INDUSTRIAL DESIGN

12 December 1958 $1.50 per copy

Annual Design Review

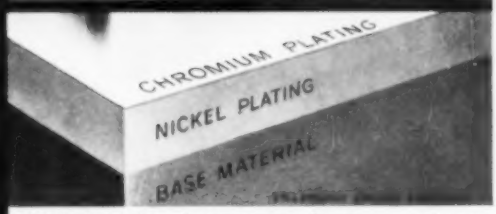
AD 1958

DESIGN WITH FLAIR...

Refreshing design idea . . . bathroom accessories of lasting luster. Nickel plating underneath chromium prevents base metals from corroding, cleaning is easier.

A hot idea . . .
Durable chrome with good extra thick layers of Nickel underneath for lasting beauty.

Timing is perfect for lustrous chrome finish. **Heavy Nickel plating underneath provides a bright metal foundation.**



Nickel, under chrome, over base . . . Chrome gives you beauty. Nickel plating makes the beauty last. Base material suits economy. Information? **Write:** THE INTERNATIONAL NICKEL COMPANY, INC., 67 Wall Street, New York 5, N. Y.

AND AN EYE TO WEAR

NICKEL PLATING UNDER CHROME

Inco Nickel *makes metals perform better longer*

DECEMBER, 1958 VOLUME 5 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.

CONTENTS

Coming

IN JANUARY—A detailed case history of Johnson Outboard Motor's redesign program; a review of new developments in photographic equipment.

IN FEBRUARY—ID's 6th installment in the Fabrication Series. This time the subject is Special Metals.

COVER: A, D and R collect themselves to form both cover and symbol for ID's 5th Annual Design Review.

FRONTISPIECE: Despite the surfeit of jokes, cartoons and TV allusions to it, the hula hoop makes one more appearance—this time as, undeniably, the product of the year.

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LETTERS

A Phoenix not too frequent

Sirs:
One of our business friends drew our attention to a recent issue of INDUSTRIAL DESIGN containing some pictures taken by Joel Witkin (October).

The pictures are wonderful, but the application of the word "junk" to the material shown in them has produced a few shudders here and elsewhere in the industry.

The material shown is iron and steel scrap—not junk, and the firms who handle this are called iron and steel scrap processors and brokers. There is a legal distinction between the two.

We don't wish to disparage the thousands of small junk dealers and peddlers who serve as an important source of material for our processor members. However, we would like to point out that by the time the material gets to the stage shown in the pictures, it is trade practice to describe it as iron and steel scrap. The word "junk" implies material discarded by the public as useless—the shards of our modern civilization.

But by the time the ferrous items have been segregated from all the other material, and collected in a processor's yard, they become iron and steel scrap—an important raw material to help in the production of new iron and steel.

You see, steel mills and foundries take scrap along with pig iron, melt both, and produce new steel. Because scrap is already steel, it reduces the refining period, helps cut the cost of finished steel products, and hence keeps the price of things like cars and refrigerators down. The use of scrap in new steel making does not reduce the quality of the new steel—it helps it. Indeed, many of the most expensive grades of steel, like the alloy steels used in jets, and stainless steel, are made from close to 100 per cent scrap.

Our industry evolved from the junk business, but today's scrap yard is a far cry from the average person's conception of it. Few people could get into the scrap processing business today and hope to make any kind of real income unless they were prepared to invest relatively large sums in the installation of equipment.

The scrap man views his product, not as the end of the road for an item which once served its purpose in the home and factory, but rather as the beginning of a new life in which it will rise again Phoenix-like from its ashes, to take on a new form.

Reducing the facts to figures, in 1957 steel mills and foundries consumed close to 30 million gross tons of iron and steel scrap which they purchased from processors and brokers. Dollar-wise, this meant gross sales for the iron and steel scrap industry of close to $2,000,000.

In any event, we did like the pictures, and we think the photographer, Joel Witkin, did a fine job.
William S. Story
Director of Public Relations
Institute of Scrap Iron and Steel, Inc.
Washington, D. C.

The Atoms for Peace exhibit

Sirs:
I noticed with interest the article on page 10 of the October 1958 issue entitled "Teague designs U. S. Atomic Show." I think a couple of corrections are in order.

Walter Dorwin Teague Associates, Inc. did an outstanding job in designing the scientific section of the U. S. Exhibit at the Palais des Nations, but did not design the U. S. Theme Exhibit in the commercial section at the Palais d'Exposition. The design for the commercial section theme center of the Atomic Energy Commission was designed, built and installed by our organization. We are happy to say that we received a commendation for our work from the Atomic Energy Commission.

Also, on page 10 of the October issue you show a model of a boiling water reactor as part of the work designed by Teague. This model reactor was designed and built by us for Leeds and Northrup and was then installed in the scientific section at Geneva.

Besides The Displayers, Inc. there were several other design and construction organizations that contributed immeasurably to the overall success of the showing that the United States made in both the scientific and commercial sections. This in no way whatsoever detracts from the competence of the Teague design but it is our feeling that the credit should be correctly given to those concerned if any credit at all is indicated in your articles.
Belmont Corn, Jr., President
The Displayers, Inc.
New York

Editor's note: ID reported on only the official U. S. government technical exhibit at the League of Nations' site, not on the more than 40 commercial exhibits on display in downtown Geneva. The boiling water reactor was one of 32 items designed by various companies to be shown within the official U. S. exhibit. The Teague office designed the settings and supplementary display material to be used in conjunction with them.

The ubiquity of paper

Sirs:
Congratulations and thanks for your November issue recognizing the importance of paper, the paper industry and paper products. Few people are aware that without paper all production would come to a complete standstill—even the collection of income taxes (what a delightful thought). Paper is a necessity for everyone, from missile men to music men.
James J. May
Design Consultant
St. Regis Paper Company
Kimberly-Clark Corporation

Errata

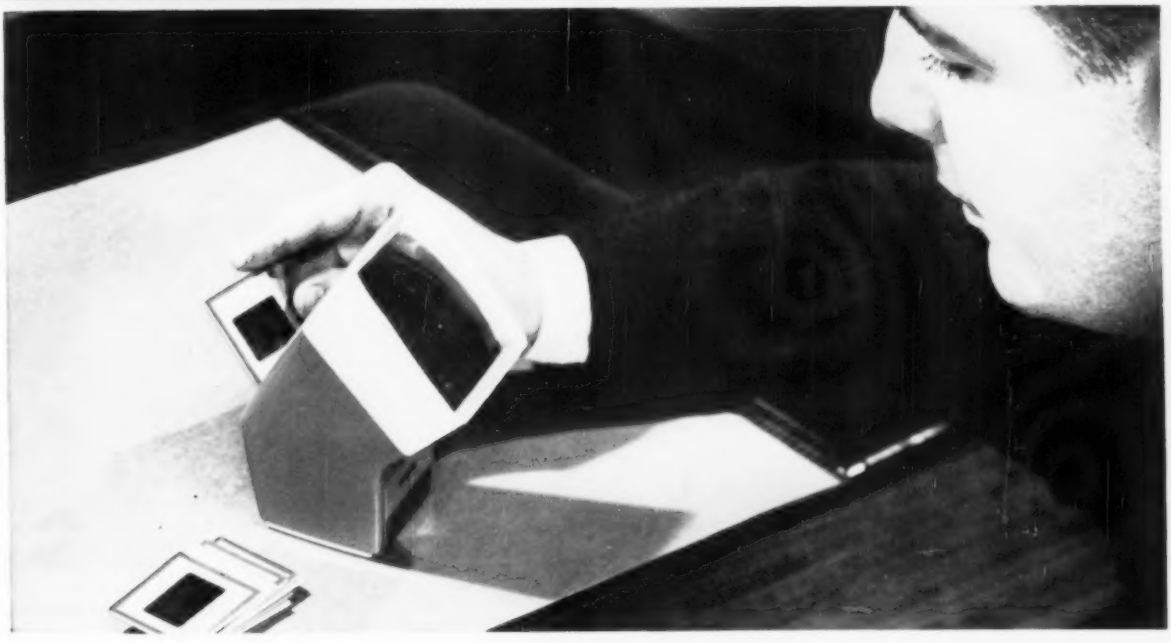
On page 26 of the November issue, the name of Howard Weber, of J. M. Little and Associates, was misspelled.

On page 97, November, the Institute of Design of the Illinois Institute of Technology was incorrectly identified as a part of the University of Illinois.

Walter Dorwin Teague's name was inadvertently omitted from the list of new ASID directors published in November.

CYANAMID

PLASTICS NEWSFRONT



ARGUS SLIDE VIEWER focuses on CYMAC® 400

A number of advantages made CYMAC 400 polymethylstyrene plastic ideal for the smartly designed case of the new Argus PreViewer II color slide viewer. CYMAC 400 resists heat and will not warp when the bulb is lighted for an extended period, or when the viewer is exposed to the hot sun in store windows. It resists stains and may be wiped clean. And it lends itself to attractive design in two tones of blue—color that won't chip off. CYMAC 400 is economically injection-molded for Argus by the Parts Division of Sylvania Electric Products. Inc.

POLAROID PICKS BEETLE® PLASTICS PARTS

Eleven parts, including the handsome pale gray and charcoal case of the new Polaroid Print Copier, are molded of BEETLE urea plastic. Selected for its hard, lustrous finish, durability and range of colors, BEETLE resists staining from oils, greases and common chemicals. Parts are compression-molded by G. M. Laboratories for the Polaroid Corporation. Used in conjunction with the Polaroid Land Camera, the Copier delivers finished prints in 60 seconds.

For the plastic that will best meet the requirements of your particular application, call or write the Cyanamid representative nearest you.

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CYANAMID Plastics and Resins Division

INTERNATIONAL DIGEST

Summaries of articles from leading publications that reflect the current design climate abroad

FRANCE

L'ARCHITECTURE D'AUJOURD'HUI, Paris

June, 1958, page 2
Nearly 50 pages of this well-illustrated issue are devoted to the Brussels World Fair. What makes the issue more interesting than many other reports on the Fair are the strikingly unusual architectural photographs, the detail of the coverage, and the use of architectural sketches (above) to clarify building techniques. Even without reading the French text, an exhibit designer or architect should be able to learn a good deal simply from these photos and sketches. Besides reporting on the pavilions of 20 nations, the magazine covers the Belgian section of the Fair in detail, and presents several text pieces on such subjects as "plastics in building," and "architecture and the machine."

INDIA

DESIGN, Bombay

September, 1958, page 22
The terracotta water jug (above) is one of many traditional handcraft items being turned out by the Calcutta Design Centre, which was established two years ago. The Centre is dedicated to "reviving traditional handicrafts and purging them of corruptions that have entered through craftsmen attempting to imitate industrial products." The Centre has been studying the problems which face such traditional crafts as metal casting, ivory and shell work, and has been searching for new uses for such traditional materials as bamboo, wood, and terracotta.

JAPAN

SHINKENCHIKU (The New Architecture of Japan), Tokyo

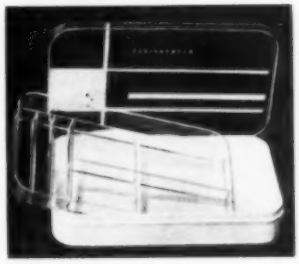
October, 1958, page 2
The Sogetsu Art Center (above) is one of the many new Japanese buildings described in this well illustrated magazine which, mercifully, is published in English. The new art center, like many of the buildings which *Shinkenchiku* reports on, shows an interesting combination of native Japanese elements with a strong Frank Lloyd Wright influence.

ENGLAND

DESIGN, London

November, 1958, page 46
In addition to its Design Centre, London now has a Packaging Centre at 50 Poland Street, which maintains a permanent but changing exhibition of packaging methods, materials and equipment. The new center also has an information bureau, a reference library and conference and meeting rooms. The center opened with a special display put on by the Society of Industrial Artists, with work by members Peter Ray, Hans Schleger, Robin Day, David Caplan (below), Ronald Ingles, and Milner Gray. Philip Andrew, director of the center, is working now for greater unity and continuity among the displays of commercial exhibitors.

GERMANY



GRAPHIK, Munich

November, 1958, page 14
Graphik devotes a full half of its November issue to plastics problems. The editors give complete coverage and criticism of this year's National Packaging Exposition at the Coliseum, and pay special attention to the new types of plastics shown there. Another article describes the thoughtful advertising program of Badische Anilin & Sodafabrik, one of Germany's large plastics manufacturers. There are also handsome four-color reproductions of plastics publicity in other European countries. Dr. H. Behringer has contributed an article describing new types of plastic packaging (above) and the great sense of adventure which pervades the field.

THIS IS GLASS

a bulletin of practical new ideas from Corning

It's cooler inside!

Sitting behind the controls of this crane in a steel mill used to be a hot job. But now cab windows are made of ¼″ polished plate that's fashioned from PYREX brand *infrared reflecting* glass.

This glass *bounces* heat away—transmission of IRR (infrared) being as low as 7%, depending on wave length. Yet you can see through these windows since about 75% of visible light is passed. These IRR windows are strong, chemically resistant, and very durable. You can get them in sizes up to 30″ x 60″. For details (along with data on blue observation glass, PYREX brand glass No. 7740, and VYCOR brand glass No. 7900) ask for PE-34, a 4-page data sheet covering flat glass properties, specifications, and applications.

Hot rod

This has *nothing* whatsoever to do with motor cars. Rather our concern here is a piece of *glass* rod that conducts electricity and produces heat.

The rod is ¼″ O.D., made of heat-resistant glass coated with a metallic oxide that's fired in for permanence. Ends are silvered so you can use clip contacts.

NEW, low-watt density heater from Corning consists of glass rod, coated with a metallic conductor, and having silvered ends for attaching clip contacts.

With either a 120 or 240 volt source, you have a power *output* rate of roughly 50 watts for every 6 inches of rod.

Someone described this low-watt density heater as "a non-crystalline, rigid wire made of glass." The big question: What can you do with it? So far the project development people at Corning have come up with hot rods ranging in size from 6 to 24 inches. Larger sizes are being looked into.

Seems like a compact heater like this should be good for lots of things. We await your suggestions and inquiries.

Working on the same principle of a metallic coating that conducts electricity to produce heat are panels like this.

These panels are called PYREX brand industrial radiant heaters. You'll find them in use in plants 'round the country for drying, heating, baking, curing.

Main reason for the popularity of these heaters is the kind of heat you get. It's *uniform*, and *long wave*—5 microns and over.

And long wave heat is very readily *absorbed*. For example, here's comparable performance for a white surface.

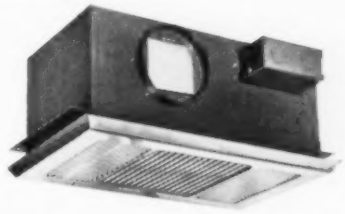
Source	Temperature °K	% radiant energy absorbed
infrared lamp	2500	30
sheathed wire unit	1000	70
"PYREX" heater	600	90

With the long wave heat from PYREX® heaters, color is of *little* importance—heating speed is almost constant.

PYREX industrial radiant heating panels are mounted in an aluminized steel frame and come complete with built-in reflector, mounting hangers, junction box, and leads.

All the facts about this efficient way to get heat are spelled out in Bulletin PE-60. Use the coupon if you'd like a copy.

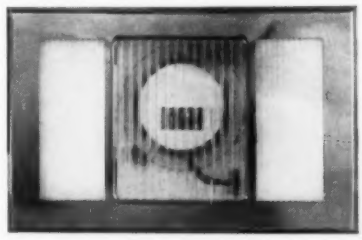
Inside job



This combination ventilator and lighting fixture is compact and smart looking. It's made by Fasco Industries, Inc., a Rochester, N. Y., firm.

Mounted in the ceiling, this fixture exhausts stale air and provides illumination for bath and/or utility rooms.

Where do we enter the picture? The grille is made of 7½″-long pieces of *glass* rod. Glass makes for smooth air flow, looks good, and stays that way.



And the 4″x7″ lighting panels are Corning No. 66 Alba-lite—an opal glass in an attractive fluted pattern. Alba-lite diffuses; it stands up to the heat from the 60-watt lamps. It, too, looks good, and is easy to keep clean.

Suggestion: If anything you make (or contemplate making) uses glass parts, try Corning. You'll get *what* you want, *when* you want it, in the *quantities* you need, at a *price* that makes sense.

Or as a starter, ask for "This Is Glass." In its 64 pages you'll probably find something you can use. Remember: *Corning can do almost anything with glass.*

Corning means research in Glass

CORNING GLASS WORKS, 54-12 Crystal Street, Corning, New York

Please send me: ☐ PE-34 "Corning Flat Glasses"; ☐ PE-60 "PYREX brand industrial radiant heater catalog"; ☐ "This Is Glass"

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

Company .....

Street .....

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

NEWS

IDEA panelists (left to right) Alexander, Zagorski, Kostellow, Cohen and Lepper discuss education with IDEA president Carreiro.

Professor Aarre Lahti reports on education statistics compiled from a 20-school survey.

Design educators meet in Georgia

IDEA, the Industrial Design Education Association, held its second annual meeting on October 24 and 25 at the Georgia Institute of Technology with 30 people representing 22 schools. The morning's discussion was built around the results of a survey of American industrial design schools as reported by Aarre Lahti, Associate Professor of Design at the University of Michigan. In December of 1957 a questionnaire was mailed to 36 schools having an industrial design curriculum. Mr. Lahti's confidential report was based on the 55 per cent of the schools which responded. Using these schools as his base, he described the number of schools offering degrees, the size of the staffs, the number of students, and the nature of the curriculum. Mr. Lahti plans to extend the survey to other schools this winter in order to establish statistics which will be as representative as possible of the design education situation in this country.

In the afternoon IDEA members heard a five-man panel discuss "Industrial Design Education in America: An Evaluation of its Accomplishments, Its Weaknesses and its Future." Members of the panel were: Robert Alexander, Michigan State University; Edward Zagorski, University of Illinois; Rowena Kostellow, Pratt Institute; Harold Cohen, University of Illinois; and Robert Lepper, Carnegie Institute of Technology. The discussion which followed centered around a comparison of curricula and the broad goals of design education. The group was also interested in probing the question of professional competence and in exploring ways of establishing a professional status.

In the evening Hin Bredendieck, of the Georgia Institute of Technology, held a reception at his home. After dinner, slides of student work were shown.

At a business meeting the next morning seven committees were established to carry on IDEA's work for the coming year. Chairmen of the new committees are: John Alcott, bylaws; Hin Bredendieck, school program study (to work in conjunction with the ASID education committee); industrial liason committee (to seek ways in which industry can help design schools); George Jergenson, competitions; Aarre Lahti, statistical studies; Arthur Pulos, membership qualifications; James Alexander and Aarre Lahti, program.

Because of busy autumn schedules, IDEA will not hold its next meeting until April, 1960, when James Alexander will act as host at the University of Cincinnati. To bridge the interval between the national meetings, three large regional meetings—for the East Coast, West Coast, and Mid-West—will be held this spring.

IDEA president Joseph Carreiro conducted the entire conference. Other officers are James Shipley, vice president; and Arthur Pulos, secretary-treasurer.

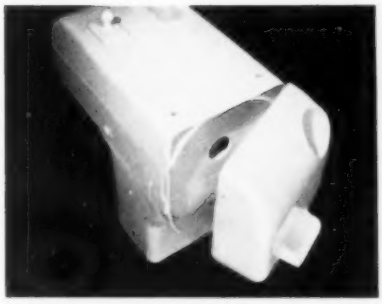
'Communications' to be Aspen theme

"Communications: New Frontiers Between Man and Man" will be the theme of the Ninth Annual International Design Conference in Aspen, Colorado. The conference will run from June 28 to July 4, according to Chicago designer Morton Goldsholl, who is this year's conference chairman.

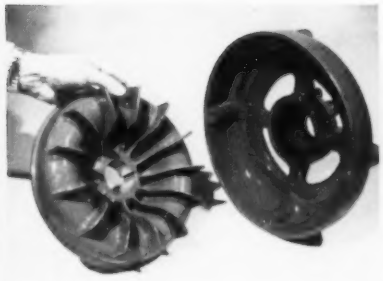
"The conference will examine the purposes to which this vast communication machinery is put, and the ends which they serve," said Mr. Goldsholl. It will inquire into the function of the visual designer, his problems, conflicts, failures, successes and potentials. Special attention will be given to the film, which Mr. Goldsholl calls "the most powerful means of communicating ideas," and emphasis will be given to a number of films and visual exhibits.

As in past years, subject matter will be divided into a series of cycles, and seminar-workshops will be held. Panelists, to be announced later, will include industrial designers, photographers, psychologists, film makers, advertising men, educators and business executives. Speakers' papers will be distributed to those attending the conference prior to its start in order to facilitate fuller discussion.

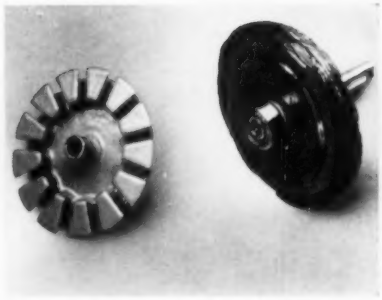
For further information and registration write to IDCA, 22 East Illinois, Chicago, Illinois.



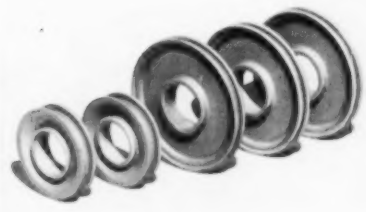
CORVEL Cellulosic Finishes—wide variety of colors with high surface gloss; excellent retention of both color and gloss in water, salt spray, sunlight.



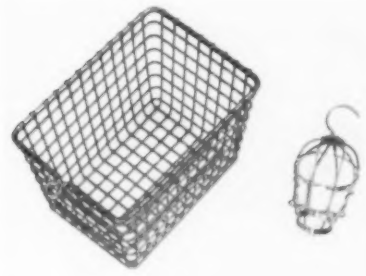
CORVEL Vinyl Finishes—durable with extreme toughness; resistant to corrosion and most chemicals. Available in a range of colors.



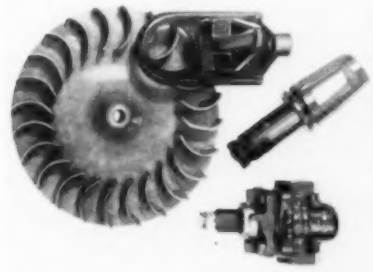
CORVEL Epoxy Finishes—excellent insulation at elevated temperatures; moisture, chemical and impact resistant. Provide a hard, smooth surface.



CORVEL Nylon Finishes—to impart the outstanding wear and low frictional qualities of nylon in coating metals and other base materials.



CORVEL Polyethylene Finishes—provide zero water absorption, excellent chemical resistance and electrical insulation.



CORVEL K-51 Penton Finishes—exceptional chemical and wear resistance. K-51 Penton finishes can withstand temperatures from −40°F. to 250°F.*

*Trademark of Hercules Powder Co.

CORVEL† Fusion Bond Finishes—

Six new engineered resins for product finishing

CORVEL finishes are specially processed dry powders, formulated for use in the patented** fluidized bed coating process. These finishes give you the following outstanding advantages:

- Comparatively heavy finishes (from approximately 0.005″ to 0.062″) obtained by a single dipping treatment—*without* the use of solvents.
- Finishes unmarred by sags, drips or bridging.
- Uniformity in thickness, with excellent coverage of sharp edges, corners and projections.

Thus, CORVEL finishes can give your products improved durability and appearance at minimum cost, and provide new design possibilities.

Process licensing is now readily available. A process license is automatically extended to the purchaser of CORVEL powders from National Polymer Products, Inc. upon payment of a small royalty added to each sales invoice. General licenses to use the patented process are available from Polymer Processes, Inc., an affiliate company.

Information relating the advantages of CORVEL Fusion Bond Finishes, to your particular products and details on the fluidized bed process and equipment are available from National Polymer Products, Inc. Write today for a copy of the new CORVEL Bulletin.

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POLYPENCO*

†*Polymer Corporation trademark for finishing materials*

**U. S. Patent 2,844,489 and over 30 patents pending

PDC prexy Fink gives award to Schroeter

PDC honors NBC

The National Biscuit Company, was awarded the first annual Industry Award of the Package Designers Council at a special meeting in New York last month. The award, which is for "outstanding contributions to the use of creative package design in marketing," was given to NBC in recognition of its "consistently good packaging and of the effective working relationship which has been established between the company and its design consulting office, Raymond Loewy Associates."

Following the presentation, representatives from both NBC and Raymond Loewy described how they developed the Nabisco packaging program. Harry Schroeter, Director of Advertising for NBC, described his company's approach. Representing the Loewy office were Neal Hathaway, director of marketing; Walter Stern, technical director of packaging and graphics; William T. Snaith, managing partner; Roy Larsen, director of packaging and graphics; Howard Treu, assistant to Mr. Larsen; and Walter Von Scheven, senior designer.

Twentieth Century Show opens

A retrospective exhibit of twentieth century design, one of the largest design shows ever held, has opened at the Museum of Modern Art in New York and will continue until February 22. In contrast to its previous "Good Design" shows, which featured current work, the museum this year is showing an extensive selection from its Design Collection. The exhibit ranges from an 1860 bentwood chair to an electronic x-ray tube, and encompasses the whole historical development of modern design. In addition to a collection of furniture, there are a broad range of mass-produced goods.

The exhibition is under the direction of Greta Daniel, Associate Curator of Design, and Arthur Drexler, Director of the Department of Architecture, who installed it. A 96-page booklet, "An Introduction to Twentieth Century Design," has been published in conjunction with the show. INDUSTRIAL DESIGN will present a complete report of the exhibit in its January issue.

A tree grows on State Street

Chicago's State Street got what reports called "the brightest lights in the world" last month when old fashioned street lamps were replaced by a new system designed by Robert O. Burton. Installed at a cost of half a million dollars, the 70 new light units (below) shed four times as much light as the old ones, and provide a total of 15.6 million lumens of light—about five times the amount considered necessary for good "whiteway lighting."

Mr. Burton's design for the unit consists of a tall pole with three luminaries (weighing 170 pounds each) branching over the street and one over the sidewalk. Each pole also carries three 30-inch planter bowls spaced around the pole.

This is one of the first lighting systems to utilize radio for its control. Each light pole has its own receiving set in its base where it gets automatic beep signals for turning lights off and on.

Food in tubes—will they buy it?

A survey by the Collapsible Tube Manufacturers Council indicates that some 70 per cent of a cross section of food industry executives feel that collapsible metal tubes have a potential as a convenience package for certain food products.

Items which could lend themselves to this treatment — used widely in Europe — include meat, fish and cheese spreads, mustard, horse radish, mayonnaise, jelly, soup and coffee concentrates. The survey also indicated that the food in tube idea has not caught on so far because metal tubes are too closely associated with toothpaste and because tubes would present a display problem in supermarkets.

UNESCO headquarters opens in Paris

The United Nations last month opened a new UNESCO building in Paris. Designed by Marcel Breuer (the United States), Bernard Zehrfuss (France), and Pier Nervi (Italy), working as a team of international architects, and decorated with gifts from member governments, UNESCO's new permanent headquarters covers a seven-and-a-half acre site near the Place de Fontenoy. The Secretariat, a Y-shaped, seven-story building walled with glass is cradled on squat concrete stilts. A conference building and a smaller building to house permanent delegations to UNESCO are also located on the site.

The headquarters' Executive Board and Committee Room (above) was designed by American architect Philip Johnson as the U. S. contribution to the building. At the request of the State Department the room was commissioned by the International Council of the Museum of Modern Art. It is one of eight rooms designed by member nations of UNESCO.

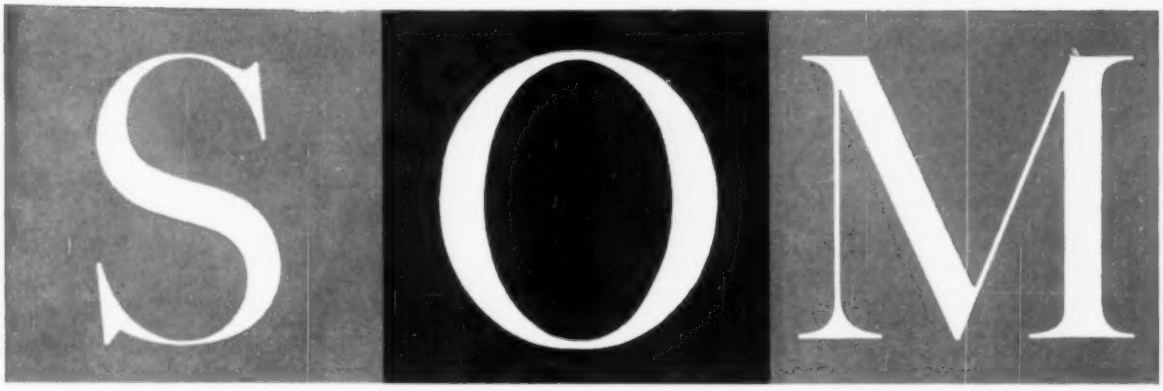
The seating plan of the room is flexible, and provides for nearly 200 people. It is a windowless trapezoid with a sloping 14 foot ceiling. Three walls are covered with rich, dark bronze-green velvet; the fourth is a sloping, undulating concrete wall, part of the exterior of the building and incorporated in the design of the room. The dramatic contrast between velvet and concrete is heightened by a white floor and white ceiling.

No. **1** *in a series*

Presenting work of the Chicago Office of

Skidmore, Owings & Merrill

Interior Design Department



The January 1959 issue of *INTERIORS* will present the first in a series of Design Firm Case Studies illustrating the work of outstanding design organizations who are active in The Interiors Market. The distinguished firm of Skidmore, Owings & Merrill will be featured in the January 1959 issue. Outstanding examples of their recently completed work as well as numerous projects that are now nearing completion will be presented. Included are the following which will be fully illustrated and described in the January 1959 issue of *INTERIORS:*

Warren Petroleum Corporation, Tulsa, Oklahoma
General Mills, Inc., Minneapolis
Draper & Kramer offices, Inland Steel Building, Chicago
Skidmore, Owings & Merrill's own Chicago offices, Inland Steel Building
Harris Trust & Savings Bank, Chicago
Parke, Davis & Company, Detroit
Grinnell College Library, Grinnell, Iowa

in the *JANUARY* **Interiors**

WHAT MATERIAL

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And BAKELITE Brand Plastics almost invariably offer cost, production, and functional advantages *as a plus!*

An example of the improvements in design made possible by BAKELITE Brand Plastics is shown at left. It is the first electronic brain, or memory unit, for music machines and jukeboxes. This assembly replaces the old electro-mechanical relay system of record selection and programming, which had moving parts that could wear out or fail.

Whatever your design area, no matter how unusual the qualities you require for forming, strength, rigidity, flexibility, insulation, corrosion resistance—explore the proven advantages of BAKELITE Brand Plastics and Resins. The material that's new all the time!

Technical representatives with years of training and field experience are available to discuss your special design problems. Write Dept. LF-52D.

BAKELITE Brand Polystyrene was chosen to encase this domestic food waste disposer...another example of a plastic meeting **exact** specifications. Ease of molding was required for the graceful design, along with chemical inertness, resistance to heat, attractive color and luster, durability and high impact strength. Molded of BAKELITE Brand TMDB-5161 for Waste King Corp., Los Angeles, by Modern Plastic Co., Los Angeles, and Industrial Molding Corp., Culver City, Calif.

* * *

BEARING PLATES and TERMINAL BOARDS of "BAKELITE" Brand Phenolic are important components in the new automatic memory unit shown on the left-hand page. Using miniature toroid cores made of powdered ferrite material, operation is similar to that of giant electronic brains. BAKELITE Brand Phenolic was chosen for its excellent electrical insulation properties, high temperature resistance, impact strength, and dimensional stability. Developed by The Seeburg Corporation, Chicago, with parts molded by Mayfair Molded Products, Schiller Park, Ill., and stampings by Fibre Fabricators and Spaulding Fibre Company, both of Chicago.

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Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y.
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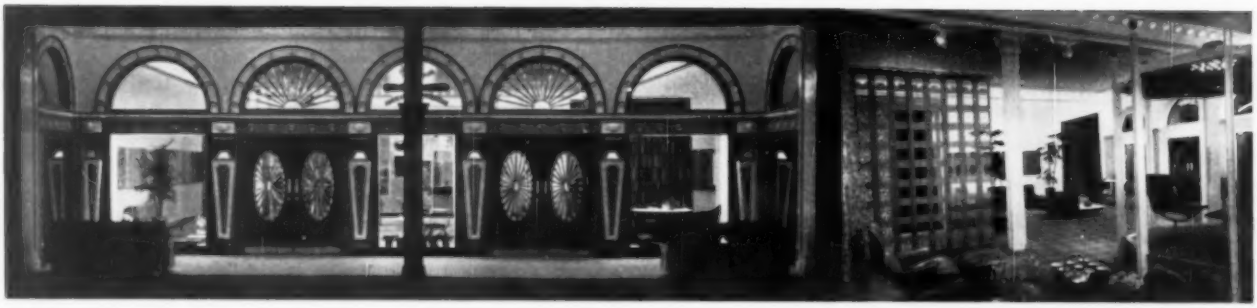


Girard revives the gas-light era

The Barbary Coast in all its color and flavor has been revived by architect Alexander Girard in the new San Francisco showroom of the Herman Miller Furniture Company. Converting a turn-of-the-century music hall (above, left), which closed two years ago, to a furniture showroom, Mr. Girard has combined fantasy with practicality. Contemporary furniture, fabrics and wallpapers stand in sharp contrast to a setting which emphasizes the decor of a by-gone era.

Such details as original plaster frieze work for ceiling light strips, lunette windows, cut-glass doors, and iron work have all been retained. A carousel-like platform (above, right) with a purple and red cut-out roof and base has been designed by Mr. Girard as the main display unit. Pieces of brightly colored wood attached to the platform with brass-headed nails give the unit a stained-glass effect. Suggesting the ingenuity which Mr. Girard has brought to this project are the red balls—actually toilet bowl floats—which adorn the top of each platform pole. An unusual folk art collection is featured in a storage wall unit used as a room divider. The eight-paneled unit is divided into individually illuminated sections which house Italian, Chinese, Mexican, and New Mexican folk art—some pieces modern, others ancient. Many of the pieces are from Mr. Girard's private collection. A pavilion (above, right) with walls of taut fabric make a display unit and provide office space in the front of the showroom as well. The pavilion has enough room for an L-shaped desk and a file cabinet, and serves as the manager's office.

The Herman Miller furniture group is designed by Charles Eames and George Nelson. Mr. Girard designs the company's fabric and wallpaper collection.

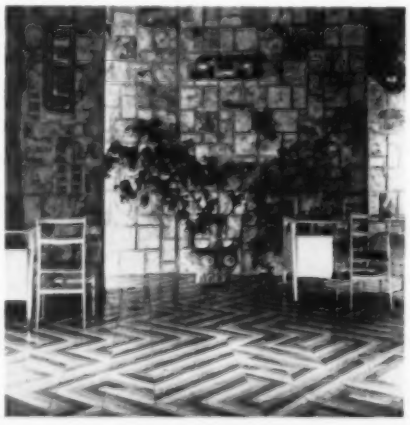
Women speak out on better living

Appliance design, home furnishings, and home architecture all came in for criticism at the Second Annual Congress on Better Living held in Washington in October. One hundred homemaker delegates attended the *McCall's*-sponsored conference on home layout, furnishings, and financing.

While quality, elegance, and simplicity were what the delegates wanted in their homes, they felt that there were many practical problems to be solved. Some delegates complained that many appliances went out of style before they went out of service. Discussing refrigerators, the delegates objected to protruding door handles and poor plastic fixtures; and built-in ovens were criticized because they have no adjacent work counter. Most delegates said that price was not the prime factor in selecting appliances. What they look for are features that will speed their work. With the recession abating, they feel that "now is the time to buy" major appliances, which many have delayed doing because of the economic situation. Nearly all of the women want larger homes, and they made a point of emphasizing that they would prefer to buy their own appliances for them. This, they felt, would give them more functional kitchens and laundries than an already equipped house would.

In home furnishing the delegates insisted on quality and emphasized their preference for simple design. The complexities of rug-buying came in for a good deal of discussion, with delegates recommending that manufacturers put descriptive tags on them.

Designer Henry Dreyfuss, guest speaker at the conference, led delegates on an imaginary tour of his "dream house."



AMA to emphasize packaging

The American Management Association will put the emphasis on packaging in 1959 with two conferences, an exposition, and seventeen group meetings. Plastic packaging materials will be the subject of a conference at New York's Biltmore Hotel on January 21 to 23. Moving to Chicago in April, the AMA will hold its 28th National Packaging Exposition at the International Amphitheatre, in conjunction with a National Packaging Conference at the Palmer House. Seventeen packaging seminars will be split between New York and Chicago in the next six months.

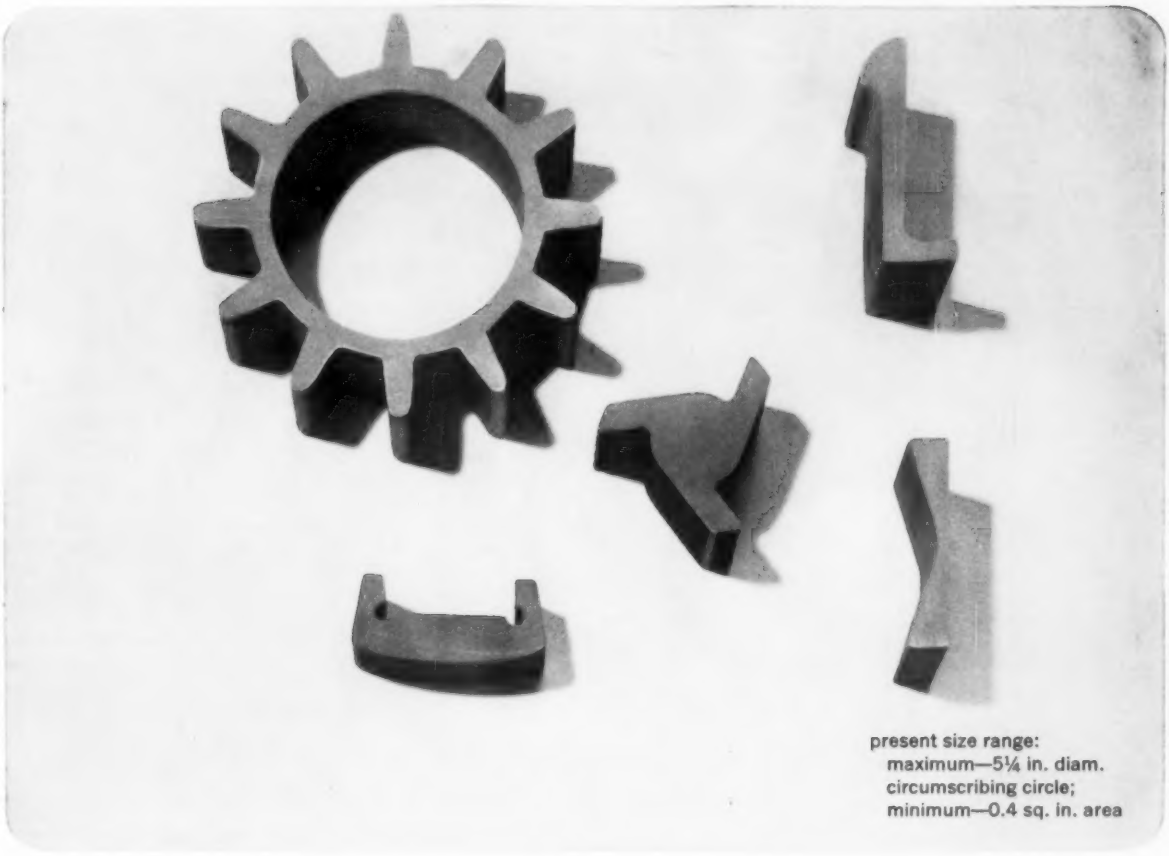
At the January conference speakers will discuss the properties, processing, and applications of specific plastic materials and the marketing aspects of plastic packaging. Panel sessions will cover new developments in packaging machinery, new applications, and what Russia is doing in packaging. An exhibit of new plastic packages will accompany the conference.

