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IID

MEMO TO ADVERTISERS

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July 1960

WHY ADVERTISING IS UP 50% AT MIDYEAR

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2. INDUSTRIAL DESIGN is recognized as the favorite professional publication of company and independent industrial designers.
3. Company heads are more and more aware of the expanding importance of the industrial designer as the man responsible for choosing materials that put "sell" into products:

"We are relying on the industrial designer for the continued acceptance of our plastics materials."

Albert E. Foster, President
Hercules Powder Company

"... we are in truth betting our corporate future on industrial design: a significant portion of our sales effort aims to provide information and assistance to the industrial designer, so he may make intelligent use of our product in his designs."

Frank L. Magee, President
Aluminum Company of America

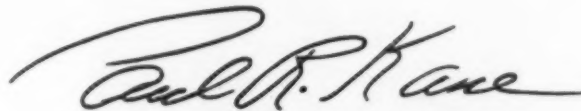
"We look upon the industrial designer's job as one of transforming our raw materials into useful functional products."

J.R. Eck, President
Mobay Chemical Company

"At United States Steel we are fully aware of the influence of industrial designers on the shapes of things to come. We welcome their imaginative use of the materials we produce, and their help in expanding our markets through improved designs which take full advantage of the special qualities of our materials."

Bay E. Estes, Jr., Vice President, Marketing
United States Steel Corporation

May we have the opportunity of discussing with you the importance of the industrial designer as a buying influence?



Paul R. Kane
Vice-President, Advertising

INDUSTRIAL DESIGN

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A monthly review of form and technique in designing for industry. Published for active industrial designers and the executives throughout industry who are concerned with product planning, design, development and marketing.

CONTENTS

Contributors	8
Letters	10
Clips & Quotes	12
News	14
Editorial	29
Memorable Packages	30
<i>A fresh look at some of the old familiar ones</i>	
Project Man	40
<i>The Army shows what it has, tells what it needs</i>	
Portable power tools	44
<i>A family look for drills, sanders, grinders</i>	
World Design Conference in Japan	46
Dialog in Graphic Design: Norman Ives	50
Military museum makes viewers participants	56
<i>Exhibits re-create sound and fury</i>	
Research and Development, Part II	60
<i>An R & D firm run by industrial designers</i>	
Designs from Abroad	70
<i>The British in New York</i>	
Art Nouveau	74
<i>Current show at the Museum of Modern Art</i>	
Design Engineering Show	76
<i>Review of the recent exhibition</i>	
Design Review	80
<i>New lawnmowers and some recent equipment</i>	
Technics	86
Manufacturer's Literature	89
Calendar	96

Coming

IN AUGUST—R & D, Part III: In-company R & D departments; Aspen report; Felt for industry.

IN SEPTEMBER—R & D, Part IV: Product testing—the T in R & D; Triennale report; Plastics: Blow molding in design; what you can do with acrylics.

COVER: Art Director Peter Bradford's cover consists of a stack of packaging shapes done in low-key colors reminiscent of those used on boxes and bottles c. 1900, a period covered in Memorable Packages, beginning on page 30.

FRONTISPIECE: "Lorelei discovering America's largest and favorite brewery" is the title of this flag-framed Anheuser-Busch poster from a day (contemporaneous with the first Budweiser label), when "men were men" and women, according to this artist, and to package designers of the period, were a good deal more than they are today.

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PRODUCTION MANAGER *George V. Rickel*

ANNUAL DESIGN REVIEW *Deborah Allen*

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18 East 50th St., New York 22, N. Y.
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ADVERTISING OFFICES

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ADOLPHUS BUSCH

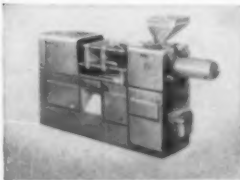
imagination AND DU PONT PLASTICS

ZYTEL® *nylon resins*

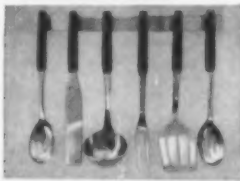
Du Pont ZYTEL nylon resins are versatile, high-quality design materials. They are being used to make a host of parts and products that work better, look better and often cost less than products made of other materials. Designers have taken advantage of the remarkable combination of properties offered by ZYTEL in such applications as household appliances, sporting goods, business machines, housewares, clothing fitments, toys, plumbing and hardware items, automobiles and many others.

ZYTEL nylon is not just one plastic. There are more than 20 formulations developed to provide special properties for special uses. When the design problem involves high or low temperatures, lubrication, close tolerances, weatherability, appearance, intricate shapes, color, textures or some other important consideration, one of the many ZYTEL nylon resins may be able to do the job better than any other material. Some products actually exist today only because nylon exists.

What ZYTEL offers to designers



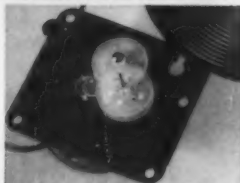
easy processing and model making: Parts of ZYTEL are readily mass-produced by conventional injection-molding machines. Such parts require little or no finishing. The spin-welding technique is also useful for the fabrication of ZYTEL, as are blow molding and extrusion. Models and prototypes can be machined easily from stock shapes which are readily available.



attractive appearance: ZYTEL is available in a variety of colors. Parts of ZYTEL can be painted, metalized and produced with textured effects. The color stability and attractive texture of ZYTEL have led to its use in a variety of consumer products, such as the kitchenware handles shown at left.



weather resistance: Products made with all formulations of ZYTEL resist wind, snow, ice, heat and salt spray. Some are designed to resist sunlight as well. As a plus, ZYTEL also resists greases, oils and gasoline. The marine air horn, shown at left, is an example of a product which is exposed to all of these conditions.



strength, toughness, dimensional stability: The mechanical properties of ZYTEL are outstanding. Together with good frictional properties and high abrasion resistance, they make possible such demanding applications as clock gears (left), rollers, slides, gunstocks, shower heads and many others. These desirable properties are retained over a wide range of temperatures.

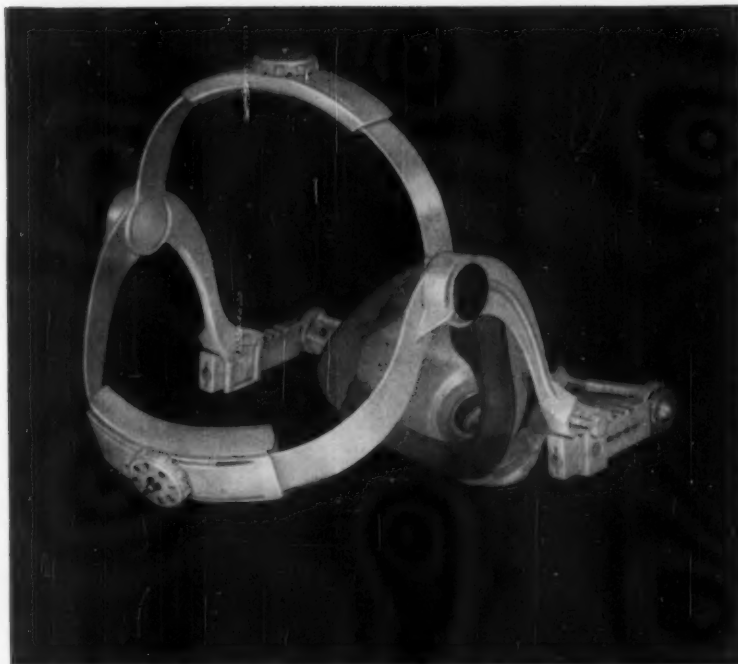


cost savings: Often one part made of ZYTEL will replace several parts of other materials. Costly finishing operations are also eliminated. The result is reduced cost. An excellent example of the latter is this valve housing (left). Previously made of metal, it is now molded of ZYTEL at dramatic cost savings.

**New
design
improvements
made possible
by ZYTEL**



A turbine wheel molded of Du Pont ZYTEL nylon resin furnishes the power to drive the rotary brush in this vacuum cleaner, and makes possible improved design of the sweeper unit—inside and out. Inside, ZYTEL gives the 54 curved blades flexibility and resistance to metallic impact . . . allowing for the pickup of paper clips, hairpins and similar objects. Outside, the flat configuration of the fan permits a low profile, designed for maximum clearance under furniture. This intricate wheel of ZYTEL was injection-molded in one piece by Chicago Molded Products Corporation for the Sunbeam Corporation, both of Chicago, Illinois.



New Puritan "Sweep-on"® jet-crew oxygen mask has easily adjustable head harness molded of Du Pont ZYTEL. Design advantages offered by ZYTEL include light weight, exceptional strength in thin sections and imperviousness to temperature changes. The use of rugged ZYTEL® per-

mits the racks and gears for size adjustment to be molded in, and the low-friction characteristics of ZYTEL make lubrication unnecessary. By WEVon Plastics Co., a division of Cook Chemical Co., Independence, Missouri, for the Puritan Compressed Gas Co., Kansas City, Mo.

What problems can ZYTEL help you solve?

The applications shown on these pages may suggest ways in which the unique properties of ZYTEL can help you solve some of your design problems. Du Pont technical personnel are ready to assist you in your evaluation of ZYTEL nylon resins, as well as the other high-quality plastic materials offered by Du Pont, such as ALATHON® polyethylene resins, DELRIN® acetal resins, LUCITE® acrylic resins. For more information about any of these materials, write us. E. I. du Pont de Nemours & Co. (Inc.), Dept. T-7, Rm. 2507Z, Nemours Building, Wilmington 98, Delaware.

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POLYCHEMICALS DEPARTMENT



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... THROUGH CHEMISTRY

ALATHON® polyethylene resins **DELRIN®** acetal resins **LUCITE®** acrylic resins **ZYTEL®** nylon resins

Du Pont's problem-solving plastics

IN THIS ISSUE



Quaker



Baltauf



Gillette

La Belle Chocolatiere (page 37) is a Graustarkian character who is reputed to be one Anna Baltauf, a waitress in a Viennese chocolate shop (and the daughter of an impoverished knight named Melchior). Prince Ditrichstein fell in love with her, married her, and as a wedding present, had her portrait painted by Jean Etienne Liotard, a Swiss portrait painter. Eventually she became the Baker trademark, but the geneological lines that led her there are lost in history.

The Quaker Man (page 35) was born simultaneously with The Quaker Oats Company (originally The Quaker Mill Company), formed by four millers in 1877 in Ravenna, Ohio, "to grind oatmeal." The millers chose Quaker for their name and trademark because that sect's image (in those days called "character") was one they wished to emulate in their business dealings.

King C. Gillette (page 33) has the name and dash of a Mississippi riverboat gambler, but he wasn't. He was a turn-of-the-century traveling salesman with a part time penchant for inventing. Gillette's razor and blade are said to have been suggested by one of his employers, the head of Crown Cork & Seal. "King, you are always thinking and inventing," runs the verbatim account in one of the Gillette company's earlier annals, "Why don't you try to create something like the Crown Cork which, when used once, is thrown away?" Four years later, he did.



Murie



Kid

The Hershey Baby (page 37) first appeared on Hershey chocolate packages somewhere between 1900 and 1910, but disappeared around 1930 when labels and wrappers went modern. Someone in the firm must still like it, however, for it remains on the letterhead. Most of the early Hershey labels were the brain children of Milton Hershey himself, and company historians assume that the baby was one of them. They also believe that the son of a president, a certain Mr. Murie, served as model.

The Campbell Kids (page 35) never actually appeared on a soup can label, but the can is a prop in so many of the drawings that Kids and can are closely associated. The original Kids were purchased to be used in Campbell car card ads in Philadelphia trolleys in 1905; their creator was Grace Weiderseim. Now almost 60 years old, the Kids haven't aged, but they have changed. Originally they were charmingly cherubic; now they are wholesome, high-colored, and obviously stuffed with vitamins.



Smith



Smith

The Smith Brothers (page 32) William (right) and Andrew, were the sons of a typically jack-of-all-trades 19th century American; the elder Smith was a restaurant-owner, also a fine cabinetmaker, also an excellent candy maker. In his candy making aspect he purchased a secret cough drop formula from a journeyman, and the boys became his first work force, stirring up batches in the kitchen. Later they inherited the business, first used their faces on store counter candy jars to distinguish their product from those of imitators.



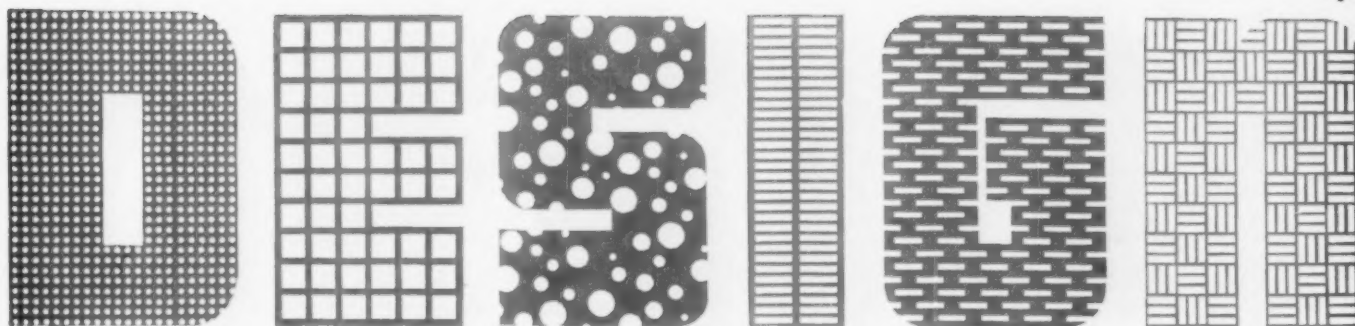
M-in-M

P & G's Man in the Moon (page 39) began as a single star, the tally mark put on Procter & Gamble's crates of candles as they were loaded aboard Ohio riverboats. Later it became a group of crosses ringed with a circle; later still, someone added a man in the moon. William Procter himself gave it its present form, borrowing the 13 stars from the first American flag.



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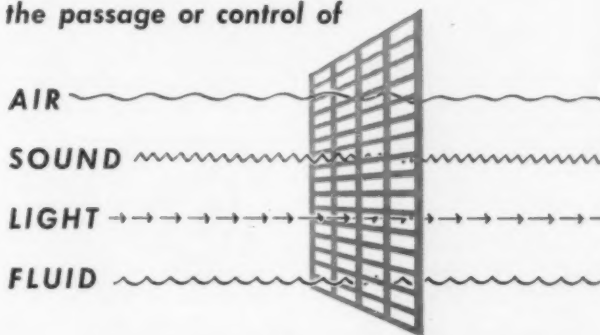
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LETTERS

Design Responsibility

Sirs:

In all the articles we have read in various magazines, all the talks we have heard at conferences; how many have dealt with our professional responsibility, responsibility going beyond immediate market needs? Designers wield power over our man-made environment—power to change, modify, eliminate, redesign. Power to evolve totally new patterns, order-systems, concepts. Have we educated our clients, their sales force, the public? Have we attempted to stand for integrity and a better way? How have we answered this challenge?

"Somehow, Charlie, the No. 18 red seems to communicate freshness of tobacco more directly."

"Harry, if we can just get them to PRINT the instant coffee right onto the paper cup, all they'll need is hot water!"

"Say, how about roll-on cheese?"

"Squeezebottle Martinis?"

"Do-it-yourself shisk-kebab kits with disposable, phenolic swords?"

"Remember, Jack, the corporate image should reflect that their H-bombs are PROTECTIVE!"

Victor J. Papanek
Buffalo, New York

Accurate Tailoring

Sirs:

The article on "Tailoring the Product to Fit" (June issue) prepared by the Dreyfuss office, presents a mass of useful data in the area of anthropometry and a smaller summary of environmental data. One unfortunate aspect of the text is that it leaves one with the impression that anthropometry and environment constitute the greater portion of a "technique" called human engineering. Even the most restrictive definition of the human engineering field includes other topics of equal or greater importance, depending upon the specific application: the distribution of functions between men and equipment, display design, control design, man-machine dynamics, human decision making, layout of large work areas, the social environment and training considerations as they affect design, etc.

The entire data for the environmental diagram (page 72) with the single exception of heat loss was abstracted verbatim

but out of context from Table 1 of "The Response of Man to His Environment," by R. T. Eckenrode, Dunlap and Associates, Inc., 1958.

There is one error in the data presented for Ventilation: it should read 50 feet/minute, not 50 cubic feet/minute. The "out of context" comment refers to the lack of any indication of duration of exposure in certain critical cases. For example, in the case of carbon monoxide, an upper limit of tolerable (or comfortable) exposure of 2,000 ppm is indicated. This is the concentration in air which makes CO just perceptible. This concentration in air is unsafe for personnel exposure of longer than about ten minutes. For safe exposure for several hours, the concentration should be no higher than 100 ppm. Similar comments could be made about carbon dioxide and some others. It is true that our Table 1 in the cited report did not contain these tolerance time restrictions, but it was not meant to be reproduced out of context with the rest of the report, which does list these other considerations in detail.

The text is much more explicit about the use of anthropometric data than in the case of environmental data, and all the usual cautions are listed. The massive amount of data integrated and presented presents a tremendous amount of effort which is to be heartily commended.

It is refreshing to see represented the range of anthropometric values, i.e. data for the small, average, and large man, rather than for the average, alone, which can be misleading. Perhaps it is not known widely enough that anthropometric data follow a normal or bell-shaped curve and that, as Dreyfuss says correctly, there are very few people below the 5th or above the 95th percentiles. . . .

Finally, we were disappointed in the clutter attending the display of information in the several drawings. We're sure that the use of some imagination and esthetic judgment would go far to cleaning them up.

Robert T. Eckenrode
Jesse Orlansky
Dunlap and Associates, Inc.
Stamford, Connecticut

Do-it-yourself Economics

Sirs:

Mr. Dreyfuss has made a valuable contri-

bution to industrial designers by publishing his charts, which are most up-to-date in an area where little data is available. I am sure that they are welcomed by all who have been seeking such data.

Today it appears that human engineering has become a confused area to industrial designers. Its exact place in the scheme of industrial design has not yet been fully determined. It is being underestimated by those designers who give it no more than lip service, and overestimated by others who use it as a panacea. It seems inevitable, however, that human factors will take its place as a tool of industrial design. . . .

In my own experience in teaching human factors to industrial design students at the Parsons School of Design in New York, students were able to move freely in the field of human factors in relation to design problems, and achieve better solutions due to a fundamental understanding of human engineering.

A method that has been of value to designers in solving the human kinetics of a design problem is one in which the designer conducts his own limited study and uses the following approach: first, to build a mock-up of the work situation; second, by using a limited number of subjects who go through the motions required in this work situation. The motions are indicated very graphically by having either polar or rectilinear charts in the three major intersecting planes and actually tracing, with crayon or a marker, the path of the hand or foot motions. The photographic method can also be used by laying out the rectilinear or polar coordinated charts on transparent plastic and the subject uses a pencil light to describe his motions.

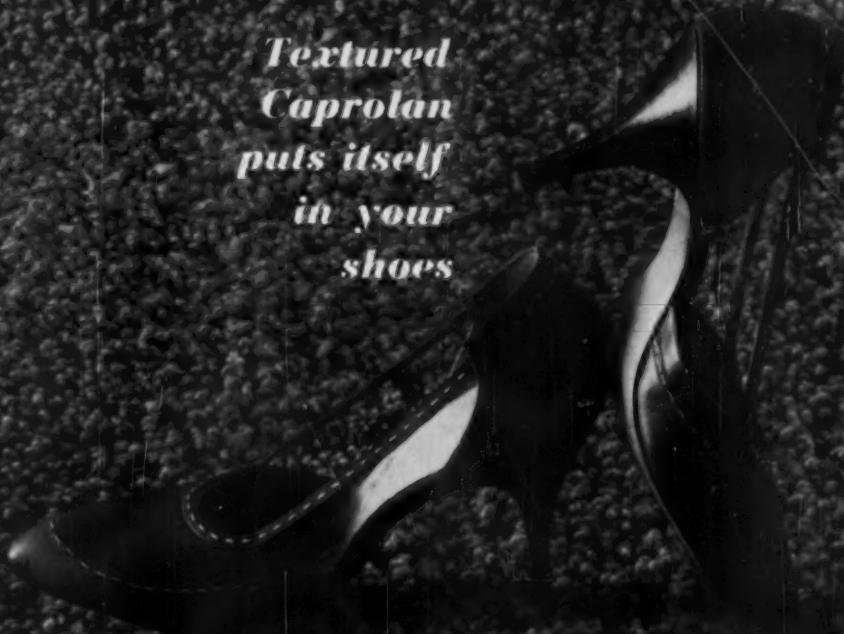
This graphic statistic then gives a configuration of the motions involved and an understanding of the human kinetics of the problem. This comprehension, combined with the published anthropometrical data, brings about a proper solution.

Archie Kaplan
New York

Erratum

The Speakman Company of Wilmington Delaware has retained Harper Landell and Associates, not the Good Design Associates as stated on page 28 of the June issue.

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Caprolan
puts itself
in your
shoes*



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CLIPS AND QUOTES

Peter Drucker, industrial consultant and professor, Graduate School of Business, New York University, in an article, "Politics for a New Generation," *Harper's*, June, 1960.

"We hear a great deal today of the 'narrowing of the gap' between the Russian economy and ours. Much more serious, however, is the narrowing of the gap between our productivity and that of our allies . . . our exports find it increasingly hard to compete in the free-world markets — not with the Russians, but with the Swiss, Dutch, Japanese, French, Italians, Germans, and British.

One popular explanation . . . is the low wages of foreign labor. But hourly wages in many other countries have gone up twice as fast as ours, and 'fringe benefits' even faster. In a large Japanese transistor-radio plant which I visited last summer, total labor costs were barely lower than ours, with much higher fringe benefits offsetting the much lower hourly wage rate. But there were far fewer 'rejects.' . . . Quality control enabled the Japanese to undercut the Americans; they had learned it from us, but did it better."

L. Bruce Archer, in an article, "What is Good Design?"; *Design*, May, 1960.

"Good taste, like good manners and every other expression of esthetic discrimination, is never laid down; it is continuously created by the common and unspoken consent of the community. The lead is often taken by people who, by virtue of their public position or in recognition of their superior knowledge or example, become tacitly acknowledged arbiters of taste. In modern times, however, other strata of society can and do reject the lead of the erstwhile arbiters of taste if they seem to go too fast, or too slow, or in a direction which is not felt to be the spontaneous and inevitable product of the time."

Andre Marie, ex-Minister of National Education, France, in a speech reprinted as an editorial in *Esthetique Industrielle*, Number 44, January-March, 1960.

"Public taste cannot be improved by dialectics. Lectures, conferences, even pictures cannot impress, because words and images fade too quickly and do not instill themselves into the total character. Profound effects do not result from intellectual stimuli, but from what we generally call environment. We learn more about beauty from using a fine looking sewing machine or typewriter every day than by listening

to lectures at the Louvre. In other words, education in esthetics cannot be taught through logic, but is acquired through practical training. If we wait for reason to lead people to choose an esthetic object, we will wait a long time. For some, taste has been formed by nature and art; for others, the choice is made by intuition. It can also be a reflex action, but a reflex is acquired only by long use, by continual, repeated and unceasing involvement with an esthetic object.

But if the public is to be educated in an industrial esthetic through the multiplication of beautiful objects, rather than publicity and propaganda, then it follows that those who invent, manufacture, and sell the object must also be educated."

Clinton Rossiter, Chairman of the Department of Government, Cornell University, in an article in the *New York Times* on "The National Purpose"; June 13, 1960.

"We lack a wide-spread popular respect for the fruits of art and learning and for those who produce them, and we have much too short a supply of first-class artists and intellectuals. More than that, no people in history has ever had to put up with so much vulgarity, bad taste and ugliness in its surroundings.

History has flung us an exciting challenge by making us the first of nations in which men of every rank could display a measure of taste, and we have responded by displaying bad taste on a massive scale. Let us be honest about it: we have the wealth and leisure and techniques to make a great culture an essential part of our lives, an inspiration to the world . . . and we have not even come close to the mark."

Fragments, a publication of Alcoa; Volume 2, Number 2, April, 1960.

"Sooner or later, anyone who writes with regularity about art, or architecture, or both, finds himself compelled to say something about the new Guggenheim museum. Here goes.

A delightful aspect of the building, it seemed to us, was the repetitive pattern of the respective washrooms for men and women. The former being fitted into the flowing outside walls. The latter being contained in a column that emerges at every landing, one unit per emergency. Great sense of continuity between the two elements. Sort of *yang* and *yin* principle applied to the necessities of separate but equal plumbing. And a minor joke that few but Frank Lloyd Wright could penetrate successfully."

Henry B. du Pont, Vice President, E. I. du Pont de Nemours & Company, in a speech at the dedication of the new science building at Sul Ross State College, Texas, May 2, 1960.

"On the surface, it would seem that automatic machines have some unusual advantages over human effort. They can operate under conditions which would discourage any labor force, however eager. Compared with the normal intake of the human system, they require inexpensive and unvaried fuel, they work long hours without fatigue or complaint, and can be repaired at a fraction of the cost of mending the human frame.

These admirable qualities often lead the unwary to forget that machines, too, have weaknesses and, unlike man, do not have the means at hand to correct them. They are, in fact, subject to one of the most deadly diseases ever to strike an economic undertaking. For machines are susceptible at all times to the insidious blight of obsolescence."

I. C. Pollack, head of Maurice Pollack, Ltee., Quebec department store, speaking on "What Sells?" at the Canadian National Industrial Design Council's Design Workshop, June, 1960.

"The day is past when the world of things was hermetically sealed off from the world of ideas. The time is gone when it was possible for men to choose, or to be forced to choose, one or the other of these worlds. Today, the World of Ideas and the World of Things are one world. And if we should be doers, we must also be philosophers; if we would be innovators, we must be practical psychologists.

This is the distinguishing feature of 20th Century society. It is the challenge and the fact of our age that within it Einstein postulated a theory which within his own lifetime produced the atomic bomb, the atomic reactor, the Atomic Age. Not by accident was this achieved, but by design."

Pier Luigi Nervi as quoted in a profile by Winthrop Sargeant in *The New Yorker*, June 11, 1960.

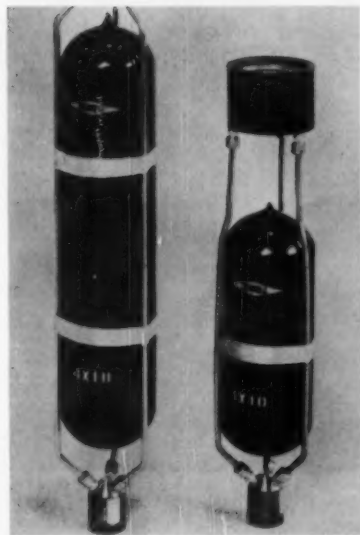
"In the absence of good taste, economy is the best incentive for art. In any building, aesthetic perfection derives from technical perfection, and the basic problems have never changed. Beauty comes not from decoration but from structural coherence. Low costs have a high esthetic value; for their sake, clients will accept daring, and even beauty."

THIS IS GLASS

A BULLETIN OF PRACTICAL NEW IDEAS



FROM CORNING



NEW WAY TO TICKLE A "TRICKLE" WELL

For some centuries now, great bangs around the globe have borne witness to man's sometimes happy faculty for putting to work the phenomenon we call "explosion."

Now we are finding ways to make use of implosion. And glass is helping us.

Supposing your oil well starts to ooze instead of gush. You take one of the devices shown above and lower it into the well. Fill the hole with fluid and apply pressure. When the psi reach a set level, you get a squoosh and then a whoosh and then—with luck—a gush of oil.

The squoosh signals an implosion; the whoosh, a counteracting explosion in the fluids. Working together, the two forces develop pressure waves up to 20,000 psi, usually enough to fracture the surrounding strata and to stimulate the flow of any oil present in the formation.

The service using these capsules is called Rockshock;* it was developed and is offered by Dowell Division of The Dow Chemical Company. The capsules are made from PYREX® brand glass blanks which we supply. The capsules are evacuated to extremely low pressures.

We make the composition of the glass blanks and their wall thicknesses to exactly the right specifications so that the capsules will implode at specified pressures.

We make the glass so that it will *dice* when it implodes, disintegrating instantaneously to pieces small enough to pass through valves and pumps without damaging them.

At the same time, we make the glass sturdy enough so that you can handle the capsules used in Rockshock above ground with as much safety as glass bottles.

Dowell can tell you more about Rockshock. They are in Tulsa, Oklahoma. We can tell you more about the marvels of glass . . . say, in our Bulletin B-83, titled "Properties of Selected Commercial Glasses." We are in Corning, New York, and can be reached by coupon.

*Dowell Service Mark

STEAM GAUGE THAT WORKS LIKE A TRAFFIC LIGHT

When you see red, you're looking at live steam. When you see green, you're looking at water.

It's as simple as that with this new Multi-Port gauge from the Diamond Power Specialty Corporation.

Like so much that's simple, this takes a fairly complicated system of optics, for which we supply the glass.

Like so much that's complicated, this optical system takes advantage of a simple fact, namely, water and steam have different refractive indexes.

At the rear of the gauge a group of sealed-beam lamps (we probably made the glass for these, too!) throw light on two colored pieces of glass. One is red, the other is green. If the light then passes through steam, only the red portion gets through to the viewing port. Vice versa for water. If the water level falls half way up a port, you see both red and green with a sharp line of demarcation at exactly the right level.

You can see the gauge in the dark. Since light has the swiftest of all movement, there is absolutely no time lag when the steam level changes.

Aside from its optical properties, the glass we provide has to take the thermal shock of live steam, the corrosive environment of steam and water, and pressure up to 3000 psi.

Actually, these are simple conditions for us to meet, as you'll discover, if you ever have occasion to put one of our glasses to work.



Bulletin IZ-1, "Designing with Glass for Industrial, Commercial, and Consumer Applications," can help you spot such occasions. The coupon will fetch you a copy.

WHY EYEGLASS LENSES DON'T COME IN BOTTLES ANY MORE

In 1912 this flask was a marvel of mass production. With just a few good puffs one of our glassblowers could produce blanks for a dozen or more eyeglass lenses.

Now look at the lens blank in the corner of the picture. It has the stamp of technology all over it. Code letters and numbers. Nicely finished edges. Each one like the other.



Now we have machines to stamp out lens blanks . . . even bifocal lens blanks . . . by the millions without a glassblower drawing breath.

A perfect example of our willingness to sacrifice the romance of handcrafting to the sheer economy and efficiency of machinecrafting whenever it will benefit our customers.

The only interest we expect you might have in all this is in this simple fact: we have *two* kinds of versatility to sell. The versatility of glass itself. The versatility of methods in manufacturing from glass.

We can cast giant mirrors and windows for radioactive cells, blow delicate bubbles for lab ware, press or roll great masses for items needed in large quantities in a hurry . . . in short, we can put to work practically every manufacturing method known to man to put your product in glass.

"This Is Glass" is a booklet that tells more about these methods and glass itself. It's in the coupon.



CORNING MEANS RESEARCH IN GLASS

CORNING GLASS WORKS, 54 Crystal St., Corning, N. Y.

B-83; This Is Glass; IZ-1

Name.....Title.....

Company.....

Street.....

City.....Zone.....State.....

NEWS



Chapman, Carioti, and Yamasaki



Deland, Stansbury, Teague

IDI design awards

Three teams of well-known designers have won IDI's tenth annual design awards. Announced June 23rd in Chicago at a national IDI luncheon celebrating the tenth year of the Design Award program, the winners were:

Walter Dorwin Teague, Jr., David H. Deland, and Benjamin H. Stansbury (above, right), of Walter Dorwin Teague Associates, for the Ritter Euphorian Dental Chair; Dave Chapman, Kim Yamasaki, and Frank Carioti (above), of Dave Chapman, Inc., for their recent report on educational facilities in the U.S.; and William L. Mitchell (below), and the Gen-



Mitchell

eral Motors Styling Staff for the design of the Chevrolet Corvair.

The Ritter dental chair (ID, June 1959), the result of a collaboration between Ritter engineers and Teague's

engineering and design groups in developing a concept originally suggested by California dentist Dr. Sanford Golden, was cited as "a product of finely sculptured form, compatible with human anatomy and with a rare completeness of detail to ease the tensions of both patient and dentist—a first in this area of design."

The Chapman-Carioti-Yamasaki report (ID June, 1960), made last April for the Ford Foundation's Educational Facilities Laboratories, was cited for opening up "the wide field of research design as the sphere of the industrial designer."

The designers of the Corvair were recognized for "demonstrating a re-evaluation of design and engineering concepts in a product geared to existing needs in a particular area."

Judges for the 1960 design awards were: Paul R. MacAlister, chairman and founder of the Award Program; IDI national president H. Creston Doner; San Francisco Chapter chairman Donald W. Brundage; Chicago Chapter chairman Robert M. Goodman; and Benjamin Werremeyer, vice-chairman of the Chicago Chapter.

Two typography shows

On view during the past month at the AIGA's headquarters was the 1960 National Exhibition of Design and Printing for Commerce, emphasizing advertising, promotion literature and business stationery, and the Fifty Advertisements of the Year, a recent addition to the program. Included in the show was the design of Robert Brownjohn for Concert Associates, Inc. (right, top). Alexey Brodovitch, Alvin Eisenman, Norman Ives,

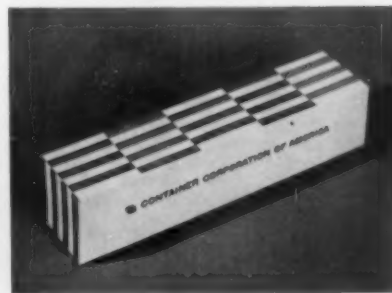
Herbert Matter, Bradbury Thompson, Constantino Nivola and Tomi Ungerer served as the jury.

In Chicago the Society of Typographic Arts held its 33rd Annual Exhibition at the Art Institute. Among the entries was a box (below, bottom) designed by Ken Rang and John Massey for Container Corp. of America. In the jury's opinion, the show



Brownjohn's poster

Package by Rang and Massey



was not up to par, being especially poor in the relation of typography to the other design constituents. "The show had no surprises," said jury member Rhodes

Continued on page 16

MANAGEMENT LOOKS AT DESIGN



Albert E. Forster, President
Hercules Powder Company

"The future of the plastics industry and the sales success of its individual basic materials are closely allied with sound functional design. We at Hercules have always felt that the industrial designer can enhance a material by utilizing its properties intelligently and correctly; likewise, the absence of sound industrial design can lose the markets for a plastic material. We are relying on the industrial designer for the continued acceptance of our plastics materials."



Frank L. Magee, President
Aluminum Company of America

"Industrial design at Alcoa includes our own corporate 'appearance'. Perhaps even more profoundly, we are in truth betting our corporate future on industrial design: a significant portion of our sales effort aims to provide information and assistance to the industrial designer, so he may make intelligent use of our product in his designs."



Bay E. Estes, Jr., Vice President,
Marketing
United States Steel Corporation

"At United States Steel we are fully aware of the influence of industrial designers on the shape of things to come. We welcome their imaginative use of the materials we produce, and their help in expanding our markets through improved designs which take full advantage of the special qualities of our materials. We recognize the contribution of industrial designers to economic progress through better-designed products which enlarge the markets of all industry."

50% ADVERTISING GAIN AT MID YEAR



... reflects the ever growing recognition of industrial designers as a strong buying influence. Their favorite publication is . . .

