

INTRODUCTION

Believe it. At the close of 1947 the United States Air Force, newly forged as an independent branch of the US Department of Defense, opened a cutting-edge film studio in Hollywood. Named "Lookout Mountain Laboratory," the 1352nd Photographic Group of the United States Air Force, as it was officially known throughout much of its career, was set up not just to take pictures and shoot film—by then established practices in the US military—but to make "movies," with all that entailed in postwar Hollywood.

The studio operated for some twenty years at the intersection between what President Eisenhower called the "military-industrial complex" and what German émigré intellectuals Max Horkheimer and Theodor Adorno called the "culture industry."¹ It stands, as such, at the origins of what James Der Derian describes as today's "military-media-entertainment network," the billion-dollar industry that fuses gaming, moviemaking, and war fighting into a seamless whole.² Lookout Mountain Laboratory provided photographs and film footage and edited feature films for a variety of clients across the Department of Defense and the Atomic Energy Commission, as well as for Hollywood studios. The facility also functioned as a film processing laboratory, storage facility, and regular meeting spot for atomic scientists and military brass. It employed hundreds of Hollywood veterans and summoned the services, as needed, of film luminaries such as John Ford, Jimmy Stewart, and Marilyn Monroe. Moreover, Lookout Mountain Laboratory worked closely with the most important innovators in scientific photography in midcentury America, above all the government contractor EG&G, or Edgerton, Germeshausen, and Grier, founded in 1947 by MIT's Harold Edgerton and his colleagues to support America's atomic weapons program.

In fact, most of the images of nuclear fireballs and mushroom clouds that we have today, including those later circulated in films such as *Hiroshima Mon Amour* and *Dr. Strangelove*, were shot by the cameras of Lookout Mountain Laboratory or EG&G, often functioning as the

cinematic crescendos of Lookout Mountain movies. So, too, members of Lookout Mountain or its affiliates shot most of the footage of the early US space program, including launch and recovery photography for the Mercury, Gemini, and Apollo programs. Still later, footage from cameras originating in Lookout Mountain captured images of bombings and dogfights over Vietnam, broadcasted across the nation on the nightly news and rebroadcasted recently in Ken Burns and Lynn Novick's The Vietnam War. That is to say, though its history has been neglected and all but forgotten, Lookout Mountain is responsible for some of the most enduring iconography of America's Cold War. It is the most important and least known film operation of its era.

Why the neglect? Why forgotten? Two reasons suggest themselves. First, though the group

produced a great number of films for the public, and even at times measured its success by such public exposure, secrecy was its day-to-day modus operandi. The vast majority of Lookout Mountain's films were classified, and many remain so today. Even its public films were more likely to carry the brand of the Air Force or other sponsoring agencies than "Lookout Mountain Laboratory" or the "1352nd Photographic Group." Moreover, upon its closing in the late 1960s, its archives were dispersed, lost, or otherwise neglected by the federal government. Hence, even though Lookout Mountain Laboratory was consumed with the creation of images and information and produced for the world a vast Cold War archive, it was a behindthe-scenes operation and was forgotten as such. Second, Lookout Mountain's history may be neglected because so many of its films now





appear bygone. When viewers look at these films today on websites such as YouTube, the Internet Archive, or our own site, nuclearfilms. org, they may come across as not just dated but hokey, camp, affected, stylized, and overplayed. They seem to trumpet rather than document America's Cold War activities, even when those activities were manifest disasters. It's hard to take them seriously. Few have.

Indeed, if the government of the United States was under a king-like sovereign in the 1950s, today that king might be a bit embarrassed about his adventures, even ashamed. For not only did he play with the worst sort of fire-atomic, even thermonuclear-he also made secret movies about his atomic affairs, screening them in private viewing rooms, convinced [at the time] of his technological superiority not just by the big bangs he set off on Pacific isles and in Southwestern deserts, but by the fact that he could watch them replayed on-screen in sophisticated [at the time] motion pictures. If he were to look back at these movies today, if he had any sense at all, their stylized seriousness would probably make him feel a bit squeamish. Or he might react as one commenter on the Internet Archive did in 2006, with "quite a hoot."³ To which we say again, as a kind of evangelistic counterpoint, hoot or not, believe it. Lookout Mountain Laboratory was a serious operation, deadly serious, and we offer here a serious book about its activities, artifacts, and filmic subject matter. This is not to say that we have not



hooted [and gasped, laughed, cried, and more]. We have. But rather than trust our reactions, we have learned to question them.

One of the goals of this book is to resist the most obvious categories—camp, kitsch, cool, and so on—and instead show the seriousness of Lookout Mountain's work. To be sure kings and presidents have been fools, but the foolish king or president is a serious subject. So here in the opening pages of this history of what was arguably the most important film studio of America's Cold War, we lay out the most basic problems we have faced in writing this book, together with some of our initial arguments.

