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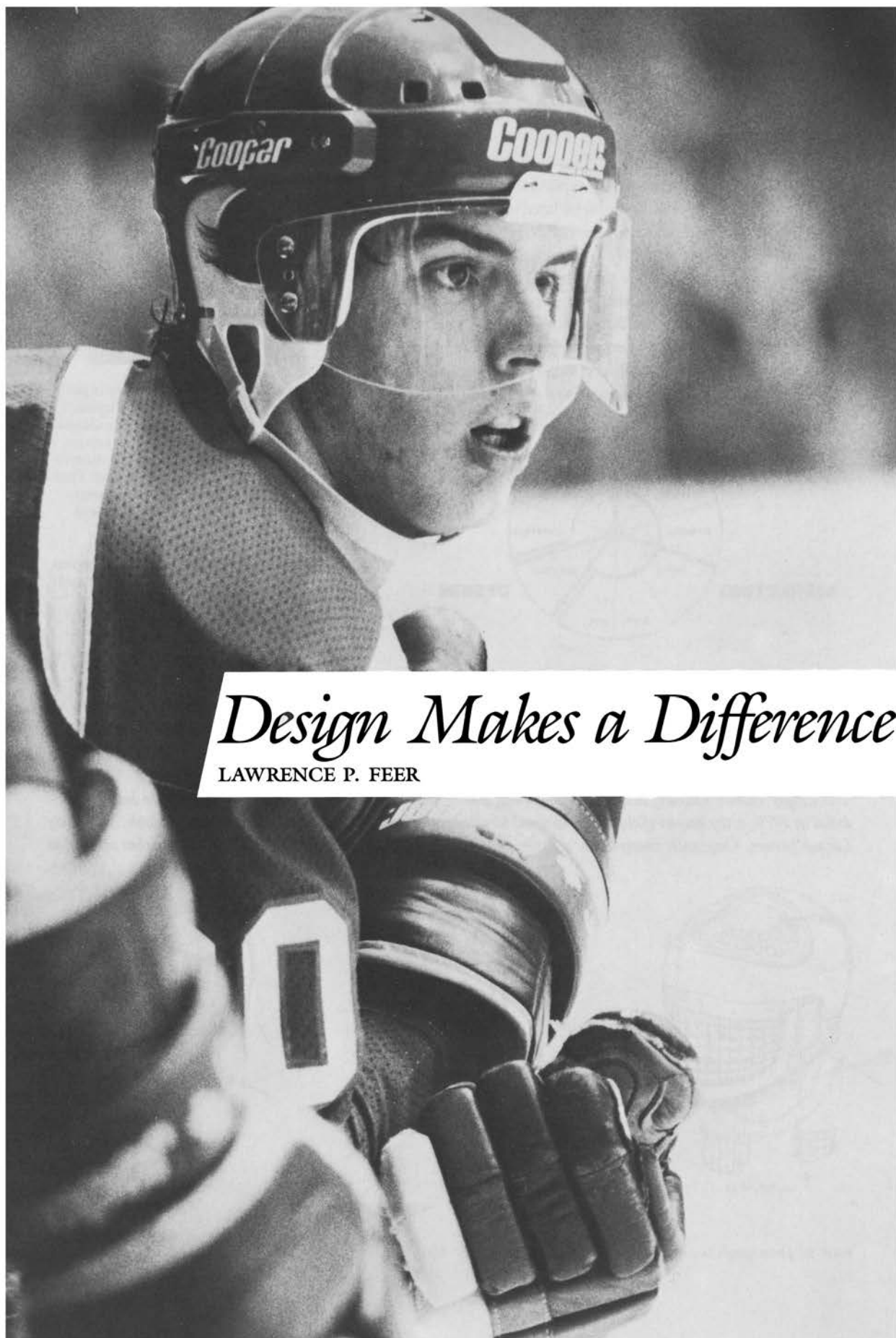
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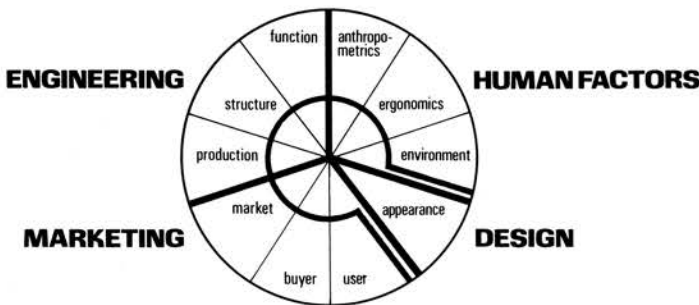
Design Makes a Difference

