

Henry P. Glass and World War II'

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Footnotes begin on page 21.

Introduction

The Art Institute of Chicago's 2005 exhibition *1945: Creativity and Crisis, Chicago Architecture and Design of the World War II Era* posed the question: What effects did World War II have on American architecture and design, both during the war and afterwards? Though the show's focus was on Chicago, this is a question one could and should ask more generally about U.S. design but, as exhibition catalog contributor John Zukowsky has noted, "Although the sociopolitical impact of these war years has been the subject of numerous books, lectures, films, and television shows, the contribution to the war effort by visual artists and professionals—artists, architects, and industrial designers—has barely been touched upon."² Indeed, in the acknowledgements to the catalog, Zukowsky goes so far as to call the 1940s the "forgotten forties, a decade that has been eclipsed by books and exhibitions on Art Deco modernism of the 1930s and International Style modernism of the 1950s."³ Zukowsky speculates that this scholarly neglect may be a result of attitudes that make it "difficult for us to imagine creative individuals involved in work that supports the destructive side of human nature," or perhaps an effect of visual arts professionals' desire "to leave their horrific memories behind."⁴

The dearth of literature on the war seems especially acute in the field of industrial design (as opposed to architecture or graphic design), perhaps because much of the work that American industrial designers did for the government during the war was classified (and thus difficult to find out and write about), and/or because historians may have considered the restrictions on materials and production for the civilian market to have cramped designers' creative opportunities and freedom of expression. Whatever the cause of the lacuna in the literature on industrial design, however, its effect is that we now have little sense of what industrial designers (other than a few superstars such as Henry Dreyfuss, Raymond Loewy, and Walter Dorwin Teague) did during the war, and—perhaps more important to the history of design—how their wartime experiences shaped their subsequent careers.

This article, which is based on a lecture I gave at the Art Institute of Chicago in conjunction with the *1945* exhibition, is my attempt to answer the question of how World War II influenced the career of Henry P. Glass, a prolific Austrian-American industrial designer who settled in Chicago during the war years. Glass makes

a particularly good case study not only because a large portion of his personal archives is publicly available in the collection of the Art Institute of Chicago, but also because the effects of the war on his personal life and design career are relatively easy to trace. Although there have been a number of articles and essays about Glass published recently, including a brief essay in the 1945 catalog, none of them systematically attempts to explore the effects of the war on his career.³ In this article, then, rather than surveying Glass's career as a whole, which other writers have already done, I will focus on the years immediately before, during, and after World War II, and propose four respects in which I believe the war significantly changed Glass's design practice. Doing so, of course, does not answer the larger question of what effects the war may have had on American design as a whole, but it does at least provide a starting point for future scholars who wish to explore the broader context of the "forgotten forties."

Before the War: Vienna, 1911–1939

Henry Glass was born in Vienna in 1911 as Heinrich Glass under the monarchy of Kaiser Franz Josef.⁴ In an interview with Victoria Matranga, he noted that "I had a good upbringing in a middle-class household."⁵ "My father was an M.D. general practitioner; my mother was a homemaker, a devoted mother. I had one sister, three years younger than I am."⁶ He further noted that "My father was a great admirer of art and architecture, played the violin, [and] my mother displayed exquisite taste in her wardrobe and purchases of home products, such as Biedermeier furniture."⁷

Although he felt some pressure to become a physician like his father, Glass said that "he had no interest at all in medicine,"⁸ and was more interested in architecture. "I loved to sketch buildings and landscapes in my hometown and traveling as a boy scout and I always had good grades in my drawing classes at high school,"⁹ he noted in a 2001 interview. He also joked: "I wasn't interested or gifted enough [at drawing] to become an artist."¹⁰ So rather than attending "high school" at a *Gymnasium*—which was the training ground for physicians, lawyers, and the clergy—Glass attended a *Realschule*, which was where one prepared for a career in architecture or engineering. It meant not having to study Greek and Latin, but rather two modern languages (one of which, fortunately for his later career, was English, although he emphasized that he only learned a little¹¹).

Upon graduating from the *Realschule*, Glass enrolled at the *Technische Hochschule*, or Technical University, of Vienna in 1929.¹² He noted that schooling as an architect at that time included "design for furniture, interiors, products, cars, storefronts, posters, exhibits, and display[s]."¹³ During his school years, Glass's "admired mentor"¹⁴ was Professor Siegfried Theiss, the head of the Masterschool that Glass attended and "the designer of the first *Hochhaus* (tall build-

ing) in Vienna.”¹⁷ Glass said that during his time at University, “Our great heroes of the profession were Otto Wagner, Adolf Loos, Peter Behrens, Clemens Holzmeister and the Bauhaus luminaries [Walter] Gropius and [Ludwig] Mies van der Rohe.”¹⁸ Since Vienna had an especially rich architecture and design tradition in the early twentieth century, it is not hard to understand why so many of the names he lists are Austrian, or—at their most remote—German. Although Glass does not mention Michel Thonet in the same breath as these architects, it is clear from his later writings that he also was very impressed with this nineteenth-century Viennese furniture designer’s work, particularly because some of Thonet’s chairs could be shipped knocked down into six pieces and assembled with the use of just ten screws.¹⁹ The influence of these earlier Austrian and German architects and designers—blended somewhat with elements of Art Deco—comes through strongly in Glass’s student work. As one would expect, given the curriculum at the *Technische Hochschule*, his designs are not just for the plans and exteriors of buildings, but also for their interiors. Like earlier Viennese architects, he was trained to think of the architectural work as a *Gesamtkunstwerk*, a total art work, and not to leave the interior to a decorator.

In December 1933, Glass passed the *Ingenieur* exam, and received his degree in late 1933 or early 1934.²⁰ He then reenrolled at the *Technische Hochschule* in the master’s degree course. Even before he finished that second degree, he got his first job, which involved converting warehouses into apartments.²¹ Glass noted that, in those days, anyone who could afford it had his furniture made to order by craftsmen, which meant that Glass had good opportunities for designing custom work. Some school drawings from that period (figure 1) provide a glimpse into the kinds of interior spaces and furnishings he recommended to his clients.²² In general, his furnishings from this period are modern in form, but not aggressively so. They appear to have been constructed in a traditional fashion out of familiar materials. There is no evidence in this early work of the concerns with folding, stacking, knock-downability, and economy of materials that characterized Glass’s wartime and post-war work. In contrast, these furnishings convey a sense of bourgeois solidity and permanence.

Glass earned his master’s degree in architecture in October 1936 with *sehr guten* (very good) grades, and continued to design private homes and interiors.²³ He had enough work that, though he considered earning a doctorate, he did not pursue it very far.²⁴ However, despite a promising career and a steady girlfriend—Eleanor, whom he married in 1937—all was not well in Glass’s life.²⁵ The Nazi party had ascended to power in Germany in 1933, and as Glass and his classmates surely knew, one of the things the Nazis did that year was to shut down the Bauhaus, a hotbed not only of avant-garde architecture and design, but also an institution that was known for the many Jews, foreigners, and communist sympathizers

on its faculty and in its student body. Glass, who was a Catholic of Jewish descent, was also, he noted: "...a student activist of sorts. I joined the Socialist Students Group ...the Socialists were the only ones that really fought the Nazis actively, and so I wanted to join them."²⁶ He was involved in scuffles and fights at the University, and was blacklisted. When the Nazis arrived in Vienna in the spring of 1938, Glass was one of the first to be picked up. He spent the next nine months in concentration camps. From May to September of 1938, Glass was at Dachau; on his birthday, September 24, 1938, he was transferred to Buchenwald. Fortunately, his new wife was not arrested, and was able to work for his freedom. At this stage in the Nazi plan, it was possible for prisoners to arrange for release, on the condition that they left the country within three weeks. Eleanor went to the Gestapo in Berlin to try to arrange his release by pretending to wish to divorce him. Meanwhile, Glass's wealthy engineer uncle in Switzerland put up an affidavit at a New York bank in order to get an immigration visa for Glass to go to the U.S., and also hired a Netherlandish lawyer who was able to arrange his release in January, 1939.²⁷ Glass arrived in the United States in February, 1939; Eleanor followed in May.²⁸ The rest of Glass's family was not so fortunate—ultimately sixteen of his relatives were murdered by the Nazis.²⁹

In a familiar tale, then, Glass's work as a designer—and his entire life in Vienna—came to a screeching and violent halt as a result of the Nazi occupation of Austria. This is the first of many ways in which World War II had a direct impact on his career and his life: It forced him to uproot himself and his wife to come to the U.S.