Why did Lookout Mountain make movies? "Documentation" of America's Cold War activities was the official answer. But their movies did far more than "document"; they dramatized America's Cold War, employing cutting-edge film technologies such as CinemaScope, VistaVision, new forms of high-speed photography, stereophonic sound, and a plenitude of props, sets, professionally written scripts, and animation. Who watched these movies? The American public had irregular access, and global publics even less so. Rather, the most typical audiences for Lookout Mountain movies were American officials working at various levels of state and military authority. Lookout Mountain frequently made training films for Air Force personnel. Meanwhile, military brass, defense brains, atomic scientists, high-level bureaucrats, members of Congress, and sometimes the president himself regularly watched their "documentary" productions.

As a rule, almost all Lookout Mountain films were designated initially as "restricted," and often "secret," even "top secret," with the special disposition "for public release" infrequently given. In this sense, Lookout Mountain Laboratory was a "secret" film studio: it is not that its existence was altogether unknown by Hollywood, but rather that the vast majority of its movies were unseen by the public because of their secretive nature. Instead, the main job of Lookout Mountain was to produce movies for the officials and operators of the American Cold War state. Indeed, Lookout Mountain films constituted a kind of "cinematic self-talk" for the state. Amid all the dire Cold War circumstances and rapid and dramatic technological and geopolitical changes in the 1950s and 1960s, America's leaders needed some positive narrative reinforcement. Lookout Mountain offered it on film.

We can therefore learn a lot about the American Cold War state by watching Lookout Mountain films. America's Cold War was a highly fluid and artificial affair that nevertheless produced a remarkably fixed sense of a bipolar global conflict together with a new and powerful generation of resilient institutions, technologies, and practices. Lookout Mountain not only worked amid the paradoxical instability and stability of the American Cold War state, but also mediated it in important respects by producing pictures, both still and moving, of the emerging Cold War. Above all, at Lookout Mountain, as at no other official US Cold War site, narratives and visual rhetorics could be produced that joined together what America's nuclearized Cold War was tearing asunder: namely, American moral agency and American technological agency. The studio was told to "document." But they realized that they needed to do considerably more: they needed to style America's Cold War, to engage in aesthetic and rhetorical negotiations of meaning, power, and politics. More broadly, extending Jacques Rancière's thesis that politics always

entails "distributions of the sensible," we might say that Lookout Mountain realized it had to render America's Cold War activities, above all its nuclear activities, sensible, and we mean here something more than just "reasonable."⁴

"Sensibility" is a term with a broad set of meanings: it can denote an ability to sense, an ability to be sensed, a means by which to denote the "common sense" or "sensible" character of some action or idea, as well as a synonym for something like "taste" or what Raymond Williams referred to in more contemporary language as a "structure of feeling."⁵ To claim that political orders are aesthetic orders among other things, as Rancière, Williams, Clifford Geertz, and other critics have done, is to claim that political orders sense, are sensed, and establish a common sense, both in the sense of the "reasonable" and in the sense of a structure of feeling.⁶

The camera is a sensibility medium, and Lookout Mountain was a sensibility operation. Its job was not only to use cameras to record American Cold War activities, but to transform film records into aesthetic objects to be sensed by others. And during all of this, the studio worked rhetorically and narratively to represent America's Cold War operations as both "reasonable" and as in conformity with dominant tastes, appetites, and desires.

For governments are not just born from the Earth, though they sometimes claim to be. They have to be made, formed, and constituted. So too with states [as in nation-states]. They are artifacts, albeit very complex ones; they have to be built, rebuilt, and maintained. As such, states have actively sought to construct sensibilities: to sense, to be sensed, and to construct a common sense. As the political scientist and anthropologist James C. Scott has influentially argued, modern nation-states such as the United States have attempted to render the world "legible" [or understandable and workable] by, among other things, mapping, classifying, and abstractly organizing the everyday world, the lifeworld, into schemas and systems.⁷ The boundaries of a state and corresponding maps are the most



Fig. 1. Waves of Light

blatant example by which modern states have sought to make the world legible [as boundaries are never natural], but census figures, economic measures, polling, and social-scientific metrics each can seek similar ends.⁸ Census figures, for example, help determine everything from voting districts to the allocation of funding for hospitals, public housing, and other social services.