INDUSTRIAL DESIGN

A WHITNEY PUBLICATION • 18 East 50th Street • New York 22, N. Y.

the magazine for the men whose decisions today shape the products of tomorrow

Patterson; "there were, I would say, a very few outstanding things and certainly nothing that indicated a new direction. Much of the problem stems from the lack of rapport between the designer and the writer to the detriment of the idea." Juror Charles Walz agreed with Patterson: "I looked for design that integrates type and illustration in a direct logical manner . . . I saw many entries that achieved this; but most entries used type and illustration in decorative and unrelated arrangements. I was surprised not to see more agency entries. In my opinion the agencies are doing some of the best advertising design today." Other jurors were Frank Johnson, Franklin McMahon and Gordon Martin.

Century 21 picks Rosenthal

Los Angeles designer Herb Rosenthal (below) has been appointed primary exhibition designer for Seattle's Century 21 Exposition. The nation's first world's fair since 1939, Century 21 is scheduled for opening in May, 1962 on a 74-acre site a mile from downtown Seattle. The theme of the fair is "Man in the Space Age," and it is expected to draw 10 million visitors.

Rosenthal's main job will be designing the interior displays for the four acres of exhibition space in the theme structure



Rosenthal

of the fair, Coliseum Century 21. Under construction since May, this vast exhibition hall is being built by the State of Washington on a design by architect Paul Thiry.

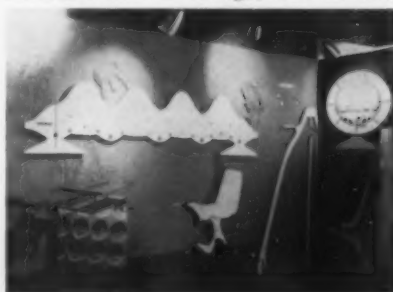
In addition, Rosenthal will be responsible for the design of several of the public areas, and for integrating the work of other designers into the exhibition theme. He will also design pavilions and exhibits for his own clients going to the fair.

Vice-president and art director of Science and Technology Inc. (exhibit design of industrial materials and processes), Rosenthal also teaches exhibitions and visual communications at the Art Center School. He is responsible for the mosaic mural (said to be the largest in

the world) which decorates the exterior of the Nile Hilton Hotel in Cairo, and, while head of the graphics department of Welton Becket and Associates, he did the interiors of the Eisenhower Museum in Abilene, Kansas. He has also designed U.S. pavilions at the Tokyo International Trade Fair and at the Izmir trade fairs of 1951 and 1952.

Parsons exhibit at IBM gallery

"Three by Five," an exhibit of the three-year course-work of five students at the Parsons School of Design, was on view



Parsons exhibit at the IBM Gallery of Arts and Sciences in New York during the month of June. The exhibit was set up to show the educational development of students in the five design departments of the school: Design in Industry, Editorial and Fashion Illustration, Fashion Design, Graphic Design, and Advertising and Interior Architecture and Decoration. The photograph (above) is of student Paul Schulze's contribution to the industrial design section of the exhibit.

Beau Doner

IDI national president H. Creston Doner, a charter member of the ASBB (Beau Brummels) and winner of one of the 1954 Sartorial "Oscars," has been cited by *Gentlemen's Quarterly* "for excellence in taste and trend-setting ideas in fashions." Others sharing the honor included



Doner

former King of Italy Umberto II, actors Clark Gable and Henry Fonda, conductor Alfred Wallenstein, Metropolitan

Opera basso Cesare Siepi, and George W. Walker, Director of Styling for the Ford Motor Company.

More matter with less art

With the 1960 Designer-Craftsmen USA competition the American Craftsmen's Council wanted to emphasize not only the esthetic qualities of craftsmanship but the utility of hand-crafted products and materials. So they subtitled this year's contest, "Designed and Handcrafted for Use," and divided the categories of entries into different areas of uses.

But after judging pieces for awards and display in the Museum of Contemporary Crafts (the show opened May 27th, will close September 11th), the jury enunciated a verdict that found American craftsmen guilty of killing Esthetics in order to marry Utility. Said the judges: "Although much is said about the crafts as art, we saw disappointingly little work that had the sense of directed purpose and conviction which the arts express. Much of the work in all areas was derivative . . . In some fields, notably textiles, there were many pieces which were of excellent technical competence which we nevertheless rejected because they both lacked originality and were more appropriate to the sphere of machine production."

From the almost 2,000 objects submitted by just over 1,000 craftsmen in 44 states, the jury did find 114 objects for awards, the number one prize of a silver



Reed's "Flower Garden"

medal going to Veda Reed of Memphis for her hooked rug, "Flower Garden" (above).

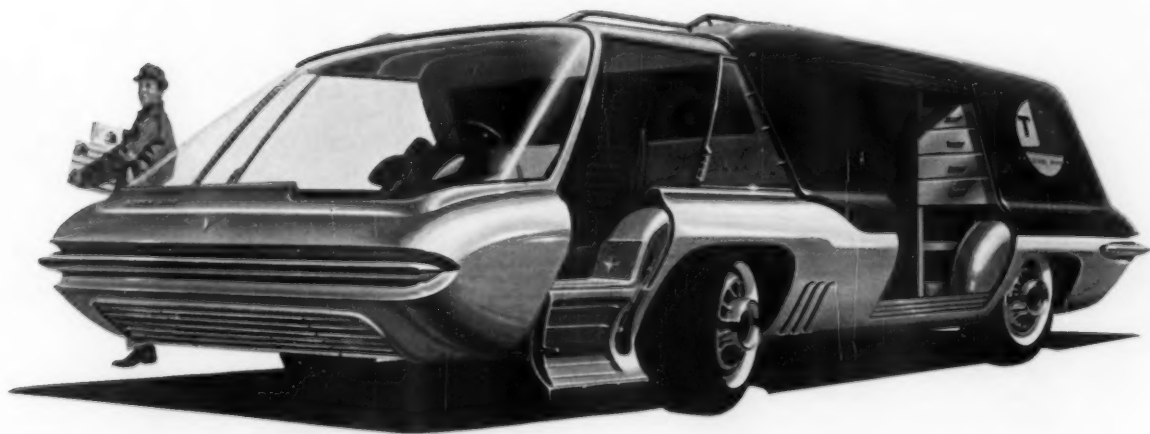
Judges for the competition were: architect-designer Alexander H. Girard, Barnard English professor John A. Kouwenhoven, and Charles H. Sawyer, Director of the Museum of Art at the University

Continued on page 18

stainless steel

No other metal has the strength, beauty and versatile qualities that serve you so well today and promise so much for tomorrow.

There is nothing like
stainless steel for
THE AUTOMOTIVE INDUSTRY



McLouth Steel Corporation,
Detroit 17, Michigan

*Manufacturers of high quality
Stainless and Carbon Steels*



Look for the **STEELMARK**
on the products you buy.

McLOUTH STAINLESS STEEL

of Michigan.

After it closes in New York, the show will be circulated around the country by The American Federation of Arts.

L-T-J on the cover

Industrial design generally, and Latham-Tyler-Jensen in particular, are the subjects of the cover story in the current issue of *Du Pont Magazine*. Messrs. Latham, Tyler, and Jensen are pictured on the cover among a score of products the firm has designed. Inside, the feature story focuses on L-T-J to describe how "industrial designers are examining product function and a host of new materials to be sure that product beauty is more than skin deep."

Iowa design organization

A group of designers and design students in the Iowa area have banded together to form the Mid-American Association of Designers (MAAD), for the purposes of discussing common problems, exchanging design ideas, and giving Iowa design students an opportunity to meet men in the practice. Unaffiliated with any other design organization, MAAD meets monthly at the Iowa campus. Chairman of the group is E. Theodore Lorenz (who heads the Industrial Design division of Mast Development Company, in Davenport—see page 69), and secretary-treasurer is Hood Gardner, of the Iowa design department faculty.

What's good for Canada

What's good? What sells? What's coming? These questions were spiritedly discussed, if never answered, last month by designers, manufacturers, and retailers who participated in a three-day design workshop sponsored by the National Industrial Design Council of Canada. The workshop, held in a Laurentian mountain retreat, was actually a pilot conference preparatory to the National Design Congress planned for September, 1961. Discussions were led by Alan Jarvis, Editor of *Canadian Art*; I. C. Pollack, President and General Manager of Maurice Pollack Ltee., the Quebec City department store; and Ralph Caplan, Editor of *INDUSTRIAL DESIGN*.

Speaking on "What's good?", Mr. Jarvis held that the real question was "What's good for Canada in 1960?" He suggested that it was not economically sound for Canadian companies to try to enter competition with the Volkswagen or the Yashiki. In discussing "What sells?" Mr. Pollack (see page 12) said it was no longer possible to sell goods on the basis of what happened last year, or even last month: "If the man at the drawing board and the man behind the counter are to be useful to each



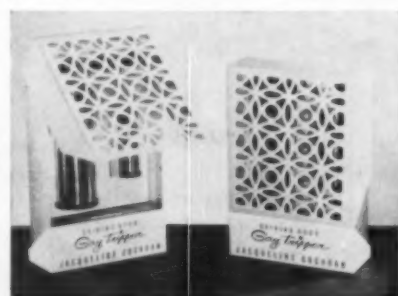
"A Busy City in America" is the title of this 19th century Japanese print made by Hiroshige II. It was among the pieces shown last month in the Chicago Art Institute's exhibition, "The Western World Through Eastern Eyes."

other, we must go beyond a recap of sales slips, beyond a catalog of yesterday's preferences."

The last day's session was a general assembly moderated by John C. Parkin, of the architectural firm of John Parkin Associates. The workshop was organized under the supervision of NIDC director Norman Hay, with Edgar Kaufmann, Jr., as planning consultant.

Paper box award

The National Paper Box Manufacturers Association has awarded its annual prize for superiority of box construction to a Jacqueline Cochran perfume package designed by Ehrman and Reiner, Inc. The package below features a hinged front



Ehrman and Reiner prize package

in a filigree pattern designed, appropriately enough, both to conceal and reveal the contents. The box was produced by Wallace Paper Box Corp., recipients of the award.

New product-planning group

The Michigan Product Planning Association has recently been formed in Detroit under the chairmanship of Stran-Steel Corporation's John H. Murphy. Milton I. Brand, of Harley Earl Associates, is a

member of the steering committee.

The association is open to management and service personnel and representatives of industrial design, advertising, and product research organizations. Meetings are being held monthly to keep members abreast of current techniques in product planning, to establish basic operating principles for product-planning programs, and to provide a clearing house for situations open and personnel available.

Display for display

The Fuller dome which has been on "display" in the Museum of Modern Art's backyard since last fall was used last month as a gallery itself, for the Museum's spring exhibition of "Art Education for Every Child." Designed by Wilder Green, the installation showed examples of children's art in all media mounted in alcoves set around the interior of the dome (below).

Children's art exhibit

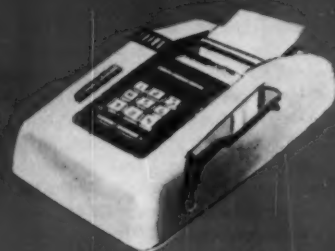


Continued on page 20

not just attractive
but marproof

not just attractive
but chemically inert

not just corrosion-free
but marproof



You can have your pattern and protect it, too ...with M&T Spray-on Vinyl Finishes

A THICK-FILM SPRAYED-ON VINYL FINISH that mirrors the pattern of metal underneath . . . or which can itself be textured chemically . . . this is the exciting news in product finishes from M&T.

Now, you can choose any available mill patterned metal, confident that its distinctive profile will not be obscured by the coating. Clad with a thick-film M&T vinyl finish, the product will look richer, feel warmer, last longer.

This finish will stay free from unsightly blemishes such as chipping, corrosion, marring, stains and fading. Its resistance to abrasion is as much

as ten times greater than that of ordinary textured enamels. Typical use: business machine housings.

These spray-on vinyl finishes apply even on intricate shapes, and at the *end* of the production operation. Thus, they create no problems in forming or welding, leave no raw edges. Moreover, you can change colors anytime without creating an obsolete inventory. Send for more data.



coatings and finishes

METAL & THERMIT CORPORATION
General Offices: Rahway, New Jersey



Renwick, Thomson, Grove



Wolaver



Otto



Mankki



Eganhouse



Stoy

Events

Syracuse University will hold a special **Summer Industrial Design Seminar** from July 5-August 10 to introduce management, engineering, and sales personnel to objectives and techniques of industrial design practice in American industry. The program will consist of lectures and discussion periods, alternating with work and review periods under the direction of Arthur J. Pulos, Professor in Charge of the Industrial Design Department.

H. Creston Doner, president of the IDI, has signed a charter for the formation of a **Student Chapter of the IDI at Michigan State University**. Tom Wilson, president of the newly founded chapter, the only one of its kind in the midwest, proposed that it assume for its 1960 project the responsibility of gathering and disseminating information on all audio-visual aids on design available in the U.S.

Awards

Charles Eames received the 1960 Design Award from the Philadelphia Museum College of Art on June 6 for his contributions in furniture design, communications study and film-making. He also delivered the major commencement address at the art institution's graduation. **Saul Bass** was honored as artist-designer "for the distinction he has brought to his profession" at the Spring Scholarship Party at the Philadelphia Museum College of Art on June 3. Similar citations went to **Robert Osborn**, artist-satirist; **Charles M. Schulz**, creator of "Peanuts"; **Dr. Henry Lee Willet**, stained glass designer; and **Frank Zachary**, art director of *Holiday*. **Walter Dorwin Teague** has been awarded a silver medal by Britain's Royal Society of Arts for his Trueman Wood Lecture delivered in London in 1959 on "The Growth and Scope of Industrial Design in the United States." The award was presented by Sir Hugh Stephenson, British Consul General, on June 15 during the British Exhibition at the N. Y. Coliseum. The National Housewares Manufacturers Association will hold its **33rd National Housewares Exhibit** July 11-15 in the Atlantic City Convention Hall with an all-time record of 750 exhibitors.

A design workshop on "Designing with New Materials, Methods and Processes" will be conducted by the Design Division of the Boston Institute of Contemporary Art at Endicott House, Dedham, Mass., Sept. 7-17. Inquiries should be sent to Theodore S. Jones, ICA, Soldiers Field Road, Boston 34.

Company News

RETAINED: George Nelson and Co. by Columbia Records Corp. as design consultant to the sales and design staff, and by the Rockefeller Center Corp. to design a new roof-top restaurant for the Time-Life building. . . . **Warren Furlonge Associates Inc.** by J. B. Williams Co. to implement the packaging function and develop design programs for their Toiletries Division. . . . **Jaap Penraat Associates** by General Automation Corp. to redesign control devices and develop a corporate identity program, and by Polarad Electronics Co. to design a *p-H* Meter. . . . **Lawrence H. Wilson Associates** by F. & F. Koenigkramer Co. to design hospital and physicians' equipment. . . . **William M. Schmidt Associates** by Amana Refrigeration, Inc. . . . **Morley Markson** by Clairstone Sound Corp. Ltd. to develop and coordinate the manufacture of stereophonic music sets and equipment. . . . **Lippincott & Margulies Inc.** by American Machine & Foundry Co. to develop a corporate identity program. . . . **Palma-Knapp Associates** by Polaroid Corp. and Kuehne Mfg. Co. . . . **Ira Simons** by Magnetic Recording Industries and Bel Canto Recordings.

ESTABLISHED: **Robert E. Graf and Jerry C. Demoney**, both formerly of Smith, Scherr & McDermott, announce the opening of their own design consultant firm, **Graf Demoney Associates** in the Professional Building, 510 Peirmont Road, Closter, N. J. . . . **Don Schreckengost** (formerly with Homer Laughlin China Co.), in East Liverpool, Ohio as an independent design consultant in the fields of ceramics, china, glass, furniture design and color consultation. . . . **Milton Brand and Co.**, Royal Oak, Michigan, as a research and consulting firm to provide specialized services in market and product planning for both industrial and consumer companies. Brand was formerly director of product planning

services for **Harley Earl Associates**. . . . **Robert Merrill Wolaver** (above), and **Onnie Mankki** (above), industrial designers, at 7113 Euclid Avenue, Cleveland.

INCORPORATED: **Samuel Ayres Associates** with Samuel Ayres as president, Wallace A. Underwood as treasurer, at 23 Miner St., Boston.

EXPANDED: Renwick & Thomson to **Renwick, Thomson & Grove** (above), with the addition of Ray Grove as full partner. . . . The design services of **Alcoa** to include a graphic design assistance group to be headed by **Robert P. Eganhouse** (above).

People

APPOINTMENTS: **Carl Otto** (above) as consulting designer for **Rek-O-Kut Co.**'s consumer products division. . . . **James A. Engelmann**, former packaging director of the Paper Mate Division of the Gillette Co. as director of packaging for **Emerson/Johnson/Mackay Inc.** . . . **Jerome Eisenberg**, formerly of Lippincott & Margulies, as design director for **Gerald Stahl, Inc.** . . . **Samuel Berger** as staff designer for **Leon Wirch Associates**. . . . **Robert Shaw** as design executive and associate, **David Kaplan** as associate, and **Sophie Koch-Weser** as account executive for **Leon Gordon Miller**. . . . **Graham W. Smith** as assistant professor in the design department of the University of Cincinnati. . . . **Dr. Milton Jacobs** as director of market research for **Cushing & Nevell**. . . . **David Wachter** as director of product development, **Bernard S. Bresky** as director of package design and graphics, and **Stuart Roberts** as director of interior planning unit, for **Schnur-Appel**. . . . **Joel Adams** as project designer for **Creative Designs International**. . . . **Raymond Stoy** (above) as product design director for **Robert Zeidman Associates**. . . . **Olle E. Haggstrom** as manager of industrial design for **General Electric's** housewares division. . . . **Louis N. Donato** as head of the Advertising Design Department of **New York's School of Visual Arts**.

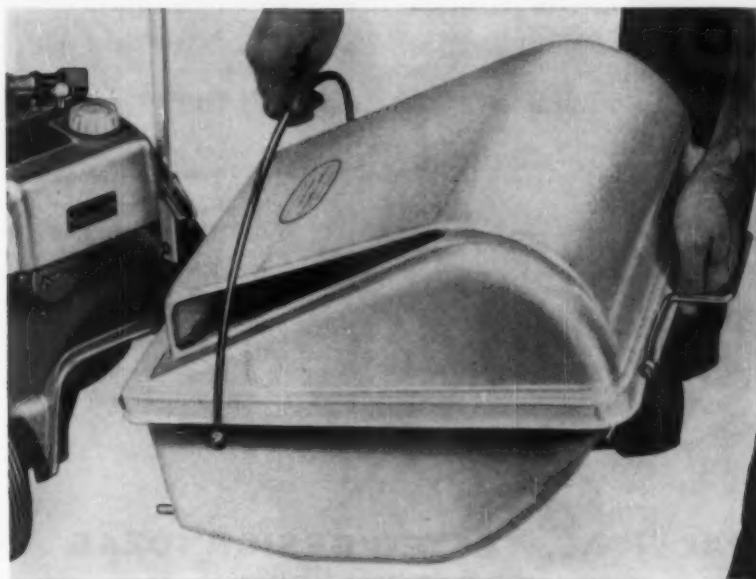
ELECTED: **Carl-Axel Acking** as president of the Society of Swedish Industrial Designers at their annual meeting in Stockholm.

CAMPCO

Plastic Sheet and Film

some practical IDEAS

for its use



Campco Linear Polyethylene provides an added safety factor in this Jacobsen grass catcher

Here's something really unique in lawn mower accessories. Jacobsen Manufacturing Company of Racine, Wisconsin is offering something new, different and unquestionably better in this ingenious plastic grass catcher.

In designing the unit, Jacobsen engineers recognized the fact that solid objects such as stones, nails, glass, etc. ejected at high speed by the whirling rotary blades presented a definite hazard to the mower operator. Therefore, proper safeguards must be provided which would reduce this danger to a minimum. As to materials, canvas wore out too quickly. Metal dented too easily. Plastic seemed to offer the greatest possibilities. The question was, which material to use.

After consulting with Campco engineers, Jacobsen settled on Campco PE-200 Linear Polyethylene. This material combines light weight with extreme resistance to penetration by flying solids. Further, if penetration should occur, the small hole resulting will not tear.

Another safety factor designed into this catcher is an angle baffle which absorbs a great deal of the force of any flying object as the grass clippings are carried upward on the ramp. This formed-in-place baffle is made possible by the deep-drawing properties of Campco PE-200. The unit is vacuum-drawn in two sections; the base, which

includes the formed-in-place baffle, and the cover. The cover forming is complicated by a cutout on each side, required to release air pressure built up by the mower blade.

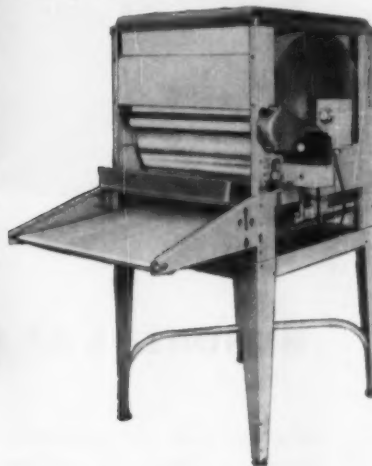
The Jacobsen Grass Catcher is an integral part of their Turbo-Vac 18" rotary mower. It measures 20" long, 16" wide and 12" high.

Campco Styrene is ideal for this portable chemical mixer

This is the Pako 25-gallon Hydro-mixer which makes it possible to mix and transport photographic developing chemicals with one compact unit. Concentrated liquids, powders and crystals are mixed and ready for use in a matter of minutes. The tank is vacuum-formed of sturdy Campco high impact white styrene which provides not only ample strength but resistance to chemicals as well.

Here's strength . . . plus good looks . . . with Campco Styrene

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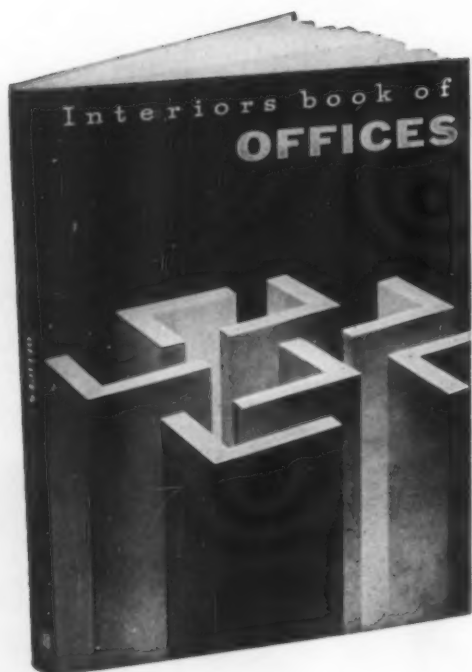


dimensional stability. Equally important is its low moisture absorption, as well as its good heat resistance, uniform thickness and excellent formability. For this application Pako selected the rich maroon color sheet which adds greatly to the appearance of the machine. The parts were vacuum-formed by Takor, Inc., of Delano, Minnesota.



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Whether a product is new and fresh off the drawing board, or old and in need of a new-design lift, chances are there's a formulation in the Dow family of thermoplastics with the right characteristics to make it an even better product. Here are

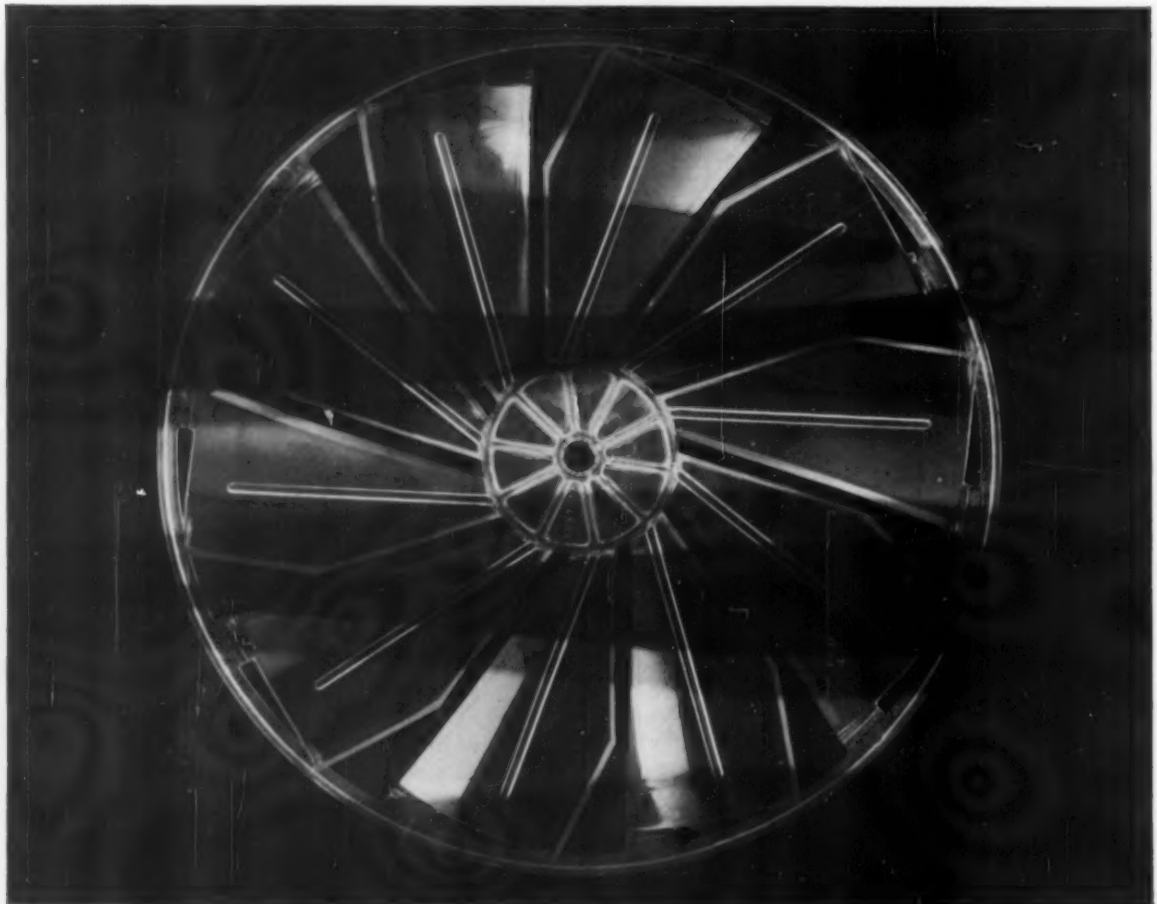
several designs, both old and new, that have taken advantage of the versatility of Dow thermoplastics materials . . .

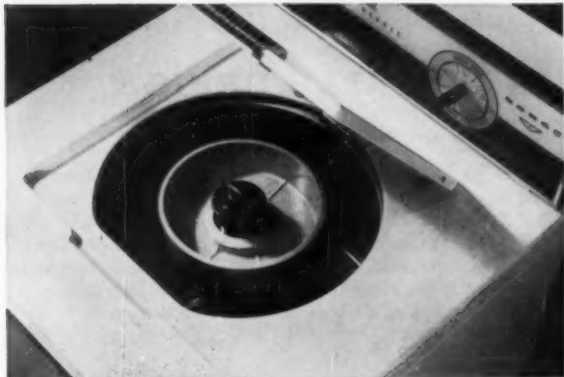
This condenser fan wheel of plastic posed a problem for the designer. The manufacturer's requirements called for a material with molding characteristics

to reproduce the complex configuration, reverse curves and angles of the mold . . . with high temperature resistance to qualify the assembly for approval by the Underwriter's Laboratories . . . and with low enough production costs to make it competitive with other materials.

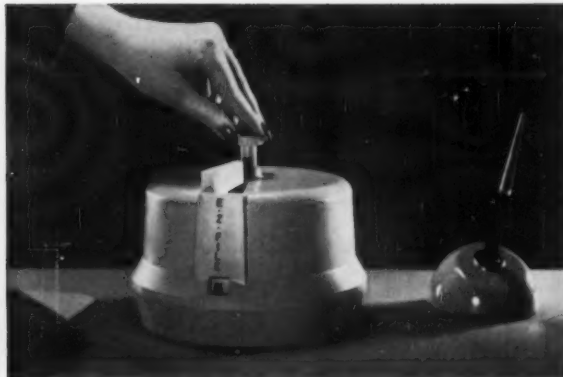
Tyrlil®, Dow's copolymer of styrene and acrylonitrile, won the job hands

Condenser fan wheel, molded of Tyrlil in one piece, meets air-moving, temperature, cost requirements.





Colorful lint filter relies on heat- and chemical-resistant Styron 440.



Functional rotary card file is molded of shock-resistant Styron 440.

down, and brought a bonus of extra advantages to the design. The high tensile strength and toughness of Tyril qualify it for a vigorous, on-the-job performance. And in production, faster cycling and better moldability result in marked economies for the manufacturer.

The outstanding performance characteristics of Tyril are currently making it the designer's favorite Dow thermoplastic for such products as tumblers, cutlery handles, bristles, filter bowls, rigid food containers, closures, pencil barrels, medical equipment components, and sprayer heads.

When washday rolls around, another versatile formulation of Dow polysty-

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Another example of versatile Styron 440 in action is the colorful, functional rotary card file, above right. Styron 440 gives it extra impact strength. It won't warp, nor will rough treatment affect the appearance of the tough, lustrous case. Inside, ribbed separators keep the cards in order . . . ribs that can be

formed accurately thanks to the excellent moldability of Styron 440.

Other characteristics of Tyril make it the ideal thermoplastic material for a modern car compass housing. Tyril meets the appearance tests for color and beauty . . . and the functional tests for ruggedness and non-magnetic qualities . . . and it resists chemicals and distortion over a wide temperature range.

The aristocrat of thermoplastics, Ethocel®, was chosen by the designer of this accurate, low-cost split image transit, shown below. Enclosed in a case of lustrous, super-tough Ethocel, the lens can be accurately positioned and held in one place for precise readings.



Accurate, low-cost transit is protected by super-tough Ethocel.



High-style compass housing combines clear and colored Tyril.

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INDUSTRIAL DESIGN

Research and Development: Part III

The third installment in ID's current series on Research and Development in and for industry will shift to the R & D organizations inside two product manufacturing companies. How they operate, who staffs them, what kind of atmosphere they work in, and how their work is related to the general problem of product development and design will be some of the questions discussed.

Report on Aspen

The Tenth International Design Conference in Aspen investigates the relationship between "The Corporation and the Designer." ID will report on the most important ideas to come out of the conference, both in the papers of the guest participants and the discussions that followed them.

Wool felt—a modern design material

Wool felt, once an ancient clothing material and now an important industrial product, will be the subject of the eighth of ID's series on Fabrication. The article will cover new characteristics, fabrication techniques, and product applications ranging from wallcoverings to washers. In addition, we will briefly discuss cotton, jute, and other fibers.

The Design Shift, 1950-1960

Ten years ago Edgar Kaufmann, Jr., in his text What is Modern Design, included a chapter called "Twelve Precepts of Modern Design." Recently he took a fresh look at the "precepts," found many of them no longer valid, and has written an article that is not so much an attempt to "update" the precepts as to examine the shifts that have rendered them obsolete in a decade.

Modular service stations

A major oil company's overseas service stations have gotten a master plan that ties in with the company's corporate image, and yet permits the individual proprietor to suit the size of his station to the size of his business, and to specify the building materials indigenous to his locale or suitable to its climate. ID's story will examine how the plan was devised and how it works.

Triennale Preview

The 12th Triennale di Milano: a preview of the products from more than a dozen countries which will appear at Italy's international design exposition this summer.

Each issue of **INDUSTRIAL DESIGN** delivers to the desks of designers and executives a definite review of contemporary design ideas and techniques.

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7th ANNUAL DESIGN REVIEW

Designers and manufacturers are invited to submit entries now for INDUSTRIAL DESIGN'S seventh Annual Design Review, a portfolio of the year's major innovations in product design, packaging, materials, professional and industrial equipment, architectural components, designs for selling and corporate identity. Coming in December, this comprehensive review of the most noteworthy design achievements of 1960 will be, as previous ADR issues have been, a valuable permanent reference for everyone concerned with design for industry. It will feature

1. inventive designs: solutions based on new functional improvements
2. notable solutions to familiar problems
3. designs without prototypes: solutions to new and unique problems
4. engineering developments
5. apt and unusual use of materials, components, finishes
6. new design ideas for merchandising
7. innovations in product form

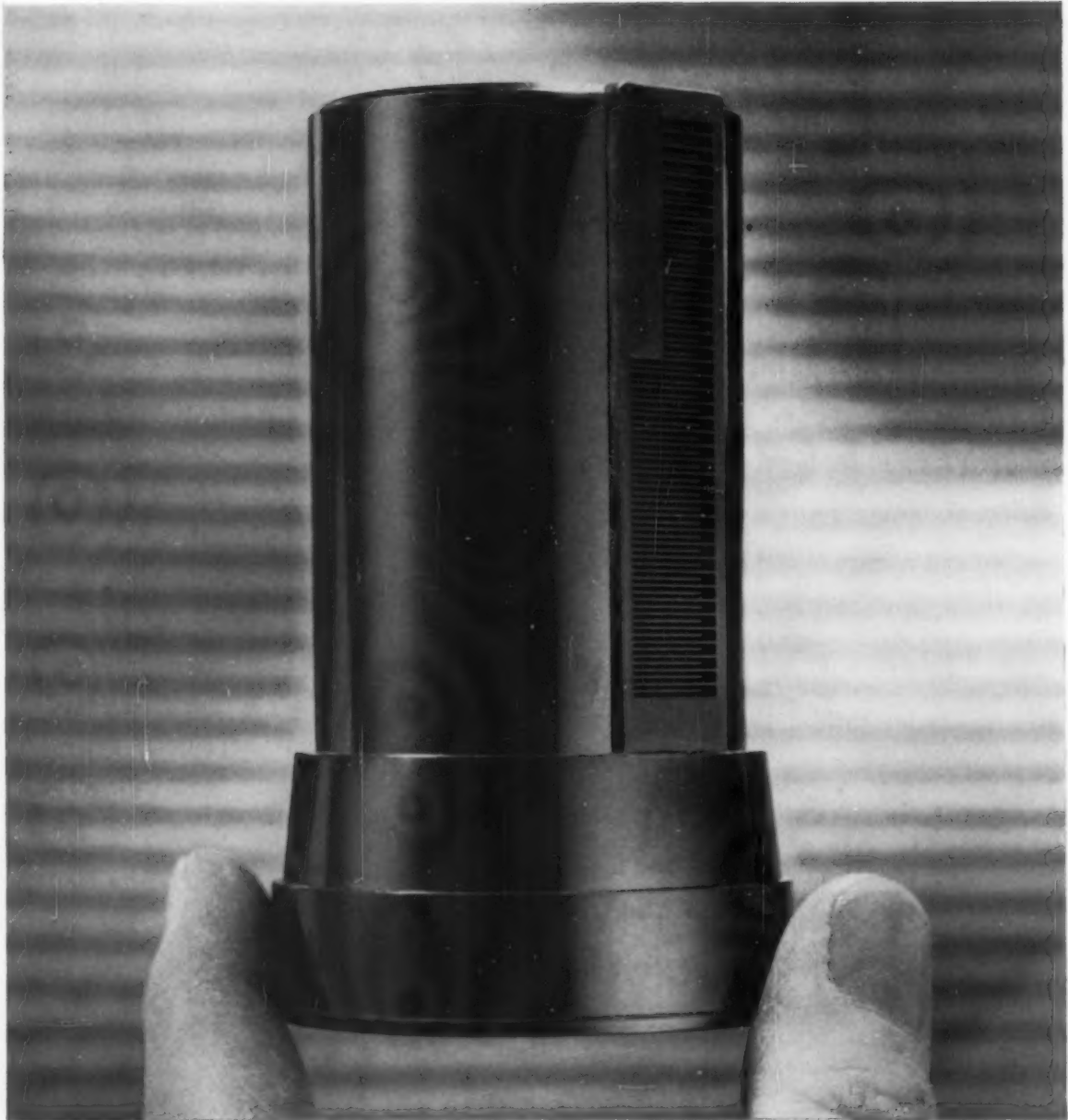
and many more categories of selection.