The Build-up to War: New York, 1939–1941

When Glass arrived, by himself, in New York in February, 1939, he was not totally without resources. He had had a little high school English, and though he retained a distinct Austrian accent until the end of his life, he seems to have fairly quickly picked up enough English to make his way in the city, though he struggled with such things as currency and slang.³⁰ He also had some help from a fellow student-colleague from Vienna named Felix Blitz, who had arrived in New York the year before. Blitz helped Glass get established.³¹

Glass began looking for work by knocking on architects' doors and showing them his drawings. He recalls that Gilbert Rohde—the designer credited with transforming the Herman Miller furniture company in the 1930s from a conservative company making period reproductions to a cutting-edge manufacturer of modern design—was only the second or third designer he approached for a position, and that it was his Viennese portfolio that helped him get the job, which paid \$25 a week (which Glass considered "princely," given that the U.S. was still in the grip of the Great Depression).³² Rohde's modernist sensibilities and his connections made him a very useful employer for Glass, since he had the opportunity to work on designs for Valley Upholstery; on "details for the first line of modern

Figure 1

Henry P. Glass, American (born Austria), 1911–2003. *Entwurf für ein Wohnzimmer* (sketch for a living room), 1929–1936. Ink on paper.

Gift of Henry P. Glass, 1994.556.1, The Art Institute of Chicago. Photograph by Robert Lifson.

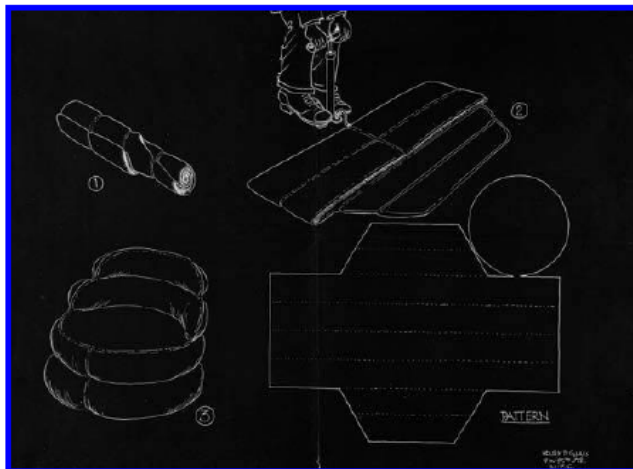
Photography © The Art Institute of Chicago.



Figure 2

Henry P. Glass, American (born Austria), 1911–2003. *Air Filled Furniture, Steps showing Air Filling Process*, c.1939–40. Blueprint, 37 x 36.3 cm. Gift of Henry P. Glass, 2004.7 15.31, The Art Institute of Chicago.

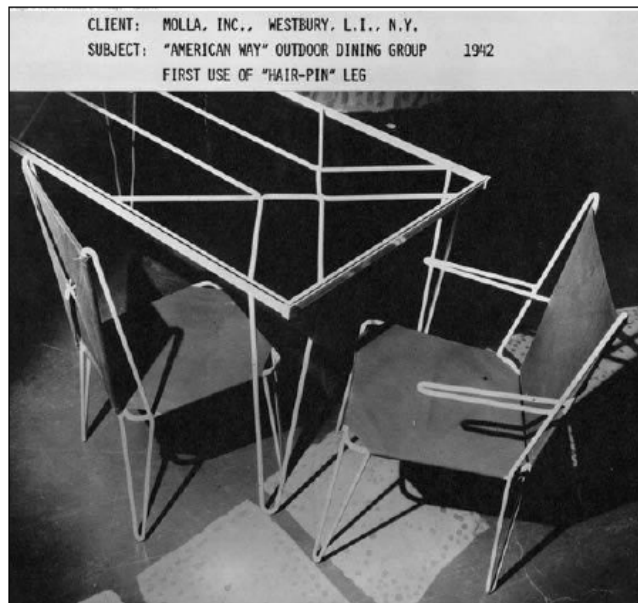
Photography © The Art Institute of Chicago.



furniture for Herman Miller”; and on some of Rohde’s designs for the 1939 World’s Fair, including the Anthracite Pavilion (as a result of which he also got to meet some of the giants of the industrial design profession including Raymond Loewy, Donald Deskey, and Henry Dreyfuss).³³ Glass recalls that working for Rohde was something of a turning point in his career. He recalled, “At my first job in America, at the office of Gilbert Rohde, I found that I am more interested in designing things that will be used by innumerable people than to work for some individual architectural client. Industrial design became my main focus. There was also another reason for this: at that time, I could be an independent practitioner in this field without a license. As an architect, I would have to work five years in an architect[’s] office before I could become independent.”³⁴

During this time, while living in his first apartment in New York, Glass started making drawings on his own for furniture that he might sell to manufacturers. One of the “wild ideas” (his words)

Figure 3
Henry P. Glass, American (born Austria),
1911–2003. "American Way" outdoor furni-
ture for Molla, c.1940–42. Photograph, Henry
Glass Collection, The Art Institute of Chicago.
Photography © The Art Institute of Chicago.



that he had was for a line of inflatable furniture, which it is tempting to see as a response to his own rather unsettled and mobile life at the time (figure 2).³⁵ Inflatable furniture usually is thought of as a product of the 1960s, which is what makes these designs so startling. They were never produced, but they show both how cutting-edge Glass was at his time of arrival in the States, and also that this must have been within a month or two of his arrival in the U.S., when rubber stockpiling has not yet begun, since presumably these designs would have been made from rubber.

Though the job in the Rohde office seems to have been relatively lucrative and personally satisfying from Glass's point of view, after the rush of the Fair was over, he lost the job and subsequently worked with several other New York designers, including Morris Sanders.³⁶ While working for Sanders, Glass met Russel Wright—best remembered today, perhaps, for his American Modern dinnerware—and Wright commissioned Glass to design a line of wrought-iron outdoor furniture for his American Way line (figure 3). The "American Way" line was a project dreamed up and spearheaded by Wright and his wife Mary. It was an extremely ambitious project that involved nearly one-hundred American designers and seventy-two manufacturers.³⁷ Wright's objectives were to develop "U.S.-made household products of 'inherently modern design' for both mass and craft production"³⁸ priced to appeal to buyers with a family income between \$2,000 and \$5,000,³⁹ and to "overcome what he saw as America's cultural inferiority complex; a mission he would accomplish by demonstrating the quality and vitality of American design."⁴⁰ Since Glass had only been in the country for a

year or so when he got this commission, he could only by a stretch be considered an “American” designer. However, the kind of “livable modernism” that Glass had perfected in Vienna—and his economical use of materials—made him a perfect fit for the project.⁴¹

Though the line was not a great commercial success, it was a boon for Henry Glass.⁴² Not only did it place him in an elite circle of American designers who had been commissioned to participate—including Raymond Loewy, Walter Dorwin Teague, and Gilbert Rohde—thus helping to establish his reputation in this country, but it also gave his outdoor furniture group a great deal of national exposure. If imitation is the sincerest form of flattery, then Glass should have been quite happy, because the distinctive “hairpin” legs that he used in this furniture group became extremely popular after the war when materials rationing ceased. Designers such as Florence Knoll imitated the hairpin legs in their own furniture, as did many lesser-known furniture designers whose works were made for the lower end of the furnishings market.⁴³

Despite this good publicity, however, during 1940 and 1941, when Glass and his wife were living on Central Park West, Glass was still shopping around designs when he was between jobs, which was frequently. He made a couple of trips to Chicago during this period for the biannual furniture markets, where he made contact with furniture manufacturers including Thonet, for whom he designed a Bent-Ply chair around 1940 or 1941.⁴⁴ But during this time, he also began creating much more materials-conscious designs that could be produced economically and shipped and stored compactly—designs that made a great deal of sense given the needs and limitations of the day.

It is important to understand that as early as the summer of 1939, two and a half years before the U.S.’s official entry into the war in December, 1941, materials stockpiling and rationing became a factor in design and manufacturing. The first baby steps toward a full-blown rationing system came in June, 1939—just four months after Henry Glass arrived in New York—when Congress and the Roosevelt administration passed legislation authorizing the stockpiling of “rubber and other strategic imports.”⁴⁵ Thus, well before Pearl Harbor on Dec. 7, 1941, and even well before President Roosevelt gave his famous “Arsenal of Democracy” speech on December 29, 1940, American industry was shifting slowly into a wartime mode.⁴⁶

But it was not until 1941 that materials rationing really began to put the squeeze on designers and manufacturers of consumer goods. On March 22, 1941, the Office of Production Management’s (OPM’s) Division of Priorities issued its first priority order, called M-1, which required aluminum producers to prioritize defense orders over civilian ones (and there also were rules about how to prioritize the civilian orders). Soon thereafter, the OPM issued priority orders for copper, iron, steel, cork, chemicals, nickel, rayon, rubber, and silk.⁴⁷ And eventually, of course, almost every raw material and food

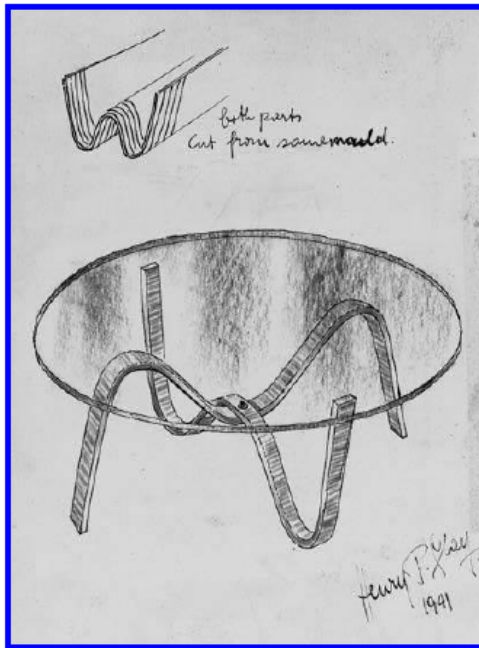


Figure 4
Henry P. Glass, American (born Austria), 1911–2003. Design for a bent plywood and glass table, 1941. Pencil and colored pencil on tracing paper. Gift of Henry P. Glass, 1999.547.1, The Art Institute of Chicago. Photograph by Robert Lifson. Photography © The Art Institute of Chicago.