However, states not only seek to make the world legible, they also attempt to render themselves legible to publics and other states, particularly in the form of legitimacy appeals: acts, arguments [broadly construed], or symbols calling for the recognition of the state's authority and rule as valid. Here the state must render itself, in part at least, like a text or image open to interpretation—for there is no other way to make legitimacy appeals other than to invite interpretive responses.⁹ Indeed, legibility and legitimacy constitute two complementary poles of modern state authority, and both rest on what we have been calling sensibility: legibility entails a capacity to sense and legitimacy to be sensed. Moreover, both work together to establish a "common sense," both in the sense of the "reasonable" and in the sense of conforming to a common style and "structure of feeling."10

But in considering this twofold quality of what we are calling the "sensibility of the state," we need to add another consideration, technology. Technologies, especially technologies of communication, relate to our senses and to our "common sense" in all sorts of ways. The well-known media scholar James Carey, remarking on the work of Marshall McLuhan, once wrote, "The media of communication affect society principally by changing the dominant structures of taste and feeling, by altering the desired forms of experience."¹¹ Both legibility and claims of legitimacy have, for example, appealed to the paradigm of writing: legibility in obvious ways [it would make the world "readable"], and legitimacy in subtler interpretive or "hermeneutic" ways. Literacy and interpretation have hence been pivotal in the construction of modern statehood, which makes the written law central. The imposition of order by legislation, mapping, classifying, and abstractly organizing the everyday world into a governed system of rules and laws is a basic state function, as is the attempt of the state to render itself symbolically meaningful in the context of the "nation."¹²

As media scholars such as Paul Virilio, Friedrich Kittler, and Roger Stahl have shown,



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in addition to writing the modern state has also made heavy use of other visual media like scopes, sights, and screens, particularly in war-making activities.¹³ Such visual media have had more than instrumental importance for the state; they have contributed, with writing, to the solidification of state power through violence.¹⁴ But even here we have perhaps underestimated the role of one of the most crucial developments in modern visual media, film. Film may be no more than an elaborate writing technology [though Kittler and others would differ], but exposed film, unlike most forms of writing, has itself been acted upon by the world, via light, and indexes that act. Ariella Azoulay writes, "Writing in light is what transpires when the camera shutter opens and light rays, reflected off that which stands in front of the camera, penetrate the lens and are inscribed upon a certain surface." Who or what does this writing? "[N]ature," Azoulay concludes, "now inscribes itself by itself," and this makes photography an altogether peculiar sort of writing.¹⁵

As such, film-especially when coupled with recorded or manufactured sound-may approach a direct relationship to the world more aggressively than writing, charting, accountancy, and so on. Think about all the controversy on whether statistics "really" reflect the world as it is, or whether they are "manipulated" to serve ulterior motives, contrasting that debate with the relatively mild intensity of the discussion about whether photojournalists "really" capture the events of war in their images. In the middle of the twentieth century, film's apparent capability to directly absorb and factually record the world granted it a seemingly immediate connection to flesh, action, surroundings, and life, an immediacy that eluded traditional writing or numerical calculations. It even offered an apparent window into the inner workings of otherwise invisible phenomena.¹⁶ And in the reanimation of motion-picture projection, film offered something more than the schema of legibility; it offered story and spectacle. It was no coincidence that film offered the state the tantalizing possibility of something beyond



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laws and statistics: a "realism" that could also serve spectacle and powerful, meaningful story.

In the last decade, critical scholars of photography have significantly complicated the purported "direct" relationship of film to the world. Azoulay has argued that photography is an ongoing negotiation among human subjects, camera technologies, photographic subjects, photographic objects, media systems, political systems, and collective civic and moral commitments.¹⁷ Robert Hariman and John Lucaites have argued that interpretation is basic to photography, despite the widespread cultural assumption, particularly in mid-twentieth-century America, of photographic realism [the camera merely reproduces that which is front of the lens). Hariman and Lucaites argue that while realism is "the first principle of photographic meaning, it cannot be achieved completely without imaginative presentation and response. The camera records the surface of the world like no other instrument, but the truth of what is shown can be realized only through an act of imagination."¹⁸ In writing in light, film, like all writing, opens itself up to reading, with all that entails. Indeed, visual studies scholar Nicholas Mirzoeff has eloquently argued that just as we need to learn how to read, so we need to learn how to look.19



Fig. 84. Division of Area for Balance

In addition, recent film scholarship has produced a strong body of work on nontheatrical, scientific, and industrial films such as those produced by Lookout Mountain Laboratory in the middle of the twentieth century.²⁰ Vinzenz Hediger and Patrick Vonderau describe the "three Rs" of such films: film as record. rhetoric, and rationalization. "Record" refers to the ways in which film serves institutional memory; "rhetoric" to strategies of inducing audience cooperation and consent; and "rationalization" to the ways in which films are used to "improve organizational performance."²¹ To be sure, the films of Lookout Mountain fulfilled each of these "three Rs." They were crucial to the Atomic Energy Commission, Department of Defense, and larger governmental institutional memories, both in the strong material sense of storing scientific data central to weapons development and in the more ephemeral sense of institutional and national legacies and ideologies. At the same time, Lookout Mountain films represented far more than reels of memory. They were actively produced to get things done, especially to support Air Force weapons development, and they got this done through the production of cinematic rhetorics. Finally, these films were a means of maintaining and sometimes enhancing the vast machinery that

made up the military-industrial complex in the first decades of the Cold War.

