Media fly, orbit, hover, and float. The scale of our media and their movement varies significantly from speedy and interplanetary to settled and deep beneath the sea. An assortment of earthly conveyance systems also shuttles our words, sounds, and images along. Some travel by air and others by wire; millions of books, vinyl records, and DVDs are delivered along roads by trucks. It is also true that media move with our bodies. Today we carry phones, MP3 players, and computers, reaching for them in our pockets, purses, backpacks, and briefcases. Devices made to be moved by humans signal the enduring imbrication of media machines not only with our eyes and ears but also with our torsos, shoulders, hands, heads, and fingers. A quick look at the history of media design reminds us that portable media (machines we carry) are not unique to the present. Radios with belt clips, cameras with straps, and televisions with handles demonstrate the importance of the body throughout media history.1 Wheeled mechanisms such as carts and dollies have also helped to spread our media load; while we have long worn our machines, we have pushed and pulled them as well. Expanding Marshall McLuhan’s lasting insight that media are extensions of our physical and sensing selves, inversely, media can also be thought of as part of our everyday weight—adding heft and even a particular silhouette or gait to our self-carriage.

This pairing of portable media with our bodies and their movements tells us something about the ways in which small devices act as interfaces between us and our cultural content, introducing dynamics that shape our relationships to media in the broadest sense. When media are portable, cognate concepts rise to the fore: accessibility, affordability, ease of use, durability, adaptability, and—crucially—programmability shaping the “who, when, where, what, and why” of media experience and use. As such,
portable media have subtended transformations of basic concepts and practices not just of making, looking, and listening but also of leisure, learning, and work, to name but a few. Some media devices are more readily associated with qualities we can group under the rubric of portability: transistor radios, cellular phones, laptops. Each of these readily imply movement on a human scale. They fit in our pockets or in our hands. They might work while in motion, and they can often be carried with minimal effort. Used in many locations, portable media devices perform a range of functions and enable a degree of user control. For some forms of media, however, the concept of portability has been far less salient.

Take, for instance, the history of cinema. The resolutely unportable movie theater has long played a key role in our understanding of why and where we watch movies, helping us to distinguish cinema from other moving-image media. There can be no doubt that the theater’s darkened and seductive spaces housing big screens, multidimensional sounds, and often controlled climates are central to the rise of film as an industrial, artistic, and popular form. These sites have hosted the screens and projectors that transform images secured on celluloid into large-scale audiovisual experiences, what some refer to as “the magic of the movies.” Projectors and theaters are fundamental to our experience of recorded stories, ideas, information, travel, art, entertainment, and what it has meant to watch and listen throughout the twentieth and into twenty-first century.

Our fascination with the movie theater is in part a fascination with the architectures of projection and confirms the sustained significance of large-scale illumination, amplification, and performance to our mediated lives. Everyday Movies shares this interest in projection as a transformative and foundational process. Yet it proceeds from the assertion that movie theaters are but one small branch of a much larger history of film projection that has for too long stood in for the whole. In other words, our fascination with the movie theater has effectively clouded our ability to see and assess the full range of projected film forms. This includes those that were the most common and numerous throughout the twentieth century, with crucial and formative legacies extending into the twenty-first—namely, cinema machines that were designed with a seemingly simple imperative: to move.

The complex history of portable projectors, and the films and viewing scenarios they enabled, have long been relegated to the margins of film history. Yet, by number, portable projectors easily eclipsed the archetypical movie theater. Moreover, portable film projectors comprised a generative technical substrate not just more extensive than but also notably distinct from cinema’s theatrical iterations. These small machines were highly adaptive
and included a family of devices deployed in varied spaces and performance scenarios. Portable projectors were not simply curiosities and occasional gadgets destined to become dusty basement junk. They were not merely a domestic memory tool or a hobbyist’s delight. Nor should they be understood as primarily a substandard method by which to re-create the seamless illusion of a professionalized, theatrical presentation apparatus. Rather, by midcentury, portable film projectors in the United States were highly productive, common, familiar, accessible, everyday technologies offering up a diverse body of films to millions. They comprised a widely visible element of a thriving small-media ecology, catalyzing a myriad of uncharted but widespread and influential protocols and practices. That these devices were already a commonplace element of an expanding media ecosystem at midcentury makes redressing their absence from film and media history plainly necessary. Moreover, this expanded media history also demonstrates that the everyday screens currently residing in our pockets descend precisely from this lineage of twentieth century film technologies that effectively normalized the place of small, accessible moving images in our everyday and institutional lives. Rather than a recent aberration from the dark, immobile theater in which we “used to watch movies,” the dispersed, formal, and informal dynamics of moving images are charted here as central elements of our past century as well as our current one, situating film history as integral to the rise of our present cross-platform, mobile, media environment.

