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## Pilot Season

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Pilot Season

by

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## Abstract

In the 1930s, two historical figures pioneered the cinematic movement into color technology and theory: Technicolor CEO Herbert Kalmus and Color Director Natalie Kalmus. Through strict licensing policies and creative branding, the husband-and-wife duo led Technicolor in the aesthetic revolution of colorizing Hollywood. However, Technicolor's enormous success, beginning in 1938 with *The Wizard of Oz*, followed decades of duress on the company. Studios had been reluctant to adopt color due to its high costs and Natalie's commanding presence on set represented a threat to those within the industry who demanded creative license.

The discrimination that Natalie faced, while undoubtedly linked to her gender, was more systemically linked to her symbolic representation of Technicolor itself and its transformation of the industry from one based on black-and-white photography to a highly sanctioned world of color photography. Over the years, Natalie and Herbert's marriage paid the cost of Technicolor's struggles causing them to secretly divorce in 1921, yet still run the company together through the early 1940s, until Herbert's affair with another woman resulted in their permanent separation.

This thesis, presented as a pilot to an hour-long television series entitled *Technicolor*, explores, primarily from Natalie's perspective, how the rise and fall of Herbert and Natalie Kalmus's marriage paralleled the rise and fall of Technicolor itself. Therefore, this thesis consists of three parts: an annotated bibliography (or show bible, as it is referred to in the television industry), an essay which summarizes the results of this research, and finally the hour-long drama script itself.

## **It's Not Color, It's *Technicolor*: Technicolor's Influence Upon Hollywood Style**

When one thinks of the word "Technicolor," images abound of some of the most iconic American films in Hollywood history. This word, in four staccato yet gloriously rolling syllables, represented an American experience embedded in extravagant musicals, gorgeous melodramas, and spectacular animated fantasies such as *Snow White and the Seven Dwarfs* (1937), *The Wizard of Oz* (1939), and *Singin' in the Rain* (1952). Indeed, Technicolor became so integral to our understanding of color films that even its name became synonymous with color; Technicolor had to be trademarked so that other companies could not reap the benefits of falsely associating their films with Technicolor's services. However, Technicolor did not begin with such marked success.

Technicolor had not developed its famous three-color process until May of 1932, at a time when unemployment had staggeringly gripped over 25% of the nation. To survive as a non-vital industry in an economic climate so severe that it had caused an average of 30% of movie theaters to shut down across the country (Fuller-Seeley, 4), Technicolor had to convince the film industry and American audiences of its intrinsic value. The company had to reconcile an America in the throes of an "Age of Doubt," as William Graebner called it; an America plagued by cultural fragmentation and historical exhaustion yet also yearning for a nostalgic, sentimental, and utopian culture of a whole. This sense of cohesion and reason was provided in color films primarily through Technicolor's aesthetic design, drawn almost entirely from Technicolor's Color Director, Natalie Kalmus.

Within this paper, I will explore Natalie Kalmus's background and theories of color design, her role and sphere of influence within Technicolor, and how Technicolor's influence helped define American films from the 1935-1950. Furthermore, I will examine

how the film industry's reaction against Natalie Kalmus and the Technicolor Advisory Service represented a larger resistance to the compulsory requirements of standardization which Hollywood had thrust upon the industry, a system which Technicolor itself was forced to adapt to in order to survive.

Natalie Kalmus was certainly not the first color scoring theorist. Robert Edmund Jones was hired to manage color aesthetics after producers had used awful palettes in the earlier Technicolor two-color process. This was an effort by Herbert Kalmus to protect Technicolor's process. Jones had been a production designer on Broadway and had written about the importance of scoring color as if in "an operatic movement, a seemingly prelude to Natalie's theory of color scoring" (Higgins, 363). Similarly, other theorists were establishing standards about color usage in films: L.O. Huggins wrote 'The Language of Color,' explaining the basic terms of color, offering a catalogue of hues and their associations, and extending the system's importance to basic color mixtures. (Higgins, 363). Therefore, color was becoming more widely accepted as a device within films. Within Jones' theory of color foregrounding, color was to be showcased for its graphic power, a practice quite evident in early Technicolor films such as *La Cucaracha* and *Becky Sharp*. Jones' schemes tended to mix strong hues by juxtaposing them within the frame or alternating colors across shots. "Such arrangements flaunt colors as a novel element, drawing attention to it by making it a strong source of visual variation. The flamboyance of the short's design makes color into something of an attraction, and the final shot seems to acknowledge this directly" (Higgins, 368). This effort to make color a spectacle was sharply contrasted by Natalie's theories of color design.

Natalie originally submitted her "Color Consciousness" theory in May of 1935 as

part of an early discussion about the possibilities of bringing three-color to feature production. She released it again in 1938, revising the essay slightly for inclusion as a chapter entitled 'Color' in Stephen Watt's anthology *Behind the Screen, How Films are Made*. This piece was important in promoting Technicolor to studios and critics: "On one hand she argued that 'if the color schemes of natural objects were used as guides, less flagrant mistakes in color would occur.' At the same time like Holbein, Bougereau, Rembrandt, or Velasquez, the motion picture colorist must follow 'the principles of color, tone, and composition that make painting a fine art'" (Street).

Her essay focused on four general principles of color: firstly, color should support the mood or tone of the story. "The main goal of creating color charts, according to Kalmus, was to ensure that from the beginning, design would suit the tone of the script. Just as every scene has some definite dramatic mood so too, has each scene, each type of action, it is definitely indicated color which harmonizes with that emotion" (Higgins 373). Her second principle held that bright, saturated colors should not be used excessively, favoring more 'natural,' and harmonious color schemes. In this principle, distinct colors associated with mood could be easily recognized within a field of neutrals, "while the neutrals themselves could take on expressive force 'emphasizing the severity of the black, the gloominess of the gray, and the purity of the white'" (Higgins 373).

Her third, and perhaps most lasting principle, was about directing attention with color, or the law of emphasis. This theory held that nothing insignificant in the mis-en-scene should be emphasized with color, as it would only distract from the characters and action. In this principle, Natalie gives an example of a bright red ornament shown behind an actor's head as a distracting element. For this reason, background actors should wear

neutral colors that do not distract from the principle actors. Furthermore, because flesh-tones are usually warm, Natalie suggested introducing cool tones into the backgrounds. Her final principle stressed the importance of considering movement in a scene when color scoring because the juxtaposition of color is constantly changing due to this movement. "Orange, for example would appear more red than it really is' next to a blue green because 'each color tends "to throw' the other toward its complement.' Kalmus encouraged a harmony that limited complements and play contrasting hues off of neutrals so as to avoid distracting apparent changes in color" (Higgins, 374).

Technicolor used both Jones' and Natalie's color theories but in different movements within Technicolor's development. Within the 1930s, according to Technicolor Historian Scott Higgins, Technicolor went through three stages or modes in its color design: a period of demonstration, restraint, and assertion. The demonstration mode for Higgins is exemplified by *Becky Sharp*: Higgins argues that in its deployment of bold and deliberate primary colors in costume and set design, Technicolor was demonstrating its "range and accuracy of the new process" (Schmidt, 1). During this period of transition, Natalie tried to execute her Consciousness theories on set, however director Rouben Mamoulian tended to agree with Jones' style of thought regarding color design and actually gave an ultimatum that Natalie must leave the project or he would.

As such, Scott Higgins declares, it is quite obvious that *Becky Sharp* was not an example of the typical Technicolor restrained style following the mid 1930s but instead, "leans strongly toward display" Of the film's twenty-one segments, sixteen clearly employ color foregrounding techniques." (Higgins, 377). This caused the film to open to mixed critical reviews, however it still prevailed as a promotion for three-color (Higgins, 379). As

a result of these mixed reviews, Natalie took full dominance as color director, implementing the next stage within Technicolor, restraint: "Technicolor corporation would want to get control of the palette and force filmmakers to be more restrained, as it were; accordingly the restrained mode represents something of a cracking down by Natalie Kalmus with her new guidelines." (Higgins, 381). Higgins uses *A Star is Born* (1937) and *Trail of the Lonesome Pine* (1936) as case studies for this. Finally, with the assertive mode there is a return to bolder colors that perhaps also represents a renewed resistance to Technicolor's guidance by those within the film industry: "In this phase we find the deployment of techniques that became established throughout the 1930s-- such as keying the set hues to the costume of the female protagonist" (Higgins, 382). Higgins uses *Gone with the Wind* (1939) as his primary case study.

"Though color experts like Jones, Coulon and Huggins offered guidelines for the proper use of color in Hollywood cinema, the job of articulating and enforcing an official Technicolor color aesthetic fell to Natalie Kalmus" (Higgins, 383). Natalie had been married to Herbert Kalmus between 1903 and 1921, and after their divorce, she headed the Technicolor color control department, sometimes referred to as the color advisory service. Natalie's background in art prepared her for the position: "Reportedly, she had studied art at the University of Zurich, the John B. Stetson University in Florida, the Boston School of Art, the Curry School of Expression in Boston, and Queen's University in Ontario" (Higgins, 383).

Drawing on this experience, Natalie set stylistic boundaries for the use of color, and she helped position the color control department as a liaison between Technicolor and the studios' production teams: When it was formed in the 1920s, the department was meant to



aid production personnel in designing for the limited range of the two-color process: "With the advent of three-color, Technicolor promoted the department as a means of avoiding the "purported excess of the late 1920s and early 1930s" (Higgins, 383). Similarly, Technicolor publicity suggested that the department was "even more vital to the three-color process because it had 'greatly increased the demands of precision in color control in order that the fine gradations of color now available on the screen may comprise a pleasing harmony'" (Higgins, 384). The basic argument was that since three-color had so substantially increased the filmmaker's palette, color regulation in design became essential. "If color was to provide more than a vivid novelty, it would have to be carefully crafted, and the color control department provided guidance" (Higgins 384). Because Technicolor had virtually no competition with other color companies in the mid-1930s and much of the 1940s, Technicolor was able to regulate all usage of their cameras and processing, a policy that ultimately contributed to its ascendancy. Cameras were leased, and processing took place in Technicolor laboratories. It was also a requirement for productions to use the Color Advisory Service, "which applied Kalmus's principles in preproduction and on the set" (Street). However, Natalie made it a point within her essay to convince the industry that the Color Advisory Service was not dictating a color style but enforcing established aesthetic norms: "'Color Consciousness' was a bid to persuade producers that Technicolor could bring with it a tested aesthetic of quality. Cinema, Kalmus argued, had been 'steadily tending toward more complete realism,' and after the addition of sound, color became 'the last step' of perfection" (Street). From the 1930s into the 1950s, Natalie and her color advisory team oversaw the color design of every major studio Technicolor production. Natalie's contract stipulated that she receive screen credit as color consultant on each of

Technicolor's features. However, beginning in 1937, credits indicate that work was parceled out between Kalmus and her associates Henri Jaffa and Morgan Padelford: "during the late 1930s and early 1940s, both associates worked on films for Paramount and Fox, while Jaffa also handled MGM and some United Artists releases, and Padelford was responsible for Warner Bros" (Higgins, 386). Natalie, Jaffa or Padelford would consult on most of the features during the period, although *Technicolor News and Views* reported that altogether there were six associate consultants (Higgins, 386). Leonard Doss, a Technicolor consultant during the late 1940s and early 1950s described in an interview with Richard Neupert in 1989, the color consultant's five step process:

"First, they read the script, then researched and planned out the appropriate color schemes (meeting occasionally with Kalmus). Second, they met with the producers to set up a budget and schedule. (A larger production budget would warrant several consultants being assigned to a film.) Third, they met with the costume department, since the interior set was generally designed around the colors worn by the protagonists. Fourth and fifth, they met with the studio's Art and then Props Departments to guarantee that the props and sets would reinforce the color schemes planned for each shot and scene."

(Higgins, 363)

It is also important to mention that while consultants would continue to advise the studio during the production and post-production stages, their priority was guiding the pre-production stages. According to Sarah Street, "The service involved advising on the correct shades of colors, contrasts, costumes, and sets, per the color consciousness article.

Samples of materials and colors from previous Technicolor films were provided so that unnecessary photographic tests could be avoided" (Street). Particular attention was paid to how the costumes worn by stars related to their on-screen characters as well as to the mood or tone of a scene. Advice was given on how to avoid distracting colors so that audience interest was always maintained in the principal players.

In addition to managing the Color Advisory Service, Natalie branded herself as the figurehead of Technicolor itself, demanding credit as the Technicolor director, fulfilling numerous interviews, and advertising tie-ins. Many articles discuss her skill as a Color Director, at a time when few women worked behind the scenes. Yet all of these articles discuss her femininity as one of the central points of interest: Headlines like, "When Film Colors Go Blooey, They Ask A Woman To Fix Them," and "Color Films Success Due to Miss Kalmus," were common. Attitudes about working women are made quite clear in these types of articles: "Mrs. Kalmus is the only woman in the corps of trained color experts who are bringing this new medium to the screen. Yet she does not in the least measure up to the general conception of a business or professional woman. She is decidedly feminine, small in stature, mild-mannered but confident that she knows whereof she speaks" (Thomas).

At the same time, these articles often refer to her expertise in the subject matter, saying that "she may be found in as many as four or five studios a day," and her office is a "veritable card-index file of material. Thousands of samples of dress materials of innumerable shades are catalogued in her files. She can put her finger on anyone of them and tell how it will reproduce on the screen" (Thomas). Also of importance, Natalie describes her process of work as a much more technical process: "First I made a thorough study of the basic principles of Technicolor photography. Then I started experimenting to

find out just how this photography reacted to the various colors. With those facts firmly established in my mind it is a simple matter to know what colors should be combined and in what ratios for certain desired effects" (Thomas).

In another article, Natalie mentions her background in chemistry as well. More than just a spokesperson, Natalie's charm turned her into a sort of icon among the press. As one trade press commentator reported after interviewing her: "Mrs. Kalmus I found a most delightful and enlightened character. Indeed I'd like to see her in Technicolor herself for she's by no means a flat personality. It is clear that she has the technical side of the game at her fingertips and can be depended on not only to look after that angle but the creative color angle as well" (Street).

This kind of reportage continued throughout her career, and Technicolor "clearly took advantage of her star value as an ambassador for the process who was in a fairly unusual position as a woman heading a complex and key operation in the company's development" It suited them to publicize her technical knowledge for this purpose, on one occasion putting her name on an article written by a male colleague in the company" (Street). As a result of this iconic status, Natalie's public presence began to take on a more obvious cultural significance: within the Margaret Herrick Collection on Natalie Kalmus, there was a folder containing correspondence with J. H. Hugues, merchandise manager for A. Harris and Company of Dallas, Texas, in 1943-44, demonstrating how her views on color extended beyond Hollywood. Having read her color consciousness article, Hughes sought her advice on how to tie in Technicolor with the colors of his incoming spring collections. She replied, "The word Technicolor is banned for use outside of the corporation, but it is permissible to use my name in your booklet." The collections were duly advertised as

"Natalie Kalmus colors." The costume display was erected in the store in February 1944, with coverage in *Vogue* and *Harper's Bazaar*. "Examples such as this make it clear that Kalmus was a sort of ambassador for the company in technical and aesthetic terms, and in this arena, her gender was convenient" (Street). She was also consulted by makeup companies such as the House of Westmore and Max Factor, the latter having a special relationship with Technicolor as adviser to the company on makeup foundation.

"Her work attracted widespread reports in fan magazines, and she encouraged ties between Technicolor and department stores by advising on color combinations for new fashion ranges; she also gave radio interviews" (Street). One commentator observing after meeting her, "Her vitality is incredible, almost electric in its force. You can feel it when you are anywhere near her. It's exhausting if you are not in tune with her" (Street). Indeed, Natalie became crucial in establishing Technicolor's brand. "Together with Herbert, Natalie made a technical process a household name, with both personalities performing different but crucial showmanship functions for the company" (Street). One article described Herbert as the "Techni" and Natalie as the "Color" in Technicolor.

Many members of the film industry reacted strongly against Natalie's presence, the Color Advisory Service, and that of Technicolor itself. When directing *An American in Paris*, Vincente Minnelli claimed that he "couldn't do anything right in Mrs. Kalmus's eyes." In response to Natalie's rule about clashing colors, Cecil DeMille, *The Ten Commandments*, fumed "Well it's too bad the good Lord up in heaven didn't have a Technicolor consultant when he made apples and oranges!" Screenwriter Arthur Laurents ("Rope") wrote in his memoir, "Alfred Hitchcock did not control color, Natalie Kalmus, High Priestess of Technicolor, controlled color," and "Natalie Kalmus might have to be killed off-camera."

Whereas Allan Dwan ("Slightly Scarlet") put it more bluntly, stating, "Natalie Kalmus is a bitch" (Nasser). There are several such reported on-set feuds with Natalie Kalmus.

According to Technicolor historian Fred E. Basten, David O. Selznick and Natalie Kalmus had extreme feuds: "On one occasion, an entire set had to be replaced," and in response, he dictated a memo stating, "I cannot conceive how we could have been talked into throwing away opportunities for magnificent color values [based on] ... the squawks and prophecies of doom from the Technicolor experts" (Nasser). However, these kinds of complaints, while neither fierce nor as widely reported, had existed against other Color Consultants: within the Margaret Herrick Collection on Natalie Kalmus, a file on Orson Welles's unfinished film *It's All True* (1942) shows that Natalie Kalmus assisted Bob Brower on color control before giving him the responsibility of going to Rio de Janeiro to work on the film's production.

Brower, a consultant at the Color Advisory Service, complained that Welles was very difficult to work with and about general mismanagement, even though RKO was generally pleased with Technicolor's work (Street). These kinds of complaints had existed against Technicolor for several years, some even prior to Natalie's reign as Technicolor Color Director. This is due to the fact that Technicolor had established a contentious relationship with studios from the early 1930s, having required studios to lease their equipment and personnel in order to use their process. "As early as 1931, for example, studio correspondence files include cases such as *Manhattan Parade*, in which Warner Bros. ignored Technicolor's advice on costumes so that 'the colors were not favorable for the Technicolor process. Such a thing is a handicap toward what we aim to do--make a good picture of pleasant colors'" (Street). Difficulties were also encountered when Fox Movietone resisted advice from Technicolor's experts on a series of fashion short films in

1939, resulting in their colors being in "bad taste" (Street). In the end, Natalie's career was ended by her divorce with her husband, Technicolor founder Herbert Kalmus. Natalie was portrayed by the press as a lunatic in her attempts to sue Herbert for partial control of Technicolor. Headlines such as "Woman Must Pawn Jewelry to 'Exist,'" and "Charges International Series of Romances," were common. When her case was dismissed, Natalie was "released" from the company in 1949. Not even a year later, Eastman Kodak would introduce the single-strip color process, which used "automatic color masking" to add clarity to final prints, signaling the beginning of the end of Technicolor.

Ultimately, Technicolor's aesthetic and rigid process led to its downfall.

Technicolor's use of soft focus proved fatal in the early 1950s, putting Technicolor on a collision course with another technical phenomenon of the decade – widescreen: "The anamorphic CinemaScope and double frame VistaVision lenses in particular had resolution and distortion problems of their own that left no tolerance for the soft focus limitation of the three-strip camera in the film negative" (Merritt, 7). Technicolor's fate was sealed by the very thing that made it successful: its refusal to conform. Because Technicolor's refused to lease cameras or lab equipment to studios, Eastman Kodak was able to trump the three color process with its more simplistic, cheaper, and universal film single-strip film stock. It was not as sensitive to light, could be used with lighter black-and-white cameras, had the ability to adapt to sharp focus, and most importantly could adapt simply to the widescreen process, unlike Technicolor. "As far as Eastman was concerned, studios could do with their stock whatever they wanted. For the studios, the most conspicuous advantages were practical: color movies suddenly became significantly cheaper to produce and easier to make" (Merritt, 7). By 1954, virtually all Hollywood color films were shot in Eastman Color

negative.

In order to make color a standard within Hollywood, it was necessary to convince audiences and the film industry itself of the importance of color in film. To convince audiences, Technicolor had to bridge the gap between a desire for nostalgia and a desire for realism in the late 1930s and 1940s. It provided an escape into vivid representations of a past to which Americans longed to return and it did this using new, cutting-edge technology. To get Hollywood to embrace the expensive three color process, however, Technicolor had to brand itself as the foremost in color technology and aesthetics. It did so, primarily through the guidance of its Technicolor Director Natalie Kalmus, by creating a highly codified and vertically integrated monopolistic system. Natalie Kalmus established clear and strict standards for color design for Technicolor, which she presented in her essay, "Color Consciousness." Natalie's theory of "color scoring," presumed that designing a color scheme for each scene was as important to a film as was creating its musical score. Color design, at the time, was not just about creating aesthetically pleasing palettes, or even creating color combinations that translated well on Technicolor film stock; it was a narrative function within the film, enhancing the mood of each scene. In order to use Technicolor's process and cameras, studios had to agree to use Technicolor's Color Advisory Team, trained in Natalie's principles. This imposition of authority by Natalie Kalmus and her Color Advisory Service represented a threat to those within the industry-- producers, cinematographers, and directors-- who demanded creative license. This discrimination against Natalie Kalmus, while undoubtedly magnified by her gender, was more systemically linked to her symbolic representation of Technicolor itself and its



transformation of the industry from one based on black-and-white cinematography, costuming, art design, and make up to a highly sanctioned world of color photography.