That twentieth-century states made broad use of film, ranging from police photo books to surveillance footage to propaganda films, suggests that the camera offered modern states the range of possibilities to which Hediger and Vonderau point. Film, that is, should not be understood as only a potential organ of state power for surveillance or propagandistic control, though it is that. It also has been a means by which states in crisis have approached and sought to secure memory and meaning. Most broadly, film and cameras have addressed the state's manifold attempts at sensibility: its efforts at perception, an ability to see and sense; its attempt at materialization, an ability to be sensed; and its work to form and conform to a shared "common sense" about the way the world works.

Indeed, in World War II the camera moved into the heart of the sensibility of the US warfare state. The entrance of the camera was a factor of both analytics and appetite. Photographers and cameras were conscripted by the War Department in large numbers to document combat operations and their effects. Film provided defense analysts with target images, damage data, and other measures of American operational efficiencies. But far more than documentation and data, the US government also saw in the camera, as Thomas Doherty has argued, a vital inroad into "cultural meaning," specifically in the form of Hollywood motion pictures. Amid the emergency conditions of World War II, Washington and Hollywood formed an "unprecedented alliance" that "generated not only new kinds of movies but a new attitude toward them."22 All sorts of films-educational, documentary, comedies, musicals, melodramas, newsreels, and film reports-were spun out of Hollywood and its affiliates on behalf of the war effort with breathtaking rapidity, with both Hollywood and the government richly benefiting from these war efforts.²³

It is therefore not surprising that the camera remained a primary state organ after the war. In the early days of the Cold War, the Department

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of State, the Atomic Energy Commission, and the various branches of the US military integrated film production units into their day-to-day organizational and operational structures. Images of the effects of atomic weapons and devices were more than emblematic here; they were "representative," in a political sense, standing in for the state and its ambitions, performing them, realizing them. In America's experiments with atomic power, film absorbed light so that the state could construct its own sensibility. In film and through the camera the United States came to see, to see itself, and to be seen. And Lookout Mountain Laboratory became the preeminent official film unit of America's Cold War.

Two forms of sensibility framed Lookout Mountain's operations, what we refer to as the "cinematic" sensibility and the "cybernetic" sensibility. Starting with the former, in his 1951 book, *White Collar*, sociologist C. Wright Mills commented on the "numbness" of Americans before the disasters of World War II:

People sat in the movies between production shifts, watching with aloofness and even visible indifference, as children were "saturation bombed" in the narrow cellars of European cities. Man had become an object; and in so far as those for whom he was an object felt about the spectacle at all, they felt powerless, in the grip of larger forces, having no part in these affairs that lay beyond their immediate areas of daily demand and gratification.... It was as if the expert angle of the camera and the carefully nurtured, pompous voice of the commentator had expropriated the chance to "take it big." It was as if the ear had become a sensitive soundtrack, the eye a precision camera, experience an exactly timed collaboration between microphone and lens, the machines thus taking unto themselves the capacity for experience.24

For Americans both during and after the war, cinema was far more than Hollywood stars and starlets; it was part of the broader fabric of American culture. What scholar Anne Friedberg describes as the "classical spectatorship" associated with Hollywood cinema-immobile viewers in the dark, dwarfed by larger-than-life images that conflate the temporalities of diegesis and of viewing-had by then found expression in all manner of media and culture as a style, as well as a mode of production and reception.²⁵ Newsreels constituted a major source of news and information, and noncinematic media such as *Look* and *Life* magazines, especially the latter, took on a distinctly cinematic style, with compelling stories focused on identifiable characters that drew on vivid pictures more than vivid text for their rhetorical force. Meanwhile, other art forms took up cinema as a subject: Tennessee Williams's The Glass Menagerie featured Tom Wingfield filling up his off-hours from his warehouse work at the movies; Walker Percy's The Moviegoer, which won the National Book Award in 1962. followed Binx Bolling in and out of movies as he embarked on his existential "search"; and designers such as Charles and Ray Eames began taking up the screen as an architectural and design motif.26

The cinematic sensibility, therefore, represents a midcentury American cultural formation that emerged from decades of production and reception in "classical cinema" around the globe. Its typical features can be approached in aesthetic, epistemological, and ethical terms. Aesthetically, the cinematic sensibility moves between the neoclassical aesthetic poles of the beautiful and the sublime, and the romantic



poles of heroism and sentimentalism. It seeks to focus, intensify, and heighten experience, rather than just leaving experience to be. But this heightened subjectivity always risks taking experience unto itself, as Mills notes, thus leaving the spectator numb. Similarly, the cinematic sensibility tends to heighten reality, but this can quickly turn into a sense of unreality, even hyperreality (a point where the cinematic and cybernetic sensibilities will later converge, well before the rise of mobile media in the 1990s].²⁷ Epistemologically, the cinematic sensibility is characterized by a hermeneutic or interpretive impulse. This impulse is related to not only spectatorship, but voyeurism-the capability of the camera to manipulate perspective, to switch angles, to zoom in and out-that is, to move. Movement means the viewer has to actively interpret what she sees not only as an observer but as a participant, to recognize a change of angle as a change in perspective, to fill in the gaps between edits, and so on. The cinematic sensibility therefore approaches meaning in terms of interpretation. Ethically, the cinematic sensibility approaches something like a "virtue ethic."28 As the cinematic screen is a site of story, so the cinematic sensibility is narratively oriented, characterized by motifs of adventure, adversity, antagonism, and the "quest."29 The cinematic sensibility presents the ethical life-be it individual or collective-in terms of a movement from tensions to their resolutions in terms of characters, plot, and action.



