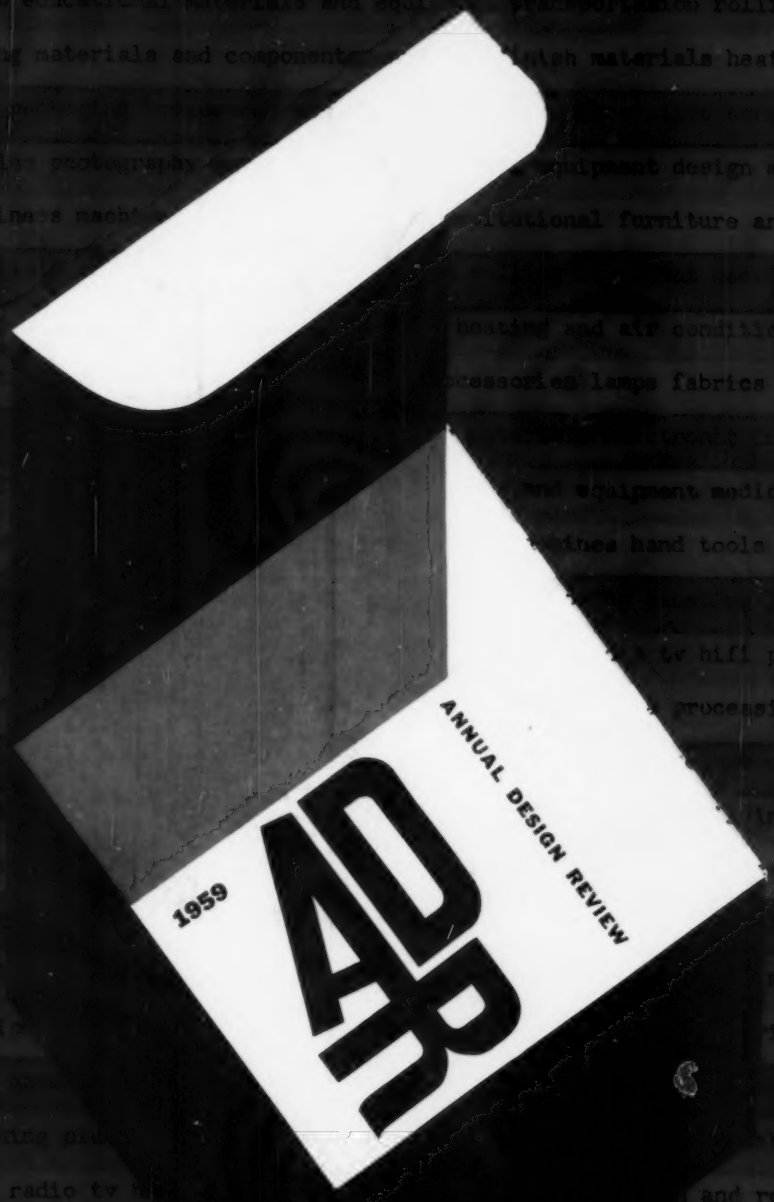
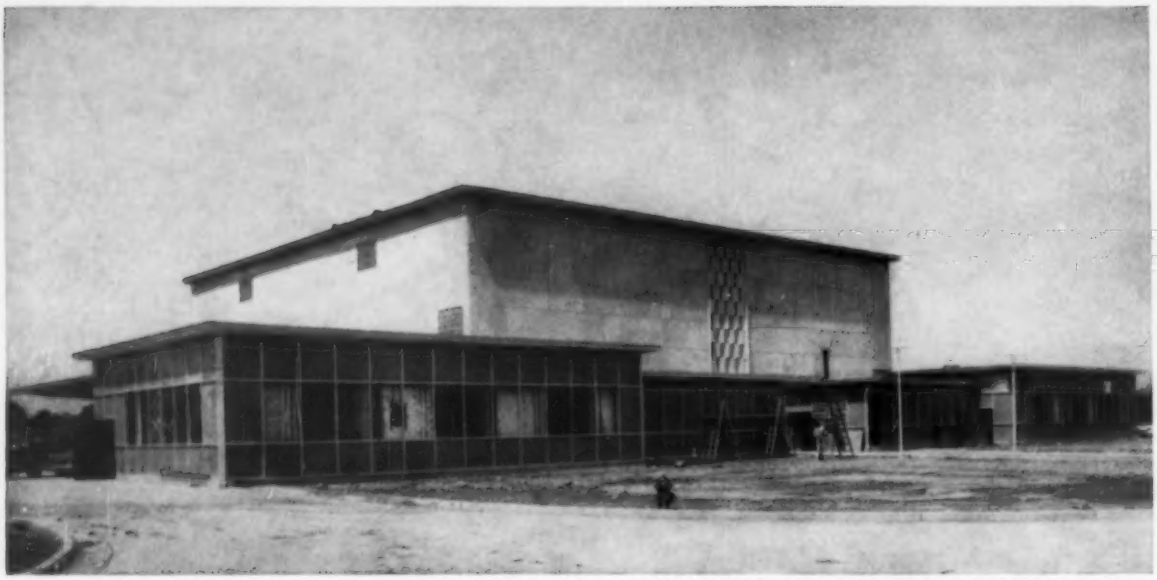
INDUSTRIAL DESIGN

12 *December 1959* *$1.50 per copy*





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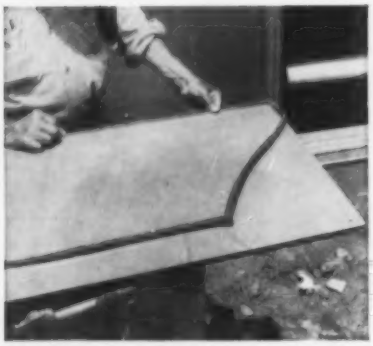

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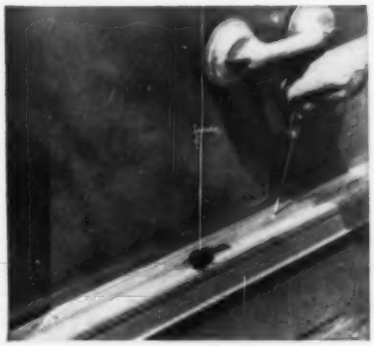

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DECEMBER, 1950 VOLUME 6 NUMBER

12

INDUSTRIAL DESIGN

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.

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Coming

IN JANUARY — A survey of mechanical fasteners; Gallery II — a portrait of a design personality.

IN FEBRUARY — The industrially produced house: the materials and techniques that make up its past and suggest its future.

COVER: The open box — characteristic of this year's design plenty — appears against a background textured with the year's product categories organized by Deborah Allen, special consultant for the Annual Design Review.

FRONTISPIECE: Ronald Beckman's photograph of the joint designed by Buckminster Fuller for the ocean liner reveals how the configuration of a structure is anticipated by the joint itself.

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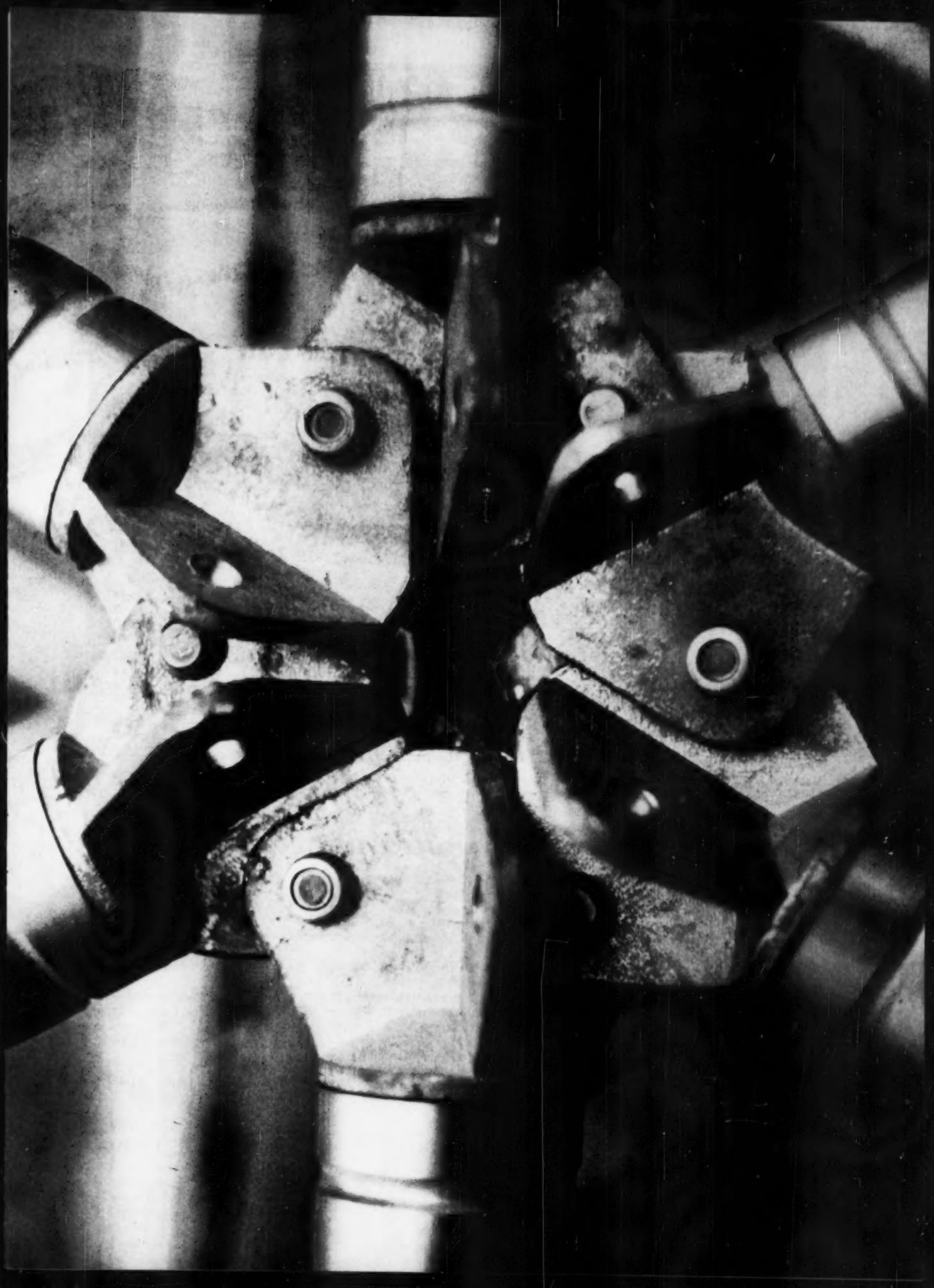

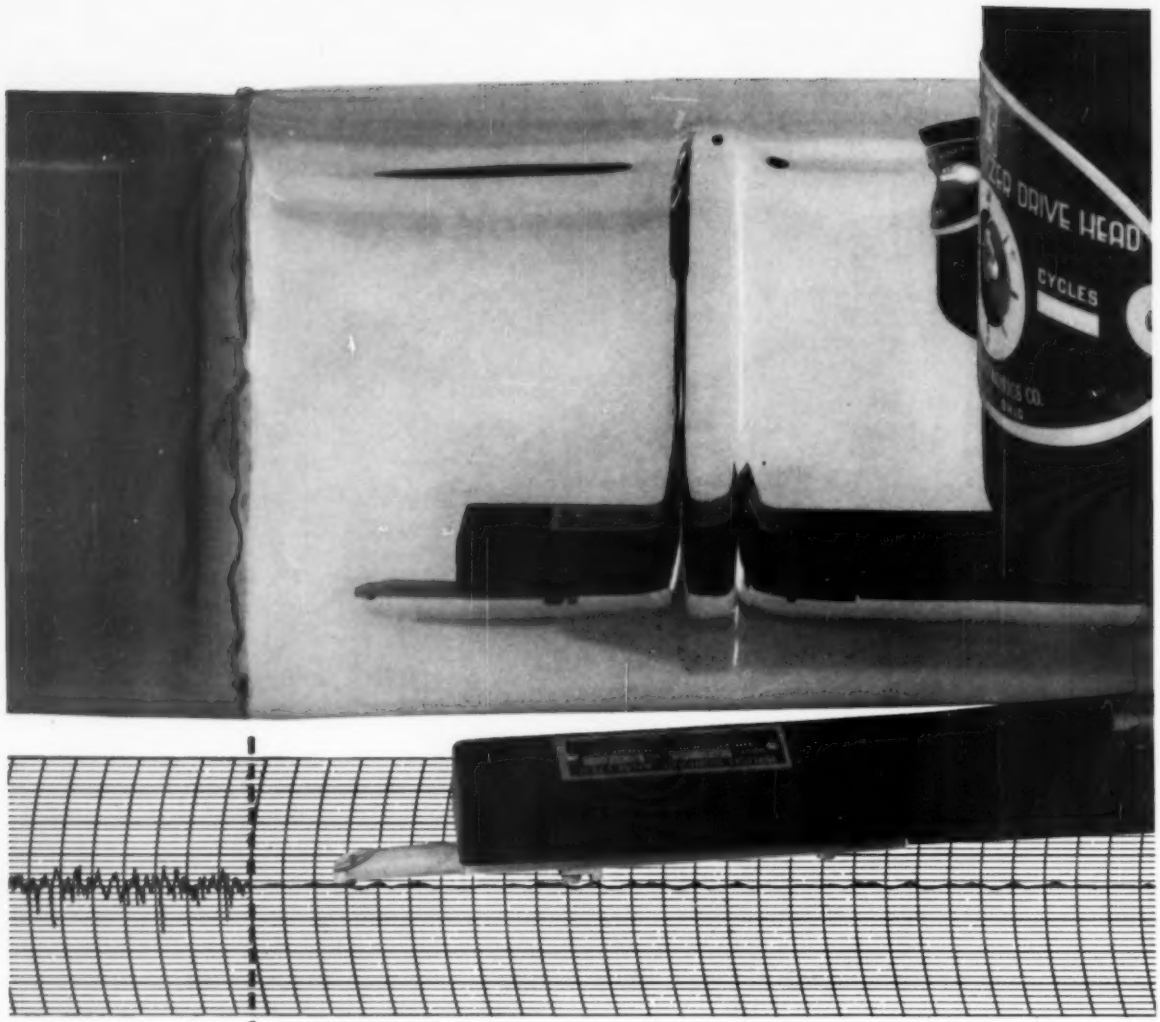

Unplated bumper section shows surface variations averaging 40 micro-inches.

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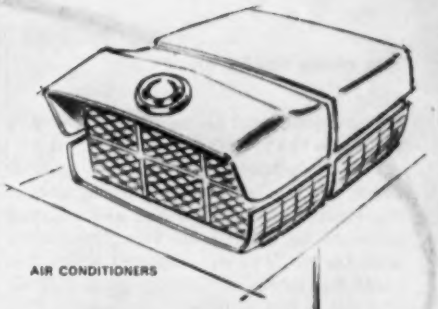

AIR CONDITIONERS

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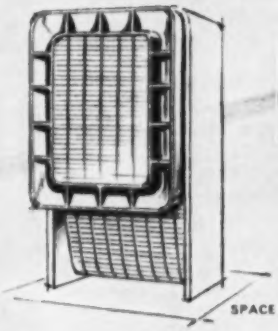
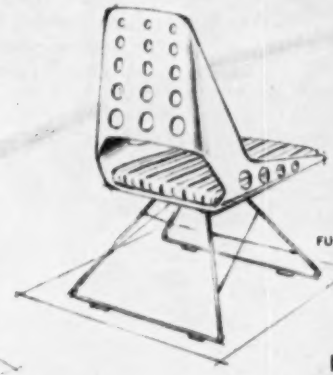


SPACE HEATERS



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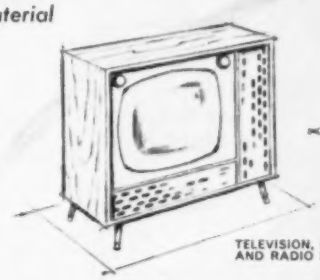

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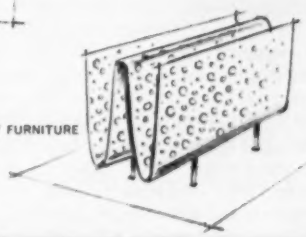

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LETTERS

Too many cooks

Sirs:
My compliments on Industrial Design's article on the ICSID Assembly.

I have just one small point to quibble about. In the introductory paragraph to the excerpts of my farewell address, you quote me as holding the view that industrial design "is in the vanguard of the new concept of administration by group." Actually this is not quite so.

What I tried to point out to my colleagues was my conviction that the concept of creative teamwork was basic to our profession. Cooperation between creative individuals is not quite the same as "administration by group."

As a matter of fact, in an administrative sense, I am rather inclined to center responsibility in a single individual instead of chopping it into many little bits and pieces. My friends in ICSID, to say nothing of my partners at PMMA, will be able to confirm that administratively I am apt to favor a rather firm hand.

PETER MULLER-MUNK
Pittsburgh

Trial and error

Sirs:
I would like to comment on two matters that were covered in the October issue—the discussion on the social responsibilities of designers, and a WESCON award as it relates to the former.

Defining personal goals and putting them into practice are pressing problems for designers since, totally, we exert a significant effect on society. Meeting the diverse requirements of the client, the market and oneself can be a complex problem. However, these diverse requirements do share one basic objective—consumer satisfaction. I think a vital factor in achieving this objective is product performance—it may take a little longer in the commercial field but I do not believe quality in product is academic yet. A sound sales record appeals to the client and for the designer there is the real satisfaction of producing a product that does its job well. The special contribution of the designer is first to meet this basic requirement and then provide an esthetic quality. The merit of a designer's effort is the degree to which his imagination has met all functional requirements in an esthetically satisfying design.

One award winner at the WESCON show, the "Digiswitch," features numbers that can be read and symmetry of design. It would appear, however, that the consumer in attempting to read the device from the right (simply the opposite view to that used for the photograph) would find the task quite difficult due to the tab projecting alongside the digit.

A full consideration of the factors involved in a product's use and the functional requirements these impose must surely be the foundation of a *designer's* approach, from both a professional standpoint and that of social responsibility. Such considerations appear equally relevant when judging design. I think those of us designing products for human operation are indeed fortunate to have our first principle—optimizing product/consumer performance—so clearly defined and to have it be one our client can also wholeheartedly endorse.

To impart the final rosy glow to this picture—we do not have to start from scratch, for basic and applied data is already being generated variously described as human engineering, human factors, and this is available to the product designer who seeks to fulfill his first responsibility.

ROY V. CALLOW
Dunlap and Assoc., Inc.
Stamford, Conn.

Packaging show

Sirs:
To the professional package designer engaged in creating packages that meet the complex marketing needs of his client, the Package exhibit at the Museum of Modern art offers little of value. From the premise that sales, cost considerations, production factors and graphics are irrelevant, the Museum's Associate Curator Mildred Constantine has presented "packages" out of context, denuded of identity and with insufficient background information as to the "why" and "how" of their specific form. However, if we accept this premise then we must say that the show was certainly successful in acquainting the public with the diverse forms of packaging both in nature and industry and in the beauty that is often present in these objects. But to be accurately representative of the modern implications and understanding of a true "packaging show," it might have embodied more than a display of industrial products that are only incidentally used for "containing" some material or item.

Addressing a recent PDC meeting, Miss Constantine explained her objective in garnering material for this exhibit. Her reason for eliminating all graphic design, "we are being over-communicated" has my complete concurrence.

But even art museums communicate and it is therefore justifiable to judge whether or not the Museum has performed its stated objective of explaining "what consititutes a package"—and how well. The exhibition is introduced by a stimulating selection of nature's packages, followed by an interesting display of package forms and materials.

But soon, it is apparent (from my own observations) that the viewing public might be quite confused as to what a package is—as, it appears, is the Museum itself. And what is a package? To those of us who work continually toward adding forms and materials to meet the modern requirements of industry, the package represents not only a practical container for a product or item, but also presents it in its most attractive and favorable form to appeal to and edify the consumer.

The conclusions that can be drawn from this year's Museum exhibit are first: that the curator has "discovered" what has long been known by the packaging designer—that the package is more than just graphic design—that there is a wide variety of technical packaging materials and constructions that have been and are being used by industry. Second, that much of the material in the exhibit which represents the result of three years of traveling here and abroad, could have been seen and selected at the annual AMA show in a much shorter time. Third, now that the Museum has publicly recognized the package as an art form and has established the precedent of a yearly exhibit, it has provided itself with an opportunity for advance planning toward a more comprehensive and complete packaging exhibit that will become a tradition in years to come.

ROBERT ZEIDMAN
New York

Sirs:
The recent critique of the Museum of Modern Art's packaging show is excellent. On all levels I feel it scores an outstanding success as a mature, penetrating, creative and pertinent comment.

ROBERT P. GERSIN
New York

Where credit is due

Photos for our story on San Francisco Museum of Art's architectural show, November, pp. 56-59, were by Morley Baer.

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BOOKS

Executive conference room, Continental Grain Co. offices, by Gerald Luss, Designs for Business

The business of design for business

INTERIORS BOOK OF OFFICES. Edited and with an introduction by Lois Wagner Green. 160 pages, illustrated. Whitney Library of Design, New York, 1959. $12.00.

Except for J. P. Morgan & Company—which in many ways is a business apart from all other businesses—there is probably no office in the country in which executive status is symbolized by a well-polished walnut rolltop desk in a Great Hall full of other such desks. The American office—executive and otherwise—has changed so radically in the past 20 years that the planning of its space and the design of its furnishings is now an occupation in itself. No self-respecting enterprise would be caught without its luminous ceilings, wall-to-wall carpeting, movable partitions, posture chairs, and oiled teak conference table (the larger the better). And in fact residential interior design frequently takes its new ideas from the design of offices, since businessmen carry home with them the tastes acquired from their handsome working environments.

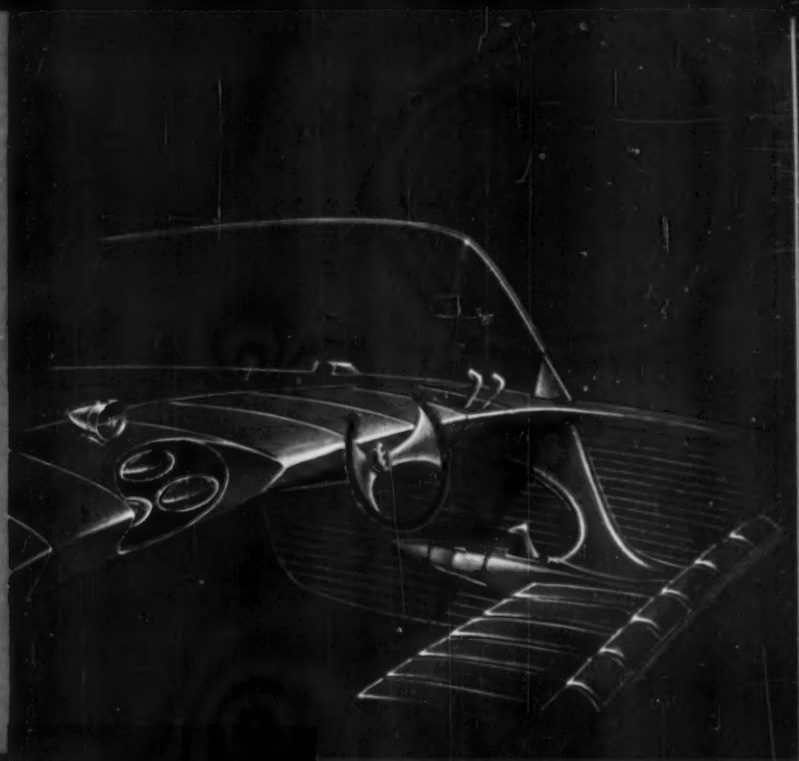
Behind this revolution in office design lie several other revolutions. One is the character of business itself. Companies nowadays are composed of semi-autonomous divisions, with their own executives, their own clerical staff; also, the operations of communication, record-keeping, and tabulating have expanded enormously. For these supra-businesses to function efficiently calls for elaborate analyses of the interrelationship of functions and, perhaps even more important, of individual function (corollary to this, the module for the ideally planned office is no longer an architectural unit, but is more apt to be that pervasively repetitive unit, the office file cabinet).

But administrative structure is only one agent of change. Another, equally important, is the high cost of real estate in the midtown areas that are, with a few rare exceptions, the purlieus of the Home Office. The necessity to fit more and more complex operations into less and less space has become a critical consideration. And along with fitting more into less, business has also had to face the problems of making less look like more. By now it is axiomatic that people work better in an environment that contributes to their psychological well-being—and space, privacy, and order are essential elements. So, too, is status. But in the absence of the real thing, most of these conditions must be met with symbols—and symbols are part of the designer's vocabulary.

Mrs. Green's book makes clear in multiple illustrations how varied this vocabulary can be; it also demonstrated the precise discipline of this particular branch of design. In fact, the great danger in office design would seem to be not change-for-the-sake-of-change, but similarity become academic: the complexity of the problem tends to make designers repeat the good solution—the drawerless executive desk, the translucent-partitioned secretarial cubicle. This seems particularly true in the matter of symbols of status (as one office consultant recently pointed out, it doesn't make sense to give the windows to the president when the optimum performance of a minor inner-office job requires natural daylight).

But however cautionary the unwritten lessons in the photographs in this book, its text should provide help and a *modus operandi* for all those who engage—or want to engage—in office design. For Mrs. Green (who, as managing editor of *Interiors*, covered the office design field) has subdivided the office into its major design areas — reception area, executive offices, general offices, recreational areas (cafeterias, employees lounges)— and has written an introduction to each that is a lucid statement of what must be accomplished, and what the problems are likely to be. The book also includes a detailed analysis by Gerald Luss, of Designs for Business, of that firm's work on the offices for the soon-to-be-completed Time-Life building.

—*B. D.*



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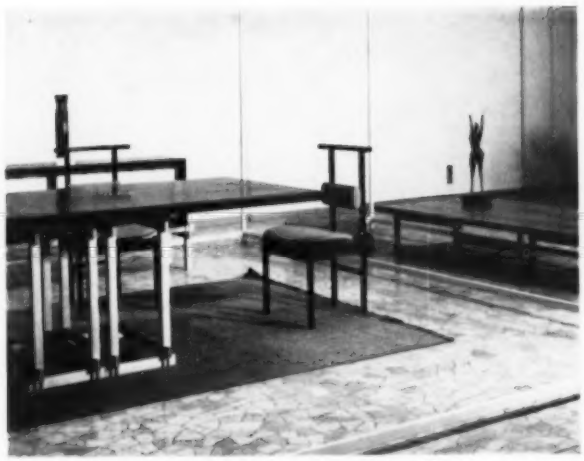
REVIEWS

Six years ago the town of Cantù, just outside Como in northern Italy, inaugurated a biennial furniture design competition, international in scope but local in sponsorship: it is underwritten by the furniture industries and furniture craftsmen in the surrounding region. Its purpose is to stimulate an awareness of the "artistic, technical, and commercial problems" in furniture design, and it is open to designers and architects throughout the world, the only stipulation being that the designs must not have been previously presented for commercial production to any manufacturer. There are ten categories. Most of them are defined by room use (dining room, bed room, living room), but two are for material types (wood furniture, metal furniture) and one is open only to advanced students and faculties of design schools. Entries, in the form of renderings and detail drawings, must also be accompanied with working drawings to be used by manufacturers and craftsmen assigned to execute the winning designs. This year's Cantù Exhibition, the third, drew 627 entries from 33 countries. A sampling of the prize-winners, shown here, suggests a curious retrogression to Constructivist concepts—curious because the representation *is* international, including such countries as England, Japan, and Sweden, where this movement, if it ever had strength, is certainly not now a strong factor. In a sense, however, it is not so curious, for the competition's categories, with their emphasis on "furniture suites" were in themselves throwbacks to furnishing concepts which are now outmoded. This year's jury consisted of four designers and architects from Sweden, Italy, and Germany, along with two technical consultants on furniture construction; the president of the Organizing Committee, Arturo Molteni, also served as president of the jury. Prizes ranged from 300,000 to 500,000 lira (about $800) and the Organizing Committee also reserved the right to purchase any design entries not selected for prizes.—*B. D.*

Teak pedestal bookshelf by Donato D'Urbino and Carlo Volonterio, Italy; second prize in student competition.



Ash and rosewood pieces by Nigel and Sheila Walters, England; first prize in competition for dining room furniture.

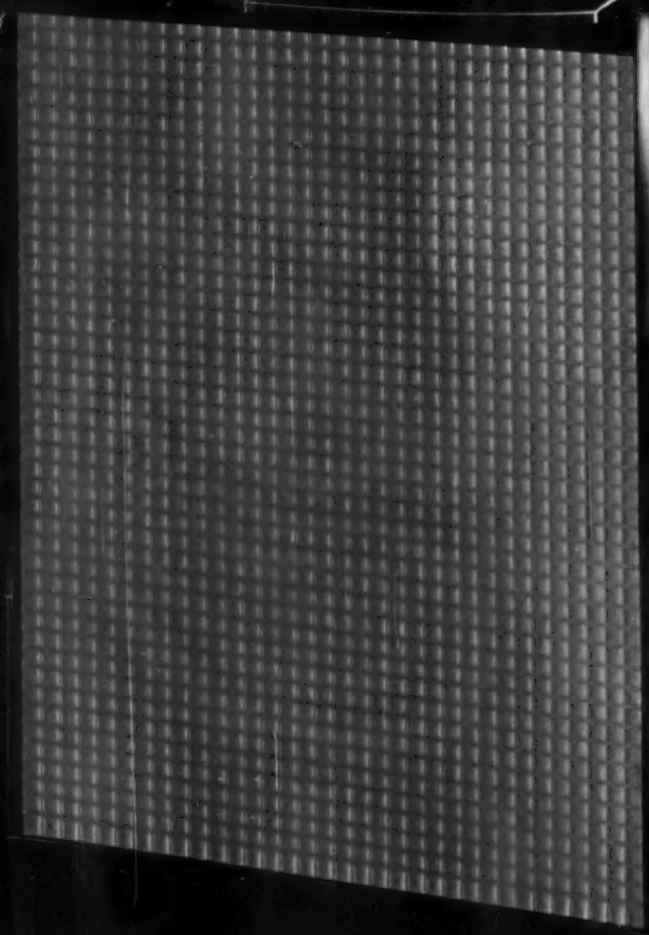
Bentwood unit, stacked as bookshelf, also forms base of chair (not shown), Yasuhiko Itoh, Japan; third prize in competition for furniture made of wood.

Laminated wood armchair with metal brackets, sling seat, by Heinrich Schütt, Germany; first prize in competition for design of a small easy chair.

Just a touch tells you

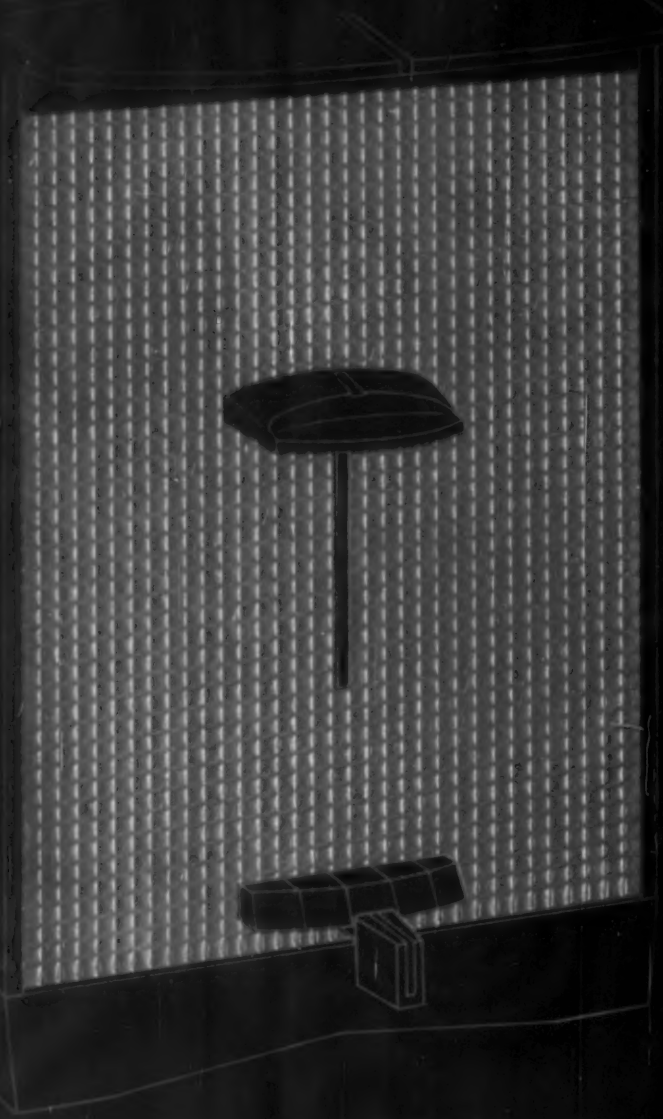
how this
Mary Proctor
Toaster
took on new

sales appeal



Gold-finished panels of USS American Embossed Amerstrip add richness, smart modernity to classic toaster lines

New Proctor Electric Company toaster styled by Raymond Loewy Associates has special design USS Embossed Amerstrip



This Mary Proctor toaster is beautiful—and different. On the sales counter it stands out from its competitors. Much of this sales-pulling distinction lies in the end panels formed from gold-finished, geometric-patterned Embossed Amerstrip. This effective pattern was created by famous industrial designers, Raymond Loewy Associates, and was rolled by American Steel & Wire.

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HARDWARE — Blocks made of Du Pont ZYTEL nylon resin prove their high strength under heavy loads. They resist the elements almost indefinitely and require little or no lubrication. Parts of ZYTEL have excellent resistance to abrasion and impact.

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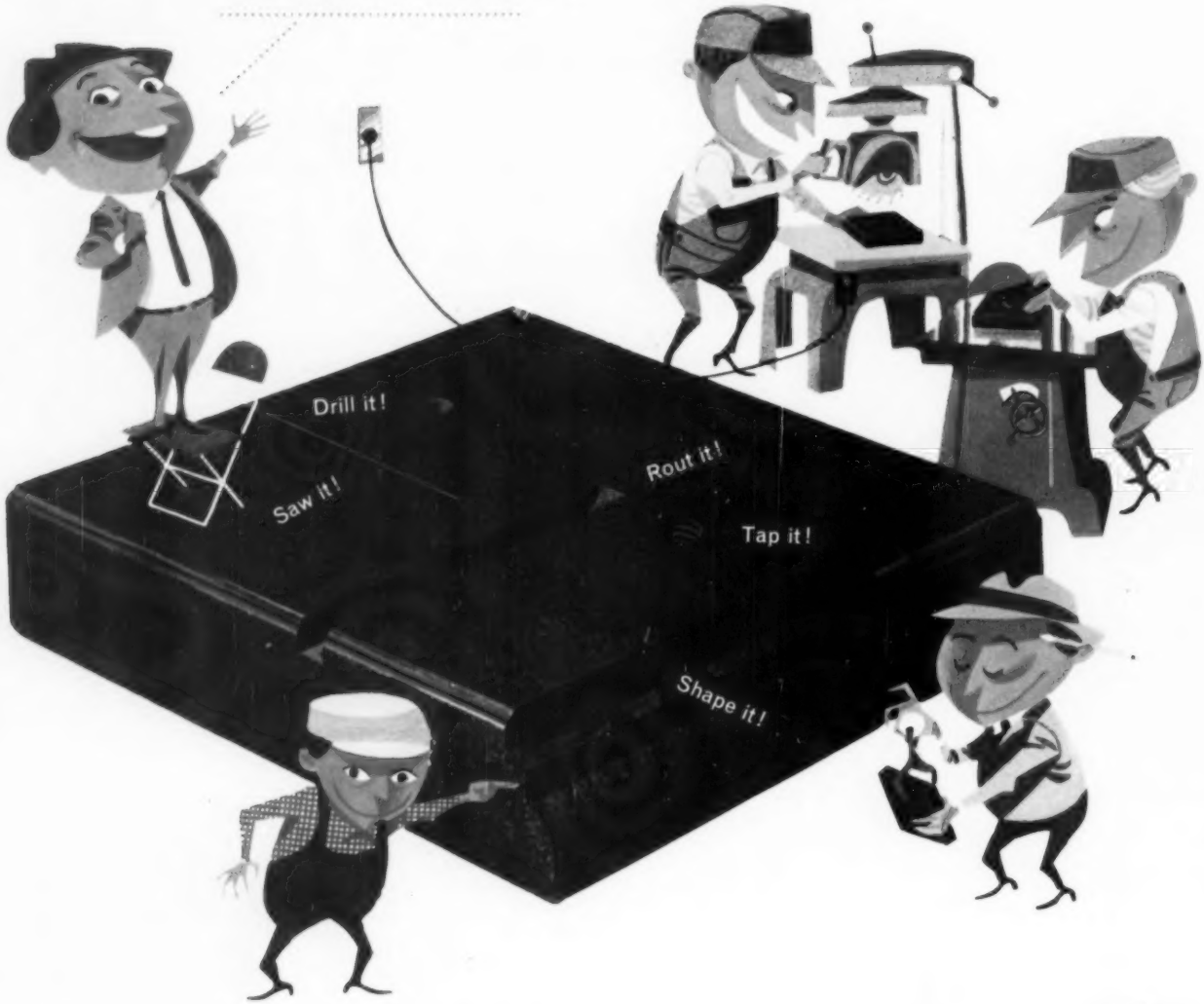

see for yourself what BENELEX can do

Your free test block comes to you ready-marked for all these operations. Simply turn it over to your shop men—then see how beautifully it comes back. *No special tools required.*

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BENELEX comes to you in two densities, No. 70 hard (¼″ through 2″ thick, sizes to 4′ x 12′) and No. 30 medium hard (⅜″ through 1¼″ thick, sizes to 4′ x 8′).

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CLIPS AND QUOTES

Sir Kenneth Clark, *excerpts from his address "Art and Society" at the 100th anniversary convocation of The Cooper Union, November 2, 1959*

"Art is an extensive word. This afternoon I shall speak almost entirely about the visual arts, and more particularly about the arts of design. In this context art can be taken to mean everything done in response to the feeling that material things must be made more precious or that certain images are so important that they must be preserved. We believe that the form-creating instinct can express itself in both ornament and image; and we are aware that they overlap. All ornament, however abstract, suggests something; all images, however factual, reveal some sense of design. Both are forms of order. And both are sacramental. Both image and ornament are revelations of a state of mind and a social temper.

Fundamentally human beings have not changed. However, if human nature has not changed, human society has; and changed as the result of a basic shift of mental outlook. This change can be described in one word: materialism. The word has taken on a pejorative sense, but materialism has been the source of achievement which have added immeasurably to the well-being and happiness of mankind. How are the philosophic assumptions of materialism reflected in the actual status of art in modern society? Do the majority still feel that material things must be made more precious? Do they still feel that certain images are so important that they must be preserved? Of course the answer is "yes." The majority still want ornament on their clothes, their furnishing fabrics, their wall papers and many objects of daily use. More than this, they still mind very much how things look, independent of their utility.

From a material point of view, the premises on which ornamental art is produced have not greatly changed. When we examine it in the light of other laws however, the change is considerable. The ornament favored by the majority is no longer made for an elite; it is not indicative of status; and it no longer has any underlying sense of symbolic meaning. In one branch of art — in architecture — it has almost ceased to exist; and although we have not grown used to buildings without ornament, the historian must record that this is a unique event in the history of art.

The portrait is typical of the decline of confidence in art which is felt unconsciously by the mass of people as a result of the camera. There is however one form of popular imagery which is not entirely dependent on photography and that is the poster. We know that in spite of many effective and memorable posters, advertising has not produced an art comparable to the windows of Chartres Cathedral; and never can. The reason is, of course, that it lacks what I have called the sacramental element in art. I said earlier that the nearest equivalent in modern life to the building of a medieval cathedral was the construction of a giant liner. But the liner is built for the convenience of passengers and the benefit of share holders. The cathedral was built to the glory of God. One might add that advertising art is concerned with lies, of a relatively harmless and acceptable kind; but one must remember that the great art of the past was also concerned with lies, often of a much more dan-

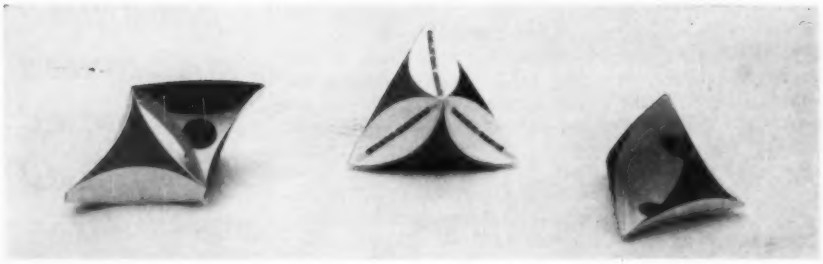
(*Continued on Page* 31)

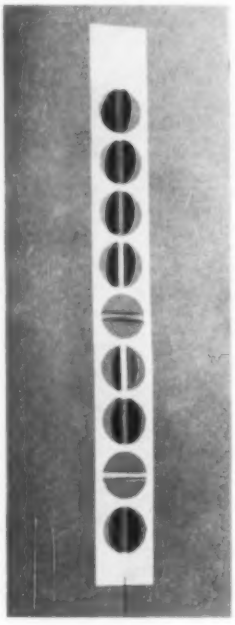
NEWS

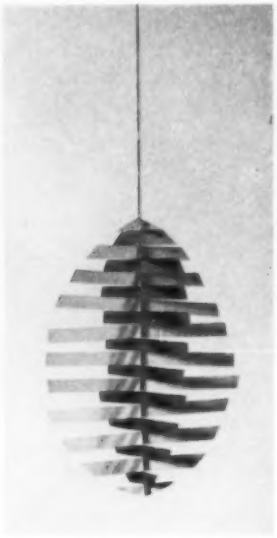
State of British design surveyed

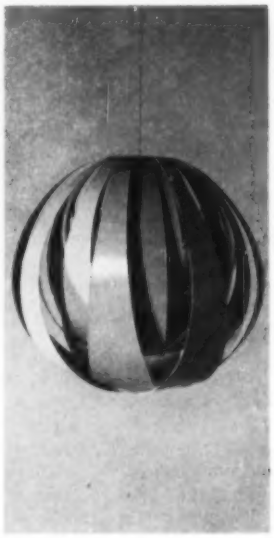
Most people still prefer "the cozy room in which one can open a bottle of stout" to a room of advanced design, says Sir Gordon Russell in a foreword to the British Council of Industrial Design's 14th annual report, released last month. "It would not be an overstatement to say that in the immediate past the majority of people in this country went through life without becoming aware of their surroundings in any vivid way." Even so, Sir Gordon believes that "the taste of the average member of the public is ahead of that of the average retail buyer." He also scatters a few shots at his country's overseas exhibition policy, declaring that "an international exhibition of the best examples of industrial design, such as the Triennale in Milan, is nobody's child." Sir Gordon, who retires this month after 11 years as director of the Council of Industrial Design, will be succeeded by Paul Reilly, deputy director since 1954.

Sir Gordon's introduction to the report is followed by a complete review of the Council's work last year. The report itself describes the growing popularity of the Design Centre, its photograph and sample design index, and designer directory service, which answered 758 requests for information during the year. It discusses the Centre's increasing influence in "the provinces" with its exhibitions in Newcastle and in Wales. And it reports on the circulation and advertising revenue of the magazine, *Design*, which is published monthly by the Council.





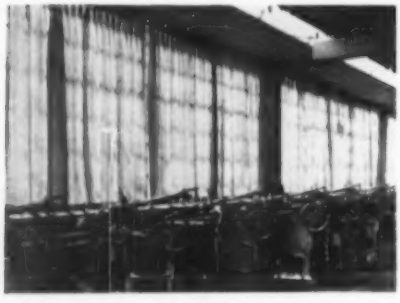




Earl paper Christmas ornaments run from complex elliptical forms (above) to simple spheres.

Curtains for curtain walls

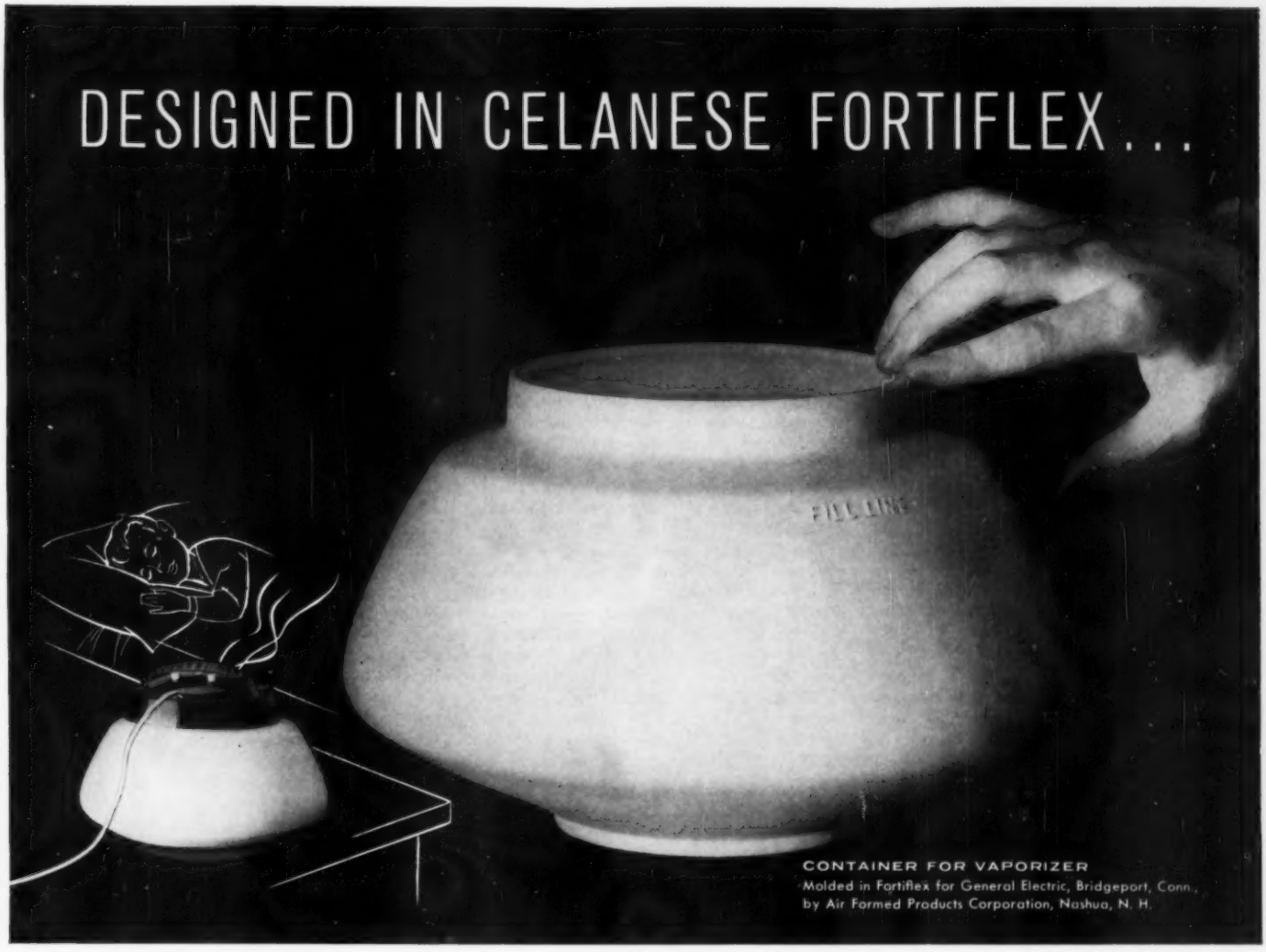
"Factory windows are always broken" goes Vachel Lindsay's famous poem. But nowadays they are seldom broken and, with the completion of tests on one of Owens-Corning's fabrics, they need not be unattractive anymore either. After a 1½-year test at the windows (left) of the Pitney-Bowes machine shop in Stamford, Connecticut, Owens-Corning Fiberglas has just released information on the material's ability to withstand wear, eliminate glare, reduce maintenance (over conventional blinds) and give good thermal insulation. The material—Fiberglas Fenestration Fabric—is not new, but it is new in its application to the huge window walls of today's glass buildings. According to the manufacturer, the fabric offers savings over conventional shading devices as it requires no periodical dusting or repair and wet washing only once every two years. Besides being used at Pitney-Bowes by Sherburne Associates, it has also been used by Eggers and Higgins for the Mutual Benefit Life Building in Newark and by SOM for the Manufacturers' Trust in New York.



Yule spirit hits Harley Earl

Two designers at Harley Earl Associates in Detroit have just been spending a busman's holiday. Inspired by the holiday season, but depressed with the triteness of traditional Christmas decorations, designers Manuel Jarrin and George Moy went to work creating decorations which would be contemporary, well-designed, yet easy to make. The result is a series of some 15 decorations, all made from paper, colored film, or foil board. One (top photo) will be used as the company Christmas card this year. The rest are lending a touch of brightness to the Earl design office for the holiday season.

