

Silent Era Motion Picture Camera Operators

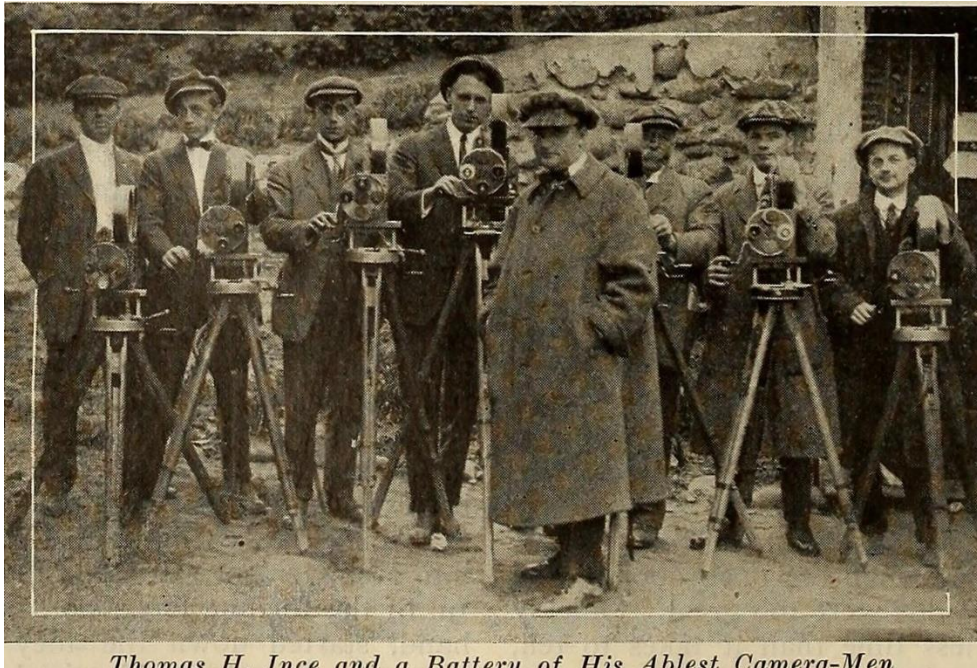
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This article was written in conjunction with an [Airtable data set](#) created by Buckey Grimm.

Abstract

Although the most significant role in the early years of motion picture production was undoubtedly that of the camera operator, there is relatively little known about the people who performed this job during cinema's silent era. The development of the fledgling motion picture business relied almost entirely on the technological and aesthetic advancements involved in capturing moving images, and much of the credit for these advancements can be attributed to the camera operators themselves who often functioned as roving inventors, photographers, technicians, and directors simultaneously. What follows draws on a decade of research into the men and women who operated cameras during this era compiled from trade journals, newspaper reports, census records, and other fragments of archival evidence about the lives and careers of some of these individuals. It is, no doubt, imperfect and incomplete—but we hope that is a useful starting point for further research in this area.

Introduction



Thomas H. Ince and a Battery of His Ablest Camera-Men
Figure 1. *Real Tales About Reel Folk*: Thomas H. Ince and his camera crew
[Source: *Reel Life*, May 29, 1915, 20].

The most significant role in the early years of motion picture production was undoubtedly that of the camera operator. With some important exceptions, however, we know very little about the people who cranked cameras during cinema's silent era. There is, perhaps not surprisingly, no comprehensive filmographic record of camera operators' work. It is often the case for a film made during the first decades of motion picture production that we cannot identify the camera operator with any certainty. After all, films were produced in such a wide array of contexts in cinema's silent years—by inventors, exhibitors, and amateurs; by the government, reformers, corporations, and educators; by employees of growing corporations, freelancers, and one-person “studios”—it is difficult to even draw a line around the boundaries of the profession.

Between the initial years of commercial motion picture invention in the early 1890s, during which the camera operator and director were one and the same, and the period of differentiation, during which the cinematographer became distinct from the producer-director but films did not yet regularly include screen credits for cinematography, there are significant gaps in our knowledge. Secondhand sources such as synopsis sheets, reviews, trade press descriptions, photos, lobby cards, newspaper articles, and written remembrances have been used to study countless actors, directors, producers, production locations and methods, promotional practices, and distribution methods. With some important exceptions, however, camera operators, whose work required a combination of tremendous technical skill, ingenuity, and creativity, remain largely marginal or forgotten figures.

This essay, along with the database prepared to accompany it, seeks to shine a light on those who cranked the cameras, hauled equipment to locations near and far, and captured images on motion picture film inside studios and repurposed locations, as well as in the great, unpredictable outdoors. Although these women—outnumbered, as the accompanying database reveals, and thus especially notable given their relative scarcity—and men were the bedrock of the emerging motion picture industry, developing reliable information about their work is a daunting task. The sheer number of lost films and a lack of screen credits in the early silent period make it immensely difficult,



Figure 2. *Enter the Camerawoman*: Dorothy Dunn of the Universal Animated Weekly [Source: *Moving Picture World*, June 9, 1917, p1609].

"Where can we find traces of a camera operator's labors and contributions? How can we confirm information about them when so little production documentation from the silent era exists?"

combined with the fact that many early camera operators' careers were relatively short. Where can we find traces of a camera operator's labors and contributions? How can we confirm information about them when so little production documentation from the silent era exists?

This database of silent era camera operators is the result of decades of research conducted by Buckey Grimm. The original data came from many sources including handwritten notes, microfilm, and news articles compiled from libraries, historical societies, and archival repositories. It drew information from trade journals such as *Moving Picture World*, *American*

Cinematographer (which began its publication run in 1920 and billed itself as “the voice of the motion picture cameramen of America; the men who make the pictures”), and *Wid’s Daily*, along with other industry periodicals of the silent era.

Grimm searched for each camera operator in the [Media History Digital Library database](#), the Library of Congress [Chronicling America database](#), [Newspapers.com](#), [Ancestry.com](#), and [Fulton History](#). Each filmography was created by drawing information from these sources, which was cross-checked with production credits in the [American Film Institute Catalog](#).

The cumulative information was compiled in an Access database, which was exported into Excel for importation into Airtable. The database, which remains a work in progress, documents close to six hundred cinematographers active from the late 1890s to the end of the silent era, pulling together as much information as possible—including dates of birth and death, short biographical sketches, filmographies, and images. We hope that it will serve as a springboard for further expansion and correction as more information is discovered by researchers wishing to explore this rather untapped area of film history.

What follows is a brief, general discussion of the silent era camera operator and a sampling of several narrative profiles, providing a glimpse into the profession during the silent era. Because of the nature of the Media Ecology Project, the database and discussions below connect to titles held in the Library of Congress Paper Print collection, American Memory collection, and WWI Signal Corps collection, offering users an interactive resource to the silent era camera operator.

Camera Crankers

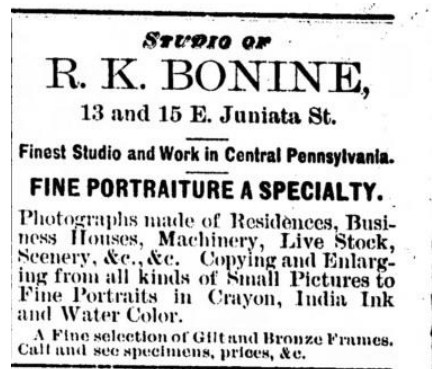


Figure 3. Page 6: Ad for Robert K. Bonine Photo Studio [Source: *Tyrone Daily Herald*, April 18, 1887].

Many of the first camera operators were experienced still photographers before they tackled the new endeavor of capturing moving images; others, like Edwin S. Porter and Billy Bitzer, started off as film projectionists, moving into production during the industry’s infancy. Still others had little or no experience with photography—but enough courage to give it a shot—and learned by trial and error.

