INDUSTRIAL STRENGTH DESIGN

HOW BROOKS STEVENS SHAPED YOUR WORLD

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Brooks Stevens, the Man in Your Life: Shaping the Domestic Sphere, 1935–50

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The editors of *House and Garden* penned these inspiring words in 1947 about the leaders in the field of industrial design, whom they dubbed "ten men in your life":

> *You will see that the trend is towards appliances that are increasingly simple to operate, increasingly automatic. Once set in motion, they are expected to carry through an intricate succession of processes, to turn themselves off at an appointed instant. You will learn that an astonishing amount of thinking, a long trial-and-error process are behind your new, gleaming, silent servant. . . . Common to these ten men is the belief that nothing is quite good enough for the American homemaker. As a result, they are in a sense social revolutionists, helping to free the housewife from the drudgery of manual chores. They are not only making housework more inviting, they are giving millions of women new leisure and the unspent energy to make the most of it.*[1]

Included in this group of "revolutionists" were Brooks Stevens and other well-known designers such as Henry Dreyfuss, Raymond Loewy, and Harold Van Doren. Stevens, like many of these designers whose careers began before World War II, found some of his earliest commercial successes in the field of domestic appliances: the Steam-O-Matic and Petipoint irons (1940 and 1941), the Hamilton dryer (1944), and the Coolerator refrigerator (1945), all of which were manufactured in larger quantities after the war, when industries had converted to peacetime production. Furthermore, two of his large-scale environmental designs from the years around World War II can be interpreted as multidimensional, mobile domestic appliances: a motor home, or "land yacht," for millionaire playboy William Woods Plankinton Jr. (1936) and the Olympian Hiawatha train for the Milwaukee Road (1947).

Echoing *House and Garden's* claim that such "gleaming, silent servants" would "free the housewife," Stevens, like many of his cohort, believed that clever gadgets could alleviate the drudgery of domestic work and that clever styling would attract the female consumers they sought. His frequently flamboyant designs did in fact garner much attention in the marketplace, but as historians of domestic labor have demonstrated, such gizmos did little to lessen the total amount of work required to maintain a mid-century household.[2] Indeed, new appliances often simply raised expectations for what tasks a housewife could accomplish on her own; in the years after World War II, as Betty Friedan powerfully argued, these expectations were often used to convince women to leave the commercial workforce (where they had labored during the war) and return to the solitary work of homemaking.[3] Although Stevens's appliances were no more or less guilty than any others of enslaving the housewife, his appealing, quirky designs—as well as his emphasis, in his design manifestos, on romancing the housewife—make a potent case study.

If, as a result of developments in domestic technologies, housewives throughout the first half of the twentieth century were increasingly isolated, surrounded at home by inanimate machines, then those who bought appliances styled by Stevens were surrounded by unusual, dynamic designs that prompted identification and emotional attachment. In short, his designs compensated for the loneliness they enabled through a sophisticated strategy of flattering the housewife. In their stunning appearance the objects flattered her taste, telling her that she was stylish enough to choose them. As commodities in a higher,

but not prohibitive, price bracket, the objects became symbols of her (newly returned) husband, who, with his peacetime salary, was doting enough to buy them. And, with the imprimatur of the phrase "Styled by Brooks Stevens" emblazoned on them, the objects demonstrated that she was important enough to deserve the attentions of this other "man in her life," the famous designer who made appliances into luxury gifts. Stevens's designs didn't just flatter women, however. They also became tools for enforcing strict gender identities and for encouraging the large-scale differentiation of gendered spheres within the home in the years around World War II.

Brooks Stevens and the Profession of Industrial Design

In his later years Stevens was proud to claim that he had coined the phrase "planned obsolescence," which he used to describe a strategy for stimulating sales based on making products *appear*, through design, to be better than previous (equally functional) models. His attitude indicates a wholehearted embrace of the commercial use to which aesthetics can be put, and it is instructive to consider his biases within the context of his peers. From their earliest days as recognized professionals, industrial designers had struggled to explain the role of aesthetics in their work. The industrial design profession emerged in the late 1920s as manufacturers sought new ways to promote their products and diversify their potential audiences.[4] Over the course of that decade, the advertising industry had developed an arsenal of psychological and aesthetic tactics to lure customers to purchase an endless variety of goods. The redesigning of products appeared, to some manufacturers, to be a logical extension of advertising. A different design made the product seem "new" and might even improve functionality and, if it were eye-catching enough, could serve as an advertisement in and of itself. New designs carried more financial risks than advertising campaigns, however, because they entailed the retooling of factories, had the potential to affect (positively or negatively) the functioning of the product, and could alter the very character (again, positively or negatively) of the item. With so much at stake, manufacturers were thus wary of using only aesthetics—notoriously unpredictable and subjective—as a base on which to expand, or resuscitate, their businesses. When they turned to the growing cadre of professional industrial designers for help in reconceiving a standard product, they demanded practical, concrete reasons for aesthetic changes.

