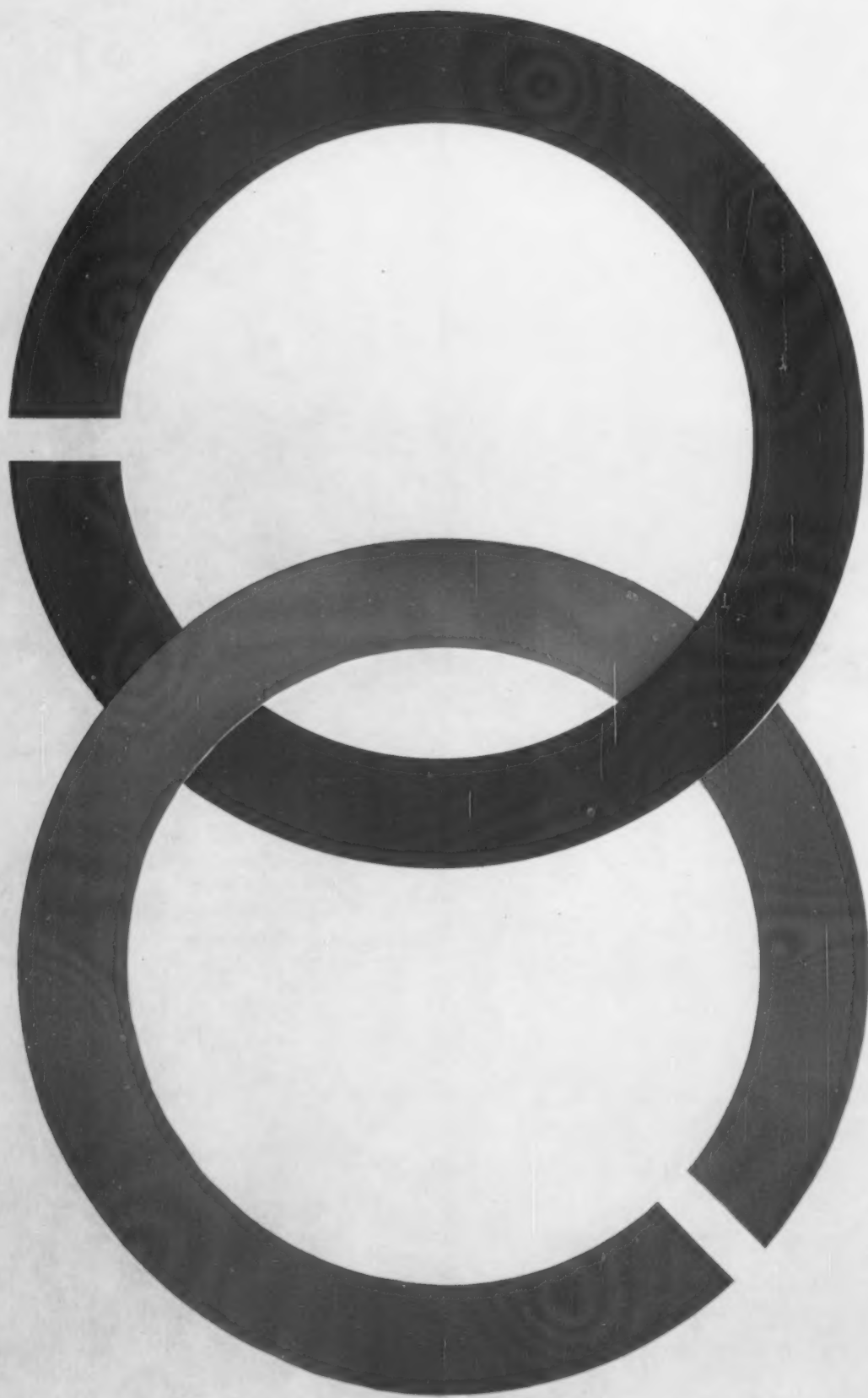


INDUSTRIAL DESIGN

9

September 1958 \$1.50 per copy



The Client-Designer Relationship: a special feature



FORECAST: THERE'S A WORLD OF ALUMINUM IN THE WONDERFUL WORLD OF TOMORROW . . . where screens of aluminum as bright as a peacock will grace patio, garden and store . . . screens of many-textured, weatherproof aluminum that will close to the wind . . . open to the breeze . . . reflect the sun . . . and enclose or divide space with the joyous beauty of an everlasting rainbow.

ALCOA ALUMINUM  ALUMINUM COMPANY OF AMERICA - PITTSBURGH



Aluminum Kaleidoscreen designed for the Alcoa collection by Herbert Bayer. Photographed in Aspen, Colorado, by Ferenc Berko.



9

INDUSTRIAL DESIGN

Copyright 1958, Whitney Publications, Inc.