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TECHNICOLOR

"Ringmaster to a Rainbow"

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## TITLE SEQUENCE

We start IN BLACK AND WHITE ON A CLOSE UP OF AN EYELID. It suddenly opens to reveal a HUMAN EYE.

We PULL OUT to show an actress and actor, both motionless as everyone scurries around them; makeup artists fuss over their faces, set designers shift objects to and fro, lights are adjusted and brightened.

As we PULL OUT even further, we ANGLE ON a director, mouthing "action!" From the corner of our eye, we see the actress struggling dramatically against her partner but our focus TURNS TO the men and women behind the camera, in their Sunday best, a reflection of 1930s class.

As we MOVE TOWARD THEM, we are whisked INTO THE LENS of the camera itself. A golden BURST OF LIGHT submerges us into the Technicolor world for the first time and oh, what a world it is: ABOVE AND BELOW US, NEGATIVES ARE PROCESSED on separate reels.

We CRAM right between them, SHOOTING into a dark tunnel, which turns out to be a film reel. We PULL OUTSIDE of the camera as the double canister is OPENED and a hand hastily takes THREE REELS in arm.

We FOLLOW THE REELS as they are exchanged from hand to hand, in the foreground of a gorgeous back lot, filled with people, props, and backdrops bustling in harmonious synchronization.

The reels are LAUNCHED FORWARD, unrolling on the ground. We are suddenly JOLTED in the opposite direction as the strip is PICKED UP and examined by yet another set of hands, this pair belonging to a technician.

We PULL OUT to see the TECHNICOLOR LAB. The technician loads the three negatives into a printer. We CRANE UP the printer and TILT DOWN as the prints are spit back out, each film strip filtering into a different bath of COLORFUL LIQUID. OUR BLACK AND WHITE WORLD IS SHATTERED as the film strips dip into the vibrant cyan, magenta, and yellow pools.

We FOLLOW the strips as they are, by some great machine, LIFTED from the bath and MERGED together into ONE STRIP OF COLOR FILM, rolling onto a spool.

A new set of hands GRABS THE REEL from the machine and loads it into a film projector. The technician flips the house lights down and turns to look at the screen. WE TURN, too, leaving the booth behind, and DROPPING into the audience, TOWARD THE SCREEN.

WE ENTER THE SCREEN ITSELF. An image flickers to life: a drop of magenta falls into a pool of black and white water, which, as soon as the drop hits the surface, creates WAVES OF COLOR that reverberate across the screen.

Suddenly, superimposed over the luminescent water we see the words: "Technicolor"

END SEQUENCE.

ACT ONE

INT. KALMUS HOUSE - BEDROOM - MORNING

We open on a BLACK AND WHITE photograph of a train car. The words "Technicolor Motion Picture Corporation" have been freshly painted on the locomotive. Standing in front, with paint buckets in hand, are HERBERT and NATALIE KALMUS, late 20s. They are beaming with pride, ready for the future.

That spirit dissolves as we PULL OUT of the photograph to reveal a night stand which separates two twin beds. HERBERT and NATALIE, seem to have worn out faster than their twenty year old photograph, as they go through their morning rituals in double time. Herbert holds up two ties.

HERBERT

Which one do you like? Blue or red?

We see Herbert in profile. He's a tall man with a charming, Eisenhower-like face. He could stand to lose a few pounds.

Natalie, putting earrings in, turns to him. She's softer around the eyes, petite, and a few years younger.

NATALIE

The blue one. Red is too forward.

HERBERT

(putting his tie on)  
Isn't that the point?

NATALIE

No, it's not as pacifying. And you should wear your Oxfords. The brown ones. With the cap toe.

HERBERT

Not the black ones?

NATALIE

They need to be shined.

He goes into the closet.

HERBERT (O.S.)

I don't see them.

(back in the bedroom)

Natalie, I don't see them.

Natalie ENTERS THE CLOSET. As she pushes some of her clothes aside to get to his shoes in the back, she sees a FADED PINK DRESS. She lingers on it. It was once quite pretty.

HERBERT (O.S.)

Did you find them?

She breaks from her reverie and pushes the dress aside. She RETURNS TO THE BEDROOM with his shoes. Herbert is still struggling with his tie. She automatically starts re-tying it.

HERBERT (CONT'D)

Damn it, I swear they weren't in there.

(flustered)

I told the Board that this would happen. I said, if we can't cut costs to seven cents per foot, MGM won't bite.

NATALIE

Not with Nickolas Schenck dangling the purse strings....

HERBERT

Exactly.

NATALIE

Hush. It'll be fine. Just walk in there, do the pitch, and the color will speak for itself.



HERBERT  
 (skeptical)  
 Like the tie? What if it doesn't?

NATALIE  
 (shrugging)  
 If it doesn't, we can always go  
 back to working out of a train car.

This does not console Herbert. She finishes fixing his tie.

MUSIC UP: THE ANDREWS SISTERS' "SHORT'NIN' BREAD"

EXT. KALMUS HOUSE - FRONT YARD - DAY

It's a beautiful day in Bel Air. The lawns are immaculately maintained and the homes are sprawling. Natalie and Herbert get into identical cherry red convertibles and drive away.

EXT. HOLLYWOOD STREETS/INT. NATALIE'S CAR - DAY

THE SONG BECOMES DIEGETIC, coming out of the radio as Natalie drives through a Hollywood of the 1930s: the roads aren't as crowded, the buildings not as tall, and beautiful boardwalk-looking signs protrude from every corner. It's quaint yet glamorous.

NATALIE CHANGES THE CHANNEL on her radio.

ANNOUNCER (V.O.)  
 In his statement this morning, Mr. Welles formally apologized for the hysteria caused by last night's reading of H.G. Welles' War of the Worlds, claiming that the radio broadcast was simply a bit of Halloween fun.

We hear the ACTUAL ORSON WELLES INTERVIEW taken on November 1, 1938:

INTERVIEWER

"Do you think there oughtta be a law against such actions as we had last night, or as a result of that?"

ORSON WELLES (V.O.)

"I don't know what the legislation would be. I know that almost anyone in radio would do almost anything to avert the kind of thing that has happened-- myself included-- but I don't know what the action would be. Radio is new and we're learning about the effects it has on people. We learned a terrible lesson."

Natalie stops at a red light. She spots a group of women, about her age, lined up in front of a theater.

WOMAN 1 (O.S.)

I thought it was fantastic. I was scared out of my wits.

IN LINE, WITH THE WOMEN

WOMAN 2

Fantastic? I tuned in about twenty minutes into the "show." They said that those machines were moving to strike New York. I tried to get a line to my brother in Manhattan but it was jammed. I was petrified.

WOMAN 1

Oh, don't be so dramatic, Ruth. It was a gag. That's all.

WOMAN 2

Gag, my eye. They should lock up that Orson Welles for what he did. Terrorizing millions of people... Why, he ought to be ashamed.

A third woman, silent until this point, catches Natalie staring at them. She smiles at Natalie, slightly embarrassed by her dramatic friends.

BACK TO NATALIE'S CAR

Natalie smiles back, without judgment, almost longing for a chance to gab with friends before a movie. She'll never know that kind of female camaraderie.

The light turns GREEN. Natalie drives away.

EXT. TECHNICOLOR - DAY

The Technicolor building is massive and sprawling, with all of the regality of a Hollywood studio.

Natalie and Herbert pull up simultaneously to their reserved spaces: "Natalie Kalmus: Color Director" and "Herbert Kalmus: President" The King and Queen of Technicolor exit their cars.

Herbert stares at the entrance for a beat, working up the courage to go inside. Seeing this, Natalie walks up to Herbert and touches his face affectionately.

NATALIE

Find your poise, darling.

He nods. They both take a deep breath and enter:

INT. TECHNICOLOR OFFICE - FRONT DESK - DAY

A receptionist, Gail, mid-twenties, sits at a desk in the entrance. She takes a slew of calls without breaking a sweat. She's clearly the office beekeeper.

GAIL

Technicolor Motion Picture  
Corporation, please hold  
(etc...)

Natalie and Herbert walk in together but split off down separate hallways without even acknowledging each other.

GAIL  
(RE: Natalie)  
Hold, please!

Attempting to scurry after Natalie, she accidentally yanks the phone from the wall. She debates fixing it for a beat but instead grabs a clipboard and chases after Natalie.

IN THE HALLWAY

NATALIE  
(without looking)  
Good morning, Gail.

Gail takes Natalie's hat and jacket as they walk and talk.

GAIL  
Good morning, Mrs. Kalmus.

NATALIE  
What's the news?

GAIL  
Your ten o'clock has been confirmed by Mr. Mayer's assistant, he'll be arriving on the hour.

NATALIE  
Good.

GAIL  
Your dry cleaning is back.

NATALIE  
Good.

GAIL  
Henry is out sick.

NATALIE

Still bent from last night?

GAIL

Your guess is as good as mine.

They've made it to:

INT. TECHNICOLOR OFFICE - NATALIE'S OFFICE - CONTINUOUS

It's like walking into the Oval Office: it's pristine, save her lavish oak desk which is covered in color charts and dozens of fabric swatches: turquoise silk, violet gossamer, and cream flax. Natalie sits in her chair and starts organizing her papers.

NATALIE

He is scheduled to direct more test footage at MGM in an hour. You best put a cold compress on his desk or you'll never hear the end of it.

GAIL

Of course.

NATALIE

Alright. Is that all?

GAIL

Well... Yes. That's all.

Natalie keeps working, undeterred.

NATALIE

Something on your mind?

GAIL

No. It's not the right time. We can discuss it later.

NATALIE

I'll give you two minutes to tell me what's going on.

Gail contemplates for a moment, and then, almost blurting out:

GAIL

I wanted to-- formally, that is-- request an assignment on the Color Advisory Service.

NATALIE

(surprised)

Now you've got my attention.

GAIL

I know it's out of the blue. But I've taken notes on all of your meetings with Mr. Selznick and Mr. LeRoy. I've even started making my own color scores.

NATALIE

Gail, I--

Gail pulls out a diagram of color swatches and scene notes. She places them on an easel in Natalie's office.

GAIL

Before you say, "no," just take a look at some of my ideas.

Natalie gets up to take a closer look. The charts show color palettes for the background, principal actors, stage designs, and furniture of each scene for "The Wizard of Oz."

For Dorothy, Gail has selected a red wig sample and a blue gingham swatch. For the Tin Man, she has indicated a brushed silver polish which registers well in lily pad tests.

Gail's real efforts lie in her set sketches: every detail been thought of, from Glenda's living quarters to the size of the yellow bricks in the road. This is a color advisor's job.

GAIL (CONT'D)

I read your essay and applied it to your latest script. Since "Oz" is so vivid, each character and set will embody a distinct color. And Dorothy will wear a blue dress to complement the lush surroundings of Emerald City, the golden road, and the pops of pink in munchkin land.

NATALIE

Gail, I appreciate your work but this design will never be produced. It's twice our budget and these colors are too bold for audiences.

GAIL

But the script calls for bright--

NATALIE

They *all* call for shocking colors. Writers don't yet know how to plan for Technicolor aesthetics. That's why we're here.

GAIL

(dejected)

I see.

NATALIE

(conciliatory)

I know you want to be an adviser. But to be frank, if this morning's meeting goes poorly, there won't be a Color Service left to join.

INT. TECHNICOLOR OFFICE - FRONT DESK - LATER

Gail enters and spots MORGAN PADLEFORD, early 30s, smugly reading a newspaper in front of her desk.

GAIL

Don't you have some poor costume designer to torment for using the wrong shade of periwinkle?

MORGAN

Ah, don't mind me. I figured since you were trying to horn in on my job, I might as well see what it's like to do yours.

Gail climbs under her desk to plug the phone back in.

GAIL

I'm not in the mood for your antics.

MORGAN

(pouting voice)

Now, now. Just because we didn't get what we want doesn't mean we have to be a poor sport about it...

GAIL

(from under the desk)

I didn't not get what I want. I just have to strike at the right time.

(she emerges)

When she's less busy.

Gail climbs back up, fixing her outfit.

MORGAN

Do you mind if I share some career advice with you?

Gail moves around the lobby, tidying up magazines and fluffing couch pillows as Morgan follows her.

GAIL

More than you'd ever know, actually.



He couldn't care less.

MORGAN

When people look back at your legacy, they won't remember you for what you did but for what you demanded.

Natalie walks past the reception desk. From the lobby, Morgan gestures at her as an example.

MORGAN (CONT'D)

Take a look at Natalie, for instance: our heroine started as a catalogue model, did some test shots for a budding young entrepreneur, fresh out of MIT and eager to perfect color films. She winked his way and whammy! Now she's running this place.

GAIL

Yeah, but she also has over five art degrees. You can't say that was all by chance.

His face says it all: Poor Gail. So naive. Morgan guides Gail back to her desk.

MORGAN

Natalie is where she is because she demanded what she wanted and kissed ass, probably literally, to get it.

GAIL

That is an awful thing to say.

MORGAN

Awful or not, she's billed on nearly every picture we make, not Burt.

(MORE)

MORGAN (CONT'D)

He'll go down in the books for starting Technicolor but she's the one they'll remember when we're all worm food. Not the people who busted their tails to get her here.

GAIL

Now who's moping?

MORGAN

Go ahead and mock me. But don't say I didn't warn you. Another three years will pass you by and you'll still be answering her phones.

Suddenly, LOUIS B. MAYER, vice president of MGM enters the building, with three executives in toe. Gail stands straight up. Morgan tips his hat and leaves.

GAIL

Mr. Mayer. Welcome.

INT. TECHNICOLOR OFFICE - THEATER - CONTINUOUS

Natalie enters the theater to see Herbert and JAMES BALL, late 50s, a lab technician, arguing.

HERBERT

How could this have happened?! This test was printed two days ago. I saw it myself. It was perfect.

NATALIE

What's going on?

JAMES BALL

One of the newer lab assistants mistakenly dropped the test strip into the yellow die after it was imbibed.

HERBERT

My question wasn't *what* happened,  
it was *how* it happened! I  
specifically said, only you are  
allowed to touch this print!

JAMES BALL

It was an accident, Herb. I claim  
full responsibility.

NATALIE

Do we have another print available?

Herbert and James look at each other. Before they can speak,  
Gail enters with Louis B. Mayer.

ACT OUT.

ACT 2

INT. TECHNICOLOR OFFICE - THEATER - CONTINUOUS

Herbert, panicked, is stunned silent for a beat. He looks at Natalie for direction. Natalie, always the good hostess, speaks up.

NATALIE

Hello, Mr. Mayer. Welcome to the Technicolor Theater.

She shakes his hand and offers him a seat.

LOUIS B. MAYER

Don't tell me you're getting into the theater business, too. I'm sure the D.O.J. would be happy to add you to this antitrust suit. They've been up my ass all summer.

HERBERT

(finding his voice)

No, we're not involved in exhibition or distribution.

LOUIS B. MAYER

Well, aren't you a pair of lucky ducks. If they don't nab you on this, they'll get you on something else.

NATALIE

It's becoming criminal to run a smart business.

LOUIS B. MAYER

Isn't that the truth. But you've done a heck of a job on this theater.

HERBERT

Thank you. It's part of our 1.5 million dollar expansion.

Herbert chokes up again. He goes for a glass of water.

NATALIE

Would you care for a tour?

LOUIS B. MAYER

After the screening, perhaps. I'm eager to see what you've got.

NATALIE

Are you sure you wouldn't like some refreshments first? These tests can be dull without gin.

LOUIS B. MAYER

No. Thanks. Let's just get right along with it.

Natalie and Herbert exchange glances and signal James to start the projector. The light from the screen flickers on their terrified faces.

INT. TECHNICOLOR OFFICE - FRONT DESK - LATER  
The phone rings. Gail picks up.

GAIL

Technicolor Motion Picture Corporation.

(listening for a beat)

Oh, he's arrived. That's good to hear.

As she listens, she becomes less enthusiastic and more appalled.

GAIL (CONT'D)

No sir, this is not how we typically conduct business.

(MORE)

GAIL (CONT'D)

I wonder, did you try giving him a cold compress?

Gail pulls the phone away from her ear as the person begins screaming at her.

INT. TECHNICOLOR OFFICE - THEATER - CONTINUOUS

The footage is awful, streaked in yellow. As the projector heats it, the bright yellow dye starts running on the print.

LOUIS B. MAYER

Is this some kind of a joke,  
Kalmus?

The projection cuts and the house lights come on.

HERBERT

It's no joke, Louie. The lab must  
have given us the wrong print.

NATALIE

I can have our technician find the  
correct print.

LOUIS B. MAYER

(getting up)

Don't bother. I've got meetings all  
day, I don't have time to waste.  
How much will this cost me?

HERBERT

You can't put a price on color. For  
Pete's sake, MGM has more stars  
than there are in heaven.

LOUIS B. MAYER

Heaven isn't cheap. The Depression  
may be winding down but nobody has  
money to waste.

HERBERT

We can do seven cents per foot. But the cost of our color service, camera rentals, rushes, and lab processing could reach upwards of 100,000 dollars per picture.

LOUIS B. MAYER

(contemplates for a beat)

It's too much.

Louie walks out the door. Natalie shoots Herbert an urgent look as Louie's executive follow him out. She goes after Louie. Herbert follows her out.

INT. TECHNICOLOR OFFICE - HALLWAY - CONTINUOUS

Natalie walks alongside Louie as he walks toward the lobby, Herbert remains behind them.

NATALIE

Look, the price is steep. But we're signing new contracts every day. If MGM is the last studio to adopt the three color process, your reputation will take a bigger hit than your budget.

LOUIS B. MAYER

Don't toy with me. I've had three calls in the past week, all saying the same thing.

(stops to face her)

If I pull out of the color business, every other studio will too.

EXT. TECHNICOLOR OFFICE - PARKING LOT - CONTINUOUS

Louie opens his car door. Natalie shuts it.

NATALIE

Alright, what will it take?

Louie pauses for a beat, surprised by Natalie's stubbornness.

LOUIS B. MAYER

I've got costume designers and cinematographers who understand color design. I don't need yours. And I don't need the advisory.

NATALIE

I'm afraid our Advisory Service is not negotiable. A film needs someone directing color as much as it needs someone scoring music.

HERBERT

(objecting)

Natalie.

NATALIE

In the past we've allowed studios to lease our equipment without our color experts and the results were catastrophic. Films lacked a basic understanding of color aesthetics.

LOUIS B. MAYER

I don't know if I agree with that.

HERBERT

We can consider removing the color advisory service, if it's a real problem.

NATALIE

I do not think that would be in anyone's best interest.

LOUIS B. MAYER

You should listen to your husband on this one. He's the expert.

(MORE)



LOUIS B. MAYER (CONT'D)

Now, Kalmus, I'm meeting with our principal investor, Nickolas Schenck tomorrow morning. Can you produce a decent proposal by then?

Louie gets in his car.

HERBERT

Yes, Louie. I can do that.

LOUIS B. MAYER

Excellent. Well, I'm off then.

Louie drives away. Natalie glares at Herbert.

INT. TECHNICOLOR OFFICE - LOBBY - CONTINUOUS

Natalie storms through the front door and moves toward her office. Herbert follows.

NATALIE

What the *hell* was that back there?

HERBERT

I should ask you the same question!  
"That's something we cannot do?"  
Since when do we refuse to compromise with studio executives?

NATALIE

Since they were too idiotic to realize what they actually need!

HERBERT

Oh, come off it already...

Natalie turns to face him.

NATALIE

Perhaps you forgot, but my refusing to compromise on color quality is what got this company back on the map!

HERBERT

We can get by without it!

NATALIE

No, we cannot! And we can't do business by sacrificing what we need to be successful.

HERBERT

Natalie, we can get by without it.

NATALIE

So you're willing to eliminate my entire department, my entire role within this company just like that.

Herbert is unsettled by this but persistent.

HERBERT

I'd rather *be* a company without an advisory service than *lose* everything we've built.

NATALIE

You mean everything that *you've* built.

Herbert doesn't respond, confirming Natalie's suspicions. She walks toward her office, leaving him behind. Gail intervenes.

GAIL

Sorry to disturb you again, Mrs. Kalmus.

NATALIE

(snapping)

What is it, Gail?

GAIL

I got a call from MGM; it turns out that Henry reported to set an hour ago.

NATALIE

Well, at least that's some good news.

GAIL

Not exactly.

INT. MGM STAGE - DAY

A dozen people bustle around a set which has been dressed to look like a living room. Henry, early 30s, rugged yet slick, glances down at a color chart before tossing it onto a chair.

He'd rather be sleeping off his hangover. Or sleeping with the little blonde who gave it to him. Probably both at the same time. The cinematographer prepping the set isn't pleased.

CINEMATOGRAPHER

(to Henry)

I'm ready for your review. I should warn you, though, a bunch of your suggestions didn't work out.

HENRY

Sure they didn't.

CINEMATOGRAPHER

(annoyed)

Do you wanna test the shot, or what?

HENRY

Only if it's bourbon. On second thought, I'll take an aspirin instead.

He leans back in his chair and tips his hat over his eyes.

CINEMATOGRAPHER

Really? You waltz onto my set,  
demand all these changes, make me  
do the lifting, and now you've got  
no input?

HENRY

Look, Johnny.

