I’ll bet you a new projection screen that you will apply the same treatment to all your films, past and future.”

A number of interesting contributions explaining title making methods and tricks have been received. As last year, the autumn and winter issues of Filmo Topics will carry a series of articles on title making, and these contributions will be passed on to you in the course of that series. The first article will appear in the October number. In the meantime, write and tell us about your title making methods, and particularly about any unusually interesting titles that you’ve made.
Martin Johnson, who needs no introduction, on location with his Bell & Howell sound and silent cameras in the gorilla country of Africa. There he produced a rare gorilla film, soon to be released.

The Prince of Wales, if we can judge from the many photographs we've received, made extensive use of his Filmo 70-D Camera on his recent South American trip. This picture was taken at Arequipa, Peru. Prince George stands directly behind his brother.

P. W. Chapman, President of the United States Lines, "shooting" Captain Alvin Foster, winner of the story contest conducted among the old sea-dogs of Sailors' Snug Harbor who made the week-end voyage to Halifax aboard the Leviathan recently as guests of Mr. Chapman.

Filmo keeps notable company aboard the S. S. Bremen. Left to right—Joseph Hergesheimer, Lillian Gish, Captain Ziegenbein, Mary Pickford and Noel Coward (with his Filmo 70-D)
HELPs IN SCene-PLANNING

A solution for the problem of getting good travel films in spite of difficulties

J. BERG ESENWEIN

WHEN traveling foreign lands, or in unfamiliar sections of our own country which are equally famed for their “movie-shot” opportunities, we have all envied local photographers their chances for taking advantage of superior points of view, and of course also of weather conditions. Similarly we have lamented the little time we have had, on occasions, to seek out the best vantage point for our camera exposures. Travel is sometimes too rapid, or the interest of our friends in other matters too insistant, to afford us the leisurely selection of light and of viewpoint which are so vital in the production of good pictures.

But even under such adverse conditions the case is far from hopeless for those who are, as old New Englanders sometimes say, “torchanded.” Fundamentally, nothing can altogether atone for the misfortune of having your sight-seeing party take you to see the Sphinx or to visit Mt. Vernon at an hour when the sun stands in the wrong quarter, so as to cause undesired shadows to mar your long-hoped-for pictures. For that reason it is wise to make inquiries—preferably of local photographic dealers—as to the best hours for your visit. If you are traveling with a large party—as on a conducted tour or on a cruise—a friendly talk with the conduc-

tor of the group, pointing out the fact that you and doubtless others are keen on getting good pictures, will in most cases cause him to arrange the order of sightseeing with a view to getting the best light. Every tourist conductor thrives on pleased patrons, and in nearly every case he will appreciate the fact that for the members of the party to bring home superior pictures will result in good advertising for his company. If you have to urge the point, a judicious use of this argument may turn out to your advantage.

Then there is an even more important way in which one may prepare to get the best pictures, and that is by taking pains to learn what pictures are to be had in the locality one is to visit. There are several ways to find this out, and perhaps my personal experience may help others.

Before sailing on each of my last two foreign cruises (on which I exposed an aggregate of about 7,000 feet of movie film, besides taking over 500 still pictures) I went over more than 100 back numbers of an especially well-illustrated magazine that deals with geographic subjects. From these issues I took out all the sections covering the lands I was to visit and had them bound in volumes—three books cover the Mediterranean and the Near East, for example. In addition—and this I had done on one previous cruise also—I collected a score or more booklets of magazine size issued over a period of several years by various tourist concerns to advertise their cruises. These well-illustrated brochures I carefully collated so as to give me hundreds of the best views of the countries visited on the several tours. I had these pages inexpensive but permanently bound in six small limp volumes.

On each cruise I took with me the books, each one rich in both pictures and text, that covered the scenes I was to visit. A careful study of the two sets of pictures did much to put me on the alert for the human-interest and scenic material I might expect to find; besides, in many cases I could at once go to the points where good pictures had been taken and from which, therefore, I might expect to get satisfactory views, but with an individual flavor.

Now it may be argued that the result of such study would be merely conventional photographs. That was true, in some cases, and indeed stereotyped pictures in certain instances cannot be avoided if one

“Local color” from Palermo, Sicily—a gayly gilded, painted, and carved donkey cart. Even the little beast’s harness bears intricate, colorful designs.
is to photograph certain famous monuments, for example. But, in general, I found that a prior study of pictures taken by professional photographers helped me to see what were the surroundings of scenes I wished to record, and so adopt an equally interesting angle, yet with more unconventional results, for of course I sought the unusual.

Furthermore, now and then a good picture found in my books suggested a view of equal interest taken under entirely different conditions or from a different angle. For example, we often see a picture of the Venetian Campanile taken from under one of the numerous arches that are on three sides of St. Mark's Square—and nearly always the picture is taken from one side of the Piazza, or Square. An equally impressive viewpoint was discovered on the opposite side, one of whose arches offered an effective frame for the picture. And a precisely similar situation exists in Havana with respect to the old Spanish arches that line two sides of the small plaza on which faces the so-called Columbus Cathedral, where the remains of the great discoverer are said to have repose for some years.

If it had not been for my prior study of pictures I would not have been ready to jump out of our carriage and, while other sight-seers were pausing to admire a fine view of Lisbon, hasten to the opposite side of a small park to photograph some ancient historic trees that centuries ago had been brought from Brazil.

All foreign cities have modern quarters, which, for pictorial interest, cannot compare with the older sections through which the tides of native life run much more free from tourist “contamination.” My picture books now and then helped me to locate these older sections, with happy results.

Several examples come to mind to illustrate further this very profitable preparation, though I could relate many more. It was an humble picture post card that caused me to be alert for the right angle from which to “shoot” William Tell’s Chapel on Lake Lucerne when the boat was approaching the shore. Similarly, I saw that a very fine view of smoking Vesuvius might be had from the streets of Pompeii, with the broken walls on both sides making a partial frame. True, I would have seen the picture when I casually came to it, but how many feet of film might have been wasted on account of inferior viewpoints had I not had in my mind’s eye a picture to which I wished my own to measure up.

Perhaps I may be permitted one more amplification of the point that it is not always wise to “shoot” at the first chance.

All over the world one will find men and boys, and sometimes girls, who row out to steamships in the harbor and dive for coins that are tossed overboard, always retrieving them before the bright pieces can wiggle their way to the bottom. But harbor water is not always clear, and brilliant water of translucent blue is rare. I was therefore disappointed to find, on a South American journey, that the dusky bodies of the native divers did not show up so well as I had hoped. Ah, my trusty books! There I found a promise of the crystalline waters I had longed for. So I waited, allowing others to take pictures of the first diving scenes that appeared, and on the shores of the Spanish Main, in the harbor of Santa Marta, Colombia, I was rewarded, for my pictures showed not only the diving boys but the under-water swimmers, like silver flashes sinking and rising beneath the aquamarine loveliness of the little bay.

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**High School Projects**

**Over 100 Miles of Film in Two Years**

One hundred and eleven miles of 16 mm. movie film have passed through one Filmo Projector in the Aliquippa, Pa., high school in the last two school years, according to Lambert E. Broad, head of the school’s science department. Mr. Broad estimates that the approximate time required for showing the 111 miles of film was 609 hours, and that over 23 million single frames were projected in that time. Mr. Broad states that after its showing of 111 miles of film, the Filmo Projector is holding up excellently.

Films are used in the geography, science, industrial history, and health classes of the high school. Also during the last two football seasons, slow motion pictures have been taken of some of the early games, and the films have been used to show the players their faults. “The use of these films, in connection with chalk talks, has been a big help to the coach in the development of the players,” says Mr. Broad.
"Magic Wishes"

An easily produced child film incorporating camera tricks which will mystify and entertain

HARRY F. MORRIS

Here is an idea for a short moving picture in which your six to sixteen year old boy will enjoy starring, because it includes his favorite pastime—eating. You will value this film because it will show your lad in a variety of natural poses and expressions. And its interest will extend beyond the family circle because it tells a story and because of its mystifying but easily achieved trick photography.

"Magic Wishes" can be filmed on any lawn or even on a spacious porch. All the properties needed are an armchair and a small table of the kind suitable for use on porch or lawn, a book, a glass of lemonade, and a plate of ice cream. Only one special costume is required—that of a witch—a long black robe with flowing sleeves and a long conical hat. The face of the witch need not be seen at all.

The first scene shows the table and the back of the chair. Robert is slumped down, only his legs being visible hanging over one arm of the chair. Then comes a front view, showing him reading a book, and then a close-up which should show that the title of the book is "Magic" or "Witchcraft".

Medium shot from front. Robert squirms around, lays book down on table, indicates he is too warm. With one hand on arm of chair, indicates an airplane taking off and zooming up into the air. Rehearse this first and make sure it is done slowly enough to "get over" to the audience. Robert gazes skyward after the imaginary airplane, then looks down, shakes his head slowly, and speaks. Title—I wish...

He picks up book and starts to read again. Close-up. His eyes close sleepily. Medium shot of boy dozing. A witch suddenly appears before him, back to camera. He starts up, swings around in his chair, and stares at her. Witch bows and indicates by gestures she will grant every wish he makes. Title—I'll make every wish come true!

Robert grins, pleased but incredulous. He starts to speak. Witch vanishes. He rubs his eyes. Starts to read again. Throws book on table. Looks discontented. Starts action of holding an imaginary dish in his left hand and eating from it with a spoon. Title—I wish...

More of spoon action, switching to a close-up. Suddenly a plate carrying a large helping of ice cream appears in his left hand, a spoon in his right hand.

Now let us interrupt the story a moment for a word of explanation. First of all, the camera cannot be held in the hands, but must be on a tripod. Then it is time for the witch to appear in the middle of the scene. Robert becomes motionless for a moment, you stop the camera, the witch takes her position, you start the camera, and Robert moves again. The same system reversed makes the witch suddenly vanish.

Similarly, in the case of the ice cream, Robert suddenly holds his hands motionless, you stop the camera, someone places a plate of ice cream in one hand, a spoon in the other, and steps out of range. You start the camera and Robert starts eating ice cream.

When you come to edit the completed film you carefully cut out the frames that show no action. The action then appears continuous and the "magic" effect is created. And, by the way, when you shoot the title—"I wish..." shoot plenty of it, at least two feet for every time it is used. Now to get back to the action.

After showing Robert greedily eating three or four large spoonfuls of the ice cream in quick succession, cut to show him scraping the empty dish.

He places plate and spoon on the table and starts to read. He is still restless and too warm. He puts down the book, takes an imaginary glass of lemonade from the table and pretends to drink it through a straw. Title—I wish... More of his imaginary drinking. He drops his hands, looks around, glances at the table. There stands a glass of lemonade, with a straw (placed there during a camera stop just after he dropped his hands).

He takes glass, starts to sip through the straw. Cut to close-up of glass as it is emptied. He places the empty glass on the table beside the plate and starts to read. Becomes uneasy. Presses hand to stomach. Title—I wish... Then more of same action. Suddenly his expression indicates that the wish has been granted—that he feels better. He glances at the table. The glass is once more full. He pours out part of its contents on the ground.

He starts to read, and again feels uncomfortable. Rubs his stomach. Looks at empty plate on table. Close-up of table and empty plate. Suddenly the plate again holds a large helping of ice cream. (The position of the plate on the table and the position of the spoon at one side of the plate must be exactly the same each time they are filmed.)

General view again. Robert, smiling, raises his hand, palm out toward the ice cream, to indicate "No more!" He now feels much better. Rises to his feet, anxious for something to do. Looks around. Title—I wish...

Flash back to Robert. Four boys suddenly stand before him. They are glad to see each other, and start to play leap frog. Robert soon tires of it and drops out. Close-up of Robert. Bored, yawns. Looks at his watch. Title—I wish...
View of boys, one behind the other, facing almost toward camera. As each boy leaps over the lad nearest the camera, he vanishes in mid air. Only one boy leaps at a time. As he leaves the ground, you cry "Still!" and all other boys remain motionless. You stop the camera. As soon as the boy completes the leap and gets out of range, you start the camera and cry "Action." The boys move forward, and as another boy leaps, you cry "Still!" Repeat this process until only the boy whom the others leaped over is left. A little rehearsing and a careful cutting out of superfluous frames in the completed picture is all that is needed to get these effects.

The one remaining friend walks over to Robert's chair and squats down behind it, out of sight. Robert walks over and sits up the chair. No boy is there! Robert sits down, picks up book but does not read. Shakes head, sadly. Title—I wish...


"I wish...

More of Robert. He claps a hand over his mouth. Title—"No more wishes for me!"


To make a rather startling additional scene for this picture, next winter place the same chair and table in the same position, just before or during a snow storm. After enough snow has fallen, have Robert in the same clothes and with the same book sit in the chair, and show him shivering. Splice this scene, preceded by a title—"I wish it were winter time!"—into the film. An appropriate place for it can be made just after Robert refuses the second dish of ice cream by having him indicate that the heat still bothers him. Then comes the title, another view of Robert indicating discomfort, then the winter scene. You'll have to get him back to summer again by having him find winter too cold and expressing a wish for summer weather. After this sojourn in a winter climate his next wish, for boys to play with, is logical.