Here's how you can participate:

From designs placed on the market since September, 1959, choose those which you believe represent the most significant work of your firm or design office. Send us one or more unretouched photos of each product, labeling each photograph clearly with the names of the product, the designer, staff member, or department in charge, and the manufacturer and suppliers. On the same label please include a brief note stating where we can see the product you selected, what you consider is unique and distinguished about it, and in what respects you regard the use of materials, components and manufacturing techniques as unusual.

Closing date is September 15, 1960.

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There are ladies present

Mike Nichols and Elaine May, the funniest young unmarried couple in the United States, were scratched as entertainers on the Emmy awards telecast last month because their comedy sketch was built around a home-permanent preparation produced by one of the show's sponsors, a rival comedy team called Procter and Gamble. This was a shame: the Emmy awards program—a dreary annual affair in which the television industry honors itself for virtues that have escaped the attention of everyone else—needs every break it can get. But the incident does dramatize how far the advertising industry, like the rest of us, can go towards losing its sense of humor. And a sense of humor is like the big toe; it isn't much, but you're way off balance without one.

Consider, if you haven't already, the American Institute of Approval, Inc.—a non-profit consultant service that will, for a fee of \$1500 a day, tell manufacturers whether or not their products are in good taste, and even give an award to those that are. The Institute is made up of ladies who, in their own words, "have won for themselves, or been gifted with, superb and widely recognized good taste." And "it will serve as a basic criterion for American taste in the highest and best sense of the word." They point out that they are not designers, but "decision-makers between alternate products and designs," and they recommend that their taste be tapped during that mystical period "after the commercial designer has presented his designs and at the moment when top management must make its decision."

Although this looks like something new, it is really just the enlargement of a phenomenon well known to designers, who for years have sardonically claimed that most designs were finally selected by "the president's wife." Well, now the President's Wife has become an institution. Taste, apparently, is in the purse of the beholder, for the women on the panel are all society leaders, although Irene Dunne is there, presumably representing Labor. The Institute's founder and director is Lady Malcolm Douglas-Hamilton, an American woman of demonstrable charm, married to a Scottish peer living in New York. Lady Douglas-Hamilton has headed a number of charitable organizations. When she realized that charity consists not just in holding balls for the benefit of orphans but in conducting taste tests for the benefit of industry, she decided to become an umpire builder by inviting her friends to become consultants.

The American Institute of Approval, Inc. does not take itself lightly ("Never before has a group of similar prestige come together for the benefit of the commercial world and the public good"), but that is no reason we shouldn't. Yet it was first called to our attention by a distinguished designer, of unimpeachable taste himself, who was disturbed enough to write indignantly, "Now someone is going to tell my clients whether my designs are in good taste!" We told him we thought he needed a vacation. Later we met a designer who had just spent an hour with Lady Douglas-Hamilton and, enormously taken with her sincerity, charm, and good breeding, had decided to recommend that his company apply for Approval. We told him we thought he needed to get back to work. Actually we have been expecting someone to expose the whole affair as a hoax—an idea dreamed up by Russell Lynes to be made into a musical starring Beatrice Lillie. But no one has, and in the meantime *we* have begun to take the Institute seriously. To publicize one's personal taste, organize it, form it into a corporation and offer it as a service, even a non-profit service—is *this* in good taste? To express one's taste is necessary; to institutionalize it seems a bit tasteless. Perhaps no one has the right to build an aspect of his personality into a committee. And furthermore. . . . But do you see what we mean? We're *all* losing our sense of humor.—R.S.C.

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If poet Lawrence Ferlinghetti ever became a real curator in his poem's imaginary "museum of objects dedicated to the history of my race," he might well include some of the unimaginative but very imaginative packages from this collection, none of which are either new or unfamiliar. In fact, they have been selected on the basis of a single common element: all are familiar to most adult Americans through long residence in the family pantry or medicine chest. And if many of them could never win an art school prize, all of them are interesting, original—and memorable. At a time when every cake mix package carries a slice from the same cake, these packages retain highly individualized, distinct personalities.

For the designer they are important not only as a reminder of a time when design was achieved neither by depth probing nor by committee, but because they raise some provocative—even embarrassing—questions. Why, for instance, are some of the "redesigns" less memorable than the original designs they are meant to improve? What has been the effect of the trend toward anonymity in many trademark personalities, such as the Baker's chocolate lady or the Quaker Oats man? When some of these classics have finally succumbed to a face-lifting, why does the new look appear less vital than the original? Even when only the type and figures are "cleaned up," as in the current Smith Brothers package, the operation leaves the patient conspicuously paler than he was before.

Is there a relationship between the enduring package and the kind of product it contains? In some cases, yes. Corn starch, for instance, although still sold as a separate ingredient, now tends to be included within a mix. It seems reasonable to suppose that the kind of woman who still disdains mixes is also the kind of woman who would prefer her corn starch package unchanged.

Does the time of introduction have anything to do with the endurance of a package design? Will contemporary companies, with package designs only a few years old, ever make a point of retaining present designs? Certainly, age itself has added a distinctive element to many of the packages in this collection. When Adolphus Busch put the finishing swirls on the Budweiser beer label, he thought his handiwork had "class" (it did and still does) but the years alone have now added an invaluable element of distinction which Mr. Busch could not have anticipated.

Today Anheuser-Busch, along with such companies as Listerine, and Lea and Perrins, feel that this quality is so valuable they guard against any design change.

With the exception of Lifebuoy and Hires, all of these packages were designed before packaging's great revolution. Like most revolutions, this one had an indeterminate beginning, but it waxed with the manufacturer's desperate need to sell his wares in the depression market of the '30's. Arthur S. Allen's clean looking redesign of the Lifebuoy package (page 33) led the vanguard in 1924. It was one of the first redesigns of a major product by a professional, and it made no concessions to the Victorian taste for family portraits, exposition medals, or heraldic devices. Allen even selected a daring sans serif type face—quite a departure for the day. It was during this period that package designers came into their own for the first time, consciously studying the package as a surface on which to make a selling design, and introducing a number of new design ideas. In 1929, for instance, Lucien Bernhard, looking for a poster style which would be readable to a person traveling 50 miles an hour, adopted a simplified poster technique to his Rem cough medicine package. The idea for comprehensive package design programs caught on after such major projects as Paul Ressinger's redesign for the Montgomery Ward drug line in 1934. And package designers were already established as a group when grocers shifted their operation into self service in the late '30's. William C. Schneider's Bisquick package, with its full-size, four-color food photographs, was one of the first to be designed with the new situation in mind. Pioneer Egmont Arens still calls it the "ideal supermarket package." With the improvement in materials and printing processes since the Second World War, package design has grown more sophisticated, in many cases more attractive than what preceded it. But often it also appears more contrived, and the very care which now goes into a new package design may make it constrained—ultimately, much too much like its neighbor.

Even if intriguing questions did not draw one to this collection, pure nostalgia would. Nostalgia for a time when ice cream came from the crank freezer (Duryea's label still wistfully carries the recipe) not the dairy department, and for a time when packages were unselfconscious, flamboyant, often naive, but certainly fun.

Photo (opposite) by Mary Anne Bradford

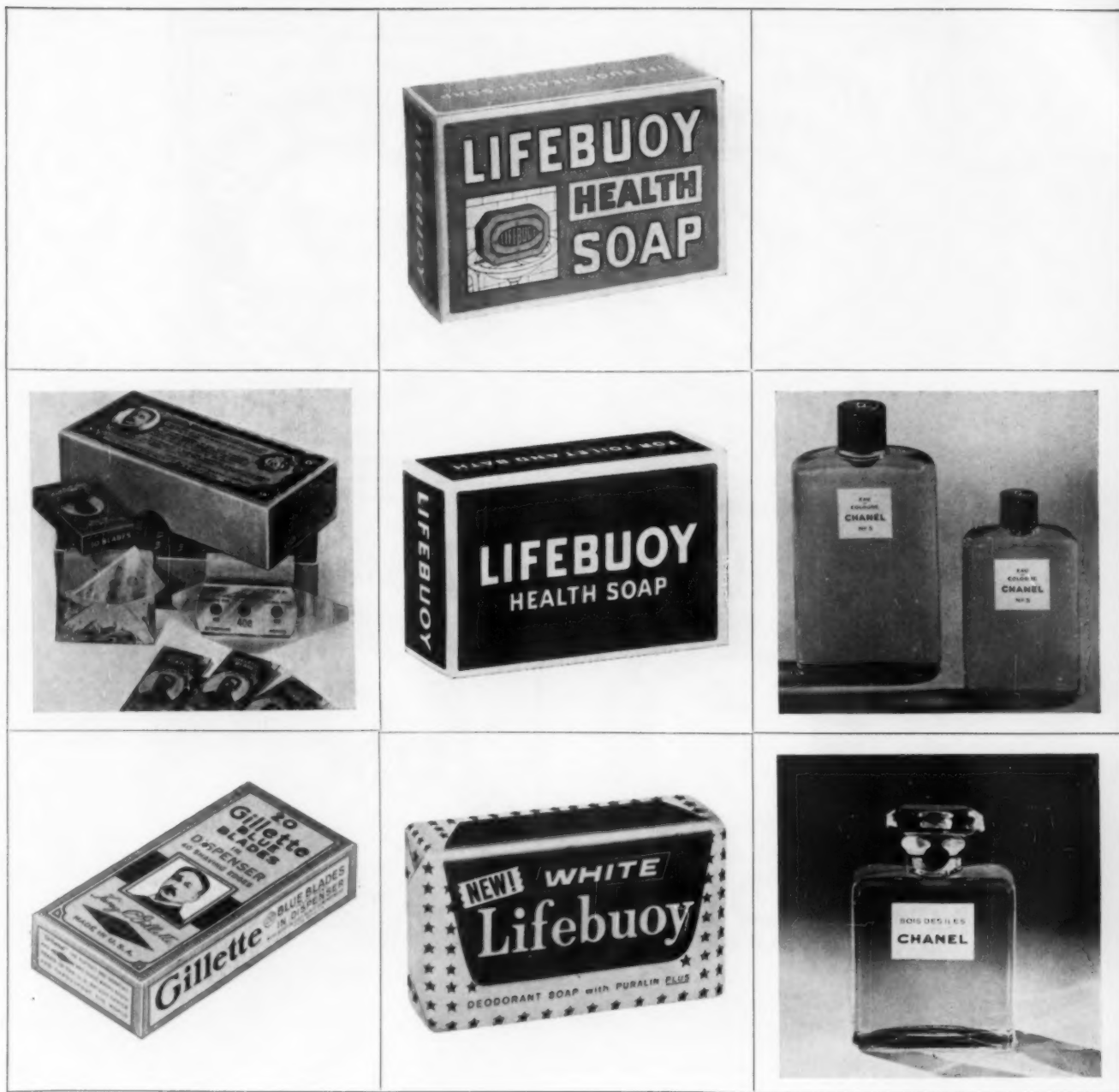
Memorable Packages

A fresh look recalls originality, flamboyance—even beauty—as important elements in package design. BY ANN FEREBEE



Smith Brothers, Inc. owns one of the world's best-known trademarks: two Smiths who made good. What is less well-known is how the two brothers, William (Trade) and Andrew (Mark), got where they did. Started in 1847 as a sideline by their father, a Poughkeepsie, N. Y. restaurateur, the business was inherited by the two brothers in 1866, when it became officially Smith Brothers, Inc. Success brought a flurry of impostor relatives — including other Smith Brothers. In the urgent need for an absolutely fool-proof trademark, the original brothers placed their own bearded faces on the small envelopes (top) in which shopkeepers sold the coughdrops. In 1872 the company began offering pre-filled packages (middle) and since then it has changed little.

Dromedary Dates, now one of General Foods' numerous lines, was originally sold by an independent company marketing its product under such re-sounding names as Royal Excelsior, Camel, and Teddy Bear. In the excitement of introducing the elegant new Dromedary line, the company overgenerously produced not a dromedary but a two-hump camel on its wrapper (top)! After General Foods took over the company, the package was restyled two years ago by Raymond Loewy Associates, who took care of the gratuitous and inaccurate hump.



Gillette Safety Razor, since its first patent in 1904, has featured on its blade envelopes and tucks a face which the company claims has been reproduced more than any other human likeness. Although the man looks like Marcel Proust, he is of course King C. Gillette, founder of the company. And his own invention, a blade so cheap it could be discarded when dull, was the factor which eventually brought his face before billions. Today the company retains Gillette's portrait and signature from the original package (top), but blue has been substituted for the original green.

Lifebuoy, which in 1908 appeared in the package at the top of the page, is the oldest toilet soap advertised in America, dating back to Lever Brother's beginnings in 1895. The designer of this package is unknown, but Arthur Allen, one of the fathers of professional package design, designed the neat red and white box in the center, Lifebuoy's best remembered package, in 1924. Lever Brothers likes to boast that nothing except the advent of low-priced plumbing raised the country's bathing standards as much as Lifebuoy and its ad campaigns. In any event, this product did unforgettably publicize, if not solve, a "fatal social problem." The current Lifebuoy package was designed by Frank Gianinoto two years ago.

Chanel Inc. has produced, many designers feel, the classic contemporary package (bottom). Although the hand-blown crystal bottle with the chaste black and white label has been around for nearly forty years, it's still in style, and this is the quality which makes the package a classic. Through the years certain packages in the line, such as the eau de cologne (top), have been redesigned to conform more closely to the concept of the original bottle, but the concept itself has remained changeless. Like all Chanel packaging, this one was a company design.



Arm & Hammer, whose trademark has been famous for more than 90 years, comes out in its first new package (bottom, left) this year, and behind the change is a rather unusual story. Spice dealer James A. Church originally selected Vulcan's hammer as a symbol for the soda because his products were ground at the Vulcan Spice Mills in Brooklyn. In 1896 Church merged with his top competitor, John Dwight, to form Church & Dwight, and the symbol of Dwight's Cow Brand (top, right) became one of the new company's important assets. The kindly cow shown on the popular blue label is said to be Lady Maud, prize winning Jersey of Philadelphia's Centennial Exposition of 1876. With these unique packages both Cow Brand and Arm &

Hammer had independently established such loyal followings that when Church and Dwight merged they made no effort to alter either design—even when both carried identical soda. But problems of overlapping advertising and distribution this year finally prompted Church & Dwight to drop Cow Brand in favor of a single, national Arm & Hammer brand. For Cow Brand consumers, an unusual composite package (bottom, right) is available for a few months. Then a new national package (bottom, left) will be used across the country. Charles W. Hoyt Company has been in charge of making the transition, and Joseph Jowaisas is responsible for both the transitional package and the new clean-up of Arm & Hammer.



Duryeas' corn starch, "famous since 1848," has been marketed in the same package longer than almost any other grocery item now being sold. Its be-medaled design goes back so far, in fact, that even fifty-year staff members recall nothing of its origin. The medals contribute more than other elements to the distinctive appearance. The Duryea family, which pioneered by putting their product in boxes at a time when their competitors were still selling starch in bulk, also pioneered in producing one of the nation's first automobiles, the long-extinct Duryea.

Quaker Oats: no one knows who actually created its first package design, but Henry D. Seymour, one of the four men who founded the company in 1877, suggested a Quaker to symbolize the character wanted for the new business. Another of the founders, William Heston, came across a picture of William Penn in an encyclopedia, and the design registered with the Patent Office the same year was probably based on that picture. Quaker Oats was one of the first companies to bring its products out of barrels, and by 1886 it was already using a square, hand-filled and glued package (above). A round package was introduced in 1915 and underwent few alterations until 1945, when Jim Nash Associates worked out a complete redesign (bottom).

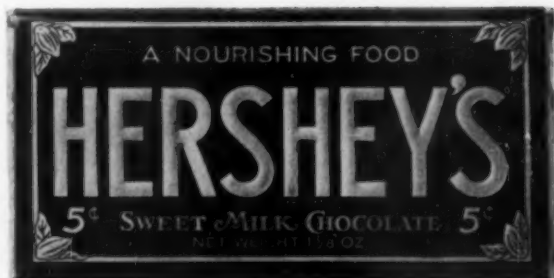
Campbell Soup adopted the original version of its red and white label back in 1894. The company believes that one of its early executives got the idea from the popular American Magazine, which at that time divided its cover into red and white halves. Sometime after 1900 a gold medal from the Exposition Universelle Internationale was added to the design and the torch from the pensive god who adorns it was repeated prominently on each side of the medal. (No one remembers just which of Campbell's culinary feats the medal honors, but it continues on in the design today—a whimsical anachronism from an age which loved to promote a product almost to knighthood.) Today's label is essentially the same as the one on the first brews.



Budweiser: Adolphus Busch, who believed that beer should be sold in style, tried to incorporate this feeling in the designs for his beer labels too. Before the invention of metal caps, each Budweiser was stoppered with a cork branded Anheuser-Busch and then wrapped with metal foil. This, with the elaborate scroll work of the logo, made the bottle suggest a fine vintage wine. Although the cork was eventually replaced with a newfangled metal crown cap (top), the red, white and blue label remains much the same as the one which Mr. Busch and his associate Carl Conrad designed in 1886. Today the company feels that their label is a major marketing asset.

Listerine, as most school children know, was named for the man who demonstrated that germs can be killed with antiseptics. It was registered as a trademark in 1881, the same year that its developer sold ownership of the formula to Jordan W. Lambert. The present package is essentially the one introduced in 1884 when a prescription for the product became unnecessary. First noticeable package change came around the turn of the century when Lambert Pharmaceutical Company began listing ingredients on the label. Then in 1937 the company replaced the cork stopper (top) with a plastic cap. The company has been test-marketing other designs recently, but so far sticks to its present one (bottom) with only the most minor changes.

Hires Root Beer originally appeared around 1890 in a cork-stoppered bottle designed by Charles E. Hires himself. A metal-capped bottle (top) introduced around 1910 reflects the application of mass-production machinery to the bottling industry. The next bottle (bottom, center), the one still generally identified with Hires, was designed in 1936 by Norman Bel Geddes, who dropped all the gold medals. This was one of the prize-winning redesigns of the '30's, and publicity on such work made manufacturers more conscious of the importance of package design—and the designer—in selling products. The present container retains Bel Geddes' concept, only substituting applied color labeling for the former foil label.



Hershey: Although the familiar reddish-brown wrap with thick silver letters (bottom) has become a contemporary classic, the Hershey bar originally presented itself quite differently. When Milton Hershey first made his "sterilized milk chocolate" bars in 1885, he covered them with wrappers of every color. Not to be outdone by Baker's La Belle Chocolatiere (see right), he featured a baby in a cocoa bean on some of the early labels. From the ornate Victorian lettering of the first wrappers, the design moved slowly to a bold and clear sans serif lettering similar to that used today. The present package (bottom) has been used since around 1930.

Baker's Chocolate goes back to pre-Revolutionary times and La Belle Chocolatiere, despite continuing threats to her graphic identity over recent years, remains one of the most familiar personages on the national market place. Although there are romantic stories about the lady's life (page 8), no one really knows just why the company adopted her for its trademark in 1883. The original pastel from which the design grew was still distinct on the Baker's Cocoa box in 1940 (bottom, left); since then the distinctive image has begun to fade. Baker's German's Sweet Chocolate (top) originally featured a feather-capped figure, but La Belle was later substituted, and the sweet chocolate package retains an old fashioned quality today.



Lea and Perrins takes its name from the two English chemists who developed it. In 1874 the company added a signature to its original label to discourage imitation. It was not until 1940 that they made other major changes (top, right), chiefly cutting out detail copy. Then in the late '50's the company discovered that many people thought of Lea and Perrins as one type of sauce, Worcestershire as another. Although the company considered a number of handsome new designs, they felt that none retained the product's identity. In their own solution (bottom) the words Lea and Perrins and Worcestershire are both emphatic.

Coca-Cola, long admired—and remembered—for its distinctive shape, saw several major but now forgotten mutations before maturing to its present form, which the company optimistically estimates can be identified by 90 per cent of the world's population. In 1900 a wired-cork pop bottle (top, left) was used. After the crown-cap was perfected, they switched to a straight-sided modern bottle (top, right), and it wasn't until 1915 that the famous pinch-waist version came out. Alex Samuelson and T. Clyde Edwards were the two men who finally ended the company's search for a bottle whose shape can "be recognized by feel even in the dark." And Raymond Loewy Associates are responsible for slight alterations to allow for larger sizes, and for white applied color labeling.

Canada Dry featured a map of Northern America even on its first pale dry ginger ale, marketed back in 1906. This design saw little change until 1953 when Raymond Loewy eliminated the heraldic devices in the neck wrapper shield and inserted the map there, making this the major symbol in the design. Now the company uses it on its entire line of products.

Ivory Soap's original label was designed by super salesman Harley T. Procter, son of P & G's founding partner William Procter. This early Ivory wrapper (right) appeared around 1898. Variations on the old checkerboard design, in shades of dark blue or black, continued until 1940, when the company adopted a new look for Ivory.

Manufactured at Ivorydale.
Factories conducted on the Profit-sharing Plan.

Small Size.

IVORY



SOAP

Procter & Gamble, Cincinnati

Small Size.

Project man

The Army shows what it has, tells what it wants, in the way of equipment for mobility, firepower, and communication

Where design is concerned, an army is like a world's fair: equipment developed for very special needs often has applicability far beyond the situation that called it into being. Just as fair architecture has influenced the buildings of daily life, so has the development of communications equipment, transportation equipment, shelter units, and even clothing for the military had a profound effect on the furnishings of civilian life. Aircraft developed for combat use is adapted to transport executives to sales meetings; electronic gear designed to help an artillery battery locate an enemy has been pressed into service to help disc jockeys reach teenagers; and even the clothing of soldiers has been incorporated into civilian fashions, such as the ubiquitous trench coat. Since the extreme demands of the military—simplicity, lightness, reliability under stress—often provoke ingenious design solutions, the Army is itself a sort of proving ground for new materials, components, and techniques.

The latest military designs were displayed recently at Fort Benning, Georgia, in Project Man—a three-day demonstration of what the Army has, and needs, to accomplish aims that Army spokesmen insist have not been essentially changed by the advent of nuclear weapons. Project Man was a no-bones-about-it attempt to show that the Army is still as important as the other major services that were, ironically, once subordinate to it. The demonstrations shown on this page were part of Project Man: in the lower picture, visitors are observing a helicopter assault; the scene above is from an all-out display of night firepower, appropriately called "the Mad Minute." The equipment that follows was displayed in the context of a statement of aspirations made by General Arthur Trudeau, the Army's Chief of Research and Development: "There are three things we need to do—move, shoot, and communicate."—R.S.C.



Mobility for the Army depends on equipment that can traverse land, air, and sea. More than that, it depends on equipment versatile enough to shift, like Superman, from one medium to another. Borg Warner's Larc 5 (lighter amphibious resupply cargo) is an all-aluminum vehicle (1) designed for quick over-the-beach supply missions. The experimental Free Air Suspension Vehicle (5) raises not only itself, but exciting possibilities for civilian transportation: it can move over both land and sea, by way of air. It doesn't fly high, but no one wants it. "We don't want to compete with the Air Force," General Trudeau says, "but we would like to be able to move over the nap of the earth." This is what the new vehicle, developed by Chrysler Corporation, does through twin rotors, set in ducts, to provide lift and thrust. For more prosaic chores, the prosaically-named Mechanical Mule (2), built largely of magnesium and aluminum, is available. Weighing only 900 pounds, it can carry a 1,000-pound load plus driver, over a 60 per cent grade. Aluminum also figures in the Army's basic means of travel: on foot. The foot bridge (3) can be erected from the far side of a river in a matter of minutes, by pushing the aluminum pontoons towards the target side, as they are joined. For delivering fluids, the Army now has the Rolling Fluid Transporter (4): the liquid is stored and hauled in tires, and can be rolled, like the beer barrels of the twenties, right to its destination.



1.



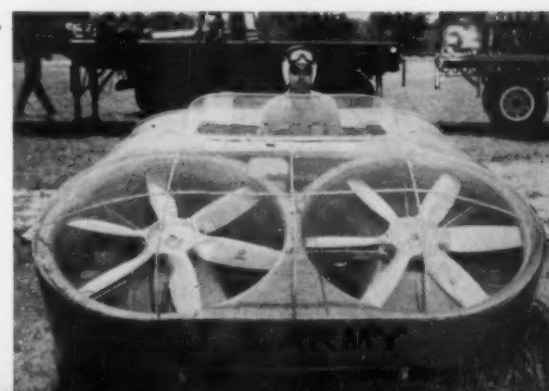
2.



3.



4.



5.



1.



2.



3.



4.



5.

Firepower is the Army's major need once it gets where it's going (or once the enemy gets where he's going), and Project Man sought to emphasize the Army's belief that nuclear weapons will not change war greatly. This conviction was expressed throughout the demonstration, in the display of equipment that could be used in both limited and nuclear war. The M-60 tank (1), built by Chrysler, uses a 750 hp engine, substantial amounts of aluminum in fuel tanks, fenders, and turret platform floor; it carries a new 105-millimeter gun and, for an extra boost, a 7.62 millimeter NATO machine gun mounted on the main gun cradle and fired through its shield. The Sergeant (2)—successor to the Corporal—is a new medium-range ballistic missile capable of delivering either nuclear or other warheads. It uses a new light-gage steel alloy developed by U. S. Steel, and the simplicity of the launching set-up is attributed by its developers to "integrated design."

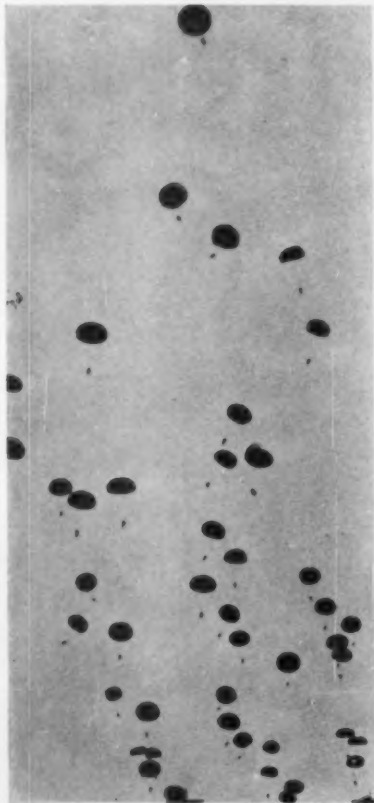
The M-56 tank, mounted with a 90 millimeter gun (3), shows its versatility, (4) as a crew prepares to fire a 4.2 inch mortar mounted on special equipment that converts the tank to a carrier and firing platform for mortars. The Pershing (5), the Army's newest and longest range surface-to-surface missile, is still in the research and development stage, will feature a new transporter-erector-launcher system that will allow it to be moved on site, erected and fired in a matter of only a few minutes.



1.



2.



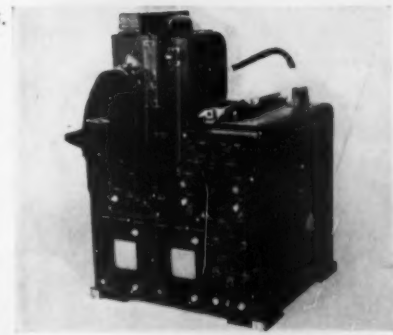
Communications for the military is a matter of getting information as well as conveying it. The surveillance drone is a good case in point. The AN/USD5 (1) is made by Fairchild. The SD-1 (2), shown here leaving its mobile ground launcher, was developed by Northrup. The drone carries a camera that exposes its film by radio command. After it has photographed the target, it is flown to a pre-designated safety area, where it is recovered by parachute. Prints can be delivered within minutes after the operation begins, without risk of life. No matter how advanced the communication media, however, it is still sometimes necessary to communicate by talking; and the New Army does this through its hat. This is made possible by a transistorized transmitter-receiver unit (3), weighing either 11 or 17 ounces, depending on which RCA release you read. The entire unit fits into the helmet, except for the microphone, which is clipped to the breast pocket. The "silent sentry," (4) a combat surveillance radar unit made by Sperry Gyroscope, is also transistorized, cutting power needs in half and making it possible for a battery to replace the gas generator previously used. The radar can detect movement of a single person half a mile away in the dark. In the same spirit, the airborne infrared camera (5), developed by Fairchild, was designed to be used for both day and night reconnaissance.



3.



4.



5.

Family of tools share housings New line of industrial drills, disc

The tools on these pages are examples of the three basic types—drills, disc sanders, and grinders—in a new line of 15 portable industrial power tools designed by Laird Covey for Stanley Electric Tools, a division of The Stanley Works of New Britain, Connecticut. Since the line will be used by mechanics rather than home craftsmen, a great deal of attention has gone into making them comfortable to handle and operate for long periods of time. In comparison to the old line, for instance, they are much lighter (up to 35 per cent), a reduction achieved by greater use of aluminum die castings, and the handles have been changed to improve their grip by a gloved hand (which is the usual way of holding these tools). They are also equipped with certain engineering advances—more powerful motors, extra high speed ventilating fans, and sealed, built-in trigger control switches—incorporated into them by the Stanley staff.

But besides these improvements in use and function, the individual tools have been given a more coherent appearance, and the line as a whole has acquired a look of kinship.

Below left are catalog illustrations of old line of Stanley tools. Below right are the new disc sander (top) and grinder.



No. 77

STANLEY



No. 803
No. 805

Each drill has No. 3 on taper arbor. See also No. 804—1" and

	Net Wgt.	Ship. Wgt.
	31 lbs.	41 lbs.
	31 lbs.	41 lbs.

STANLEY

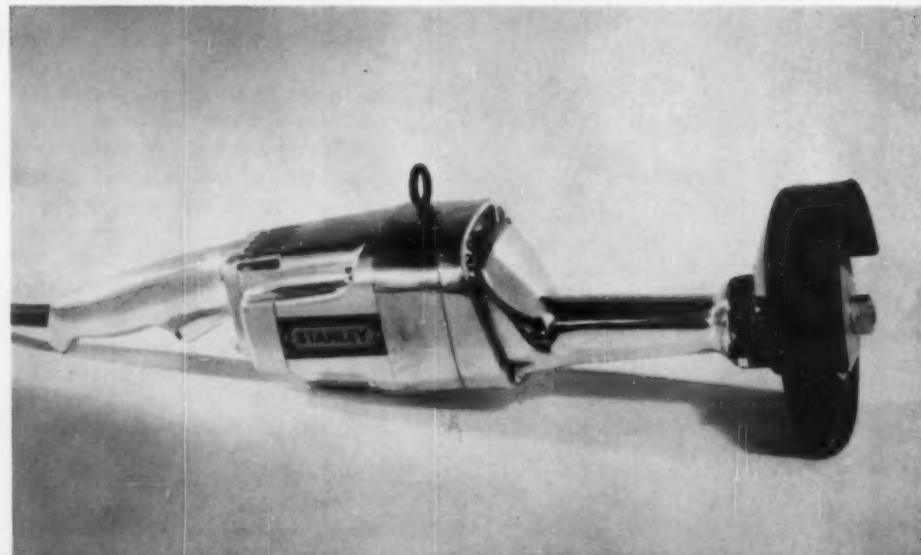
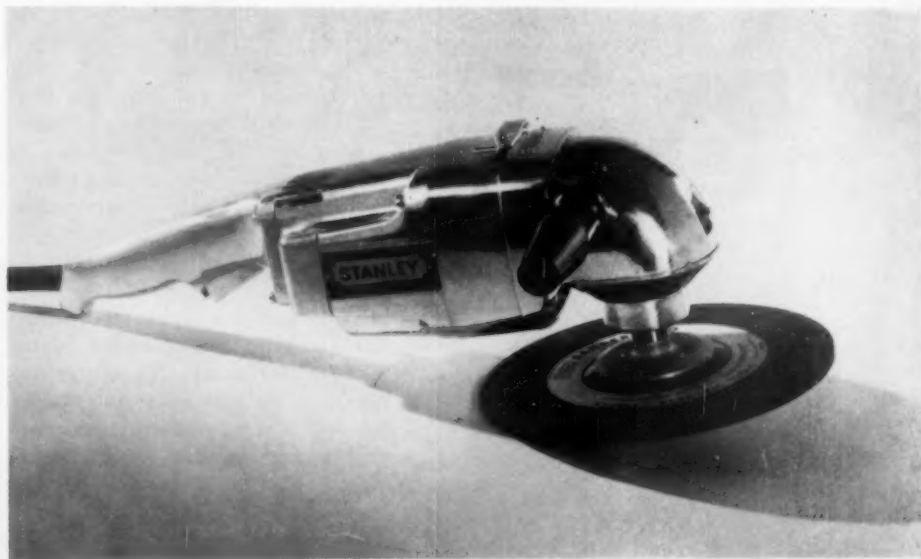
DRIVE BRUSH MS-1464 — 3/4" Dia., 5-11 Threaded Hole, Fine. Fits under 72, 92.
DRIVE BRUSH MS-1465 — 3/4" Dia., 5-11 Threaded Hole, Coarse. Fits under 72, 92.
SANDING DISCS FOR WOOD SANDING, fibre back aluminum oxide-open-kate. For 7" sanders, MS-455-4 coarse 50 grit, MS-455-5 medium 80 grit, S-455-6 fine 120 grit. For 9" sanders, MS-126-4 coarse 50 grit, MS-126-5 medium 80 grit, MS-126-6 fine 120 grit.
OR METAL SANDING, fibre back aluminum oxide-waterproof. For 7" sanders, MS-455-1 coarse 24 grit, MS-455-2 medium 36 grit, MS-455-3 fine 7 grit. For 9" sanders, MS-126-1 coarse 24 grit, MS-126-2 medium 36 grit, S-126-3 fine 80 grit.
OR REMOVING OLD FINISHES, fibre back aluminum oxide-open-kate. For sanders, MS-464 16 grit, MS-465 24 grit. For 9" sanders, MS-328 16 grit, S-327 24 grit.
GLYSHRING BONNET — MS-320 for 9" sanders, MS-466 for 7" sanders.
SPACEMENT PADS — MS-1272 for 9" sanders, MS-1271 for 7" sanders.
GLYSHRING PAD — MS-467 (7") for 7" sanders.