CINEMATOGRAPHER

My name's Bill.

Henry doesn't give a shit.

HENRY

Look, Bill. You're new to color  
lighting so you don't understand  
the process: I tell you how to  
light the set, you argue with me. I  
tell you why your way won't work,  
you do it anyway. It looks like  
shit, I fix it.

CINEMATOGRAPHER

Now, wait a minute, here--

HENRY

So rather than go back-and-forth  
about why I'm right and you don't  
know what the hell you're talking  
about, I'm going to shut my lids  
while you shut your lips, for  
about, oh, thirty minutes?

BILL

You know, you've got some nerve--

HENRY

And when those thirty minutes are  
up, I'll redo everything you  
screwed up and we'll have both  
skipped another unpleasant  
conversation. Sound good, Bill?

CINEMATOGRAPHER

What an asshole.

Henry tips his hat back over his eyes.

HENRY

That's the spirit, Bill.

Natalie enters the stage and spots Henry lying back in a chair while everyone else works.

NATALIE

Henry, what are you doing?

HENRY

Ah! Natty Bear! Come to see all of the fun?

She kicks the stool out from under his feet.

NATALIE

(whispering)

You don't show up to one of our biggest meetings of the year, come to set drunk, and insult the one client we're trying to land?

HENRY

(loudly)

He's not a client, he's Bill!

Bill turns and glares at Henry.

NATALIE

Yes, well "Bill" is going to be debriefing "Louie," as in "B. Mayer." As in the one person just *begging* for an excuse to cut our department for antics like this.

HENRY

Alright, alright. I'll do what you say, mother. Just don't take away my toys.

NATALIE

I've already called Morgan in to replace you. He's going to clean up this MGM mess with a new test for tomorrow's meeting.

HENRY

So... day off?

NATALIE

Hardly. Drink some coffee, get back to the office. We're on press detail and you're giving Judy Wilkers a tour.

HENRY

She sounds pretty.

NATALIE

I don't think sixty year old gossip columnists are your type.

HENRY

Oh no, that old crow from Variety? You can't do that to me!

NATALIE

We need some decent press and for some unfathomable reason, women find you charming. Now go. Before I change my mind and fire you. And apologize for making a fool of yourself.

Natalie leaves. Henry stands up and takes his hat in hand. He approaches Bill.

HENRY

Look, Bill. I said some things, you said some things...

INT. TECHNICOLOR BOARD ROOM - DAY

Herbert sits with his four board members. They're all around their 50s or 60s. Except for WILLARD, 70s, the human embodiment of a walrus. Behind Herb is a chalkboard with cost-analysis breakdowns.

GEORGE

We just spent \$1.5 million on this facility because you said that we had contracts lined up for the next three years, Herb. *You* said that.

HERBERT

They're still lined up but, as you know, black-and-white films topped the box office this year. Louie is trying to convince the other majors that color is a gratuitous expense.

GEORGE

So, if he refuses to invest in color, nobody will.

HERBERT

Bingo.

WILLARD

We should start a production line, teach them a lesson!

DEXTER

We can't *afford* that.

RICHARD

Let's stay focused, gentlemen.  
Herb, how do we sell them on it?

HERBERT

We could adjust our licensing policies, allowing studios to lease our cameras as desired, without all of our services.

DEXTER

What does Natalie think of that?

Herbert stands up and moves to the window.

HERBERT

She's willing to try it; one of our color directors is working with an MGM cinematographer right now. But overall, Natalie is opposed to it.

WILLARD

And why shouldn't she be? We tried letting studios control their color picturing for "The Toll of the Sea." It nearly sunk us! Pirates dressed in fuchsia, skies were teal blue, it was ghastly. And better yet, audiences knew it.

RICHARD

Willard is right. We can't remove our services. We need to convince the public that they can't live without color anymore. Then, MGM would have no choice but to buy in.

GEORGE

How do we make audiences *demand* color?

Herbert looks out the window. This whole thing is a headache.

HERBERT

If we can find a way to reconcile the costs, I can find a way to sell it to audiences.



INT. TECHNICOLOR OFFICE - LOBBY - DAY

Natalie enters the office as the board members leave. They say quick hellos before exiting.

IN NATALIE'S OFFICE

Herbert stands, looking through some charts on her desk.

NATALIE

I see you've come to clean out my desk for me.

HERBERT

Despite what you may think, I'm not trying to torture you.

NATALIE

What did the board have to say?

HERBERT

The board thinks that cutting advisory services is a bad move.

NATALIE

I'm glad they're seeing reason. I just pulled Henry from set at Metro. He is incapable of working with their cinematographer. That cameraman needed constant guidance.

HERBERT

I'll let Louie know that it didn't work out so well.

NATALIE

I sent Morgan with a team to work on a new concept. It'll be slapped together but we have no choice.

HERBERT

Good. I'd like you to put all of your energy into publicity for now.

NATALIE

I had already scheduled some tours today to showcase the new lab. I'll make a few calls.

HERBERT

I scheduled an interview for you this afternoon. With Eleanor King.

Natalie stops dead in her tracks at this.

NATALIE

Are you insane?

HERBERT

Natalie--

NATALIE

No, forget it. I cannot and will not play hostess to that woman.

HERBERT

Eleanor King was and is a very dear friend of mine.

NATALIE

(scoffing)

Friend...

HERBERT

She also writes for the country's largest women's magazine. Whether you like it or not, we need her.

NATALIE

Do you actually think I'd let the woman who tore apart our marriage into my office? Into our business?

HERBERT

I don't think it bears repeating  
that Eleanor and I haven't had an  
affair.

NATALIE

(angrily)

Herbert, do not stand there and lie  
to me.

HERBERT

(yelling)

I'm not lying to you! For once in  
your rigid little life, could you  
see that someone else may be right?

Natalie is hurt by this. She takes a beat to recover.

NATALIE

There was a time in our marriage  
when I believed in you over my own  
suspicions.

HERBERT

I know it happened before. But  
never with her.

NATALIE

There was a time when I felt that  
you cared for me more than  
yourself.

HERBERT

Natalie, don't say that.

NATALIE

And you proved to me, without a  
shred of doubt, that my trust was  
misplaced.

HERBERT

It's been fifteen years. If you  
can't trust me now, after  
everything we've done to rebuild  
our marriage and this company, when  
can you?

Natalie considers this for a beat.

NATALIE

I don't know.

They stare at each for a beat. A rock, a hard place, and  
their marriage in between.

HERBERT

Fine. The pitch is tomorrow at 9  
am. Try to have something prepared.

He walks out of her office.

ACT OUT.

ACT 3

INT. TECHNICOLOR BREAK ROOM - DAY

Two women eat from their sack lunches. Gail enters.

BRENDA

I swear it's true. I saw him storm out of Natalie's office and then he asked me to connect him to Eleanor King.

JUDY

Eleanor King? I thought they ended things a couple of years ago.

BRENDA

How could he? After Bonnie was born-

Judy nudges Brenda to stop talking, as Gail makes her presence known.

JUDY

(recovering)

Afternoon, Gail. How's the MGM catastrophe going?

Gail pours a cup of coffee, breezing past them.

GAIL

Fine, thanks. Natalie's working on a backup plan now.

BRENDA

(under her breath)

I'll bet she is...

Judy snickers.

GAIL

You ladies ought to be cautious of what you choose to chatter about in the open air of a break room.

BRENDA

Oh, come on, Gail. You know there's something fishy there.

GAIL

I know no such thing. And neither do you.

JUDY

Like hooley I don't. I manage his books. He has a separate account which I guarantee, Natalie knows nothing about.

BRENDA

It's not like this was out of the blue. No kids, obsessed with work, always undermining him? It's a wonder he's still with her at all.

GAIL

Careful, Brenda. If you build your pedestal any higher, you may need to look down to see God.

INT. NATALIE'S OFFICE - DAY

Natalie selects a cigarette from a secret drawer in her desk. A rare vice. She lights one and lies on a chaise lounge, staring at the ceiling. It's a shade of EGGPLANT. How dull.

She releases a steady stream of smoke. We watch as it floats to the ceiling, FORMING CLOUDS that subtly SHIFT COLORS and expand to form a pale blue sky. She blows another puff.

Suddenly, MIRAGES OF RED form in sky, followed by GREEN, and LAVENDER as the ceiling TRANSFORMS into the SISTINE CHAPEL.

IT SPREADS DOWN THE WALLS, desk, filing cabinets, and floor. With each puff of smoke, Natalie PUSHES and RESHAPES the color as it's meant to be. It's breathtaking.

A knock at the door SUCKS the entire FLOATING WORLD back into Natalie's cigarette. She stares at it, disappointed. She opens the door an inch. We see Gail through the sliver of open door.

GAIL

Are you ready to start your interviews?

INT. TECHNICOLOR OFFICE - CONTINUOUS

We weave INTO and OUT of rooms as Morgan, Gail, and Henry conduct tours simultaneously.

IN THE PUBLICITY DEPARTMENT

MORGAN leads a tour of half a dozen reporters. In the office, people are answering phones frantically, giving statements, contacting press, etc...

MORGAN

Here at Technicolor, we work in a hive. The publicity department consists of twelve honey bees who constantly respond to inquiries from studios, our massive fan base, and press to get the buzz out on every major Technicolor picture.

REPORTER 1

(joking)

Do you have a queen bee?

IN THE PROCESSING LAB

Gail leading a tour of about four journalists.

GAIL

That would be our Color Director, Natalie Kalmus. She communicates with our lab technicians to remain up-to-date on breakthroughs in our color technology.

(MORE)

GAIL (CONT'D)

She also processes test prints for key films and takes note of any color registration discrepancies that result from poor camera work or color scoring.

REPORTER 2

Did you say "color scoring?"

IN COLOR ADVISORY SERVICE OFFICE

Henry is flirting with the aforementioned JUDY WILKERS, a plump older woman who eats up every word.

HENRY

That's right, Judy. At Technicolor, we score scenes for color pictures like you would score music for a movie. And here is where the magic happens.

JUDY WILKERS

And how does one "score color?"

Henry points to a color chart on the wall.

HENRY

First we read a script, research and plan the color in our scenes-- with Natalie's assistance, of course.

IN THE BOARDROOM

Gail is now leading a different set of six journalists. She shows them cost breakdown charts.

GAIL

Next, our color advisors meet with producers to set up a budget and a schedule. Only the best studios can afford Technicolor but audiences are demanding it like never before.



IN THE TECHNICOLOR THEATER

Morgan shows a test print to a group of twelve reporters.

MORGAN

After we establish a budget, we get into production. We meet with costuming, art, and the props department to conduct tests. If it doesn't look perfect, we scrap it.

REPORTER 2

How many people does it take to run this operation?

We see a blinding flash from a camera.

INT. NATALIE'S OFFICE - CONTINUOUS

Natalie sits across from Eleanor. It's much quieter, much more tense. A photographer in the background is taking photos of Natalie and Eleanor.

NATALIE

We have over two hundred and thirty five employees. Half of these employees serve our lab, the rest fill out our accounting firm, repair shop, resources department, and publicity room.

ELEANOR

And how many work on your Color Advisory Team?

NATALIE

The Service has five advisors.

ELEANOR

I see. Well, I think that's all that I need. It's been wonderful to see you again, Natalie.

NATALIE

Yes, a real treat.

Eleanor's photographer snaps another photo of Natalie. The flash is jarring but Natalie is unfazed.

PHOTOGRAPHER

I'm going to grab another roll of film from the car.

ELEANOR

Certainly, Robert.

He leaves. There's a beat of awkward silence.

ELEANOR (CONT'D)

When Herbert suggested I conduct this interview, I couldn't have been more thrilled. I've never had the opportunity to see you in your natural habitat.

NATALIE

I'd hardly call it my 'natural habitat.' I'm comfortable in both my work and home environments, just as you are.

ELEANOR

Yes, of course. I simply meant you excel so much more in a work setting.

This is the most polite of insults.

NATALIE

Well, we're entering a modern world. Women don't need to be controlling buckets and brooms, but boardrooms.

ELEANOR

If women are so busy in the boardroom, what will be left of the bedroom, I wonder?

NATALIE

So long as there are women such as you asking those questions, I hardly think the rest of us need worry.

ELEANOR

I'm not sure I follow your meaning.

NATALIE

I'm sure you do.

They exchange icy looks.

ELEANOR

Maybe if you spent less time in the office late at night, you'd be less paranoid about what your husband is doing while you're away.

NATALIE

I find it odd that you're so concerned with my poor performance of wifely duties yet you take no issue with shattering other traditional vows. Fidelity, for example.

Eleanor is shocked silent. The photographer arrives.

PHOTOGRAPHER

Ladies, can I just get one more shot of you two together?

Natalie smiles brightly and pulls Eleanor in for a shot.

NATALIE

Of course.

ELEANOR

(whispering)

I understand it's difficult for you, seeing Herbert play godfather to Bonnie but that doesn't mean that we've engaged in an affair.

NATALIE

(through gritted teeth)

Just smile for the camera, Eleanor.

HERBERT ENTERS the room. He looks at Natalie as the photographer snaps more pictures.

HERBERT (V.O.)

I've said it time and again, Dan, projecting two prints at once is a temporary fix to a larger problem.

The camera flash in Natalie's office blinds the room, sending us into:

FLASHBACK:

INT. M.I.T. CLASSROOM - DAY

We see two men around a classroom table, pouring over diagrams. We recognize one of them to be HERBERT, about 25 years younger and leaner. The other is DANIEL COMSTOCK, also in his mid 30s.

DANIEL COMSTOCK

Why not?

HERBERT

Because if they become unaligned, everything will appear half red and blue. The actors will look alien.

DANIEL COMSTOCK

Well, what do you suggest, Herb?

NATALIE (O.S.)

Excuse me.

We see NATALIE, in the doorway. She's lost her hardness in her youth but she's still refined and absolutely stunning. Herbert and Daniel break from their discussion, confused by Natalie's presence. She's holding several garment bags.

NATALIE

I don't mean to intrude. I was sent by the Waltham Agency to meet with a Mr. Herbert Kalmus?

Herbert is stunned silent for a moment.

HERBERT

(regaining consciousness)  
Yes, yes that would be me. How do you do, miss...

NATALIE

Dunphey. But you can call me Natalie.

She offers her hand.

HERBERT

Natalie.  
(smiling)  
It's a pleasure to meet you.

He shakes her hand, they share a moment. Daniel looks back and forth between the two of them. Off of their budding romance, he rolls his eyes and begins prepping the lighting.

INT. M.I.T. CLASSROOM - LATER

Natalie's coat is off and she's settled on a chair in front of a pale blue screen. Herb photographs her while Dan runs the camera.

DANIEL

Alright, that's good. Natalie, do you have a more colorful dress?

She shows him all of her dresses in an array of colors.

NATALIE

(to Dan)

Which do you like?

HERBERT

The pink one.

Herbert smiles at Natalie.

DANIEL

There's a powder room upstairs but it takes a few minutes to get there.

NATALIE

I wouldn't make a very good model if I didn't know how to change on the run.

Natalie walks behind the screen and starts undressing. The high key lighting makes her silhouette clear behind the thin screen.

Daniel pays no attention but Herbert is entranced by her figure as she slips out of her dress and into a new one. Behind the screen, Natalie senses his gaze and peeks her head out to see him. Herbert turns quickly and pretends to work.

BACK TO PRESENT:

INT. TECHNICOLOR OFFICE - NATALIE'S OFFICE - NIGHT

Natalie enters. Herbert is reading a newspaper. He doesn't look up.

HERBERT

Is the press all gone?

NATALIE

Yes.

HERBERT

Good. I'm turning in for the night.

NATALIE

Very well. What would you like to do about the meeting tomorrow?

HERBERT

I think you should lead it.

NATALIE

Is there a particular reason?

HERBERT

It's your department on the line, you should have a chance to make your stand.

NATALIE

Well. I appreciate your confidence.

HERBERT

I want to apologize for putting you in an uncomfortable situation wi--

NATALIE

I don't much feel like fighting right now, Herbert. I don't think either of us have the energy for it.

MUSIC UP: HOAGY CARMICHAEL'S "TWO SLEEPY PEOPLE"

HERBERT

(futilely)

Fine, then. Good night.

NATALIE

Good night.

INT. TECHNICOLOR OFFICE - HERBERT'S OFFICE - CONTINUOUS

Herbert pours himself a scotch. FROM HIS WINDOW, he watches while Natalie drives away.

INT. KALMUS HOUSE - BATHROOM - NIGHT

Natalie gets out of the shower and dries off. She catches her reflection in the mirror and pauses, evaluating herself, stripped down to her core.

For an instant, she sees HERBERT walk in the frame and wrap his arms around her. She smiles at the picture of them together in the mirror. When she turns around, he's GONE and she's alone again.

Doubts creep into her mind: what if she did drive Herbert into another woman's arms? What if he does resent her for sacrificing her wifely responsibilities? She starts sobbing.

INT. TECHNICOLOR OFFICE - HERBERT'S OFFICE - CONTINUOUS

Herbert takes a swig of scotch and stares at a picture of Natalie on his desk. He fiddles with his wedding ring in his hand, deep in thought.

INT. KALMUS HOUSE - BATHROOM/BEDROOM - CONTINUOUS

Natalie, still crying, looks in the mirror again but transforms her tears to sheer defiance.

She will not let herself fall to pieces. She wipes her eyes and stares in the mirror until she looks composed again. A few beats later, she nods at her reflection and walks to bed.

She turns off a radio, CUTTING THE MUSIC, and a lamp and goes to sleep.

ACT OUT.



ACT 4

INT. TECHNICOLOR OFFICE - HERBERT'S OFFICE - DAY

Herbert, sleeping in a puddle of drool on his desk and still clenching an empty bottle of scotch, is awakened by Natalie opening his door. She brings in a fresh suit and tie.

NATALIE

Let's go. The meeting is in ten minutes.

Herbert gets out of his chair and attempts to fix his hair and suit. Natalie helps him change.

NATALIE

(RE: the stench of scotch)  
Make sure to brush your teeth, too.

Herbert pulls a toothbrush out of his desk as if it was as normal as selecting a pen.

HERBERT

Thank you.

NATALIE

You're welcome.

He touches her cheek for a moment, then pulls away.

HERBERT

You should take the lead today.

NATALIE

Why?

HERBERT

Because I believe you know what's best for us.

NATALIE

Thank you.

HERBERT

You're welcome.

INT. TECHNICOLOR OFFICE - BOARDROOM - CONTINUOUS

MGM executives abound. Natalie is the only woman in the room, besides Gail who is taking the minutes in the corner. NICKOLAS SCHENCK, late 50s, holds everyone's attention.

NICKOLAS SCHENCK

Let me get this straight: to rent your cameras and lab, we have to use your staff, including three cameramen, two Color Advisory Members, and a cinematographer?

LOUIS B. MAYER

You forgot the partridge in the pear tree.

The executives snicker dutifully. All but Mr. Schenck, who shoots a "shut up" look to Louie. Louie obeys.

NICKOLAS SCHENCK

That's preposterous. There's no way I'm spending \$100,000 a picture to rent your cameras and lab.

NATALIE

I'm afraid that's our only offer, Mr. Schenck.

Gail glances from Schenck to Natalie. Schenck fixes his gaze on Natalie, smiling.

NICKOLAS SCHENCK

Then I'm afraid we'll be doing business elsewhere.

NATALIE

As is your right. But I don't think you're going to do that.

NICKOLAS SCHENCK

(skeptical)

No?

NATALIE

No.

(walks around the table)

You can go to any service you'd like: Cinecolor, Eastmancolor, heck, even Agfa-Gevaert if you'd like to travel across the globe. But they won't *produce* color like we do, Mr. Schenck, because they don't *think* about color the way we do.

NICKOLAS SCHENCK

And how's that?

NATALIE

Color isn't a spectacle or attraction to put audiences into seats. It's the last frontier in cinematic honesty. It creates a fantasy so true and so vivid that we lose ourselves just watching it.

Natalie flips the lights off and starts a projector. We see test footage of Judy Garland in her light blue Dorothy dress on the wall behind Natalie.

The background features bright colors, just as Gail had laid out in her plan. We see Gail in the corner. She is shocked that Natalie used her ideas to dress the set, Dorothy, everything. Even the ruby slippers.

NATALIE (CONT'D)

When Dorothy is carried to "Oz", she parts with her sepia world and begins a Technicolor journey. We *feel* the lure of the Emerald City alongside her and the sadness in parting from it as she goes home.

We focus on Natalie, a mere silhouette in the dark room.

NATALIE

And when it's over, we know that,  
while there was no place like home,  
there really was no place like  
"Oz", either.

The test footage ends. Natalie collects herself before flipping the lights on. The executives have nothing to say. They turn to Mr. Schenck to see how they should react.

NICKOLAS SCHENCK

You've warmed my heart, Mrs.  
Kalmus, really. But you're trying  
to selling sap to a lumber mill. As  
touching as your "Oz" proposal is,  
it's twice our budget.

NATALIE

You're right. It is. And *that's* why  
it will work. I'm not just selling  
a sweet story, I'm selling an  
expectation of quality.

Natalie nods to Gail. Gail sets down her note pad and pulls out a bin stuffed with letters. Natalie starts dispersing letters to each executive.

NATALIE

"Oz" is a story that audiences have  
connected with for decades now. And  
since you announced plans to make  
it months ago, we've received  
hundreds of fan letters begging for  
it to be done in color.