Designers balanced the demands of function and appearance in a variety of ways. Walter Dorwin Teague, considered by many to be the founding figure of the profession, argued that for each functional product there existed an ideal efficient, aesthetically pleasing form. Although appearance thus took precedence in Teague's philosophy—all design was motivated by the pursuit of a Platonic form—the commitment to an eternal and constant form imbued his aestheticism with certitude and conviction. (It also, ironically, contradicted the popular practice of annual restyling.) He developed these beliefs in his 1940 manifesto *Design This Day*, in which he asserted that "only one set of aesthetic laws and one standard of judgement" informed great design, reminding his readers that "implicit in any man-made thing is the ultimate form that will most perfectly satisfy its maker and serve its user."[5] Henry Dreyfuss, another major figure in Stevens's professional world, rationalized his aesthetic decisions by developing forms that responded to intuitive use by the human body. As a critic in 1931 explained, "Dreyfuss brings to his work no special aptitude for mechanics and only a moderate gift in the handling of materials. He has to a high degree a sense of the ultimate use to which commodities will be put, a feeling for the comfort of the man who is going to use the fountain pen for writing more than as a decorative adjunct to his desk."[6] Norman Bel Geddes, undoubtedly the best showman among the early generation of industrial designers, prided himself on forward-looking, often fantastical and extravagant designs. Although he, like his peers, believed that a redesigned form must enable enhanced functional capacity, he did not allow function to take complete priority over aesthetics. Rather, as Jeffrey Meikle has written, Geddes believed that form should *express* function, that aesthetics should be used to make an object *look* functional.[7] This variation on the "form follows function" doctrine allowed Geddes to explore aesthetic devices that were not a direct result of the object's use—in short, it allowed him to experiment aesthetically, not infrequently to the

detriment of the object's performance. Needless to say, many of his peers blamed Geddes for the flamboyant, impractical reputation that some companies ascribed to this young group of businessmen-artists.

Stevens set up business for himself as an industrial designer in Milwaukee shortly after his departure from Cornell University in 1933. He entered the trade several years after his New York colleagues had established themselves, and he inherited from them the vexing relationship between improved product functioning and eye-catching aesthetics. Although he navigated his own course through these philosophical waters, his solution owed a particular debt to Geddes, whose popular futuristic 1932 publication *Horizons* would have been known to Stevens.[8] From his first years as a professional designer, Stevens seems to have understood, as did Geddes, the consumer's attraction to eye-catching designs. Unlike Geddes, Stevens was able to develop new designs that were not costly to implement and that did not impede functioning. His concern for functionality took a decided backseat, however, to his inspired enthusiasm for design as an attention-getting strategy. Indeed, his mature design philosophy could best be described as the pragmatic use of aesthetics. As early as 1940 he reminded manufacturers that "in this fast moving day and age the purchaser … often buys on first appearance."[9] And in the years after the popular term "planned obsolescence" became commonplace in design circles, he further expressed his commitment to the manufacturer's bottom line by proclaiming: "The industrial designer, of course, creates his special niche in the economic and business life of his country by adding the stylist's touch to make manufactured products desirable to the consuming public and to give the products that last degree of 'buy-appeal' necessary to make the sale."[10]

As Stevens was all too aware, the primary audience for his "buy-appeal" designs was the housewife of the late 1930s and 1940s. While men tended to be the breadwinners of the family (except during the war years), women almost uniformly decided which products to buy for the home. They were not only the arbiters of taste in household furnishings, but they were also the experts on maintaining hygiene and order in that household and were thus the logical audience for manufacturers of home appliances, as an ad from 1950 makes clear (fig. 1). Stevens himself invoked the housewife's buying authority repeatedly through the figure of "Mrs. Consumer": How to make a given product "appeal more to Mrs. Consumer?" How to modify a design "lest Mrs. Consumer shy away from a good product because [of how] it looks"?[11] More importantly, his rhetoric reveals a pervasive concern with establishing an intimate emotional connection with the housewife, with romancing her into buying his work. Stevens understood, for example, how an appealing design could acquire greater than average significance for his

Fig. 1
Advertisement for the Modern Hygiene vacuum cleaner, 1950

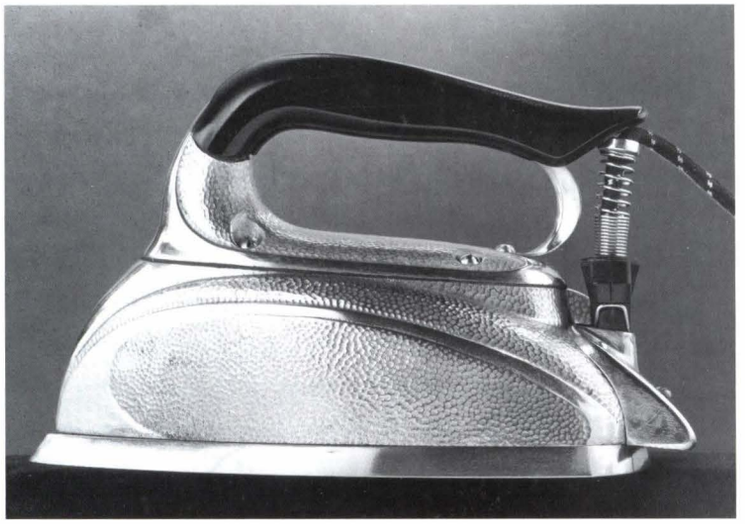
audience: it not only had to look pleasant but also had to inspire "pride" and "joy" in its owner.[12] Less unusual designs were "a step toward regimentation and… blandness" and would not establish a meaningful "identification" between the owner and the product.[13] His designs, by contrast, established themselves in the household pantheon of prized possessions and imbued their owner with a sense of her own good taste and, quite simply, importance. He confirmed this design strategy when he commented to a reporter in 1955: "Designers regard women as the yardstick for measuring the appeal of products. Men will never again be considered the country's most important buyers. …It was [during the Depression] that industrial design really got under way. We had to use a little romance, a little divining, and a little plunging to find out what women wanted to buy."[14] Ultimately, while his peers emphasized the enlightening and clarifying power of good design, Stevens—as evidenced by his propensity for the dramatic and unusual, and his embrace of commercialism—demonstrated a commitment to the seductive power of good design.