DESIGNED IN CELANESE FORTIFLEX...



CONTAINER FOR VAPORIZER
Molded in Fortiflex for General Electric, Bridgeport, Conn., by Air Formed Products Corporation, Nashua, N. H.

Blow molded plastic puts steam in vaporizer design

Sometimes a material and a process make a natural team —as in the case of Fortiflex linear polyethylene and blow molding. Together, they make it possible to redesign products for better quality and greater economy.

In this blow molded bottle for the new G.E. Vaporizer, Celanese Fortiflex (a non-conductor) provides added insurance against shorting of the electrical element and contributes to safer operation. Fortiflex withstands boiling temperatures without softening. The blow molding method makes it possible to produce this difficult shape quickly and economically in large scale production. Mold costs are substantially reduced. With a capacity of nearly a gallon, the bottle weighs little more than 12 ounces and provides steam for 12 hours without refilling. Molded-in bottle colors are pink and blue.

If you need a hollow component that has good strength, why not see whether a blow molding of Fortiflex will meet the requirements? We'll be glad to send you information on both process and material.

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TYPICAL PHYSICAL AND CHEMICAL PROPERTIES OF FORTIFLEX

Properties of Fortiflex "A" Related to Melt Index

PHYSICAL PROPERTIES	ASTM METHOD	UNITS	FORTIFLEX RESINS A-20	A-70	A-250	A-500
Melt Index	D-1238-52T	—	0.2	0.7	2.5	5.0
Heat Distortion Temp. (66 psi)	D-648-45T	°F.	185	185	180	180
Brittleness Temp.	D-764-52T	°F.	−200	−180	−160	−100
Impact Strength, Izod (⅛" x ½" injection-molded bars)	D-256-54T	ft. lb./in. notch	23	18	13	3
Tensile Strength, Max., 0.2 in./min.	D-638-52T	psi.	3700	3600	3500	3300
Elongation, First Tensile Yield Point	D-638-52T	%	25	25	25	25

Properties of Fortiflex "A" Not Affected by Melt Index

PHYSICAL PROPERTIES	ASTM METHOD	UNITS	VALUE
Density		g/cc	0.96
Refractive Index	D-542-50	n_D^{25}	1.54
Hardness, Shore D	D-676-49T		65
Stiffness	D-747-50	psi.	150,000
Water Absorption (⅛" specimen, 24 hr. immersion @ room temp.	D-570-54T	%, wgt. gain	<0.01
Flammability	D-635-44	in./min.	1.0
*Mold Shrinkage length		in./in.	0.03 to 0.05
width		in./in.	0.02 to 0.04

Measured on injection molded tensile bar. Mold shrinkage depends on part design and molding conditions.

Celanese Corporation of America, Plastics Division,
Dept. 116-L, 744 Broad Street, Newark 2, N. J.

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Fuller projects shown

Models, photographs and sketches of Buckminster Fuller projects ranging from early house and car schemes to a recent proposal for a dome covering half of Manhattan were exhibited at the Museum of Modern Art in New York last month. These supplemented the current outdoor display of structures (ID, October 1959) by the famous engineer-designer.

Among the projects represented in the display were a greenhouse, a multi-story building, an airplane hangar, a railroad tankcar repair center, and an athletic center (shown below). The proposed athletic center consists of a huge dome, 650 feet in diameter, covering a football field, a basketball court, a track, a baseball diamond, a hockey rink, a stadium and service facilities. The dome, represented in the model as clear plastic, would actually be made of a metal frame with plastic panels.

Several diagramatic models illustrating various structural systems developed by Fuller were also exhibited. Among these is a tensegrity mast similar to the one on display in the Museum garden, but demonstrating more perfectly the Fuller principle of discontinuous-compression, continuous tension.

The Fuller house, shown in a three-foot-across metal model which is in the permanent collection of the museum, was designed in 1946. The three-wheeled Dymaxion car, shown in photographs, was designed in 1933. Also shown in photograph form were the huge, city-size dome (superimposed on a photograph of Manhattan) and the disposable cardboard dome which also appears, in the round, in the Museum's packaging show. This dome has been used as a tent by the U. S. Marine Corps.

The exhibition was selected by Arthur Drexler, director of the museum's Department of Architecture and Design, and designed by Wilder Green, the department's assistant director.

Films and lectures on the film

The art of the film is the subject of a series of programs planned by the New York branch of the Young Men's and Young Women's Hebrew Asssociation to run through the winter. In addition to showing important shorts, features, documentaries, and experimental films of both the past and present, the series will include lectures and commentaries by film directors, writers, editors, actors, and critics who are particularly interested in the film as an art form.

The first part of the season was given over to a cycle of classic Russian films, ten in all, among which was *Road to Life*, *Mother*, *Earth*, and *The Battleship Potemkin;* the last three were judged to be among the twelve greatest of all time by the Brussels International Jury of film critics and historians. The cycle also included two lecture programs. On December 1st, Len Lye discussed his work in kinesthetic motion and his other experimental work with the film. On January 24, Francis Thompson, whose film, *N. Y., N. Y.,* won first prize at this year's Cannes Festival, will talk on The Distorted Image and will illustrate his ideas with examples from his own work.

The YMHA is at 92nd Street and Lexington Avenue, New York. Tickets are available for single programs or the entire series of films and talks.

Symposium on play philosophies

At a meeting of the Architectural League of New York last month, David Aaron, Victor Lundy, and William Pahlmann discussed their designs for recreational facilities, and their philosophies of recreational design and planning, as they are reflected in their work.

Architect Lundy argued that recreation should be thought of as *re-creation*—literally, experience that stimulates the rebirth of a person's zest for work. The design of recreational buildings, Lundy pointed out, provides an architect with an unusually fruitful opportunity to introduce beauty into the lives of people—for it touches their lives at a time when they are especially responsive to beauty.

David Aaron, designer, and President of Playground Corporation of America, spoke on "The Playscape—a new concept in playgrounds." Mr. Aaron described playgrounds fitted with sculptured pieces and bars manufactured by his firm, and divided into categories by type (according to function) and complexity (according to children's ages). "Poly Blocks," for example, are pressed steel hexagonal blocks with bright-colored aluminum tread plates, preassembled to form bridges, cliffs, walls and gates. They range in complexity from simple stepping blocks for three-year-olds to six-foot-high "mountains" for ten-year-olds.

William Pahlmann, interior designer, related some of his experiences in designing recreational clubs, emphasizing how important it is to be aware of how one person's idea of recreation may differ from another's.

Each of the speakers illustrated his talk with slides.

Len Lye—production still from "Tree of Hope"

(Credit—United Nations)

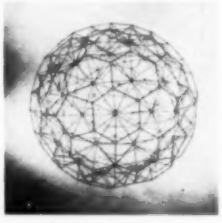
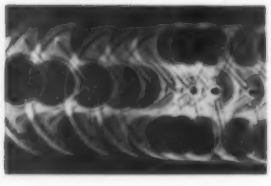
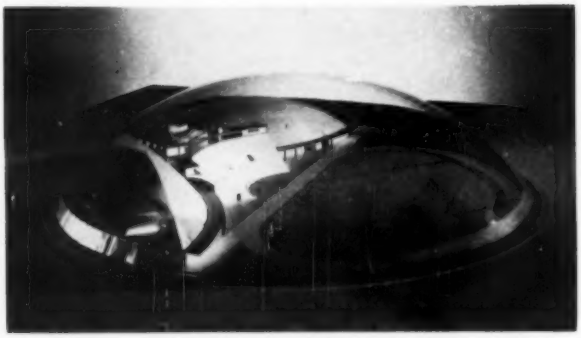


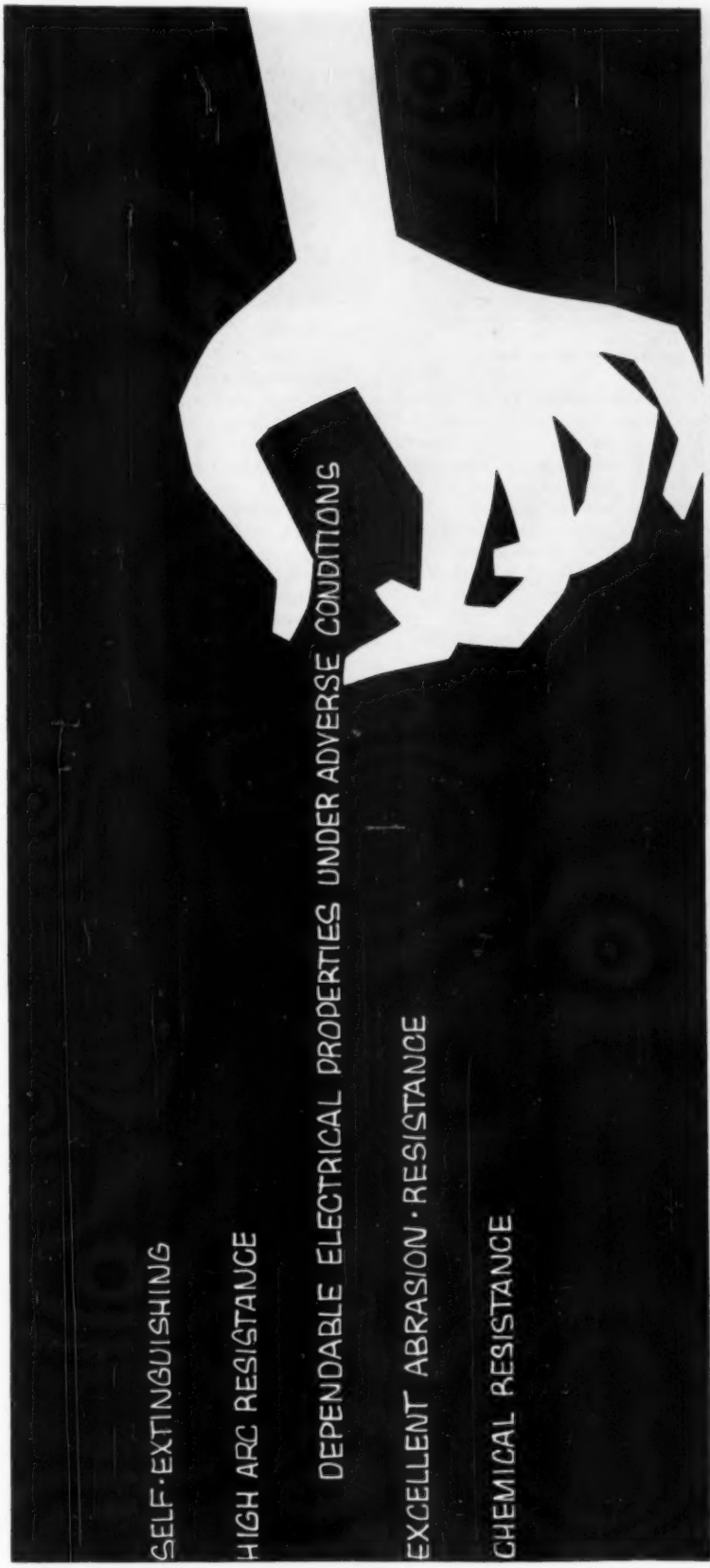
Photo of a diagrammatic model of a double-walled sphere, by Buckminster Fuller.



Francis Thompson's film reel distorted through prismatic lens



Project for an athletic center, 1959, by Buckminster Fuller.



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Beauty treatment for balloons

The big comic balloons which are a feature of the annual Thanksgiving Day parade sponsored by Macy's, New York, will be sporting a new coat of paint this year, and will once again be filled with helium (last year a government regulation forbid its use, so plain air and giant derricks were substituted to keep the figures aloft). "Spaceman" (above), "Popeye," "Turkey Gobbler," and "Observation Balloon" have just returned from the Litchfield Park, Arizona, plant of Goodyear Tire & Rubber Company, where they underwent refurbishing. Goodyear has been making the balloons for the Macy parade for 30 years. Of the four currently in service, "Spaceman," 70 feet high, is the largest.

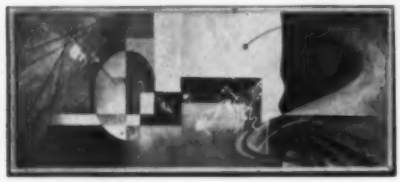
Housing & feeding equipment shown

The 44th National Hotel Exposition, sponsored by The New York State Hotel Association and The Hotel Association of New York City, was held at the New York Coliseum in November. The exposition—a show of equipment for hotels and motels—included cooking utensils and furniture; there were 614 exhibitors.

Featured in the show were two exhibits incorporating new products. The Outside Inn, designed by Henry End, was a dining center consisting of an inside dining room, an outside dining terrace, a coffee shop, and a cocktail lounge and bar. The Room of Tomorrow, designed by Tom Lee, was a hotel-motel room planned to utilize a small space to the best advantage.

Paintings derived from industry

The Silvermine Guild of Artists, in Connecticut, which frequently plays host to meetings of industrial designers, is currently exhibiting a group of paintings inspired by the objects of industry and technology. The paintings are on loan from the Bundy Corporation, of Norwalk, Connecticut, manufacturer of electrical connectors, and the show has been organized by industrial designer John Vassos, board chairman of the Silvermine Guild. One of Mr. Vassos' paintings (below) is represented in the collection.



Uses-of-zinc competition held

A design awards competition is being held by the New Jersey Zinc Company for the best use of a zinc die casting in a product part which was formerly, or otherwise might have been made, as a casting or stamp of other metals. To qualify, entries must be of unusually light weight construction, and will be judged on efficient utilization of the die casting process for zinc. The judges will be three editors of metal-working magazines.

Cash awards of up to $200 for the first prize will be given to the winning designer. The entry must either be in production or imminently so. Information may be had by writing to "Lighter Than You Think" Contest Editor, The New Jersey Zinc Company, 160 Front Street, New York 38, N.Y. The last date entries may be submitted is January 31, 1960.

Philadelphia honors architects

The Philadelphia chapter of the AIA last month sponsored an exhibition of architectural design in the area, and awarded prizes to the firms of Geddes, Brecher & Qualls; Vincent G. Kling; Nolen & Swinburne; Pietro Belluschi in association with Charles Frederick Wise; and Kneedler, Mirick & Zantzinger. The jury was composed of Peter Blake, Hugh Stubbins, and Hugh Wiley, with John Johansen of Harvard University serving as chairman.

Company News

RETAINED: **Peter Quay Yang Associates** by Robertson Manufacturing Company, maker of tiles and ceramics, as consultant on products and advertising . . . **Charles Butler Associates** by American Motor Scooter Corporation as design consultants . . . **Shaw, Metz and Associates**, architects, by the trustees of the Art Institute of Chicago to design the new Morton wing to the institute . . . **Buffie Johnson**, painter, to design abstract murals for the Astor Theater, opening in New York this month.

NEW OFFICES: **Trademark Management Institute**, a subsidiary of the James M. Vicary Company, to develop and test new trademarks, at 22 East 60th Street, New York 22, N. Y.

GOING PLACES: **Design Directions, Inc.** to 307 Fifth Avenue, New York 16, N. Y.

Culberg

Arnesen

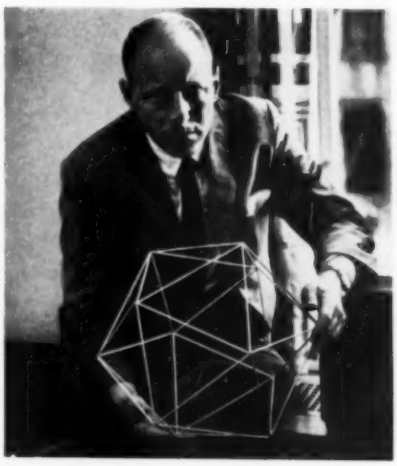
. . . **Jack Lenor Larsen, Inc.** to 677 Fifth Avenue, New York 22, N. Y.

COMPLETED: by **Robert Zeidman Associates**, a corporate identity project for the Graphic Controls Corporation of Buffalo, New York, a holding company of firms producing printed charts and forms for automation; and for themselves, a corporate symbol—a icosahedron, or a twenty-sided geometric figure (shown below with Mr. Zeidman) . . . By the **Chemetron Corporation**, a model of a food refining plant, designed by C. W. Hancock, for their exhibit at the first World Agricultural Fair at New Delhi, India.

People

APPOINTED: **Richard Arnesen** (above) as associate in Smith, Scherr & McDermott, industrial design firm of Akron, Ohio . . . **Jack Lenor Larsen** and **Win Anderson** as co-directors of the department of fabric design at the Philadelphia Museum College of Art . . . **John Cacel** as director of product engineering and **Anthony Barsanti** as associate product design coordinator at Domenico Design Associates of N.Y. . . . **J. J. Culberg** (above) to the planning council of the American Management Association's Packaging Division.

ELECTED: **Margery Markley** as executive vice-president of Package Designer's Council for 1959-60.



Zeidman with icosahedron

NICKELOID METALS IN A *Woman's World*

Part of that happy gleam in the eyes of a modern homemaker is because of the convenience, the ease, and the pleasant decorative warmth of her kitchen. Along with the soft woods and pleasant colors she revels in the easy-to-maintain gleam of clean bright appliances, housewares, working surfaces and decorative trim. The efficient chromium and the warm copper . . . seen so much about the modern kitchen . . . are most probably stamped or fabricated from one of the versatile galaxy of Nickeloid Metals. There's eye appeal and there's sales appeal in appliances and housewares which utilize Nickeloid Metals. Liked, too, by designers and production engineers. Complete information about Nickeloid Metals and the Nickeloid pre-finished metals method is contained in a special kit, which will be mailed you on request.

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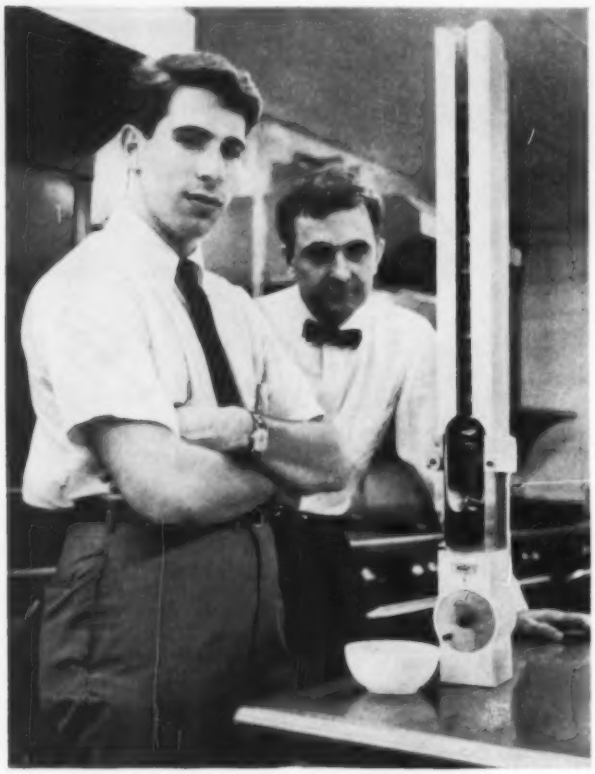
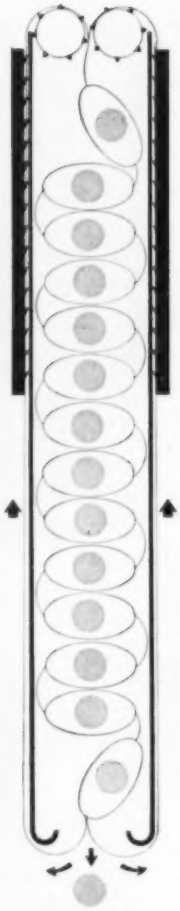
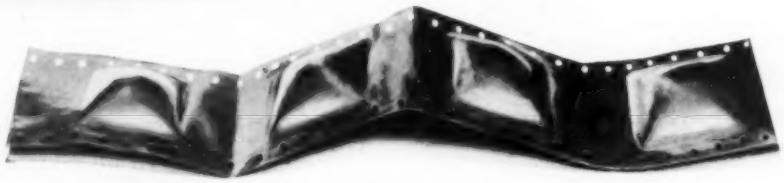
Samuel Lebowitz (foreground) and Robert A. Kolli, chairman of the Department of Industrial Design, Pratt Institute.





ALCOA
STUDENT
DESIGN
AWARD



SAMUEL LEBOWITZ REPACKAGED THE EGG IN ALUMINUM to win an Alcoa Student Design Award in his senior year at Pratt Institute.

Inventiveness and thoroughness helped Samuel Lebowitz win, according to Robert A. Kolli, chairman, Department of Industrial Design. "Our award committee felt his design showed a lot of new thinking and we feel that bold, inventive thinking by the industrial designer is indispensable. He developed two products —package and dispenser—and established their feasibility with chemists and Alcoa packaging technicians."

Shockproof and airtight, the new package ends breakage; keeps eggs fresh *without* refrigeration. Shelled eggs are heat-sealed into formed pockets of an aluminum foil strip with an organic liner. This strip is threaded into an aluminum dispenser which automatically releases eggs to the spout, one at a time.

Lebowitz chose aluminum foil packaging because it cannot affect flavor, yet has the necessary strength and formability. His selection of aluminum extrusions makes the dispenser attractive, light in weight, sanitary. His Alcoa Student Award is one of an annual series intended to encourage and reward college students who already show great promise as designers.

ALUMINUM COMPANY OF AMERICA, PITTSBURGH 19, PENNSYLVANIA

customized decorative metal...

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WHIRLPOOL BUILT-IN RANGE
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Capricious cooks like the dash of spice Decorative Metal adds to their kitchen, range-makers such as Whirlpool Corp. know.

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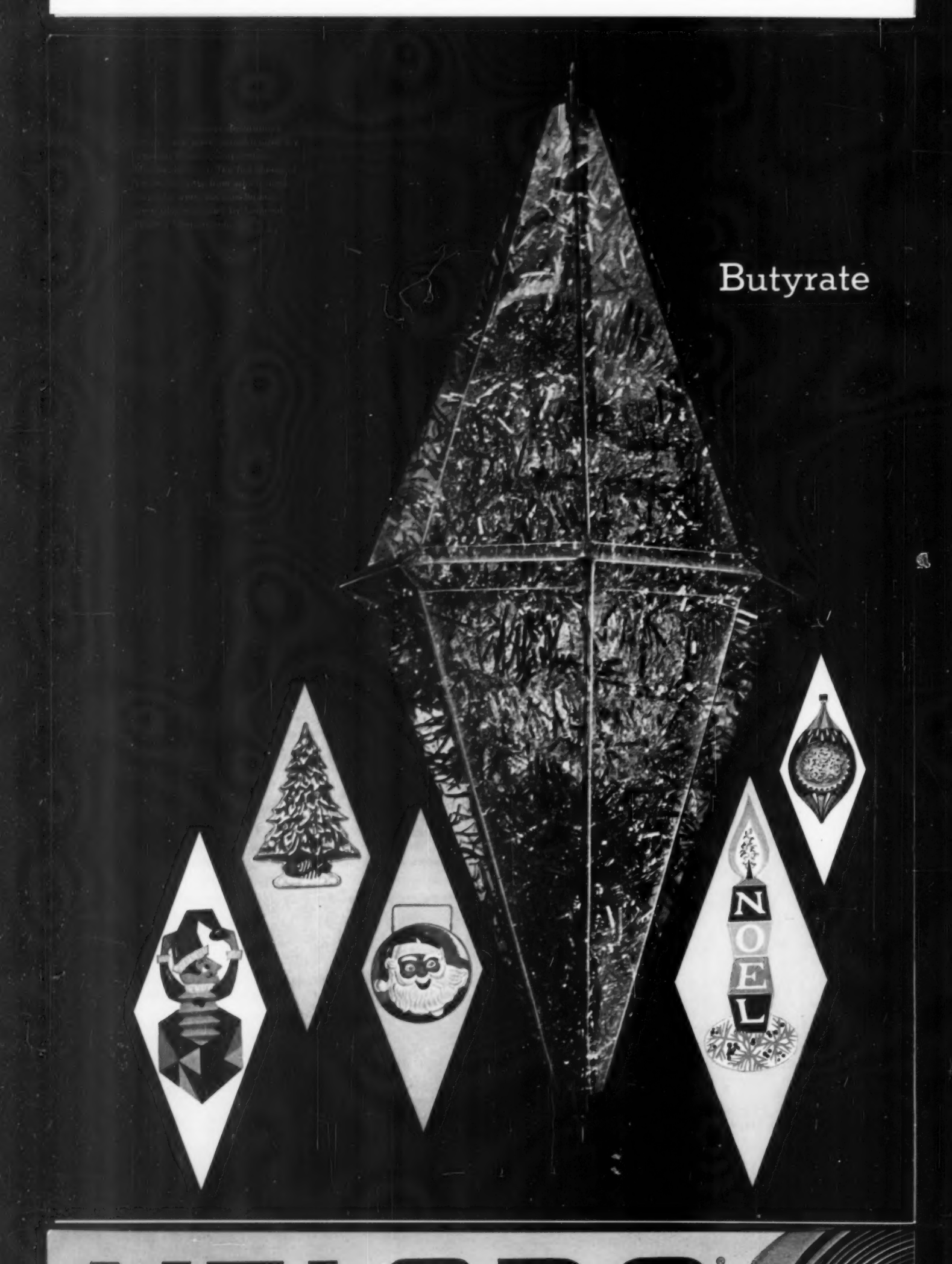
Butyrate
NOEL

gives the gift of long life to giant outdoor Christmas decorations

Street displays made of tough, weather-durable Tenite Butyrate plastic help communities spread Christmas cheer for many years

When you need a plastic with long outdoor life, you find a ready answer in Tenite Butyrate.

Its durability has been proved by displays like these and by hundreds of other applications in many different fields, including such products as automobile taillight lenses, marine buoys, outdoor signs and oil-field pipe.

Yet, the outstanding weatherability of Tenite Butyrate seldom is the sole reason for its use. Rather, it is Butyrate's *combination* of properties that usually dictates its choice for a specific job.

The Christmas decorations shown here are an ideal illustration of how Butyrate's properties can be mated to the demands of a specific use.

Outdoor durability certainly is an important consideration for these decorations. Exposed to weather extremes ranging from sub-zero Alaska to sunny Florida, they must be able to endure in any location, showing excellent resistance to cracking, crazing or "aging."

They must also be tough enough to take the abuse of repeated installation and dismantling, plus the hazards of storing and transporting.

Butyrate satisfies these requirements... and other specifications of the manufacturer, such as availability in a crystal-like, clear-transparent formulation, resistance to yellowing by sunlight, and a high surface luster.

Fabricating advantages, too, complement the service excellence of Butyrate. Because of the ease with which extruded sheet of Butyrate can be vacuum-formed over inexpensive molds on fast-cycle machines, production costs are kept at a minimum. Even decorating costs are low; for the multicolored patterns are applied by silk-screening the inside face of the display before forming, thus protecting the printing from the weather and preserving a naturally glossy exterior. Subsequent fabricating operations such as trimming, punching, stapling, riveting or grommeting are easy to carry out without danger of crazing or cracking.

If you'd like to consider Tenite Butyrate for one of your material needs, let us hear from you. We'll be glad to discuss your application in confidence, and help you evaluate the suitability of Butyrate. For this assistance or for more information, write EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

TENITE®
BUTYRATE
an Eastman plastic

VELCRO®

the "mechanical"
textile
that grips instantly
removes easily
readily adjusts!

Velcro introduces a completely new fastening method to designers and manufacturers. It is the first original development in closures in over forty years—and the first to provide the vital factor of adjustability!

Velcro is based on the revolutionary but sound principle of employing the cumulative locking strength of hundreds of tiny hooks and loops to create a powerful, adjustable bond. A closure designed with Velcro can be easily opened by a peeling action, and closed and opened thousands of times without loss of original locking strength.

Velcro consists of two woven nylon tapes that lock firmly when pressed together. In forming closures, Velcro is cut to size (in patches or lengths) and applied by stitching or adhesives. Although Velcro is a textile, its use is not limited to textile applications. It can be used on metal, wood, plastics or other materials.

Since its recent introduction, Velcro has revolutionized the design of many consumer products . . . improved the operation of equipment . . . inspired designers to new product ideas. Applications of the Velcro principle are already in use in quick-change chemical and dust filters and roller pads, safety equipment, removable automotive and aircraft upholstery, surgical equipment, displays, sporting goods and luggage, conveyor belts, and clothing.

A sample of Velcro is all that's needed to start your thinking about the tremendous possibilities of this unique closing device and how it can solve a host of industrial fastening problems. Return the coupon below, and a sample of Velcro will be mailed to you immediately —together with specific data and application information.

Velcro Sales Corporation, 681 Fifth Ave., New York 22, N. Y.

Please send me complete Velcro Fact File.

Name _____ Title _____

Company _____ Product _____

Address _____

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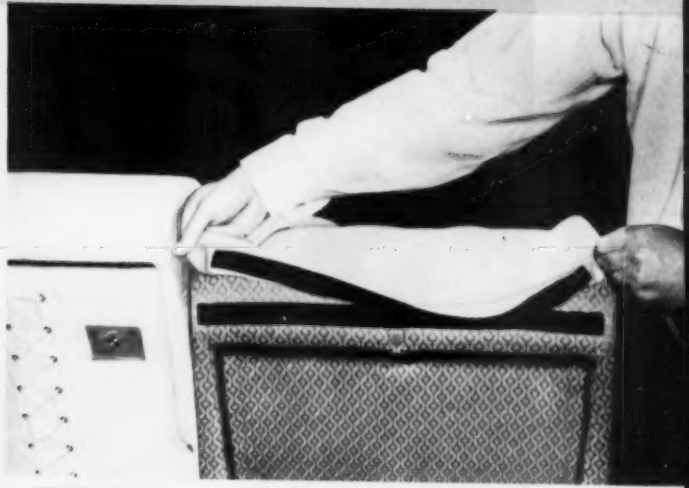
VELCRO®

VELCRO SALES CORPORATION

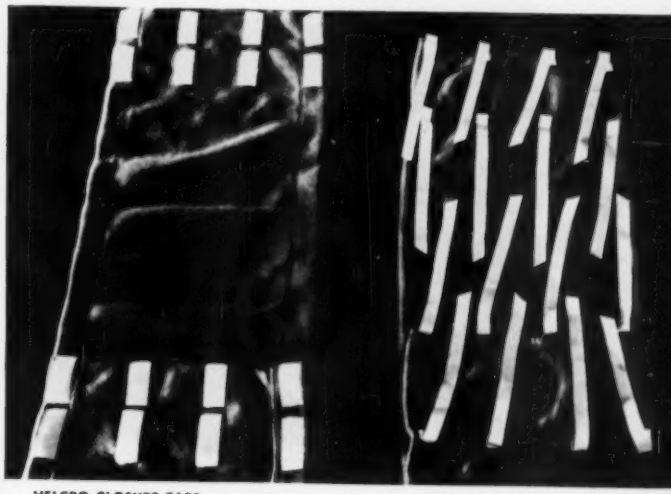
681 Fifth Avenue, New York 22, N. Y.

ept in fastening

GREATLY ENLARGED PHOTOGRAPH shows Velcro construction, and how the nylon hooks engage the randomly woven loops upon contact. Due to nylon's "memory," hooks spring back to shape after being peeled from loops. Independent laboratory tests have shown that Velcro can be opened and closed 32,000 times without loss of holding power. Velcro cannot seize or jam.

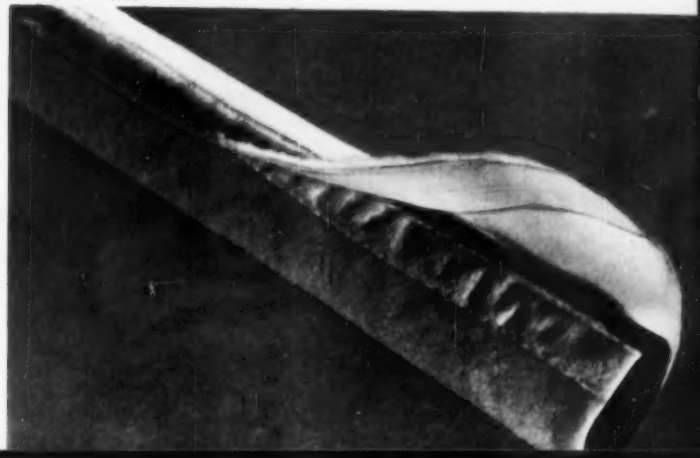


VELCRO can be dry cleaned repeatedly without damage. It has earned the American Laundry Institute and Good Housekeeping seals. Here, Velcro is used in upholstery coverings of latest passenger aircraft.



VELCRO CLOSURE TABS on continuous vacuum filter belt permit rapid attachment, removal or adjustment. Old model at right depended on tapes and ordinary slow hand tying.

VELCRO FASTENERS speed processing in paper plant. They cut time required to change cloth sleeves on rollers of coating machines from four man-hours to ten man-minutes.



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New ideas . . . new designs with LUCITE®

ACRYLIC RESIN

NAME-TAG HOLDER for office intercom consists of two precision-extruded parts of LUCITE. Top piece acts as magnifying lens and safeguards tag. ("Key-Municator" by Stromberg-Carlson Co., Rochester, N. Y. Parts by Anchor Plastics Co., Inc., Long Island, N. Y.)

The unique combination of properties offered by Du Pont LUCITE has frequently been the stimulus for a new design idea. Consider, for example, the opportunities for simplified design, economy, superior performance and appearance that are opened by these engineering properties: LUCITE can be precision-extruded or molded; it provides high strength; its clarity is comparable to that of the finest optical glass; it withstands weather extremes; it offers unusual latitude in surface texture and color; it is easily machined, requiring little or no finishing; it is resistant to chemicals and non-toxic.

The availability of these properties in a single engineering material may well suggest to you an idea for a design improvement. Further information on properties and applications is available to you in a booklet: "A New Look at the Product Design Qualifications of a Popular Plastic, LUCITE". For your copy, write to: **E. I. du Pont de Nemours & Co. (Inc.), Dept. T-12, Rm. 2507L, Nemours Building, Wilmington 98, Delaware.**

In Canada: Du Pont of Canada Ltd. P.O. Box 660, Montreal, Quebec

LUCITE®
ACRYLIC RESIN

POLYCHEMICALS DEPARTMENT

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Velcro can be opened and closed 32,000 times without loss of holding power. Velcro cannot seize or jam.

(*Continued from Page* 17)

gerous kind. The difference is not one of truth, but of the different realms to which these two forms of art belong — the realm of matter and the realm of spirit.**99**

Helen Papashvily, *"Holiday Handbook of 20th Century Antiques", Holiday, Nov.* 1959, *p.* 150.

66It is only fair to warn collectors rummaging through the artifacts of this century that they face problems unknown to their predecessors. There is no limit to the quantity of the material—man probably produced more in this century than in all his previous time on earth—but the quality is another story. An Elizabethan chair may be more durable than a modern one, for among our contributions to technology and economics is the concept of the object made not to wear but wear out—wonder fabrics that dissolve, metal trim added solely as a rust attraction, form and color used to make objects conspicuous today and obsolete tomorrow.**99**

"Breaking the Cost Barrier", *editorial by Hartley W. Barclay in Automotive Industries, Oct.* 15, 1959, *p.* 59.

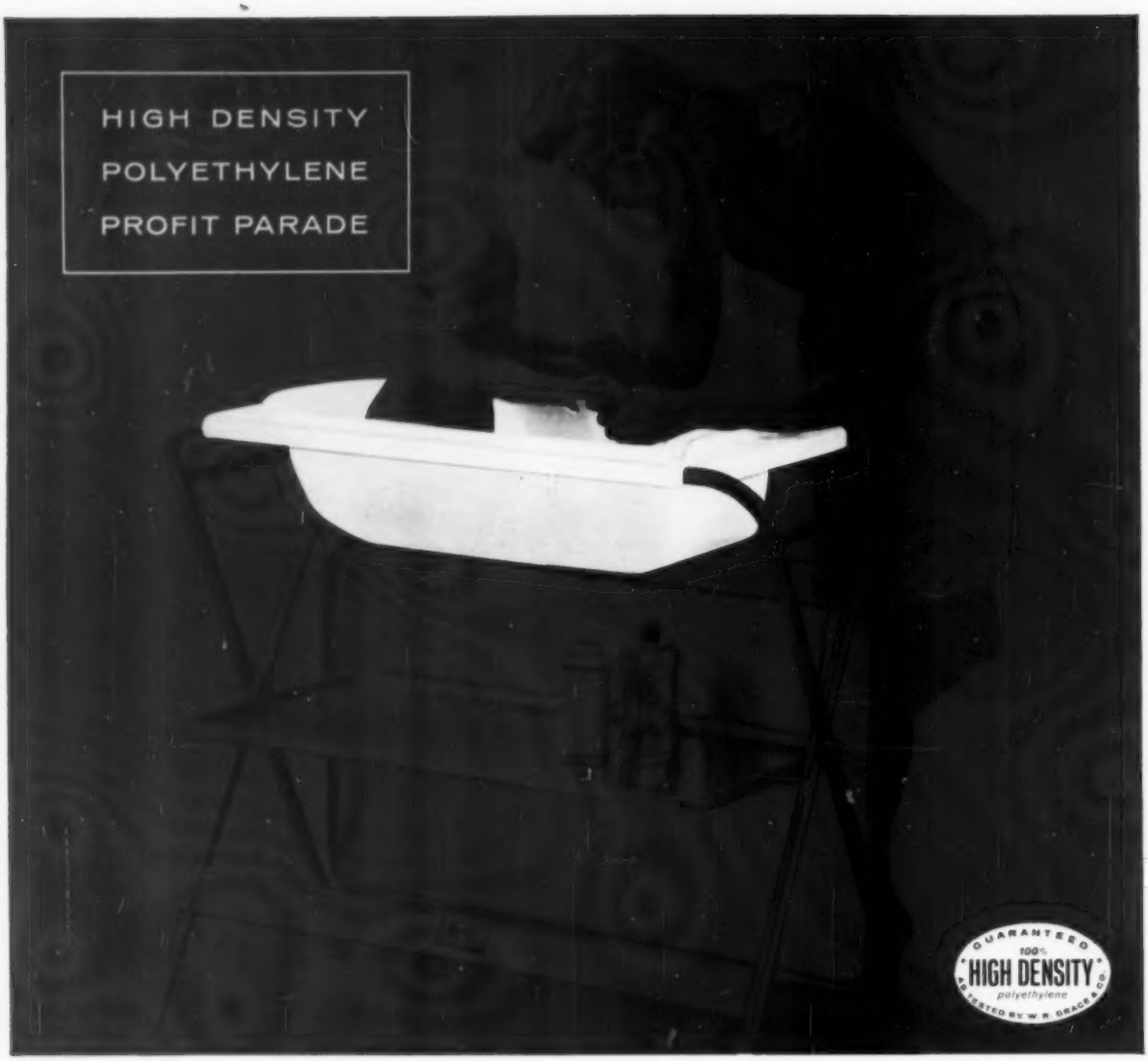
66The combined examples of effective design, engineering and manufacturing of the automotive industry and the broad range of suppliers to the industry, provide a very real and vivid example of importance and significance to the federal government. Surely, if the automotive industry can provide a "break-through-on operating-costs" for automobile owners, the federal government can provide its parallel "break - through - on - reduction - of - governmental costs." Certainly if the automotive supplier manufacturers can show such a broad range of new ways to make more products at lower costs, the federal government can find new ways to reduce operating costs and taxes and at the same time succeed with all necessary advances in vital public services. For producing these great "break-throughs" in industry, both the automotive manufacturers and their suppliers deserve the gratitude of every alert and well informed citizen.**99**

Henry M. Wriston, *"Humanists and Generalists," The Annals of the American Academy of Political and Social Science, Sept.* 1959, *p.* 14.

66It seems reasonably clear that, in a free society, planning can be relied upon almost in inverse ratio to development. It is easier to plan for a static or slowly expanding, rather than an explosively dynamic, society. Where science and technology, research and development are pressed, successive "break-throughs" make earlier calculations seem absurd. . . . If security is essential, if hazard is to be reduced to a minimum, if even the marginal worker — at whatever level — is to be protected in the specific job he holds, planning cannot be bold, for boldness and security do not go together.**99**

W. Sam Carpenter, *General Manager of the International Department of E.I. du Pont de Nemours & Company, in a speech to the National Foreign Trade Convention, November 17, 1959.*

66In evaluating a product to be manufactured overseas, the contribution that the product can make to the economy in which it is to be produced is a very important consideration. It is one that seems sometimes to be overlooked. Products which do not require heavy importation of raw materials and ones that provide business opportunities are those needed most particularly in countries at an early stage of industrialization. All countries need basic products that will bolster their economies before they need the more sophisticated luxury products, and in many cases the older product is one that is surprisingly profitable simply because it fulfills a more fundamental economic requirement.**99**



Exclusive Selling Advantages Offered in Lifetime Tub

Products in many different fields are gaining an edge over competition by utilizing the benefits of Grex high density polyethylene. The "Lifetime Tub" by Baby Bathinette Corporation is an example that really holds water.

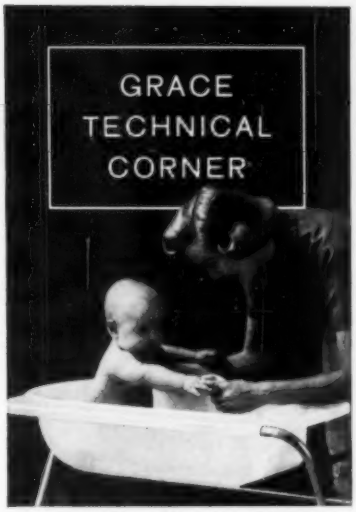
This well-known manufacturer chose Grex to make a tub that would outlast competitive models since this is a tough plastic that is virtually indestructible. They used its molding characteristics to obtain a soft, pleasant, easy-to-clean texture. They took advantage of its strength and rigidity to make the tub light in weight for greater ease of carrying.

This new Grace plastic offers a unique combination of properties to help you create unique selling advantages. It takes a beating without chipping, cracking or breaking. It can be molded in any color and decorated. It resists the elements and most corrosive chemicals. And it is the only thermoplastic that takes boiling or freezing without losing its shape or strength.

If you need an idea of how to gain an edge over competition by using high density polyethylene be sure to call in the experts. Grace has the production facilities, technical service and experience to help put your product in the Grex profit parade. We're easy to do business with.

Grex is the trademark for W. R. Grace & Co.'s Polyolefins.

W.R. GRACE & CO.
POLYMER CHEMICALS DIVISION
CLIFTON, NEW JERSEY



Grex answers design and molding problems on extra-large piece.

Don't let size limit your thinking when designing or molding with Grex high density polyethylene. The "Lifetime Tub" shown here is 30½" x 6½" x 19"—one of the largest pieces so far injection molded with this Grace plastic. Some of the technical thinking that went into this job may give you an idea of how to get the most from Grex.

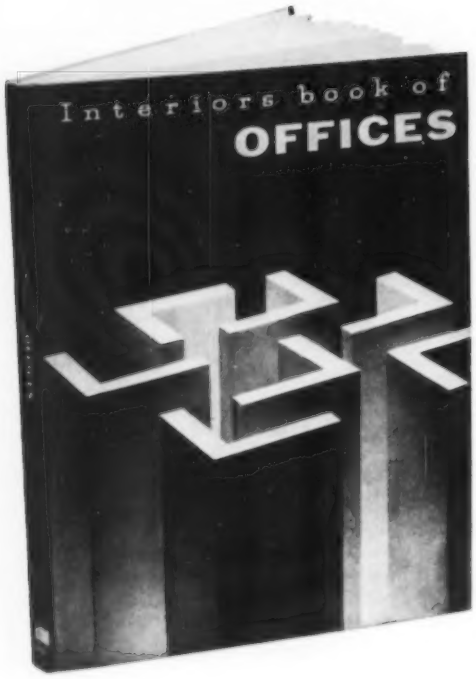
Cost a design factor. Production of a piece as large as this tub invariably presents a cost problem. Taking advantage of the way Grex performs in thin wall sections, the designers were able to keep the amount of resin per tub to a minimum and permit economical cycle times. Use of thin walls, however, called for a design that would not only take care of the weight of baby and water but also provide for satisfactory suspension of the tub in its metal frame. Reverse curves solved both problems and minimized use of ribs and fillets to avoid heavy sections, sinks and depressions.

Mold surface. Depending on mold surface, Grex takes any finish ranging from high gloss to matte. In this case, it provided a smooth, pleasant texture—essential to protect baby and make cleaning easy—through the use of a highly polished chrome-plated mold.

Molding technique. Production of the tub involved a 3-pound shot of Grex, a large mold cavity and thin wall sections. Under these conditions, multigating was chosen over normal gating. With four gates the cavity was filled faster and strain reduced.

What are your problems? If you have a job in mind for high density polyethylene count on Grace for help. Now's the time to call, wire or write:

Technical Service Department,
Polymer Chemicals Division,
W. R. Grace & Co., Clifton, N. J.



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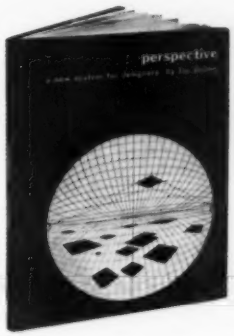
edited by George Nelson A comprehensive collection of answers from all over the world to one of today's most challenging problems in residential and contract interior design—provision for adequate, convenient storage space. George Nelson here demonstrates the most imaginative and functional solutions. 176 pages, 303 illustrations. $12.50.



Perspective

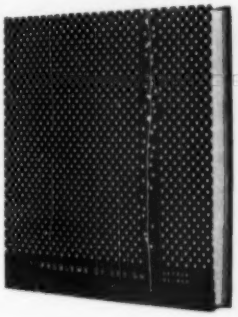
by Jay Doblin This new system of perspective eliminates the complex mechanical drawing traditionally employed as a basis for perspective. It has proved to be a great help to everyone whose work requires the representation of objects in perspective for it is a tremendous time saver. A must for designer, draftsman, architect. $5.

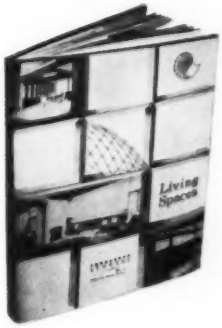
Display

edited by George Nelson Here are the ingenious and successful displays that have set new precedents in shop, showroom, museum and exhibition. A complete review of the new systems created by more than 125 top designers and architects to attract attention and capture interest. 192 pages, 9 x 12, 312 illustrations. $12.50.

Problems of Design

by George Nelson who's unique insight into design requirements for marketing success has helped many manufacturers achieve leadership in their fields. This book shows how to design for success in any and all areas of American business—a book that bridges the gap between creator and user. 206 profusely illustrated pages. $10





Living Spaces

edited by George Nelson This wonderful collection of living spaces was originally selected by the editors of Interiors and it includes the names of all the famous architects and interior designers of the day. Among the 81 designers represented are Finn Juhl, Le Corbusier, Richard J. Neutra, Mies Van der Rohe. 148 pages, 9 x 12, 232 illustrations. $7.50.

Anatomy for Interior Designers

by Francis De N. Schroeder 1,312 essential modular measurements of anatomy which every designer must keep handy for constant reference, whether he is drafting a doorway, a unit of furniture, or the interior of a jet plane. Designed to take the place of hours of research and eliminate design errors before they are made. 96 pages, 9 x 10. $4.00.