STANLEY

No. 565 GRINDER



STANLEY



sanders, and grinders are related in appearance

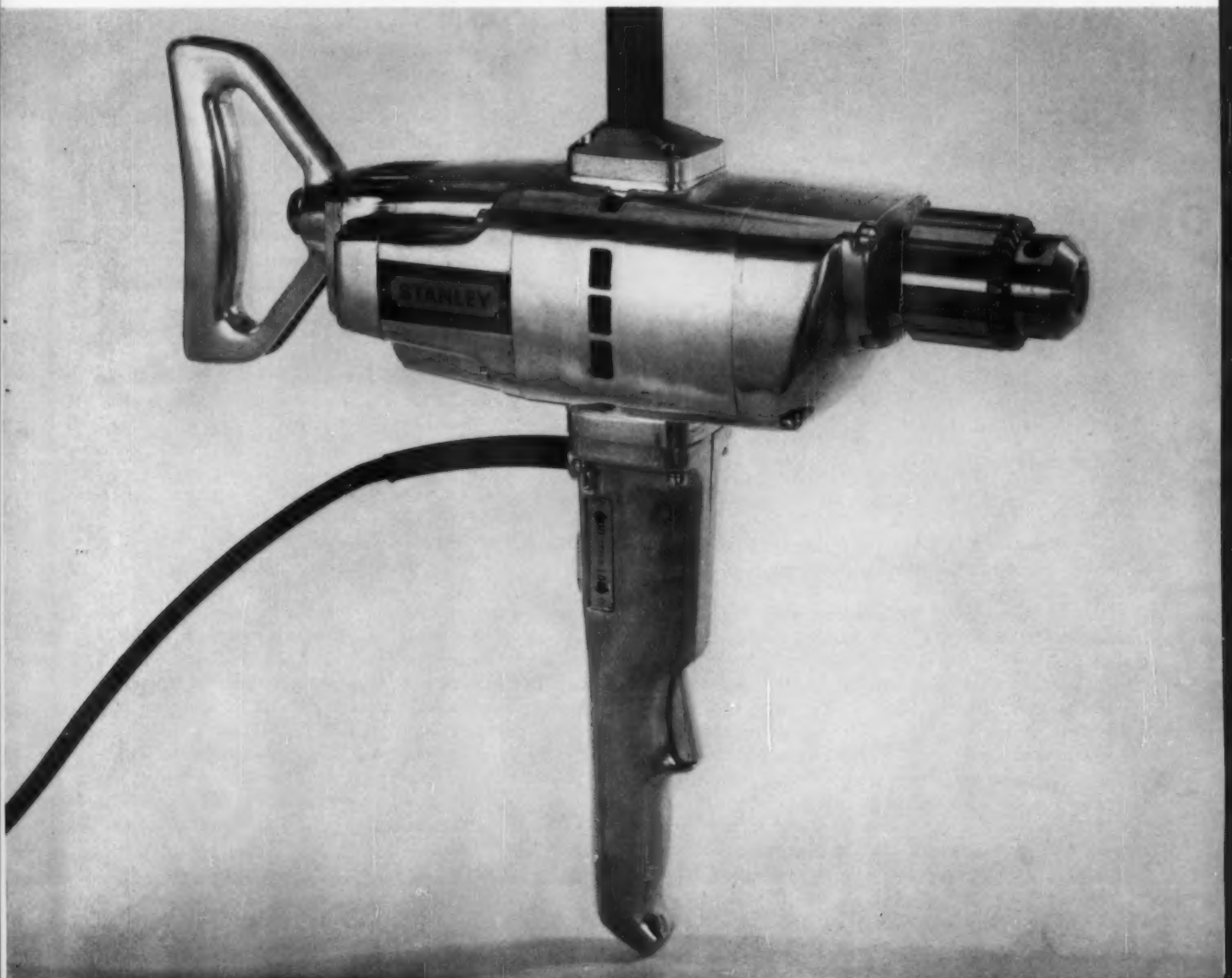
In the old line, the tools were characterized by round shapes and each tool had a different housing. Both the drills and grinders were front-heavy, and various sections of individual tools frequently had no relation to each other.

The housings for the new tools have a common external form, and some of the tools also share common internal parts such as gears, switches, and shafts, which naturally reduces manufacturing costs. All of the tools use the same motor housing of ribbed aluminum construction, light but sufficiently strong for continuous operation. The grinders, sanders, and polishers also have common gear housings made from an interchangeable combination die; they differ only in size. For visual continuity, the diagonal pattern of the cowl on the front of the gear housing is repeated on the drill, even though its purpose (air exhaust) is served on the drill by side vents. All the drills have identical spindle housings and spade handles, and the grinders, sanders, and polishers use the same control-switch handle (the control-switch handle on the drills is different because of

their different configuration and weight distribution).

In silhouette the new line's appearance is "soft square," gradually tapered from front to rear, and is reminiscent of other recently introduced lines of Stanley tools. This cleaned-up overall look extends to such details as the shape of the handles, which have been freed of their contoured grips and instead made larger in diameter because research showed that this provided a better grip for a gloved hand. The old rectangular spade handle on the drills has also been changed to a streamlined "D" shape that is bigger, more adequate for the user's hand, and more comfortable when used as a chest plate. The Stanley name plate is now just that, and has been enlarged for easier identification; pertinent electrical information has been transferred to a smaller label on the opposite side of the tool. And rather than the conventional high-gloss finish, which looks fine when new but rapidly shows marks of use, the surface of the entire line is barrel-burnished to a hard, durable satin sheen that is said to last longer.—L.D.G.

New heavy-duty drill below features easy-to-grip "D" shape handle for comfort and convenience.

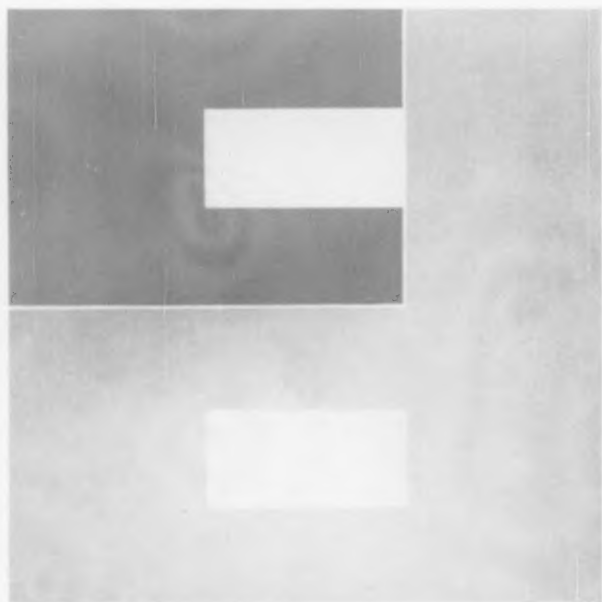


World Design Conference

East and West discuss their common problems in Tokyo

As a consequence of the 1956 Aspen conference, a number of the Japanese designers who had been present there began to plan a Japanese Aspen: an international meeting of designers, who would not only exchange ideas, but would see what Japan itself had to offer the world. The significance the conference occupied in Japan's mercantile life was reflected in the executives of the World Design Conference Foundation: the president, Tadashi Adachi, is also president of the Japanese Chamber of Commerce, and the two vice-presidents are also vice-presidents of the Tokyo Chamber of Commerce and the Japanese Federation of Economic Organizations.

Japan is not Aspen, however, and the immutable fact of the distance involved, and the money and time necessary to cover it, meant that many of the delegates originally invited



could not come. (There were other reasons: one delegate could not come since in his hurry he had taken all his shots at once.) One count put the number of delegates who got there at 84, representing 26 countries. More than half of these were architects; 24 were industrial designers; the graphic arts accounted for 11; and the rest were craftsmen, critics, and educators. In addition, there were about 300 guests (including a group of 17 NSID members).

The theme of the conference, which lasted from May 11th to 16th, was *Our Country: The Total Image*, and this theme was explored in three seminar cycles: on the personality of design and the designer, on the factors that affect the practice of design, and on the future of design in a changing culture. Each cycle began with a series of speeches addressed to the conference as a whole; then the delegates were divided

into three groups for panel discussions on three aspects of the general topic. In addition, on the final evening, ten designers and teachers participated in a seminar on design education.

This made a full program, since it was amplified by sight-seeing tours arranged by the indefatigable hosts, and receptions and luncheons tendered by Tokyo officials and a number of the embassies. One of the problems in holding a conference in a place as distant and as absorbing as Tokyo is the difficulty of penning people together long enough to talk to them. Some designers did not get to the conference at all, while others simply missed a reception here and there. To remedy this, the two-man committee appointed to plan for the next conference (Junzo Sakakura, chairman of Wo-DeCo's executive committee, and Herbert Bayer) are seriously considering the widespread suggestion that it take place on a boat, where no one can get away.

To deal with the language problem, the organizers provided a UN-like system of simultaneous translations in Japanese, French, and English, and consecutive translations in German and Italian. The paraphernalia of headsets and translators' booth, television floodlights, and a swarm of photographers meant that the atmosphere was imposingly technical, and the efficiency of the mechanics was in strong contrast to the vagueness of expression that seems an inevitable concomitant of design conferences. One delegate reported a distressing prevalence of good will and general agreement; he had hoped for more controversy. (But U. S. industrial designer Sophie Koch-Weser said she felt the delegates took advantage of the distance from home base to speak more frankly than usual of their own past design mistakes.) Other participants complained of the repetitiveness of the speeches. At one point, the delegate sitting next to Saul Bass leaned over and whispered, "If one more speaker starts with the Industrial Revolution, I'll scream." Bass himself was the next speaker: he started with the Industrial Revolution, and he reports that he did hear a small scream.

Joella Bayer, Herbert Bayer's wife, acted as ID's observer, and her evaluation of the conference follows:

"A large majority of the speakers, each in his special field, emphasized the contribution of design to humanity and the future role it should play in the life of society. In the field of industrial design there was an evident tendency toward a plan of living, an attempt to move from design of individual products towards an overall planned design, to achieve a total image of the future based on industrial civilization.

"To me it is not important that conferences reach conclusions; what is important is the interrelation among the designers, and the ideas that emerge. As a spectator of the nine Aspen conferences, I think the Tokyo one highly successful."

Excerpts from some of the speeches appear overleaf.





Kenzo Tange: "Now that the liberation of atomic energy has at the same time brought about the liberation of humanistic consciousness, there is a demand for a dynamic balance between the general trend of technology and humanity. We must search out the gaps between what has been brought about by technological development and humanity, and go ahead after discovering the problems to be solved. The only way to span these deep gaps is creation. The time has now come when the designer must proceed to change human life from within himself."



Jean Prouvé: "While most men are attracted, enthralled, and conquered by the evolution of science and the magnificent industrial productions that it generates, it is unfortunately still true that the same men find architectural emotion, joy, and well-being, when it comes to their own homes, in the construction of epochs long gone by. What anachronism and what failure in our civilization does this represent? On one hand there is the wide diffusion of the spirit of exaltation and beauty, and at the same time there exists, in the essentials of our daily life, in our outworn urbanism, a hesitation and technical mediocrity accompanied by momentary fashions and by ugliness."



Walter Landor: "We, as creative designers, must guard against the danger of watering down or wiping out the vital differences that are rooted in our cultures. If we allow ourselves to drift further in this direction, we shall end up in a morass of sterile mediocrity and sameness that offends no one, pleases no one, moves no one, but is bought by everyone because no alternative choice is available."



Raphael Soriano: "In observing one aspect of our progress, that of increase in speed of communication, one important principle becomes apparent, which we in the arts seem to neglect, or perhaps do not like to face. That is the integrity of unambiguity. In learning more about everything in this world, in exchanging the right inventions with one another, the more clearly we communicate with one another, the more clearly this noble aspect of man is focused. There lies the culture of man! Not in a multitude of trivia, such as the ceramic figurines, the paintings, the sculptures, the poetry, and other forms of art, which is now supposed to represent an exchange of culture."



Herbert Bayer: "The moral strength and effort often needed to produce good design in the face of the forces of production, sale and profit are not to be minimized. The free artist who assumes independence often lives on charitable support and rejects the challenge to devote his abilities to the concrete visual problems of his time. The designer, on the other hand, accepts the responsibilities of a position anchored in a service to his society. However, the artist's sensibilities and the character of a commission are often at odds. It should not be looked upon lightly that it requires conviction of mind, moral strength, effort and knowledge to produce honest works in the face of limiting economic forces."



Yusaku Kamekura: "Japanese forms to this day are those of simplicity, refinement, and grandeur, each derived from the classes of the merchants and farmers, nobility, and warriors, and also influenced in large measure by Shintoism and Buddhism. But to refuse and resist this inheritance seems to me a dictate of the conscience of a designer. Without this spirit of resistance against his inheritance, I am afraid that the designer will end as merely a tradesman or a specialized technician."



Saul Bass: "There are two ways of solving the latent anxiety that plagues all mankind. First is simplification. Second is for us all to become wiser, and I personally prefer the latter course."

The designer must have confidence that he is a representative of Man. Our real customers are mankind. Although we cannot change the masses, one of our jobs is to open up the way of growth for people, to make them feel something.

The creative act is a heretical, a rebellious act; intuition and insight do not coincide with the common and ordinary, but they are not opposed to common sense and reason.

It may be difficult to discover Truth, but we must have the insight to meet the demands of human beings; we must have a warm humanity."



Erik Herlow: "We all know objects whose form is so pure that we have nothing to add and nothing to subtract—they are universal. The wheel in all its shapes is a thing of universality—something usable and suitable for everybody. The variations may be of regional or individual origin, but the wheel by itself is universal and maintains its significance in all true shapes and variations. In our days we are better equipped with means of communication than ever before. While we can learn to understand each other more than ever, at the same time the possibility is there to imitate each other, and the imitated is to the universal as falsehood is to truth, and it is important to distinguish between them."



Hans Schlegler: "There is a maze in front of a young person and it is necessary to help him find his way through it alone and yet not unaided. Self-knowledge and paying no heed to the passage of time bring him closer to freedom. The student should always be ready or rather able to destroy what he has done, realizing it is simply a revelation of some part of his nature.

The student should not be in charge of powers which he has neither discovered nor can yet control, of which he has not invented the mechanism and for which he is not providing the fuel. Nor, furthermore, should he feel himself a designer because he has seen and remembered designs."



Carl Aubock: "It is truly remarkable while product design is still looked upon as a very specialized activity—although it becomes more and more of a vital factor in industrial planning—that at this same time industry no longer looks for its own leaders among the specialists. It is obvious that design by now wants to share in the leadership of industry, and the responsibilities involved ask for a man who has not much in common with the traditional concept of the industrial designer."



Louis Kahn: "Realization means harmony of a system in which a definite subjective condition reaches a condition of sensible order. Architecture is the ideational affirmation of space; the fact that most buildings, despite their internal differences, look alike, is because they lack Realization. Realization is not a mere ideology, but a philosophy with an emotional background."



Noriaki Kurokawa: "How can we achieve an entirely new universality? The answer, possibly is not single. We can no more be allowed to resist the devastating effect of mass production and mass communication, as William Morris did, nor can we be allowed to run away from it. We must strive to incorporate humanity into techniques and mechanics so that humans are "stirred up" for the sake of machines and machines are "stimulated" for the sake of humans, thus giving life to universality. I remember I was deeply impressed by Dr. Hideki Yukawa's remark that "science and philosophy are not two antagonistic knowledges but two points on a line of string." Should we not link machines and humans with a single line of string?"



Peter Smithson: "Designers as interpreters of society to itself—myth-makers—have a duty to show that common objectives can be reached by individual, primarily self-serving, acts. Our responsibilities as technicians in the field of environment are changing. We professionals are less responsible for control from above and over-all design, and more responsible for process:

—Town Planners for flow of services and vehicles: the long-term structure.

—Architects for making places, spaces for the social gesture, whose length of life will be appropriate to their function.

—Designers for dressing and furnishing the social gesture: the daily-consumed myth."



B. V. Doshi: "The creative mind always succeeds in adapting the most diverse elements to the immediacy of the local circumstances. This process whether it is conscious or not is clearly a recognition of the natural significance of regionality.

The human condition of change is not basically a series of rejections, but rather an oscillating sequence of creative reactions to aspects of the past. In a long perspective of time, change is confrontation of the cultural heritage through a continuing accumulation of new experience."



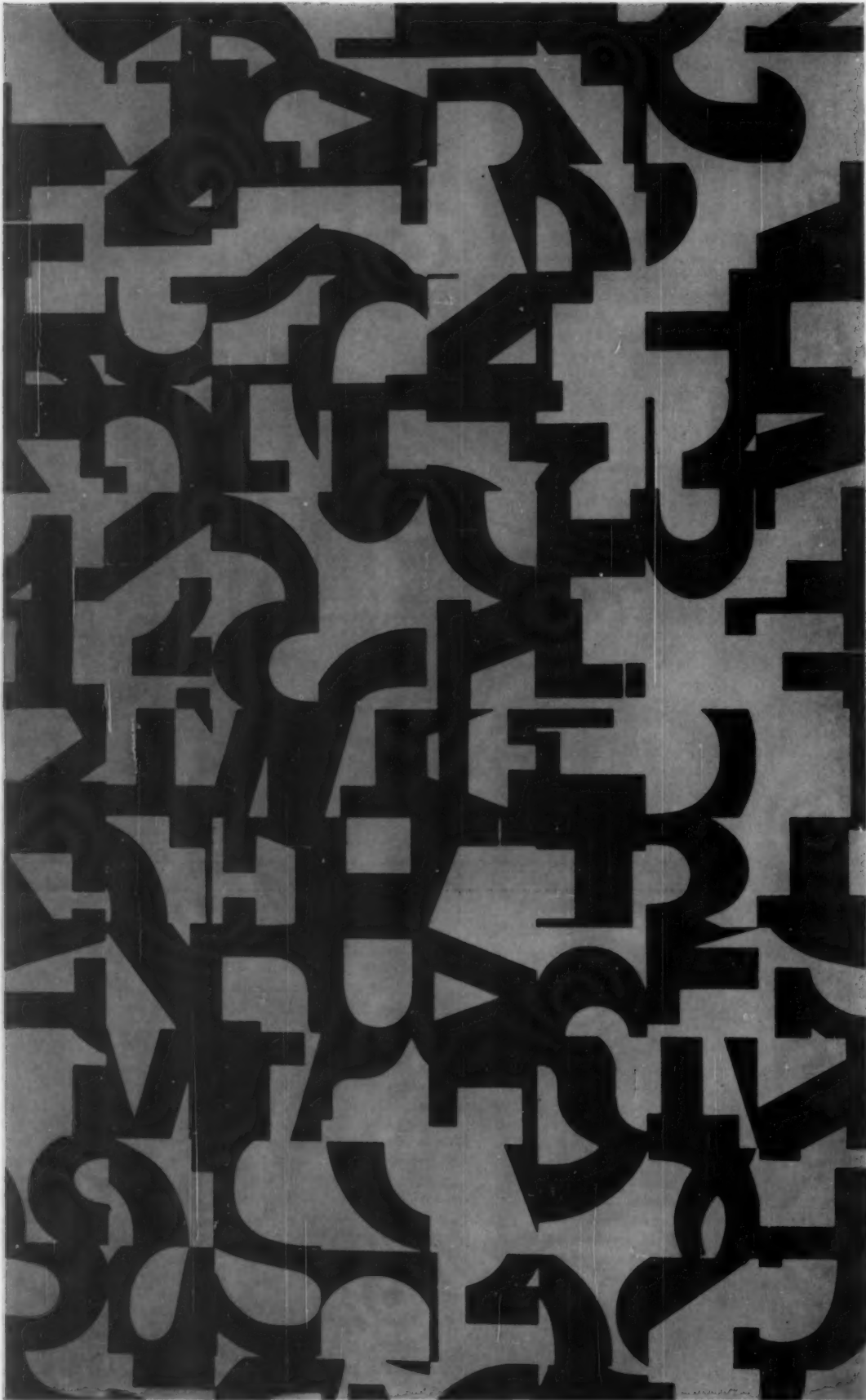
Tomas Maldonado: "In certain areas of production—instruments, apparatus, and appliances—the zones of action or manual control have been decreasing in size and the zones of visual and acoustic perception have been increasing. If this process continues, the task of the industrial designer will become more and more the design of information displays.

For this purpose it will be necessary that the designer admit that his task is essentially communicative and only peripherally artistic. He must also admit the existence and legitimacy of objective communication; i.e.: he must cease to believe that persuasive communication is the only form of communication."



Yki Nummi: "Superfluous structures and inessential forms which lowered efficiency insignificantly when we used small effects have become serious drawbacks in our world, even insurmountable obstacles. In present conditions only forms that are sufficiently simplified are preserved, as they offer the smallest resistance to the steadily growing pressure of mass production.

Individuality will play a small role in this system, and there are already signs of a gradual shift to anonymity. The role of regionality will probably be just as small. The center of gravity of design may differ in different regions, but the "great line" of design will be roughly the same everywhere in the world."



Dialogs on graphic design

VI: NORMAN IVES

Laying out his own work as illustration, a graphic designer discusses graphic design as a universal language

There is a major difference between the terms "graphic art" and "graphic design." Graphic art, as in painting, deals in private symbols; graphic design deals primarily with public symbols. Paintings are individual expressions which may be extremely personal and mysterious. They take time and reflection on the part of the viewer to understand and explore the painter's point of view. The graphic designer can never be obscure in this sense. He must interpret and compose ideas in a public, universal way that will relate to the instincts and cultural ideas, conscious or unconscious, in all of us.

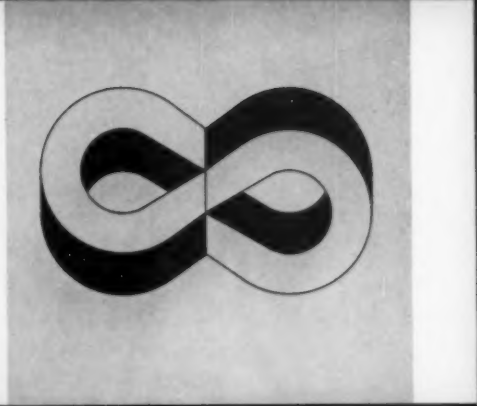
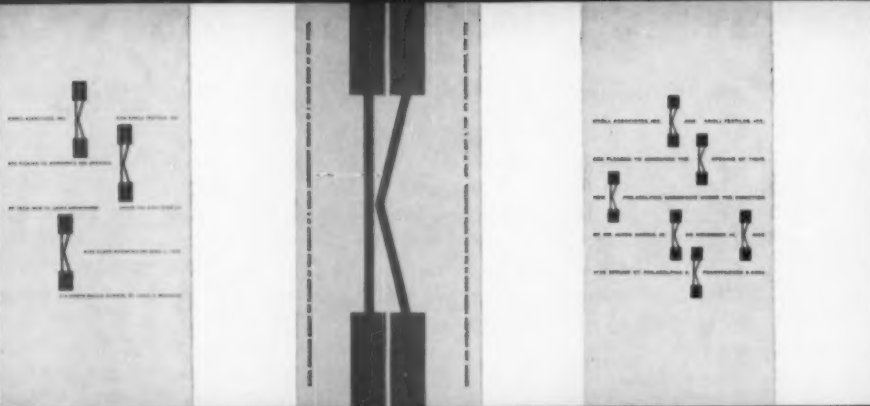
Graphic design covers many areas, but these fall essentially into two categories: one is the organization and synthesis of existing material, the other is the creation of an image of an idea. The first comprises the design of books, magazines, exhibitions, packages, and the multitudinous literature of commerce and institutions. The second comprises the design of posters, magazine and book covers, advertisements, and symbols. In both categories the designer acts as catalyst to give the raw materials of communication — manuscripts, type faces, paper, printing processes, ink, photography and other pictorial material — a meaningful form through the vocabulary of vision, the parts of which are color, mass, shape, texture, balance, contrast, rhythm, line, volume, and proportion. In addition, since most books, magazines, and commercial printings are mass-produced, the graphic designer must be aware of all the stages in production, and of the conditions imposed by the various processes and manufacturing services that he must use. The extent of a designer's imagination and ingenuity in the face of these limitations can be measured by the appearance of the resulting design. Nowhere is this clearer than in book design, which presents the designer with the most restrictions and built-in limitations. When one considers the vast numbers of books that are published today, it is surprising that they do not look more alike than they do. A great tradition in book design has grown up during the 500 years of its existence, and, of all graphic design, the book has undergone the least change in appearance from the impact of the modern art movement. This is not primarily the fault of the designer; it springs from limitations and conditions within the whole industry. These restrictions are present wherever products are mass-produced—and they are necessary and desirable. It takes an ingenious and dedicated designer to overcome them or use them to advantage, and the overall results we see in the book stores are, on the whole, much better than they would be if there were no restrictions. Examples of the latter can be seen in certain limited editions, in which a well-written manuscript or group of poems is put together in some inappropriate format, set in a romantic type,

and printed on very expensive handmade paper.

Magazines confront the designer with other difficulties, since a good magazine is only as good as the visual and literary material that goes into it. Decisions on size, type face, process, paper, etc. must grow out of this material, as should the arrangement of the material on the pages. If there is a photographic essay, for instance, the photographs themselves will determine their own size and placement in relation to one another on the page. This will depend on the content of the photograph, which includes the story it tells and its emotional value, and the formal values within the photograph. By creating a visual drama from page to page that relates to the story the pictures tell, the designer can augment the photographer's intention and communicate the story idea forcefully and memorably. When the designer is given a series of unrelated pictures to arrange, he imposes an order on them, introducing relationships and images, not inherent in the material, to reinforce that material and to help the reader understand it. This draws close to the second category of graphic design, the creation of an image, although it is not precisely the same.

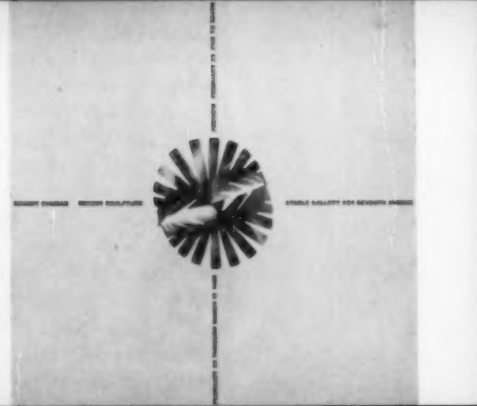
The design of posters, covers, and symbols imposes conditions and restrictions of a different nature. And in one sense this kind of design has more freedom: since there is no great tradition of poster design in this country, the designer has greater latitude for the exercise of his talents. Nevertheless, only a handful of individual designers have made successful posters, and in each of these cases it is obvious that the designer had complete control over the design. Judging from the majority of posters, there are apparently too many economic considerations for the manufacturer to permit the designer a free hand. The result is always a collaboration between the designer and non-designer (the seeing and non-seeing), with no attention given to the relation of form to idea. This is especially true in photographic posters. It is generally recognized that photographs have a strong emotional content, but they are seldom used for other than documentation. The photograph's formal values, and the use of these values to emphasize and increase the effectiveness of its content and message, are rarely used to advantage. In poster design the photograph becomes even more difficult to handle because, in addition to its own formal values, there are the formal elements of the poster layout and its written message. These elements should not have a separate visual entity, as is often the case, but should relate to the photograph's formal values.

Vision is the most universal of languages; seeing is more convincing than reading. It is up to the designer to interpret our culture in a way that is universally understood: through the eye.



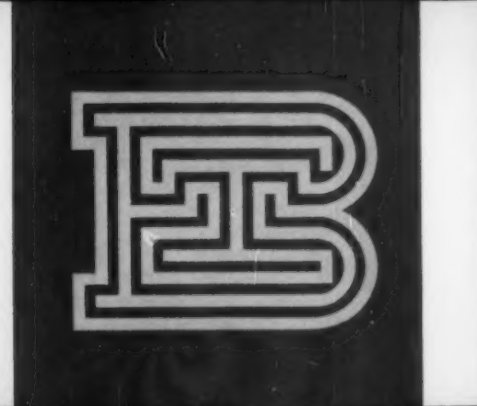
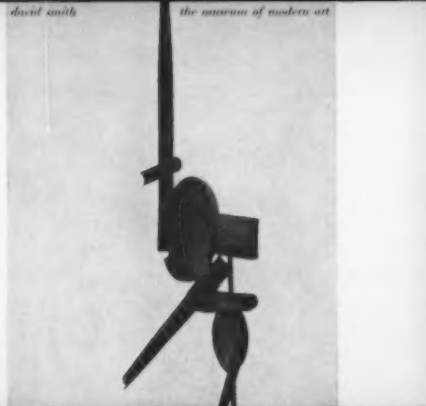
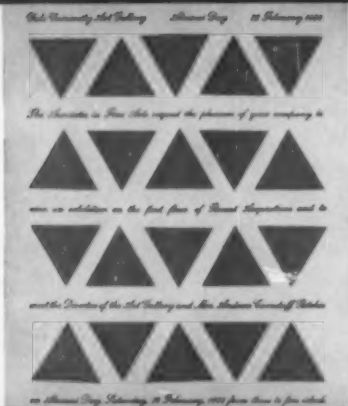
Three announcements

Symbol: magnets



Booklet cover

Poster



Poster

Catalog cover

Symbol: BT — Bank

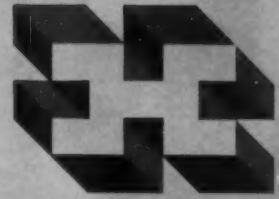
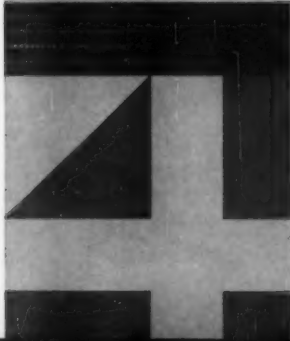
NATION

Sofistic System's
By David Carl

Delia Brothers in Hymnals
by Charles Edmondson

Paula Jankowski
by William A. Wilson

A collection of seven square abstracted
Compositions are presented to bring a new
freedom and a new insight to architecture.
Four others, Paul Rudolph, Ben Neuberger, others.



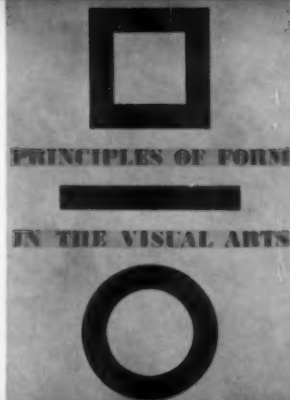
Magazine cover

Poster

Symbol: H — hotel chain



STONE SCULPTURE FROM MEXICO
THE MUSEUM OF MODERN ART



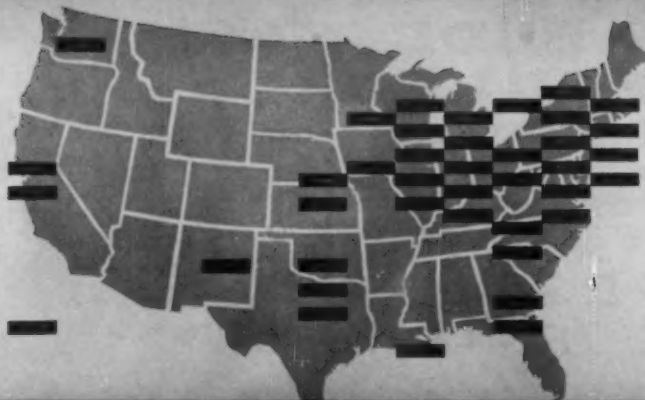
PRINCIPLES OF FORM
IN THE VISUAL ARTS



Magazine cover

Poster

Symbol: A-O — architect



Map



Record album



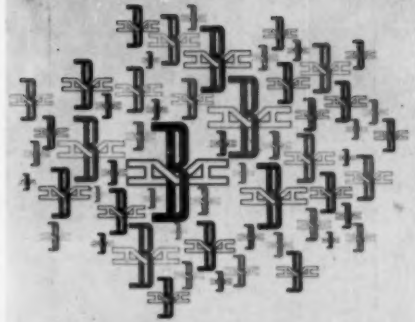
Symbol: three books

Continued from

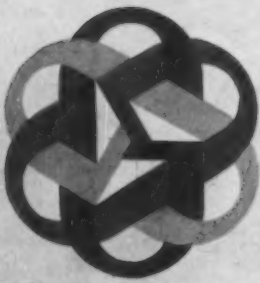
with an introduction by Cyril Dixon

and other parts

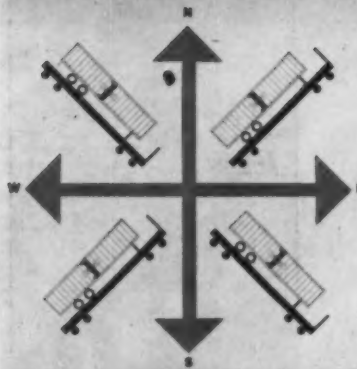
Book jacket



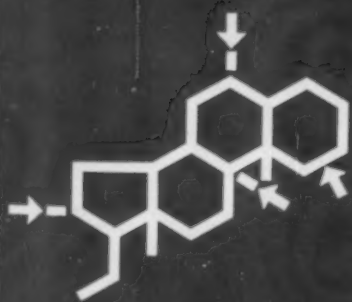
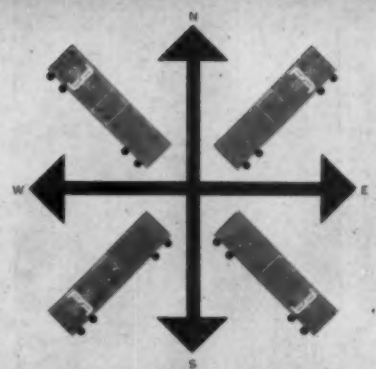
Greeting card



Symbol: 3 G's — museum



Annual report cover



Exhibition panel

ABCDE
FGHIJK
LMNOP
QRSTU
VWXYZ
12345
67890

Alphabet



127th ANNUAL REPORT 1951 BOSTON AND MAINE RAILROAD 1951

Annual report cover



Symbol: AM — bank



Catalog cover



Catalog cover



Greeting card



Magazine cover

Catalog cover



Symbol: E — printer



Book cover

Textiles and Ornaments of India

Book cover

Museum



1.

2.



1, 2. Cantigny's theme is established by display unit just inside entrance. First Division's big red "1" is set into floor, surrounded by a revolving frieze of battle paintings on color film, illuminated from below. One-minute accounts of each battle, synchronized with movement, are heard over cup-like receivers. Curved panel behind display holds illuminated pictures of division's 39 commanders, with narrated biographies for 8 best-known. 3. Fiberglass tunnel encloses and concentrates attention on campaign stories of World War II told through maps, photographs, taped sound, and objects such as Butterfly bomb, Teller mine embedded in block of earth. Facing tunnel is a mock-up of German pillbox with anti-tank gun projecting from slit; pillbox is repository for captured souvenirs. 4. Trench is authentic, with real machine gun that can be aimed and "fired." Diorama background lights up with gun flashes, and sound track has synchronous gunfire.

honors the military

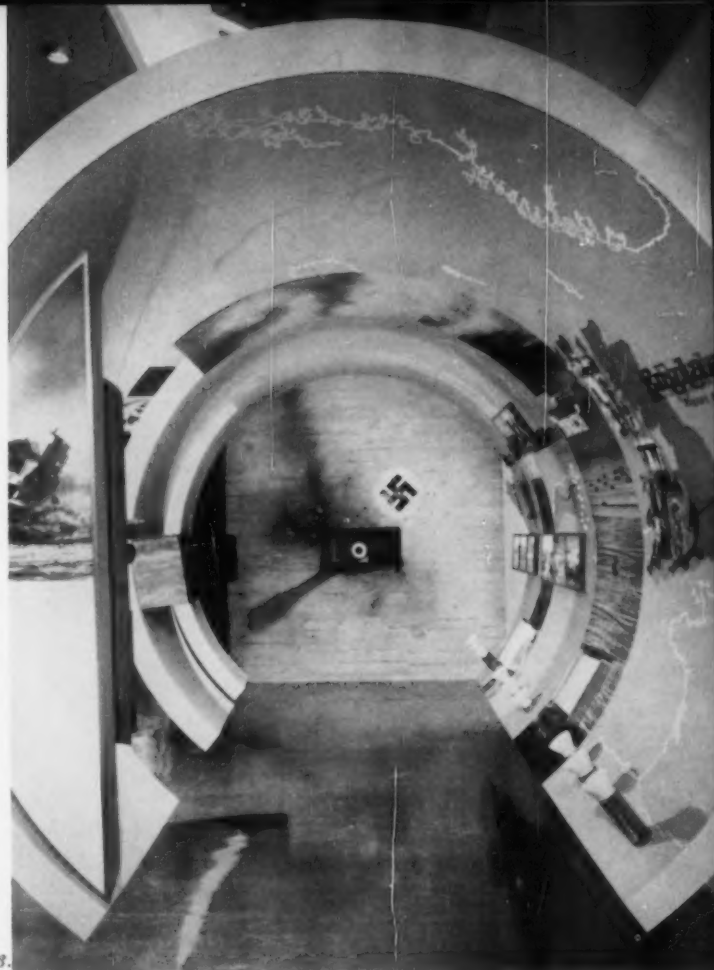
As long as war creates old soldiers (which the next war may not) it will probably also create heroes and subjects for epics and friezes. The museum shown on these pages speaks of war in this spirit. It is a military museum in memory of one man—Colonel Robert R. McCormick, the late publisher of the *Chicago Tribune*—but dedicated to the exploits and honors of an entire military unit, the First Infantry Division of the U. S. Army. Colonel McCormick served with the division during the first World War and remained one of its most faithful alumni. Cantigny Museum is located on his estate, Cantigny Farms, in Wheaton, Illinois. It occupies an existing building and a new Memorial and Archives Hall in a landscaped setting that includes field pieces and a 500-car parking lot; it was financed by the Robert R. McCormick Charitable Trust. Things being what they are, it may well be the last of the military museums to present war as a phenomenon not only exciting but inspiring.

