President's Message
By DR. HERBERT T. KALMUS

The motion picture industry continues its evolution to wide-angle and three-dimensional presentations.

Development of new procedures is not new to TECHNICOLOR, I might say it is one of the most distinctive features of our history. When we began, nearly four decades ago, the problem was to bring a sufficiently good quality of color to the screen. Today our work is to accommodate our procedures to serve an increasing number of screen techniques, all of which are still in more or less formative stages.

We have always taken pride in our research and development department. Large sums have been — and are being — expended on it, and we have always found that the results far more than justified the expenditure.

In this connection I may say in passing that the prints for “Cinerama” were manufactured by TECHNICOLOR, the first CinemaScope picture, “The Robe,” was in Color by TECHNICOLOR, and the first VistaVision feature, “White Christmas,” is also in Color by TECHNICOLOR. In 1953 there were 24 three-dimensional TECHNICOLOR productions.

So it may be seen how deeply TECHNICOLOR service and procedure are involved in the current evolution. It has been necessary to modify procedures, to devise new procedures, and to install new equipment to supply the new demands of the industry.

For over twenty years TECHNICOLOR has been the mainstay of the industry in its evolution from black and white to color. During those years TECHNICOLOR developed many methods of manufacturing color motion picture release prints which have gone through many stages of improvement all tailored for best effect in the theatres with screens up to something like 35 feet in width.

TECHNICOLOR early recognized that it must serve the industry with the best and least expensive prints in color which would satisfy these new large screen requirements. Consequently it immediately embarked upon research and development projects to that end.

At the outset, about two years ago, in the very early conferences among TECHNICOLOR technicians the attack of TECHNICOLOR to meet the new increased area screen requirements was aimed in three directions: (1) increased area of negative at the time of photography; (2) improvement in the matrix stock and its processing; and (3) improvement in the character of raw positive print stock and its processing.

The VistaVision demonstration which showed improved characteristics of smoothness, freedom from grain, visibility and color rendition embodied only one of the three phases of improvement upon which TECHNICOLOR is working. It embodied the increased negative area, but not the improved matrix stock nor the improved positive print raw stock. The improved matrix and print raw stock should further improve the clarity, smoothness, visibility and freedom from grain of TECHNICOLOR prints manufactured from both large area and normal size area negatives.

These researches and this development work which TECHNICOLOR is now undertaking has been in process for something like a year. TECHNICOLOR hopes and expects to complete this work some time during this year as a means of continuing to be of greatest possible service to the motion picture industry.

Plans for French Plant Completed

Negotiations resulting in the drafting of final documents for signature for the establishment of a French TECHNICOLOR plant in Paris have been completed, according to Dr. Herbert T. Kalmus, President and General Manager of TECHNICOLOR MOTION PICTURE CORPORATION.

The negotiations have been between TECHNICOLOR MOTION PICTURE CORPORATION and important French motion picture and financial interests, Dr. Kalmus said. The name of the new company is to be SOCIETE TECHNICOLOR with a capital of 1,000,000,000 (one billion) francs. This step is a continuation of the policy of TECHNICOLOR to expand its laboratories over the world.

TECHNICOLOR’S British plant, TECHNICOLOR LIMITED, at London, has been in existence since 1936.
EXHIBITORS, ATTENTION! This full-page color portrait of beautiful RHONDA FLEMING is the tenth in a series of such portraits suitable for framing for your theatre lobby, of motion picture stars who have added luster to films in Color by TECHNICOLOR, and so have won a place in the TECHNICOLOR HALL OF FAME. Miss Fleming is currently appearing in "Yankee Pasha," a Universal-International production in color by TECHNICOLOR.
Technicolor has modified some of its three color cameras so that a single strip of color negative film may be used. In these modified cameras, the film runs past the camera aperture horizontally and an area corresponding to eight perforations (or two normal frame areas) is exposed. The negative image area is then optically printed in reduced size.

Color motion picture negative which, contrary to custom, moves horizontally through a camera. The scenes are recorded on an area equal to two full frames of normal motion picture negative.

Working from such a double frame negative the TECHNICOLOR laboratory is manufacturing 35mm TECHNICOLOR dye transfer release prints of normal size and position, which may be combined with either photographic or multiple magnetic sound tracks. Such release prints can, of course, be projected on any screen including large screens, and in any aspect ratio from 1.33 to 1 or to any larger ratio desired. Since these new improved TECHNICOLOR dye transfer release prints are of normal size and position in every respect no special projection lens in the theatre is necessary.