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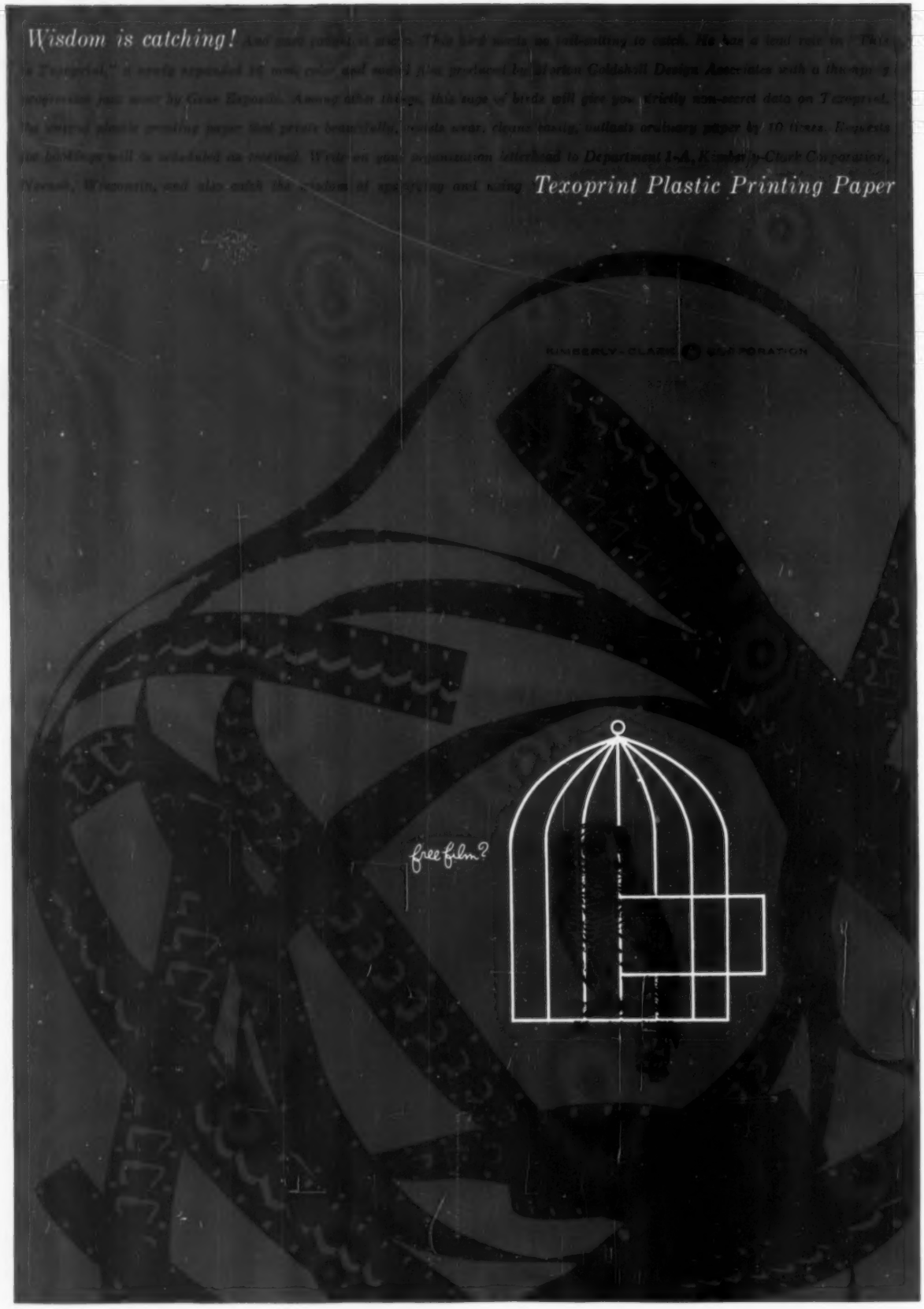
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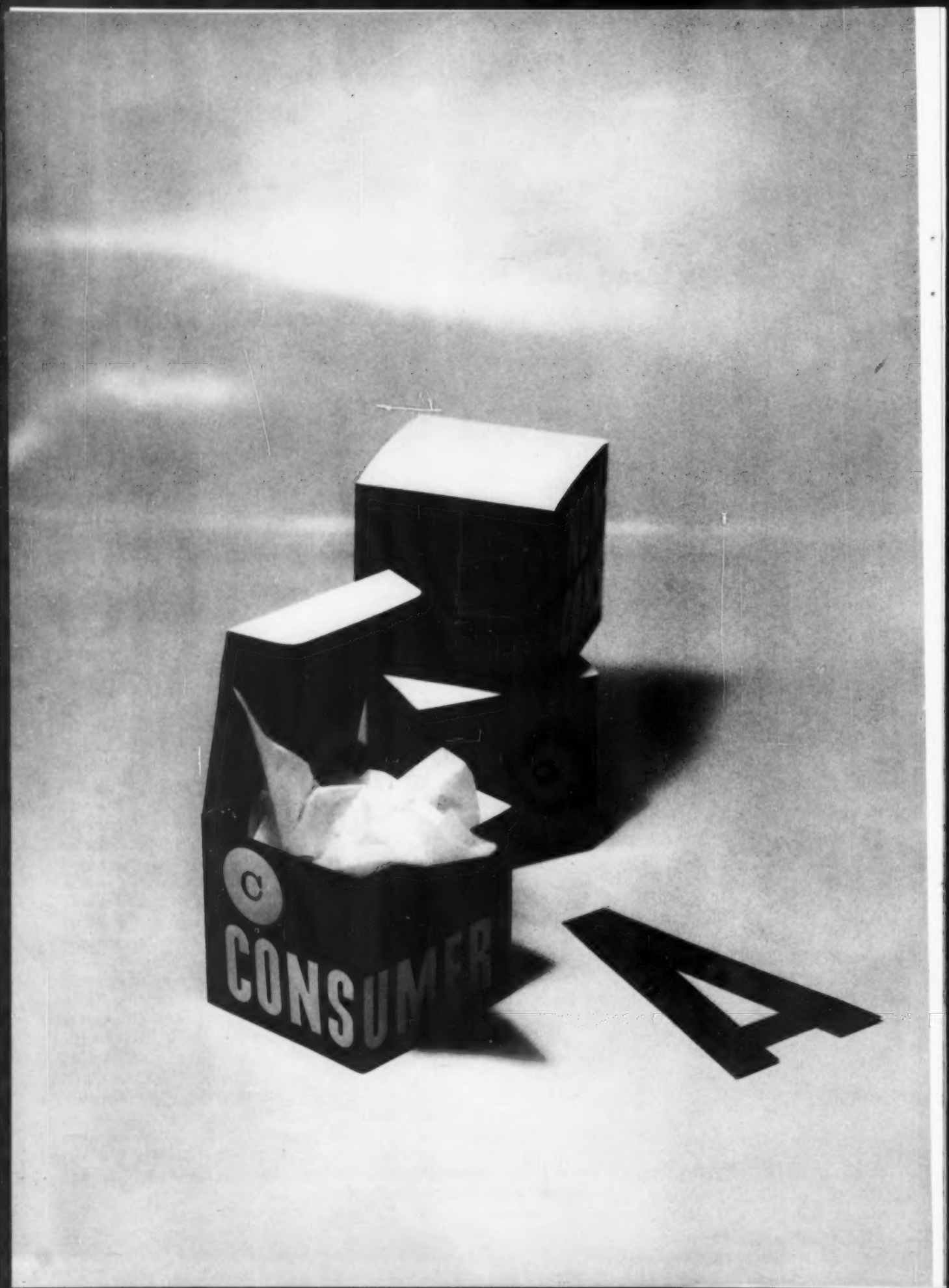
No trend, no theme

This is the sixth time we have tried to describe a year in terms of its design. And this is the page on which we customarily announce the trends, the patterns, the themes without which nothing called an "annual review" can seem authentic. Well, this year we discern no trends large enough to characterize the year's work, and we have decided to resist the editorial temptation to impose a "theme" on the year as though we were decorating a high school gymnasium for the senior prom. Maybe that's news in itself.

No trend? No theme? Last year we talked about "more with less," not because the principle was formulated in 1958, but because that year brought it to a visible culmination in many areas. This year, however, consumer goods seem to represent "just as much with not quite so much less"—a change that registers only a barely perceptible flicker on what is normally a significant segment of our barometer. In electronics, on the other hand, there is even more with even less. The "glob" circuits on page 88 show what spectacular results technology can achieve when it gets down to essentials; and the instruments on pages 92 through 101 suggest that electronics equipment, along with industrial goods in general, has taken over design leadership by persistent attention to *essentialness.*

A word of caution about all our choices. In evaluating products for ADR we can judge on the basis of such criteria as innovation, organization of components and controls, imaginative use of materials, humane concern for the user, and sheer visual finesse and appropriateness. But beyond all this lies the critical question of technical excellence: how well does the thing work? Hopefully, when we select a superior design we expect it to enclose an advanced and reliable piece of engineering. But we know that the correlation is not inevitable. We are fully aware that some of the most stunning designs seen on the pages that follow may, seen in the hard light of consumer reality, be rejected because they are slower, less efficient, more costly, or prone to mechanical failure. These things we do not presume to evaluate; we have no testing laboratories, we confer no seal of approval for product engineering. Yet in waiving responsibility for the engineering behind the designs, we do not think for a minute that the designer can waive it too. For the designer must work with the engineer not just to get his part of the work done (as though it could ever be isolated!), but to exert influence and even pressure on the product's total quality. First because, as the industrial equivalent of the craftsman, he can never divorce his art from the quality of the object it shapes. And second because, although the industrial designer's rights in this matter may seem small, his presumption rests on a big pragmatic argument: in the long run, consumers learn where appearance belies reality, and when they do, their resentment and distrust take the very active form of sales resistance. It's happened in advertising, it's happening in television, and it could happen here.—*The Editors*


CONSUMER

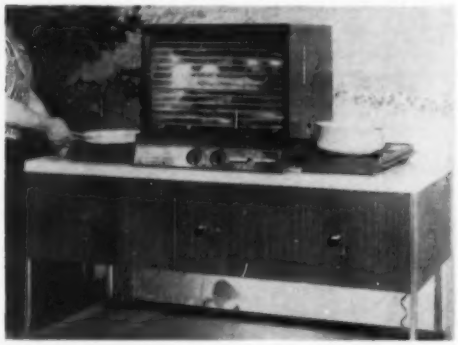
C

MAJOR APPLIANCES

While experimental devices are not really part of the year's produced design, those shown here seemed to belong because the future they point to appears to be more a matter of time than of fantasy. Furthermore, the importance of the new materials is that they have to do less with such subsidiary concerns as portability, than with the primary purpose of ranges and refrigerators: heating and cooling. Built-ins are too much with us to be called a "trend" any longer. Everyone is making them and, because of the big builder's market, everyone will probably go on making them. General Electric in particular is taking design advantage of this phenomenon as an opportunity to improve the configuration of appliances, as in the one-piece range (5) and the range hood that offers controls at eye level (6). As far as this year's controls in general are concerned, we can't do better than to quote from an inter-office memo on the subject turned in after a field trip by one of our special consultants, a no-nonsense housewife: "Particularly in washing machines everyone is control happy. Most of the decorative ones are the least defensible practically—that is, large amounts of space are given to telling you how you want to wash certain things; buttons have to be correlated with other buttons for no good reason I can see, or maybe elaborate, hard-to-use levers give you a choice of two simple alternatives. The high backsplash is also in style, and when they run out of levers and charts to decorate it with they just leave an empty glass case with concealed lighting that looks as if it's waiting for a troupe of puppets. Then of course there are those chrome strips across the front of most washers. A glance will tell you that the Easy is one exception: a combination machine, it has less dial than any of the single machines. My! All these crazy machines are trying to soothe the housewife and tell her that she doesn't have any more work now that they are there. They look like Musak to me. Musac? Muzak."

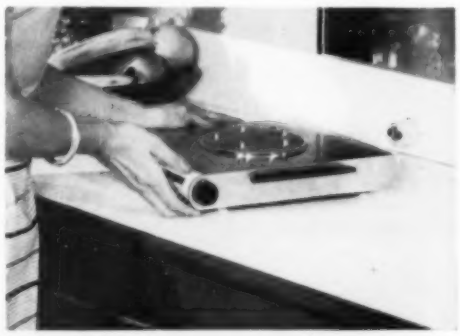
1 Surface cooking unit
Hotpoint Company, Chicago
Raymond Sandin, Manager of Industrial Design; Charles D. Dushek, staff designer

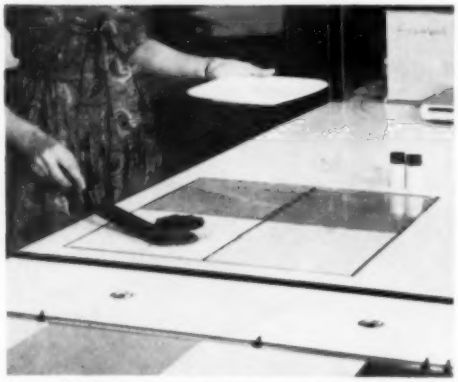
Unit quadruples as thermostatically controlled burner, dutch oven, french fryer, coffee maker.



2 Countertop range
Hotpoint Company, Chicago
Raymond Sandin, Manager of Industrial Design

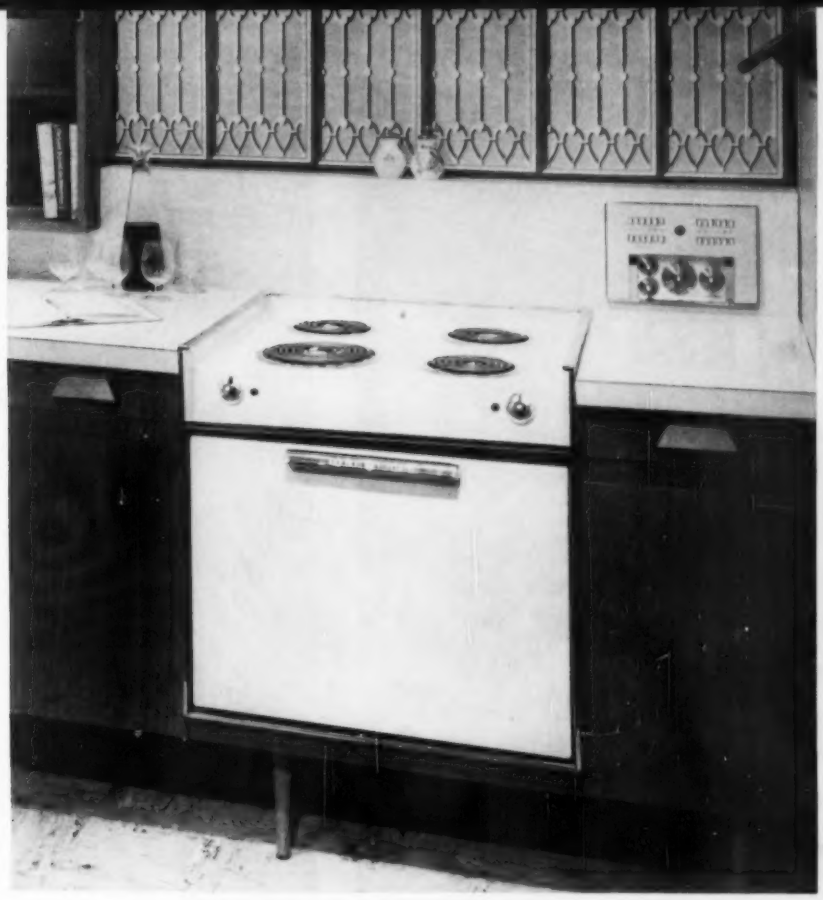
Oven door of Custom Trend small home or auxiliary range raises upward like roll-top desk; two-burner units pull out from base.





3 and 4 Portaburner and Pyroceram surface
RCA Whirlpool, St. Joseph, Michigan
Sundberg-Ferar, consultant designers

Above, disk of porous silicon carbide provides flameless heat, attaches to scattered gas outlets in RCA's Miracle Kitchen. Pyroceram projections support pot. Below, silicon carbide burner is covered with thermostatically controlled Pyroceram surface, providing cooking range of 150° to 650°.

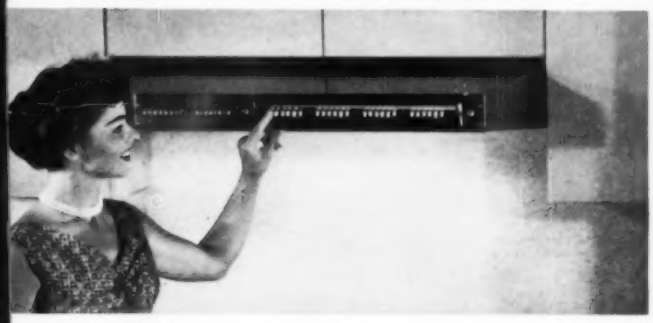


5 Range
General Electric Company, Louisville
Arthur N. BecVar, Manager of Industrial Design; Edward W. Harrison, account designer

Built-in unit combines burners and oven. Top surface has been lowered to more convenient stirring height. Separate controls may be installed anywhere.

6 Range hood
General Electric Company, Louisville
Arthur N. BecVar, Manager of Industrial Design

Ventilating hood, copper or stainless steel, incorporates range controls at eye level, out of children's reach. Fan and interior light removable for cleaning.



7 Wall oven
Hotpoint Company, Chicago
Raymond Sandin, Manager of Industrial Design Section; Ralph LaZar, project head

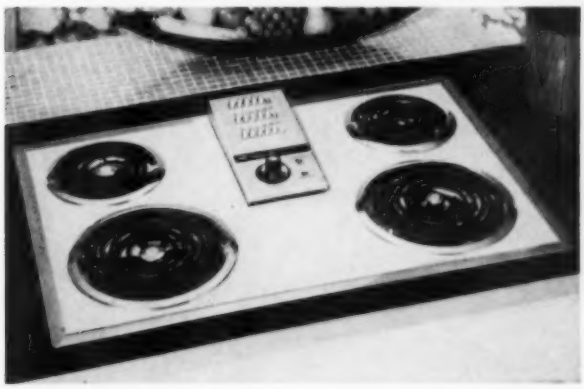
Mirrored oven window becomes transparent when oven is lighted. Right and left control mountings.

8 Wall oven
Frigidaire Div., General Motors, Dayton, O.

French doors take 10 inches less clearance than conventional oven doors, permit housewife to stand close. Both doors open when one is pulled.

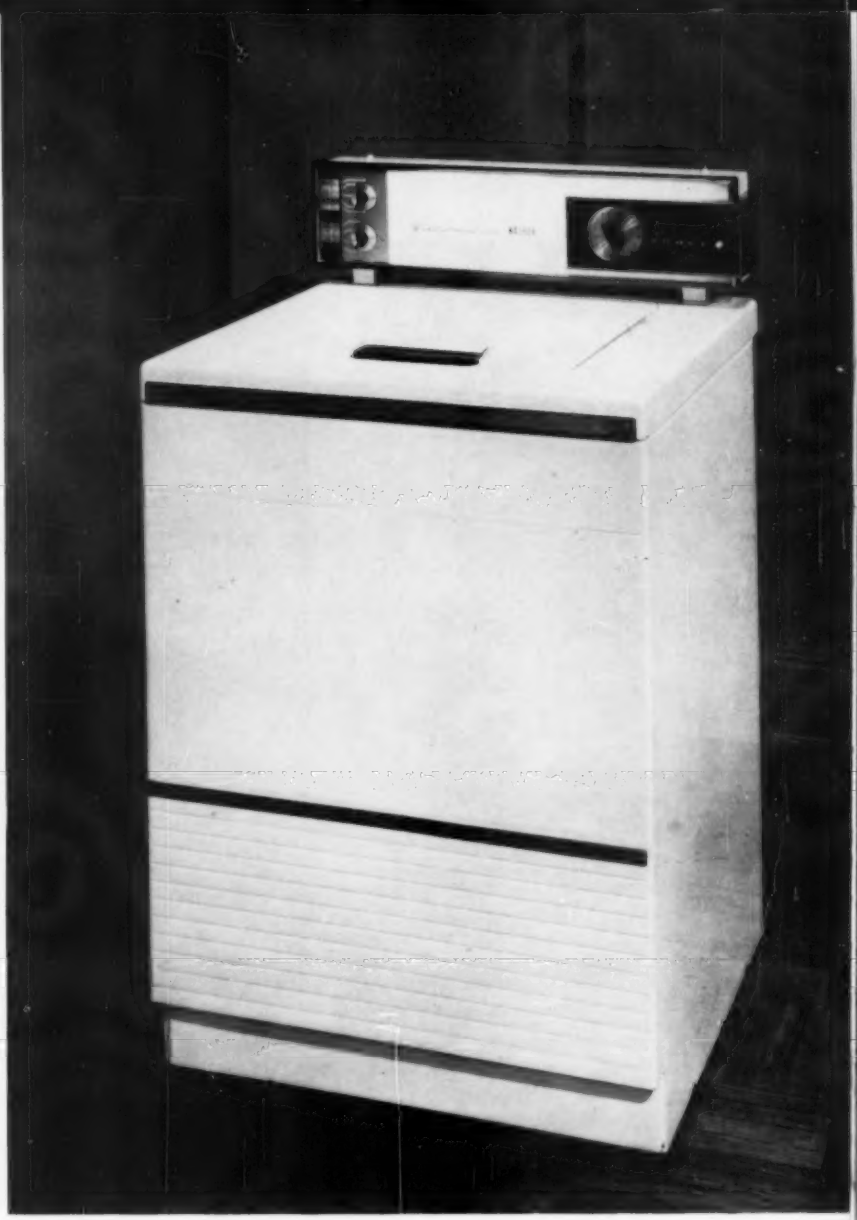
9 Cooking surface
Hotpoint Company, Chicago
Raymond Sandin, Manager of Industrial Design; Donald A. Smith, project head

Removable, reversible controls are color-coded to burners; colored cooking surface also reverses.



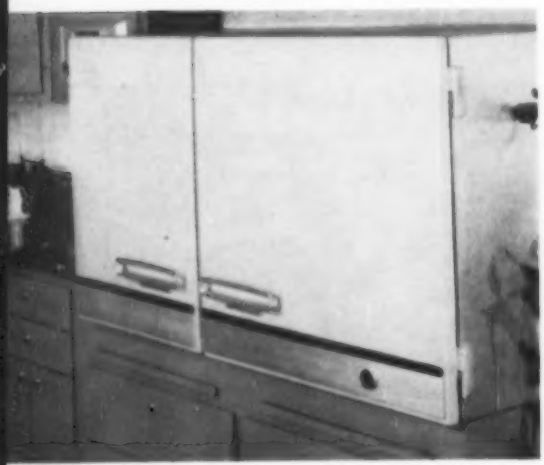
10 Washer
Norge Division of Borg-Warner Corp., Chicago
Mar Bello and Associates, designers

Gas or electric washer is redesign for "squared-off" look. Another note here: 10-pound load, although dimensions of cabinet have not been changed.



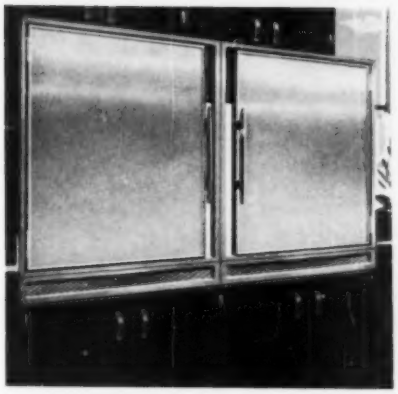
11 Refrigerator
Westinghouse Electric Corp., Mansfield, Ohio
Staff design
Peter Muller-Munk Associates, consultant designers

Panels of polystyrene sandwiched between two sheets of aluminum are notched by electric saws and folded into cabinet shape. Unit may be installed at eye level or used free standing.



12 Built-in ironer
Ironrite Inc., Mt. Clemens, Michigan
Loren Schrader, Chief Engineer

Automatic ironer can be installed in standard base cabinets; in use, swings up and out.



13 Refrigerator and freezer
Sub-Zero Freezer Co., Inc., Madison, Wisconsin
Staff design

Stainless steel doors incorporate graphics and handle in side molding. Door panels are changeable.

14 Dishwasher
RCA Whirlpool, St. Joseph, Michigan
Sundberg-Ferar, designers

Telephone-type dial selects one of four possible cycles. Washer fits under standard counter.

15 Dishwasher
Westinghouse Electric Corp., Mansfield, Ohio
Staff design

Mobile dishwasher includes hot water booster that guarantees temperature of 140°.

16 Washer-dryer
Easy Division, Murray Corporation, Syracuse
Stuart Mundt, John Donovan, staff designers

Designed for built-in installations, combination unit fits under standard 36" surface. Front panels removable for servicing.

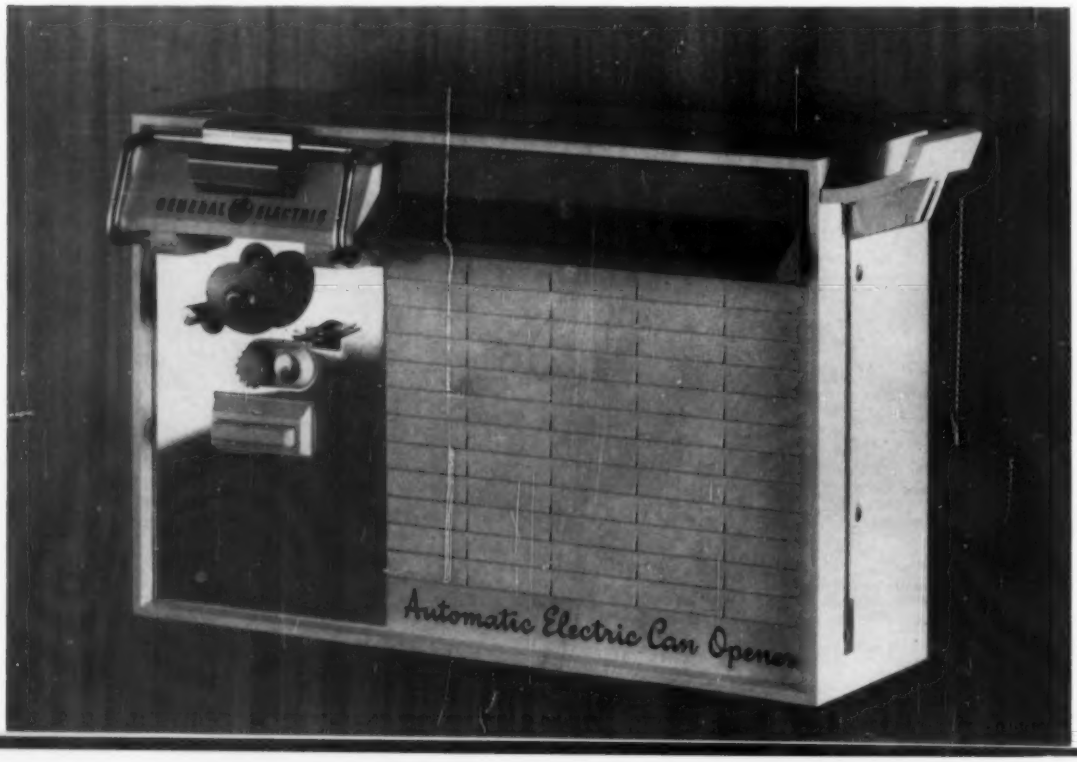
C

17 electric knife sharpener
Burgess Vibrocrafters, Inc., Grayslake, Ill.
Dave Chapman, Inc. (Douglas Anderson), designers

Conical carborundum stone operated by vibrating motor; contour design for convenient hand grip; extended lip for safety. Two-piece melamine housing; beige and brown; chrome-finished blade.

18 Electric can opener
General Electric Co., Bridgeport, Conn.
P. O. Rawson, staff designer

Ceramic magnet automatically holds lid. Cellulose acetate white case.



19 Coffeemaker
National Presto Industries, Eau Claire, Wis.
Mel Baldt and Associates, designers

Flaired design for easy cleaning. Formed from developed blank; handle covers welded seam back. Phenolic base incorporates pilot light and Presto logo.

20 Glass percolator
Silex Co., Chicago, Ill.
Leotta & Parcher, designers

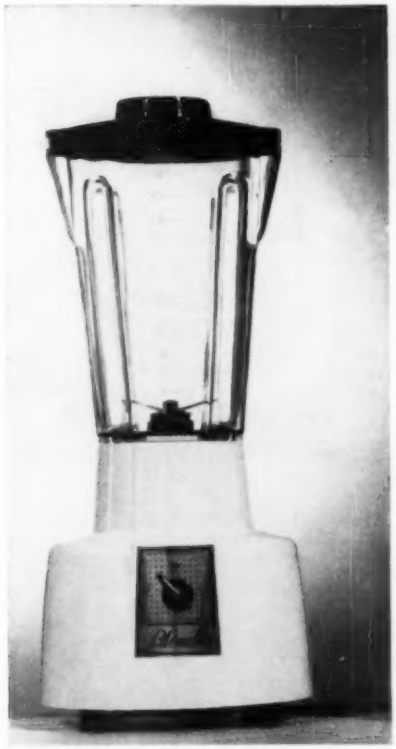
Designed for watching coffee being made. Gold stripes hide interior container. Painted black or beige phenolic, anodized aluminum, glass.

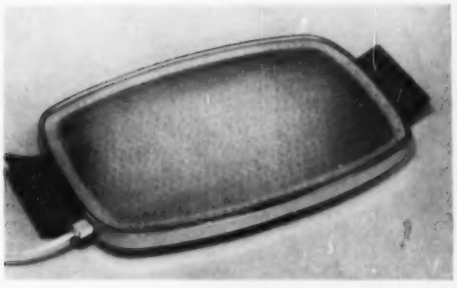
21 Spoutless coffee maker
Westinghouse Electric Corp., Pittsburgh, Pa.

Spout eliminated to prevent collection of coffee oils. New pumping system speeds up percolating. Brew control with signal light; anodized aluminum finish; phenolic plastic handle.

22 Food blender
Dewenter Industries, South Pasadena, Cal.
Channing Wallace Gilson, designer

Two pouring spouts; graduation marks; styrene, Cycolac, urea; injection molded.



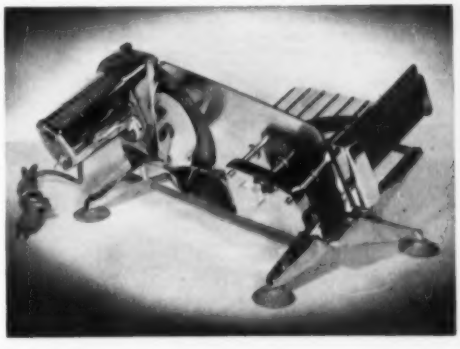


23 Thermo-Tray
Cornwall Corp., Boston, Mass.
Russel Wright Associates, designers

Foamed-in-place plastic tray; walnut handles added; anodized aluminum; immersible.

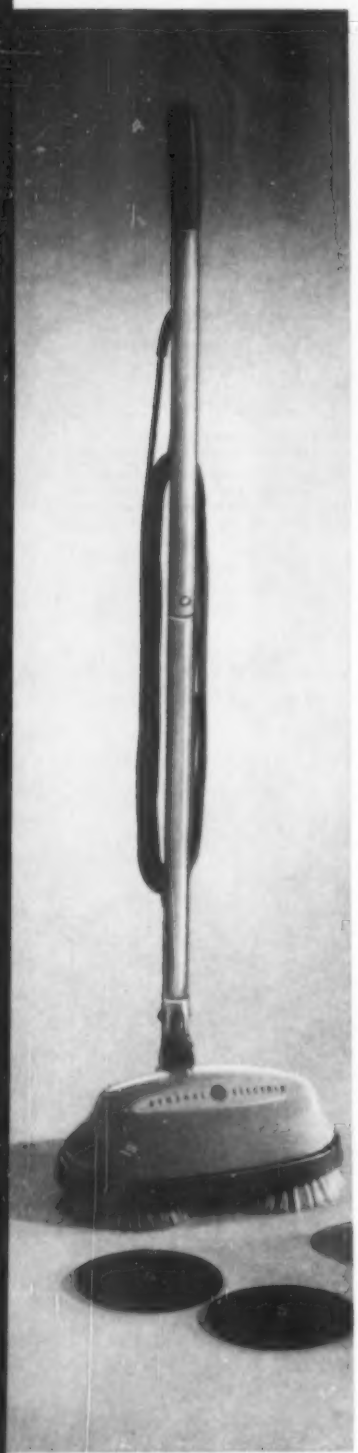
24 Smorgasbord hotray
Salton Mfg. Co., Inc., New York
Lewis L. Salton, designer

Automatic food warmer heats in three minutes. Long narrow design places more dishes within reach. Satin-silver finish aluminum, shatterproof glass, walnut handles.



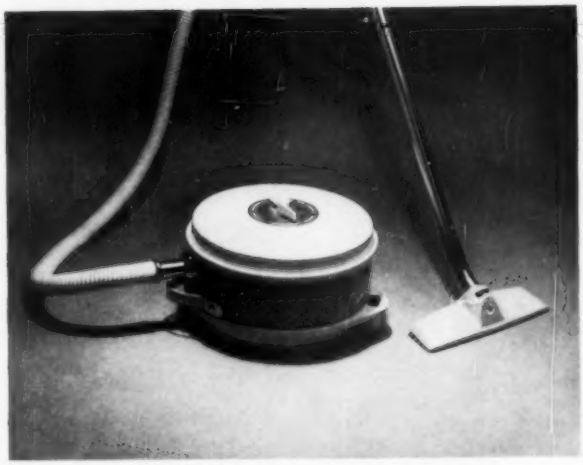
25 Food slicing machine
General Slicing Machine Co., Walden, N. Y.
Harry Preble, designer

Gravity angle for self feeding; pedestal leg for platter clearance; rotary knife, stainless steel, serrated edge.



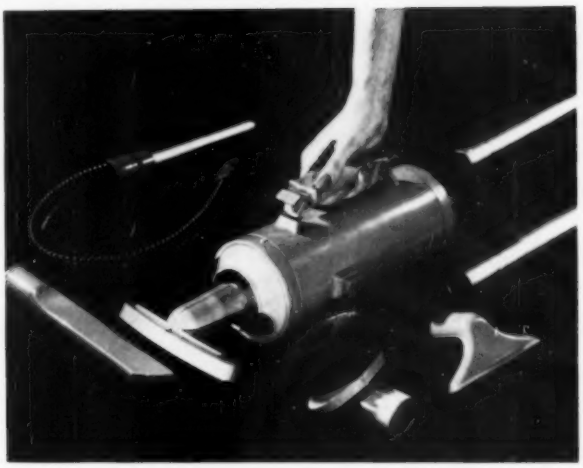
26 Floor polisher
General Electric Co., Bridgeport, Conn.

Twin brushes; locking handle with toe release; vinyl bumper; snap-on attachments. All-steel motor hood, handle; baked enamel finish.



27 "Hatbox" vacuum cleaner
Hamilton Beach Div., Scovill Mfg. Co., Racine, Wis.
Dave Chapman, Inc., designers

Clip mechanism stores cord on underside; front wheel swivels; metal construction; vinyl bumper; suction regulator.



28 Portable electric cleaner
Troy Industries Inc., Tuckahoe, N. Y.
George Barradas, designer

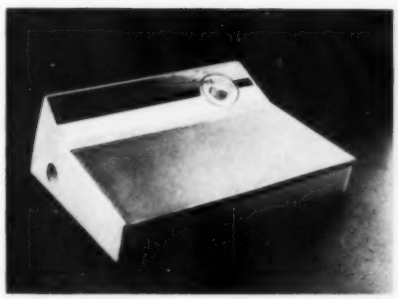
Compact, plastic vacuum cleaner does varied jobs. Empty-out or disposable bag.

29 Swivel-top cleaner
General Electric Co., Bridgeport, Conn.

Vinyl bumper; automatically adjustable cleaning unit; step-on switch. Sandalwood baked-on enamel finish, brown base.

30 Presto steam-dry iron
National Presto Industries, Eau Claire, Wis.
Mel Boldt, designer

One-piece construction for cooler handle, greater tank capacity. Phenolic plastic, die-cast aluminum sole plate.



31 Electric hair dryer and vanity case
Merit Enterprises, Inc.
Monte L. Levin, designer

Storage space for tubing, cap, bobby-pins, make-up accessories; mirror on underside of lid.

32 Hot dog cooker
Westinghouse Electric Corp., Pittsburgh

Cooks six hot dogs in ninety seconds. Removable lid, immersible bottom.

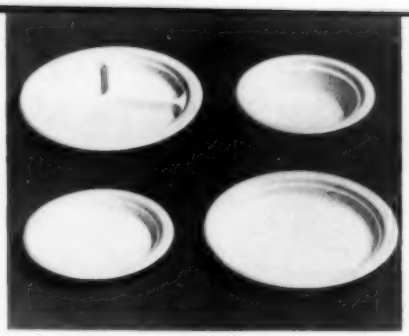
34 Swirlaway wall and upholstery cleaner
E. R. Wagner Manufacturing Co., Milwaukee
Brooks Stevens Associates, designers

Continual refilling action in handle; high-impact polystyrene injection-molded; blue-green.

33 Switch and outlet boxes
Waber Electronics, Havertown, Pa.

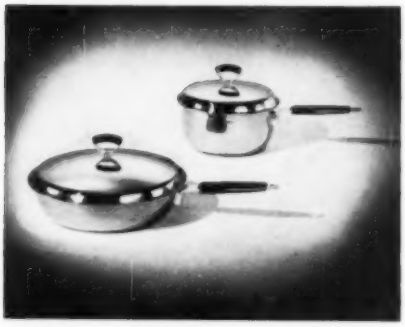
Hammertone gray, drawn-steel case; ten-foot neoprene cord. Panel mounted fuse protects equipment.

HOUSEWARES



35 Paper plates
Keyes Fibre Co., Waterville, Maine
Peter Schladermundt Associates, designers

Molded disposable plates in white and pastels.



36 Stainless steel cookware
Buckeye Div., Mardigian Corp., Wooster, Ohio
R. C. Nicolay, Chief Engr.
Smith, Scherr & McDermott (Pierre L. Crease), consultants

Aluminum pressure-bonded to exterior bottom assures uniform heat and superior conductivity. Heat barrier handle; impregnated wood laminate grips.

37 Insulator for coffeemaking unit
Chemex Corp., New York
Peter Schlumbohm, inventor

Dylite removable half-shells keep coffee hot.

38 Danish cookware
Voss, Denmark
Henning Seidelin, designer

Enameled cast-iron cookware in brilliant colors; chip-proof.

39 Upholstery shampooer
Bissell, Inc., Grand Rapids, Mich.
Staff design; Harley Earl Assoc., consultants

Controlled action of applying upholstery liquid; zinc, nylon and polyethylene.

40 Spongemaster mop
Bissell, Inc., Grand Rapids, Mich.
Peter Muller-Munk Associates, designers

No projecting levers; self-cleaning sponge; hands never in contact with water; cleans into corners; steel, polyethylene, cellulose sponge.

41 Automatic shampoomaster
Bissell, Inc., Grand Rapids, Mich.
Armstrong-Balmer Associates, designers

Nylon bristle brushes; automatic dispensing action for cleaning mixture.

42 Carpet sweeper
Bissell, Inc., Grand Rapids, Mich.
Robert G. Plantholt, designer

Compact; low, for cleaning under furniture. Painted finish; white vinyl bumper.

43 Dust mop
O-Cedar Div., American-Marietta Co., Chicago
Staff design
Palma-Knapp Assoc., consultants

Push-button removable top; washable dacron and cotton turquoise yarn.

44 Home laundry cart
KOL, Inc., St. Paul, Minn.
Karl O. Larson, designer

All-purpose utility cart; frame construction of plated tubular steel; polyethelene basket.

45 Jar and bottle opener
W. L. Gill Co., Redlands, Calif.

Vinyl opener has gripping ledges of graduated diameters to provide necessary leverage for screw caps of any size. Injection molded.

45-A Bottle cap
Wheaton Plastics Co., Millville, N. J.
Ned Glover, staff designer
Paul S. Van Baarn, inventor

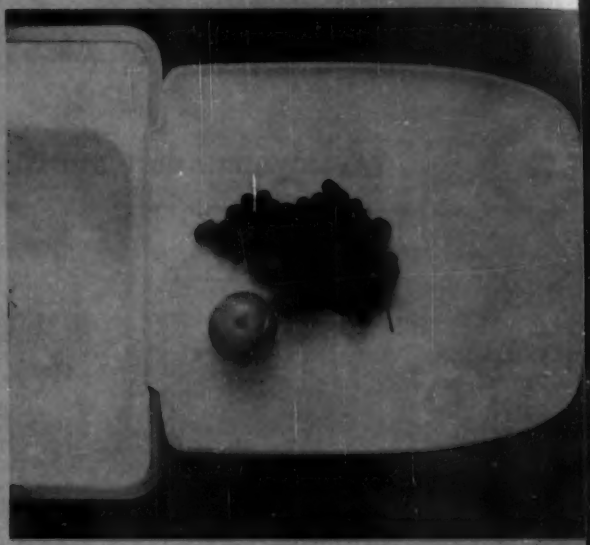
Insures against tampering and protects contents from moisture. After seal-strip is torn away, closure becomes hinged captive cap. Polyethylene.

46 Can opener
Rival Mfg. Co., Kansas City, Mo.
Staff design

Removable magnet; chrome-plated die-cast aluminum.

47 Paper towel holder
Kimberly-Clark Corp., Neenah, Wisc.
Morton Goldsholl Design Associates, designers

Two rounded steel stampings secured together to hold paper towel roll. Baked enamel finish.

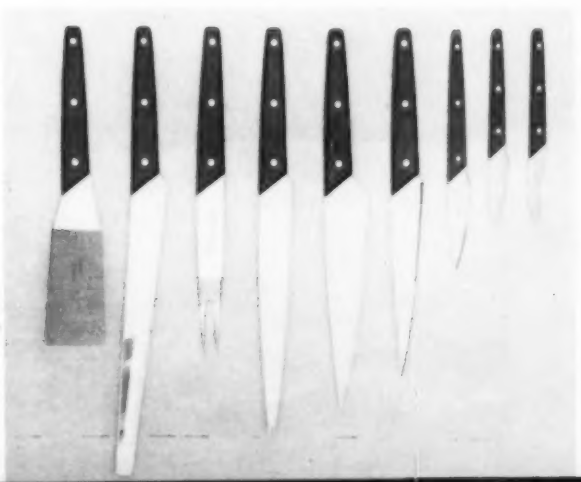


48 Drainer trays
Rubbermaid Inc., Wooster, Ohio
Smith, Scherr & McDermott, designers

Sloped tray quickens drainage. Raised sides eliminate spill-overs. Shallow ridging permits easy cleaning. Compression molded of rubber.

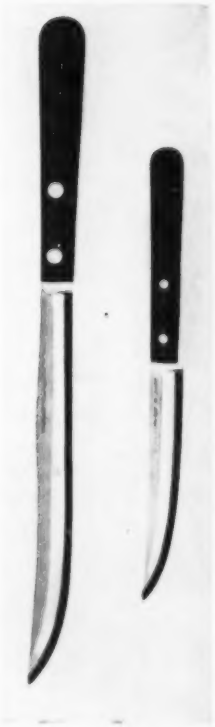
49 Kitchen tool set
Dapol Plastics, Inc., Worcester, Mass.

Injection molded of polyethylene; withstands high temperatures; unaffected by food or detergents.



50 Kitchen and table knives
Ontario Knife Co., Franklinville, N. Y.
Michael Lax, designer

Grey nylon handles have extra long taper for better grip. Stainless steel blades.



51 Knives
Robeson Cutlery Co., Inc., Perry, N. Y.
Jerry Moberg, staff designer

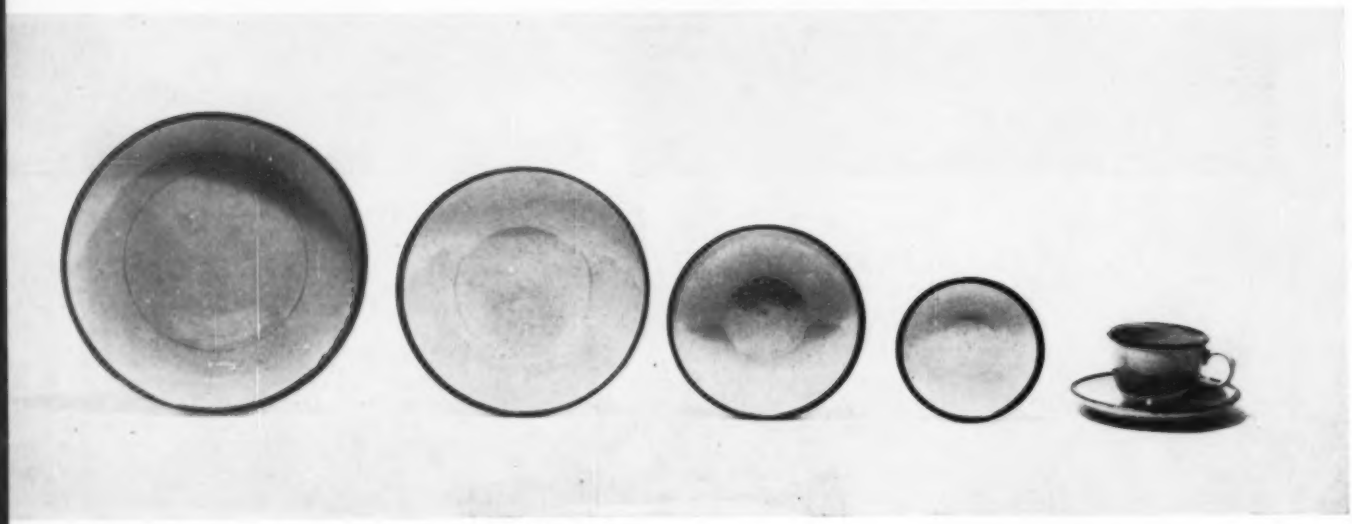
Tungsten carbide is detonated onto edge of knives, which becomes sharper as steel edge wears.

C

TABLEWARE AND FURNITURE

53 Mugs
Bennington Potters, Bennington, Vermont
David Gil, designer

Vitreous stoneware is slip-cast and pressed.



54 Dinnerware
Marshall Studios, Veedersburg, Indiana
Jane and Gordon Martz, designers

Stoneware is fired like porcelain but uses coarser clays. Edge impressed by hand.

55 Grilling platter
A C Fabricators, Inc., Hawthorne, California
Rose S. Gavin, designer

Hand-cast aluminum is highly polished outside, satin-finished inside. Base is walnut.

52 Flatware
Wallace Silversmiths, Wallingford, Connecticut
Staff design

Stainless steel place setting in Sonnet pattern.

56 Dinnerware
Oneida Silversmiths, Oneida, New York
Ben Seibel Associates, designers

Melamine dinnerware, compression molded, available with metal covers and wooden bases.

57 Serving dishes
West Bend Aluminum Co., West Bend, Wis.
Painter, Teague and Petertil, designers

Stainless steel serving pieces, satin-finished, can be used for heating and storing.

Form in tableware has returned somewhat to the essential character of the material. The mugs by Bennington Potters (53) and the dinnerware by Marshall Studios (54), for example, subtly express the sturdy nature of stoneware products. And in the field of furniture, metal is handled with a sophistication bordering on the tongue-in-cheek. Storage units offer more permutations than ever. Paul McCobb's system for Mutschler (60) can be mounted at heights for kitchen and bathroom use, and for these purposes may have top surfaces of travertine or stainless steel. And students of Pratt Institute, working on a project for K-D furniture to be assembled by unskilled labor, have devised—in the process—a vertical storage unit that swivels on a single pole mount (62).

58 Cosmopolitan tea cart
Vista Furniture Co., Anaheim, Cal.
Kipp Stewart and Stewart MacDougall, designers

Handles are extension of square, narrow-gage tubular steel frame; neat bracket connects Lucite wheels; walnut edge of top matches drawer.

59 Capricorn chair, table
Kagan-Dreyfuss, New York
Vladimir Kagan, designer

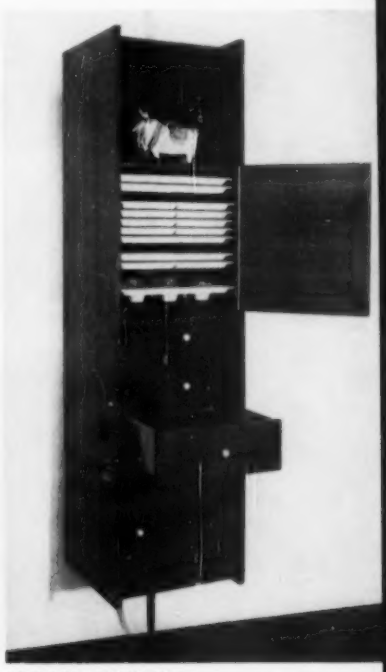
Steel wire and cast aluminum with baked enamel finish for indoor-outdoor use; contoured vinyl upholstery; all bases, tripod construction.

60 Modular storage units
Mutschler Brothers Co., Nappanee, Ind.
Paul McCobb, designer

Base cabinets in woodgrains or color attach to free-standing anodized aluminum supports at three levels, including one for kitchen use.

61 Comprehensive storage system
Herman Miller Furniture Co., Zeeland, Mich.
George Nelson & Co. (John Pile), designers

Components are shelves, side panels, doors, drawers, "flipper" units rather than completed box; spring-fitted poles require no holes.

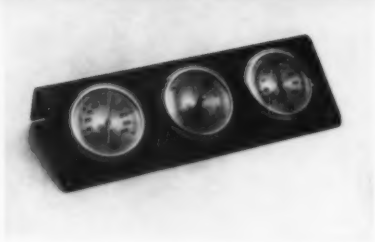


62 Precision-fit furniture
Monsanto Chemical Co., Springfield, Mass.
Design Laboratory, Pratt Institute, designers
Robert Kolli, Giles Aureli, faculty leaders

Swiveling closet, one element of experimental K-D furniture; panels assembled with Fishbone connector; injection-molded drawers and trays.

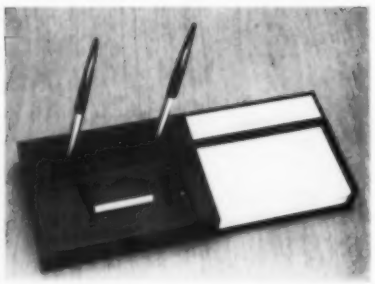
C

ACCESSORIES



66 Weather instrument set
Peter Pepper Products, Inc., Lomita, Cal.
Don Lewis, designer

Easy-to-read instruments; walnut laminated to aluminum.