The success of the picture depends on the camera being supported motionless on a tripod for all scenes in which it is to be stopped. The actors must hold absolutely still while the camera is stopped, preferably in a pose taken midway in some definite action. Careful editing will do the rest, and you will have a thoroughly enjoyable and mystifying picture that will well repay the care taken to get it right.

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**STILLS FROM YOUR SUMMER FILMS**

As you project the films you made this summer, you probably see many scenes that you would like to have as "still" pictures for your album. For even though you took still pictures as well as movies, there are bound to be views in the 16 mm. films that you didn't get with the still camera. In a movie scene four feet long there are 160 individual frames, so that, in the case of a close-up of a friend, you are bound to find at least one frame which shows just the expression that you want. Anything so fleeting is difficult to get in the single exposure of a still camera, but is quite easily recorded in the course of the quick succession of exposures made by your Filmo.

In your Filmo Projector you already have the greater part of the equipment required to make enlargements from your 16 mm. films. Add to the projector a Bell & Howell device known as the Filmo Enlarger—and you are ready to begin. You don't need a darkroom for this enlarging outfit—use it right in your living room. Nor do you need to cut frames from your film. You merely run the film through the projector until the desired frame appears, then press a lever and perform a few other simple motions like those of using a still camera, and the trick is done. The exposures are made on 2½ by 3½ inch film packs, which any photo-finisher will develop and print. As many prints as you desire can be made from the enlarged negatives. These prints make good title backgrounds.

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Be sure to return the enclosed post card if you want future issues of Topics.

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An indoor close-up by Mr. H. D. Spokesfield, Tulsa, enlarged from 16 mm. film. Notice the freedom from grain.

Watching projected pictures on the white-finished film pack adapter slide of the Filmo enlarger, to select the ones to be enlarged.
SEASONABLE HINTS

Loading the New Film

THE new super-sensitive panchromatic film, being dyed opaque, does not have paper leader. In loading this film into the Filmo Camera, unwind just enough to thread the camera. After the camera door is replaced and locked, run off about one foot of film (which is all that will be fogged), set the footage dial at zero, and you are ready to shoot.

Machinery Needs Oil

FROM now on you'll be using your Filmo Projector more than you did during the summer. Remember that it will do its best work, with the least wear on moving parts, when it is properly lubricated. Follow the oiling instructions given on the chart on the inside surface of the case cover—or, if yours is an earlier model not supplied with this chart, refer to your instruction book.

Your Filmo Camera, too, should be oiled periodically, according to the instructions. Oiling is especially important in the case of the 70-D, on account of its high operating speeds. Use the special Filmo Camera Oil for the camera, and the special Filmo Projector Oil for the projector.

About Splicing Film

LACK of proper care of film cement is the most common cause of splicing difficulties. The volatile constituents of the cement evaporate rapidly if it is left uncorked. Keep the bottle corked at all times, even corking it after each application of cement is made. When putting the bottle away, press the cork in firmly.

Use cement sparingly. Only a little, evenly distributed, is needed to make a strong splice. Film cement sets quickly, so close the pressure clamp instantly after the cement is brushed onto the film.

When removing emulsion preparatory to splicing, be sure to do a clean job. Be especially careful that no emulsion is left on the edge and corners of the cut. If you use water to aid in removing the emulsion, be sure that the film end is wiped dry before making the splice. Moisture will prevent the cement from binding firmly.

Film which is exceptionally dry is difficult to splice. Place it in a Filmador or a humidor can over night and you will find that it will splice more satisfactorily.

Missing Equipment

Filmo 70 Cameras

No. 26675—F. W. Yeager, 273 E. 175th St., New York City.
No. 34298—The Emporium, San Francisco.
Number on camera door is 33115.
No. 57713, 70-D—George W. Evans, Mahanoy City, Pa.
No. 63003—Notify Bell & Howell Co.

Filmo 75 Camera

No. 56559—Notify Bell & Howell Co.

Eyemo Camera

No. 113708, with lens No. 169296—Notify Bell & Howell Company.

Lens

No. 206814—Cooke 1 inch F 1.5. Notify Bell & Howell Company.

Filmo Projectors

No. 51771—American Petroleum and Transport Co., 122 E. 42nd St., New York City.
No. 67152—Notify Bell & Howell Co.

Questions and Answers

Conducted by

R. Fawn Mitchell

Q. Why are instructions given to stop down the lens for distant shots—doesn't a distant object require more light?
A. This question is always puzzling because it seems logical that the farther the light has to come, the more the lens has to be opened to get that light. However, it so happens that even clear air reflects a certain amount of light. This is called "scattering." The effect is more pronounced if there is dust or water vapor in the air. In hot weather, even the eye can see this effect, especially if looking through binoculars. This is often referred to as "heat haze." The photographic effect of this "scattering" is to reflect light into the camera in addition to that coming from the subject. Therefore, the lens has to be stopped down. A color filter is particularly valuable in absorbing the ultraviolet portion of this reflective light. The deeper the filter, the more haze is absorbed, and the better the rendition of the distant subject.

Q. What difference in exposure has to be made between a light and a dark subject taken at a distance? Does the rule of stopping down the lens apply?
A. A dark subject requires more exposure than a light one at a distance, just as in close-ups. The rule of stopping down applies—that is, a dark subject at a distance requires less exposure than the same subject at close-up.

Q. Just how far do you dim the Photometer filament down in taking a reading?
A. A good way to take this reading is to turn the rheostat until the filament image just blends into the subject. Do not strain the eyes at all. Just take a quick, easy reading. If the same procedure is adopted in taking the neutral setting reading as in taking the exposure reading, a true relation will be obtained, thus giving the correct exposure at all times. If any difficulty is experienced in this connection, try starting with the rheostat turned off and gradually bring it up until you can just see the filament.

Q. What filter factors should I use when using my 2x, 4x, and 6x filters with panchromatic film?
A. With "pan" film the 2x filter becomes a 1½x, the 4x a 2x, and the 6x a 3x. In other words, open up your lens ½, 1, and 1½ stops, respectively.
Enliven Your Films with
B & H Editing and Titling Equipment

B & H Film Editor. Picture-viewer, two-way rewinder, and splicer—all “under one roof” in this efficient and compact film editor. The viewer magnifies and illuminates the film for easy inspection as you move it along easily with the geared rewinders. Splicer block conveniently located directly beneath for quick cutting and splicing; makes strong diagonal splice. Water and cement bottles within easy reach. B & H Film Editor, complete, $10.

B & H Combination Rewinder and Splicer. Mounted on a common base, geared rewinds, reel support, splicer block, and cementing equipment provide a compact device for quick and easy editing of your movie film. Attractively finished in crackle-enamel. Price, $14.

B & H Character Title Writer. With this ingenious title device, you can not only make perfect title movies in the usual way, but you can take a movie of your own hand writing titles in white ink on a black background. Two powerful lamps, permanently placed, supply adequate illumination. Camera mounts on a fixed base; compensating focuser supplied. Complete with cards, pen, ink, and carrying case, $36.

B & H Extra Bright Screen provides the high degree of reflective power necessary for adequate projection of kodacolor pictures. Double frame permits facing the projection surface inward when not in use. Swinging feet turn parallel to the frame for storage. 20" x 27", $21; 30" x 40", $39.

B & H Splicer. This is the famous diagonal-splicer which cuts the film on the correct angle for maximum bonding surface. The B & H diagonal splicer goes through projector easier, too. Mounted on hardwood block. Complete with scraper, film cement, and water bottle, $7.50.

B & H Reels and Cans. (Left) B & H Reels are of extra heavy aluminum; bear a legible and accurate film footage scale, and have the famous side-tension grip which eliminates necessity for threading the film in the hub. Humidor cans of heavy ribbed construction, easily stacked, and have tell-tale moistener which tells you when water is needed. 100 ft. reel or can, each, 75c.

September Filmo Library Releases

New silent and sound movies of every description, including the famous Universal, Pathé, and UFA series, are ready for your selection. Write for complete list of new September Filmo Library Releases.

Another Filmo veteran . . . the camera of Mr. B. V. Covert, Lockport, N. Y., which, in 60,000 feet of film, has "hunted quail" and "fished salt water" from Newfoundland to Florida for more than seven years. Mr. Covert's movies won first place in the 1928 Photoplay contest, and second in 1929. Mr. Covert apologizes for the outside appearance of the camera, but states: "... the inside is absolutely perfect." And so . . . another Filmo that for years has defied time and wear, is proved good for many more years of prize-winning movies.

If you should take a trip through the Bell & Howell factory, you'd find almost as many measuring and testing devices as you would production machines. For precision is as much a part of a Filmo as the shaping of its parts. This is necessary, if good movies are to be made. And it is necessary if the camera is to continue to serve, year after year, with the efficiency and dependability you have a right to require.

The Filmo Camera itself is your assurance of good photography, versatility, dependability, and long life. Examine it closely at your dealer's. See for yourself why Filmo owners are so covetous of their equipment. Observe to what lengths Bell & Howell engineers have gone to provide a smoothly-operating, trouble-free mechanism that will take theater-quality movies under all photographic conditions, that acts as efficiently in the hands of the beginner as an old timer, that takes movies year after year without showing the slightest trace of wear.

The Filmo 70-A camera is now $140 with F 3.5 lens, and $190 fully equipped for Kodacolor. The Filmo 75, fully equipped for Kodacolor at $149.50, is the lowest priced color movie camera you can buy. See your dealer today or write for full information. Bell & Howell Company, 1842 Larchmont Ave., Chicago, Illinois. New York, Hollywood, London (B & H Co., Ltd.) Established 1907.
EVERYTHING for Editing and Titling

B & H Film Editor. (Above) Picture-viewer, two-way rewinder, and B & H diagonal splicer, comprise this efficient and compact film editor. The viewer magnifies and illuminates the film for easy inspection as you move it along in either direction with the geared rewinders. Splicer block is conveniently located directly beneath for quick cutting and splicing. Water and cement bottles within easy reach. B & H Film Editor, complete, $10.

B & H Character Title Writer. (Above, left) With this ingenious title device you can easily film titles perfectly, and can also make trick titles. For instance, you can film your hand as it writes. Two powerful lamps, permanently placed, supply adequate illumination, while the camera is mounted on a fixed base and is equipped with a compensating focuser. Complete with cards, pen, ink, and carrying case, $36.

Filmo Enlarger. (Below) Attached in but a moment to the Filmo Projector, the Filmo Enlarger will make 2 1/4 x 3 1/4 inch negatives of any frame in your movie film. Any photo finisher can develop the film and make the prints. Uses ordinary film pack. Movie is viewed on white film pack adapter slide for selection, slide is removed, and the exposure is made just as in a snap shot. Filmo Enlarger, complete with special condenser and film pack, $28.50.

B & H Splicer. This is the famous Bell & Howell diagonal splicer which cuts the film on correct angle for maximum bonding surface. The B & H diagonal splicer goes through the projector more easily, too. Mounted on hardwood block. May be combined with B & H Picture Viewer and Rewinder to make complete Film Editor. Complete with scraper blade, film cement, and water bottle, $7.50.

B & H Reels and Cans. (Right) B & H Reels are of extra heavy aluminum, bear a legible and accurate film footage scale, and have the famous side-tension grip which eliminates necessity for threading the film in the hub. Insulator caps of heavy ribbed construction, easily stacked, and have tell-tale moisture which tells you when water is needed. 100 ft. reel or can, each, 25c.

Titling Your Films

No. 10 Looking back and ahead at this series

The October, 1930, issue of Filmo Topics carried the first of a series of nine articles on movie title making which appeared regularly each month until June, 1931. We were greatly pleased, as the series went on, to find that Topics readers liked it, benefited from it, and even contributed many valuable ideas to it. In fact, because of the number and merit of these contributions the series was continued a month or two farther into the spring than we had originally intended, and even then was discontinued for the summer months while the editor had a lot more material in his files.

Now that autumn is here it's time we give thought again to the subject of making titles. Even though a year has passed, we don't like to go back over all the fundamentals covered in the early articles of the series because so many of you were reading Topics at that time and, we hope, have your back copies filed for reference. On the other hand, some of you didn't get Topics at that time and so haven't read the early articles. Perhaps we can best please all concerned by reviewing the preceding articles of the series, offering to send you, on request, any back issue or issues of Topics that you wish, and then going on with the series next month.

So here's a summary of what has gone before. Send for any or all issues that sound interesting to you.

October, 1930, No. 1. Pick the method you like best. Titles are vital to the success of personal movies. Titles may be made from (1) ready-made, movable letters or (2) cards lettered, written, or printed. Discussion of these movable letter outfits—Sewah, Filmo Title Board, and B & H Block Letters. Film these with reversal film.

Hand lettering titles on white cards in black ink, then getting reverse color effect on screen by filming on positive film which is then developed as negative.

November, 1930, No. 2. Preparing title cards for filming. Size of title card—4 1/2 x 3 1/2 inches if to be used in B & H Character Title Writer. Methods of getting wording on cards: (1) lettering by hand, (2) writing in neat, open longhand, (3) typing with a typewriter, using carbon paper for making the impression, the ribbon being removed, and (4) having a printer set the type and proof it on white matte cards. Illustrations showed effects of various methods and proper letter sizes. Ink and card to be dull rather than glossy, so as to avoid halation.
Splicing Is Easy—Try It!