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

CONTENTS

Contributors 6

Letters 10

Clips and Quotes 12

News 16

THE CLIENT AND THE DESIGNER

Introduction 35

The two-lane road to Clienthood

Working with clients 38

A large office uses various systems for various clients

Becoming a client 43

How to choose and use a designer

The paper it's written on 46

A lawyer discusses typical design contracts

The team approach 48

How one client worked with four designers

The designer's garden of famous clients 58

Client-designer relations through the ages

A Dutch designer views his clients 64

Jaap Puntgat discusses design practices in Holland

The United States Government as client 66

Problems and rewards in working with the government

Antenna system 72

Prefab antennas for radio astronomy and space tracking

REdesign 78

Laird Covey redesigns Stanley Tools' power router

Polish posters 80

Poster art in Poland shows new vitality

Design review 84

Chairs: from logical use to free use of materials

Technics 90

Calendar 96

Coming

IN OCTOBER—ID presents a major, comprehensive research report on reinforced plastics in product design and manufacture—an informed review of the entire field.
IN NOVEMBER—A history of hand-made paper, from its origins to the 19th Century, and an up-to-the-minute report on recent developments in the paper industry.

COVER: A graphic illustration of the relationship between designers and clients: two open, interlocking circles.

FRONTISPICE: A window of a new and second-hand shop in New York, showing knives and other cutlery. Photo by Jim Ward.

PUBLISHER *Charles E. Whitney*

Directing Editors

EXECUTIVE EDITOR *Douglas G. Meldrum*

EDITORIAL DIRECTOR *Ralph S. Caplan*

ART DIRECTOR *James S. Ward*

CONSULTING EDITOR *Jane Fiske McCullough*

TECHNICAL EDITOR *Arthur Gregor*

ASSOCIATE EDITORS *Hrag Akmakjian*

Gregory Dunne

Nina Klippel

RESEARCH EDITOR *Ann E. Perebee*

ASSISTANT ART DIRECTOR *Matilda Laurie*

EDITORIAL ASSISTANT *Ursula McHugh*

BUSINESS MANAGER *Alec E. Oakes*

ADVERTISING DIRECTOR *Paul R. Kane*

SUBSCRIPTION MANAGER *Judith Paul*

ASSISTANT TO THE PUBLISHER *Sven K. Martinsen*

PRODUCTION *George V. Eickel*

PUBLICATION OFFICES *Whitney Publications, Inc.*

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

Charles E. Whitney, President and Treasurer

Jean McClellan Whitney, Vice-President

Alec E. Oakes, Vice-President

Paul R. Kane, Vice-President

Copyright 1958 by Whitney Publications, Inc.

All rights reserved. The trade mark

"INDUSTRIAL DESIGN" is registered

in the U.S. Patent Office

ADVERTISING OFFICES

New York 18 East 50th Street
New York 22
Telephone PLaza 1-3626

Chicago Archer A. King & Company
410 North Michigan Avenue
Chicago 11, Illinois

Boston M. S. Beggs Company
422 Boylston Street
Boston 16, Massachusetts

Atlanta Blanchard-Nicholas-Coburn
75 9th Street North East
Atlanta 5, Georgia

Los Angeles The Maurice A. Kimball Co., Inc.
2650 Beverly Boulevard
Los Angeles 97, California

San Francisco The Maurice A. Kimball Co., Inc.
681 Market Street
San Francisco 5, California

Tyler, Texas Weaver, Incorporated
P. O. Box 2142
Tyler, Texas

INDUSTRIAL DESIGN is published monthly by Whitney Publications, Inc., 18 East 50th Street, New York 22, N. Y. Subscription price \$10.00 for one year, \$18.00 for two years, \$24.00 for three years in the United States, Possessions and Canada. Rates to countries of the Pan American Union are \$12.00 for one year, \$22.00 for two years, \$30.00 for three years. Rates to all other countries are \$14.00 for one year, \$26.00 for two years, \$36.00 for three years. Price per copy \$1.50 in U.S.A., Possessions and Canada. \$2.00 to all other countries. Second-class mail privileges authorized at New York, New York.



Member of the Audit Bureau of Circulation



Member of the Associated Business Publications



in this issue...

Laird Covey has been heading his own office since 1953. He was previously associated with GE for five years as a designer, and with Lippincott and Margulies for six years as Director of Product Appearance Design. He has among his clients the Paper Container Division of Continental Can Company and the Clock and Timer Department of GE.



Covey



Epstein

Lee Epstein, attorney, has been closely associated with designers and their clients for more than twenty years. His set of "Proposed Contract Forms", written for the A.S.I.D., was the first consistent guide for contract writing in the field. He represents many prominent designers, teaches at Pratt Institute, has written for *INTERIORS* and *INDUSTRIAL DESIGN* (January 1957), and has served as speaker and panelist at numerous professional meetings.



Becker and Becker

Nathaniel and Jules Becker, directing partners of Becker & Becker Associates, formed their design office in 1950, and now have branches in London and Dayton. Among their wide range of clients are Corning Glass Works, M. W. Kellogg Company, and The Budd Company. Their assignments for various branches and departments of the government have been extensive and multifarious.



Barnhart

A. Baker Barnhart, a designing partner in Raymond Loewy Associates, has, among other distinctions, that of being Loewy's first employee. Trained as an architectural engineer, Barnhart started his design career in 1933, thus becoming, despite his relative youth (he is now 47), one of the pioneers of industrial design.