Natalie lifts the projector screen to show promotional art for the film. Phrases like "A Technicolor Triumph," and "Technicolor Presents" are consistent across each poster.

NATALIE (CONT'D)

People expect it. And with that expectation comes a fantastic opportunity. "The Wizard of Oz" will make history as the first Technicolor feature film and most vivid musical MGM has ever made.

NICKOLAS SCHENCK

And if it flops?

NATALIE

It won't flop. In fact, if "Oz" doesn't double its returns within the first six weeks of release, we'll refund all of your expenses.

NICKOLAS SCHENCK

What's in it for you?

NATALIE

If I'm right, you agree to use Technicolor as your sole color service for the next two years.

NICKOLAS SCHENCK

Don't you think you're putting all of your eggs in one basket?

Natalie looks at Herbert. He stares at Natalie for a beat, stoic yet confident in Natalie's move.

HERBERT

We think it's a pretty sturdy basket.

NICKOLAS SCHENCK

(considers for a beat)

Alright, I'll pay your full rates for one picture to test it out. If you make "Oz" look like everything you promised it to be here, we'll create a standing contract.

Natalie tries to hold back her relief.

NATALIE

You've made a wise decision, Mr. Schenck.

NICKOLAS SCHENCK

Yeah, they always say that. Your job is to make sure I don't regret it. You start on Monday.

INT. HOLLYWOOD MANSION PARTY - NIGHT

The fortune used to build this house could feed a small country for a year. The living room, complete with a diamond chandelier, marble fireplace, and baby grand piano, is swelling with pretty people and fancy cocktails.

IN THE LIVING ROOM

Natalie bounces between circles, kissing cheeks and shaking hands. Gail stares at her with disdain. Morgan approaches.

MORGAN

How ya doin', sport?

GAIL

Well, my hand is still aching from writing those fake fan letters, all the while, you were shooting footage for *my* pitch and didn't tell me?

MORGAN

Ah... yes.

GAIL

Why would you *do* that? Why would *she* do that?

MORGAN

Take a look around you, Gail.

We pan the room, noting the numerous guests and wait staff.

MORGAN (O.S.)

Tell me anyone or anything in this place that wasn't built on the blood, bones, and sweat of someone else's labors.

Henry approaches the two, completely drunk. He wraps his arms around them both.

HENRY

What are we talkin' about?

MORGAN

Gail's bent out of shape because Natalie used her idea in the pitch and didn't talk to her first.

HENRY

Ah, what of it? Happens all the time.

GAIL

How can you both be so nonchalant about this?

HENRY

We all do it to each other. It's a sign of respect. She wouldn't have used it unless it was great idea.

GAIL

She didn't seem to think it was a great idea yesterday...

MORGAN

Yeah, I never said she was perfect. Say what you will about Natalie. She's incapable of saying "thank you" or "sorry," she's obsessive, and demanding as hell--

HENRY

But she always comes through when you need her.

MORGAN

And she always makes up for her mistakes.

Gail considers this for a beat.

IN THE FOYER

Herbert is pulled into a conversation with NAZI CONSUL George Gyssling. His German accent is subtle, the result of living in Los Angeles for the past five years.

GEORGE

Mr. Kalmus.

HERBERT

Mr. Gyssling. How are you?

GEORGE

Quite well, thank you. I understand that your British Technicolor office is doing just as nicely. Congratulations.

HERBERT

Thank you. But my wife Natalie really oversaw it. She spent the past two years whipping it into shape.

IN THE LIVING ROOM

Natalie spots Herbert and George together in the foyer. They nod in her direction and she smiles back, trying to mask her concern.

BACK TO THE FOYER



GEORGE

Perhaps I should be speaking with Mrs. Kalmus, then.

HERBERT

What about?

GEORGE

Expanding your international assets. Mr. Kalmus, are you familiar with Agfa-Gevaert?

HERBERT

Of course. It's a rising German color film company. It's probably our closest rival in color quality.

GEORGE

It's close, but no cigar. Agfa-Gevaert is not technologically progressing as quickly as desired. Mr. Goebbels is hoping to implement a color film program at the UFA school by this spring.

IN THE LIVING ROOM

Different party guests laugh loudly, dancing and drinking. It's frenetic and claustrophobic.

BACK TO THE FOYER

The noise is less pronounced but just as present.

HERBERT

A teaching program?

GEORGE

That's correct.

HERBERT

What would you have me do about it?

GEORGE

Serve as our supplier, naturally.  
We would be willing to sign long  
standing contracts for your  
products, should you prove to be  
successful.

NATALIE (O.S.)

Herbert, there you are.

Natalie approaches the men, fanning herself.

NATALIE

Why, it's a zoo in here. I can  
hardly breathe.

GEORGE

Mrs. Kalmus, a pleasure to meet  
you.

NATALIE

Likewise, Mr. Gyssling.

GEORGE

You know me? Nothing gets past this  
one, I see.

HERBERT

I'm afraid not...

NATALIE

Well, I hate to interrupt the fun,  
gentlemen, but I haven't shared a  
dance with my husband yet.

She pulls him tight for added effect.

GEORGE

Say no more. I will leave you love  
birds alone. Mr. Kalmus, do  
consider my offer.

(kissing her hand)

(MORE)

GEORGE (CONT'D)

It was a pleasure to meet you, Mrs.  
Kalmus.

She nods and smiles as George departs. They walk into:

THE LIVING ROOM

Just as the music changes to "Moonlight Serenade." They hold each other closely.

NATALIE

What did he want?

HERBERT

And here I thought you actually  
wanted to dance with me...

NATALIE

(scornfully)

Herbert.

HERBERT

Goebbels wants us to expand out to  
Germany. I'm guessing to make more  
appealing propaganda films.

NATALIE

And you told him no?

HERBERT

You came in before I got the  
chance.

NATALIE

But you will, right?

HERBERT

I need to think things over. It  
could be a very lucrative  
opportunity.

NATALIE

It could be a very dangerous opportunity. George Gyssling has been censoring Fox and MGM pictures for years now.

HERBERT

You say that as if we weren't already censored by Hays' Code.

NATALIE

It's different. We can't control that.

HERBERT

And we're fine, see? Censorship isn't the end of the world. And if we secured Germany, we'd have major control over the European industry.

NATALIE

Yes, if there's a European industry still standing after we've built it. If Germany goes to war, we could lose everything.

HERBERT

It won't come to that.

NATALIE

Maybe not. But Gyssling is a thug. And we don't do business with thugs.

HERBERT

We do business with all kinds of thugs. These ones just belong to a more conservative political sphere.

NATALIE

To put it lightly.

HERBERT  
I'll tell him no.

NATALIE  
Why?

HERBERT  
Because you want me to. And we're  
busy enough as it is.

NATALIE  
(waits a beat)  
Thank you.

HERBERT  
You're welcome.

INT. HERBERT'S CAR - NIGHT

NATALIE  
Can we stop by the office quickly?  
I need to put some things in order.

HERBERT  
That's fine. I have something to do  
as well.

Herbert holds her hand automatically. Natalie smiles to herself. Maybe this could work out.

INT. TECHNICOLOR OFFICE - NATALIE'S OFFICE - CONTINUOUS

Natalie drafts a memo. We see on her typewriter: "Dear Frank, please note the change in titles and pay grade for Ms. Gail DeWitt, secretary to Natalie Kalmus. Current salary: \$75 per month. New position and salary: Technicolor Advisory Service: \$250 per month. These changes are to take effect immediately."

She signs it and seals it in an envelope. Natalie exits her office.

IN THE HALL

She notices a sound from Herbert's office. She goes to his door. We hear a muffled voice.

HERBERT (O.S.)

I miss you too, Eleanor.

(waits a beat)

Is that Bonnie? Put her on!

(waits a beat)

IN HERBERT'S OFFICE

Herbert is on the phone.

HERBERT (CONT'D)

Hi honey. How did you like your new playhouse?

(waits a beat)

I'm glad you had a good birthday, princess. Did mommy give you lots of toys?

BACK TO HALLWAY

Natalie looks away from the door. She can't listen anymore. In a daze, she walks into:

INT. TECHNICOLOR OFFICE - THEATER - NIGHT

We see Natalie turn on the light in the projection booth, pull out an old projector, load the reel, dim the lights, and play the reel. We watch alongside Natalie as the image of YOUNG NATALIE from the test flickers to life on the screen.

HERBERT (O.S. IN THE FILM)

This is test number nine with Tri-Ergon sound equipment and a two beam splitting process. The date is August 14th, 1916 and our beautiful subject, Natalie Dunphey is wearing a pink dress against a light blue background. Natalie, will you say something for the test?

NATALIE (IN THE FILM)

What should I say?

HERBERT (O.S. IN THE FILM)

Why don't you tell us a little more  
about yourself? What are your  
hopes, dreams, wishes?

IN THE FILM, Natalie laughs. She's glowing.

MUSIC UP - THE INK SPOTS' "IF I DIDN'T CARE"

We pull out of the screen to Natalie in the projection booth. Her eyes fill with tears as she listens to her younger self explain where she's from and what she's studied. She doesn't even notice HERBERT ENTER the theater below.

He watches the test from the corner, glancing at Natalie, crying in the booth. He considers going to the booth but instead goes to the middle of the row and sits down. We pan out to see them both in the frame, watching their marriage form on screen as it falls apart in real life.

FADE OUT.

THE END.

## **Technicolor Show Bible (An Annotated Bibliography)**

**1. Schmidt, Lisa. "Harnessing The Technicolor Rainbow: Color Design In The 1930s." *Velvet Light Trap: A Critical Journal Of Film & Television* 63 (2009): 72-74. *Academic Search Premier*. Web. 6 Feb. 2014.**

**Summary:** This essay is a review of Scott Higgins' book "Harnessing the Technicolor Rainbow: Color Design in the 1930s." The most important aspect of this review is definitely surmised in this quote: "Higgins proposes that the adoption of Technicolor unfolded in three stages or modes: demonstration, restrained, and assertive."

**Demonstration:** "The demonstration mode is exemplified, for Higgins, by (*Becky Sharp*). Analyzing the color design for the film, Higgins argues that its deployment of bold and deliberate primary colors in costume and set design was "a demonstration" of the range and accuracy of the new process."

**Restrained:** After reading contemporary reviews of the three-strip process, "it is easy to understand how the Technicolor corporation would want to get control of the palette and force filmmakers to be more restrained, as it were; accordingly the restrained mode represents something of a cracking down by Natalie Kalmus with her new guidelines." Higgins uses *A Star is Born* (1937) and *Trail of the Lonesome Pine* (1936) as case studies for this. He also suggests that Natalie was responsible for convincing critics that Technicolor could be employed for more (or less) spectacle.

**Assertive:** "With the assertive mode we see a return to bolder colors that perhaps also represents renewed resistance to Technicolor's guidance. In this phase we find the deployment of techniques that became established throughout the 1930s-- such as keying the set hues to the costume of the female protagonist." Higgins uses *Gone with the Wind* (1939) as his primary case study for this.

**Technicolor achieves greater range of light and shadow than black and white in *Gone with the Wind*:** "It is clear that directors and producers continued to struggle with Technicolor's color consultants through a subsequent panoply of Technicolor classics, but Higgins also illuminates in his study of *Gone with the Wind* how one explicit goal of the production was achieved: to explore a greater range of light and shadow that had been previously available (made possible with the introduction of more sensitive film stock). One of the chief critiques of Technicolor had been that the same degree of photographic mastery found in black and white was impossible in a Technicolor film, which required full, flat light. After *Gone with the Wind*, it was apparent that complex lighting schemes, even chiaroscuro, were possible."

**Reflection:** It's helpful to note that Technicolor went through three movements, in the mind of Scott Higgins and when they roughly occurred. This is valuable in describing the transitions that Technicolor went through in the 30s as it was developing into a full-fledged company. It is however a summary of another author's work, one whose information may be more valuable if read first hand.



**Analysis:** While it would be more helpful to review Scott Higgins' book personally, this is useful in gaining an understanding of his work. It will be useful if only to summarize Higgins' work or to verify the reliability of Higgins' research.

**2. Higgins, Scott. "Demonstrating Three-Color Technicolor: "Early Three-Color Aesthetics and Design" *Film History* , Vol. 12, No. 4, Color Film (2000) , pp. 358-383  
Published by: Indiana University Press**

**Summary:** Technicolor's Three-color process was actually the company's fourth color process: "The previous three systems had been based on two-color components, and they had met with varying degrees of success."

**1. Two-Color Process:** Introduced in 1915, it required a special projector with dual apertures, each fitted with a color filter. Colors weren't mixed until they were superimposed on the theater screen during projection.

**2. Subtractive Two-Color Process:** Introduced in 1922, this process cemented Red-orange and blue-green positives back to back to create a single print that combined colors before they reached the screen, subtracting, or filtering, components from a single white light source.

**3. Two-Color Dye Transfer:** Introduced in 1928, this process printed both colored images on a single piece of release stock, eliminating the problems caused by cemented prints, like buckling and drifting out of focus. It was successful in the early sound era of 1929-1931 but fell out of favor. This process still didn't allow for saturated and distinct reds, blues, greens and yellows.

**4. The Three-Color Process:** Introduced in May of 1932, the three-color camera exposed three negatives, each registering a different portion of the spectrum. This was facilitated by a prism and mirror combination behind the lens that split incoming light between two apertures. One-third of the beam would pass directly through the prism and a green filter to expose a strip of panchromatic film with green light. The other two-thirds of the beam was deflected ninety degrees to expose a blue and red bipack of films, placed emulsion to emulsion. This light first passed through a magenta filter that absorbed green light. Then, the light exposed a blue sensitive stock that was also equipped with an orange red filter layer. The remaining light reached the second part of the bipack and generated the red negative. Each negative was projected onto a special stock carrying a thick layer of emulsion that would harden where it was exposed. When the unexposed, soft, emulsion was washed away, it would leave a gelatin relief image represented as a range of peaks and valley of that color record. This was the matrix stock, and it had been developed as part of the two-color dye-transfer process. The matrices functioned like rubber stamps in transferring a color image to the release stock, known as the blank. Each matrix positive was saturated with a subtractive primary dye that represented the color complementary to that registered by the negative. For example, the matrix made from the red negative would carry cyan dye, the green negative, magenta dye, and the blue negative, yellow. Prints were made on an elaborate contact printer, or transfer machine. After traveling through a dye tank, the matrix came into contact with the blank on a 206-foot pin belt. The blank was

pressed down onto the matrix in a heated pathway for nearly a minute, after which the two were peeled apart and the blank was dried. A system of nineteen water jets placed between the dye tank and the point of contact served to wash the dye away to a specified density. This wash-back mechanism was an essential strength of the Technicolor dye transfer system since it allowed the precise and independent manipulation of each color's density and contrast, a level of control sacrificed in subsequent photochemical processes. The order of the color transfer was yellow, cyan and magenta. Before application of the colors, the blank was pretreated with a half-tone exposure, or gray ghost, generated from the green record. This black-and-white image, often referred to as the 'key image' served to improve the shadow detail and contrast and increase the image's apparent sharpness." (Higgins 359).

The inventor of the three-color camera talks about the ultimate goal of the Technicolor technology: James Arthur Ball engineered the three-color camera and said that the two color systems had always been considered a preliminary and transitional process: In the earliest days of Technicolor development we recognized that the ultimate goal... must be a process that would add a full scale of color reproduction to existing black-and-white product without subtracting from any of its desirable qualities, without imposing complications upon theater projection conditions, and with a minimum of added burden in the cost of photography and in the cost of prints." (Higgins 359)

Enticing the industry through animation: The three-color dye-transfer process dominated color film production in Hollywood until the 1950s. In 1932, however, Herbert Kalmus faced the problem of enticing a skeptical industry to reconsider color production. "According to Kalmus, because it would take some time to build enough three-color cameras and convert the plant to the new process, and because producers were unwilling to invest in the untested system, Technicolor turned to animation as the first market for the new system." Three color animation did not even require the fully functional three-color camera. Rather the animation cells were filmed using successive exposure through filters of red, green, and blue frames on a single roll of black-and-white film. A step printer could then derive the three matrices. Kalmus found a customer in Walt Disney who entered into a two-year exclusive contract for three-color animation and premiered the process in the Oscar-winning short *Flowers and Trees* late in 1932.

Reflection: Technicolor's cameras went through four evolutions: the two color process, two color subtractive process, the two color dye process, and the three color system. Producers were unwilling to invest in untested systems so Technicolor was able to find clients in animation, where the three-color camera was not required but the process could be used.

Kalmus quote on using the Disney cartoons to persuade producers of Technicolor's potential for features: "Producers were willing to admit they had been wrong about color cartoons now that the color cartoons were being held over for weeks, or even months and earning several times their costs, but they still began every conversation about color in feature films with the question of costs. I liked to confound them with the following reply. 'Do you remember the huge rainbow in Disney's *Funny Bunnies*? Do you remember the bunnies drawing the colors of the rainbow into their pails and splashing their paints on the

Easter eggs? Don't you agree that it was marvelous entertainment? Now I will ask you this: How much more did it cost Mr. Disney to produce that entertainment than it would have in black and white?' The answer, of course was that it could not have been done in black-and-white at any cost."

The trending thoughts on color scoring: Robert Edmund Jones was hired to manage color aesthetics after producers had used awful palettes in the earlier Technicolor two-color process. This was an effort by Herbert Kalmus to protect Technicolor's process. Jones had been a production designer on Broadway and had written about the importance of scoring color as if in an operatic movement, a seemingly prelude to Natalie's theory of color scoring. Other theorists at the time were making similar claims, suggesting that Kalmus was merely contributing to a more general trend of thought about color design as a legitimate tool. L.O. Huggins wrote 'The Language of Color,' explaining the basic terms of color, offering a catalogue of hues and their associations, and extending the system's importance to basic color mixtures. (Higgins, 363).

Early films and color foregrounding: "Color foregrounding, the showcasing of color for its graphic power, is clearly central to *La Cucaracha*'s design...Jones's schemes tend to mix strong hues by juxtaposing them within the frame or alternating colors across shots. Such arrangements flaunt colors as a novel element, drawing attention to it by making it a strong source of visual variation. The flamboyance of the short's design makes color into something of an attraction, and the final shot seems to acknowledge this directly" (Higgins, 368).

John Belton's comments on cinematic realism: *La Cucaracha*'s tendency toward an abundance of color 'over-shadows the story,' because Jones uses a color range that is 'so extensive that it gives us too much to look at,' disrupting the narrative flow. "Belton's broad point is that Technicolor did not automatically confer a sense of realism to cinema but that conventions had to be developed whereby color films attempted to duplicate the 'monochromatic range' of black-and-white. Because of this, *La Cucaracha* might best be described as "exhibiting a novelty-based approach, or a demonstration mode of color design" (Higgins, 369).

Natalie Kalmus' personal background "Though color experts like Jones, Coulon and Huggins offered guidelines for the proper use of color in Hollywood cinema, the job of articulating and enforcing an official Technicolor color aesthetic fell to Natalie Kalmus. Natalie had been married to Herbert Kalmus between 1903 and 1921, and after their divorce she headed the Technicolor color control department, sometimes referred to as the color advisory service. Natalie Kalmus's background in art recommended her for the position. Reportedly, she had studied art at the University of Zurich, the John B. Stetson University in Florida, the Boston School of Art, the Curry School of Expression in Boston, and Queen's University in Ontario.

The Need for Color Design: Drawing on this experience, Kalmus set stylistic boundaries for the use of color, and she helped position the color control department as a liaison between Technicolor and the studios' production teams. When it was formed in the 1920s, the department was meant to aid production personnel in designing for the limited range of the two-color process. With the advent of three-color, Technicolor promoted the

department as a means of avoiding the purported excess of the late 1920s and early 1930s. Natalie Kalmus emphasized the importance of her department in the mid-1930s by pointing to 'the early two-color pictures' in which 'producers sometimes thought that because a process could reproduce color, they should flaunt vivid color continually before the eyes of the audience.' Similarly, Technicolor publicity suggested that the department was even more vital the three-color process because it had 'greatly increased the demands of precision in color control in order that the fine gradations of color now available on the screen may comprise a pleasing harmony.' The basic argument was that since three-color had so substantially increased the filmmaker's palette, regulation of color design became essential. If color was to provide more than a vivid novelty, it would have to be carefully crafted, and the color control department provided guidance.

The Color Advisory Service: From the 1930s into the 1950s, Kalmus and her crew of color consultants oversaw the color design of every major studio Technicolor production. Kalmus's contract stipulated that she receive screen credit as color consultant on each of Technicolor's features. However, beginning in 1937, credits indicate that work was parceled out between Kalmus and her associates Henri Jaffa and Morgan Padelford. During the late 1930s and early 1940s, both associates worked on films for Paramount and Fox, while Jaffa also handled MGM and some United Artists releases, and Padelford was responsible for Warner Bros. Kalmus, Jaffa or Padelford would consult on most of the features during the period, although *Technicolor News and Views* reported that altogether there were six associate consultants. According to Kalmus, the department would review scripts and generate a 'color chart for the entire production' that accounted for 'each scene, sequence, set and character.' The goal, wrote Kalmus, was to produce a color score, like a musical score, that 'amplifies the picture' by matching color to the 'dominant mood or emotion' of a sequence, thus 'augmenting its dramatic value'.