Italy gets beachhead on 5th Avenue

Italian architect Gio Ponti has created a blue and white fantasy (left) within the new ticket office for Alitalia (the national airline of Italy) on the ground level of the Tishman building, 666 Fifth Avenue, New York. The wear-resistant ceramic tile flooring has a geometrical pattern in two shades of blue. Ceramic squares also cover the four trapezoidal columns which relieve the depth of the room and break up the storefront effect of the plate glass windows which surround the office on three sides. All materials, with the exception of the ceiling, are Italian.

Mr. Ponti says that he has tried to create two themes for the 27 by 50 foot office area: aviation and Italy. Through the skilled use of blue, white and pastels he has created an atmosphere of airiness and altitude. To represent Italy, Mr. Ponti said he has tried to bring in "the centuries-old heritage of art and fine hand craftsmanship. At the same time I felt it should be both modern and futuristic, for Italy is not a country looking only backward into its glorious past, but a nation of artists and artisans, constantly creating, constantly original."

Experience**—the added alloy in **A-L Stainless, Electrical and Tool Steels



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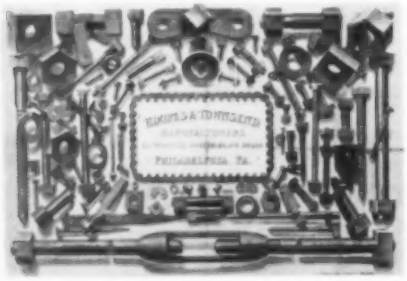
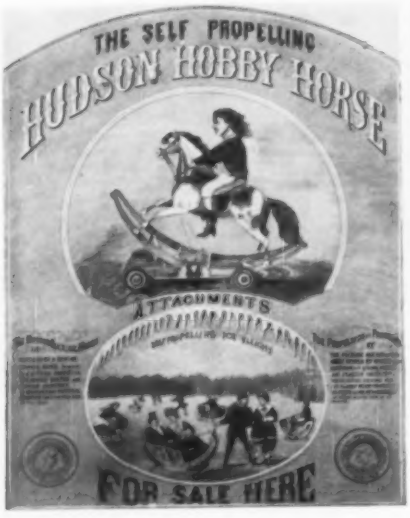
Three exhibits for designers

Nineteenth century advertising techniques: Ad men of the last century used many of the techniques of their modern successors according to posters on display at Washington's Library of Congress this month. The show, called "Nineteenth Century American Salesmanship," which runs through December 31, is a collection of 66 posters which were deposited in the Library of Congress in the last century for copyright registration, and which are now part of the colorful Americana collection in the Prints and Photographs Division. Methods used to sell products before Madison Avenue *was* Madison Avenue didn't include subliminal persuasion, but did include the testimonial, the "appeal to sound thinking," the appeal to the emotions, and the "before and after" technique.

The posters, running from 1837 to 1876, include both woodcuts and lithographs, many of them in color. Perfumes, medicated soap, self-propelling hobby horses (below), an "instant pain annihilator," and a "sure-raising" flour, are some of the products advertised. One poster of 1861 advertises a telegraphic fishing appartus which removes "all the tedious work" from fishing —even to holding the pole.

Early posters sell hardware, hobby horses





Another poster is from the offices of Thomas Halloway, the famous Englishman who opened an American merchandising office in 1850 which by 1870 spent up to $50,000 a year on advertising its products. The poster represents Moses holding up the brazen serpent and handing out Halloway's pills to a collection of soldiers, civilians and freed slaves.

Groups who wish to borrow the exhibit, which will begin to circulate in January, should write to the Traveling Exhibition service of the Smithsonian Institution.

Ceramics show opens in Syracuse: A comprehensive international exhibition of ceramics was held at the Syracuse (New York) Museum of Fine Arts last month. The show will open at the Metropolitan Museum of Art in New York on January 23 and move to the Boston Museum of Fine Arts in April. It will also travel to Manchester, New Hampshire, Cleveland, and Detroit. The show celebrates the twentieth anniversary of the Ceramic National, top competitive exhibition in the field.

Nearly 300 potters, sculptors and enamelists are showing a total of 543 pieces in the exhibition. Besides Americans, well-known ceramists from Belgium, Denmark, England, Finland, France, Holland, Italy, Norway, Sweden, and Germany are also presenting their work.

Prizes amounting to $3200 were awarded to 24 entrants by a jury including Dorothy Liebes, textile designer; Henry Varnum Poor, ceramist; and Perry Rathbone, director of the Boston Museum of Fine Arts. The Syracuse China Corporation, and the Ferro Corporation of Cleveland joined the Syracuse Museum in sponsoring the show this year.

Edwin Scheier's prize-winning stoneware

Creativity at work: The evolution of creative ideas from the first sketch to final reproduction was shown at an exhibition of the Art Directors Club of New York last month. Taken from case material of 15 medal winners from the Club's last competition, the exhibition traced the origin and development of creative work in such media as newspapers, magazines,, booklets, point-of-sale, outdoor advertising and tv.

The work of photographer Ernst Haas, winner of the Art Directors Special Medal Award, and the work of Bruce F. Green, winner of the Kerwin H. Fulton Medal, were featured. In addition the following winners of Club medals showed their work: Robert Pliskin (magazine ad); Herb Lubalin and Herb Stricker (newspaper ad); Louis Dorfsman (direct mail); Helmut Krone (poster); Kenneth Deardoff (book jackets); Henry Wolf (editorial spread); Irving Penn (magazine ad art); Ted Streshinsky (black and white ad art); Gregorio Prestopino (editorial art); Stefano Robino (editorial art); Guy Fraumeni (tv); Cris Jenkyns (tv).

More than 450 entries were selected from 12,000 submissions in 33 classifications. The exhibition was designed by George Guisti, named Art Director of the Year by the National Society of Art Directors.

Ad art by Herb Lubalin (top), Hugh White (bottom)

CLIFFORD F. HOOD

Portrait by Fabian Bachrach

"U. S. Steel employees invest more than $2,400,000 a month in U. S. Savings Bonds"

"Those enrolled in the Payroll Savings Plan for U.S. Savings Bonds alone save the equivalent of one and one half $25 bonds a month.

"For those investing in U.S. Savings Bonds under the Savings Fund Plan, each is averaging more than one $25 bond per month.

"The response of our employees to the Payroll Savings Plan for Savings Bonds is evidence of their faith in the nation. We are proud of their record in saving systematically in E Bonds, thus participating in a program of planned thrift while helping to build America's power to keep the peace."

CLIFFORD F. HOOD, ***President and Chairman, Executive Committee, United States Steel Corp.***

Today there are more Payroll savers than ever before in peacetime. If employee participation in your Payroll Savings Plan is less than 50% . . . or if your employees now do not have the opportunity to build for their future through the systematic purchase of U.S. Savings Bonds, give your State Director an opportunity to help. Look him up in your phone book. Or write: Savings Bonds Division, U.S. Treasury Dept., Washington, D.C.

INDUSTRIAL DESIGN

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Exhibits

An exhibition of **Scandinavian industrial art** will be shown at the Musée des Arts Decoratifs in Paris through February.
The first exhibition of work by members of the **York State Craftsmen** will be shown at the Albany Institute of History and Art during February and March.
The **Museum of Modern Art** is sending an exhibition of industrial design to New Delhi this month.

Awards and Competitions

Walter Landor and Associates of San Francisco won the 1958 award for packaging design for their Old Fitzgerald decanter (above) in the Tenth Annual Exhibition of Advertising Art, sponsored by the San Francisco Art Directors Club and the Society of Designers and Illustrators. The firm also won top awards in the package design contest sponsored by the Brewers' Association of America for its design of beer containers and cartons.
Sheldon Rutter's design of a pedestal fan (above) for Robbins and Myers, Inc. won first prize in the Second Annual Design Derby in Miami.
The **Bell Telephone System** received the NSID's 1958 award for the outstanding contribution of the year to interior design. The award was for Bell's introduction of color telephones.
S. M. Hexter Company, Cleveland and New York fabric house, awarded **Virginia W. Kelly** first prize in their contest for the most original interior of 1958.
The British Council of Industrial Design has announced the establishment of the **Duke of Edinburgh's Prize for Elegant Design.** The prize is open only to products which have been shown in London's Design Center.

Company

NEW OFFICES: **Bruce Martin Scott Industrial Design,** 65 Main Avenue, Sea Cliff, Long Island . . . **William H. Armstrong,** the Stevens Building, Birmingham, Michigan . . . **Sidney G. Warner,** Box 413, Ithaca, New York . . . **Charles R. Pollock,** 452 West 25 Street, New York . . . **Dixon and Parcels Associates, Inc.,** package designers, (see new trade mark, left), 485 Fifth Avenue, New York . . . **Hassett, Herbst and Huggins,** Industrial Designers, 3300 Lake Shore Drive Chicago . . . **Grace Gilbert** (below) packaging consultant, 1135 Pelham Parkway, New York . . . **Camden Associates,** with Robert Hurley, Wallis E. Stuart, and David Donnan as associates, at 8 Irving Street, Salem, Massachusetts.

dp
Dixon & Parcels Associates inc.

People

APPOINTED: **William L. Mitchell** as vice president in charge of GM Styling Staff. . . . **Richard S. Cody** as design director for Warren Wetherell and Associates, design firm . . . **Frederick S. Brennan** as general partner in Latham-Tyler-Jensen Design Consultants . . . **Steven J. Parrot** (below) as project director at Jim Nash Associates . . . **Rudolph C. Roth** (below) to the staff of Mel Richman Design Associates . . . **Robert B. Rockwood** (below) as consultant for a new design advisory service for Polyplastex United . . . **George Patton, Jr.,** as product and package designer for the Washburn Company of Worcester, Massachusetts and Rockford, Illinois . . . **John D. Cuccio** (below) as account executive with Hodgman-Bourke, Inc., New York industrial designers . . . **Robert M. Wolaver** (below) as director of functional design for J. M. Little and Associates . . . **M. Fillmore Harty, Jr.,** (below) as director of design for William M. Schmidt Associates.

ELECTED: **Jay Doblin** and **Raymond Spilman** as Fellows in the ASID . . . **Joseph M. Parriott,** chairman; **Edward Conroy,** vice chairman; **W. B. Donnelly,** secretary; **Gerald Ewing,** Treasurer of IDI's Southern New England Chapter.
DISSOLVING: **Charles Luckman** and **William Perreira** their international architecture firm. Mr. Luckman remains as owner.
RETAINED: **Walter Baermann** by No-Sag Spring Company, Detroit. . . . Sundberg-Ferar by Speedway Petroleum Corporation, Detroit.

Education

An **Industrial Packaging Short Course** will be held at Purdue March 2 to 13.
A course called **"Case Studies of Pupils with Emotional Blocks in Creativity"** will be offered by New York University for the spring semester.
Columbia University has established an archive and research unit called **"Amigos de Gaudi—U.S.A."** to furnish information about this increasingly popular Spanish architect.

Cuccio *Wolaver* *Rockwood* *Gilbert* *Harty* *Roth* *Baermann* *Parrot*

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Scarcely any form, any shape or any irregular pattern can stump aluminum's protean nature. Aluminum molds itself to an idea's image . . . fluidly, feasibly, in minutest detail. Share Alcoa's intimate knowledge of this most versatile metal. Your first step: turn the page.

ALCOA IS ALUMINUM

ALUMINUM IS FORM . . .

Cast it: Aluminum can be cast in sand, die, plaster and permanent molds. Smooth surfaces, close tolerances, high-density nonporous parts are obtainable. Neither shape nor size presents a problem. Thinner, more uniform walls are possible.

Coin it: Many aluminum alloys are ductile enough to permit coining of amazing detail. No protective coating is needed; aluminum's surface characteristics assure long-lasting fidelity of reproduction. Semi-coining, a combination of embossing and coining, eliminates the labor of hand-chasing aluminum surfaces.

Draw it: Aluminum lends itself to odd shapes, as well as the usual rectangles, cylinders and hemispheres. Most shallow draws can be made on single-action presses at the highest speeds possible. Tooling costs are kept low; cast-iron tools can be used for short runs.

Extrude it: Parts with complicated cross sections make ideal extrusions. Metal can be massed where it's needed; strength increased while weight is reduced. Die costs are moderate, tooling simplified. Welding, forming, riveting, machining and expensive assembly work are eliminated.

Impact it: Hollow, cup-shaped shells, flanged or cup-end tubes, solid shapes and combinations of these forms lend themselves to aluminum impacts. Smooth, bright, scaleless, with no parting line and no draft to trim, aluminum impacts match the strength of forgings. High production speeds at lowest cost are possible because machining, fabrication and assembly are eliminated.

Forge it: Long die life, high mechanical properties, precision tolerances, zero drafts—these are some of the arguments for aluminum forgings. Larger, more intricate shapes can be forged because of the great weight savings. Thinner webs and ribs are possible. (Aluminum forgings have smoother and more uniform surfaces.)

Machine it: Aluminum can be turned at the highest speeds and feeds, to the most precise tolerances possible. Extremely fine finishes are attainable. Tools last longer. Plating is eliminated.

Stamp and form it: Standard tools and techniques can be used to stamp aluminum, allowing for a simple springback in forming dies. Sharp, clear letters, figures and decorations are raised. Dies last longer due to aluminum's easy machinability.

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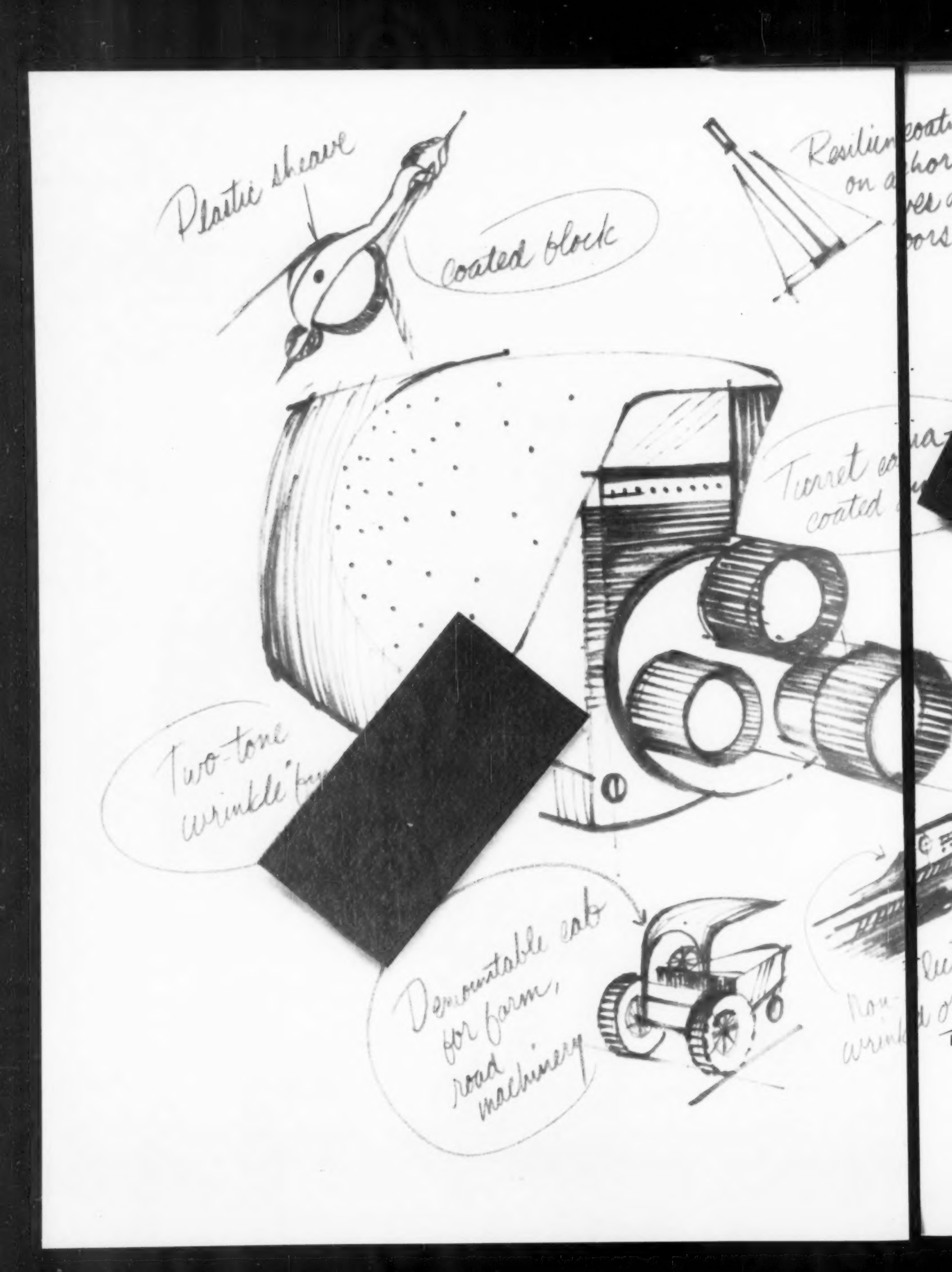
Plastic sheave
coated block
Two-tone wrinkle
Demountable cab for farm, road machinery

...ideas start when you study these coatings... for products that work outdoors

More than weatherability is needed for outdoor products—attractive colors...unusual textures...chemical resistance...simplified production...That's why you'll find such a rich fund of idea-starters in the properties of coatings based on BAKELITE Brand Vinyl Dispersion Resins.

These organosols and plastisols offer a variety of formulations that range from glossy to textured, from hard to resilient. They can open up entirely new fields for coatings.

One type, for example, is applied in a quarter-inch thickness for cushioning metal and even providing electrical insulation. Another rugged variety outlasted ordinary coatings tenfold in abrasion tests. The chemical resistance of still another has led to its use in lining chemical drums. Metal coated with these materials can be post-formed – they won't crack, chip, or lose adhesion. Some types can be molded.

In fact, they can be used for roller-coating, spraying, knife coating, dip coating, slush molding, rotational molding, casting, and extrusion . . .

Learn how coatings based on BAKELITE Brand Vinyl Dispersion Resins can improve your product designs. Write for the names of coatings formulators who work with them, or for technical information on specific uses. Address Dept. LV46L, Union Carbide Plastics Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y.

It pays to design with coatings based on **BAKELITE** BRAND **PLASTICS**

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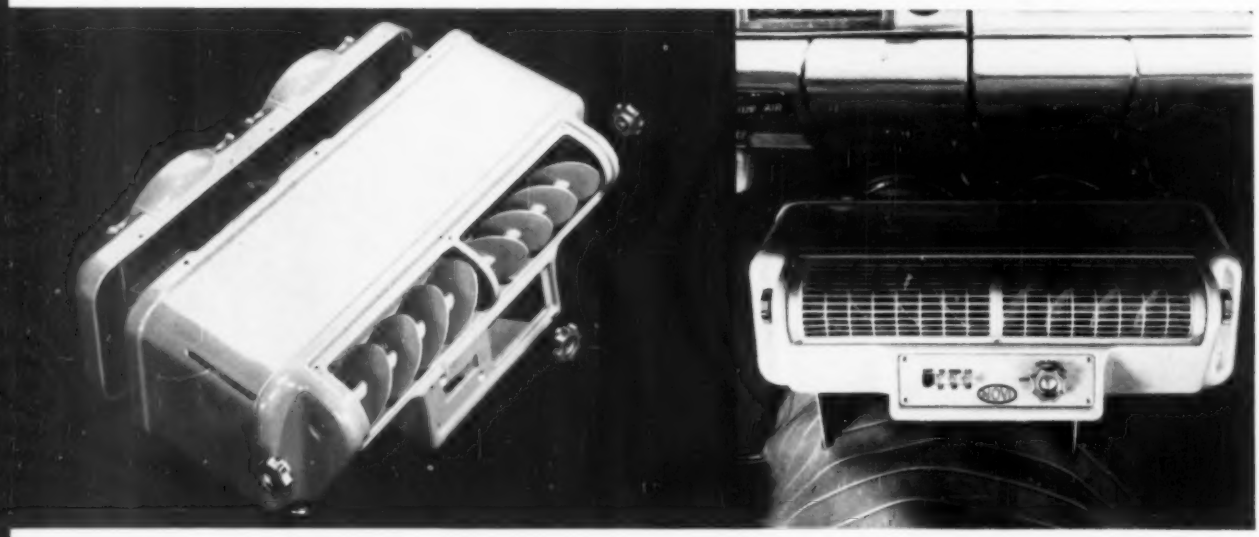
Dow plastics readily adapt to modern, functional design



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Tough new Dow plastics and dramatic processing developments are making product news almost every day. Designers are forging ahead with "impossible" ideas and then finding the right materials to do the job. It will pay you to keep abreast of the rapid-fire developments at Dow. Call the Dow Sales Office nearest you or write to THE DOW CHEMICAL COMPANY, *Midland, Michigan, Plastics Sales Dept. 1517C.*

YOU CAN DEPEND ON DOW

Two approaches to invention equal one approach to elegance

A review of the year's products ought to be a picture of one year in the life of American design. (Of course it can never be the whole story, and a revealing and possibly useful article could be prepared on what *does not* appear in the Annual Design Review.)

The editors have tried this year, in their necessarily fallible fashion, to find a pattern in 1958 design, and to discover what it means and where it is going. For reasons that have to do with the nature of American consumership and salesmanship, each year the pattern of this issue has been rooted in invention — the new idea translated into a material product. The discernible pattern in 1958 is an extension of some elements noticed and discussed last December, and it can be described by two formidable and exceedingly contemporary words: modularization and miniaturization. Perhaps they can be called two approaches to invention, and although they have long been present, their combined influence in 1958 was so strong and so widely applied that together they seem to express the character of the year's work. Modularization — the use of component systems — has penetrated into our conscious approach to all design, including the immediate structure of our environment, and many of its machines and accessories. Miniaturization, too, has acquired a new dimension. We find it not only in mechanical objects, where its desirability is obvious, but, as you will see, in non-technical forms in all our products.

These two words are in themselves reducible to one of the most abused, and most meaningful, cliches of design: More with Less. When first introduced by Mies van der Rohe, the term provoked a verbal attack by those who read into it implications of anti-materialism, anti-humanism, and naturally anti-Americanism. But nothing seems to us *more* American than the "more with less" theme that is even more evident this year than last, running through products in every vein.

Once when addressing a design group, economist Peter Drucker referred to "an elegant solution," and someone in the audience pounced on him for recklessly making value judgments outside his own field of authority. Drucker's defense is worth noting: "Certainly not," he said. "It's a common mathematical term — it refers to an equation or theorem that is achieved with the fewest parts most succinctly and economically used."

We like the idea of using so passionate a word as "elegant" for so apparently dispassionate a subject as mathematics. It helps clarify what we mean by "more with less": that absence, economy, even negation itself, are not wholly negative; they can be positive forces, and in a design sense as well as a mathematical one they can lead to the creation of something more — perhaps it's beauty.

The Editors

BUILDING and HOME

Fairchild Aerial Surv. Inc.

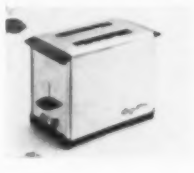
Last year we had a good deal to say, for the first time, about building products as industrial products—about the fact that the usual yardgoods of the building industry had suddenly, in one year, emerged from the category of custom-made and entered the ranks of the mass-produced. A glance at this year's collection indicates that our first barometer reading was accurate, for building components can now truly be called products in their own right. The significance is not only that a slow and often backward craft-oriented industry has become something of a center of technological advances; not only that the fine products and detailing that once grew out of costly custom architecture are coming within the consumer's reach. The significance reaches to all areas of production geared to building and home, and several outside of it: Modularization, "the systems idea," seems to have penetrated the thinking of designers of home equipment, appliances, office equipment, chairs, etc. And with very good reason: the design of products in standardized components turns out to be the answer to the monotony of standardization; it can multiply choice and generate excellence.

The word "module" is very much bandied about these days, and about as inaccurately used in most cases as the common advertising expletives. Any product seems to be popularly tagged "modular" if it has two parts vaguely related by one common dimension or a similar nametape. But properly understood as it is used here, it is the basis for a whole system of design: a group of components with common dimensions (not necessarily all identical but related in proportion) that are capable of being rearranged into *new* pieces.

It is this element of arrangability that creates a variety of choice from a few parts, that offers multiplicity from simplicity. (Obviously—what good would multiplicity from multiplicity be?) In short, the whole *must* be greater than the sum of the parts—the whole in this case being a plethora of possible floor plans, a variety of choices in the putting together of a kitchen or a hi-fi family or the face of a factory.

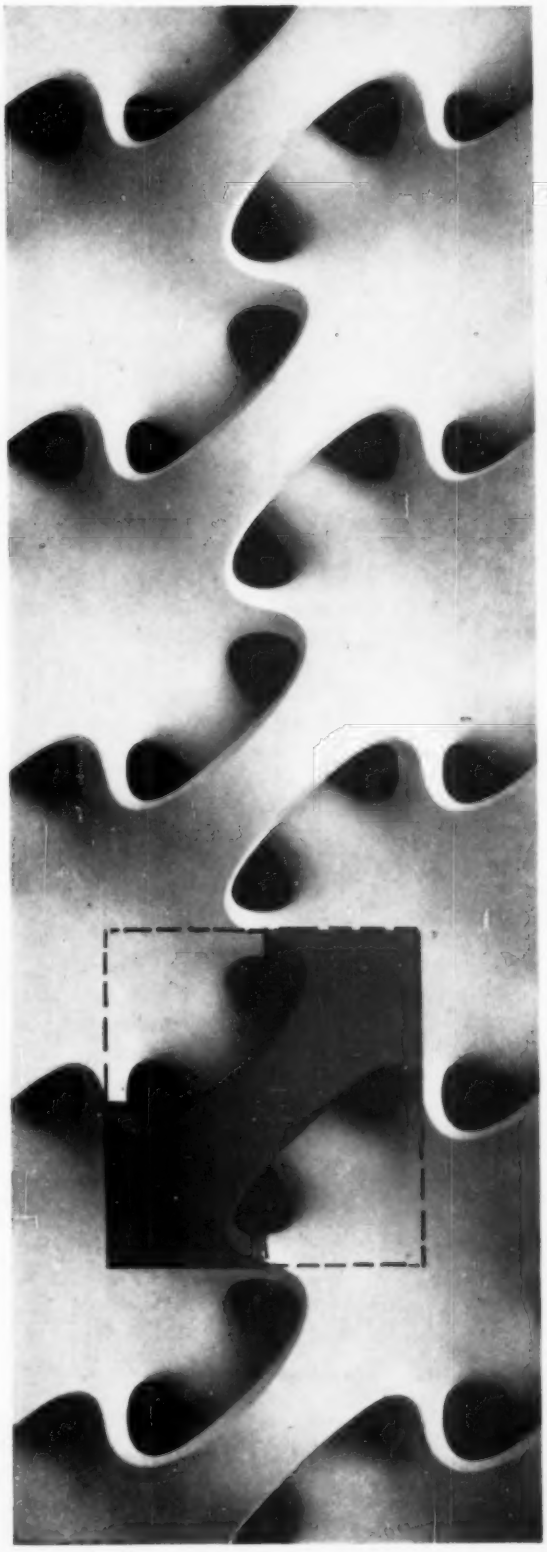
It is important to stress that a modular system is not just a duplication of parts for the sake of production convenience, but parts keyed to a system that adds up to products that are virtually customer-designed. Thus we look to see to what degree a component is the building block not of sheer convenience but of *design* or *architecture* in the hand of the user. And what we find is often superbly impressive: The "Omni" pole system (page 33), demonstrates to what degree components can be pre-designed for post-design. It is a system so eminently versatile that it can be used for anything from lobby displays to bedroom closets, looking equally elegant in place, yet allowing a wide range of personal choice in the way the parts are finally "designed" to go together.

It is important to note, beyond the influence of modularization on architectural products, that we find an architectural approach emerging in products that have never before been considered physically modular (tv, some furniture, decorative lamps, standard appliances) and that do not involve actual "installations." This might best be described as an architectural style—but it is more than a mere stylish overwash from a technical trend. The architectonic style has in the past been found as far afield as fountain pens, machines, plumbing. It implies, again, doing the most with the least, using the lightest members and most apt materials in the most suitable—self-evident and expressive—way.



As building moves from a craft to a process of industrialization, the tendency is to treat the materials of architecture like ready-made products, to the point that our Annual Design Review now regularly includes as many mass-produced designs for building as for other fields. The important element in this trend is that the ready-made products are not *whole* products as often as they are modularized components: structures, partitions, curtain walls, decorative surfaces, lighting and heating systems—all designed to be turned out by the yard and to be put back together in a variety of possible arrangements to suit the architect's plan, taste, and needs. Wasco panel (4) is one example—it turns the now-familiar curtain wall panel into a light-weight mass-producible plastic component. Hi-Lite block (3) is a simple building-block concept that is both structural and decorative, while Mural, Inc. (1) offers a more sophisticated system for achieving a decorative partition of any size from a single part repeated ad infinitum.

Norman Cherner's house (2) shows a larger application of the system's approach. While it is a complete pre-fab structure, it is actually built up of its own space-framing "blocks"—standardized bone members making up bays, enclosed by modular skin panels. Whereas the principal approach to house prefabrication was once in terms of structural panels (which both supported and enclosed space), this new way is similar in concept to the interior partition systems now widely used in commercial buildings: it offers (as do all well-designed systems) more versatility and flexibility in the layout of interior space. There is additional significance in the fact that it is a house created by an industrial designer, perhaps the first production unit to emerge directly from this field. However unsettling this may be to those who regard the lines between architecture and industrial design as inviolable, it is a fact that will require increasing recognition as the artistic Maginot line crumbles before the latest technical advances.

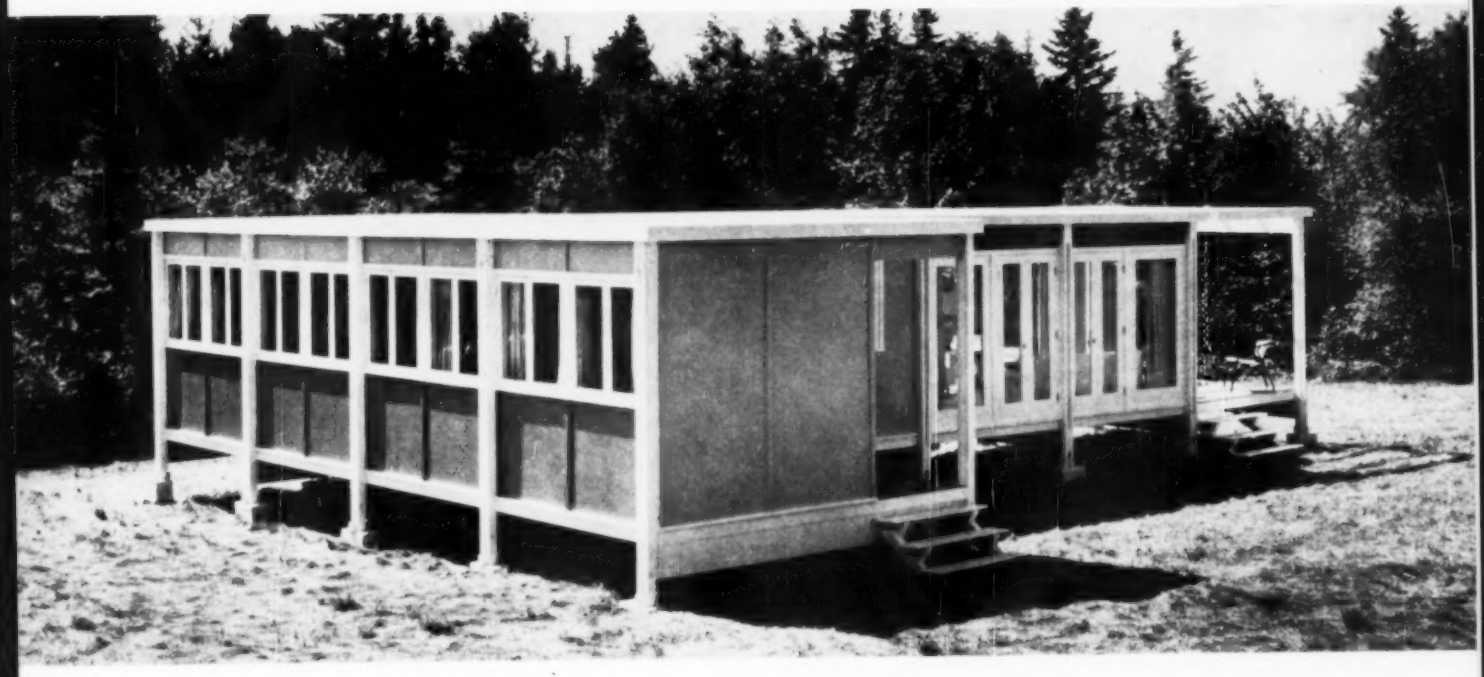


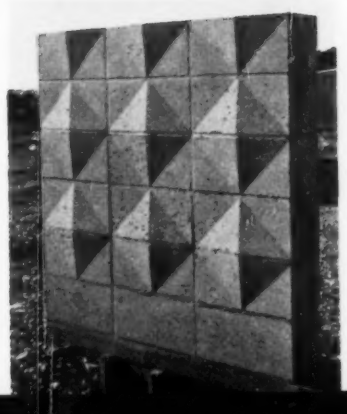
1. Sculptural pierced walls
Murals, Inc., New York
Erwin Hauer, designer

Pre-cast concrete blocks make 6" deep pierced screen. Unit formed by two 12"x12" blocks, each 3" thick.

2. Packaged house
Prebilts, Inc., New York
Norman Cherner Associates, designers

3-bedroom house, quickly assembled from fir plywood panels and structural members; fiberglass- or foil-wrapped fiberglass-insulated roof, walls, and floor; nine pairs of French doors. Several plans possible. Wall panels come unassembled: interior panels fastened at site.





3. Hi-Lite concrete blocks
Besser Company, Alpena, Mich.

Standard 8" x8"x16" two-core concrete blocks have 5 unfinished surfaces, with one or two raised pyramids on face.

4. Acrylic sheet for exterior curtain walls
Wasco Products, Inc., Cambridge, Mass.

World's longest cast acrylic sheets — 144"; widths up to 100" are clear, colorless or white translucent in 3 thicknesses: 1/8", 3/16", 1/4".

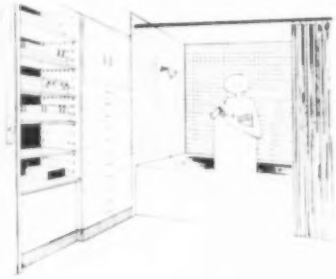
The modular concept is particularly evident in the furniture systems on this spread. George Nelson's system (9) can be either a wall or a wall decoration. Its basic members are extruded, making it easy to custom-fit on a mail order basis. The mass-produced custom kitchen by Paul McCobb (8) can be extended in any direction, making the kitchen a less rigid room. Even with such diverse elements as the office and the telephone booth, comparable modular maneuverability is offered. The prefabricated telephone booth (10) is designed to tie in with difficult partitioning systems, while the double desk and work unit (11)—with its adjustable and detachable wall—can provide a series of offices within an office. Another wall idea is the Louver-fold (7), which can convert from a room divider to a fully closed wall section.

5 Seamless bathroom
Dudley Industrial Corp., Hollister, Calif.

Molded, seamless, one-unit bath, shower, toilet area, basin, and vanity, made of Glaceramic ¼" thick. 7½' high, 4'x7' floor space, 200 lbs. Easily cleaned, unbreakable, easy drilling of holes for plumbing connections.

6 Stratapanel storage components
Robert A. Schless & Co., Inc., Elizabethtown, N. Y.
Robert A. Schless, designer

Molded of Dow 475 high-impact styrene in one piece, smooth-interiored drawers available in one depth, several widths, either 3" or 6" high. Wood drawer fronts optional. Slide-panel same material.



7 Louvertold door
Consolidated General Products, Inc., Houston
Staff design

Adjustable vertical wood louvers, airfoil-shaped form see-through screen to control air, light. Fully closed, louvers overlap tightly to become wall.

Variable furniture systems provide airy, freer living and business spaces

8 Kitchen unit
Mutschler Bros., Co., Nappanee, Ind.
Paul McCobb, designer

Series "700," mass-produced custom-kitchen, painted walnut-finished birch encased in aluminum, suspended 8" from floor.

9 OMNI Spacemaker System
Structural Products, Inc., Charlotte, Mich.
George Nelson & Co., designers
Robert Garjulie, designer

Design-it-yourself shelves, storage, room divider. Extruded anodized aluminum slotted poles (square or round), installed floor-to-ceiling with spring-mounted hardware, stands free of wall. Adjustable brackets hold many shelves, desk units. Additional hardware includes lamps, sliding doors, flip fronts.

10 Prefabricated telephone booth
General Cabinet Co., Los Angeles
Pereira & Luckman, designers
Charles Kratka, Director of Interior Design

Modular prefabricated telephone booth designed to tie in with difficult partitioning systems.

11 Two-person desk and work unit
Herman Friedman Co., New York
Gersin and Arnold Assoc., designers

Multiple-unit modular desk, wood; aluminum legs, Micarta top. Forms own wall. Designed as private office within larger office.

12 Chair
Herman Miller Furniture Co., Zeeland, Mich.
Charles Eames, designer

Side frames and stretchers of grooved aluminum castings. Electronically welded Naugahyde upholstery—reinforced by stiff inserts—is held in tension. Swivel base.

13 Side chair
Knoll Associates, New York
Eero Saarinen, designer

Molded reinforced Fiberglas seat covered in foam rubber, with cast aluminum base; optional swivel mechanism has automatic return. 120"W x 21¼"D x 32"H.)

Chairs as well as other furniture achieve simplified structure and versatility

14 Indoor-outdoor chair
Simmons Company, New York
Raymond Spilman, Rod-Lopez-Fabrega, designers

Six independently suspended (U. S. Rubber) cushions suspended on bar-stock leg framework. Cushions molded vinyl with integrally cast vinyl upholstery.

15 AEON chair
Aeon Industries, Inc., Glen Cove, N. Y.
Guy Rothenstein, designer

½" foam cushion formed to molded plastic shape covered by over-all "skin" of heavy liquid vinyl plastic. Straight, swivel, or stacking legs.

16 "Steelwood" office furniture
Robert John Company, Philadelphia

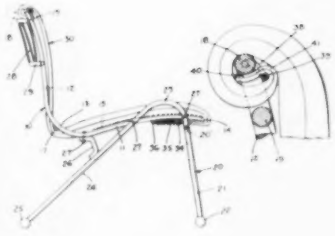
Wood or aluminum panels of diverse colors and textures snap into steel frame; high-pressure laminates for desk tops.

17 Plastic chair
Herman Miller Furniture Co., Zeeland, Mich.
George Nelson and Co., Inc.
(Charles Pollock) designers

Flexible two-section plastic shell rests on soft rubber shock mounts attached to swagged legs, with bright chrome, black, or white finish. Optional two-tone

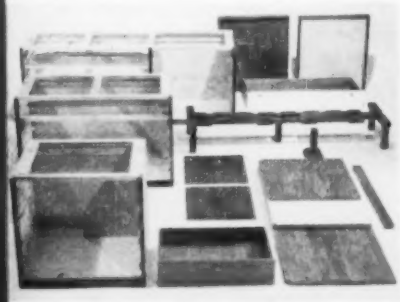
18 Upholstery system
J. Sarge Taffae, New York, inventor and producer

Fabric attached at top around wire yoke, other end under seat front by adjustable helical springs; anchored at juncture of rubber-webbed seat and back by removable rod inserted through side rails.



19 Modular furniture collection
Brown-Saltman, Los Angeles
Martin Borenstein, designer

Chest components (nine-ply birch) joined by tongue-and-groove connectors. Separate top and ends and extensible platform eliminates duplication of legs. Finished surfaces.