Penraat

Jaap Penraat, who recently arrived in this country from his native Amsterdam, is one of the Netherlands' foremost industrial designers. His clients include Philips, Proost, and Werkspoor, as well as the Dutch government. His current assignment is the design of an exhibit for a trade fair the government of the Netherlands is mounting in New York. The parachute-like object at left is a small-scale model of a tram waiting-station-and-shelter Mr. Penraat designed for the transportation system of the city of Amsterdam.



PLASTICS NEWSFRONT

Midget Adding Machine New Step in Miniaturization

This telephone-size, 7½-pound adding machine, the *Add-Mate*, is Underwood Corporation's newest bid to reduce size and weight of business machines. Easily portable, it can be slipped into a desk drawer or under a counter when not needed. Contributing to its compactness and lightness is the attractive, two-toned housing of CYMAC SUPER* 201 methylstyrene-acrylonitrile copolymer plastic.



THE COLORFUL TWO-PIECE HOUSING

is molded of CYMAC SUPER. Shown above, respectively, are the complete unit, the unit minus the top section, and the inner sides of the top and bottom sections. CYMAC SUPER was selected because of its toughness, surface hardness, and resistance to heat, staining and denting.

It is unaffected by the diester permanent lubricant applied to the mechanical assembly prior to encasement in the housing. The transparent, serrated tear-plate, also CYMAC SUPER, and the housing are injection-molded for Underwood by Nosco Plastics, Inc., Erie, Pa. *Trademark

AMERICAN CYANAMID COMPANY
PLASTICS AND RESINS DIVISION
30 Rockefeller Plaza, New York 20, N. Y.



In Canada: Cyanamid of Canada Limited, Montreal and Toronto

Offices in:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Dallas • Detroit • Los Angeles • Minneapolis • New York • Oakland • Philadelphia • St. Louis • Seattle

**Whenever you
remember**



Taillight lenses molded for Oldsmobile
by Guide Lamp Division of General Motors Corporation,
using Tenite Butyrate plastic.

need a tough, outdoor plastic... this new use for Tenite Butyrate

Simple applications often do the best job of illustrating the many advantages of Tenite plastics.

Take the taillight lenses of the 1958 Oldsmobile as an example. They're a new use for Tenite Butyrate.

Reasons for the choice were many. Weather resistance, of course, was of primary importance. Transparency and good optical properties were other requisites. Impact resistance was needed, too, to take the shock of hard knocks...and toughness, which would serve to prevent cracking around the bolt holes should mounting bolts be drawn up too tightly.

Expanding use of higher octane gasolines imposed still another "must": resistance to the aromatic solvents that give the new gasolines their extra power.

Finally, since a lens should be expected to last the life of the car, a material was needed with good aging properties—i.e., a material that would stand up under long service with little or no crazing, discoloration, or embrittlement.

In Tenite Butyrate, designers found a plastic material with properties that satisfied all these demands. The toughness, weatherability and long life of this versatile plastic had already been proved in numerous outdoor applications such as oil field pipe, signs, fishing lures, buoys and marine trim.

Is Tenite Butyrate a possible answer to one of your own material problems? Easy and economical to injection mold or to extrude, it is available in crystal clear or in any color you desire...transparent, translucent, opaque, or variegated.

For more information on this useful plastic, write EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.



TENITE
BUTYRATE
an Eastman plastic

LETTERS

"Production specialties" response

Sirs:

With a great deal of pride we read the article "Production Specialties" in the April issue of *Industrial Design*, featuring Park Nameplate Company.

The interest which this article has created among both industrial designers and design people in the furnishing, packaging and architectural fields has amazed us. We have received inquiries from all over the United States and as far away as Australia, Europe and Japan.

We are aware of the contribution this article will make toward the future growth of our company, and we appreciate having been chosen as a participant in this series. David Kend, Vice president
Park Nameplate Company, Inc.
Flushing, N. Y.

Pre-fabricated chimneys

Sirs:

We enjoyed very much your coverage of "What is Happening to the Gas Industry" in the design review section of your July issue of *Industrial Design*.

We would like to point out that, on page 86, your article indicates incinerators require brick or masonry chimneys. It is true that Type "B" gas vents, which are approved only for gas burning appliances, are not adequate for incinerators, but Type "A" or factory built chimneys are entirely adequate for this service, and are so listed by Underwriters' Laboratories, Inc. These may or may not be constructed of masonry as was indicated in your article.

M. L. Stark, Vice President-Engineering
Peerless Manufacturing Division
Dover Corporation
Louisville, Kentucky

Editor's note: Mr. Stark is quite right. In fact, pre-fabricated chimneys are required to pass stiffer UL tests than could be met by many conventional masonry chimneys.

Design and national character

Sirs:

Your presentation on design in Russia (ID, June) was excellent. Allow me to suggest that such a probing review in *Industrial Design* emphasizes a new and fitting role for the designer . . . he reveals the true picture of his land, economy and culture. He communicates in a language everyone

understands and even in the most "curtained" country tells of its technology, productive capacity, honesty, humor, and sophistication, as well as hinting at its long-range goals.

Your excellent coverage, plus what I have seen at a number of international exhibits, points to two conclusions:

1. In spite of her formidable productive capacity, Russia's product is revealingly drab, tasteless, spartan. This is a picture of a state-oriented economy and it will not change until the system changes to one that recognizes the dignity of man.

