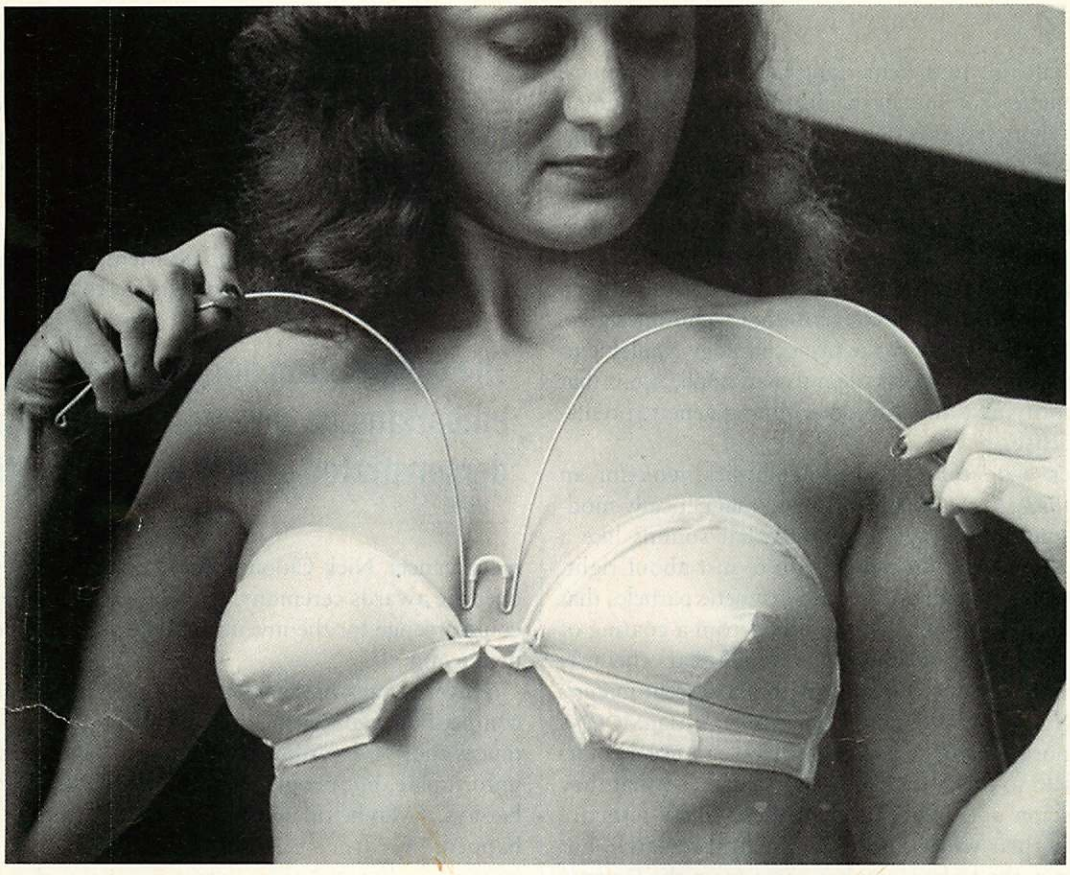

A model displays the wire used in her strapless bra, 1946.

THE BRA

It uses structural mechanics and materials science to counteract the law of gravity

BY CURT WOHLEBER

THERE ARE A LOT OF false popular accounts of the history of the bra. The story of the New York socialite Caresse Crosby, also known as Mary Phelps Jacob, is closer than most to the truth. Around 1913 Jacob purchased a sheer, tight-fitting evening gown, but the rigid stays and embroidered eyelets of her corset ruined its smooth contours. Instead of wearing the corset, Jacob sewed together a makeshift brassiere out of a pair of silk handkerchiefs and some ribbon. She patented this simple invention in 1914 and although she was never able to market it successfully, she did in later years manage to sell people on the notion that she was the inventor of the brassiere.

This was not the case, as Jane Farrell-Beck and Colleen Gau show in their recent book *Uplift: The Bra in America,* published by the University of Pennsylvania Press. Under different names the brassiere goes back to at least the Civil War. In 1863 a man named Luman Chapman patented a breast supporter, designed to alleviate the friction inflicted by the corsets of the day. To modern eyes his device, with laces crisscrossing down the back and tied over the abdomen, looks like a dire orthopedic appliance. But it was a tremendous improvement over the corset, at least in principle, because it allowed the shoulders rather than the waist to support the bosom.