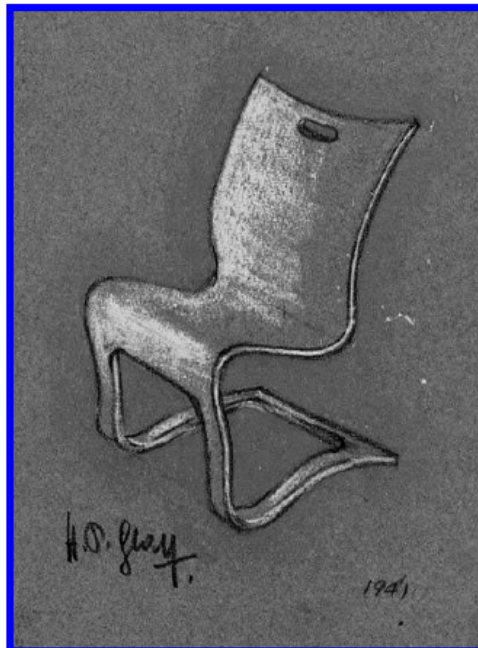


Figure 5
Henry P. Glass, American (born Austria), 1911–2003. Design for a molded plywood chair, 1941. Colored pencil and olive green and yellow pastel on tan laid paper. Gift of Henry P. Glass, 1999.548.5, The Art Institute of Chicago. Photograph by Robert Lifson. Photography © The Art Institute of Chicago.

item was rationed, and most civilian production was suspended or severely curtailed for the duration of the war, as factories of all descriptions were switched from civilian uses to military ones.⁴⁸

When he was between jobs in 1940 and 1941, Glass recalled, “I made furniture sketches, usually at night, [and] in the daytime I walked criss-cross through Manhattan hitting all [the] little cabinet-makers and upholsterers I found in the yellow pages of the phone book and sold my sketches where I found interested parties.”⁴⁹ Some examples of the kinds of sketches he meant may be figures 4 and 5, which are small presentation drawings in pastel on heavy, colored paper.⁵⁰ These drawings are notable for at least four reasons: first, they show his skill at draftsmanship, which was clearly a real selling point for him; second, they show his interest in the economical use of materials, which was, perhaps, a response to stockpiling and rationing (note the annotation on figure 4); and third, they are surprisingly adventurous and modern in form and materials for the U.S. in 1941, given that the country was still quite conservative in its tastes in furnishings,⁵¹ and that period reproductions were still the most popular form of furnishings. But—and this is my fourth point—they do entail a compromise from the kind of avant-garde Bauhaus modernism that Glass apparently admired. There is no chromed steel tubing in Glass’s work of this period. Although Glass does make use of adventurous forms such as the cantilevered chair (figure 5), he usually executes them in wood and fabric, or at his wildest, cowhide or pony skin. After two years in New York, he had abandoned the more fanciful and cutting-edge designs such as

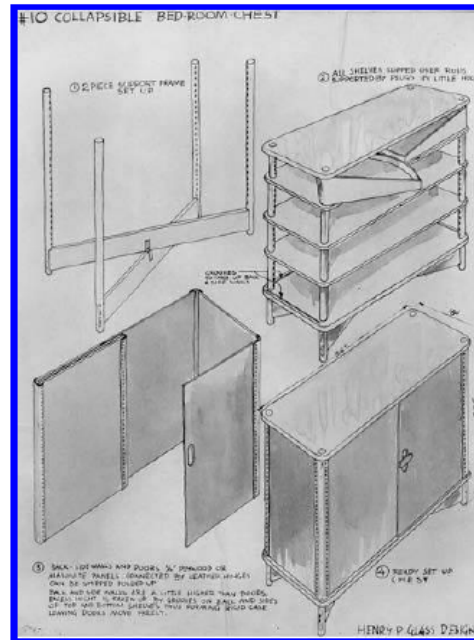
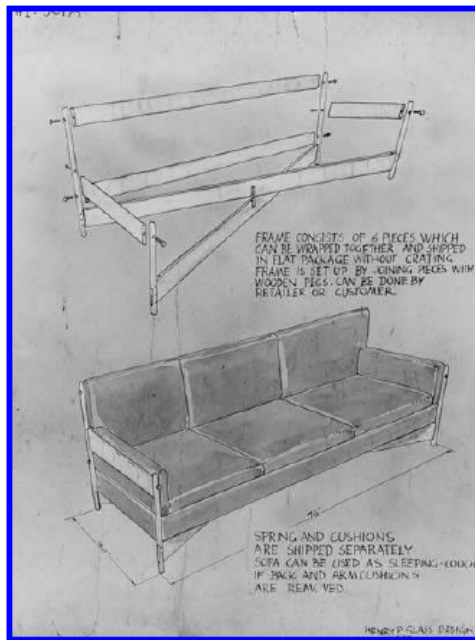


Figure 6
Henry P. Glass, American (born Austria), 1911–2003. Design for a sofa. Booklet: *Study on the Problem of Small House Furnishings*, 1941. Gift of Henry P. Glass, RX24570/1.1, The Art Institute of Chicago. Photography © The Art Institute of Chicago.

Figure 7
Henry P. Glass, American (born Austria), 1911–2003. Design for a collapsible bedroom chest. Booklet: *Study on the Problem of Small House Furnishings*, 1941. Gift of Henry P. Glass, RX24570/1.1, The Art Institute of Chicago. Photography © The Art Institute of Chicago

the inflatables—clearly he had picked up a sense of the American market, and realized its essential conservatism.

More evidence of the effects of the war on Glass's thinking can be seen in his designs for defense housing. As the war in Europe continued, the necessary migrations of workers from rural areas to port cities and industrial areas where defense jobs were available resulted in terrible housing shortages—rents were outrageous, housing was hard to find, and conditions were so bad that the Navy Department censored all housing news at its stations around the country.²² It probably was these conditions that led Glass to create a handbound booklet in 1941 that shows how he envisioned the task of building defense housing furniture. The cover notes that Glass's plans were for a housing project in Mobile, Alabama. Mobile was one of the fastest-growing cities in the U.S. during this period, due to its shipping and shipbuilding industries. In particular, it was home to Alcoa's fleet of bauxite carriers, which meant it was an essential port for the aluminum industry, and of course aluminum was an essential war materiel.²³ Glass said that he got the program for this project from Eliot Noyes at the Museum of Modern Art, New York, but that he did the project entirely on his own initiative—in other words, he did not have a client, and apparently did not draw the plans with the intention of entering them in a competition, either.²⁴

The first thing to note in this project is that Glass did not limit himself only to furniture. He started by planning an efficient, minimal house that could sleep as many as seven people, if necessary—and in Mobile, it probably was necessary. The plan of the

house was a compromise between wartime necessities and traditional bourgeois ideals of what a family home should be. It had a living room and a dining room, two bedrooms and a bath, but the living room was furnished in such a way that it could be converted to a bedroom at night. The furniture was designed with this cramped housing situation in mind: Glass designed sofas and daybeds that were convertible to single beds, and regular single beds that could be bunked (figure 6). Much of the furniture also could be folded up when not in use, such as a gate-leg dining table, or could serve more than one function, such as side and coffee tables with removable trays. Glass also designed the furniture to be lightweight and easily knocked down for inexpensive and space-efficient shipping (figure 7)—an important consideration in an era when freight charges, due to gasoline shortages and military commandeering of railroads, were quite expensive, and when the armed forces placed weight limits on the amount of possessions they would ship for free when military families needed to relocate. Furthermore, the furniture was made largely of materials such as plywood and Masonite—there are no metal beds here—and the hinges on the case goods were made of wood or leather rather than metal (see annotations to figure 7). This furniture also is typical of Glass's approach to style during these and subsequent years. Even more so than the other furniture sketches from 1941 discussed above, these designs are a compromise between modern and traditional styles. There is no inflatable furniture; no cantilevering; no pony skin. Instead, the furniture is made of familiar (and still relatively available) wood, with some limited upholstery and/or the suggestion of upholstery in the form of detachable cushions and fabric slings. The overall effect thus is more traditional than avant-garde. Although these designs apparently were never produced, they seem like a highly efficient solution to the problem of how to furnish the thousands of new housing units being built by the government in response to the increase in industrial and military activity, and give us some hint of what the defense work Glass did during the war was like.