LAWRENCE P. FEER

WHAT DO YOU SAY when the director of research and development (R & D) of a major U.S. company opens the conversation with the statement, "So you make things look pretty"? I rapidly calmed my indignation and replied that I did but "there's much more to it than that." Three months later, at the conclusion of the project, he recommended my industrial design services to a colleague. Apparently he liked my "pretty" designs or perhaps he learned that design makes a difference. My new R & D ally, the vice-president of engineering, the marketing manager, and the president all actively supported me because they learned that industrial design helps them solve their problems and provides a competitive edge. The product is structurally sound, producible at an acceptable cost, easier and safer to use, and better looking than its competitors.

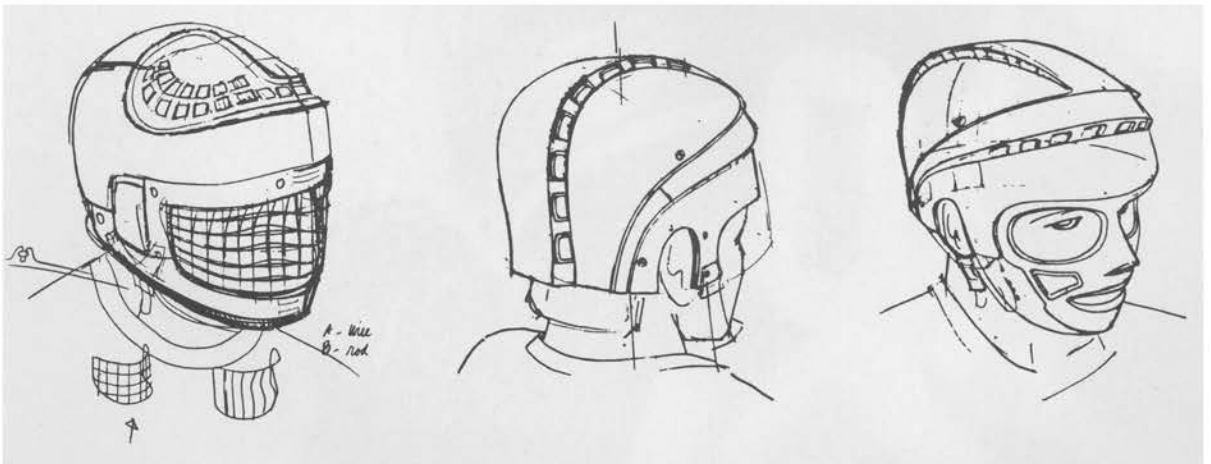


Lawrence P. Feer is a professor in the Industrial Design Program, Department of Design, College of Visual and Performing Arts, Syracuse University. He received his bachelor's and master's degrees in Industrial Design from Pratt Institute. Active for the past twenty-five years as a freelance designer and consultant in the United States, Canada, and Europe, he has been responsible for the design of numerous consumer and industrial products and exhibits, as well as packaging, corporate identity, and a privately published design manual for a Swiss machine tool conglomerate.



The Cooper Hockey Helmet, designed in 1977 and produced in 1979, is the helmet of choice by National Hockey League players. Originally conceived as a design for the

youth market it apparently has one of the best comfort-protection-appearance combinations available. My early concept sketches explored a variety of styles that alluded to



Designing starts with a meeting of all the disciplines involved in the development, production, and sale of the product. Each area contributes expertise in establishing the design criteria, critical to the quality of the final product. Design appearance is by necessity an intertwining of all the areas, as shown on the chart. Priorities, goals, schedules, programs, and budgets are set for the timely completion of the project.