Early Domestic Appliance Designs

An in-depth examination of several of Stevens's domestic appliance designs—including irons, a clothes dryer, and refrigerators—reveals that the devices, while claiming to make housework easier, in fact only charmed the housewife and did little to lessen the amount of work in her day. Stevens's earliest commercially successful designs for the housewife were two irons: the Steam-O-Matic, the first domestic steam iron, and the Petipoint (for the Edmilton Corporation), an air-cooled electric iron with a smaller point at its rear for detailed ironing. The Steam-O-Matic was, of necessity, a bulky item: contained within its walls was a chamber for water, which, when heated, produced steam (fig. 2). Stevens's brief was to "minimize the apparent size" of the iron, so that "Mrs. Consumer" would not think it too heavy.[15] He achieved this with a series of swooping lines—highly polished, in contrast to the mottled surface of the remainder of the body—that originated from the iron's prow, traced its rounded contours, and terminated at the back, giving the iron a sense of forward-surging motion. The plastic handle complemented the dynamism of the body: toward the front its molded form fit the housewife's grip, and at the rear it kicked upward with a featherlike flair. This iron had a sense of panache that belied its weight and transformed the bulky metal object into an efficient, aerodynamic instrument. As one ad asserted, "It seems like magic, but it's very simple… just fill the iron with water, plug in, and in a moment it is steaming lustily."[16]

The Petipoint, developed in the following year, had a similarly streamlined, forward-rushing aesthetic (fig. 3). Its prow seemed to burrow busily into the task at hand, achieving such speeds that its expansive wings appeared to lift the back of the iron from the horizontal surface. The handle again accentuated the body's motion: its front end leaned forward, pulling the heavier back end of the handle almost out of its seat. The elaborate wings did more visually, however, than simply enhance the aerodynamic sensibility. Their distinctive presence—which, according to Stevens, facilitated the iron's air-cooling function—transformed the iron from a workaday accessory into a unique, somewhat extravagant possession. The wings were an aggressive expression of technological innovation, confirming the iron's cutting-edge status. They were also an uncanny echo of the ruffles (or petticoats) that the iron itself was designed to negotiate; this reference, however subliminal, imbued the object with a preciousness and femininity more frequently associated with jewelry, ensuring the housewife's intimate attachment to the tool.[17]

Of course, Stevens also claimed that his designs enhanced each iron's functional capabilities; even if aesthetics and psychological responses were his primary interests, he was always careful to include practical considerations when justifying his designs. The Steam-O-Matic required a large body to house the water that became steam, and Stevens made that body as light and sturdy as possible by casting it in aluminum. The Petipoint's cooling fins allowed the heat of the iron to dissipate to either side, leaving the top surface, with its thermostat, and the plastic handle cooler than those of other irons of comparable size. And its smaller point at the back—the "petit point," designed "to accommodate small pleats and sleeve tucks in ladies' shirtwaists and blouses"—made the iron into a virtual two-in-one.[18] (The "petit point" also



Figs. 2 and 3
The Steam-O-Matic clothes iron of 1940 (left) and its immediate successor, the Petipoint of 1941, both designed for the Edmilton Company of Milwaukee

eliminated the flat edge that had traditionally formed the base for an iron when it rested upright, not in use; the user of the Petipoint had to rest the iron on its side, balanced against the fins and handle, a decidedly awkward and impractical consequence of this "functional" design.)

Thus both of Stevens's irons apparently transformed a hitherto complicated or specialized process into an easily performed chore. The Steam-O-Matic enabled women to care for cotton shirts and heavy linens, which they had previously sent out of the house for cleaning and pressing.[19] The Petipoint offered a fine point for detail work within a larger iron, so that a housewife would not have to make do with the larger point for delicate ruffles or, worse, skip the ruffles altogether. In effecting these changes, the irons can be classified as what Reyner Banham called the "great American gizmo." In his formulation, a gizmo is "a small self-contained unit of high performance in relation to its size and cost. ...The minimum of skill is required in its installation and use."[20] While there is no doubt that ironing requires skill, these two products allowed the housewife to iron heavy fabrics and details with less skill and fewer complicated maneuvers than previous irons had demanded.