If moving to the U.S., then, was the first way in which World War II had a significant impact on Glass's design career, materials rationing and the defense effort constituted the second. Both factors seem to have encouraged Glass to work at finding design solutions that made economical use of materials, that could be easily knocked down for storage or shipping, and that could be stacked, folded, or converted for use in tight quarters. These were interests he maintained throughout his later career. Although in the 1950s and 1960s, Glass necessarily bowed to the taste for large, upholstered, "luxurious" furnishings that were what his clients and consumers wanted (and for which he got a great deal of professional recognition²⁸), he also continued to work on other projects that were more similar in spirit to his wartime designs. These included projects such as the Beau Fer group for Stuckslager, which made efficient use of modern

Figure 8
 Stux Beau Fer Group for Walter N. Stuckslager
 Inc. Henry P. Glass, designer. Henry P. Glass
 Papers, Ryerson and Burnham Archives,
 The Art Institute of Chicago. Digital file
 © The Art Institute of Chicago.



Figure 9
 Henry P. Glass, *The Shape of Manmade Things*
 Northfield, IL: E.C.G. Publishers.
 Cover. Henry P. Glass Papers, Ryerson and
 Burnham Archives, The Art Institute of
 Chicago. Digital file © The Art Institute of
 Chicago.

materials and which could be easily folded, stored, and shipped (figure 8), and also outdoor furnishings, a category in which consumers valued compactness and light weight more highly than they did in living room or dining room furniture. In fact, two of the three designs that Glass singled out as being the best of his career—the American Way outdoor group (figure 3) and the Cricket chair (figure 9; at lower right)—were for outdoor furniture, a category in which he had freer reign to explore the kinds of design problems in which he was interested (the third design Glass singled out was the Swingline children’s furniture line [figure 10, discussed below]).³⁶ And, indeed, the 1978 Cricket folding chair for Brown Jordan of California is truly an amazingly efficient design. As the sales brochures note, it folds up to a thickness of only one inch, and unfolds cleverly to become a comfortable armchair. It was light; it was compact; it was made of virtually indestructible materials; and it was pirated immediately by other manufacturers and produced in inferior versions for a lower price, so it never sold as well as Glass and Brown Jordan might have hoped. But it was in this elegant, efficient design—which Glass considered one of his best—that the legacy of World War II really shows in Glass’s work. Even as late as 1996, he argued, “...there are ways to save space in shipping and storing of all kind of items made of wood or other materials. They can be folded, nested, or stacked, eliminating the necessity of consumer assembly. The more compact the result of such methods, the better the design.”³⁷ In other words, Glass clearly never lost his interest, fostered by the exigencies of the war, in creating furniture that was not only beautiful and comfortable, but also efficient to ship, assemble, and store.³⁸

Figure 10
Henry P. Glass, American (born Austria),
1911–2003. Swingline children's furniture for
Fleetwood Furniture Co., 1951. Photograph,
Henry Glass Collection. The Art Institute of
Chicago. Photography ©The Art Institute of
Chicago.



Figure 11
Henry P. Glass, American (born Austria),
1911–2003. "Structural Bends" Victory Series
collapsible bridge table for W. L. Stensgaard,
c.1942–45. Photo montage, gift of Henry
P. Glass, RX24570/1.2, The Art Institute of
Chicago. Photography ©The Art Institute of
Chicago.



Designing for the War Effort: Chicago, 1942–1945

As a result of the monumental changes in American industry and consumption habits during wartime, much of the work available to designers such as Glass, who had worked primarily on residential and commercial furniture design, disappeared. Glass recalled that "After Pearl Harbor, the chances for designers in New York dried up almost completely."⁵⁹ So Glass and his wife moved to Chicago in 1942,⁶⁰ where he worked as Chief Designer of the Architectural Department at a display company called W. L. Stensgaard for the duration of the war.⁶¹ Glass got the job at Stensgaard as a result of one of his prewar trips to Chicago, when he was recommended to W. L. Stensgaard, probably by Eliot Noyes.⁶² Stensgaard, at least before the war, was a company that specialized in retail display, which included everything from signage to merchandising vitrines to store architecture.⁶³ And this commercial work continued, albeit at a slower pace, during the war years. Glass noted that, in the four years he was there, he worked on "countless merchandising and display units and store layouts for such companies as Ekco, Kelvinator, Textron, and a rather prestigious traveling exhibit for the Pullman Company."⁶⁴

Figure 12
 Structural Bends Furniture Victory Series
 group for W. L. Stensgaard and Associates.
 Henry P. Glass, designer. Henry P. Glass
 Papers, Ryerson and Burnham Archives, The
 Art Institute of Chicago. Digital file © The Art
 Institute of Chicago.



Stensgaard, however, wanted to move into the defense furnishings market, and Glass notes that he showed W. L. Stensgaard his plans for the Mobile, Alabama housing project and was hired because of them.⁶⁵ One of his first projects at Stensgaard, Glass recalled, was for “a group of low-cost defense housing furniture, made of nonessential materials, namely plywood and bent Masonite,” a production technique for which Stensgaard was “well equipped.”⁶⁶ This was almost certainly the “Structural Bends” Victory Series, which was a suite of furnishings for home and office that was made of plywood and Masonite. Many of these pieces—as you might expect from Glass—folded up or stacked, and of course were both strong and lightweight (figure 11). They got their strength not only from the inherent properties of hardboard, but also from the fact that Glass and his colleagues bent thin sheets of it in cunning ways, much like a sheet of paper or cardboard can be bent in order to support a surprising amount of weight. To demonstrate these properties, Glass and some of his colleagues performed a stress test that was charming in its simplicity (figure 12).

It is worth pausing here to talk briefly about Masonite, since it is difficult to say if Glass would ever have used it in his furniture designs if it were not for the war, and for his association with Stensgaard. Masonite—or, as it is generically known, “hardboard”—became an extremely popular product during the war, because it was made from sawmill waste and forest thinnings—materials that previously would have been considered waste products—and was bonded through heat and pressure with naturally occurring lignins, which meant that no synthetic glues or resins were needed.⁶⁷ Although it had not been a particularly popular or prestigious material for furniture construction prior to the war, it was virtually “swept off the market by the military ‘for the duration’” because it could be used in place of metals for some applications, including some types of ship

and airplane construction. It also was used in huge quantities for Army and Navy housing (most notably in Quonset huts) at offshore bases.⁶⁶ Glass's association with Stensgaard meant that he not only had access to Masonite during the war, but that he also had access to machines for tooling it and to other staff members who had expertise in working with it, since the company had employed Masonite and other non-traditional materials such as plywood for display design before the war. Thus he became knowledgeable about a material that few other modernists had previously exploited for furniture design, and used that knowledge to great effect after the war.

In addition to the Structural Bends series, Glass worked on other projects between 1942 and 1945 that were directly commissioned by the armed forces, such as "educational devices for cockpit dials in Navy fighter planes and camouflage kits for the Army."⁶⁹ Because of this work, Glass never became a soldier. He recalls that "During WW II I was deferred because my draft board decided that I was doing more important work for the war effort as a civilian."⁷⁰

Like Charles and Ray Eames's molded plywood leg splints for the Navy, or Jens Risom's 1941 cotton webbing-"upholstered" chairs for Knoll, or nautical and aviation engineers' wartime designs for ships and airplanes made of plywood and Masonite rather than scarce steel and aluminum, Glass's work for Stensgaard is a good example of the ways in which the war effort changed both the nation's and individual designers' own design priorities, particularly regarding the use of materials.⁷¹ This is the third point I wish to make. World War II, I believe, helped accelerate designers' and consumers' acceptance of materials and construction techniques that they formerly might have considered inferior, such as bent plywood and Masonite, or canvas slings rather than upholstered seating. And the use of these materials, which had different structural properties than their more traditional counterparts, in turn may have helped foster a change in furnishing aesthetics from traditional to modern.⁷²

For example, one of Glass's wartime practices that carried over into the postwar years was his use of Masonite as a material for both institutional and domestic furniture. His award-winning 1951 line of "Swingline" children's furniture for the Fleetwood Furniture Company of Grand Haven, Michigan, for example, was clearly derived from the "Structural Bends" wartime furniture that he had developed at Stensgaard (figure 10).⁷³ Not only did it have similar bends and curves, but it also was brightly painted, just as the earlier furniture line was.⁷⁴ The furniture was designed to be easy to maintain, easy to organize things in (Glass believed the color coding would help children learn to put their things away), and sturdy. (The stools were fastened to the table, so they wouldn't tip over or get dragged around the room, and there were no hinges to fail on the case goods. Instead, the drawers hung from the furniture's upright posts.) Glass won the Industrial Design Institute's gold medal in

1952 for this line, which was perfectly timed for the beginning of the baby boom.⁷⁵ Glass also used Masonite and plywood in his designs for institutional furnishings, such as the school storage units he designed for Fleetwood, and wrote favorably about Masonite in his books.⁷⁶