But Mills's *White Collar* suggested the rise of another sort of sensibility, what we refer to as the cybernetic sensibility: "You are the cog and the beltline of the bureaucratic machinery itself; you are a link in the chains of commands, persuasions, notices, bills, which bind together the men who make decisions and the men who make things; without you the managerial demiurge could not be. But your authority is confined strictly within a prescribed orbit of occupational actions, and such power as you wield is a borrowed thing.... You are the servant of decision, the assistant of authority, the minion of management."³⁰

Cybernetics was a term famously created by the midcentury mathematician Norbert Wiener and is the title of his 1948 book Cybernetics: Or Control and Communication in the Animal and the Machine. In that book, Wiener argued for a marriage between solutions to the problems of control and those of communications: by approaching problems of control as problems of communications [and vice versa], one could move beyond any one technique or technology to think in a "much more fundamental" manner about control problems.³¹ As such, cybernetics, as Wiener suggested in coining the term, pursued the perfection of "steersmanship" by means of refining complex systems via the processes of feedback systems and control loops.

But cybernetics encompassed far more than a project by a single, if singular, mathematician. It was part of a far-reaching sensibility that too can be approached in aesthetic, epistemological, and ethical terms. Aesthetically, the cybernetic sensibility turns on seeing systems: it sees everywhere schemes, feedback loops, circuits, and so on, and understands all thingshuman, nonhuman, and human-machine-in terms of information flows, and ultimately modes of "control" through "commands." Inputs and outputs form the schematic boundaries of the cybernetic sensibility, creating the assumption of what Paul Edwards has described as the "closed world" of cybernetics.³² In terms of epistemology, the cybernetic sensibility privileges heuristics over hermeneutics. Assuming



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an "informational surfeit," a proliferation of data, methodology, organization, and rule systems took precedence over interpretive judgments.³³ In this postwar moment, as Orit Halpern argues, "Vision and cognition were rendered equivalent, a 'process.'"³⁴ The cybernetic sensibility moved between the aesthetic-epistemological poles of modernist abstraction and utilitarian documentation, and between the ethical poles of a kind of scientific, even stoic, objectivity and utilitarian cost/benefit calculus. Ethics was a problem of control. And of course, the iconic technological analog of cybernetics was electronic computing, rather than cinema. As operating machines, computers, in the words of Edwards, "served not only as military devices and tools of policy analysis but as icons and metaphors in the cultural construction of the Cold War."35 And computer interfaces condensed communications and control, knowledge, and action into a single visible screen. Computers as such exemplified in their operations and their visual presentation the power of systemic communications and control. Within the cybernetic sensibility, computers came to symbolically span "mind," "machine," and indeed the state itself.

As suggested here, the cinematic and cybernetic sensibilities offer a window into not only the work of Lookout Mountain, but also the world of America's Cold War more broadly. Indeed, in significant respects America's Cold War from the age of George Kennan to that of Robert Mc-Namara can be understood as a movement from the cinematic sensibility to the cybernetic one, as hermeneutic modes of inquiry, so typical of Kennan, were displaced by the heuristic ones so typical of McNamara. In the 1960s, the ignoble "killing machines" of Vietnam overcame the heroic ethos of World War II, and cost-benefit analyses replaced romantic ideals of heroism and freedom.

Take the word "information."³⁶ In the summer of 1950, the Department of Defense's Ad Hoc Committee on Chemical, Biological, and Radiological Warfare—established in 1949 by Secretary of Defense Louis Johnson—urged the defense department to take the lead in coordinating public information on "weapons of mass destruction" [a phrase that the report urged publicists not to use]. It sought an "organic" public information campaign, one that did not appear forced, coordinated with the Department of State and aimed at offering "information" free of both "emotion" and "moral implications." The goal was "making the public aware in a nonhysterical sense" through a "factual and objective viewpoint" so as to avoid "panic," "speculation," and "exaggerated fear." Such an "educational" program, the Ad Hoc Committee reported, could prepare Americans to withstand with relative calm chemical, biological, or atomic attacks on their cities and encourage them to support America's ongoing chemical, biological, and atomic weapons programs. The committee therefore recommended that the government carefully measure the "impression," "tone," "indications," and "terms" used to directly or indirectly [through leaks] manage publicity about "wonder weapons."37 This was all part of its "information" campaign.