Another central characteristic of the gizmo is that it operates "independent of any physical or social infrastructure"—that is, it requires no larger network of technology or people than its own body and that of its user.[21] With the exception of an infrastructure of electricity, both of Stevens's irons were independent; they eliminated the need for assistance from a household servant or a contracted, out-of-house service. In short, they enabled the housewife to be completely self-sufficient and completely isolated. Whereas before she might have used the in-house and out-of-house help of numerous people, these new irons enabled her to perform, and thus made her solely responsible for, all of the complicated tasks of clothing and linen care. As Ruth Schwartz Cowan has convincingly argued, technological innovation in the twentieth-century household eliminated many of the supporting tasks done by human servants but ultimately did little to lessen the total amount of work needed to maintain the home.[22] The housewife therefore had as much, if not more, work to do than when she had human help; furthermore, instead of spending her day with other people doing housework, she now spent her day alone with her "gleaming, silent servants."

On an unconscious level, it was perhaps to compensate for this increasingly isolated life that Stevens and other designers imbued their appliance designs with such flair and panache. The goal of an eye-catching design was not merely to prompt the housewife to purchase a given product. It was, more importantly, to foster identification and attachment to the object over a period of time: the design reminded her that someone (that "man in her life") had thoughtfully considered her daily routine, thus transforming the object of work into a surrogate object of affection. In the years immediately following World War II, a flashy appliance, demonstrating a couple's participation in peacetime prosperity, was a particularly potent lure to the housewife returning to homemaking.

Stevens's design for the Hamilton clothes dryer enhanced another product that actually only reorganized chores even as it proudly came "to the relief of the little housewife" (fig. 4).[23] The mechanism for a self-contained drying unit had been developed by an independent inventor in the mid-1930s, at which time no automatic dryer was available to consumers; housewives instead had their laundry dried at commercial establishments or they hung it on a line (either outdoors or, in wealthier homes, in basement "drying rooms"), often with the help of family or a laundress.[24] Thus, when the Hamilton Manufacturing Company approached Stevens to provide a design for its new dryer, he had the opportunity to establish a form for a completely new appliance.

Stevens undoubtedly took inspiration for the dryer's basic white cube from Geddes's radically simplified white stove for Standard Gas (1933; fig. 5), which had codified the predominant aesthetic for case-piece appliances throughout the 1930s. Hamilton had placed the opening to the dryer in the front of the cube so that the top surface could be used by the housewife for folding or other "work" (which she was now able to do alone, without help). Stevens quickly realized, however, that such a basic design "would have no appeal and could never command the price required."[25] His solution was to place the service and adjustment controls

behind two fluted panels on either side of the door and to put a window in the door. The fluted panels were an entirely extraneous element—a bit of ornament that dressed up the dryer, demonstrating that both it and the woman who used it deserved an extra dose of luxury and beauty in their daily routine. Indeed, in an advertisement from *Electrical Merchandising*, the dryer's flutes echo the housewife's apron, reinforcing an identification between her pristine, well-cared-for femininity and the machine (see fig. 4).

Although the window was conceived as a device to show off the dryer's capabilities—as Stevens later recalled, the Hamilton company asked, "Well how are we going to make [the public] know what it does? I said, put a window in the door"[26]—when coupled with the fluted panels, it offered multiple layers of associations. It was, in one interpretation, a window onto a stage set flanked by tall, rich curtains—imbuing the life inside the dryer, and the life using the dryer, with some of the drama of the daily radio soap operas. In another interpretation, it was simply a window—a house window, with white curtains—offering a mesmerizing view of the transformed fabrics of household life. In fact, when it was first introduced in stores, Stevens recommended that it be displayed tossing around a colorful pair of "the husband's shorts"; the shorts not only demonstrated the machine's function but also acted synecdochically, reminding the housewife that her work was not lonely, but rather was in the service of her husband and family.

Electric refrigerators, introduced in the 1920s, received some of the most celebrated makeovers in the 1930s and 1940s by designers such as Dreyfuss, Loewy, and Stevens. Dreyfuss's 1934 design for General Electric set a precedent that later models would imitate (fig. 6). He removed the condenser from its highly visible place in a monitor above the refrigerator and buried it at the bottom of the object; he then extended the sides of the case to the floor, creating a unified, simplified mass. Loewy's designs for the Sears Coldspot—updated annually between 1935 and 1938—offered a more stylish variation on Dreyfuss's rectangular box: its 1938 incarnation featured chrome-striped feet, a subtle vertical ridge running down the length of the front (intended to evoke an automobile's V-shaped radiator), and two ball handles (fig. 7).[27]

Fig. 4 (upper)
Advertisement for the Hamilton clothes dryer, 1944

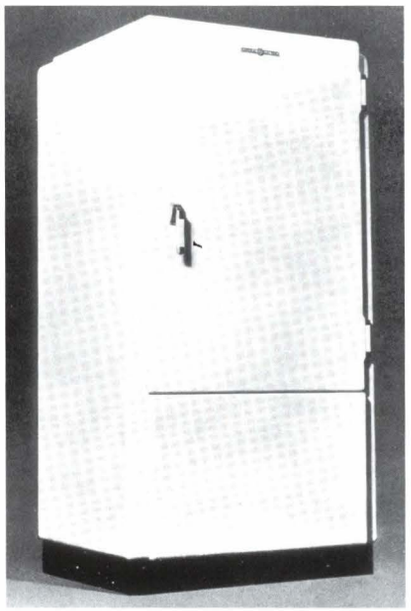
Fig. 5 (lower)
Norman Bel Geddes, Oriole stove, ca. 1933.
Designed for the Standard Gas Equipment Company, Baltimore.