In the first years of American film production, when brief spectacles and short skits prevailed—for example, one-shot films of a sneeze, a kiss, or a dancer’s whirl—motion picture subjects had to be adequately lit and framed, but the bulky camera, in the case of Edison Company’s Kinetograph, was stationary, and the camera operator’s decision-making process was fairly limited.

As the technology’s initial novelty waned and camera equipment was refined, camera operators needed to rise to the occasion of capturing more challenging spectacles and intricate dramas. When not confined to studio or interior set work, camera operators were sent on assignment by either a fledgling producer or a nascent studio. Some ambitious operators also struck out on their own accord, trying to fill exhibitors’ growing hunger for content. These camera operators—who were also, in these early years, usually the film’s “director”—had significant autonomy and discretion over what and how they filmed. They would travel—sometimes alone, sometimes with an assistant or two—often for long periods of time, during which they made their way from town to town, state to state, country to country by train, boat, and airplane. Their mission was to capture dramatic views, scenic landmarks, and newsworthy incidents, which they filmed and sent back to their home base to be developed, edited, duplicated, and distributed.

The first American cinematographers, William Kennedy Laurie (W. K. L.) Dickson and William Heise, who worked for Thomas Edison on the development of the Kinetograph and Kinetoscope, shot the company's first films inside Edison's Black Maria studio after it was completed in 1893.¹

These camera operators and the others who popped up in their wake literally called the shots. It was only years later, when film production split into differentiated roles, that the camera operator began to be understood as a supporting role, at which point it was often dismissed as primarily a technical job performed in support of the director's creative vision.

It is astonishing to reflect upon how much the earliest camera operators had to figure out. They had to film in a wide range of conditions—outside, where light and weather fluctuated wildly, and inside, where illumination was often inadequate or unreliable. They had to solve technical problems largely on their own, especially when in the field. Some traveled with mechanics by their side, since the breakdown of what was often a single camera on the road could result in lost time and footage, especially catastrophic when camera operators were tasked with shooting an event that could not wait or be repeated if a camera was sidelined for repairs. Film stock was unreliable and had varying sensitivities; new cameras had varying technical components that required quick mastery. Between shoots on the road, many camera operators also projected films and functioned as itinerant exhibitors or sales reps. This was a job, in other words, that required the wearing of many hats.

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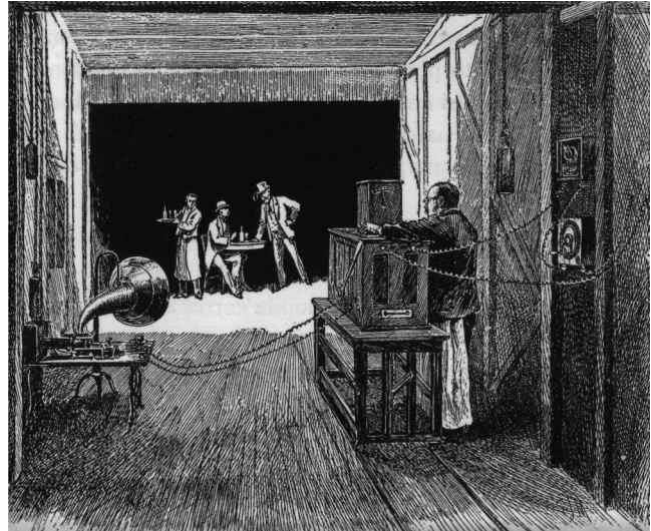


Figure 4. Artist's rendering of filming in Black Maria, by E. J. Meeker [Source: *Century Magazine*, 1894].

It was also work that required moxie. When out in the field, camera operators often risked their lives for their footage, especially when filming “actualities” of unpredictable events like wars or natural disasters. In the late 1890s, one American cameraman declared that “following the fortunes of war with a camera that weighed a quarter of a ton is likely to be about as exciting as following them with a gun,” equating the risks of filming with those of combat.² In 1909 British cinematographer Joseph Rosenthal told *Motion Picture World* readers about nearly being taken prisoner, having his horse shot out from under him during a skirmish, surviving a

shell that burst near his tent, and dodging a barrage of bullets when his aluminum tripod flashed in the sun and soldiers mistook it for an enemy heliograph transmitting Morse code.³ A 1914 *Reel Life* story about Mutual cameramen embedded with Pancho Villa in Mexico shared horrific stories of quicksand, hostage-taking, assaults by hordes of biting flies, incoming bullets, and circling buzzards.⁴ Such depictions of the emerging profession helped to gender it as one only men could handle, despite the fact that a number of women assumed the role—forming their own production

companies, taking to the skies to capture moving images from the air, and even shooting in places like all-male prisons. When “plucky motion picture camerawoman” Maxine Dick “swooped back and forth” while “perched on the side of the plane” over the Presidio while taking “thousands of feet of film” in 1922, San Francisco’s mayor “congratulated her on her daring.”⁵ Such evident bravery and technical capability demonstrated that women could do the job, even if they appear to have been largely excluded from work in this arena by most production companies emerging in the silent era.

Silent era motion picture camera operators were either self-taught or learned their craft by observation and, in essence, apprenticeship. In the United States, the first government-sponsored course on cinematography—which may also have been the first such course—was taught by camera operator Carl Gregory for Army Signal Corps recruits in 1918. In January of that year, Gregory helped start the first Government Military School of Cinematography on Columbia University’s campus.



Figure 5. Signal Corps School of Cinematography [Source: US National Archives and Records Administration, RG 165, Records of the War Department General and Special Staffs, 1918].

When its doors opened, the school welcomed four thousand reserve officers from all branches of service, who learned “how to take moving pictures” as well as “how to develop, cut up and assemble films, and how to project them in theatre or camp.”⁶ In 1919 Gregory began offering a general course on cinematography at Columbia University, which the New York Herald assured readers was “more than a matter of turning the crank.”⁷ It was, as this course demonstrated, no simple task to learn how to use constantly changing equipment, capture well-exposed footage when it took days or weeks to develop, or frame a scene in a fashion that would be satisfactory to producers, exhibitors, and the new breed of motion picture reviewer, not to mention increasingly discerning audiences.

It is perhaps not coincidental that Gregory began teaching cinematography in 1919, the

same year that the American Society of Cinematographers was founded in Los Angeles. It was preceded by the New York–based Cinema Camera Club, which was organized in 1913 by three Edison Co. cameramen: Philip E. Rosen, Frank Kugler, and Lewis W. Physioc.⁸ The founding of the organization might seem to herald the official recognition of cinematography as a profession that required skills that went well beyond “turning the crank.” However, almost a decade later in 1928, a *Variety* profile of the profession still felt the need to make the case for camera operators as “important as producers, supervisors, directors, film cutters, actors, scenarists or title writers.” The article complained that camera operators were typically still given “little outward recognition.” In fact, the article explained, camera operators were usually considered mere technicians—it was due time that they were recognized for their tremendous “ability and knowledge.”⁹

James H. White

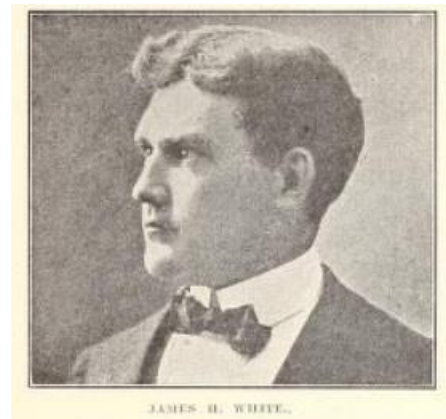


Figure 6. James H. White Honored:
James H. White [Source: *Talking Machine World*, August 15, 1906, 21].