2. The picture of our economy, our lives and our aspirations is equally evident in our product. The American designer must be honest in his interpretation of his life and times so that a superficial design solution will not confuse those whose respect we must win and hold.

The designer has never had a greater responsibility.

Nathaniel Becker
New York

A method of design education

Sirs:

This letter is a comment on your July article on the Pratt exhibit of student work at IBM.

The work is without question nicely designed and the models beautifully executed, but I fear that much of this work is better for the school than it is for the student. It makes good exhibits and is excellent for public relations use, but it is actually a betrayal of the students' time. The average 4-year course is all too short to acquaint a beginner with the art world, to teach facility with the tools of communication and to free and direct the imagination. I do not say that students should not make careful good-looking models, but these should not be too complicated so that too much time is not consumed in the process.

To take a full semester to make a model is a mistake. I believe it is also a mistake to have several students work on one project. This is done to make larger, more impressive models, perhaps also more complicated, and is supposedly to build a sense of "team work" in the student. This is a bad practice because a student needs the experience of making decisions and going through all processes himself.

Actually, deciding which models are

good to make and which are not is often difficult, and most instructors including myself are tempted to make impressive models; so I do not mean to cast stones but only to say that we who teach should be careful how we use students' time.

Several years ago I began a practice which I think has not been used by other product design schools, but has been used by Architectural Schools under the Beaux Arts system. This is the introduction of the "sketch" problem. The procedure is this: at the beginning of the class session I announce the problem and three hours later the presentation must be complete. Of course, the problems are simple, and complex engineering details are not considered. The purpose of the problem is to develop concentration, to make quick decisions and to develop quick presentation techniques. I have found this to be time well spent for the student and incidentally, enjoyably spent as well.

I recommend more of this type of teaching and less of the exhibitionist time-consuming and time-wasting methods.

Joseph Palma, Jr.
Industrial Design Department
Art Institute of Chicago

Comments on Expo '58

Sirs:

I spent a good share of last fall in Brussels, as a technician for our particular part of the American Pavilion. I wish to say that your interpretations (ID, July) were excellent and were, to a degree, the feeling that I obtained myself while visiting many of the buildings in Brussels as they were under construction. Therefore, I commend you and your magazine for this very wonderfully written feature.

James Ellet
Kalwall Corporation
Manchester, N. H.

CONGRATULATIONS SPLENDID U.S. PAVILION PIECE.

Peter G. Harnden
Paris

Erratum

In the article on the Pratt student exhibition in the July issue of ID, the model typewriter shown on page 73 was incorrectly credited. The typewriter was designed by W. Keith Wills.

2 VITAL FORCES IN INDUSTRIAL DESIGN



THE
INDUSTRIAL
DESIGNER



STANDARD'S
PERFORATED
METALS

together they express creativity, strength,
function and integrity.

On your next design blueprint that calls for any perforated metal or material, specify STANDARD, where fine craftsmanship has been translated to automation to give you perfection at a price!

**IT'S EASY TO
BRING THESE
TWO FORCES
TOGETHER!**

Mail this coupon now for your personal copy of STANDARD'S new catalog that shows an unlimited selection of patterns perforated in all metals or materials from sheet or coil stocks. Standard has complete tooling facilities for your custom designs.

STANDARD
PERFORATED METALS



STANDARD STAMPING & PERFORATING CO.
3129 West 49th Place, Chicago 32, Illinois

Gentlemen:

- Please send me your perforated materials catalog.
- Please have a salesman call
- Please quote on the attached job specifications.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

CLIPS AND QUOTES

James Teague, *Painter, Teague and Peter-til, Chicago, in a written statement, March, 1958.*

“ In a day of specialization the industrial designer is the exception who attempts to expand his influence and control over an extremely wide area. If he is truly competent to be also a *final* authority in all fields of production, merchandising, public relations and psychology, fine; if not, he might just try being the best designer he can. Design in the majority of instances has done a good job in our development. This is all the more reason for checking any elements which tend to use design as a means to present questionable philosophy to industry and the public. Planned obsolescence, changes just for change, style at all costs are points that are being given serious study. Some groups maintain these are necessary ‘to our national economy and what this country was built on.’ Perhaps for the future a more sound foundation would be worth investigating, since there appears some doubt that continued thinking along these lines is valid. ”

Misha Black

Misha Black, *The Design Research Unit, London, in a recent speech.*

“ If the designer's inclination is to produce experimental forward-looking designs ahead of their acceptability by large numbers of people, then he *must* be content to work for those manufacturers whose economic production quantities are relatively small. His work is probably the most important of all. He and his employers are the pace makers, the nation's prototype workshops where styles and methods are evolved which later will influence the whole industry and change the environment of a nation. But that kind of designer must be honest with himself. He must admit the slow natural development of public taste, the lag which is inevitable, even in consumer goods, between the invention and its large scale exploitation.