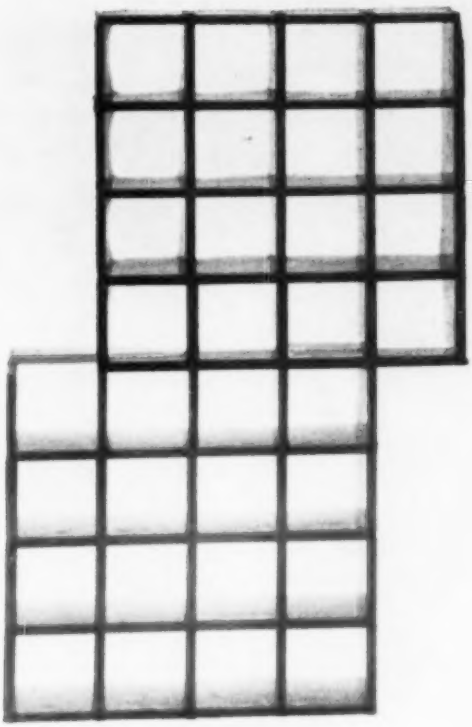
based on interchangeability of components

Chairs have long been regarded as design microcosms—a distillation of architectural, human, and formal considerations. They present to the designer a stimulating problem with an infinite variety of possible answers. This year's collection displays the invasion of the system's idea not only to group seating but to individual pieces. Such unit interchangeability offers variety in methods of manufacture and flexibility in function. The Taffae chair (18), for example, has upholstery that is easily variable as a production element. The Eames (12), Nelson (17), and Saarinen (13) chairs all work within a production idea —a basic design that can be adapted to arm or armless models of different sizes.

Light fixtures: a few components create many lamps

The two kinds of illumination shown here — architectural and decorative — are both in their way componential: the former in terms of its building context; the latter within itself, as a light enclosure. Cell Ceiling's system (22), of the architectural variety, has the unusual feature of being adaptable to irregular areas. The Miller Company's lamp (23), is both an architectural component and a modestly decorative light enclosure; and it is one solution to the difficult problem of providing both reflected and down light.

The four shapes and five colors of the Svend Wohlert lamps (21) are interchangeable, and through recombination make 28 varieties of lamps; and the Heifetz (25) and the Koch and Lowy (26) lamps are systems of parts which may be regrouped in the manner of modular wall-shelves, giving them a newer flexibility in their use, appearance, and location. The parts merchandized as components would permit one to organize a number of related lamp forms for different purposes in a single room or house.



20 Evenglo colored plastic louvers
Koppers Company, Inc., Pittsburgh
Staff design

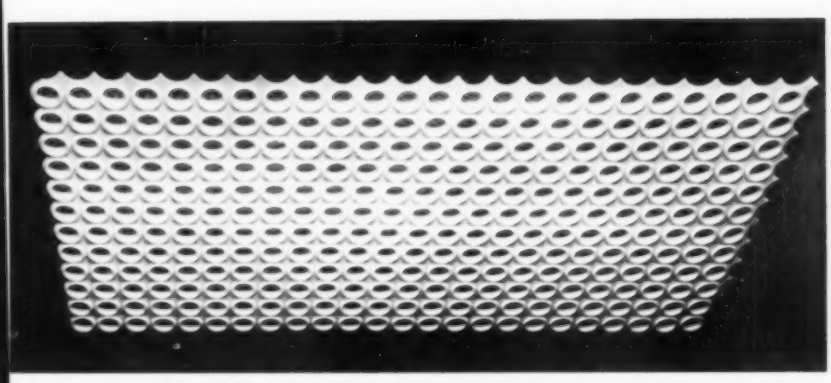
Molded or extruded colored polystyrene in modifiable 2'x4' sizes, louvers give varying degrees of light transmission and hiding power.

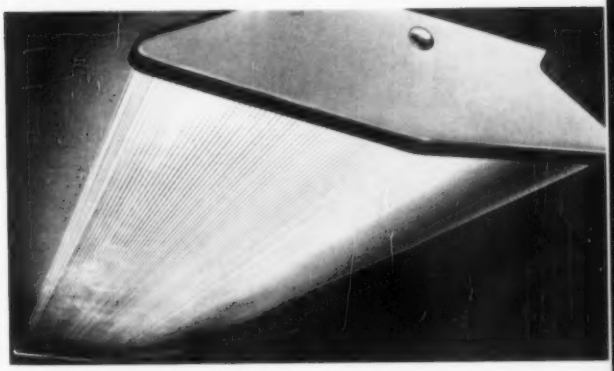
21 Conb-lights
Svend Wohlert, Inc., San Francisco
Per Iversen, designer

Four shapes, five colors (white acrylic, or black, sand, mustard, coral lacquered aluminum) make 28 combinations for ceiling, wall, table, floor fixtures.

23 Sabre commercial fixture
The Miller Company, Meriden, Conn.
Douglas Arnold, staff designer
Philip Johnson, consultant

Longitudinal prisms provide up-and-down light components with one-piece extruded wrap-around acrylic or styrene lens. First application of cross-marking to shaped extrusion.



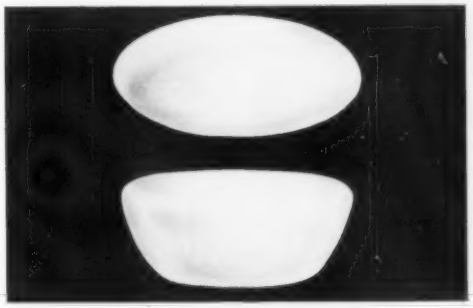


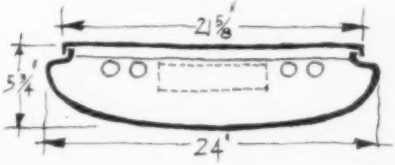
22 Honeycomb luminous ceiling
Cell Ceiling, Inc., New York

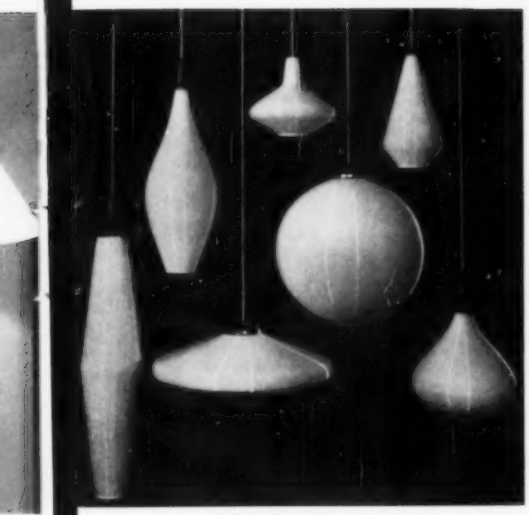
2"x4" plastic diffuser panels for brightness contrasts, noise-absorption: 2 sheets of vinyl—top one flat, frosted, transparent; bottom, white molded sheet of non-directional pattern of circular cells, 2" on center, 1" deep. Adaptable to areas of irregular shape.

24 Circline fluorescent fixture
Lightolier, New York
Carl Moser, designer

Large scale, low brightness, medium impact polystyrene diffuser with concealed metal housing around Circline lamp.







25 Rotaflex globes
Heifetz Company, Clinton, Conn.
Yasha Heifetz, designer

Flexible, sturdy, Tenite lamps; Danish process of extruded individual tubes spun over chuck, then sealed. 1/16" thick. Ceiling, pin-up, table, floor.

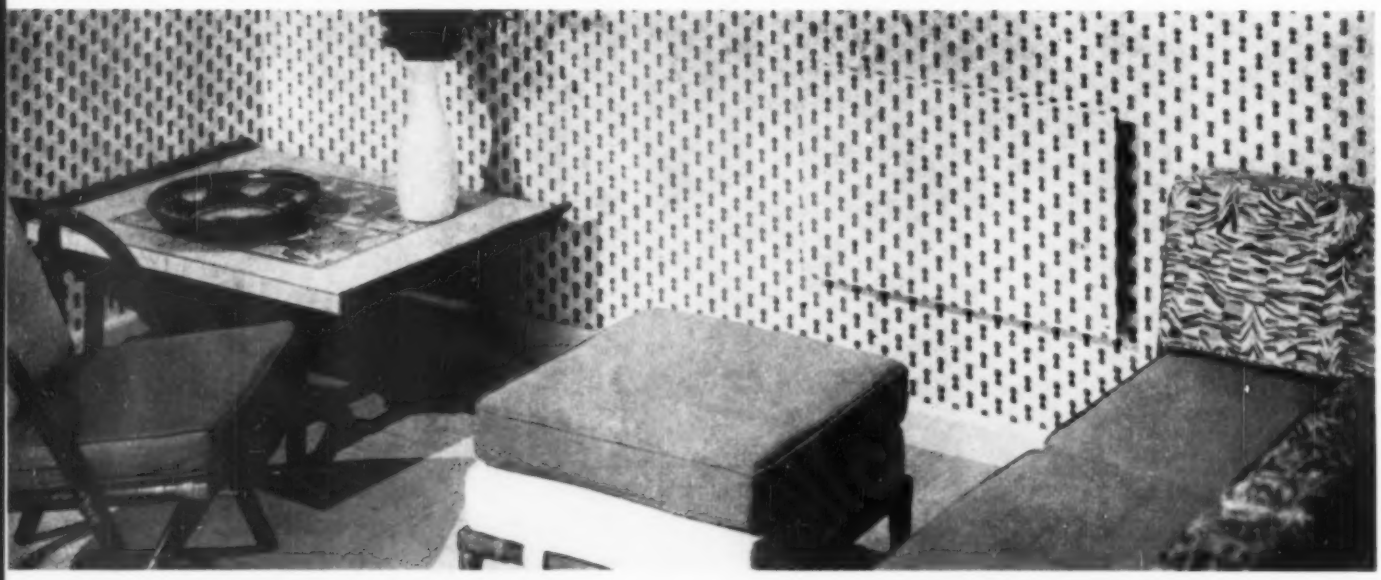
26 Globe lamp
Koch & Lowy Mfg. Co., New York
Ernest Lowy, designer

Blown Swedish white-frosted glass, 6" diameter, with aluminum or polished brass base and extruded tube, fits family of mounts to make variable fixtures.

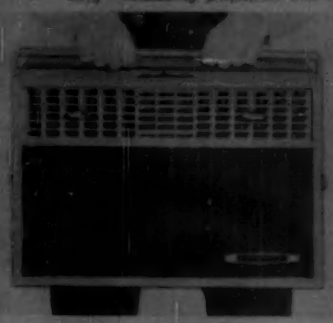
27 Lamp
OKA, Inc., New York
Otto Kolb, designer

Stamped, anodized circular aluminum louvers act as a light control. Legs: ebonized steel wire. 12" high. Table, ceiling, pin-up, floor.

Appearance and disappearance in air-conditioner design



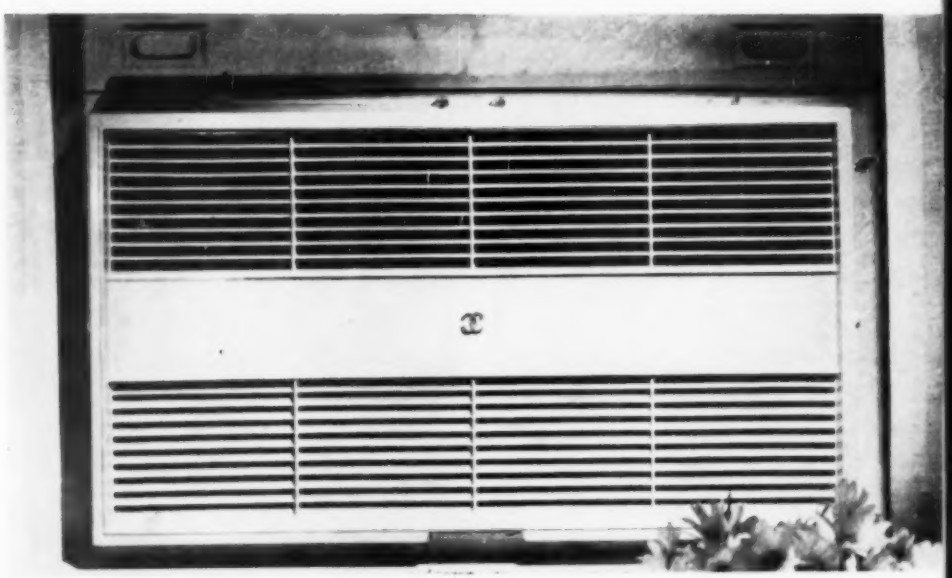
28 Built-in air conditioner
General Electric Company, Louisville
Thin-line aluminum-encased conditioner installed in wall, painted or papered to match room. 15⅝"x28" with 2 depths: 12" and 16⅛" (including projection into room).



29 Portable air conditioner
Mitchell Mfg. Co., Chicago
59 lb. portable conditioner can be installed in any window. Mitchell Micro-Sonic Filter removable and washable.

30 Air cooler
Kleer Kleen Mfg. Co., Hayward, Calif.
Channing Wallace Gilson and Donald Brundage, designers
Case of extruded sheet styrene, thermoformed (by Thermo-Plastics of Redwood City, Calif.); rust-proof, needs no paint.

31 Room air-conditioner
Carrier Corp., Syracuse, N. Y.
Joseph B. Federico, designer
Grille allows horizontal and diagonal flow of air. Clear lucite knobs designed into sprocket type wheel. Heavy gage Bonderized steel, resin prime coat sprayed.

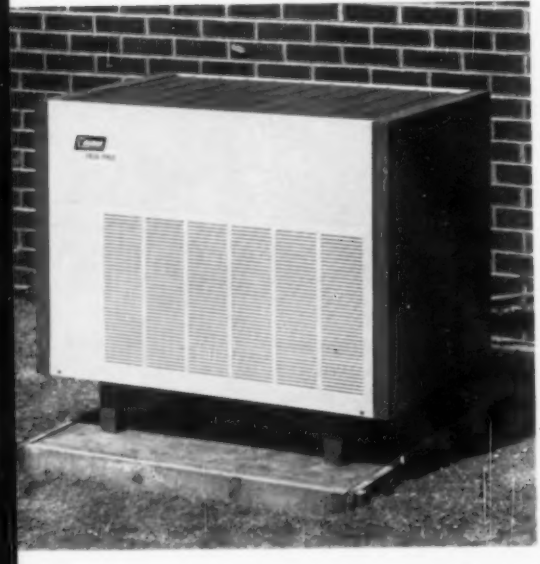


Air-conditioning units continue to disappear into the wall, as television units would like to if they could. The GE built-in (28) is extremely recessive, and what remains of it can be camouflaged. Gone the protrusion, gone the intransigent, metallic look. But a remaining—and perhaps more difficult—problem is to make inconspicuous and pleasing those units of air-conditioning that are either installed in windows or are portable: the center of the design problem here is the grille, and because recessiveness has its limits, the solution naturally tends towards decorativeness, as in the Carrier unit (31).

The built-in trend, which seems to know no bounds, extends to room- and water-heating units. The former is handsomely exemplified in the GE in-the-house gas furnace with its architectural clarity of parts (34): the "floating" front panel is delicately separated from the enclosing case, an attractive design feature. The Holly-General water heater (35) is the latest to abandon the traditional round shape for the square look, making for simpler upkeep. The Coleman unit (32) and Hotpoint's baseboard heating unit (33) perform their functions with esthetically satisfying proportions.

32 Air-cooled condensing unit
The Coleman Co., Inc., Wichita, Kansas
Frank Osborn, designer, engineer
C. N. Fellnagel, consultant

Remote air conditioner condensing unit; condenser coil across top; air forced upward through coil, preventing fluctuation of air due to wind. Edges sealed against weather. Servicing from front access panel. Fabricated after painting.



33 Electric baseboard heating
Hotpoint Company, Chicago
Ray Sandin, Manager Visual Design
D. A. Smith, staff designer

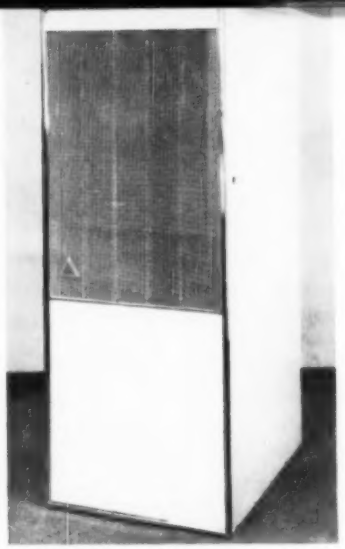
Radiant, low density heat panels, 6" high, 2" deep, hermetically sealed against moisture, has built-in outlets. Steel, baked-on silver-gray enamel, convector fin of extruded aluminum.

34 Gas furnace
General Electric Company, Air Conditioning Dept., Tyler, Texas
B. E. Freitag, Mgr. Mech. & Ind. Design

100,000 BTU capacity. Peripheral gap for combustion air inside frame on all four sides. Built-in or free-standing.

35 Water heater
Holly-General Company, Burbank, Calif.
William F. Swink, Chief Engineer
Tor Petterson Assoc., consultants

New square-shape can be built in, with controls at convenient reading height for adjustment.



36 Furnace-air conditioner
Perfection Industries, Cleveland
Don R. Gredys, staff designer
Smith, Scherr & McDermott, consultants

Internal aluminum reflectors obviate heat-absorbing installation. All connections from top. Designed for interior rather than cellar installation.

37 Heating and air conditioning unit
Lennox Industries, Marshalltown, Ohio
Waltman Associates, designers

3-sectioned, aluminized-steel heating, air-conditioning, blower unit, built-in, in widths starting at 26".

38 Heating-cooling unit
General Electric Co., Room Air Conditioner Dept., Louisville
Arthur DecVar, Director of Design

17" wide in-the-wall heat-cool conditioner projects only 3½". Panel papered or painted to match wall.

The idea of recessiveness asserts itself too in the GE built-in heating and cooling unit, Thermaline (38), which is noteworthy as much for its skillfully concealed but fully accessible controls as for its trim elegance. The future of heating units seems to lie in great part in the two-way home unit, for heat in winter and cool air in summer; and considering the job performed by these appliances, their small size is impressive. The Lennox modular unit is "custom-built" for climate variation: in a predominantly warm area, the air conditioner (top section) might be coupled with a smaller heater (middle).

Old shapes and new combine with simplified controls

Building hardware and fixtures are fast catching up with the architecture that has set their pace, and each of the items on this page demonstrates an inventive approach to bettering its service. Both the Pfister (39) and the Crane Co. (41) taps mix hot and cold water and control the volume; and the latter's small round lavatory includes a lip edge with the fixture edge already included, in the fashion of kitchen sinks nowadays. The Briggs oval lavatory (40) solves building-in to some degree (a tricky matter with shaped basins) by including its own large top slab, hence needing only to butt with adjacent surfaces; while the Lyon, Inc. sink's garbage swirl formed into the metal surface (43) makes sense in that it permits its use even while the sink is piled full. The Yale & Towne toothbrush holder (42) looks handy, hygienic, and handsome.

39 Plumbing fixture
Price Pfister Brass Mfg. Co., Los Angeles
Channing Wallace Gilson and Wm. R. Brewer, designers

Single valve regulates hot, cold water, and volume. Spout, sand-cast brass; control handle, die cast zinc; bright chrome finish.

40 Oval lavatory
Briggs Mfg. Co., Warren, Mich.
Harley Earl, Inc., designers

1-piece china oval bowl extends into 32" slab-top; grouped fittings can be regulated by one hand. May be set on cabinet or wall-mounted with chrome legs.

41 Round lavatory
Crane Company, Chicago
Henry Dreyfuss, designer

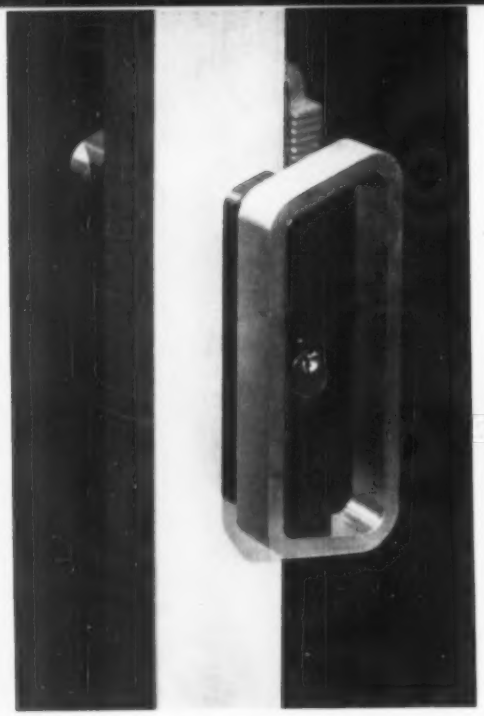
Classic round wash-basin in counter-top lavatory. Singl-ese Faucet controls water pressure and temperature.

42 Toothbrush holder and cup
The Yale and Towne Mfg. Co., White Plains, N. Y.
Merendino, Greene and Assoc., designers

Inverted cup covers brushes, protecting both. Standard towel and support bracket forms base for unit.

43 Stainless steel sink
Lyon, Inc., Detroit
Harley Earl, Inc., designers

Depression in steel bottom directs garbage into disposer. Redi-Rim eliminates need for separate rim in installation.

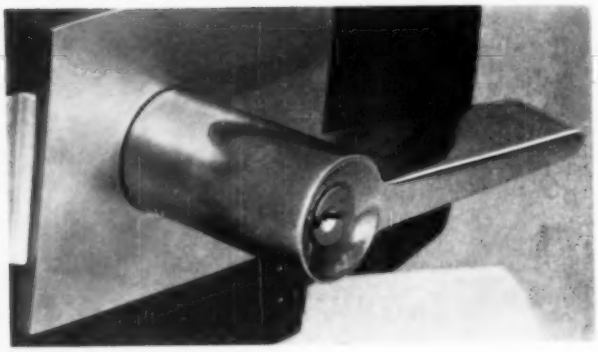


45 Handle and locking hardware
Glide Windows, Inc., North Hollywood
Abe Grossman, designer

Aluminum hardware for sliding doors. Available with colored plastic grip handles.

44 "Unilev" lever handle
American Hardware Corp., New Britain, Conn.
Leo J. Maffei, designer

Unit construction, 100% reversible; internal parts non-ferrous, or zinc-plated dichromated steel.

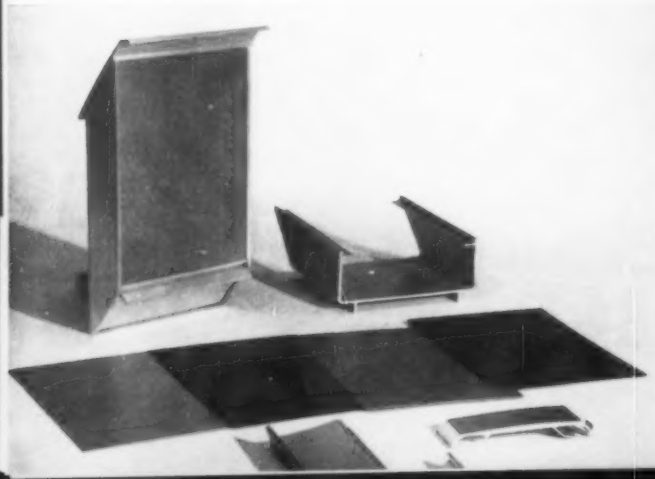


46 Thermostat
Mears Electric Controls, Portland, Ore.
Byron Ferris, designer

Brushed chrome trim ring; removable face plate painted to match wall; the size of a switch plate.

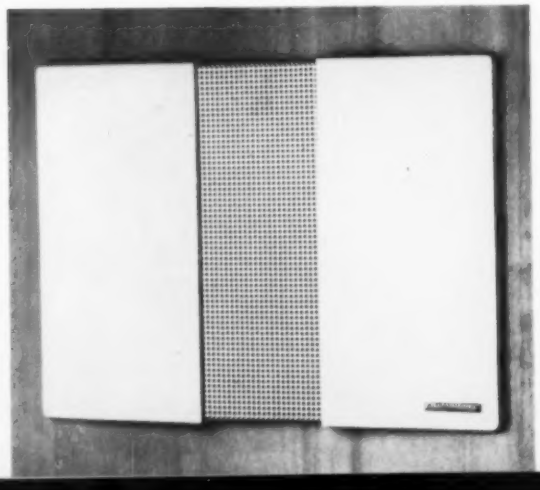
48 Mailbox
Duraflex Company, Miami
Harley Earl, Inc. (Frank Moelich, designer)

6½"x12"x4", main body is anodized extruded aluminum with anodized textured face plates with color. Flip-top lid for depositing, spring-loaded bottom tray. Installation: 2 hidden screws.



49 Recessed door chime
The Rittenhouse Company, Inc., New York
Reinecke and Associates, designers

Perforated gold anodized grille, steel side panels. Chime mechanism embedded in wall, thin cover exposed.



Clarity and logic emerge in shape and operation

The unassuming range shown at the right might stand as an object lesson for this year, showing how good design can lurk beneath a filigreed facade. It is one of the least expensive models in the RCA Whirlpool line ("Deluxe" ranges, like "giant" olives, are only relative), and, for reasons of economy, the metal trim that bedecks its more costly siblings has been eliminated. What is left is not a bare, stripped-down model. It has a significant void — an indentation which outlines the front panels for an unexpected effect of subdued richness. The simplicity of the back panel, with five simple controls centrally grouped, uses the remaining space to emphasize the maker's name (a proof that modesty is its own reward?) and is a pleasant relief from the space-ship complexity that today's control panels often display.

Most important, the controls are placed to give a graphic representation of the arrangement of the burners: instead of the usual soldiers-in-a-row alignment, they form a square that corresponds to the burners they control—a much easier pattern to operate instinctively. The move toward simplification of controls is observable in some other appliances this year: in the washer (62) shown on page 46, for example, which, once one of four choices has been made, will make all the other decisions about time and temperature; and the wall oven (page 45), which spells out instructions for setting automatic timers.

Experimental appliances (51 and 52) continue to move into production, some foreshadowing changing power sources. The tendency to combine various kitchen functions into one unit is shown most spectacularly this year in the Multimatic Wall (52), designed to illustrate the major household uses of gas. Another reason for "packaging" the kitchen appears on page 46, in a unit (65) intended for use in recreation rooms, where bars are for eating as well as drinking.

51 Range
RCA Whirlpool, St. Joseph, Mich.
Sundberg-Ferar, designers

Controls in back panel repeat pattern of burners for quick identification.

52 Gas wall
American Gas Association
Walter Dorwin Teague Associates, designers

Combination of range, washer, dryer, hot water heater, refrigerator, and furnace.

50 Electronic oven
The Tappan Company, Mansfield, Ohio
Joseph R. Mango, designer

Oven, which bakes or broils in minutes by heatless waves, is now in production.

Details are refined for economy of space and labor

Many of this year's major appliances are more comfortable to use because they are adjusted to normal human positions. To clean the oven, the housewife need no longer thrust her head inside it like a suicidal ostrich. Several manufacturers have dealt with this problem, and Frigidaire's pull-out oven seems to be an unusually far-reaching solution.

The eye-level oven, another move toward getting the housewife up off her knees, has been pushed a logical step further by both Tappan and Hotpoint, who eliminate the substructure and hang the oven and burners on the wall or stack them on a counter where they are handiest (57 and 59). Philco gives the second oven a shape more appropriate to its usual function (pastry), "builds it in" by the simple device of integrating it with the counter, and sets the high oven on it (61).

53 Built-in refrigerator-freezer
Thermador Electrical Mfg. Co., Los Angeles

Stainless steel front panels, anodized ribbed aluminum touch strips. Louvered grille for air circulation. Shelves pull out full-length.

54 Swing-out refrigerator shelves
Norge Div. of Borg-Warner Corp., Chicago
Mel Boldt & Associates, designers

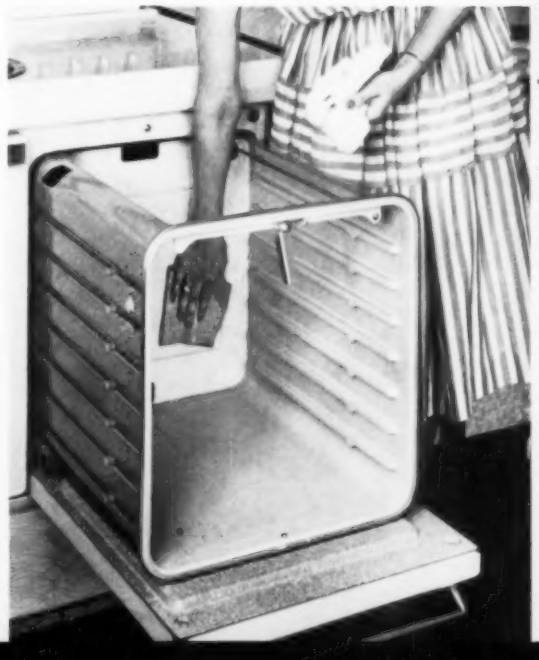
Removable shelves swing completely clear of interior on side pivot. Vertical adjustment by shelf spacer that works like automobile jack.

55 Refrigerator-freezer
General Electric Company
Appliance and TV Div., Louisville, Ky.
Arthur N. BecVar, Manager of Industrial Design

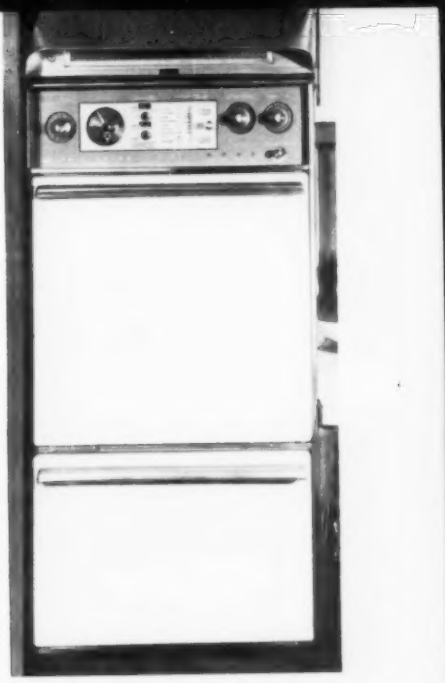
Nearly rectangular shelves, side pivot replace semi-circular shelves on center pivot.

56 Pull-out oven
Frigidaire Div., General Motors Corp., Dayton, Ohio

Entire oven, with removable top, pulls out of cabinet, exposing interior for easy cleaning. Sealed heating units at top and bottom come out with oven.



Eye-level ovens hang from the walls or stack on cabinets

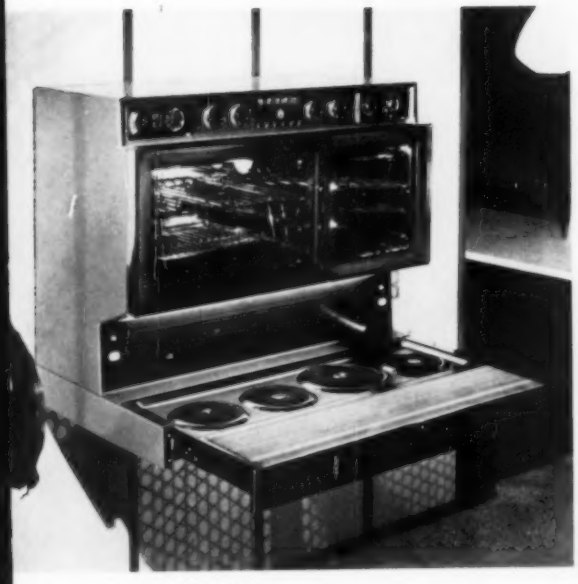


60 Wall oven
Frigidaire Div., General Motors Corp., Dayton, Ohio

Door serves as shelf for loading or drops down completely when disengaged, to allow direct access for cleaning.

58 Wall oven
Sears, Roebuck and Co., Chicago
James S. Montague, staff designer
Mfr.: Whirlpool Corp., Hamilton, Ohio

Kenmore oven has inside glass door to retain heat but permit viewing when outside door is opened.



57 Range
The Tappan Company, Mansfield, Ohio
Tom Clark, staff designer
Smith, Scherr & McDermott (F. Eugene Smith), consultants

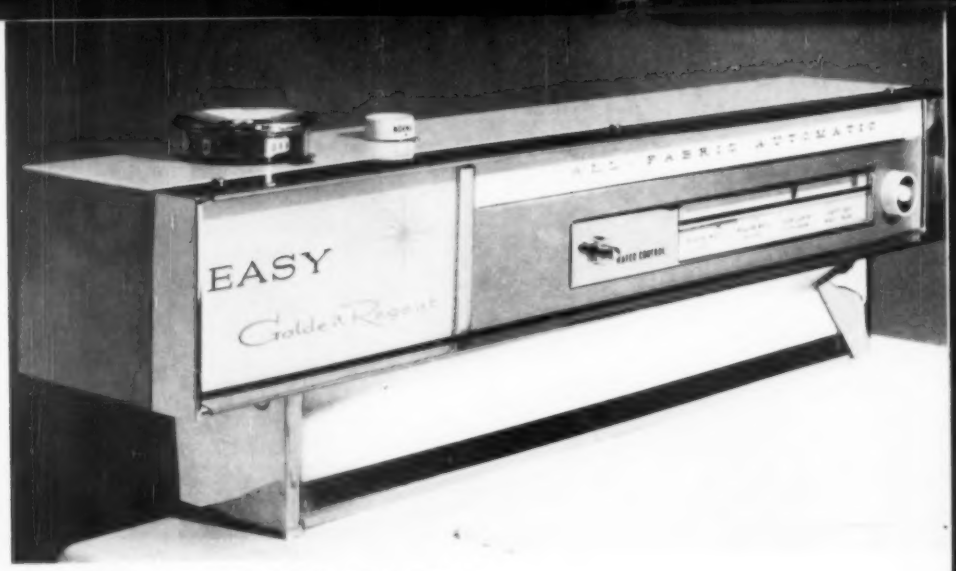
Eye-level, two-oven unit can be mounted on cabinets or hung on wall. Wooden cutting board flips to cover four-in-line burners.

59 Range
Hotpoint Company, Chicago
Staff design

Stack-on oven with rotisserie; drop-down burners; experimentally produced in small quantities. Stainless steel or enamel. Controls mounted vertically: rotary switches for oven, pushbuttons for burners.

61 Split-level oven
Philco Corporation, Philadelphia
Harper Landell & Asociates, designers

Top unit can also be used as full-width rotisserie; lower unit is roll-out baking drawer with viewing window in top. Eye-level control panel for both ovens.



Washers for clothes and dishes

62 Automatic washer controls
The Murray Corp. of America, Syracuse
Stuart Mundt, John Donovan, staff designers
Simplified control system programs washing according to type of load: from regular-hot to gentle-cool.

63 Washer and dryer
Frigidaire Div., General Motors Corp., Dayton
Controls permit wide selection of laundering conditions.

64 Portable dishwasher
Westinghouse Electric Corp., Mansfield, Ohio
Staff design
Peter Muller-Munk Associates, consultants
Tilt-down detergent storage bin in back panel, unit rolls on ball-bearing casters and wheels.

65 Snack bar
Dwyer Products Corp., Michigan City, Indiana
Complete kitchen facilities in one unit, bar front finished in hardwood, laminated plastic bar top.

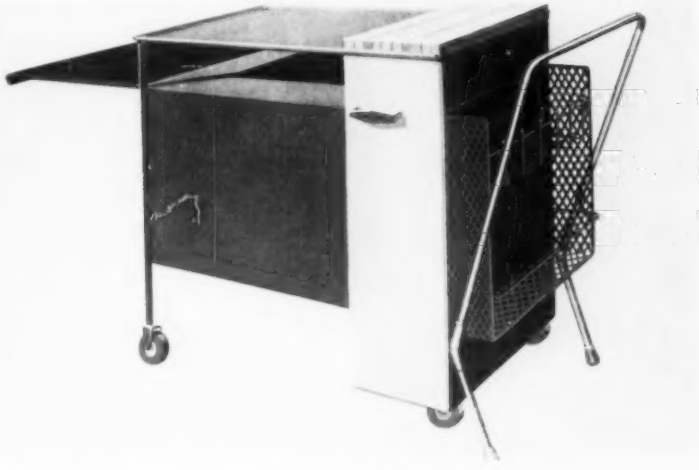
More and more of the kitchen is on the move this year. The Westinghouse cart (66) goes the original Servel Wonderbar one better by suggesting that where it is desirable to keep food cool, it may also be desirable to keep food warm. And with outdoor cooking so popular, the smaller kitchen components—utensils and glasses — need wheels too, to save long expeditions back to the house; and they need, further, the kind of protection that a sturdily constructed cart like the Fowler (67) gives. The Hotray cart (68) extends the range of the kitchen without quite so much effort as the others, and discreetly vanishes into a closet when it is not needed.

Smaller kitchen accessories have become just as mobile. The Proctor toaster (71), shown overleaf, is one that, at last, was designed to sit on the dining table with as much assurance as other electric cookers. The top surface has been extended to form lifting handles, leaving the base below a simple, uncluttered box. The big coffee urn (70), a step down from the "club" model of last year, and now really domestic, reflects the entertainment pattern of today.

In materials for cookware, Pyroceram (74) is probably the real innovation of the year: it makes the all-purpose utensil eminently easy, and suggests that there will be room for complete design re-evaluation of the multi-function pot. Other improvements: holes molded into plastic handles (76); hanging rings (77) for a balanced lift.

66 Hostess cart
Westinghouse Electric Corp., Mansfield, Ohio
Staff design

Warming oven at top, refrigerator below; unit operates on house current or batteries.

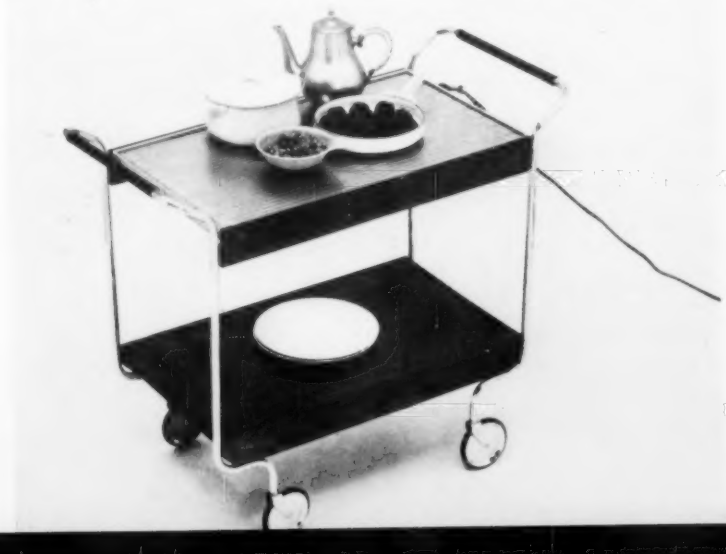


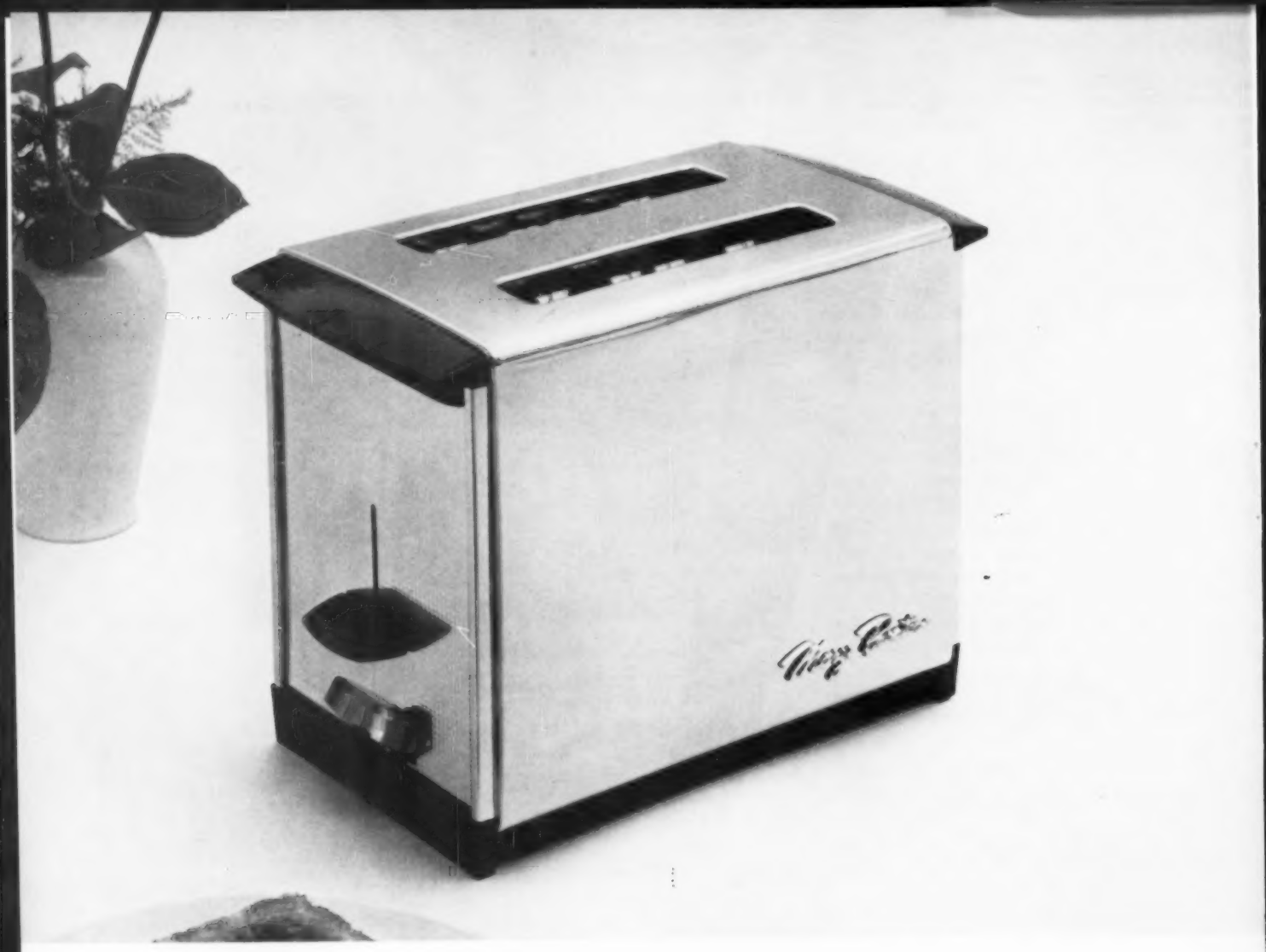
67 Serving cart
Fowler Mfg. Co., Portland, Oregon
Byron Ferris, designer

For use at outdoor barbecue; wooden cutting block, enclosed storage space, bottle and glass rack on end.