James Henry White was born in the village of Grafton, Nova Scotia, in the 1870s and immigrated with his family to the United States in 1888.¹⁰ The White family settled in Massachusetts, where he worked for the New England Phonograph Company. While touring regional phonograph production facilities, Thomas Edison visited the factory and met White, who eventually parlayed this chance encounter into a job with the Edison Manufacturing Company in Orange, New Jersey, where the young man moved in 1894. White soon began cranking the camera for films produced in *Black Maria*. In 1895 Edison loaned out White to the Holland brothers, who held the rights to Edison-filmed material in the United States and Canada. On their behalf, White traveled the world making one-shot films that would eventually be distributed by Edison Co.¹¹ In May 1896, White became one of three members of Edison’s Vitascope Board of Directors, where he would play a key role as a producer for the first commercially viable projection system in the United States.¹²

The press covered White’s camerawork on films like *Black Diamond Express* (Edison, 1896). When the film showed at the Edisonia Parlors, located at 305 Ellicott Square in Buffalo, New York, at the end of 1896, it was declared a sensation. “Have you seen the *Black Diamond Express* rush at 90 mile an hour speed round the bend at Geneva?” asked an enthusiastic newspaper commentator. “If you haven’t you’ve failed to see the greatest marvel of the age.” Showing “all hours during the day,” the film was touted for being “astonishingly realistic.” White was credited with taking “the view” with assistance by “two experts from Edison’s Laboratory,” hinting at an early form of professionalization required for such “expert” work. The article further explains a bit about how the film was made: White shot the films, which “were sent to Edison and prepared at his New Jersey laboratory,” a reminder of the process required when camera operators were filming even regionally in the field.¹³

After White became the head of Edison’s Kinetograph Department—a position he held from October 1896 to November 1902—he was sent around the country from New York to San Francisco, making “over 120 copyrighted subjects” gathered over “approximately 10 months.”¹⁴ Accompanied by fellow cameraman Fred Blechynden, White filmed at Yellowstone Park in the summer of 1897. Press coverage described “James H. White and another Gentleman, both from Orange N.J., who represents the Edison Vitascope Company”; the men “have been engaged in taking Vitascope views of the park and other scenes along the Northern Pacific in the interest of the railroad company.”¹⁵ A

few days later, White traveled to Oregon. His unusual occupation made his presence in the area newsworthy: “James H. White of Orange N.J. is in the city. He will take kinetoscope and projectoscope photographs of the city, and will photograph the Willamette when she leaves the wharf for the North. White will go to Dyea [in Alaska] to take pictures of the men bound for the interior.”¹⁶

According to news reports, White and Blechynden traveled from Los Angeles to New Mexico to take some “Indian Pictures” before moving on to Denver. “From Denver they will return and go through Mexico and from there will go to China. Mr. Blechynden has with him a large number of proofs of very interesting pictures taken in the past few weeks.”¹⁷ The men traveled “with a tripod that enabled an operator to pan his camera,” a significant technical aid that increased the quality of landscape filming and other shots that benefit from keeping a moving subject in frame.¹⁸ In *Return of the Lifeboat* (1897), shot during this trip, White stops the camera to reframe his shot on several occasions, and also—as film historian Charles Musser describes it—“turns the camera to keep the action in frame.”¹⁹

"On these extensive, long-distance sojourns, White also exhibited the 'Projecting Kinetoscope' he traveled with—he was both a cameraman and an itinerant exhibitor."

By January 1898 White had reached the West Coast and begun filming views in California. One California newspaper reported that “James H. White representing the Edison Company, was in Riverside recently, and was taken to the packing house of Riverside Heights No. 10, by A. C. White, and got some splendid views of the packers at work.”²⁰ The article goes on to explain that “In thirty seconds 1800 pictures can be taken and Mr. White announces that the conditions were very favorable to securing some very choice living pictures of an important feature of the orange industry in Southern California.”²¹ On these extensive, long-distance sojourns, White also exhibited the “Projecting Kinetoscope” he traveled with—he was both a cameraman and an itinerant exhibitor. On January 30, 1898, for example, he was on the program of the Calvary Presbyterian Church at the corner of Geary and Powell Streets in San Francisco, where he showed a program of films using Edison’s Projecting Kinetoscope.²²

As Musser has documented in his extensive research on White’s career, this trip was partly subsidized by transportation companies, including the railroads, which sought creative ways to promote tourism. Not surprisingly, trains, hotels, landmarks, and scenic landscapes feature heavily in the films White shot on this trip, such as *Southern Pacific Overland Mail*, *Going through the Tunnel*, *Hotel Del Monte*, *Lick Observatory*, *California Orange Groves*, and *Panoramic View*.²³ On February 21, 1898, White filmed the California Limited train as it was nearing Santa Anita, capturing it as it traveled sixty miles per hour.²⁴

In February 1898, White and Blechynden set sail for Japan and Hong Kong, filming the ship they were on during a dramatic monsoon and stopping in Hawaii on their return voyage in May. The resulting films—including *Hong Kong Wharf Scene*, *Shanghai Police*, and *Wharf Scene*, Honolulu, fed audiences’ curiosity about “exotic” remote locales, which they could experience without leaving home because the camera operators were, in essence, doing the traveling for them.²⁵ On May 1, 1898, during the return voyage, White and Blechynden boarded the S.S. *Baltimore*, which met up with United States Navy Admiral George Dewey, and thus found themselves on board during the victorious Battle of Manila Bay. White “hurriedly developed” his negatives “to show the officers of the fleet, before rushing them back to New York,” suggesting that he had the ability to develop film in the field.²⁶ White returned ill from this long journey, requiring time at home to convalesce. During his recovery, he acted for Edison films, worked in sales, and worked as a camera operator for studio-bound productions like the comedy series *Adventures of Jones*—in which he occasionally played the

lead role—and military reenactments like *Battle of Mafeking*.²⁷

In February 1899, White was part of a group that formed the Klondike Exposition Company to make Vitascope pictures in the Yukon and Alaska. This group was licensed by Edison to provide film subjects for his company's Kinetoscope Department. The next year, on April 11, 1900, White was severely injured while filming a recreation of a battle scene in West Orange. "Through some blunder," the *Utica New York Herald* reported, "a cannon was discharged prematurely and White and William McCarthy were struck by the wad and burned by the powder." White "was badly lacerated as well as burned and his condition is serious."²⁸ He recovered enough to travel to Paris for the exposition in the summer of 1900, where he shot over a dozen films. Musser suspects that it was during this trip that he likely acquired a smooth panning head for his tripod, allowing his camera to more smoothly swivel in the films he produced there, like *Panorama of Place de l'Opera* and *Panorama of Eiffel Tower*.²⁹ Musser estimates that between 1898 and 1900, White and fellow cameraman Heise produced around half of the films sold by the Edison Company—an impressive percentage that indicates the outsized importance of their filming abilities to the company's success.³⁰

In the early 1900s, White continued to work as one of the lead camera operators for Edison. After he married Pauline Dede on November 30, 1902, the newlyweds decamped for a honeymoon in the West Indies. White's postnuptial celebration was, however, a multitasking endeavor; he shot twelve films during his honeymoon, including *Native Women Coaling a Ship* and *Scrambling for Money* (1902).³¹ In 1904 he was sent to England to manage Edison's Phonograph and film interests; he remained there until he returned to the United States in 1908.³² In December of that year, he supervised filming in Savannah, Georgia, for Edison and then traveled to St. Louis, where he tackled the challenge of filming an aviation demonstration.³³ By 1914 he had transitioned out of camerawork to become an agent selling raw film stock—first for British firm BRIFCO, until it dissolved in 1919, and then for the Film Stock Company in the early 1920s. During this decade, White—truly one of the first American motion picture camera operators—was described as "the first 'round-the-world photographer."³⁴ He died on April 1, 1944, in New York.³⁵

William "Daddy" Paley



Figure 7. William [Daddy] Paley Crosses Great Divide: William "Daddy" Paley [Source: *American Cinematographer*, July 1924, 8].