Mapping the proliferation of these machines, *Everyday Movies* documents the conditions in which film projectors became everyday media. It focuses on the late teens through to the 1950s, examining the technological standardization and institutionalization of portability within but then mostly beyond Hollywood. It ends during the decade in which portable projectors categorically outnumbered movie theaters, becoming the most common viewing platform for showing and watching films. Key dates include 1923 and 1932, when the American film industry codified the small-gauge film formats of 16 mm and 8 mm respectively, distinguishing them from the larger, industry-standard 35 mm gauge. These new smaller, lighter apparatuses used nonflammable film stock and were precisely designed to minimize cost, weight, and size, as well as to maximize ease of use and movement, contrasting with the professional technologies in commercial movie theaters. The spread of these diminutive devices up until World War II was steady but, compared to the contemporaneous rise of radio, notably minor. During the 1920s and 1930s, American industry became early adopters, using portable projectors in its communication, public relations, and exhibition activities. Minor use in homes, schools, and museums
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grew comparatively slowly. The war years catalyzed a remarkable surge in the American manufacture of small projectors. Military use of film technologies increased dramatically, making portable film projectors standard operating equipment and securing them an expansive global footprint. Everywhere soldiers went, a projector inevitably followed.

At the end of World War II, the formation of a major civilian film-viewing and film-performance infrastructure within the United States can be readily observed. Consider that in 1947 there were 18,059 conventional four-walled movie theaters operating throughout the country, 2,000 fewer than immediate postwar highs.² That same year American manufacturers such as Bell and Howell, Eastman Kodak, RCA, and Victor Animatograph shipped 92,858 16 mm projectors, and 215,533 8 mm projectors.³ Throughout the following decade, movie theaters chart a steady decline down to 11,335 theaters in 1959.⁴ This contrasts with the 4,632,500 portable film projectors estimated to be in concurrent use.⁵ Thus, by 1959, for every single commercial movie theater in the United States there were 408 small portable projectors in operation. These devices continued to proliferate rapidly, and by 1969 portable, self-operated machines outnumbered theatrical screens by a ratio of more than 875:1, with an estimated 8,526,000 projectors in use, compared to 9,750 movie theaters.⁶ By 1980 the ratio likely grew to well over 1,000:1.⁷ In other words, while the number of theatrical sites steadily declined after the war into the 1970s, this small, adaptable, programmable, portable film apparatus dramatically, unapologetically ascended, wending its way into homes, schools, libraries, retail outlets, trains, planes, museums, factories, government and corporate offices, research labs, and ongoing military operations. From the end of the war and for decades, manufacturers of portable projectors year after year churned out hundreds of thousands of devices, cumulatively creating a technological infrastructure that for almost fifty years provided a primary interface between film viewers and projected images. Such numbers make portability and projection a basic fact of film and media history, one that plainly requires mapping and analysis. This viewing infrastructure handily complicates the routine assumption in film and media history that the movie theater is the historically situated and de facto site of American film and our experience of it. To neglect consideration of portable projectors is to overlook the most common, accessible, and quotidian means by which film prints have been shown, watched, heard, and engaged with from the end of World War II and into the 1980s.

There is a simple premise at the heart of this book: Watching films is a peculiar kind of proposition, one that has entailed a rather complex series
of technical, institutional, and cultural shifts that can only be fully understood if we denaturalize some of the long-standing assumptions that have limited our discussions about film viewing. Everyday Movies does this by charting the numerous devices that shed the architectural, industrial, and regulatory weight of the theater and instead extolled notably contrasting virtues, including lightness of weight, accessibility, adaptability, ease of use, affordability, repairability (figure 1), and—perhaps most important of all—programmability. These devices provide a revealing entry point into the history of moving images and sounds, demonstrating the myriad ways in which still, discrete images and sounds captured on celluloid transformed into moving, illuminated encounters across a gamut of institutions and sites. Importantly, these encounters were rarely brokered by a vertically organized, profit-seeking film industry, nor should they be characterized
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simply as instances of film exhibition, the commercial presentation of movies to a paying and pleasure-seeking mass audience. Rather, through the rapidly growing network of portable machines, films were frequently and regularly presented to small audiences and private individuals, many of whom gathered as institutional subjects: students, soldiers, scientists, workers, managers, family members, scholars, artists, and activist-citizens. In other words, portable projectors—particularly those issued in the 16 mm format—entailed, authorized, and legitimated distinct kinds of institutions, audiences, and varied modes of viewing. These forms of viewing arose alongside and, in some instances, undergirded the more storied ideals of the renegade politico, the radical artist, and the noble amateur that tend to characterize noncommercial film histories. They also ascended alongside the so-called mass audiences of television and big-screen Hollywood cinema that all too often typify the era.