The Color Advisory Services Process of Color Design: Leonard Doss, a Technicolor consultant during the late 1940s and early 1950s described in an interview with Richard Neupert in 1989, the color consultant's five step process: "First, they read the script, then researched and planned out the appropriate color schemes (meeting occasionally with Kalmus). Second, they met with the producers to set up a budget and schedule. (A larger production budget would warrant several consultants being assigned to a film.) Third, they met with the costume department, since the interior set was generally designed around the colors worn by the protagonists. Fourth and fifth, they met with the studio's Art and then Props Departments to guarantee that the props and sets would reinforce the color schemes planned for each shot and scene." The color control department was strongly invested in guiding the pre-production and design of a feature but the consultants would continue to advise the studio during the production and post-production stages.

Natalie Kalmus's Color Consciousness: Submitted in May of 1935. Although her comments were originally framed as part of an early discussion about the possibilities of bringing three-color to feature production, they also defined what would be her department's basic approach to color. In 1938, Kalmus revised the essay only slightly for inclusion as a chapter entitled 'Color' in Stephen Watt's anthology *Behind the Screen, How Films are Made*. This piece played an important role in promoting Technicolor to studios and critics. In justifying

her principles of design, Kalmus referred to nature, high art, and human perceptual psychology. Each point of reference helped her build a case that color must be carefully controlled and harmonized. On one hand she argued that 'if the color schemes of natural objects were used as guides, less flagrant mistakes in color would occur.' At the same time like Holbein, Bougereau, Rembrandt, or Velasquez, the motion picture colorist must follow 'the principles of color, tone, and composition that make painting a fine art.' Finally, she suggested that the human nervous system 'experiences a shock when it is forced to adapt itself to any degree of unnaturalness in the reception of external stimuli', and so it was 'important that the eye be not assailed with glaring color combinations, nor by the indiscriminate use of black and white.' Furthermore, Kalmus sought 'to convince the industry that her advisory department was not so much dictating a color style as enforcing established aesthetic norms.' 'Color Consciousness' was a bid to persuade producers that Technicolor could bring with it a tested aesthetic of quality. Cinema, Kalmus argued, had been 'steadily tending toward more complete realism,' and after the addition of sound, color became 'the last step' of perfection. Kalmus's writing pointed in two directions. On one hand, she offered a fairly literal approach to color that, while out of keeping with classical Hollywood standards of subtlety, could be easily grasped and visualized by potential customers for Technicolor. On the other hand, she provided guideline designed to check the kind of obvious chromatic play that Jones had indulged in.

Natalie Kalmus' four general abstract principle of color:

1. Color should support the mood or tone of the story. "The main goal of creating color charts, according to Kalmus, was to ensure that from the beginning design would suit the tone of the script. Yet, unlike Jones, Kalmus's discussion implies that color's role should be supportive of action and dialogue, suggestive of mood rather than an equal partner in its communication. In Kalmus's words, the director's 'prime motive is to direct and control the thoughts and emotions of his audience. The director strives to indicate a fuller significance than is specifically shown by the action and dialogue.' Color should aid the director in achieving this 'fuller significance': We have found that by the understanding use of color we can subtly convey dramatic moods and impressions to the audience, making them more receptive to whatever emotional effect the scenes, action, and dialog may convey. Just as every scene has some definite dramatic mood-- some definite emotional response which it seeks to arouse within the minds of the audience-- so, too, has each scene, each type of action, it is definitely indicated color which harmonizes with that emotion." (Higgins 373).

2. Excessive use of bright, saturated color should be avoided in favor of more 'natural', harmonious and less intense color schemes. Design must balance assertive hues with an array of neutrals. The idea here is that distinct colors associated with mood could be more easily recognized within a field of neutrals, while the neutrals themselves could take on expressive force 'emphasizing the severity of the black, the gloominess of the gray, and the purity of the white.'

3. Directing attention with color. "The law of emphasis states in part that nothing of relative unimportance in a picture shall be emphasized. If, for example, a bright red ornament were shown behind an actor's head, the bright color would detract from the character and action.' Extras should blend in with the background, while principle players should be

wearing colors contrasted with the background. Further, because flesh-tones are usually warm, 'we usually introduce the cool tones into the backgrounds; but if we find it advantageous to use warmer tones in the set, we handle the lighting so that particular section in back of the actor is left in shadow.'

4. Consider the movement in the scene when color scoring because the juxtaposition of color is constantly changing due to this movement. Orange, for example would appear more red than it really is' next to a blue green because 'each color tends "to throw' the other toward its complement.' Kalmus encouraged a harmony that limited complements and play contrasting hues off of neutrals so as to avoid distracting apparent changes in color.

Mamoulian's excesses in color against Natalie's style: In *Becky Sharp*, Mamoulian tended with Jones' style of thought regarding color design and actually gave an ultimatum that Natalie must leave the project or he would. As such, it is quite obvious that *Becky Sharp* is not an example of the typical Technicolor restrained style following the mid 1930s but instead "leans strongly toward display:" Of the film's twenty-one segments, sixteen clearly employ color foregrounding techniques." (Higgins, 377). It opened to mixed critical reviews because of this but still prevailed as a promotion for three-color (Higgins 379).

Analysis: Were it not for his exclusive contract with Walt Disney, Kalmus may not have gained as much momentum in gaining studio acceptance of the three-color process.

"The aesthetic guidelines that Natalie Kalmus offered in 'Color Consciousness' would provide guidance for most successful color design in the classical era. Her basic principles proved enduring, though the flamboyant and deliberate implementation of these guidelines as presented by *Becky Sharp* would wane" (Higgins, 381).

**3. Street, Sarah. "Negotiating the archives: the Natalie Kalmus Papers and the 'branding' of Technicolor in Britain and the United States." *Moving Image* 11.1 (2011): 1+. *Fine Arts and Music Collection*. Web. 20 Jan. 2014.**

Summary: The Law of Emphasis was probably Natalie's most important rule, and the one that has endured while the more artificial requirements have faded. It states that individual colors should be narratively motivated. Basically, Natalie was pushing for color to be more than just decorative. She wanted it to be thematically valuable. Because this is such an important rule, here are a few more cases of narratively important color:

Natalie as an icon- As one trade press commentator reported after interviewing her, "Mrs. Kalmus I found a most delightful and enlightened character.... Indeed I'd like to see her in Technicolor herself for she's by no means a flat personality. It is clear that she has the technical side of the game at her fingertips and can be depended on not only to look after that angle but the creative color angle as well." (29) This kind of reportage continued throughout her career, and Technicolor clearly took advantage of her star value as an ambassador for the process who was in a fairly unusual position as a woman heading a complex and key operation in the company's development. (30) It suited them to publicize

her technical knowledge for this purpose, on one occasion putting her name on an article written by a male colleague in the company. (31)

Natalie and Technicolor as a Brand- Her work attracted widespread reports in fan magazines, and she encouraged tie-ins between Technicolor and department stores by advising on color combinations for new fashion ranges; she also gave radio interviews. She was admired for her dedication to and knowledge of Technicolor, one commentator observing after meeting her, "Her vitality is incredible, almost electric in its force. You can feel it when you are anywhere near her. It's exhausting if you are not in tune with her." (32) For those not intent on criticizing her recommendations as interference in a production, her expertise was important in the creation of Technicolor as a brand. Together with Herbert, Natalie made a technical process a household name, with both personalities performing different but crucial showmanship functions for the company. One article described Herbert as the "Techni" and Natalie the "Color" of Technicolor. (33)

Natalie's relationship with Kay Harrison and Britain Technicolor- Although the documents on her dealings with Technicolor Ltd. are not voluminous, they nevertheless reveal a productive and mutually respectful relationship with Kay Harrison. Though Kalmus might have enjoyed being in Britain for many social reasons, such as going to the races, the idea that she was not much involved with British productions can, to some extent, be challenged by reading letters from the beginning of the Second World War. (23) Soon after she had returned to Hollywood following the production of the first British three-strip films, Harrison wrote that they missed her expertise and that her presence "alone made it possible for this company to have efficient color direction during the initial stages of its development." (24) Natalie Kalmus replied with details of how she was busy in Hollywood keeping up to date with the latest technical developments, including monopack film:

I am so enthusiastic and thrilled about it that the extra work, which runs into long hours, is more entertaining than tiring. I wish I could tell you more about it but mum is the word for the present. I am also busying myself learning every new trick of the trade, particularly the changes that have been brought about by the use of our fast negative. I am also following the trick work on different pictures very carefully. This I know will be very useful to us in England.... I want you to be assured of my willingness to cooperate with you in any way that it is possible for me to be helpful, and to reassure you that you can call on me any time you need me. I have no fear whatever about being in England in these times of war. (25)

Natalie's controversy with those in the industry: Although most greeted Kalmus's presence in Britain enthusiastically, this was not always the case. The script of *Sixty Glorious Years* (1938; U.S. title *Queen of Destiny*) was sent to Kalmus, and there is correspondence with Maude Churchill, wardrobe mistress, regarding a number of possible laces dyed particular shades that were submitted as swatches to Kalmus for her selection and then the chosen ones returned. (16) On the other hand, Freddie Young, who worked with Bill Skall as first

cameraman on the film, recalled Natalie Kalmus visiting the studio when *Sixty Glorious Years* was being shot and declaring the shade of the exterior blue sky to be "wrong" on the basis of "instinct." His view was that she failed to take into account the impact of studio lights, which made any such judgment problematic. He concluded that she was ignorant and persuaded producer Herbert Wilcox to thereafter ban her from the studio. (17) This is typical of subsequent responses to the Color Advisory Service, with cinematographers in particular being disrespectful of Kalmus's knowledge and all too willing to interpret recommendations as interfering with their own expertise. As British producers and directors grew more confident working with color after the Second World War, this criticism increased, inflected with nationalist discourses that claimed that a British school of Technicolor was being developed. In this particular case, however, it is likely that Young exaggerated antipathy toward Natalie Kalmus because when *Sixty Glorious Years* was finished, Herbert Kalmus sent a cable to Kay Harrison congratulating him, and Natalie, in particular, for doing "a wonderful color job." (18) The papers therefore provide intriguing glimpses of the intricacies involved in operating the Color Advisory Service, glimpses not so easily conveyed by a simple screen credit at the end of a film.

Technicolor's advice is ignored- leads to controversy: The company therefore depended on studios using its equipment and personnel, thus establishing a mutually dependent relationship with studios. This inevitably led to some friction. The difficulties of negotiating over color control are more extensively documented for the United States than Britain. As early as 1931, for example, studio correspondence files include cases such as *Manhattan Parade*, in which Warner Bros. ignored Technicolor's advice on costumes so that "the colors were not favorable for the Technicolor process. Such a thing is a handicap toward what we aim to do--make a good picture of pleasant colors." Furthermore, the plea was made by Technicolor that "we must know and study the color relation between the sets, the furniture, the drapes and the costumes to obtain proper separation of values and harmony of colors. With due respect for the art director's architectural conception of a set, Technicolor's art department should be given the privilege of choosing the colors of the walls, decorations, wallpaper etc. The same thing applies to costumes." (10) Difficulties were also encountered when Fox Movietone resisted advice from Technicolor's experts on a series of fashion short films in 1939, resulting in their colors being in "bad taste." (11) A file on Orson Welles's unfinished film *It's All True* (1942) shows how Natalie Kalmus assisted Bob Brower on color control before giving him the responsibility of going to Rio de Janeiro to work on the film's production. Brower, a consultant at the Color Advisory Service, complained that Welles was very difficult to work with and about general mismanagement, even though RKO was generally pleased with Technicolor's work. (12)

Natalie supervises British Technicolor: While these plans were being made, Natalie Kalmus arrived in London to supervise the use of the process in *Wings of the Morning* (Harold Schuster; produced by New World Pictures, a subsidiary of Twentieth Century Fox, 1937). She confidently predicted that in two years, every major feature film would be made in color. (6) Her color consciousness article, first published in an American technical journal, detailed her approach to designing screen color based on principles of harmony, strategic juxtaposition, and awareness of complementary colors. This piece received widespread



coverage in Britain, demonstrating the extent to which her guidelines were in currency at the same time as the process had been exported and the British company established. (7)

Natalie's Role as Technicolor Director: One of the main themes I was interested in researching was the extent and nature of her contribution to the creation of Technicolor as a successful color process and as an economic enterprise. Technicolor cameras and processing were not available on the open market, a restrictive policy that ultimately contributed to its ascendancy. Cameras were leased, and processing took place in Technicolor laboratories. It was also a requirement for productions to use the Color Advisory Service, which applied Kalmus's principles in preproduction and on the set. As head of the Color Advisory Service, Natalie Kalmus was a contracted employee with Technicolor. (8) The Kalmus collection contains a memo on the services provided that was geared toward proving how Technicolor's expertise could save producers time and money, particularly during preproduction planning. The service involved advising on the correct shades of colors, contrasts, costumes, and sets, per the color consciousness article. Samples of materials and colors from previous Technicolor films were provided so that unnecessary photographic tests could be avoided. Particular attention was paid to how the costumes worn by stars related to their on-screen characters as well as to the mood or tone of a scene. Advice was given on how to avoid distracting colors so that audience interest was always maintained in the principal players. Kalmus argued that it was necessary to establishing good color "flow," based on her belief in the efficacy of "warm" and "cool" colors in relation to mood and characterization. (9)

### **Reflection:**

Natalie Kalmus- Started out as a catalogue model and went to art school.

Herbert and Natalie's relationship- Herbert and Natalie had divorced in 1921 but they lived together in the same house in Bel Air so most people thought they were still married. In the 1930s, her correspondence with Herbert Kalmus is generally friendly, and he seems fully supportive of her career. Personal differences apart, they were linked by their enthusiasm for Technicolor and worked hard to enhance its commercial and public profile. In 1944, relations between the couple began to break down, due to Herbert's affair: Herbert's affairs and his relationship with Eleanore King, whom he married in 1949, were the background to Natalie filing the lawsuit, claiming that she was entitled to a financial settlement because their divorce in 1921 was invalid (on the grounds that they had lived as man and wife subsequently, sharing a house in Bel Air, California, for which, as documents in the Kalmus collection reveal, Herbert paid household expenses) but the court had declared the divorce to be legal, and Natalie was not therefore entitled to further financial support. Herbert Kalmus had in fact been paying her alimony until 1945, and she also received a salary from the Technicolor Corporation, from which she retired in 1948. (49)

Natalie's perspective on color theory- She believed that color should be scored in films like music is scored for films and wrote papers on it: The archive at the Herrick is significant, detailing the role she played in advertising the process and disseminating a certain ideology around color. Although lacking in key respects--there are no charts, only fractions

of correspondence with Technicolor Ltd., and no financial information or correspondence with people with whom we know she worked closely such as Joan Bridge--the papers have been useful in my research, even though a lot of material seems to have disappeared, destroyed, perhaps, by Natalie or Herbert Kalmus.

Natalie establishes British Technicolor- In the early-mid thirties, she worked in Britain to establish Technicolor. She established a friendship with Kay Harrison. She was reputedly hard to work with by many in the industry and less desirable than those she trained: Tie-ins with consumer products worked extremely well with her advocacy of color consciousness as a way of negotiating the modern world, her insistence on nongarishness establishing a code of taste around color that gravitated toward careful, artistic choices rather than nonnaturalistic "super-abundance." Joan Bridge is an intriguing figure in the British context since she did a similar job but did not provoke such criticism. Having worked with Dufaycolor in the 1930s, she subsequently collaborated with Natalie Kalmus or was the sole Technicolor adviser on many British feature films. Bridge was admired by British cinematographers such as Ossie Morris, who never accorded Natalie Kalmus the same courtesy. However, this could be because Kalmus represented an external regulation that Joan did not.

Natalie as a public figure: Commentators were fascinated by her apparently powerful position, as when "Find the Woman," a 1941 radio broadcast, introduced her as "a brilliant, beautiful woman whose knowledge of colors and their relation to moving images is helping to pave the way to an all-color screen. Petite, utterly feminine, she is, nevertheless, the supreme dictator of color technique in Hollywood ... and the world over. She schedules her day so she can supervise as many as six films in production or preparation at one time." (44) The admiration of her artistic, technical knowledge and hard work featured in other publicity, as well.

Natalie as a brand ambassador- She was a brand ambassador for Technicolor, used as a consultant for fashion designers and makeup artists, giving interviews for radio interviews: "Intriguingly, the creation of her public persona involved facilitating tie-ins with department stores. A folder containing correspondence with J. H. Hugues, merchandise manager for A. Harris and Company of Dallas, Texas, in 1943-44, demonstrates how her views on color extended beyond Hollywood. Having read her color consciousness article, Hughes sought her advice on how to tie in Technicolor with the colors of his incoming spring collections. She replied, "The word Technicolor is banned for use outside of the corporation, but it is permissible to use my name in your booklet." The collections were duly advertised as "Natalie Kalmus colors." On this basis, particular colors were selected and approved; she changed the description of one from "True Blue" to "Serene Blue," which further popularized her views on cool and warm colors. The costume display was erected in the store in February 1944, with coverage in Vogue and Harper's Bazaar. In gratitude for her cooperation, and after inquiring with Kalmus's secretary about a desirable gift, she received an alligator purse and perfume. (41) Examples such as this make it clear that Kalmus was a sort of ambassador for the company in technical and aesthetic terms, and in this arena, her gender was convenient. She was also consulted by makeup companies such

as the House of Westmore and Max Factor, the latter having a special relationship with Technicolor as adviser to the company on makeup foundation. (42)"

Natalie's relationship with Kay Harrison- Many British filmmakers felt that Kalmus represented American interference of their professional competencies, however managers such as Kay Harrison were grateful for Kalmus's input at a crucial point when British companies were beginning to produce in color. The pre-World War II advances in color were very important determinants of subsequent developments, especially in the short film market and in popularizing amateur formats such as Kodachrome.

**Analysis:** This document is extremely useful. Important quotes have been selected above.

**4. 1940 Chevrolet Technicolor Ad. Romano-Archives Special Collection Department, 1939. Film. 7 Feb 2014.**

**<<http://www.youtube.com/watch?v=m1GmTWXOLjA>>.**

**1939 Chevrolet Technicolor Ad Cartoon. Ad. Romano-Archives Special Collection Department, 1939. Film. 7 Feb 2014.<  
[www.youtube.com/watch?v=R0ZFeJT\\_NN8](http://www.youtube.com/watch?v=R0ZFeJT_NN8)>.**

**Summary:** The 1939 Chevrolet Cartoon: A nine minute and fifty three second Technicolor Chevrolet cartoon. It is a story about a boy named Ala Kazan, who with the help of magician named Mickey, tries to win the heart of the princess, despite the fact that all of her suitors are wizards. At one point, the boy "takes a detour through a rainbow," an obvious attempt to highlight the color of the film. At the end of the cartoon, the magician turns the boy's car into a fantastic Chevrolet car, which helps him win the girl. The announcer says that "the moral of the story is like this: a poor because honest citizen could almost always marry the king's daughter and live happily ever after, if he knows the right people." In terms of color, this film makes judicious uses of colors with neutral backgrounds, especially because the characters are constantly in motion, which Natalie warned about.

The 1940 Chevrolet Ad: A 48 second Technicolor commercial for Chevrolet. Starts with a cartoon title card which says, "Chevrolet Presents: The Trip," with Technicolor inscribed on the bottom of the title card. It shows the family loading luggage into a Chevrolet car, followed by the family fitting into the car and driving to the grandparents house. The narrator describes how spacious the car is and how easy it is to fit everything and everyone into the car. The color schemes are reminiscent of Natalie's color design: the background uses cool tones: blues, whites, and dark greens, while the principle actors adorn splashes of color, namely in the wife who wears a brown or orange dress (it's hard to say, the print obviously was not restored well), while the little girl dons a stripped white and black dress.

**Reflection:** These ads represent Technicolor's expansion into modes of commercial production rather than just entertainment.

**Analysis:** This is helpful to consider when looking at Technicolor's spread into commercials. It's hard to say if the technology is lacking or if the restoration is but given my research on Technicolor restoration and evidence of other Technicolor films at this time

that had achieved much higher results, I'd say it's just a poor restoration. There is no information from the Romano-Archives regarding this film.

**5. Ball, J.A. "THE TECHNICOLOR PROCESS OF THREE-COLOR CINEMATOGRAPHY."**

*Journal of Motion Picture Engineers. XXV.No.2 (1935): 127-138. Print.*

<http://www.widescreenmuseum.com/oldcolor/ball.htm>.

**Summary:** Color and black and white lighting differ: In color photography, all very full exposures tend to bleach out to white, and all low exposures tend to drop into black. A highlight upon a face in black-and-white photography can, in the final print, be merely the bare celluloid, and the result will be still entirely satisfactory; but if, in a color print, such a condition exist, the delicate flesh tint will, in that area, be bleached out to white, and the face will look blotchy. All areas of the face should, therefore, be reproduced in such a manner as to yield a good flesh tint. Very light make-ups, and oily make-ups having considerable shine, are apt to be troublesome. In any case, it is necessary to control the light and lighting contrasts accurately and to avoid "hot spots."