There's no reason why anyone should project short 100-foot reels that no more than appear on the screen before they are finished, making necessary another threading of the projector. It's easy to assemble your films onto 400-foot reels for convenient projection. The splicing is child's play. You just go through these simple operations on the B & H Splicer and the job is done:

1. Cut the film on a diagonal with the blade. Pilot pins hold the film just right for the correct cut.

2. Scrape off the emulsion from the bonding surface. The scraper guide and the pilot pins take care of all positioning.

3. Cut the other film end on a diagonal with the cutter blade. Here, too, pilot pins insure your cutting on exactly the right angle.

4. Place the two film ends so that they overlap slightly, as shown. Brush on a little film cement, and . . .

5. Close the pressure clamp quickly. In a few seconds release the clamp, lift the film from the pilot pins, and you will have made a strong, pliable, diagonal splice—more quickly than it takes to tell how to do it.
Mr. and Mrs. A. K. Stern, of Chicago, the latter a daughter of Julius Rosenwald, well-known philanthropist and head of Sears, Roebuck & Co., sailing on the S. S. Ile de France with their Filmo 70-A Camera which they used to record their trip and especially to make movies showing large-scale housing conditions in Europe. Dr. Simon Flexner (right), of the Rockefeller Foundation, saw Mr. and Mrs. Stern off.

Mrs. James M. Hopkins recording autumn sports events at Ouweestra, near Chicago, with her Filmo 70-A Camera. Hunt, horse shows, and horse races provide many colorful cinematic opportunities at this season.

(Below) Chester Morris, star in "Corsair," United Artists film to be released to theaters this month, with the Filmo 70-D Camera which he appears using in this latest Roland West production.

(Below) Gilbert Warrenton, professional cinematographer and one of Hollywood's best, relaxes after a hard day's work by making movies. His favorite star is Gilbert, Jr., and his camera is a Filmo 70-D.
LET'S APE OUR BIG BROTHERS

Yes, the cine-amateur, like his Filmo, has a Big Brother to look up to

LEO J. HEFFERNAN

termined to prevent him from working? Not in the least, for he
turned away from the scene, de-
liberately lit a cigarette, then
lounged nonchalantly against an
iron railing. Apparently his mind
was elsewhere, but a close ob-
server could see that a signal was
given his assistant, who lurched away to
a position in front of the doorway.

The "funny" fellows, who had been danc-
ing and grimacing but a moment before,
shamefacedly ceased their antics, as the
lack of interest on the part of the camera-
aman made them feel ridiculous. Even the
circle of rubbernecks, gathered to watch
the fun at the cameraman's expense, lost
interest and dissolved, after which normal
pedestrian traffic along the pavement was
resumed. When the moving men were
about to emerge from the hallway, the as-
sistant gave the signal. As the camera
was all set for the scene, the cameraman
quickly jumped into position and started
cranking without delay. Needless to say,
he secured a celluloid record of the scene
which was exactly what he wanted, and
one which, on the screen, would look as if
the camera had been hidden. These tac-
tics can be employed by the amateur, who
has available to him an ally which the
professional lacks—remote control. If the
hand holding the bulb of this ingenious
accessory is held in the pocket, no one
else need know when the picture is being
taken.

I have been introduced to many profes-
sional cameramen by my friend Walter
Scott, ace cameraman of Fox Films, and
have, in fact, made it a point to talk with
as many "Big Brothers" as I could. Many
of these chaps are frank enough to admit
that they are sadly lacking in theoretical
knowledge of the principles of photog-
raphy. It is the practical knowledge,
gleaned from years of experience in mo-
tion picture studios, which enables them
to secure such striking screen results.
After all, that is what counts. All the
theories in the world will prove worthless
if one fails to master the practical side
of one's hobby or profession.

It seems to me that many amateur cinema-

(Right) Miss Kathleen Howard, Filmo
enthusiast of New York City, sets up
her camera atop "Anthony's Nose" to
film this view of the Hudson River. But
what's this photo that looks like a carv-
ing, you ask? It's a "posi-negg," and is
easily made in still photography or in
16 mm. film enlargements—but the
process can't be applied to movies them-
selves—at least not with reversal film.
A positive on film is made from any
negative. Positive and negative are laid
together and registered, then shifted
just slightly on a diagonal and used,
just as a single negative would be, for
making a print on paper.
The remedy is fairly obvious. There is a huge gulf between theory and practice—a gulf which can only be bridged by action and performance. The amateur cameraman must bridge the gulf by himself before he can hope to produce the kind of motion pictures which will hold the attention of an audience.

"But I never see professional cameramen at work!" exclaimed a friend to whom I had been expounding my theory that amateurs should go about getting pictures the same as pros do, "and even if I did, I couldn't go chasing one around just to see how he does this and that."

As this is all perfectly true, it would seem, superficially, that my advice to this particular amateur was impractical. However, knack usually goes hand-in-glove with common-sense. The mental stimulus which will result from asking himself, "How would a professional take this shot?" will help the sincere worker to think in a manner apart from the grooves which theories engrave in the mind. Thus, it can be seen that the trick is merely to detach oneself, then think along purely practical lines.

For instance: suppose you wish to take a hundred feet of that parade which is scheduled for Main Street next week. The natural tendency is for you to line yourself up with the thousands of spectators at the curb. Your pictures will lack the finished quality which is so desirable, for some of the marchers will be so near to you that their forms will appear on the screen as blurred, jumpy ghosts. If, however, you ask yourself, "How would a professional take this picture?" you will not fail to look about for a more advantageous viewpoint. If the parade is of sufficient importance you will probably see one or two "big brothers"—on the roof of the big building where Main Street makes a sharp turn—on the balcony of the hotel—but never mingled with the crowds on the curbstone. There is no earthly reason why an amateur, with a little diplomacy, cannot secure a similar perch and thus assure himself shots of the desired scenes which will be every bit as interesting as those seen in the professional newssheets.

Emulating the example of our "big brothers" will not be the most convenient way to photograph the scenes we go after. For example—it means carrying a tripod while on treasure bent. We must use it for every scene, for a professional would not think of taking a picture while holding his camera in his hands. But the screen results will tell a story which will be a source of real pleasure to the enthusiast. The added touch of taking every scene as a real cameraman would take it, will not fail to pay big dividends in audience interest.
AUTUMN FILMING

October’s cinematic offerings and how to do them justice with your Filmo

MANY vote October their favorite month of the year—for life in general and for movie making in particular. And there is much to be said in support of their selection, just in case anyone should rise to assert that the filming season should end with the summer vacation season. Forgetting a few grey, rainy days (which is easy to do except on such days) the weather is zestful. It makes us feel like going places even to the extent of a little physical exertion. October’s bold, warm colors appeal to us and add to the lure of the out-of-doors. We don’t find ourselves too lazy to run down the best viewpoints and subjects for our movie scenes, as we must confess we did on certain hot summer days. We’re as full of pep as our age permits. And of things to film we have plenty.

Saturday afternoon there’s the football game. That is surely worth a hundred feet or so of film. Our Filmo will have lots of company at the stadium. The chances are that the coaches will each have a man filming the game for squad training purposes. Let’s shoot a few plays at 32 and 64 speed to see how they look slowed down the way the players see themselves on the locker room screen. But, while the coach films only the game itself, play by play, we will want to film the affair more after the style of the newsreel cameraman or, better yet, somewhat as it would be filmed if a part of a photoplay of college life. That is, we’ll want to get the excitement, the high spirits, the tempo of the day into the film by taking shots of the merry, jostling crowds entering the stadium, the teams trotting onto the field, the cheer leaders and the roosters, the scoreboard as it is changed, and other bits of “atmosphere” and by-play—all in addition to shots of the more significant plays themselves. Then we’ll have a film story which, when projected, will practically take our audiences to the game with us.

We’ll need a 2 or 3-inch lens to get the best shots from the grandstand—the 3-inch in a large stadium or for the more distant plays in any stadium. As for exposures, we’ll follow the chart or, better yet, use a Photometer, guarding against under exposure when the light begins to fade in the second half, particularly when using the faster film speeds. On dull days our Cooke F 1.8 lens may be called into use before the game is over.

But perhaps your idea of an October outing is to let others cheer the gridiron heroes while you shoulder a gun, whistle for your dog, and ramble off across golden fields and through the flaming woods to glory in nature’s vivid beauty and perhaps, at the same time, to bag a fat squirrel, or a rabbit, or a bird or two for the pot. Or perhaps you’ll go to the north woods this autumn for bigger game. In either event take your Filmo along and be well equipped with panchromatic film and color filters. If you’d really like to do justice in your October outing films to the season’s gorgeous colors, take them in Kodacolor. A film in full natural colors, such as you can easily make with your Filmo even on a short hike over the countryside any bright October afternoon, can be a gem of beauty that will always delight you. The soft autumnal lighting and the Indian Summer haze lend rare atmospheric qualities to carefully produced October films.

Sometimes it is a problem to know how to handle the purely scenic film, which many of us are inspired to produce, in such a way that its scenes “hold together” and interest is sustained. One excellent solution is to select a suitable poem, the lines of which can be used as titles while the word pictures can be interpreted in movies. October is a fine month to try your hand at this sort of film, preferably in Kodacolor, and you may wish to use Dart Fairthorne’s poem, Early Autumn:

The country lanes are bright with bloom,
And gentle airs come stealing through.
Laden with native wild perfume,
Of balm and mint and honey-dew.
And o’er the summer’s radiant flush
Lies early autumn’s dreamy hush.

In wayside nooks the asters gleam,
And frost-flowers dance above the sod.
While, lapping by, the silent stream
Reflects the hue of goldenrod.
That flower which lights a dusky day
With something of the sun-god’s ray.

The grape-vine clambers o’er the hedge
In golden leotards; sumac burn
Like torches on the distant hedge,
Or light the lane at every turn.
And ivy riots everywhere
In blood-red banners on the air.

A purple mist of fragrant mint
Borders the fences, drifting out
Of fostering corners, and its tint
As half of cheer and half of doubt.
Is like the dear, delightful haze
Which robs the hills these autumn days.
SOUND FILMS
NOW PLENTIFUL IN 16MM.

IT IS undoubtedly safe to predict that it will not be long before talkies will be shown as commonly in the home as silent pictures are today. For the sound pictures have advanced into the field of private, amateur showings far more rapidly than was anticipated a year or two ago. Then, when 16 mm. talkie producers were first being announced, it was predicted that a long period must elapse before there would be available a library of sound subjects for this type of reproduction which would be sufficiently large and varied to make home programs practical and enjoyable. But already the Bell & Howell Film Library is offering over 230 16 mm. sound subjects, and has in sight approximately 25 releases monthly for the next twelve months.

Certain well-known producers, including Pathé, Universal, and Ufa, have been quick to see the possibilities of the home talkie market, and have made professional subjects available for 16 mm. sound reproduction, which subjects comprise the Film Library talkie offerings. A number of progressive Filmko dealers are already building up comprehensive sound libraries for renting to owners of home reproducers, and some of these dealers have even announced a plan by which people who are giving a social function at home can rent both reproducing outfit and talkie subjects at a reasonable fee.

As an example of the type of sound film material available, the current release list is reproduced below.

**PATHE 16 MM. SOUND FILMS**

Price $15 per reel including sound disc

<table>
<thead>
<tr>
<th>Title</th>
<th>Code</th>
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<tbody>
<tr>
<td>Hooked—Granland Rice Sport-light, salt and fresh-water fishing</td>
<td>MURK</td>
</tr>
<tr>
<td>Sporting Brothers—Granland Rice Sportlight, dealing with Soccer, Rugby, and Football</td>
<td>MURK</td>
</tr>
<tr>
<td>Youk Saw Youk—Aesop's Cartoon Fable</td>
<td>MUKR</td>
</tr>
<tr>
<td>Noah's Ark—Aesop's Cartoon Fable, Noah's troubles in assembling his animal cargo</td>
<td>MUKR</td>
</tr>
<tr>
<td>Temple of Silence—The Great Adventure Series, Exploring ancient ruins in Indo-China</td>
<td>MUKR</td>
</tr>
<tr>
<td>Fable Tangles—A two reel comedy</td>
<td>MURE</td>
</tr>
<tr>
<td>Road to Mandalay—Songs Sketch by a soloist and by a fine quartet</td>
<td>MULAR</td>
</tr>
<tr>
<td>Red Hot Rhythm—A new red drawing of New York's Tin Pan Alley, portraying in an understanding way the struggles and joys, heartbreaks and triumphs, of the song writers</td>
<td>MUKR</td>
</tr>
</tbody>
</table>

**UFA EDUCATIONALS**

Price $60 per reel including two sound discs

- Jupiter, Saturn, The Milky Way
- One of the Astronomy series
- Insect Farmers and Lobsters
- The strange ways of the ant
- Secrets of the Sea—Jellyfish and sea-slugs through the microscope

**UNIVERSAL SOUND FILMS**

Price $30 per reel including sound disc

<table>
<thead>
<tr>
<th>Title</th>
<th>Code</th>
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<tbody>
<tr>
<td>Chili Con Carmen The Lucky Rabbit</td>
<td>MACR</td>
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<tr>
<td>Kiss and Kursches The Lucky Rabbit</td>
<td>MACR</td>
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<tr>
<td>Broadway Follies The Lucky Rabbit</td>
<td>MACR</td>
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<tr>
<td>Bowery Bimbos The Lucky Rabbit</td>
<td>MACR</td>
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<tr>
<td>Tramps The Lucky Rabbit</td>
<td>MACR</td>
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<tr>
<td>Hush Hush The Lucky Rabbit</td>
<td>MACR</td>
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<tr>
<td>Prison Panic The Lucky Rabbit</td>
<td>MACR</td>
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<tr>
<td>Hot for Hollywood The Lucky Rabbit</td>
<td>MACR</td>
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<tr>
<td>The Royal Bluff Slim Summerville</td>
<td>MACR</td>
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<tr>
<td>Varsity Drag All Star</td>
<td>MACR</td>
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<tr>
<td>Flying High All Star</td>
<td>MACR</td>
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<tr>
<td>Collegians</td>
<td>MACR</td>
</tr>
<tr>
<td>Universal Comedies</td>
<td>MACR</td>
</tr>
</tbody>
</table>
E. C. HINCHCLIFF of Rockford, Illinois, showed us some interesting Agfa color plates that he had made by the still projection of a frame of Kodacolor film onto the glass plate, which was held against the wall of his dark room. Projection was done in the usual way, through the regular Kodacolor lens and filter assembly on the Filmo Projector. The color plates were developed according to the manufacturer's directions.