68 Hotray cart
Salton Mfg. Co., Inc., New York
Peter Quay Yang, designer

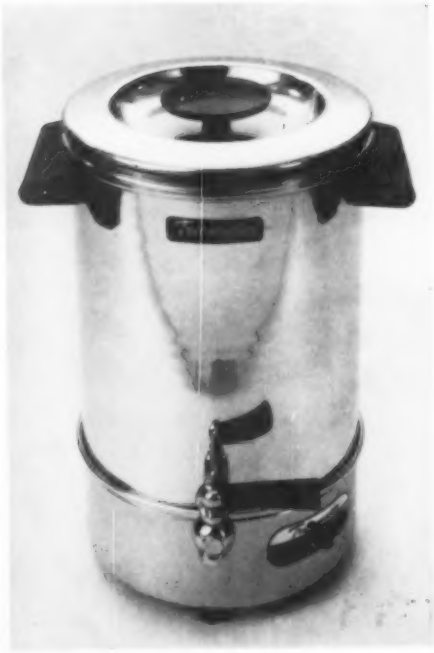
Glass heating surface, brass tubing frame, walnut side panels, plastic surface on lower shelf; unit folds for storage.





71 Toaster
Proctor Electric Co., Philadelphia
Raymond Loewy Associates, designers

Textured, colored end panel; "Select-ronic color beam" controls toast shade.



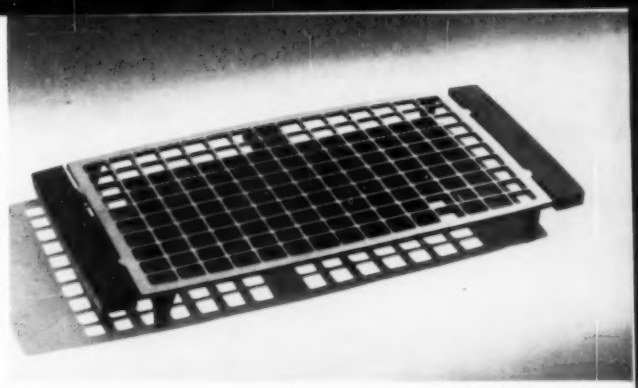
69 Electric percolator
Regal Ware, Inc., Kewaskum, Wisconsin
Nolan Rhoades, designer

Molded plastic base, chrome-finished metal body.

70 Automatic coffee urn
Tricolator Co., Inc., Newark
Cushing & Nevell, designers

Polished aluminum, top and base anodized copper color, handles of molded plastic.

Cooking moves out of the kitchen,



72 Food warmer
Williamsburg Electric Inc., Ann Arbor
Edward Klein, designer

Metal grille heating surface; teak handles.

73 Electric griddle
Westinghouse Electric Corp., Mansfield, Ohio
George H. Frost, Manager, Portable Appliance Design

Plastic handles and feet; white control dial; well to catch grease.

74 Pyroceram saucepan
Corning Glass Works, Corning, N. Y.
Staff design

Detachable plastic handle; ceramic withstands extreme changes in temperature.

75 Electric skillet
General Electric Co., Bridgeport, Conn.
Donald L. McFarland, Manager of Industrial Design; Housewares and Radio Receiver Div.

Completely immersible; removable silicone thermostat; cooking chart on handle.

acquires company manners; new utensils are easier to hang and to hold

76 Cookware
S. W. Farber Co., Inc., New York
Perry E. Jeffe, designer

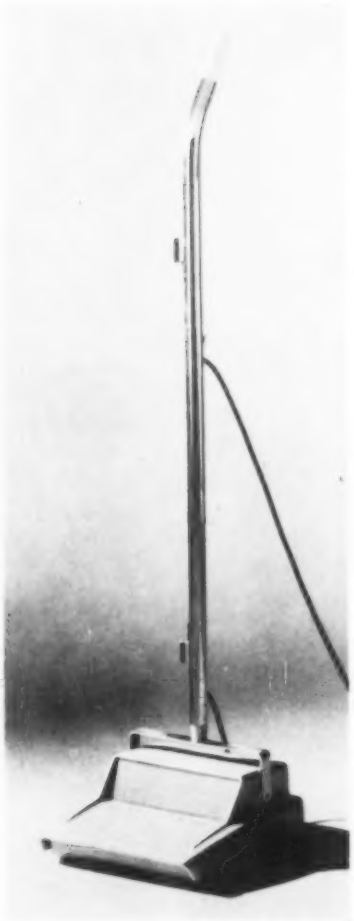
Oven-proof phenolic handles with holes for hanging; stainless steel with aluminum clad bottoms.

77 Aluminum cookware
Regal Ware Inc., Kewaskum, Wisconsin
Nolan Rhoades, designer

Hang-up ring on rim serves as auxiliary handle in lifting heavy pot.

Old household problems are approached in new ways

The inventiveness with which American design, in its better moments, approaches humble objects is often stimulated by minor irritations—the ice cubes that dilute the drink, the hard-as-a-rock ice cream that can't be served, the cold draft from the electric fan. Some of the solutions here are the result of new applications of scientific principles; others display the dazzling simplicity that is the most dramatic attribute of common sense. More often, they are a combination of the two — the bright idea made practical by new technical developments: the scoop (82) containing a chemical that melts the surface of the ice cream as it cuts. Other examples: the coffee pot (80) with a transparent gage to measure the water—and, later, the coffee; the vacuum cleaner that carries its accessories with it (81), or shakes the dirt free before consuming it (78); the double flask (85) into which the ice can be lowered to cool and mix the drink without thinning it. Sometimes the improvement is the result of a wholly new concept: one of these is the bottle warmer and cooler (84), which works on a thermo-electric principle called the Peltier effect. The bottle, placed in the inner container, stays cool until an automatic timer reverses the mechanism, turns on the heat.

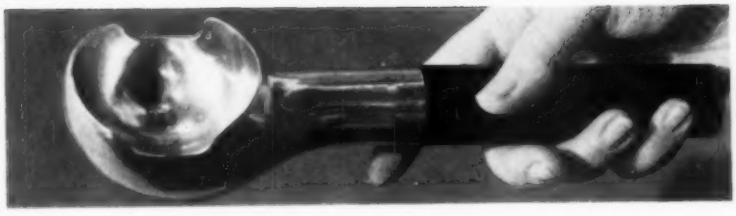


78 Electric carpet sweeper
Davis Manufacturing Co., Plano, Ill.
Edward Klein, designer
Case molded in phenolic; vibrating motor shakes dirt from rug.

79 Heat screen
Arvin Industries, Inc., Columbus, Ind.
Plastic panels contain printed circuit heating elements; thermostat limits surface heat to 150°; infra-red radiant heat distributed evenly over surface.

80 Coffee maker
General Electric Co., Bridgeport, Conn.
Donald L. McFarland, Manager of Industrial Design; Paul Rawson, account designer
Transparent tube, open at top for cleaning, gages coffee inside; plastic handle, base.

81 Vacuum cleaner
RCA Whirlpool Corp., St. Joseph, Mich.
Sundberg-Ferar (Carl W. Sundberg), designers
Low, flat plastic body incorporates storage space for accessories; stands on end for operation or storage.



82 Ice cream scoop
Modern Machine Co., Staatsburg, N. Y.

Chemical sealed into double-walled steel heat produces heat on contact with ice cream. Handle of U. S. Rubber Co.'s plastic: Kralastic.

85 Pitcher
Chemex Corp., New York
Peter Schlumbohm, inventor

Double Pyrex flask; inner chamber, filled with ice, cools and mixes drink in outer flask.

83 Fans
Chemex Corp., New York
Peter Schlumbohm, inventor

Rotating filterpaper discs maintain vacuum between them, direct beam (but not draft) of cooled, filtered air.

84 Bottle warmer and cooler
Westinghouse Electric Corp., Mansfield, Ohio
Staff design

Anodized aluminum container surrounded by 50 electric junctions; vertical aluminum fins; thermostat and timer mechanism.

40 Improvements in details add to household convenience

Small improvements in housewares this year, as usual, often add up to major conveniences. Innovations can be very simple, like the knife handle (87) set at an angle for less effort in cutting and slicing, or the transparent frying pan cover (86) with its chimney-handle. The strainer (89), which drains quickly through its rectangular slots and shields the hand from steam, ends the nuisance of dumping the vegetables into a colander to drain. These devices are often as handsome as they are convenient: for instance, the bread box-cutting board, with its contrasting wood and chrome surfaces. Many changes reflect a new evaluation of what actually *happens*—the timer (90), no longer a one-handed clock, now achieves distinction as a horizontal dial on a stable base, to be twisted accurately with one hand. The scale (94) is a long-awaited rearrangement of elements, much easier to balance on.

86 Frying pan lid
Chemex Corp., New York
Peter Schlumbohm, inventor

Clear Pyrex lid rests on bottom or sidewalls of pan; water vapors leave through chimney, which is cool enough for handling.

87 Knife
Ekco Products Co., Chicago

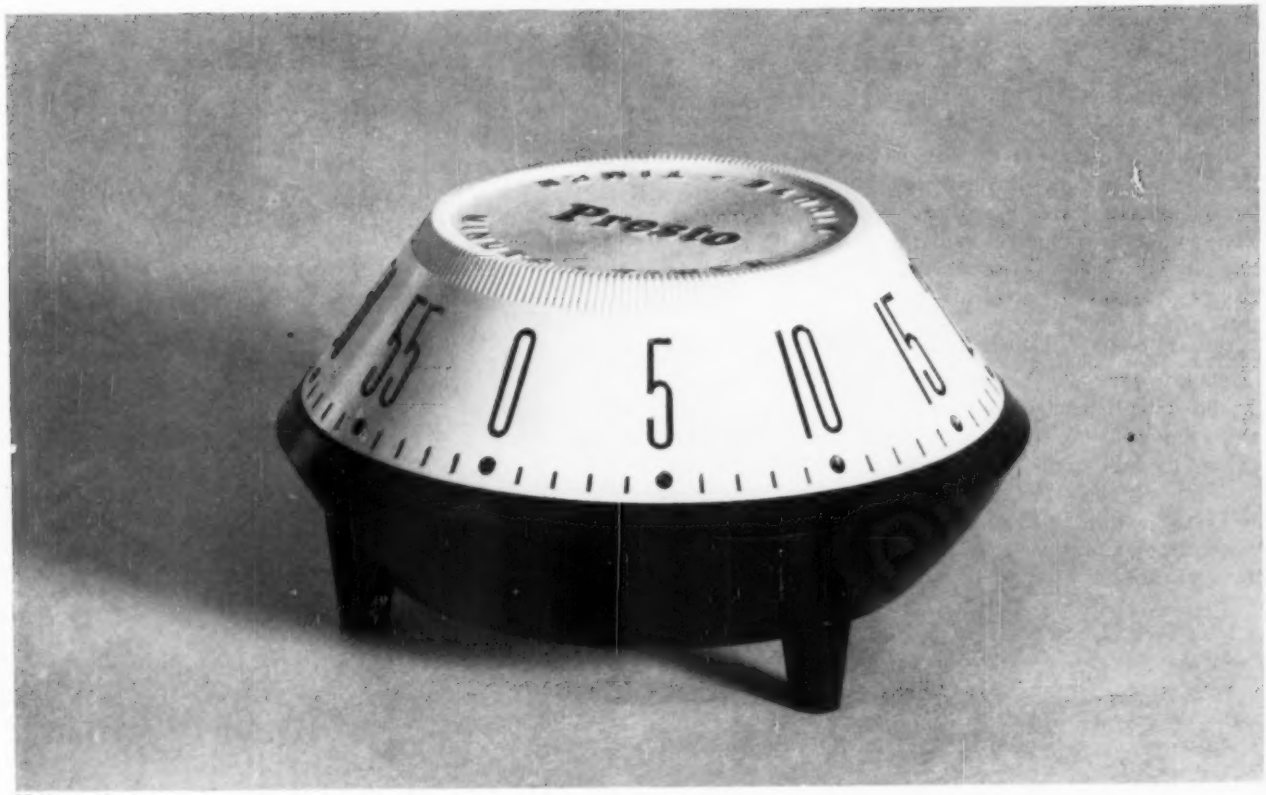
"Swedish Cook's knife," offset handle, Waverly edge.

88 Bread box
Kromex Industries, Inc., Cleveland
Michael Lax, designer

Chrome on steel; wooden cutting board lines door.

89 Food drainer
Standfast Products Co., Cleveland
Greenlee-Hess, designers

Plastic straining grille with long rectangular slots for greater flow of liquid and efficient food retention.

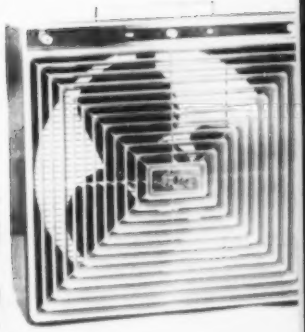


90 Minute timer
National Presto Industries, Eau Claire, Wisc.
Mel Boldt & Associates, designers

Two-piece plastic construction; horizontal design for stability; can be operated with one hand. Spring-operated bell signal.

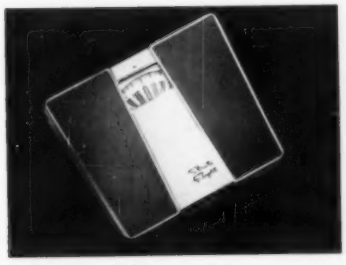
91 Kitchen sink sprayer
Modern Faucet Mfg. Co., Los Angeles
Emerson/Johnson/Mackay, Inc. (Allan Johnson, Tom Kellogg), designers

Plastic replaces corrodible zinc die-cast head; stamped brass trim.



92 Portable fan
Fasco Industries, Inc., Rochester, N. Y.
Edward Shartle, Project Engineer; William Purves, Chief Engineer
Van Dyck Assoc. (Ray B. Wheeler), consultants

High impact polystyrene diffuser grille; controls at top.



94 Bathroom scale
Borg-Erikson Corp., Chicago
Banka Mango (Joseph R. Mango), designers

Horizontal arrangement with steel structure, gold aluminum center panel, chrome beading, rubber platform treads, depressed dial.

93 Built-in bathroom scale
Nutone, Inc., Cincinnati
Waltman Associates, designers

Stamped case, counter-spring mechanism, fits in normal wall depths.

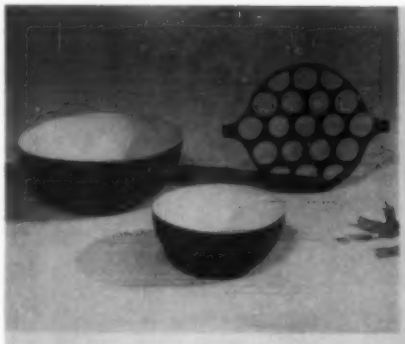
Technical improvements in decorative housewares this year have been more closely integrated into the esthetic role that these accessories play. Some approach their new function with reverence and some with whimsy; some are unobtrusive in their new chic, others are as conspicuous as ingenuity can make them. The transistor clocks, for example, which run on batteries and are thus liberated from dangling cords, can now serve more freely as pure ornament. The wall clocks (100) seem to take seriously their new role; the table clock (101), a bit of humor in the old wood-turning tradition, goes all-out to dramatize its new decorative position.

The Lax glassware (95) and (96) is interesting for its use of pressed glass, economical but usually troubled by mold marks. In this case, the mold marks have been made a part of the decoration: the textured surface is marked off by, and serves to conceal, the mold mark. The holes in the ceramic trivet, in part a ventilating device, reflect the shape of the whole and give the surface a pleasant pattern of solid-and-void.

Plastics, often considered the most abused modern medium, continues to find appropriate expression as a decorative material. Used as it is in the salt and pepper shakers (98), it gets both definition and dignity from strong shape and color. The Boonton sugar and creamer (99) reflect a growing confidence in the use of elegant line in place of brute strength.

96 Hanging planters
Fenton Art Glass Co., Williamstown, W. Va.
Michael Lax Associates, designers

Pressed glass bowls suspended on leather thongs.



97 Stoneware bowls and trivet
Bennington Potters, Bennington, Vermont
David Gil Cooperative Design, designers

Inside of bowls glazed crystalline matt white; rubber pads on bottom of trivet protect furniture, permit ventilation.

95 Pressed glass bowls
Fenton Art Glass Co., Williamstown, W. Va.
Michael Lax Associates, designers

Panels introduce variation in surface texture, conceal mold lines.

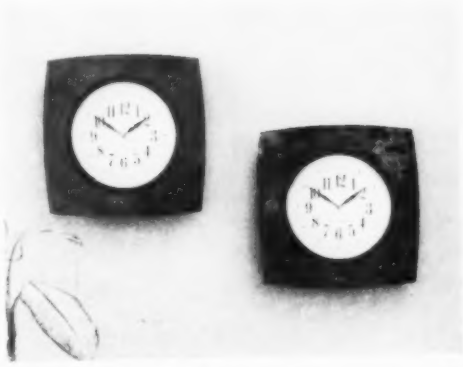
Forms, dignified and humorous, show greater assurance

98 Salt and pepper shakers
Victory Manufacturing Co., Chicago
Edward Klein Industrial Design, designers

Plastic case molded in black; non-corrosive brass or chrome cap. Polyethylene plug in bottom for refill.

99 Melamine sugar and creamer
Boonton Molding Company
Belle Kogan, designer

Additions to Boonton's familiar Patrician line aim at thinner lines.



100 Transistor wall clocks
Charles Denning, Ltd., Sag Harbor, N. Y.
Raymond Loewy Associates, designers

Curly maple (left) and tortoiseshell laminate with white lacquer faces.

101 Transistor table clock
Howard Miller Clock Company, Zeeland, Mich.
George Nelson, designer

Mounted on carved wood pedestal, case is laminated maple and walnut layers with brass trim, silver dial. Batteries last a year.

102 Refuse container
Rubbermaid, Inc., Wooster, Ohio
Clyde Breneman, staff designer
Smith, Scherr & McDermott, consultants

Molded of polyethelene; structural ribs act also as feet. Lid locks on.

These plastic "working containers" have a number of advantages over their metal counterparts: they are lightweight, rustproof, and noiseless. (This last virtue is especially useful in the case of the minnow pail (104) which won't frighten away the fish with its clatter.) They can also be esthetically satisfying, most strikingly in the case of the refuse container (102), whose clearly-defined lines exhibit the sculptural approach to mass-produced objects made possible by plastic forming methods and careful structural design.

Plastic housewares display crisp new form

103 Divided bucket
Brittion Products Co., Cuyahoga Falls, Ohio
Andrew Jendrisak, designer

Molded of high-impact Dylene polystrene (Koppers Co., Inc.); holds soapy water and rinse water simultaneously.

104 Minnow pail
Federal Tool Corporation, Chicago
Staff design
Reinecke & Assoc. (Jack Mell), consultants

Polyethelene; bottom of inner pail molded in tiers and slotted for quick drainage.

105 Sprinkling can
Federal Tool Corporation, Chicago
John E. Press, Chief Engineer
Reinecke & Assoc. (Jack Mell), consultants

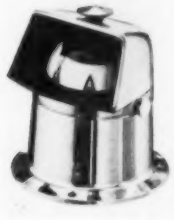
Polyethelene bucket and handle molded in one piece; handle end snaps onto rim.

Designers equip the active sportsman

Sports equipment these days falls into two categories and fits at least two kinds of sportsmen: the highly-mechanized speed-conscious driver or sailor, and the do-it-yourself hiker. The designer has, obviously, more scope in the case of the sports car or boat. And it is interesting to note the extent to which marine hardware has become an outlet for the impulse toward sensuousness and refinement that might, in another country, be lavished on automobiles. Of the two examples shown here, (107 and 109), the anchor, in particular, is almost a sculptural abstraction. It is also a very practical improvement on one of the oldest of forms.

The Scarab (106) represents the American entry into the field of racing sports cars. A kind of contemporary symbol of pure speed, it is engineered like an airplane, and the space allotted to the driver has been reduced to the bare minimum.

The combination knapsack frame and camp chair (108) is typical of equipment for the no-nonsense camper. Completely without pretensions, it is ingeniously designed to adjust a heavy load to the anatomically correct position.



107 Course monitor
Airguide Instrument Co., Chicago
Latham-Tyler-Jensen (George B. Jensen), designers

Die-cast, chrome-plated case; rotating hood with black interior to emphasize dial.

108 Combination pack frame and chair
Himalayan Pak Co., Monterey, Cal.

Tubular aluminum frame adjusts to hold bulky loads, balance weight of pack. Plastic-tipped legs swing down to convert to chair. Total weight: 42 ounces.

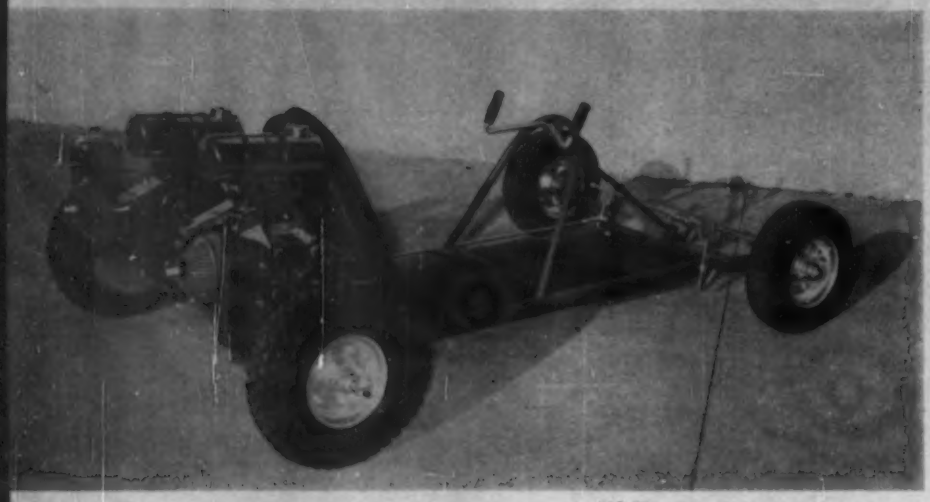
109 Folding anchor
Armada Marine Products, Garden City, Mich.
William M. Schmidt Associates, designers

Flukes fold vertically for storage in subdeck canister. In open position, stock rod is inserted to lock flukes.

106 Scarab sports car
Reventlow Automobiles, Inc., Culver City, Cal.
Charles Pelly, designer

High tail holds 40-gal. gas tank, spare tire, inboard brakes. Low midsection for visibility.

40 Personal objects reveal the formal aspect of informality



110 Play car
Go Kart Mfg. Co., Monrovia, Cal.
Lynn Wineland, designer

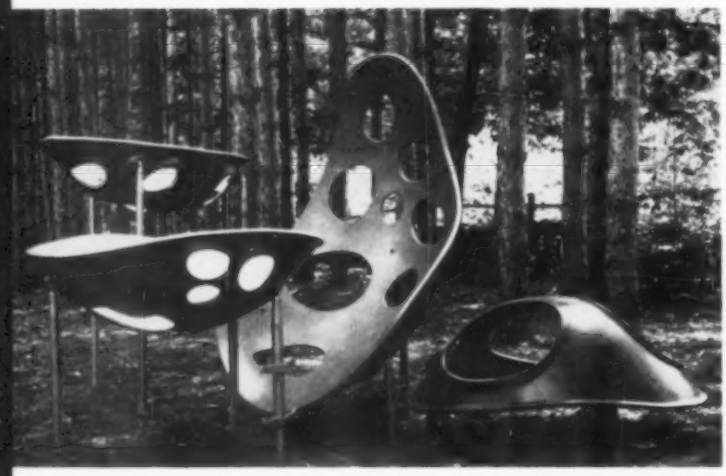
Maximum of 50 mph (with governor, 10 mph, for children). Simple tubular, welded frame; 1- and 2-cylinder versions; handlebar steering.

While informality is the point of play and personal items, it calls for more rather than less care on the part of the designer — informality does not mean formlessness. The aluminum play forms (111) are a case in point. Apparently random in shape, they seem particularly well-adapted to a contemporary play problem. Although they are photographed in a wood, their actual locale will probably be concrete city playgrounds, where they will replace the natural forms country children play with. They are, further, a reflection of the contemporary tendency toward standard components that can be assembled in un-standard ways.

The Go Kart (110) is a quite different kind of toy—and as it roars down upon them, parents may feel that it carries authenticity a little too far. And Eggbert (112) was created to rectify the impersonality and coldness children are said to feel in unmanned toy vehicles.

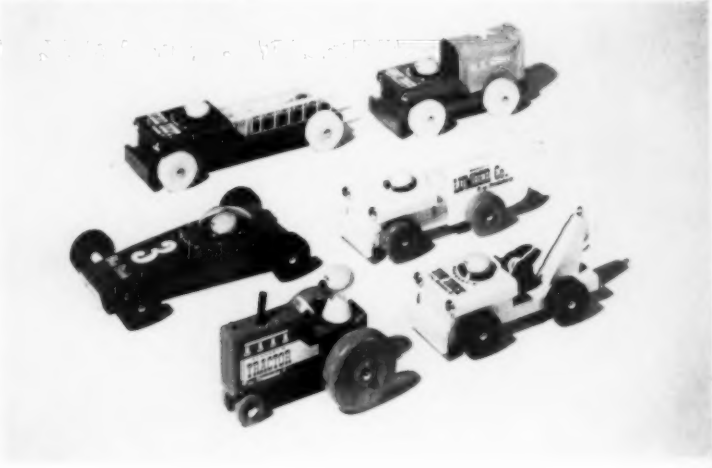
111 Aluminum playforms
Playground Corp. of America, New York
David Aaron, designer

Designed for Alcoa's Forecast program; sandcast shells, color-anodized; hinged mounting-flange; pipe supports.



112 Toy vehicles
Strombecker Mfg. Co., Moline, Illinois
Jay Doblin and Smith, Scherr & McDermott, designers

Wood figure of driver ("Eggbert"), mounted on spring, bounces as toy moves.

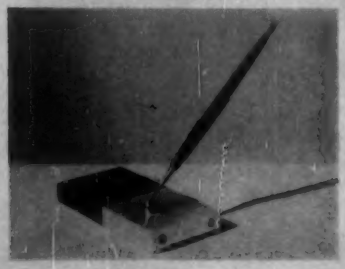


113 Cordless electric shaver
Landers, Frary & Clark, New Britain, Conn.
Raymond Loewy Associates, designers

Powered by 4 radio-transistor batteries; melamine case; Swiss-made head.

114 Pen holder
The Parker Pen Co., Jamesville, Wisconsin
Don Doman, designer

Rosewood and brushed aluminum; exposed screwheads form part of design.

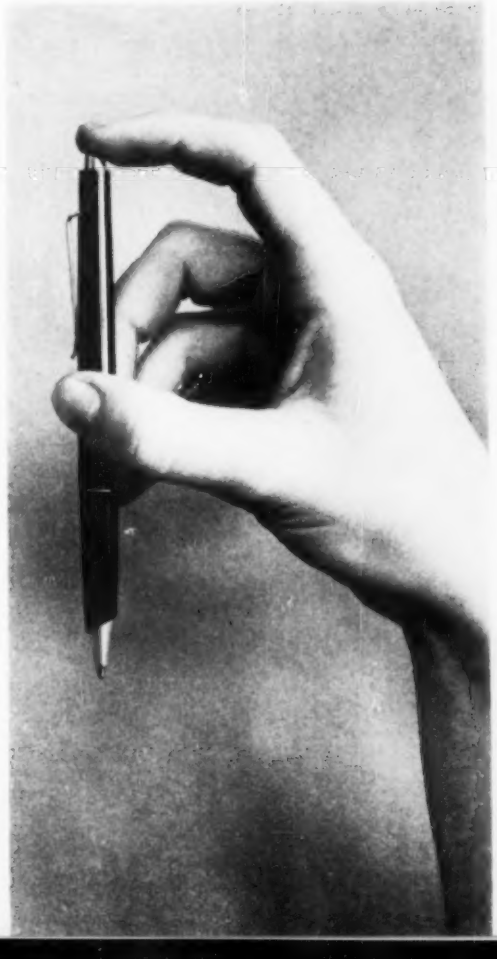


115 Ball-point pen
Paper Mate Co., Culver City, Cal.
George Larson, Director of Design
Zierhut Associates, Inc., consultants

Redesign of Paper Mate introduces tapered-end plastic and metal cap.

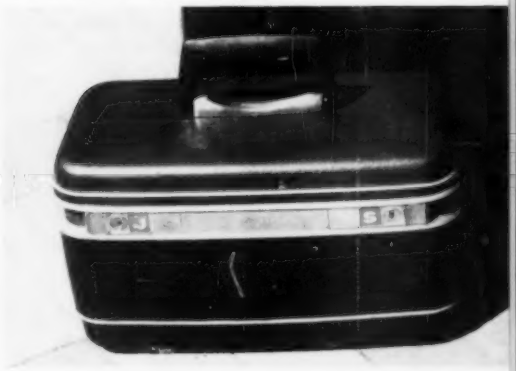
116 Ball-point pen
Esterbrook Pen Co., Camden, New Jersey
Henry Dreyfuss, designer

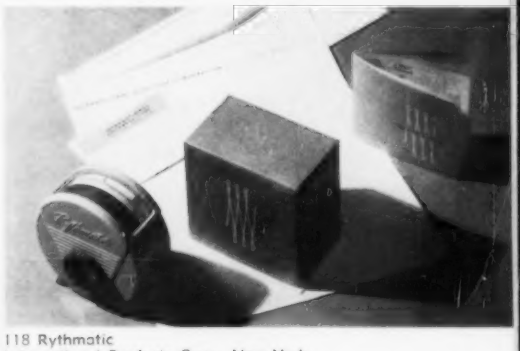
Plastic barrel thickens at point where it is [illegible] turns up at end to prevent fraying of pocket edge.



117 Luggage
Shwayder Brothers, Inc., Denver
Melvin Best Associates, designers

Recessed hardware; case of drawn magnesium shells, vinyl covered; adhesive-backed vinyl hides rivets; magnesium frame.





118 Rythmatic
International Products Corp., New York
Good Design Associates, designers

Simple design for personal product; designers engineered and styled entire program: product, packaging, sales literature.

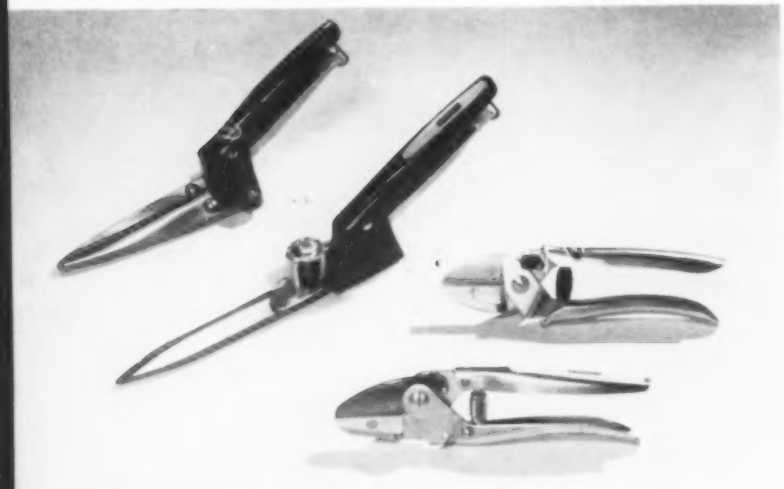
For the amateur workman, professional equipment

Garden equipment is one area of manufacture where it is particularly important to fix the corporate image in the mind of the consumer. Gardeners are notoriously easy victims to the lure of a new tool or a new spray, and the chanciness of their undertaking makes them more likely to develop a mystique of loyalty to a line that has brought them success. A number of designs this year show increased attention to the problem of brand identification: the Stanley tools (119 and 120), already distinguished by neat and workmanlike organization, place the logotype in a position where it becomes a very quickly recognized part of the design. The housing of the Garden Mark tractor (125) has been reorganized, largely by color, to unite it with the rest of the Montgomery Ward garden supply line, which extends from lawn seed to wheelbarrows.

With the increasing number of powered home workshop and garden tools, a central power source—with auxiliaries for different jobs, in the manner of farm implements—becomes a logical and economical method of construction. The two miniature tractors shown here (123 and 125) are each the center of serious and professional work in the garden.

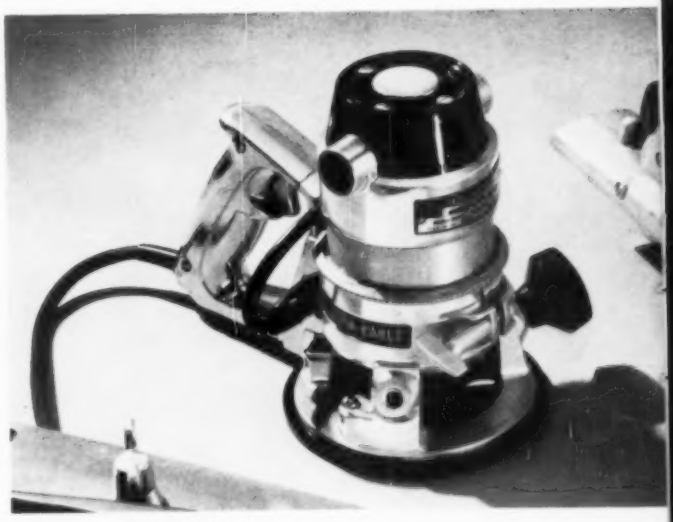
119 Garden shears
Stanley Tools, New Britain, Conn.
Joseph March, Charles Koepple, engineers
Laird Covey, Industrial Design (Laird Covey, Thomas Helms), consultants

Wooden handles; oval at gripping end, round at blades. Tapered blade points.



120 Garden tools
Stanley Tools, New Britain, Conn.
Joseph March, Charles Koepple, engineers
Laird Covey, Industrial Design (Laird Covey, Thomas Helms), consultants

Spoon-shaped handles rest in palm of hand, lower grips fit fingers.



121 Power router Model 150
Porter-Cable Machine Co., Syracuse, N. Y.
J. Gordon Bentley, Industrial Design Co-ordinator
Peter Muller-Munk Associates, consultants

Die-cast aluminum housing, plastic end cap; spiral adjustment key in base.

122 Power lawnmower
Moto-Mower, Richmond, Indiana

Blade of riding mower stops instantly when lock-out lever is thrown.

123 Garden tractor
Toro Manufacturing Company, Minneapolis
Staff design
Charles Butler, consultant

Sportsman model, 5.75 h.p., bevel gear transmission. Steering bar swivels for access to seat.

124 Power lawnmower
Toro Manufacturing Company, Minneapolis

Vacuum forces blades upright for cutting; air flow forces cut grass into bagging attachment. Leaf mulcher included.

125 Garden tractor
Montgomery Ward & Co., Chicago
Staff design
Dave Chapman, Industrial Design, consultants

Color treatment, graphics, unify exposed parts, integrate tractor with rest of line.

SIGHT and SOUND

Technology may never find equals for the amazing human eye and ear in efficiency and flexibility, but some man-made "eyes" and "ears" are letting us see and hear things that until recently have been invisible or silent. New telescopes, using new principles such as radio astronomy (ID Sept. '58), are now penetrating deeply into corners in space to actually see what for centuries has been a matter of mathematical speculation. The application of new electronic, nuclear and photographic methods to microscopy are revealing whole new worlds that have been invisible until now because of their minuteness. New devices are showing that the universe is much richer in sound than ever imagined. Noises from beneath the sea, deep under the crust of the earth, and millions of miles out in space are being heard for the first time. And sometimes developments in "sight" and "sound" are inseparable: it was "sound" equipment, for instance, that gave "sight" to the nuclear submarine Nautilus so it could find its way under the North Pole. Similarly, sound equipment, like the Seismograph on page 65, "sees" oil and mineral deposits deep underground.

1958 has seen its share of basic developments in the fields of sight and sound, but it will probably be remembered more for advancements like those shown on these pages—advancements which, as the fruits of basic research projects, have moved out of the laboratory and are now available for the direct or indirect benefit of millions as extensions of eyes and ears. While spectacular strides have been made in the development of equipment to "see" where the eye cannot see, standard lighting products have also been improved and new lighting technologies such as electroluminescence (ID Aug. '58) are bringing new kinds of light into offices, homes and factories. And while very specialized sound equipment has been introduced to detect oil under the ground, a new kind of sound has invaded the living room and the word for it—stereo—has become a household byword.

Developments in equipment to see more things more clearly (even to "see" what has never been seen before and where the eye cannot see) highlight technology in 1958.

SIGHT

Research and development in materials, components and equipment during 1958 may not have been as obviously exciting as in past years, but a review of the year's technological work does show a concentration in the broad field of lighting, sight and detection. Since lighting problems and products related to sight are always the concern of the industrial designer, some new advancements in this area deserve special attention.

A new light bulb

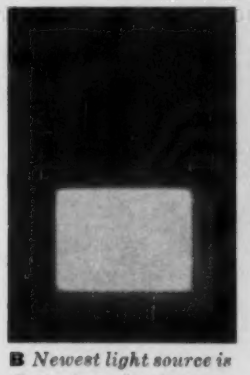
The new incandescent light bulb (A) represents a basic change in the shape of one of the most universally familiar products. But this change involves a lot more than simply creating a different contour. The new Westinghouse lamp is another step in the continuing effort to make a lamp that throws off light with minimum glare, a problem that has little to do with the actual shape of the bulb. In the past, glare has been cut down by using louvers, lamp shades and other light diffusers. Although these devices help to create more agreeable lighting effects, they also cause a great deal of energy to be wasted or misused. The problem is simply that light given off by incandescent lamps originates at a center, is concentrated in a single area, and is not evenly distributed. If even light distribution can be attained glare is cut down and power is put to more efficient use. The Westinghouse bulb has a new electrostatic silica coating on the inside surface of the glass which promotes an even white light with less glare than found in earlier frosted or tinted bulbs. Since the addition of a shade or diffuser is no longer necessary to eliminate glare and would be a detriment by cutting down light output, the bulb is being produced in a shape that is perhaps more conducive to use without a covering. It remains to be seen whether this specific bulb will gain broad acceptance by the light-conscious consumer, but it is significant that a light bulb is now available that needs no additional fixture to give glareless light.