67 Desk base
Parker Pen Co., Janesville, Wis.
Don Doman Associates, designers

Pen or pencil can be inserted in any opening. Storage space under cover. Compression molded black plastic, brushed aluminum & stainless steel.

68 Handblown glassware
Blenko Glass Co., Inc., Milton, W. Va.
Wayne Husted, designer

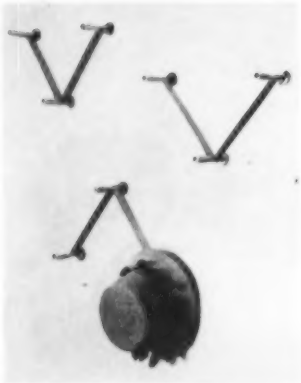
Made off-hand with colored glass.

69 Sculptured bud vases
Vanguard Design, New York

Decorative walnut vases contain glass liners to hold water.

63 Planters
Bennington Potters, Bennington, Vermont
David Gil, designer

Interchangeable bases; vitreous white and blue stoneware.



64 Hat and coat rack
Nessen Studio Inc., New York

Brass or satin chrome plate over brass; tapered white plastic knobs.

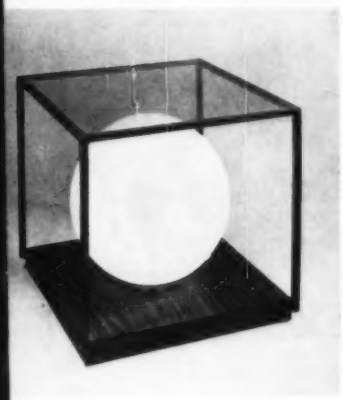
65 Sand Urn
Nessen Studio Inc., New York

Brushed or polished brass, or satin chrome plate over brass. Galvanized steel insert in antique white baked enamel.

LAMPS

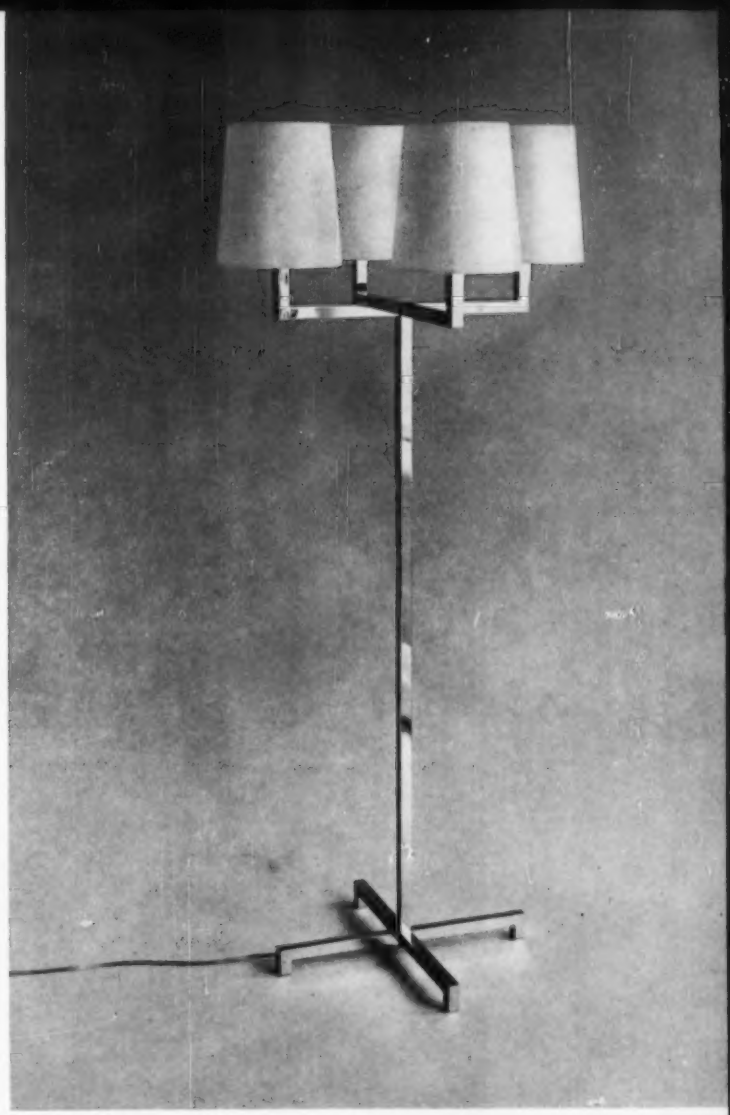
70 Lamp table
Habitat Inc., New York
Paul Mayen, designer

Translucent white globe; oil-finished walnut base and frame; colored transparent glass on top. Used as table, floor lamp, or table lamp.



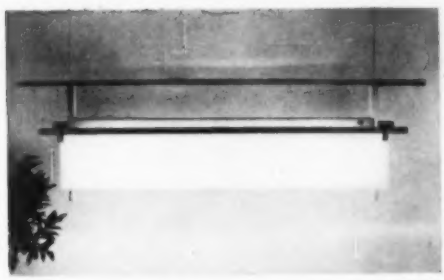
71 Desk lamp
Koch & Lowy Mfg. Co., New York
Ernest Lowy, designer

Polished Brass and green eye-saver glass.



74 Lamp
Hansen, New York
T. H. Robsjohn-Gibbings

Polished brass; translucent linen shades; control switch set in shaft.



72 Long horizontal light
Jason Harvey, designer

Individually made light conceals four bulbs. Japanese paper laminated to vinyl, Plexiglas shield, natural wood framework.

73 Reflect-A-Line
Lightolier, Jersey City, N. J.
Noel Florence, designer

Lighting system; shallow, extra-compact lines of light to fit in small spaces; aluminum; grey baked enamel finish.

C

75 Rug
Edward Fields, New York
Raymond Loewy, Associates, designers

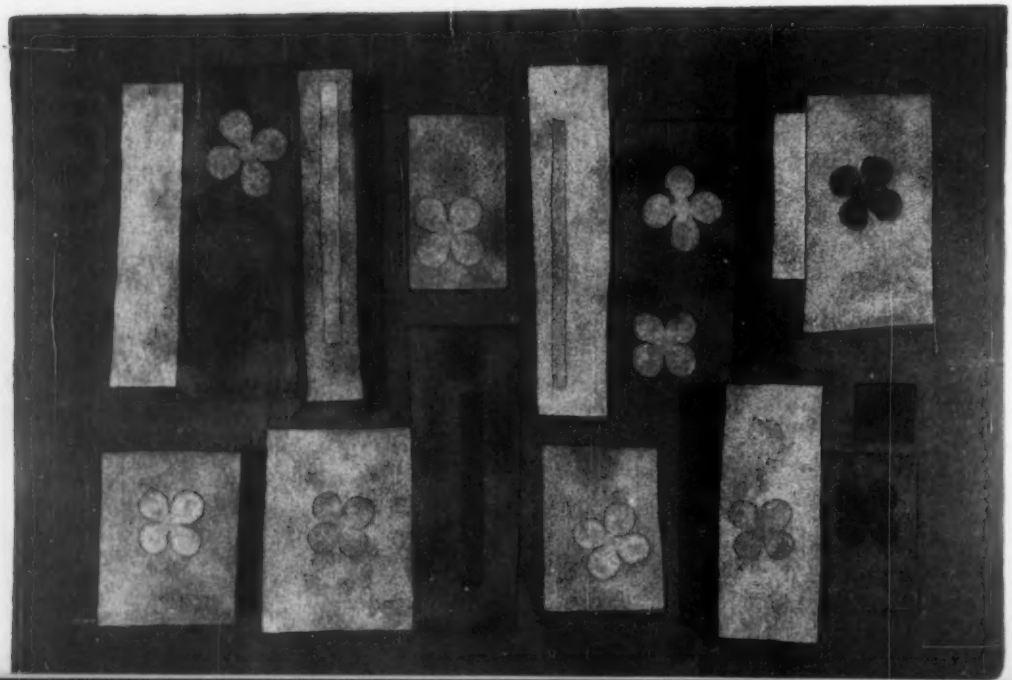
"Kaleidoscope" pattern uses variety of shapes and colors.

76 Rug
Cabin Crafts, Inc., Dalton, Ga.
Bittan Valberg, designer

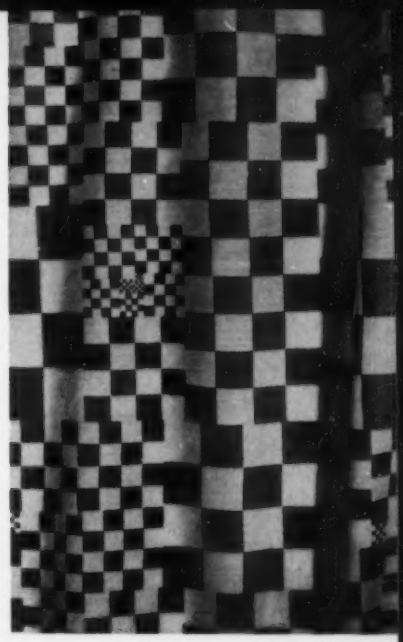
"Red Hills," area rug in bold coloring; tufted of Acrilan yarns.

77 Rug
V'Soske
Al Herbert, designer

Random arrangement and impressionistic outline of "Bow Knots."

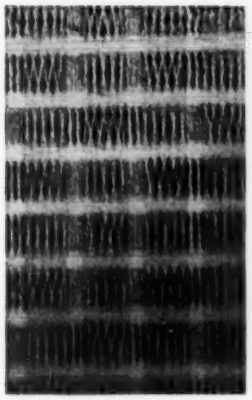


RUGS AND FABRICS



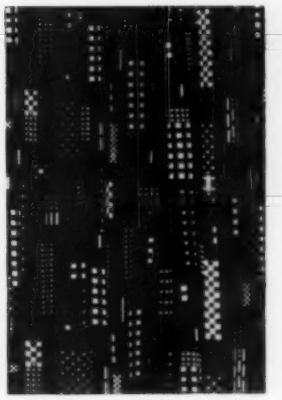
81 Textile
Knoll Textiles, Inc., New York
Ross Littell, designer

"Chess," an abstract rendition of a chessboard; dacron and linen sheer; pigment tinted.



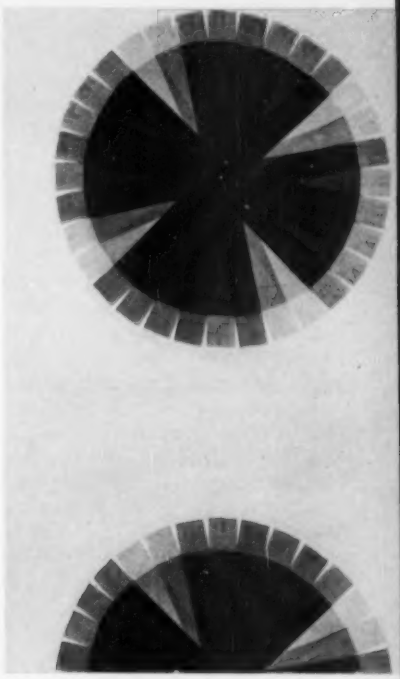
78 Asbestos decorative blinds
Lozano-Fisher Studios, Inc., New York
Matias Lozano, designer

Asbestos used as decorative textile. Fireproof, mildew resistant, impervious to sun rot; hand loomed; natural white.



79 Fabric
Herman Miller Furniture Co., Zeeland, Mich.
Alexander Girard, designer

"Manhattan" suggests city night lights. Printed on mohair casement cloth.

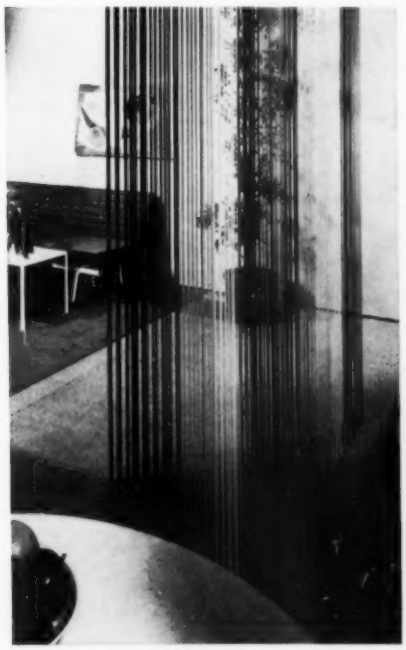


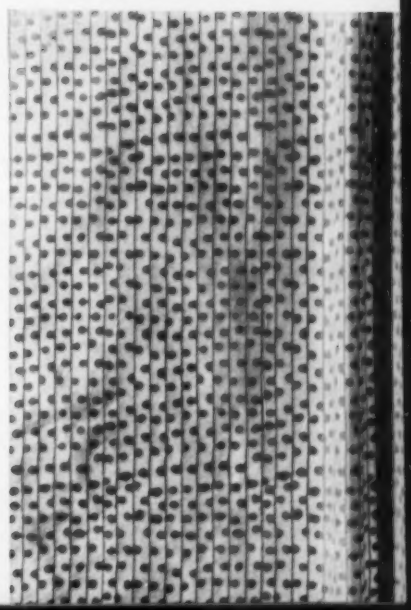
82 Drapery fabric
Jack Lenor Larsen, Inc., New York
Rolf Middleboe, designer

Eight-color silk screen print on cotton.

80 "Ribbon Wall"
Howard Miller Clock Co., Zeeland, Mich.
George Nelson & Co., designers

Rainbow-hued cascade of flexible steel streamers; free-hanging from ceiling track.



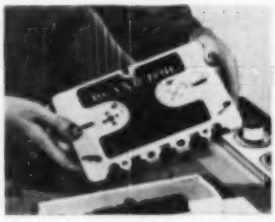


83 Fabric
Isabel Scott Fabrics Corp., New York
Gere Kavanaugh, designer

"Unicorn," a continuous vibrant repeat design achieves beaded curtain effect.

The adaptation of techniques developed for high fidelity to products developed for mass markets makes redesign necessary, and prediction tempting. Prerecorded tape has never really threatened to replace the disc, and may not be threatening to do it now. But certainly the cartridge (84, 85) overcomes many of the objections to tape (anyone who can spin a record can slide a cartridge into place; there is no problem of tape snarling or breaking; no reel systems to master). As cartridge systems, and the machines that use them, become standardized, the result may be a complete home entertainment system. Stereo sound too has passed from the realm of the faddist into equipment made for people who just want to listen to music faithfully produced, and who want to do it conveniently. The problem, which is now more that of the designer than of the sound engineer, is to achieve a maximum of good reproduction with a minimum of furniture moving. Television, which has been "portable" for a few years has this year become "truly portable" (87). For a long time now it has been common for teen agers to walk the streets with the ubiquitous transistor radio clapped to their ear like the seashells of an earlier generation. But while this relieved them of the burden of listening to each other, or of thinking, they still had a couple of eyes unoccupied, and there was nothing to do with them but keep them peeled for traffic. Now the television set can go wherever its owner goes, making a perfect gift for the man who wants to get away from it all, wherever he happens to be.

RADIOS, RECORD PLAYERS, TV RECEIVERS

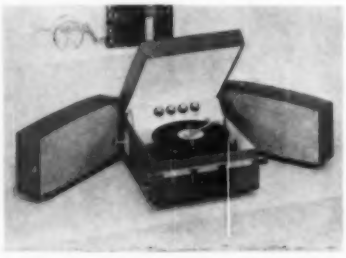


84 Semi-automatic tape cartridge
Radio Corporation of America, Camden
Bernard A. Grae, Manager of Industrial Design; Bernard Radtke, staff designer

Pre-recorded tape cartridge (or blank for recording) is inserted into player/recorder, with no need for user to touch tape, or to rewind. After tape runs course, cartridge is flipped for second half hour of play or record.

85 Continuous-play tape magazine
Conley Electronics Corporation, Skokie, Ill.

Magazine slips into player slot to provide automatic continuous performance. Tape in cartridge forms continuous loop, unwinds from single spool at center, automatically rewinds on outside of spool.



86 Portable stereo hi-fi record player
Motorola, Inc., Chicago
Herbert Zeller, Director of Design

Detachable speakers can be arranged for optimum sound adjustment. Styled like weekend case.

87 Portable tv receiver
Philco Corporation, Philadelphia
Staff design: Howard Bonner, project engineer; Herbert Gosweiler, designer of case

Battery-operated portable weighs 15 pounds, measures 16⅝" x 8⅜" x 5⅝", uses 21 transistors. Image received by 2" cathode ray picture tube at bottom of set is projected up to beam-splitter mirror, which magnifies it and projects it to mirror on back wall of set.

88 Portable tv receiver
Admiral Corporation, Chicago
Lawrence H. Wilgus Associates, designers

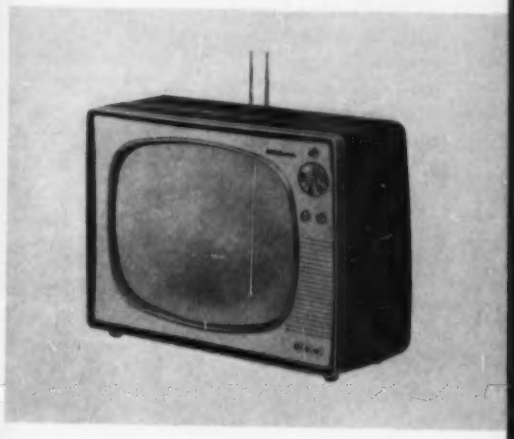
Vinyl-clad steel case with high-impact styrene.

3 Transistor radio
General Electric Co., Bridgeport
Staff design: Alex C. Hauenstein, designer; W. J. Donnelly, assistant designer; D. L. Motsinger, Manager, Industrial Design Operation

Die-cast front supports entire chassis assembly. Cycolac case with leather handle.

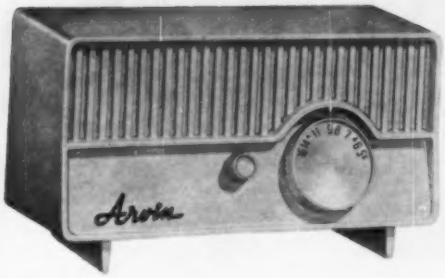
90 Portable tv receiver
Radio Corporation of America, Camden
T. P. Maderwick, Manager of Industrial Design, designer

Front controls; recessed handles in sides.



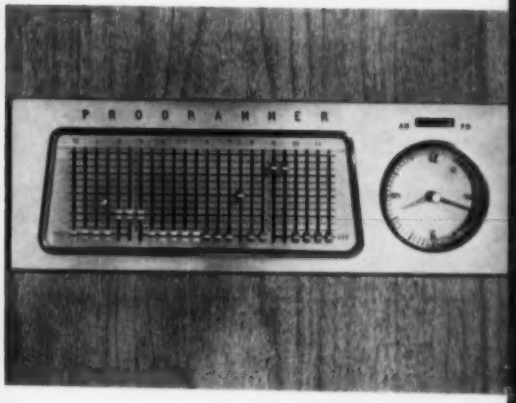
91 Table radio
Westinghouse
Stanislaw Zapolski, designer

Molded-in carrying handle; 4" overall depth. White, with coral, aqua, or charcoal trim.



92 Radio and tv programmer
Hayden Mfg. Co., division of General Time Corp.
Harold T. Stenhammer, inventor and designer

Any number of programs for any given times may be pre-selected up to 12 hours in advance. Set automatically turns on, off, switches stations.

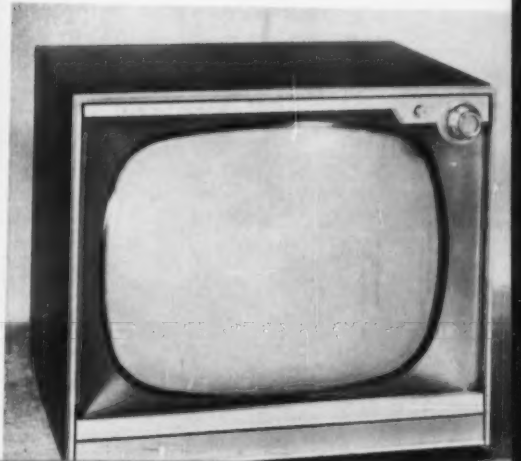


93 Table radio
Arvin Industries, Columbus, Indiana

Air-loop antenna; five tubes including rectifier; comes in charcoal or "Mona," weighs 3 lbs., 6 oz.

94 TV cabinet
Zenith Radio Corp., Chicago
Reinecke & Associates, designers

Anodized gold aluminum, die-cut and formed.



95 Transistor radio
Zenith Co., Benton Harbor, Mich.
Stuart Sizer, staff designer

Separate grille mounted to chassis allows for color and design changes in transistor circuit.

C

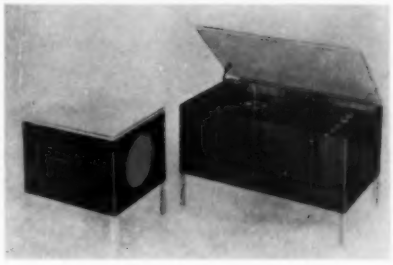
There seems to be much more restraint in enclosures for high-fidelity equipment this year, and perhaps this was inevitable because of the high seriousness of the listening consumer. Hi-fi bugs are sophisticated to the point of demanding a quality of reproduction that is almost professional, and it's natural to suppose that the equipment is more convincing if it *looks* professional. So designers may have had neither the pressure nor the temptation to style up the enclosures with textured panels, hoods, and calligraphic escutcheon plates. If this made only for a general "cleanup" this year, it may point to more positive things to come. Perhaps the three-dimensional grille cloth (98) is a precursor.

96 Speaker enclosure
R. T. Bozak, Norwalk, Conn.
Raymond Spilman, designers

Walnut cabinet with hand-rubbed oil finish, uses such devices as exposed dowels for appearance compatible with early American decor.

97 Hi-fi cabinet
S. M. Furniture Co., Santa Monica, Cal.
Porter, Steiner and Associates (Simon D. Steiner), designers

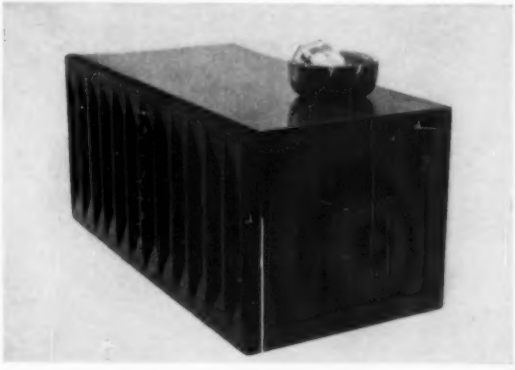
Walnut finish bonded to extruded aluminum by epoxy resin.



HIGH-FIDELITY EQUIPMENT

98 Speaker enclosure
Audax Division, Rek-O-Kut, Corona, N. Y.
George Nelson and Co. (Ronald Beckman), designers

Speaker grille is three-dimensional screen of vacuum-formed Dynel (Union Carbide) sonic cloth woven by F. Schumacher & Co.



99 Equipment cabinet
Allied Radio Corp., Chicago
Edward Klein, designer

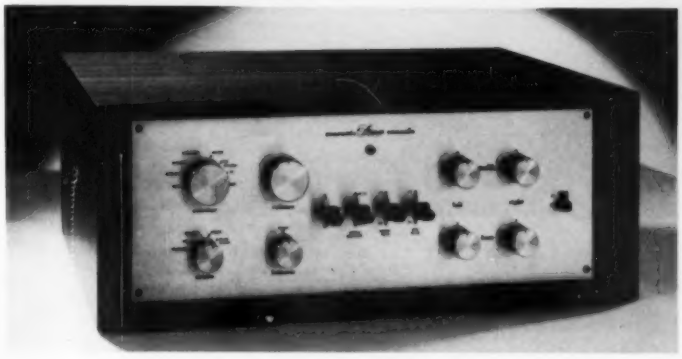
Pre-finished kits of hardwood veneered ¾" plywood require only screwdriver for assembly.

100 Speaker system
James B. Lansing Sound, Inc., Los Angeles
Edmund A. May, product development engineer; Richard R. Ranger, discoverer of radial refraction principle; Herb Kornfield, stylist

Enclosure uses curved refractor panel to integrate separate sound channels when two units are combined for full stereo sound system.

101 Hi-fi control center
Westinghouse Corp., Metuchen, N. J.
Seymour Silverman, Manager of Industrial Design; Theodore Schriever, staff designer

Sculptured tone arm and stabilizer, die-cast escutcheon.

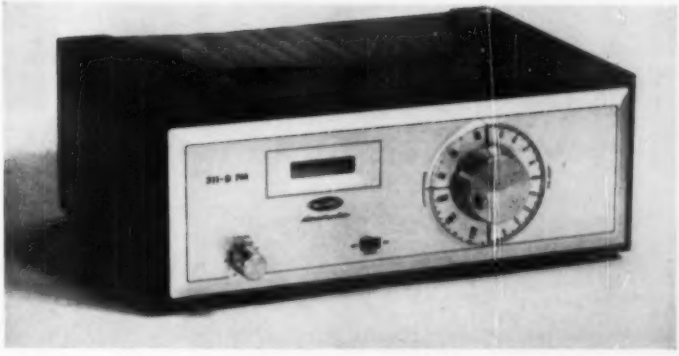


102 Stereo console
Marantz Co., Long Island City, N. Y.
Sidney S. Smith, staff designer

Knobs grouped by function to minimize confusion of 13 controls. Anodized aluminum panel and knobs.

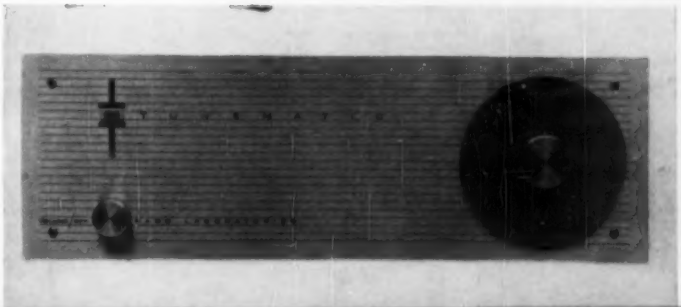
103 Stereo tuner
Harmon/Kardon, Inc., Westbury, N. Y.

Manual tuning improved by factor of 10 to 1.



104 FM tuner
H. H. Scott, Inc., Maynard, Mass.
Victor H. Pomper, staff designer

Planetary drive tuning mechanism with rotary dial increases convenience, decreases chance of malfunction. Panels and knobs of brushed gold anodized aluminum.



105 FM tuner
Karg Laboratories, South Norwalk, Conn.
Kenneth L. Curtis, designer

Stations instantly selected by call letters on translucent acrylic dial.

106 Binoculars
D.P. Bushnell & Co., Inc., Pasadena, Cal.
Paul R. Maguire, designer

Long eye-distance and retractable eyecups permit full field of view for eyeglass wearers. Built-in ultraviolet filters protect eyes. Charcoal gray and matte black.

PERSONAL ITEMS

107 Samsonite luggage
Shwayder Brothers Inc., Denver, Colorado

Combination of vinyl and magnesium used for rigidity and dent resistance.

108 Hearing aid
Sonotone Corp., Elmsford, N. Y.

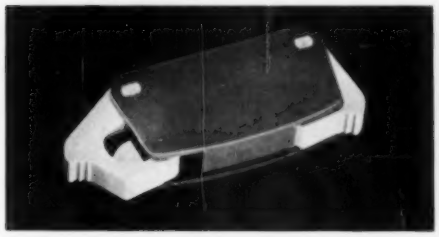
Entire hearing aid carried in contoured case at end of eyeglass temple; thin, transparent tube carries sounds to ear.

109 Sentinel Revolver
High Standard Mfg. Corp., Hamden, Conn.

Gold, turquoise or pink metal part; compression-molded grips resembling color and texture of bone. Movable square-notched rear sight.

110 Contact lens case
American Optical Co., Southbridge, Mass.
Robert S. Morris, staff designer
Francis Knodratowicz, Development Manager

Identification space; polished finish on "Implex" case and trays; anodized aluminum rivets; polyurethane foam.

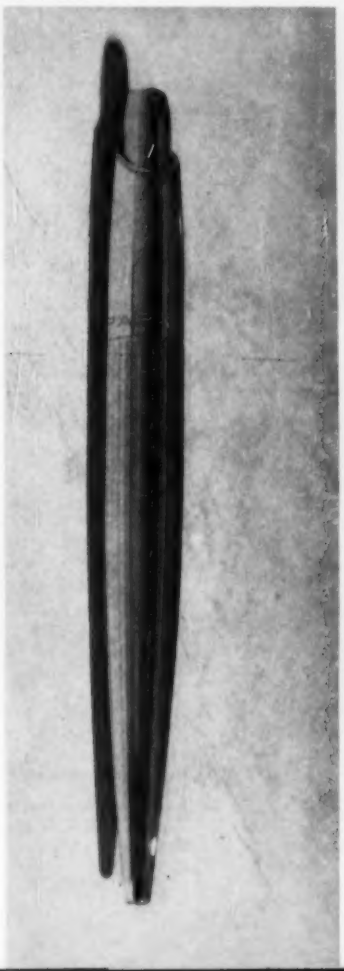


111 Hearing aid
Zenith Radio Corp., Chicago

Miniaturization of component parts results in smaller "behind-the-ear" hearing aid. two mike openings for use at either ear.

112 Ball point pen
Parker Pen Co., Janesville, Wis.
Walter I. Bieger, designer
Harry G. Fischer, engineer

Unique side-action mechanism built around cartridge. Brass, spring steel; grooved barrel with tip, cap and button, gold plated.



113 Ball point pen
Paper Mate Mfg. Co., Santa Monica, Cal.
Zierhut/Vedder/Shimano, designers

Diagonal line corresponds to movement of pen. Injection-molded plastic; deep-drawn brass.

C

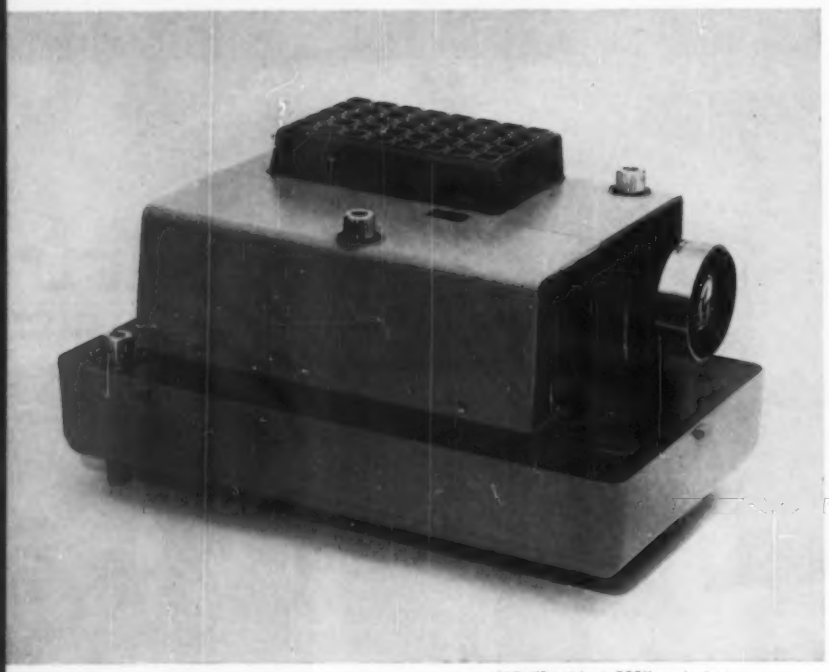
PHOTOGRAPHIC EQUIPMENT

117 Super Graphic camera
Graflex, Inc., Rochester, N. Y.
Peter Muller-Munk Associates, designers

Butt-welded aluminum frame, rotating film back; flash synchronized through battery-powered printed circuit.

118 C-33 camera
Argus Company, Ann Arbor, Mich.
Harley Earl Associates (Ray Grosse), designers

Interchangeable lenses coupled with single-window range-viewfinder. Zinc and aluminum body.

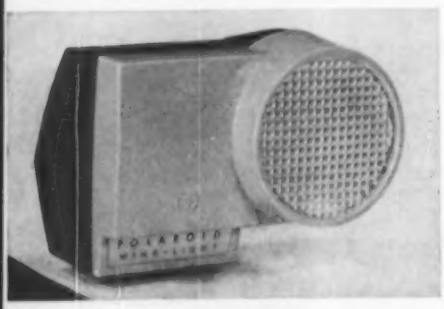


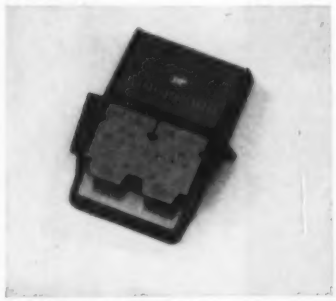
115 "President 500" projector
Argus Company, Ann Arbor, Michigan
Harley Earl Associates (Dominic A. Saporito, Fred Hertzler), designers

Automatic 6-speed timer control, shutter and diaphragm in 3.3 lens; zinc and aluminum body.

114 Polaroid Wink Light
Polaroid Corporation, Cambridge, Mass.

Fill-in flash for Polaroid camera, light powered by ordinary flashlight bulb. Plastic housing.





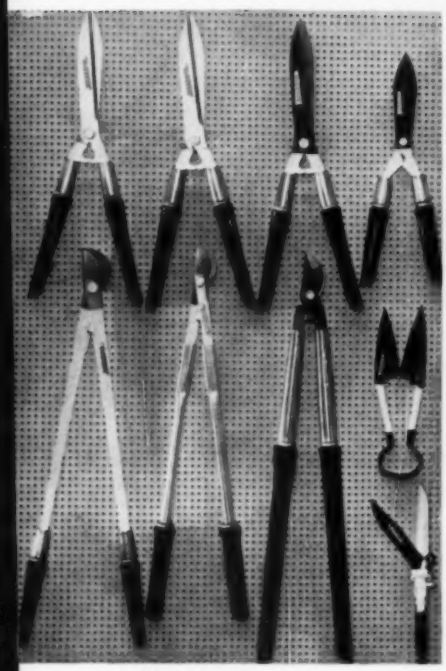
116 Splicer for 8 and 16 mm. film
Hudson Photographic Industries, Croton, N. Y.
Eugene Martinez, Design Director

Die-cast aluminum with stamped stainless steel cutting plate.

119 Anscomatic projector
Ansco Corporation, Binghamton, N. Y.
Clare Hodgman, designer

Automatic timer control, shutter and diaphragm in lens; body of cast aluminum with plastic lens cover.

GARDEN TOOLS

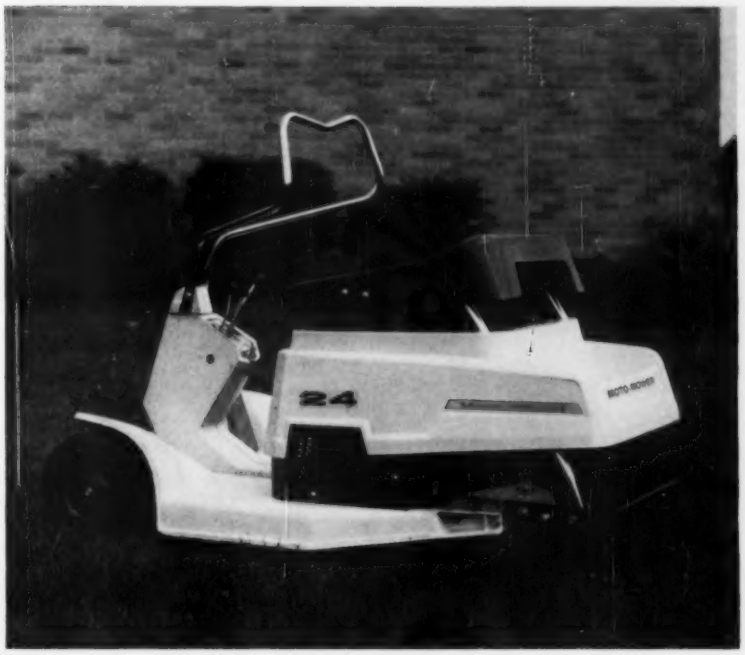


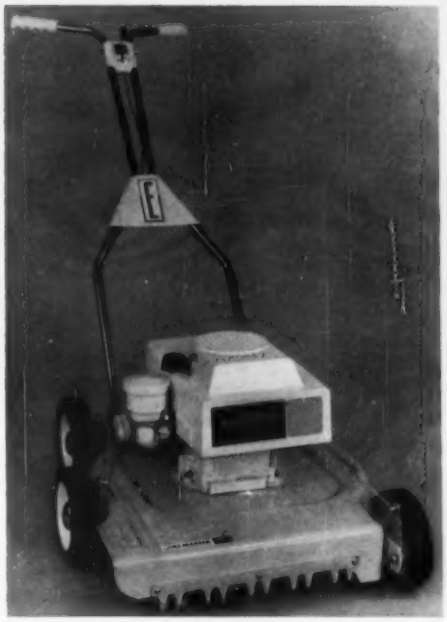
120 Garden tools
Disston Div., H. K. Porter Co., Inc., Philadelphia
Raymond Loewy Associates, designers

Long, slim black wooden handles fitted over metal parts; aluminum tubing.

121 Riding Rotary mower
Moto Mower Subsidiary Co.. Dura Corp., Richmond, Ind.
W. B. Ford Design Assoc., Inc. (Douglas Cabell, Alfred Przybylowicz), designers

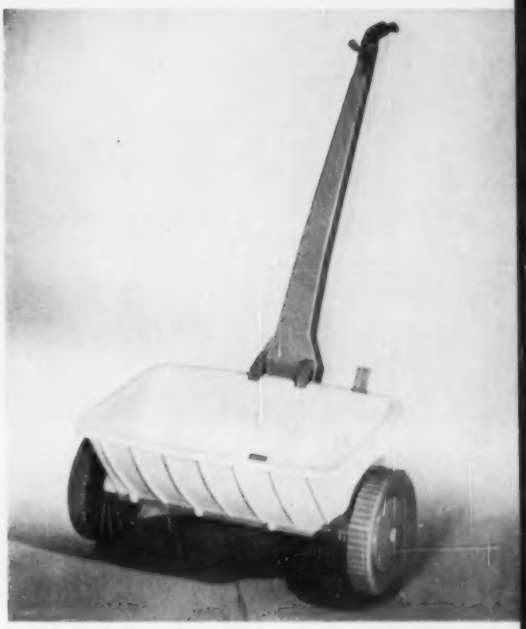
Cast aluminum deck and instrument housing; vacuum-formed cycolac engine shroud; fiberglass seat.





122 Lawnmower
Eclipse Lawnmower Co., Prophetstown, Ill.
Stowe Myers Industrial Design, designers

Rider-type lawnmower with all moving parts covered; vacuum-formed engine shroud.



123 Vigoro fertilizer spreader
Federal Tool Corp., Chicago, Ill.
Reinecke & Associates, designers

Injection molded linear polyethylene; rustproof.

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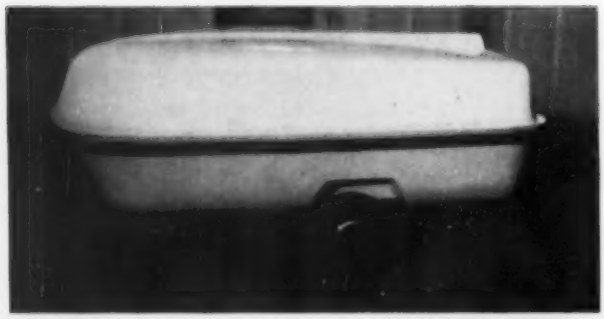
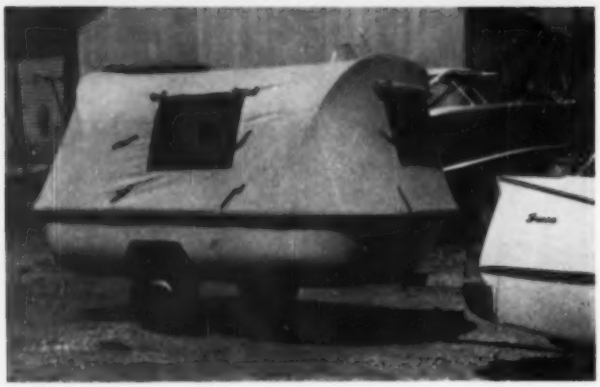




Recreation equipment this year seemed almost synonymous with boating, but boating, at the present stage of its hurried evolution as a sport for everyman, is not necessarily synonymous with esthetic sensibility. For example, no one has yet been able to resolve satisfactorily the serious and absurd problem of the outboard motor—the power package designed for a vehicle whose form, size, and structure the designer can only guess at, since he will never see it. But there has been some progress in getting the boat to water (124, 127), and in making the passenger safe (126,129,-131). And outdoor life for the landlocked is enhanced by the designer's interest in the old problems of bed (124), board (133), and light (135). Perhaps the year's most outstanding contribution of technology to sports was the creation of a light, inexpensive .22 caliber rifle made of structural nylon and steel. Apart from the protective oiling of the steel parts, no lubrication is necessary; and since nylon won't warp, the barrel is precision bedded in the stock, as it is in expensive match rifles.

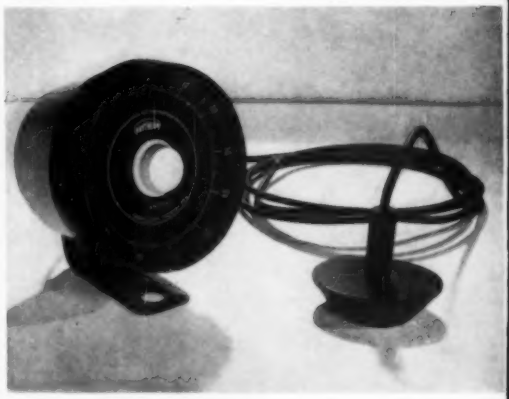
124 Nomad combination boat-trailer
Knight Manufacturing Co.
Design Enterprises (Frank H. Stephens, Jr.), designers
Ralph Aldrich, engineering consultant

Trailer sleeps two on removable bunks, has built-in ice box. Top is 2-seat boat of hand-laid-up Fiberglas, rated for 6 hp outboard.

RECREATION EQUIPMENT FOR WATER AND LAND

125 "Bar Harbor" fiberglass boat
Lone Star Boat Co., Grand Prairie, Texas
Mel Boldt and Associates (Mel Boldt), designers

Self-bailing motor well permits full tilt of motor for accessability and installation of accessory tank fittings for remote fueling.



126 Fathometer depth sounder
Raytheon Co., Waltham, Mass.
Leonard B. Emerson, product designer;
Herbert Single, electronic designer;
Gilbert Horsman, mechanical designer

Completely portable, powered by self-contained battery pack or 12 v. dc. Shell eliminates glare for easy reading even in bright sunlight.

127 Lightweight boat
Sudbury Laboratory, Sudbury, Mass.

Vacuum-formed of transparent Tenite butyrate, hull weighs 44 lbs., carries 600 lbs. afloat. Can be placed on cabintop without spoiling silhouette or cutting light.

128 Bail-Kwik bailer
R. C. Molding Co., Inc., New York

Molded of Tenite polyethylene flexible enough to let mouth be pressed to deck for water takeup.

129 Boat cushions
Charles Ulmer, Inc., New York

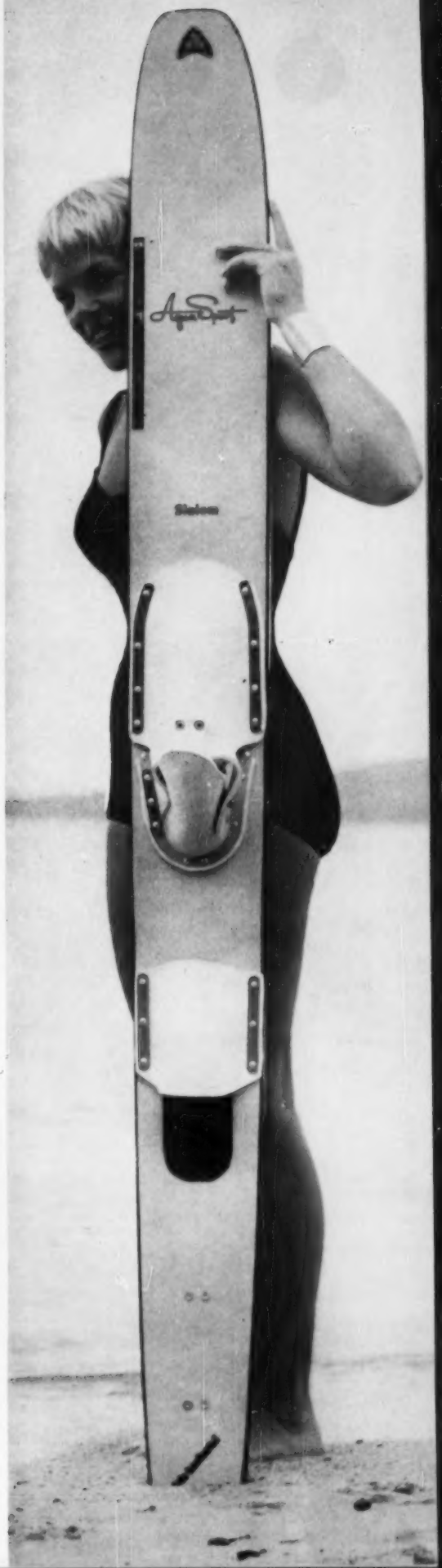
Floatable cushions of Ensolite (U. S. Rubber vinyl sponge). Three snap together to form emergency life raft, can support 12 persons.

130 Water skis
Cove Craft, Inc., Laconia, N. H.
Laurence C. Brown, designer

Tapered tail allows for weight shift from front to back foot. Built-up four-piece laminated core sandwiched between two cross laminations and two longitudinal face laminations of veneer.

131 Depth sounder
Applied Electronics Co., San Francisco
Gene Tepper and Associates, designers

Sheet-metal cabinet, epoxy finish, silk screened acrylic face plate.



C

132 22 caliber rifle
Remington Arms Co., Inc., Ilion, N. Y.
Staff design: Wayne E. Leek, supervisor, Ilion research division

Structural "Zytel" molded nylon fore-arm, stock, and receiver containing metal parts. Nylon trigger, trigger guard, bolt handle, safety and magazine parts eliminate all lubrication but protective oiling of few metal components.

133 Portable stove, broiler, heater
Oxy-Catalyst, Inc., Wayne, Pa.

Vertical broiler and heater burns liquid gas at surface of catalyst-coated screen to produce flameless infra-red radiant heat. 9 lbs.

134 Stove and kettle
Chemex Corp., New York
Peter Schlumbohm, inventor

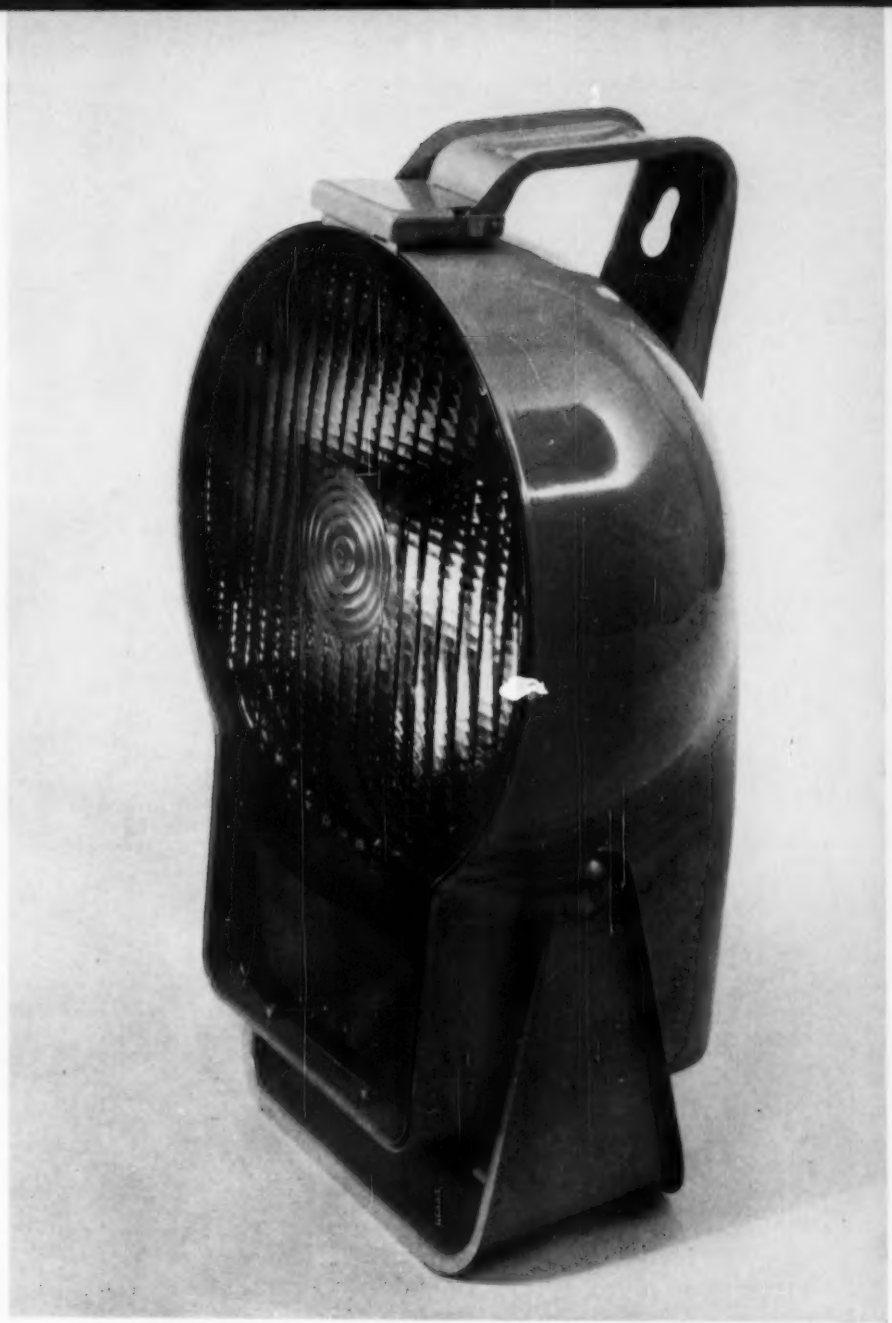
Hot gas passes through annular chimney, white for minimum radiation. Extruded aluminum kettle anodized black for good heat intake.