How this affects color cinematography: The art of the color cinematographer is intermediate between that of the painter and that of the stage artist. The painter has to work with pigments having a limited range of contrast but has great freedom of choice as to composition. The stage artist works with light, and so does not encounter the pigment limitation; but he must select his costumes, backgrounds, etc., to be harmonious in a great variety of arrangements, most of which are more or less out of his control. In color cinematography the difficulties of both are combined; there is the pigment limitation combined with the comparative lack of control of composition. To illustrate this difference let us take, for example, a scene wherein a figure clad in white is to be illuminated by red light, as from a fire which is not visible to the audience. The stage artist, in arranging such an effect, must have a suitable background for the figure when it is viewed from a great many different angles. In arranging his lights, however, he can call for more and more intense beams of red light until he has achieved the desired effect. If a painter is endeavoring to get the same effect in a painting, he can select a favorable pictorial composition, but to depict the red illumination he can use only the brightest red pigment in his palette. If he is dissatisfied with his first effort, he can not heap on more and more of his red pigment. Obviously nothing is to be gained in that manner. He can only improve his result by suppression of, or contrast with, the background. Now in color cinematography, the brightest red that is available is the full value of red pigmentation in the film, and this is obtained by full value of the magenta and yellow dyes without any cyan dye. These conditions result from full exposure of the red negative with no exposure in the green and blue negatives. If the color cinematographer is not satisfied with this full pigmentation and endeavors to get a more intense red by piling on more red light in front of the camera, he merely over-exposes the red negative and begins to get some exposure in the green and blue negatives. The corresponding areas in the print tend to bleach out to white. The significance of the pigment limitation can be summed up in a very few words: if the desired effect can be shown in a painting, it can be photographed, and if it can not be painted, it probably can not be photographed. While no such brief statement is ever strictly true, this

one contains such a large percentage of truth that it is worthy of being set up as a guiding principle.

The need for high key lighting: In color photography, it is necessary to operate at rather high levels of illumination. If one is not careful, this may lead to a condition like this: given only relatively weak light-sources, one finds it necessary to use a great many of these sources, in order to attain an adequate level. The widespread distribution of these units then tends to fill all shadows and eliminate modeling on faces. If, then, the attempt is made to provide modeling by superimposing a localized shaft of light, as from a spot-light, the face is burned up, blotchy, and generally unrecognizable. The way out of this dilemma is to recognize that modeling should properly be produced by shadows, and to use fewer and brighter sources or to mass the sources of illumination, so that shadows have a chance to exist. In other words, it is just as important for the cameraman to determine directions from which light shall not come as it is to determine directions from which light shall come.

Achieving chiaroscuro lighting: While color contrasts will occasionally produce a pleasing result when flatly lighted, that is not the way to get sharp photography, nor in general, the most pleasing photography. The Technicolor process is capable of reproducing a full scale of contrasts and those effects of light and shade (chiaroscuro), and those directional effects so striking in black-and-white are even more effective in color. These considerations apply not only to the lighting of figures and faces but also to the design and lighting of sets. In the design and painting of sets, the art director should have in mind the cameraman's problem of achieving the necessary light levels with a minimum number of sources of illumination. Under these conditions, it is always much easier to keep parts of a set in low key by keeping light away from them, than it is to paint them dark and then be forced to illuminate them strongly.

Carbon Arc usage over Tungsten: This need for fewer and brighter sources is one of the reasons why we choose carbon arcs in preference to incandescent tungsten lamps. Another reason is the fact that only in the white-flame carbon arc and in sunlight do we find the correct balance of blue and red components for the photographic emulsions with which we have to work. If tungsten lamps were to be used, it would be necessary to throw away the excess red light by the use of blue glass bulbs or over-all filters. An additional reason for the use of arcs is that at the high levels of illumination which we require, the heat rays emitted by incandescent lamps are a serious problem. Arcs radiate more light and very much less heat. If incandescent units were properly filtered to correct the color of the light and to absorb heat rays they would undoubtedly be useful on special occasions.

Solving the noise and flicker issues of Carbon Arcs: Special arc units have been developed by the National Carbon Company and Mole-Richardson, Inc., for use in connection with the Technicolor three-component process. They have been designed to solve some of the earlier difficulties with arcs, especially noise and flicker. The older types of arc also gave off some smoke which appeared as carbon dust in the air, but it is possible to incorporate absorptive means in the vents to absorb this smoke. The only drawback to the use of arcs is the necessity for "time out" for retrimming, but this can usually be made to coincide with other "time out" activities, particularly if the head electrician works closely with the

director. There is no danger of Klieg eyes when using arcs, provided only that a sheet of ordinary glass is between each arc and the eyes of the people. This is a simple enough requirement and entirely eliminates any danger.

The required level of illumination is not very different from that which was in use by many black-and-white cameramen before the introduction of supersensitive film. We have devised methods of measurement of illumination levels for the guidance of the cameraman.

Exterior photography divides itself into four classifications:

- A. Sunlight shots wherein the scenery is of maximum importance. These occur abundantly in travelogues and scenics and quite frequently in dramatic photography, especially in establishing long shots.
- B. Sunlight shots wherein faces are of greatest importance.
- C. Imitation sunlight exteriors built upon a dark stage and artificially illuminated.
- D. Night exteriors.

In group *A* there are pronounced differences between color photography and black-and-white photography because color photography can reproduce those pleasing color contrasts of sky, water, blue haze, foliage, beach, etc., which are almost entirely lost in black-and-white. Furthermore, there is always a strong directional effect to the sunlight with very pronounced shadows. A front cross light is best in color, whereas a side- or back-cross would generally be preferred in black-and-white.

In class *B* it must be realized that few faces will stand the harsh lighting of the direct sun as in a front cross-lighted setting. So gauzes, diffusers, reflectors, and sometimes "booster" light, must be called into use. Conditions are then most favorable if the sunlight comes from behind the figure. This is true in color or in black-and-white. The skillful cameraman takes advantage of the changing directions of sunlight throughout the day to schedule his shots and angles for best results. Cooperation between director and cameraman in such cases is even more important than in the case of interiors.

It is, of course, perfectly obvious that if artificial light is to be mixed with daylight, as in the case of "booster" light, the color of the "booster" light must approximate sunlight. Here again the use of carbon arcs in preference to incandescent lights is clearly indicated. One might wonder if the change in sunlight quality from morning to late afternoon might not show upon the screen in abrupt changes in color of successive scenes. We have found it generally possible to correct for such differences in the printing. Such correction, however, is not possible where one encounters simultaneously very yellow light from the sun with blue shadows illuminated from a clear sky. Such an effect will, of course, carry through to the screen, and a very beautiful effect it is.

The set ups of group *C* are very troublesome if the illusion of reality is of importance. This illusion almost always is important in a motion picture so that the artificialities of the usual stage lighting are scarcely acceptable at all. Shadows can perhaps still be painted upon buildings, walls, and backgrounds but of course not upon people. Nor can the shade of a

tree be so imitated. What is really needed is a light-source of greater power than any now available. Pending the development of such a source, the sun promises to return to its former importance. In other words, sizeable sunlit exteriors to be photographed in color had best be real. The difficulties of imitating grass, shrubs, etc., also argue in the same direction.

In the case of night exteriors (class *D*), color has one great advantage over black-and-white in that it is possible to contrast moonlight and lamplight, for example, by the use of blue and amber filters.

Problems with sound: Technicolor adds practically no complications to sound recording other than a somewhat noisy camera and the necessity of eliminating "whistle" from the arcs. If the camera is adequately blimped, the problem of camera noise is solved forthwith. The whistle caused by high-frequency ripples in the electric current coming from the commutators of direct-current generators can be practically removed by the combination of an alternating-current filter at the generator and additional choke-coils at the individual arc units.

Problems with Transitions: When we come to the trick department, however, color has its special problems. Fades, lap-dissolves, wipe-offs, etc., can all be made by duping all three negatives and taking pains to preserve the register, exposure, and contrast balance. Those methods of composite photography that depend upon color differences can not be used in Technicolor. The projection background process is, of course, ideal for trick shots in color. However, there is the problem of adequate illumination of the projection screen. So far, projected backgrounds have been used in Technicolor only in relatively small areas, such as through the rear window of a taxi or limousine. Eventually, we hope to be able to work out means for handling projection backgrounds in very much larger sizes, but at present we are rather restricted.

Technicians should appreciate the change to color: There is a general appreciation of the fact that "color is coming." When sound swept the industry several years ago, it meant the introduction of a new and different technique, and of men of new and different training. The sound engineer was the "big shot." The cameraman was locked in a padded cell with his camera, and the art director was told how he could and could not construct his sets to meet the new acoustic considerations. Conditions will be much more enjoyable for everyone concerned when color sweeps the industry. The sound men will not be affected in any way at all, but the cameraman and the art director will be given new tools to work with, whereby the value and importance of what they can contribute to a picture will be greatly increased. For these reasons it is to be expected that the technicians generally will be enthusiastic and cooperative with the rising tide of color.

How the company is structured- It is the policy of the Technicolor Company to organize and maintain a nucleus camera department and color art department for the purpose of accumulating experience and disseminating information and advice as to the skillful and effective use of Technicolor. Beyond this nucleus the policy is to invite cooperation from the studio organizations and especially from those cameramen and art directors who

desire to continue to lead in their respective fields. These men will generally be surprised, first, at the extent to which their conscious sense of color has become atrophied through lack of use while working in black-and-white; second, at the speed with which they can regain it; and, third, at the utter inadequacy of black-and-white photography in comparison with good color photography.

Color no longer interferes with quality- When our color was of inferior quality, we used to hear the expression color interferes with the drama. Since the introduction of the three-component process, the expression has been rapidly fading out of use. Good color assists good drama. Dr. Herbert T. Kalmus, President of Technicolor, has supported a liberal policy of research and development work since the organization of the company. This policy is continuing, and the work involves nearly all departments. We propose to continue to improve our product until the last doubter is swept off his feet.

**Reflection:** This is an examination of how Technicolor's equipment will affect different aspects of production. The last two paragraphs are especially useful because they point to Technicolor's attempt to regulate their reputation after the two color process instability.

**Analysis:** This will be useful as a general contribution but most likely not as a specified quote. Perhaps it could be used to reinforce Natalie's reasoning for exercising such control on set. Ball describes the sensitivity of the three color camera in relation to these different departments.

**6. Drapeau, J. California. Civ. 17534 Second Dist, Div One. *Kalmus v. Kalmus (1950)* 97 CA2d 74. 1950. Print. <<http://online.ceb.com/CalCases/CA2/97CA2d74.htm>>.**

**Summary:** Natalie M. Kalmus filed her complaint for support and maintenance, dissolution of partnership and for accounting and appointment of receiver in the superior court. Dr. Herbert T. Kalmus and a number of other defendants were named. The complaint alleges that the plaintiff and Dr. Kalmus (who will hereafter be referred to as the defendant) were married in Massachusetts July 23, 1902, remarried in New York City in February, 1923, and separated June 6, 1944; that the defendant is worth three million dollars or more, {Page 97 Cal.App.2d 75} and is principal stockholder in a number of prosperous Technicolor corporations; and that plaintiff is entitled to an interest in defendant's earnings and property, by way of community, dower, partnership, or otherwise. The complaint avers grievous mental cruelty, desertion, and adultery. It also avers that in addition to her alleged marital rights in defendant's property, plaintiff and defendant have been partners in all of defendant's business enterprises from the date of the marriage. Plaintiff prays for support and maintenance, counsel fees and court costs, and for an accounting of the partnership alleged.

Defendant's answer admits the marriage in Massachusetts; denies the marriage in New York; alleges a decree nisi of divorce in Massachusetts December 22, 1921, which became final six months thereafter; and that defendant and plaintiff have not been husband and wife since the decree. The decree provided for payments of \$625 per month by defendant to plaintiff as alimony, which payments have always been made. The answer also alleges a



compromise agreement, set out in haec verba, releasing defendant from all asserted claims and demands of plaintiff, and dated February 19, 1945. All of the other material allegations of the complaint are denied.

Defendant also cross-complained for declaratory relief and injunction, setting up the divorce decree and the compromise agreement as a bar to any and all claims by plaintiff against him; and alleging harassment by her of him throughout the years. The prayer is for declaratory judgment accordingly, and for injunction.

Plaintiff answered the cross-complaint, averring that after the decree nisi she and Dr. Kalmus resumed marital relations and lived together as husband and wife, in her belief that the decree had not become final and was not binding, which relationship continued until 1944; denying the allegations of the cross-complaint; and pleading in bar a pending equity action in Massachusetts to set aside the decree nisi. This action, however, was commenced after the complaint was filed in this proceeding.

Thereupon the trial came on, on the date set. Defendant and his counsel were present; the defendant Technicolor Motion Picture Corporation and its counsel were present. All of the other defendants had been dismissed. But the plaintiff did not appear. Testimony was taken; the trial court made its findings and judgment, declaring that plaintiff and defendant were not husband and wife, and had not been since the Massachusetts decree nisi became final; that the compromise agreement was valid and binding upon plaintiff; and that she had no rights, either as wife of plaintiff or as a partner, in his earnings or in his property, other than to be paid \$625 per month alimony.

Plaintiff was enjoined from asserting any rights in defendant's earnings or property as his wife or otherwise, and from harassing or annoying him.

From this judgment plaintiff has appealed. All of the matters and things specified in the notice to the clerk to prepare the record are in the file. The notice does not specify a demand for a reporter's transcript of the testimony and proceedings upon the trial.

**Analysis:** After suing Herbert for half of Technicolor, among additional assets, Natalie loses. It's rule that "she had no rights, either as wife or plaintiff or as a partner, in his earnings or in his property, other than to be paid \$625 per month alimony." More interestingly, she was ordered from "asserting any rights in (Herbert's) earnings or property as his wife or otherwise, and from harassing or annoying him." This may point toward some sort of discrimination by the court against Natalie. Despite the fact that they had divorced, they did in some respect have a common law marriage and she did create a significant contribution to Technicolor.

**Reflection:** This decision is not as useful as the secondary decision, as it enumerates more of the claims. However, it is still valid and shows that she was only paid \$625 per week in alimony.

7. Drapeau, J. California. Civ. Nos. 17534, 17672, 17700 2d Dist, Div One . *Kalmus v. Kalmus (1951) 103 CA2d 405*. Los Angeles: , 1951. Print.  
<<http://online.ceb.com/CalCases/CA2/103CA2d405.htm>>.

**Summary:** Natalie appealed from the former decision. The lower court stated only three of the reasons why it denied her appeal

(1) Estoppel of appellant to claim suit money and alimony pendente lite in attacking a divorce decree of the Massachusetts court, under which for 27 years she had received \$7,500 each year as alimony.

(2) Estoppel of appellant to claim suit money and temporary alimony in attacking the said Massachusetts divorce decree because of (a) the 1945 contract between appellant and respondent, (b) appellant's receipt of substantial considerations under such contract from respondent, and (c) appellant's failure to restore such considerations to respondent and her failure to give notice of rescission of the said 1945 contract.

(3) Failure of appellant to establish the relationship of husband and wife between herself and respondent by a preponderance of the evidence.

[21] It is the validity of the court's action in denying appellant's application which is here reviewable, and not the court's opinion or statement of reasons for its action.

[22b] Regardless of the findings which appear in the minute order, appellant's application may have been denied for reasons not therein expressed. In the exercise of its discretion the court was entitled to, and undoubtedly did, consider appellant's necessity for the financial aid she sought, and in that regard, as pointed out by respondent, there was evidence in the record that--

"(a) Appellant was already receiving from defendant (and had been receiving for nearly three decades) the sum of \$7500.00 per year as alimony under the Massachusetts divorce decree which she was purporting to attack and, as supplemented by the February 19, 1945, contract, will continue to receive such alimony for the balance of her life should respondent predecease her.

"(b) Appellant, under her contract with Technicolor Corporation, was receiving and will receive for life \$11,000.00 annually without rendering any service therefore.

"(c) Appellant had had a total income of over \$30,000.00 per year for a number of years right down to the time of the hearing on her application.

"(d) Appellant had received from respondent at the time of the Massachusetts divorce in 1921 certain household effects, a \$25,000.00 insurance policy, the sum of \$5,000.00 in cash, 1000 shares of stock of the Technicolor Company and negotiable bonds in the amount of \$25,000.00; and

"(e) Plaintiff had received from defendant under the contract of February 19, 1945, \$36,625.00 cash."

As heretofore pointed out, a reviewing tribunal does not pass upon the reasoning or argument upon which judicial action is taken but reviews only the action itself. A wife seeking the awards here under consideration must establish necessity for them. [25] They are not a matter of absolute right and may be awarded only upon a finding of necessity (Loeb v. Loeb, 84 Cal.App.2d 141, 144, 148 [190 P.2d 246]; Baldwin v. Baldwin, {Page 103 Cal.App.2d 423} 28 Cal.2d 406, 413 [170 P.2d 670]; Warden v. Warden, 218 Cal. 98, 99 [21 P.2d 418]).

**Reflection:** The most significant portion of information here is certainly how much Natalie was given for her stake in Technicolor and her alimony. The verdict was upheld and Natalie was essentially forced out of Technicolor as a result.

#### **8. Higgins, Scott. *Harnessing the Technicolor Rainbow: Color Design in the 1930s* .**

**University of Texas Press, 2009. eBook.**

**<[http://books.google.com/books?id=tkVqLEb7yXoC&dq=technicolor news and views color director's work&source=gbs\\_navlinks\\_s](http://books.google.com/books?id=tkVqLEb7yXoC&dq=technicolor+news+and+views+color+director's+work&source=gbs_navlinks_s)>.**

**Summary:** This is an expansion of his previous essay and is a very good resource on Technicolor. Although I do not have access to it, I was able to use Google Books to get a preview of some valuable sections, one of which details a report from *Technicolor News and Views*, "Color Director's Work," which could not otherwise be located in online archives and makes important statements about the team often known as the Color Control Service or the Color Advisory Service.

**Color Advisory Service:** "In addition to Padelford and Jaffa, *Technicolor News a.* lists Robert Brower, William Fritzsche, and Richard Mueller as staff members. In 1939, Monroe W. Burbank appears on the list, but he is left out of the 1941 discussion. Similarly, the 1941 article introduces Henry Staudigl as staff member. It seems likely that most of these consultants were assigned short subjects or assisted Kalmus, Jaffa, and Padelford during this period. William Fritzsche and Robert Brower would both handle feature films in the mid to late 1940s" (Higgins, 247).

**Running the Color Advisory Service:** "Drawing on her background, Kalmus set stylistic boundaries for the use of color, and she helped position the Color Advisory Service as a liaison between Technicolor and the studios' production teams. If there was a single voice behind the Technicolor look, it was likely Natalie Kalmus'. When it was formed, in the 1920s, the department was meant to aid production personnel in designing for the limited range of the two-color process. With the advent of three-color, Technicolor promoted the department as a means of avoiding the purported excesses of the late 1920s and early 1930s. Natalie Kalmus emphasized the importance of her department in the mid-1930s by pointing to "the early two-color pictures" in which "producers sometimes thought that because a process could reproduce color, they should flaunt vivid color continually before the eyes of the audience." Technicolor publicity suggest that the department was vital

because the three-color process had "greatly increased the demands of precision in color control in order that the fine gradations of color now available on the screen may comprise a pleasing harmony." (Higgins, 39).

**Reflection:** Useful in its establishment of other key members of the Color Advisory Service.

**Analysis:** Much of this text was already summarized in the previous Higgins essay that I had read.

**9. Kalmus, Herbert T. "Technicolor Adventures in Cinemaland ." *Journal of the Society of Motion Picture Engineers*. (Dec. 1938): n. page. Print.  
<<http://www.widescreenmuseum.com/oldcolor/kalmus.htm>>.**

**Summary:** This document is primary source material. "It is an address made by Technicolor founder Herbert Kalmus at the Fall meeting of the S.M.P.E. in Detroit, Michigan., October 28, 1938. It was reprinted in the December, 1938 Journal of the SMPE. The article stands as an interesting history of Technicolor from its founding up to the date of publication. One point of extreme interest, discussed near the end of the article, is Dr. Kalmus' anticipation that the special three strip cameras would not be required in two years."

**Reflection:** These quotes appear to be the most useful for this project:

**Kalmus's approach to designing color technology:** "Early in the development of any color process, two decisions of policy must be made: first, how far will it permit departure from standard equipment and materials, and, second, how will it attempt to divide the additional requisites of recording and reproducing color between the emulsion maker, the photographic and laboratory procedure, and the exhibitor's projection machine Technicolor assumed at the outset that special cameras and special projectors were permissible, provided raw film of standard dimensions were employed."

**A mobile Technicolor Railway Lab:** "The earliest Technicolor laboratory was built within a railway car. This car was completely equipped with a photochemical laboratory, darkrooms, fireproof safes, power plant, offices, and all the machinery and apparatus necessary for continuously carrying on the following processes on a small commercial scale; sensitizing, testing, perforating, developing, washing, fixing and drying positive; printing, developing, washing, and conditioning air; filtering and cooling wash water; examining and splicing film; and making control measurements and tests. In 1917 the car was rolled over the railway tracks from Boston, Massachusetts, where it was equipped, to Jacksonville, Florida, where the first Technicolor adventure in feature motion picture production was to take place.