New fluorescent and mercury lamps (C) with increased brightness have also been put on the market this year. A "Super-Hi" line of fluorescent lamps, also developed by Westinghouse, operates at a brightness level two and a half times that of standard fluorescent lamps. A new mixture of rare gases is the key to this new brightness and also increases the life span of the lamp. Mercury vapor lamps have been restricted to industrial and medical applications until the introduction this year of 400, 700 and 1000 watt Colortone lamps. These mercury vapor lamps have a new coating on the outer bulb which produces a light that is much stronger than standard light sources, but comparable in lighting effect. This makes them suitable for use in offices, school rooms, stores, show windows, and so forth.

A new light source

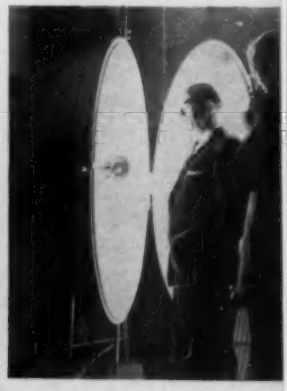
The subtle green light thrown off by the glowing square (B), may well be the forerunner of a revolutionary new lighting concept. This little panel is still something of a gadget, but is the result of years of research in the field of electroluminescence—a lighting effect that results from the electrical excitation of phosphors. First observed in 1936, this phenomenon has only recently been taken through the necessary developmental stages to make it available (if only on a very limited scale) as a new light source. Contrary to the conventional incandescent bulb or fluorescent tube, the electroluminescent light looks like a cell. It is very flat, has an evenly distributed light, casts no shadows and gives off a glareless glow. It takes very little current to bring the phosphor layers in the cell to luminescence. The base of the cell is generally a thin glass or metal plate which, when it is metal, is virtually unbreakable and has a relatively unlimited lifespan. The color of the light is another unique feature of the electroluminescent cell. The unit shown can be plugged into any ac outlet and glows with a greenish color. But proper

A *The new Westinghouse incandescent lamp (left) is contrasted here with the old.*



B *Newest light source is flat, electroluminescent light cell shown here in form of safety light put out by Westinghouse.*

C *New, powerful fluorescent-mercury lamp of Westinghouse (right) for street, auditorium and industrial lighting.*



selection of chemicals and adjustment in operating frequencies can produce blue, red, yellow, or white light. The major shortcoming at the present time is the limited brightness of the cell, a problem that is delaying widespread use of electroluminescent panels in place of standard light sources. But even with its low brightness, the panels are finding applications to illuminate clock, radio and telephone dials, speedometers, instrument panels on automobile dashboards and in airplane cockpits, and as lights to denote safety areas in laboratories and photo darkrooms. When the brightness problem is overcome—and there is every indication that it will be—electroluminescence holds the promise of revolutionizing interior design, window displays, shop sign illumination, etc. And since the thin panels can be "built into" walls or products, they will radically change lighting concepts for designers and architects.

Seeing what can't be seen

There are other improvements in "sight-aiding" products that don't fall into a single category but share a common aim: they "see" where the eye cannot see, an ability that contributes significantly to making new and more complete data available in a variety of fields. The closed tv setup (D) "sees" in almost total darkness. New electronic circuitry and a recently developed image tube (an image orthicon tube) give this new camera fantastic sensitivity. The photograph shows a room with normal illumination on the right and picture reception under these conditions in the center. The darker picture on the left is what is received with no illumination other than a cigarette lighter.

Television sets are not only much more sensitive, they are also much smaller. General Electric showed the prototype of a truly portable tv set (E) late this year. It is about the size of an automatic toaster, weighs ten pounds and can be operated from house current as well as from its battery. Developed by GE's tv receiver department, the tiny tv is fully transistorized (it has twenty-two), has an eight-inch screen, and a built-in antenna. Although the cost is still high, General Electric anticipates that they will soon be able to mass produce these sets at a price that will give them a potentially large market.

Automatic lighting control

An automatic lighting control system by Minneapolis Honeywell (F) almost magically measures incoming daylight and, working very much as a thermostat does for a heating system, adjusts the amount of artificial light to maintain a given light intensity in a certain area. The system is known as Light Saver Controlled Lighting and has a phototube to measure the amount of light coming into an area. This tube transmits a signal which operates a switching motor which decreases or increases lighting in three or more stages so the adjustment is practically unnoticed by occupants of the area. Minneapolis Honeywell claims that the new system can give power savings of up to eighty per cent.

There are several ways in which the Honeywell control can be used to accommodate different window arrangements. Many school buildings, for example, have windows on the outside walls only. For this situation, lighting stages are arranged with internal lights in rows, parallel to the outside wall. As the need for internal light begins, rows of lights are turned on, beginning with the row of lights farthest from the windows. Where there is a ceiling lighting panel which also admits natural light, artificial lights are automatically turned on as they are needed to supplement daylight. Sequencing is arranged for the most uniform transmission of light to the space below.

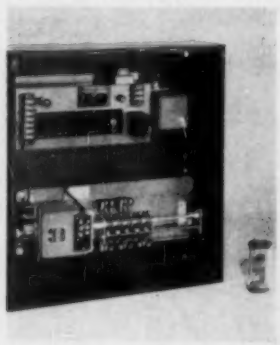
Sturdier headlight

In addition to efforts to develop lights that give better illumination, Westinghouse has also introduced a new headlight (G) that will keep burning under very tough treat-

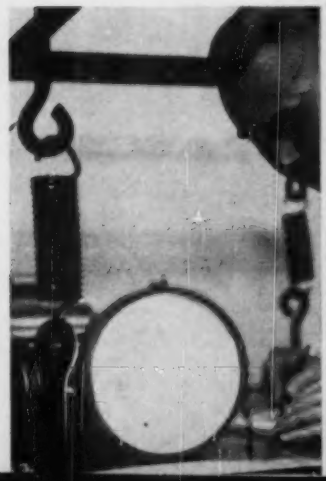
D *GE's new tv camera "sees" in the dark.*

E *Working model of GE's Lilliputian portable tv.*

F *A "thermostat" for lighting by Minneapolis-Honeywell.*



G *New tungsten filament gives Westinghouse truck headlamp better vibration resistance.*



ment. Designed for use on trucks, the new headlamp has a filament made from a new tungsten material called "M" or "muscle" wire. Laboratory tests show that the lamp will withstand ten times more shock than previous truck headlamps and, incidentally, has improved beam intensity.

Mobile radar tracker

The problem of watching and keeping track of supersonic targets gets more difficult and more important every year. A new mobile tracker (H) introduced this year by Hughes Aircraft Company for the U. S. Army Signal Corps simultaneously detects the range, bearing and altitude of supersonic targets and computes all information to give the best possible target attack. The system, known as Frescanar, is an electronic-beam radar system. The antenna operates from within an inflated plastic balloon which protects it from snow, ice and wind. The whole system is carried on a mobile trailer, can be moved easily and put in operation rapidly.

A machine that "sees" customer response

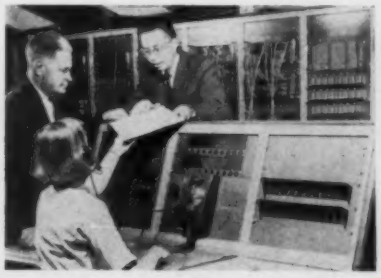
A computer called "Sibyl" (I) does a slightly different kind of seeing job. Developed by Bell Telephone Laboratories, the new machine can simulate a variety of communication devices and systems and test them without the necessity and expense of building special one-time equipment. In addition it provides objective data on how telephone users would respond to a new service. Named Sibyl after the women of ancient Greece who were supposedly inspired to see the future, the equipment will help engineers and psychologists predict whether or not a new facility will be useful and attractive from the customer's point of view.

To perform these functions, Sibyl has three coordinated sections: a main machine that is like a computer that can be programmed to simulate the functions of a proposed service under realistic conditions, a section that includes conventional read-out equipment, and an operator console. The console allows a human operator to be used to simulate a "real" situation. To test "voice dialing," for instance, the user, as far as he knows, speaks his number into the telephone. A silent operator at the console, however, actually does the dialing. By using this method of simulation, Bell Laboratories can provide users with machine experience without actually building the final machine itself, and equally important, they can analyze his performance and collect data without disturbing the user or his environment.

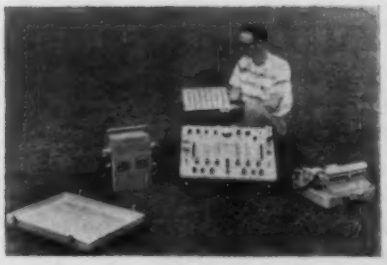
Portable seismograph

An all-transitorized amplifier system (J) developed by Texas Instruments, Inc. has made it possible to reduce radically the size and weight of a seismograph and permit its use for the detection of petroleum and other minerals in inaccessible locations. Like some of the other pieces of equipment shown on these pages, the new seismograph sees where the eye cannot see and, like many 1958 developments, it takes full advantage of transistors and their greater reliability. The Explorer seismograph, as it is known, is an excellent example of why there is frequently a long time-lag between a basic innovation and its widespread application. Transistors and other solid state electronic devices were introduced a number of years ago, but it is only now that they are beginning to realize their full potential. In the case of the Explorer seismograph, it was essential that it be highly dependable under severe operating conditions since it was designed for use in the field and frequently far away from regular maintenance facilities. Although transistors, printed circuits and other solid state devices were desirable for their reduced size, weight and power requirements, it is only recently that they have been sufficiently proven for many applications where there is little or no margin for malfunction. Other developments in semiconductors and solid state electronic devices are on page 109.

H *New electronic-beam radar system by Hughes Aircraft detects and computes range, bearing and altitude.*



I *Bell's "Sibyl" can predict consumer response to planned products.*



J *Seismic amplifier by Texas Instruments "spots" oil, minerals deep underground.*

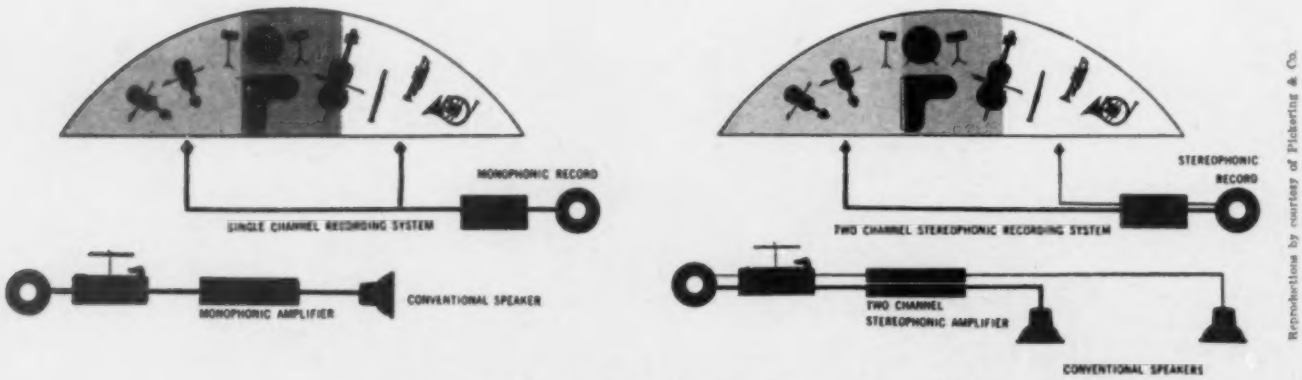
SOUND—or, more correctly, serving sound—has been the purpose of products and equipment in two general areas: aural data transmission, and sound detection. Detecting a situation by means of sound goes back to the earliest methods of long-distance communication using systems of wire or radio waves. Hidden messages have been conveyed for some time by codes of sounds, and to the popular beat of the Morse code have been added a variety of strange-sounding sounds that tell something of what's going on vast distances away. Sonar detection, for example, keeps submarine and other naval craft informed of the naval situation behind fogs and under sea, and the by-now famous "beep-beep" of certain electronic hook-ups is an indication that a man-made object is circling the earth. The sound-wave spectrum is also being employed in ultrasonic instruments which rely on the intensely rapid vibration of the waves for their operation (medical instruments can literally be sterilized by subjection to ultrasonic "shock"). But, as in the case of sight-detecting products, these are developments which have emerged from laboratories within the last few years. In sound equipment for the home there have been important developments that are bringing a new dimension to sound transmission through radio and sound reproduction by phonograph. These make up the highlights in sound-transmission equipment for 1958.

From hi-fi to stereo

Audio home equipment has always been designed with a single aim: to transmit sound in as full a range as is possible with available components. High fidelity equipment was a significant stride toward this goal by "mirroring" sound with far fewer omissions and distortions than had been possible with earlier home audio set-ups. Advanced components and circuitry were combined to increase the reproducibility of tonal patterns: less was lost and the ear was given more. But while speakers could "go into" the high and low sound frequencies they were previously not equipped to enter, they were still not able to recreate the depth, the space quality of the original sound occurrence. The reason for this was not poor reproducibility, but the fact that recording methods were not equipped to take space into account. This defect has now been corrected with the introduction of stereophonic sound which, by definition, means "solid" sound—sound that comes from more than one source in an effort to "surround" the listener.

From esoteric to popular

Stereo is no doubt the year's most pronounced development in audio home equipment. It is not new in audio technology, however. In fact, it dates back to the early 1930's, when an English engineer filed British patents for cutting and reproducing stereo disks. But it remained an esoteric audio item until a few years ago when it was used with Hollywood spectaculars; and in October 1957 Westrex, a subsidiary of Western Electric, demonstrated its first stereo system for home use. The effect of this was dramatic and had far reaching results. It was now possible to bring three-dimensional reproductions of concerts and other entertainment into the living room, and the audio industry was quick to make the most of this new product-line opportunity. Record companies like Capitol and Decca began cutting stereo disks, and audio components manufacturers (GE, H. H. Scott, Pickering and many others) supplied the necessary equipment for stereo listening in the home (see pages 78, 79). This new "alive" conc[illegible] was appealing enough to bring audiophiles and music [illegible]husiasts in throngs to the 1958 New York High Fidelity Music Show, whose theme was "The Age of Stereo." Another indication of the immense popularity and rapid growth of the audio home equipment industry can be seen in the retail sales figures which rose from 12 million dollars in 1950 to about 250 million in 1958, and will no doubt continue to climb.



Reproductions by courtesy of Pickering & Co.

Diagrams indicate difference between mono and stereo recording equipment and techniques.

Some questions and answers

The popularization of a new technical term invariably raises the question: what is it? how can this new product achieve what could not be done before? Definitions as outlined by the originators of stereophonic equipment might be the best way to clear up confusion about what stereo really is, how it compares to monophonic sound (the single-source sound heard on all previous records), and how it works. The Institute of High Fidelity Manufacturers has prepared a series of answers to questions often asked about stereo records. Here are some of the questions and the answers.

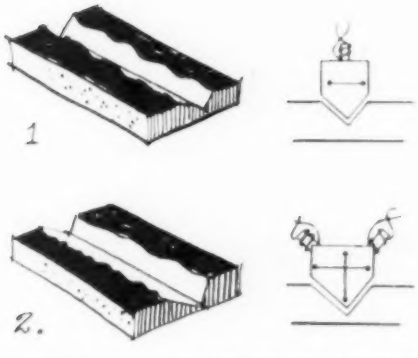
What is stereophonic sound?

"Our sense of direction, perspective, and depth in sound depends on one phenomenon: we hear the same sound slightly differently with each ear. Since sound coming from our right is louder and more distinct to our right ear than to our left, we automatically place that sound to our right. A system of home listening that could reproduce this phenomenon would finally bring in-person listening into the home . . ."

What is a stereo record?

"On a monophonic record the identical sound is engraved on both sides (walls) of the groove (see sketch 1 below). No matter how many speakers or amplifiers are used, you cannot get away from a single, point-source effect . . . The stereo record recreates perspective. Sounds are recorded from two points of view and engraved one on each side of the groove (see 2 below). Thus, the stereo record gives a realistic 'display' of sound. All that is needed to produce this three-dimensional effect is the stereo record, two amplifier speaker systems, a turntable or record changer and a stereo cartridge."

What is a stereo cartridge?



In monophonic recording (1) *the identical sound is engraved on both walls of the recording groove. In stereophonic transcription sounds are recorded from two directions and are engraved on separate sides of the groove* (*see sketch 2 above*).

"A cartridge is the device which transforms into an electric signal the vibrations picked up by the stylus as it travels the record groove. The important fact about a stereo cartridge is that with one stylus, two sound messages can be kept separate."

Are both monophonic and stereo cartridges needed to play both kinds of records?

"No. Stereo cartridges play both mono and stereo records. And monophonic records play just as well with a stereo cartridge . . ."

Why are two audio systems necessary?

"To keep the audio channels separate until they are reproduced in the living room. For homes already equipped with one system—a turntable or record changer, cartridge, amplifier and speaker—what is needed to convert it to stereo is a stereo cartridge and an additional amplifier and speaker. Only with this equipment can the audio channels be kept separate until they are presented as stereo sound."

Why must the two audio channels be kept separate when they mix again before we hear them?

"Each channel must emanate from a different speaker source. The sub-audible signal of each amplifier must not mix until it is converted by the speakers and then mixed by your own sense of hearing. Although proper speaker placement depends on each room's characteristics, a critical element in proper stereo performance is this: the two speakers should be separated as far as possible without creating a 'hole' (drop-off of sound) between them . . ."

This means, of course, that certain arrangements must be made for stereo listening that are not necessary for ordinary audio reception, and the question might well arise whether these are too stringent. Should the home listener who wants to relax be forced to conform to rules of listening? For proper reception, stereo listening requires not only accurate tuning and precise manipulation of equipment, but also that the listener be virtually restricted to one spot if he is to get the full effect of three-dimensional reproduction. The answer to this obviously depends on the degree to which a listener is addicted to the art of sound reproduction and transmission. What is significant in considering the progress in audio transmission technology is the fact that the proper stereo-means have been found and that a full space effect of sound can now be achieved in the home. The listener will no doubt decide for himself whether or not he wants to comply with the rules to get the most out of his stereo equipment. And, of course, in the case of the audiophile there is no decision whatsoever. It is perfect reception he wants, and preparations are probably a joyful step toward his goal.

1958 has seen and heard new sight and sound techniques in lighting products and home audio sets. The techniques are not always revolutionary. But all of them indicate new and significant trends that will unquestionably create further changes in product concepts and consumer habits.

COMMUNICATIONS and SELLING

Fairchild Aerial Survey, Inc.

About a year and a half ago designer Eliot Noyes was discussing the work he did in conjunction with IBM designers on one of the data processing machines. "We started stripping off the gray enclosure panels," Noyes said, "and the more panels we stripped the more beautiful it became." The statement is characteristic of a certain approach to all design, but it is even more characteristic of an approach to designing equipment for communications and selling. For in machines that abstract complicated messages—and in packages that must reduce an elaborate sales pitch to a quickly assimilated line or two—designers this year have tended to strip off the non-essentials. And the more they strip, the more beautiful it becomes (sometimes).

That really is what miniaturization means—not merely making something smaller in size, but enlarging it in concept by reducing it in physical and esthetic bulk. Size reduction is merely the natural outcome of a process in which the essential inner and outer aspects of a product have been simplified to require less room, less power, less maintenance, and to make for *more* efficiency. Take the transistor for example. Since it is smaller and handier, it has made possible simpler assembly and circuit arrangements; the logic of the circuit assembly (printed circuits) has in turn simplifed maintenance and change-over in complex equipment like computers, and has greatly influenced the corresponding logic of form.

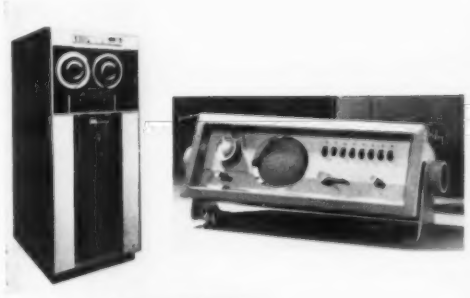
The process by which more is achieved with less in communication products may begin with a new circuit design and end with a miniaturized product in which everything non-essential has been eliminated, and in which the essentials emerge as the "lines" of the design.

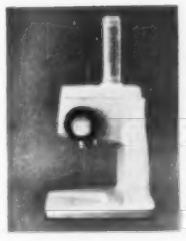
This is not to say, either, that miniaturization is just the comprehensive elimination of excess. Rather it is a drive toward intelligent use of means: the dictum More with Less has finally to be translated and interpreted by the designer, who must ask: More with *how much* Less? The process of answering that question is a series of choices that can properly be labeled design.

How much less? The BDC Contex (139) is small, light, unadorned, and inexpensive. And there is another "less"—it takes less training to operate it. For this year's business machines not only reveal less gingerbread but require less effort. The Cormac copier (142) produces results in one step instead of two.

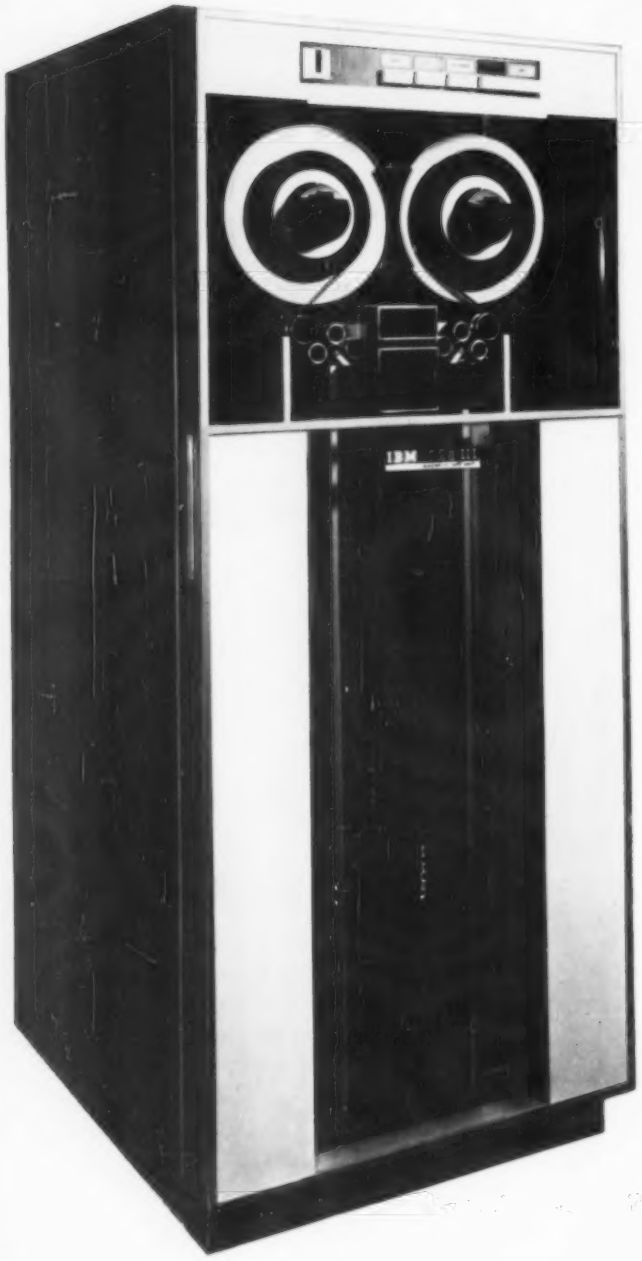
Selling, so far as we know, has no counterpart to the transistor or to the semiconductor materials from which it is made. But it is comparable to communications in one respect: the heart of selling is in the message, and this year's selling messages are expressed in leaner, more expressive graphics.

What has miniaturization meant this year? One thing it meant was a hit movie entitled "The Incredible Shrinking Man." It also meant a number of products—some of them in the following section—that, having been minimized, become better in ways that have nothing to do with minimization. It's like this. The famous Harlem Globetrotters basketball team began as an understaffed road team—a team with no reserves, playing in a different town each night. To conserve their meager physical resources they invented a technique for minimizing the amount of running they did. Was this miniaturization? Certainly it was more with less. And the spectacular result was a style of basketball that was not only physically less demanding but generally more effective. The result was basketball but the principle was design.



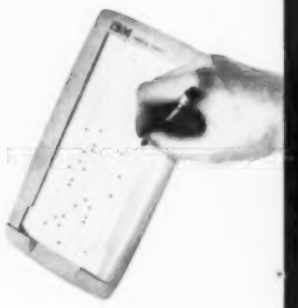


Fairchild Aerial Survey, Inc.



126 IBM 729 III magnetic tape unit
IBM Data Processing Division, White Plains, New York
IBM Data Processing Industrial Design Staff
James LaDue, designer
Eliot Noyes, consultant; E. Benilacqua, designer

Transistorized unit reads or writes 60,000 characters per second and automatically checks information for validity and readability.



127 IBM Port-A-Punch
IBM Data Processing Division, White Plains, New York
IBM Data Processing Industrial Design Staff
Walter Furlani, Manager Industrial Design, Endicott
Eliot Noyes, consultant

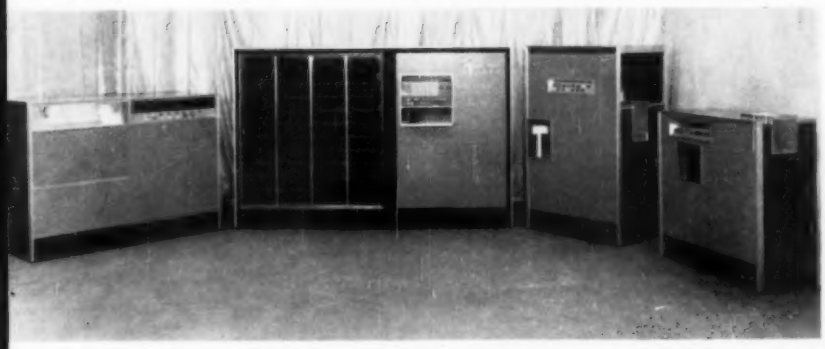
Manual keypunch covered with a plastic template with holes to guide punching; replaces written form in order to speed up data processing.

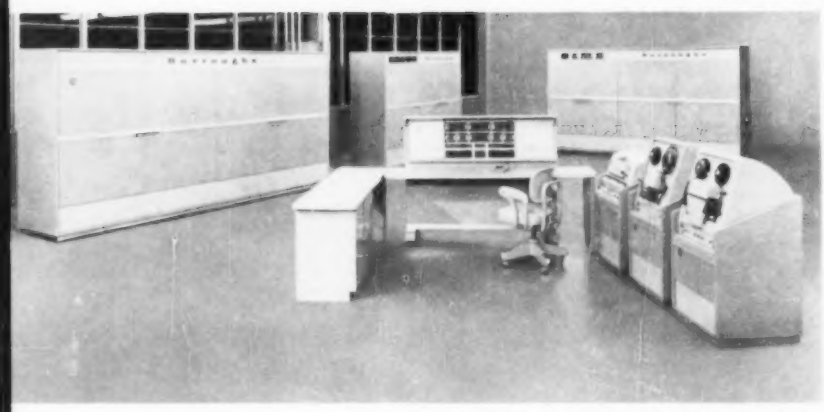
128 FR-300 hi-speed digital tape transport
Ampex, Redwood City, California
Staff design
Frank T. Walsh, designer

Complete equipment fits one 19" rack cabinet, tape speed of 150 ips; 10½" reels; ½" or 1" tape.

129 Univac computer
Remington Rand, St. Paul
Carl W. Sundberg, Montgomery Ferar, Richard W. Figgins, Raoul J. Pepin, designers

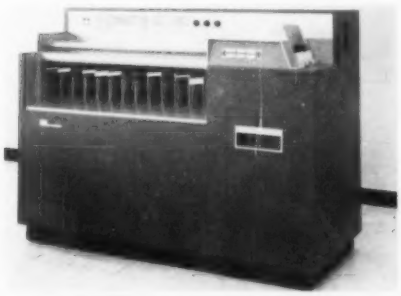
Clean-cut cabinets have dials and buttons arranged for quick selection. Glass area exhibits a new transistorized printed circuit card library.





130 Burroughs 200 Electronic Data Processing System
Burroughs Corp., Detroit
Lawrence H. Wilson Associates, designers

Modular construction simplifies storage and handling; electronic circuitry too is sub-modular, making production assembly lines possible. Skin is installed after delivery.



131 IBM 108 card proving machine
IBM Data Processing Division, White Plains, New York
IBM Data Processing Industrial Design Staff
R. H. Koepf, manager; Walter S. McCormick, designer
Eliot Noyes, consultant

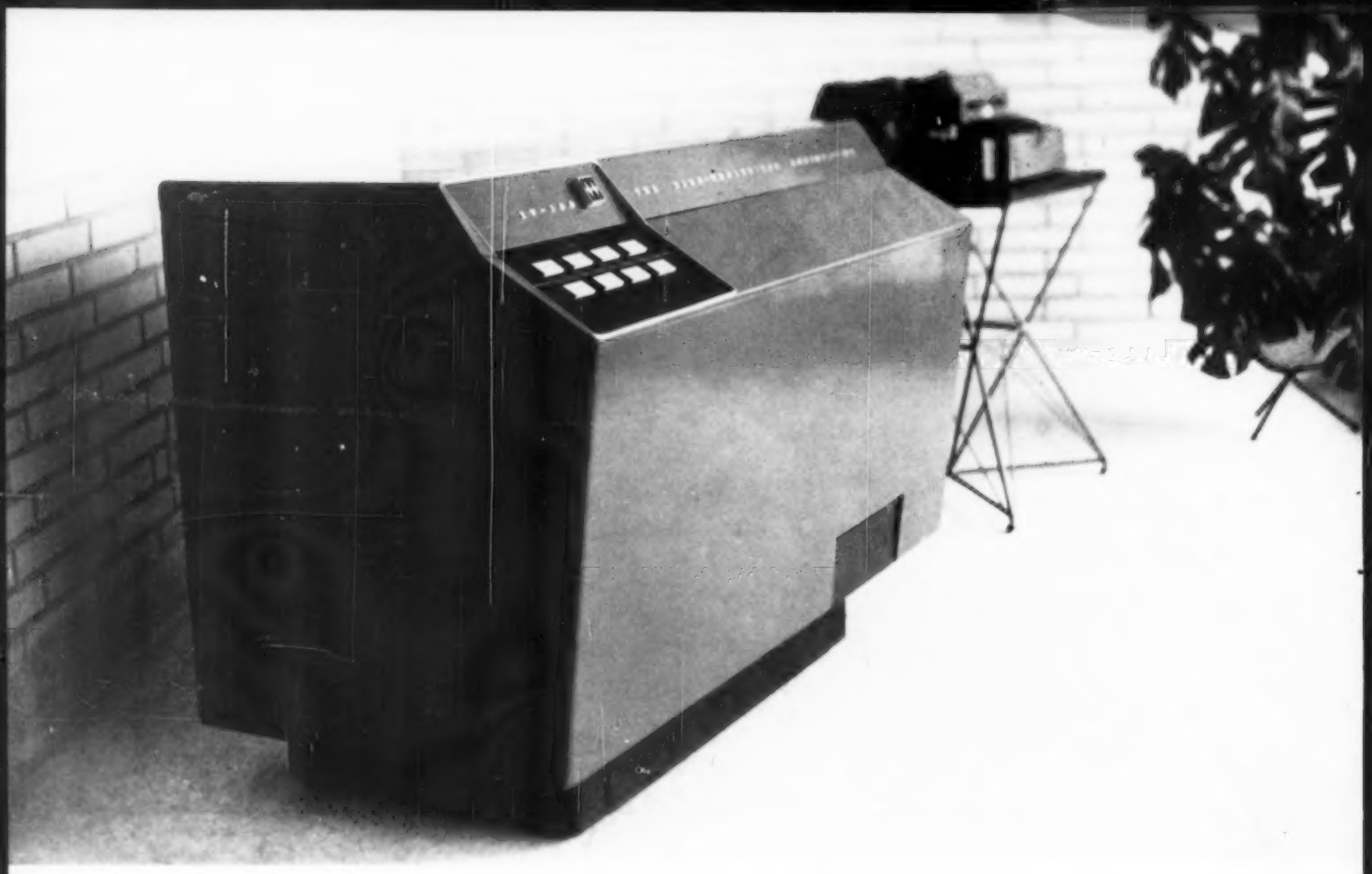
High-speed card editing, proving, sorting and arranging machine for Data Processing Systems, expresses union of covers and exposed mechanism.

132 Univac modular cabinet
Remington Rand, St. Paul
J. C. Schulte, R. S. Gormley, J. E. Empie, T. G. Martinovitch, R. H. Van Valkinburgh, designers

Units may be built together in any number by removing side panels. Frame is standard 19" rack mounted construction. For miscellaneous one-of-a-kind or short-run equipment, where special cabinets not feasible.

Data processing is one of a number of technological advancements that have happily demanded something correspondingly new from design. There were no direct precedents for this line of automated office and industrial equipment, and the consequent absence of pre-conditioned design concepts gave the designer freedom to deal with an exciting conceptual problem. With the first "electronic brain," the designer became responsible for considering the human control and operation of a vast number of knobs and switches, and a great variety of electronic circuits. The solutions manifested in computer equipment—as in IBM's 729 III (126) — have often been direct and handsome. The functions of the operator have been broken down into consoles and into areas within the consoles; the components of the entire system have been broken down into basic assembly units which can, in many cases, be added to, or subtracted from, a given system, depending on performance requirements.

One thing remarkable is the extent to which designers have used devices integral to the consoles and to other system-components, and incorporated them into the shape of the finished chassis. How effectively this has enhanced the appearance of computers can be seen in the 729, in which the tape reels and rollers are exposed — resulting in an appearance that grows out of the unit rather than being superficially imposed on it—the tape reels are clearly the dominant aspect of the unit's form, just as they are central to its function. Ease of access and reduced maintenance problems are other advantages. A similar effect is achieved in the Univac Modular Cabinet and Tape Unit (132), and here the modular construction principle makes for a desirable and efficient flexibility. In one way or another, the other data processing units shown here are characterized by the same "inside-out" approach. The exposed area in the IBM 108 Card Proving Machine (131) where the cards are stacked gives a distinct structural emphasis to the cabinet. And the same is true of the open section in the center cabinet of the Univac Computer (129) which also features, under glass, a new printed circuit card library.



Machines that do complicated jobs are themselves made less complicated by designers

"Simplify, simplify" argued Henry Thoreau. Consultant to no one but himself, he did his famous computation without benefit of any brains but his own. Since no one ever took his advice, men have not become simplified, but they have at least seen the necessity of simplifying their machines; and designers have had the fairly new problem of fashioning devices that perform complicated calculations, but that are not operated by specialized—or even trained—personnel. Case in point: the BDC Contex (139). Engineered and designed so that even the proverbial child can work it, this handsome midget has taken on in the process a serious but not formidable look. The Remington Rand airlines reservation set (137) and Teleregister Corporation's agent's keyset (138) are other calculating devices designed for use by people without technical computing knowledge. Larger units too are more compact than ever: as the duties required of their innards become more complicated, design provides a compensatory (and often very attractive) simplicity.

134 Electronic typing calculator
Electric typewriter div., IBM, Lexington, Ky.
Staff design

Automatically does the arithmetic on business forms as they are typed, and produces a punched card for further data processing by other machines.

135 Univac 1103A console
Remington Rand, St. Paul
J. C. Schulte, R. H. Van Valkinburgh, R. J. Gormley, J. E. Empie, T. G. Martinovich, designers

Peripheral equipment for computer. Keyboard functions as input-output device for file computer.

133 RW-300 digital control computer
Ramo Wooldridge Corp., Los Angeles
William E. Curry, staff designer

Automatically controls such processes as chemical manufacturing and petroleum refining. Polyethylene circuit boards.

136 Add Mate calculating machine
Underwood Corporation, New York
Lurelle Guild, designer

All-electric machine is rigid plastic injection molded. Weighs only 7½ pounds.

137 Airlines reservations set
Remington Rand, St. Paul
J. C. Schulte, R. J. Gormley, J. E. Empie, T. G. Martinovitch, R. H. Van Valkinburgh, staff designers

Gives all flight information, indicating status of flight and ticket transaction.

138 Airline and hotel keyset
Teleregister Corp., Stamford, Conn.
James Murphy, mgr., design eng'g., Stuart Harris, engr., Laird Covey Industrial Design (Laird Covey, Thomas Helms)

Co-polymer housing, laminated keyboard.

139 BDC Contex calculator
Bruder Carlsen, Copenhagen
Henning Carlsen, engineer

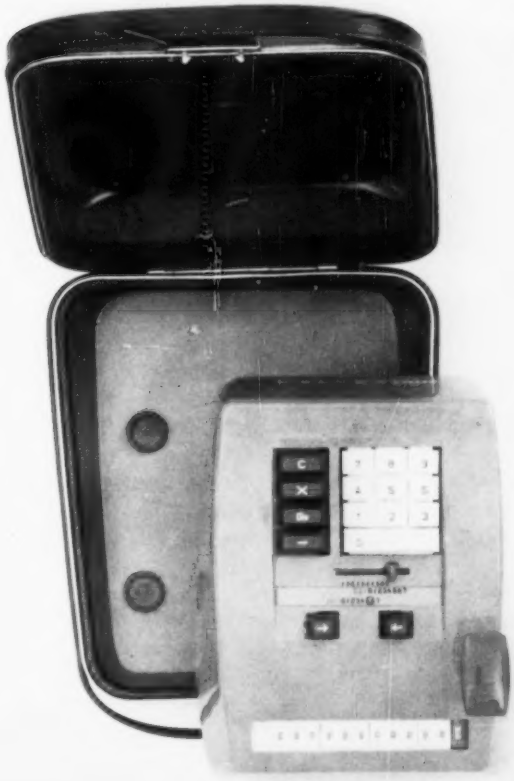
Smallest and lightest (6 lbs.) 10-key machine on the market, it costs only $125. Offers full 11 columns and divides.

140 Univac 1103A console
Remington Rand, St. Paul
J. C. Schulte, R. H. Van Valkinburgh, designers

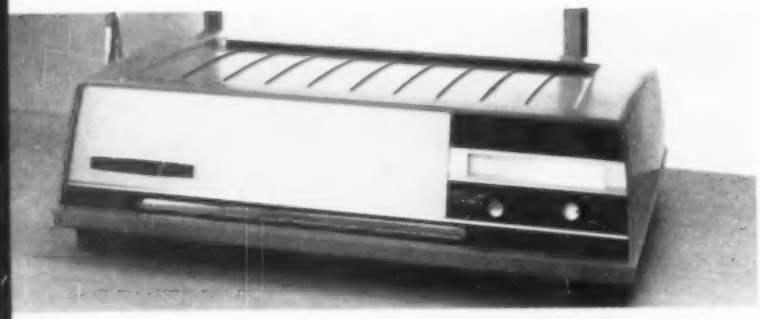
Switches, recessed to prevent accidental tripping, have nylon handles.

141 Electronic control center
DuKane Corp., St. Charles, Ill.
Mel Boldt and Assoc., designers

All emergency and alarm facilities controlled through single center with common wiring, conduits.



New equipment facilitates communications for business



142 Photocopy machine
Cormac Photocopy Corp., New York
Raymond Loewy Associates, designers
Grey beige injection-molded plastic, front panel chrome textured Mylar. 21" x 13" x 6".

143 Dictating machine
Dictaphone Corp., New York
Gordon Florian, designer
Extensive use of aluminum for mechanical components, magnesium case, transistorized amplifier effect 20% weight reduction.