135 Camper's lantern
Ray-O-Vac, Madison, Wis.
John V. Hansen, Ralph Jacobson, staff designers

Head tilts to convert from flood to spot.

136 Organ
Hammond Organ Co., Chicago
Anthony Trendler, Chief Engineer

Extra division enables player to get three-manual-voice performance from single manual instrument.



138 Flashing light
R. E. Dietz Co., Syracuse, N. Y.
Arthur J. Pulos, Douglas Cleminshaw, Donald Waterman, designers

Carrying handle locks lens in place. Base allows directional adjustment. Main body and lens of one-piece construction. Lens of Acrylic.

137 Rear view mirror
Jervis Corp., Detroit

Switch adjusts mirror up, down, or sideways. Stainless steel cables by Allegheny Ludlum.

139 Single-face turn signal
Double-face turn signal
R. E. Dietz Co., Syracuse, N. Y.
Arthur J. Pulos, D. Lee du Sell, designers

Snap-grip Lucite lens and O-ring construction eliminates lens screws, retainers. Water, dust and rust proof.


UMER
SELLING
AD

Part 2
Selling

The designer as a selling force commonly operates in two ways: first he plans products that will sell. Second, he plans packages, signs, and in fact the whole program of relating the intangible image to the tangible product or service. This aspect of the selling function of design has expanded, rather publicly, as manufacturers responded to the fact that the package has replaced the retail clerk, and that corporations, like centipedes, need to put all their best feet forward. Some of those feet are shown on the next ten pages.

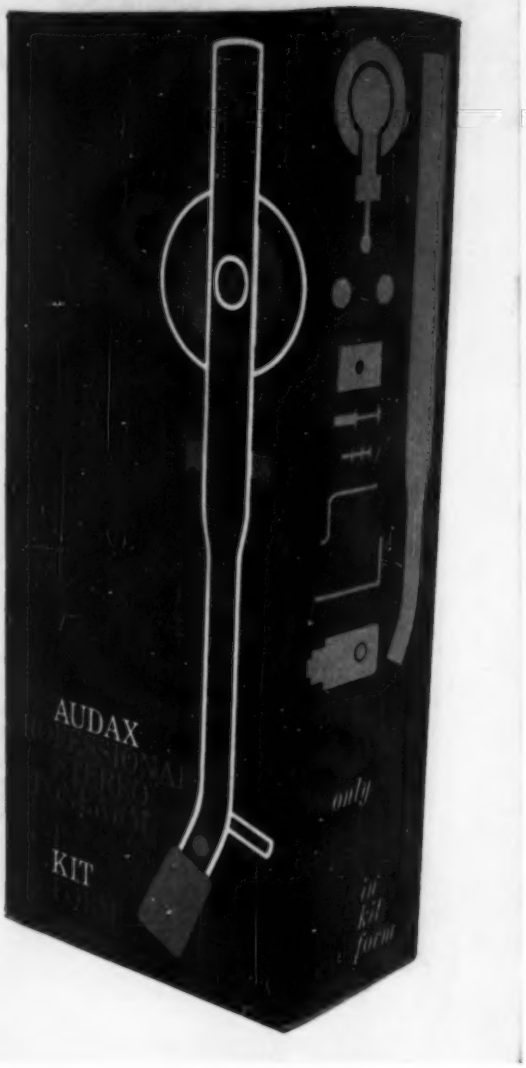
In hard goods there is some refinement, of the type usually found only in luxury packages, and, more important, an increased use of clear graphic statements of what the product is and what it's used for. (As life becomes more complicated, fairly obscure products arise to handle the complications. They need to be explained.) That statement need not be achieved at the expense of taste is evident in such packages as the tone arm box (141) in which both the assembled arm and the components of the kit are used in a way both informative and pleasing. Sometimes, through transparent film, the product itself becomes the design, as it does in the sea blue sponge wrap (147).

There was little to applaud in food packaging this year, for the same reason that carnival barkers never win awards for voice technique: they have to shout too loud too long too stridently. Designers of cereal boxes and frozen dinner kits may not have to shout, but since many think they do, the result is the same. Certainly the fierce competition of the supermarket does not make for easy solutions; still, is fierce design the only kind that will satisfy fierce competition? If not, there was little effort to prove it this year. But perhaps because the potables on page 77 are created, as the ads say, "to be enjoyed in moderation," their packaging looks as though it were intended to introduce the product inside rather than to play war games with the next item on the shelf.

Another selling area in which desperation appeared to be a driving force was the corporate image. Now that "decorator colors" is the magic phrase applied to all consumer products that aren't black, there is a sort of "decorator logo" attached to the companies that make the products. Staid old firms whose management still, spiritually, wears celluloid collars have been given genuine domestic Swiss logos that are supposed to embody "the new corporate image." Often they are new only to the client, and genuine to no one. The year's freshest way of imaging a corporate structure was Charles Eames's device (171-A) for cramming as many visual aspects of American life as possible onto seven screens at once. Unquestionably it confused some Russians, but we can't help believing that it carried a clearer message than the stylized brandmarks presumed to "impart dignity" to products that may not have any.

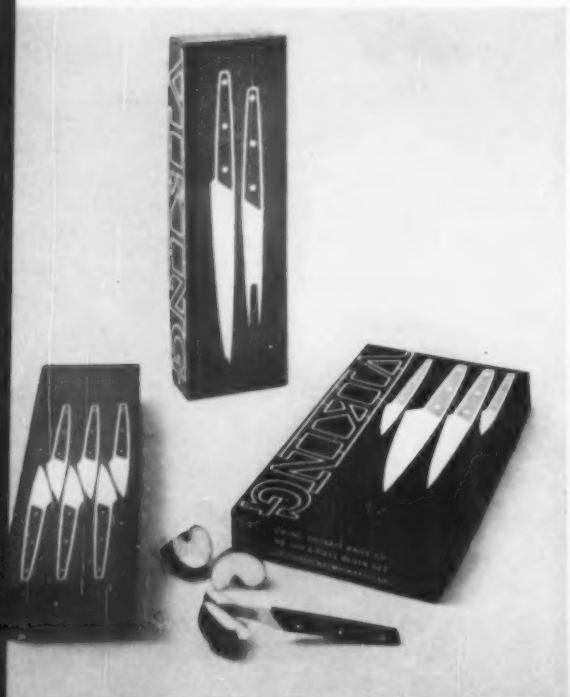
S

HARD GOODS PACKAGING



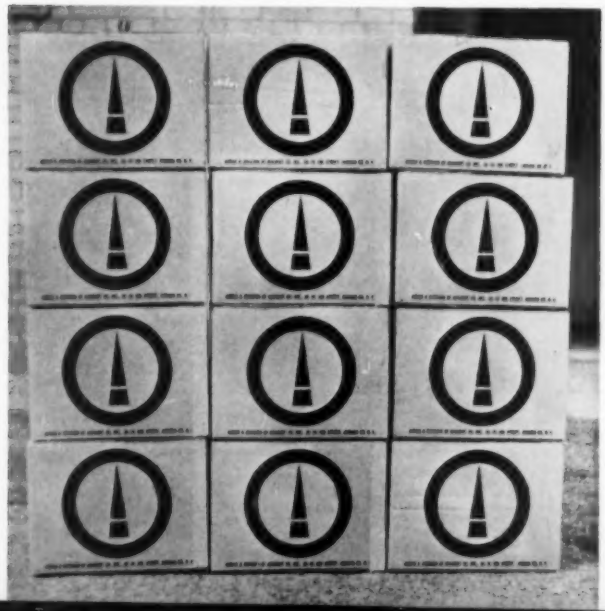
141 and 142 Tone arm and speaker packages
Audax Co., division of Rek-O-Kut Co., Corona, New York
George Nelson & Co. (Richard Schiffer), designers

Components in tone arm kit used both as decorative graphic device and product identification. Logo on speaker pack establishes corporate identity. Offset printing in red, black, gold and white.



140 Cutlery package
Ontario Knife Co., Franklinville, N. Y.
Michael Lax Associates (Richard Schiffer), designers.
signers

Ochre background and knife handles, with white outline, blades, and company logo strive for quality connotation.



143 Shotshell reloading kit pack
Lyman Gunsight Corp., Middlefield, Conn.
Gersin and Arnold Associates, designers

Symbol identifies product, glamorizes sport. Finished in overall plastic varnish; black, white, red-orange.

144 Carpet sweeper package
Bissell Carpet Sweeper Co., Grand Rapids
Harley Earl Associates (Dave Bishop packaging director; Tomoko Miho, graphics; R. Watts, structural design), designers

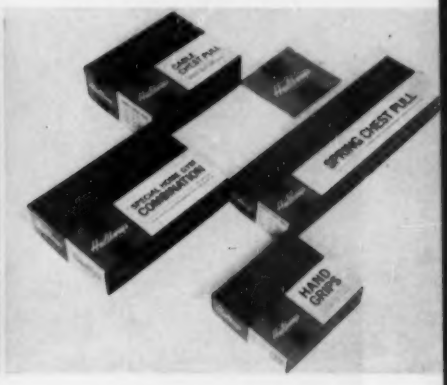
Gift carton of one-piece white corrugated board has interchangeable insert for promotional use. Sectional handle fits in covered section.

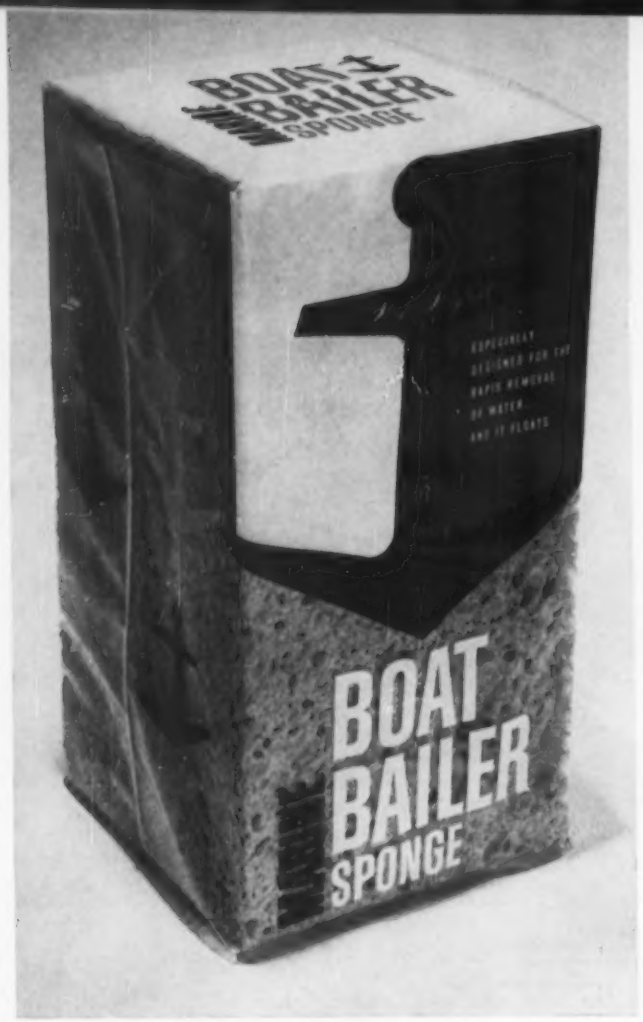
145 Paint cans
United Wallpaper Co., Chicago
Robbins, Caver, Page & Associates (Jerald O. Page), designers

Paint brush motif; readable directional copy. Paper supplied by Carpenter Paper Co., Dallas.

146 Exercising equipment box
Healthways, Los Angeles
Porter, Steiner & Associates (David J. Goodman), designers

Design accommodates wide range of box sizes over several lines, each distinguished by color variation. Packages below colored black and red-orange on white stock.





147 Sponge package
Burgess Cellulose Co., Freeport, Ill.
Dave Chapman, Inc. (Dave Chapman, Hal Hester), designers

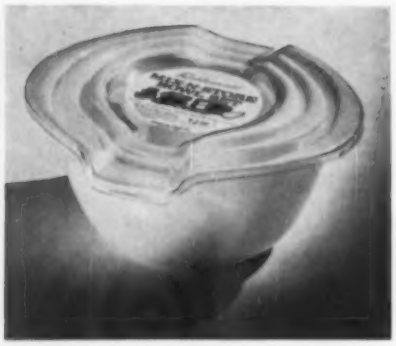
Nautical product given nautical theme by anchor, and blue of sponge showing through. Heat-sealed polyethylene wrapper gives airtight wet pack.

149 Sponge package
General Mills, Minneapolis
Lippincott & Margulies, designers

Red, white and black colored panels intended for "high-fashion" look for product.

150 Stationery wrapping
Onward Stationery
Morton Goldsholl Design Assoc., designers

Color and typography distinguish school items from commercial office supplies in graphic coordination of more than 50 items.

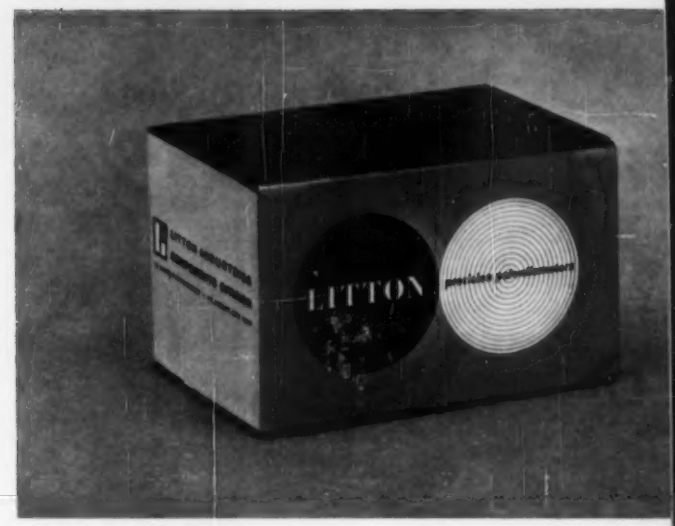


148 Mixing bowls packaging
Rubbermaid, Inc., Wooster, Ohio
Smith, Scherr, and McDermott, designers

Injection-molded clear polystyrene lid clamps over edges and spout of largest of three bowls in set. All three bowls visible; customer can feel bowl itself without opening package, which also serves as lid for refrigerator storage.

S

BUSINESS PACKAGING

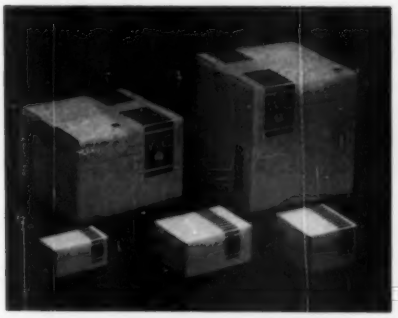


154 Potentiometer box
Components division
Litton Industries, Beverly Hills, Cal.
Robert M. Runyan, designer

Precise graphic treatment suggests precision instruments.

151 Gyro packages
Whittaker Gyro Division
Telecomputing Corporation, Los Angeles
Channing Wallace Gilson, designer

Logo and graphics in gold and yellow on #1 white corrugated board. Cartons ship fragile gyros for planes, missiles.



152 Paper carton
International Paper Co., New York
Lester Beall, Cliff Stead, Jr., designers

Company logo forms intricate graphic pattern.

155 Industrial wire pack
Dashew Business Machines, Culver City, Cal.
Porter, Steiner & Associates (A. Porter), designers

Part of company identification program for materials used primarily for internal industrial operations.

153 Packaging and Corporate identity program
Graphic Controls Corp., Buffalo, N. Y.
Robert Zeidman Associates (Don Pahl), designers

First flip-top box used as dispenser for circular charts.

S

LUXURY PACKS

157 Ice cream carton
Morton Goldsholl Design Assoc., designers

Single set of plates rotated in printing, with only different color inks and inserted type slug to identify flavors.

156 Cigarette pack
Brown & Williamson, Louisville
Frank Gianninoto & Associates, designers

New trademark appears on gold band extending from closing stamp to 1/3 of way down pack.

158 Cigarette pack
P. Lorillard Co., New York
Jay Doblin, Leedia Vitale, Ray Grove, designers

Band of blue and one of green suggest freshness.

159 Bourbon bottle
Stitzel-Weller Distillery, Louisville
Walter Landor & Associates

Small size bottle developed for hotel and restaurant use of premium eight-year-old "limited supply" bourbon.

160 Bacon and ham wraps
Jones Dairy Farm, Port Atkinson, Wisconsin
Robert Sidney Dickens, designer

Wrapping suggests wholesome quality farm product, provides neat generous space for weight and price.

S

PERSONALS PACKAGING

161 Instant-wash kit
Lensclean, Inc., New York
Brownjohn, Chermayeff, & Geismar, designers

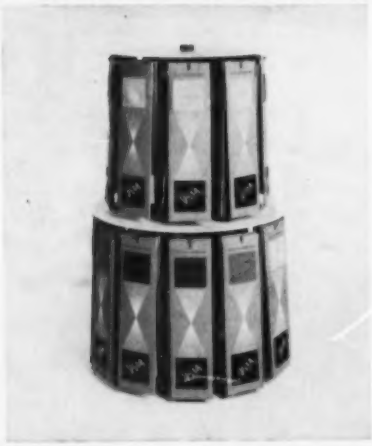
Logo ingeniously devised to serve both single and multi-pak identification purposes.

163 Sports girdle package
Sea Lure Manufacturing Co., Los Angeles
Porter, Steiner & Associates (A. Porter), designers

Three display units fit into standard shipping carton, allowing display on three counters.

162 Men's toiletries line
Yardley of London, New York
Donald Deskey Associates, designers

Bold Y stands out in black, gold, terra-cotta.



164 Package and display unit for scarves
Scarves by Vera, Inc., New York
Don Wallance, designer

To select, purchaser revolves color wheel of dyed silk color squares rotating horizontally.

165 Hand lotion bottle
Pacquin, Inc., New York
Lippincott & Margulies, designers

One-piece wrap-around label applied at angle inspired client's "off-the-shoulder" advertising campaign.

166 Bath powder package and dispenser
Millot Inc., New York
Package and label, staff design: James King, designer
Container design: Apcon Corporation

Bottle of DuPont Zytel is one of first aerosol packages to be used for powder.

167 Kitchen towel gift pack
Startex Mills, Startex, S. C.
Harry Lapow Associates (R. Flynn), designers

Towels rolled and inserted into polystyrene tumbler, with label bowed to outside and pack wrapped in Vitafilm.

168 Plant entrance sign
Titeflex, Inc., Springfield, Mass.
Lester Beall, Richard Rogers, designers

Steel and hardboard sign in russet, black, and white identifies plant to traffic from three directions.

169 Logo
Weyerhaeuser Co., Tacoma, Washington
Lippincott & Margulies, designers

"Tree in a triangle" brandmark represents timber company on letterheads, vehicles, billboards, logger's hats.

S

170 Corporate identity program
Farm Bureau of Ohio, Columbus
Raymond Loewy Associates, designers

Logo intended to distinguish client from organization with similar name, and to appeal to women in suburban outlets.

171 Corporate identity
Shell Oil Co., New York
Raymond Loewy Associates, designers

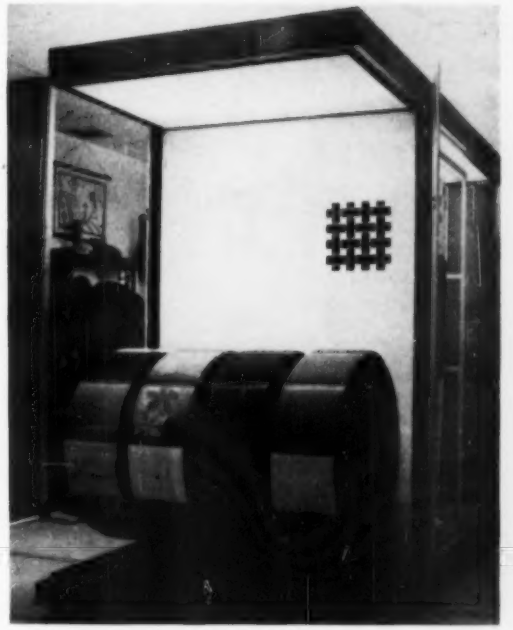
Modification of old shell sharpens indentation of flutes, substitutes bright yellow for orange.

172 Vending machine
Dariomatic, Inc., Manhattan Beach, Cal.
Channing Wallace Gilson, designer

Large glass expanse set in steel case trimmed with metal roll-formed trim. Texture panel of aluminum; hob-nail texture from Croname.

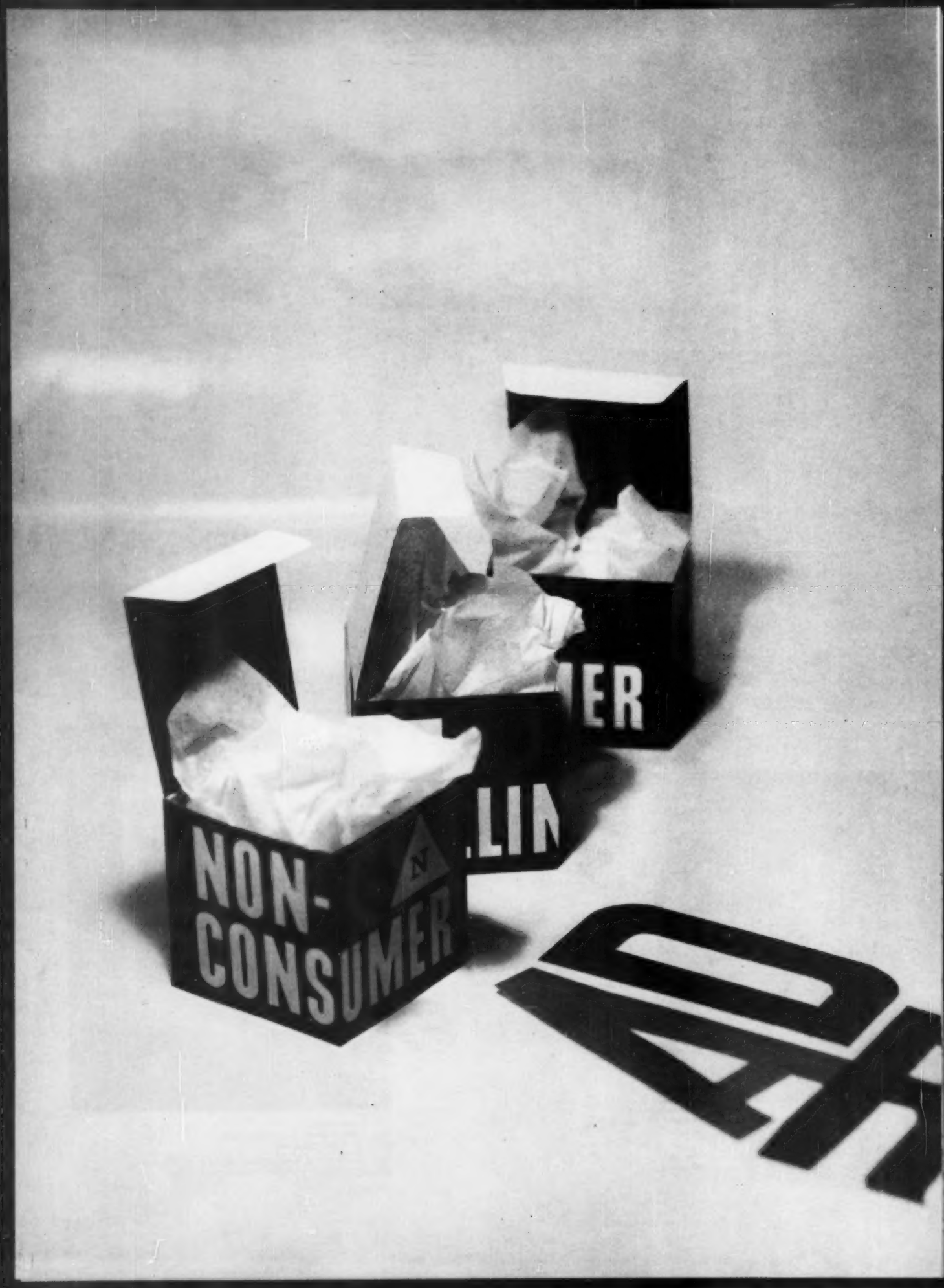
171-A Multiple screen film presentation
American National Exhibition in Moscow
Charles Eames, designer

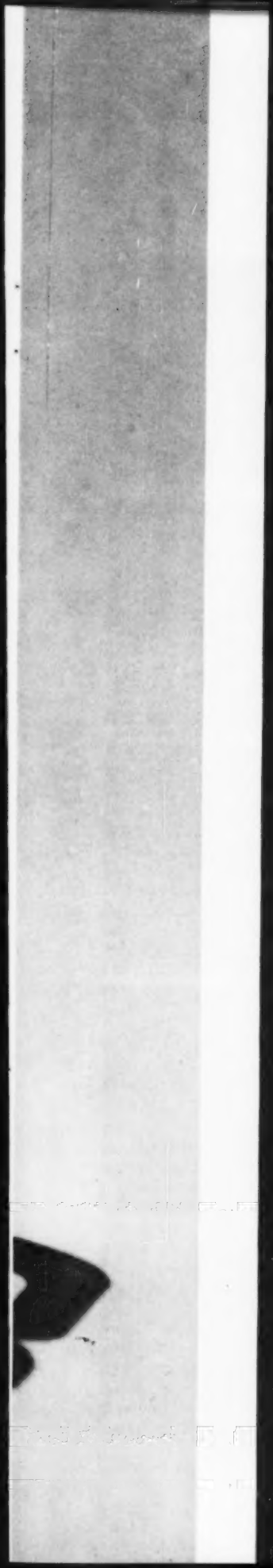
Synchronized 35-millimeter projection technique simultaneously shows 2000 slides (color and black and white) in 12-minute presentation.

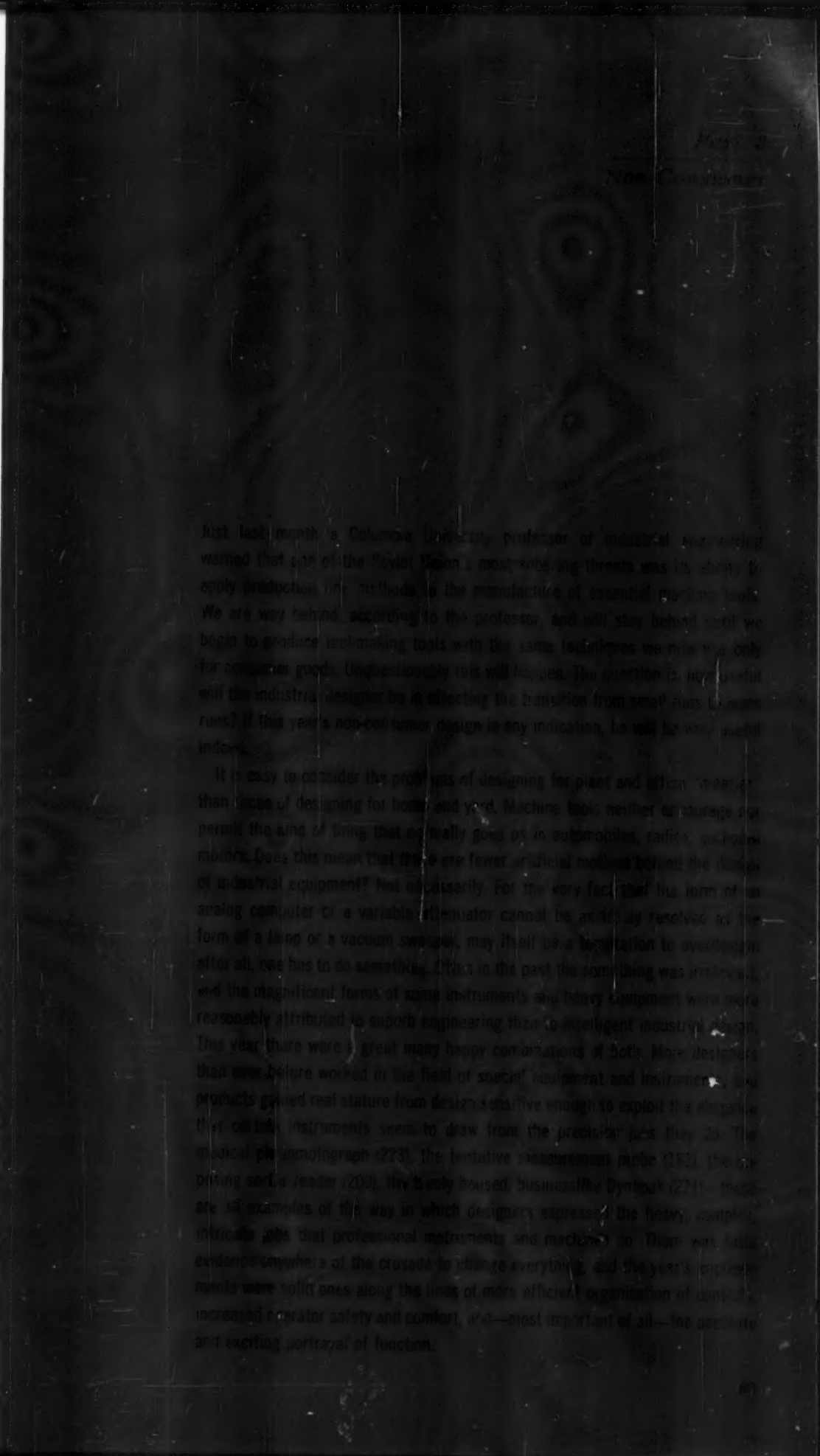


173 Fabric display
Jack Lenor Larsen, Inc., New York
Ward & Saks, designers

Four demountable foam-rubber padded drums move independently on stainless steel upright shafts.

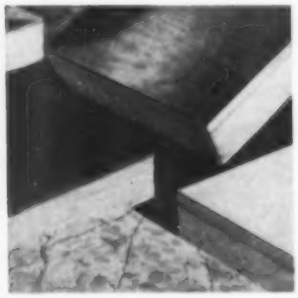

NON-
CONSUMER





N

The purpose of new **MATERIALS** on the market this year is either to "make" new products or to protect them from adverse environmental forces. Some new materials are of exceptional strength to enhance the life-span and operation of products, some are of unusual lightness, others have properties never before available. Thin-walled metal hose can now be supplied to manufacturers as flat ribbons to be inflated at point-of-use; newly treated nylon surfaces can stick to each other as tenaciously as a burdock burr to a woolen coat. What can be done with some of the new materials, and where and how they can protect products, is indicated on the next three pages.

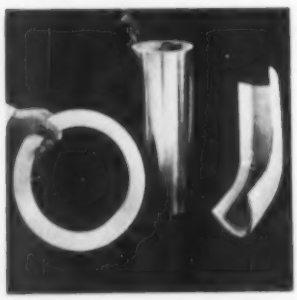


A *Alply sandwich panel*

A. This new panel construction is made of expanded polystyrene foam and aluminum sheets. It offers a combination of strength, light weight, efficient thermal insulation and production economy. Ordinary electric saws can cut the material to shape, making small production runs feasible. The panel can be supplied in specified thicknesses of inner and outside materials, and can be textured, formed, and colored to achieve any desired decorative effect. First commercial use of the product this year was in two new Westinghouse refrigerators. The panel can therefore be tailored to individual requirements and offers simplification in the design and construction of a large variety of appliances, buildings, trailers, etc. Manufactured by Aluminum Company of America, Pittsburgh 19.

B *Aluminized fire fighter's suit*

B. Development of this expendable aluminized fire fighter's suit grew out of the need for protection against the intense radiant heat resulting from fires set off by nuclear weapons. It also minimizes the danger due to physical contact with radioactive fallout. It is made of a combination of unbleached kraft paper, fire-retardant-treated, and aluminum foil (.00035), laminated and creped. The new material is also suited for civilian use: for protection of emergency forest fire fighters, civil defense workers and people evacuating fire areas. It was developed by the U.S. Army Quartermaster Research and Engineering Council, Natick, Mass.



C *Cormet A porous nickel*

C. A new production process has made possible the manufacture of large pieces of porous nickel in a variety of complex shapes. Cormet A can operate at temperatures up to 575° F, and is particularly well used as a non-contacting conveyor when processing highly sensitive materials such as camera and X-ray film, gelatinized paper, adhesive materials, plastics and other products that have high surface sensitivity at high temperatures. The material is pressed and sintered, and is supplied in sheets 12 by 30 inches, as well as cylinders two feet in length, with 12-inch diameters. Manufactured by Corning Glass Works, Corning, N. Y.

D *Corning industrial filters*

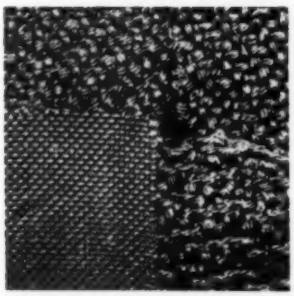
D. Industries faced with such problems as liquid filtration, gas diffusion, purification of air can now improve their processes with a new industrial filter made of high temperature ceramic particles surrounded by a glassy coating. The new filter is supplied in various shapes—discs, tubes, plates, cups and pellets—all of which have a very high particle retention. The porous material of the filters is heat-resistant and safe for operation up to 1830° F. Manufactured by Corning Glass Works, Corning, N. Y.

E *Delrin, thermoplastic acetal resin*

E. This new plastic is supposedly the first with strength approaching that of non-ferrous metals. It is metal-like in many ways, and will do many jobs heretofore performed only by metals. Tough, resilient without being brittle, Delrin retains its properties across a wide range of temperature and humidity. Heavier than most plastics, it is lighter than die-casting alloys: 80 per cent lighter than zinc, 45 per cent lighter than aluminum, over 20 per cent lighter than magnesium. As seen at left, it is used to replace brass in the construction of a self-seating faucet (by Kel-Win Manufacturing Company, Richmond, Va.). In this use as internal cartridge its main advantage is its corrosion resistance. Delrin is also a good insulator, which means the hot water faucet handle remains cool. Produced by: E. I. du Pont de Nemours & Company, Wilmington 98, Delaware.

F *Flexible plastic magnet*

F. This plastic magnet, said to react exactly like metal or ceramic magnets, is manufactured in continuous lengths in diameters ranging from spaghetti-size to that of garden hose. It can be cut without changing its magnetic properties and can be magnetized in spots or sections. So far it has been used only for refrigerator gasket seals but has good application possibilities for compacts, jewel and cigarette boxes, with telephone and hearing aids, etc. It can be useful too in the toy industry, and in office supplies (bulletin boards, etc.). Manufactured by B. F. Goodrich Industrial Products Company, division of B. F. Goodrich Co., Akron, O.

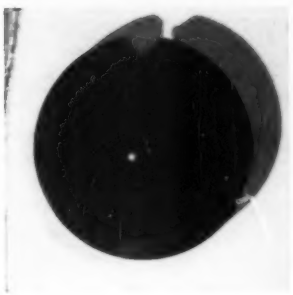


G *Graphite cloth*

G. A unique development in the field of materials this year was the conversion of graphite from its usual brittle block form into that of flexible cloth. This was accomplished by a thermo-chemical process in which any material containing graphite can be subjected to temperatures approaching 5400°F. The new material is best used in high-temperature situations. It is good up to 6600°F but oxidizes at 750°F and must be protected from air above this temperature. It is likely that the "coal" textile will be used as a reinforcing agent in various plastics and refractory (oxidizing) materials used at high temperatures. Manufactured by National Carbide Corporation, New York, N. Y.

H *Marlex 5000, linear polyethylene*

H. Copolymerization has made possible the production of this new linear polyethylene series which differs from previous Marlex in its increased resistance to stress cracking, and in its load-bearing ability. These properties make the new resin well suited for plastic ropes (at left) and filaments, containers for liquid detergents, toys and housewares, and for injection molding for various industrial items. Manufactured by Phillips Chemical Company, New York, N. Y.



I *Penton®, thermoplastic polymer*

I. The disk and half-ball (at left) used in the Drymaster pumping system, exemplifies the properties of Hercules' new chlorinated polyether. In this application the material replaces the five parts required in a conventional bronze disk and half-ball assembly. The plastic assembly was injection molded in one piece. The wear resistance of the plastic is higher than of the bronze disk, and the high corrosion resistance of Penton® is advantageous here. Manufacturer: Hercules Powder Company, Wilmington 99, Delaware.

N

J *Plastic mirror*

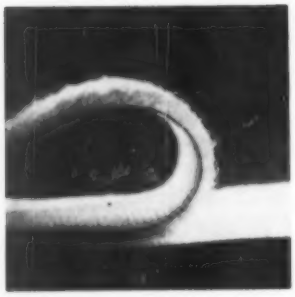
J. The plastic mirror is capable of reflecting the same intricate configurations as the "old-timers." Paraboloids, hyperboloids, ellipsoids, and more complex aspheric surfaces are duplicated faithfully. In fact, for certain applications the physical qualities of the plastic mirror are superior to those of glass. It is, for example, obviously superior in shock resistance. It is also much cheaper to manufacture. The base of the new mirror is a special epoxy formulation; the reflective surface is an aluminum coating applied by vacuum deposition and coated with a protective film. The new product is called Repli-Kote and is manufactured by Military Products, Singer Manufacturing Company, New York, N. Y.

K *Pro-fax® polypropylene*

K. This new thermoplastic is finding wide use in packaging, dinnerware, and other food-handling products due to its freedom from taste and odor, high heat distortion factor, and resistance to staining. In the large capacity coffeemaker (at left, Jubilee by Cory Corporation), the pouring lip and lid are made of polypropylene. The material comes in four colors, supposedly fade-proof; its light weight and strength are the prime reasons for its use as webbing and fabrics with outdoor furniture. Coty has also used the new plastic as the material for one of its three-piece containers decorated with metallic panels of Mylar. Manufactured by Hercules Powder Company, Wilmington 99, Delaware.

L *Strubing, seamless metal tubing*

L. Field inflatability is the most outstanding property of this new type of metal tubing. The thin-wall, seamless tubing can be shipped in ribbon form; for example, the entire ductwork for the heating system of a seven room house can be shipped in a box the size of an orange crate. This results in an obvious cost reduction for such installations. The product can be manufactured in various materials and thicknesses; in metal foil it is a promising material for packaging of frozen foods, toothpaste,etc. It is easier, supposedly, to insert a chicken in a length of Strubing and crimp the ends than to wrap a foil sheet around it. Manufacturer: Wolverine Tube Division, Calumet & Hecla, Allen Park, Mich.



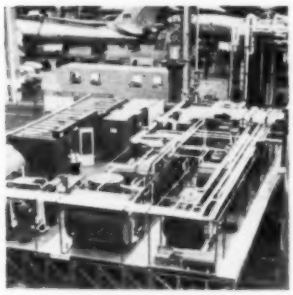
M *Velcro, self-fastening nylon*

M. This spectacular "first," based on the observation of burdock burrs that stick to clothing, consists of two strips of nylon tape—one covered with tiny, close-packed filament hooks, the other with thousands of tiny loops—which stick to each other when pressed together. Its application is almost without limit, and some of its suggested uses are for quickly installed exhibits, and holding conveyor belts for large printing presses. Velcro of course is already used in belts and for myriad fastening applications. It is supplied in ribbons of varying width. It is manufactured in Europe, Canada and the U.S. and is distributed here through Velcro Sales Corporation, New York, N.Y.

N *U. S. Steel vinyl-coated mill product*

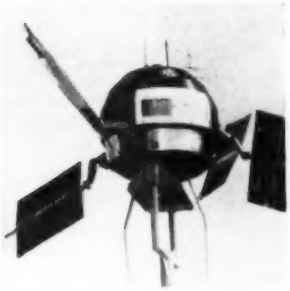
N. This newly marketed vinyl-coated steel product differs from other vinyl laminates in the way it is processed and supplied. It is not a laminate in the ordinary sense; vinyl is applied to it not as a film but in the form of liquid vinyl plastisols and the cured and finished steel product is shipped to users directly from the mill. It can be used in much the same way as vinyl laminates and is available in various colors and textures. Manufactured by United States Steel Corporation, Pittsburgh, Pa.

Research in the field of **POWER** is centered largely around materials. The capture of solar rays, for example, is meaningful only if the heat can be transformed into useable energy. To convert heat into electricity—one of the major activities this year in the power research laboratories—various types of semiconductor materials are being investigated, and generators capable of this direct conversion have been built for special applications. Another factor significant in utilizing power sources is obvious but troublesome in many instances. Power, however abundant, is not much use unless it can be brought where it's needed. These are some of the problems that have occupied scientists and engineers in this research field.



A *Airlifted nuclear plant*

A. A pre-packaged "portable" nuclear power plant has been constructed to bring power to out-of-the-way places. The power "package" is designed to be air-lifted; sixteen C-130 Hercules cargo planes can accomodate the entire plant, which can be loaded aboard the planes in one hour, and be transported to any point in the world in one and one-half days—which is a vast reduction from the weeks required to ship fuels. The portable plant (a full-scale mock-up is shown here) uses enriched uranium as its fuel source and can generate 1,000 kilowatts of electricity and 7,000,000 BTU's of heat per hour; an amount sufficient to power four medium-sized manufacturing plants or 2,000 homes. Lockheed Aircraft Corp., Nuclear Products Branch, Marietta, Ga.



B *Solar "paddle" wheels*

B. The power needed for the communication system of the satellite Explorer IV to transmit space data for a year is being supplied by solar energy. Four "arms"—20 inch square aluminum paddles—snap out into position when the satellite rocket's third stage is about to fire 150 miles out in space. The paddles are made of ultra lightweight aluminum honeycomb on whose surfaces sun absorbing units—solar cells—are mounted. A total of 8,000 cells charge nickel-cadmium batteries which supply the 40 watts of power required for the Explorer's communication system. Fabricel Division of Poly Industries, Inc., Pacoima, California.

C *Thermoelectric generator*

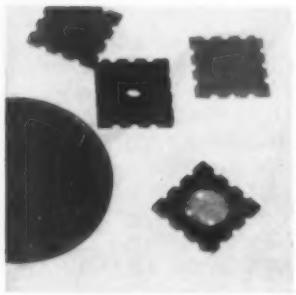
C. The principle of thermoelectricity—utilizing the electricity generated due to contact of two dissimilar metals at a heated junction—has been employed in a generator unit operating from a radioactive isotope heat source. The unit is not yet efficient enough to make it applicable as a standard power source although its six per cent efficiency is a vast improvement over earlier units. When the units are improved further to yield a more workable efficiency, this direct conversion of heat into electricity will of course have obvious benefits (less cost, less bulk, etc.). Manufacturer: Minnesota Mining & Mfg., St. Paul, Minn.

D *Thermoelectric research*

D. Thermoelectricity has so far been used commercially—and extensively—with thermocouples whose operation is based on the thermoelectric phenomenon. But industry is hopeful that once thermoelectricity is made practical for power applications, it might do for the power-generating field what the transistor has done for electronics. Consequently many companies are very active in thermoelectric research. At left, solar energy contained in the mirror is focused on an assembly of thermoelectric materials which convert the intense heat directly into electricity. At Westinghouse Research Laboratories, Pittsburgh, Pa.

N

The striking news in **ELECTRONICS** also revolves around new materials which are causing drastic changes in the entire field of electronic components. Nowhere this year does the "miracle" of advanced technology turn up with as many examples as in the field of electronics which is, of course, the heart of a vast array of military, industrial and consumer products. And the prospects ahead are equally staggering. The replacement of such hitherto clumsy parts as capacitors and resistors by a barely visible film of vaporized pure metal has already been accomplished in the laboratories. And vast reductions resulting from the use of ceramic and semiconductor materials are evident in modular circuit elements and components that reached the market this year. Some of them are shown here.

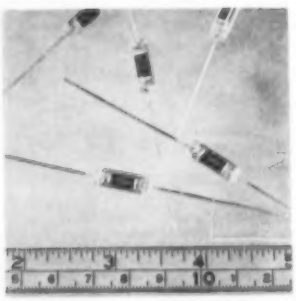


A *Fotoceram wafers*

A. A photo-etching process is employed in the manufacture of tiny wafers that help to reduce the volume taken up by circuit assemblies. The wafers are used as bases for such circuit components as resistors, transistors, capacitors and diodes, and the development of the photo-etching process makes possible the production of these new micro-modules on a low-cost mass production basis. The manufacturing process also guarantees a high degree of accuracy in the wafer's minute dimensions. They are made of a high-temperature glass-ceramic, one-third of an inch square. Manufactured by Corning Glass Works, Corning, N. Y.

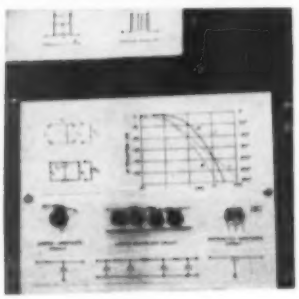
B *Fusion-sealed capacitors*

B. Circuit elements are miniaturized not only in the "active" component category (tubes, diodes), but in the "passive" group as well. This new CYF-10 capacitor is only 11/32" long and 11/64" wide and weighs up to a half a gram. The capacitor has this specific attribute: unlike standard glass capacitors it is fused around the edge and at the juncture of lead and capacitor body by a recently developed sealing technique which supposedly makes the unit impervious to moisture. Manufactured by the Electronic Components Department, Corning Glass Works, Bradford, Pa.



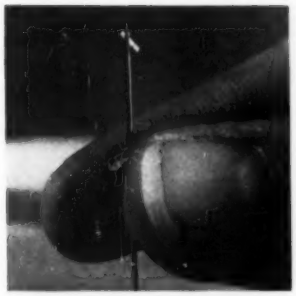
C *Glass enclosed resistors*

C. A technique similar to the one used to manufacture the fusion-sealed capacitors (item B) produces another miniature circuit element, the glass-enclosed resistor. A ⅛ watt unit, for example, is ⅜" long and ⅛" in diameter; all units are made of the same materials: glass rod bearing a tin oxide film and enclosed by a clear glass envelope. This construction makes the units impervious to moisture as well as resistant to physical shock. The new units will be best applied in circuits requiring high reliability: missiles, aircraft, computers, radar systems, etc. Manufactured by Electronic Components, Corning Glass Works, Bradford, Pa.



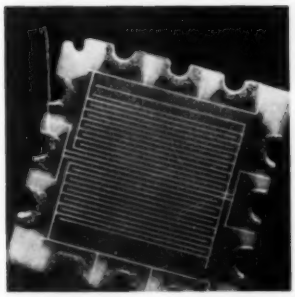
D *"Glob" circuits*

D. The term miniaturization when applied to electronic circuitry no longer describes the design direction of this essential aspect of electronic products. Micro-miniaturization is more correct. Ways are being sought to reduce the space taken up by circuits to such an extent that the third dimension would be "eliminated." The hope is that a thin film of vaporized pure metal will replace even miniaturized circuitry, bulky by comparison. The "glob" circuits at left are examples of the fantastic volume reduction now possible with electronic circuitry. Thin films of magnetic and other electrical materials are deposited to form a glob that can carry out such electronic functions as amplifying and oscillating. Varo Manufacturing Company, Garland, Texas.



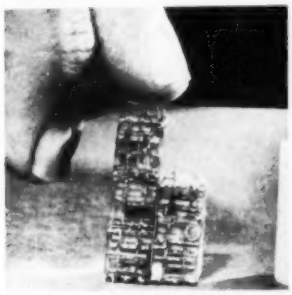
E *Logic element*

E. The circuit element shown here in the eye of a standard sewing needle, is a further example of the "miracles" occuring in this phase of technology. This tiny, tiny piece of silicon is an integrated logic element capable of performing the types of basic electronic computer functions which now require a good many conventional components. They are so tiny, 100 million of these logic elements can be crammed into one cubic foot. The element is regarded by computer scientists to be an important step toward the ultimate goal of computer components: to be compact enough to permit construction of a computer capable of the intricate functions of the brain. Radio Corporation of America, New York, N. Y.