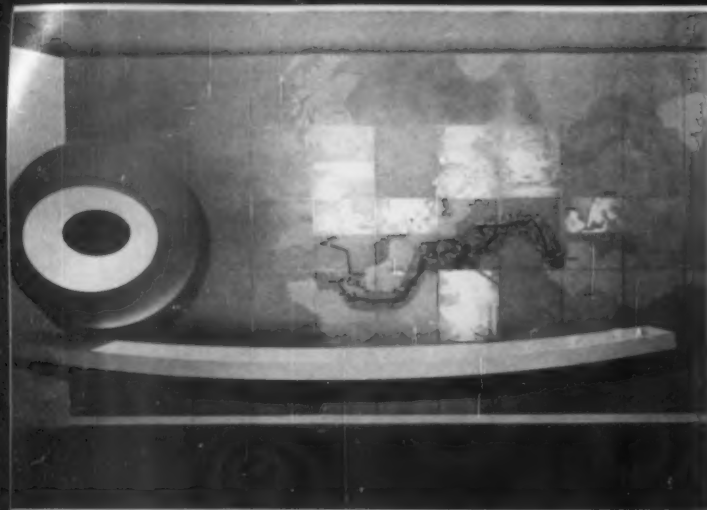
But if Cantigny's message is anachronistic, the method of its telling is not. Latham-Tyler-Jensen's exhibits department, under Donovan Worland, was responsible for its installations, and they are the most advanced example to date of L-T-J's thoroughly modern museum design concept (for a previous example, see Hinsdale Health Museum, ID May 1959). Overleaf, Mr. Worland discusses the philosophy behind this concept. Put into practice, it consists of a full orchestration of animation devices which convert the museum-goer from passive spectator to active participant in the story the museum tells. In Cantigny, these devices are aural, visual, and tactile, and although the exhibits range from the relative perspective of a diorama or map to the immediacy of a full-scale replica of a dugout or trench, none are without movement and sound. The diorama tells the story of the Battle of Cantigny on tape that is heard over individual phones or public address system, and is synchronized with the changing scene within the diorama: dawn breaks, the troops and armaments move forward, at the end the town crumbles and burns.

What the diorama does for a single battle, the map does for an entire campaign. Again, recorded commentary is synchronized with the action: moving light lines trace the division's advances, at appropriate intervals photographs of various engagements flash on the map's grids, and off to one side, activated by a button, an "eyeball" tv shows silent movies of other divisional activities.

On still a third level, the trench and the dugout try to communicate experience rather than history. Life-size and made of the genuine materials, they are meant to be stepped into and "felt". The trench, for example, fronts on a diorama of a night battle scene in a barbed wire no-man's-land: shells burst, machine guns rattle, and flashing lights simulate their fire.

Contributing to Cantigny's spectacular effects were Product Presentations, Inc., exhibit builders; Richard Rush Studios, dioramas; Model Builders, Inc., synchronous sound and animation systems.





1.



2.



3.



4.

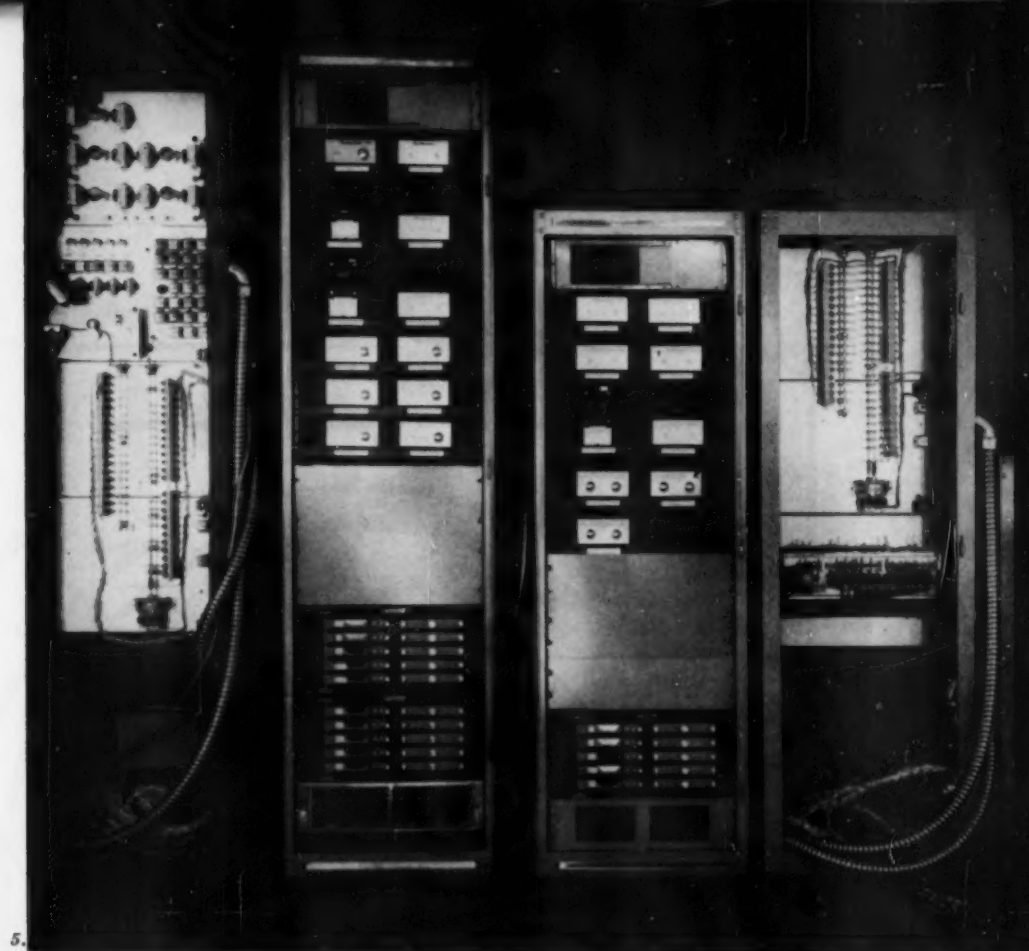
Cantigny's objectives, and their pertinence to all museum design, are discussed below by L-T-J's Donovan Worland.

As museum audiences mature—and we think that they are maturing—they are becoming increasingly interested in the principles, processes, and ideas that underlie the objects exhibited. We have pursued this point of view for several years in the design of scientific exhibits, but Cantigny offered our first opportunity to try it in the historical field. Our original assignment was to design, in an existing structure, a suitable display of the memorabilia and artifacts treasured by the units of the First Infantry Division of the U. S. Army. Instead, we counter-proposed to tell the story of the men of the First Division, and tell it in the most effective terms that modern devices and techniques permit, using the objects and documents only as support for a central story line to be told by the exhibits. We have taken the stand that a good exhibit is, by definition, an editorial statement.

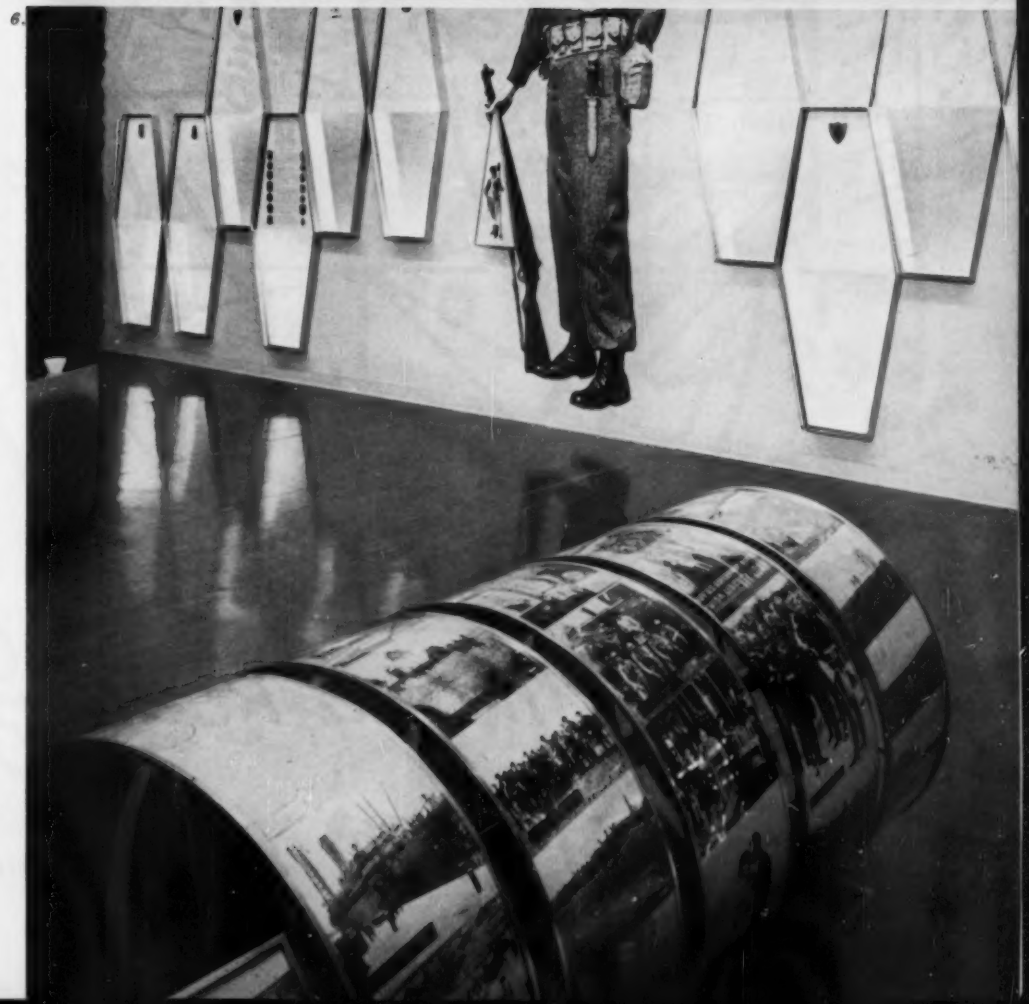
Unfortunately, many museums neglect this obligation and present *all* of a story without emphasis. This relieves them of the burden of defending a viewpoint, but it puts upon the viewer the burden of synthesizing words and visual impacts, and of reaching conclusions on the basis of a jumbled mass of information. If we forego a sentimental attachment to the usual bewildering clutter of souvenirs, documents, and objects, and elect to extract the essential story embodied in them, we are coming a long way toward functioning as museum designers. Once the story is determined, the steps to communication—as we see them—are these: tell the story within an experience-situation if possible, permit the visitor to participate actively in the telling, and offer the serious student access to authentic, detailed source material.

Admittedly, the installations for this kind of presentation are expensive. But it seems to us that there is a basic decision to be made here. Should a museum spend its available funds on the acquisition of more warming pans when those it already has are not only poorly displayed, but lack any effective explanation beyond the usual dusty copy card? You will see in these photographs a few rusty swords, a few tattered flags and refurbished weapons, but we hope that in no case do they create a barrier between the viewer and the story. The question as to whether or not our approach is successful will be answered by visitors when Cantigny opens this summer.

Exhibits like Cantigny are of course usually problems in custom design. As industrial designers we are sometimes questioned about the validity of such work within an office which should be concerned primarily with design for mass production. We think that the experiences gained in design for space, as contrasted with graphics or product design, enrich the talents of understanding of the whole office; we have found that the skills required in all three areas are closely related, and that much of our talent is interchangeable as long as we remember that each field has its own objectives. Museum design in particular demands the integration of the three fields: an understanding of communication through graphics, a knowledge of the relationship between sculptural form and functional mechanisms, and a mastery of the techniques of three-dimensional communication combined with design in space. Cantigny is an evolutionary step in the development of this approach.



5.



6.

1. Moving light line traces Division's advances across wall map of Europe, while action photos of 11 engagements appear on grids at appropriate intervals. Curved fiberglass slab holds documents; eyeball tv shows silent movies.

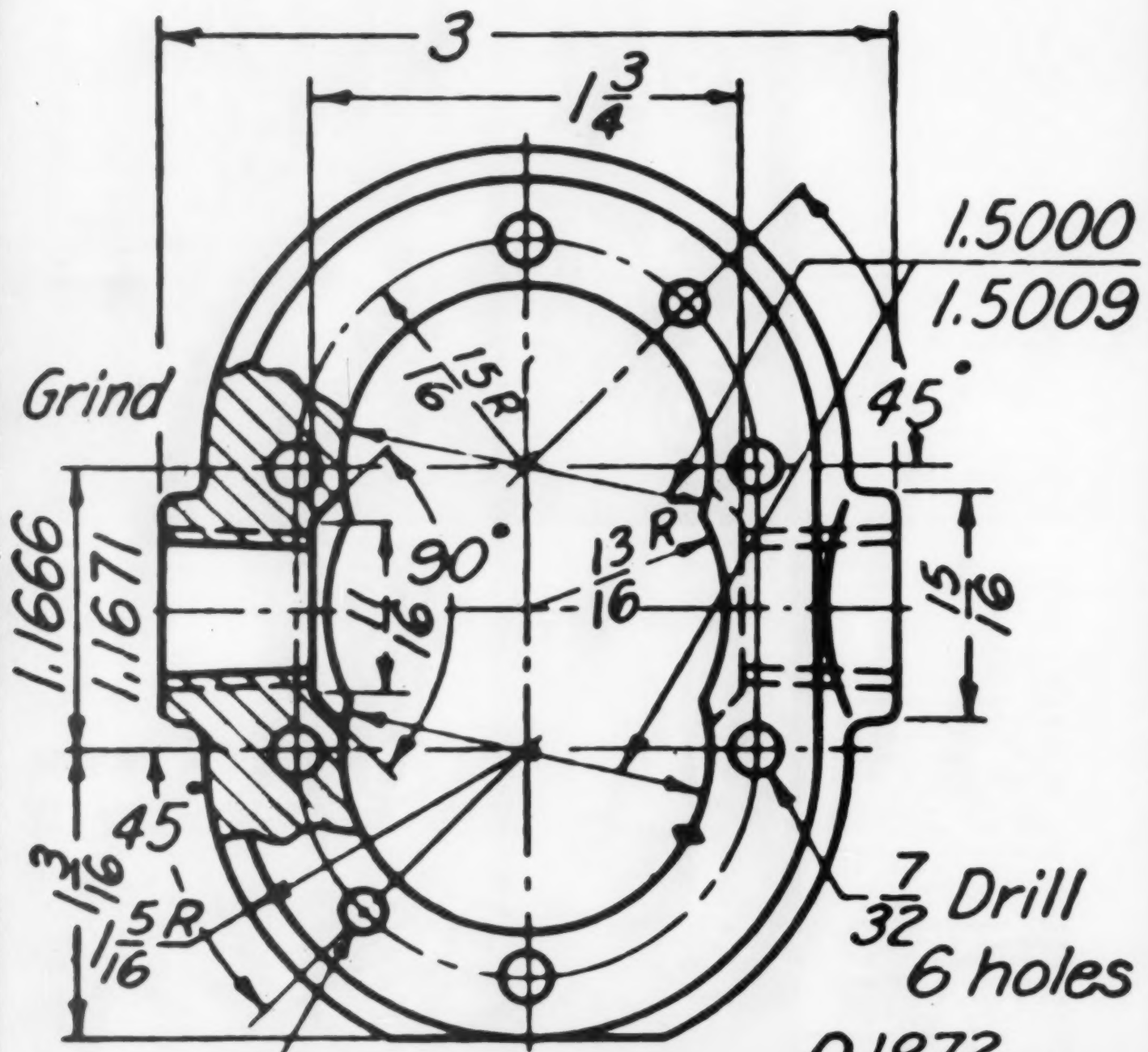
2. Diorama in fiberglass shell tells story of battle of Cantigny with flop-over sections that follow the action of one day; synchronized sound is heard over individual receivers or public address system.

3. Side view of tunnel display for World War II.

4. Library in new Memorial and Archives Hall provides third level of communication (first is "posters," second, "participation") for serious students of military matters.

5. Electronic controls for Cantigny's exhibits synchronize sound, control physical animation and lighting effects.

6. Constantly rotating spiral displays newspaper clippings, photographs, sheet music of pre-World War I period.



1.5000
1.5009

7/32 Drill
6 holes

Drill and Ream $\frac{0.1872}{0.1875}$ for

102

Dowel Pin #116 with Pc. #101 &

Development by design by Richard Moss

Defining Research and Development in terms of what R & D people do is in at least one way like trying to define Industrial Design by what designers do: almost impossible. They both do too many things to be easily packaged in tidy definitions. The National Science Foundation has catalogued almost 600 "independent commercial laboratories performing research and development," and these firms specialize in everything from broad fields such as chemistry, metallurgy, electronics, aeronautics, and medicine, to rather more esoteric subjects like resource catalysis, emission spectroscopy, ornithopterics, and fluorescent x-ray spectrography. And they range from tiny two-man laboratories holed up in the hinterlands of North Dakota (Western Testing Laboratory in Grand Forks) to such mammoth metropolitan enterprises as Cambridge's Arthur D. Little, Inc., whose staff of over 1200 scientists is expected to gross about 20 million dollars in 1960, thus making off with a lion's share of the estimated 12 billion dollars U. S. industry will spend this year on research and development (ID June, 1960).

Some consulting R & D firms make a specialty of product development—and that raises the question of design. Mast Development Company, founded 15 years ago and presided over today by a man who is a member of both the American Society of Mechanical Engineers and the American Society of Industrial Designers, answers the question with what might be called total design. "Total design" has several current meanings. As used by some academicians, it refers not to the design of individual objects but to the re-creation of the human environment. Architects use the term to describe combined shell and interior design. Corporate-image makers apply it to a service which furnishes the design of everything involved in creating and projecting an image. Design firms (who sometimes call it "total integrated service") use it to accommodate the expansion of their services into product planning, market research, and other hitherto marginal areas of design activity.

In this sense, "total design" has aroused much controversy. At ASID's annual conference last fall, designer Donald McFarland challenged the value of designers' willingness to hide what he considers their proper light (product design) under the bushels of market research and product planning; while, in contrast, the influential Loewy office is not only willing to do so but is thriving on it.

Distinct from all this, total design at Mast Development Company is not so much a service or a departure as an operating principle which governs its product development projects. Function (technology), form (esthetics), and operability (human factors) are all looked on simply as three inseparable aspects of the same thing, and that is, quite simply, design.

How this philosophy operates, and what kind of work it has produced, is the subject of this second installment in ID's current series on contract research and development. It begins on the next page.

Development by design

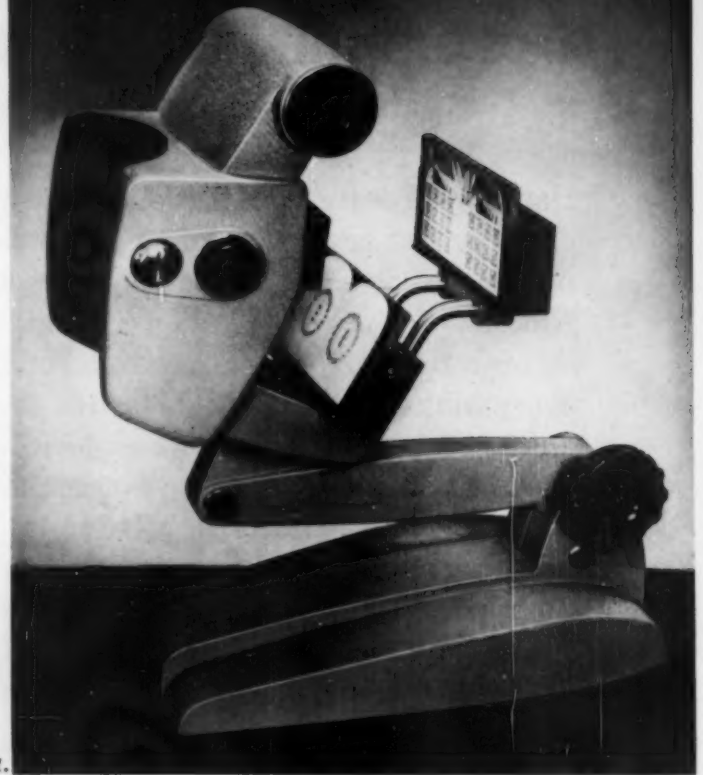
One day shortly after the second World War a salesman from the Keystone View Company in Meadville, Pennsylvania called on Gifford Mast to sell him some optical equipment. Mast had recently returned to his native Davenport, Iowa (from wartime work in the theory and engineering of photo-optical systems for the Jam Handy Organization's military training devices) to incorporate the Mast Development Company as a consulting R & D firm offering product-development services to small manufacturers in the Midwest. Mast couldn't use any of Keystone's products, but he was struck by their antiquated style (3), and subsequently got Keystone's president to agree that his optical devices needed a new look and that MDC ought to create it.

The project entailed complete redesign, inside and out, of several models of a stereoscopic telebinocular vision-testing device (1), and it furnishes an early example of the kind of work MDC was set up to do: skin-and-guts design. In this instance, both form and mechanism were re-thought from the base up. Besides bringing the overall design of the instrument up to date—and its form-fitting "functionalism" tells its own story—MDC redesigned both optics and mechanism of the instrument. Improvements included an automatic switching from "far-point" to "near-point" vision testing, a built-in accommodation for wearers of bi-focal glasses, and a spring-loaded counterbalance, housed in the base, for simplified height adjustment (schematic, right).

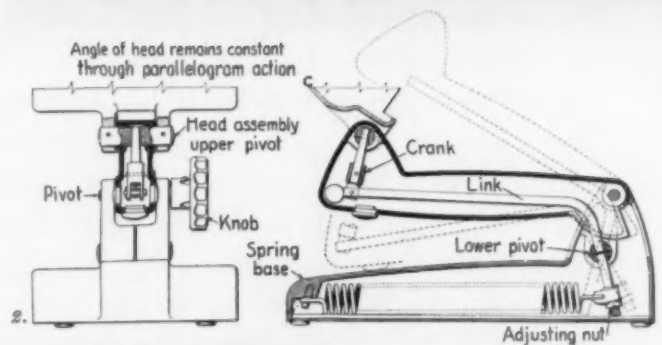
MDC's total design operation was originally set up, in 1945, on the precarious footing of a three-man workshop housed in an old grocery store on the east side of Davenport. Although president Gifford M. Mast disclaims any flair for self-promotion—partly, he says, because he doesn't know how to play the game, partly because he doesn't like the rules, anyway—his company has experienced rapid growth. MDC now counts a staff of almost 50 engineers, designers, and technicians, expects to do a business of over \$700,000 this year, and has long since moved from the grocery store to much more spacious, if scarcely more glamorous, headquarters in a large old nondescript-Victorian schoolhouse a short drive up the hill from the banks of the Mississippi.

Skin-and-guts design at MDC is the direct product of Gifford Mast's grass-roots education in technology and design. The Keystone vision testing instrument is one early example of this approach, but there are many others, particularly in the field of photo-optical systems and devices, which has become a specialty of the house. They include the Tru-View stereoscopic hand viewer, the SVE slide projector, and a host of filming and associated equipment for the military (pages 64-65).

The son of an Iowa businessman, Mast still bears the marks—in politics and ethics as well as in design—of a staunchly conservative Midwestern upbringing. Out of the University of Chicago in 1935 with what were then two pretty useless items, a physics degree and Phi Beta Kappa key, Mast had a choice of two jobs. He turned down an offer to do what he now recalls was something like "time-study work on band-aids and jockstraps" for a job at Theodore (son of Thomas Alva) Edison's R & D labs in West Orange, N. J. There he worked on Ediphones and other devices, wound up designing exhibits and dis-



1.



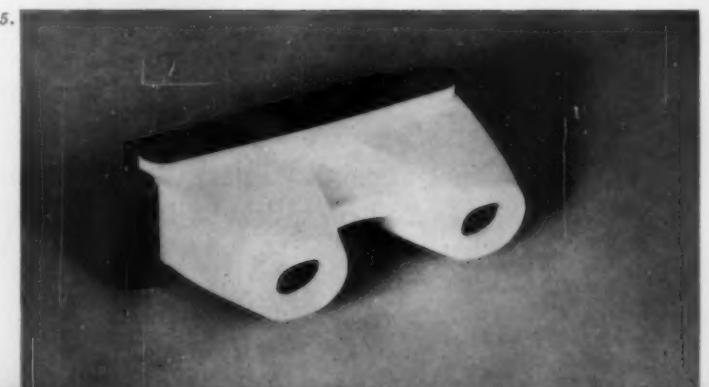
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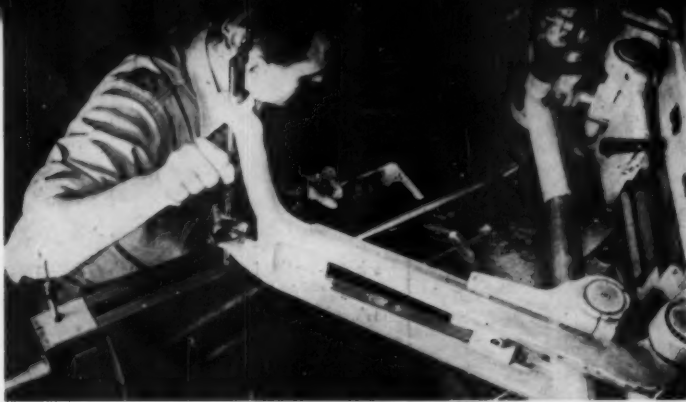
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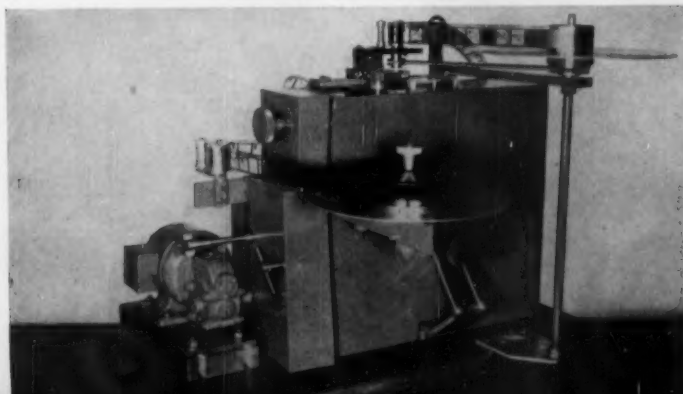


"Whole products — not just the appearances of products" are what Gifford Mast (right, top) set up MDC to do, and the Keystone View Company's stereoscopic telebinocular vision-testing device (1) was one of their first whole-product jobs. MDC photo-optical experts redesigned old-fashioned "functionalism" of the original instrument (3, left) in a more up-to-date idiom, and rebuilt the mechanism from the base up. New features included a built-in accommodation for wearers of bi-focal glasses, automatic switching from "far-point" to "near-point" vision testing, and a spring-loaded counterbalance for simplified height adjustment (2).

Tru-View stereoscopic hand viewer (5) is another example of MDC whole-product development. Started before the war and continued afterwards, this project began with the redesign of the viewer itself (old model, 4, left). Subsequently, MDC designed Tru-View's entire production equipment, including a special perforator (below) for adapting 35mm film to viewer indexing.

MDC has no production facilities, but its elaborately equipped model shop (above) does occasionally manufacture some products in quantities too small for regular production lines; also a few proprietary items like ozone research devices (page 67).

Lew Shuh (right, bottom) heads up MDC's Mechanical-Electrical division.



plays for Edison products. This lasted no longer than it took Henry Ford to visit the labs and offer Mast a job at his Dearborn museum. Mast went to Dearborn a few weeks later to take up the offer; but Ford was away on an extended vacation, and nobody in Dearborn seemed to have heard of Gifford Mast.

Mast filled in the jobless gap with the nearest thing at hand—testing automatic dishwashers by counting the particles of artificial soilage (rice) left on plates after washing. He remembers the job distinctly: "I loathed every minute of it. You counted white rice particles stuck to white plates—in reflected light. There were usually about 2000 of them. So one day I stained the rice with iodine, so I could see them. But then of course there weren't 2000—there were 5000!" This discovery, he reports, completely upset the company's existing testing standards, and Mast decided at this point that what sluggish Midwestern manufacturers needed was not so much to test machines as to get up some forward-looking product development to create better ones when testing indicated they were needed.

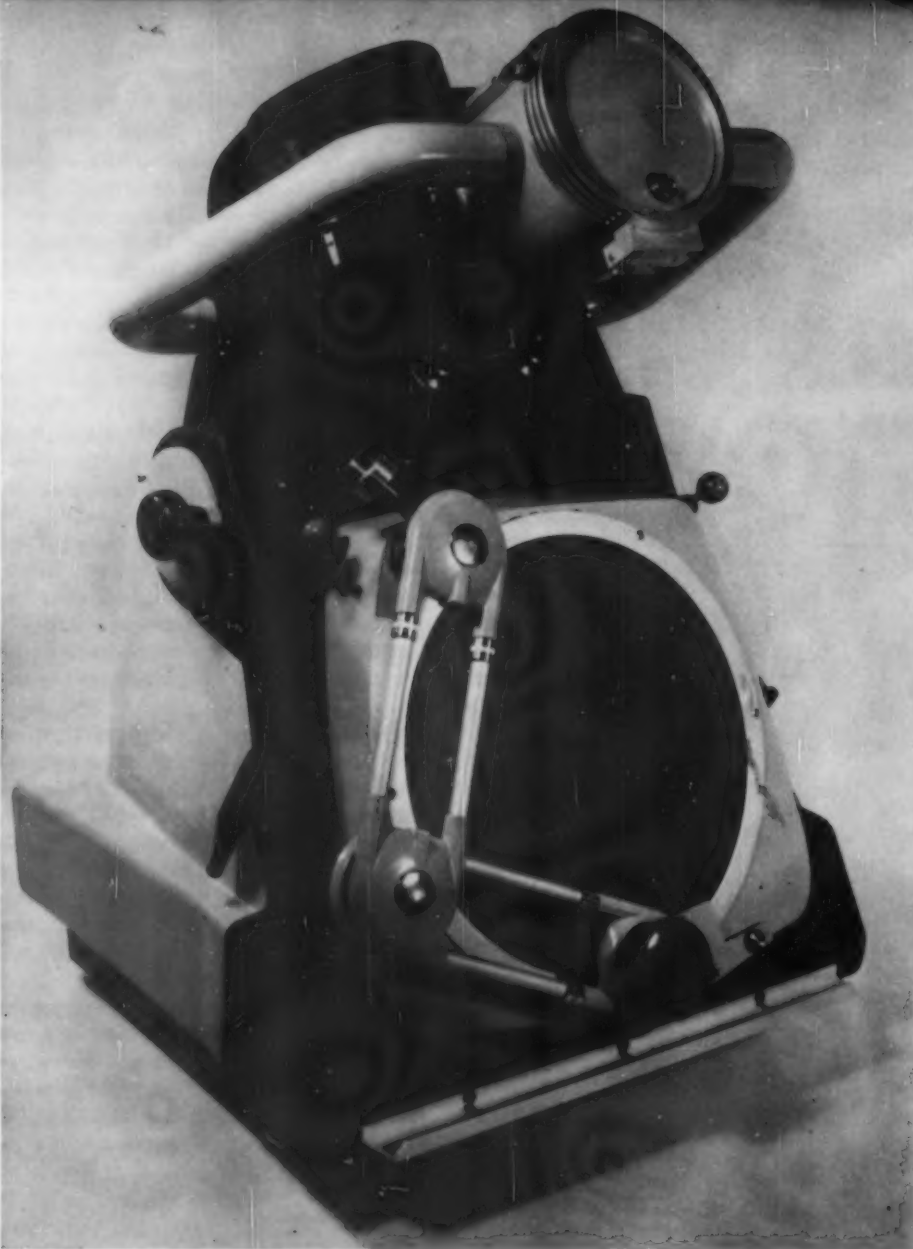
G. McStay Jackson, president of the General Design Corporation in Chicago, saved the day for Mast by hiring him to add industrial design (a subject in which Mast had been interested since college days) to General's regular work in architectural and interior design. But since Midwestern companies weren't buying much design, Mast shortly accepted a scholarship from Harvard where he planned "to take an M.A. in mechanical engineering and then go to work for some of those hot-shot designers in New York and learn what the technique was."

Walter Dorwin Teague, if anybody, knew what the technique was, and Mast served a brief apprenticeship with him—working on scientific exhibits for Henry Ford's pavilion at the World's Fair. Carrying letters of introduction from Walter Gropius, he wound up his peregrinations in the East with a grand architectural tour of Scandinavia.

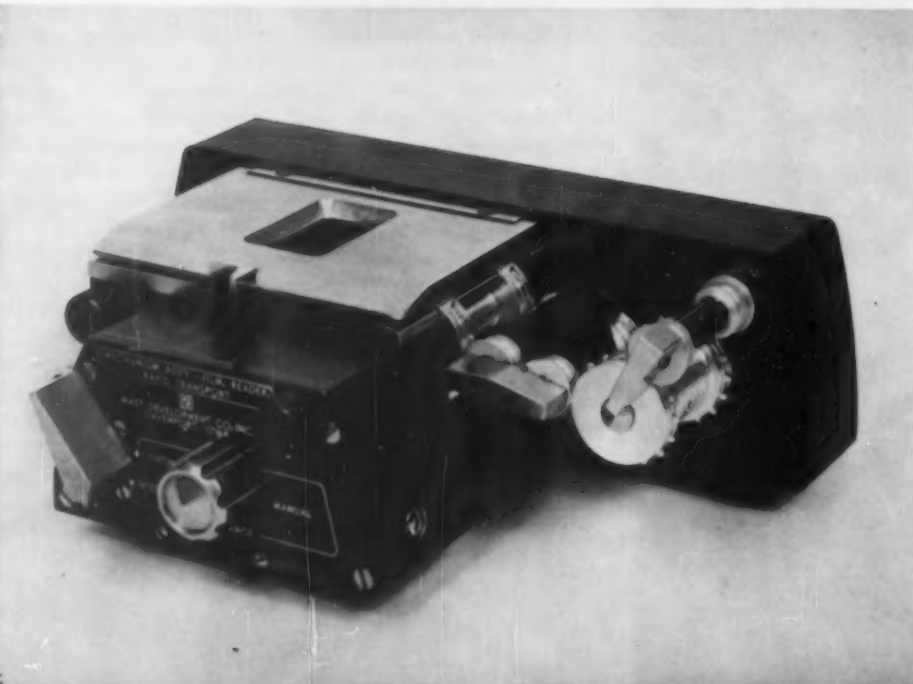
Better-engineered design

All along, Mast had the idea that he would eventually return to Davenport to set up a product design service for local manufacturers, predicated on the conservative (though hopefully not yet old-hat) notion that industrial design should be firmly grounded in the technics of production and operation. Feeling strongly during those early days "that so much of industrial design was nothing but putting pretty cases on bad pieces of engineering," Mast recalls that what he wanted to do was "whole products, not just the appearances of products."