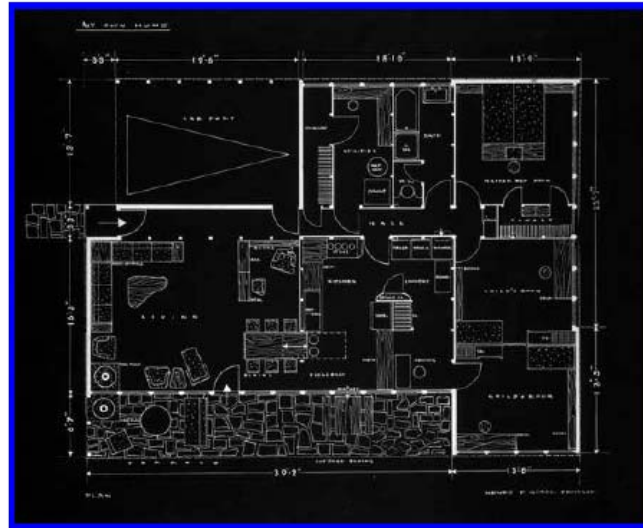
Ecological Concerns: 1940s and Beyond

Despite what seems to have been a busy schedule at Stensgaard during the war years, Glass found time not only to take on “moonlight jobs for various clients” designing furniture and products,⁷⁷ but also to attend evening courses at the Chicago School of Design—which later became known as the Institute of Design.⁷⁸ As Glass recalled later, “I heard lectures by architect George Keck there, which greatly influenced me in designing my own solar house in Northfield.”⁷⁹ Keck was an important early theorist of passive solar housing. As early as 1933, he and his brother, William, who was then just out of architecture school, began working on plans for passive solar houses, of which they built a number in the Upper Midwest.⁸⁰ In 1938, Keck helped found the Institute of Design in Chicago along with László Moholy-Nagy and Gyorgy Kepes. Keck was head of architecture there from 1938 to 1944, during the time when Glass was taking courses.⁸¹ While Keck was teaching there, he made a number of important innovations in housing design, which presumably Glass heard about firsthand in class. For example, in 1940, when Thermopane windows became available, the Kecks began using them in all of their designs.⁸² And in 1942, when Keck designed wartime prefabricated homes for the Green Company of Rockford, Illinois, he developed a form of radiant heating for them.⁸³

During his first five years in the U.S., Glass also was exposed for the first time to the works of Richard Buckminster Fuller, whose ideas he very much admired.⁸⁴ Glass even went so far as to place an order for one of Fuller’s aluminum Dymaxion houses when it appeared that a Wichita, Kansas firm would begin producing them in 1945 (the deal fell through, and Glass got his deposit back).⁸⁵ In other words, then, during the war era, Glass clearly absorbed many of Keck’s and Fuller’s ideas about energy efficiency (which were particularly timely given the fact of wartime gasoline and fuel rationing) and their interest in prefabricated and modular homes that could be quickly assembled to meet housing demands (such as for the defense buildup or the anticipated demand for postwar housing). Evidence of Glass’s newfound interests—he had shown no interest in prefabricated or modular or energy-efficient housing prior to arriving in the U.S.—can be seen in a project he did in 1944 for an article in *Interiors* magazine called “Guesses on Housing.” Glass’s wartime plans for “homes of the future” were modest, economical, energy-efficient plans for modern-styled modular and prefabricated houses that were modeled loosely on Fuller’s and Keck’s ideas (though Glass’s houses were somewhat more conservative in appearance).

Figure 13

Henry P. Glass, American (born Austria), 1911–2003. Plan of Henry P. Glass House, Northfield, IL, 1948. Blueprint on paper. Gift of Henry P. Glass, 1994.567.2, The Art Institute of Chicago. Photography © The Art Institute of Chicago.



They were meant to address the coming postwar housing shortages effectively and equitably, and to be customizable to families and building sites of different sizes. Unfortunately, they were never built, and prefabricated and modular housing never really caught on with the American public, except in a limited way—other than in the form of mobile homes—until quite recently.⁶⁶

In any case, the 1944 project—and Glass’s desire to purchase a Dymaxion house—shows that either his night classes or fuel rationing, or both, during the wartime years had a profound impact on his thinking. This is even more evident in his 1948 design for his own house in Northfield, Illinois (figure 13). It is impressive how many of his wartime ideas and predictions he followed through on in the design of this house, which has Thermopane windows throughout, and which has a roof raked to echo the angle of the sun at the winter solstice. It has deep overhangs to shield it from the summer sun, and all the rooms have cross ventilation.⁶⁷ The house also had labor-saving features and many clever built-ins that were meant to maximize space and minimize housework and clutter.

Unlike some other architects, who recommended small, modern, efficient homes for *other* Americans, while building themselves extravagant pleasure-palaces, Glass actually practiced what he preached—his own home was truly a model for the kind of housing that he thought other people should aspire to. My fourth point, then, is that some of the energy-saving impulses of the wartime years stayed with Glass after the war, which is made very clear in the example of his own house, in his subsequent works, and in his writings, including his lecture notes for the courses he taught at the School of the Art Institute of Chicago between 1946 and 1968.⁶⁸ In his 1996 book based on those lecture notes, Glass echoed the writings of Buckminster Fuller when he argued that “In general, great

effects achieved by small means are a crucial prerequisite for human survival. Recognizing the sensible application of these principles in material, form, and structure of manmade articles and the rejection of wasteful abuse of these elements is not only an expression of good taste, but actually the social duty of every conscientious citizen of this planet, plagued by dwindling energy and resources.”⁸⁹

Conclusions

World War II had at least four fairly clear effects on Henry Glass’s design career: (1) He moved to a new country after personally experiencing the horrors of the Nazi regime and, as a result, the trajectory of his life and career changed totally (in particular, he began to work primarily as an industrial designer rather than as an architect); (2) He worked for the military and the homeland defense effort via his job at Stensgaard, where he learned to create space-efficient, collapsible, stackable, multifunctional furnishings for military and civilian housing projects; (3) Because of materials shortages and rationing, he learned to make efficient use of “nonessential” materials that had formerly been considered inferior, cheap, or tacky, and to exploit their strengths and beauty; and (4) He became interested in ecological issues, either as a result of energy rationing during the war, or due to his exposure during wartime to the ideas of George Fred Keck and Buckminster Fuller.

Unlike many of his contemporaries, who begrudgingly responded to wartime materials restrictions and who gladly returned to designing large and inefficient products and buildings in the postwar period, Glass seemed to see the war as an opportunity for reeducating the tastes and purchasing habits of Americans toward greater restraint and economy and ecology, as well as toward more modern styles. Unlike many of his colleagues, he was not willing to define “good design” as the design that sells best or is most profitable to the manufacturer. Instead, he described himself as a “purist,” by which he apparently meant not only that he believed in truth to materials and good form, but also in efficiency and ecology, even if these things were not always valued by consumers.⁹⁰

And Glass did not abandon his principles, even during the “Populuxe” years of the 1950s and 1960s. Not only did he and his family—inhabiting a modest passive solar house and driving an economical Volkswagen Beetle—live the kind of life that he recommended for others in the postwar years, he also continued throughout his life to design and teach according to the principles that he had adopted during the war. His teaching career, I would argue, was particularly significant not only because he became a mentor to many aspiring industrial designers in the Chicago region, but also because it encouraged him to write down in the form of lecture notes many of his principles and beliefs about design. These lecture notes for his classes formed the basis for two very similar book manuscripts: an unpublished one from 1975 called *Design and the*

Consumer, and another that was privately published in 1996 called *The Shape of Manmade Things*. Although Glass did a fair amount of writing and speaking throughout his career—he wrote essays and was interviewed many times for journals and magazines in his field—his books and the lecture notes on which they were based are particularly revelatory about his thinking about the profession of design. They also demonstrate, in the same way that many of his postwar products do, some of the ways in which his experiences during World War II continued to shape his thinking throughout his life.

Although probably few American-born industrial designers had wartime experiences quite as dramatic or life-changing as Glass's—and many of those designers may have been eager to forget the war and its exigencies, rather than to learn from or build upon them—it is surely worth examining the “forgotten forties” more fully to discover in what ways the war shaped or failed to shape the trajectory of postwar American industrial design. In the case of Henry Glass, at least, it is clear that World War II had a profound and lingering effect on his designs and his sensibilities.

1 I'd like to thank everyone who had a hand in pointing me toward and helping me with this project, which began with research I did in preparation for a May 12, 2005 lecture at the Art Institute of Chicago. Many people helped me with this project over the course of 2004–2005 including, at the Art Institute of Chicago, Amy Babinec, Amy Berman, Peter Blank, Lori Hanna Boyer, Brandy Culp, Mary Hess, Kim Krueger, Jeffrey Nigro, Gail Pearson and Jenifer Robertson (both of the Community Associates Program), Martha Thorne, Annemarie van Roessel, Marta Wojcik, Mary Woolever, John Zukowsky, the Ryerson and Burnham Library staffs, and the heroic imaging department staff (none of whom I met, but who worked for a long time on all the images I ordered). Victor Margolin of the University of Illinois, Chicago, suggested my name to the Art Institute for the lecture. Victoria Matranga of the Housewares Association generously offered her personal recollections and her invaluable videorecorded interviews of Henry Glass, which were absolutely indispensable to piecing together the tale of his early life. David Jameson of ArchiTech Gallery spoke with me last year during his show on Glass. Phyllis

Ross, an expert on Gilbert Rohde, shed some light on Glass's work in Rohde's office. AnneKarin Glass, Henry's daughter, offered her assistance in finding information I needed. Nancy Weichert and Leigh Engel in Carbondale, two valiant student workers in art history, both did a lot of running to the library for me. And finally, my thanks to the School of Art and Design's art history program for illustration subventions.