D. W. Hardy, Englewood, N. J., wrote to tell of his simple film editing method. He uses small, oval, gummed stickers, which he attaches to the film to indicate various operations that are to be done. As he projects the film and comes to a section that is to be cut out he attaches a sticker on which he draws an arrow pointing toward the section to be removed. The sticker is placed at the cutting place as soon as it comes off the projector's lower sprocket. At the other end of the section, when it comes off the sprocket, he places another sticker at that cutting place, its arrow pointing back toward the first one.

Numbered stickers are attached to the film to indicate changes in positions of scenes. Figures encircled, placed at each end of a scene, indicate that that scene is to be cut out and moved to a point identified by the same figure without the circle. Stickers lettered A, B, C, etc., point out places where titles are to be inserted. The title-designating letters correspond to letters identifying the titles on the title script.

"Of course," writes Mr. Hardy, "it takes a bit of reversing (the projector) to determine parts to be cut out, but this method makes the splicing very simple as you just run the film through the rewinder until you come to a sticker, then do the indicated cutting and splicing.

Filmo Entertains Passengers on Alaska Cruises

MOTION pictures are being used more and more by steamship and railroad lines for sales promotion and for passenger entertainment. Canadian National has placed a Filmo Projector on each of its fine Alaska cruise vessels. The cruises of these ships are of about ten days' duration, and the plan is to show a number of films each evening to fill in the interval between dinner and dance hours.

Questions and 
\* \* \* 
Answers

Conducted by
R. Fawn Mitchell

Q. Why has the golf model Filmo 70-D Camera a shutter opening of only 110 degrees?
A. When taking fast moving objects, such as the golf club head in motion, it is desirable to reduce the exposure time to a minimum to prevent blurring.

Q. Can the golf model 70-D Camera be converted into the regular 70-D model?
A. Yes, by changing shutters. The golf model has a shutter with an opening of 110 degrees, and the regular model has a shutter with an opening of 216 degrees.

Q. Some of my splices have a narrow white margin adjacent to them. What causes this?
A. If water is used before scraping, care must be exercised not to use too much. Excess water tends to seep under the guiding blade, causing the emulsion to tear away and thus produce the white line in question. It is also quite important that the film be pressed all the way down on the pilot pins at each operation; otherwise exact registration is not secured.

Q. I notice that the new supersensitive film does not have paper leader. Can the camera be loaded in daylight without fogging the film?
A. Yes. Supersensitive panchromatic film is dyed opaque, so that the film itself serves the purpose of leader paper. In loading this film into the Filmo Camera, unwind enough to thread the camera. After the camera door is replaced and locked, run off about one foot of film, set the footage dial at zero, and you are ready to shoot.

Q. What is the best way to preserve films?
A. The first essential is to keep your films in humidors cans stored in a reasonably cool place. Put a teaspoonful of water on the humidor pad once a month or so, depending on how often the film is exposed. Some people prefer to add a few drops of oil of camphor or carbon tetrachloride. The films should be cleaned before being stored away. The B & H Film Cleaner is ideal in that it cleans the films while they are being projected, leaving them ready for storing immediately after being shown.
Kodacolor for your
Filmo Camera and Projector

Projection Lens Assembly for Kodacolor.
Any Filmo Projector can be equipped for Kodacolor projection with the famous Filmo lens assembly, which includes special corrected projection lens, Kodacolor filter, and for most Projectors, a special condenser. For Projectors with extra condenser slot, the assembly is $35; for Projectors without extra slot (no condenser supplied), $30.

Cooke Special F 1.8 Speed Lens and Kodacolor Filters.
This is the lens and filter equipment which makes beautiful color movies so easily with Filmo. Designed and fashioned by master English lens makers, this fast lens also takes black and white movies of the highest quality. Complete with Kodacolor and neutral density filters, $75. Lens alone, $60. Special compact model for Filmo 75 at same prices.

Filmo Critical Focuser. (Below)
You can focus any Filmo 70-1 Camera lens in a moment when the camera is equipped with this Critical Focuser. 25 diameter magnification. Critical Focuser, including installation, $40.

Filmo 75 for Kodacolor. The Filmo 75 fully equipped with a special compact model of the famous Cooke F 1.8 speed lens with Kodacolor filters, is the lowest priced Kodacolor-equipped movie camera on the market. Kodacolor results with this outfit reach the perfection you would expect from any Filmo Camera. The Filmo 75, completely equipped for Kodacolor, including case, $119.50.

October Filmo Library Releases
New silent and sound movies of every description, including the famous Universal, Pathé, and UFA series, are ready for your selection. See page 7 for October releases, and write for complete list of Filmo Library subjects.

BELL & HOWELL
FILMO

From the rigors of New England winter to the climate at the bottom of a Brazilian coal mine is just an ordinary range of weather for this Filmo 70 Camera, bought in 1926, the companion of Edward H. Bauer, Consulting Engineer in Rio de Janeiro, Brazil. And today, this Filmo is giving its owner superlative service, helping him in his business as well as his play. Inspection shows it to be untouched by its rigorous life. Years more of dependable service lie ahead of it.

The world is Filmo's final testing laboratory. Simulate as we will, in the Bell & Howell factory, conditions equivalent to ten years of use, weather at the poles or in the jungles, a fall from a ten story building—nothing quite proves Filmo's dependability so well as the hundreds of true experiences it has had. Speaking of his veteran Filmo 70, Mr. Bauer says: "It has been traveling with us from the United States to Brazil, South America; has weathered the heat and humid atmosphere of the tropics, and has gone down into the coal mines of Rio Grande Do Sul. Regardless of temperature or weather conditions, we have always had first class service from the Filmo... It has been in the heart of the jungles of South America filming hydro-electric plants. The 'Old Faithful' Number 70 is still going strong, a fine running mate for my new Filmo 70-D."

Maybe you're not going to the Pole, nor yet to the Brazilian jungles, but you do want the movie camera that is unaffected by weather and jolts and rough handling... a camera that goes on serenely taking theater-quality movies, whether it's in your living room or on a mountain side. Such a camera is Filmo.

NOVEMBER 1931
The Field Model

**FILMO 75... in a new pebble-grain covering**

Yes—the same honest and sturdy heart beats beneath this new and serviceable covering of the famous Filmo 75. It looks every inch a Filmo, and it is every inch a Filmo—a camera particularly useful for trips afield and at sports events because of its compact size and because it slips easily into the pocket of your overcoat. Takes a full complement of lenses, including telephoto. Variable viewfinder built-in. And with F 1.8 speed lens and special filter at $149.50 it is the lowest priced Kodacolor-equipped camera on the market. With 20 mm. F 3.5 universal focus lens, $92; with case, $99.50.

**The B & H Film Cleaner**

Maybe you think your films are clean, but the new brilliance they will have after a trip through the B & H Film Cleaner will show you what you've been missing in projection results. This device attaches to the Filmo Projector in a moment, cleans during projection, and does a thoroughly scientific job of it. Price, complete, as pictured below, $13.50.

**The B & H Extra-Bright Screen.** Give snap and sparkle to movies you thought were under- or over-exposed. The patented surface of the B & H Extra Bright Screen has a marvelous reflective power—and is especially effective for Kodacolor. Double frame, protecting projection surface during storage. 20 x 27 in., $21; 30 x 40 in., $39.

**The Filmador—a Thermo-Humiditor.** Here's the final solution to all your film storage problems. Keeps moisture in with rubber-sealed cover, and minimizes moisture-absorbing temperature changes by insulating inner container from outside air. Filmador complete, $5.

**BELL & HOWELL**

Lights! Camera!

Try your hand at movie making in your home, for, now that film is faster, indoor shots are easier to take than ever before.

Have you done any indoor movie making with your Filmo loaded with the new super-sensitive panchromatic film? If not, we hope that we can induce you to try it, for you will certainly be pleasantly surprised when you screen your films and see the fine results that are now so easy to produce.

This new film is four times as fast under incandescent light as the regular panchromatic film. This means that you can now take indoor shots at F 3.5 that formerly required stop F 1.8. Or it means that you can take a given scene with a given lens opening with only one-fourth as much light. Or, most significant of all, it means that every other factor—camera, lens, and light—being equal, you can get back twice as far with your Filmo and therefore include an area twice as wide and twice as high. You can now take full length views of people, to put it still another way, where heretofore you had to confine yourself to waist-length views.

It is really very much worth while to initiate yourself to indoor cinematography, for there are so many things to film in the home, and so many scenes that you are sure to want you can only shoot indoors. For instance, how can the film of baby's life be complete without scenes of his bath, his play, his meals, his attempts to creep, and finally his first steps? Yet these things ordinarily occur in the home and obviously can best be filmed indoors. Again, how can the family record film be representative without portraying each member of the family at characteristic indoor activities? High spots in the family history, too, can usually be filmed only indoors, yet you will not want to pass up the opportunity of recording a wedding, the family reunions at the coming holiday season, or the children's parties.

There are many other indoor movie possibilities too—short playlets or novelty films by the family and friends who drop in for the evening, moving picture portraits, the family pets, and even the children's toys, some of which may be suited for those mystifying films in which inanimate objects move as though alive. So you see that your camera can bring you just as much pleasure indoors in winter as outdoors in summer—if you will let it.

As we said before, the effectiveness of artificial lighting equipment for indoor movie making is quadrupled by the advent of the new super-sensitive panchromatic film. For instance, a pair of Halldorson 500-watt lights, or one 500-watt and one 1000-watt unit, will now equip you excellently for a wide range of indoor work. The accompanying table
gives a good idea of what can be done
with these and various other lighting unit
combinations. Of course you can take
close-ups indoors with the aid of sufficient
ordinary home lamps, when using the
new film. A total of about 200
watts of ordinary bulbs, placed
within 3 feet of the subject, will
permit taking close-ups with the
F1.8 lens.

But then, once you have gotten
well into this comparatively new
phase of personal movie making,
you will not care to be limited to
close-ups. You will get better and
more interesting results by using
two comparatively powerful
sources of illumination, preferably
diffused to avoid harsh shad-
ows and placed so as to give
"modeling." For instance, if you are
using the combination of a
1000-watt lamp and a 500-watt
lamp, set the 1000-watt lamp on
the side of the subject you want
to be highlighted, that is, on the
side which is to appear lighter
than the other. The classic ar-
angement of lights is to have the
stronger light at a 45° front angle
to the subject. However, modern
conceptions of satisfactory illu-
nimation have made it accepted
practice to depart materially from
this method. A type of lighting
now commonly used is to illumi-
nate the front of the subject
sufficiently to get satisfactory ex-
posure and then use a very pow-
ful back light. This back light
produces a "halo" around the sub-
ject and makes it stand out from
the background, thus giving depth
—the illusion of stereoscopic relief.
For an effect of this nature in an
ordinary room, you would use the
500-watt light in front of the sub-
ject and the 1000-watt light be-
hind. Often the projection screen
can be pressed into service ad-
vantageously to reflect light back
onto the shadow side of the subject.

Indoor work provides a means of
learning the fundamentals of the
art of motion picture photography
because every factor is under your
control, even to the lighting,
which outdoors is necessarily
taken largely as you find it. The
mere change in the elevation of
your lights can work an unbel-
lievable effect on your picture
result. This is a field in which
enjoyable experimental work may be
done, and in which the possibilities seem
inexhaustible. One application of un-
usual lighting effects is the mystery play.

By placing the lights on the floor
and having no overhead illumination at all,
the faces of the actors assume an unreal
aspect strikingly in accord with the spirit
of mystery plays. Gigantic dis-
torted shadows are produced, con-
tributing further to the "atmos-
phere."

It will be found preferable to set
the camera on a tripod for indoor
shots, so that it will be steady at
times. There is nothing so an-
noying to an audience as a picture
that jumps about on the screen.
The favorable reaction of the
audience, even though it is com-
pounded only of your own family
and intimates, is the goal toward
which your movies should be
aimed. Therefore, such factors as
camera steadiness, correct ex-
sposure, and careful editing and ti-
tling, are every bit as important
as in any Hollywood production.