William C. Paley—nicknamed "Daddy" because "he was the first man who cranked a motion picture camera in California"—is a key figure in motion picture history and the professionalization of cinematography.³⁶ He was a filmmaker, producer, and inventor of a motion picture camera in 1894 and one of the earliest working projectors in 1897—the Kalatechnoscope. In the 1920s, when *American Cinematographer* commemorated his passing with a tribute, it referred to him as "the first professional motion picture cameraman in America."³⁷

Paley was born in Lincolnshire, England, on March 1, 1857. He studied at the South Kensington Museum, where he took his first tintype photograph at around ten years of age—a memento he kept "to his dying day."³⁸ In October 1878, he immigrated to the United States with plans to open a photographic shop but instead found employment with the Automatic Photograph Company. Under his stewardship as

plant superintendent, the company became “the largest in the world,” in part thanks to Paley’s invention of a printing and developing machine that was capable of producing “100,000 finished cabinet size photographs every ten hours,” which “ran to capacity production daily for years.”³⁹

By the summer of 1896, Paley began conducting public demonstrations of a new photographic sensation: Roentgen’s x-rays. “Early in August,” he told the press in 1897, after realizing the toll this work was taking on him:

my fingers began to itch, and then little water boils appeared under the skin, some of which filled with blood. My fingers grew red, as if they were scalded. In a week the skin peeled from the fingers. I tried to protect my hand as much as possible and used the right hand. I had the same trouble with the forefinger of that hand.

Paley’s hair also began turning prematurely gray, he developed trouble with his eyesight, and started hearing “a slight buzzing in the ears,” all a “result of the rays.”⁴⁰ Quitting x-ray exhibition work to improve his health, Paley returned to his photographic roots. Like many early camera operators, he was a tinkerer and successfully constructed a moving picture projector he called the Kalatechnoscope in 1897, which was described in the press as “the most highly perfected machine for the exhibition of moving pictures,” and began to successfully exhibit films in the New York area.⁴¹ Paley traveled the country with his projector, exhibiting films to groups at a time when this was a novel endeavor.

Paley worked as a motion picture cameraman for the Eden Musée, a former theater, concert hall, and museum of attractions that became the first such establishment in New York to commit “itself to motion pictures on a full-time basis” in 1896.⁴² The Eden Musée began producing films in the fall of 1897, after it had established the sustained popularity of its Cinematograph exhibitions. Paley was hired to shoot *The Passion Play of Oberammergau* (1897), a version of the Passion Play that was shot on a New York City rooftop. Musser explains that filming lasted a full six weeks, during which time Paley shot “twenty-three scenes, totaling approximately 2,000 feet,” with the result of a full “nineteen minutes of screen time.” Combined with lantern slides, a lecture, music, and vocals, *The Passion Play* was seen by thirty thousand people during its first three weeks.⁴³

After the success of this work, Paley was contracted by Edison in 1898 as an “expert operator” to film events related to the Spanish-American War. He embarked on a hospital ship, the *Olivette*, from Tampa, along with the first US expeditionary forces.⁴⁴ Thanks to “Thos. A. Edison’s Great War-Graph,” which the company billed as “America’s Greatest life Motion-Picture Device” capable of “Reproducing American History,” audiences were promised views taken by Mr. Edison’s own operators, under the direction of William Paley.⁴⁵ Paley made a series of films like *War Correspondents* (Edison, 1898), described in *Phonoscope* in August 1898 as “a vivid and moving



Figure 8. *He’s 16 Years Ahead of All War Photographers: “Daddy” Paley filming during the Spanish-American War* [Source: *Photoplay*, March 1917].

wargraph, portraying the Key West correspondents in a mad race for the cable office, after the arrival of a naval dispatch boat with news from the fleet.”⁴⁶ He filmed Teddy Roosevelt “going into action” but had to stay back with his equipment once Roosevelt and his Rough Riders descended into the undergrowth.⁴⁷

Paley filmed extensively on this trip, capturing soldiers on American soil preparing to embark overseas in Military Camp in Tampa, Taken from Train (Edison, 1898) to Havana Harbor and Cuban scenes like Pack Mules with Ammunition on the Santiago Trail, Cuba (Edison, 1898). On July 1, 1898, he “filmed the first shot fired by Capron’s Battery in the general advance of Santiago.” Paley was in the action and, occasionally, in harm’s way.⁴⁸ He recalled just being missed by a shell on one occasion and his camera taking a hit from a bullet that tore dangerously close to his body, making a hole in his coat sleeve. Paley plugged the bullet hole in his camera with his finger until he could fill it with paper to keep the light out. When the resulting footage turned out “a bit fogged,” someone added a “sub-title explaining the incident,” lending a sense of authenticity—instead of technical inadequacy—to the final film product.

When he was trying to leave the Santiago Trail, Paley struggled due to the size and weight of his camera equipment. His wagon broke down on the road, and he was stranded in the rain. He had to spend the night outdoors, after which he contracted yellow fever. “But with the help of General Shafter he managed to get all his film safely away to the Edison Company before he surrendered to the hospital ship at Guantanamo.” He found passage back to New York, where he slowly recuperated. After partly recovering:

Daddy Paley was called by Edison to film the land and naval reviews in celebration of the victory and triumphant return of Admiral Dewey and, while there were other cameras on the job, he secured the finest record of the fleet passing Grant’s tomb, and got a close-up of the Admiral, who bowed right into the eye of the camera.



William “Daddy” Paley, technical agent on cameras with National Film Corp. at Hollywood, is credited with turning the first motion picture crank in the world.

Figure 10. “Daddy” Paley at work on camera at National Film Corporation [Source: *Moving Picture World*, 392].

These “War-Graph” films by Paley, which American Cinematographer described as “the only motion picture records of the Spanish-American war in existence,” played to audiences all over the country and continued to be used for educational purposes well into the 1920s. After his passing, the Los Angeles Times credited him with having taken “the first news feature pictures.”⁴⁹

By 1904 Paley had entered into a partnership with William Steiner to produce short films under the banner of Crescent Films. Paley and Steiner continued this partnership through 1905, when Crescent films ceased production as a result of Edison’s aggressive motion picture patent legal actions. Paley continued to work as a freelance cameraman. In 1910 he was hired by Gaston Méliès for the Star Film Ranch in San Antonio, Texas, where he lensed many of the early westerns filmed there over the course of the next year. While working as a cameraman for the Nestor Company, Paley sustained a leg injury when a carriage he was riding in overturned and

the leg of his tripod “stuck” in his foot, resulting in blood poisoning and, eventually, a leg amputation.⁵⁰ In 1913 he began selling a “hand-made motion picture camera” which Motion Picture World called “one of the finest machines ever seen in this city,” deeming it “ridiculously cheap” at \$300.⁵¹ This was not a mass-produced camera—Paley made and sold them one at a time, which became his only means of supporting himself after he began using a wheelchair.