For a designer of that creative calibre to work for firms concerned with mass sales would be as profitless for both as it would be for a great painter to become art director of even our most progressive advertising agency. ”

IIT

Don Dailey, *Don Dailey and Associates, Evansville, Indiana, in the commencement address to industrial design students at the University of Illinois, February, 1958.*

“ Graduates in fields other than design leave college with a head full of facts and a set of rules to be applied to their work. You don't have these—nor should you. Your real specialty is dealing with the unknown or undiscovered—with the intangible and constantly changing influences of human needs and influences. Our chosen field is unique in that it is practically the only one which must constantly question every rule, habit and currently popular concept. Our credo (unlike anyone else's) must be *it ain't necessarily so.* ”



R. P. Koenig, *Cerro de Pasco Corporation, New York, in a commencement address at the Montana School of Mines, June, 1958.*

“ The proposition that we need more science to produce a quick task force of Sputnik-makers, I think is naive. Science is so much a part of learning today that a general lift in the aims and integrity of education will almost surely bring with it a heightening of the standards in the

teaching of science. I believe, with Clemenceau, who once said that ‘war is too serious a matter to leave to the generals,’ that education is too serious a matter to entrust entirely to pedagogical experts. The conformist, whom a thin, watered-down system of education suits very well, has a very muddled set of values. Just as he condones a system of education which is formless and devoid of any real content, so his own life is often one of bleary concepts. Even though he believes himself sure and secure as a part of the great bloc of other conformists, actually he is basically troubled and spiritually insecure. ”

dr

Frank Carioti, *Dave Chapman Industrial Design, Chicago, in a press conference at the Merchandise Mart, June, 1958.*

“ The basic problem in the appliance industry today is not design, nor costs, nor the consumer. The responsibility for the current situation rests squarely on the shoulders of management whose complacency since V-J day has bred complacency in research and planning. This industry has been meeting markets, not building them—following trends, not making trends. They have been studying their competition with more intensity than they study their customers.

We must create, design, engineer, produce and advertise products today that cater to a way of life, not a way of production. We must design homes for a way of living not for a way of building. The entire team involved in planning the products and services of our industry must plan and design for people, not for a system of statistics, a price policy or a merchandising program. If we want to know where we're going to be in 1960 or 1961, we'd better have a good idea of where people will be in 1965—they're usually way ahead of us. ”

ADD SALES APPEAL



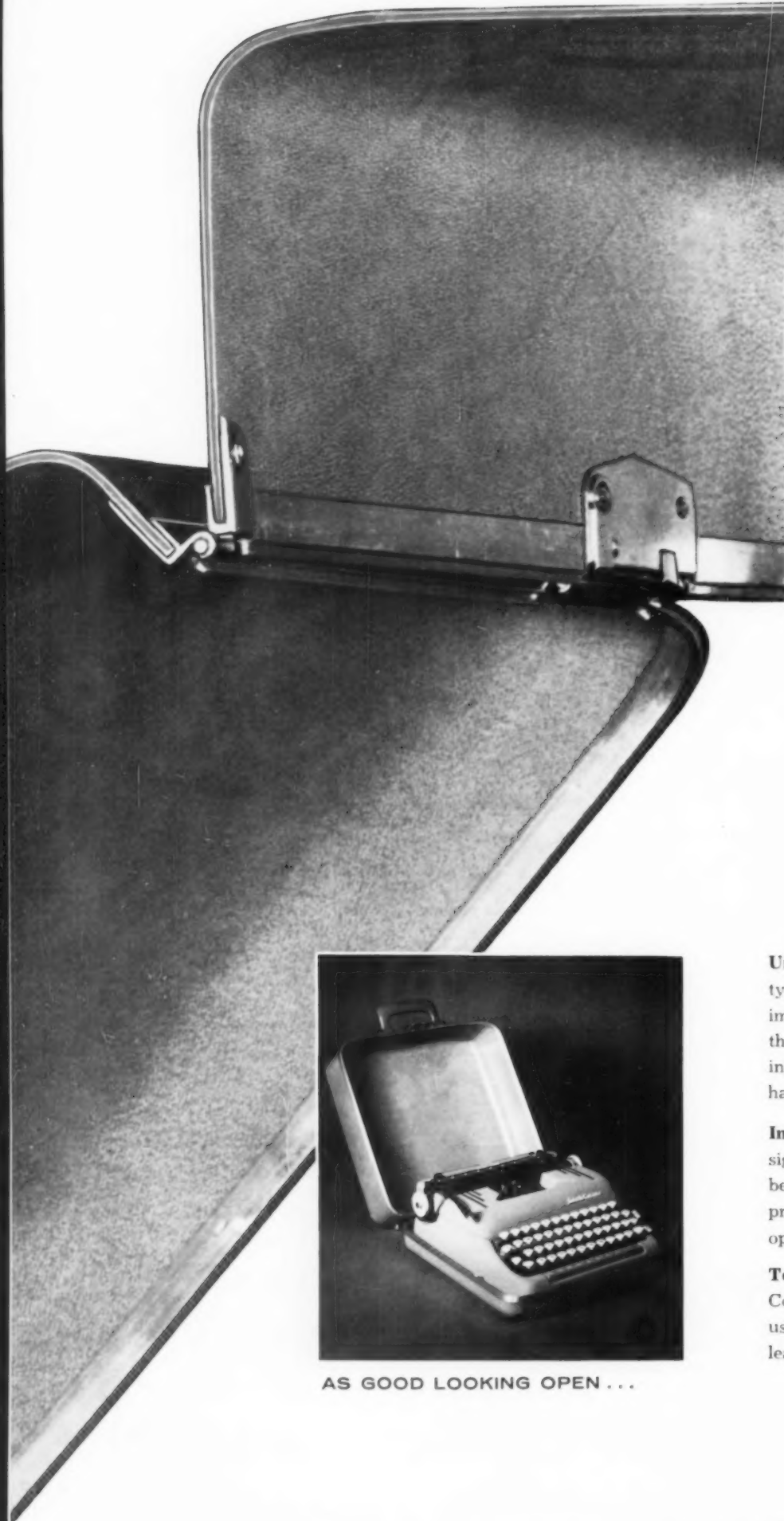
**Dress up your product...*inexpensively*
...with pressure-sensitive backed "MYLAR"**