A folder which proved exception-
ally popular was published a year
or so ago, and a few copies are
still available to those who will
write for them. Under the title
"Filmo Movie Making—Indoors"
this folder presents a complete
but clear and concise set of facts
which are an effective guide to
those undertaking indoor work
with the camera. Subjects covered
include: actinic value, effect of
distance, soft and hard light, dif-
fusers, reflectors, positioning lights
and reflectors, and electric cur-
rent demands. A feature of espe-
cial value is "Ten portrait lighting
effects and how they were ob-
tained." This section is illus-
trated with ten portrait photographs
and with a diagram of the lighting
with which each photo was taken.
Furthermore, a thorough discus-
sion is given of each lighting ar-
angement and the resulting pic-
ture. This material was first
prepared for and originally pub-
lished in the American Cinemat-
ographer, professional camera-
men's magazine, which fact
voices for its merit and value for
the serious amateur. As we said,
this folder will be sent upon re-
quest—as long as the supply lasts.
We suggest that you write for it
now, for it will help you in getting
good films of your Thanksgiving
reunion and your Christmas and
New Years parties.

<table>
<thead>
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<th>Table of Artificial Lighting Data</th>
</tr>
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<tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1 Arc Lamp; 1 Reflector</td>
</tr>
<tr>
<td>1-1000 Watt Light; 1 Reflector</td>
</tr>
<tr>
<td>1-500 Watt Light; 1 Reflector</td>
</tr>
<tr>
<td>1-1000 Watt Light; Reflectors</td>
</tr>
<tr>
<td>2-1000 Watt Lights; Reflectors</td>
</tr>
<tr>
<td>1-1000 Watt Light; Reflectors</td>
</tr>
<tr>
<td>2-500 Watt Lights; Reflectors</td>
</tr>
</tbody>
</table>

Note: The above table is based upon these assumptions:
(1) That the walls and ceilings have average reflecting
power, that is, white ceilings, medium-toned walls.
(2) That no daylight nor other additional light than
average home illumination (which has little actinic
value) falls upon the subject.
(3) That the subjects are clothed in medium colors—
neither white nor very dark.
(4) That, in the Arc Lamp, panchromatic carbons
are used.
H.R.H. Prince Gustaf Adolf of Sweden, when this photograph was taken, was keeping his eye closely on his movie subject as he rotated the turret head of his Filmo 70-D Camera preparatory for the next shot. The event was a field day, according to Nordiska Kompaniet, Stockholm, through whose courtesy this photo is reproduced.

(Right)—Mr. David Couper Thomson (with his Filmo 70-D), who heads the huge Dundee, Scotland, publishing firm which bears his name, enjoyed an inspection trip through the Bell & Howell factory in the course of his recent American tour with his nephew and business associate, Eric V. Thomson, also shown.
African Game Filming Experiences

Major C. Court Treatt, F. R. G. S.

Editor's Note: Major Treatt has been exploring, hunting, and photographing in Africa for twenty-two years, since he was eighteen. He is a recognized authority on the lesser known tribes, and is a distinguished scientist receiving support and cooperation from both the British Government and the British scientific societies.

I am often asked, "Going to Africa? Pretty dangerous place, eh? What with charging lions and all that sort of thing?"

Not at all. Nine times out of ten, lions run away when they get the human smell. For instance, my brother-in-law and I were photographing a huge lion some thirty yards off drinking at a water-hole, and we got some good film. The lion, his drink finished, turned round and started to walk away. We thought we were going to lose him, when I blotted, with great presence of mind, made a noise like a bleating goat. Immediately the lion whipped round and started to stalk towards the blind. As he came nearer, his stalk changed into a fast catlike rush and it appeared that he would finally end up right on the camera. If I were a "newspaper explorer" this story would probably end in a ferocious fight in which I had gallantly knifed the lion, but the actual truth is that, when he got within about ten feet of the camera, he caught the hated human smell and, whipping round, ran for his life.

For photography of dangerous game, the quickness and adaptability of an automatic camera such as the Bell & Howell Eyemo makes its use indispensable. I have had great success with such a camera actuated by a distant release. On one occasion, I hid a clockwork camera in a lump of mud about thirty feet from my blind so that only the lens projected. I could actuate this camera from the blind by distant release. On the top of the lump of mud containing the camera, I placed a very smelly piece of meat. A lion drank at this water hole every two or three days and I knew the meat would attract him. In due course he arrived and, smelling the meat on the top of the hidden camera, started to stalk towards it. But lions are clever and somehow he sensed the faint whirr of the camera. But he did want that meat. Finally, desire overcame discretion and he made a wild rush, snatched the meat from the very top of the camera and made off with it. This resulted in a most perfect picture of a lion charge and could not have been taken by any other means.

The buffalo, rightly, has the reputation of being the most dangerous animal in Africa. But a good deal of my work has been in totally uninhabited and unexplored territory where the animals are unused to man. A year ago I was on the unexplored Shalleika River where buffalo were numerous. I stalked a herd of them, and the leading cow of the herd resented my presence. (Cows, not bulls, almost invariably are the leaders of the buffalo herd. This, even in the human species, is not unknown.) Somehow I was convinced that this buffalo did not mean real mischief but only meant to frighten me (and she did) while she covered the retreat of the herd. Five times
she charged right up to the camera, only to pull up in a cloud of dust. Then, the herd having reached safety, she turned around and cantered off.

I have been hunting nearly all my life, but nowadays I have entirely given up hunting with a rifle and hunt with a camera instead. It is more sport and more exciting, and the portability of the Eyemo has made successful camera hunting possible.

For instance, I am the only white man to have hunted and killed an elephant with a spear and shot the hnt. This was while I was living with the Baghara Arabs in the Central Sudan. It entailed days of hard running and marching and great quickness in the use of a camera. We covered four hundred and twenty-one miles on foot in twenty days.

African women? Theoretically they are of little importance. But in Africa, as everywhere else, what the women say eventually goes. The Baghara women are a modest, healthy lot. Paying a compliment to a Baghara girl, incidentally, is a risky business, reminiscent of your own Wild West. While the girls are dancing around the evening fire, the gentleman intending the compliment struts up to the dancer and fires his rifle as close to her head as possible. She must not flinch.

Mrs. Court Treutt, who accompanies me on my African jaunts, also prefers the African bush to London. In Africa the natives treat her like a princess, while in London Mrs. Court Treutt laments, old ladies rushing for omnibuses poke her in the ribs with their umbrellas. Her relations with the native women became so cordial that a precedent-shattering Nazir once permitted her to enter the sacred precincts of his home and take tea with his numerous wives.

**Movie Makers' Christmas Cards**

**ARE you looking for an idea for your 1931 Christmas cards?** Here are two cards, received last year, which may give you an inspiration. The upper card was used by Mr. Frederick R. Roberts and family, New York City. A film frame inserted in the rectangular hole in the card carries the names of the senders and the season's good wishes.

The larger reproduction is of a folder. As it is opened up the right hand panel lies over the center panel so that it is seen first. When it is folded back the center panel is revealed. This folder is printed in green and red. Its cover fold bears a conventional design around the words "Merry Christmas." On the whole, it is unusually attractive and individual, and obviously appropriate.
In resuming this series in October Filmo Topics, we promised you some more trick title ideas and methods to supplement the regular and special title making methods which have been discussed in the preceding articles of this series. These ideas, to be presented here, were all contributed by Filmo owners who have used them, and so are practical for home production. We hope that you will find them useful.

Mr. Howard Gilmore, of Brookline, Mass., contributes two ideas, both of which are unique and of general usefulness. His first: Flow the wax from a white paraffin candle one-eighth inch thick over heavy paper. Sandpaper the surface smooth. Turn the sheet over and draw the title in block letters. Cut these out with a jigsaw. Remove the paper backing and arrange the paraffin letters on a thin black sheet of metal. Place this upside down in respect to the camera on an improvised wire frame in the upright position of the B & H Character Title Writer card holder. Support the entire Title Writer in a vertical position. (See December, 1930, Filmo Topics for suggestions on placing and using the unit in this position.) Then light a candle and hold its flame under the metal plate as the camera is started. Continue to melt down the title and operate the camera until the entire title has melted away. Turn this film strip end for end and splice it into your film. The screen effect will be that of the title wording forming apparently automatically out of a black background. This idea is especially recommended for a main title.

Mr. Gilmore’s second idea is for a film trailer. “A trick which pleased the audience as much as any I have used is made as follows,” he writes. “Mount the camera upside down on a tripod. Place a large dark curtain against the side of the house. Cut out six inch white paper letters to spell ‘GOOD NIGHT’ and pin these letters on the curtain at about chin height. Leave enough curtain blank at the right so that you can stand in front of it without hiding the letters. As the camera is started you step before the curtain, bow and smile toward the camera, pull off the last letter and throw it to the wind, and continue to do this with letter after letter until all are gone. Then step out of the picture and have the camera stopped.

“After processing, turn this film strip end for end and splice it onto your final film of the evening. On the screen you will be seen to step into the picture, pick letters out of the air and place them deftly against the background to spell out ‘G-O-O-D N-I-G-H-T,’ then bow and smile and step out of the picture.”

There seems to be no end to the fascinating and sometimes (to the audience) mystifying things that can be done by reversing the motion in the screen pictures by working with the camera held upside down. Mr. J. Cullen Ayerza, Argentine Consul at Toulouse, France, a previous contributor to this series, has told us of another trick title method which employs this simple reverse motion technique. His new stunt is to lay out white cord on a black background so that it spells out the desired title as in long-hand writing. Rather than cut away the cord between words, paint these portions black to match the background. With the camera upside down, expose enough film to permit reading the title (one foot or 2½ seconds for each 5 words). Then, with the camera still running, pull gently on the end of the cord which has been left at the edge of the background. Pull until all the cord has disappeared. The result on the screen, after this title has been turned end for end, is that of a series of white cords entering from the right and twisting themselves until they form the title.

In filming this title, give somewhat less than normal exposure so as to produce a contrasty film in which the black segments of the cord will not be noticeable against the black background. One stop less should be enough.
THE late Knute Rockne speaks from the screen in six Pathé 16 mm. sound films made available this month through Bell & Howell Filmo Library. In these thrilling films epic plays and big moments in football history are reenacted by a champion Notre Dame team and explained by Rockne himself in spoken comment.

Aided by the team's demonstration, Rockne shows how Red Grange made his great kickoff catch in an Illinois-Michigan game and raced 100 yards for a touchdown, how Chris Cagle of the Army darted, dodged, and twisted 50 yards through Yale for a touchdown. We see Jack Elder of Notre Dame, himself, intercepting a forward pass in the 1929 Army game and dashing 98 yards for the only score of the contest. Dozens of other famous plays from all sections of the country are reenacted and explained by Rockne. Truly, this series is a rare find for football fans!

Each of the six subjects comprising this series is complete on one 400-foot reel. The price per subject is $45, which includes the film and the sound disc.

**Film Storage**

NOW that the steam is in the radiators and the air in our homes is apt to be dry, it is time to consider the condition of our stored films. Humidor pads should be moistened, and kept moist throughout the winter. Film must be kept moist to be long lived and to project smoothly and without damage. Probably the most satisfactory way to store films is in the B & H Filmador, a thermo-humidifier container which provides better film protection with less attention than any other device known to us.

**Projector Cleanliness**

FUZZY edges of screen pictures are caused by tiny particles of dust which collect on the edges of the projector aperture. Remove this dust before each movie entertainment, using the long-handled brush supplied.

**Projection**

RECENTLY we saw the same personal movie on two different evenings. The first showing was on an improvised paper "screen" and with an inefficient projector. The pictures were dull and dark and lacking in detail. Our conclusion was that the film was only fair in quality. The second showing was on a high grade projection screen and with a new Filmo Projector. It was hard to believe that we were seeing the same films, the contrast was so marked. It surely pays to give films a chance in projection. The effects of fine photography are either retained or discarded, depending upon the conditions of projection.

**Film Cleaning**

ANOTHER thing that can cause pictures to be dull and apparently inferior quality is an accumulation of dirt and finger marks. Any film is bound to become soiled, and the effect on the screen is the same as that of soiling a snapshot paper print. Sometimes one doesn't realize how dirty his films have become until he sees them after they've been cleaned. Perhaps some of yours are badly in need of cleaning right now. Institute a clean-up campaign with a B & H Film Cleaner, which attaches to your Filmo Projector and cleans the film as it is projected. You will marvel at the improvement.

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**Seasonable Hints**

**Flying Feet**

**Touchdown**

**Backfield Aces**

These and other Filmo Library Talkies are available through your Filmo dealer.

In some cities Filmo dealers have sound films for rent as well as for sale. Filmo Library Talkies are well diversified in subject matter, as is indicated by the following list of current releases.