Paley eventually landed a job for the National Film Corporation in Hollywood, filming its productions and also maintaining its camera equipment.⁵² He honored a request from Mary Pickford to film her in the early 1920s, and although he “struggled” with his crutches, he “managed to catch a bit of sheen in the film from that head of golden curls.”⁵³ When his health declined further, resulting in the amputation of his other leg, he moved into the Actors’ Fund–supported Wilshire Rest Home in 1923. During an interview conducted in his final years, Paley told a reporter for the local paper that he was not gloomy about his condition—rather, he was grateful to still have his sight and his appetite and to be able to “appreciate beautiful scenery.”⁵⁴ Paley was still garnering press notice in his later years, long after he had stopped filming. He received gifts and visits from many of the men and women with whom he worked during his long career, and his room at the rest home was always filled with flowers. After Paley died at age fifty-seven on May 31, 1924, *American Cinematographer* dedicated a multipage spread to the passing of the man referred to as the “Dean of Cinematographers.”⁵⁵

Fred S. Armitage

Frederick Syron Armitage was born on June 29, 1874, in Seneca Falls, New York. His father, Thomas—better known as Coke—was a retail grocer and Civil War veteran.⁵⁶ When he was eighteen years old, Armitage began working for the Gould Manufacturing Company of Seneca Falls; he married Edith Eleanor Smith on June 16, 1897.⁵⁷ In 1898 Armitage began filming for one of the largest American film producers of the era, the Biograph Company. One of his early assignments was to capture the blowing up of the steamer Onondaga in the Finger Lakes in September 1898.⁵⁸

While filming in 1899 at Niagara Falls, Armitage described some of the challenges he faced. The only way to reach the falls was a “trolley road,” which:

runs through the gorge below the falls alongside the rapids. The road is built as near as possible to the water, because its business comes from people who want to get a close view of the rapids. In some cases the cars seem to be directly over the water. And drops of flying spray are actually dashed aboard the cars.⁵⁹

What was exciting for tourists wanting proximate views of the rapids—splashes and all—was not friendly to the enterprise of filming. Tasked by Biograph “officers” with capturing the approach to the falls, Armitage’s only option was to convey his bulky camera along the road. He explained:

The cameras we use for this work along with the electric apparatus and motors to operate it weigh several hundred pounds, so you see they can’t be carried like snapshot boxes. We set



Figure 11. Only known photo of Fred Armitage, source unknown.

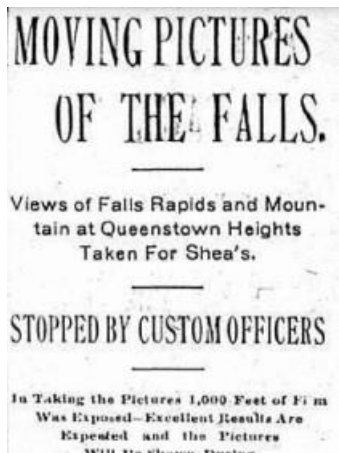


Figure 11. Moving pictures of the falls
 [Source: *Niagara Falls Gazette*, June 26, 1899].

our cameras up on a car, mounting it up on a high platform so that it would take in a view of the whole river. Then we timed the run over the road to see how fast it would be necessary to go to get the whole scene upon our films.

His crew, who rode in a modified truck that had to travel at a decent clip in order to produce satisfactory images, started filming just when the “curvy road” reached the “head of the rapids,” and “every time we went around one of these curves the car seemed to rear up on one side.” Eventually the “car struck an unusually sharp curve,” causing it to “balance in the air for a minute” before going “over on her side.” The men jumped out “at the right time”; both they and the car were spared from tumbling into the rapids, but only because the road where they toppled had “a little ground between the truck and the water.” Had the accident happened a few seconds before or after, truck, crew, and equipment would have ended up in the rapids.

As this story suggests, Armitage’s job as a cameraman was part logistics, part technical mastery, part artistry, and part

happenstance. Even at this relatively early stage in the medium’s history, Armitage discussed his work from the perspective of an experienced operator who knew how to approach complicated shoots, including an awareness of the risks that might lead to bad footage or personal harm. For camera operators, there was always a good deal of guesswork, especially in the field, since the outcome of any given shoot could usually only be discerned after films were developed at a remote laboratory, long after the cameramen had moved on. When the desired footage mattered most, there had to be duplicative efforts to ensure a good outcome. In 1899 Armitage was one of a team of four cameramen, each operating a different camera, for Biograph’s filming of the Jeffries–Sharkey fight. This was an event considered so important to capture on film that the over ten thousand spectators “were not permitted to smoke lest it harm the quality of the pictures,” which Biograph had exclusive rights to capture.⁶⁰

“There may be livelier and more exciting occupations than taking photographs for a moving picture concern,” Armitage declared in 1899, “but if there are I haven’t heard of them.” He often shared tales of his many near and actual disasters, as when he, his crew, and his camera were thrown from a log float while photographing the St. Lawrence River. On this occasion, the men and the camera had to be rescued from the river. Fortunately, the camera could be repaired in the field and put back into service. The camera operator was also a protector of the film producer’s most significant material asset—the camera. As Armitage observed, “one of these big cameras, capable of taking 200 photographs per minute, is worth a good deal of money, and an operator will run considerable personal risk rather than desert it.”

Armitage recalled another occasion when the equipment could not be saved: in Atlantic City, fire engines—which had been summoned “for our special benefit” to make a dramatic tale of fire rescue, resulted in the firemen wanting “to make as good a showing as possible” by putting “on an extra burst of speed.” Their enthusiastic driving caused an engine to almost hit him and his crew. There was, however, a casualty—his “big camera” was “smashed.” But even this tragedy had an element of good fortune: the only part of the camera “left intact was the box into which the film is reeled,” resulting in a series of spectacular views that included “a pair of big grey horses tearing along at full gallop right out of the center of the picture.” The film was notable “because of its realistic character,” attained because these cameramen risked their lives for the sake of the shot.⁶¹

Musser, who has written extensively on early camera operators, identifies Armitage as one of four main cameramen working for Biograph in 1899—the others were Bitzer, Arthur Marvin, and C. Fred Ackerman. He notes that Wallace McCutcheon filmed a few studio productions and Eugène Lauste produced several shorts. Biograph used a rotation for its cameramen, whereby each would take a turn being out on the road for a period of time and then be relieved to do studio shoots so they could have periods during which they were home and not constantly on the move.⁶²

For one of his local assignments, Armitage filmed *Demolition and Building Up the Star Theatre* (Biograph, 1901) in New York City. Planned explosions were some of the riskiest endeavors to film, since they required both proximity and careful timing. In the 1890s, Armitage had filmed a demolition in Syracuse, for which the boss gave him a signal when he “touched off the fuse.” Armitage started his camera and immediately ran away, but the explosion “came in about two seconds,” pushing him to the ground as rocks fell around him; he was fortunate to have been spared a direct hit.⁶³

The Star Theatre demolition took place at 13th and Broadway, right across the street from Biograph’s offices. Armitage set up his camera outside the theater and filmed the deconstruction and demolition over the course of several days, crafting an electronic apparatus that recorded activity approximately every four minutes during daylight hours. Using this time-lapse method, Armitage gave audiences a sense of the theater disappearing before their eyes.

In the late 1890s and early 1900s, the trick film was an immensely popular type, employing techniques like substitution tricks, for which the camera was stopped and started to make objects appear to disappear or explode, often in short skits like *The Execution of Mary Queen of Scots* (Edison, 1895), *The India Rubber Head* (Méliès, 1901), and *A Nymph of the Waves* (American Mutoscope & Biograph, 1900). However, Armitage’s innovation was to manipulate time in the service of what we would now call documentary. Because such “tricks” were accomplished in camera, they were especially challenging—Armitage would not have known if he pulled off the film until after the building was gone.