TECHNICOLOR has been working on the new system for more than a year, resulting in the introduction of laboratory procedures which are uniquely dependent upon steps in current TECHNICOLOR techniques. The new method is already in operation in moderate volume at the Hollywood plant.

After successful camera tests combined with tests of the TECHNICOLOR laboratory procedure, Paramount Studios decided to photograph their high-budget production "White Christmas" using this process, thus being the first to use it on a feature picture.

The Technicolor Three-Color Camera uses three strips of negative film and incorporates a prism in the optical system to divide the light. Two of the films with emulsion surfaces in contact are placed in the camera at a right angle to the lens axis. The front film receives the BLUE image and the rear film receives the RED image. The third film is placed directly in back of the prism and receives the GREEN image. The negatives after processing appear as above.

The Successive Frame process, used in most animated cartoon photography, uses one strip of black and white negative. In front of the camera lens is mounted a wheel containing three filters — BLUE, GREEN and RED. This wheel rotates as each scene is photographed three times on successive frames through each of the three color filters. The negative therefore is three times as long as the finished print.
Current Techniques of Color Motion Picture

With the current evolution of motion pictures to various types of wide screen and three-dimensional techniques, great additional importance accrues to the techniques of color motion picture photography.

Within the past two years photographic techniques have been altered in two ways: New negative materials have been introduced and new aspect ratios for recording negative images have been developed.

The new negative materials are, generally speaking, color negatives.

The aspect ratio (which means relation of picture width to height) had been settled for over 30 years at four to three, which means that for every four units across the picture there were three units in height.

Today this is all changed.

This article will deal with the most important photographic techniques now in use in motion pictures.

COLOR NEGATIVE

There are several color negative films manufactured by different companies throughout the United States and Europe. These negative films can be used in an ordinary black and white camera and in many respects are similar, having three emulsion layers superposed on a cellulose acetate base. These three emulsion layers are differently sensitive to different colors of light. This means that the photo-sensitive silver halide particles in the separate emulsions are exposed by different colors of light. Generally, color negative films have a filter layer between the top two emulsions. Where the color sensitivity is not complete, this filter aids in separating unwanted colors from a particular emulsion.

In the United States the most widely used color negatives are Eastman and Ansco. In Europe in addition to these two are Agfacolor, Gevacolor and Ferraniacolor. The TECHNICOLOR laboratories, in both United States and England, manufacture release prints from all of these color negative systems.

TECHNICOLOR has long recognized that an improvement in the definition or visibility of TECHNICOLOR dye transfer (imbibition) prints when projected in the theatre, especially on large screens, would be possible from a negative resulting from almost any system of photography that employed a larger than standard area of negative on which to record the picture information. There are a number of photographic procedures which might bring this about. One such system employs a single strip of 35mm color motion picture negative which, contrary to custom, moves horizontally through a camera. The scenes are recorded on an area equal to two full frames of normal motion picture negative.

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E-PERFORATION AREA
(VISTAVISION)

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EASTMAN COLOR NEGATIVE

Eastman Color Negative has only one strip of film surfaced with three layers of emulsion, each being sensitive to a different primary color. This film can be used in a conventional 35mm camera. (Normal aspect ratio shown.)

ANSCO COLOR NEGATIVE

Ansco Color Negative has only one strip of film surfaced with three layers of emulsion, each being sensitive to a different primary color. This film can be used in a conventional 35mm camera. (Normal aspect ratio shown.)

CINERAMA

In Cinerama type photography, 35mm color negative film is used, but a larger than normal area is exposed. On each of the three negatives, which are exposed simultaneously in three separate cameras, an area 6 perforations in height and extending completely across the film between the perforations is utilized.

AGFACOLOR

In Europe, there are two Agfacolor COLOR. These negatives also.
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Three Negatives Used Abroad

AGFACOLOR  
GEVACOLOR  
FERRANIA COLOR

In Europe, there are three additional color negatives, AGFACOLOR, GEVACOLOR, and FERRANIA COLOR. These negatives are similar to those used in the United States in that three layers of emulsion are superposed on a single film base. Technicolor manufactures dye transfer prints from these negatives also.

Three-Strip Negative

When color motion pictures are photographed by the three-strip method, a special camera is used. These cameras are manufactured by TECHNICOLOR and are furnished to the motion picture producer. They are available to him upon demand at his studio or an location.