**OTHER PATHE 16 MM. RELEASES**

**PRICE $45 PER REEL INCLUDING SOUND DISK**

<table>
<thead>
<tr>
<th>Title</th>
<th>Subject</th>
<th>Reels</th>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>&quot;Champion Makers&quot;</td>
<td>granite</td>
<td>1</td>
<td>MULF</td>
</tr>
<tr>
<td>Rice Speedlight</td>
<td>Pictures of Minnesota</td>
<td>1</td>
<td>MULF</td>
</tr>
<tr>
<td>&quot;Bouyville Romance&quot;</td>
<td>toes</td>
<td>1</td>
<td>MULF</td>
</tr>
<tr>
<td>&quot;Sacred Fire&quot;</td>
<td>Vagabond</td>
<td>1</td>
<td>MULF</td>
</tr>
<tr>
<td>&quot;Sea Going Shells&quot;</td>
<td>A ceremony</td>
<td>2</td>
<td>MULF</td>
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**UNIVERSAL SOUND FILMS**

**PRICE $30 PER REEL INCLUDING SOUND DISK**

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<tbody>
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<td>&quot;Courts Wildcat&quot;</td>
<td>Hoot Gibson</td>
<td>6</td>
<td>MACU</td>
</tr>
<tr>
<td>&quot;The Climax&quot;</td>
<td>All Star</td>
<td>6</td>
<td>MACU</td>
</tr>
<tr>
<td>&quot;College Love&quot;</td>
<td>George Lewis</td>
<td>8</td>
<td>MACU</td>
</tr>
<tr>
<td>&quot;Night Ride&quot;</td>
<td>Joseph Schildkraut</td>
<td>6</td>
<td>MACU</td>
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**Oswald Cartoons**

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<th>Title</th>
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<tbody>
<tr>
<td>Hell's Reels</td>
<td>The Lucky Rabbit</td>
<td>1</td>
<td>MACU</td>
</tr>
<tr>
<td>My Pal Paul</td>
<td>The Lucky Rabbit</td>
<td>1</td>
<td>MACU</td>
</tr>
</tbody>
</table>

Not So Quiet          The Lucky Rabbit: 1 MACU
Squawks               The Lucky Rabbit: 1 MACU

**SPECIALS**

Broken Statues         Benny Rubin: 1 MADAB
Leather Pushers       The Knockout: All Star: 2 MADAC
Featurettes           Hot and Bothered: George Sidney: <NAME>: 2 MADAB
SPORTING YOUTH SERIES
Seeing Stars: All Star: 2 MADAF
COLLEGIANS
On the Sidelines: All Star: 2 MADAF
UNIVERSAL COMEDIES
His Bachelor: Sunny Jim: 2 MADAB
EDUCATIONAL FILMS
Not only is a great and constantly increasing choice of entertainment films offered by Filmo Library, but educational films of recognized merit are available in ever-growing volume as well. One hundred 16 mm. educational subjects have just been added. These deal with science and nature, history, geography, American statesmen, literature, industry and agriculture, and other subjects. Silent versions are $30 per 400-foot reel. Sound has already been added to some, at $5 extra. A complete list of these films will be sent on request.
Movie Club News

The Hull Amateur Cinematographers’ Society, Hull, England, according to a news item in The Daily Mail, is an especially active and enthusiastic organization. In reporting an interview with Mr. R. C. Board, chairman and “prime mover” of the organization, the paper states that the Society has already produced and shown three complete films and has several others in production. The results are said to be of excellent quality. An ever increasing membership list is another indication of the healthy condition of this club.

Los Angeles, California, has a live organization known as the Los Angeles Amateur Ciné Club. Due to being located in the country’s film producing center, this club is readily able to obtain the services of professionals as speakers for its meetings. For instance, at a recent meeting, the speaker was Mr. Gilbert Warrenton, A. S. C., one of Hollywood’s foremost cameramen and, incidentally, a Filmo owner, who gave practical demonstrations in lighting, reflectors, and camera lenses.

Another progressive club is the Hudson County Ciné Club, Jersey City, N. J. A part of this club’s program is an annual public exhibition at which are shown the finest reels produced by members as well as really outstanding films by others.

“Sunkist Movie Makers of San Gabriel Valley” is the name of a small and unique club in California. Its membership consists of six wealthy orange growers—Arthur R. Powell, chairman, Elbert G. Griffith, Chas. O. Wright, Frank Stokes, Ronald Taylor, and Dr. Shaen Magan. There are no officers except a chair of another member to help him promote the entertainment. The host may invite whomever he pleases; sometimes it is ladies’ night, sometimes non-member movie makers are invited. Four Filmo 70-D Cameras and four Filmo Projectors are owned among the members.

The Cover Illustration

The seasonable cover illustration of this issue of Filmo Topics is reproduced through the courtesy of the Chicago Daily News, and is from a striking photograph by Clyde Brown, pictorially inclined photographer of that newspaper. The picture was taken at night with the aid of a photo flash, the still photographer’s equivalent of the ciné photo flare.

A Stitch in Time

Filmo owners who followed the “Facts About Filmo” series of articles which ran in Topics last year realize the close “fits” in the working parts of their cameras. These fits are as close as, and in many cases closer than, those in a fine watch, even though the Filmo mechanism parts are much larger and heavier. This precision is necessary, for any play between the moving parts would result in inaccuracies in the positioning of the film—inaccuracies which, multiplied many many times in projection, would become glaring, annoying defects on the screen.

The closer the “fit” of the moving parts the better the pictures and the more important it is that foreign matter be kept out of the mechanism. Do not leave your Filmo with the door removed. If it is a turret model and you don’t have a lens in each of the three openings, always keep the unused openings plugged with the screw caps provided for the purpose. Thus you will keep out foreign matter which might possibly cause trouble.

Movie Makers Magazine

Filmo TOPICS readers who can use additional reading matter on cinematic subjects each month are advised to become members of the Amateur Cinema League and thereby obtain the inspiring and instructive League publication, Movie Makers. Charges are low and the benefits are many. Write to the League at 105 W. 40th St., New York City, for a free sample copy of their magazine.

Questions and Answers

Conducted by R. Fawn Mitchell

Lens Spots

Q. One of my lenses has spots of tarnish on the front element. What is the cause of this and how can the spots be removed?

A. Tarnish spots, or spots of a similar nature, are usually due to excessive heat or exposure to strong chemicals. Optical glass is very sensitive to certain chemicals. For instance, it is possible to damage a lens by a touch with a finger, the acid humors secreted by the body affecting the glass. There is nothing that can remove these spots but a complete repolishing of the glass surface. This can only be done by the manufacturer of the lens.

Mounting Camera Vertically

Q. I want to attach a Filmo Camera to a vertical board for title making and animated work. Is the thread in the tripod screw hole of sufficient strength to prevent its stripping or wearing out?

A. Yes, and while the question of wearing out or stripping does not enter, it would insure greater rigidity and less strain if a brace is used to help support the camera.

Kodacolor Colors

Q. In projecting my Kodacolor film do I get a predominance of red in the picture. What is the matter?

A. Sometimes this condition is due to the film being exposed with the camera filter in an ups-down position. If Kodacolor pictures have been taken in this way, they can only be shown with the projector filter reversed to correspond. Failure to put the ratio diaphragm on the camera lens will also cause color distortion. This is the little unit that comes with each roll of Kodacolor film. Another cause of this distortion is failure to get the filter on the camera lens lined up absolutely vertically. Still another possible cause is the use of an old projector lamp with sagged filaments.

Lenses Compared

Q. Will the results obtained with a 1-inch F 1.8 lens set at F 3.5 be as satisfactory as those obtained with a 1-inch F 3.5 lens set at full opening?

A. No. Speed in a lens is necessarily obtained by sacrificing some of the definition. Another point is that the greater area of glass surface in a fast lens may, under certain conditions, give a tendency to cause multiple flares and reflections, resulting in a halo in the picture.
Indoor Movies Easier than Ever

with the new fast film and Filmo equipment

Because so many things worth filming happen indoors, only the movie maker who is prepared for taking interior scenes can make his family history films complete. Happily, since the introduction of the new, fast film, indoor scenes are far more easily taken than ever before. Taste anew the pleasures of personal movies by adding interiors to your repertoire. When it’s cold and dark outdoors, make your own picture weather and sunlight in your home.

Halldorson Mazda Lights
Two or more lights, with speed lens and the new fast film, provide for most home scenes. The Halldorson 1000 watt Mazda light, complete with case, $37.50. Twin 500 watt lights, both in metal case, complete with stands, $35. Single 500 watt light, no case, $13.50.

Cooke Speed Lenses
The Cooke one inch F 1.8 speed lens (left) is ideal for indoor work. There is a special compact model for Filmo 75 Cameras, $80. The new 15-mm. F 2.5 wide angle lens (at right) includes a 67 per cent wider picture area than the one inch—important for working indoors, $45.

B & H All-Metal Tripod
The B & H All-Metal Tripod has unique counterbalance device and excellent panning and tilting head. Sturdy tubular legs tipped with rubber sheaths protect floors. $36. Leather case, $12.50.

Focusing Alignment Gauge
This tripod accessory permits viewing and focusing from exactly the photographic lens position, making possible 100 per cent accurate framing and critical focusing even of close-ups and titles. The Gauge complete, $21.

Waist-Level Viewfinder
This supplementary viewfinder for Filmo 70 Cameras attaches to the door just above the spyglass viewfinder, and is instantly removable. Fine for those "worm’s eye" viewpoints. Area matches that of 1-inch lens, Complete with device for attaching, $10.

BELL & HOWELL * FILMO

The Outstanding Achievement in Personal Movie Projection

FILMO MODEL J
100% GEARED PROJECTOR

Bell & Howell, for 24 years the leading professional movie equipment manufacturer, presents a 100% geared 16 mm. motion picture projector—the Filmo Model J. It is based upon the time-tried and proved Filmo Projector design, including the film movement mechanism which automatically frames steady, flickerless pictures, controls for reversing and for "still" projection, lens interchangeability, and adaptability to Kodacolor. Has amazing new lens which, coupled with its optical refinements, gives 30 per cent more light than the famous Filmo 75 volt, 375 watt Projector. See this new Projector at your dealer's today, or write for folder.

NO BELTS OR CHAINS. Feed and take-up reels are gear-driven.

AUTOMATIC REWIND. Just press a lever and film is rewound!

BUILT-IN PILOT LIGHT. Illuminates threading mechanism.

ILLUMINATED VOLTOMETER. Easily seen in dark.

LAMP-HOUSE LIGHT-TRAP. No light cast on ceiling.

AERO-TYPE COOLING. Radiation fins keep lamp-house cool.

REFINED REFLECTOR ADJUSTMENT yields brighter pictures.

TILT CONTROL. Easily accessible knob centers image on screen.

Bell & Howell  Filmo

Fitting Filmo Gifts

**FIVE DOLLARS AND LESS**

- Filmo Pocket Tripod ................................ $0.75
- B & H 400 ft. Humidor Can .......................... $0.75
- B & H 400 ft. Reel .................................. $0.75
- B & H Lens Cleaning Kit ............................ $1.50
- B & H Portrait Attachment ......................... $2.00
- Color Filters for all lenses ....................... $2.50 to $5.00
- Auxiliary Finder Unit ............................... $3.50
- Remote Control for Filmo 70 ..................... $4.50
- Filmo Duplicator .................................. $4.50
- Prismatic Eye ...................................... $5.00
- Ratchet Winding Key ................................ $5.00
- The Filmador Thermo-Humidor .................... $5.00

**FIVE TO TEN DOLLARS**

- B & H Combination Filter Set ...................... $5.75
- Pilot Light for Filmo 57 Projector ................ $6.00
- B & H Rewinder .................................... $6.00
- B & H 16 mm. Film Releases ....................... $6.50 and up
- Vignetting Mattes .................................. $7.50
- B & H Block Letter Titling Outfit ................. 7.50
- B & H Film Splicer ................................ 7.50
- Filmo Focusing Microscope ....................... 9.00
- B & H Waist-Level Viewfinder for Filmo 70 10.00

**TEN TO TWENTY DOLLARS**

- Filmo Iris Vignetter ................................ $10.50
- Film Storage and Carrying case $10.50 to $14.00
- Filmo Title Board with letters .................. $12.25
- Filmo Lens Modifier ................................ $13.50
- B & H Film Cleaner ................................ $13.50
- Halldorson Mazda Lights ......................... $13.50 and up
- B & H Combination Rewinder and Splicer 14.00
- Kodacolor Filter Set for Filmo Cameras ....... $15.00
- Parallax Viewfinder for Filmo 75 ............... $15.00
- Folding Box Screens ............................... $17.50 and up
- Special Carrying Cases for Filmo 70 or 70-D .... $18.50 and up

Bell & Howell Wishes You
FOR EVERY PURPOSE

TWENTY TO THIRTY DOLLARS

- B & H Photometer, with case... $20.00
- B & H Extra Bright Screens... $21.00 and up
- Filmo Enlarger... 28.50
- Variable Viewfinder and Door... 30.00
- 3½" or 4" Filmo Projection Lens... 30.00

THIRTY DOLLARS AND MORE

- Cooke 1" F 3.5 Focusing Lens... $35.00
- Projection Lens Outfit for Kodacolor... 35.00
- B & H All-Metal Tripod... 36.00
- Character Title Writer... 36.00
- Filmo 70-D Critical Focuser... 40.00
- B & H Film Editor... 40.00
- Cooke 15mm. F 2.5 Wide Angle Lens... 45.00
- Cooke Telephoto Lenses... $55.00 and up
- Cooke 1" F 1.8 Speed Lens... 60.00
- Same, with Kodacolor Filter Set... 75.00

The Filmo 75 Field Model
with a new large field compensating Parallax Viewfinder and a new carrying case. Greater utility and a greater value, too... $118

You can shop from this booklet


A VERY HAPPY CHRISTMAS
THE affairs of the household at Christmas time are different and distinctive. The day has a spirit of its own, and its activities are not duplicated on any other day of the year. Good cheer and happiness prevail. The stage seems set for Filmo movie making, so probably every Filmo owner will want to keep his camera busy on Christmas eve and Christmas day.