An early understanding of human need, function, production, and appearance criteria enables me to construct a design that closely predicts the final product. I find that each product design problem presents a unique set of conditions and each has a different ultimate goal. After the product parameters have been identified, analyzed, and prioritized, the key to an innovative solution can be recognized. It is usually one special consideration that provides the distinctive feature that separates the design from others and provides the competitive edge.

I use sketches to represent an idea. These sketches embody combined product needs for function and use while actively seeking a unique appearance that makes the product novel. Such two-dimensional illusions of nonexistent three-dimensional forms make it possible for the development team to evaluate a variety of ideas and to select those that best meet the established criteria.

The really interesting part comes when full-size mockups are constructed to get a "feel" for the scale of the product. Previously unrecognized human and technical problems come to light and are easily solved directly on the model by the development team. Often these early models are painted and corporate identity graphics are added to experience the full visual impact of the product. When the technical aspects are complete, working prototypes are built to prove the design's functional capability and ease of operation.

VISUAL CONCEPT/SAFETY COOPER SK2000

Hockey Helmet

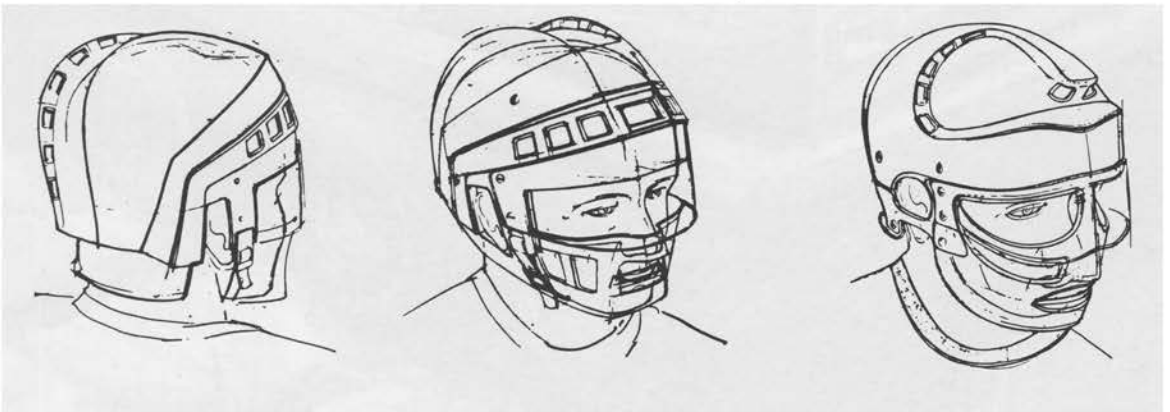
*An animal and gladiator form
that reflects the action and
aggressiveness of the sport.*

*Designed with
Thomas Faul Design,
Rama, Ontario*

*Manufactured by
Cooper Canada Ltd., Toronto*

animal forms and gladiator-type headgear. The selected design projects the image of a lion's nose and a Roman helmet. A clay model was used to refine the form prior to

making wearable prototypes for market testing. Technically, the helmet is easily adjustable for different head sizes, provides adequate cooling, and meets all safety standards.



For some projects a second series of sketches or clay models are completed to refine the design and to reevaluate production methods, materials, service, and maintenance. Finally, an appearance model, which may also be operational, is used for market testing.

The projects shown here started with a goal, then involved specific product criteria, and finally led to a product presently on the market. A variety of products and a diversity of market areas are represented. The special considerations of each project are noted in the first line of its caption. Their common denominator is the essential design process, which recognizes the need and value of integrating human, engineering, and marketing needs. Design made a difference by providing a special image, a unique look, a more understandable operation, or a timeless appearance.

**HUMAN FACTORS, DESIGN
AND ENGINEERING
CONCEPTS MERGED
*GRIZZLY All-Terrain Vehicle***

An operational prototype was redesigned to improve the structure, handling, control, comfort, and ease of production.