This new technological infrastructure multiplied the locations where films could be seen and shown, making not just film viewing but film programming a basic element of cultural life. Film shows became everyday acts requiring selection, curation, and presentation. The ability to program films, to choose what would be projected and seen, made cinema into something much more akin to other small, consumer-grade media. Similar to the phonograph and its effects on music, the portable projector changed how and why films were made, circulated, stored, programmed, presented, and experienced. Take but one element of these changes: film circulation, or what is often called “film distribution.” The film prints shown on portable devices traveled according to imperatives distinct from those that appeared on commercial film screens. While occasionally rented, these other films were also frequently lent, borrowed, purchased, traded, or simply pulled from a shelf, accumulating in countless public and private film collections and dedicated film libraries. Specific titles were ferried about under the aegis of official institutions of state, as well as clandestinely and unofficially in brown paper bags, collectively constituting a mix of formal and “informal” media circulation. Portable projectors and the films that played on them enabled the wrestling of film programming away from the hands of a highly centralized commercial industry and created conditions in which, ideally, anyone could show a film. Do-it-yourself film performance dispersed the powers of projection, spreading them to amateur, artist, aristocrat, anarchist, and authoritarian alike. Not bound to the simple function of playing a film, these machines and their newly emboldened users took up projectors in ways that invited particular kinds of authority but also creativity, improvisation, adaptation, and occasionally subversion.
of formal and officially sanctioned media content and use. Projection was integrated into a myriad of cultural activities and agendas; programming easily became counter-programming. Equally important, this new infrastructure for film viewing created the conditions in which a broader range of films became possible, as there was a ready-made infrastructure for seeing them. The tens of thousands of film titles and hundreds of thousands of circulating 16 mm and 8 mm film prints available at midcentury index more than the widespread availability and use of movies. They also suggest that moving images had become everyday phenomena; they were increasingly integral to ever-widening spheres in an increasingly mediated era. Beyond entertainment, films were teaching, training, selling, and advancing spiritual well-being. They were integral to political persuasion, social work, industrial display, governance, psychological therapy, aesthetic experiment, and sex, to name but a few. As a result, the expanded function of movies was normalized. Moving images became familiar elements of an increasingly mediated world.

Portable projectors shaped an emergent media infrastructure that catalyzed new kinds of films. Yet projectors were also far more than simply playback machines. With them, new modes of behavior and media engagement, or what we call “watching films,” arose. For instance, if you wanted, you could watch a film again. Or you could watch alone. You might select only the good parts, the useful parts, the naughty parts. Or you could require others to watch the most salacious, threatening, or instructive parts. A quick survey of design tendencies in these devices tells us something about what other kinds of presentation and watching these projectors facilitated. What emerges is something other than a singular machine or uniform model with an enshrined ideal. Rather, what will be charted here is a flexible and varied apparatus, one that was designed and used in full dialogue with forms and functions significantly expanded beyond Hollywood’s. Some projectors were highly specialized and made for research and analysis, replete with frame counters, precision machinery, and remote controls that enabled repeated stopping, starting, slowing, and reversing of a film. Some were rugged and designed as all-purpose, all-terrain, military machines decorated in army green or navy blue to signal patriotic duty and to assist in camouflage. Many others were manufactured for a mass consumer market, with minimal features operated by simple buttons and levers and proudly espousing low cost and high value. Still others were experiments, oddities, or artistic tools for creating multidimensional experiences, responsive environments, or industrial and public relations events. These devices integrated varied kinds of light projection with sound...
technologies that maximized their versatility. There was no single portable projector; the imperative toward adaptability meant that projectors developed to serve many purposes and were consequently part of an evolving multimedia constellation that often had plug-in ports, creating links to other media: slide projectors, microphones, record players, radios, and amplifiers. Portable projectors were thus integral to evolving small-media ecosystems that evinced commitments to improvisation, adaptability, and shifting applications that—taken on the whole—transcended strict adherence to the ideals of a particularly pure medium or to the institutions that directly arose to uniquely support one (i.e., the so-called film industry). This sea of machines created a form of cinema that was resolutely not the one normalized by the commercial movie theater or by Hollywood.

Consider this example. A 1941 issue of *Popular Mechanics* featured a modern marvel of intermedial engineering: the phono-cine-radio-recordograph” (figure 2). The device merged a phonograph, radio, amplifier, sound film projector, and screen. It could record sounds but also play them, summoning them from shellac records or capturing them from the air. It could play a film on a small screen that sat atop the device, perched like a proud ornament in the center of the hulking console. Still years before television had proven itself commercially viable, the phono-cine-recordograph promised a highly integrated home entertainment unit, which the magazine dubbed “concentrated entertainment” for its ability to bring sounds and images together in one magnificent media machine. The sizable device also offered media storage and a host of input ports. Even at this size and multifunctionality, further adaptability was anticipated. Straining commonsense definitions of portability, the recordograph weighed in at eight hundred pounds, and it took an amateur radio enthusiast a year to design and build it in his basement. The machine might best be thought of as amateurism gone awry, fanatical tinkering, or perhaps even science fiction. Yet there it was in a mass-circulated, do-it-yourself magazine that promulgated the goal of explaining “how the world works,” the publication’s motto, to its readers. The projector appeared alongside ads for water-going pontoon bikes and tips for training gentlemanly dogs. It would be an odd one-off if it weren’t for the fact that other similar devices, fashioned for aspiring showmen, were being engineered and sold during the same period.

The Victor 40, announced two years earlier by the Victor Animatograph Company, provides another such example (figure 3). Known as the “Add-a-Unit,” in production from 1939 until 1947, the projector similarly espoused a devout multimedia modularity. It could be purchased with a