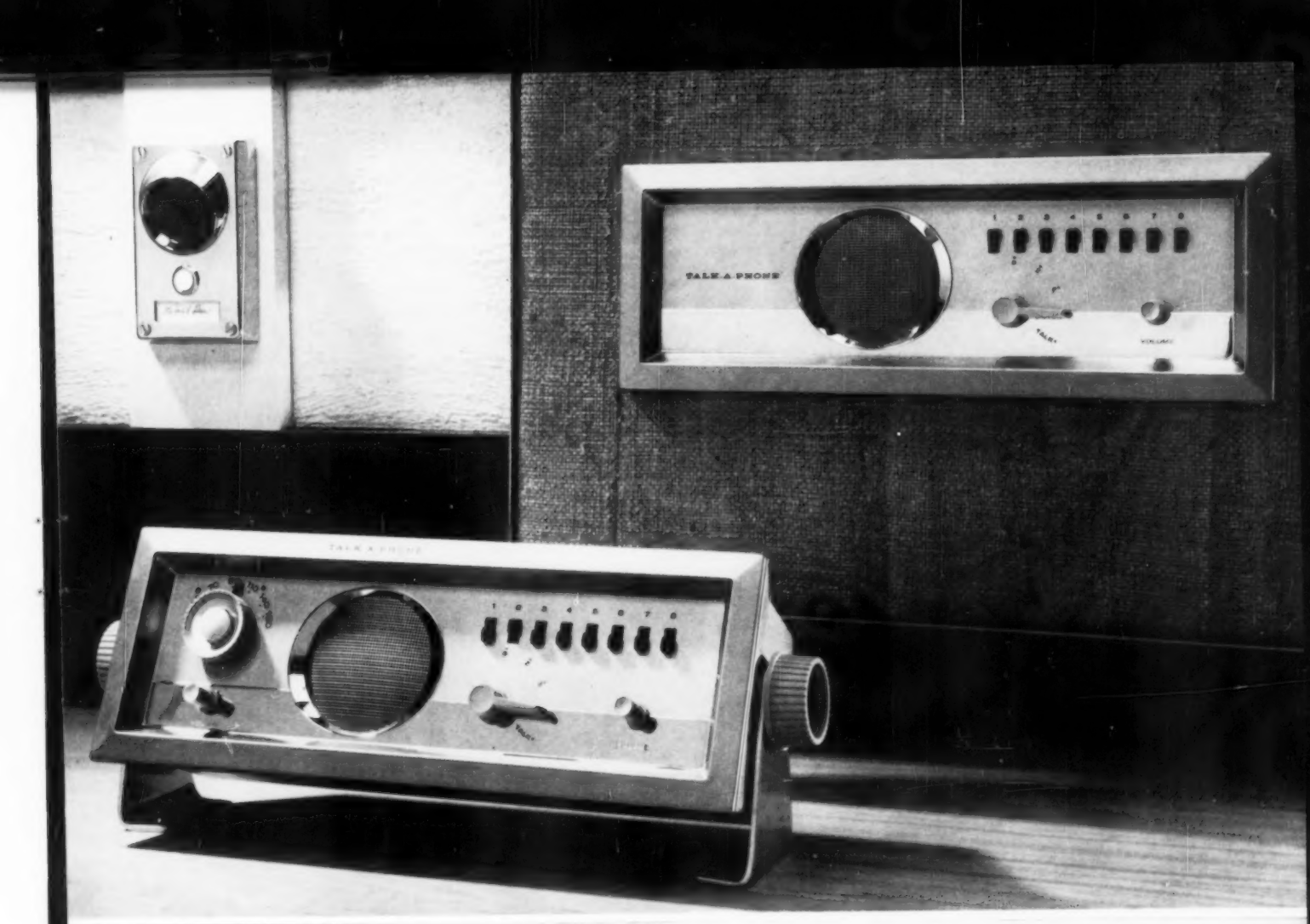
144 Home intercom radio system
Talk-A-Phone Co., Chicago
Dave Chapman Industrial Design, designers
One-piece stamped face plate finished in satin gold frame; satin and polished silver control surface.

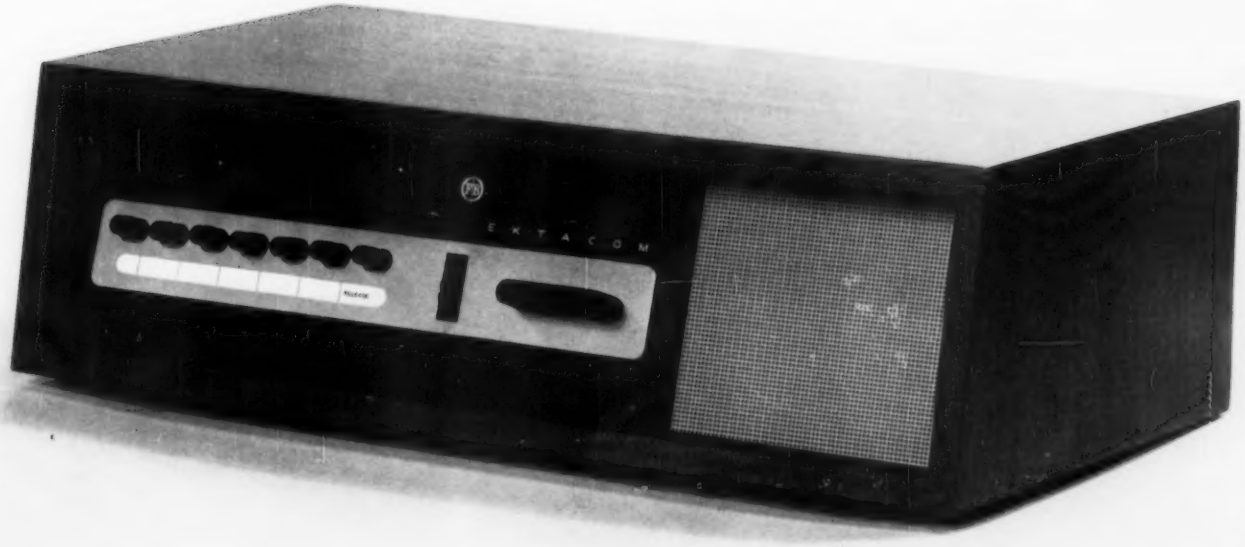
145 Intercommunication system
Fisher-Berkeley, Emeryville, California
Walter Landor & Associates, consultants
John Crane, designer
Wood housing frames clearly organized panel.

The famous five senses may be equally important, but in the field of business communications, where the proximity of communicants cannot be depended on, sight and sound loom larger than the rest. The Cormac photocopier (142) reduces two operating steps to one, simplifying and expediting the process of duplicating visual material. Visual records must be kept as well as made, and the Meilink safe (147) is designed to make security compatible with contemporary office decor. In sound equipment too there is a pleasant emphasis this year on producing machines that look as though their job is one to be done in an office, performed by business personnel rather than ham radio operators. The Talk-A-Phone (144) and Ektacom (145) are two examples. The Dictaphone (143) is reduced in size, weight, and complexity of operation, with surface decoration minimized. For both inter-office and outside-line use, the multiple-key phone set (146) uses handset and dial of standard 500 attached to 18-button housing.

146 Multiple-key telephone set
Bell Telephone Laboratories, New York
Henry Dreyfuss, designer
Translucent plastic buttons illuminated when line is in use. Dial and keys set in transparent panel with changeable color paper insert.

147 Fire-insulated safe
Meilink Steel Safe Co., Toledo
Ralph E. McClellan, design engineer
Sundberg-Ferar, Inc., consultants
Expansion joint and pre-stressed stay rod construction; thermo-cel insulation solid cast and encased between inner and outer shells.


TALK-A-PHONE


EXTACOM

Media rare: radio and TV receivers achieve restraint

149 Portable transistor clock radio
Westinghouse Electric Corporation, Metuchen, N. J.
Seymour Silverman, Vance Dimmick, Ralph French, staff designers

One of first transistor clock radios on market. Eight-transistor chassis plays up to 400 hours.

150 Table radio
Sylvania Electric Products, Batavia, N. Y.
Greenlee-Hess Industrial Design, designers

Side tuning permits use of front area for speaker. Chassis molded in black polystyrene, gold trim.

151 Modular table radio
Roland Radio Corporation
Monte L. Levin, designer

Two fronts combine to make four models. Front and bottom shelves, molded as one piece, form support for chassis; rear housing is enclosure only.

152 Three-way portable radio
Westinghouse Electric Corp., Metuchen, N. J.
Seymour Silverman, Ralph French, Gene Grossman, staff designers
Bronislaw Zapolski, consultant

Omni-directional antenna; illuminated dial.

No one thinks of radio in the same way anymore, and this includes the industrial designer. As radio became a supplementary medium, with emphasis on the portability of units, the receivers themselves went through a transitional stage of garish redesign in much the same way that a politician who knows that he is losing makes his campaign speeches louder and more reckless. The radios shown here seem to have settled down to their new role. The Westinghouse (149) has a minimum of frills, and, with the case, is interesting as a total package solution. The Sylvania (150) puts the controls at the side—possibly a slight inconvenience—to present an honest, unemotional facade for a low-cost radio. This year there was a plethora of high-backed radios. The Roland (151) features dial and twisting controls at an especially effective angle for both sight and manipulation, and the high back—which takes up most of the room in any small radio—is naturally housed. Components of the Westinghouse portable (152) are neatly and logically arranged, and the illuminated dial is easy to find and to use.

People who refer to television as "that monster in the living room" usually mean the contents and not the set, but there have been times when the phrase was properly a *double entendre*. These receivers are all noteworthy for having achieved restraint under difficult circumstances. Since tv is a visual medium, there are essentially two ways of looking at a tv set: when it's on and when it's off. Designers, for better or worse, can't do much about what appears on the screen when the set is turned on, but one of the real problems is to keep the Cyclops eye from dominating a room when not in use, and outstaring family and guests. The Hotpoint (153) and G.E. (155) screen frames relate neatly to the curvilinear shape of the tube, are thereby made less haunting. Wall picture tv still seems to be the most promising solution, and the Philco separate screen (154) is a forerunner. To get the picture tube out of the chassis, Philco redesigned the cathode and trimmed the depth of the tube itself. The flat look is further emphasized by light color tones.

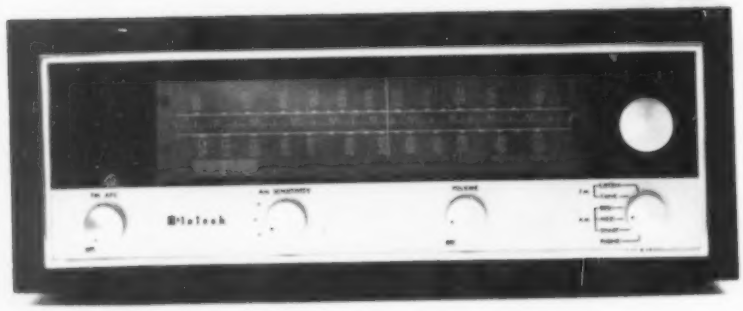
153 TV receiver
Hotpoint Company, Chicago
Ralph Lazar, staff designer
Ray Sandin, manager of Visual Design Dept.
Molded plastic front, metal cabinet. Front mounted speaker and controls.

154 TV receiver
Philco Corporation, Philadelphia
Product design department, Herbert Gosweiler, head
New flattened 110° tube reduced at neck to make separate screen possible.

155 TV receiver
General Electric Company
Arthur N. BecVar, Mgr., I.D., Appliance and TV Receiver Division, Louisville, Kentucky
Richard Montmeat, TV Receiver Dept., Syracuse
Compact controls, large screen, hand grips on sides.

156 Pre-amplifier
Fairchild Recording Corp., Long Island City
Raymond Loewy Associates, designers

Anodized black aluminum housing slides back to let amplifier's control panel fit flush in built-in unit. Easy-to-read controls.



157 Hi-fi tuner
McIntosh Laboratories, Binghamton, N. Y.
George H. Kress Assoc. (designers of panel)

Die-cost panel gives instrument clean look, in contrast to usual sheet metal look.

158 Pre-amplifier
David Bogen Company, Paramus, N. J.
Staff design

Extruded acrylic plastic panel has dial range silk screened on surface beneath. Station positions indicated by thin beam of light.

159 Turntable
Rek-O-Kut Company, Corona, New York
George Nelson Co., (Ronald Beckman) designers

Color unity achieved through selection of blended colors. Shape of cover plate conforms to shape of fan belt beneath. Family resemblance in whole line.

More sound, less space, and flexible arrangements

New engineering developments in home sound receiving equipment have come to be taken almost for granted each year, and so have changes (if not developments) in the shape and appearance of receiver units. The big problem in most cases has been to keep hi-fi equipment from sprawling all over the house, making the most sensitively decorated living room take on the character of a hobbyist's basement workshop. A good, and popular, solution has been the combination of the two impulses that dominate this review—miniaturization (the introduction of smaller, more compact units) and modularization (the arrangement of units in systems). The Verde Loudspeaker System (162) and the Bogen Music Wall (160) both concentrate on getting a lot of sound from a small space. Furthermore the Bogen Music Wall, and the entire Stephens Trusonic line (164) are systems of individual units designed to be used in a number of complementary ways.

160 Music wall
David Bogen Company, Paramus, N. J.
Staff design

Wall-mounted music system has two units: one with pre-amp-amplifier, stereophono mechanisms; second with tuner, storage.

161 Stereophonic radio-phono enclosure
Packard Bell Electronics, Los Angeles
J. W. Kelso, Director of Design

Four-speed record changer, six speakers mounted in live rubber on flexible baffle. Walnut with formica top, aluminum trim.

162 Verde loudspeaker system
Altec Lansing Corp., Anaheim, Calif.
Herbert L. Kornfeld, designer

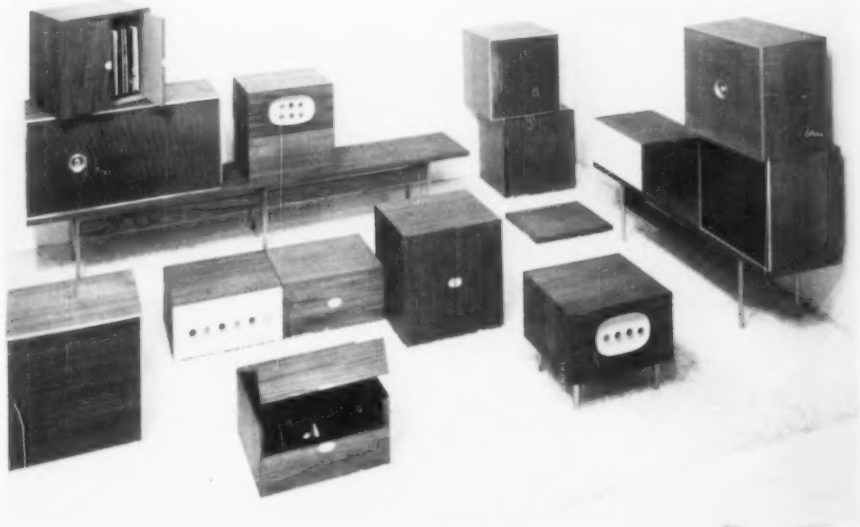
Grille cloth and frame removable for custom decoration. Top of cabinet serves as table. Walnut blond, or mahogany finish.

163 Speaker and amplifier
Stephens Trusonic, Culver City, Calif.
Saul Bass, designer; Fred Usher, assoc.

Three sets of control knobs, in different colors, come with each unit, enable set to be color-keyed to interior decor.

164 Hi-fi package line
Stephens Trusonic, Culver City, Calif.
Saul Bass, designer; Fred Usher, assoc.

Line is modular; benches in varying lengths, two heights. May be assembled vertically, horizontally, or wall-hung.



Many of this year's developments in photographic equipment have been commanded by the amateur in what continues to be a buyer's market. The Bell & Howell Electric Eye (165) is for him: since it is automatic, requiring only a click of the shutter, it is operated the same as the old aim-and-snap box Brownie. The 35 mm transparency, much used by professionals and amateurs, grows in prominence as slide projectors become more commonpiace—and (key word) automatic. The Argus (169), the Bell & Howell (170), and the Kodak (172) have in common "full automation": switch on, sit back, watch show. Design for the home-moviemaker includes Bell & Howell's automatic-threading projector, which an all-thumbs person can operate, with optional Filmovara zoom lens that varies screen-image size even at short distances. The Wittnauer Camera-Projector (173) is a two-in-one economy instrument: one machine shoots film and, with an easy change, projects it.

For the pro, semi-pro, and bug, there are the Kodak Flasholder (166) and Heiland's lightweight Futurama Strobonar (167), the former batteryless.

But for the full-time professional, the Super Graphic (168) is still unglamorized, non-pushbuttoned, unautomated, and straightforwardly suited to its job; miniaturized components and printed electric circuits economize space.

166 Kodak Generator Flasholder
Eastman Kodak Company, Rochester, N. Y.
Staff design

No batteries needed. Half-turn of nylon generator wheel stores electricity in capacitor to fire M-2, No. 5, or new M-5 or M-25 flash bulbs.

167 Futurama Strobonar
Heiland (Div. of Minneapolis-Honeywell) Denver, Colo.
Henry Dreyfuss, designer

Light, one-piece transistorized strobe unit, 3 small batteries, doughnut-shaped flash tube.

168 Super Graphic 4x5 Camera
Graflex, Inc., Rochester, N. Y.
Peter Muller-Munk Associates, designers

Traditional hard-working press camera redesigned with controls housed. Aluminum casing replaces wood; magnesium, cycolac parts.

165 The "Infallible"—Electric Eye 127
Bell & Howell, Chicago
Staff design

Photoelectric cell reads existing light, transmits electricity to voltmeter, which opens and closes aperture. Red signal indicates insufficient light. Fully automatic.

Automatic and easy-to-operate: the trend in photography is to design for the amateur

169 Argus Electromatic 35 mm Projector
Argus Cameras (Sylvania), Ann Arbor, Mich.
Harley Earl, Inc. (Dominic Saporito, Samuel Shapiro, Frederick Hertzler), designers

Of vinyl-clad metal and aluminum extrusions, has remote control button.

170 The "Explorer" Slide Projector
Bell & Howell, Chicago
Richard Lanigan, staff designer

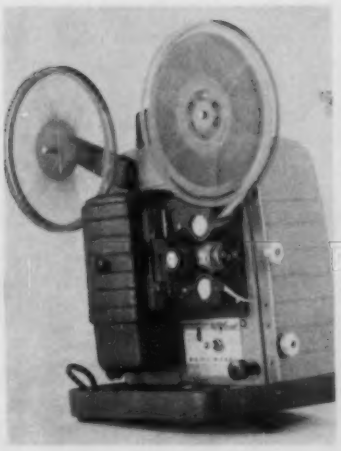
Completely automatic projector, with remote control that works in reverse, Filmovara zoom lens, built-in pointer with adjustable size.

172 Kodak Cavalcade Slide Projector
Eastman Kodak Company, Rochester, N. Y.
Staff design

Three ways to advance slides: automatic, remote, manual; no "popping" of slides, permits "editing", switches from 300- to 500-watts.

171 Bell & Howell Auto Load Movie Projector
Bell & Howell, Chicago
Staff design

First automatic-threading 8 mm movie projector. Easy-to-reach focusing knob; Filmovara f/1.5 zoom lens varies image size without moving.



173 Wittnauer Cine-Twin Camera-Projector
Longines-Wittnauer Watch Co., Inc., N. Y.
Staff design

8 mm camera becomes a 400-watt projector (300-ft. reel capacity).

174 Label and neck pamphlet
Cerwin Vineyards, Sonoma, California
Walter Landor & Associates, designers

Calligraphic lettering in red and black stresses individuality of numbered bottles from "non-commercial" vineyard. Strathmore double deckle stock.

175 Brandy ½-pint pack
Paul Masson Vineyards, California
Jerome Gould, designer

Sportsman theme suggests out-of-doors use of flask as part of good living. Supplier of cartons: Milprint.

Informality and elegance are emphasized in packages for 'the pleasurable necessities'

Packaging what have been called "the pleasurable necessities" can be characterized by two seemingly contradictory qualities: informality and elegance. This year, even more than last, package designers, like Porgy's Bess, celebrated the fact that the livin' is easy. Yet taste seems more demanding. Perhaps the point is not that popular taste has "improved," but that American buyers have been inundated with so much blatant design that refinement is effective not because it is good but because it is different. In any case, designers appear now to realize that although (as they tell whoever will listen) the package is a salesman, the graphics need not have the tone of a traveling salesman joke.

Since we live in a decade comparable in many ways to the twenties, it may be only natural to expect the revival of the hip flask. The ½ pint package (175) has an outdoorsy sports theme indicating that this brandy is meant to be consumed near field and stream. For indoor tippling, the Cerwin label (174) implies that California wine is a luxury.

At a time when cigarette packaging has pyramided into the news, it is interesting that at least two brands express good taste not only by well-dressed advertising models, but by the design of the package. Since the cigarette pack is something of a personal item—something that both men and women carry with them on their person like cosmetics or baby pictures or credit cards—Old Golds and Tareyton are neither quaint nor billboardy. The former makes a frank, simple announcement that these are "straights," for the smoker who isn't running scared this year and doesn't want any television scientists between him and his tobacco. The Tareyton pack, on the other hand, advertises "dual protection," for those who give lip service to filter tips

In design for shelf-to-pantry selling there is still a lamentable tendency to try to beat the advertising agency at its own shouting game (even while deploring the game). But the peanuts (178), tuna fish (179), and low-calorie dressing (180) all betoken an awareness that, for the housewife whose senses have been assaulted by it, the hard sell is coming to mean the hard buy.

176 Old Gold pack
P. Lorillard Co., New York
Jay Doblin, designer

Clean white pack with straightforward presentation emphasizes "straights"—an unapologetically unfiltered smoke.

177 Tareyton pack
American Tobacco Co., New York
Lippincott & Margulies, designers

Cigarette features "dual filter," suggested by two bold red stripes on white field.

178 Peanut can
Kelling Nut Co., Chicago
Morton Goldsholl, designer

Label displays picture of product, strong brand-name island, and funny Indian—a graphic pun on red skin peanuts.

179 Tuna fish can
Van Camp Sea Food Co., California
Saul Bass, designer

Brand name is framed by plump fish shape, with line and shading variations keyed to specific type of tuna.

180 Low-calorie dressing carton
Louis Milani Foods, Inc., Los Angeles
Jerome Gould, designer

Carton designed for mass store display emphasizes trimness for product connotation.

181 Trig deodorant package
Bristol-Myers Co., New York
Jim Nash Associates, designers

Solid rings of colors, with no frills, impart masculine feeling to package.

182 VO hair dressing tube
Alberto-Culver Co., Chicago
Dickens Incorporated, designers

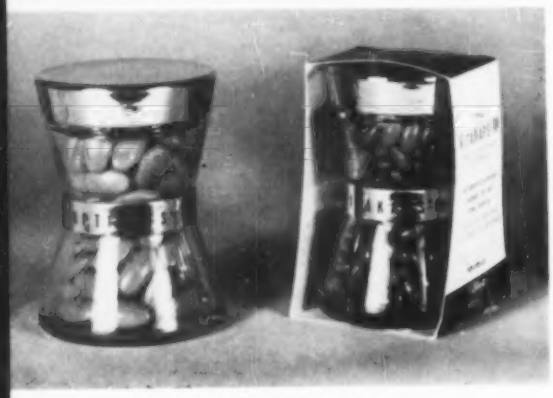
Bold lettering, easily seen, connotes a contemporary product.

184 Brioschi anti-acid bottle
Cerebelli & Co., Fair Lawn, N. J.
Lippincott & Margulies, designers

High-shoulder, short-neck bottle.

183 Water bottle labels
Hinckley & Schmitt
Design Dynamics, designers
Lawrence H. Muesing, Director of Design

Product differentiation emphasized by use of distinguishing color combinations.



185 Vitamin jars
Abbot Pharmaceutical Labs, North Chicago
Raymond Loewy Associates, designers

Since vitamins are taken with meals, design is compatible with table service.

For personal supplies, a positive approach to the package; for identity, a clean face

In the area of personal hygiene and grooming—with b.o., five o'clock shadow, and kiss-me-not breath—both advertisements and packages have seemed at times to regard the consumer as nothing more than a collection of social fears. Therefore it is reassuring this year to see a positive approach to personal packaging that acknowledges the product as a good thing instead of a necessary evil. The Trig (181) and VO (182) packages do not insinuate that their neglect will inevitably result in lost jobs, lost loves, lost confidence. Rather they boldly offer a man's image for a man's product—attractive enough to *want*. The same no-nonsense approach appears in the Hinckley & Schmitt water bottles (183). Since not even the most widely drawn caricature of a copywriter can find a secret ingredient in water, the buyer is presented with just a nice watery design telling him clearly what's inside the bottle.

The Brioschi jar (184) makes another point: the importance of the package in a campaign for *new* markets. It replaces a nostalgia-summoning old bottle dear to the hearts of Italian immigrants, but less dear to the buying habits of second and third generation shoppers. The modern look seeks to overcome this.

The trademarks on this page all reflect industry's increasing awareness of the importance of showing the world a face that is recognizable and meaningful and, above all, clean.

186 Trademark
Bozak Manufacturing Co., Norwalk, Conn.
Van Dyck Associates, designers

The simplest of trademarks, this symbol for manufacturer of hi-fi speakers wittily shows company broadcasting itself.

Garden Mark

187 Trademark for garden supplies
Montgomery Ward, Chicago
Dave Chapman Industrial Design, designers
Dave Chapman, Kim Yamasaki, Doug Anderson, Anthony Morrow, design team

Leaf symbol and logo on complete line.

188 Trademark
Computer Engineering Associates, Pasadena
Walter Landor & Associates, designers

Universal symbol for direction of electric current in red is used as field for stylized black lettering.

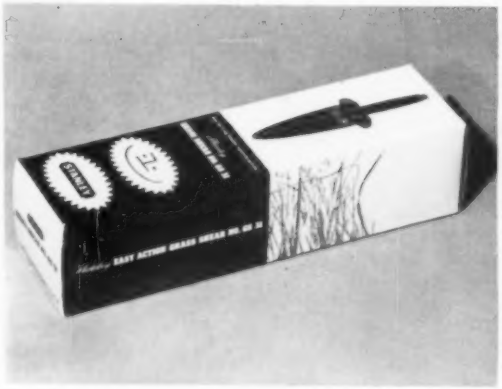
189 Trademark for nylon weaving process
Heberlein Patent Corp., New York
Francis Blod-Design Associates, designers
Marian Franco, designer

Bird symbol intended to counter synthetic qualities of nylon, suit American taste.

190 Swirlaway package
Stanley Tools, New Britain, Conn.
Lester Beall, Richard Rogers, designers
Package for sanding attachment uses photographic treatment of product in action.

191 Caulking compound package
Dicks, Armstrong, Pontius, Dayton
Read Viemeister, designer
Related color schemes yellow, black, white.

192 Grass shear package
Stanley Tools, New Britain, Conn.
Lester Beall and Richard Rogers, designers
Package shows product, environment in which it is used, and new whimsical symbol.

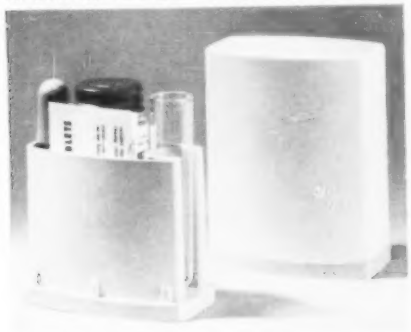


Each package is a special problem—but some problems are more special than others. Most of the packages on this spread were designed to meet needs peculiar to special situations. The amplifier package (193) is aimed at that complicated consumer, the hi-fi enthusiast—an amateur with (some of) the professional's inside knowledge. The diabetic test kit (194) replaces two kits previously used, thus cuts inventory and handling costs for the distributor. For the consumer, whose association with the product is hardly a pleasant one, the designer has used a two-tone grey color scheme—fairly cheerful, but not inappropriately gay. The novelty packages (199) are one solution to a unique marketing problem: upgrading practical jokes to make them salable in better outlets. The working assumption was that this could be done if they were packaged in a way that made them more socially acceptable. In the Reynold's gift wrap design (195) the packaging aim was to avoid the inadequate display that the conventional roll or square cutter boxes usually get. With Busybeads (198) the aim was to achieve a design that would show some of the widely different uses of the product—interlocking beads that may be used as material with which to make tapestry, or as toys.

193 Amplifier bulb package
Tung Sol Electric, Inc., Newark
Francis Blod Design Associates, designers
Marion Franco, designer
Multiple speakers and impulse pattern aim at attracting hi-fidelity devotees.

194 Diabetic test kit
Ames Co., Elkhart, Indiana
Henry Keck Associates, designers

Case molded of cellulose propionate plastic (Forticel); molded internal shape provides built-in holder for both test tube and medicine dropper.

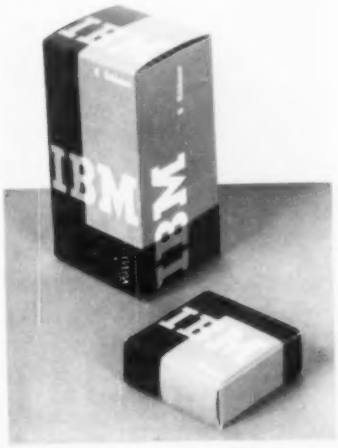


195 Gift wrap and packaging
Reynolds Metals, Richmond, Virginia
Saul Bass, designer

Combination gift package consists of individual triangular cutter boxes nested to form drum.

196 Typewriter ribbon packages
Data Processing Supplies Div., IBM, New York
Paul Rand, designer

Corporate image dominates businesslike design.

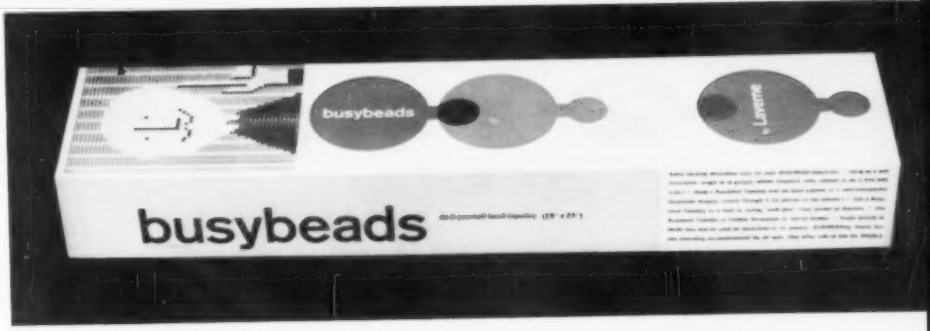


197 Microscope slides package
American Hospital Supply Corp., Evanston, Ill.
Design Dynamics, Inc. (Lawrence H. Muesing, David H. Humphrey), designers

Slides are dispensed one-at-a-time in correct position for technician's hand.

198 "Busybeads" package
Laverne Originals, New York
Ward and Saks, designers

Design uses bead form of product for both decorative and explanatory effect. Halftone shows tapestry made with product.



199 Novelty packages
S. S. Adams
Robert Zeidman Associates, designers

Blister packs of vacuum molded plastics and upgrading graphic treatment are used to dignify trick items.

New techniques appear for dispensing and display

Design for the mechanics of selling makes the designer responsible to all the people involved in each transaction. The Alka-Seltzer unit (202) aims at the consumer with a strong visual impact suggesting cleanliness. And since it goes on the counters of drug stores, with their great personnel turnover, it is also aimed at the temporary soda clerk: complete operating and cleaning instructions are visible on the surface when the top is removed. The Sports Illustrated rack insert (201) is intended to sell both the dealer and his customer. Illuminated cover transparencies show the product. To win a place in the dealer's rack, the insert is equipped with a bottom light that impartially illuminates competing magazines.

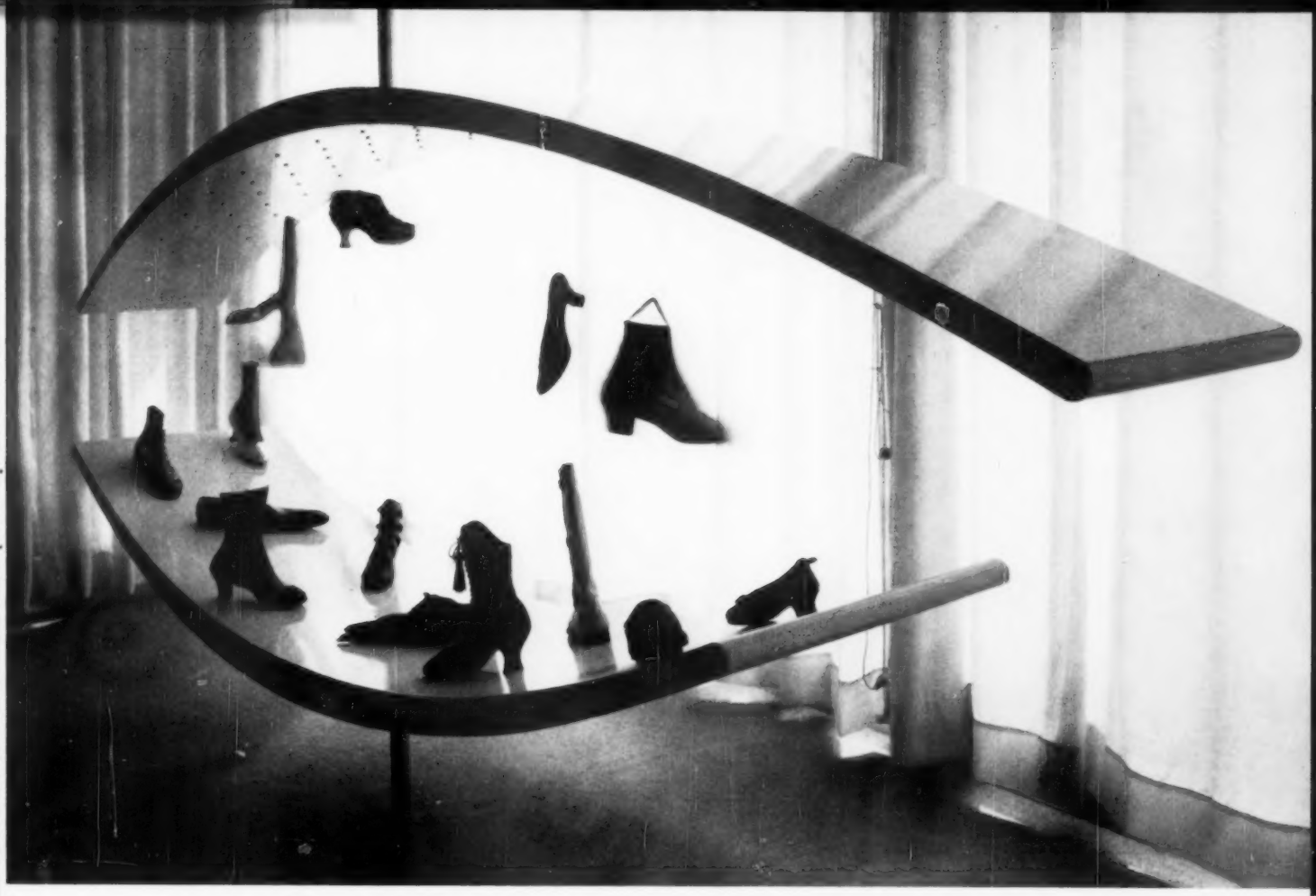
The point of exhibits has always been to arrange clear information attractively, with a minimum of clutter. Since people as well as panels can create disorder, the exhibit designer is responsible not just for display but for environment. The exhibit for Litton Industries (206) is unusually successful in creating an environment for viewing, and thus giving the necessary context to the presentation.

200 Manhattan "yellow pages"
New York Telephone Co.
Raymond Loewy Associates, designers
Simplified redesign uses telephone dial as symbol.

201 Magazine rack insert
Time, Inc., New York
Robert McKean, designer
Arque Dickerson, project design.r
Acrylic plastic insert fits into dealer's rack, illuminates itself and other magazines.

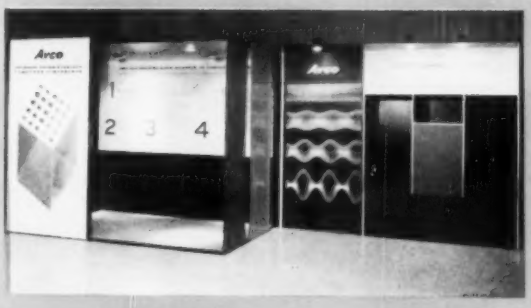
202 Alka-Seltzer dispenser
Miles Laboratories, Elkhart, Indiana
Hansen-Lynn, Burbank, Cal., manufacturers
Henry Keck Associates, designers and engineers
Die-cast base and superstructure. Bottle holder and slide molded cellulose propionate plastic.

203 Cellophane tape dispenser
Johnson & Johnson, New Brunswick, N. J.
Irvin J. Gershen Industrial Design, designers
Walter L. Koch, designer
Airtight design assembled of snap-fits, may be opened if tape failure occurs.



204 Free-standing display fixture
Ardley Studio, Inc., New York
Eugene Tarnawa, designer

Self-contained display fixture. Inexpensive construction of masonite panels on wood frame.

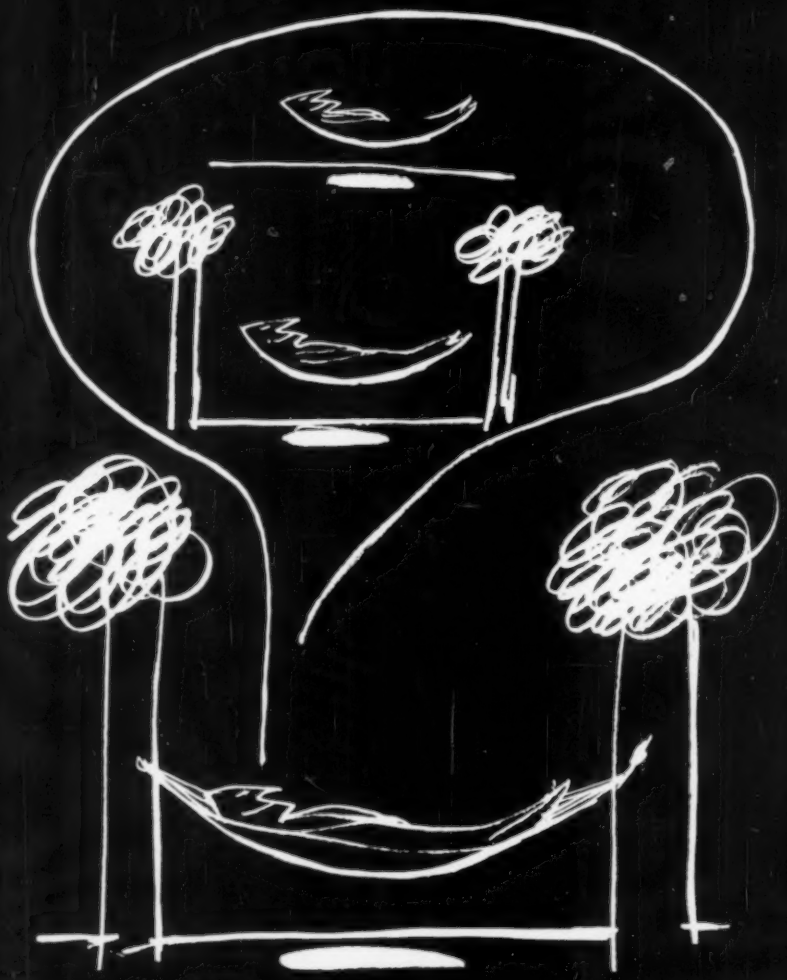


205 Transportable computer exhibit
Bryan-Elliot Exhibit Co., New York
Gersin and Arnold Associates, designers

Constructed chiefly of wood and acrylic plastic, exhibit used in conjunction with demonstration of packaged electronic equipment.

206 Exhibit
Litton Industries, Inc., Beverly Hills, Cal.
Walter Dorwin Teague Associates, designers

Modular approach allows individual division exhibits (10' x 10') yet retains continuity in assembly.