Here's the perfect answer for greater sales appeal in today's competitive market. *Think of it!* Versatile Mirro-Brite "MYLAR" with its amazing tensile strength and decorating appeal, is now self-adhering with pressure-sensitive backing. In narrow widths as tape from 5/8" to 1" or wider. In continuous rolls or large cut-to-size sheets for unlimited possibilities in die-cut panels and design effects. Extensive variety of color finishes, embossed patterns and special effects. Also available without pressure-sensitive backing. Write for illustrated sampler and price lists.

**"MYLAR" is DuPont's registered trade mark for its brand of polyester film.

COATING PRODUCTS, INC.

DEPT. ID-9 101 WEST FOREST AVENUE ENGLEWOOD, N.J.
ALSO MIRRO-BRITE ACETATE, POLYSTYRENE, BUTYRATE AND ETHYLCELLULOSE



"HOLIDAY" carrying case for Smith-Corona portable typewriter. Cutaway shows Colovin vinyl film laminated to both sides of sheet aluminum. Note that, even after unusually deep draw, Colovin is perfectly smooth at the corners. The grain neither stretches to the outer curves nor wrinkles on the inner. Cut edge shows how cleanly the laminate can be machined.

Two-side vinyl portable

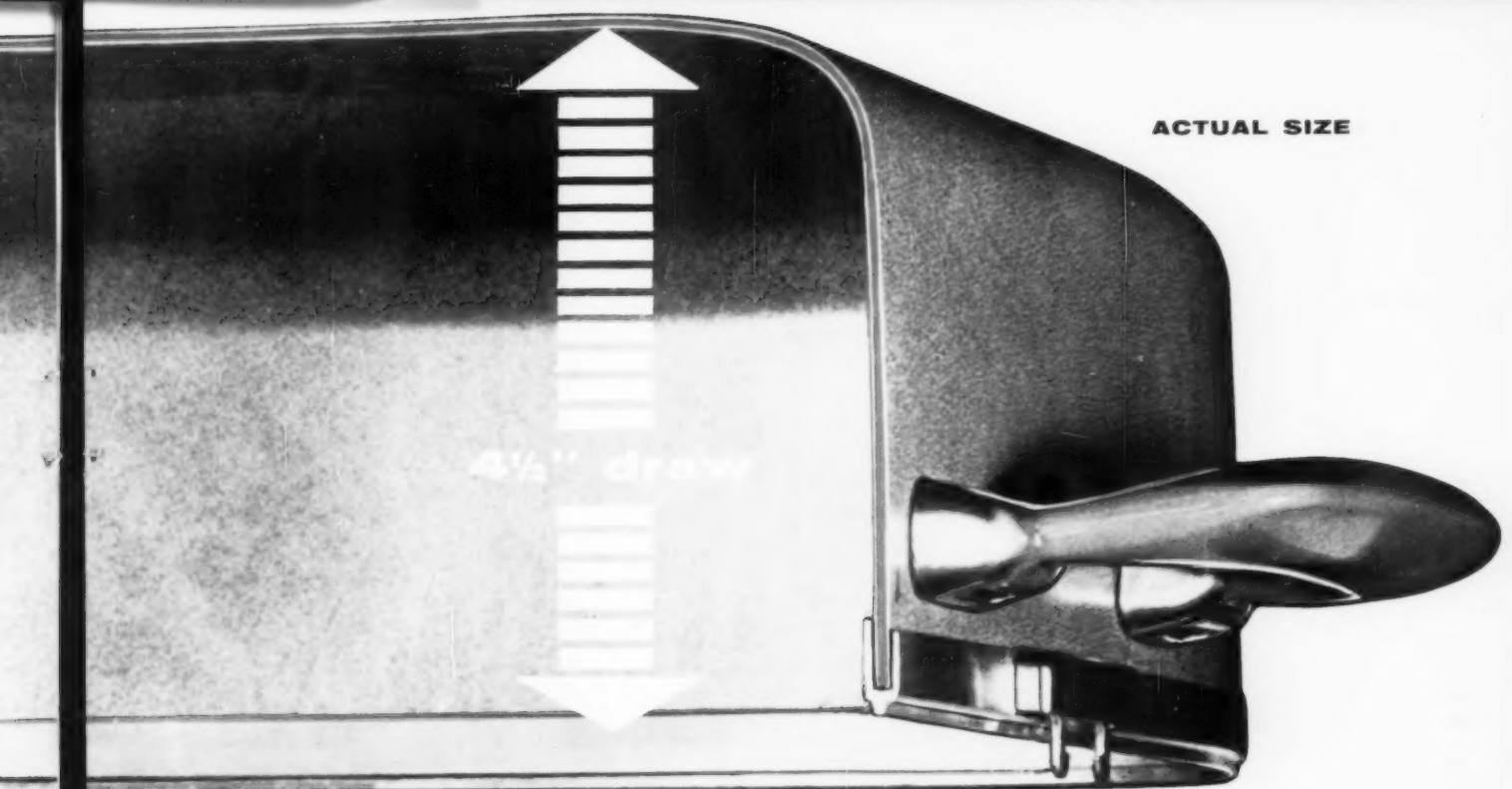
Until 1954, production of a Smith-Corona typewriter carrying case involved a minimum of four operations: construction of the case itself, covering the outside, lining the inside, applying the hardware and handles.