*Designed with
Thomas Faul Design,
Rama, Ontario*

*Manufactured by
Trans-Tec Ltd.,
Sudbury, Ontario*



The Grizzly is a rugged off-road vehicle that can carry 1,000 pounds and go nearly anywhere: up a 60 percent grade, over fallen trees, through small bodies of water, and onto ecologically vulnerable tundra. With 16 low-pressure tires (24 optional for flotation), it exerts a ground pressure of only 2 pounds per square inch but has enough traction to pull a pickup truck with its brakes locked across dry pavement. A dual shaft 18-horsepower Briggs and Stratton engine powers the left and right axles separately through 2 variable speed drives and 2 forward and reverse transmissions. Thus, Grizzly can be controlled in a number of ways utilizing various combinations of engine speed, variable drive left or right, and forward or reverse. It can be made to rotate in place about its center or go up to 12 miles per hour. For long-distance highway



travel it climbs two planks into the bed of a standard pickup truck.

It took 3 days to test the operational prototype and to reconceive both the structure and the form to make it functionally and aesthetically superior as well as easier to manufacture. After a few more days I had completed the original mechanical layouts and

perspective sketch renderings, which proved to be very close to the final production vehicle. The engineering, appearance, and human needs were simultaneously considered in the design of each component: side extrusions, the front and rear castings, the hood—every part served a technical, human, and appearance purpose. Moreover, extra parts were eliminated and assembly simplified to reduce production costs and improve the Grizzly's appearance—strong yet sporty.



PHOTO: Trans-Tec Ltd., courtesy of the artist

**CLASSIC TOUCH FOR
TIMELESS APPEAL
NEW ERA/FOREVER**
Flatware

*Designed while on staff
for Oneida Ltd.*

*Manufactured by Oneida Ltd.,
Sherrill, NY*

In 1953, Oneida named this pattern New Era, to connote its modern appearance. True to the name, it started an era of sales that continues thirty-four years later. First produced in Oneida's premium silverplate, it was subsequently moved to the lesser grades of consumer silverplate and then into the hotel line.

No longer available through retail outlets, the pattern is now offered in Oneida's finest 18/8 stainless. The new name, Forever, respects the timeless appeal of the design, which bridges the gap between contemporary and traditional patterns.

In 1985, Forever was selected by Disneyland for use in its restaurants. The modern simplicity, a classic line, and a touch of decoration seems appropriate for the forever quality of Disney.