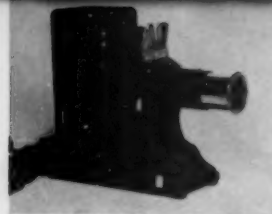
Although designing whole products has been MDC's chief interest from the start, and still is, the firm is not averse to taking on jobs requiring purely engineering work on the one hand or purely styling on the other. The engineers who work at MDC, like most engineers who gravitate to the staffs of R & D consulting firms, are of a different species from those who wind up in the more stable positions in large corporations or the more routine jobs in the small ones. R & D engineers typically enjoy working on the great variety of problems that pass through consulting offices, and what they often like best is the tension raised by problems that are apparently



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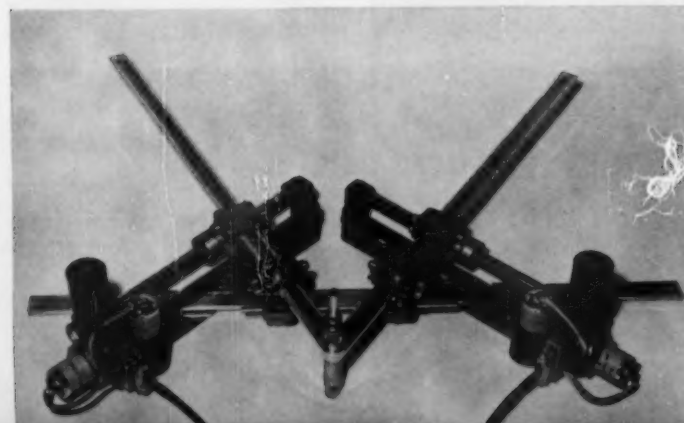
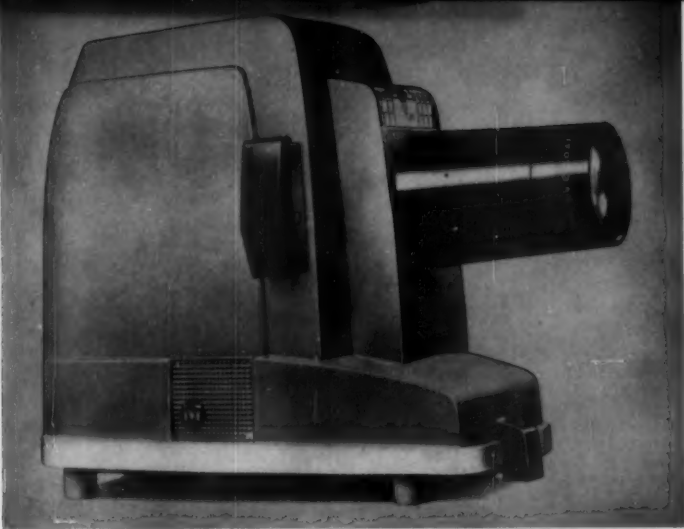
2.



3.

Photo-optical devices, developed under the direction of Wright K. Gannett (below), are an MDC specialty. Slide projector (4), developed for the Society for Visual Education in 1950, not only updated the Victorian styling of the old model (3), but also incorporated a self-cooling lamp housing that revolutionized projector manufacture. Gannett's engineers eliminated need for a fan by reconstructing housing walls to allow automatic evacuation of hot air. Good examples of how MDC integrates engineering and design are two devices at left. The 35mm rear-projection viewer (1) is used for shipboard radar film evaluation. Housed in a corrosion- and fungus-resistant jacket, the device features bi-directional, multi-speed manual film transport and a drafting attachment for angular and linear measurements on the viewing screen. Rapid film transport (2) is a precision device for moving 35mm film bi-directionally at standard movie rate (24 frames/sec.) and rapid transit (96 frames/sec.). Gunfire-control simulator (5), used for training and evaluating operator's target recognition and lock-on manipulation proficiency, eliminates cathode ray tube, simulates radar scope display optically, electrically, and mechanically. Aerial spotting camera (6), for 60-second reconnaissance photos, and mechanical oblique sketcher (7), which translates aerial photographs taken at oblique angle to the earth into useful map and chart data, are other MDC-developed military devices.





insolvable. "Nothing makes us happier," says Lew Shuh, who is director of MDC's Mechanical-Electrical division, "than when a customer comes in here and says, 'Boy, have I got a tough one for *you*—and it's gotta go in three months.'" (Not worried about their status as professionals, MDC staffers call their customers customers, rather than clients.)

Characteristic of the problems MDC's customers bring in are those raised by impossible specifications: "This mechanism has to be redesigned to combine all the features of three other models, and it must be smaller, lighter, better-looking, and cheaper to produce." This is the kind of technological Gordian knot engineers like Shuh relish taking a cut at with their ingenuity. Do they ever fail? "We never guarantee success," Shuh explains, "but then we've never been unsuccessful, either."

MDC's industrial design group also takes on one-shot jobs—in appearance and corporate-symbol design—but for different reasons. Actually, they would prefer not to, but they regard such projects as one way of getting MDC's foot in the door of complete product design service. Ted Lorenz, chief of MDC's three-man industrial design division, currently has a corporate-symbol proposal under favorable consideration by Nu-way International (a group of U. S. and foreign manufacturers of oil and gas heating equipment with headquarters in Rock Island, Illinois) for whom he eventually wants to do complete product design work. Lorenz admits that this is a 180-degree reversal of the ideal procedure, whereby a corporate image is evolved out of product design, but explains that it is one way to break down Midwestern manufacturers' resistance to MDC's fairly heterodox services.

Two specialties of the house

Total design of photo-optical systems and devices, a number of which are shown on these two pages, has accounted for a substantial part of MDC's work since the grocery-store days. Although MDC people have no qualms about using the word "styling" to describe one aspect of design, they have no use for it as an approach to the problem. Says Wright K. Gannett (opposite), MDC co-founder and head of its photo-optical division: "You can't just move things around on the surface and do a job. It starts right down in the engineering design." That what finally comes to the surface is worth looking at is evident in such commercial products as the Keystone testing instrument mentioned earlier (page 62) and in military devices like the rapid film transport and radar film assessor shown opposite (1 and 2).

MDC's special interest in this field has its precedent in the pre-war period, when MDC was only a plan for the future and Mast, then in partnership with Davenport designer H. Wood Miller, got the job of redesigning the Tru-View stereoscopic hand viewer (page 62). It was originally just a redesign job that subsequently got MDC, after the war, into the development of Tru-View's entire production equipment, including an automatic film cutter, a film winder for spooling cut lengths, and a special perforator for adapting 35mm film to viewer indexing. The Tru-View project was also the occasion for MDC's development of the first optical-quality injection-molded acrylic lenses, which saved Tru-View about 86 per cent

Development by design

on the cost of the original glass lenses, and represented a genuine advance in the art of plastics molding.

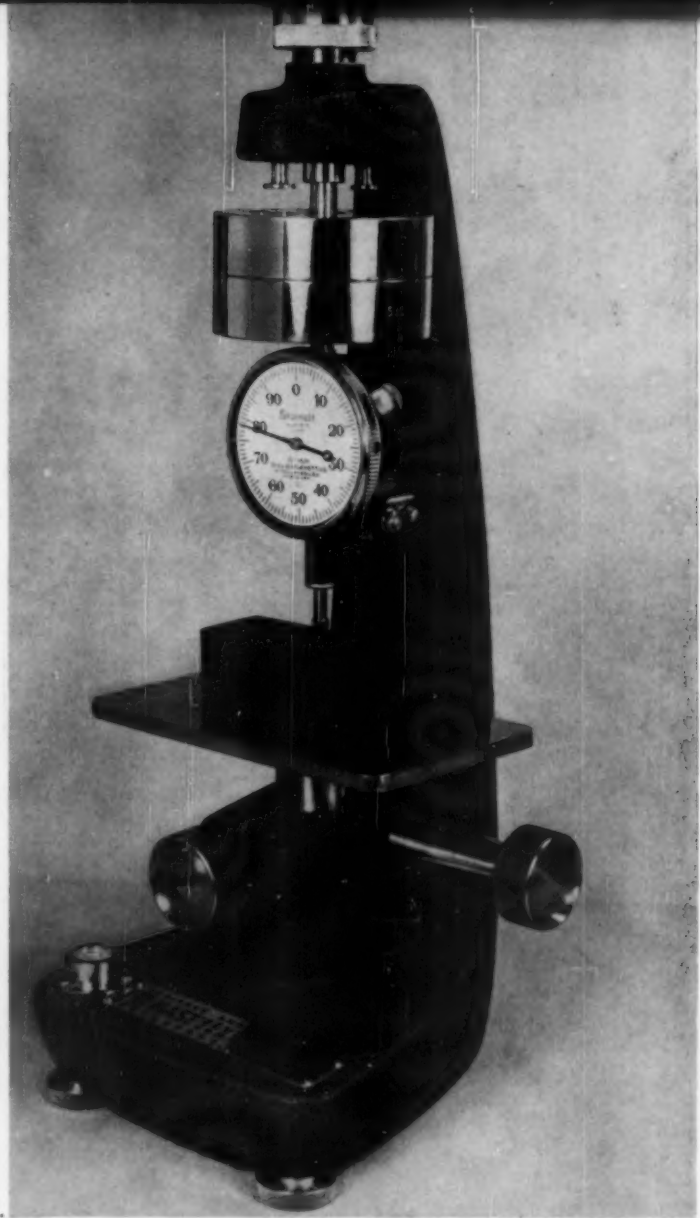
But MDC's special abilities in photo-optics really developed during the war when both Mast and Gannett were working together for the Jam Handy Organization on training devices for the armed services. Gannett worked on the design of projection systems and Mast directed a group of scientists responsible for developing the mathematics of plane-to-plane fire. One of the results of their work was a widely used trainer for Navy airplane gunners. Another result is the large number of prime government contracts for similar devices (e.g. the fire control simulator, shown on the preceding page) which MDC has been getting ever since.

Government interest was also responsible for the origins of another MDC specialty: ozone research. Slight fluctuations in the normally infinitesimal ozone content of the atmosphere have been found in recent years to have important effects on such unrelated phenomena as the weather, the aging of rubber, and industrially-caused air pollution. MDC got its start in the ozone field when the Ordnance Corps' labs at the Rock Island (Illinois) Arsenal asked MDC to duplicate an ozone testing device originally built by Firestone for a rubber-aging research project which Firestone was conducting for the Arsenal. MDC's venture into ozone R & D has burgeoned to the point where the company now claims leadership in the development and production of ozone sensing, measurement, and testing equipment.

MDC developed and manufactures (as three of the few proprietary items it makes and sells itself) an ozone test chamber used by nearly all the major rubber companies, a portable ozone meter (5), and, in association with the University of New Mexico's Dr. Victor H. Regener, a precision instrument for detecting and recording atmospheric ozone concentrations (6). Not content (R & D people are characteristically restive about everything they do) with its present unique position in ozone instrumentation, MDC wants to push its capabilities in this field still further—particularly in the promising areas of air pollution control (e.g., smog) and weather reconnaissance. Dr. Royal E. Rostenbach, hired two months ago to conduct exploratory research for Hugh Saunders' Ozone division, will be the man behind this push. Dr. Rostenbach (who, like Gannett, happens to be an old Iowa schoolmate of Mast's) is a chemist whose perambulations about industry and the government have given him, quite coincidentally, years of experience in rubber, air pollution, and weather research.

Make the main thing the main thing

In the leaner early days of MDC, Mast and Gannett themselves did all the industrial designing there was to do, but as the company grew it found the need to set up a separate industrial design section. Designer Paul Hoogesteger ran the first one-man section, and he had at least one hand, and sometimes both, in much of the MDC work shown on these pages. When his hay-fever drove him from the corn-belt two years ago he was succeeded by E. Theodore Lorenz, (page 69), who now heads a three-man Industrial Design division coequal with the Photo-optical, Mechanical-electrical, and Ozone divis-



1.



2.



3.



4.



Instrumentation for research in atmospheric ozone is another MDC specialty. With the development and manufacture of such devices as the portable ozone meter (above) and the precision instrument at right (6) for measuring and recording atmospheric ozone concentrations, MDC claims leadership in this relatively new field. Hugh Saunders (below, right) heads MDC's Ozone division, and Dr. Royal E. Rostenbach (below, left) has just been hired to conduct exploratory research in this area, which bears upon such diverse problems as the weather, industrially-caused air pollution, and the aging of rubber.

But MDC's chief specialty is diversity: imagination and time to develop products in almost any field. For example: The indentometer at left (1) is a precision instrument for measuring the hardness of rubber developed by MDC's industrial designers. The Maico hearing aid (2) was a simple styling job, but the human-engineered anti-aircraft mount for the Ordnance Corps (3) involved a five-year development program and included some major innovations in gun-mount design. The concealable camera (4), developed for the Navy just before the end of the war and just recently de-classified, has been the object of much discussion in the design-engineering world. The dot counter (7) was made possible by a new type of counter transfer mechanism devised by MDC engineers.



ions of the firm. Lorenz's assistants are two recent graduates of the University of Illinois: Lou Beardslee, who specializes in graphics, and Sam Hohulin, who concentrates on product design.

The Industrial Design division has its own styling and corporate-graphics clients, but operates chiefly as a design and human-engineering consultant to the other MDC divisions. (Sometimes it works just the other way around. Except for some "consultant" help from the engineering group, Hoogesteger was alone responsible, right down to production drawings, for the design of the Indentometer shown on the opposite page. This is a precision dead-weight instrument for measuring the hardness of rubber, developed for the Navy's Bureau of Ships.)

Lorenz's idea of design, like Mast's, is almost as radical as it is traditional. After graduating from Cincinnati in 1950 he spent several years in the advertising departments of two G.E. divisions, filling what he felt was a gap in his education: the marketing aspects of industrial design. Lorenz came away from G.E. with a keen appreciation of the role design plays in sales, but he is disturbed by the current tendency among many designers to substitute a merchandizing mentality for a design philosophy. "There are really only two creative efforts in making products," he says, "—engineering and design. Everything else, like marketing research, is peripheral. And when we start making peripheral things the main thing, we're in trouble. It's one way to make money," he concludes, "but is it good for the profession?"

"Boys will be boys"

Curiously, although both the engineering and design groups at MDC appreciate the need for integrated engineering and design, they are, like their counterparts in companies where that need is not so keenly felt, often at variance with each other. Lorenz feels his group ought to have more to do on MDC projects than the great deal it already does, while the engineers unanimously voice the prejudice common to their *métier*: industrial designers, in their view, can do scarcely more than daub on colors and move control-knobs around. Far from being apprehensive about this, however, Mast thinks relations between MDC engineers and designers are basically healthy: "They work together like brothers—so, naturally," says papa, "they like to take a swat at each other every once in a while."

Like his predecessor, and in keeping with MDC design policy, Lorenz is strong on human engineering. MDC's many government projects, which count for about 75 per cent of its total billings, require strict adherence to human factors specifications, and MDC carries its experience with military projects over into its commercial work. Illustrative of MDC's three-way emphasis on the integration of technology, design, and human engineering, is the development program for the Duke mixer-freezer unit shown overleaf. Begun two years ago under Hoogesteger and continued by Lorenz, this project is also illustrative of what MDC's Mechanical-Electrical and Industrial Design divisions can come up with when they are not exchanging brotherly swats.

This machine, manufactured by H. C. Duke & Son in East Moline, Illinois—and used chiefly by the Dairy

Development by design

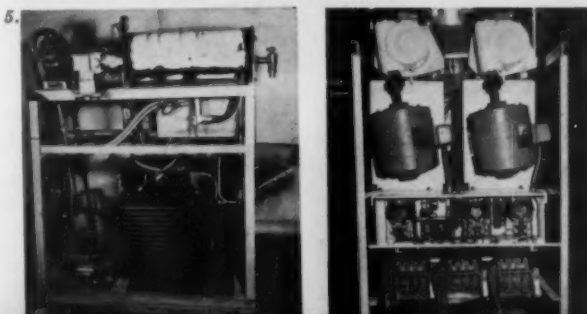
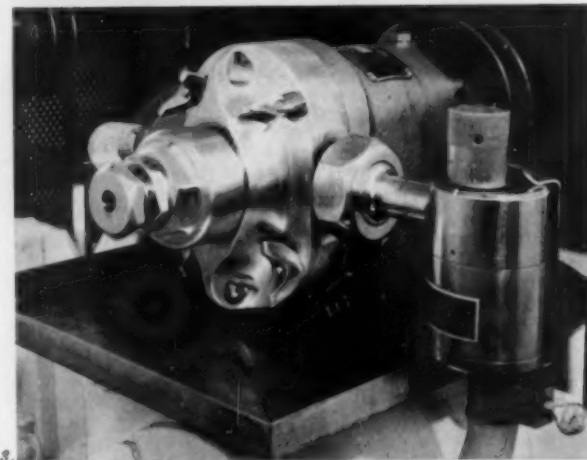
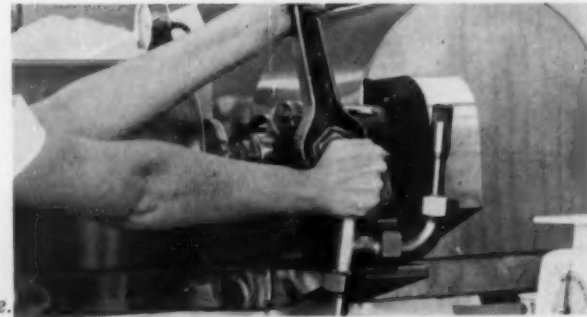
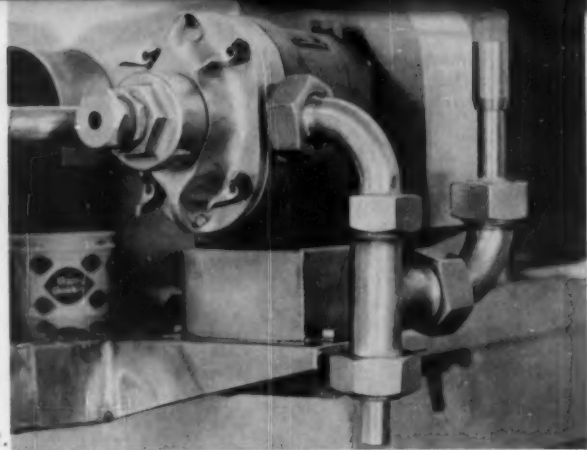
Queen shops—mixes, freezes, and dispenses “soft ice cream.” The old model (6), still in use, is mechanically inefficient and, from the point of view of looks, out of keeping with the modernistic shops it is used in. President Gene Duke wanted the new one to incorporate a number of specific mechanical improvements, to provide two units (for two flavors) in the same space in which the old model housed only one, and to look more like a sanitary food dispenser than a stainless-steel water-boiler.

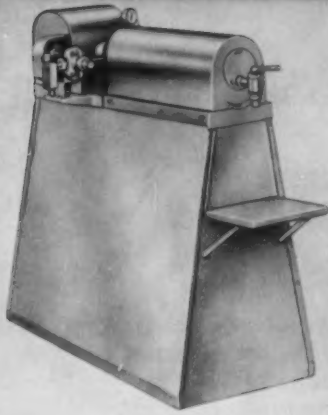
Operator-use surveys conducted by the industrial design group furnished the basis of many of the mechanical and design improvements made in the new machine. Certain daily cleaning and inspection operations were not being carried out, it was found, because certain parts were inaccessible or because operators (mostly women) had difficulty in dis-assembling the unnecessarily complicated mechanisms. For example, the milk mixing pumps and the associated air-bleed valve mechanism have to be opened up and cleaned daily. On the old model, these units were awkward to get at, since they were located on the side of the machine towards the rear, and dis-assembly of the heavy couplings required the use of special wrenches (2). Location of these units on the new machine is at the rear, under the telescoping hood, thus providing easy accessibility and, incidentally, eliminating the need for right- and left-hand models. The air-bleed valve assembly on the old model (1) consisted of 21 parts (8, bottom) which the operators could, and did, re-assemble incorrectly as often as correctly. The new valve design, which received much publicity in the design-engineering field, eliminated about half the number of component parts and made it impossible to assemble the remaining ones incorrectly.

The controls and thermostat of the earlier model were located in different places on the side and towards the rear of the machine. MDC's designers brought them together in one control-panel, using simple push-push on-off buttons, at the front of the new machine (7). Over-all layout of the machine, including various vertical dimensions, was based on anthropometric data available in armed forces publications and was arranged to provide easy operation by virtually the complete range of the female population.

Although MDC conducts many more product-development programs for industry than for the military, the few government contracts it gets, being bigger, provide most of its gross earnings. Right now, in order to achieve a better balance in its sources of earnings, MDC is making a big effort to move more decisively into commercial work like the Duke mixer-freezer project. To this end, the company hired its first salesman a few months ago. He, together with Lorenz, whom MDC considers instrumental in selling its services to industry, have proposals in at a number of big and middle-size Midwestern manufacturers. And MDC's future in this direction, though not yet rosy, is bright.

MDC long ago grew out of the category of a one-man show. But Mast himself is not at all regretful about any loss of personal influence. On the contrary, he feels he extends it by hiring key personnel who will see to it that MDC develops its future growth, as it develops products, by design.

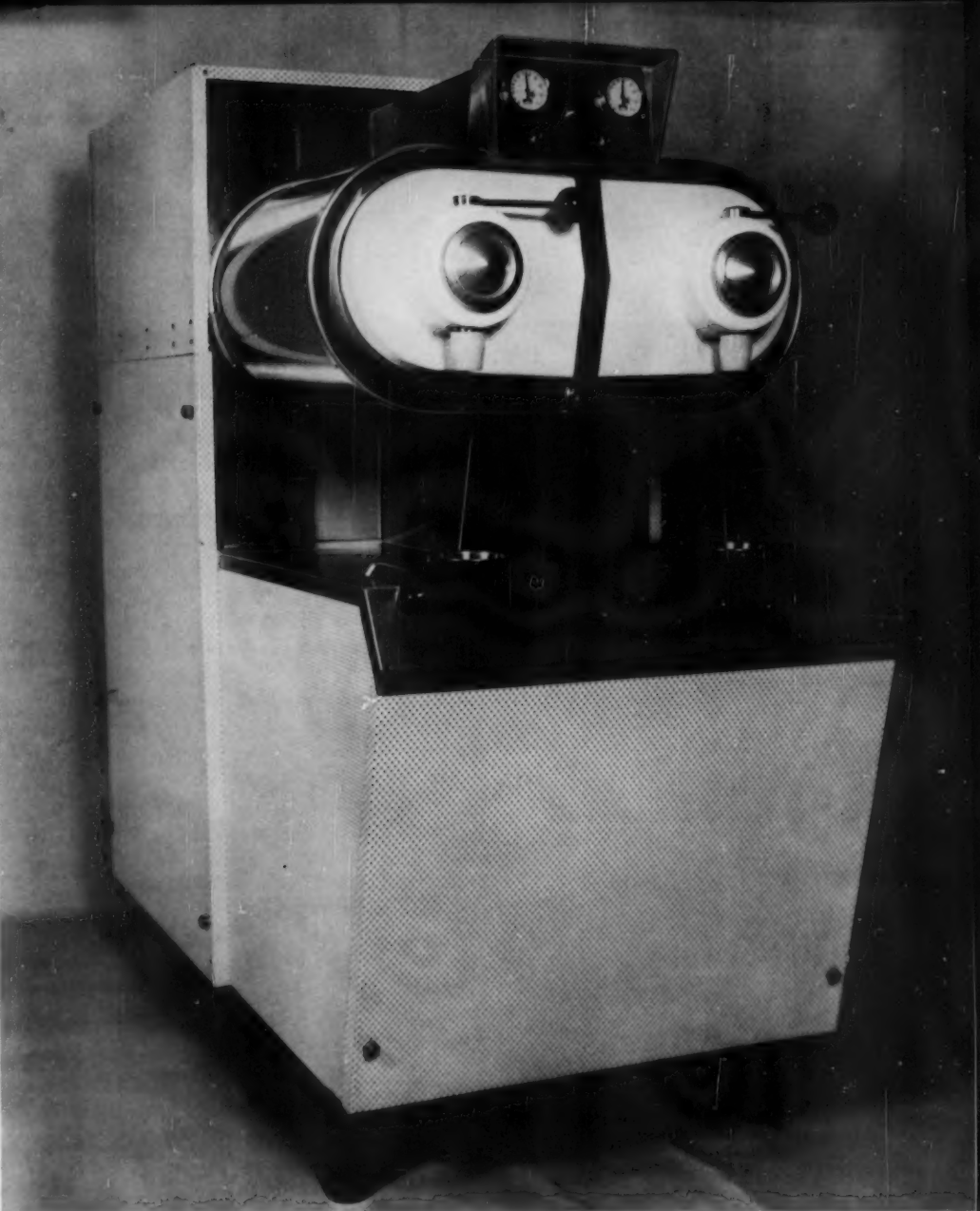




6.

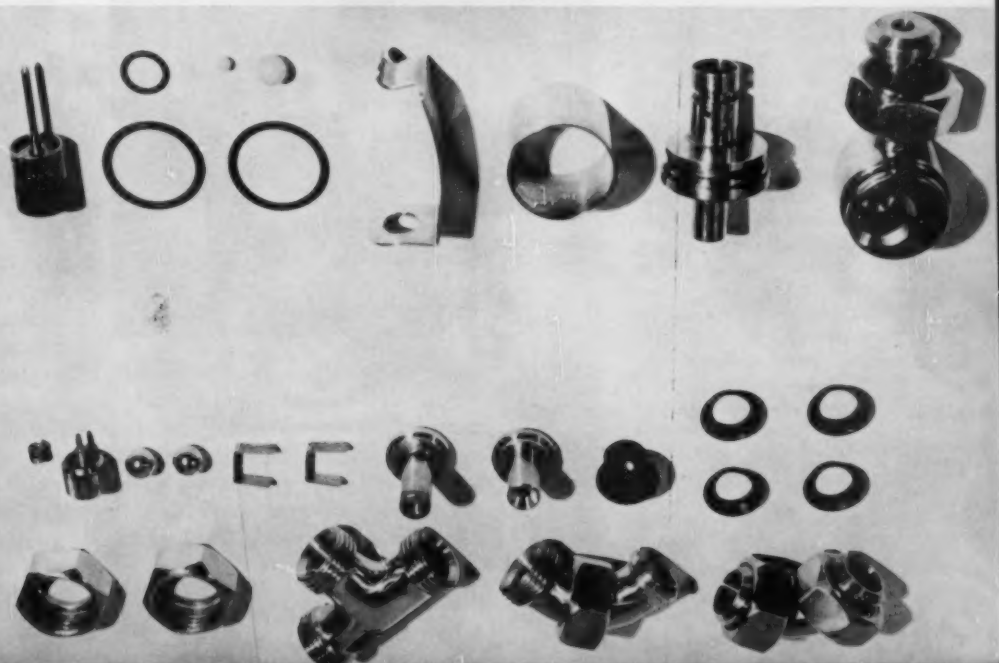
Total design at MDC is illustrated by development project for Duke "soft ice cream" mixer-freezer-dispenser. The original machine (above), was mechanically inefficient and unacceptable in appearance. The new unit, right, is an altogether different machine. The result of a collaboration between MDC's engineers and its industrial design group (now headed by E. Theodore Lorenz, below), the new model occupies no more space than the old one but offers two mixer-dispenser units instead of one, features remarkably improved appearance, human engineering of vertical dimensions and overall layout, a centralized control panel, and a number of mechanical improvements.

On the old machine, disassembly of the milk pump and related air-bleed unit for daily cleaning (1) required special wrenches (2) and more than erector-set talent for putting the valve's 21 parts (8, bottom) back together. Women operators could not handle the job. These units have been redesigned (3) to provide easy disassembly (4) and to make incorrect re-assembly impossible by reducing the number of parts (8, top) and mechanically "coding" them. These units were also relocated from the side of the machine to the rear, under a telescoping hood, to improve accessibility. Rear end (5) has been cleaned up, and temperature gages brought forward to central control panel.



7.

8.



British lion stalks the Coliseum *Old world craft and contemporary technology*



With pomp, and the circumstance of a fat American market, British industry took over four floors of New York's Coliseum from June 10th to 26th to stage a panoramic exhibition of all things British — technology, tradition, history, humor, and food and drink.

Summoned from the street by the deep strokes of Big Ben, the visitor was escorted through the entrance by a life size movie of a guard brigade marching across Piccadilly circus, and led to a raised black platform where a man in a white suit conjured out of the darkness the miracles of modern science—hovercrafts and jets rose from the depths and sank again, technicolor visions of atoms and molecules appeared and dissolved in the air. Most of the industrial displays were large enough to absorb the general public from the main thoroughfares and ranged from reproductions of Old English buildings—five pubs and the original Lloyds (below)—to modern shell constructions, one or two stories high, trimmed with flowers, carpets, and polished wood railings.

Roughly three-fifths of the entire exhibit was devoted to technical dis-



plays: electronics, aircraft equipment, communications and scientific instruments. However, because of the general nature of the exhibition and the difficulty of transporting heavy equipment from Britain, most exhibits were showcases aimed at familiarizing

the American market with a company name and "bridging the psychological gulf of the Atlantic."

The most intense selling campaign was launched by the British automobile industry, which showed over twenty different makes, and had the largest exhibit staged by a single industry. Although sport and luxury cars were featured, the biggest bid for the American market was made by the small



economy cars. Rootes motors introduced a Hillman with an automatic transmission; and Triumph showed, for the first time in the U. S., its new Herald, with a novel frame, manufactured in several large sections bolted together for easy repair access. To give the home mechanic free access to the sides of the engine, the hood and fenders are made in one piece and open out and away from the windshield. Rootes introduced the Commer Caravan, a family camping car (above) designed to sleep three comfortably in the back on a double and single bed which make up into seats during the day. A dining area can be set up by pivoting the front seat around to face

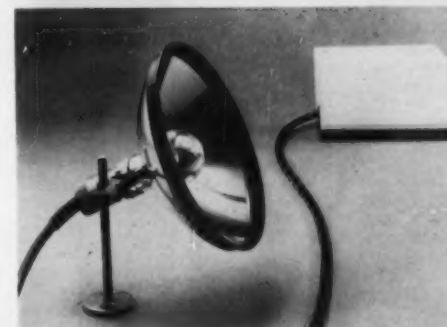
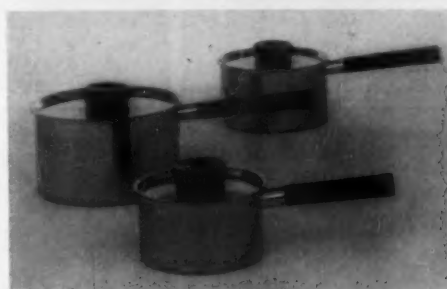
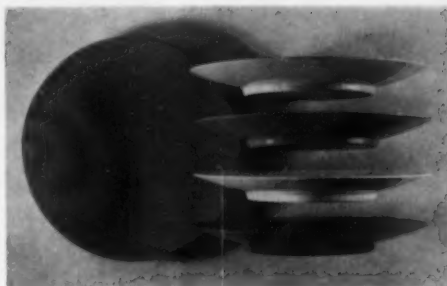
the back, and unhooking a table from a cupboard. Additional features are a stove, sink and expansible ventilator.

If the visitor did not really care about the practicalities of traveling, he could take a mad imaginary trip to "Long Suffering" on the model railway built by the cartoonist Rowland Emmett.

On the whole, most consumer exhibits were limited in scope, and emphasized conservative and already familiar aspects of British industry: men's clothing, wool, textiles, Irish linens, and antiques. The most progressive exhibit was that of the Design Centre, which showed the American public a fair sampling of modern English consumer goods — from fishing rods to chestnut roasters. Their exhibit included the 1960 design awards and the Duke of Edinburgh Prize for Elegant Design. The Design Centre's missionary zeal to raise the level of English design is illustrated by the latter award, which was given to the Spode china set (right), with the stipulation that it be produced in plain white (which it now is). Much of the furniture on display — especially the chairs — was derived from Scandinavian design; but other items had a distinct English flavor, combining light and dark woods finished with a high polish. The most straightforward, and often the best, designs were in leather goods, tools, housewares (right) or technical equipment.

The Worshipful Company of Goldsmiths of London, which stems from a medieval craft guild, has also been instrumental in guiding the public toward contemporary design. Although much of its exhibit was unfortunately devoted to antique reproductions, which are in popular demand, the company highlighted its original modern pieces. On the following pages are a few examples from the display: to the left, a splendid array of antique gold and silver; to the right, contemporary designs, one of which is mass-produced (top right).

The design co-ordinator of the exhibit was James Gardner.—M.D.



Design Centre exhibits:

1. (left) "Fiesta" Melamine plates. Designed by Ronald E. Brookes. Made by Brookes and Adams Ltd. Colors: blue, grey, red, green, black, white and yellow.

2. "Judge" stainless steel pans. Design by Misha Black and Ronald Armstrong of Design Research Unit. Made by Ernest Stevens Ltd. The metal is a stainless steel alloy.

3. Spode "Apollo" tableware. Designed by Neal French and David White for W. T. Copeland and Sons Ltd. Winner of the Duke of Edinburgh Prize for Elegant Design.

4. Low-voltage display lighting fixture. Designed by Richard Sevens for Atlas Lighting Ltd. A mat black rim surrounds the anodized aluminum reflector to prevent glare; transformer is black and white enamel.

Overleaf, exhibits of the Worshipful Company of Goldsmiths. Objects, left to right, top to bottom:

Wine coaster of silver gilt made by Benjamin & James Smith, 1810-11.

Gilt dish, 61½" wide, ornamented with representation of Minerva, Venus, Mercury, Vulcan. Made by Paul de Lamerie by the order of the Company in 1740.

Silver and gilt tankard by an unknown artist, dated 1579.

Detail of handle from a silver sauce boat made in 1748 by Humphry Payne.

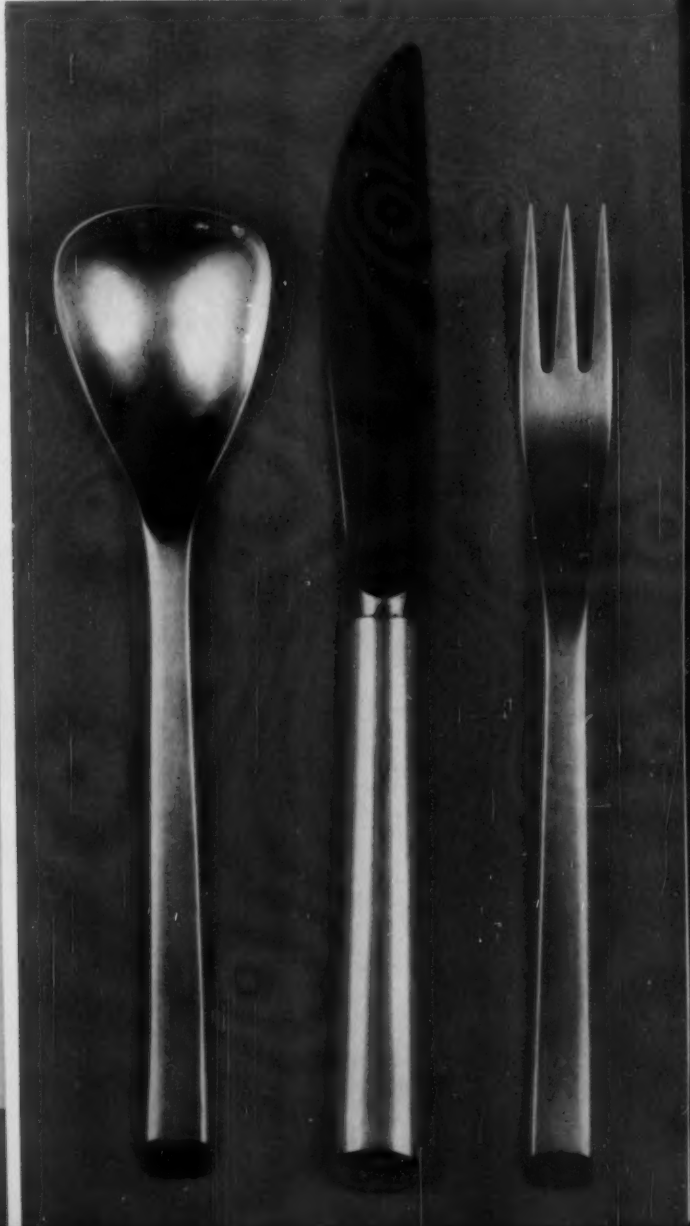
Silver teapot with leather handle. Designed by David Mellor for Walker & Hall, Ltd. First

made in 1959, this is an example of a mass-produced piece of modern silver.