In that year Smith-Corona's Product Design Department sought a case that would be lighter in weight, more economical to produce, stronger and as good looking open as closed.

To meet these specifications, Smith-Corona's engineers became pioneers in the use of a revolutionary new material—leather-textured Colovin vinyl laminated



AS GOOD LOOKING OPEN . . .



ACTUAL SIZE

CHALLENGE TO INDUSTRIAL DESIGN: *Develop a portable typewriter carrying case that can pass muster for fine luggage yet permit definite economies in production.*

lamination, 4 1/2" draw give Smith-Corona typewriter case "luggage" smartness at low cost.

to both sides of a sheet of flight-weight aluminum.

In manufacture, these sheets are drawn to form two shells simultaneously, one 4 1/2" deep, the other 1 3/8". Both the covering and lining operations are eliminated. Production time is cut by 50%; cost savings are proportionate.

Since Colovin vinyl-on-metal laminate is pre-finished, it eliminates hand operations and expensive finishing equipment. Since it "tailors" like fabric, it requires no fitting around corners. Since it can be worked as precisely as metal alone, yet has greater resistance to damage, there are a minimum of production line rejects.

Manufacturers of many industrial products have found Colovin laminate a perfect solution to the all-too-frequent conflict between Engineering and Design. It provides unlimited opportunity for color, texture, dimensional effect. Yet it requires little or no change in production methods, machinery or personnel.

Write us for more detailed information. We'll include our brochure, "Colovin Meets Metal," showing colors and textures, test specifications, industrial applications, a technical report on Colovin vinyl-on-metal laminate, and a list of laminators to whom we supply Colovin sheeting.



... AS IT IS CLOSED

COLOVIN... first and finest in the vinyl laminate industry

COLUMBUS COATED FABRICS CORPORATION, COLUMBUS 16, OHIO

NEWS



North Carolina's new department

A department of product design intended to train industrial designers as well as to improve North Carolina's products for local and world markets, is getting under way this month at North Carolina State College in Raleigh. The 1957 General Assembly appropriated \$36,000 for the creation of the new department, which will offer a comprehensive five-year course of study for the degree of Bachelor of Product Design. Austin R. Baer (above), president of Idea Technology, Inc., a New York consulting firm, will head the new department. Mr. Baer taught at M. I. T. from 1952 to 1955, and in 1956 was recipient of the grand prize in the Versatility-in-De-

sign competition sponsored by Hess Brothers.

The new department, Mr. Baer explained, will work closely with industry in developing a curriculum geared to current industrial problems and objectives. "We expect," Henry L. Kamphoefner, Dean of the School of Design, said, "to be able to make a contribution to any industry in the state where product appearance and product design are essential. Industry has been learning that good design pays off in the market place."

North Carolina State already has strong departments operating in the fields of textiles, furniture manufacturing, and industrial engineering.

Discussing his views of product design, Mr. Baer commented that it "is maturing in a direction diametrically opposed to the training requirements for almost every other field of endeavor, or at least it should be. There is no magic formula for a course of study in product design. In recent years a flurry of activity has produced dozens of techniques for ideation. While all of these must be understood, the great challenge is in the development of the prepared mind by a thorough understanding of the psychology and physiology of the creative as well as the engineering and esthetic tools."

"We are anxious to encourage support," Mr. Baer continued, "of the new department by industry through a well defined system which will enable interested companies to receive some justification for their help by an identification with the

school. Such a program would provide a source of industrial liaison and guidance, a wealth of problem areas for academic study, and an additional avenue for stimulating public interest."

Industrial arts awards

Examples from the more than 700 award-winning projects in the Twelfth Annual Industrial Arts Competition sponsored by the Ford Motor Company were on display last month at the Tavern on the Green in New York's Central Park. Entries were submitted by 40,000 students in high schools and vocational and trade schools from all over the United States and Canada. The prize winnings totaled \$26,900.

Among the 100 top award-winning projects displayed were Francis D. McLeod's electrically operated mineralogical computer (below left), which identifies the components of ore samples, and Herbert Mackey's hydroplane (center), which won for him an honorable mention award in the open division. The Para-Traveler (right), designed by Richard Vorie (not shown in photo), is an electrically operated wheel chair for paraplegics. Projects will be exhibited in other cities.