2 John Zukowsky, “1945: Creativity on the Cusp between War and Peace” in *1945: Creativity and Crisis: Chicago Architecture and Design of the World War II Era* (Chicago: Art Institute of Chicago, 2005), 3.

3 Zukowsky, acknowledgements, “1945,” 36.

4 Zukowsky, “1945,” 3.

5 Some recent publications on Glass include Adam Katz-Stone, “The Quiet Invasion Continues ... Henry P. Glass, Designer,” *Austrian Information* 50:7/8 (1997), available at “Austrian Information,” www.austria.org/oldsite/aug97/glass.html (accessed 10/5/2004); Henry P. Glass: *Industrial Design, Interieurs, Architektur* (exhibition catalog; Vienna: Hochschule für Angewandte Kunst in Wien, 1997); Jeffrey Head, “How Things Work: The Inventions of Henry P. Glass,” *Modernism* 7:1 (spring 2004): 80–87; and Kay Manning, “Henry P. Glass and the Beauty of Manmade Things” in *1945: Creativity and Crisis: Chicago Architecture and Design of the World War II Era* (Chicago: Art Institute of Chicago, 2005), 22–25. In addition, there are many online resources on Glass, including an obituary (<http://new.idsa.org/webmodules/articles/anmviewer.asp?a=1675&z=106>) and an interview by Victoria Matranga (www.idsa.org/whatsnew/sections/dh/interviews/glass_henry.html) on the Industrial Designers Society of America website, and a number of pages of biographical/exhibition information on the ArchiTech Gallery site (accessible via www.architechgallery.com/arch_info/artists_pages/henryglass.html).

- 6 Henry P. Glass: *Industrial Design, Interieurs, Architektur* (Vienna: Hochschule für Angewandte Kunst in Wien, 1997), 26.
- 7 Henry Glass, "Henry P. Glass, FIDSA Interview," interview by Victoria Matranga, October 18, 2001. Available at "IDSA Design History Section—Living History Interviews," at: www.idsa.org/whatsnew/sections/dh/interviews/glass_henry.html (accessed 10/5/2004).
- 8 Glass, "Henry P. Glass, FIDSA Interview."
- 9 Glass, "Henry P. Glass, FIDSA Interview."
- 10 Henry Glass interview by Victoria Matranga, videorecording, Northfield, IL, November 7, 2001.
- 11 Glass, "Henry P. Glass, FIDSA Interview."
- 12 Glass, interview, November 7, 2001.
- 13 Glass, interview, November 7, 2001.
- 14 For information about the curriculum of the Technische Hochschule Wien, see Christopher Long, "An Alternative Path to Modernism: Carl König and Architectural Education at the Vienna Technische Hochschule, 1890–1913," *Journal of Architectural Education* 55:1 (September 1, 2001): 21–30.
- 15 Glass, "Henry P. Glass, FIDSA Interview."
- 16 Glass, "Henry P. Glass, FIDSA Interview."
- 17 Glass, "Henry P. Glass, FIDSA Interview."
- 18 Glass, "Henry P. Glass, FIDSA Interview."
- 19 Henry Glass, "Design and the Consumer" (1975), unpublished typescript, 18–19. In Henry Glass Collection, Ryerson and Burnham Libraries, Series I, Box 1, 1994.5, Art Institute of Chicago.
- 20 Glass, interview, November 7, 2001.
- 21 Glass, interview, November 7, 2001. Glass notes: "I was lucky, even before I finished Masterschool, I had a wonderful client. In Austria, I never worked in anyone's office except my own. My client specialized in converting old warehouses into modern apartment buildings and he entrusted me with these projects. This enabled me to open my independent studio and to start my career most auspiciously, since many of the tenants who moved into these apartments selected me as their interior designer. Several of the most famous Austrian theater personalities were among my early clients, which ensured excellent publicity and media recognition." Glass, "Henry P. Glass, FIDSA Interview."
- 22 Glass, interview, November 7, 2001.
- 23 Glass, interview, November 7, 2001; "Genius of Midwestern Industrial Design the Focus of New Art Institute Exhibition. 'Design from the Heartland: Henry Glass, John Polivka, and Richard Ten Fyck [sic]'"
- 24 Glass, interview, November 7, 2001.
- 25 Glass met his future wife, Eleanor, in a café where there was a band playing. They danced, and he asked her for a date. Her family was also from Vienna. They dated for four years before marrying in 1937. Glass, interview, November 7, 2001.
- 26 Glass, interview, November 7, 2001.
- 27 Victoria Matranga notes: "I asked him how he got out of the Nazi prison camps. He said he was first at Dachau and then Buchenwald. Ely got a Dutch lawyer through Henry's uncle in Switzerland. That lawyer was accredited with the Gestapo, so he was allowed inside the Gestapo headquarters in Berlin. Henry was imprisoned because he had fought the Nazis when he was at the University, and because of his Jewish family background. Ely was quick thinking. She told the Gestapo that she wanted her husband back because she wanted to get a divorce. The Nazi judge told her that she could divorce him without having him in person. She said, 'Would you like it if your wife divorced you while you were in prison?' So they let him out, on the condition that he leave the country in three weeks. Ely couldn't go with him because she was in treatment for TB, so he went to NYC in January 1939 and she followed him in May." Matranga, electronic correspondence with author, October 14, 2004 (based on a conversation she had with Glass on June 20, 2003).
- 28 Eleanor had tuberculosis, which was why her travel plans were delayed. Glass, interview, November 7, 2001.
- 29 Glass's sister had married an Italian before the occupation; his parents left to stay with the uncle in Switzerland. His father died in Switzerland, and his mother moved to Bologna with his sister. Glass, interview, November 7, 2001.
- 30 Glass recalls asking a man in the subway what a nickel was, and the man unhelpfully replied, "Half a dime, you dope!" Glass, interview, November 7, 2001.
- 31 Glass, interview, November 7, 2001.
- 32 Glass, "Henry P. Glass, FIDSA Interview."
- 33 Glass, "Henry P. Glass, FIDSA Interview."
- 34 Glass, "Henry P. Glass, FIDSA Interview."
- 35 Glass says that 90 W. 95th Street was his first address in New York. He describes the inflatables as some "wild ideas I had." Matranga asks him what the suite was to be made of, but unfortunately he doesn't answer, or his response is inaudible on the tape. Henry Glass, interview by Victoria Matranga, videorecording, Northfield, IL, April 17, 2003 (1:11:30).
- 36 Other employers included S. J. Campbell, Leo Jiranek, and the Broadway scenic designer Boris Aronson. Of this last job, for which Glass made cardboard models of sets, Glass said, "He had me working day and night—he had a cot that he put up for me in the office." But the pay was only \$15 per week, and then got lowered to \$10, so Glass quit and began looking for other ways to make a living. Glass, "Henry P. Glass, FIDSA Interview"; Glass, interview, November 7, 2001.
- 37 Essay on Russel Wright, from "DesignAddict," www.designaddict.com/design_index/index.cfm?fuseaction/designer_show_one/DESIGNER_ID/230/index.cfm (accessed April 22, 2005).
- 38 William J. Hennessey, *Russel Wright: American Designer* (Cambridge, MA: MIT Press/Gallery Association of New York State, 1983), 48.
- 39 Hennessey, *Russel Wright: American Designer*, 48.
- 40 Hennessey, *Russel Wright: American Designer*, 47.
- 41 The term "livable modernism" is from Kristina Wilson, *Livable Modernism: Interior Decorating and Design During the Great Depression* (New Haven, CT: Yale University Press, 2004).