In total, Armitage filmed over four hundred titles for Biograph. In its employ, he also traveled along the East Coast to help the company install Mutoscope projection equipment in exhibition venues, filming along the way. After leaving Biograph he was hired by Edison’s Motion Picture Company in 1908, worked for the Towns and Cities Film Company in 1912, and then for Canadian Bioscope of Halifax, Nova Scotia, in 1913.⁶⁴ That same year, he became the first vice president of New York’s Cinema Camera Club, the foremost (largely social) organization of cameramen, before essentially disappearing from public record for the next several years.⁶⁵

In 1917 Armitage was the director of cinematography, overseeing three assistants, for the E.I.S. Motion Picture Corporation, an educational film company that was attempting to break into feature film production.⁶⁶ After years of strenuous work, Armitage could no longer keep up with the physical demands of the profession. In 1919 he moved to North Salem, New York, where he became a part-time farmer and rural route mail carrier.⁶⁷ When his health further declined in 1920, Armitage moved to Ecorse, Michigan, partly in search of a cooler climate. In his last years, he worked as a bookkeeper at Battery Station before passing away on January 3, 1933, at the age of fifty-eight.⁶⁸

Carl Louis Gregory

Born on September 9, 1882, in Walnut, Kansas, to Jay and Mary Gregory, Carl Louis Gregory was the eldest of six children. In the late 1890s, his family relocated to the small community of Geneva, Ohio, not far from Lake Erie. As Buckey Grimm has detailed in an extensive article in

Film History:

At the age of 11 Carl Gregory began his lifelong fascination with photography when he fashioned a camera out of a cigar box and a pair of spectacle lenses. He attended high school in Cleveland, and became quite proficient in the photographic field. In 1900 he enrolled at Ohio State University, helping to defray some of his tuition costs by earning money providing photographic services for the school yearbook, as well as photographing specimens for the medical and science labs.⁶⁹

In 1904 Gregory was working as a photographer at the Louisiana Purchase Exposition at the World's Fair in St. Louis, and by 1907 he was working as a wet-plate photographer with the United States Geological Survey, later transferring to the Bureau of Reclamation, where he likely gained his first real experience with producing motion pictures. Unlike the other camera operators profiled here, who tended to have long-term relationships with producers for at least a portion of their career, Gregory moved from company to company, working for over a dozen different film-producing concerns.

As Grimm observes, Gregory began working in motion pictures in 1907 with the United States Reclamation Service, for whom he made lantern slides in addition to:

filming, processing, titling, editing and presenting motion pictures showing how the work of the Reclamation Service was done. His knowledge of colour photography led him to begin lecturing later that year at George Washington University, the Union Club of Baltimore, and the American Chemical Society.⁷⁰

In 1909 Gregory started working as a camera operator for Thomas Edison's Bedford Park Studio in New York City, where he shot such films as *A Trip to Mars* (1910) and *King Cotton* (1910). A year later, he became the head cameraman for the new Thanhouser Company, where he shot *The Cry of the Children* (Nichols, 1912), *The Million Dollar Mystery* (Hansel, 1914), and many other films.

Highly sought after for his technical expertise, Gregory worked for numerous producers as a cameraman, including Fox and Majestic. In 1914 he became the first cameraman to film underwater, capturing the marine gardens near San Salvador in the Bahamas and explorer George Williamson pulling items out of an underwater shipwreck, resulting in *30 Leagues under the Sea* (1914). When the film premiered at the Smithsonian Institution, the pictures were described by one observer as "the most wonderful and most marvelous ever taken in the world."⁷¹ Gregory's expertise in the field of cinematography led him to write a regular column, in which he discussed camera equipment and filming technique, for *Moving Picture World* starting in 1915. In 1916 he was hired as the first cameraman for the recently developed Technicolor company, for which he shot the first two-color film, *The Gulf Between* (1917).



Figure 12. Carl Louis Gregory behind Akeley camera at the Monkey Temple in Bombay, India, 1923 [Source: Jonathan Silent Film Collection, Frank Mt. Pleasant Library of Special Collections and Archives, Chapman University].

After helping the US Army Signal Corps establish its cinematography school at Columbia University in January 1918, Gregory became its chief instructor. He helped convert a former chemical laboratory on campus into a “small but complete laboratory for the production of motion pictures,” with a developing room, double duplex printer, washing and toning apparatus, and two two-thousand-foot drying drums. Gregory and his fellow instructors taught students to “secure a pictorial history of the great war” by making “many miles of motion picture films.”⁷² Trainees were instructed in “the preliminary operations of setting-up, threading, cranking, titling, and panoraming” before getting “to take short sample scenes of familiar subjects about the University,” followed by assignments to film events taking place across the city or at nearby military camps. The most advanced students worked with instructors making educational and propaganda films that quickly went into circulation.⁷³

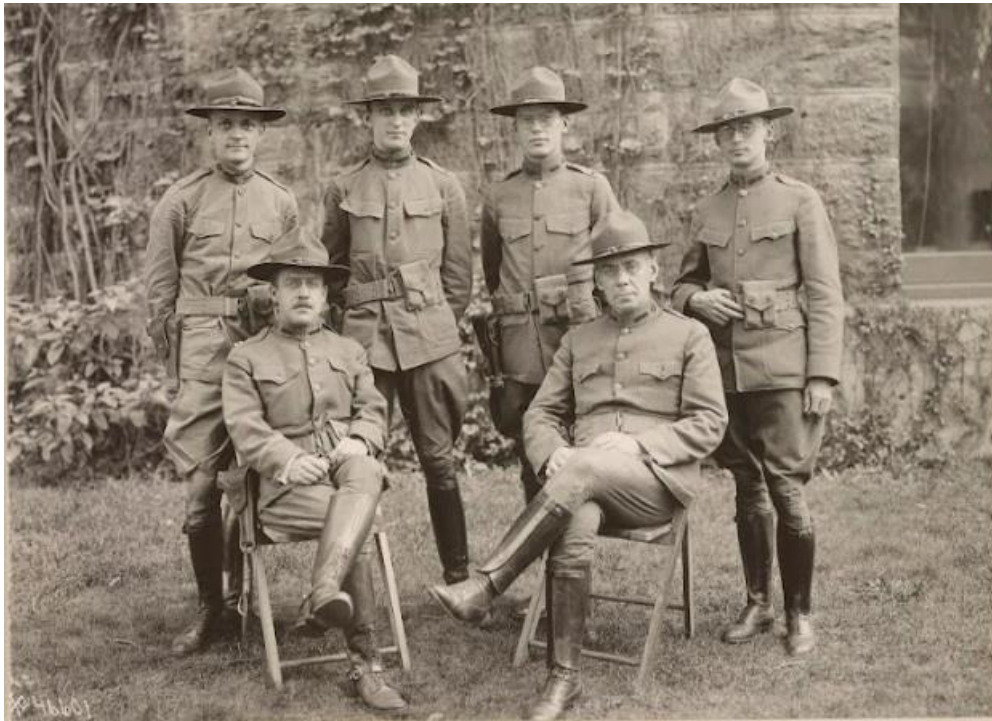


Figure 13. Officers of the Signal Corps School of Photography, Columbia University. Carl Louis Gregory standing top right [Source: National Archives, Record Group 111, Records of the Office of the Chief Signal Officer].

The instruction of Signal Corps recruits was crucial to the war effort. These filmmakers produced a visual record of what was happening on the home front as well as abroad. The nine-reel Signal Corps propaganda film *America Goes Over* featured appearances by President Wilson and General “Black Jack” Pershing and gave home front viewers the chance to watch American troops as they set up camp, moved supplies, and received care from nurses. Since camera equipment had become less bulky and more mobile than it was during the Spanish-American War two decades before, such films also regularly offered battle scenes. The Signal Corps films *France in Arms (1914–1918)* and *Menin Road* transported viewers to different European fronts to demonstrate the efforts of both US and French troops, including riveting footage of soldiers preparing for battle, taking up arms, and diving into trenches at the sight of enemy planes.