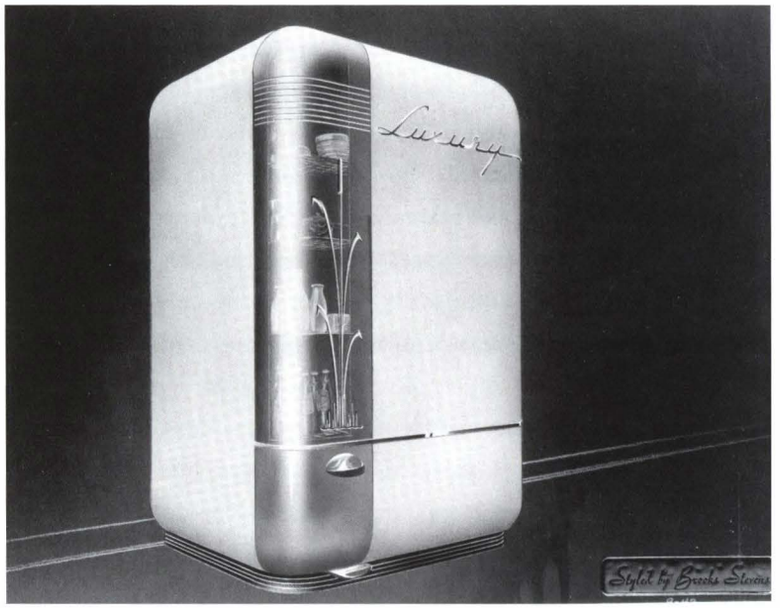
Fig. 6 (upper left)
Henry Dreyfuss, refrigerator, 1934.
Designed for the General Electric Company, Schenectady, New York.

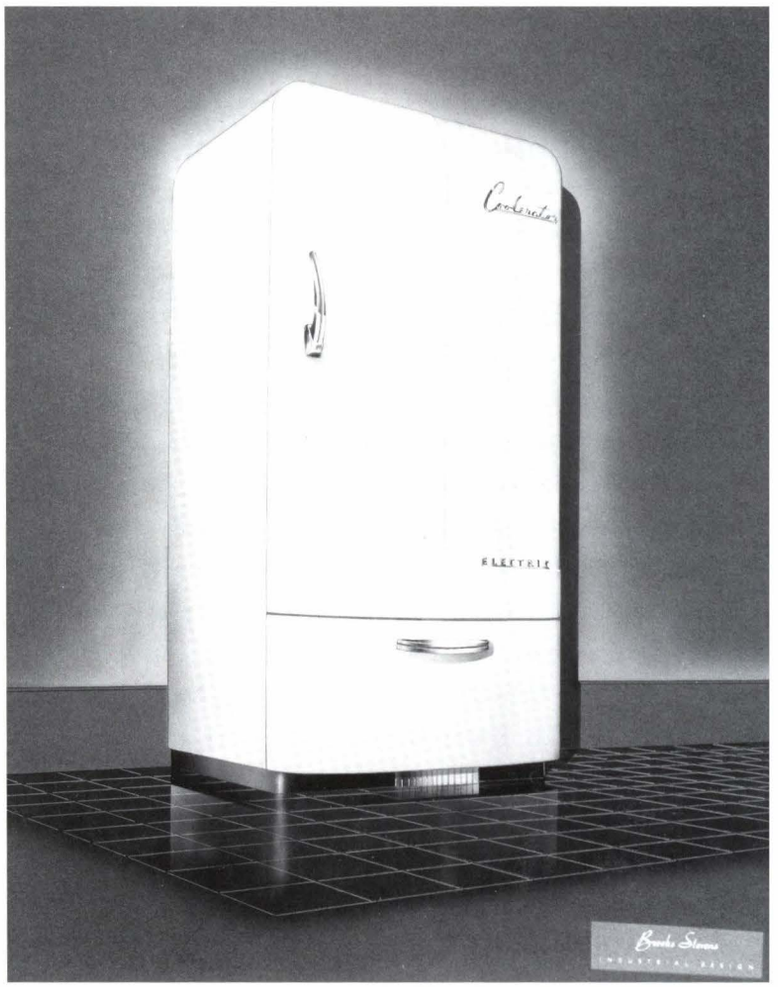
Fig. 7 (lower left)
Raymond Loewy, Coldspot refrigerator, 1938.
Designed for Sears, Roebuck, and Co., Chicago.

Fig. 8 (upper right)
Brooks Stevens, rendering for a Luxury refrigerator, 1942.
Designed for the Hamilton Manufacturing Co., Two Rivers, Wisconsin.

Fig. 9 (lower right)
Brooks Stevens, refrigerator, 1948.
Designed for the Coolerator Co., Duluth, Minnesota.