- 42 The Wrights gave their American Way line as glamorous a launch as they could: Eleanor Roosevelt opened the exhibition at the New York Macy's store. However, only about twenty stores across the country were able to offer the complete American Way line at the outset in 1940, due in part to materials shortages, and in part to the size of the line, which included works from about sixty-five different designers. As a result, sales were not great, and the American Way line became a financial disaster for the Wrights, who had largely financed the project out of their own pocket. See Hennessey, *Russel Wright: American Designer*; also, Donald Albrecht, Robert Schonfeld, and Lindsay Stamm Shapiro, *Russel Wright: Creating American Lifestyle* (New York: Cooper-Hewitt/Harry N. Abrams, 2001), 159.
- 43 Glass had met Russel Wright while he (Glass) was working in the architect Morris Sanders's office, and remembers that Wright "liked my work and when in 1941 [actually 1940] he launched his campaign 'American Way, [] he honored me with an important assignment: to design a complete line of wrought iron furniture. I created a rather startling group of tables, chairs, sofas, etc. which commanded immediate and favourable attention in the trade press, particularly in the weekly "Home Furnishings"[sic]. Its editor-in-chief, Alfred Auerbach, coined the name 'Hairpin Group' because of the shape of the 'steel wire' legs. It was a great success, mainly in the media, I don't know how much of this furniture was actually sold in stores. It certainly created a trend, countless furniture pieces of all kinds were put on 'hairpin' legs for several years." Glass, "Henry P. Glass, FDSA Interview."
- 44 Glass, "Henry P. Glass, FDSA Interview."
- 45 Eliot Janeway, *The Struggle for Survival: A Chronicle of Economic Mobilization in World War II* (New Haven, CT: Yale University Press, 1951), 29. Hitler had, by that time, annexed both Austria and Czechoslovakia; and though the invasion of Poland did not occur until September 1, 1939, the Roosevelt administration pushed a reluctant Congress to pass a "preparedness" budget in July, 1939 that included a Reorganization Bill and a \$525,000,000 defense budget. Janeway, 47.
- 46 By the summer of 1940, for example, "Manufacturers were being swamped with contracts; the Government was underwriting elaborate expansion programs; and businessmen, understandably enough, were fighting to service their regular customers." Janeway, 180. And on September 16, 1940, Roosevelt authorized draft registration to begin on October 16, with the first 400,000 draftees due to report on January 1, 1941 and the second 400,000 in the spring (he did this during the height of his reelection campaign—a brave move!). Janeway, 176. For example, throughout 1940, just as the Russel Wrights were promoting their "American Way" campaign, there were already some clear shifts toward wartime production that had an impact on what could practicably be produced; notably, "work contracted for the Chase Brass and Chrome Company [for the American Way line] was curtailed due to wartime material shortages, and a planned line of knockdown furniture for Sears Roebuck was never launched." Albrecht et al., 159.
- 47 Janeway, 218–19.
- 48 According to Doris Kearns Goodwin, "By the end of November [1942], government regulations extended into almost every aspect of American life. Shortages of iron and steel prohibited the manufacture of a wide range of consumer items, including electric refrigerators, vacuum cleaners, sewing machines, electric ranges, washing machines and ironers, radios and phonographs, lawn mowers, waffle irons, and toasters. The use of stainless steel was prohibited in tableware. Shoe manufacturers were ordered to avoid double soles and overlapping tips; lingerie makers were limited to styles without ruffles, pleating, or full sleeves." Kearns further notes: "To ensure a sufficient amount of cotton and wool to supply the army ... the War Production Board mandated a new 'Victory' suit for civilians, with cuffless trousers and narrower lapels. Reductions in the amount of cloth allowed also led to shorter, pleatless skirts, rising several inches above the knee, and to the creation of a new two-piece bathing suit." Goodwin, *No Ordinary Time: Franklin and Eleanor Roosevelt: The Home Front in World War II* (New York: Simon & Schuster, 1994), 394, 355.
- 49 Glass, "Henry P. Glass, FDSA Interview."
- 50 All of these drawings are signed "Henry P. Glass" and dated 1941, though I suspect that the dates may have been added later, since they seem to be in a different pencil and hand than the signatures. But probably the dates are still accurate, and I would guess that these are the kinds of sketches Glass "shopped around" to furniture makers.
- 51 Adam Katz-Stone notes that "When he [Glass] first came to this country, in 1939, he found an American public 'still steeped in tradition, much more so than the European public, and they looked askance at the [sic] anything new' even in New York, that veritable breeding ground for things new and innovative." Katz-Stone, "The Quiet Invasion Continues ... Henry P. Glass, Designer." *Austrian Information* (Washington, DC) 50:7/8 (1997): www.austria.org/oldsite/aug97/glass.html (accessed 10/5/2004).
- 52 Janeway, 173.

- 53 According to an Alabama history website, "Mobile was home port for two important ship lines. Freighters operated by Waterman Steamship Company transported valuable wartime cargoes throughout the world. Alcoa Aluminum Company operated its own fleet of ships to transport bauxite (the ore from which aluminum is made) from South America to the company's refinery on the State Docks. Waterman lost 27 ships and 313 seamen's lives during World War II; Alcoa lost 8 of its own ships and 67 sailors, as well as 13 chartered bauxite carriers. Mobile's two shipyards won contracts to build desperately needed merchant vessels and warships. Alabama Drydocks and Shipbuilding (ADDSCO) built freighters and tankers. Gulf Shipbuilding, a subsidiary of Waterman Shipping, constructed destroyers and minesweepers. More than any other Alabama city, Mobile boomed as a result of wartime production. At the height of the war, the two shipyards and Brookley Field employed nearly 60,000 people. Only cities such as San Diego, California, and Norfolk, Virginia experienced comparable population explosions and accompanying strains on housing, education, and public utilities." From "ADAH: Alabama Moments (Alabama and World War II—Details)." Available at: <http://www.alabama.moments.state.al.us/sec50det.html> (accessed April 12, 2005).
- 54 Vicki Matranga interview of Henry Glass, tape 1, November 7, 2001 (1:46).
- 55 Glass's designs often were advertised using his name, which usually is a good indication of a designer's reputation. In addition to winning a number of design awards, including ones from the Fine Hardwoods Association and the Industrial Designers Institute, he also became chairman of the IDI's Chicago chapter in 1959–60 and national vice-chairman in 1960–62, and was elected a Fellow of the IDSA in January 1965—an honor that only 132 people have received since the IDSA was formed from the combination of the American Society of Industrial Design (ASID), the Industrial Designers Institute (IDI), and the Industrial Designers Education Association (IDEA) in 1965. Glass, "Henry P. Glass, FIDSA Interview"; "IDSA—About IDSA," available at: <http://new.idsa.org/webmodules/articles/anmviewer.asp?a=80&z=106> (accessed April 25, 2005).
- 56 Glass recalls that "The most successful product in terms of monetary reward was a folding conference table, which I designed for Samsonite Corp. It was patented, but I received royalties for as long as it was manufactured and sold, about 40 years. The products I am most proud of were the Hairpin Group of 1941, the colorful 'Swingline' furniture I designed for Fleetwood Co. in 1952 and the 'Cricket' folding chair that I did for Brown-Jordan in 1978." Glass, "Henry P. Glass, FIDSA Interview."
- 57 Henry P. Glass, *The Shape of Manmade Things* (Northfield, IL: E. C. G. Publishers, 1996), 52. Of knockdown furniture, Glass wrote: "Achieving a happy balance between an economical package and a user-friendly assembly job is a test of good design." Glass, *The Shape of Manmade Things*, 116.
- 58 In fact, Glass seemed to sum up his career and his design philosophy well in a 1953 address to the Industrial Designers' Institute, when he argued that "'bigger' isn't always 'better' [...]" [...] "When human ingenuity has figured out ways by which great bridges or tremendous domes can be supported by light weight structures, or if products are being designed which give greater serviceability at a lower price because of material and production economies, these are cases where less is definitely more and I should like to meet the editor, manufacturer, designer, or retailer who disputes this!" Glass, address to the Industrial Designers' Institute, June 25, 1953 (in uncatalogued red binder in Henry Glass Collection at Ryerson and Burnham Libraries, Art Institute of Chicago).
- 59 Glass, "Henry P. Glass, FIDSA Interview."
- 60 Although Glass and later writers often say the move to Chicago occurred in 1941, Glass remembers that the move was post–Pearl Harbor, and thinks it must have been early 1942. Glass, interview, April 17, 2003 (1:40).