Now compare this sense of "information"that which one agent communicates to another via a medium and framed in terms of "tone," "emotion," and "moral implications"—with the official definition of "command and control" offered by the US Joint Chiefs of Staff in 1961, the first definition of its kind: "An arrangement of personnel, facilities, and the means for information acquisition, processing, and dissemination employed by a commander in planning, directing, and controlling operations."38 "Information" is here not simply something that is communicated by one agent to another, but something that is acquired, processed, and disseminated within a larger "operational" process. It is part of a "system," such that "information" and "communication" become virtual synonyms [electronic computers could be called "information systems" or "communication systems"]. The United States Air Force was at the heart of the rise of "command and control" in the 1950s, and with it, this different, cybernetic sense of "information."39

"Command and control" took hold in the US military after World War II and before the prospects of atomic warfare: these weapons were so powerful that their command had to be centralized, or controlled.⁴⁰ A hierarchical structure was put in place, with the president at the top, and elaborate systems built so that rapid decisions could be made. These systems were called "communication" or "information" systems, a [con]fusion that suggested a more basic melding between processes and substances, rendered virtually identical within larger operational systems. Thus government, industry, and media began to speak as much of "information processes" as of "information programs"; and in computing, programs would indeed be processes.

Lookout Mountain felt the effects of the transformation from the cinematic to the cybernetic sensibilities of the American Cold War state. For its first ten years, its main work revolved around recognizable cinematic subjects: characters, stories, action. It engaged, we might say, in informational programming in the sense of media production and so-called edutainment. But as it moved into the 1960s, Lookout Mountain found itself pulled more strongly in the direction of "data" production, so that by the beginning of the Vietnam War in 1965, the studio was busy building, fitting, and operating camera mounts on fighter planes to record bombardment footage. Such work was as old as aerial war photography itself, but the difference was not only that the Pentagon was stripping the studio of its cinematic subjects, but it was processing Lookout Mountain's film footage as one set of "data" among others, incorporated into a giant modern war computer. To be sure, even in its early years Lookout Mountain generated plenty of footage for use in postdetonation, postlaunch, or postattack data analysis; but the studio was originally set up for edited film productions more than for data analysis. In the late 1950s and 1960s, with the rise of a cybernetic sensibility, Lookout Mountain restructured its technical, organizational, and communicative practices to facilitate the efficient flow of images-as-information, including setting up internal review and critique processes to improve the functional quality of such "informational" images. The unit's leaders grew ever more focused on getting the right images before the right eyes at every level of decision making, from the pilot over Vietnam to the adviser in the White House. Lookout Mountain had become a cybernetician's dream: a kind of living information processing machine.

But the story of Lookout Mountain is not really the displacement of a cinematic sensibility with a cybernetic sensibility. It is more complicated than that, for the cybernetic was the subject of so many of Lookout Mountain films during its "cinematic" phase. Over and over again, Lookout Mountain films featured men and machines, and men at machines, working in "systems" and executing operations. Early on Lookout Mountain framed the Cold War state as what we call a "state of operations." The cinematic sensibility helped construct the cybernetic sensibility, and both helped build the American Cold War state into a state of operations comprising discrete, distributed, and ideally coordinated geopolitical actions. As Lookout Mountain dramatized the rise of men, machines, and the Cold War, they drew on the peculiar capacity of the camera to bring together technique and art, engineering and imagination, objectivity and subjectivity-the very poles that the rest of America's Cold War activities seemed to be driving apart. Their cameras offered the state imaginative and narrative forms for conceiving of and waging an American-style "scientific" Cold War.

Their cameras, however, were rarely directly seen. While their images were everywhere from mushroom clouds, to missile launches, to space monkeys—Lookout Mountain was hardly noticed even by government officials, let alone members of the public. And this brings us back to the most significant challenge we faced in writing this book, and to a central argument. Lookout Mountain, like the camera, but unlike many other Cold War sites and institutions, was

TRANSFERRED TO THE FEDERAL' RECORDS CENTER 18 May 68

UNCLASSIFIED

SFP 1028. PHOTOGRAPHY IN THE USAF - OPTICAL INSTRUMENTATION AT VANDENBERG AFB, CALIFORNIA (1960).

2 reels, 35mm, color, sound, edited, 1508 feet, quality: Good (Basic: Orig color "A&B" Rolls)

MASTER CARD

Covers mission of 1352nd Motion Picture Squadron in providing optical instrumentation and record photography for 1st Missile Division and for AFBMD in support of research and development launches and SAC training exercises. (Photo'd by 1352nd)

- 1 reel, 16mm, analyzed)
 - 1) Scenes of Atlas launch -- show missile veering off course and being destroyed.