Stevens developed several refrigerator designs during and after World War II, each indebted to Dreyfuss's and Loewy's work in varying ways. Among the more fanciful of his designs was a proposed refrigerator for Hamilton with a translucent corner through which the user could see the contents (fig. 8). In the 1942 renderings the refrigerator is a seamless box with rounded corners and edges, sitting on a diminutive striped base. The translucent panel is engraved with a large, attenuated flower, and the word *luxury* is emblazoned in glistening chrome across the door. In this dreamlike view, arising in the midst of the war effort, the jewel-box aspect of a refrigerator is fully realized: from this machine's stylish exterior one can eagerly contemplate the delight of opening its doors and finding the treasures (bountiful, unrationed food) inside.[28]

For the Coolerator Company, Stevens designed a refrigerator that further simplified Loewy's stylish box (fig. 9). The body of the Coolerator has the same contours as the Hamilton design, with its seamlessly rounded rectangular form. The facade is interrupted only by the line separating the lower compartment from the refrigerator proper, its two handles—one horizontal and one vertical—and a dramatic chrome thread that rushes from over the top edge of the box, plunges down the length of the door, then whips off to the right, trailing the word *electric*. The chrome thread, like the fluted panels on the dryer, is an unnecessary, if restrained, ornament. Its simplicity is both understated and pronounced—the single curve shown off on a field of white—and it marks the refrigerator with a subtle sophistication, appealing to the housewife's sense of her own stylishness and uniqueness. Indeed, the early advertisements for the Coolerator proudly extolled the manufacturer's commitment to serving the needs and fantasies of the postwar wife: "Brook [*sic*] Stevens, famous industrial designer, and his staff worked for months to perfect a Coolerator to fit in the streamlined postwar kitchen. 60 designs were submitted. Of these 60, 8 were chosen for consumer and homemaker testing. In this way, the design of the New Coolerator was chosen the favorite of women everywhere! Yes, the New Coolerator is styled right—with all 17 things women want most in a postwar refrigerator!"[29] Although the advertisement did not enumerate those "17 things," it is clear that enlarged refrigerators with more efficient cooling systems allowed women to shop less frequently, so that they no longer had daily interaction with shopkeepers, but rather made weekly shopping trips to stock their own stylish refrigerated shelves.

Stevens's early appliance designs dressed up the gizmos of the domestic sphere, the silent, mechanical servants that had replaced the housewife's daily interactions with human help. Moreover, these servants flattered her: through their unusual designs they forged a sense of identification, so that their uniqueness, and the care with which they were designed, was transferred to their owner. The housewife herself became unique, the object of special care, even as she was stranded at home alone, left to ruminate on the world to which the flying Petipoint iron might take her, the world beyond the window of the Hamilton dryer.

Early Environmental Designs

Stevens's domestic appliance designs ultimately had ramifications far beyond the individual chores of isolated housewives. Because his designs were so explicitly intended for the women of America's homes, they ensured that certain tasks and spheres were made specifically feminine. If taking care of clothing and preparing food were incontrovertibly women's work, then the laundry and kitchen, outfitted with luxury gizmo "gifts" from Stevens to accomplish these tasks, became spaces within the house solely for women. Stevens used gizmos to similar (unconscious) effect in two large-scale environmental designs from these years, the Zephyr land yacht and the Olympian Hiawatha train. In both of these mobile domestic environments, gadget technology defined and differentiated gendered spheres, as it had done within the stationary home.

In the Zephyr land yacht, designed and constructed for William Woods Plankinton Jr. in 1936, Stevens built an entire home around the clever layering of gizmos (Plankinton even later gave the vehicle the nickname "Gadget").[30] With its electric icebox, electric stove, full bathroom with shower, living room, hunting and fishing equipment, and sleeping quarters for eight (including driver and manservant), the land yacht was, in essence, a large-scale gizmo. It operated as a completely self-sufficient domicile,

UNMARRIED MILLIONAIRES Bill

By Jack Stone

William Woods Plankinton Breakfasts in Gadget. His Mansion Trailer—There Is Scarcely a Part of the United States the Millionaire Bachelor Hasn't Visited in Gadget.

GOSSIP columnists frequently have announced the betrothal of William Woods Plankinton, perhaps with the stubborn belief that "a man whose fortune runs upwards of $10,000,000 has little chance of escaping matrimony."

Their predictions, however, obviously are inspired by nothing more than the gambling instinct. At 39, the packing heir is still as free as the wind.

In 1928, when Plankinton was a starry-eyed youth of 21, he announced to the press that despite his inherited millions he was a man of democratic ideals.

At the time of the interview Bill's father had just died and he had inherited $4,000,000 as well as trusteeship of a $10,000,000 trust fund.

"In New York there are so many great fortunes that $4,000,000 doesn't seem so much," Bill said modestly. "Everybody who's anybody works, and I want to be somebody. I want to be independent of the trust fund. I want to make my own money out of my own work.

"Life can be so much more enjoyable that way. For instance, I'd rather entertain a girl on money I've earned myself than on money left me."

Even at that age Plankinton evidenced a wary attitude toward designing women. Asked the question that inevitably would be put to such an eligible young man, he replied:

"Yes, surely I like girls. Don't say I don't! It's girls because something like that was printed in a Milwaukee paper and my pals gave me the laugh.

"You know, after that article I received more than 800 letters from girls all over the country. I counted them and felt like a movie hero.