The subject matter which will unfold itself before you will be of a nature so rare and so precious that you will want to get the finest possible pictures of it. Surely it will be worth a little forethought and extra planning to get a really vivid record of your family's happiest day of the year. Of course, in filming your family's Christmas, you can do as much or as little as you wish toward producing a complete, professional-like story of the day. That's entirely up to you. We merely want to suggest that you plan in advance whatever shots you believe you'd like to include in your Christmas film. That way you'll be far more sure of accomplishing what you have in mind, and you'll do it with less effort and with less interference with the other essential activities on the program. So have at least a scenario outline before you begin.

We can't very well plan your Christmas film for you, but we can at least give an outline for a rather complete record of a more or less typical Christmas day. In this, we hope, you will find parts that you can lift bodily and apply to your filming, while other portions may be of some help, even if less directly applicable. Many of these scenes, obviously, will have to be filmed indoors if at all. But indoor camera work no longer need appall you—if it ever did. With the new super-sensitive film and a fast (F 1.8) lens you can do things with a few artificial lights that you'd scarcely believe possible. So we'll list indoor scenes along with exteriors, and then, later in this article, tell you a little about the really simple technique of indoor camera work.

Christmas preparations will probably open your film—decorating the house, wrapping gifts, addressing cards, trimming the tree. The children can be shown hanging up their stockings and going to bed. Here, as at every other opportunity, use close-ups of your actors' faces. Close-ups are
often the making of a family record film. Santa Claus himself may be shown in your film if you wish—and you can make him appear as by magic by setting the Filmo on a tripod, exposing a few feet of film on the fireplace or Christmas tree, then stopping the camera, having Santa assume his position, and starting the camera again. On the screen he will mysteriously pop into the picture from nowhere in particular. He can then pass out gifts to the children, and later disappear as strangely as he appeared (done by having him step out of range while the camera is stopped). These scenes are well worth taking if there are youngsters in the family, for they delight in the effects of this simple camera trick, especially when Santa Claus is the chief character.

The children on Christmas morning, as they first see the gaily lighted tree, and then as they open their gifts, make a fine picture. This scene can well be preceded by a shot of the calendar showing that the date is now December 25. Later you may want to film the dinner preparations, the children as they play outdoors with their new sleds, skates, and skis, and as they take their gifts to their playmates. Still later there will be the arrival of your guests and the dinner itself—including, of course, the carving of the turkey.

After dinner perhaps winter sports will engage your attention. They'll make fine movies, too, especially if you use a color filter in filming them. By the way, arrange your shots as much as possible to use your super-sensitive film indoors and the regular panchromatic film outdoors. The great speed of the former isn't required for your outdoor daytime shots.

After dinner sports on Christmas day will no doubt provide fine action subjects for your movies.

Your concluding scenes may show the youngsters in bed, clutching new toys in their arms as they sleep. Or a scene of the entire family around the fireplace, with a fade-out at the end produced by slowly stopping the lens down to its smallest opening, may be the right conclusion for your Christmas film.

Now about filming those indoor scenes, November Filmo Topics included an informative article on this subject, and we recommend that you refer back to that issue and read that article. We'll send you another copy if you've misplaced yours.

Due to the high efficiency of the new super-sensitive film when used under incandescent lights, if you have an F 1.8 lens for your Filmo you can actually take close-ups (head and shoulder views) by concentrating about 200 watts of ordinary room illuminating Mazda lights within three feet of your subject. To be able to take in more of your subjects, which you surely want to do in the course of your Christmas day Filmo-ing, you should have more lights at your disposal, even with the new fast film. A pair of 500-watt Halldorson Mazda lights, with their broad reflectors, will permit you to take almost any scene indoors at night provided the subject is not more than fifteen feet from the camera. The combination of one 500-watt and one 1000-watt Halldorson Mazda Light will give you a working distance of 20 feet, and at this distance your camera with its 1 inch F 1.8 lens will take in an area 5 3/4 feet high by 7 3/4 feet wide, a very liberal "stage" for home scenes.

Of course many of your interior scenes will be taken during daylight hours, and for these, artificial lights will be needed merely to supplement light coming in through the windows, chiefly to illuminate the shadow side of the subjects.

It is not an easy matter, until one has considerable experience, to judge what exposure to give these artificially and semi-artificially lighted scenes, so the use of an exposure meter such as the B&H Photometer is recommended.

When your Christmas films have been processed and projected for your private inspection, get them properly edited and titled. With that done you'll have a film of your family at its joyous best which will be a prized addition to your library.

Be sure to film the youngsters as they try out their new gifts.
IF A FILMO CAMERA COULD TALK...

This is what it might say in relating its experiences on a trip to Mexico.

Paul B. Nelson
Illustrations, Courtesy The Travel Guild, Inc.

A telephoto lens caught the action at the Plaza de Toros

Well, here I am off again on another trip. Always sort of glad to get away from town, too. We’re heading south this time. Careful there, porter, don’t handle me so rough. I’ve got a long way to go.

“Here I am at New Orleans. Say but this town is like Paris! There’s the Vieux Carre, the old French section, and it sort of makes me homesick for the Left Bank, at that. Look at those narrow winding streets. The quaint little shops like the ones up near the Place du Tertre. Over there is Antoine’s, that famous restaurant, and nearby is the Old Absinthe House where Jean La Fitte and his pirates used to hang out. Sure enough, I’m being wound up. There’ll be plenty of work today and I’ll get a kick out of it. What marvelous chances for composition with those old doorways for framing.

“Four busy days have gone by and we’re leaving at noon. Where do you suppose we’re going? To Mexico! Yes-sir. Taking the S.S. Morazan and sailing across the Gulf to Vera Cruz. Then we’re traveling up to Mexico City and will make side trips all over the place from there.

“Another three days have gone quickly by and we’re nearing the harbor at Vera Cruz. And if anyone’s ever told you that there’s nothing much to take movies of on a fruit boat trip across the gulf, he’s very mistaken. That trip down the Mississippi was marvelous—something like the St. Lawrence only different.

“Every day there was something doing. First, that school of porpoises flunting along the bow of the ship. But we used fifty feet on them, but then the water was clear and they did look mighty pretty down there, sometimes swimming along on their backs. Then the flying fish, and that little tropical canary that flew on board the second day out. Of course, there were lots of things doing on the ship, too, and already my indicator has gone around almost five times.

“What an interesting place is Vera Cruz. Landed here yesterday morning in a shower of rain but even then everything went smoothly and we were up here in our hotel before we knew it. No trouble at all about customs or immigration. This noon we’re taking the Mexican Railway up to Orizaba in the mountains. We’ll stay there overnight and then go on to Mexico City so that we can have the whole trip by daylight.

“What a wonderful afternoon it was. No sooner were we on the train in Vera Cruz than we started work. First, a picture of that dark-skinned cargador or railway porter. I guess you’d call him in the States, who took our baggage from the boat and then sat patiently in the station with it ’til train time.

“The countryside was mighty interesting. Banana and cocoanut plantations, miles of coffee trees, groves of oranges and lemons, and fields of pineapple and sugar-cane. Thatched huts of clay. Natives doing the family wash along the banks of streams, beating their clothes clean on the polished rocks. At Paso del Macho the railroad was electrified and soon we began to climb. Over bridges, through tunnels and mountain passes. And everywhere tropical jungle.

“At the picturesque little town of Cordoba we had some of the best subjects for photography I’ve ever seen. Down to the train they came, barefoot Indian women and children in long white skirts and blue rebosos offering us everything from papaya to fried chicken; a wandering minstrel with his mandolin who insisted on singing ‘La Paloma’; a white-whiskered native selling yards and yards of tickets to the National Lottery; armed soldier; a real ranchero in town from a nearby hacienda; and everywhere scores of black-eyed children of all sizes and shades.

“Tonight we’re in Mexico City, comfortably located in the splendid Regis Hotel. But don’t ask me to tell you all about the ride up from Orizaba this afternoon. There’s just too much about it to start in. Wild flowers as I’ve never seen before. At every station there was something new and different to photograph; a shepherd boy with his crook; a dashing cowboy in his gay serape and fancy sombrero; great cactus trees; fields of huge pulque plants; and Popocatepetl and Ixtaccihuatl forming an inspiring background for it all. Tomorrow we’re going to do Mexico City and then we’ll get a car and chauffeur and go exploring the nearby countryside.

(Please turn to page eight)
SELECTING GIFTS PAINLESSLY

As Christmas moves steadily closer and closer, do you find yourself sorely puzzled by the problem of what to give to those on your list? Perhaps we can make a suggestion which will help you with at least some of your decisions. If you suspect that this suggestion is a little prejudiced please try it anyhow and see if it isn’t helpful after all.

Our suggestion is that you get a copy of the new Filmo Catalog, either from us or from your dealer. Sit down with it some evening at home and thumb through its pages. You’ll be surprised, we believe, at what appropriate selections you can make for many on your gift list. And because they are so appropriate and of such rich quality even though they may cost but a few dollars, these gifts will convey the spirit behind them—your desire to give the pleasure which comes from the possession of fine things of great utility.

Let’s assume that your parents head your list. If they live some distance from you, how pleased they would be with a Filmo Projector, presented with your assurance that you will frequently send them films of yourself and of their grandchildren. We needn’t tell you how much they’d enjoy such an arrangement.

Perhaps the name of a grown and married son or daughter stands near the head of your list. Life for him or her, you know, is full of high spots now, and a Filmo Camera would bring rare pleasure at once and untold value as the years go on. What gift could show more thoughtfulness...could win more lasting gratitude?

Have there been times when your Filmo Camera should have been twins? When the family was scattered, or when Kodachrome pictures were desired when ordinary film was in the camera? Why not a second camera as a family gift? The Filmo 75 is the lowest in price of any Kodachrome-equipped camera, and it is so light, compact, and beautiful that the ladies of the family will choose it as their own. Or if your original Filmo is an early model, probably you would select the newer Filmo 70-D Camera as the family’s second instrument, because of the great flexibility it affords with its three-lens turret head, and its seven film speeds.

For the member of your family who delights in provoking laughs, what could be more appropriate than a Filmo Lens Modifier and a Filmo Duplicator, the first for taking weirdly distorted scenes and the second for giving any subject a twin on the screen—for making the camera “see double”.

For the one who has a flair for title making and film editing there are fine Bell & Howell made devices which facilitate every step of these operations. For a movie maker who goes in for miniature sets and trick close-up work the Focusing Alignment Gauge will make a most acceptable gift.

Anyone interested in filming outdoor sports will find a Cooke telescopio photo lens a mighty useful accessory. Such a lens will also please the nature loving movie maker who enjoys filming wild life, as will the inexpensive Remote Control for his Filmo 70 or 70-D Camera. The traveler will be especially grateful for a new carrying case for his camera. Undoubtedly you can select one in a leather to match his other luggage. He’ll also appreciate the useful but inexpensive little Prismatic Eye, for filming natives without their knowing it.

The parent of young children will find many uses for a Halidron Mazda Light and a Cooke Speed lens, as these things make it so easy to film the youngsters indoors where some of the most interesting child pictures can be taken.

In addition to all these things there are others of general utility to fall back upon if you are still undecided. Anyone who uses a camera can improve his results with a B & H Photometer for determining correct exposures. Color filters are low in cost but very generally useful. A B & H All Metal Tripod will let anyone produce rock-steady pictures and beautifully even panoramas. A new projection screen may meet an existing need in some friend’s or in your family’s cine outfit. The Filmo Enlarger for making stills from 16 mm. movie films, the B & H Film Cleaner which cleans dust and dirt from film as it is projected, and the Filmador thermosturoid film storage container, all make gifts which any movie fan will receive with keen pleasure.

Some of these gifts are pictured on the first two pages of this issue: all are fully described in the Filmo Catalog. Once you’ve made your decisions, a few minutes in your dealer’s store will clean up this part of your Christmas shopping—or you can even order by phone. The new Filmo Catalog may be had either from your dealer or from Bell & Howell.

Films for Your Holiday Entertainment

No doubt you will plan one or more movie entertainments around Christmas-time for the children and for your holiday guests. In the case of the children, there are certain films that they will eagerly see over and over again, and which, therefore, are desirable purchases for your private film library. A special selection of such films has been assembled and listed, and we suggest that you write for a copy of this list. As evidence of the child appeal in its subjects, it includes, among other subjects, two Santa Claus reels, a group of trained animal and other vaudeville act films, and “Felix the Cat” and other cartoon comedies. These are all silent pictures.

If you wish to put on a talkie entertainment, arrange to rent a B & H Filmo-phone from your Filmo dealer. Many dealers have these efficient 16 mm. sound film reproducers available on a rental basis, as well as talkies from the extensive and varied B & H Sound Film Library.