 - Shows telemetry control panels.
 Technicians screening film on light table.
 - 4) Scenes of Thor/Discoverer launch -- shows missile veering off course and being destroyed.
 - 5) Scenes of remote and manned camera installations surrounding launch area -- shows crews setting up equipment, checking electrical circuits and manning tracking camera mounts.
- 603º Total footage in reel.

THE END

USAF MOTION PICTURE FILM DEPOSITORY

CARD 1 OF 1

UNCLASSIFIED

MASTER CARD

UNCLASSIFIED

FOR OFFICIAL USE ONLY

AIR STRIKES, SOUTHEAST ASIA (REPORT ENDING 25 AUGUST 1966). FR-743.

2 reels, 16mm, color, sound, edited, 744 feet, quality: Good (Basic: Mas ektachrome "A.B & C"rolls

Documentary footage of July and August air strikes on concentrated structures, bridges, watercraft, observation post and POL utilizing F-4C, F-100 and F-105 aircraft. Many scenes have North and South Vietnam outline map superimposed at beginning of mission run with f location. (Photo'd by 1352nd)

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7	l re	el,16mm,analyzed) Reel 1
	11:	Forward PMC footage of F-4C dropping napalm on Viet Cong structure west of Chu Lai
		shows napalm burst and damaged buildings. (24 July 1966)
	231	Forward PMC footage of rockets striking Viet Cong area along river and striking
		objects in water and densely wooded area.
	411	Aft PMC footage of incendiary bomb burst in area west of Saigon. (27 July)
	631	ALS of F-4C dropping napalms at low level on Viet Cong structures map of North
		and South Vietnam superimposed over scene.
	891	Aft PMC footage of CBU passes along river and structures shows bomblets bursting.
3	131	ALS of F-4C dropping napalm south of Pleiku in wooded area.
1	1171	Forward PMC footage of rocket attack on Viet Cong village shows launch and impact
		near Da Nang.
3	1401	ALS of F-hC dropping bombs on structures.

152' ALS's of F-4C going in over wooded target and dropping napalms.

USAF MOTION PICTURE FILM DEPOSITORY

CARD 1 OF 3

UNCLASSIFIED

a "behind the scenes" operation. More properly, they were "before the scenes," both chronologically and spatially. Their scripts, cameras, and editorial units did the framing, but Lookout Mountain itself was rarely framed as a subject. They operated, in a certain sense, invisibly. Lacking the financial incentives of an MGM or a Universal Studios to "go public," Lookout Mountain invested relatively little in its own brand or imprimatur. To be sure, its commanding officers tried to promote the value of the unit to the Air Force and the Atomic Energy Commission. But once that value diminished, there was little will to remember and preserve the memory of the unit and its work.

Archives are not automatic. Like states, they have to be made and preserved. Typically, when researching histories having to do with the activities of the US government, scholars rely on relatively well-organized discrete official archives. No such archive exists for Lookout Mountain Laboratory, for the makers of archives have to have some reason to make an archive, as well as resources. It is apparent that when Lookout Mountain was closed in 1969-though the studio was itself a kind of archive, holding thousands of films and hundreds of thousands of still photos, cataloged through meticulously constructed caption sheets to aid in retrievalno one cared to archive its records and holdings, at least not as an archive of Lookout Mountain Laboratory. Instead, these artifacts were treated like the contents of a grandparent's attic upon his or her death. Some of Lookout Mountain's holdings were sent to Los Alamos or other Atomic Energy Commission sites, where they were added to research libraries. Some films followed other personnel and equipment to a new operation at nearby Norton Air Force Base, where the Air Force and eventually other defense units would consolidate their audiovisual labor. Other items slowly and haphazardly made their way to the National Archives. The Air Force's Historical Research Agency managed to get some documents, largely as they were sent up the chain of command. But a large portion of Lookout Mountain's holdings, including thousands of film canisters, negatives, photographer's logbooks, various reports, and many still photographs, were trucked off to an Air Force warehouse in California, where they were piled [rather than compiled] and either discarded or forgotten.

It took the curiosity of a nuclear test scientist some years later to help recover what survived. Dr. Byron Risvet, a geologist working for the Department of Defense, wanted to learn more about the effects of nuclear blasts on sand and soil. At Los Alamos he came across some Lookout Mountain footage of nuclear blasts in the Pacific, and he set out to locate more. This brought him eventually to the pile of stuff in an Air Force warehouse. Dr. Risvet summoned some government trucks to go get the pile and ship it back to Kirtland Air Force Base in Albuguergue, where it was put under the custody of Dr. Risvet's organization, the Defense Threat Reduction Information Analysis Center (or DTRIAC, since we are now in the acronymed world of the Department of Defense-we are, in fact, going to try to avoid acronyms in this book]. DTRIAC, of course, is not open to the public, definitely not-not even to the scholarly public, unless you are a government or government contractor "scholar" with security clearances. Scholars like us have a hard time getting access to DTRIAC. If they do, they have to be constantly watched or "escorted." All electronic devices, let alone all electronic recording devices, have to be left at the gate. Only pencils and paper are allowed. And once you get in, unless you have security clearances, you can see only a small number of items: the logbooks, some reports, a few films.⁴¹