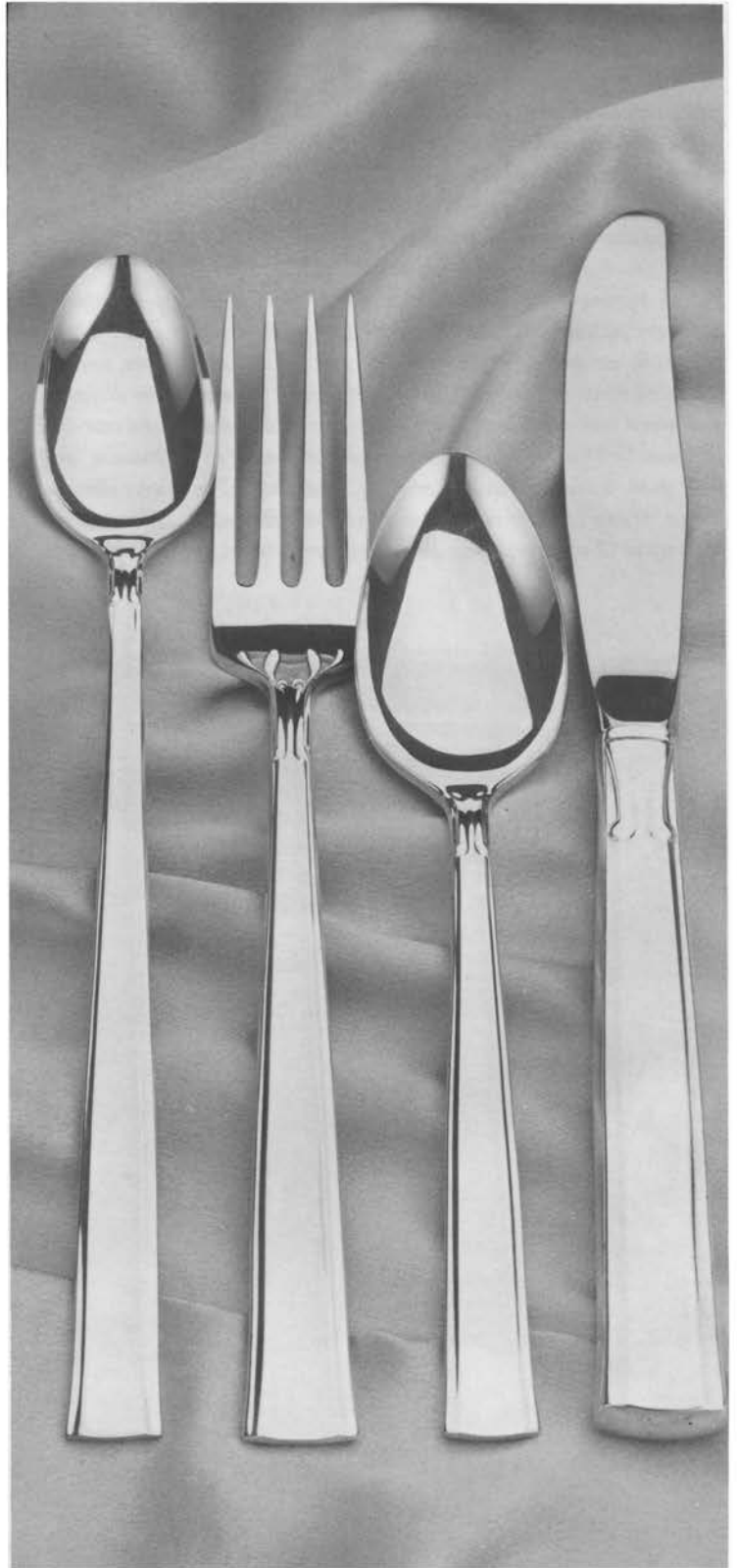


PHOTO: Steve Satori, SU Photo Services



PHOTOS: Matchbox Toys (USA) Ltd., courtesy of the artist

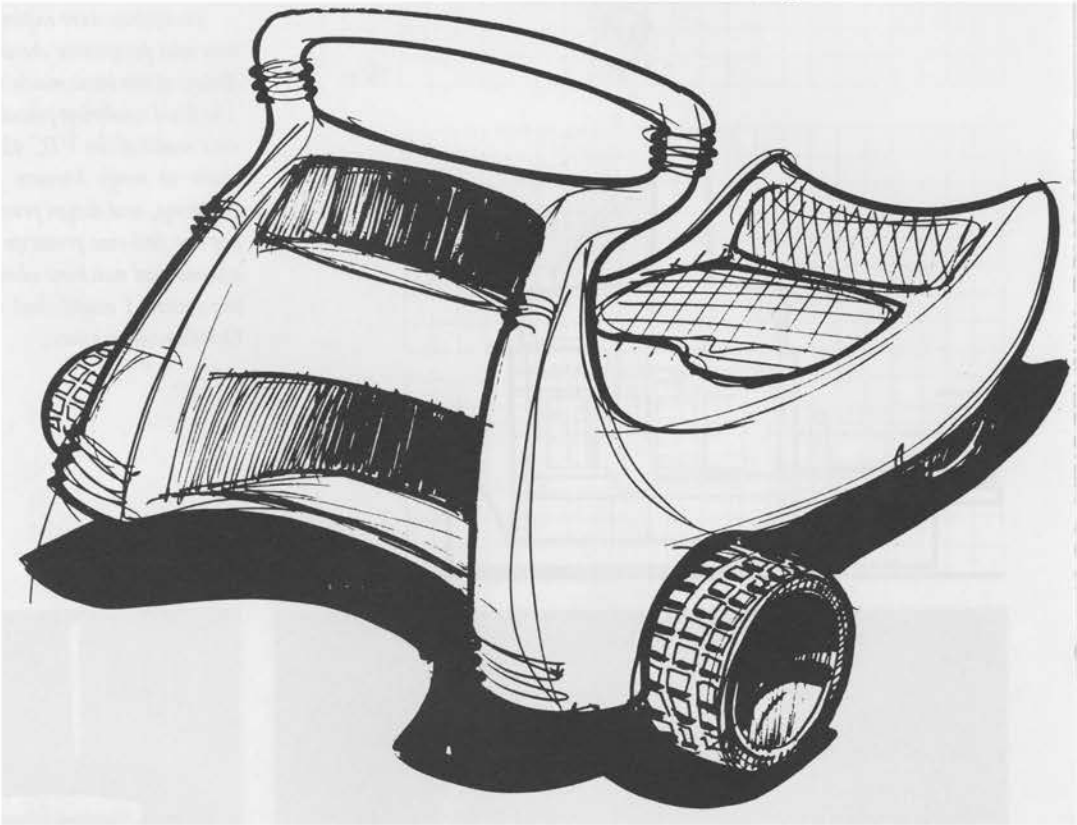
**CHILD DEVELOPMENT/
NEW LOOK**

STRIDE 'N RIDE

*New concept in
child development highlighted
by a contemporary appearance.*

*Designed with CSI Inc.,
East Aurora, NY*

*Manufactured by
Matchbox Toys Ltd.,
Moonachie, NJ*

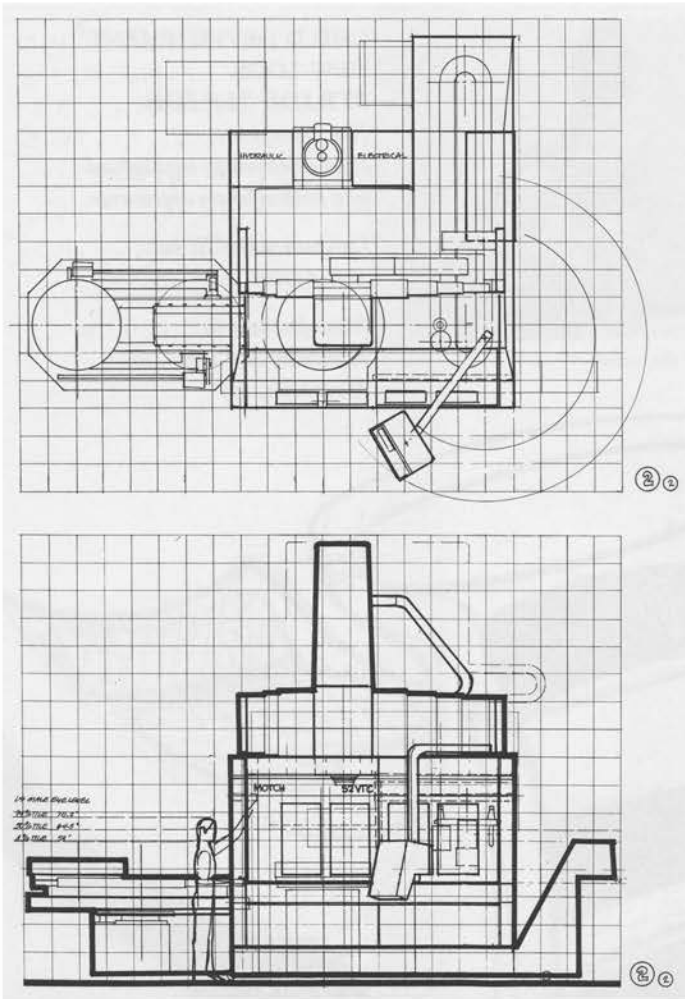


Children who are ready to walk typically pull themselves up on whatever is handy. Stride 'N Ride provides children with a unique toy to help them stand and then learn to walk. When one of the test group children actually took his first step using the working prototype, I knew we had a good design.

Stride 'N Ride is exceptionally safe. The wheels are locked by a special brake until the child leans forward to take a step, at which time the brake is released so he/she can walk with the support of the toy. When the child is ready to climb on and ride, the parent can disengage the braking system so Stride 'N Ride will roll freely.