Silver mustard pot and salt dish designed and made by Gerald Benney for the Ionian Bank, 1960. These two pieces are part of a complete set of tableware which includes the silverware below. The interiors of the pieces are gilt as well as the ends of the flatware. Salt dish has an insert of thick smoked glass.

Silver jug by Gerald Benney, 1960.





Art Nouveau on show



Silver-plated brass candelabrum: Gertrude von Schnellenbuhel

Below left, blown glass tulip, 12 inches high: Karl Koepping



Above right, revolving music stand: Alexandre Charpentier

Headboard, carved wood 55 by 27 1/4 inches: George Lacombe



Although it lasted barely two decades, the movement known as Art Nouveau managed to insinuate its curling tendrils into the design of everything from engravings for book end-papers to the cast iron structure for an entrance to the Paris Metro. Nothing escaped it, and nothing, in the eyes of its protagonists, was intended to: it was conceived as a total art style. What caused it is not quite clear. It may have been revolt against industrial regimentation, or against florid but finical Victorian ornament. At any rate it was anti-rational, pure instinct. Like all things unchecked by reason, it ran to excess and some of it was pretty outré even in its time. Nevertheless the wildness of its growth served a purpose; it overwhelmed brittle, superficial conventions, destroyed the worst of them,

Below left, carved chair, 5 feet high: Charles Mackintosh



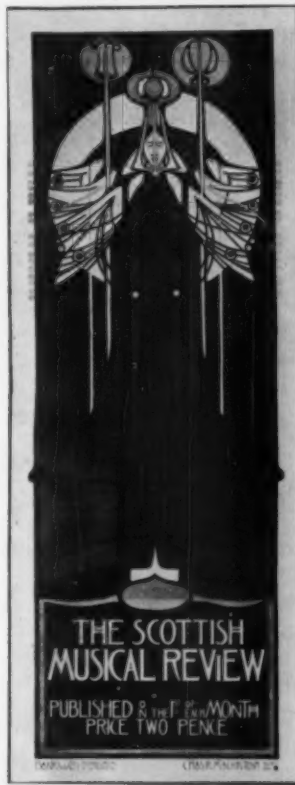
Above right, rush-seated side chair: Henry van der Velde

Stair hall, Atelier Elvira, Munich: August Endell



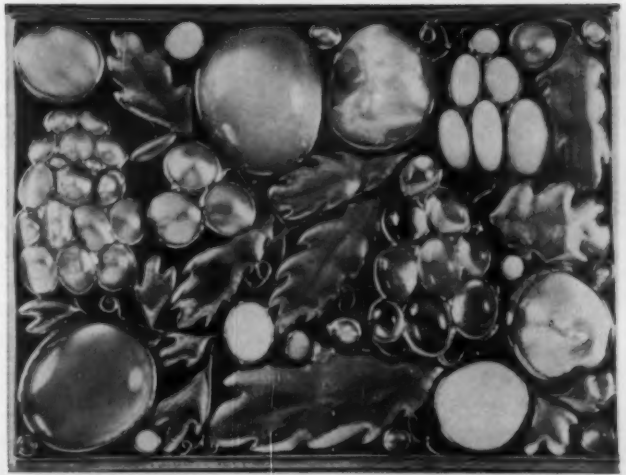
and made room for a more internalized art. Most people's impressions of Art Nouveau have probably been formed by dusty items found under the eaves of the attic, or more recently, by isolated exhibits of Tiffany glass or Gaudi architecture. Until September 6, the full sweep of the movement can be seen in a comprehensive exhibition at New York's Museum of Modern Art. It is a show full of small and large pleasures — the sudden realization that Toulouse Lautrec's Jane Avril posters were Art Nouveau, the gradual recognition of the movement's very real strength, however precious its individual objects. For proof, the show produces some curious after-images (the flaking patterns on the slate sidewalk outside the Museum are pure Art Nouveau).—*B.D.*

Below left, poster 7 feet high: Charles Mackintosh



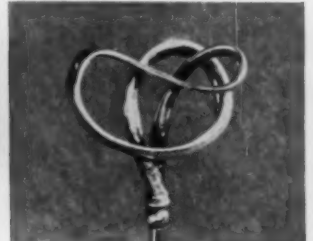
Above right, poster, 80 1/2 inches high: Henri Dumont

Carved pearwood side table, 43 1/2 inches high: Hector Guimard



Brooch, gold with moonstones, opals, pearls: Josef Hoffman

Below left, silver bowl, 8 inches high: Charles Ashbee



Above right, silver hatpin: Percy Stamp

Gilded bronze door handle, Hotel Solvay: Victor Horta



Carnival come-on for technology

The 1960 Design Engineering Show

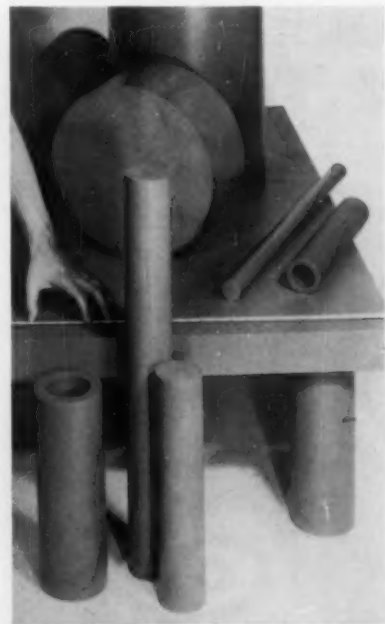
Although the Design Engineering Show and Conference, held at the end of May in New York's Coliseum, was called "The Research and Development Exposition," at times it more nearly resembled a convention of traveling salesmen. Cries of "How many orders do you have?" were frequently heard across the paper-littered aisles, and unusual diligence was required to ferret out the few new products and materials from the mass of well publicized and commonly known information that the salesmen had crammed into the booths of the more than 400 companies exhibiting. However, a few companies captured the visitor's attention by challenging him to find new applications for their product.

The plastics suppliers stressed improved fabrication techniques, and argued that the new plastics, with their light weight, high strength, high temperature resistance, and anti-corrosive qualities, could replace metals

pany, with its demonstration of portable television receiver cabinets constructed of styrene plastic, continued the campaign to capture this market from the metals companies. Polymer Corporation demonstrated nylon in massive, symmetrical shapes said to be larger than anything previously available in the material. This development



in more and more applications. Union Carbide featured an electric motor that was epoxy-encapsulated to permit it to run under water. The same com-



permits nylon to be used for large bearings and bushings, or for rollers for textile and paper processing. Koppers Company, Inc. showed a railroad car door that is the largest individual vacuum-formed molding ever made from Dylite expandable polystyrene. The door liner, made of Cyclocac plastic manufactured by the Marbon Division of Borg-Warner, also was the largest molding of its material. The use of these plastics is said to improve insulation, and reduce the weight of each door by four to five hundred pounds. Du Pont showed Delrin in such applications as gear pumps and fishing reel housings, and foamed-in-place polyurethane and epoxy resins in products as diverse as structural panels and seat cushions. They also featured Teflon FEP-coated pump ball valves. This is the first time that the material, which



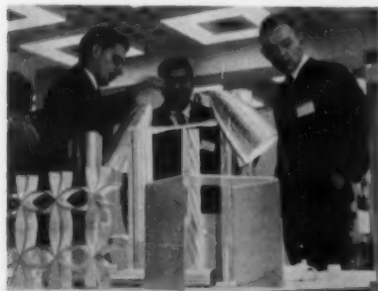
dispensed some real news and inflated the rest with novelties and peep shows

is self-lubricating and anti-corrosive, was shown successfully coated on an irregular metal shape.

The metals companies pointed to the development of new construction and fabrication methods as well as to the potential decorative qualities of metal when produced in various textures and colors. Reynolds displayed Colorweld, an aluminum foil with a pre-finished enamel surface, that may be used, for example, for side panels of bus interiors and mobile homes, and for pipe jacketings. They also showed inter-



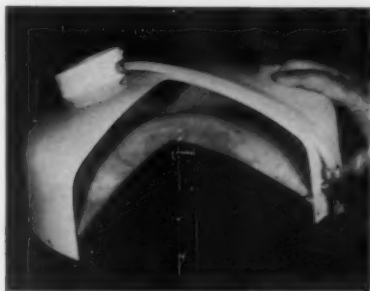
locking, extruded aluminum shapes for forming any continuous flat or curved surface. The Reynolds exhibit included an IBM Ramac 305 computer programmed to answer 450 questions ranging from "What is galvanic corrosion?" to "What are some of the normal applications of industrial foil?"



Alcoa displayed conventional extrusions and products fabricated from aluminum powder by impact extrusion. One advantage of the latter is suitability to high-temperature locations. Revere Copper and Brass had an exhibit of aluminum sheet in various colors,

patterns, textures, and applications.

In other areas, companies announced new applications of existing materials, and, in some instances, new products. Minnesota Mining and Manufacturing Company showed a new line of high-strength structural adhesives along with typical bonded parts to illustrate

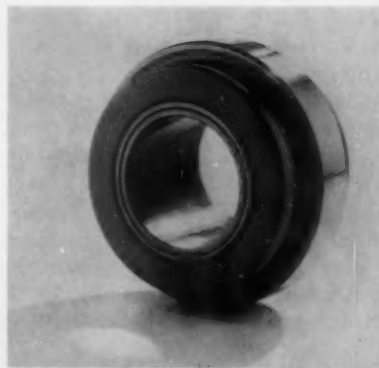


how they are used. U. S. Rubber exhibited a new urethane elastomer known as Uscothane. More abrasion-resistant than manganese steel, it is being employed as a skirt along the



circumference of the experimental Curtiss-Wright "air car" to direct air straight down to the ground, and to protect the metal undersides from the land surface in all kinds of weather conditions.

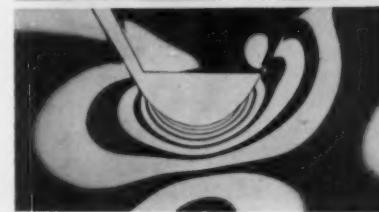
Tann Corporation presented a new family of self-lubricating, sealed bearings said to have a base life of 20,000 hours. The bearing is dependent upon an oil film, maintained between the inner race and the bushing, which supports the weight of the rotating shaft. Thus, there is no metal-to-metal contact at any point, and the bearing is



virtually free from vibration and noise, and resistant to humid and gritty atmospheres. The Bristol Company de-



monstrated an open-end wrench with a ratcheting action. An improved screw thread that has a smoothly radiused root was offered by Standard Pressed Steel Company. To dramatize their development, which is said to double the life of the screw, they utilized a Polaroscope to project an enlarged image of the stress patterns in the thread of a plastic model shown in a simulation of actual use. (The photographs show the



stress lines in the old flat-bottomed root and the new smoothly radiused root.)

The Battelle Memorial Institute demonstrated an electronic scanner capable of reading a daily newspaper or any other printed matter and transposing the words into tonal sounds which a blind person can be taught to understand. The Institute believes that the scanner, which is still under development, may someday replace Braille.

Many other companies used gimmicks to entice the audience. The Mueller Brass Company turned its booth into a miniature golf course and dressed their representatives in light blue tee-shirts and golf caps.



Fenwal, Inc. provided an amusement arcade of peep boxes and pinball machines to house their control instruments; they also had one peep box loaded with an old-fashioned moving-card picture entitled "Hollywood Scandals." Binks Manufacturing Company had an air-brush artist sketch faces from the crowd. Ohio Seamless Tube Division of Copperweld Steel Company ran a dice game with a pretty model as croupier. Another company bluntly displayed a sign reading "Sorry! Our display lost in transit." And several other companies held drawings with radios and television sets as prizes. Unfortunately, the gimmicks often drew

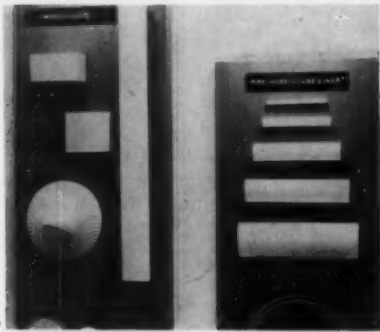
attention away from the subjects treated in the booth.

The Design Engineering Conference, which was sponsored by the American Society of Mechanical Engineers and held concurrently with the show, included sessions on methods and materials. In the opening session, entitled "New Horizons of Engineering Design," Dr. Arthur R. Kantrowitz, director of the Avco-Everett Research Laboratory, stated that it was necessary for designers to think about the space age and to design for people who will be living outside the earth. "Space is for people," he said. "Outer space is simply an extension of life on earth." People will not be living on planets, but "in contained areas (in space itself), transported and built, piece by piece, just as you erect a building by transporting components to a selected site . . . I cannot say when this will occur, but it is inevitable."

The subjects of the other sessions included reliability prediction, new welding processes, metal fabrication by explosives, the use of high-strength steels, and the problem of integrating computers into an engineering set-up. In these technical sessions, the speaker usually depended on a number of slides to illustrate his talk. But because many of the speakers used a text-book approach that included quantities of hard-to-remember numbers, as well as diagrams too small and difficult to understand, the listeners often seemed dulled rather than excited by the talks.

In conjunction with the conference, Owens-Corning Fiberglas held a two-day symposium of their own at their Fifth Avenue offices to explain and examine the field of glass fabrics. The symposium consisted of a number of short speeches each dealing with a specific aspect of fiberglass technology. Included was a short talk by Robert Hose, of the Henry Dreyfuss office, listing twenty requirements for an ideal material. After noting how few materials meet even a small number of these requirements, Mr. Hose concluded that "materials suppliers still have a long way to go."—L. D. G.

1. Ethylene Corporation's display of Teflon products was an "abstract" composition.
2. Buchanan Electrical Products Corporation queried the visitor.
3. Force gage for measuring tension in a permanent test set-up displayed by the Hunter Spring Co.
4. A flexible hose man pointed the way to the Flexonics Corporation's booth.
5. Ohio Seamless Tube Division of Copperweld Steel Company turned its products into patterns.
6. Materials exhibit by the Copper and Brass Research Association.



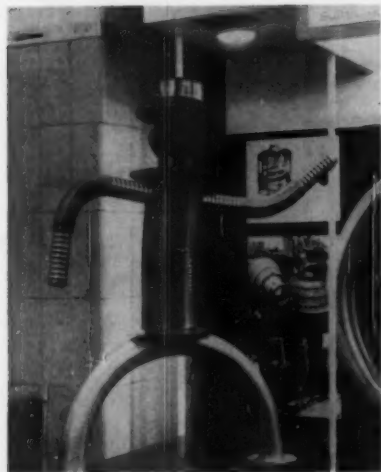
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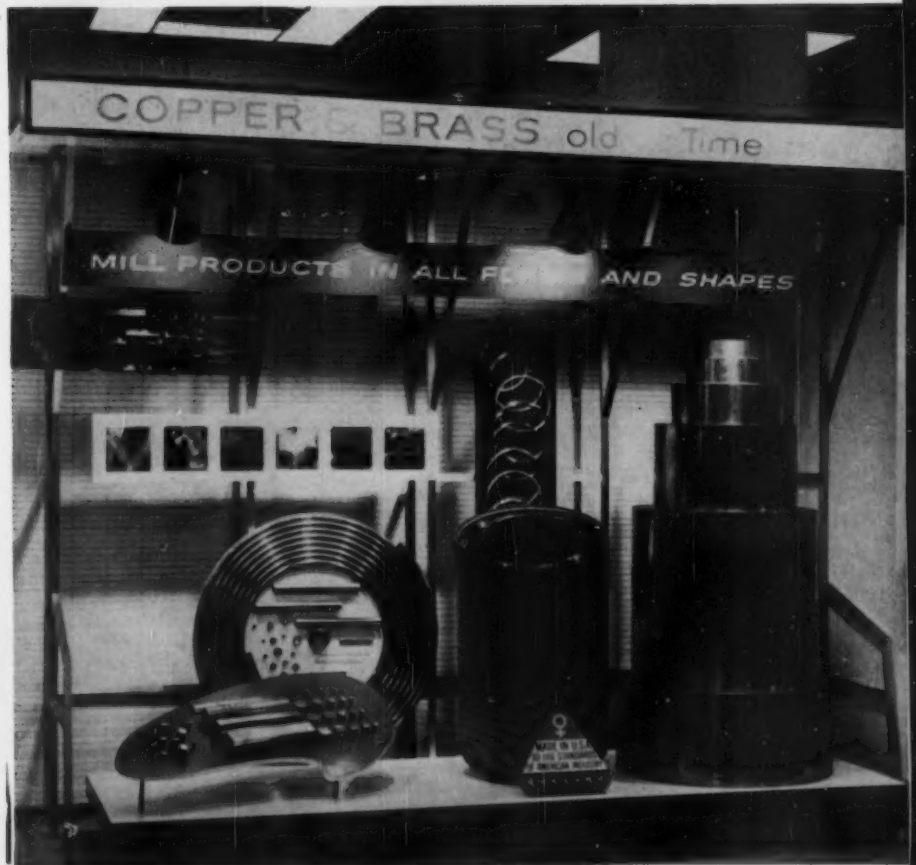
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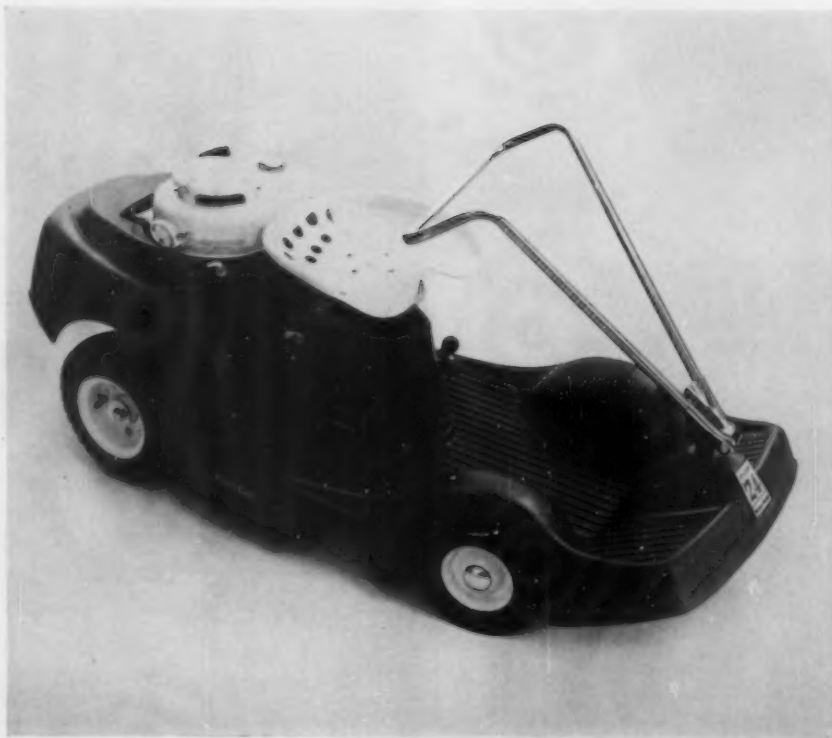


DESIGN REVIEW

Riding lawn mowers come in wildly divergent forms and offer unique riding experiences to daring customers of an industry which is still trying out new techniques for keeping the flourishing suburban lawn in check. Prices range broadly, and steel, aluminum, and the latest plastics are all popular. Some mowers look and operate like sensible small tractors. Others feature "sports car styling," and claim to drive like sports cars too. At least one has evolved an original-looking form to solve such serious mower threats as tipping over, engine burns, and scalping.



Porter-Cable Machine Company's Mark 24 confronts problems of small riding lawn mowers with a specially developed form. To avoid danger of tipping over, it has been designed to ride very low to the ground, and the tractor-like seat has been placed low, also giving the operator a sense of security. For greater stability and to keep it out of operator's way, engine is located in rear, where it cannot burn him or fall on him. The Mark 24 also offers handle bar steering and close-set wheels which minimize scalping. A single aluminum casting serves for wheel guards, foot rest, and blade shroud. Engine shroud is fiberglass. Both are light green. Richard Lamkin (manager) and Joseph Kieffer, staff engineers. Pulos Design Associates, designers. \$349.50.





Dille & Maguire's Turfmaster TR4 electric riding rotary mower has automotive transmission, separate blade clutch, foot brake, and parking brake. "Hite - A - Just" lever eliminates need for tools in adjusting cutting heights to one of seven positions. Craftsman Industrial Designers, consultants. \$588.95.

Homelite mower car designed to "drive like a car," has three-speed automatic transmission plus reverse and neutral. Needs no clutch. Automatic braking and down-hill braking. Lever adjusts cutting height to five positions. Aluminum grille, fiberglass body. Lippincott and Margulies, designers. \$450.



Bready Pow'r-ette suburban lawn and garden tractor has attachments for light farming and gardening as well as mowing and snow plowing. Pneumatic rear tires, adjustable seat. Chief engineer Robert G. Hills, designer. \$399.50.

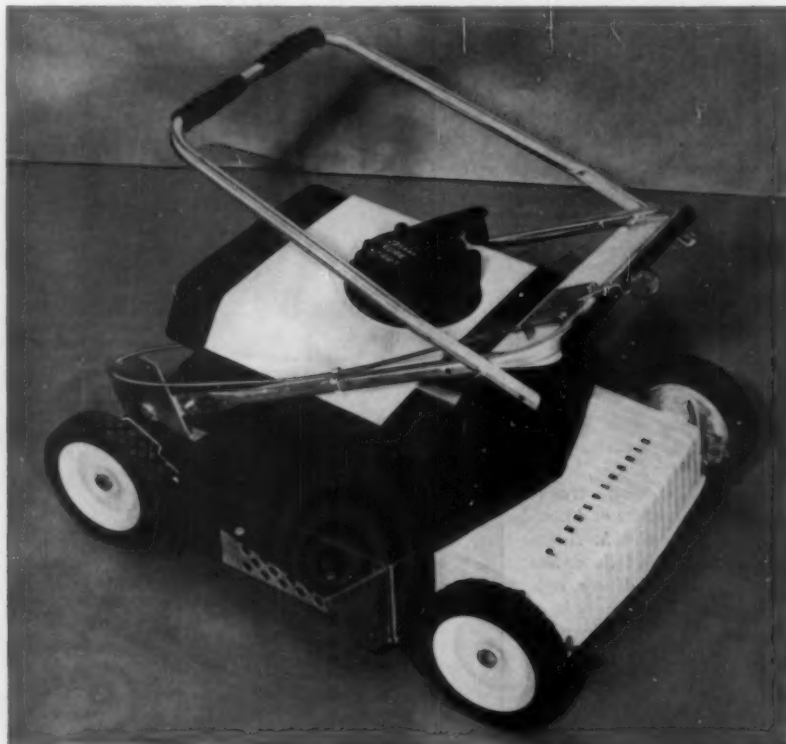


Outboard Marine's Lawn-Boy Loafer has four forward speeds, reverse and neutral. Quietlite engine floats on three rubber shock mounts that isolate vibration and is sealed in a thickly insulated fiberglass soundtrap bonnet to reduce noise. Brooks Stevens, designer. \$114.50.

Hand-propelled power mowers offer new gimmicks (one converts to an outboard motor), new attachments, bright colors, and a surfeit of styling to survive in a fiercely competitive market. Genuine design improvements include placement of the engine controls on handle of machine, introduction of easy-to-operate foot pedals for making cutting height adjustments, and folding handles which reduce storage space requirements. But design must still cope with at least two serious safety hazards: discharge angles which, on turning, may endanger the operator with flying objects, and housings which inadequately shield the cutting blades.



Acco "outboard mower" converts in a few minutes to outboard motor with mechanical self-starter when propeller unit is attached. Has folding handle and aluminum housing for mower unit. Housing for engine itself is Hercules' Profaz, a polypropylene which helps absorb sound. J. William Mason, designer. \$159.00.



Pennsylvania power mower features handle which folds down on deck for easy storage. Levers adjust wheels to cutting spring, summer, fall, and extra-high grass. Lightweight aluminum deck with plastic housing for engine. Throttle control on handle. J. William Mason, designer. \$86.95.



Bolens' Orbit-Air cuts grass in a "cyclone chamber" where a triple-pitch blade with multiple cutting surfaces recuts clippings until they are pulverized—at which time the airblast drives them downward between the grass. Orbit-Air thus combines mowing, cleaning and mulching in one operation. A. J. Slemmons, designer. \$114.95.





Huffy electric mowers (top) have flip-over handles which do away with turning at end of rows, eliminate danger of tripping on cord (controller keeps it out of mower's path).

Huffy Hytamatic (right) rotary mower has handle-mounted lever which easily adjusts wheels for cutting height in seconds. *Vie Studios, design consultants.* \$69.95 for electric; \$84.95 for Hytamatic.



Bantam high-wheel convertible model has 20-inch rear pneumatic tires which permit mowing in rough areas. Eight-inch front wheels have semi-pneumatic tires. Engine mounted rear of center to counter-balance front mower assembly. *Falls Products engineering staff, designers.* \$274.95.



Moto-Mower's transmission propelled rotary has panel-mounted controls on redesigned, loop handle. Lever on front wheel controls the four cutting heights. Semi-pneumatic tires, die-cast aluminum hood, offset front wheels. *Walter B. Ford Associates, designers.* \$144.95.



Savage rotary mower has easy-to-use foot pedal which simultaneously adjusts all wheels for different grass heights. Throttle control at top of handle. Ribbed steel hood finished in metallic green. *Staff design.* \$89.75.

Miscellaneous selection of equipment includes a versatile and powerful prime mover which can perform a variety of road-building operations by the addition of various attachments. Lawn sprinklers and an outboard motor are highly styled, while good sense has been applied to the design of two new pieces of cleaning equipment. A vacuum cleaner packs maximum performance into a very small volume, and a single power-handle unit offers two different attachments, one for scrubbing, the other for vacuuming.

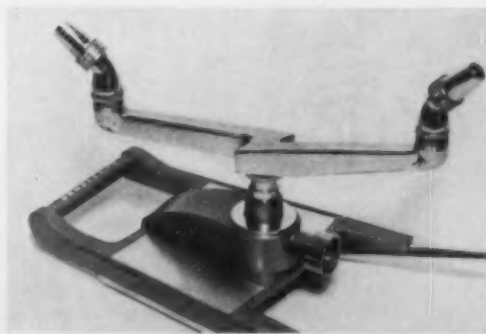


Ottawa Commando is a basic prime mover with a dozen "uni-tools" that convert it to power crane, aerial tower, fork lift, tractor, bulldozer, or snow plow. Attached to the front end, above, is a hydra-hammer to break concrete and tamp fill. The rear end carries a hydraulic backhoe. A shuttle transmission with split torque drive arrangement permits Commando's operation as a truck or tractor.

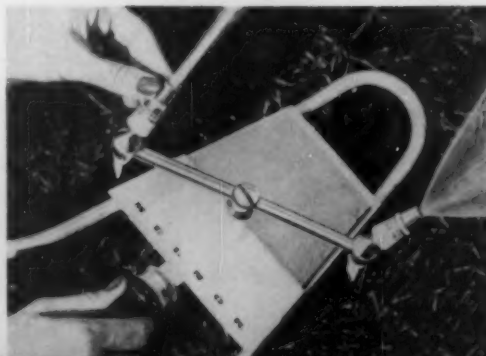
Westbrook Golden Sprayer, made of lightweight and tough Tynite butyrate, works with a light pumping action similar to that of a trombone sprayer. It uses either powder or liquid spray. Paul Esmay, designer.



Lafayette Brass model 104 sprinkler has dual dials on nozzles which permit coverage of circular or odd-shaped areas up to 60 feet in diameter. Rust-proof Cyclocac styrene base is decorated with stamped aluminum inserts. Irvin Gershen designer. \$5.95.



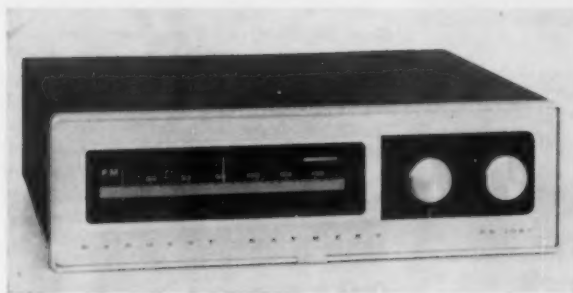
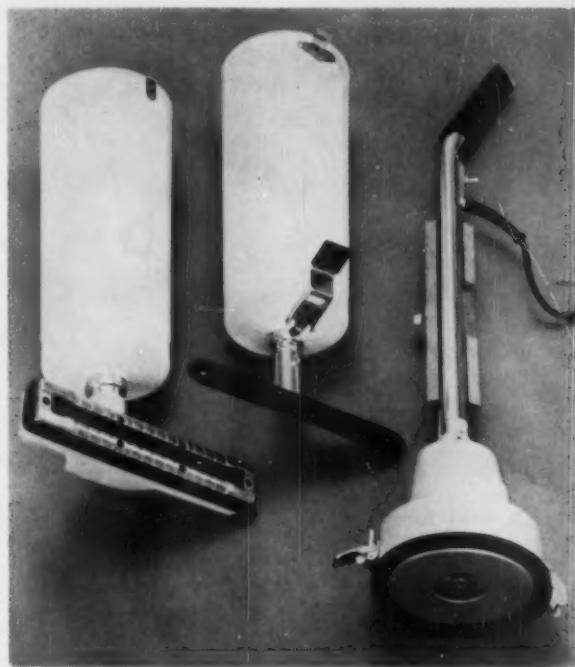
Melnor Industries revolving sprinkler covers areas up to 50 feet in diameter. Dials on either side of arm may be adjusted independently for mist, medium or jet spray. John D. Beinert, designer. \$5.95.





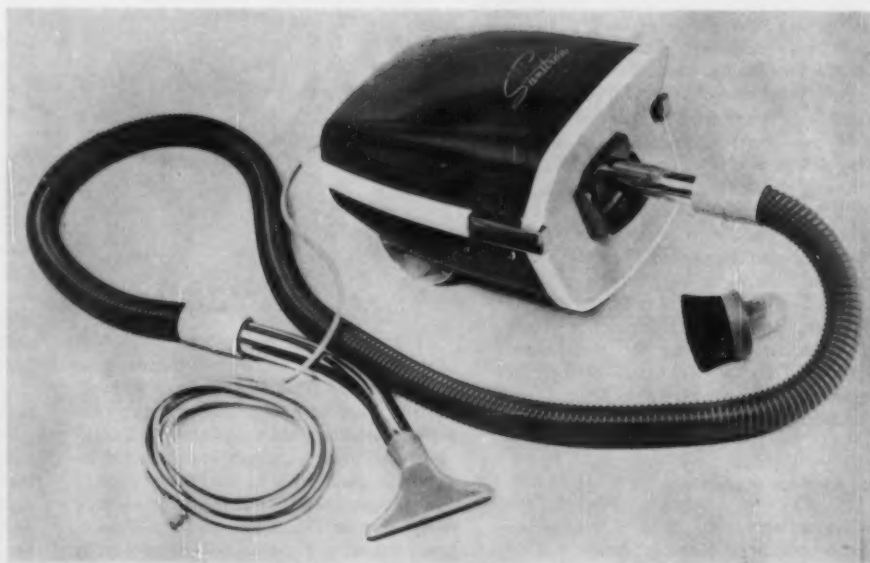
McCulloch Scott 120 horsepower, supercharged fuel-injection outboard motor takes up no more space than conventional 50 horsepower engine. Homogeneous form of experimental fiberglass housing is achieved through development of single unified surface. Reinecke Associates, designers.

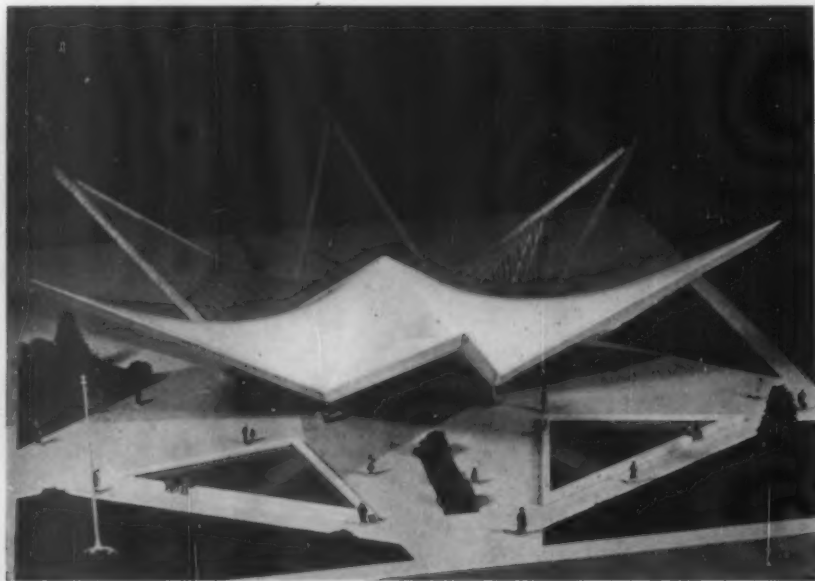
Bissellectric Sweep Master has a single power unit handle with attachments for vacuuming both carpeted and bare floors, and also for scrubbing hard floor surfaces. Washer unit has foot pedal for releasing either clean water or cleanser. After scrubbing, the appliance vacuums into tank. Peter Muller-Munk Assoc., designers. \$59.95.



Sargent-Rayment self-powered, high-fidelity FM-band radio tuner uses pin-sized indicator lights behind dial glass instead of the usual printed legend around circumference of control knob. Gold anodized aluminum faceplate rim and border piece; ribbed black anodized aluminum behind knobs. Arnold Wolf, designer. \$97.50.

Switson of Canada's new vacuum cleaner fits in 14" x 11" x 8 1/2" space. The low silhouette departs from the usual canister shape, allowing use in either horizontal or upright position. One hp input motor operates through toe switch. Steel housing finished in copper and driftwood color baked enamel. Lippincott and Margulies, designers. \$94.50.





Plastic roof forms

Foamed polystyrene plastic planks are used as forms in a new construction technique for roofs of thin-shell design. In the past, thin-shell construction has been hampered by the high labor and material costs of the elaborate form work that was required. The new technique, in which the forms become a permanent part of the roof, promises a satisfactory and relatively simple and inexpensive method of building large hyperbolic paraboloid roofs and other similar structures (see above). It will be used, for instance, in the construction of the elliptically shaped elevated concourses at the Trans-World Airlines Terminal at Idlewild Airport.

In use, the plastic planks, formed of Styrofoam, are bent to the desired roof contour, and their surface acts as a support for the application of a structural roof material such as concrete. The planking also serves as thermal insulation and as a vapor barrier, and provides a base for interior decoration.