**Securing funding in 1920:** In 1920 Judge William Travers Jerome first became interested in Technicolor; he brought as associates the late Marcus Loew, Nicholas M. Schenck, now President of Loew's, Inc., and Joseph M. Schenck, now Chairman of the Board of Twentieth Century Fox, Inc. Both Joseph and Nicholas Schenck have on many occasions been most

helpful to Technicolor by giving practical advice to Judge Jerome and to me, but at no time more so than when it was decided to produce the photoplay which was later called *The Toll of the Sea*. This was the first Technicolor production by the subtractive method. It was photographed in Hollywood under the general supervision of Mr. Joseph M. Schenck, Chester Franklin, Director, Anna May Wong, lead, and J. A. Ball, Technicolor cameraman.

Technicolor makes \$160,000 in 1923: Mr. Nicholas Schenck arranged for the release of *The Toll of the Sea* by Metro-Goldwyn-Mayer. The first showing was given at the Rialto theater in New York, the week of November 26, 1922. Letters of praise were received from Maxfield Parrish, Charles Dana Gibson, and other artists. But because of insufficient laboratory capacity we were not able to supply prints fast enough to follow this up immediately and not until 1923 was the picture generally released in the United States. It grossed more than \$250,000, of which Technicolor received approximately \$160,000."

Building a plant in Hollywood in 1923: " Meanwhile Technicolor plant No. 2 was being built in Boston in a building adjoining the one containing the Pilot Plant. It had a capacity of about one million feet of prints per month and cost approximately \$300,000. And in April, 1923, the late C. A. Willat, in charge, J. A. Ball, Technical Director, G. A. Cave, Assistant Technical Director, were sent from Boston to establish a small Technicolor laboratory and a photographic unit in Hollywood. This was established in a building in Hollywood rented for the purpose."

" A small plant, primarily for the purpose of developing negative, making rush prints, and providing a California headquarters was installed at 1006 North Cole Avenue, Hollywood, in a building erected for our purpose. A large part of the equipment was built by our engineers in Boston and shipped to California. The installation was ready for operation about the middle of the year 1924."

Ben Hur: In the Fall of 1924 we had six men and four cameras working in Rome on the Metro-Goldwyn-Mayer production, *Ben Hur*.

The Black Pirate: One of the great adventures of Technicolor in Cinemaland and a milestone in its progress was in the photography, print manufacture, and exhibition of Douglas Fairbanks' *The Black Pirate*. Mr. Fairbanks had the idea that the screen had never caught and reflected the real spirit of piracy as one finds it in the books of Robert Louis Stevenson, or the paintings of Howard Pyle, and that he could catch it by the use of color....But Mr. Fairbanks' attorneys pointed out that this production would cost a million dollars, and asked what assurance there was that Technicolor would be able to deliver prints, much less satisfactory prints. This difficulty was finally resolved by making a tripartite agreement in which the engineering firm of Kalmus, Comstock & Wescott, Inc., which still had the pilot plant in the basement of its building, agreed under certain conditions that it would deliver the prints in case Technicolor company failed. There was great discussion as to the color key in which this picture would be pitched. We made test prints for Mr. Fairbanks at six different color levels, from a level with slightly more color than black and white, to the most garish rendering of which the Technicolor process was then capable. Mr. Fairbanks set to work on the shore of Catalina Island and off that shore on his pirate ship, with four of

the seven Technicolor cameras then in existence, to capture moods after the manner of impressionistic painting. The picture was released through United Artists in 1925. So far as audience reaction, press reviews, and box-office receipts were concerned, it was a triumph from the start, but for the Technicolor company it was a terrible headache....It had been clear from the very start that the double coated process was at best but a temporary method, and the work of developing a true imbibition process was being pressed in our research department.

Famous Players Lasky stops using Technicolor in 1925: Early in 1925 Mr. Sydney R. Kent, then head of distribution of Famous Players Lasky Corporation, said: "We have concluded not to do more Technicolor pictures for the present, for two reasons: first, because we have had a great deal of trouble in our exchanges due to the fact that the film is double coated and consequently scratches much more readily than black and white, with the necessity of having to order more replacements, and it is an added bother to our operators; and, second, because the cost is out of all proportion to its added value to us. We paid \$146,000 additional for *Wanderer* prints. We understand that you need volume to get your costs down. At an 8-cent price we would be interested to talk volume." Evidently Technicolor needed the single-coated imbibition prints and volume to lower the price to meet his conditions.

Schenck advises Technicolor to get into production in 1926: Meanwhile Mr. Nicholas Schenck, then President of Loew's, Inc., was advising us to produce a picture ourselves, to prove both quality and costs. And so in 1926-27 I once more found myself explaining to the directors of Technicolor that I always had believed and still believed very thoroughly in the ultimate success of the Technicolor project, always provided, however, that it was recognized by all the Directors to be a tremendously difficult undertaking technically and one which requires business sagacity and financial endurance. These directors, including the late Wm. Travers Jerome, the late Wm. Hamlin Childs, the late A. W. Erickson, the late Wm. H. Coolidge, the late Thomas W. Slocum, James C. Colgate, Eversley Childs, and Alfred Fritzsche, had many earlier reminders of the necessity of financial endurance. Prior to 1926 over two and one-half million dollars had been spent, but this time I was not calling for money for cameras and printers, for imbibition machines and research salaries; it was to go into production. When they asked what I knew about production, I frankly told them nothing, but at least I could start from scratch without some of the fixed ideas and prejudices concerning color that some of the Hollywood producers seemed to have accumulated. I wanted to make short subjects, not primarily to make money as a producer, but to prove to the industry that there was nothing mysterious about the operation of Technicolor cameras that the transition from what the eye saw to what the emulsion recorded was susceptible of reasonable control through understanding, that black and white cameramen could easily be trained to light for Technicolor cameras, that talented art directors could readily begin to think in terms of color, that rush prints could be delivered promptly, and generally that the job could be done efficiently and economically, utilizing but not minutely imitating black and white experience.

Building the company in 1929: "During the years 1929 and 1930 Technicolor appropriated over \$3,000,000 for plants, equipment, and research work which increased its plant

capacity from one million to six million feet of two-component prints a month. At the same time that it had been building those plants and training personnel to operate them it had been filling its orders. Such conditions were not conducive to the highest quality product even if the orders had been normal. The fact that this rush was largely forced upon Technicolor by the producers wouldn't help in the slightest degree with the exhibitor or the audience even if they knew of it. And executives who were glad to try to work it out with us gradually over a period of time were suddenly confronted with the necessity for drastic curtailment of their own budgets because of a sharp drop in motion picture theater attendance. At the peak of the rush Technicolor had twelve hundred men employed with a payroll of approximately \$250,000 per month whereas by the middle of 1931 these had dropped to two hundred thirty men and approximately \$70,000. In the middle of 1931 picture production in Hollywood was at an extremely low ebb and the last week in July is said to have been the worst for theater receipts in fifteen years. During 1931 the base price of Technicolor prints was reduced from 8 3/4 to 7 cents per foot.

During this boom period of 1929 and 1930, more work was undertaken than could be handled satisfactorily. The producers pressed us to the degree that cameras operated day and night. Laboratory crews worked three eight-hour shifts. Hundreds of new men were hastily trained to do work which properly required years of training. Many pictures were made which I counseled against, and all in the face of the fact that to book a picture in our crowded schedules called for a deposit of \$25,000. At one time we held \$1,600,000 of such cash payments.

Technicolor finishes building its first 3 color camera (May 1932): But Technicolor had persisted in its research and development work so that by May 1932 it had completed the building of its first three-component camera and had one unit of its plant equipped to handle a moderate amount of three-color printing. The difference between this three-component process and the previous two-component process was truly extraordinary. Not only was the accuracy of tone and color reproduction greatly improved, but definition was markedly better.

Cartoons become testing ground for three color process: However, we could not offer the three-component product to one customer without offering it to all, which required many more cameras, and the conversion of much of our plant. To allow time for this and to prove the process beyond any doubt, we sought first to try it out in the cartoon field. But no cartoonist would have it. We were told cartoons were good enough in black and white, and that of all departments of production, cartoons could least afford the added expense. Finally Walt Disney tried it as an experiment on one of his "Silly Symphonies." This first attempt was the delightful *Flowers and Trees*, following which Disney contracted for a series. For Christmas, 1932, came *Santa's Work Shop*, the following Easter, *Funny Bunnies*; in May, 1933, came *Three Little Pigs*, which made screen history, and in March, 1934, *Big Bad Wolf*. I needn't relate the story of Disney's extraordinary success with Technicolor. The "Silly Symphonies" in Technicolor surpassed the "Mickey Mouses" in black and white, and then both Mickies and Sillies adopted Technicolor.

Disney and Technicolor rise together: Both the Disney Company and Technicolor were rather undersized at birth and in recent years both have grown rapidly in importance. A frequent conversation has been as to which helped the other most. Much like the conversation between two Irishmen after a considerable session at the bar: "Yer know Clancy, when I was born I weighed only five pounds." "Yer did, and did yer live?" "Did I live?" "Yer ought to see me now."

Producers just want cheaper costs: What Technicolor needed was someone to prove for regular productions, whether short subjects or features, what Disney had proved for cartoons. But the producers asked, "How much more will it cost to produce a feature in three-component Technicolor than in black and white?" This question is always with us and it seems to me the answer must be divided into two parts; the added cost of prints, negative raw stock, rushes, and lighting can be numerically calculated and requires little discussion. But then there are the less tangible elements about which there is much discussion. I have said to producers and directors on many occasions: "You have all seen Disney's *Funny Bunnies*; you remember the huge rainbow circling across the screen to the ground and you remember the Funny Bunnies drawing the color of the rainbow into their paint pails and splashing the Easter eggs. You all admit that it was marvelous entertainment. Now I will ask you how much more did it cost Mr. Disney to produce that entertainment in color than it would have in black and white?" The answer is; of course, that it could not be done at any cost in black and white, and I think that points to the general answer. A similar analogy can be drawn with respect to some part of almost any recent Technicolor feature.

You can't put a price on color: If a script has been conceived, planned, and written for black and white, it should not be done at all in color. The story should be chosen and the scenario written with color in mind from the start, so that by its use effects are obtained, moods created, beauty and personalities emphasized, and the drama enhanced. Color should follow from sequence to sequence, supporting and giving impulse to the drama, becoming an integral part of it, and not something super-added. The production cost question should be, what is the additional cost for color per unit of entertainment and not per foot of negative. The answer is that it needn't necessarily cost any more."

Building contracts from 1938 onward: Looking ahead, Technicolor has contracts for about forty feature-length productions spread among most of the outstanding producers, constituting a very substantial volume of business. Among these there are now either being photographed or in preparation the following: *Dodge City*, Errol Flynn, Olivia de Havilland (Warner Bros.); *Gone With the Wind*, Clark Cable (Selznick International Pictures); *Heart of the North*, Dick Foran, Gloria Dickson (Warner Bros.); *Jesse James*, Tyrone Power, Henry Fonda, Nancy Kelly (Twentieth Century Fox); *Kentucky*, Loretta Young, Richard Greene, Walter Brennan (Twentieth Century Fox); *Little Princess*, Shirley Temple, Richard Greene, Anita Louise (Twentieth Century Fox); *Northwest Passage*, Robert Young, Spencer Tracy (Loew's, Inc.) *Sweethearts*, Jeannette MacDonald, Nelson Eddy, Frank Morgan, Ray Bolger (Loew's, Inc.); *The Light That Failed* Ray Milland (Paramount); *The Mikado*, all-star (G. & S. Productions, Ltd.); *The Thief of Bagdad* (London Films Productions); *The Wizard of Oz*, Judy



Garland, Jack Haley, Bert Lahr, Ray Bolger (Loew's, Inc.); and a second feature-length production is being prepared by Walt Disney Enterprises, Inc.

Getting capital to handle the increase volume: To meet this growing volume of business, Technicolor many months ago appropriated some \$1,500,000 to increase the number of its cameras and to double its plant capacity. This expansion program is now well on its way to completion. I have thus passed over rapidly the matter of eighteen pictures to be produced in Technicolor during the last part of this year and the first six months of next year, although they will probably represent an investment of some fifteen million dollars.

Foreign sales and the imminent war problem: The foreign situation is becoming increasingly difficult. Sales to Germany, Spain, Japan, and China have practically ceased, and in many other foreign countries they are below normal. The Italian government controls the entire distribution of films in Italy, which probably means that everything possible will be done to distribute Italian-made pictures at the expense of English and American-made pictures. To cope with the various regulations of censorship, the various languages requiring either superimposed titles or dubbing with new sound-track, has for years been difficult enough, but with the more recent quota laws, import duties, exchange difficulties, and especially in the face of the impossibility of getting money out of several foreign countries, to continue in the motion picture business there means adventures in other businesses, possibly including banking and politics. The establishment of Technicolor laboratories at various points over the world is a practical necessity and despite all these difficulties definite progress is being made."

Exhibition Department established at Technicolor in 1937: "About a year ago Technicolor established a department to contact exhibitors directly. Its representatives travel over the country to call upon exchange managers, theater managers, and projectionists. The purpose has been to study projection and screen conditions at the theater; to advise how to get the best results with Technicolor prints, to listen to complaints and establish good will, and particularly to obtain projectionist, manager, and audience reactions to productions in Technicolor. The results have been most gratifying; we have found that the public reaction to Technicolor pictures is extremely favorable and that exhibitors throughout the country are realizing more and more that Technicolor has great box office value.

Kalmus' thoughts on establishing Technicolor throughout the trials: In the letter from Dr. Goldsmith, suggesting for himself and Mr. Crabtree that I write this paper, he said, "I believe it would be of particular interest to the engineers in the industry if you cared to indicate how you happened to cling, so tenaciously to these developments through the dark ages when color motion pictures were not so well appreciated." All I have said points to the answer; it was marvelously interesting; it was great fun; we couldn't let anybody down, neither customers, employees, stockholders, nor directors. But there was something else too; there was always something just ahead, a plan for tomorrow, something exciting to be finished - yes, and something more to be finished after that; and I am willing to predict that it won't be finished for many years yet. The type of film which will be standard for natural color pictures ten years hence may not yet have emerged. I predict that within two years Technicolor will have done away with special cameras and be regularly employing single

strips of negative through any standard motion picture camera and that within two months for special purposes and within six months for more general purpose it will be offering to its customers a negative for use in its present cameras with from three to four times the speed of its present negative. That's why we cling so tenaciously; there's always something ahead; there always will be; our pride is enlisted; it's our job.

Rush prints could be made available within 24 hours: MR. GRIFFIN: How quickly is the rush print available in the three-component process after the negatives leave the camera? Dr. KALMUS: Regular twenty-four hour service.

**Analysis:** This will be useful in gaining Herbert's perspective on the business. It's noteworthy to mention that, despite the fact that this is mostly a technical account on the foundation of the company, Herbert does not mention Natalie whatsoever. He talks about the Color Advisory Service in limited terms and the need to color score but she is not mentioned.

**10. Dowell, Pat, dir. "The Work Of Jack Cardiff, Technicolor Master." NPR: 27 May 2011. Radio. <<http://www.npr.org/2011/05/31/136717508/the-work-of-jack-cardiff-technicolor-master>>.**

**Summary:** Jack Cardiff was one of the most honored and admired cameramen of the 20th century — the first cinematographer to be awarded an honorary Oscar (in 2000) for his life's work. Cardiff invented new ways to use the camera to create Technicolor masterpieces such as *The Red Shoes*.

He made the massive Technicolor camera, almost as big as a refrigerator, do hand-held shots, by mounting it on a bungee cord platform attached to the ceiling and then swinging it around to capture the whirling excitement of bodies in motion.

He was the only cameraman that the Technicolor Corp. chose to train in Britain; people there were impressed that he knew which side of the face Rembrandt liked to light. Cardiff learned Technicolor's many rules, then promptly ignored them when he went to work with the directing team of Michael Powell and Emeric Pressburger in the 1940s.

**Reflection:** He showed a different, more evolved style of Technicolor lighting. Useful to show the dimensionality of Technicolor.

**Analysis:** I think it's interesting that someone who was trained in a Technicolor lab is portrayed as someone who learned the disciplines just to ignore them. Is this just a slanted report or is this characteristic with Jack Cardiff's style?

**9. *Remastering Process of the Wizard of Oz*. Turner Entertainment Co. , 2005. Film. 9 Feb 2014. <<http://www.youtube.com/watch?v=qKFZ8qxmjF4>>.**

**Summary:** Eleven and a half minute documentary about the restoration of the "The Wizard of Oz". The original Technicolor negatives were scanned at about the double HDTV-

resolution to record all the details that can be seen at full-HD resolution (Nyquist-Shannon theorem). The great thing about Technicolor is that each elementary color has its own negative. Ordinary color film (negative or direct positive) has three layers. The three negative sources allow to reconstruct damaged frames from the other intact frames. This way the original negatives only needed to be scanned rather than cleaned. Every single frame of the movie was inspected by a skilled operator and retouched if necessary.

**Reflection:** Technicolor prints were easier to restore than other prints because there were three different negative sources, one for each color. If one print was damaged, you had other negatives to rely upon. They also discuss the early processes of film restoration using cotton swabs to wipe off the negatives. This process was highly damaging to the negatives themselves.

**Analysis:** This will likely not be that useful in terms of my project but does discuss how incredible Technicolor prints were. In comparison to other color prints of the day, the Technicolor prints were easier to restore. They say that they don't have to enhance anything in the footage, merely clean off the prints in a special process. The original Technicolor prints were always perfect; only time and storage processes had altered their quality.

**10. Thomas, Dan. "When Film Colors Go Blooey, They Ask A Woman To Fix Them." *Southeast Missourian* [Cape Girardeau] 16 04 1930, Wednesday Evening 2. Print.**

**<<http://news.google.com/newspapers?nid=1893&dat=19300416&id=v44fAAAIIBAJ&sjid=xtMEAAAIBAJ&pg=4575,2567956>>.**

**Summary:** This article describes Natalie's process of color design but more importantly, it shows the way she was portrayed by the press. There are several mentions of her femaleness: "Mrs. Kalmus is the only woman in the corps of trained color experts who are bringing this new medium to the screen. Yet she does not in the least measure up to the general conception of a business or professional woman. She is decidedly feminine, small in stature, mild-mannered but confident that she knows whereof she speaks." At the same time, the article refers to her expertise in the subject matter, saying that "she may be found in as many as four or five studios a day," and her office is a "veritable card-index file of material. Thousands of samples of dress materials of innumerable shades are catalogued in her files. She can put her finger on anyone of them and tell how it will reproduce on the screen."

Also of importance, Natalie describes her process of work: "First I made a thorough study of the basic principles of Technicolor photography. Then I started experimenting to find out just how this photography reacted to the various colors. With those facts firmly established in my mind it is a simple matter to know what colors should be combined and in what ratios for certain desired effects."

**Reflection:** This article is useful in showing Natalie's reputation to the public, albeit a different reputation than that which was known within the industry. The article is displayed on the next page.

## When Film Colors Go Blooey, They Ask a Woman to Fix Them

By DAN THOMAS.

Hollywood, Calif., April 16.—A woman, Mrs. Natalie Kalmus, is movieland's newest "trouble shooter."

For years Hollywood has found "trouble shooters" indispensable in various fields. There have been writers whose specialty has been putting seemingly impossible stories into usable shape. Camera experts have been called into correct certain bits of poor photography. Technicians continually are called upon to remedy mechanical difficulties.

Mrs. Kalmus' field is color. She is the outstanding color expert in the film colony.

**Wife of Inventor.**

In private life Natalie Kalmus is the wife of Dr. Herbert T. Kalmus, president of the Technicolor Corporation and inventor of technicolor photography. Since he first conceived the idea of photographing objects in their natural colors, his wife has worked with him. She has studied color as color, as related to art, as related to nature and as related to motion pictures.

Inasmuch as natural color films are rapidly supplanting the standard black and white pictures, it readily can be seen that there is a tremendous demand for a real authority on color values. Mrs. Kalmus is regarded by Hollywood as that authority. Her office is



tell at a glance what combinations of colors and materials will create certain effects. And she is never wrong.

As a general rule the advice of this feminine "trouble shooter" is sought on costuming and set designing before they are made. But she is so busy that directors sometimes go ahead without waiting to consult her. Then she receives hurry-up calls to come and tell them what is wrong.

**Based on Long Study.**

"My work really isn't as difficult as it sounds," Mrs. Kalmus remarked as we sat in her office discussing this new phase of the picture industry. "First I made a thorough study of the basic principles of technicolor photography. Then I started experimenting to find out just how this photography reacted to the various colors. With those facts firmly established in my mind it is a simple matter to know what colors should be combined and in what ratios for certain desired effects."

Mrs. Kalmus is the only woman in the corps of trained color experts who are bringing this new medium to the screen. Yet she does not in the least measure up to the general conception of a business or professional woman. She is decidedly feminine, small in stature, mild-mannered but confident that she knows whereof she speaks.

but a portion of her workshop. She may be found in four or five different studios in a single day. To cover this amount of territory she must be able to correct mistakes at a glance. And she does.

Mrs. Kalmus' office is a veritable card-index file of material. Thousands of samples of dress materials of innumerable shades are catalogued in her files. She can put her finger on anyone of them and tell how it will reproduce on the screen. She also can

**Mrs. Natalie Kalmus**

11. Theisen, Earl. "How Three Color Movies Are Made." *Modern Mechanix* 07 1935, n. pag. Print. <<http://blog.modernmechanix.com/how-three-color-movies-are-made/>>.