Looking back at the war after its conclusion, Gregory credited motion pictures as being “one of the greatest contributory factors to the success of our war activities,” resulting in tangible outcomes like increases in voluntary enlistment and successful Liberty Loan campaigns. Even after

the war, Gregory believed that the cameramen who had been trained at the school he helped open seemed eager to continue their work in the private sector. He speculated that this would likely result in films being more widely used for “other purposes than that of the purely entertainment side.”⁷⁴



Figure 14. Carl Gregory on right, Howard Walls on the left, operating Gregory's optical printer copying Paper Print collection of Library of Congress, 1943 [Source: Photograph 64-NAX-528, National Archives and Records Administration, Still Picture Branch].

Gregory continued with a variety of cinematographic pursuits over the course of the 1920s, including shooting extensive footage of the rubber industry in Manila, becoming the dean of the New York Institute of Photography—where he taught cinematography—working as a prolific industrial and educational filmmaker, and inventing new equipment, like an improved optical printer. Gregory was also one of the founding members of the Society of Motion Picture Engineers (SMPE) and consulted with the Library of Congress on refilming the important Paper Print collection dating to the motion picture industry's first years, preserving the images from the paper rolls on celluloid.⁷⁵

the Library of Congress Motion Picture Division until ill health led him to retire to Van Nuys, California, where he died in 1951.⁷⁶

Gregory continued to do motion picture cataloging and preservation work for

Katherine Russell Bleecker

As we have argued in [“Lights, Camera- maids, Action!: Women behind the Lens in Early Cinema,”](#) there were notable female camera operators in the silent film era despite the fact that the emerging industry and the press usually treated their work as a novelty. Of around six hundred documented American motion picture camera operators working before 1930, around twenty-five were women.⁷⁷ It is telling that A. J. Dixon began his 1916 profile of camera operator Grace Davison by asking, “How many of you ever heard of a woman cameraman? That such a person exists will doubtless be a surprise to the majority of people in the film business, as well as to those outside of it.”⁷⁸

Katherine Russell Bleecker was one of these women, whose “fondness for amateur photography” evolved into writing, directing, and turning the crank of her own camera.⁷⁹ Where the rest of the camera operators profiled here worked, for at least a



Figure 15. *Prison Motion Pictures Taken By A Girl*: Katherine Russell Bleecker filming for New York Prison Bureau [Source: *New York Times Magazine*, November 21, 1915, 39].

significant portion of their careers, for major motion picture enterprises or government entities, Bleecker was an independent producer who began listing her profession as “photographer” in New York’s 1915 census.⁸⁰ In this she was not at all unusual—there were many self-employed motion

“As we have argued in “Lights, Camera- maids, Action!’: Women behind the Lens in Early Cinema,” there were notable female camera operators in the silent film era despite the fact that the emerging industry and the press usually treated their work as a novelty. Of around six hundred documented American motion picture camera operators working before 1930, around twenty-five were women.”

picture producers who worked their own cameras in the early twentieth century, filming their way into the fringes of the emerging industry.

Bleecker was born on May 5, 1893, in New York City.⁸¹ She began her career modestly in the skilled amateur tradition, filming moving pictures of children and domestic scenes before branching into “society photodramas at Newport, Palm Beach, Pittsburgh, Thousand Island, Cleveland, etc.”⁸² Bleecker made a number of films produced in the “see yourself in the movies” tradition

practiced largely by itinerant camera operators who made “local films”: scenarios starring people from a given town, filming at local homes and recognizable businesses. They developed and edited these films, returning to the town to sell tickets to the locals to see themselves on-screen in the movie theater. In the summer of 1915, Bleecker produced a film in this fashion in Philadelphia, working with the Lubin Company, which loaned her equipment for the production.⁸³ And in the fall, she shot a robber-and-murder-themed picture play in Asbury, New Jersey, featuring “over 100 society people,” Chief of Police William H. Smith, and the entire Independence Fire Company, who were filmed rushing to action in a scene described as so real that “many forgot the camera.”⁸⁴

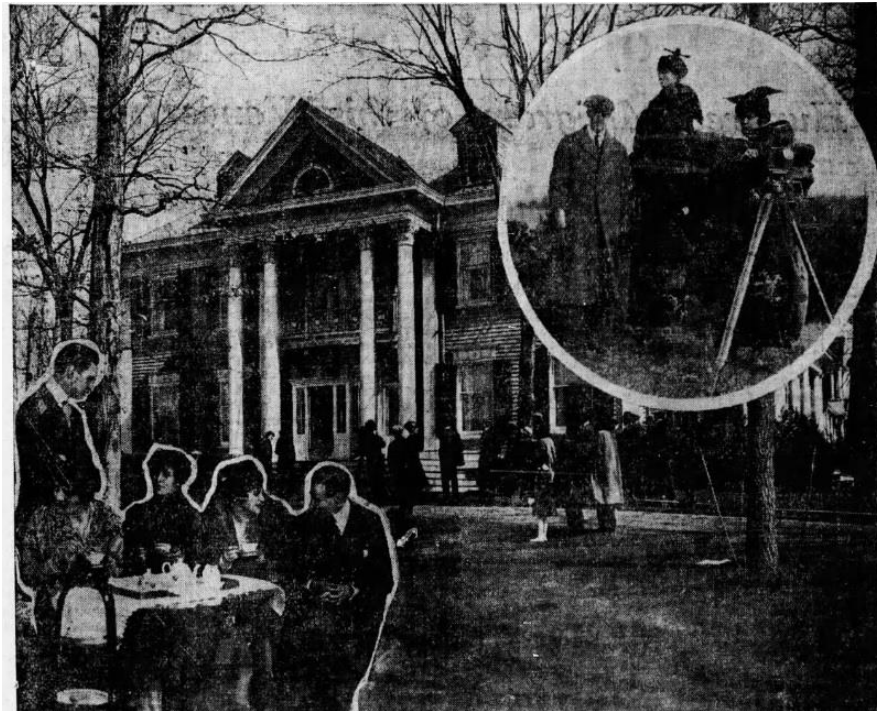


Figure 16. *Amateur Movies - A New Form of Entertainment*: Bleecker filming an amateur production in Morristown, New Jersey (Bleecker behind camera in inset) [Source: *Hartford Courant*, April 18, 1915, 25].

In the tradition of the silent era camera operators that came before her, Bleecker was adventurous and took risks. She boasted that she had “been up in a flying machine” to shoot motion pictures and filmed “from tugboats and automobiles.”⁸⁵ Not all of Bleecker’s films were made for entertainment purposes, either. Her camera, she explained, had captured subjects from “Newport’s debutantes in society plays to Sing Sing convicts.”⁸⁶ Indeed, in 1915, Bleecker filmed inside three New York prisons—Sing Sing, Auburn, and Great Meadow—to produce what the *New York Times* described as “prison moving pictures taken by a girl.”⁸⁷

"Bleecker advertised her firm's ability to film 'anything at any time from films of children and social events to factories and machinery.'"