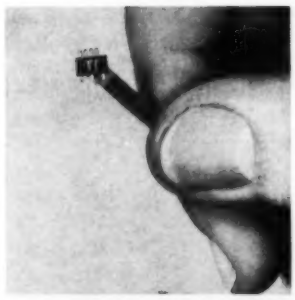
F *Micro-element resistor*

F. The desire to take the third dimension out of new circuit components has been nearly achieved in this recently developed micro-miniature resistance module. It consists of a solid state material in the form of a ceramic wafer about .35 inch square and only 10 thousands of an inch thick. By processing suitable substrates into the micro-wafers, the desired resistor characteristics are obtained. The wafers can be designed for required values of resistance between 10 ohms and one megohm. The basic module forms may be stacked or interconnected and any number can be used. Daystrom-Weston Instruments, Daystrom, Inc. New York, N. Y.



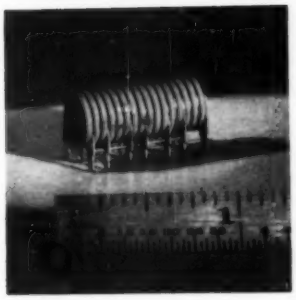
G *Micro-module circuits*

G. A principle similar to that used in the construction of the resistor elements (item F) is behind the make-up of complete micro-module circuits. These consist of ceramic conducting, semi-conducting or insulating materials in the form of thin and small flakes, each of which contains some element of a circuit: capacitors, resistors, etc. A six-transistor radio circuit made entirely of the flake-like materials is no larger than a sugar cube. The units were originally developed for military use but they have also been applied to consumer products. A five-transistor radio the size of a fountain pen is ready for the consumer market. Radio Corporation of America, New York, N. Y.



H *Silicon solid circuit*

H. The revolution in the field of electronic components caused by the utilization of semiconductor materials (in the transistor and semiconductor diodes) is now making itself felt in complete circuits. The tiny circuit at left (it measures ¼" x ⅛" x 1/32") consists of silicon and represents the equivalent of twelve electronic components making up a multivibrator circuit: two transistors, two capacitors, eight resistors. Texas Instruments Incorporated, Dallas, Texas.



I *TIMM ceramic circuits*

I. T(hermionic) I (integrated) M(icro) M(odules) is the term given to a new concept in circuit construction which makes use of the heat resulting from the red-hot operation of thermionic electron tubes. Ordinarily it is a problem to get rid of the heat in tightly packed electronic equipment. But with these new circuits which use tiny electron tubes in place of transistors the heat generated within the circuits actually increases the overall efficiency of operation. The one-inch ceramic capsule shown at left contains eight tubes and four resistors. The use of ceramic makes a high temperature operation possible; the resistors consist of a resistive film on the inside of ceramic insulators. General Electric Company, Receiving Tube Department, Owensboro, Ky.

N

Indicator lamps and tubes for electronic circuits are smaller and more versatile

A *All-glass flashbulb*

A. This flashbulb, the size of a jelly bean, indicates that miniaturization is an active force in product groups other than electronics. It has a grooved glass base designed especially for use in multi-lamp clips. It is zirconium-filled and delivers a light output of 7,000 lumen seconds. The bulb is expected to be used extensively with simple box cameras, but it can also be used with adjustable cameras having "F" or "X" synchronization at speeds up to 1/60th of a second, and with Class M synchronized cameras at all shutter speeds. Manufactured by General Electric Company, Photo Lamp Department, Cleveland 12, Ohio.

B *Ceramic tubes*

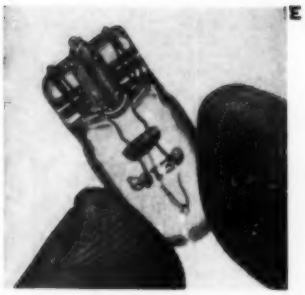
B. The use of tubes and other components in advanced areas of technology has in many instances made redesign necessary to meet the stringent demands imposed by nuclear radiation, very high frequency communication, etc. These small ceramic tubes ranging in size from ⅓" to ⅞" in length were designed to meet nuclear radiation, shock and vibration environments, and low-noise requirements at high frequencies in military as well as commercial communications applications. The temperature limit of the ceramic tubes is about 300°C. Manufactured by the Receiving Tube Department, General Electric, Owensboro, Ky.

C *Gold-bonded diode*

C. The basis of a newly developed parametric amplifier, applicable to very low noise amplification of microwave signals, is this diode no larger than a match head. Although it is tiny, the clock is hermetically sealed, and is available in two basic types, one for operation in the frequency range below 1,000 megacycles, and the other for the microwave frequency range. The semi-conductor diode has a nominal cutoff frequency of 70,000 megacycles and is designated HPA-2800 and HPA-2810. The parametric amplifier supposedly solves major bottlenecks of air traffic control by its ability to increase the range of existing airport and aircraft radar systems. Manufactured by Hughes Aircraft Company, Culver City, Cal.

D *High-power transistor*

D. Transistors heretofore employed in low-power electronic circuits are now being designed to handle high currents. The device shown here is made of silicon and can control over five kilowatts of power when operated as a switch. The characteristics of this new class of transistors are: collector-to-emitter voltage from 30 to 200 volts; maximum collector current rating 30 amps. The high-power, double-ended transistor is encased in a hermetically sealed housing specifically designed to take advantage of its high current and high voltage capabilities. Manufactured by Westinghouse Electric Corporation, Pittsburgh 30, Pa.



E *Indicator lamp*

E. Rated at 2 candlepower, this all-glass indicator lamp is 1 1/32″ long and has a life expectancy of 500 hours. It is lighter in weight and smaller than previous indicator lamps; and since it has no basing cement it can withstand ambient temperatures of up to 900°F. Called the GE 158, the miniature lamp was designed specifically for use in automobiles, but is also expected to find wide use in home appliances, radio and tv sets, control board panels, decorative ornaments, printed circuits, toys, novelties, coin machines etc. Manufactured by Miniature Lamp Department, General Electric, Nela Park, Cleveland 12, Ohio.

F *Nuvistor tube*

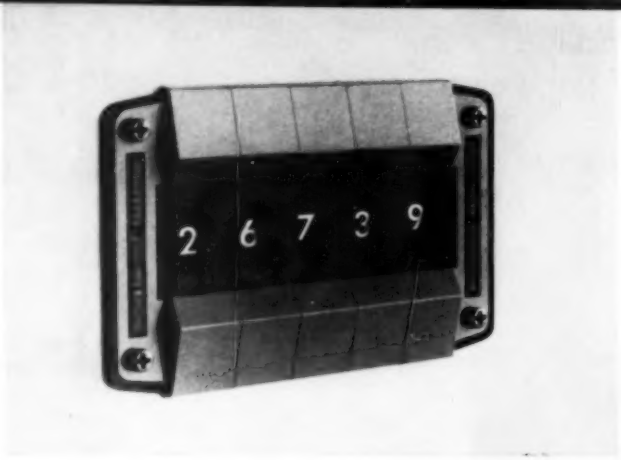
F. Spurred on by the great success of the transistor and other solid state devices which threatened to push the tube out of the electronics picture, recent advances indicate that much can be done in tube design to further explore its potential. It is doubtful that tubes would have been made as small had transistor competition been less critical. The tiny tube shown here is smaller than a thimble and its emergence on the market will influence the circuit and overall chassis design of tv sets and electronic equipment for guided missiles and jet planes. The tough little Nuvistor can withstand extreme changes in temperatures from 660°F to 320°F below zero. Like other developments in electronics this year, the Nuvistor is the result of new materials and processes. The tube is made of ceramic materials and strong metals such as steel, molybdenum and tungsten. Manufactured by Radio Corporation of America, Harrison, N.J.

G *"Transistorized" tube*

G. The popular adage: "two heads are better than one" is particularly apt in describing this tube experiment which combines the best of two electronic "camps." What was once the "enemy" of the vacuum tube, the semiconductor device, is now being applied to remedy one of the tube's traditional weaknesses: the cathode. In conventional tubes, the electrons that flow across its vacuum are obtained by boiling them out of a coated metal wire, or cathode, at high temperatures. This requires considerable electric power to supply the necessary heat, which then must be dissipated to prevent overheating. The elimination of these heat problems was the main reason for the transistor's popularity when it was introduced. In the experimental vacuum tube shown here the cathode heat problem has been solved in a new way: the cathode is replaced by a small piece of a semiconductor material—silicon carbide—which emits a constant flow of electrons from its surface. Applied successfully to the vacuum tube, this new method of electron emission from semiconductors would do away with the tube's inefficient process and it would also combine in a single operating unit many of the inherent advantages of both semiconductors and tubes. Westinghouse Electric Corporation, Pittsburgh 30, Pa.

H *Triple triode*

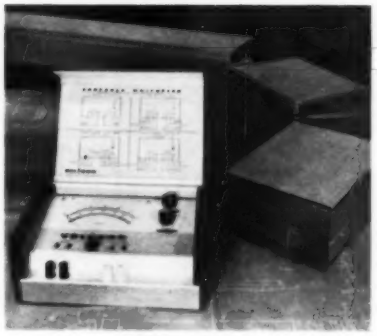
H. The more conventional area of electronic tubes has not been dormant this year. The tube shown here looks like an ordinary vacuum tube but is, in fact, industry's first triple triode receiving tube. It is expected that the new triode, designated 6EZ8, will be used with these circuits: RF amplifier, oscillator and mixer; and oscillator, mixer and AFC tube. Each triode in the tube is rated for a maximum of 330 plate volts, 50 volts negative dc grid, and 2 watts plate dissipation. Receiving Tube Department, G. E., Owensboro, Ky.



ELECTRONIC EQUIPMENT

174 Digiswitch
Digitran Co., Pasadena, Calif.
Jack Reitzell, project engineer
Jim Powell, Bernard Caminker, consultant designers

Panel space visual clutter reduced; several switches may be actuated at once. Beige and black.

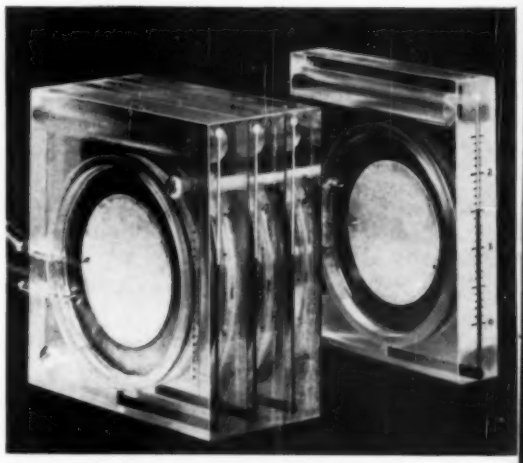


175 Portable Wattmeter
Voltron Products Inc., South Pasadena, Cal.
Tor Petterson, Monte Hartment, consultants

Brush-finished anodized aluminum main case and cover provide complete hook-out hinge, tracks for holding glass panel, chassis, bottom plate, and instruction cards.

176 Calibration indicator
Baldwin-Lima-Hamilton Corp., Electronics & Instrumentation Div. Waltham, Mass.
Harry Lockery, Chief Engineer

Designed for portability; precise, highly-versatile instrument for calibration service involving tension or compression loads; wood case; aluminum chassis.

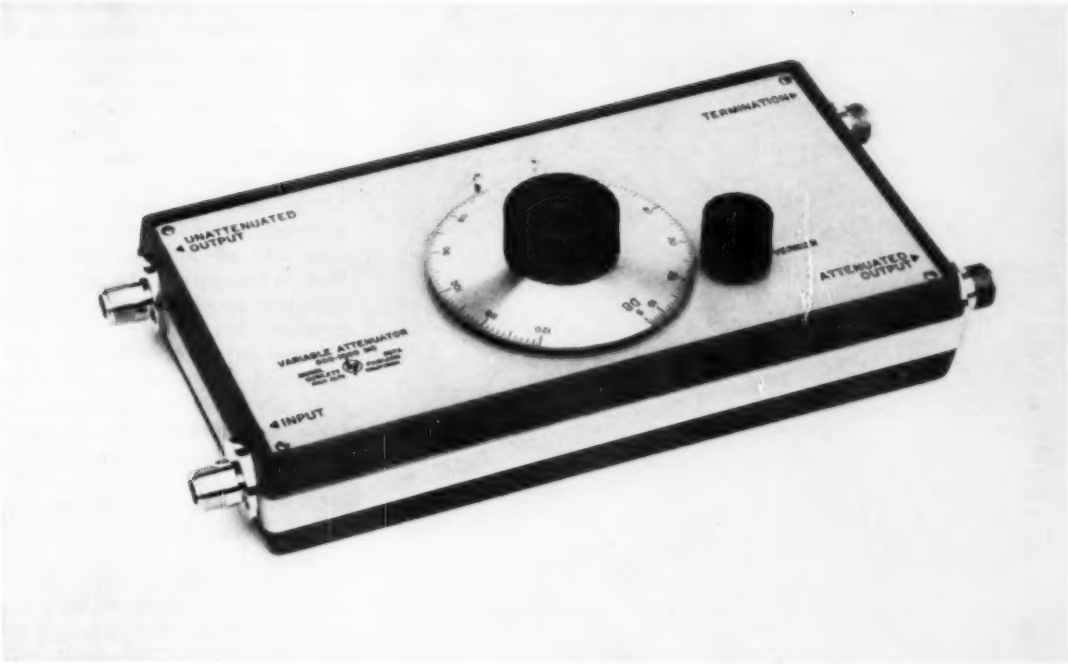


177 Ceramic discs
Mullenbach Div., Electric Machinery Mfg. Co., Vernon, Cal.

Voltmeter works on parallel-plate capacitor principle. Electrostrictive ceramic discs used as dynamic element.

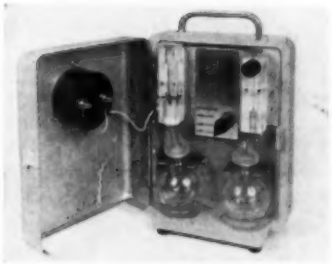
178 Portable frequency standard
Bell Telephone Laboratories, Inc., New York

For checking and readjusting a radio relay system oscillator; ten times more accurate than unit to be tested.



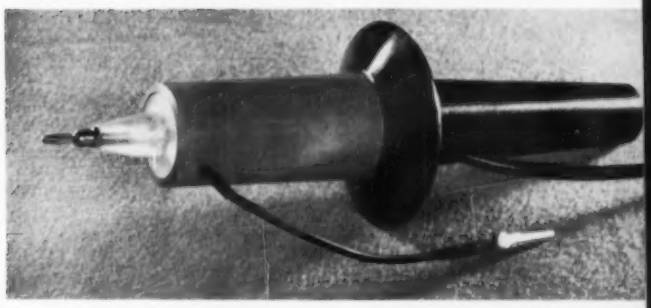
180 Variable attenuator
Hewlett-Packard Co., Palo Alto, Cal.
George Pearson, designer
Hal Edmondson, mechanical engineer
Carl Clement, project head

Human engineered for visual clarity.



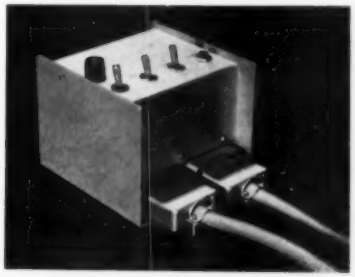
179 Atmospheric ozone meter
Mast Development Co., Inc., Davenport, Iowa
Hugh Saunders, Manager, Equipment Div.
Ted Lorenz, Manager, Industrial Design Div.

Ozone sensing and measuring instrument uses micro-coulomb ozone sensor. Aluminum housing, glassware, electrical mechanical components.



181 Voltage measurement probe
Tektronix, Inc., Portland, Ore.
Ken Ireland, staff designer

Plastic probe used to contact voltages to be shown on oscilloscope screen. Frequent adjustments are made without tools.



182 60-Cycle pulser
Tally Register Corp., Seattle, Wash.
Wade C. Vaughn, designer

Unique feature is "exposed structure" of packaging concept.

N

COMMUNICATIONS

The practical application of electronics has of course been responsible for all communication devices from the home radio to data-collecting and data-transmitting instruments in space. Unlike direct communication, which is an exchange *within* the range of sensual perception, electronic communication brings *into* that range, data already existing in the form of electrical energy. The aim of modern communication, then, is translation, and it is along these lines that research in this field has progressed this year.

Three outstanding devices have been developed to exchange man's perceptions more fully. Bell Telephone Laboratories has demonstrated a transistor-operated electronic larynx that enables people who have lost the use of their voice to talk. Bell has also made operative a simple electronic circuit that simulates the function of the individual biological nerve cell. A combination of a number of these artificial cells aids the study of the nerve systems of the eye and ear, and thus, it is hoped, will improve our ability to understand and predict neurological behavior. In the field of color perception, Dr. Edwin Land has demonstrated the feasibility of his theory that the eye perceives the full color range of objects that appear to be monochromatic. In his demonstrations, objects are photographed on ordinary black-and-white film through a red and a green filter. Projected again on a screen—one transparency through a red filter and the other without a filter—the objects are reproduced in a full range of color. This new photography is based on the eye's ability to perceive all the colors of natural images simply by comparing long (red) and short (white) wavelengths.

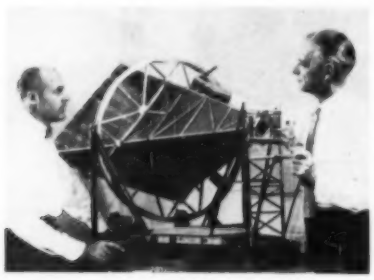
Much has been done to bring space data down to earth. RCA's new tv system (A) will permit astronomers on the ground to aim and focus a telescope in a balloon miles above the earth. Hughes Aircraft is building an atomic clock (B) which will be sent into space to orbit the earth and will check relationships between time and space (see ID Aug. 59). Bell is developing a receiving antenna (C) which will receive information from a satellite used like a mirror to absorb and reflect data. Developments in the field of ground communication are also outstanding if less spectacular. Some of them, and news of other communications, follow on the next three pages.

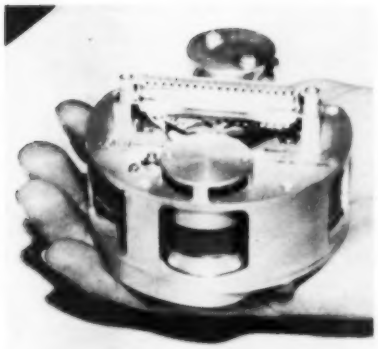
A. RCA's tv system to guide telescope in space.

B. Hughes Aircraft model of atomic clock satellite.

D. Collins' new antenna for broadband, high-frequency military and commercial communication.

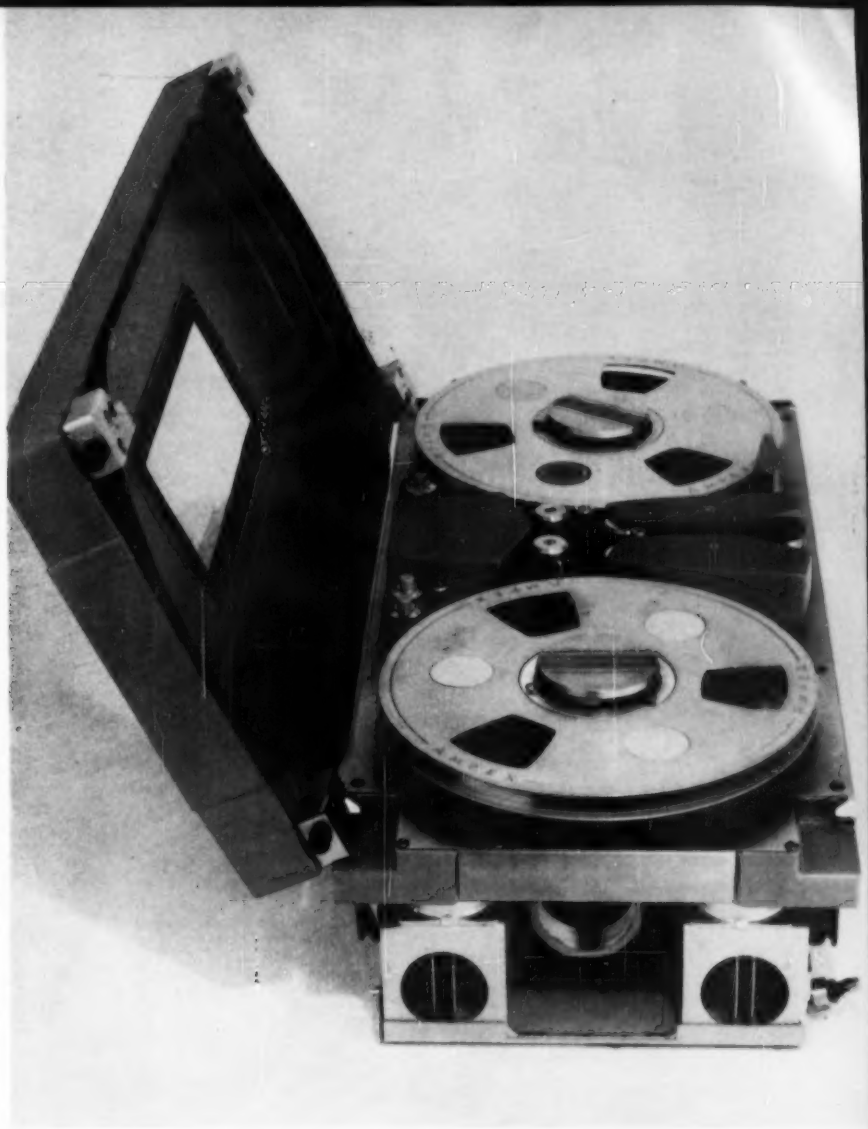
C. Bell's model of antenna to receive data mirrored from space.





183 MTR-362 Miniature tape recorder
Leach Corporation, Special Products Division, Compton, Cal.
Paul D. Engdahl, Manager of Instruments Group

24-ounce airborne tape recorder will withstand a minimum of 1000 G shock. Made of aluminum with clear, anodized finish, recorder measures 3⅜" in diameter, 2½" in length.

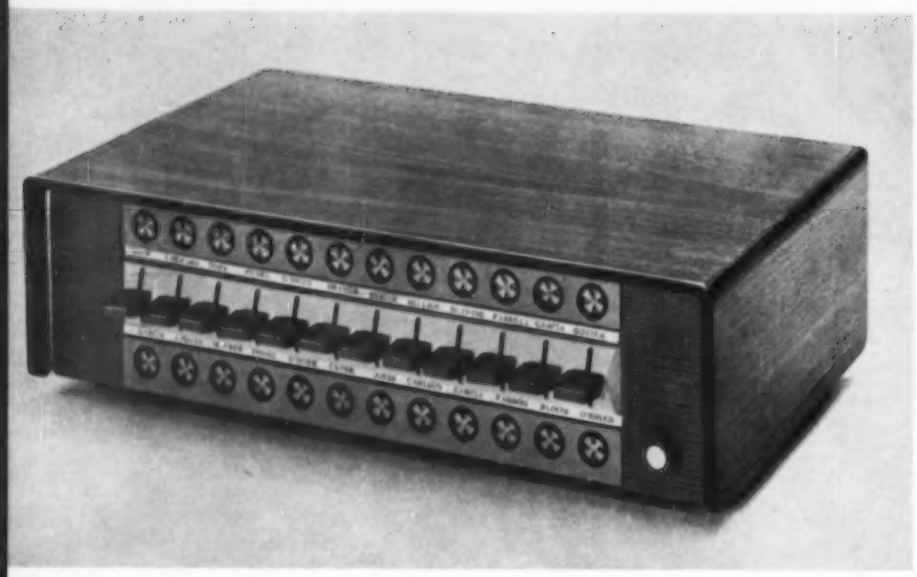


184 Ampex AR-200 mobile recording unit
Ampex Corporation, Instruments Division, Redwood City, Cal.

Recorder for flight data acquisition is small and lightweight due to solid-state circuitry and use of aluminum casting for chassis. Operates at altitudes up to 100,000 feet.

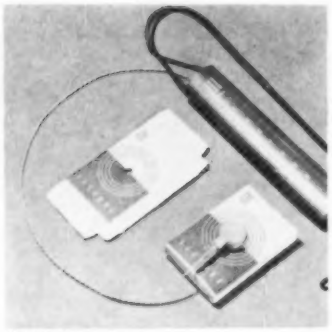
185 Video telemetering system
Lockheed Aircraft Corporation, Electronics and Avionics Division, Los Angeles 22, Cal.

System designed for missile applications includes transistorized circuitry, occupies 118.9 cubic inches, and weighs 5.9 lbs. System is capable of operation under extreme environmental conditions.



186 Intercom
Dictograph Products, Inc., Jamaica, N. Y.

Fully transistorized intercommunications system has indicator lights to identify caller. Voice is picked up from as far as 10 feet away from instrument.



187 Radio receiver
McIntosh Lectour, Inc., Washington, D. C.
George H. Kress Associates, designers

"Lectour" receives recorded lectures transmitted to rooms at National Galleries; cardboard ear-piece is disposable.

189 Data-sending station
Western Electric Company, New York

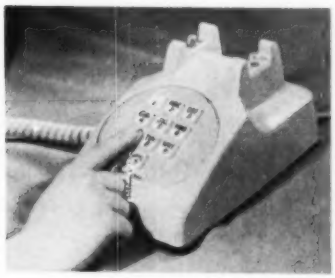
Data is inserted on punched card into station which transmits it by wire to central computer which station can also interrogate.

188 Television camera
Industrial Products Division, I. T. T., San Fernando, Cal.
Channing Wallace Gilson (Channing Gilson and William Brewer), designers

Closed-circuit camera uses aluminum extrusion heat sink, is dust-free, moisture-proof.

191 Intercom
Talk-A-Phone Company, Chicago
Dave Chapman, Inc. (Dave Chapman, Kim Yamasaki), designers

Unit can operate flat on desk or upright against wall. Wrap-around shroud is charcoal vinyl-clad formed metal.

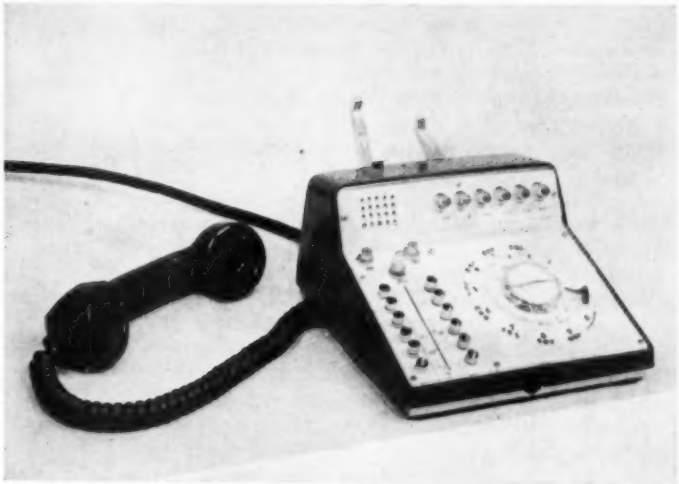


192 Pushbutton phone
Bell Telephone Laboratories, New York
Henry Dreyfuss, designers

Experimental model under consideration as replacement for conventional rotary dial.

190 Dial-in-hand phone
Bell Telephone Laboratories, New York
Henry Dreyfuss, designers

Small handphone is being tried out for customer reaction; dial has night light; easier to operate than standard phone sets.

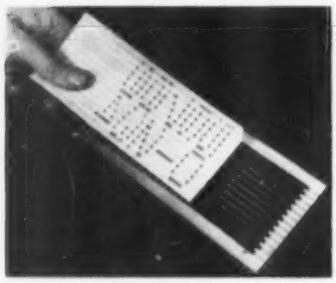


193 Executive phone
Bell Telephone Laboratories, New York
Henry Dreyfuss, designers

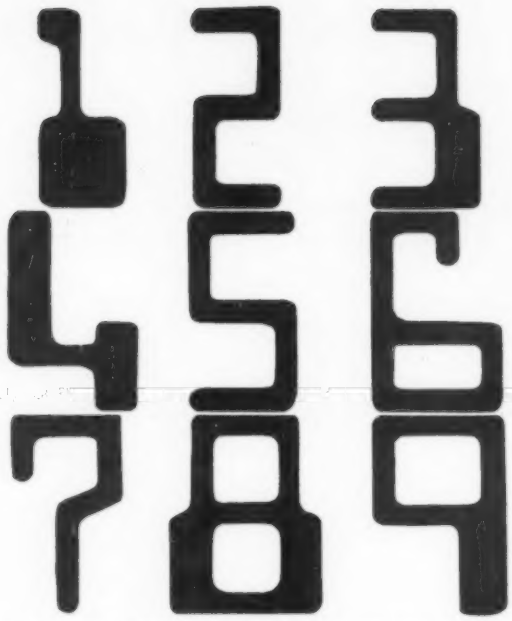
Experimental unit incorporates regular phone, office intercom, speaker phone; gray housing; face plate of Lucite backed with metallic or colored paper.

N

ELECTRONIC DATA PROCESSING



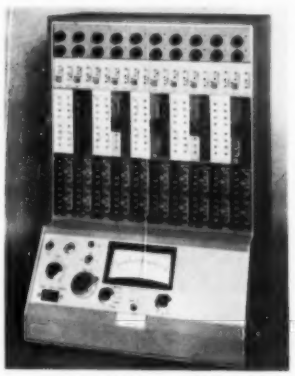
A. Rex Corporation's Rex-Array photo-rectifier plate takes up 1/20 the space of conventional computer diode networks.



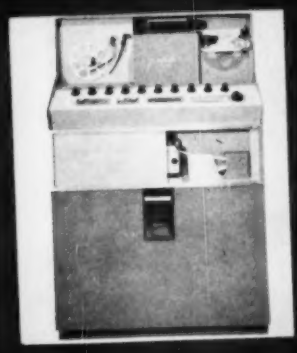
B. American Bankers Association computer language.

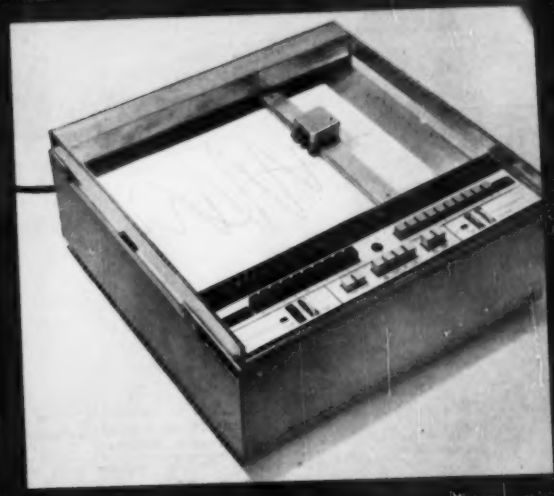
Important developments in technology invariably set off a chain of design events. This year the application of new materials has made a dramatic difference in electronic components which have, in turn, had critical effects on products for communication and data processing. The most pronounced activity in the computer field is, of course, the effort to make computers smaller. One development this year which is helping to take the bulk out of data processing equipment is the photo-rectifier plate (A, see ID April '59) which increases the flexibility of digital systems. A single Rex-Array plate is equivalent to a large conventional diode network but requires hardly any soldering and takes up only 1/20 the space. Miniaturized components have made possible the vastly reduced analog computer by Electronics Associates (C), small enough to be used by engineers as a desktop instrument. Communication has also been simplified in an area which is rapidly becoming "computerized," namely banking. General Electric's ERMA (Electronic Recording Method of Accounting) uses a system of numbering (B) imprinted on checks in a special type font standardized by the American Banking Association. The figures represent the issuing bank's number, routing symbol, and such data as branch number and account number.

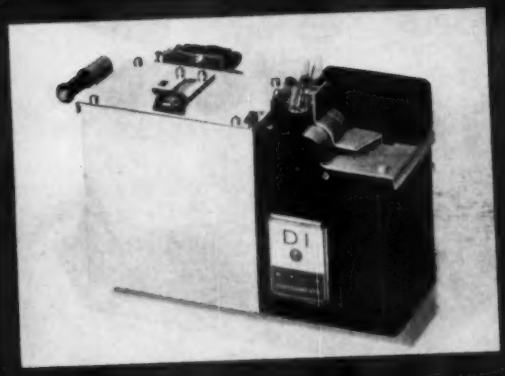
The rest of the examples that follow—computer equipment and components—all indicate a high level of design which seems to convey with respect the fact that the most advanced theories as well as the very latest materials and products are at work here. The design level has been high in this field from the very start and it has not fallen off. The logic underlying the operation of these machines is also expressed in the way they are assembled and constructed. The necessity for modular components and equipment to put into effect the flexibility of which these machines are capable has made possible the grouping of masses in an architectural sense, and this has given the systems a visual logic which also expresses their meaning as machines. Some examples of the year's developments in marketed computer systems and equipment are shown here and on the next three pages.



C. Electronic Associates' desktop analog computer.



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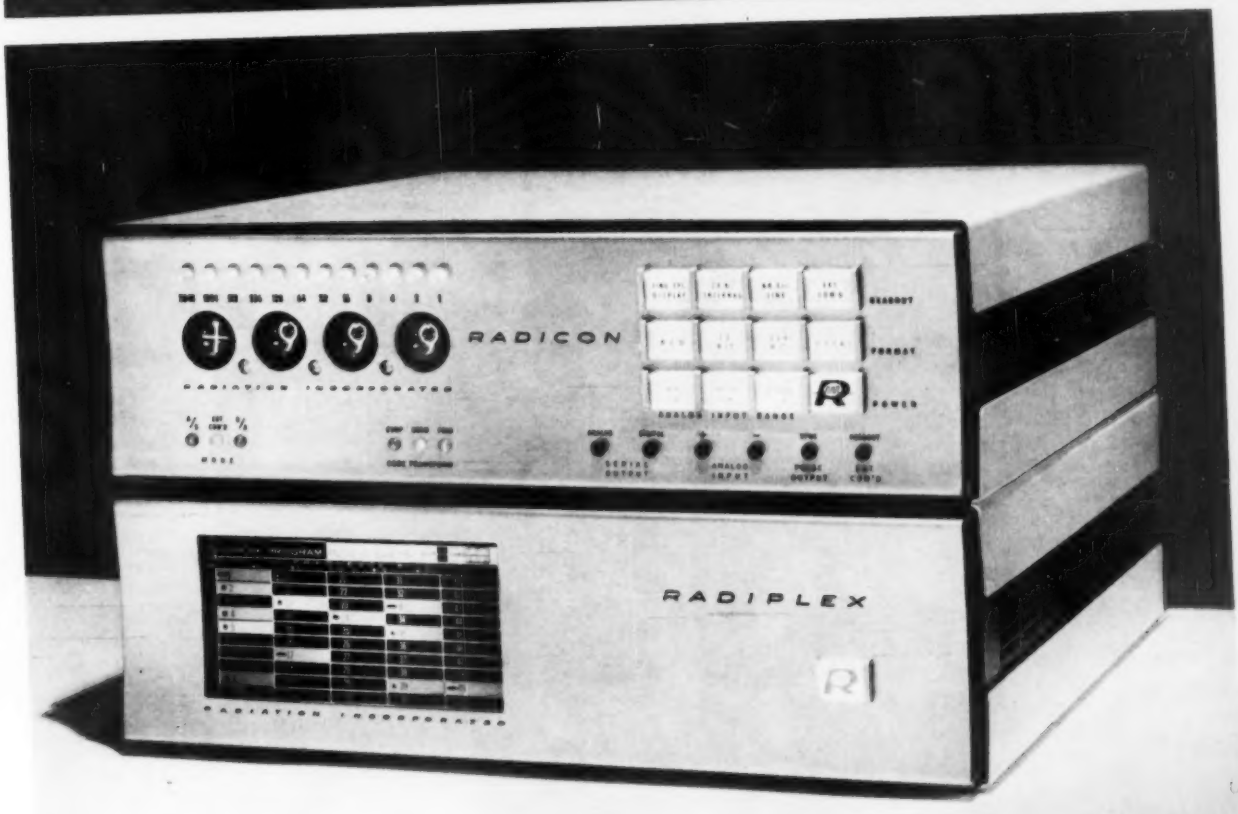
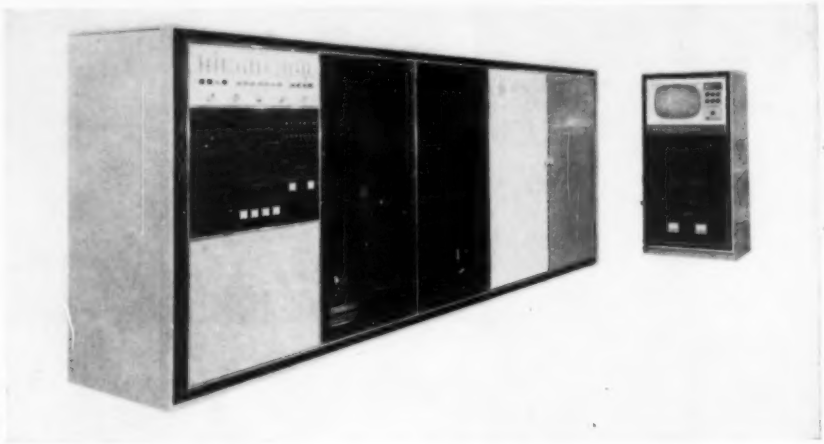
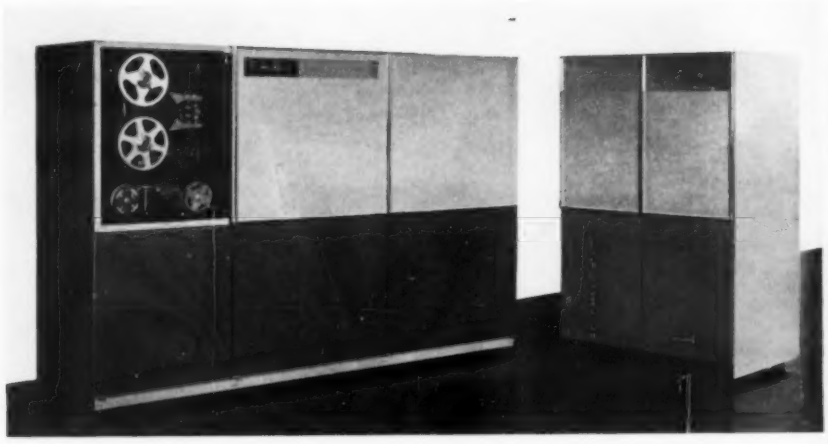

RADICON
RADIPLEX



198 "210"—NASA II computer
Beckman Instruments, Incorporated, Anaheim, Cal.
Zierhut/Vedder/Shimano, designers

Total display of modular plug-in units and other readouts through glass doors make up design motif.

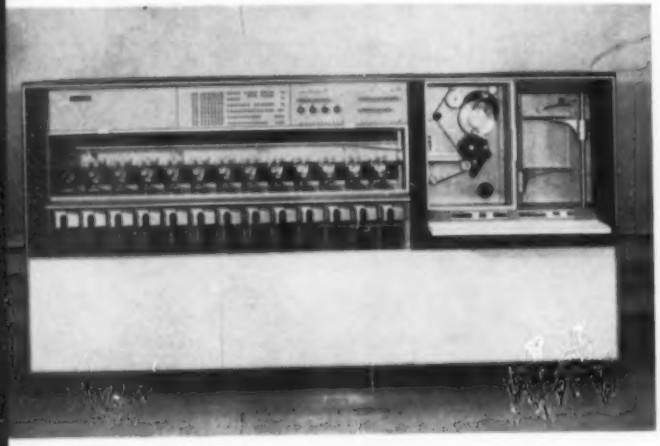


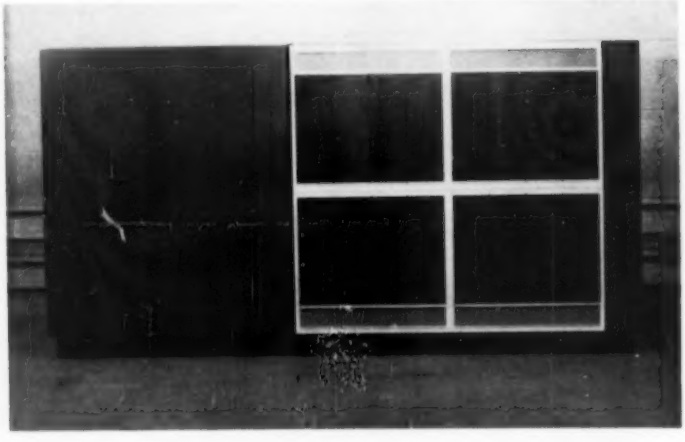
199 "255" Director
Stromberg-Carlson, Rochester, New York
Zierhut/Vedder/Shimano, designers

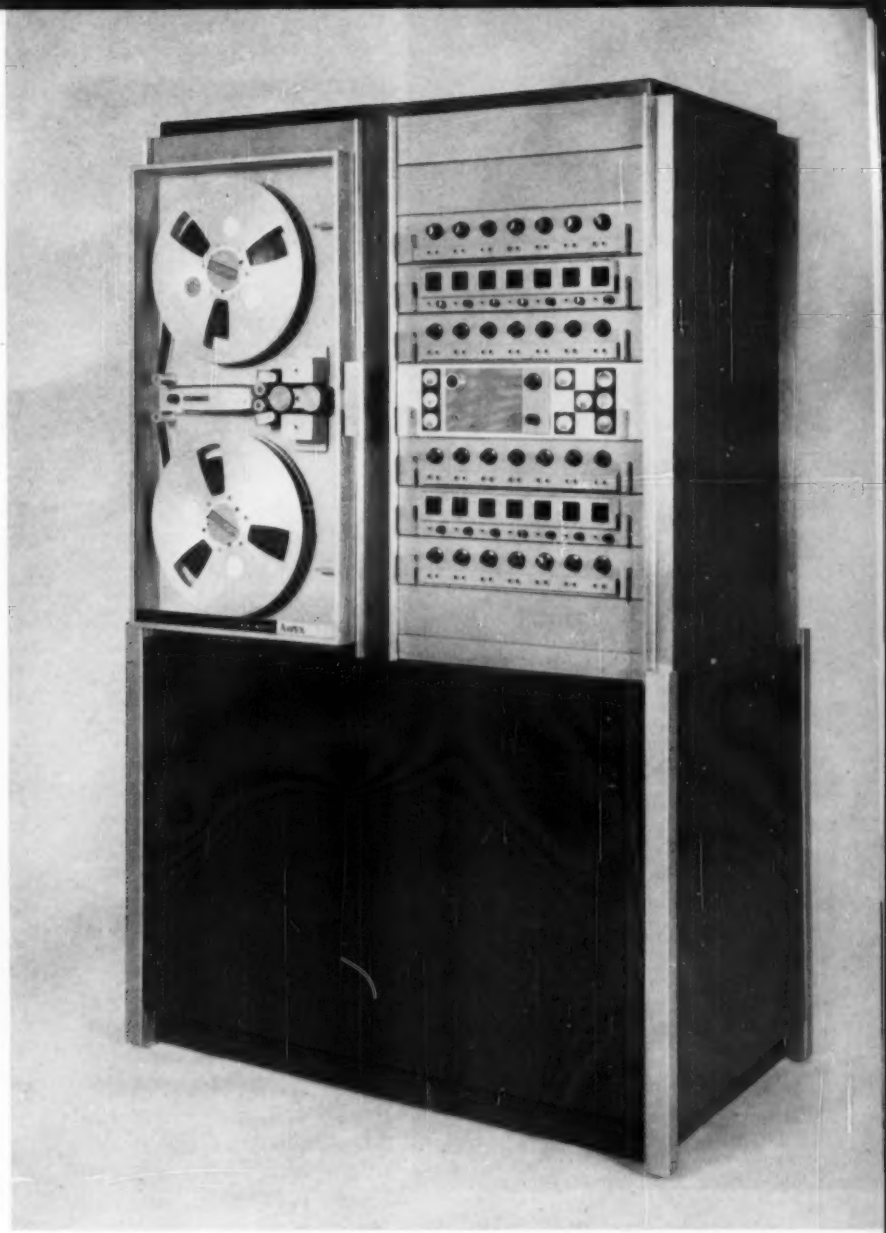
Sheet-metal and glass unit is exposed only in upper center control area; rest is covered to facilitate handling by operator.

200 1210 Sorter/Reader
IBM Corporation, Poughkeepsie, New York
Staff design: J. J. LaDue, project head; W. S. McCormick, Jr., designer; R. J. Furr, senior engineer; Elliot Noyes, consultant

Check-sorting and depositing machine serves as input to data-processing system, can feed 900 checks per minute.





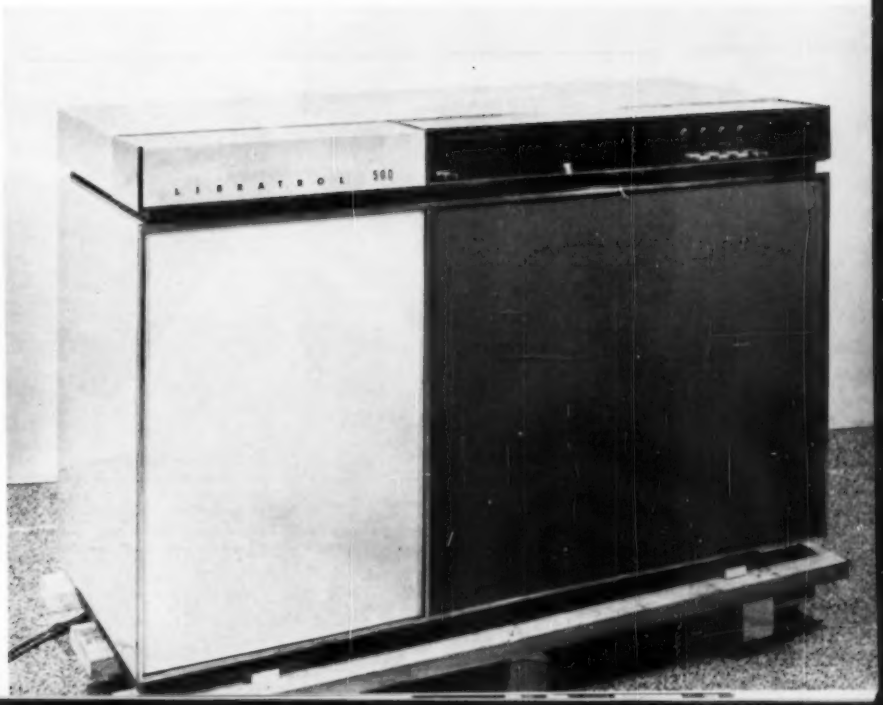


201 FR-600 data recorder
Ampex Corporation, Instrumentation Division, Redwood City, Cal.

Direct recording of frequencies up to 250 kc and wide-band recording techniques for FM are possible with this analog magnetic tape recorder.

202 "500" process control computer
Librascope, Incorporated, Glendale, Cal.
Ken Slee, Director of Design
Zierhut/Vedder/Shimano, consultants

Industrial process control unit has fused glass dust cover for controls, honeycomb structure for removable panels, and uses solenoid-operated latches.



204 Electric typewriter
IBM, Inc., New York
Sundberg-Ferar, designers

Black plastic front panel contrasts with colored aluminum case; muted carriage return; new touch control; individually adjustable space bar.

205 Portable typewriter
Remington Rand Div. of Sperry Rand Corp., New York
Sundberg-Ferar Inc., designers

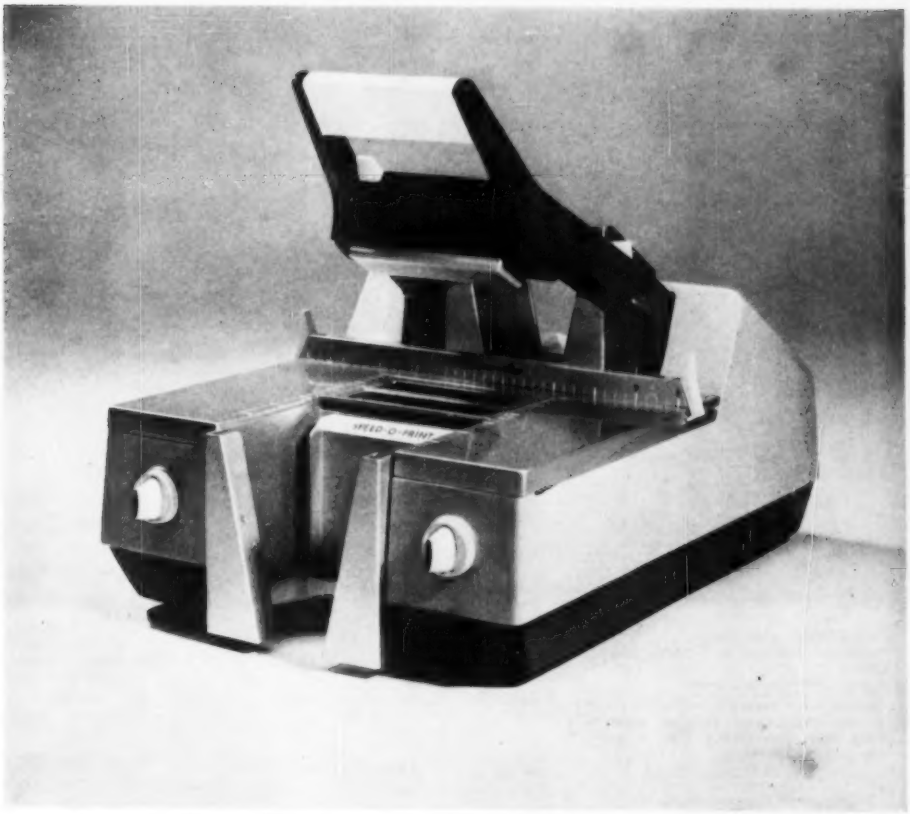
Satin-smooth pearl and charcoal gray finish; aluminum, steel, plastic.