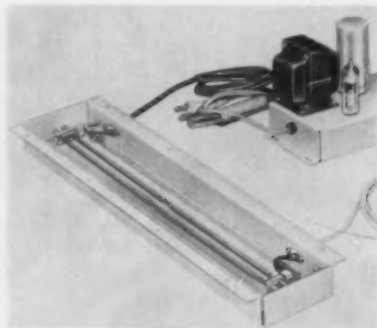
A further possibility for the new technique involves shaping the panels over sculptured earth, casting adequately reinforced concrete over them, then lifting the finished roof into place. Manufacturer: Dow Chemical Co., Midland, Mich.

Improved listening

In a further attempt to reproduce the sound quality of live performance, engi-

neers have added one more control knob to the already crowded control panel of the hi-fi stereo phonograph. The new knob is part of a system that makes it possible for the listener to adjust the amount of reverberation, or echo, within the listening environment to suit his personal taste. The system was developed by the Hammond Organ Company and will be used by both Philco and Zenith in their new stereo phonographs.

The development is important because reverberations which are a significant



part of an actual performance must also be reproduced. This is extremely difficult at the recording level for several reasons: recordings are made under all sorts of conditions, varying from those at Carnegie Hall, with its excellent acoustic qualities, to those in a small studio where reverberation is almost entirely absent. Even within a good acoustical set-up, it

is difficult to determine where the microphone should be placed. In addition to these variables of recording, there are variables in the home environment where reproduction takes place. Among these are the proportion and location of the hard, sound-reflective surfaces and the soft, sound-absorbent surfaces, as well as the size of the room.

Regardless of whether or not the recording contains sound reverberations, the new system can generate them electrically. This is accomplished by dividing the main signal into two portions: the first, corresponding to the direct sound that is heard in the concert hall, passes directly through the main phonograph amplifier; the second is by-passed through a spring-like mechanism (see below, left) where it is attenuated, delayed and reflected. The by-passed signal is then picked up, amplified and reinserted into the main amplifier along with the direct signal. The control knob allows the listener to vary the ratio between the direct sound and the reverberant sound in order to produce the optimum acoustical background. According to the manufacturers, the effect is to give to home listening the large concert hall feeling of realism, richness and resonance. The system can also be applied to reproduce signals from radio broadcasts and magnetic tapes. Manufacturer: Hammond Organ Co., Chicago.

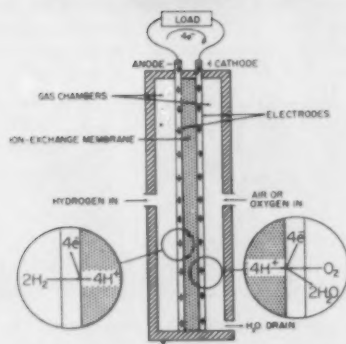
Fuel cell

A recently developed portable power supply for a field radar set represents one of the first practical applications for the fuel cell, a device that directly converts chemical energy into useful electricity. The conversion results from the reaction between a conventional fuel (hydrogen) and air (oxygen). The process is the reverse of electrolysis; instead of separating water into its components by passing an electric current through it, the fuel cell creates water in a controlled reaction which liberates energy in the form of electricity. It differs from the conventional storage battery in that it uses hydrogen for a fuel, and operates continuously as long as fuel and air are available.

The fuel cell is of great importance because its efficiency (the amount of electrical energy obtained from a given amount of fuel) is substantially higher than that of conventional generating equipment—50 to 70 per cent, depending on load, as compared to 30 to 35 per cent for internal combustion engines, and 40

per cent for steam engines. Its other advantages include simplicity (no moving parts), ease of maintenance (only fuel and air need be supplied), silent operation, self-regulation (fuel is consumed only on demand), and absence of noxious or toxic by-products.

The new radar power pack (below), which is presently undergoing evaluation, was designed to have the customary ruggedness and dependability of standard battlefield hardware. The fuel cell



which it uses differs from others in that it has a solid electrolyte rather than a liquid one. Thus, there is no need to handle, pump, or contain caustic liquids, and it can operate at negligible internal pressure and temperature. The electrolyte is a special plastic membrane that has a metallic electrode in contact with each of its sides. In operation, hydrogen and air enter chambers on opposite sides of the membrane and penetrate the porous electrodes. On the hydrogen side, the electrons are given up, collected in the anode and conducted to the load. The hydrogen ions travel through the solid membrane to its other side, where they combine in the cathode with the electrons returning from the load in the presence of oxygen. Water is formed at this point and drained off.

The power pack consists of thirty 11 by 11 inch cells, and weighs 30 pounds. It will take the place of a 55-pound engine generator, or 80 pounds of batteries. It can produce 200 watts of 24 volt dc for 14 hours. Manufacturer: General Electric Company, Schenectady, N. Y.

Flexible lettering

A new kind of pre-cut alphabet is available to draftsmen and commercial artists; it consists of reusable vinyl letters that make it possible to compose titles, captions or other text quickly, simply and economically. Known as Planotype, the letters are suitable for use in art work, charts and graphs, signs and visual demonstrations, and for reproduction in black and white or color.

The letters have an adhesive on one side, and will stick on contact to a variety of surfaces, including paper, plastic, glass, stone, and metal. When properly handled, they will not lose their form, finish or adhesive qualities.

In use, the Planotype letter is lifted with a fine-edged instrument from the aluminum sheet on which it is supplied, and placed adhesive side down on an adhesive-resistant parchment layout sheet. For transfer to the art work, a gridded, transparent Mylar sheet is placed over the letters so that they appear in the desired position between the grids. Then, by holding the Mylar sheet against the letters and applying slight pressure, they are picked up and placed in the proper position on the art work. The Mylar sheet is peeled off, and the letters adhere to the surface. They will remain there indefinitely.

Besides speed of application, another advantage of Planotype letters is that



they can be removed from the art surface without leaving a residue. This permits last-minute changes and corrections to be made freely—the final text will not show that a letter has been removed or replaced.

The letters come in different type faces and sizes, and are available in opaque red, black, white, and in various transparent colors. They are supplied in an

alphabet distribution at a cost of \$4.95 per sheet. (For a discussion of visual aid systems, see ID, March 1958, pp. 60-65.) Manufacturer: Planoscope Corporation, New York 17, New York.

New vinyl

A new vinyl plastic has been developed that can withstand temperatures 60 degrees higher than conventional vinyl without loss of the qualities—strength, light weight, impact resistance, non-flammability, corrosion resistance—that are associated with it. Called Geon, the new material can be used in temperatures of 180 to 200 degrees F., and at pressures of up to 150 psi. The high temperature factor means that Geon may substitute for metals in many applications in the building, chemical processing and automotive industries. It will be suitable for process piping, tanks, ductwork, hot and cold water lines, valves and similar products; it is competitive in cost with existing materials used for these products.

Geon piping is only one-sixth the weight of copper piping, which suggests that it might simplify the prefabrication and installation of plumbing walls for



the home building industry. The piping may be joined with solvents, or threaded couplings; it can be cut with a saw and formed to desired curvatures by heating. Because of its low conductivity, a hot fluid passing through a Geon pipe will not heat the surrounding area, and a cold fluid will not cause it to "sweat." It is self-extinguishing, and is able to withstand long-term operating temperatures and pressures in hot water lines.

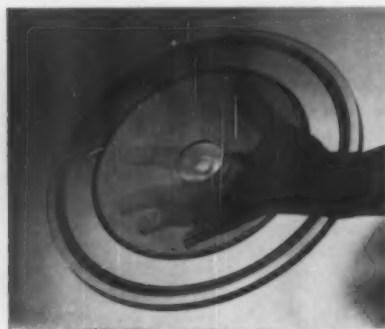
The picture above illustrates its low conductivity: 180-degree water is passing through standard copper pipe on the left and Geon pipe on the right. The low melting alloy standing on the copper pipe is melting, but the same alloy standing on the Geon pipe remains intact and square-cornered.

Products made from Geon can be produced on existing plastic processing

equipment; it can be extruded, molded, formed or stamped. It is now in pilot-plant production, and will be available in limited quantities until commercial production facilities are completed next year. Manufacturer: B. F. Goodrich Chemical Company, New York, N. Y.

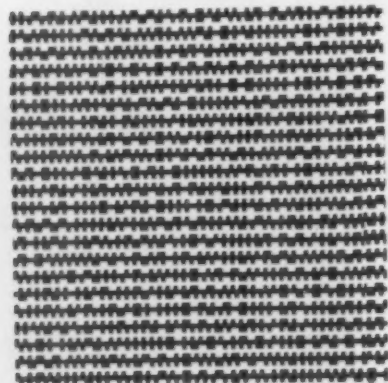
Automatic language translation

IBM, in cooperation with the Air Force, recently demonstrated a machine that is capable of translating Russian into crude but meaningful English. Although the grammar of the electronic translator is



still well below college level, a more sophisticated word analyzer, presently under development, is expected to improve it in the near future.

The heart of the system is a rotating glass memory disk on which coded forms of words are arranged in about 700 tiny concentric tracks formed of black and white spots (below). A sharp light beam is used to scan the tracks and pick out the right "dictionary" word to correspond with the Russian text word. Corresponding English words are then



printed out immediately by an electric typewriter. The disk rotates about 1,400 times a minute, and a word can be picked out in less than 1/30th of a second. If, at any time, the translator finds a word not in its vocabulary, it prints this word in red for later addition to the memory

disk. It also prints in red any proper names or nouns that must be transliterated from the Russian alphabet into English. A Russian dictionary of 55,000 word stems has been compiled so far, and with word endings also listed, this corresponds to about a half-million words as they appear in text.

At present, input to the translator is on a special electric typewriter that converts Russian letters into punched holes in paper tape. The paper tape is then read electronically and compared to the Russian and English dictionary words stored on the glass memory disk. Because this method of input is limited by the speed of the typist, Baird-Atomic Corporation of Cambridge, Mass. is developing equipment that will automatically read and recognize printed material, and feed it into the translator at a rate of 2,400 words a minute. Source: IBM, New York, New York.

New thermoelectric material

A new thermoelectric material has been developed that is said to have the highest efficiency and lowest manufacturing cost of any similar material. Thermoelectricity is the conversion of electrical power into heat, or vice versa. When the current moves in one direction, it cools; heat is produced by reversing the cur-



rent. The advantages of thermoelectricity (still in the experimental stage)—small component size and the fact that it can produce heat or cold without requiring moving parts—suit it for application in refrigeration and in the heating and cooling of homes, commercial buildings, automobiles and aircraft.

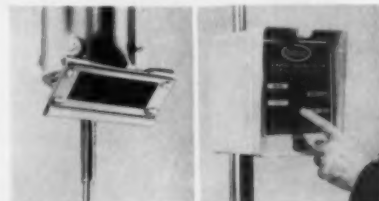
The new material is called Neelium; it is an atomized material (of bismuth, tellurium, selenium and antimony), whereas conventional thermoelectric materials are zone-melted. Neelium is said to be easier to handle and is not as sensitive to thermal and vibration shock as the zone-melted materials.

In the present application, Neelium is

fabricated into tiny blocks, eight of which are assembled into a thermoelectric module called a Frigister (see preceding column). It is completely sealed in a plastic case, except for copper connector bars which remain exposed and which serve as the heat transmission elements. These units, which measure 1 by 1 by 1/4 inches, may be used to cool transistors and other electrical equipment. The manufacturer is also developing smaller Frigisters, the size of a nail-head, for medical purposes involving vein expansion and nerve control. Manufacturer: Neeceo Cooling Semiconductors, Ltd., Montreal, Canada. Distributor: General Thermoelectric Corporation, Princeton, New Jersey.

Emergency-call system

An emergency-call system that uses sunlight as its entire power source has been developed to provide a means of communication for motorists stranded on super-highways. Although such a system has long been desirable, the necessity of installing overhead or underground power lines has hampered its introduction. In



the new system, the emergency call transmitters (above right) are powered by nickel cadmium batteries that are kept charged by tiny silicon solar cells (above left) which draw energy directly from the sun and never need replacing.

To operate the transmitter, which in a typical system might be placed every quarter-mile along the roadway, the motorist simply presses one of four buttons on the transmitter panel: one each for fire, ambulance, police and service truck. The message is transmitted by code and picked up at a central point by an FM receiver that displays the message visually, indicates the exact location of the transmitter originating the message, and provides a printed record.

The transmitter, which has a power output of one watt, is housed in a metal box, about one cubic foot in size, that can be mounted on a pole or lamp-post. The solar cells are mounted on a twenty-foot antenna atop each transmitter. The units could also be installed along national park trails and on beaches to insure speedy help in emergencies. Manufacturer: Hoffman Electronics Corporation, Los Angeles, California.

Manufacturers' Literature Supplement

A bibliography of currently available technical brochures dealing with materials, methods, components, and machines

Materials — Metals

1. **Stainless Steel Annealing.** General Electric Company. 4 pp. Ill. Bulletin describes high production vertical furnace for continuous bright annealing of stainless steel strip. Schematic drawing of a typical system is included. The furnace is said to make possible a fifty per cent reduction in cost while improving corrosion resistance, surface appearance, and physical properties of the strip.
2. **Aluminum Boxes.** Zero Manufacturing Company. 24 pp. Ill. Catalog lists over 12,000 standard deep-drawn aluminum boxes and covers available without tooling charges. Sizes range from $\frac{1}{8}$ " by $1\frac{1}{2}$ " to $20\frac{1}{2}$ " by $32\frac{1}{2}$ ". A wide range of heights are available in each box size in increments of $1/16$ ". The company also has secondary operations facilities to adapt boxes and covers into customized containers, housings or cases.
3. **Industrial Precious Metal Plating.** Burton Silverplating Company. Ill. Brochure describes facilities for plating on metallic and non-metallic substances with gold, silver, rhodium and platinum.
4. **Tin.** Malayan Tin Bureau. 20 pp. Ill. Booklet contains detailed descriptions of some of the varied uses of tin in American industry including tinplate, solder, bronze, babbitt, white metals, tinning, tubes, chemicals and miscellaneous alloys.
5. **Steel Pipe.** Peter A. Frasse & Company. Data sheet lists dimensions and weights of steel pipe, and includes a table showing the capacity of round tanks in diameters up to 32' 9".
6. **New Cold-Heading Tool Steel.** Uddeholm Company of America. 8 pp. Ill. Pamphlet describes UHB 19-VA, a water hardening, vanadium alloyed tool steel specifically developed for the cold-heading industry. Information is given on forging, stress relieving, hardening, tempering and annealing. The new steel is particularly designed for use in cold header dies, inserts, coining dies, embossing dies, casings, punches, and similar applications.
7. **Magnesium Dockboards.** White Metal Rolling and Stamping Corporation. 2 pp. Ill. Data sheet describes the new "Whitelight" magnesium dockboards and portable bridges that are said to be light enough for one-man use and strong enough to take loads of up to 30,000 pounds per axle. Illustrations show how the non-skid, corrugated floor utilizes interlocked and integrally stiffened extrusions. The new units are available in straight, flared and round shapes, and in ramp-dockboard combinations.
8. **Alloy Preforms.** Lucas-Milhaupt Engineering Company. 20 pp. Ill. Booklet describes design considerations and examples of metal joints that can be used with brazing alloys in preformed shapes. Included are comparisons of preform

and hand feeding, applications of round wire rings, flat wire rings, mandrel wound rings, and a no-tangle, notch-coil ring, and a complete material selection chart that shows the general characteristics of gold, silver, aluminum and soft solder alloys.

9. **Perforated Metal.** Cross Perforated Metals, National Standard Company. 40 pp. Ill. Brochure presents engineering data for specification of heavy-gage perforated metal. Information includes applications in screens, strainers, supports, ventilators, guards, etc., and directions for pattern specification, dimensions, weights, calculation of open areas, and materials selection.

Materials — Plastics

10. **Fiberglass Reinforced Plastics.** Cadillac Plastic & Chemical Company. 16 pp. Catalog of polyester resins, epoxy resins and other materials for fiberglass reinforced plastics, such as fiberglass cloths, tapes, woven rovings, chopped strand mats, surface and overlay mats, etc. Property tables and application data are also included.
11. **Reinforced Fiberglass Building Panels.** Alsynite, Division of Reichhold Chemicals, Inc. 4 pp. Ill. Brochure offers information on various highlight transmission panels, the use of flat panes for plant windows, and a round-up of specification data and installation details.
12. **Laminated Plastic Parts.** Synthane Corporation. 8 pp. Ill. Brochure describes facilities for fabricating laminated plastic parts.
13. **Custom Extrusions.** Anchor Plastics Company. 72 pp. Ill. Comprehensive brochure, describing design and application of extrusions, includes property tables, short descriptions of materials, and over 700 cross-sectional diagrams of extruded moldings.
14. **Daponite Laminating.** Food Machinery and Chemical Corporation. 24 pp. Booklet presents information on the requirements for an efficient Daponite laminating operation. This type of surface is said to impart durable and high quality finishes to such materials as hardboard, particle board, and plywood.
15. **Design Properties of Plastics.** Cadillac Plastic & Chemical Company. 6 pp. Charts. Pamphlet provides a comparison of the design properties of nine major families of plastics with each other, as well as with metals and other materials. Comparisons include mechanical, thermal and dielectric properties, specific gravities, price ranges, and tensile strength.
16. **Urethane Foams.** Isocyanate Products, Inc. 8 pp. Ill. Booklet describes materials, equipment, design data and ap-

plications of urethane foams. The company's facilities are also discussed.

17. **Lexan Plastic.** General Electric Company, Chemicals Materials Department. Folder describes Lexan polycarbonate resin that is being used in the electronic industries for coil forms, connectors, battery and barrier parts, terminals, housings, etc.

18. **Acrylite Panels.** Wasco Products, Inc. 8 pp. Ill. Brochure shows eleven full-color photographs of Acrylite decorative plastic panels that are now available in various textured surfaces.

19. **Plastics for Lighting.** K-S-H Plastics, Inc. 10 pp. Ill. Catalog has information on plastic prismatic lens panels of polystyrene and acrylic, and various types of special prismatic extruded panels.

Methods

20. **Typing of Symbols.** Remington Rand. 12 pp. Booklet describes method of using an electric typewriter for typing of special symbols (which are illustrated) and equations used in the field of physics. The typewriter has an interchangeable type bar on which the typist can insert special type characters.

21. **Carbon Dioxide Foundry Process.** Cardox Division, Chemetron Corporation. Booklet describes the carbon dioxide foundry process for producing castings to critical tolerances; the chemical reaction, selection of sands for use with the process, sand reclamation, and comparison with other gases are also discussed.

22. **New Metal Forming Method.** Commercial Shearing and Stamping Company. 8 pp. Ill. Bulletin describes Rotoforming, a new metal forming service in which cold metal is pressure shaped into a desired thickness and circular shape. In the process, metal is redistributed from a compact, heavy blank or preform to a final part configuration; no metal is cut away, since the initial blank contains the exact amount needed for the finished part. The method is said to offer unique design possibilities for hollow metal component parts. Both hard and softer metals may be used.

23. **Hardening of Large Gears.** Philadelphia Gear Corporation. 4 pp. Ill. Booklet describes facilities for hardening the full tooth contour of large gears. The advantages of this process are said to include increased gear life, increased strength horsepower rating, minimized distortion, and elimination of stress concentrations.

24. **Electron Beam Welding.** Air Reduction Company. 12 pp. Ill. Brochure presents information on electron beam welding in which metal is bombarded by highly accelerated electrons in a vacuum chamber. The method has special application to the new metals and alloys such as titanium and zirconium. Also included is a full page schematic drawing of the electron beam gun.

25. **Hermetic Sealing Process.** Electro-Seal Corporation. Manual describes process and applications for hermetic sealing of electrical and mechanical components, and also a new electro-seal process for hermetically sealing entire assemblies. The process has been applied to timer mechanisms, electronic amplifiers, and remote control gear for power stations.

26. **Resistance Welding.** Robotron Corporation. 4 pp. Ill. Folder describes "Spike Power," a method of resistance weld-

ing that employs high current, short duration pulses. With this method, it is possible to weld certain dissimilar metals, aluminum, and vinyl-clad steels without damaging the vinyl. Photomicrographs of typical weld nuggets are also included.

27. **Plastic Bag Production.** F. J. Stokes Corporation. 4 pp. Ill. Bulletin describes a complete, integrated production system that starts with resin granules and delivers finished printed plastic bags ready for use in a variety of sizes, thicknesses and colors, with and without vent holes. The equipment occupies a space only 10 feet wide, 30 feet long, and 20 feet high.

28. **Designing Thermoforming Molds.** Phillips Chemical Company. 12 pp. Ill. Bulletin discusses the designing of thermoforming molds for high-density polyethylene. Aluminum is the material of construction for these molds because of its low cost, reusability, and heat transfer characteristics.

Components and Machines

29. **Gas-Shielded, Metal Arc Welding Equipment.** Air Reduction Company. 20 pp. Ill. Catalog describes complete line of Aircomatic equipment for gas-shielded, metal arc welding. A new item described is the AH60-B Aircomatic manual gun for applications employing carbon dioxide as a shielding gas.

30. **New Voltage Regulator.** General Electric Company. 4 pp. Ill. Booklet presents design information on the new transistorized static voltage regulator with card-mounted circuits that eliminates contacts and moving parts.

31. **Mechanical Sealing.** Garlock, Inc. 8 pp. Ill. Booklet offers design and engineering data, and applications of the Mechanipak Seal, a mechanical seal for rotary shafts. Information includes temperature, pressure, shaft speed and other operating data needed to select or utilize mechanical sealing devices.

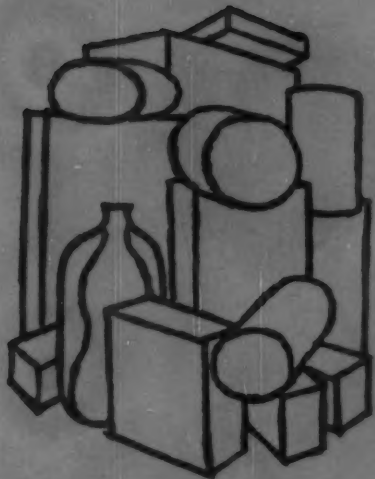
32. **Magnetic Particle Clutches.** Lear, Inc. 16 pp. Ill. Brochure describes magnetic particle clutches that depend on a magnetic field to hold the driver and driven members together. According to the manufacturer, the clutch has a high torque to inertia ratio, low residual torque, constant performance under environmental extremes, and a smooth, chatter-free torque transmission.

33. **AC Motor Catalog.** Sterling Electric Motors, Inc. 56 pp. Ill. Catalog includes complete pricing and dimensional data on motors ranging from ¼ to 200 hp; a special section presents information on motor selection and application.

34. **Clamps.** Wittek Manufacturing Company. 16 pp. Ill. Booklet contains information on various kinds of standard clamps used throughout the automotive, aircraft, appliance, agricultural, marine and general manufacturing industries for hose, flexible plastic pipe, and duct connections.

35. **Indicating Electronic Temperature Controllers.** Fenwal, Inc. 4 pp. Ill. Brochure describes the Series 560 portable controller that adapts the thermistor as the temperature sensing element, and is able to combine the three major modes of indicating control (on-off, proportional control, adjustable differential) by the flip of a switch.

36. **Axial Piston Pumps.** Denison Engineering Division, American Brake Shoe Company. 8 pp. Ill. Booklet describes design and applications of axial piston pumps in both constant and variable volume models in pressures up to 5000 psi. Performance and torque curves are illustrated, as well as complete schematics of the axial piston techniques of pumping.



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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102
103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119

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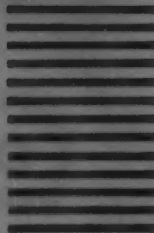
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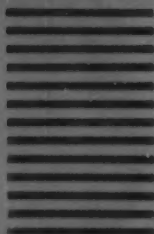
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37. **Plug and Receptacle Connectors.** Burndy Corporation. 52 pp. Ill. Catalog describes the industry's first complete line of plug and receptacle connectors featuring crimp-type, snap-locked contacts. A technical discussion of application, installation and functions is included.

38. **Electronics Products.** Hoffman Electron Tube Corporation. 288 pp. Comprehensive catalog of electronic products, including tubes, electronic instruments, industrial systems, microwave instruments, generators, oscilloscopes, analog computers, etc.

Miscellaneous

39. **Marine Battery.** Exide Industrial Division, the Electric Storage Battery Company. 6 pp. Ill. Bulletin describes a new marine battery that is 50 per cent more powerful and lower in price than its equivalent-size predecessor. Known as MGD, the new battery uses a new, continuous-filament glass fiber in its positive plates.

40. **Building Maintenance Manual.** S. C. Johnson & Sons, Inc. 28 pp. Ill. Manual provides detailed information on methods and materials for maintaining the following floor surfaces: wood, rubber tile, asphalt tile, vinyl, linoleum, cork, terrazzo, clay and ceramic tile, concrete, marble, mastic and magnesite.

41. **Industrial Trucks.** Automatic Transportation Company. 12 pp. Ill. Brochure presents history and design data on line of industrial trucks.

42. **Wood Flake Panels.** Silvatek Division, Weyerhaeuser Company. Illustrated folder provides information on Veneered Versaflake, which is composed of screened wood flakes that have been sized with a water repellent, thoroughly blended with resins and additives, and compressed under heat to form a homogeneous solid wood panel. The panels can be used for bi-fold doors, cabinet work and millwork, and are available in various woods including birch, cherry, mahogany, red and white oak, and walnut, in standard panel sizes, 3/4" thick.

43. **Nameplates.** W. H. Brady Company. 4 pp. Ill. Bulletin describes a new type of nameplate that can be used for identification and decoration. Known as Poly-Plate, it employs sub-surface printing and a Mylar-protected surface.

44. **Grinding Wheels.** Norton Company. 14 pp. Ill. Booklet describes the properties and uses of various types of grinding wheels used in the welding field.

45. **Automation Technology.** General Electric Company. 16 pp. Ill. Brochure discusses the technology, equipment and economics of automation, and assesses the current state of the concept.

46. **Industrial Floor Coating.** Flintkote Company. 4 pp. Ill. Booklet describes Flintmastic, a surface coating for industrial floors that is said to provide an effective and economical method of restoring worn and uneven floors, both wood and concrete, to a level, wear- and water-resistant surface.

47. **New Fastener.** Simmons Fastener Corporation. Data sheet describes Cam-Bolt, a fastener for use where the strength of a bolt is required but where fast opening and closing is desirable.

48. **Pilot Lights.** Dialight Corporation. 256 pp. Ill. Comprehensive manual describes the methods of selecting the proper pilot light to accommodate the required lamp. The text includes full-size illustrations of all pilot lights, as well as technical data such as dimensions, lens styles, finishes, etc.

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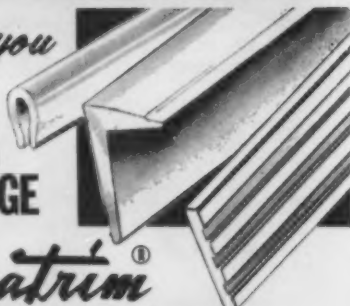
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Index to Advertisers

Allied Chemical Corp. (National Aniline Div.).....	11
Agency—Benton and Bowles, Inc.	
Aluminum Company of America (Corporate Div.)	Back Cover
Agency—Ketchum, MacLeod & Grove, Inc.	
Apex Coated Fabrics, Inc.....	26
Agency—Robert Marks & Company	
Chicago Molded Products Corp. (Camco Div.).....	21
Agency—Marsteller, Rickard, Gebhardt & Reed, Inc.	
Conforming Matrix Corporation.....	26
Agency—Wendt Advertising	
Dayton Rogers Manufacturing Co.....	95
Agency—Keystone Advertising, Inc.	
Dow Chemical Company, The.....	24-25
Agency—MacManus, John & Adams, Inc.	
DuPont de Nemours, E. I. & Company, Inc. (Polychemical Div.)	6, 7
Agency—Batten, Barton, Durstine and Osborne, Inc.	
Enjay Chemical Company, Plastics Div. Inside Front Cover	
Agency—McCann-Erickson, Inc.	
Glass Laboratories, Inc.....	94
Agency—The Furman Company, Inc.	
Harrington & King Perforating Company, Inc.....	9
Agency—Marvin E. Tench Advertising Agency	
Hooker Chemical Corporation (Durez Div.).....	28
Agency—The Rumrill Company, Inc.	
Integrated Ceilings & Grilleworks, Inc.....	95
Agency—Boylhart, Lovett & Dean	
Lundstrom Laboratories, Inc.....	93
Agency—The Rumrill Co. Inc.	
McLouth Steel Corporation.....	17
Agency—Denman & Baker, Inc.	
Metal & Thermit Corporation.....	19
Agency—Marsteller, Rickard, Gebhardt & Reed, Inc.	
Olin Mathieson Chemical Corporation (Metals Div.)..	23
Agency—D'Arcy Advertising Co.	
Rigidized Metals Corp.....	Inside Back Cover
Agency—Melvin F. Hall Advertising Agency, Inc.	
Steere Enterprises, Inc.....	94
Agency—Clayman and Associates	

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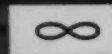


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For Your Calendar

Through July 17. "European and American Glass." Exhibition at the Art Institute of Chicago.

Through July 17. Retrospective exhibition of paintings and drawings of Philip Evergood, organized by the Whitney Museum. Walker Art Center, Minneapolis, Minnesota.

Through July 17. "The Story of American Glass," Smithsonian Institution traveling exhibition. Columbus Museum of Arts and Crafts, Columbus, Georgia.

Through July 31. "Early Steamboat Advertising" and "Architectural Studies." Exhibitions at the New York Historical Society, New York.

Through July 31. "Sixteen Younger Minnesota Artists," exhibition of ten painters and six sculptors. Walker Art Center, Minneapolis, Minnesota.

Through August 21. "Japanese Art Treasures from the Honolulu Academy of Arts," an American Federation of Arts Golden Anniversary exhibition. Seattle Art Museum, Seattle, Washington.

Through September 5. Quilts and Coverlets. An exhibition of spreads from the 18th, 19th and 20th centuries from the Museum and private collections. Brooklyn Museum, Brooklyn, New York.

Through September 6. "Art Nouveau." Exhibition includes paintings, architecture, photographs, furniture, design objects, books, posters and jewelry. Directed by Peter Salz and installed by Arthur Drexler. Museum of Modern Art, New York.

Through September 11. "Designer-Craftsman U. S. A.—1960." Exhibition of 114 objects selected in a competition entitled "Designed and Handcrafted for Use," sponsored by the American Craftsman's Council. Museum of Contemporary Crafts, New York.

July 1-August 7. Exhibit of sculpture and paintings by Picasso, Klee, Moore, Pollack, and others, from the collection of Mrs. John D. Rockefeller, III. San Francisco Museum of Art, San Francisco.

July 6-August 31. Sixth annual summer program of the American Management Association. Courses and workshops range from three to five days, and topics cover every phase of management. Colgate University, Hamilton, New York.

July 8-31. "The Artist in His Studio." An exhibition of photographs by Alexander Liberman. Art Institute of Chicago, Chicago.

July 9-September 11. Jewelry by Christian F. Schmidt. Art Institute of Chicago.

July 11-15. The Atlanta Merchandise Mart, Atlanta, Georgia.

July 11-15. National housewares exhibit sponsored by the National Housewares Manufacturers Association. Atlantic City Convention Hall, Atlantic City, New Jersey.

July 11-30. "The Fledgling Years—Early Conquests in Flight." Exhibit at the IBM Gallery, New York.

July 17-22. Los Angeles Summer Market. Los Angeles Home Furnishings Mart, Los Angeles.

July 17-September 2. Annual summer session of the Brooklyn Museum of Art. Brooklyn Museum, New York.

July 18-November 4. 1960 Triennale. Palazzo dell'Arte and Parco Sempione, Milan, Italy.

July 19-21. Annual western packaging and materials handling exposition. Pacific Auditorium, Los Angeles.



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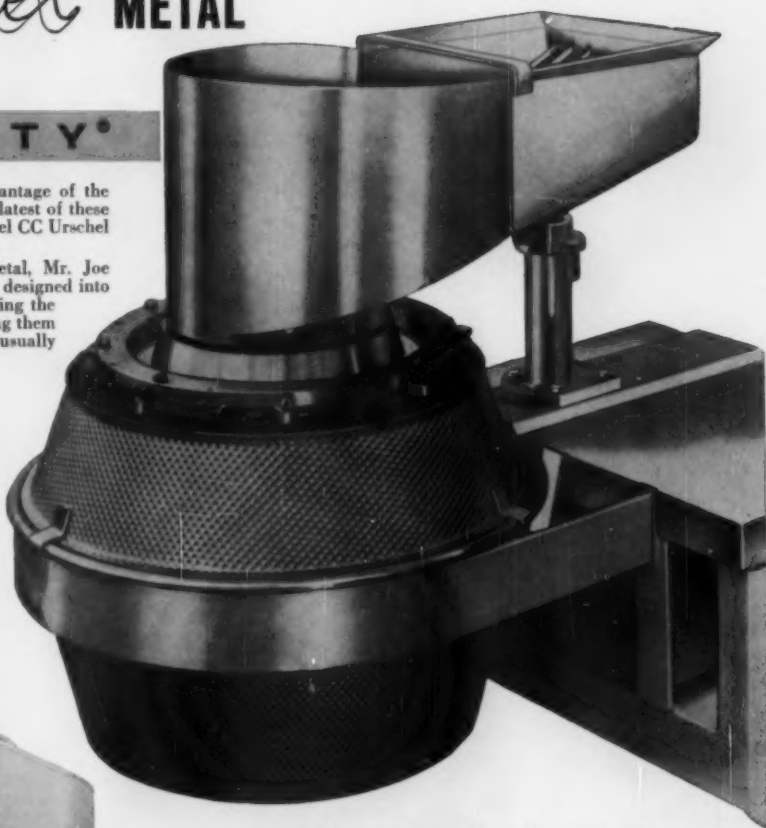
Result:

BEAUTILITY[®]

More and more manufacturers are taking advantage of the reduced friction area of RIGID-tex Metal. The latest of these is Urschel Laboratories, makers of the new model CC Urschel Potato Chip Slicer illustrated.

In commenting on the use of RIGID-tex Metal, Mr. Joe Urschel, president, said, "RIGID-tex Metal was designed into this equipment for the sole purpose of facilitating the discharge of the thin potato slices without having them stick to the contacting surfaces. The slices are usually less than 1/16" thick and because of their wet surfaces have a tendency to stick to any flat material. The slices do not stick to the surface of RIGID-tex Metal.

It would have been possible for us to use wire screen or perforated sheet, but such material would have had two disadvantages. One, a certain amount of water would escape beyond the discharge opening through the material and two, the material would not be considered sanitary. The stainless steel RIGID-tex Metal discharge surface is very easy to keep in a sanitary condition."



Have you tried RIGID-tex, the original, three-dimensional textured metal? Its beautiful patterned surface is mar-resistant to hide scuffs and scratches. It increases strength, without increasing weight — BEAUTILITY.

RIGID-tex Metal is available in all metals, all finishes, all colors... solid or perforated. There are more than 45 standard patterns from which to choose. Write for complete information.

See Sweet's Design File 11/Ri



Pattern No. 6-WL was used in the Potato Chip Slicer.

RIGIDIZED METALS
CORPORATION

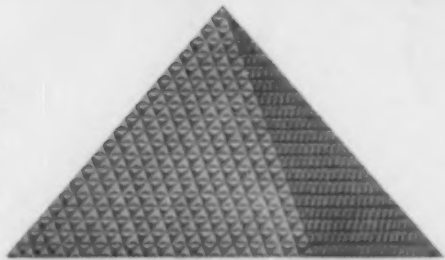
7387 OHIO STREET • BUFFALO 3, N. Y.

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Aluminum garden architecture designed for Alcoa from standard warehouse stocks by Garrett Eckbo. Photographed by Julius Shulman. For list of aluminum products in this garden, write to Aluminum Company of America, Pittsburgh, Pa.



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