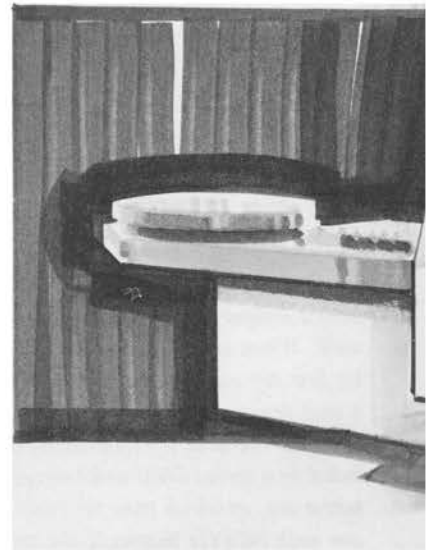
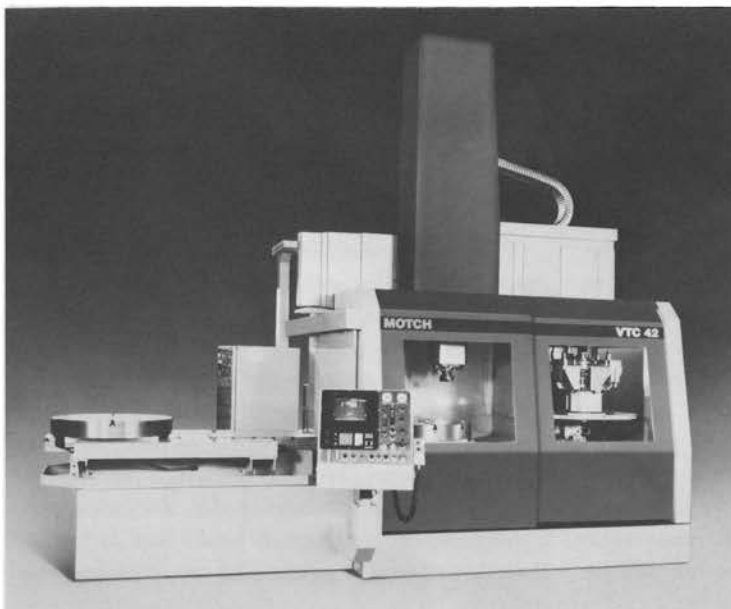
Today, young adults are committed to good health and fitness for themselves and their children. Stride 'N Ride recognizes their concerns and meets one of baby's developmental needs. To feature the modern character of the product, I gave it an up-to-date aerodynamic and high-tech look while retaining a soft, childlike form.

An early concept sketch projects the racy form and a design configuration that works well going either direction. The final form was developed in three dimensions using a functional test buck (study model used to test mechanical and human factors) and two operational form prototypes.



There is a balance of engineering, human, and marketing concerns in the design of the Motch VTC 42. I designed its cabinetry to improve both physical and visual access to work areas of the machine and to provide a strong machine appearance reflecting precision, strength, durability, control, value, and corporate image. Control location and arrangement accommodate operator needs and safety considerations.