Nothing seems to have come of Chapman's invention, but in the ensuing decades physicians and proto-feminists called for more "hygienic" styles of underwear. The corset, then at its peak of popularity, molded the body through brute force. It was laced as tightly as human strength and endurance would permit—tight enough to permanently deform internal organs. In 1876 a Boston dressmaker, Olivia Flynt, patented a substitute she called a "bust supporter," to allow "beauty of form to be preserved without lacing or otherwise injuriously pressing or

LEFT: NINA LEEN/TIMEPIX

binding the body."

Flynt's undergarment and similar devices enjoyed some limited success, but according to Farrell-Beck, fashionable women would have nothing to do with the things. Going about corsetless was associated with women of low morals.

The evolution of the bra through the twentieth century is extraordinarily complex, a matter of both engineering and fashion design. The first brassieres were resolutely utilitarian alternatives to the corset; they gained popularity only after new fashions gave them a cosmetic as well as functional advantage.

By the late 1920s, bras were taking a more active role in shaping the bosom. Maiden Form's were "adapted to support the bust in a natural position, contrary to the old idea of brassieres made to flatten the chest." Their name was an apparent rejoinder to the popular "Boyshform" brand, which was meant to evoke images of both youth and androgyny.

Maiden Form bras lifted the breasts by means of both the shoulder straps and a tight elastic band below the bust. The fabric covering the breasts was gathered at the center to form a "double support pocket," an early form of bra cup. Before that, bras typically hadn't featured cups, essentially functioning as bandages compressing the chest.

Bra designers were often early adopters of new fabrics, materials, and manufacturing techniques. Lastex, a fabric made from extruded filaments of latex rubber clad in cotton, rayon, or silk, made a big splash when it appeared in 1931. It offered flexibility while maintaining firm support, and its fabric covering absorbed perspiration. But bras made with such materials tended to wear out quickly; the rubber split easily and would lose its elasticity before long. Promising new materials such as nylon and neoprene, a synthetic rubber, appeared in the 1930s, but the Great Depression and material shortages imposed by World War II delayed their widespread adoption. In the 1940s Maiden Form's bra technology contributed to the war effort when the company designed harnesses for carrier pigeons used by Allied paratroopers.

A famous bit of brassiere lore from this era has the inventor-industrialist Howard Hughes devising a seamless bra for the actress Jane Russell during the filming of the 1943 movie *The Outlaw*. Hughes, the owner of RKO Studios, fired the movie's original director, Howard Hawks, and took it upon himself to ensure that the movie effectively showcased Russell's physique. In one scene Hughes was dismayed that the seams of her bra were plainly visible. "This is really just a simple engineering problem," he remarked, and then he worked deep into the night perfecting a seamless bra. Years later, in her autobiography, Russell said that Hughes's contraption was "uncomfortable and ridiculous." She used tissue paper to conceal the seam of her regular bra, and Hughes never knew the difference.

In the postwar years manufacturers had an abundance of new materials to work with: nylon, polyester, spandex, synthetic rubbers, and assorted blends. Bras appeared with zippered fronts, Velcro straps, inflatable cups, and countless configurations of bands, seams, and straps. The underwire appeared as early as 1934 but did not become common until after World War II. An echo of the odious stays of old-style corsets, it illustrated how far the bra had strayed from its strictly utilitarian origins. Like the corset, the bra was now a tool for molding the body into a certain shape—albeit in a more benign and limited way.

Underwires illustrated how far the bra had strayed from its strictly utilitarian and "hygienic" origins.

A 1950s ad promises eternal support.

A backlash ensued in the 1960s. Some women's movement activists called for the abolition of the bra, as a yoke of the patriarchy, and going braless was for a time seen as both fashionable and progressive. However, for many, forsaking the bra was simply not practical. No one needed conical, cantilevered breasts, but some form of support was necessary.

Howard Hughes's longtime dream was realized with seamless bras featuring cups heat-molded from elastic meshes of thermoplastic nylons and polyesters. Wearers could feign a braless look yet still enhance their figures. In the 1970s the trend was toward natural fibers and a less sculpted, more "natural" look, and in the 1980s the sports bra, a practical undergarment that would have pleased Olivia Flynt and other nineteenth-century dress reform advocates, gained widespread popularity. But, perhaps inevitably, the 1980s and '90s saw the pendulum swing the other way with the return of bras designed to accentuate the bust—"pushups," such as the Wonderbra and the Miracle Bra, which despite state-of-the-art materials and manufacturing generally still rely on underwires.

After more than a century of research and innovation, technology has yet to develop anything close to the perfect bra. Most bras on the market today, Farrell-Beck complains, favor women "in the first firmness of youth." But new materials, sophisticated manufacturing techniques, and computer-aided design offer hope that the twenty-first century will see the creation of bras far beyond anything Caresse Crosby could have dreamed of. ★