"Each said she was Miss Right and was just the wife for me, but how could I find out?"

NOW approaching 40, the slightly portly Plankinton still can't find out. He's met all the eligible debs and divorcees of the past 20 years from Newport to Hollywood to Palm Beach, with stopovers in Europe, but true romance has escaped him.

"When the right girl comes along," he said recently, "I suppose I'll do what all sensible men

December 21, 1947

Fig. 10
William Woods Plankinton Jr. taking breakfast in his Zephyr Land Yacht.
From an article published in the *American Weekly*, 1947.

which could roam where it pleased without needing to put roots into a larger permanent social or economic infrastructure (fig. 10). Although the land yacht included space for Plankinton's (male) visitors and servants—whereas appliances such as the Steam-O-Matic or Hamilton dryer allowed for the presence of only one person—their role in his mobile home can be seen as that of a gizmo too. By joining Plankinton on one of his peregrinations, his friends and servants gave up their larger social network and entered into the sole service of entertaining him; conversely, their presence insulated—or isolated—Plankinton from the larger world, providing him with a portable fraternity, everything he needed within the easy reach of the Zephyr's forty-five feet. As the housewife's gizmos made her kitchen and laundry a specifically feminine sphere, so Plankinton's large-scale roving gizmo defined the perimeter around an indubitably masculine world.

In Stevens's designs for the Olympian Hiawatha train, he created another mobile home, a large, self-sufficient gizmo outfitted with gadgets, in which both men and women were given gender-appropriate spaces. Stevens's firm oversaw all aspects of the train design, from its interior compartments and accessories to its exterior shape; in the totality of its design vision, the project matches Dreyfuss's better-known work on the Twentieth Century Limited (1938). The newly renovated Olympian Hiawatha train was clearly marketed as a domestic sphere on wheels. Various advertisements from the summer of 1947 depicted it as a family home, with a mother, father, and son gathered before a window in a mock living room in one image and a family of four around a table in another (figs. 11, 12). Significantly, the press releases for the new train frequently stressed its modern, homelike environment and touted its highly gendered "lounge rooms." An article from the *Milwaukee Journal* informed readers that "the women's lounge quarters will emphasize a feminine note while the men's lounge and smoking rooms will be definitely masculine."[31] The "feminine note" was apparently achieved through "soft grey green and ivory formica paneling" in the lounge, the inclusion of a large divan, and "carefully selected French costume prints," which were hung on the walls. The men's lounge, in contrast, had "red leather chairs, carpeting, and … sporting prints covering the popular sport of trout and game fishing."[32]

And, indeed, the train's separate gendered spheres were even writ large in its exterior design. Its major innovation was its rear observation lounge, in which multiple panes of glare- and heat-resistant glass created an egg-shaped, streamlined room for viewing the landscape and sky above (fig. 13). This flashy tail stood in pointed contrast to the engine of the train, which Stevens fashioned into a charging bullet: two headlights, one above the

other, framed by horizontal lines, appeared to pierce the night air, streaking at top speeds along the narrow tracks (fig. 14). Stevens's engine was a machine for (the masculine occupation of) work, while his observation lounge was a machine for (the feminine occupation of) socializing. Furthermore, while the engine was a machine for *seeing*, the observation lounge, glowing as it snaked through the western landscape, was a machine for *being seen* (both from outside the train and from the social scene within). Ultimately the entire body of the train, a home on wheels, was anchored by the polar opposites of gender, the masculine engine and its feminine tail.

Throughout the domestic sphere—whether stationary or traveling—Stevens's gadget designs always worked on two levels: first, to perform a task (ironing, powering a train) and, second, to assign and confirm gender identities. His domestic appliances romanced the housewife, encouraging her to ignore the loneliness of housework and reconfirming the feminine character associated with such chores and the sphere of the house in which they are performed. Stevens's designs for the larger-scale gadgets of the Zephyr land yacht and the Olympian Hiawatha similarly affirmed traditional social gender codes such as the hunting male, the preening female, and the intact nuclear family. One may well ask why the women (and men, for that matter) of America made themselves such willing accomplices to this conservative social order. Undoubtedly the economic and social upheavals of the 1930s and 1940s fostered respect for the familiar, safe gender roles of previous generations. It may well have been comforting to a mid-century housewife, stripped of her mother's cadre of servants, to be given the tools to perform the tasks that in previous years she would have overseen—for a time, at least. It was not until the publication of Betty Friedan's book *The Feminine Mystique* in 1963 that women began to challenge the assumptions attached to their housework and encoded, unconsciously, in Stevens's designs. The legacy of Friedan allows us to envision a society—as yet unattained—where Bill Plankinton might find a niche in his land yacht to store his Petipoint iron.

Figs. 11 and 12
Advertisements for the Milwaukee Road's Olympian Hiawatha train. From *Better Homes and Gardens*, 1947 (above) and *National Geographic*, 1950 (left).

Figs. 13 and 14
The streamlined engine and the Sky Top Lounge observation car of the Olympian Hiawatha

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1. "Ten Men in Your Life," *House and Garden*, September 1947, 125.