This month Filmo Library offers the productions, both sound and silent, of another producer—Columbia. The December ADVERTISEMENT (Please turn to page nine)
**Titling Your Films**

No. 12. Clever animated titles

**We were** a little apprehensive, in resuming this series of articles in October *Filmo Topics*, that you had read enough or the subject. But, as the cigarette ads say, “you never can tell ‘til you try”. We tried, and now it can be told that interest is still high in the subject of title making. How many of you have written in for the preceding articles of the series we can’t say off hand, but the number is no trifling one. And the contribution of worthwhile title making ideas continues to pour in. Here are a few tricks for you to try out during some of these long winter evenings, when you are busy getting your summer films edited and titled, in finished shape for showing.

**The Revolving Reel**

At a recent Chicago Cinema Club meeting Mr. G. C. Lowell, Filmo owner of Wilmette, showed a film with unusually fine titles. His titles were in clear white letters against a dim background mainly composed of a revolving 400-foot projection reel, as indicated by the accompanying illustration. The letters seemed to stand out in space in front of the interesting and appropriate animated background. The lettering had been done on clear celluloid (glass would also serve). Providing a spindle on which the reel could revolve, and turning the reel with a thread, were simple mechanical details. Painting the reel a dark color would serve to keep it from blending with the white letters. This is a very easy title to make, yet one that produces a very professional double exposure effect.

**Fade-in and Fade-out**

Here is an idea which anyone can easily use in the course of any title making session, yet it solves a problem which has confronted everyone who uses positive film for shooting titles, and which has confounded most movie makers who have grappled with it. We’ll let Mr. Robert Whitfield, Columbus, Ohio, tell you about it, as it’s his.

“Thus, the title begins as a blank sheet, then the first line appears, followed by the second, and so on. Then the first line disappears, followed by the second, and so on until only a black blank is left.”

**Trademark a la M.G.M.**

Mr. William R. Steinway, London, England, wrote just recently and told about making some special leader and trailer titles which are certainly unique and effective. To appreciate them fully you should see them in action on the screen, but we’ll do the best we can at describing them.

Mr. Steinway’s leader title is a take-off of the well-known Metro-Goldwyn-Mayer trademark lion. To produce it he blackened a large square of ply-wood, cut a hole from its middle, and over this hole he painted the legend shown by the single frame enlargement at the left. “Bimstein,” it might be explained, is a contraction of “Bill Steinway”. At this stage of the game the amateur producer whistled for Bonzo, his pet Sealyham. Bonzo’s head was placed through the hole in the black board. As the Filmo hummed he swayed his head, yawed, and harked, producing action much like that in the M.G.M. trademark title.

The “Bimstein” trailer pictures the wagging tail of the dog projecting through the hole in the board between the words “The End”. It is reported that this leader and trailer provoke a great deal of merriment.

**Kodacolor Titles**

What methods have you used for making color titles for your Kodacolor film? We are collecting all the available material on this subject for an early article in this series. Pass your ideas on, as many Filmo owners have expressed interest in Kodacolor film titles and will be glad to know how you make yours.
NEW HOLLYWOOD BUILDING OPENED

Bell & Howell's new Hollywood home, pictured on this page, was opened on the evening of October 19 with a meeting, in the eighty-seat theater, of a group of local amateur movie makers, the Los Angeles Cine Club. And so was begun this building's service to moviedom, for it was designed to perform such service as well as to meet the commercial needs of its builders.

It is sincerely hoped that both amateurs and those engaged in the various divisions of the professional motion picture industry will take full advantage of the really fine facilities offered at 716 North La Brea Avenue. The eighty-seat theater and its projection booth will be fully equipped for showing sound or silent 16 mm. or 35 mm. films, and will be at the disposal of Bell & Howell customers and friends, as will the three smaller projection rooms and the room which is fully equipped for 16 mm. film editing.

Both professional and personal motion picture equipment will be displayed and serviced in this building. An engineering department, supplied with every necessary instrument, will operate as a branch of the Bell & Howell research, experimental, and engineering department at Chicago which, incidentally, has just had its quarters enlarged approximately 50%. A most modern motion picture machine shop will provide for servicing 16 mm. and 35 mm. equipment and for building special cine machinery. Lens testing, setting, and repairing will be taken care of by a fully equipped optical department.

Located at 716 North La Brea Avenue, the new Hollywood home of Bell & Howell is ideally placed at the very hub of studio-land. This building, together with its equipment and personnel, will permit of our rendering the highest type of service in both amateur and professional fields on the west coast.
If a Filmo Camera Could Talk

(Continued from page four)

"Today we’re out at the Xochimilco, the floating gardens, a short drive from the city. My master had a hard time deciding which ‘gor- dola’ he wanted. Finally this one, all decorated with flowers and with the name 'Valencia' embroidered in daisies, appealed to him and so here we are, floating through quiet canals lined with simply beautiful tropical foliage. Old Emperor Maximilian knew his stuff. What a place for movies. Am I busy? * * *"

"This afternoon we were out to the Pyramids, just outside the city, and though I’ve never been to any place I still think those out at San Juan Teotihuacan have the Egyptian pyramids beat. Nobody knows how old they are. They’re still excavating them, and if I remember that all of our native guide said, I think that some of those hills we saw in the distance are pyramids, too, that no one knows a thing about.* * *

"Spent a quiet Sunday afternoon. Merely went out to the Plaza de Toros and saw six angry bulls bite the dust. We had seats on the shady side of the ring, and since it was too hot, we sat on the shady side, too. Never have I seen better action or a more colorful scene. What a crowd there was. How excited they got. Master used his telephoto lens a lot of the time and I’m sure he got every detail that the second ball threw a fat old picador on his car away across the ring from us. The fourth ball was killed right in front of us and though I felt my master’s hand shake a little, I think we got a perfect picture. Was he excited? I thought sure he’d let me run down before it was all finished.* * *

"Today we were down to Casa Calpini on Avena Madero to buy some film. Casa Calpini are the Bell & Howell dealers in Mexico City, never met a more accommodating chap than G. W. Schultz, the owner. One thing he explained was that the light in Mexico is much more intense than in the States or Europe and that as a rule it is better to use an aperture one stop smaller than is usually the case. Of course, we knew about that—but it’s an important fact and worth repeating. Mr. Schultz showed us an exposure chart he had just worked up that will soon be ready for distribution. Everybody who comes down here should use one.

"All film exposed in Mexico must be developed and inspected before leaving the country, Mr. Schultz explained. So we left all of our exposed film with him and bought several rolls more for our next trip out to Cuernavaca and Taxco. When this is exposed, we’ll leave it at Casa Calpini and Mr. Schultz will see that it is inspected and sent to us by registered mail. He assured us that there would be no difficulty whatsoever.* * *

"The trip over the mountains to Cuernavaca and Taxco was delightful. The roads were fine and so smooth that my master made some interesting shots right from the front seat of the car while it was moving. Every place we stopped there were pictures, pictures, pictures. Everybody willing to pose and nobody running after us for ‘money, money,’ like they often do in Europe.

"Glad we brought those color filters along and I’ll bet those snow-capped peaks will turn out perfect with that panchromatic film.* * *

"Just been over to see Mr. Schultz at Casa Calpini again. He projected the film we had left and it is great! Even better than I expected and I’m mighty proud of myself.

"Home tomorrow. Hope I get a little rest, but I doubt it. You know my habit. Well, anyway, it’s been a great trip. Hope we come down here next year, too. * * *

Missing Equipment

Filmo 70 Cameras

No. 10433, with 1" F 3.5 UF lens No. 124609.
No. 14602, with 1" F 3.5 UF lenses No. 131265.
No. 25708, 70 C, without lenses.
No. 62241, 70-D with following lenses:
1" F 3.5 UF Cooke No. 184708
1" F 3.5 Foc. Cooke No. 189799
2" F 3.5 Cooke No. 205408
4" F 4.5 Cooke No. 209112
Billy Burke Home Movies, 5372 Wilshire Blvd., Los Angeles.
No. 19581—Paul B. Duffield, 2472 Enterprise St., Los Angeles.

Filmo Projectors

No. 10734—Gernantown V. M. C. A., 5722 Greene St., Philadelphia.
No. 67189—M. B. Waltz, 5541 Longwood Drive, Glencoe, Ill.

Eyemo 35 mm. Camera

No. 897—Billy Burke Home Movies, 5372 Wilshire Blvd., Los Angeles.

Questions and Answers

Conducted by
R. Fawn Mitchell

Supersensitive Films

Q. I understand that the new supersensitive film is 109 feet long to allow for daylight loading and unloading. Does this mean that I can load and unload my camera in a dark room and use the entire length of film for pictures?
A. No. We have recently been informed that in processing this new film six feet are cut off the starting portion and three feet off the end. This procedure is part of the laboratories’ standard practice and is carried out in all cases.

Streaked Kodacolor Pictures

Q. Several reels of my Kodacolor film, when projected, show vertical streaks and lines in the picture. If these are scratches, why do I experience this difficulty only with my Kodacolor film?
A. Your trouble is probably due to dirt that has accumulated in interstices between the small cylindrical lenses embossed on the film. This appears very similar to a scratch and confuses many people. A thorough cleaning of your films with the B & H Film Cleaner should remove this difficulty.

Winter Lubrication

Q. Will the regular camera oil provide satisfactory camera lubrication in cold weather?
A. Yes, except that in extremely cold weather you might find it helpful to purchase a little chemically pure kerosene from your druggist and use one or two drops of this instead of oil. This will, in effect, thin the oil already in the camera.

The Cover Illustration

The Christmas eve photograph which decorates the cover of this issue is used by courtesy of The Chicago Daily News. It suggests a subject worthy of your Filmo Camera’s attention along about 8:30 P.M., December 24.

Movie Makers Magazine

HERE'S another Christmas gift suggestion—give yourself a subscription to Movie Makers, official magazine of the Amateur Cinema League. You’ll praise your choice twelve times during 1932—as each issue reaches you packed with useful material about your hobby. Write to the League offices at 105 W. 40th Street, New York City, for a free sample copy.
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A Binder for Filmo Topics

To keep your 1932 copies of Filmo Topics in permanent, easily accessible form (for each issue will be one to which you’ll want to refer frequently) order one of these new binders now. Capacity twelve issues—insert them monthly as they reach you. Price...

$1.50

Binders for your 1932 issues may be had at the same price.

BELL & HOWELL COMPANY
185 Larchmont Avenue, Chicago

Films for the Holidays

(Continued from page five)

Some Columbia releases include seven one-reel talkies at 85 cents each including sound disc, as follows: Station B.U.N.K.—A musical novelty; Kat’s Meow—Krazy Kat cartoon comedy; Screen Snapshots No. 5—Four through Hollywood; Screen Snapshots No. 11: Do It Now—A clever skit; A Day of a Man of Affairs—A comedy; Radiators—Music by Utica Jubilee Singers. In addition, ten Columbia feature-length silent films are released.

December 1 also brings the release of four Pathé 16 mm. sound films at $45 per reel including sound disc. There is a Grantland Rice Spotlight, “Campus Favorites”, presenting college songs of Cornell, Yale, Princeton, and Pennsylvania; a cartoon comedy called “Jungle Jazz”; “Two Fresh Eggs”, a two reel comedy with Al St. John; “Songs of Mother”, old-time child songs with appropriate accompanying sketches.

Universal’s contribution to the current sound film list includes a fine collection of one and two reel comedies and four feature-length talkies, all of which are priced at 80 cents each including sound disc. A complete list may be had upon request.
A Filmo for Christmas

... the gift that is worthy of the spirit behind it

For photography-minded people, there is little question about the movie camera or projector to give for Christmas. Filmo, of course, is the choice of those who know.

And why? First, you have the simplicity of taking movies for which the Filmo Camera is famous. "What you see, you get"... down to the last detail, with the superb clarity and the brilliance you would expect from a professional movie camera.

And when Filmo movies flash on the screen there you see the undeniable proof of the superiority of the Filmo Projector — movies so brilliant and clear that you miss not the tiniest detail, movies steady and flickerless.

Can you think of a better gift than personal movies, or better equipment to take and show these movies than Filmo? Do not be misled by price tags. Bell & Howell equipment is in no sense expensive, for it is built not only to produce the finest of personal movies but to last forever. No Filmo has ever worn out!

Ask your dealer to demonstrate Filmo for you, or write us, if you like, for interesting Filmo literature.

Bell & Howell FILMO


The new model "J" projector

This is the new 100% gear driven Filmo Model J Projector with automatic rewind, a new and powerful optical system that passes 30% more light than ever, automatic pilot light, a new tilting device, illuminated voltmeter, radio interference eliminator, and other refinements. Price, complete with case, $297; fully equipped for Kodacolor, as well as black and white, $332.

The Filmo 70-D Camera

Below is the Filmo 70-D Camera, still the undisputed master of all personal movie cameras. Three-lens turret head. Seven film speeds. Variable viewfinder. Comes in sturdy and tasteful Mayfair Case of English saddle leather. Price, $245 and up. Other Filmo Cameras from $92 and up. The Filmo 75 Field Model Camera, equipped with Kodacolor filters and speed lens at $149.50, is the lowest-priced Kodacolor-equipped movie camera you can buy.