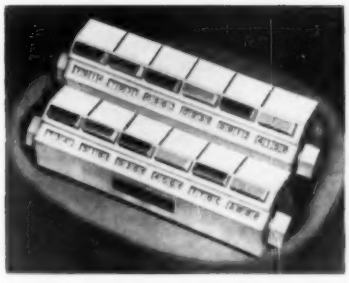
206 Automatic copier
Haloid Xerox Inc., Rochester, N. Y.
Armstrong and Balmer, designers

Original laid on scanning glass; dial control for number of copies desired; copies all colors, clean to use.

207 Automatic addresser
Speed-O-Print Corp., Chicago
Dave Chapman, Inc., (Kim Yamasaki), designers

Uses metal plates. Brown and tan baked enamel finish; chrome trim.



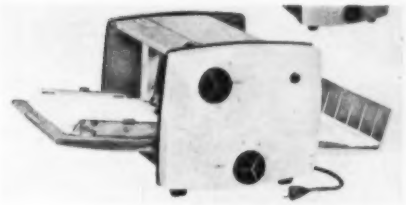


208 Multiple-tally machine
Denominator Co., Inc., New York
Lloyd LaPointe, staff designer

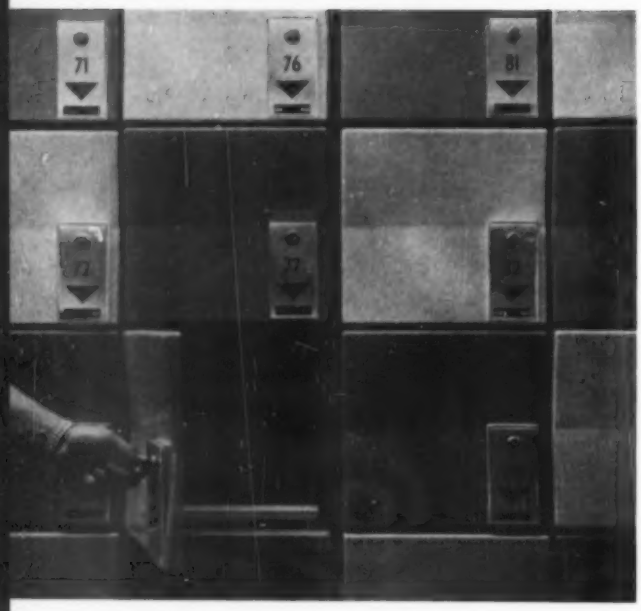
New compactness; all metal; light touch operation; bright metallic anodized aluminum finish.

209 Spirit duplicator
Bohn Duplicator Co., New York
Burton Tysinger, designer

Feed and receiving trays fold to make self-contained dustproof case; nylon gear requires no lubrication.



The fact that office and residential furniture design have moved closer together during the past decade has been described as a phenomenon making for strange bedfellows. It really isn't. The taste that a man cultivates at home in Oak Park is not dropped the moment he hops aboard the 7:50 to Chicago; and as American business habits have grown less formal, the office itself has become a region of home-like comfort. What *is* strange is the sequence of influence. For just as offices had begun to be more "at home" in decor, the home itself was undergoing the famous revolution towards starkness. As a result, residential influence has made the office a much more austere place than it might ever have become if left to its own devices. Warm woods continue as popular top finishes, but chrome, stainless steel, and aluminum bases are the furniture details most responsible for the effect of this year's office.



210 Bowling alley lockers
American Machine & Foundry, Shelby, Ohio
Henry Dreyfuss, designers

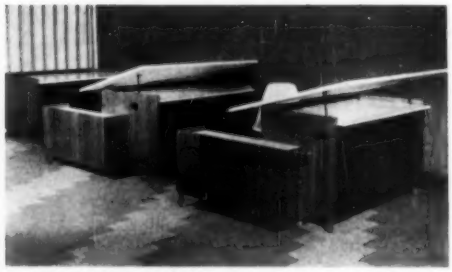
Canted front lockers have gasket edges to cut down noise, recessed floor to keep ball from rolling. Key is knob, eliminating hardware.

211 Industrial vacuum cleaner
Kent Co., Rome, New York
Arthur J. Pulos, Douglas Cleminshaw, Donald Waterman, designers; R. C. Kimball, chief engineer

One head unit eliminates several previous units, yet is adaptable to all original bases.

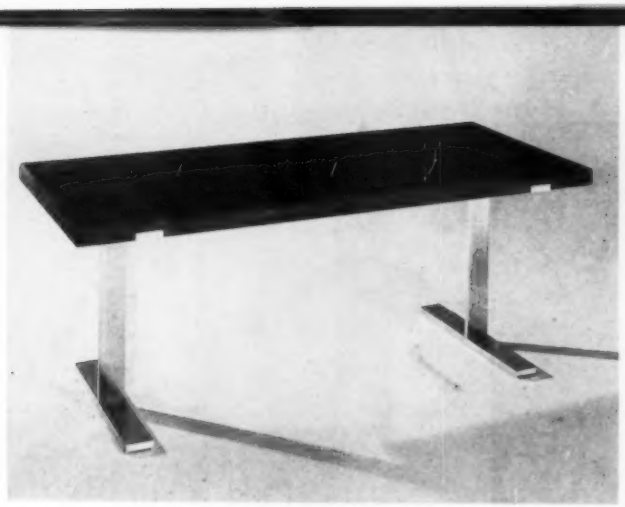
212 Portable table
Sico Manufacturing Co., Minneapolis

Folds in three seconds. No latches, locks, hinges. 14-gage steel plated with zinc lustron.



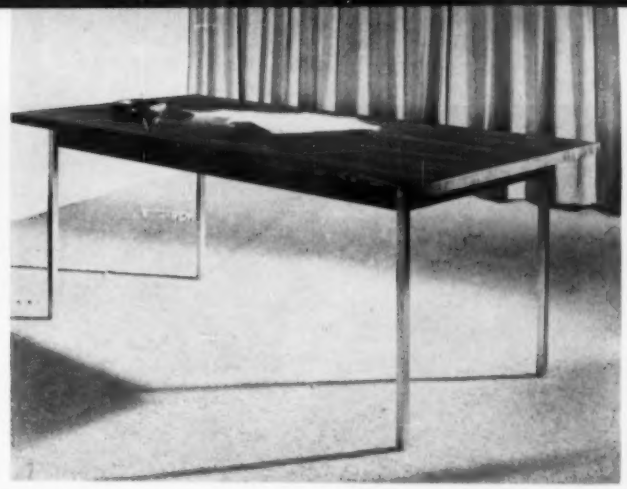
213 Drawing desk
Hamilton Manufacturing Co., Two Rivers, Wis.

Board efficiency increased by bringing tool, storage, reference and working areas together.



214 Desk table
Helikon Co., New York
Robert Becker, designer

Walnut or rosewood top; brushed chrome or black oxidized finish H-form legs.



215 Desk table
Corry-Jamestown Corp., Corry, Pa.

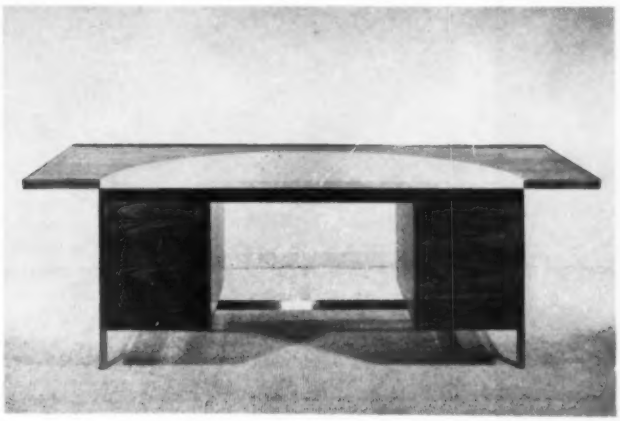
Simple-lined conference table intended for uncluttered look.

216 Desk and chair
Steelcase, Inc., Grand Rapids, Mich.
Earle C. Bullock, chief designer

Tops of self-edge Textolite or Formica, or steel edge with stainless binding on Textolite top.

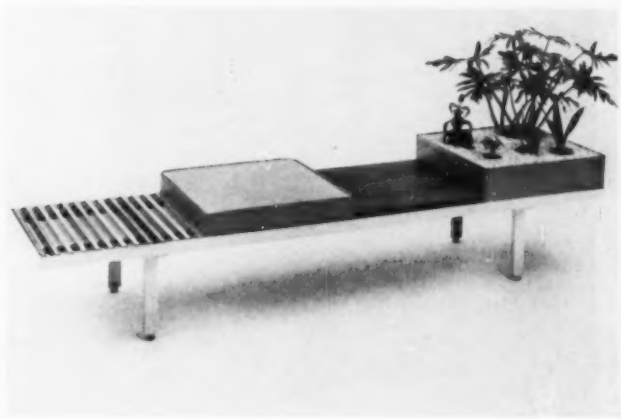
217 Desk
Lehigh Furniture Corp., New York
Ward Bennett, designer

Satin polished aluminum frame, front and side panels of black vinyl covered plywood.



218 Desk
Dunbar Furniture Corp., Berne, Indiana
Edward Wormley, designer

Walnut top with leather or Formica semi-circular inlay, and stainless steel legs and stretchers.

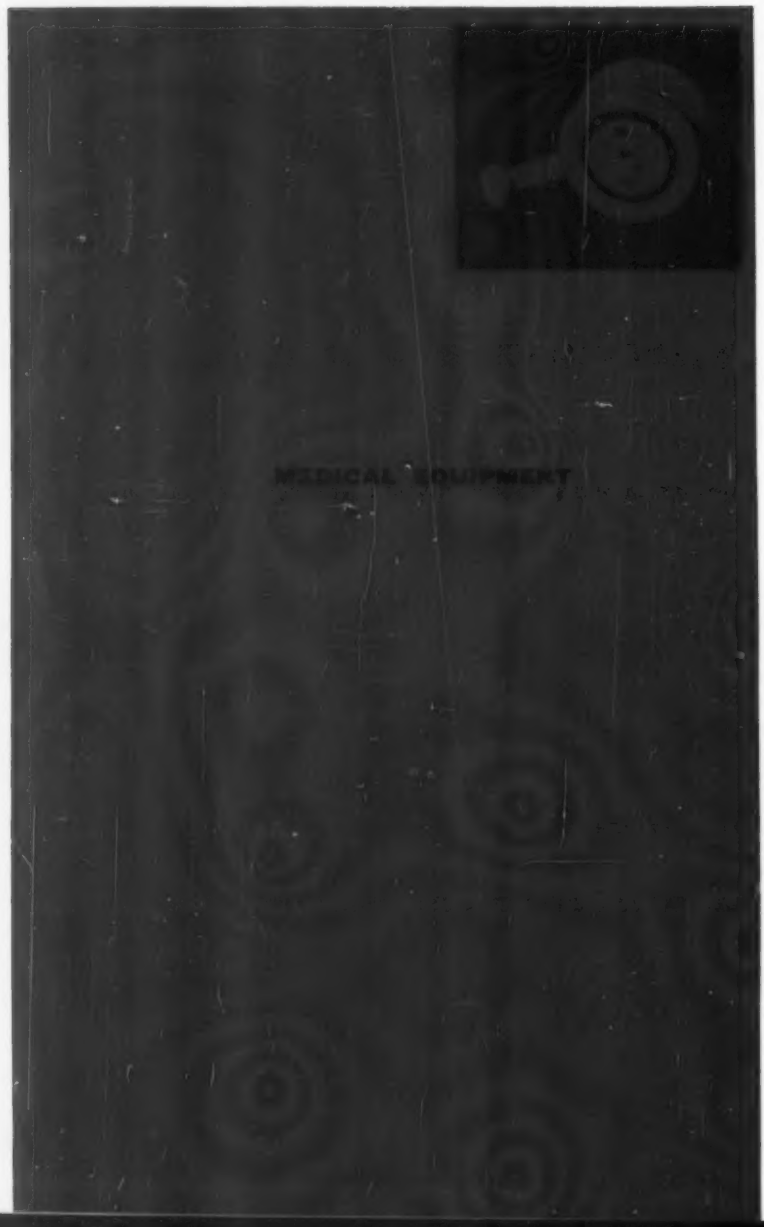


219 Bench system
Herman Miller Co., Zeeland, Mich.
George Nelson & Co. (John Pile), designers

Small module for use as complete table, planter, cushioned bench, or multiple-function piece.

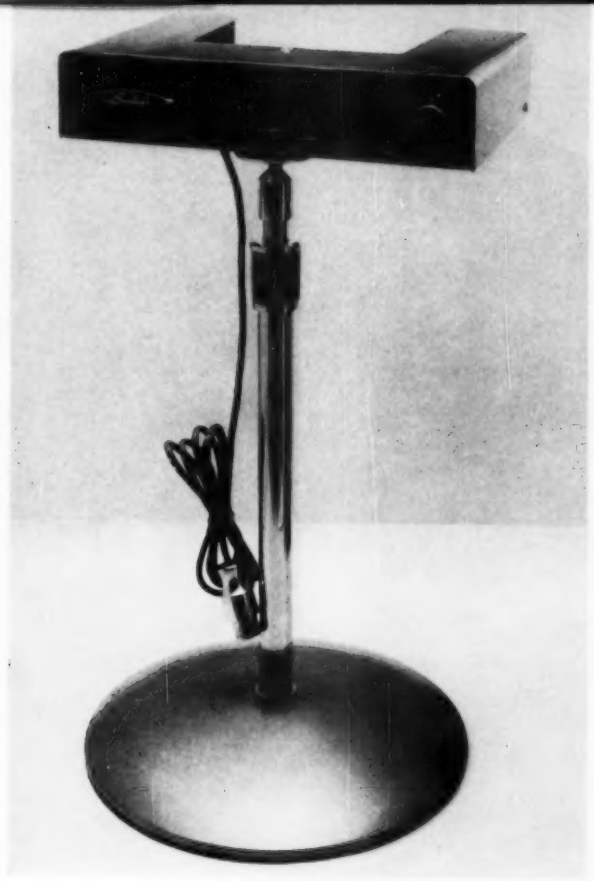
220 Mortar and pestle
Coors Porcelain Co., Golden, Col.

Neoprene ring in bottom prevents slipping and marring. Extreme hardness for grinding. White-glazed, isostatically-pressed aluminum oxide.



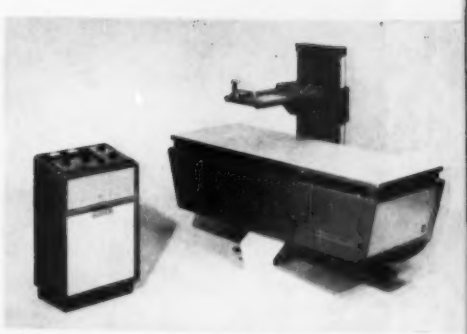
221 Examination chair-table
Shampaine Co., St. Louis, Mo.
Donald Deskey Associates, designers

Complete positioning flexibility; control pedals on each side.



223 Photomotograph
Burdick Corp., Milton, Wisc.
Don Doman Associates, designers

Instrument for making Achilles' tendon reflex test; aluminum case; chrome-plated steel column stand; satin finish chrome-plated steel base.



224 X-ray table and control cabinet
Mattern X-Ray, Div. of Land-Air, Inc., Chicago
Palma-Knapp Associates, designers

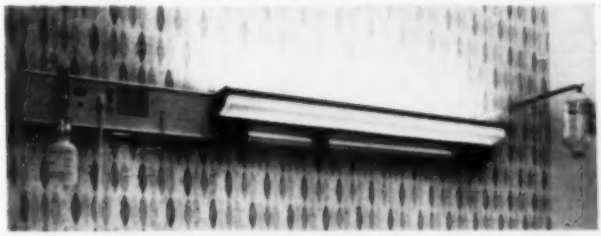
Sheet metal, steel plate base, stainless steel; medium grey-green and light grey.

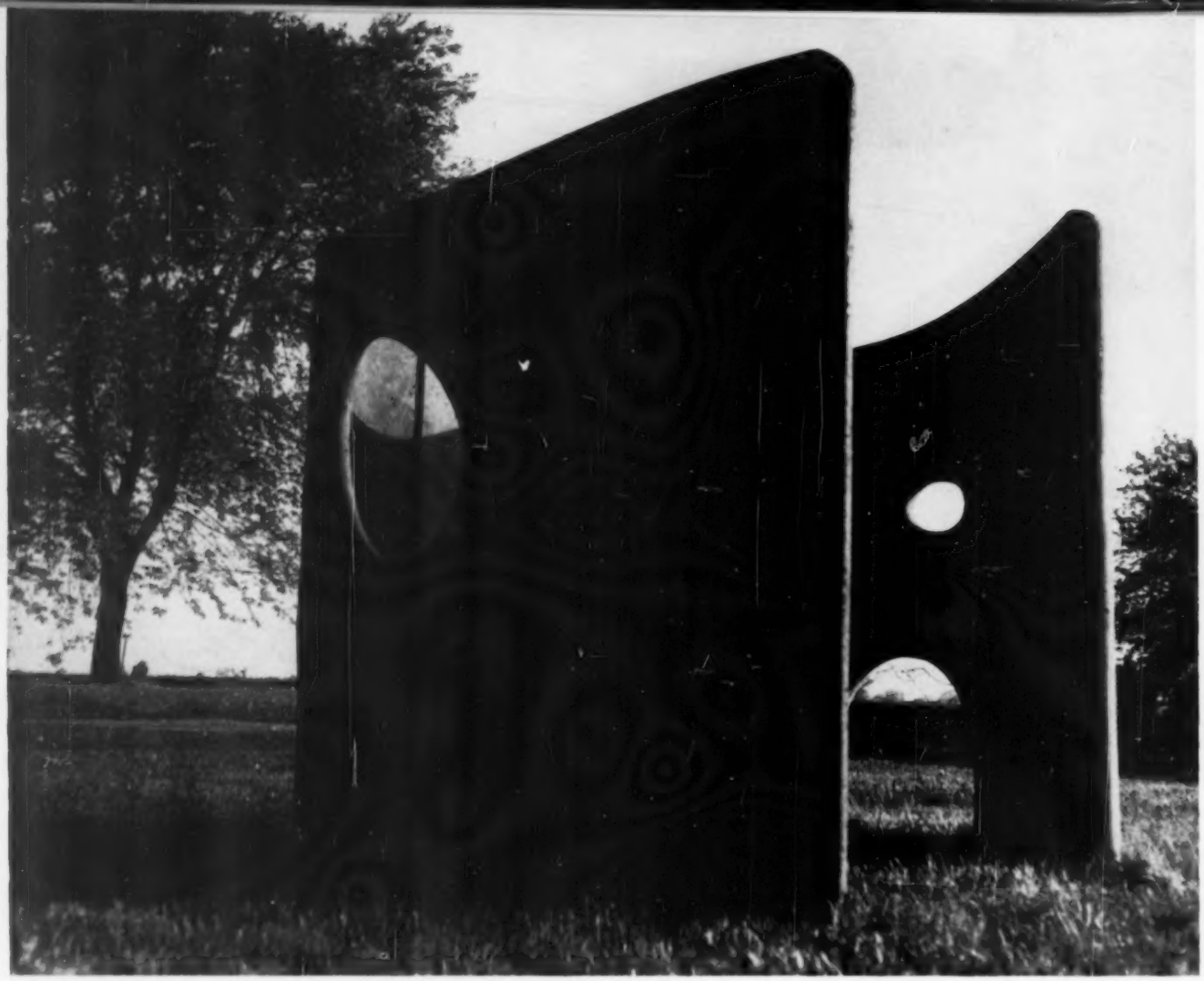
225 Integrated hospital patient service system
Sunbeam Lighting Co., Los Angeles, Calif.

Indirect illumination; narrow beam reading light; audio-visual nurse call, oxygen and vacuum systems; built-in telephone outlets, accessory support arms.

222 Rechargeable battery handle charger
Welch Allyn, Inc., Skaneateles Falls, N. Y.
Pulos Design Associates (Richard Chapman), designers

Rechargeability eliminates use of standard flashlight batteries; nylon receptacles minimize harm to surface of diagnostic instruments.

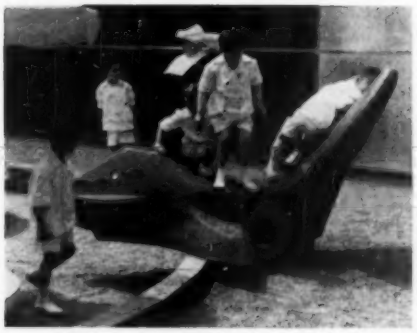




226 Playwall
James E. Miller, South Lyon, Mich.
James E. Miller, designer

Molds for curved concrete sections may be rented; structure poured on site. Walls are set in place by small crane and embedded 1' in ground.

PLAY AND EDUCATION

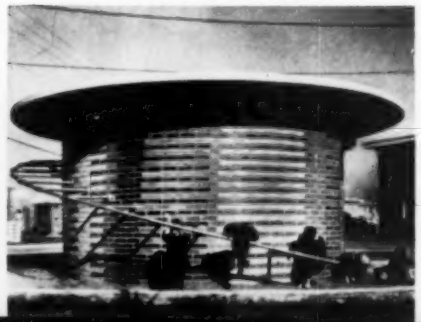


227 "Play Porpoise"
Playground Associates, Inc., New York
Fannie Hillsmith, designer

Cast from lightweight plastic molds, playground structure is 8' long, weighs 1100 pounds.

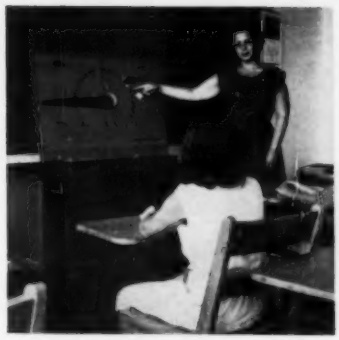
228 Tool building
Willow Walk, Cleveland
James H. Scheuer, builder
Mayer, Whittlesey and Glass, architects

Low (7') maintenance building becomes play structure with addition of metal rail spiraling from top to bottom. Sand pit surrounds building.



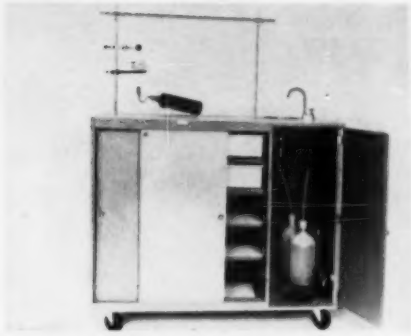
229 Model dam
Science Education Div., Product Design Co., Redwood City, Cal.
Olive Mayer and Clinton St. John, designers

Vacuum-formed polystyrene reservoir and clear plastic generator included with materials for do-it-yourself plaster dam.



230 Three-dimensional posters
Creative Playthings, Inc., New York
Staff design

Silk-screened posters, taped to metal board or cabinet, are background for magnetized die-cut rubber and cork figures.



231 Mobile laboratory
Central Scientific Company, Chicago
Stowe Myers, designer

Intended for classroom demonstrations in elementary science, unit is equipped with gas, electric and water services, has pegboard display panel, Formica top.

232 Globe
Bro-Dart Industries, Newark, N. J.
Geo-Physical Maps Inc., designers

Vinyl relief globe, 12" in diameter, prepared by geographers for accuracy of a professional standard.

233 Play structures
Creative Playstructures, Inc., Milwaukee
George Goundie and Howard Schroedter, designers

Arcs of fiberglass-reinforced plastic and galvanized steel form double slide and "ant hill"; components can be rearranged.

234 Playground
Capitol Towers, Sacramento, California
James H. Scheuer, builder
Saul Bass, designer; William Carmen and Herbert Rosenthal, associate designers

Prototypes of symbols and structures for experimental playground now under construction.

N

TRANSPORTATION BY AIR

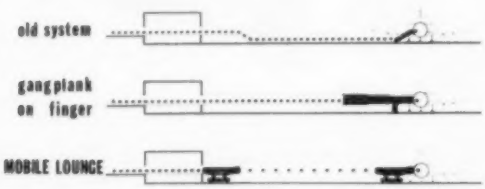
Every ten minutes or so something happens to bring the science of the '50's closer to the science fiction of the '30's, and this is especially, dramatically true in the field of air travel. Buck Rogers—precursor of Flash Gordon, Sky Masters and, for that matter, Wernher Von Braun and the astronauts—rose to the wild skies simply by slipping on a space belt and pushing a button. The Aeropak (below) carries the idea from the old comic strip to the modern battlefield. But in passenger travel, the jets have left a trail of irritants in their wake: now that we have planes that can cross the Atlantic in six hours, it is more infuriating than ever to fight through hours of traffic in order to reach the terminal in time to wait the customary 45 minutes for takeoff. Hence the commuter plane (below). And it is also irritating and inefficient for passengers to find, upon reaching the airport, that the jets have to be kept out on a farm two miles away. Hence the two loading systems shown below.

Aerojet's Aeropak.

Lockheed's rooftop commuter plane.

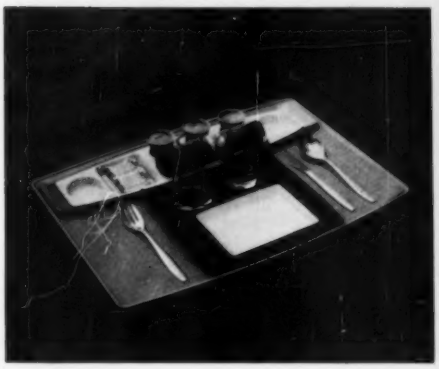
Lockheed's monorail.

Mobile departure lounge, Washington Int'l Airport.



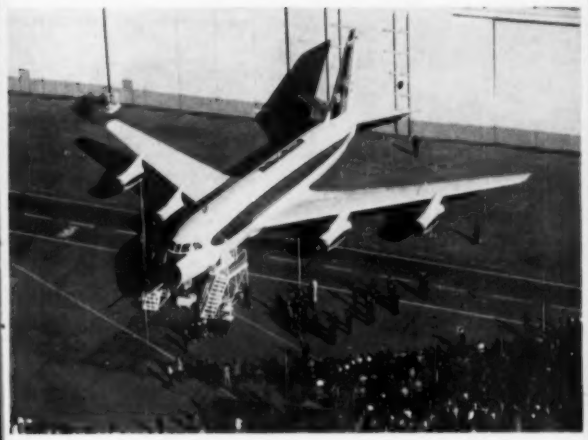
236 Trays
United Airlines, New York
Raymond Loewy Associates, designers

All parts removable; disposable cardboard inserts; plastic, china, glassware, metal; soft colors.



237 Baby's bassinet
Dandux Bassinets, Daniels, Maryland

Tubular aluminum and nylon; completely washable; 5 pounds; includes blanket and rubber sheet.

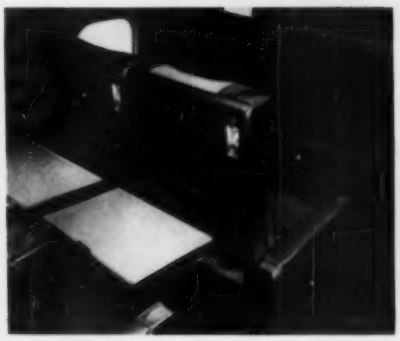


238 Jet airliner
Convair, Div. of General Dynamics Corp.

Newest and fastest of world's jet transports; carries 88 passengers in two-abreast seating.

239 Mobile armchair
Lockheed Aircraft Corp., Marietta, Ga.
Henry Dreyfuss, designers

Armchair swivels, reclines, slides backwards and forwards, developed for executive jet transport; Fiberglas, leather.



240 Seating unit
Douglas Aircraft Co., Inc., Santa Monica, Calif.
J. A. Graves, Chief; E. F. Klarquist, H. C. Bjornlie, H. S. Jencks, designers

Seat backs used as folding table. Compartment containing masks, above table opens automatically. Reading light is mounted beside head cushion.

SEA AND LAND

242 Towboat
St. Louis Shipbuilding & Steel Company
St. Louis

Four-diesel-engine-powered boat run by Federal Barge Line has towed 42 barges about 7½ acres in area with a cargo of 30,661 tons; shown here on the Mississippi River.

243 Nuclear merchant ship
New York Shipbuilding Corporation, Camden, N. J.

22,000 ton N.S. Savannah is first nuclear powered merchant ship; has passenger accomodations for 60; needs refueling once every 3½ years.

244 Plastic Jo-boat
Polymer Engineering Corporation

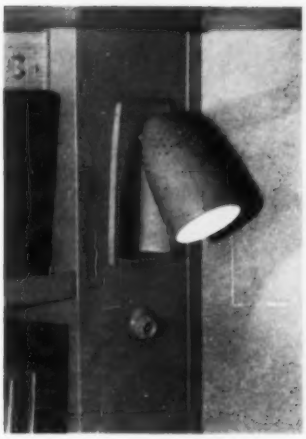
Flat-bottomed workboat is made of fiberglass-reinforced Hetron 32-A polyester resin (Durez Plastics Division of Hooker Chemical Corp., North Tonawanda, New York).

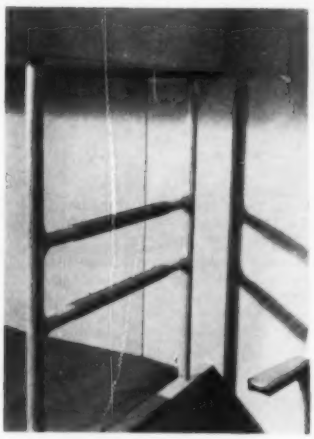
245 Air Scooter
Princeton Department of Aeronautical Engineering, Princeton University, Princeton, N. J.

Not strictly a land vehicle, scooter resembling a Flying Saucer rides at a height of 3 to 4 inches above ground; is 8 feet in diameter at base.

246 Marine float pontoon
Zenith Plastics Company, Gardena, Cal.
Howard G. Nourse, staff designer; Moffatt & Nichol, Inc. consultant engineers

Made of polyester resin reinforced with glass fiber, float pontoon resists marine life damage.



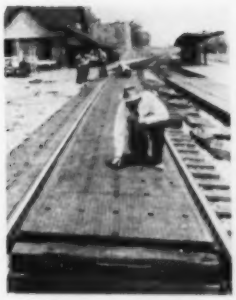


247 Officer and crew staterooms
Maritime Administration and Hopeman Brothers, New York
Raymond Loewy Associates, designers

Prototypes of new quarters for U.S. merchant and passenger ships are part of program to upgrade seamen's quarters, which have not changed for twenty years. Bathroom facilities and stateroom details are shown above.

248 Solid tire
Dayton Rubber Company, Dayton, Ohio

Experimental prototype of plastic-foam-filled automobile tire that is blow-out-proof, airless, easy-riding.



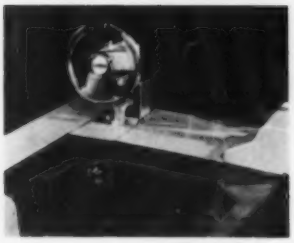
249 Rubber track cushions
Goodyear Tire & Rubber Company, Akron

Rubber railroad crossings for motorists over a double set of curved tracks at Wooster, Ohio; eliminates ice collecting, bumps.

250 Moving sidewalks
Otis Elevator Company, New York

"Travolator" resembling escalator arches 127 feet across busy street and interconnects motel, garage, hotel; in San Diego.

Thompson Trailer Corp., Leveloder Body adjusts vertically for loading, unloading.



Clark operator area of narrow aisle lift truck.

Clark Van Carrier stacks cargo containers.

These are machines that go to work; and when they do, men go to work with them. That statement embodies the entire principle of design in the heavy moving equipment field, a principle that has this year been incorporated into the creation of a number of unusually hard-working and "considerate" pieces of rolling stock. The Leveloder at left has a body that lowers itself to the ground (over a manhole, if necessary, for the convenience and safety of underground repairmen) or rises to a platform height of 52" for loading. As for the operator: the Backhoe (261) lets him move his whole digging assembly to any of five positions; the Gradall cab (259) lets him see as much as possible of what he's doing; the helmet (258) lets him breathe, protects him from flying objects, and soothes his brow by circulating clean cool air around his head.

ROLLING STOCK

251 Gas truck
Yale & Towne Mfg. Co., New York

Adjustable, foam rubber seat; suspended dual brake pedals; separable instrument panel unit.

252 Elbolift
Automatic Trans. Co., Div. of Yale & Towne Mfg. Co., Chicago

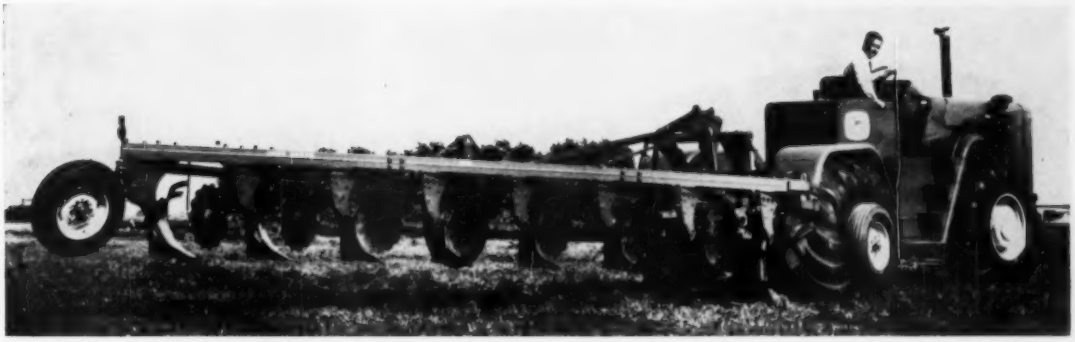
Removable crank; high plexiglass guards and overhead canopy for driver safety; side shifting fork and load carrying ram attachment.

253 Turbo-Tug
Napco Industries, Inc., Minneapolis, Minn.

Jet aircraft towing vehicle. Utilizes aircraft weight to help create traction needed. Starts aircraft engines.

254 "Jeep"
Willys Motors, Inc., Toledo, Ohio

4-wheel drive for off-the-road travel; turning radius of 21 feet, 10 inches; easy engine access between seats.



255 Farm tractor
Deere & Co., Moline, Ill.
Henry Dreyfuss, designers

Carries large farm equipment units weighing up to 5 tons.

257 Harvester-thresher cab
International Harvester Co., Chicago

Tinted glass resists sun glare and dust accumulation. Automatic wiper and washer keep windshield clean.

256 Crop-chopper
New Holland Machine Co., New Holland, Pa.
C. J. Kermes, product stylist

Sheet metal dividers separate standing crop from wheat being chaffed.

259 Gradall
Warner & Swasey Co., Cleveland
Henry Dreyfuss, designers

Operator surrounded almost entirely by glass; adjustable padded seat; organized controls; two-level floor for driver's comfort.

260 Loader-backhoe combination
J. I. Case Co., Burlington, Iowa
E. B. Lang, Chief Product Engineer

10-foot digging depth backhoe; 1,000 lb. loader lift; two-tone red enamel.

258 Helmet
Jamieson Laboratories, Inc., Santa Monica, Cal.

Air-conditioned helmet filters air, protects from flying objects, and circulates cool air around driver's head.

261 Backhoe
Massey-Ferguson Industrial Div., Wichita, Kan.

Operator's seat and controls move with digging assembly. Seat revolves with boom.

262 Black-top roller
Littleford Bros., Inc., Cincinnati, Ohio
Craftsman Industrial Designers (James S. Mariol), designers

Applies 2,380 lb. weight; operator's platform low enough to reach tools on ground; all steel constructed frame.

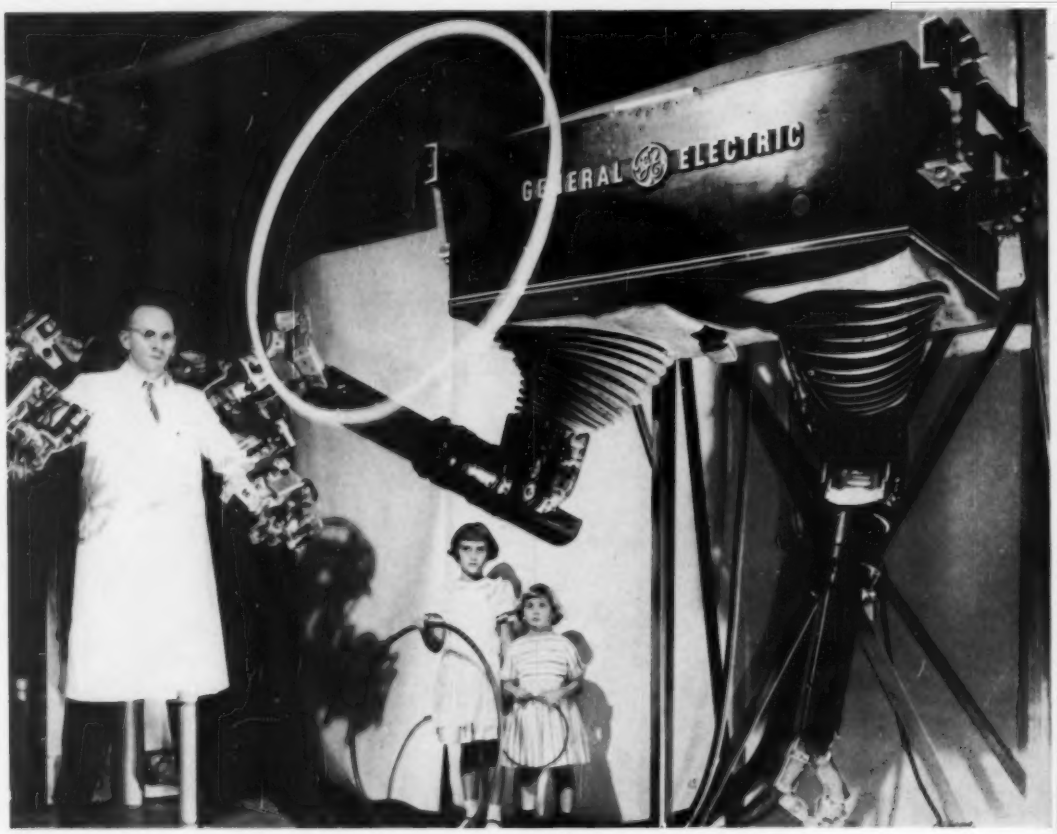
263 Coal hauler
LeTourneau-Westinghouse Co., Peoria, Ill.

Box-beam-and-corrugated trailer construction of high-tensile-strength steel; air-actuated bottom-dump doors.

264 Trojan tractor shovel
Yale & Towne Mfg. Co., New York
Charles J. Jacobus, Chief Engineer

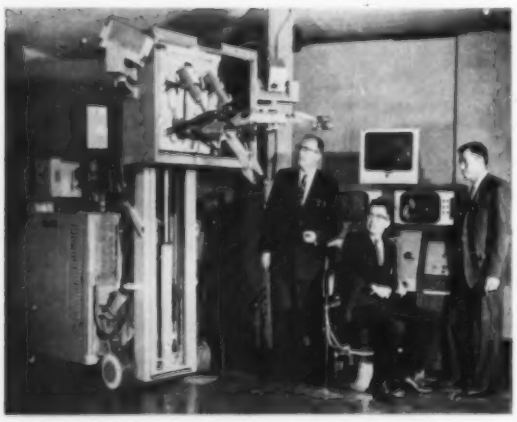
One piece side plate to avoid weld undercuts in stress areas; front bumper integral part of frame.

PLANT AND LABORATORY



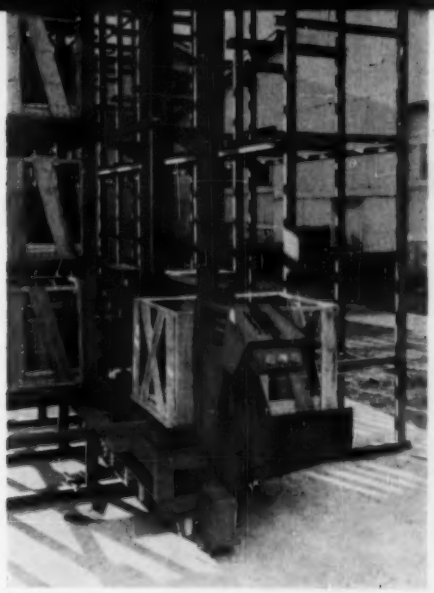
265 "Handyman"
General Electric, Schenectady, N. Y.
Ralph Mosher, project chief

Hydro-mechanical master-slave handles radioactive objects; first manipulator to simulate clutching motion of human hand.



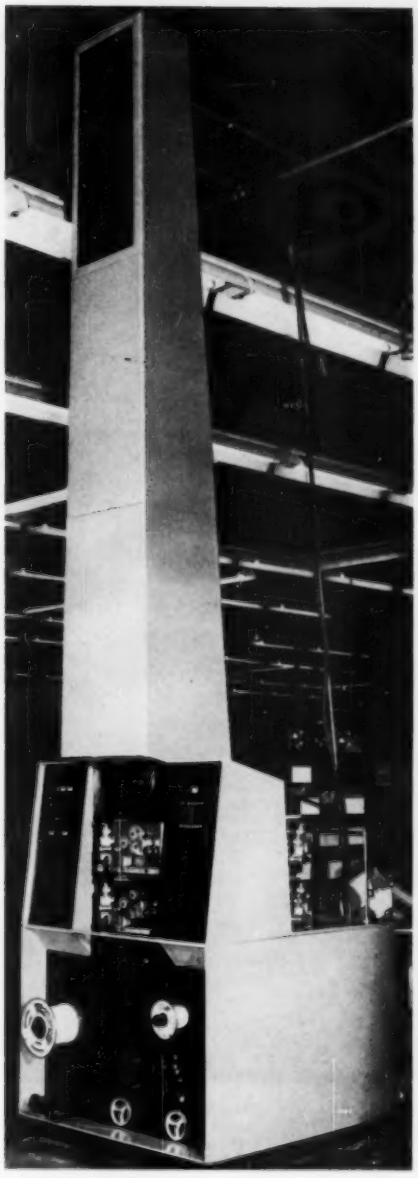
266 Mobot Mark I
Hughes Aircraft Co., Culver City, Calif.

For use in radiation labs; remote-control handling; television camera "eyes"; flexible steel arms.



269 Semi-automatic mechanical storage system
Triax Equipment, Cleveland, Ohio
Onnie Mankki, designer

Quickly retrieves specific loads from storage space. Normal operation data omitted from control panel to discourage unauthorized operation.

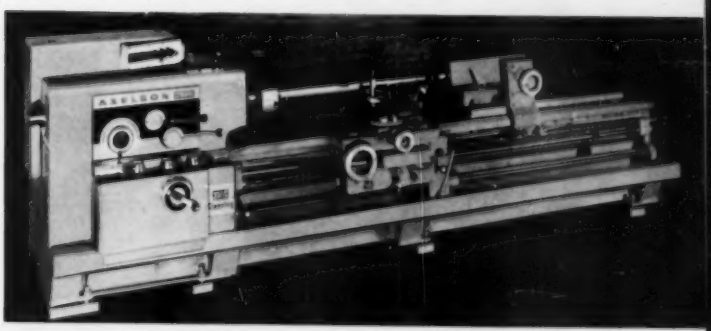


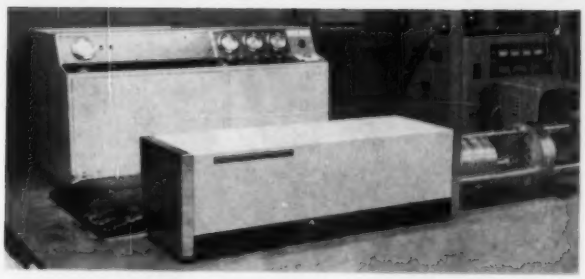
267 Semi-automatic wire color-coding machine
General Electric Co., Utica, N. Y.
George A. Beck, Director of Design; Dale W. Gruye, designer

Prints exact quantity of each color needed.

270 Axelson Lathe
Clearing, Div. of U. S. Industries, Inc., Chicago
J. M. Little and Associates, designers

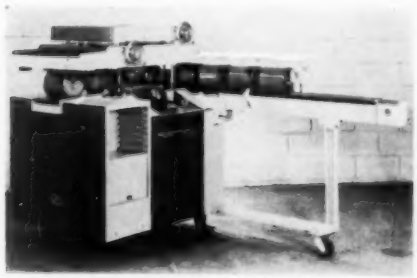
Welded bed may be detached for replacement with bed lengths as required. Painted blue-green finish.





271 Dynapak
Convair, Div. General Dynamics, Pomona, Calif.
Zierhut/Vedder/Shimano, designers

Displays all possible functioning elements; quick-remove case; brake-formed, welded steel case; grey, charcoal, chrome trim. Power pack cabinet matches console.



268 High-speed can imprinter
Charles Beck Machine Corp., King of Prussia, Pa.
Leotta & Parcher, designers

Prints data on ¼-pint to 1-gallon cans through rolling action. Iron, steel, aluminum; grey and blue.

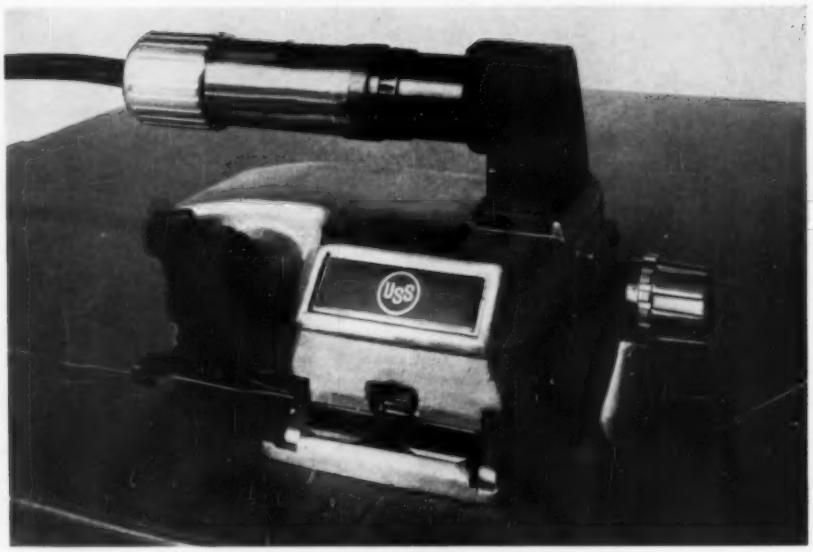
272 Reciprocating metering pump
Hills-McCanna Co., Chicago
Palma-Knapp Associates, designers

Nameplate used to cover moving parts for safety; cast iron, plated steel top cover; dark grey-green body.

TOOLS

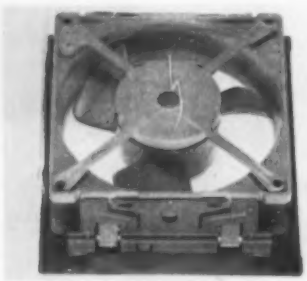
273 Unitized motor
General Electric Co., Western Springs, Ill.

Built around mechanically established air-gap; "unitizing" accomplished by fixing mechanical relationship with new resin material with extreme holding power.



274 Steel strapping machine
United States Steel Corp., Chicago
Staff engineering
Peter Muller-Munk Associates, consultants

Almag cast aluminum, alloy steels; natural brushed aluminum-cadmium plate, black anodized aluminum, black oxidized steel.



275 Muffin fan
Rotron Mfg. Co., Woodstock, N. Y.
J. C. van Rijn, Chief Designer and President
J. C. Larson, Assistant Chief Engineer

"Inside-out" motor with cantilevered bearing; air impeller integral with motor; no lubrication necessary.

276 Wrap-around cable spacer
PLM Products Inc., Cleveland
R. G. Harrocks, staff designer

Easy installation; automatic latching; smooth and clear molded acrylic.

277 Disposable dry chemical fire extinguisher
Ansul Chemical Co., Marinette, Wis.
Roy Downham, senior design engineer
Latham, Tyler & Jensen, consultants

One-hand operation; hanging bracket serves as locking device to avoid accidental discharge.