Bleecker’s seven-reel film was made at the behest of the Joint Committee on Prison Reform with the intention of being exhibited in Buffalo, Rochester, Syracuse, and Albany as part of a campaign for better prison conditions.⁸⁸ She approached this work in the spirit of reforming “antiquated methods of punishing transgressors,” filming scenes in which volunteers from

the prison population had their heads shaved and were flogged. Although cardboard was used instead of a leather strap for the beating scene that Bleecker shot, this was no lighthearted fare. It was shot in real prisons with real prisoners, based on some of their most horrific real experiences. “You know,” she explained to a *New York Times* reporter, “the punishment consisted of putting iron bracelets on the miscreant, hauling him up until his feet were several inches from the floor, and then beating him with a leather strap.”⁸⁹ Describing it was one thing—showing people what it looked like was another. It was a brave undertaking, especially for a woman who was considered part of New York City’s high society.

In 1916 the ever-entrepreneurial camerawoman advertised the “Katharine Russell Bleecker Film Service,” which had an address at New York’s Grand Central Terminal Building. Bleecker advertised her firm’s ability to film “anything at any time from films of children and social events to factories and machinery.”⁹⁰ In this era, she concocted at least two “see yourself” films in Pittsburgh: one, *The Smuggler’s Revenge*, featured “a number of the wealthy folk,” and another was a screenwriting and movie star competition in which she cast locals in the winning screenplay production, *Man and Millionaire*, in 1916.⁹¹ Working her magic in the Midwest, she also produced and showed *The Perils of Society* in Cleveland, Ohio, which raised over \$20,000 to benefit French war orphans over the course of two months that same year.⁹² As press stories usually noted, Bleecker always cranked her own camera.

In early 1917, Bleecker filmed a “society moving picture,” *In Honor Bound*, at the Orpheum Theatre. Working with the Red Cross and the Pennsylvania Women’s Division for National Preparedness, she wrote, directed, and filmed the production using locals in the roles. When the local paper covered the production, it noted that “Miss Bleecker’s moving pictures business is her own,” adding that she “is entirely independent.”⁹³ At the end of the year, Bleecker’s career took a turn when she assumed a managerial position at the Rialto Theatre in New York City, thus becoming the “only woman manager” on Broadway.⁹⁴

Bleecker married Willis Noel Meigs on November 6, 1918, after which she did not appear to pursue further work in motion pictures. But her working days were not yet over. In 1931 Mrs. Katherine Bleecker Meigs—“blond, attractive and enthusiastic”—took on what one newspaper called “one of the biggest jobs a woman has ever undertaken,” that of the “Nation’s Social Secretary.”⁹⁵ In what amounted to a national secretary service, which she ran out of offices on Fifth Avenue, Mrs. Meigs was credited with introducing “an entirely new field for women in business.”

Working with the Postal Telegraph Company, Mrs. Meigs oversaw logistics for a team of

women who answered questions submitted by telegram about how to set a table for a formal dinner, arranged chaperones for single women, sent flowers, reminded husbands of anniversaries, and provided shopping services for women who did not have the good fortune of living in New York City. Now a mother of two, Mrs. Meigs told a reporter that she “still enjoys experiments in photography,” even though her camera-cranking days were well behind her. She also firmly believed that “it was quite as possible for a woman to combine home life and office duties as it is for a man.” Bleecker died on February 6, 1996, at the remarkable age of 102.⁹⁶

A list of external links featured in this essay can be found here.⁹⁷

About the Authors

[Marsha Gordon](#) is Professor of Film Studies at North Carolina State University, a recent Fellow at the National Humanities Center, and an NEH Public Scholar. She is the author of numerous books and articles, and co-director of several short documentaries. Her latest book, *Becoming the Ex-Wife: The Unconventional Life and Forgotten Writings of Ursula Parrott*, was published with the trade division of University of California Press in April 2023. For seven years Marsha contributed to a monthly show, "Movies on the Radio," with NC Museum of Art film curator Laura Boyes and Frank Stasio, on 91.5/WUNC's "The State of Things." She regularly introduces films, gives lectures, and participates in panels all over the United States and Europe.

Charles “Buckey” Grimm is an independent researcher who for over 3 decades has been researching various facets of Motion Picture History, focusing on events from the Silent Era. Some of his authored articles appear in *Film History*, *Moving Image*, and *Journal of Film Preservation* on subjects relating to Early Film Preservation, U.S. Government Film Production, and the Library of Congress Paper Print Collection. His current effort is documenting the lives and careers of Cinematographers during the silent era.

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⁵ “Woman Dares Plane Dangers to ‘Shoot’ City,” *San Francisco Chronicle*, January 25, 1922.

⁶ “Columbia University an Armed Camp,” *Scientific American*, January 26, 1918, 87.

⁷ “Columbia to Train Actors for Movies,” *New York Herald*, April 28, 1919.

⁸ Robert Birchard, “Founders of the American Society of Cinematographers.” Birchard also offers brief profiles of the organization’s fifteen founding members. <https://theasc.com/asc/the-15-founders-of-the-american-society-of-cinematographers>.

⁹ “300 Important Cameramen Becoming Recognized As Photographic Marvels,” *Variety*, January 4, 1928.

¹⁰ New York death indexes list his date of birth as March 19, 1876; in the 1900 census, his birth year is listed as 1872. The 1900 United States Census, Orange, New Jersey, lists White’s immigration year as 1882, and the 1881 Canadian census shows White still in Nova Scotia. All census records are from Ancestry.com.

¹¹ Charles Edward Hastings, “A Cameraman Runs into a War,” *Motion Picture World*, December 9, 1927, 327.

¹² Charles Musser, *Before the Nickelodeon: Edwin S. Porter and the Edison Manufacturing Company* (Berkeley: University of California Press, 1991), 70.

- ¹³ “Express Train on Screen,” *Buffalo Evening News*, December 23, 1896, 30.
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- ¹⁶ “Another Gang,” *Weekly Gazette-Times* (Corvallis, Ore.), August 11, 1897, 1.
- ¹⁷ “Personal,” *Albuquerque Journal*, September 24, 1897, 4.
- ¹⁸ Musser, *Emergence of Cinema*, 233.
- ¹⁹ Musser, *Emergence of Cinema*, 233.
- ²⁰ “Southern California,” *Valley Tribune* (Lake Elsinore, Calif.), January 21, 1898, 2.
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- ²⁸ “Hurt in a Sham Battle,” *Utica New York Herald*, April 12, 1900.
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- ⁴⁹ "Dean of Cameramen," A1.
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- ⁵³ "Movies Still Adolescent."
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- ⁵⁶ "New York: Report of the Adjutant-General 1893–1906," National Archives, Index to Federal Pension Records. Accessed on Ancestry.com.
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⁹³ "Crowd about Public Square."

⁹⁴ "Woman Theatre Manager Broadway's Very Latest," *Sun* (New York), December 18, 1917, 16.

⁹⁵ All quotations and information in this paragraph from "New York Society Woman to Be Nation's Social Secretary," *Herald Palladium* (Benton Harbor, Mich.), September 12, 1931, 4.

⁹⁶ Accessed on FamilySearch.org.

⁹⁷ Links Featured in "Silent Era Motion Picture Camera Operators":

Grimm Airtable Dataset:

<https://airtable.com/appVwqBAyZOW1pQju/tbl4SU5WzpVCwCM1h/viwcizzCom6dkS60k?blocks=hide>

Media History Digital Library Database: <http://lantern.mediahist.org/>

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Clip 1. *Black Diamond Express* (Edison, 1896): <https://www.youtube.com/watch?v=jVvabY7Y7fw>

Clip 2. *Demolishing and Building Up the Star Theatre* (Biograph, 1901):

<https://www.youtube.com/watch?v=vk9YHrE0328>

"Lights, Camera-maids, Action!": Women behind the Lens in Early Cinema": <https://lareviewofbooks.org/article/lights-camera-maids-action-women-behind-the-lens-in-early-cinema/>

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