This camera is unique. It is the only one used commercially in which three strips of motion picture film are successfully exposed simultaneously to exactly the same scene. The strips of film in this camera are negative films and each records a specific color aspect of a given scene. As seen in Figure 1, green light coming from a scene is transmitted through the lens of the camera and thence through a special light-dividing prism. It is recorded on a negative film which is particularly sensitive to green light. The red and blue colors coming from the same scene pass through the same lens and enter the same special prism; but instead of being transmitted they are reflected to an aperture on the side of the camera. In this aperture two films are traveling. These films are placed one in front of the other; the front one records the blue light of the scene, while the back one records the red light.

When developed, these negatives have silver images, and when held up to the light, appear the same as black and white negatives. These special cameras used in this taking process have traveled with location units to every continent of the globe. Cameras have been used in the air; under water; and even in the craters of volcanoes.

16mm Positive

For expedition photography in rough country many producers favor the lightweight 16mm taking system. Additionally, operation of the 16mm equipment is less complex.

KODACHROME

Similar to color negative, 16mm color positive film has three layers of emulsion, each sensitive to a different primary color—red, green, and blue. The commercial film is low in contrast and differs from color negative in that a positive color image is obtained by reversal development rather than a negative. From it three 35mm separation negatives are made.

All of the taking systems shown on this page are being used in the manufacture of Technicolor release prints.
CURREDLY RELEASED

All the Brothers Were Valiant — M-G-M
*Annapurna (British) — M-G-M
Apache — Linden, United Artists
Arrow in the Dust — H. Goetz, Allied Artists
Battle of Rogue River — Columbia
*Beachhead — Schenck, United Artists
Black Horse Canyon — Columbia
Caine Mutiny, The — Columbia
*Centennial Story, The — King Bros., RKO
Casanova's Big Night — Paramount
*Conquest of Everest (British) — United Artists
Dangerous Mission — RKO
Demetrius and the Gladiators — 20th Century-Fox
*Dial M for Murder — Warner Bros.
Drums Across the River — Columbia
Drums of Tahiti — Paramount
Elephant Walk — Paramount
Flame and the Flesh, The (British) — M-G-M British Studios Ltd.
French Line — RKO
*Gambler from Natchez — Panoramic, 20th Century-Fox
Garden of Evil — 20th Century-Fox
Glenn Miller Story, The — Univ.-Int'l
Golden Coach, The (British) — Panorama, United Artists
Gorilla at Large — Panoramic, 20th Century-Fox
*Gypsy Colt — M-G-M
Hall and High Water — 20th Century-Fox
*Her Twelve Men — M-G-M
Iron Glove, The — Columbia
Jesse James vs. the Dalton's — Columbia
Jive — Pine-Thomas, Paramount
Johnny Dark — Univ.-Int'l
Knock on Wood — Deno, Paramount
Laughing Anne (British) — Republic
Law vs. Billy the Kid, The — Paramount
*Living Desert, The — Disney, Buena Vista
Living It Up — York, Paramount
Malignant Obsession — Univ.-Int'l
*Men of the Fighting Lady — M-G-M
Naked Jungle, The — Paramount
Night People — 20th Century-Fox
Outlaw Stalion, The — Columbia
*Passion — Pinecrest, RKO
*Phantom of the Rue Morgue — Warner Bros.
Prince Valiant — 20th Century-Fox
Princess of the Nile — Panoramic, 20th Century-Fox
Raisins in Laramie — Univ.-Int'l
Reiable Window — Paramount
Red Garters — Paramount
Rhapsody — M-G-M
Ride Clear of Diablo — Univ.-Int'
River of No Return — Columbia
Robe, The — 20th Century-Fox

TO BE RELEASED

*Adam And Athena — M-G-M
Barefoot Contessa (British) — Figaro, Inc. (Rome), United Artists
Beachcomber, The (British) — Landan Independent Producers Ltd., United Artists
Benjamin Brigade — Univ.-Int'
Big Rainbow, The — RKO
Black Dakotas, The — Columbia
Black Knight, The (British) — Warwick, Columbia
Black Shield of Falworth — Univ.-Int'
Bridges of Toko-Ri, The — Paramount
Bullet is Waiting, A — Welsch, RKO
*Chief Crazy Horse — Univ.-Int'
Cinematic Holiday — Cinerama
Conquest of Space — George Pal, Paramount
Dawn at Socorro — Univ.-Int'
*Deep in My Heart — M-G-M
Dual in the Jungle (British) — Univ.-Int'
L.A.P.D. — Capitol
•Denotes Print by Technicolor, all other Color by Technicolor.
Feature Schedule