278 Heavy duty sabre saw
Wen Products, Inc., Chicago

Cutting blade in line of sight; air stream clears dust; finger control trigger switch.

280 Hammer
Olin Mathieson Chemical Corp., New York

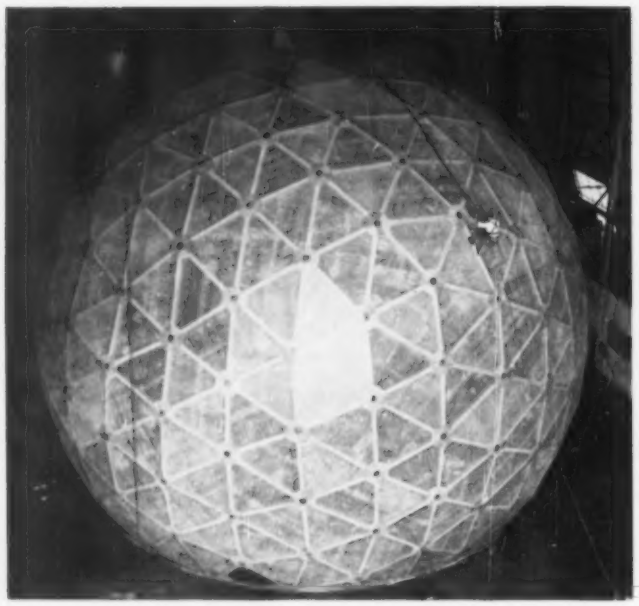
Hammer head suspended by elastic shocks within head housing; shock absorbent; non-slip, non-twist, neoprene covered metal handle.

279 Plasti-Form
Era Engineering, Santa Monica, Cal.
H. D. Hutchinson, president; W. C. Gregge, vice-president, designers

Electrically heated tool for forming and lay-up of complex plastic shapes.

281 Electric driver drill
Millers Falls Co., Greenfield, Mass.
Garth Huxtable, designer

Easily convertible drills; reversible side handle; hard chrome finish.



282 Fiberglass radome
Goodyear Aircraft Corp., Akron.

Built for USAF missile detection systems, 68'-diameter Fuller radome of glass-cloth-reinforced fire-retardant resin can be put up, taken down, in 80 hours.

283 Portable dome shelter
The Berger Brothers Co., New Haven.

"Geodome" housing facility for industrial, defense uses, is supported by inflatable fabric wall. Company also makes inflatable beds, litters, floors.

284 "Above-ground" swimming pool
International Swimming Pool Corp., White Plains, N. Y.
Nembhard A. Culin, designer

Full-size luxury pool of steel-reinforced redwood. Installation requires little digging. Easily dismantled and moved.

286 U.S. Moscow exhibit shelter
Lunn Laminates Inc., Huntington, L.I.
George Nelson & Co., designers (Albert G. H. Dietz, consulting engineer).

Fiberglass-reinforced plastic structure: 70 interlocked sections each supported by 20' hollow column.

285 Multi-purpose dome shelter
Pease Woodwork Co., Hamilton, O.

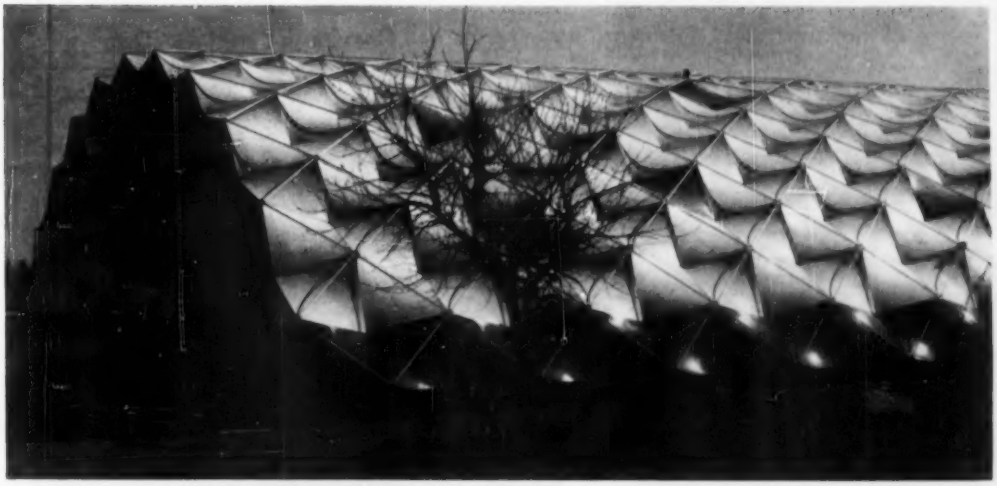
Geodesic domes of 38 triangular frames designed by Fuller-trained engineers, can be put up in 20 hours, are used for camping, utility shelters.

PREFABRICATED STRUCTURES

Each successive ADR has seen new uses made of prefabricated materials and structures. During this past year, some new *kinds* of applications have been developed—from swimming pools to radar domes. And prefabricated structures in 1959 have also stressed esthetic qualities. Witness, for example, George Nelson's flowerlike reinforced plastic structure for the U.S. Moscow Exhibit (286). Developments in prefabrication techniques in 1959 also show the influence of advances in materials technology—mainly in plastics—and, as they do each year, of the engineering concepts of R. Buckminster Fuller.

287 Roof section
Structural Plastics, Inc., Fort Worth.
William R. Orr, designer.

Lightweight fiberglass-reinforced plastic modules (translucent or opaque) for multi-use, multi-shape canopies.

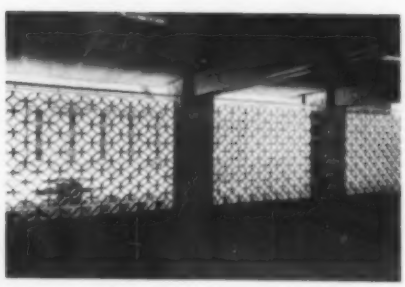


288 Hemisphere roof
Structural Plastics, Inc., Fort Worth
William R. Orr, designer.

Plastic 36'-diameter, light-weight, translucent (or white or pigmented) weather cover will carry two-ton hoist.

290 Gutter and downspout system.
Owens-Corning Fiberglas Corp., Toledo

Strong, lightweight "Fiberglas Permadrain" roof drainage system will not rot, dent, rust, corrode, or split-freeze; can be nailed like wood; needs no painting. Made of Fiberglas-reinforced plastic. Shown, left to right: corner, cross-section, installation.

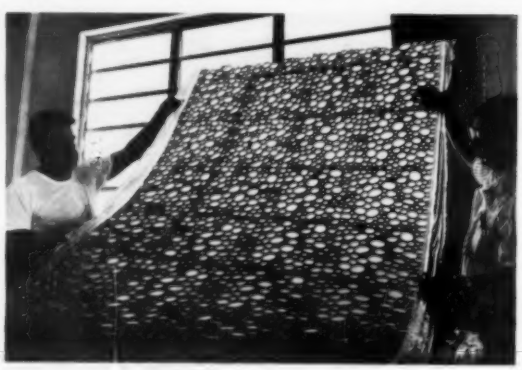


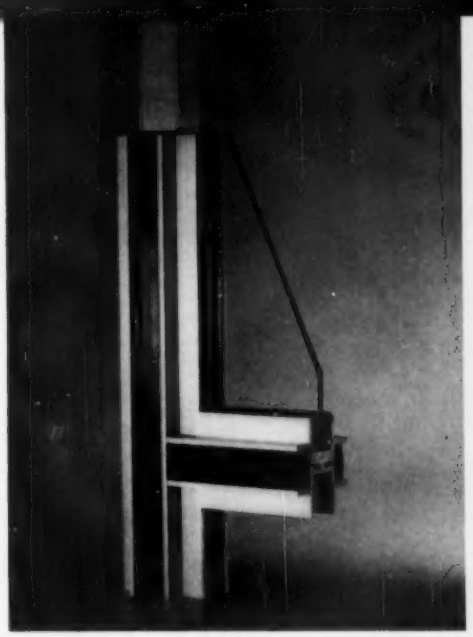
291 Modular "solar screen"
Gladding, McBean & Co., Los Angeles

Ceramic partition for variety of domestic, commercial uses. Comes in several dimensions, non-fading natural clay or pigment colors.

292 Modular sandwich panels
Naugatuck Chemical Division, U.S. Rubber Co., Naugatuck, Conn.

Colorful, weather-resistant fiberglass-reinforced plastic panels for a variety of architectural, interior decoration applications.

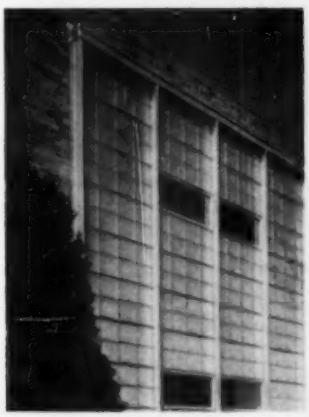




293 Aluminum frame partitions
The Mills Co., Inc., Cleveland
Staff design: Frank Harwood, project head

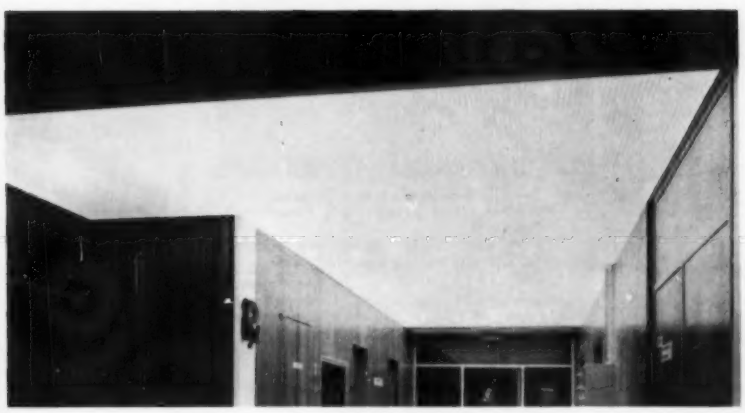
Interior partitions of natural or anodized aluminum posts with black or colored vinyl trim. Panel surfaces of painted steel, plastics or wood. Modular on 4" basis.

BUILDING SYSTEMS



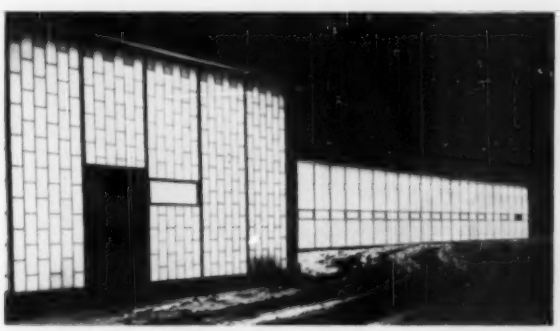
294 Prefabricated curtain-wall system
Owens-Illinois, Toledo, Ohio

For industrial, commercial, civic, residential buildings. Framing system: head, jamb, sill, struts or mullions, and batten strips with snap-on finish covers. Panels: 2"-thick glass of different colors.



295 Luminous ceiling
Integrated Ceilings, Inc., Los Angeles
Staff design

Translucent stabilized-polystyrene suspended ceiling, called "Infinilite." Non-modular; shows no seams, overlapping, or visible means of support.



296 Prefabricated curtain wall system
Kalwall Corp., Manchester, N.H.

Translucent panels of fiberglass-reinforced polyester plastic bonded to aluminum I-beam grid core. Entire unit factory-assembled, is light but structurally self-supporting.

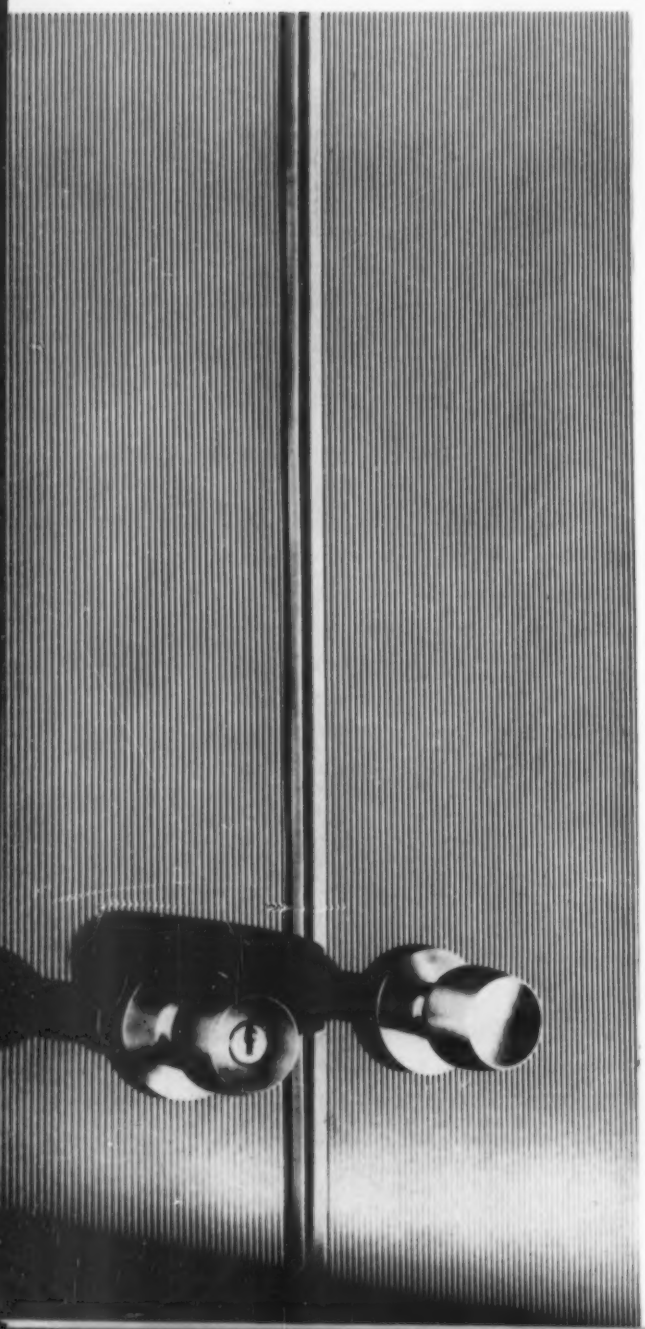
HARDWARE AND COMPONENTS

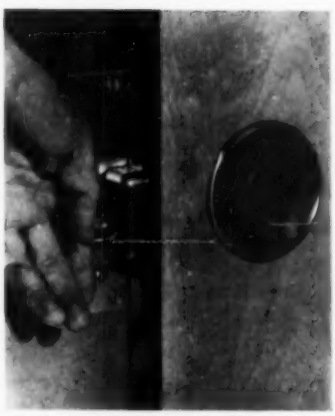
298 Entrance-door trim
Sargent & Co., New Haven, Conn.
Staff design: Richard J. Ohno, appearance designer; Alfred E. Floyd, engineering

For use with exit devices. Choice of materials: brass, bronze, aluminum, stainless. Cold-drawn base plate, grip; forged thumbpiece.

297 Aluminum doors
National Homes Corp., Lafayette, Ind.

Residential exterior doors of (Kaiser) aluminum skin embossed in fine-ribbed pattern; chemically treated; painted; laminated to hardboard-and-wood frame with honeycomb core.



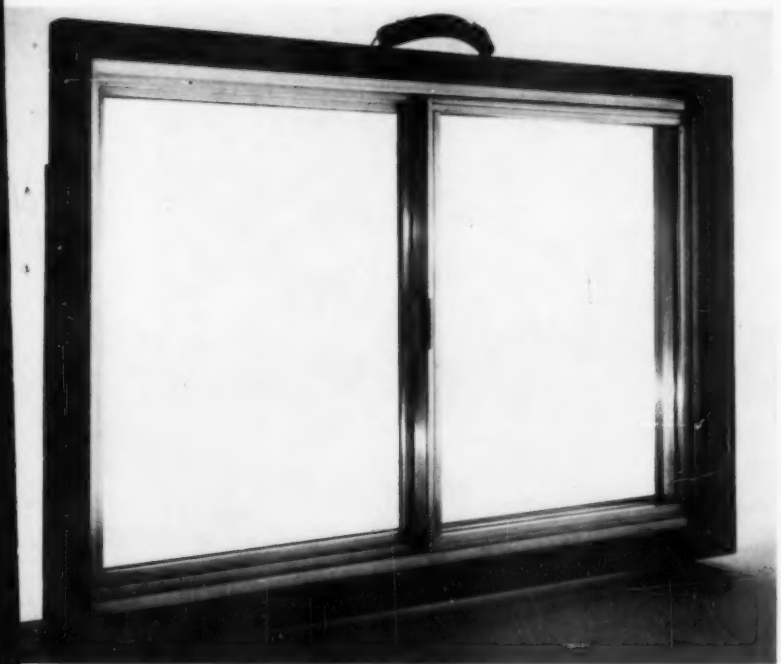


299 Surface-mounted door hardware
Stanley Works (Hardware), New Britain, Conn.
Staff design: K. M. Johnson, sales engineer; W. J. Macfarlane, product engineer

For refrigerator-like closure (door overlaps opening) of interior doors. Push-pull open-and-close. Roller-strike engages nylon latch-cam.

300 Glass lever-handle
Yale & Towne Mfg. Co., New York
Staff design: Glen Holland

Free-blown Pyrex borosilicate glass lever-handle designed especially for interior doors of new Corning Glass Building in New York.

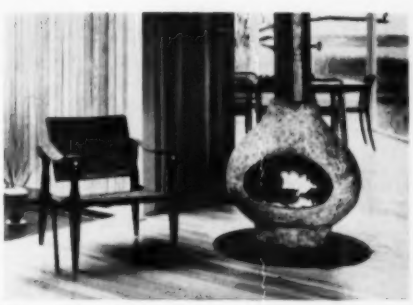


301 Handrail system
Aluminum Company of America, Pittsburgh
J. H. Blayden, staff development engineer

All-aluminum (plain or anodized) wall bracket and rail-to-post assembly adjust to any stair-angle. Any lengths; heights from 2' to 3'6".

302 Horizontal rolling window
Glide Windows, Inc., North Hollywood, Calif.
Staff design; Abe Grossman

"Shadoframe" of natural-finish (Alcoa) aluminum; uniform dimensions all around; leakproof; accommodates ½" Twinwindow or Thermopane.



303 Heating unit
Strawberry Bank Craftsmen, Portsmouth, N. H.
Susan Norton-Taylor, staff designer

Fireclay and refractory concrete "Igloo" heater; hand-molded, glazed and fired (to 2200). In red, green, white, and blue.

304 Folding door
Columbia Mills, Syracuse, N. Y.
Walter Dorwin Teague Associates (W. D. Teague, Jr., David Deland, Benjamin Stansbury)

Vinyl fabric on strip- and sheet-steel frame. Nylon rollers. Installed without tools in 1 minute. 6'6" to 8' high; 2'2" to 4' wide.

305 Automatic entrance/exit
Kawneer Co., New York

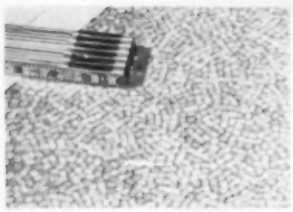
"Package" of anodized aluminum doors, frame, electric operator mechanism and vinyl mat. Neoprene edge on pivot side, dampened closure speed on latch-side, provide safety.

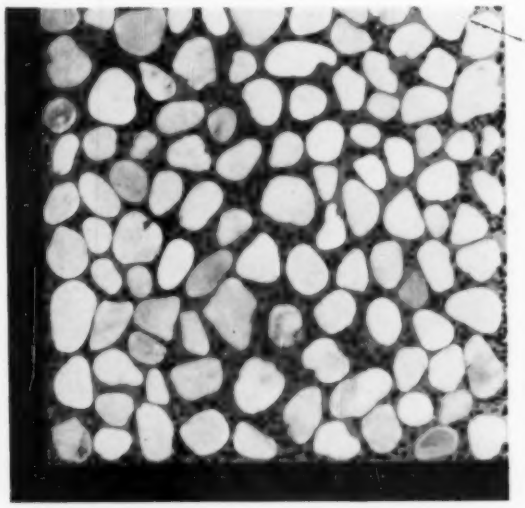
N

FINISHING MATERIALS

306 Sheet flooring
Armstrong Cork Co., Lancaster, Pa.

Tiny vinyl blocks set against vinyl; surrounded by vinyl grout; tone-on-tone colors.



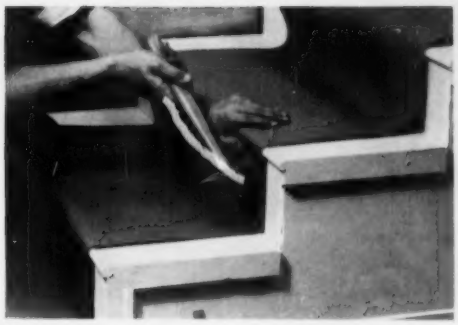


307 Tiles
Italia-Tile Corp., New York
Robert Nagel, designer

Hydraulic compression of cement and marble mixture makes terrazzo floor and wall tiles.

308 Micro-saic flooring
Miller Brothers Co., Inc., Johnson City, Tenn.

Unfinished oak flooring gives patterned effect with various grains of the wood.

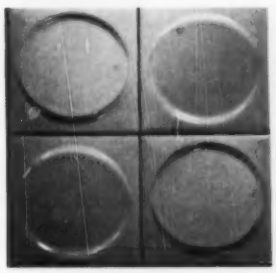


309 Mat and runner
Fabrics Div., E. I. du Pont de Nemours & Co., Inc., Wilmington, Delaware

Vinyl-clad cushioned mat is durable and stain resistant. Grips floor. Grey, green, or beige.

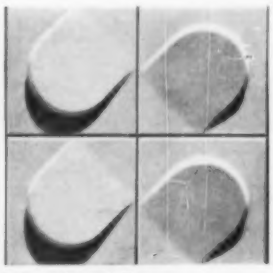
310 Flakewood paneling
International Paper Co., Long-Bell Div., Longview, Wash.

Used for wall paneling, partitions, screens and furniture items; can be sawed, planed and drilled; consolidated overlays of wood-flakes and fibers.



311 Sculptured tiles
Robertson Mfg. Co., Trenton, N. J.
Peter Quay Yang, designer

Press-molded ceramic tiles use light and shadow for pattern variety. Glossy, matte, semi-matte finishes.



312 Sculptured tiles
Pomona Tile Mfg. Co., Los Angeles
George Nelson, designer

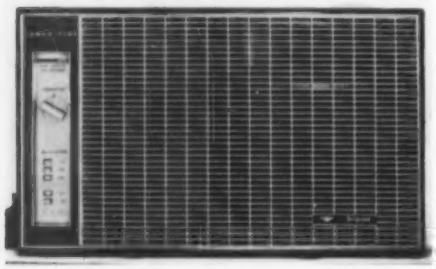
Glazed ceramic relief-surface wall tile allows design versatility.

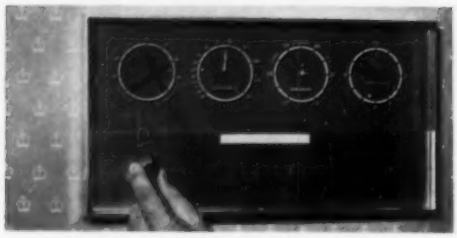
313 Electric heating panel
Sun-Tron Corp., Chicago, Ill.
Painter, Teague and Petertil, designers

Heating panels to match room furnishings; aluminum, laminated phenolic, steel.

314 Air conditioner
Hotpoint Div. of GE, Chicago, Ill.
Robert R. Fink, staff designer
R. C. Sandin, Mgr. Industrial Design

Portable; easy access to discharge grilles and removable filter.

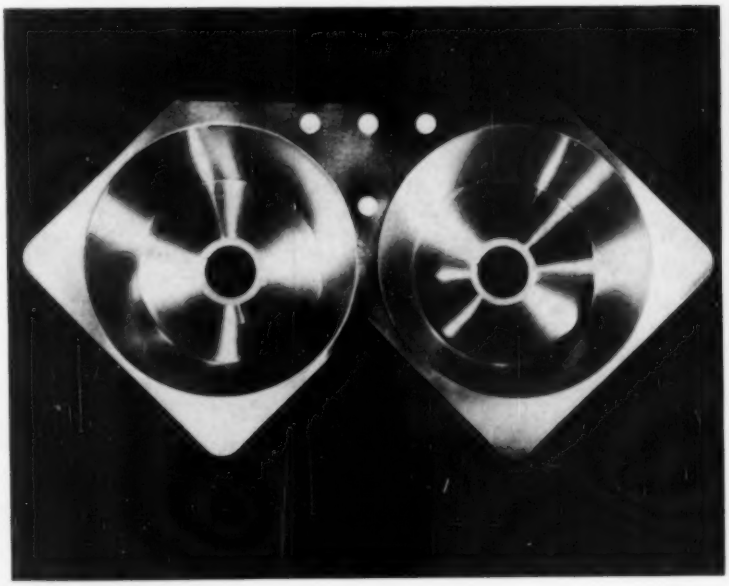




315 Weather station
Minneapolis Honeywell Regulator Co., Minneapolis
Henry Dreyfuss, designers

Centralized control of temperature conditions monitored according to outdoor weather.

PLUMBING AND HEATING



316 Stainless steel sink
Aeronca, Metal Products Div., Middletown, Ohio
Claus E. Sporch, designer

Swirling-water draining facilitates cleaning sink.

317 Bathtub
American-Standard, Plumbing & Heating Div., New York
Herwart Werker, Director of Research

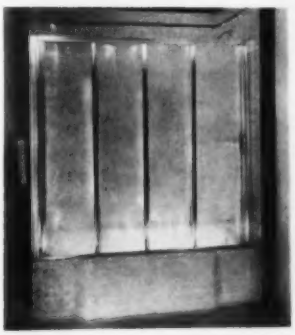
Two wide ledges provided by contour shape; enameled cast iron.

318 Bathtub
Briggs Mfg. Co., Warren, Mich.
Paul J. Petlewski, Design Director
Robert G. Plantholt, designer

Rim-seat tub with straight front at floor level for easier tiling; slip-resistant bottom; stamped steel, white porcelain enamel.

319 Water closet
Crane Co., Chicago
Henry Dreyfuss, designers

Off-the-floor for easier cleaning. Tank concealed behind steel panel snapped on wall; flush handle on side of bowl eliminates added wall opening.

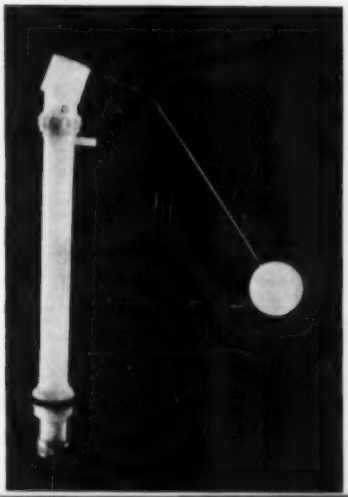


320 Folding tub and shower enclosure
Kinkead Industries Inc., Chicago
George Kochanowski, Chief Engineer
Roy Brenner, Product Development Director

Non-shatter polyethelene used with aluminum and nylon components; door slides and folds from either side.

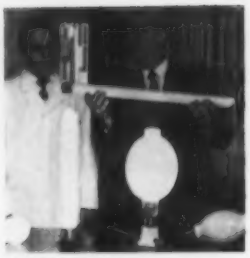
321 Single lever lavatory faucet
American - Standard, Plumbing and Heating Div., New York
Robert Hyde, Director of Research and Development

Easy to clean; brass and stainless steel; casting and stamping, chrome finish.



322 Ballcock Valve
Hydo Valve Corp., Austin, Texas

Injection-molded hydraulic nylon ballcock toilet valve; non-corrosive.



A. Westinghouse fluorescent lamp in ordinary socket.

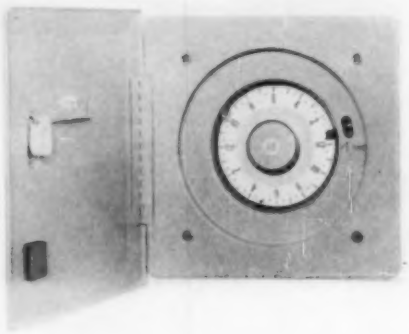
B. Fluorescent panel.

C. Round fluorescent lamp, half standard length.

D. Sealed beam projection lamp by Westinghouse.

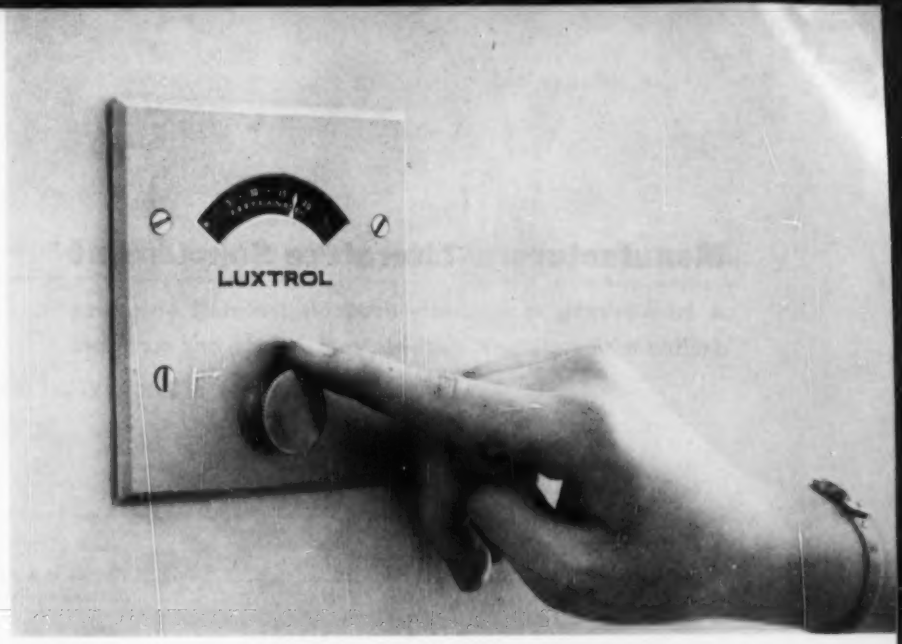
The variety of fluorescent lighting developments has increased this year, and Westinghouse has developed a number of things that alter established lighting concepts. The single-ended fluorescent lamp (A) screws into a socket like ordinary incandescent bulbs; the rectangular panels (B) are only one inch thick; the round fluorescent bulb (C) confines wiring to one end of the fixture. Other innovations achieve convenience and efficiency by control. The Bryant wall switch (327) doesn't affect light, but it does make it easy to turn on. Luxtrol (324) determines a room's lighting much as an automatic thermostat controls temperature: it measures the amount of combined natural and artificial light in a room, and adjusts lighting accordingly for a constant level of illumination. And the Lamp-Lyter (323) knows when you want the lights turned on or off, and does it for you.

LIGHTING



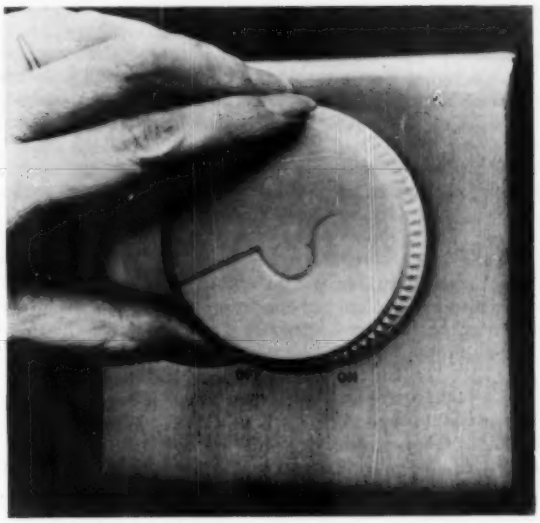
323 Lamp-Lyter
International Register Co., Chicago

Electric automatic light control combines timer and manual "on-off" switch in compact unit mounted flush into wall.



324 Automatic light controller
Superior Electric Co., Bristol, Conn.

Thermostat-like device preset to lighting level desired; amount of light automatically adjusted by photoelectric eye.

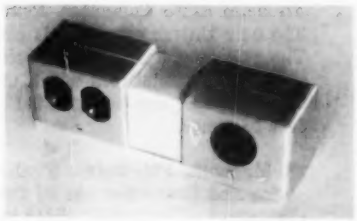


325 Variable light-brightness control
Superior Electric Co., Bristol, Conn.
Edward Wormley, designer

Continually adjustable transformer uses only necessary current, requires no special wiring.

326 Floor outlets
National Supply Co., Div., Armco Steel, Pittsburgh
Henry Dreyfuss, designers

Simple housings of brushed metal.



327 Wall switch
Bryant Electric Co., Bridgeport, Conn.
R. O. Wiley, design engineer

Straight-sided, rectangular wall plate framing large actuator; top touched for "on", bottom for "off."

Manufacturers' Literature Supplement

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

Materials—Metals

1. **High-purity Brazing Alloys.** Alloy Specialties Company. 8 pp. Booklet discusses various alloys for brazing copper, bronze or brass. Specifications on composition of alloys and cooling properties are also included.

2. **Aluminum and Steel Curtain Walls.** Ceco Steel Products Corporation. Curtain walls in both aluminum and steel are illustrated in this guidebook. The walls are shown in installations as panel arrangements, and as areas within plants. Construction details are included for single and multi-story buildings.

3. **Use of Sodium Wire.** U. S. Industrial Chemicals Company. Processes and equipment for converting metallic sodium into wire are described in a technical data sheet available from the manufacturer. Extrusion methods are detailed in steps, and the advantages of sodium in wire form for industrial and commercial use are discussed.

Materials—Plastics

4. **Moldings for Machinery Parts.** Continental Diamond Fibre Corporation. Plastic moldings available for manufacture are illustrated in a booklet from a maker of molding equipment. Different kinds of molding are described and a comparison of their advantages is included.

5. **Nylon Materials.** Spencer Chemical Company. Properties, characteristics and application of nylon are discussed.

Methods

6. **Plastic Tank-lining.** Amercoat Corporation. 6 pp. Brochure illustrates Amer-plate industrial lining, a dense flexible polyvinyl chloride sheet for lining tanks and other vessels. The material will protect steel and concrete tanks from corrosion and burns from acids and other volitile solutions.

7. **Gold Spray.** Bee Chemical Company, Logo Division. Booklet describes a bronzeless gold spray for finishing which is said to give an appearance comparable in quality to those finishes made with bronze powder, but costing less than the bronze-powder finishes.

Miscellaneous

8. **Precision Measuring Tools and Equipment.** Scherr-Tumico Company. The complete line of Scherr-Tumico measuring tools, optical measuring equipment, and testing machinery is described and illustrated in a catalog. In addition to the instruments produced by the company, other brands which the company distributes are included.

9. **Air Valves.** Hannefin Company. The Hannefin Valve Finder is a guide to the choice of air valves and measuring devices for air pressure.

10. **Recorders and Recording Systems.** General Electric Company. 12 pp. Illustrated booklet shows complete line of GE recorders, gives dimensions, chart speeds, operating specifications, applications and accessories.

11. **Electrical Insulating Varnishes.** Minnesota Mining and Manufacturing Company. 34 pp. Booklet catalogs different kinds of varnishes for electrical wires, discusses the advantages of each kind, and describes typical applications.

12. **Electric Tachometers.** Electro-Mechano Company. Bulletin illustrates manufacturer's complete line of tachometers, gives data on the company's new Model 31.

13. **Rate Gyros.** Humphreys Inc. 2 pp. Bulletin RG-101 describes rate gyro for use in stabilization and other instrumentation and control systems. These gyros use either ac or dc current and one such instrument can measure both pitch and yaw.

14. **Variable Speed Pulleys.** T. B. Wood Company. Bulletin lists complete line of variable speed pulleys designed to eliminate freezing and sticking in pulley operation. Technical data on application and specifications of equipment is included.

15. **Shaped Tubing.** Superior Tube Company. Shaped tubing in square, rectangular, elliptical, oval and other cross sections is illustrated and described in Bulletin No. 17. Metals in which the tubing can be obtained include stainless steels, carbon and alloy steels, nickel and nickel alloys, glass sealing alloys, titanium, and beryllium copper.

16. **Aluminum Bronze Bars.** Johnson Bronze Company. 4 pp. Folder illustrates a new product, aluminum-bronze bars, which can be either solid or centrifugally cast, or hollow. Information is included covering applications of the bars in gears, valve seats, and worms; properties and tolerances.

17. **Solid State Computer.** Remington Rand Corporation. The new Univac computer is explained in Booklet U1770. The new computer is unique because of magnetic core amplifiers and transistors which use little space and power. The computer can be operated in as little as 575 square feet of space.

18. **Magnetic Flowmeter.** Fischer & Porter. Bulletin explains and illustrates use of flowmeter for proportioning percentage of chillproof added to liquids.

19. **Warehouse Layout.** Automatic Transportation Company. This booklet deals with effective layout and planning of factories and warehouses. The use of manufacturer's

CLAD REX SBR

The physical characteristics of CLAD-REX® vinyl-metal laminate

The use of vinyl-clad metals is growing rapidly. The type and variety of vinyl-clad metals is increasing also. Although the various vinyl-clads compete for attention, they are not alike. Nor do they deliver similar advantage.

Therefore, your vinyl-clad metals data file should be assembled with care. Know exactly what you are considering, when to use it, and how.

At present there are two basic types of vinyl-clad metal available. One is a plastisol which is roller coated or sprayed on the metal substrate in liquid form. The other is a calendered vinyl film which is laminated to the metal substrate. Various levels of quality exist within both areas. However, the laminated type generally offers substantially broader advantage to the user than the plastisol—primarily within the areas of styling.

Because the characteristics can obviously vary in degree with the gauge of metal and film as well as texture and pattern of film, the following tabular data must be considered as typical:

Results of Physical Tests

Characteristic	Properties of Film (3 Mil)	Properties of Laminate
Ultimate Tensile	4400 psi	Tensile of Supporting Metal
Ultimate Elongation	170%	Elongation of Supporting Metal
Tear Strength	910 lb. in.	Dependent on Metal Gauge
Bend Brittle, ¼" rod	—5° C.	—30° C.
Reverse Impact	Tears	120 in.—lbs.
Heat Deformation at 120° C. 2000 g. load	32%	30% (1 side)
Shrinkage 5 min. at 250° F.	4.6% with cal. grain 1.6% cross cal. grain	0.6% None

The corrosion resistance of Clad-Rex vinyl-metal laminate

The poly-vinyl chloride film used in Clad-Rex offers unusual resistance to chemicals. It will withstand acids, alkalis, alcohol, household detergents, salt water, industrial liquids, petroleum and corrosive atmospheres.

Results of Corrosive Tests

Agent	VINYL-METAL LAMINATE		PHENOLIC		ALKYD	
	Days Exp.	Result	Days Exp.	Result	Days Exp.	Result
10% Sulfuric Acid	17	OK	2	Failed	2	Failed
10% Nitric Acid	17	OK	2	Failed	2	Failed
10% Hydrochloric Acid	17	OK	2	Failed	2	Failed
10% Acetic Acid	17	OK	2	Failed	2	Failed
10% Lactic Acid	17	OK	17	Failed	2	Failed
10% Formaldehyde	17	Swelled	2	Failed	2	Failed
10% Caustic Potash	17	OK	3	Failed	2	Failed
Distilled Water	17	OK	17	Failed	2	Failed
Mineral Oil	17	OK	17	OK	17	OK
Ethanol	17	Sl. Shrink	17	OK	17	OK

The durability of Clad-Rex vinyl-metal laminate

Although the sales appeal of unlimited styling is a major factor, perhaps the most important advantage offered by Clad-Rex vinyl-metal laminates is their durability. Clad-Rex *is* practical to fabricate. It can be processed in almost as many ways as any *un*finished sheet metal—including deep-drawing.

Results of Abrasive Tests

Coating	Mils Film Thick	Total Revolutions	Revolutions Per Mil Film Thick.*
Vinyl-Metal Laminate	4.0	8,430	2,108
Vinyl-Metal Laminate	8.5	17,156	2,100
Phenolic	1.25	1,204	1,000
Urea-Alkyd	1.70	122	72
Vinyl Lacquer Coating	2.0 Ave.	703-954	351-477

*Abrasion resistance determined with a Taber Abrader using a CS-10 wheel.

The cost advantage of Clad-Rex vinyl-metal laminate

As a purchased material going into a users plant, vinyl-metal laminates cost more than unfinished or some other prefinished metals. *But, most important, end products made of Clad-Rex generally cost less!* The reasons are worthy of close examination:

1. Parts made of Clad-Rex require no further finishing. This means a savings in original equipment (including maintenance), finishing material, factory floor space, labor, handling, etc.

2. The abrasion resistance of Clad-Rex substantially reduces and often eliminates rejects. This means a savings in rejected products, handling and expensive reworking activities.

A source of engineering and manufacturing service for you

Clad-Rex interest in helping you extends into your own plant. A Clad-Rex Fabricating Engineer is provided to show your production people how easy it is to process Clad-Rex.

Furthermore, Clad-Rex operates a fully staffed and equipped research laboratory. Its facilities are devoted to customer service as well as improving Clad-Rex itself.

Write and describe your product. See how Clad-Rex can work its broad effect on industrial design, engineering and selection of pre-finished metals in your product.

VINYL-METAL LAMINATES BY CLAD-REX DIVISION OF SIMONIZ COMPANY
2107 Indiana Avenue • Chicago 16, Illinois
Telephone: VIctory 2-7272

Manufacturers' Literature *(Continued)*

electric trucks and their application to a factories' needs are also mentioned.

20. **Latex Rug Backing.** Plastics Division, Koppers Company. A new latex for rug backing is described in this booklet. Also discussed are specifications of the product, other uses for firm's latex, and methods of manufacture.

21. **Silicad Batteries.** Yardney Electric Corporation. Booklet shows Silicad cells, said to be more efficient and longer-lived than comparable batteries of the same output. Booklet supplies data on Silicad batteries.

22. **Cartridge Turbostarter.** General Electric Corporation. Publication GET-2933 is a technical report on a cartridge turbostarter for aircraft engines. The design approach, performance, reliability and components of the starter are discussed in the course of the report.

23. **Silicone Insulation.** General Electric Company. Booklet titled "Why and Where it Pays You to Use Cable Insulated with General Electric Silicone Rubber," lists the properties of silicone rubber and discusses the applications of this material.

24. **Preventing Metal Corrosion.** Corrosion Reaction Consultants, Inc. 8 pp. Booklet explains how CRC-3-36, a liquid formula, prevents corrosion of metals. How it is applied and other qualities of the formula are mentioned.

25. **New Voltmeter.** Southwestern Industrial Electronics. Bulletin covers features of new voltmeter and gives diagram of the unit. Specifications are included.

26. **Stud Welding.** Nelson Stud Welding Division, Inc. 12 pp. Booklet gives details of advantages and applications of stud welding, a method of welding. The booklet includes a cost reduction work sheet.

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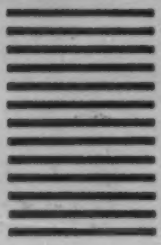

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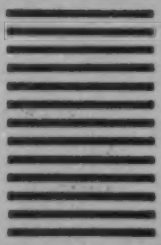

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Index to Advertisers

For Your Calendar

Through January 3. Exhibition of International Contemporary Glass organized by the Corning Museum of Glass. The Metropolitan Museum of Art, New York.

Through January 3. "Federal Buildings, 1960." An exhibition prepared by the Public Buildings Service of The General Services Administration. The Octagon, Washington, D. C.

Through January 3. "Twentieth Century Design, U.S.A." Exhibit at the Minneapolis Institute of Arts, Minnesota.

Through January 31. "Eighteenth Century Decoration." Exhibit at the Metropolitan Museum of Art, New York.

December 13-January 3. "Midwest Designer-Craftsmen." Smithsonian Institute Traveling Exhibition, Rollins College, Winter Park, Florida.

December 14-16. "Market Research," AMA orientation seminar, $150. The Astor Hotel, New York.

December 14-16. "Product Manager," AMA workshop seminar, $125. The Astor Hotel, New York.

December 14-18. "Product & Package Design Forum," AMA orientation seminar, $200. The Astor Hotel, New York.

December 19-January 17. "British Artist Craftsmen." Smithsonian Institution Traveling Exhibition. M. H. de-Young Memorial Museum, San Francisco.

January 4-15. The International Home Furnishings Market, in conjunction with the National Housewares Show and the Import Show. The Merchandise Mart, Chicago.

January 4-17. The Toy and Juvenile Market. First formal buying event. The Merchandise Mart, Chicago.

January 10-14. Forty-ninth annual convention of the National Retail Merchants Association. Statler Hilton Hotel, New York.

January 12-16. Sixteenth annual technical conference of the Society of Plastics Engineers. Conrad Hilton Hotel, Chicago.

January 13-24. National Motorboat Show. Jan. 13-15, trade only; Jan. 15-24, public. New York Coliseum, New York.

Beginning January 15. "Festival of France." Exhibition at the Trade and Convention Center, Philadelphia.

January 17-20. Annual Canners convention and Canners Show. Americana Hotel. Bal Harbour, Florida.

January 22-February 14. "Architectural Photography." Smithsonian Institution Traveling Exhibition. Georgia Institute of Technology, Atlanta.

January 22-27. East Side Settlement House Winter Antiques Show. 7th Regiment Armory, New York.

January 24-29. San Francisco Winter Market. Western Merchandise Mart, San Francisco, California.

January 25-28. Eleventh Plant Maintenance and Engineering conference and show. 43 discussion sessions, exhibit of products and services demonstrated under simulated factory conditions. Convention Hall, Philadelphia.

February 1-4. Annual national conference of the American Society of Heating, Refrigeration and Air-Conditioning Engineers. February 1, Symposium on Plastics in Domestic Refrigeration presented by the Society of Plastics Engineers. Baker Hotel, Dallas.

February 1-4. Instrument-automation conferences and exhibits sponsored by the Instrument Society of America. Exhibit, Houston Coliseum. Conference, Rice Hotel, Houston, Texas.

THIS IS THE WORLD'S first MOLDED FIBER GLASS AUTOMOBILE PRODUCED IN MATCHED METAL DIES

All photographs are unretouched.

It was built in June, 1954, for presentation at the National Plastics Exhibition in Cleveland, and has had continuous, hard use ever since.

NOTICE THE PERFECT CONDITION OF THE BODY.

This car has been driven 125,000 miles. For three years it has been driven in and around Ohio — where road chemicals are in use five months of the year. For two years it was in Florida's salt air . . . with "MFG" Boat salesmen trailering boats behind it most of the time.

THERE IS NO RUST, CORROSION OR OTHER DETERIORATION OF THE MOLDED FIBER GLASS BODY.

The car hit a deer in the Pennsylvania mountains . . . right front fender. It ran into a stone fence later . . . left front fender. It has had a few scrapes with other autos. These impacts have caused only small, local damage, quickly and easily repaired. The tough impact-resistant body has never been out of shape or dented. It has been repainted once — for appearance only.

NO BODY PARTS OR SECTIONS OF BODY PARTS HAVE EVER BEEN REPLACED.

Maybe **your** products, too, could be made **better** with MOLDED FIBER GLASS. Our engineers will be glad to go over your drawings . . . call, write or send for literature.

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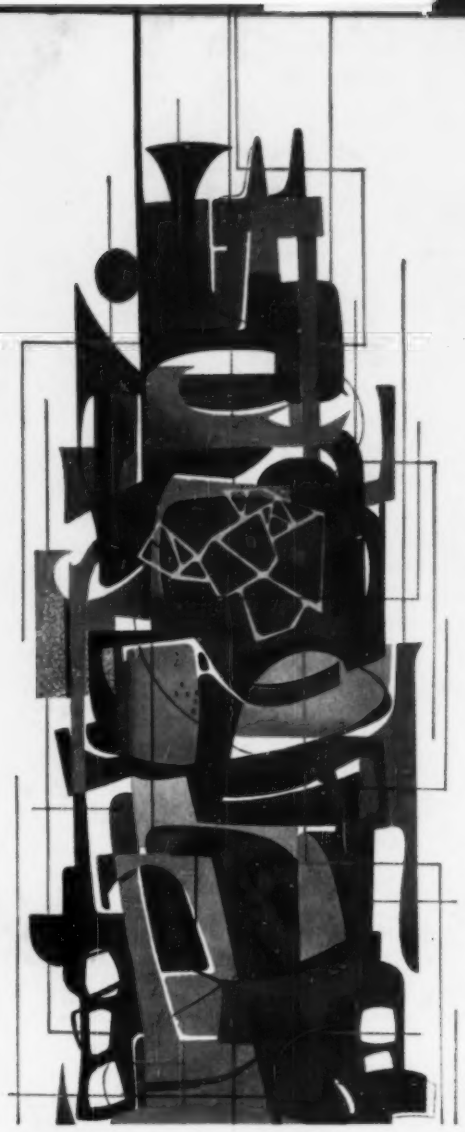

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