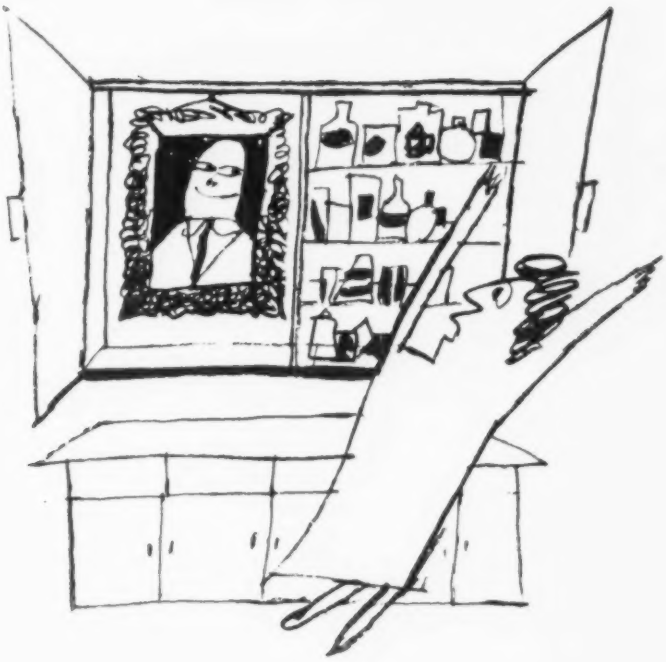
"A designer is a planner. It is our basic assumption that he can plan anything."

Business Week

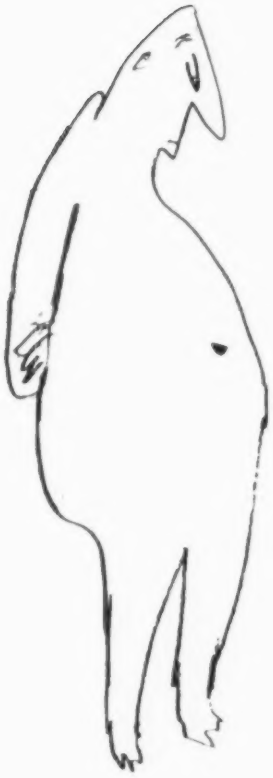
TALK ABOUT DESIGN

"The artist should reflect the people's happiness."

press release,
Embassy of Union of Soviet Socialist Republics



"Package designers should not expect their handiwork to hang in the Louvre. Their goal should be the housewife's pantry."
Press release from new package design firm

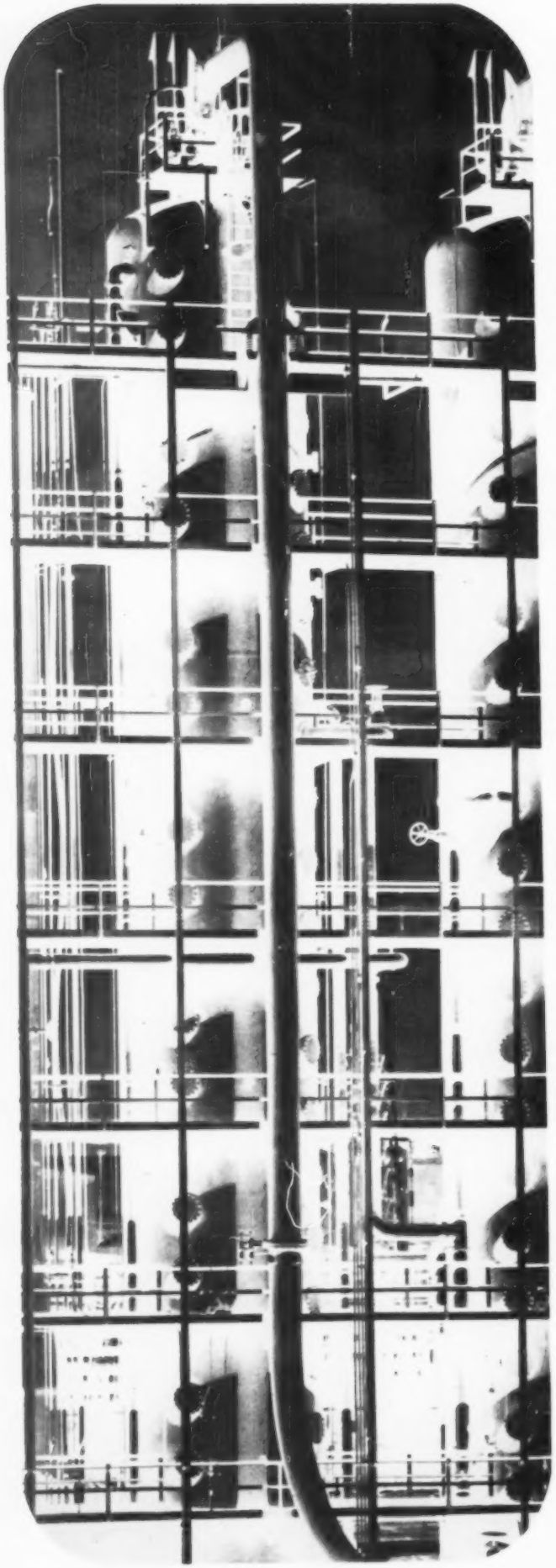


"Our naivete is our great asset. We ask: "Does that button have to go there?"
Business Week

Talk about design was more widespread than ever this year. Here is a collection of statements by and about designers, culled from the world press, and graphically clarified and translated for our younger readers.

"We design things the way we think they should be designed."
Business Week

"Industrial designers are employed primarily for one simple reason."
Newsweek



INDUSTRY and EQUIPMENT

The solid virtues of conservatism and stability have tended to immunize the industrial community from the hazards common to other areas in which designers work. Because of the huge capital expenditure required for most industrial equipment, and because adornment is beside the point, industrial equipment has remained almost uncorrupted by competitive styling. In no other field, however, is there more room for real *design*: for here industry offers the designer the opportunity to redesign essentially prosaic instruments and machinery from the point of view of total use rather than merely that of salesmanship. The industrial consumer is likely to be undeluded by sales claims—unlike his lay counterpart, he *does* know what he wants. Since the equipment he buys is necessary for the smooth, economical operation of his business, performance—rather than personal satisfaction—is the basis for purchase. He *demands* more for less in a literal sense: machines that do more work in less time for less money. This serves both to limit and to free the designer. His freedom is professionally profound: a field of design all but undiluted by the persuasions of other designers. And so favorable a climate for creativity naturally encourages an emphasis on originality that reduces the pressures and desperation—and consequent overdesign—of consumer design. Yet this very fertility of original approach also imposes its own restriction: the cost of most capital equipment precludes artificial obsolescence. The designer must increase the value of his product by improving its performance, rather than by just superficially sharpening its sales potential. This is a tangible manifestation of an American ideal: freedom implies responsibility.

In many of the products shown on the following pages, the designer's responsibility ended with a consideration of form. But it seldom began there. A stock cabinet is designed to house a variety of nuclear instruments, the lines of a tractor are smoothed out—but the complex working mechanism is necessarily where it all begins. It has been said that a designer's "ignorance" can be his greatest asset and, properly understood, this is true. But it can be an asset only on the assumption that it is a temporary ignorance. It would be far too much for these paragraphs to discuss the question of where engineering ends and design begins. But it does seem reasonable to point out here that product evolution can be enhanced when—in an area in which collaboration is vital—the designer works as basically as the engineer. Shaping machines that will clear more earth with fewer operators, that will lift more weight with less power, that will cover more space in less time—these are tasks no designer can claim as his alone. But his inventiveness, combined with that of the engineer, is revealed in these pages as a means of opening more new fields in which industrial design can flourish.

The presence of the designer in the industrial equipment field is an increasingly dramatic indication of design influence on every facet of the national economy. New fields—remote indeed from the popular notion of where designers work—continue to seek out the industrial designer and find new ways to use him. Each field introduces problems peculiar to it. Industrial equipment design has effected a subtle shift in emphasis for both designer and design process. The highly technical instruments designed in 1958 show the design process as an adjunct to engineering perfection. In this section of ADR we see a collection of products demonstrating how the finely trained specialist and the imaginative generalist pool their talents.

Larger capacity, more styling in construction field

Like Neanderthal creatures from forests primeval, some of the industrial specimens on this spread crawl over, through, and sometimes under the earth's surface in an effort to rearrange nature, for better or for worse. Superlatives like "biggest" and "largest" are applied to the earth-moving and construction equipment by their designers, but these are the same words that were used last year and the year before and the year before that to describe similar equipment designed for the same companies. This year, however, along with size (and its corollary, speed, which, in turn, implies economy), more attention is being paid to operator comfort as well as operator safety. Increased size usually means quicker production schedules and resultant cost savings. But there are further psychological economies to be gained from having operators who are both proud of their equipment and well protected from the dangers of their work. This year at least one equipment manufacturer has attempted to raise operator morale by adding the much maligned fin to the outline of a tractor. Meanwhile, other manufacturers are talking in terms of styling and the "angled lines of the profile which heighten interest in the best contemporary fashion."

On the more immediately practical level, Henry Dreyfuss has designed a lift-truck seat (208) to give maximum lumbar support, maintain the natural curve of the spine, and minimize the pressure on the large arteries in the thighs. Yale & Towne's tractor shovel (212) has an adjustable operator seat, permitting the driver to assume the most convenient position for reaching hand and foot controls. Bucket arm members never rise above the upper edge of the cockpit sides, eliminating the possibility of clothing being caught or pinched between the lifting arm and the side of the machine when the bucket is lowered. The Harley Earl-designed Clark 480 tractor-dozer (209) positions the operator for maximum visibility, safety, and control.

As for size, R. G. LeTourneau's super earthmover (211) is said to overshadow previous dirt movers "as a bulldozer overshadows a spade." A single operator can dig a box car full of dirt, haul the load to any desired location, then spread it with an even finish.

207 H-25 "Payloader" tractor shovel
Frank G. Hough Co., Libertyville, Ill.
Keith Kampert, designer

H-25 provides 25 per cent greater capacity with better maneuverability in a shorter radius than was considered possible.

208 Lift-truck seat
Hyster Company, Portland, Oregon
Henry Dreyfuss, designer

Single hand-operated control adjusts seat to fit proportions of individual operator.

209 Tractor-dozer
Clark Equipment Co., Benton Harbor, Mich.
Harley Earl Inc., designers

World's largest tractor-dozer powered by 600 hp, 4-wheel drive, turbo charged V-12 Diesel engine.

210 Tree cutter
Rome Plow Company, Cedartown, Georgia

Tree cutter has knife which splits tree vertically and weakens it so that blade can cut tree down in successive passes.

211 Super earthmover
R. G. LeTourneau, Inc., Longview, Tex.
Staff design

Two giant buckets are incorporated in the self-loading earthmover to hold the 130 ton load. Newest and biggest of all earthmovers.

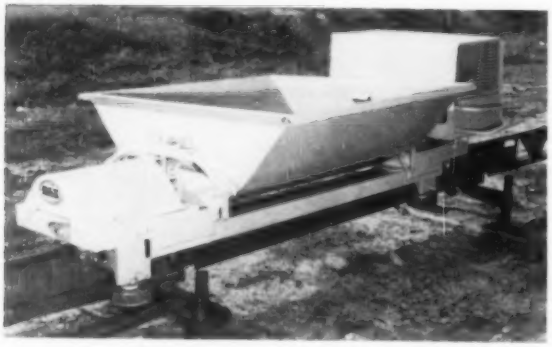
212 Tractor shovel
Yale & Towne Manufacturing Co., New York
Staff design

Rear end casting employed to provide a counterweight and sturdy grille to protect the radiator and headlights.

213 "Ranger" rough terrain fork truck
Clark Equipment Co., Battle Creek, Mich.
Harley Earl Inc., consultants

Designed and manufactured for the Army, the Ranger has both 2-wheel and 4-wheel drive and front and rear axle steering.

Design solves both specialized and pedestrian problems



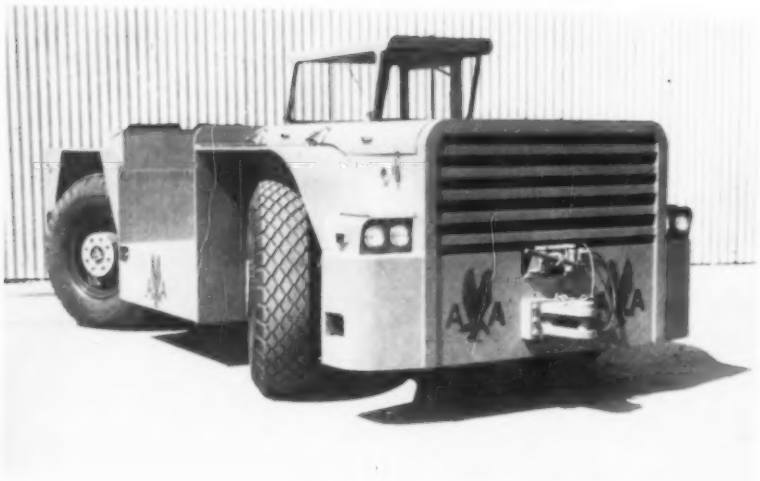
214 Railporter
Chain Belt Company, Milwaukee, Wisconsin
Staff design
Bob McKillop, project engineer
Nolan Rhoades, consultant

All vital operating parts of material carrier shielded to protect them from material being carried.

The equipment on these pages represents two fresh problems designers have had to solve this year. The first is that of meeting the demands of extreme specialization—as in the design of tow tractors capable of maneuvering giant jet aircraft around an airfield with a minimum of difficulty. A manifestation of the second is in the design of Montgomery Ward's water pump line (217) where part of the problem is restyling and making more interesting a basically prosaic kind of product.

Both the T-300S (215) and Clark 330 (216) tow tractors are low-profiled to move under and around the jet aircraft in order to push and haul them from lines of traffic. An enclosed cabin on the T-300S provides protection from the noise and blast of the jet engines.

Another specialized problem is solved in the Railporter (214). This self-propelled supplier can run automatically over hand-laid lightweight rail sections (three men can lay up to 450 feet of track per hour) from supply point to dump destination, discharge its cargo, and return to the supply area for another load. The machine is also portable for easy transfer from job to job.

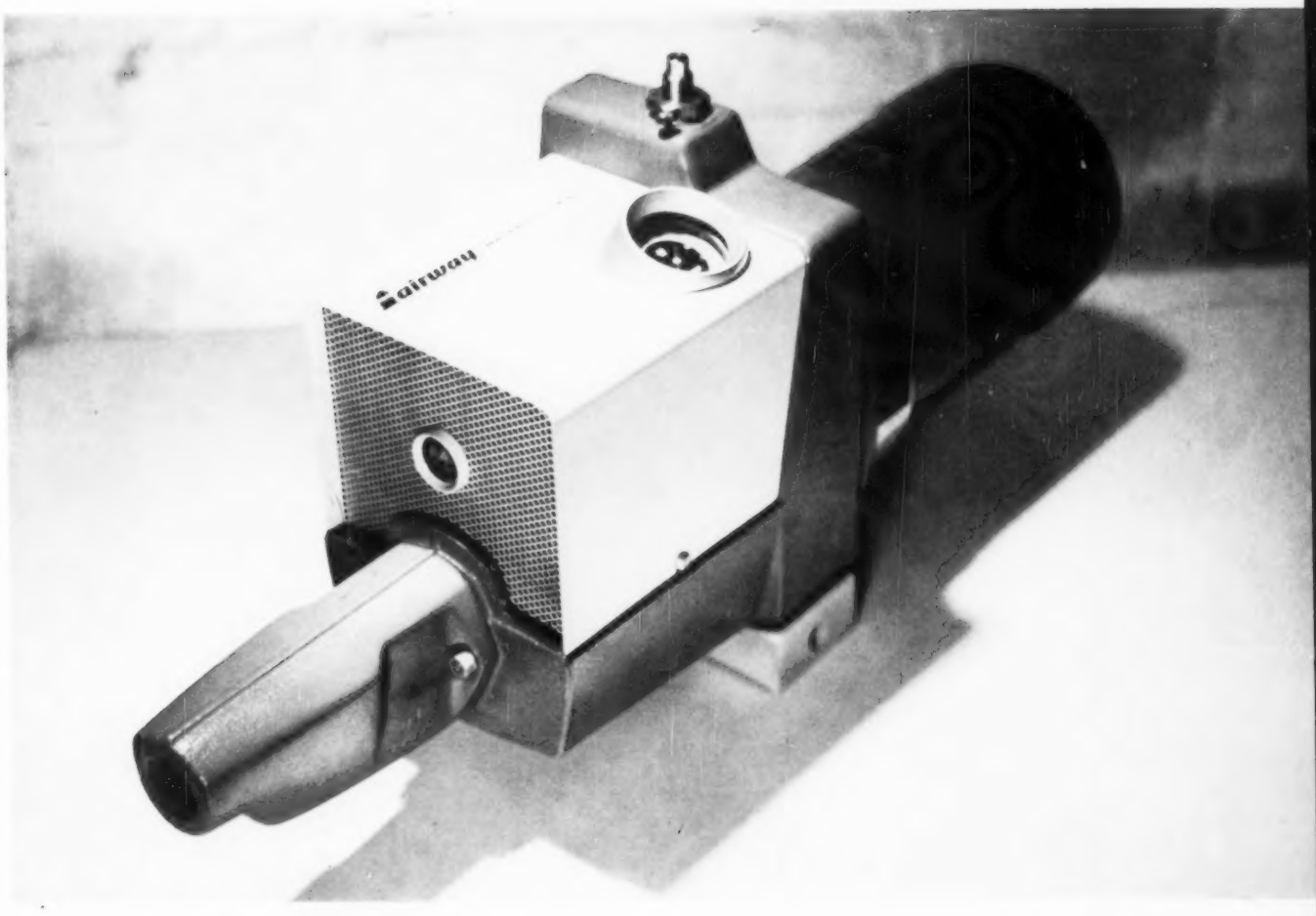


215 T-300S Paymover towing tractor
Frank G. Hough Co., Libertyville, Ill.
International Harvester Company
Ted Koeber, designer

First 4-wheel drive, 4-wheel steer tractor of 30,000-lb. capacity designed for jets.

216 Clark tow tractor 330
Clark Equipment Co., Battle Creek, Mich.
Harley Earl Inc. designer (Marlon Pokhemus, Dominic Saporito) in cooperation with Special Products Group of Clark's Industrial Truck Division.

Body is brake-formed from heavy steel sheet on alloy steel channel frame.

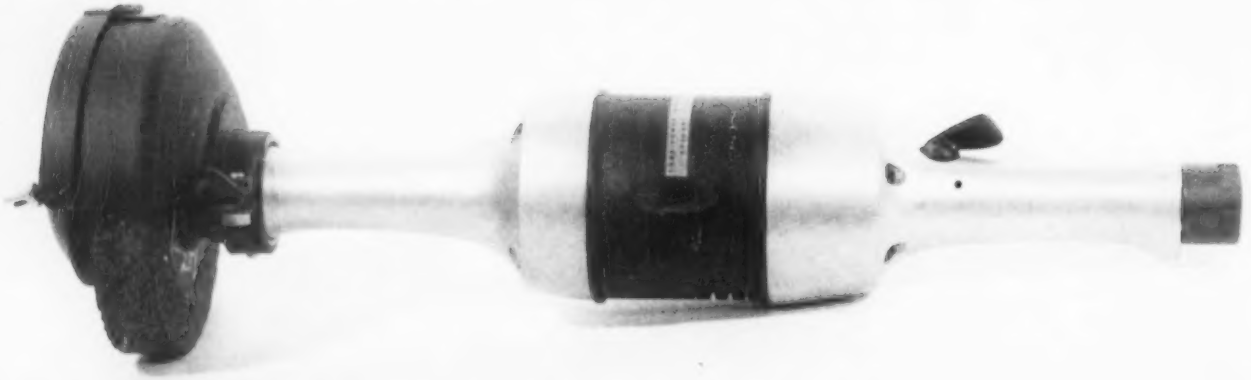


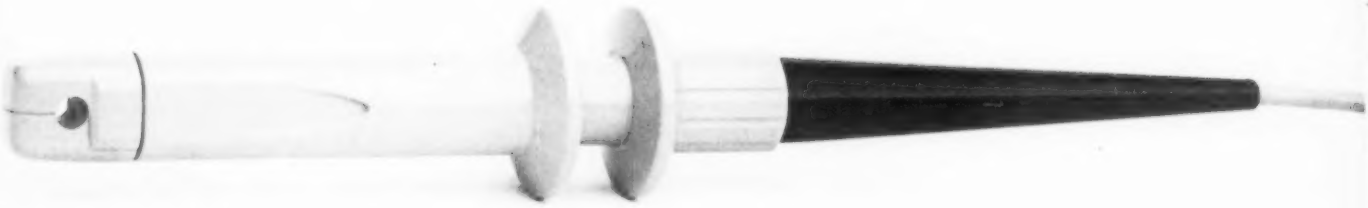
217 "Fairway" water system
Montgomery Ward & Co., Chicago, Ill.
Dave Chapman, Inc., designers

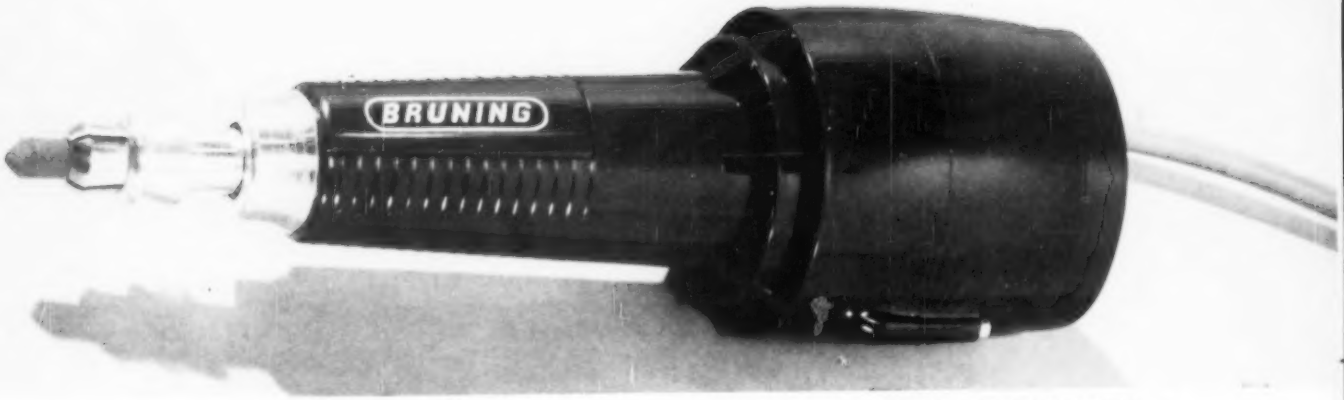
Reduced height dimension achieved by incorporating air charger, pressure gage and pressure switch under a single shroud.

218 "Dryer-Blender"
Pfaudler Permutit, Inc., Rochester, N. Y.
Van Dyck Associates, consultant designers in cooperation with Pfaudler engineering department

Mixes and dries chemicals; rotating conical section is glass lined.







219 Pneumatic industrial grinder
Thor Power Tool Company, Aurora, Ill.
William M. Schmidt Associates, designers

6-inch wheel capacity grinder constructed of cast magnesium with black oxidized steel exhaust deflector ring.

220 Direct current milliameter probe
Hewlett-Packard Co., Palo Alto, Cal.
Staff design, Carl Clement, Manager of Industrial Design
Thomas Lauhon, designer

Probe is used to measure d.c. current from .001 to 1 amp. Clamps its jaws around wires 3/16" diameter and measures them.

221 Electric erasing machine
Charles Bruning Company., Inc.
Mount Prospect, Illinois
Palma-Knapp Associates, designers

Machine is die-cast, has bakelite plate acting as nameplate and switch.

Industrial equipment offers greater design opportunity

A recognizable trend in recent years has been the extension of design into the fertile pastures of the industrial equipment field. More and more the designer is finding that in consumer areas his efforts are often limited to *redesign*. Furthermore, product design has tended to place the design emphasis on selling rather than on improvement of performance. Certainly the consumer field has not been exhausted, but there is a growing awareness within industry that there are virtually untapped deposits that can be worked and refined by the designer. In such a field as industrial equipment he is more apt to find one of his cherished professional dreams—a product that has escaped the attention of another designer. Consequently there is less repetitive overdesign because originality can flourish without being cramped by the use of styling as a sales gimmick—a plague of the heretofore more popular design fields.

On the page at the left are three similar forms for three widely dissimilar pieces of equipment. In each case, however, the cleanness of the design facilitates the functioning of the product. All three pieces have been reduced in size to allow maximum accessibility into crowded areas.

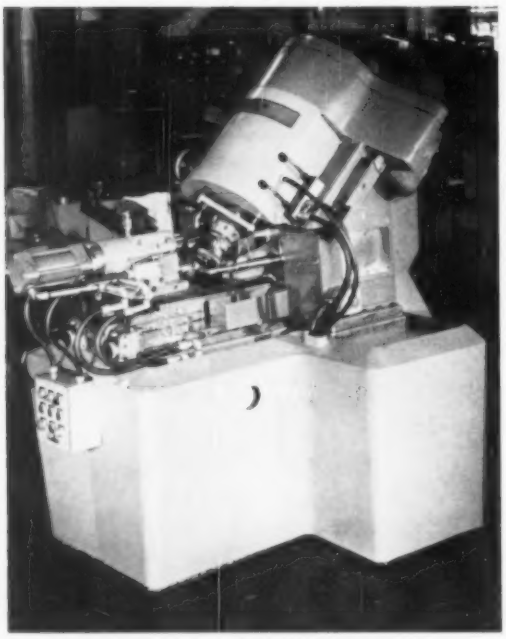
As with most other areas in the industrial field, efforts are being made to make the most pedestrian equipment tasteful. The Detroit power screwdriver (224) covers all the parts which were once exposed, to give a more unified and neat appearance. The access doors on the top and in the rear of the pin router (225) strive for cleanliness of appearance, assembly and service while making for a simpler casting. All major operating parts of the wheel balancer (222) are contained within a massive casting to simplify appearance.

222 Electronic wheel balancer
Stewart-Warner Corporation, Chicago, Ill.
Staff design
A. Fuller Dean, Director of Design
Balancer makes possible accurate on-the-car balancing of automobile wheels.

223 Electric router
Stanley Electric Tools, New Britain, Conn.
James Godfrey, chief engineer
Kestutis Damijonaitis, engineer
Laird Covey, Industrial Design, consultants
Laird Covey and Thomas Helms, designers
Windows in brushholders allow inspection without removing them from router.

224 Power screwdriver
Detroit Power Screwdriver Co., Detroit
Harley Earl Inc., designers
Top case of the machine aluminum casting for strength and light weight. Removable for maintenance and adjustment.

225 Pin router
Onsrud Machine Works, Inc., Niles, Ill.
Palma-Knapp Associates, designers
Router is a heavy weight production machine consisting of sand castings and a fiber glass front guard. Access doors on rear and top.

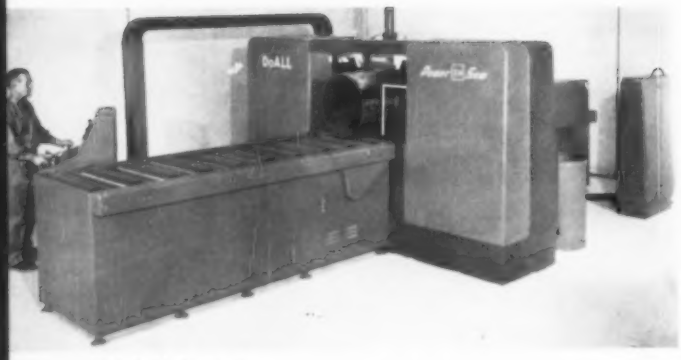


226 Gear shaver
Illinois Tool Works, Chicago, Ill.
Reinecke and Associates, designers
Gear shaver can be operated by hand or electrically controlled.

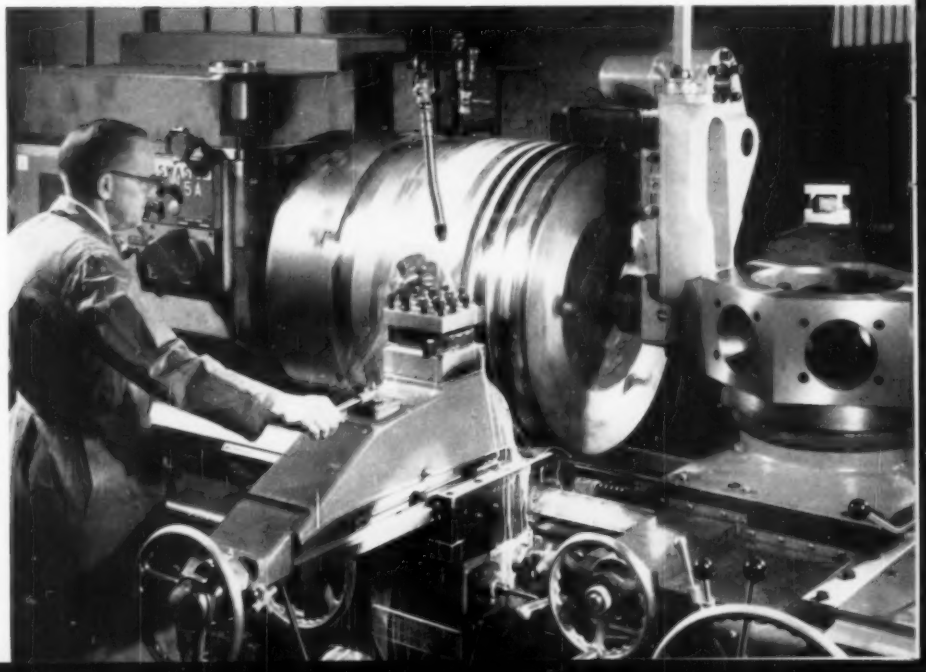
Though the relation between capital equipment and jet aircraft would at first glance appear tenuous, the predicament confronting the designer is the same for both. For in these two areas—both highly specialized—the designer must work in the most intimate contact with the engineer. The problems involved are so highly technical that compatibility between design and engineering must be enforced. Solidly entrenched workmanship rather than the ephemeral gimmicks of salesmanship is the presiding design axiom.

In the "Jetstar," of course, there is more room for design subtleties within the framework of safety and operational efficiency. For example, the rear-mounted engines add sleekness to the lines of the plane, while, at the same time, the high, protected location of the engine inlet provides greater safety for ground personnel, improved maximum lift due to uninterrupted flap span, and substantially greater safety in emergency landings and ditchings.

With Warner & Swasey's turret lathe (228), Henry Dreyfuss has attempted to reduce the strain of the man who runs the machine. Manual and visual elements of the controls were located so that the operator might fix his eyes at one point and place his hands at another with a minimum of muscular or visual strain. The power saw (227) can be operated automatically so that the operator receives maximum protection while the machine is in operation.



227 C-24 Power saw
The DoAll Company, Des Plaines, Ill.
Staff design
Power tables feed material into saw as well as discharge cut part. Can cut through mild steel at rate of 15 square inches per minute.

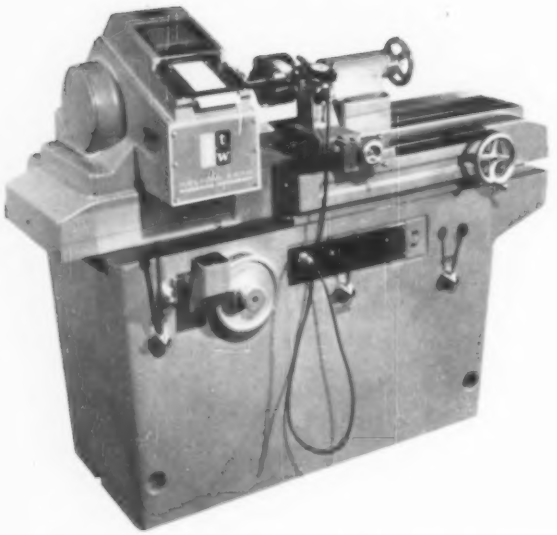


228 Heavy-duty turret lathe
Warner & Swasey, Cleveland, Ohio
Henry Dreyfuss, designer
Manual and visual elements of controls located to reduce operator mental and physical fatigue to a minimum.

229 "Jetstar"
Lockheed Aircraft Corporation, Burbank, Cal.
Staff design
Kelly Johnson, chief designer

Top speed 685 mph; has flown at altitudes of 52,000 feet, and non-stop 3105 miles.

Precision instruments call for design subtlety



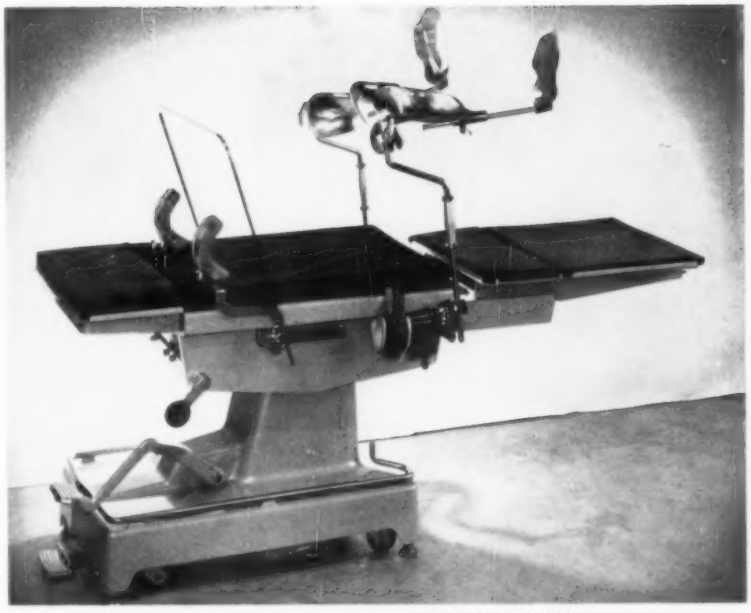
231 Helical Lead Measuring Instrument
Illinois Tool Works, Chicago, Illinois
Re necke and Associates, designers
Mecsuring instrument keeps record of each gear, which is checked on tape.

232 Testing unit
Magnaflux Corporation, Ch cago, Ill.
Staff design
Unit features more conveniently located controls, accessible interior components and larger uncluttered work areas.

230 Fin lamp
OKA Associates, New York
Kolb Associates, designers
Lamp is used for illumination of targets, micrometer stands, etc. Fins of natural anodized aluminum.

233 Nuclear Instrument Cabinet
Radiation Counter Laboratories, Inc.
Skokie, Illinois
Painter, Teague & Petertil, designers
Cabinet used for variety of nuclear instruments by changing front panel accordingly.

The term "precision instrument" implies the exactness necessary for the proper functioning of these sensitive apparatuses. Because the purpose of these instruments is so exacting—and, in many cases, so delicate—there has been a tendency to express the meticulous accuracy of the equipment by a certain fragile sleekness in the housings. This styling subtlety hints at, rather than announces, the functionalism of the individual pieces. Furthermore, in the burgeoning medical equipment field, design can minimize the more frighteningly clinical aspects of areas like obstetrics and electrocardiography. Also, more instruments this year are self-contained, as the helical lead measuring instrument (231) and the electrocardiograph (236). The Magnaflux-Magnaglo testing unit provides its users with a magnetic particle inspection method—either visible or fluorescent—for rapid production testing of small parts up to 24" long. The nuclear instrument cabinet was designed to be used for a variety of instruments. It replaced stock purchased cabinets that many companies used to house their testing devices.



235 Obstetrical table
American Sterilizer Co., Erie, Pa.
Fred Storm Industrial Design, designers

Anatomically proportioned table with retractable shelf, foot section controls, choice of portable or permanent control base.

236 Electrocardiograph
The Burdick Corporation, Milton, Wisconsin
Don Doman Associates, consultants

Unit is smaller than most machines of this type. Paper drive swings up and out for easier loading.

234 Muscle stimulator
The Burdick Corporation, Milton, Wisconsin
Don Doman Associates, consultants

1/8" brake-formed aluminum wrap serves as chassis and housing. Edges are polished, sides painted. Handle can serve as stand.

TECHNOLOGY

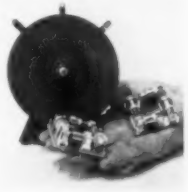
Two devices developed in 1958 attracted a great deal of public notice, not necessarily because they were ingenious (which they certainly were), but because they represent an attitude toward—or a reaction to—technological advancement that seems to be prevalent. A little black box made by engineers at Bell Telephone Laboratories in their spare time exemplifies a response to the constantly increasing control that automatic equipment is having on the everyday existence of people at home and at work. Humorous, if in a bizarre way, the little black box pokes fun at today's technology. Stronger than the humor, however, is the feeling it gives that our mechanized world sometimes can be downright frightening.

The Bell box looks rather like a miniature coffin. On the front is a simple ON-OFF switch. When this switch is snapped ON, a subdued whirring begins; the lid slowly rises, a miniature hand eerily appears from inside the box, reaches out and flips the switch to OFF. The hand then retreats inside the box and the lid closes. The little black box silently waits for someone to turn it ON again—if anyone has the nerve. Here then is the ultimate machine: its sole function is to turn itself OFF. But more interesting than what it does (or doesn't do), is the reaction it gets when people see it in action, as millions did when Jack Paar showed it on his tv show "Tonight."

In 1958, when Charles Eames was asked by the Aluminum Company of America to design a device for their Forecast program that would dramatize aluminum, he chose to build a "do-nothing machine" (ID, April '58). The machine utilized such advanced components as silicon cells to draw and convert power from the sun. And this solar power made it spin, whirl and dance in a frantic frenzy—with no purpose at all except, perhaps, like a child, to attract attention to itself. The charming, useless Eames solar toy and the morbid, useless Bell black box carry a similar message: technological developments, whether they are delightful or frightening, give rise to something akin to awe in the minds of many people—awe prompted by the realization that many things are dependent upon the proper function of machines whose operation is beyond popular comprehension.

Some of the technological developments shown on the following eight pages are awe-inspiring, a few to the point of being a little frightening. There is little doubt that the first man to don a space suit in preparation for the first actual flight into space will be frightened. But his fear will be minimized by his understanding of what is happening at every moment and of what he should do if the unexpected arises. The idea of a house that is heated and air conditioned by the sun is an exciting concept to the potential homeowner. This excitement is probably not as intense to the research men at the University of Arizona who have been working out angles of reflectance, btu's, thermal conductance and all the other elements that must work in combination to make such a house practical.

While the industrial designer cannot be a specialist in all the technologies of materials, components, processes and the other problems surrounding today's production, he must be familiar with the techniques, characteristics and potential performance of equipment to use them effectively. If such familiarity with technological advancements makes them less exciting for the industrial designer, this is a sacrifice he must make.

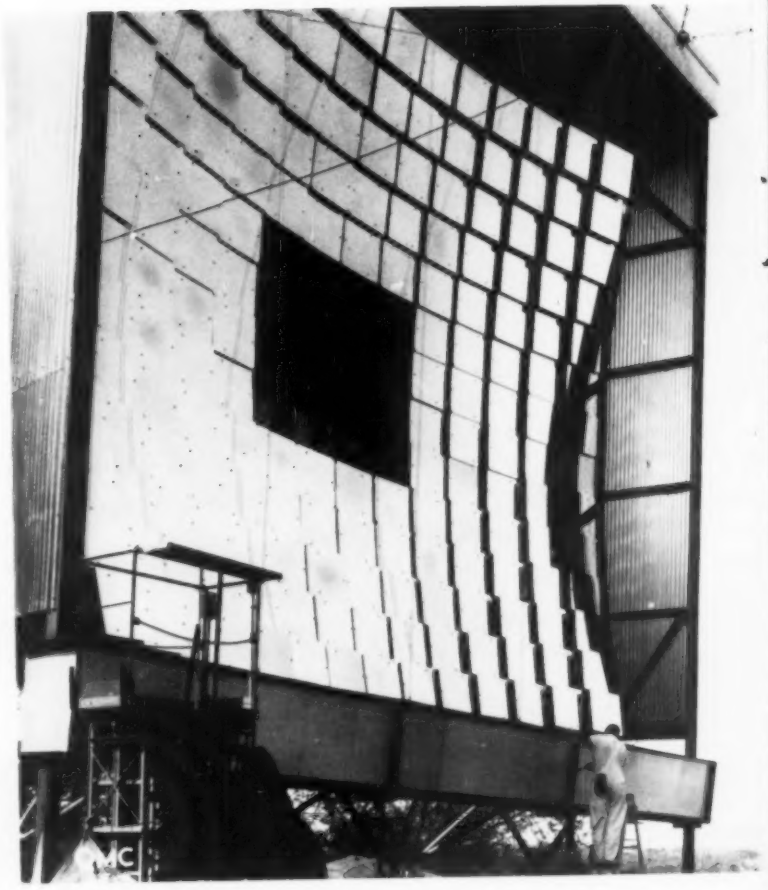


To a large extent, research scientists in industry and the universities are concerned with pure discovery: they aim to accumulate behavior data in areas of science in order to explore and control them. But pure research is, of course, by no means an activity divorced from practicality. Converting theory into practice has occupied the laboratories in 1958 as in previous years. The University of Arizona, for example, has constructed a one-story building to explore the possibilities of heating and cooling the home by solar energy. While this is still in the future—it is expected that this sort of heating-cooling system will not be ready for general application for five to ten years—it is nevertheless a firm attempt at using solar energy in this particular and obviously practical way.