2. See, for example, Ruth Schwartz Cowan, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave* (New York: Basic Books, 1983); Christine Hardyment, *From Mangle to Microwave: The Mechanization of Household Work* (Cambridge: Polity Press, 1988); and Susan Strasser, *Never Done: A History of American Housework* (New York: Pantheon, 1982).

3. Betty Friedan, *The Feminine Mystique* (1963; reprint, New York: Norton, 2001).

4. One of the first book-length discussions of industrial design was published in 1932: Roy Sheldon and Egmont Arens, *Consumer Engineering: A New Technique for Prosperity* (New York: Harper and Brothers, 1932). The classic history of the industrial design profession is Jeffrey L. Meikle, *Twentieth Century Limited: Industrial Design in America, 1925–1939* (Philadelphia: Temple University Press, 1979).

5. Walter Dorwin Teague, *Design This Day: The Technique of Order in the Machine Age* (New York: Harcourt, Brace and Company, 1940), 49, 47.

6. Gilbert Seldes, "Profiles: Artist in a Factory," *New Yorker*, 29 August 1931, 22.

7. Jeffrey L. Meikle, "Coldspots and Heaters: The Formation of Industrial Design," *Industrial Design* 28 (July–August 1981): 25.

8. Norman Bel Geddes, *Horizons* (Boston: Little, Brown, 1932).

9. Brooks Stevens, "When Engineering Influences Design," *Durez Molder* 10 (April 1940): 10–11.

10. Brooks Stevens, "The Clarification of 'Planned Obsolescence,'" ca. 1959, Brooks Stevens Archive, Milwaukee Art Museum.

11. Stevens, "When Engineering Influences Design," 10–11. The phrase "Mrs. Consumer" originated with Christine Frederick's 1929 book on home economics, *Selling Mrs. Consumer* (New York: Business Bourse, 1929). See John Heskett's essay in this volume.

12. Ibid.; Brooks Stevens, "Industrial Design and Its Practical Application to Industry," lecture given on November 17, 1937, quoted in "November Meeting," *Milwaukee Engineering* 18 (November 1937): 9–10.

13. Stevens, "Clarification of 'Planned Obsolescence,'" 4.

14. "Most Products Designed for Female Buyer," *Milwaukee Journal*, 16 October 1955.

15. Stevens, "When Engineering Influences Design," 10–11.

16. Advertisement for Steam-O-Matic iron at Marshall Field and Company, ca. 1940, Brooks Stevens Archive.

17. A brochure promoting the Petipoint Iron, published by the Edmilton Corporation, 1941, explained its functions: "Now dainty ruffles, tucks, and hard-to-get-at surfaces may be ironed perfectly and easily as well as large flat surfaces . . . all with one iron" (Brooks Stevens Archive).

18. "Designer's Notes: Design Commissions Prewar and Immediate Postwar," Brooks Stevens to Richard Guy Wilson, 8 July 1985, collection of the author.

19. Cowan, *More Work for Mother*, 106.

20. Reyner Banham, "The Great American Gizmo," in *A Critic Writes: Essays by Reyner Banham* (Berkeley: University of California Press, 1996), 113; originally published in *Industrial Design* 12 (September 1965): 48–59.

21. Ibid. For a related discussion of the gizmo (or device) paradigm, see Albert Borgmann, *Technology and the Character of Contemporary Life: A Philosophical Inquiry* (Chicago: University of Chicago Press, 1984), chap. 9.

22. The "servant problem"—the shortage of women to hire for household help—started in the first decades of the twentieth century. However, as Cowan demonstrates, throughout the pre-World War II years, the area of housework for which wives consistently sought specific help was the laundry, either through a hired laundress or commercial laundries. Cowan, *More Work for Mother*, 106–107, 156–157, 174.

23. Brooks Stevens Associates, "Industrial Design . . . and How It Creates Business," 1949, Brooks Stevens Archive.

24. "Designer's Notes."

25. Ibid.

26. Brooks Stevens, interview with Chip Duncan, 1990, transcript, Brooks Stevens Archive.

27. Meikle, *Twentieth Century Limited*, 106.

28. In a 1990 interview, Stevens recalled the Hamilton refrigerator: "And you see this corner here? That is a transparent molded part of the cover, metal and plastic. Now you know when you walk up to the refrigerator when you come down at ten at night and you wanna look and see if there's anything there to nibble on. You would sneak the door open and look in real quick and close it because you're supposed to be wasting the cooling or whatever if you left the door open. So . . . this gave you the view point, I could see 90% of the content through the transparent door and then say, oh there is some cream cheese in there. I'll open the door now and take it out. And that was part of the romance that was in the showroom. This thing would light up inside and you'd see all the goodies in there" (Stevens, interview with Chip Duncan).

29. Advertisement for Coolerator refrigerator, published in *What's New in Home Economics*, April 1945, Brooks Stevens Archive.

30. Jack Stone, "Unmarried Millionaires: Bill Plankinton, Bachelor in a Trailer," *American Weekly*, 21 December 1947, 6–7.

31. "New Trains to Set Pace for Railroad," *Milwaukee Journal*, 10 November 1946.

32. "Designer's Notes: Olympian Hiawatha Railroad Train for Chicago, Milwaukee, St. Paul and Pacific Railroad," 12 May 1948, 5, Brooks Stevens Archive.