Man With a Million (British) — G.F.D., United Artists
Man Without a Star — Univ.-Int'l
*Many Rivers to Cross — M-G-M
Mashterion of Kansas — Columbia
Pirates of Tripoli — Columbia
*Prize of Gold (British) — Warwick, Columbia
Purple Plain (British) — G.F.D. Group Film Prds., United Artists
Raid, The — Panaramic, 20th-Century-Fox
Romeo and Juliet (British) — G.F.D., United Artists
Run for Cover — Pine-Thomas, Paramount
Secret of the Incas — Paramount
Semline Uprising — Columbia
Sign of the Pagan — Univ.-Int'l
*Smoke Signal — Univ.-Int'l
So This Is Paris — Univ.-Int'l
Son of Sinbad — Warner Bros.
Star is Born, A — Warner Bros.
Star of India (British) — Stross, United Artists
Stranger in Town (British) — A.B.P.C.-Anglo Film Ltd., Allied Artists
Strategic Air Command — Paramount
Switzerland, People and Places — Disney, Bueno Vista
Ten Wanted Men — Columbia
This Island Earth — Univ.-Int'l
They Rode West — Columbia
Three for the Show — Columbia
Three Hours to Kill — Paramount
Three Ring Circus — Walls, Paramount
Tiger and the Flame, The (British) — Mad (Bombay)
20,000 Leagues Under the Sea — Disney
Ulysses (British) — Pont de Laurentis, United Artists
*Vanishing Prairie, The — Disney, Bueno Vista
Vera Cruz — Flora, United Artists
Violent Men — Columbia
We're No Angels — Paramount
West of Zanzibar (British) — G.F.D., Folking, Univ.-Int'l
White Christmas — Paramount
*Woman's World — 20th Century-Fox
Wyoming Outlaws — Columbia
*Yellow Mountain — Univ.-Int'l
You Know What Sailors Are (British) — G.F.D., United Artists

IN PRODUCTION

*Afrocan Lion — Disney, Bueno Vista
Annapolis Story — Allied Artists
*Bad Day at Black Rock — M-G-M
Blue Horizons — Pine-Thomas, Paramount
*Captain Lightfoot — Univ.-Int'l
Case Ricordi (British) — Documento Film (Rome)
Catch a Thief — Paramount
*Cattle Queen of Montana — Pine-forest, RKO
Eddie Foy Story — Hope, Paramount
Filis de Caroline, Le (British) — Cinematic (Paris)
Foxy — Univ.-Int'l

Short Subjects

Leg Rollers — Terrytoons, 20th-Fox
Looking at Lisbon — FitzPatrick, M-G-M
Lumber Jack Rabbit — W.B. Cartoons
Magoos Goes Skiing — United Prds., Cal.
Magoos Steal Here — W.B. Cartoons
No Barking — W.B. Cartoons
No Parking Here — W.B. Cartoons
Nonsense Newsreel — Terrytoons, 20th-Fox
North of Sahara — Warner Bros.
Northwest Mouise — Famous, Par.
Of Rice and Hon — W.B. Cartoons
Perry Bill — Disney, RKO
Pet Problems — Terrytoons, 20th-Fox
Plywood Panic — Lantz, U-I
Popeye Ace of Space — Famous, Par.
Popeye's 20th Anniversary — Famous, Par.
Prescription for Percy — Terrytoons, 20th-Fox
Punch Trunk — W.B. Cartoons
Robot Rabbit — W.B. Cartoons
Rugged Bear — Disney, RKO
Runaway Mouse — Terrytoons, 20th-Fox
Satisfied Customers — Disney, RKO
Seacape Court — Warner Bros.
Sea Sports of Tahiti — FitzPatrick, M-G-M
Seeing Spain — Famous, Par.
Shaving Muggs — Lantz, U-I
Sokka in Morocco — Terrytoons, 20th-Fox
Space the Rad — Disney, RKO
Spared the Rad — Disney, RKO
Surf and Sound — Terrytoons, 20th-Fox
Tall Tale Teller — United Prds., Cal.
Tall Tale Heart — W.B. Cartoons
Three Little Pups — Disney, RKO
When Fish Fight — Warner Bros.
Wild Wife — W.B. Cartoons
Winter Paradise — Disney, RKO
Working for Peanuts — Famous, Par.
Zero the Hero — Disney, RKO