**Summary:** The Technicolor Three-Color process is the nearest approach to the colors and delicate shades found in nature. It was perfected for Technicolor under the supervision of J. A. Ball, and was first commercially used in 1932 in the Walt Disney Silly Symphony, "Flowers and Trees." The same process was first used in a real-life picture, "The House of Rothschild," in a color sequence supervised by Natalie Kalmus. It was also used in "La

Cucaracha," a two-reel short which has taken the country by storm because of its beautiful color. Financed by John H. Whitney at a cost of \$65,000, which is over three times the cost of an uncolored picture of the same length, this is proving to be the first notably successful color film outside of the cartoons. In photographing a Disney Silly Symphony, three negatives are made, one each for the three colors, red, green, and blue. All colors of the rainbow can be reproduced by a blending of these three primary colors. The three negatives are made through filters which absorb certain portions of the light passing through them. The light striking the red negative is photographed through a red filter that absorbs or stops all the colors except red. This gives a photographic record of the red objects in the picture. In like manner, the green and blue negatives are photographed through green and blue filters.

How it's done in animation: Walt Disney and his staff paint the cartoons in the colors desired, and then a special Technicolor camera photographs the three negatives at one operation. The three negatives are made simultaneously through the use of a special prism. Each of these negatives records the intensity and extent of only one color; for instance, on the blue negative is a picture of only the blue color in the objects, on the red negative is the image of the red objects, etc. From each of the three negatives is made a print on a special gelatin coated stock, which is called a "matrix." In making the "matrix," a silver image is not used as in the case of ordinary black and white photography. Instead, a photographic emulsion in the form of a gelatine, sensitive to light, is used.

**Reflection:** This is an extremely interesting look at how the Three-color process was explained to audiences. Most likely a piece of promotional material by Technicolor itself. The images show, beautifully, how Technicolor camera techniques worked.

**Analysis:** Very little is mentioned about Natalie herself but does suggest her influential Color Consciousness branding to it.

**12. Lauchlan, Archie , dir. "The Wonderful World of Technicolor." BBC4: 25 12 2008. Television. <<http://vimeo.com/16567680>>.**

**Summary:** Perhaps the best resource on Technicolor, this one hour long documentary discusses the history, aesthetic, development, and ultimate regression of Technicolor. It mentions Herbert Kalmus as having skills beyond just science, including his "entrepreneurial prowess:" once he had identified a need in the new movie industry, namely color, he was indefatigable, keeping the competition out by keeping in with the right people in the right studios." It also discusses Natalie's influence upon the style: "They created a kind of early Microsoft monopoly," by insisting that people bought their camera, film stock, and color advisory services.

**Reflection:** This is quite useful in tying together all of the research I have conducted into one cohesive timeline. Beyond that, I do not know how serviceable this is to the project.

**13. Merritt, Russell. "Crying in Color: How Hollywood Coped When Technicolor Died." *Journal of the National and Film Sound Archive, Australia*. 3.2/3 (2008):**

n. page. Print.

<[http://www.nfsa.gov.au/site\\_media/uploads/file/2010/09/09/NFSAJournal-Vol3-Nos2\\_3.pdf](http://www.nfsa.gov.au/site_media/uploads/file/2010/09/09/NFSAJournal-Vol3-Nos2_3.pdf)>.

**Summary:** Herbert and Natalie's differing motivations (best example of Natalie's theories): For Herbert Kalmus, the engineer, the most important rule was the need for accuracy in reproduction. But for Natalie Kalmus, the trained art student, Technicolor was to be built on time-honored principles of color harmony, balance, and contrast. Color cinematographers and designers, Kalmus argued, were obliged to study which hues belong with one another. They were to avoid foregrounding colors adjacent to each other on her color wheel because, she argued, the combinations are characterless, too near each other to make a significant impression. When one color is placed in front of or beside another," she wrote, "there must be enough difference in their hues to separate one from the other photographically." She recommends "the judicious use of neutrals" as a "foil for vivid color" in order to "lend power and interest to the touches of color in a scene." In the tradition of the German Romantics and, more recently, of New York graphic designers like Josef Muller-Brockmann and Gyorgy Kepes, color was to be structured as a set of polarities. This became Technicolor's own version of Hollywood's 180° rule: a scheme of triads based on three equidistant colors on the wheel, where hues should be either next to one another or roughly 30° apart.

Why Technicolor fell from popularity:

Soft focus, in fact, would prove fatal in the early 1950s. It put Technicolor on a collision course with another technical phenomenon of the decade – widescreen. There were, in fact, an assortment of widescreen processes – eight of them altogether. But they all shared the need for pinpoint sharpness.

Widescreen: The anamorphic CinemaScope and double frame VistaVision lenses in particular had resolution and distortion problems of their own that left no tolerance for the soft focus limitation of the three-strip camera in the film negative. This becomes a lifesaver for historians, by the way. It can be taken as an article of faith: if the film has been shot in any wide screen format, it cannot have been shot in Technicolor, no matter what the screen credits imply. The popularity of widescreen made the demise of Technicolor inevitable.

Expensive: Other – more prosaic – forces made its fall one that few within the industry mourned. The system had always been awkward and expensive, by the end of the '40s adding an additional \$100,000 to an average picture.

Bulky Cameras: Further, the cameras were notoriously bulky, a particular hardship for location shooting. Martin Hart estimates that a fully equipped Technicolor camera, like the one that Huston took down the Congo with Bogart and Hepburn in African Queen or that Renoir used on the Ganges, weighed over 100 pounds.

Technicolor's film stock is not sensitive enough: Moreover, the insensitivity of the Technicolor film stock famously required lots of hot light, special makeup, and specially toned clothing and sets. But beyond that, Technicolor had developed Technicolor apparatus

was leased – never sold – filmmakers were obliged to use Technicolor's camera, its labs, its custom-made negative and print stock, and – most important for our purposes – the Technicolor support staff [called variously the Color Control Department and the Color Advisory Service]. That staff included the Technicolor color consultant who passed on every foot of film sent through the camera and whose job it was to make Technicolor look good – sometimes, it was argued, at the expense of the picture. Until 1948, Technicolor's chief consultant was Natalie Kalmus, the ex-wife of Technicolor's founder Herbert Kalmus, who quickly became Technicolor's chief aesthetic enforcer. (Page 2)

Why Eastman Kodak Could Take Over- Yet, if it sailed in under the radar, the Eastman revolution was real and its effects far reaching. Within two years of its debut, Hollywood crossed its color Rubicon and the dye was cast. By 1954, virtually all Hollywood color films were shot in Eastman Color negative. And as far as Eastman was concerned, studios could do with their stock whatever they wanted. For the studios, the most conspicuous advantages were practical: color movies suddenly became significantly cheaper to produce and easier to make.

Eliminated Technicolor camera- The most conspicuous advantage of Eastman Color was that it eliminated the need for the bulky Technicolor camera. As a single strip of film, it could fit into any 35mm camera and did not even require Eastman processing. Eastman also had a considerably higher rating than Technicolor – by 1955, somewhere around 50, more than half -again the speed of the most up-to-date Technicolor film [and by the end of the decade a whopping 125 and 160 ratings for its two high speed stocks]. Deep focus in color had at last become possible. (Page 7).

Technicolor's biggest year was 1952, when no fewer than 85 Hollywood features used the 3-strip camera. It meant that in the following year audiences were flooded with Technicolor releases including *The Band Wagon*, *Shane*, *5,000 Fingers of Dr. T*, *Gentlemen Prefer Blondes*, *The Caine Mutiny*, and *Magnificent Obsession*. The studios released almost one hundred Technicolor features in 1953 [95 by my count, including three shot overseas] and distributed another 23 foreign films shot in Technicolor. (Page 14).

**Reflection:** Useful in its description of Eastman Kodak and Technicolor's demise

**14. Nasser, Latif. "Ringmaster to the Rainbow." *Radio Lab*. 27 07 2012: n. page. Web. 9 Feb. 2014. <<http://www.radiolab.org/story/219452-ringmaster-rainbow/>>.**

**Summary:**

Quotations from various directors on Natalie Kalmus: Vincente Minnelli ("An American in Paris") claimed that he "couldn't do anything right in Mrs. Kalmus's eyes." In response to Kalmus's rule about clashing colors like red and orange, Cecil DeMille ("The Ten Commandments") fumed "Well it's too bad the good Lord up in heaven didn't have a Technicolor consultant when he made apples and oranges!" Screenwriter Arthur Laurents ("Rope") wrote in his memoir, "Alfred Hitchcock did not control color, Natalie Kalmus, High

Priestess of Technicolor, controlled color." and "Natalie Kalmus might have to be killed off-camera." Allan Dwan ("Slightly Scarlet") said bluntly, "Natalie Kalmus is a bitch."

Gone With The Wind (1939): In its time, it was the longest movie ever made, and one of the most expensive. Technicolor sure knew how important the film was; for the Atlanta fire scene -- one of the earliest scenes filmed -- all seven Technicolor cameras in existence were on set filming. Behind the cameras, the movie's production history was famously nightmarish; it cycled through five directors (one of whom had a mental breakdown), had about fifteen screenwriters on staff (churning out rewrite after rewrite), and -- despite the 3.9 million dollars allotted to it -- constant budget problems.

Clashing with David O Selznick: The film adaptation was helmed by megalomaniacal producer David O. Selznick. (The "O" was decorative.) *Life* called Selznick "the most dictatorial and irregular executive in an industry where irregularity is commonplace." With Selznick, Kalmus met her match. She believed in demure naturalistic colors. He believed in expressive saturated colors. He wanted the brightness of the film to reflect Scarlet O'Hara's changing fortune. She didn't.

Controversies on set: The two went head-to-head over sets, props, and wardrobe. When Natalie didn't like the way a certain character was costumed or a certain set was furnished, she'd just change it without asking Selznick's permission. According to Technicolor historian Fred E. Basten, "On one occasion, an entire set had to be replaced." For much of production, Selznick -- hopped up on Benzedrine -- dictated memos at a feverish pace: "I cannot conceive how we could have been talked into throwing away opportunities for magnificent color values [based on] ... the squawks and prophecies of doom from the Technicolor experts." Selznick coined the term "production designer" for his art director William Menzies to help stack the deck against Kalmus. Natalie wasn't deterred. The conflict climaxed over mulberry wallpaper. As Basten told the story:

"The wallpaper had been selected for the dining room at Twelve Oaks and was to be seen briefly as a background for beige jackets worn by several male cast members. "Out with the wallpaper!" ordered Natalie. Her reasoning: the beige would fade into the mulberry, therefore, the actors would be lost in the scene. Color tests were taken by ... William Menzies, which showed the hoped-for contrast between the two colors. Natalie was proven wrong, but she wouldn't give in and the mulberry paper was removed. So was Natalie."

Selznick brokered a deal with Natalie's ex-husband and boss Herbert to keep her off set. She soon departed to head Technicolor's plant in Great Britain.



The downfall of Technicolor: The late 40s were not great for Technicolor, either. Crucial patents it held expired in 1945, and a government antitrust suit in 1947 busted up its effective monopoly on color film. By the early 1950s, Technicolor's former research partner, EastmanColor, dethroned it. Technicolor's signature three-strip process was tossed aside in favor of EastmanColor's cheaper and technologically simpler method using a single layered film strip. (One key reason for EastmanColor's triumph was that it could handle widescreen processes like CinemaScope far more efficiently than Technicolor.) After 1953, Technicolor operated primarily as a laboratory and research firm. The package deal was over. But, in large part thanks to Technicolor, the future of color movies was secure.

**Reflection:** This source, whilst informal, has consistent reports with other historians, although this is a blog format. It therefore should be used within limits, to convey a sense of public opinion about Natalie.

**Analysis:** If nothing else, this article led me to two verifiable news sources about Natalie Kalmus, both of which will become the focus of my next study.

#### 15. "Woman Must Pawn Jewelry To "Exist".

*Lewiston Daily Sun* 7 8 1948, Saturday Morning 2. Print.

<<http://news.google.com/newspapers?nid=1928&dat=19480807&id=dpU0AAAIBAJ&sjid=SWgFAAAAIBAJ&pg=4940,3253059>>.

**Summary:** Newspaper article entitled: "Woman Must Pawn Jewelry to "Exist:" This article makes describes Natalie Kalmus's court case against Herbert, stating that she has had to "pawn her jewelry because she can't live on \$47,600 a year," and petitioned the court for temporary alimony pending trial of the suit. Her attorney claims that her expenses are \$4,850 a month, her hotel bill and tips exceed \$1,100 a month, and she pays \$190 a week for an automobile and driver. She received \$32,000 annual salary as technical adviser to Technicolor, \$675 monthly expense allowance and \$7,500 a year temporary alimony. They separated in 1921 but she felt that a final decree never was entered. They became reconciled but separated again in 1944. She asks a division of community property she estimates at over \$3,000,000.

**Reflection:** While fairly unbiased, this article seems to imply by enumerating her requests alongside her age, that a 65 year-old woman shouldn't have need of such expenses. Whether this was intentional or not, it could give rise to draw negative opinions against her.

**WOMAN MUST PAWN JEWELRY TO "EXIST"**

LOS ANGELES, Aug. 6.-Mrs. Natalie Kalmus has had to pawn her jewelry because she can't live on \$47,600 a year, her attorney told superior court today.

She is suing Dr. Herbert T. Kalmus, millionaire founder of technicolor, Inc., for separate maintenance. Today she petitioned the court an increase of temporary alimony pending trial of the suit.

The attorney said the 65-year-old woman's monthly living expense is \$4,850, her hotel bill and tips exceed \$1,100 a month and she pays \$190 a week for an automobile and driver. She received \$32,000 annual salary as technical adviser to technicolor, \$675 monthly expense allowance and \$7,500 a year temporary alimony.

The court continued her plea for an increase in temporary alimony to \$3,000 a month when the attorney for Kalmus, 67, said he is seeking proof that the couple has not been man and wife since 1921.

Mrs. Kalmus said in her complaint they married in 1902, were divorced in Massachusetts in 1921 but a final decree never was entered. They became reconciled but separated again in 1944.

She asks a division of community property she estimates at over \$3,000,000.

**Analysis:** This may not be entirely relevant to this paper, just reinforces Natalie's attempt to claim her stake in Technicolor over several legal battles.

16. "Color Films Success Due To Miss Kalmus." *Spokane Daily Chronicle* 10 12 1931, Print.

<<http://news.google.com/newspapers?nid=1338&dat=19311210&id=5dBXAAAIBAJ&sjid=2fQDAAAIBAJ&pg=7367,2375899>>.

**Summary:** This article, like many others of the time, imply that Natalie is an unparalleled and unique expert. She's also a woman. More interestingly, this is the first article I've seen to suggest that she has a background in chemistry. Her quotes seem to suggest the accuracy of this statement, although I have not read or seen any other information stating that she has a background in chemistry.

**Analysis:** This will be mentioned in my research. The article is shown here:

**COLOR FILMS SUCCESS  
DUE TO MISS KALMUS**

Natalie M. Kalmus, who occupies the unique position of being the only motion picture color director in the world, has an interesting background.

Mrs. Kalmus was an ardent art enthusiast from early girlhood and her education was planned in such way that she might get as much art instruction as possible.

Half way through art school, she became interested in chemistry and went into this so deeply for a time that it was necessary for her to temporarily abandon her study of painting and drawing.

The combination of these two things (chemistry and art) were found by her to be the most necessary of all foundations in her work with the Technicolor corporation, of which her husband, Dr. Herbert T. Kalmus, is president and general manager.

**Wealth of Experience.**

"It must have been some hunch of mine that told me that at some future time I would need chemistry and painting," she said. "With the formation of the Technicolor company I played the leading feminine role in all of their early productions and also took charge of the color department. My art school training had given me the sense of color that was necessary and my chemistry gave me the knowledge of dyes and how to use them."

In addition, Mrs. Kalmus has had a wealth of practical experience in the motion picture studios.

Mrs. Kalmus has received much praise for her color work on "Fanny Foley Herself," recently completed with the new Technicolor process.

**Says She's Cruel**



—Associated Press photo.

A divorce complaint charging cruelty has been filed against Helene Costello (above), actress, by Lowell Sherman, who charged that his wife cursed him and tore up her wedding dress.

17. "Charges International Series of Romances." *Herald Journal* [Spartanburg] 5 11 1948,

<<http://news.google.com/newspapers?nid=1876&dat=19481105&id=PF0sAAAAIBAJ&sjid=J8sEAAAIBAJ&pg=6257,322557>>.

**Summary:** Natalie sues Herbert for \$200,000 for attorneys fees and \$40,000 for expenses to track down five women she says were intimate with her husband.

**Reflection:** This is the first primary source material I have found to confirm that Natalie suspected Herbert of having an

**Charges International  
Series of Romances**

HOLLYWOOD, (UP)—Movie color expert Mrs. Natalie Kalmus asked for \$200,000 attorneys fees and \$40,000 expenses Thursday to track down 5 women she says were intimate with her husband.

Mrs. Kalmus is suing Technicolor President Herbert T. Kalmus for separate maintenance, charging he carried on an international series of romances with various women.

Attorneys for the wife asked the court to give them 6 months to prepare their case. Mrs. Kalmus is seeking a half-interest in her husband's \$3,000,000 share of Technicolor, Inc., as well as \$3,000 a month alimony pending trial.

affair. Interestingly, in the Street document, she mentions that Herbert had an affair with Eleanor King but this has not been confirmed in my research elsewhere, beyond the fact that she has been confirmed to be his second wife.

**18. "Court Setback For Mrs. Kalmus Causes Hysteria."  
*Los Angeles Times* 30 9  
1949, n. pag. Print.**

**Summary:** Natalie is portrayed as "hysterical" in her reaction against the court's deliberation that she must wait for the Boston court to decide if her divorce was verified.

**Reflection:** This is certainly useful in showing the emotional impact that her divorce had on her, as well as the psychological turmoil she underwent as a result.

*Los Angeles Times* 9-30-49



**UPSET**—Mrs. Natalie Kalmus failed yesterday in new move to set aside judgment which denied her separate maintenance. She became hysterical. "I can't stand it," she sobbed as Superior Judge McKesson held motion was outside his jurisdiction.

*Times photo*

## Court Setback for Mrs. Kalmus Brings Hysteria

Mrs. Natalie Kalmus, 67, became hysterical yesterday when she failed in her new move to set aside the June 1 judgement which denied her separate maintenance.

"I can't stand it!" she sobbed as Superior Judge William B. McKesson held that her motion was outside his jurisdiction, since she already has filed appeal to a higher court.

"Oh, what can I do?" she asked

brokely as her attorney, Werner O. Graf, took her arm to lead her from the courtroom.

"Oh, God! O, God! Won't any court dare give me justice?"

### Counsel's Contention

Graf had argued that the separate maintenance suit against Dr. Herbert T. Kalmus, 67, millionaire founder of Technicolor, Inc., had been tried here while she was lying ill in a hospital in Boston.

The lawyer also pleaded that the California court had no right to rule until final determination of her Massachusetts suit to set aside the divorce she obtained from Dr. Kalmus in 1921.

Dr. Kalmus, who has consistently denied there was a reconciliation following the divorce 28 years ago, was married three weeks ago to Mrs. Eleanor King, newspaper columnist. He and Natalie Kalmus were wed in 1902.

19. "Velo Walls Compliment You Says Hollywood." *Spokane Daily Chronicle* 28 03 1939, n. pag. Print.

<[http://news.google.com/newspapers?nid=1338&dat=19390328&id=qNNXA AAAIBAJ&sjid=N\\_UDAAAIAAJ&pg=5202,6396446](http://news.google.com/newspapers?nid=1338&dat=19390328&id=qNNXA AAAIBAJ&sjid=N_UDAAAIAAJ&pg=5202,6396446)>.

**Summary:** This advertisement shows how Natalie became representative of Technicolor brand, as well as a legitimate color expert to the public.

**Reflection:** It will be used as an example of her influence in popular culture.

**Vello<sup>\*</sup> Walls**

**COMPLIMENT YOU**

— says Hollywood!

Accent *your* beauty—with beautiful walls! "It's the vogue!" says Natalie Kalmus, Technicolor expert. Chiffon-smooth Vello walls, with their flattering, pastel shades, set off *your* charm. Vello, new type paint, reflects light *softly*. Easy to apply—quick to dry. Economical, washable! Plan now to beautify your walls with Vello! Ask your painter or dealer.

*FREE! Hollywood reveals color secrets—for you! Send for "Lovely Walls, Lovely Lady." State color your hair, eyes. Lux Sales Co., Maritime Building, Seattle, Washington.*

\* The modern casein paint.

It is important to note that there are a number of primary sources that I was unable to access, due to payment requirements. These include:

- Natalie Kalmus, "Color," in *Behind the Screen: How Films Are Made*, Stephen Watts, ed. London: A. Barker, Ltd., 1938.
- Kathleen McLaughlin, "Expert in Color Photography, Woman Is Paid \$65,000 a Year," *New York Times*, Feb. 26, 1939, p. 46.
- "Madam Kalmus, Chemist," *New York Times*, April 2, 1939, p. 134.
- Natalie Kalmus, "Doorway to Another World," *Coronet*, vol. 25, no. 6, April 1949.