The point of all of this is not to chronicle our research adventures—of which there are numerous others [see our "Epilogue and Acknowledgments"]—but rather to present a research problem. The scattered, deteriorating, disorganized, neglected, and often inaccessible archives of Lookout Mountain Laboratory are not just a challenge for research, but a basic research problem calling for critical answers. Part of the history of Lookout Mountain Laboratory is the virtual disappearance of its archives. That its holdings were relegated to the emptying of the "attic" of the Air Force says much about the climate of the Cold War in America in the late-1960s. It also says much about the structure of the Cold War state. Finally, it says quite a bit about the invisibility of the camera to historiographical optics.

And this history presents us, as critics and historiographers, with a basic question: Do we write the history of Lookout Mountain as if there were no history of neglect, as if there were a relatively organized and coherent archive from which to work? Do we ignore, in fact hide, the problems of the archives, as historians often do? Or do we instead make the problem of the archive a subject of the book? We have chosen a middle path. This book is a critical history. We want to tell the story of Lookout Mountain Laboratory, but in a way that does not glide over its fraught, complex, and often covert history. To be sure, we have written a history of Lookout Mountain Laboratory that, for the most part, smooths over the major challenges we, as researchers, faced in reconstructing its history. But we do not smooth over the tensions and contradictions that typify this history, for the basic aim of the book is to tell not only a history of Lookout Mountain Laboratory, but also a history of the United States' Cold War as it appeared in and through Lookout Mountain's cameras and operations. Lookout Mountain stood in a dialectical relationship to the US Cold War state: it was both its chronicler and its producer. As such, the studio was every bit as complex and contradictory as the state that sponsored it, and which it projected. In the pages that follow, telling that complex and contradictory story is our central aim.

The first two chapters concern the advent of Lookout Mountain Laboratory and its place at the postwar cultural nexus of the military-industrial complex and the culture industry. In chapter 1, "Hollywood's Nuclear Weapons Laboratory," we trace its beginnings in Hollywood amid America's postwar nuclear weapons regime; in chapter 2, "Colonels, Cameras, and Security Clearances," we climb up the chain of command, so to speak, and look at the military and government organizations with which Lookout Mountain worked and to which they directly reported. Subsequent chapters focus on Lookout Mountain's films and operations, and are organized around the main geographic sites of their operations: the Pacific, the Nevada Test Site, Vandenberg Air Force Base, the Arctic, and to a lesser but still crucial extent, airspace and outer space. America's Cold War was very much a "staging" operation, premised on the power of technological spectacle. In chapter 3, "Strategies of Containment," we consider the way in which the Pacific was staged in the cameras of Lookout Mountain as a "pristine laboratory" much more than what it was: an imperial site for adventurous, dangerous, and indeed highly destructive nuclear experiments. Chapter 4, "Sense and Sensibilities," looks at the production history of Lookout Mountain's most famous and controversial film about the Pacific nuclear tests, Operation Ivy. Here we find the American nuclear state using narrative film to try to make nuclear weapons make sense to members of Congress, mayors, and the public. Chapter 5, "Routine Reports," focuses on Lookout Mountain films about nuclear tests in the Nevada desert, a space that also appeared as a laboratory, but a barren rather than pristine one, and thus a far more reconfigurable stage for the "routine" engineering operations of nuclear testing. Both the Pacific atolls and the Nevada desert were sites of political conquest as well as technological dominion. In chapters 6 and 7, "The Vectors of America" and "Engineering Geographies" respectively, we look at the ways in which in the Arctic and in outer space the logics of political conquest and technological dominion were fused in accounts of Air Force missile, radar-defense, and space activities. Chapter 8, "The Vietnamization of the Cold War Camera," turns to Lookout Mountain's activities in Vietnam, activities that ended up spelling the studio's end through absorption into a larger system largely of its own invention, and the culmination of the transformation of the American Cold War state from cinematic sensibility to a cybernetic one. Chapter 9, "Mushroom Cloud Cameras," steps back from the particulars of Lookout Mountain's history to critically reflect on the power of cameras in the American nuclear state; and chapter 10, "Closure," relates the story of Lookout Mountain's closing, arguing for its significance for understanding the changing nature of the national security state at the end of the 1960s.

The back matter of this book matters a lot. We encourage not only reading the "Epilogue and

Acknowledgments," but also skimming through the Sources. There you will learn more of our own research adventures and find other routes into the history of Lookout Mountain and our research materials. We hope that when you are finished reading this book, you will believe that one of the most important sites for America's Cold War was this little-known Air Force film studio up in the Hollywood Hills, and you will continue to critically reflect with us and others on the ongoing configurations of the American military-media-entertainment network.

LABORATORY OPERATIONS

require a high degree of skill and scientfic control