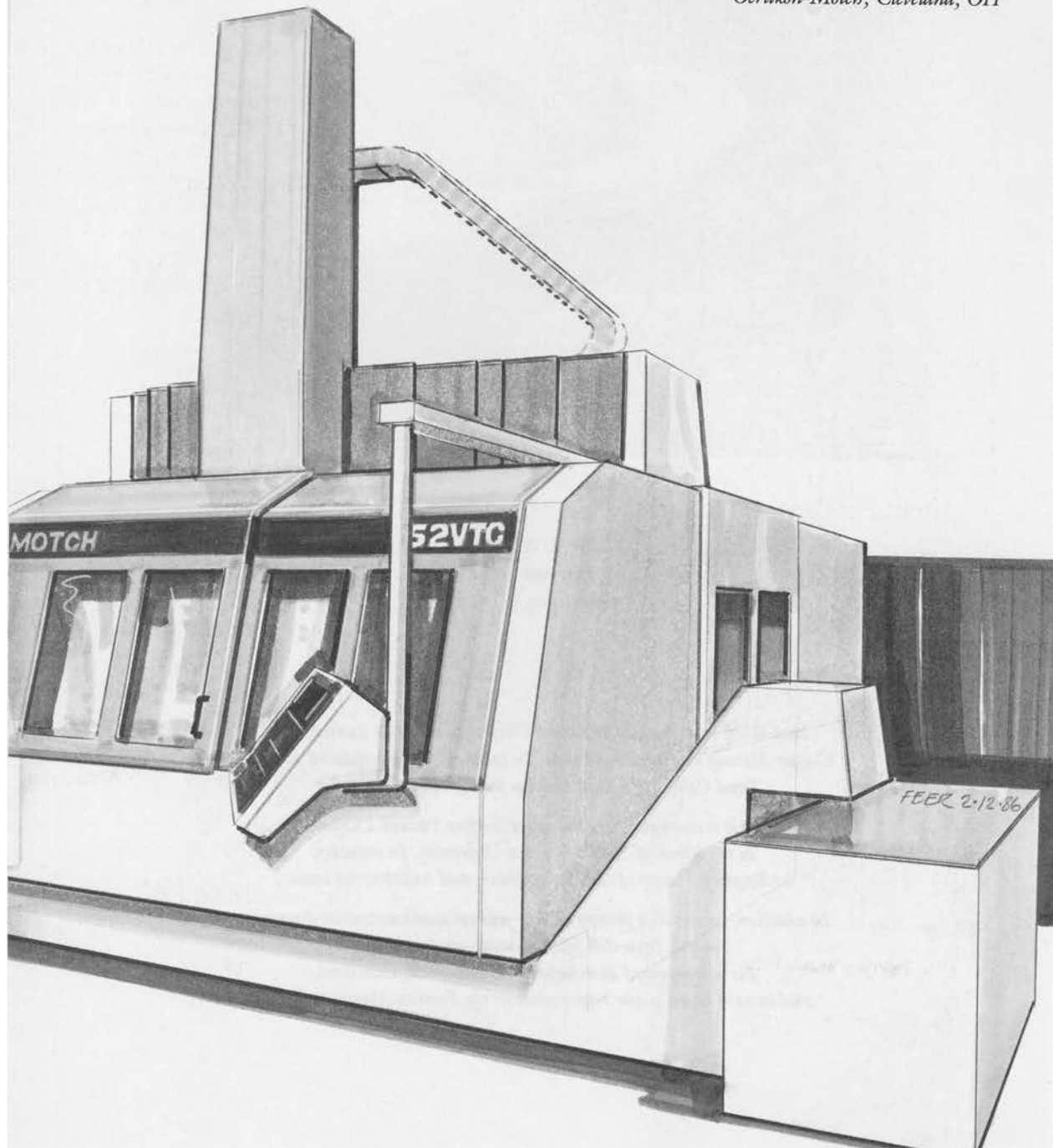
Variations were explored in elevation and perspective sketches over underlays of the basic machine elements. The final rendering preceded a quarter scale model of the VTC 42, which was made to verify human factors, engineering, and design prior to fabricating the full-size prototype. The paint scheme and machine identity support the system I established in 1975 for Oerlikon Machines.



CORPORATE IMAGE/
ENGINEERING/
HUMAN FACTORS
MOTCH VTC 42
Vertical Turning Center

*Machine housings designed
to improve the product image
and human factors.*

*Designed for and manufactured by
Oerlikon-Motch, Cleveland, OH*





RICK WOLFF
Pear and Apple
watercolor, 9" x 10"

Rick Wolff was educated at Boston University where he studied under Conger Metcalf and Walter Murch. In 1966-67 he was affiliated with the Royal College of Art in London on a Visiting Fellowship.

He is currently the Director of Surface Pattern Design in the School of Art at Syracuse University. In industry, he designs for many of the leading fabric and wallcovering houses.

In addition, he spends a portion of each year on small watercolor drawings, mostly from still-life and landscape fragments.

He is represented in many private and public collections, and in 1978 had a major retrospective at the Everson Museum of Art.