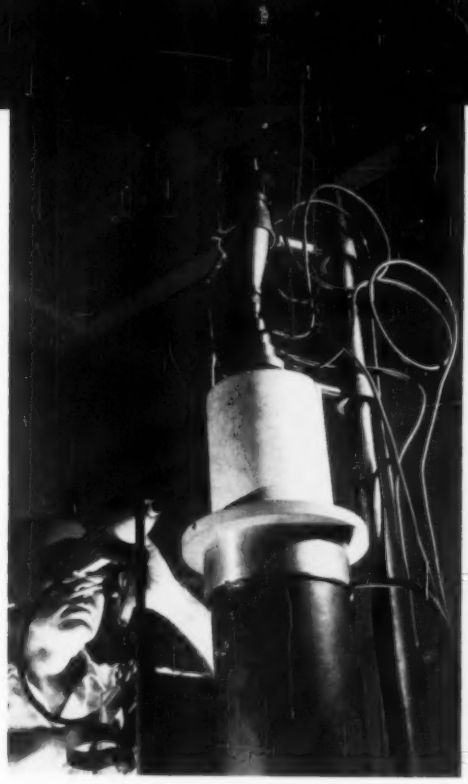
Another research activity that may in time result in a new power source for the generation of electricity is the work of Westinghouse scientists in the field of thermoelectric materials. The theory that certain ceramic-type compounds can convert heat directly into electricity is not new, but the material necessary to make it practical is only now being developed in the laboratories (top picture, opposite page).

Can space be considered a commodity? Whether it can or not, space travel must obviously be made "practical." To study the needs of man enclosed in a chamber beyond the earth's atmosphere, and to observe rocket engines under transonic and supersonic velocity conditions, industry has constructed elaborate facilities under the aegis of the Air Force (see page 108) to bring space travel more and more within the realm of actuality.

More within the "home" range but by no means lacking in unique performance have been the developments of recent years in VTOL (vertical take-off and landing) aircraft. These planes that take off like a helicopter have this year been converted into wingless sky-jeeps (see page 108). Although restricted at this point to the military, the principle of the wingless craft could of course be applied to a civilian sky-car, and the aircraft industry is predicting that this transportation method will be made available to civilians within a few years.

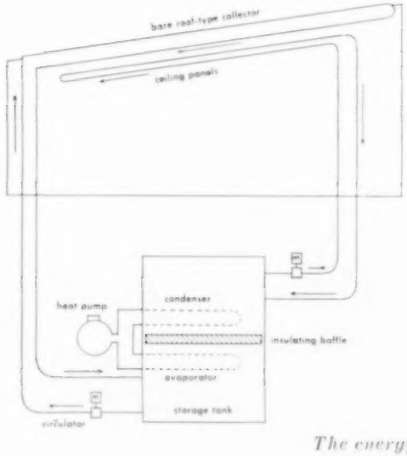


Solar furnace. *The Army Quartermaster Research and Engineering Command has installed a new solar furnace at its Natick, Mass. headquarters. The furnace was designed and built by D. S. Kennedy & Company. One of the principal components of the new furnace is the concentrator shown here. It is made up of 180 concave mirrors which receive solar energy and reflect solar radiation into a four-inch area inside the test chamber. The temperature at this area is extremely high—4000 to 5000 °F—and it is used by Army technicians to test Quartermaster materials for thermal protection properties. Each of the 180 mirrors is adjustable and is about 2 feet square. The concentator uses these mirrors to accept the sun's rays from another principal component, the heliostat, through adjustable vanes which control the amount of radiation that is absorbed.*



Thermoelectric materials. *A new ceramic-type group of materials made up of elements known as the "transition" metals, have been found capable of converting heat directly into electricity. Previously known thermoelectric materials could not be employed in high temperature operation. The group now in use can be operated at the temperatures required for power generation. The new materials are still in the early stages of development and are being prepared on a laboratory scale at some companies; the experiment shown here is one of many carried out at the Westinghouse Research Laboratories to further develop the new materials for possible large scale direct heat-to-electricity conversion and power applications.*

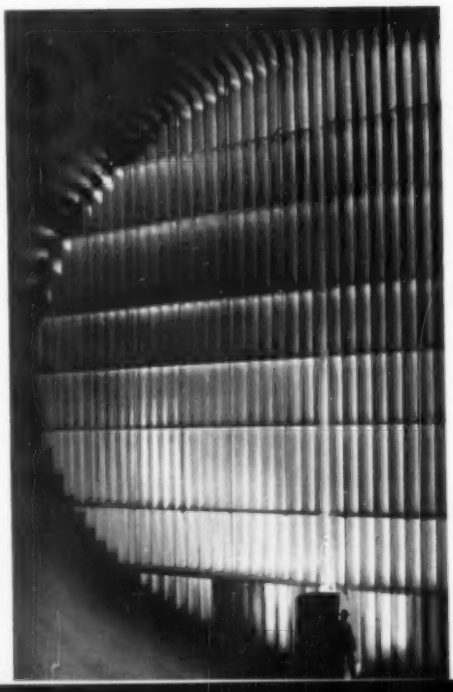
Solar research house. *The University of Arizona has erected a one-story, ranch-type research house to explore the possibilities of residential heating and cooling with solar energy. The heating-cooling system uses a specially developed copper roof (shown below) where solar heat is collected to warm the house in winter; the roof is also used to dissipate heat drawn from the interior for the purpose of cooling it. The heating and cooling system uses a 1,600 square-foot solar collector with parallel tubes to carry water. In winter, the roof functions during sunny daylight periods as a conventional solar heat collector. During hot weather, the roof operates at night as a heat rejector. 4,600 lbs of copper are used in the structure of the solar house—2,000 lbs for the solar collector roof, 2,000 lbs for the interior ceiling panels, the rest for piping. It is expected that this type of solar heating-cooling system will become practical for home use within the next five to ten years.*



The energy distribution system to and from the building interior is illustrated by this diagram. Water circulates from a storage tank through the copper ceiling.

Space chamber. *Litton Industries has built a space research laboratory for the purpose of checking human occupancy conditions in an environment maintained at an absolute pressure approaching one billionth of an atmosphere. The laboratory consists of a vacuum chamber evacuated by a high performance pumping system. Human occupancy in the almost total absence of air is made practicable through the pressure suit and breathing system shown here. This suit is designed to allow the inhabitant of the space lab to perform manual operations requiring some dexterity. Instrumentation and controls make the laboratory a complete facility for experimentation and study under conditions which closely simulate outer space. The vacuum chamber is eight feet in diameter and fifteen feet long. It was developed under contract with the Air Force.*

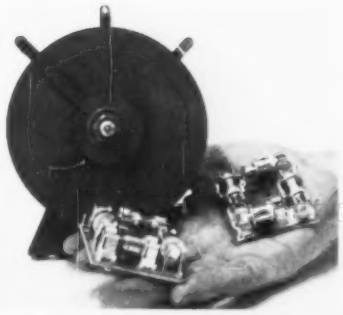
Sky jeep. *A new vertical take-off and landing aircraft, the VZ-8P aerial jeep, has been put into operation by Piasecki Aircraft Corporation. The wingless vehicle shown here is the first flying prototype of the new craft which rises vertically from the ground on two columns of air, then hovers under its own power. The craft uses two small horizontal ducted propellers placed within the body which achieve both vertical lift and forward flight. The aerial jeep was designed and built for the Army to meet their need for a vehicle that combines the ability of the ground jeep with the hovering and flying capabilities of a helicopter. Piasecki is applying this concept to a similar vehicle for civilian use.*

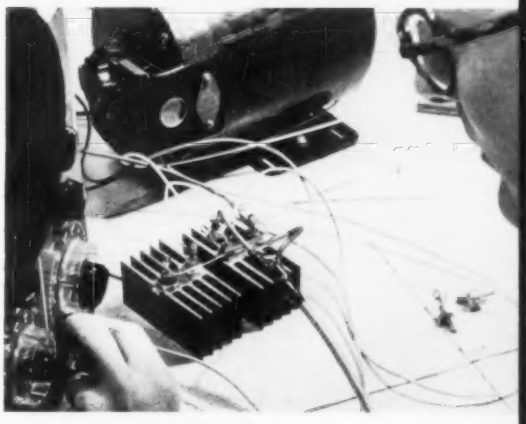


Wind Tunnel. *Operating conditions for future aircraft, missiles, jet and rocket engines are simulated in wind tunnels and high-altitude test cells at the U. S. Air Force's Arnold Engineering Development Center, Tullahoma, Tennessee. Shown here are the vertical steel vanes that control the wind tunnel's air flow of the transonic wind tunnel. The diameter of the tunnel is 55 feet at this point and ranges down to 35 feet at other sections. The propulsion wind tunnel facility permits developmental tests on full-size, operating ramjet and turbojet engines mounted as they will be in actual flight. The tunnel (the largest of the major testing laboratories at the Arnold Center) has two closed-circuit test sections: one for transonic, the other for supersonic velocities.*

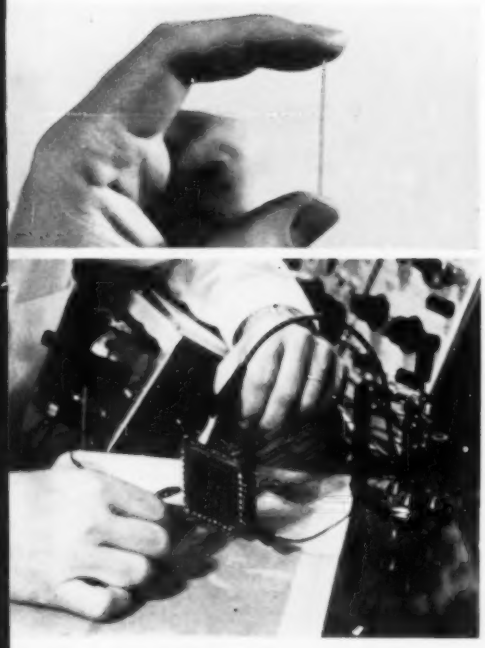
Components continue to get smaller, cooler, more efficient

Industry is reaping the rewards of a newly applied group of materials, and the components in which they are used. What the peer among semiconductor devices, the transistor, has done to increase efficiency, reduce maintenance and cut down the size of practically every technical electronic and many consumer products is by now an old story. But other components are now being converted into the semiconductor family, and their properties further affect the design of products in which they replace conventional parts. *Silicon rectifiers* have been applied abundantly in 1958 (about 200 million dollars worth have been used). Compared with the component they replace in converting ac current to dc or in other electronic functions — the selenium rectifiers — they have increased efficiency, vastly reduced size, and improved performance at high temperatures. The list of products in which they have been used is vast: hi-fi components, computers, telephone equipment, automatic production controls, etc. Texas Instruments Incorporated has developed another semiconductor device, the *sensistor*, which replaces the conventional resistor and offers the general semiconductor advantages.

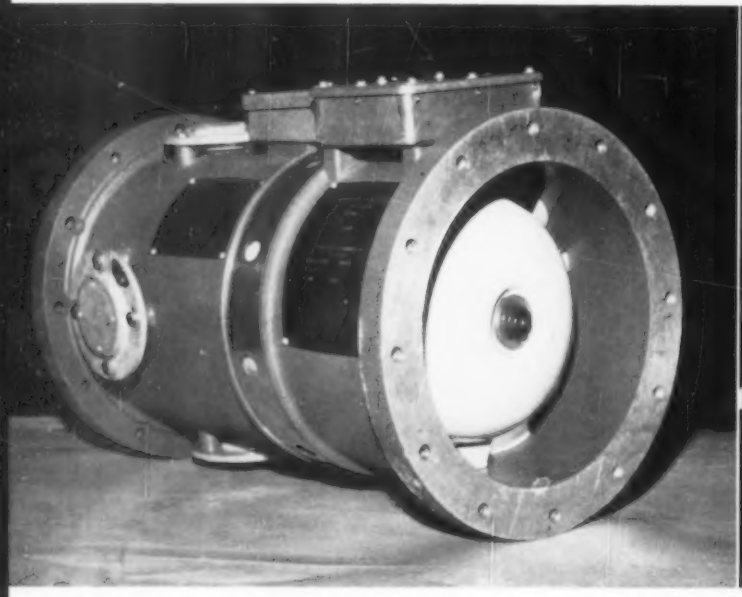


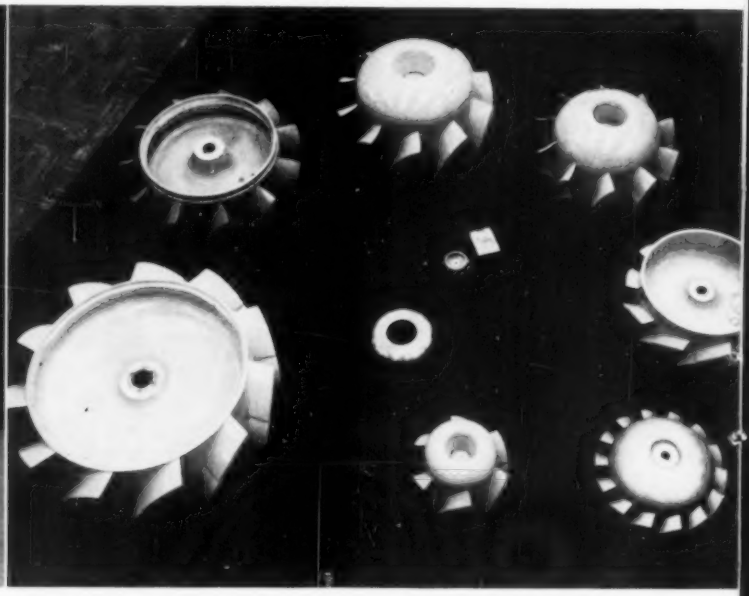


Silicon rectifier. *Not new, but this year in full swing production, rectifiers made of semiconductor materials are affecting the electronics industry in much the same way as the transistor when it first appeared. The new rectifiers are not likely to turn up in consumer products as much as does the transistor, but they are rapidly being used in telephone instruments and telephone office equipment, in motion picture sound systems, radar-, radio-, and television transmitters and receivers. The main advantage over the silicon rectifier's predecessor, the selenium rectifier is reduction of size. Four small silicon rectifiers (product of Audio Devices) take the place of the larger selenium rectifiers above, top picture; at GE the new rectifiers are tested against old ones, above.*



Magnetic "thinking" device. *A glass rod the size of a pin with a magnetic coating will increase the "thinking" speed of computers 10 to 20 times. It will also make it possible to navigate a missile or satellite with smaller power sources and increase their useful range. To store a "bit" of information in the new memory component requires no more than 20 thousandths of a watt (five thousand rods could be operated on the energy needed to light a 100-watt bulb). The component, developed at The National Cash Register Company's Electronics Division, lends itself to mass-production techniques that are less expensive than those for comparable components now in use. It also has higher heat resistance than the conventional unit which means that it is well suited for missiles and space vehicle equipment. A single element is shown at left, top; a completed rod memory assembly is under test below.*





Silent fan. *To avoid being observed by electronic sound detection, submarines are forced to shut off any noise-making equipment when approaching a target. Atomic-powered submarines, however, cannot be operated without air-cooling; consequently the need for fans has been an obstacle in the design of atomic powered submarines for military use. General Dynamics Corporation has recently overcome this problem by developing a new, silent fan. They have accomplished this by utilizing air control principles used in the design of aircraft. Reduced turbulence in the rotor and stator sections of the fan (shown installed at left, in parts at right) make possible higher pressure ratios and fan efficiency at a fraction of the speed of conventional fans. The new fan has been installed in the nuclear Skate, will be used on all atomic subs, and with some adjustments will find application in domestic and commercial air conditioning, electronic cooling systems, chemical processing.*

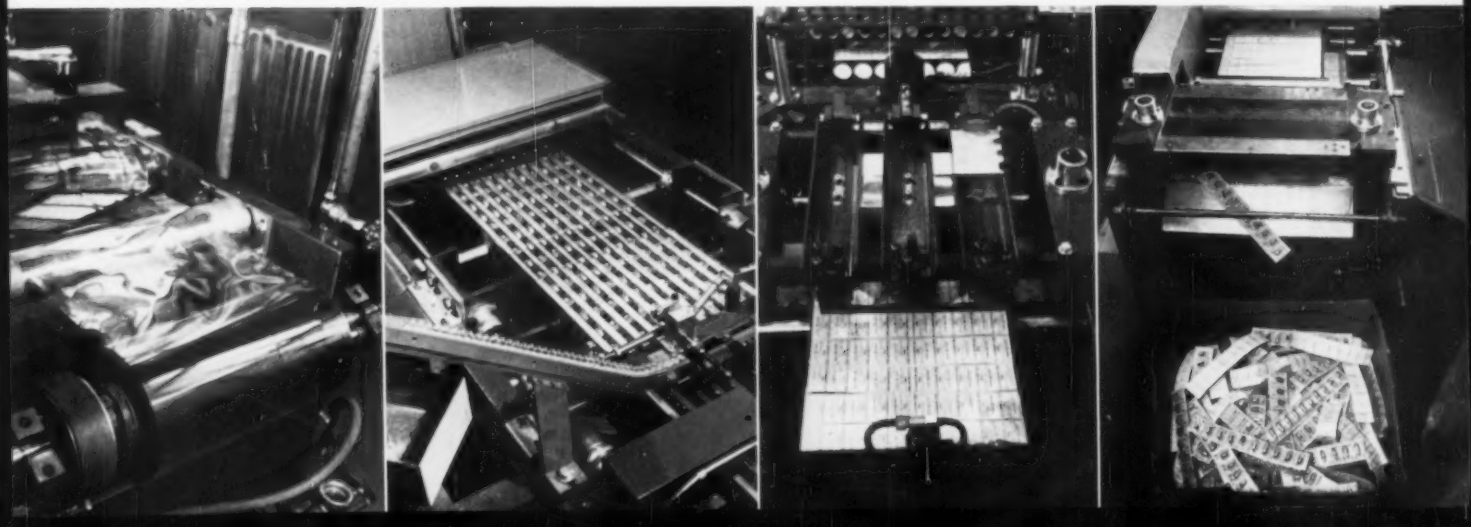
Electric collator. *A small, desk-top electric collator that can manipulate 120 sheets, or 20 sets of 6 sheets of paper per minute, has been put on the market by Thomas Collators Incorporated. The office collator is made of steel with a silver finish, is 12" wide, 15" deep, 15" high and weighs 35 lbs. It is operated by a 60 cycle, 110-120 volt ac motor, and can easily be moved from desk to desk. The collator consists of six bins which hold 1¼" of 8½" x 11" paper (onionskin, bond, mimeo, ⅛" cardboard). The portable office machine is particularly well suited to schools, libraries, offices of all kinds, and for any operation in which duplicated material must be gathered into sets. A simple on-off switch controls the machine.*

A single trend continues to influence the design of office and industrial equipment: greater mechanization. This generally means more efficient operation and less manual assistance. The front rank of this trend does, of course, indicate the new direction which is more advanced than mechanization, namely: automation, or the self-regulation of machines. The incorporation of principles of self-regulation in production processes is still very rare, but stepped-up mechanization and improvements that lead to smaller, smoother-running equipment are evident across the vast range of office and industrial products.

The smooth-running fans (at left) that General Dynamics has installed in the nuclear submarine Skate, and plans to use in other applications where forced-air circulation is needed, has solved a serious handicap in the successful performance of atomic subs in wartime. In a different field—office equipment—the introduction of a small electric collator (at left, below) has cut down by a good percentage the amount of manual labor in collating duplicated material. The trend toward stepped-up mechanization of industrial processes is well illustrated by the new automatic blister packaging equipment (below) used by General Electric to package flashlight bulbs at a rate of 18,000 per hour. In quality control of metals, a new spectrograph (at right) is capable of a quick analysis of chemical ingredients which is recorded on tape as the machine tests and controls samples or the entire output of a metal-producing plant.

Spectrograph. *A new piece of quality control equipment which analyzes the chemical composition of metals has been developed by North American Philips Company. Called Autrometer, the device is an automatic X-ray fluorescent spectrograph; it compares a metal sample against a known standard sample by exposing each alternately to a beam of X-rays. Every element in the metal gives off a certain amount of radiation at an intensity which depends upon the amount of the particular element present in the metal. The result is automatically printed on a tape for inspection.*

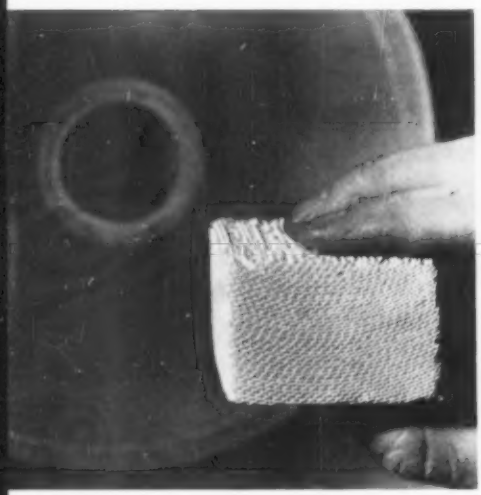
Automatic blister packaging machine. *General Electric is using an automatic machine developed by Packaging Industries, Incorporated, to package flashlight bulbs in cellulose acetate. The fully automatic machine can package 18,000 bulbs per hour. The sequence of operation is shown below. A strip of the plastic is fed into the machine where it is vacuum-formed into cavities; the bulbs are fed into the heat-molded cavities which are covered with a pre-printed, cardboard-backed support material. The sealed packages are trimmed and ready for packing.*



40 Synthetics deal with heat and corrosion more effectively

In the area of materials, the year's major advances were made in the synthetic field. There were no material breakthroughs—only a refining and a re-emphasis of the special properties required by the jet and missile age—heat and chemical resistance. Du Pont's Viton, for example, (below right) is being used currently in jet aircraft. Furthermore, the synthetics continue to expand into areas which heretofore were the exclusive vistas of the metal family and the construction materials; that is, rivets and nails fabricated from GE's Lexan (right), assembly lines housed inside a nylon-reinforced building made from a Minnesota Mining polyester resin (next page, top).

Lexan. *General Electric's new Lexan polycarbonate resin is transparent, heat resistant and tough. Tests have shown it capable of being struck with a hammer without shattering. GE expects Lexan to be the first of a new family of resins. Its use is primarily as a molding material. Presently, however, it is anticipated that the material or members of the polycarbonate resin family may appear in the form of film, extrusions, coatings, fibers, or elastomers. Already Lexan is being used for a terminal block in electronic equipment where other thermoplastics melt and distort from the heat. Ball bearings for industrial use are being fabricated from it because of its resistance to thermal and mechanical shock.*

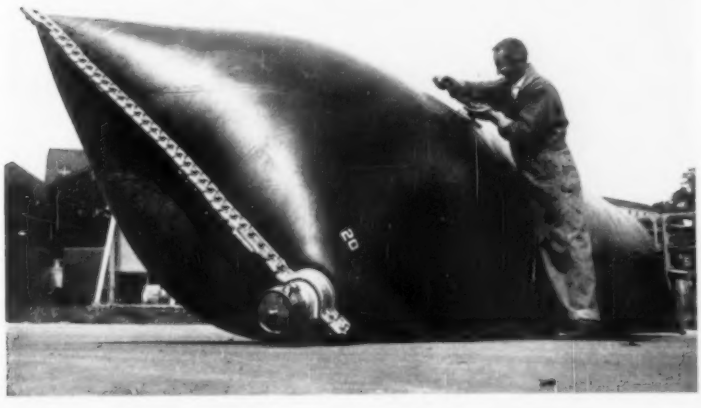


Cercor Process. *The Cercor process was developed by Corning Glass Works for forming thin-walled ceramics into lightweight honeycomb structures capable of withstanding temperatures up to 1800°F with virtually no thermal expansion. At this high temperature, Cercor materials are resistant to corrosion and oxidation. Furthermore, their low coefficient of thermal expansion enables them to withstand extreme thermal shock. The temperature characteristics of these materials suggest that their future uses will be in such areas as gaseous heat exchangers, catalyst supports, and structural materials for use at elevated temperatures. A wide variety of Cercor structures in a number of shapes can be built with base materials of many ceramics.*

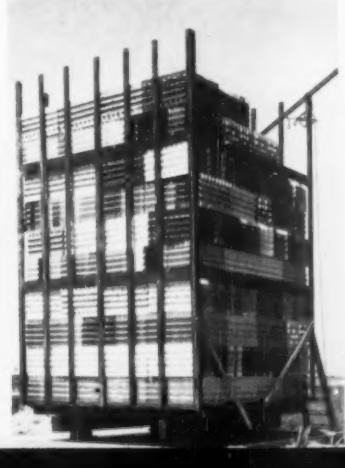
High temperature synthetic rubber. *Pilot plant tests on Du Pont's Viton have shown that this new synthetic is adaptable in both the missile and high speed aircraft fields because of its high heat and chemical resistance. The new synthetic rubber has a tensile strength at room temperature ranging from 2000 to 3000 psi, and an ultimate elongation from 100 to 400 per cent depending on its hardness which can be varied by vulcanization. Chemically, the rubber is a linear co-polymer of vinylidene fluoride and hexafluorpropylene which are resistant to heat, oils, and solvents. At present Viton is being used for seals in hydraulic alternator drives in jet planes and valve stem seals in heavy truck motors.*

Polyester building. *The G. T. Schjeldahl Co. has erected a giant air supported building (above) fabricated from a new polyester film. The building, 340 feet long by 30 feet wide, is made of a reinforced heat-sealable polyester plastic called "Scotchpak" by its manufacturer, Minnesota Mining and Manufacturing Company. Its skin contains a grid of nylon fibers which tend to form a rope of their individual strands whenever the plastic is subjected to a tearing force. This eliminates the possibility of a run in the material. The skin is impervious to chemicals and the natural elements. It has a workable temperature range of —70°F to 230°F, and will not dry out or become brittle with age. Tests prove the material fireproof, a necessity for construction uses.*

Sealdtank. *A giant rubber-fabric container developed by United States Rubber Company is capable of holding nearly 4000 gallons of liquid. For the rail and trucking industries it makes every vehicle convertible from a dry to a liquid cargo carrier. Placed empty on a trailer truck, the container can be filled through a fitting at the top or from one end. The Sealdtank is made of four plies of rubber coated rayon fabric molded like a tire. Both ends are sealed by metal closures, and its outer surface is made of neoprene for oil and weather resistance.*



Dowpac, *a vacuum-formed corrugated sheet made from high impact polystyrene, has been developed by Dow Chemical for use in treating a wide variety of industrial and chemical wastes. The new packing is installed in self-supporting modules from individual sheets 37½" x 21". When assembled, the sheets form a honeycomb structural pattern. Maximum oxidation efficiency is obtained from the high surface-area-to-volume ratio and from the excellent free vent characteristics of the material. The free vent qualities also permit the use of packed depths many times in excess of those possible with conventional media. Other structural advantages are low unit weight and rigidity.*



Manufacturers' Literature

Alco Research Development, and Engineering. Alco Products, Inc., Schenectady 5, N. Y. 16 pp., ill. Two-color brochure details the company's research and development organization and its personnel working in 16 current areas of technology.

Alcoa Report to the Building Industry. Aluminum Company of America, Pittsburgh, Pa. 32 pp., ill. Theme of new publication is that installed cost economy is creating major new markets for electrical applications of aluminum in the building industry.

Ceramic Transducers. Gulton Industries, Inc., 212 Durham Avenue, Metuchen, N. J. 8 pp., ill. Technical brochure describes a new series of Glennite high temperature, piezoelectric ceramic transducers, which have high Curie points that have made it possible to reach higher output voltages per unit input pressure than can be reached with conventional ceramics.

Epoxy Spray-Coat System. Union Carbide Plastics Company, Division of Union Carbide Corporation, New York, N. Y. 3 pp., ill. Coatings Technical Release No. 45 describes a new method of spray-coating 100 per cent reactive systems based on Bakelite epoxy resins that results in curing speeds suited to application requirements.

Field Service Brochure. Hoffman Electronics Corporation, Los Angeles 7, California, 16 pp., ill. Booklet discusses the expanded field services capabilities of Hoffman which are now available on a world wide basis in a variety of engineering, maintenance, and training applications.

Film Folder. Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Company, 260 Madison Avenue, New York 16, N. Y. Booklet "Film Reviews" lists the various industrial and educational motion picture films available from Eastman. The films described show how Eastman plastics are manufactured and where they are used.

Finger-Flexible Hose. Titeflex, Inc., Hendee Street, Springfield 4, Mass. 6 pp., ill. Bulletin No. 400 describes the new Springfield 400 Finger-Flexible® Teflon® hose for industrial and aircraft applications. Bulletin lists specifications and ordering instructions along with a performance chart of the convoluted hose.

Foamglas. Pittsburgh Corning Corporation, Pittsburgh 22, Pa. 12 pp., ill. Booklet devoted exclusively to the use of Foamglas insulation in low temperature spaces.

Foamsil. Pittsburgh Corning Corporation, Pittsburgh, Pa. 4 pp., ill. Folder describes new insulating and refractory material, Foamsil. The folder contains background information on the foamed silica material which is 99 per cent pure fused silica and has a practical operating range of —450° to 2200° F. The material is unaffected by practically all commonly used acids and is unaffected by thermal shock.

Hastelloy Alloys B. Haynes Stellite Company, division of Union Carbide Corporation, Kokomo, Indiana. Latest information on a group of nickel based alloys that combine the advantages of excellent corrosion resistance with good strength at high temperatures.

How to Select Display Stands. Hinde & Dauche, Sandusky, Ohio. 36 pp., ill. Merchandising at point of sale is stressed in this new booklet. Photos of successful display stands point out how effective stands command consumer attention.

Industrial Textiles. Paulsen-Webber Cordage Corporation, Industrial Textiles Division, 170 John Street, New York 38, N. Y. Brochure illustrates the varied applications Paulsen-Webber has found for industrial textiles in a number of different industries. All the products shown in the brochure

Manufacturers' Literature *(Continued)*

were specially designed and fabricated to meet the needs of clients in the aviation, trucking, shipping, contracting, and material handling industries.

Paper-Base Epoxy Resin Laminate. Synthane Corporation, Oaks, Pa. New engineering bulletin on Grade EP-22, a paper-base epoxy resin laminate and one of its latest products especially designed for printed circuit and other electronic applications.

Plastic Containers for Packaging. Lermer Plastics, Inc., 502 South Avenue, Garwood, N. J. 4 pp., ill. Brochure describes extensive line of printed, rigid plastic containers for packaging. Folder describes the virtually unlimited printing designs and colors possible with Lermer's wide variety of lightweight, shatterproof plastic containers.

Plastic Sandwich Panels. Monsanto Chemical Company, Springfield, Massachusetts. 116 pp., ill. Results of a three year study conducted at M.I.T. on the architectural potential of lightweight plastic sandwich panels. Advantages stressed are plastic's formability, durability, structural strength, and integral color and transparency or translucency.

Powder Metallurgy Methods. Metal Powder Industries Federation, 130 West 42 Street, New York 36, N. Y. Powder Metallurgy Quarterly examines 16 case histories of the advantages of fabricating cams and cam-like structures from metal powder.

Silicone Fluids for Mechnical Applications. Dow Corning Corporation, Midland, Michigan. Bulletin #3-112 is a compilation of information essential to selecting the most suitable silicone fluid medium for designing for reliable, uniform performance. Typical applications cited show how silicone fluids are used to advantage in damping, springing, coupling, and related mechanical applications.

Six Fabric Books by Color. F. Schumacher & Company, 60 West 40th Street, New York 18, N. Y. Schumacher is now offering its Chromoscope® collection of books. This series consists of six books, each of which features a definite color series. The series are reds, blues, greens, beiges, and blacks and whites.

Special Purpose Alloy Welded Tubing and Pipe. Alloy Tube Division, Carpenter Steel Company, Union, N. J. Booklet covers the sizes, gages, finishes, chemical composition, and mechanical and physical properties of high temperature, low expansion, and high permeability alloys used for tubing and pipe in the aircraft, missile, nuclear energy, and chemical fields. Data also includes fabrication characteristics and corrosion and oxidation resistance information.

Teflon-Lined Pipe. Resistoflex, Roseland, N. J. 4 pp., ill. Bulletin T-S-1A covers chemically inert, corrosion proof Teflon-lined pipe and fittings. These pipes assure a dynamically balanced rate of thermal expansion-contraction between housing and liner freeing them from the effects of thermal shock and fatigue stress.

The Story of Technology. E. I. du Pont de Nemours and Company, Wilmington 98, Delaware. 36 pp., ill. The booklet describes the large corporation as a principal element in technological development.

Classified Advertisements

15¢ A WORD PER INSERTION, $5.00 MINIMUM, PAYABLE IN ADVANCE. BOX ADDRESS COUNTS FIVE WORDS.

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Miscellaneous

FRESH IDEAS IN TOY DESIGN NEEDED *by a leading manufacturer of educational toys. Large eastern firm, marketing a prestige line, interested in any new marketable toy idea. Excellent royalty and fixed fee arrangement along with necessary facilities to promote and advertise any item in production. All ideas will be given personal and prompt attention. If interested please write for submission forms. Box ID-208* INDUSTRIAL DESIGN, *18 East 50th Street, New York 22, New York*

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Index to Advertisers

Distinguished Industrial Designers interpret the expanding role of design in industry . . . how form, technique, and appearance have emerged as major factors in volume manufacturing and marketing.

"Time is recorded usually by the appearance of objects and their surroundings. The past cannot be defined by deeds alone. The hand of man, directed by the creative mind, continually pursues new means of visual expression. When he achieves his aim, the work that man leaves behind defines the reality of his own time."

Paul McCobb, A.S.I.D.
New York, New York

For Your Calendar

December through January. An exhibition of Scandinavian industrial art at the Musée des Arts Decoratifs, Paris.

December 12-February 15. Wharton Esherick: a retrospective of his work in wood furniture and sculpture. Museum of Contemporary Crafts, New York.

December 14-January 11. Fulbright Designers. J. B. Speed Art Museum, Louisville, Kentucky.

December 14-January 14. One Hundred Years of American Architecture. M. H. de Young Memorial Museum, San Francisco.

December 17-February 22. 20th Century Design. An exhibition of the Museum of Modern Art's entire Design Collection. New York.

January 1-March 31. European Glass Design. Commercial Museum, Philadelphia.

January 5-15. Exhibition of Vietnamese Handicraft and Art Objects. Woodward and Lothrop, Washington, D. C.

January 5-16. International Home Furnishings Market. American Furniture Mart and Merchandise Mart, Chicago.

January 10-February 1. British Artist-Craftsmen at the National Collection of Fine Arts, Washington, D. C.

January 18-22. Annual Convention and Exposition of the National Association of Home Builders. Conrad Hilton, Hotel Sherman, and Coliseum, Chicago.

January 18-23. New York Lamp and Home Furnishing Accessories Show. Hotel New Yorker and Trade Show Building.

January 19-23. New York Winter Furniture Show. New York Furniture Exchange.

January 21-23. Conference on plastic packaging materials, sponsored by the American Management Association. Hotel Biltmore, New York.

January 23-March 8. Ceramic International to celebrate the 20th anniversary of Ceramic National. Metropolitan Museum of Art, New York.

January 26-29. Annual Meeting of the American Society of Heating and Air-Conditioning Engineers, Bellevue-Stratford Hotel, Philadelphia.

January 27-30. Annual Technical Conference of the Society of Plastics Engineers. Hotel Commodore, New York.

February 3-5. Annual Technical and Management Conference of Reinforced Plastics Division of the Society of the Plastics Industry. Chicago.

February 9-11. American Management Association conference on the economics of packaging machinery. New York.

February 11-April 19. "Four New Buildings," will be shown in models and photographs at the Museum of Modern Art, New York.

April 21-April 28. Europak 1959. European packaging fair to be held in the RAI buildings in Amsterdam.

REDUCE TRUCK CAB WEIGHTS as much as 40%

REDUCE TOOLING COSTS 80%

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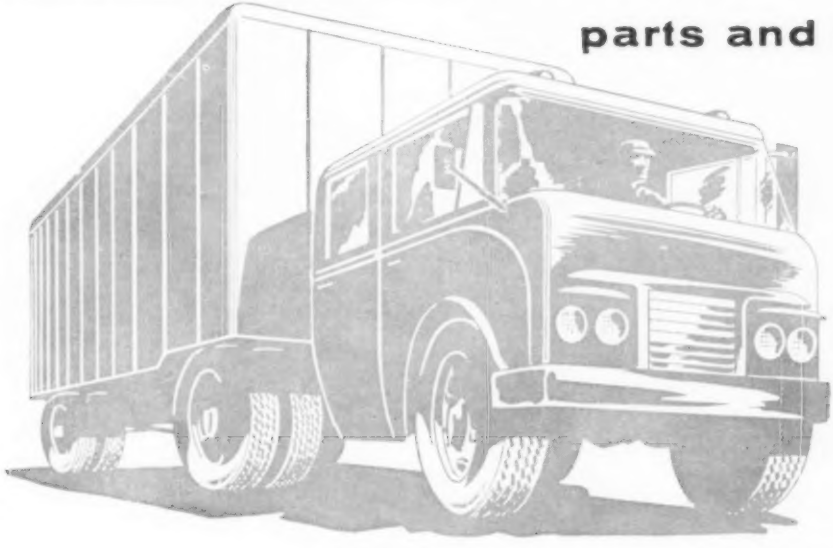
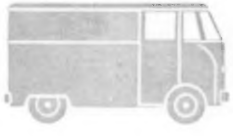
MOLDED FIBER GLASS

parts and assemblies





"A pound saved earns a dollar a year," say the trucking companies.

And MOLDED FIBER GLASS parts save pounds and pounds . . . they weigh 40% less than metal parts. That's one reason why so many truck and trailer manufacturers are starting to use MOLDED FIBER GLASS molded pieces and flat sheet for body parts and assemblies . . . from fenders to complete, assembled cabs.

Other important reasons are:

Tooling costs for MOLDED FIBER GLASS parts are 80 to 85% less than for metal;

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MOLDED FIBER GLASS body parts do not rust or corrode . . . do not dent . . . provide sound and temperature insulation;

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"We picked MARLEX for our new slide projector case and height adjustment knob because it is the least expensive type of plastic material that has the required rigidity, resistance to heat and impact, colorability and gloss," says Herbert R. Leopold, Vice President of Optics Manufacturing Corp., Philadelphia, Pa.

"Our new Opta-Vue is the first projector on the market with a thermoplastic housing. Since this was a design innovation, we had to be sure to select a suitable resin, so we tested them all. One "high-impact" plastic lasted just 4 hours in our heat test before it melted! Another "heat-resistant" plastic cracked in several places in our drop test. MARLEX was the only material tested that matched all our specifications and passed all our tests. In fact, we advertise a lifetime guarantee for all MARLEX projector components!"

Whether your major interest is injection moldings, vacuum moldings, extrusions, filaments, sheet or transparent film, you will find that MARLEX is the best thermoplastic resin for the job. In fact, no other material serves so well, and so economically in so many different applications.

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*MARLEX is a trademark for Phillips family of olefin polymers.

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