- 61 "Genius of Midwestern Industrial Design the Focus of New Art Institute Exhibition. 'Design from the Heartland: Henry Glass, John Polivka, and Richard Ten Fyck [sic]':" <http://www.artscope.net/NEWS/news111099-1.shtml> (accessed 10/5/2004). Job title is from Henry Peter Glass, "Furniture of Today and Tomorrow," *Furniture Manufacturer* (June 1952): 42–46.
- 62 Glass, interview, April 17, 2003 (~16:00).
- 63 As W. L. Stensgaard himself put it, "This organization is devoted to the science of 'merchandise presentation.' The purpose is to create a better appearance, arrangement and dramatization of service or product at 'point of sale.' [...] "Yes ... ours is a highly specialized job for the purpose of assisting both the manufacturer, the retailer and the advertising agency. Here you will find broad, practical experience and America's largest and oldest organization devoted exclusively to Merchandise Presentation, Demonstrations, Displays and Exhibits of all types." W. L. Stensgaard in *Merchandise Presentation* (Chicago: W. L. Stensgaard and Associates, 1945), from "Stensgaard Masonite Furniture" folder, Henry Glass Collection, Ryerson and Burnham Libraries, Art Institute of Chicago.
- 64 Glass, "Henry P. Glass, FIDSA Interview."
- 65 Glass, interview, November 7, 2001 (1:46:00).
- 66 Glass, "Henry P. Glass, FIDSA Interview."
- 67 "Hudson Timber/Australian Hardboards/Australian Hardboards.": <http://www.hudson timber.com.au/hardboards/default.asp> (accessed 10/18/2004).
- 68 Masonite was so critical a material that "The company was granted three Army-Navy 'E's for its contribution to the war effort" in John M. Coates, *Masonite Corporation: The First Fifty Years, 1925–1975* (Chicago: Masonite Corporation, 1975), 19.
- 69 Glass, "Henry P. Glass, FIDSA Interview." According to design historian Arthur Pulos, "The U.S. Department of the Navy had a particular interest in the contribution that designers could make to its part in the war effort. Victor Schreckengost was made head of design in its Department of Training Devices, where he was joined by Henry Glass and Paul MacAlister"—presumably through some arrangement with Stensgaard, Glass's employer. Pulos, 24.
- 70 Glass, "Henry P. Glass, FIDSA Interview."
- 71 Jens Risom's 1941 collection for Knoll was made of birchwood and cotton webbing, materials that were "not subject to wartime restrictions." Untitled page: <http://www.knoll.com/products/brochures/Risomside.pdf> (accessed September 1, 2005). On the use of plywood as a wartime shipbuilding material, see Dung Ngo and Eric Pfeiffer, *Bent Ply: The Art of Plywood Furniture* (New York: Princeton Architectural Press, 2003): 40–47. For discussion of wartime uses of Masonite, see Coates, *Masonite Corporation*.
- 72 For example, Eliot Noyes's exhibition at the Museum of Modern Art, New York (MoMA) in 1941 called "Organic Design in Home Furnishings"—which included Eero Saarinen's and the Eameses' works in bent plywood—is often pointed to as a driver of change in the furniture industry, but the war effort was probably equally important, if not more important, in shaping tastes. More people lived in war housing than saw the MoMA show, and thus became familiar with some of the positive qualities (as well as some of the negatives, I'm sure) of these new materials, which certainly must have affected their buying patterns after the war.
- 73 The 1951 date is from a document called "Department of American Arts Gift Consideration, June 8, 2000" in the Art Institute of Chicago's American Art curatorial files (Item 2000.133). Glass himself speaks of the Swingline line as being from 1952, but given that he won an award for it in 1952, a 1951 introduction date seems more likely.
- 74 The caption for the Swingline furniture in one of Glass's manuscripts reads: "Part of the award-winning 'Swingline' group of juvenile furniture designed by the author in 1952. Bins and boxes swing practically friction-free on hardwood dowels. This was the first use of bold, bright color on children's furniture." Glass, "Design and the Consumer," 62A (fig. 36). Glass (erroneously) claimed that the Swingline furniture was the first line of children's furniture to be painted in such a way, but Alma Buscher and Ilonka Karasz had both used primary colors on furniture well before that. But perhaps Glass meant that his was the first mass-produced line of furniture that made use of bright colors.
- 75 "Department of American Arts Gift Consideration, June 8, 2000," 4. From American Art curatorial files on Henry Glass, Art Institute of Chicago.
- 76 Glass notes that "All hardboards are very useful materials in the right place. They are inexpensive and perfectly correct as drawer bottoms, cabinet backs, and the like." Glass, "Design and the Consumer," 82.
- 77 Glass, "Henry P. Glass, FIDSA Interview."
- 78 Glass recalls that he attended classes at the Institute of Design "Later, in 1940 and 1941," but since he did not move to Chicago until 1942, clearly this is a slip of the tongue, particularly since he notes elsewhere in the same interview that "During the war ... I attended classes at the School of design in Chicago" Glass, "Henry P. Glass, FIDSA Interview." During the early 1940s, the Institute of Design was called the Chicago School of Design. It was renamed the Institute of Design in 1944, and it merged with Illinois Institute of Technology in 1949. See "History of Illinois Institute of Technology," available at: <http://www.iit.edu/about/history.html> (accessed April 25, 2005) and "Institute of Design: Profile: History" available at: <http://www.id.iit.edu/profile/history.html> (accessed April 25, 2005).
- 79 Henry P. Glass, letter to Annmarie van Roessel, June 17, 1997. From American Art curatorial files, Art Institute of Chicago.

- 80 The first house the Kecks built that incorporated these ideas was the Wilde Residence in Watertown, Wisconsin, of 1935. The Kecks built other passive solar houses in 1937 in Lake Forest, Illinois, and in 1939 in Menasha, Wisconsin. Amy L. Gold, "Keck, George Fred" in *American National Biography* (New York: Oxford University Press, 1999), 431–432.
- 81 Gold, 431–432.
- 82 Gold, 431–432.
- 83 Gold, 431–432.
- 84 Glass noted: "Later, in America, I most admired Buckminster Fuller." Glass, "Henry P. Glass, RDSA Interview."
- 85 Glass wrote, "In 1945, Beech Aircraft started a tentative production run of the Dymaxion dwelling machine at a cost of \$1,800 per unit in Wichita, Kansas. At the time, it was enthusiastically supported by industry, labor, and the public because, at a retail price of \$6,500—fully installed, it would have solved the acute housing shortage and would have given employment to 1,000 workers, but when the war in Japan ended, industry and labor went back to their customary pursuits and the new, speculative project was abandoned. This author ordered a unit, but my deposit was returned. This episode led to the great experience of meeting Mr. Fuller personally. Upon my invitation (I was then president of the Chicago Chapter of the Industrial Designer's [sic] Institute) he came to Chicago, gave an inspiring speech to our group and also came for an afternoon of critique to my industrial design class at the School of the Chicago Art Institute. He refused to accept any remuneration. That was typical for Fuller's entire perspective on life, which he devoted to the betterment of the human condition by the optimum utilization of natural resources, without consideration of personal advantage." Glass, *The Shape of Manmade Things*, 160.
- 86 Glass stated in "Guesses on Housing" that "One of the few good things about the war is the way it speeds up public understanding. This flexibility of imagination carried into the postwar era, applied to the postwar house, may accelerate public acceptance of 'modern' design, or possibly sound the death knell of the whole hackneyed controversy of 'modern' vs. 'period.'" Glass, "Guesses on Housing" in *Contract Interiors*, 103 (Feb. 1944): 35–37.
- 87 When Glass's house was written up in *Interiors* magazine in 1950, the description of it read as follows: "Designer Glass and his wife and two children live in a solar house. Its whole south wall is Thermopane throughout, and the angle of the roof, parallel to the angle of the December 21st midday sun, admits it to the very rear of the south rooms. An overhang provides summer shade, and all rooms have cross ventilation. The living room, dining area, kitchen, and sewing room are [a] single air space divided by storage units, and the dining table moves in and out of the kitchen for easy serving. A loud speaker and movie screen are housed in the baffle wall between kitchen and living room; radio chassis and projector are built into cabinets at the opposite end of the living room. Black asphalt tile floor and burlap and Kalistron-covered wallboard facilitate servantless housekeeping for Mrs. Glass, who is the lady in the picture above. The side chairs are Armour Institute of Technology's experimental models, black and shiny." "The Year's Work" [1949–1950] [residential and commercial interiors] in *Contract Interiors*, 110 (Aug. 1950): 79. In other words, Glass's house was a very technologically and stylistically advanced home for its day, especially given that—as William Hennessey put it—"With the war safely behind them, American consumers now preferred furnishings that expressed conventional prosperity, conformity, and tradition." Hennessey, 65. In fact, Glass's design was a bit too advanced for some of his neighbors' tastes; Glass recalled: "The neighbor in the adjoining lot, a 'very conservative gentleman,' felt that Mr. Glass's modern construction was devaluing his property, and decided too that the architect with the accent must
- of course be some sort of Communist." Adam Katz-Stone, "The Quiet Invasion Continues ... Henry P. Glass, Designer." *Austrian Information* (Washington, DC) 50:7/8 (1997); <http://www.austria.org/oldsite/aug97/glass.html> (accessed 10/5/2004). (Though Glass made a joke of this frequently, he does seem to have worried at least a little that his neighbors might think he was a communist; probably it didn't help that he'd been a member of socialist groups as a student.)
- 88 Again, dates vary. Glass says 1945 in one source (Henry P. Glass, letter to Annmarie van Roessel, June 17, 1997, from American Art curatorial files, Art Institute of Chicago), but other people often say 1946 (e.g., "Genius of Midwestern Industrial Design the Focus of New Art Institute Exhibition." Design from the Heartland: Henry Glass, John Polivka, and Richard Ten Fyck [sic], "" available at: <http://www.artscope.net/NEWS/news111099-1.shtml> (accessed 10/5/2004). For the end date, Glass says 1969; other sources (including "Genius of Midwestern Industrial Design"), say 1968. In any case, Glass reached the rank of full professor at SAIC, all the while maintaining his own practice as a designer.
- 89 Glass, *The Shape of Manmade Things*, 10.
- 90 Glass noted: "Although a marked improvement in popular taste in the last few decades has been noticeable, although the watchword 'good design sells' has been recognized by producers and consumers, huge quantities of junk products in all fields still are a large part of the market picture. Conversely, there have been many instances when good design was not accepted by the buying public." Glass, *The Shape of Manmade Things*, 169.