Other projects included such varied items as a 1500-pound plastic injection molding machine, a model steam engine, a disc-jockey phonograph turntable with speaker and amplifier, a 42-pound model aluminum cannon, a lie detector, and an electric mandolin and guitar combination. Fourteen categories were represented in all.

Francis D. McLeod's computer, Herbert Mackey's hydroplane, and Richard Vorie's Para-Traveller; winners in Ford's IAA competition.



REINFORCED PLASTICS



A major report on the influence of reinforced plastics on design and industry

In October, INDUSTRIAL DESIGN will focus its editorial sights on the wide and continuously expanding field of reinforced plastics. The result will be a truly comprehensive coverage of what has been and is being done with reinforced plastics and what might be expected in the future. Briefly the issue will discuss:

. . . **Materials** — recently developed and experimental materials and ingredients that are used or will be used to make reinforced plastic products

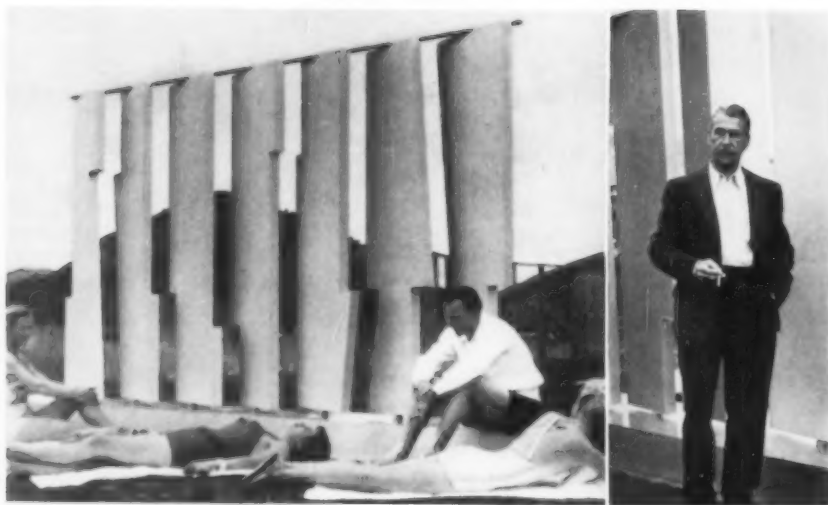
. . . **Fabrication methods**—techniques and equipment for the production of reinforced plastic products

. . . **Products** — what is being made from reinforced plastics and what are the design considerations for this versatile family of materials.

The October issue of INDUSTRIAL DESIGN will be a permanent reference on reinforced plastics for design and business executives. Everyone concerned with product planning and design will want to read and keep it.

Coming in the October issue of

INDUSTRIAL DESIGN



Alcoa displays versatile screen

Herbert Bayer has just created the latest addition to the Aluminum Company of America's Forecast Collection. Mr. Bayer's design, an outdoor space divider, is composed of aluminum-faced structural panels, on one side brightly colored, on the other natural but patterned. The Kaleidoscreen may be used as both a wind and sun control device. The sun's rays may be reflected by the colored aluminum face or diffused by the natural face, and wind can be directed by partially opening the leaves of the screen, or completely blocked by closing the panels.

The construction of the screen, like the screen itself, is a new idea. In discussing the new material, a sandwich of foam plastic between aluminum sheets, Mr. Bayer said, "The modern designer has been seeking a flat panel, a structural medium that will allow designs in terms of planes rather than straight lines." Alcoa's new panel "frees the designer from thinking in terms of a skeleton to which things are affixed—the conventional structural framework with which they traditionally have had to work."

The Kaleidoscreen, according to Alcoa, will have a number of interior uses also. For instance, with two facing screen-type walls a home could be opened for ventilation. As a roof, the screen would create new possibilities in day and night-time lighting. Manufacturer of the original screen was the Stolle Corporation of Sidney, Ohio.

British goods shown in Canada

Responding to an invitation to exhibit British goods at the Canadian National Exhibition in Toronto August 20 to September 6, the British Council of Industrial Design staged their fourth annual exhibit of well-designed consumer goods. Only those products for which there is a market in

Canada, and for which the exhibitors either have or can obtain agents, were chosen.

Leslie Gooday designed the stand, at which 133 British manufacturers displayed their products. With the exception of toys and sports goods, all the products chosen were selected from Design Index, the CoID's illustrated catalogue of well-designed goods.

Contemporary Crafts to open show

A four-part exhibition will open at New York's Museum of Contemporary Crafts on September 26 and run through November 30. The major exhibition will be a variety of craft objects lent from the permanent collections of more than a dozen museums. The second part of the show will be a display of Finnish rug designs (circulated by the Smithsonian Institution Traveling Exhibition Service). In addition there will be an exhibition of the work of David Weinrib and a collection of wall hangings by Jettie Penraat.

IDI sponsors design materials show

A Design Materials Show will be held in conjunction with the IDI National Conference at the Sheraton-East Hotel on October 8, 9 and 10, according to John Griswold, General Chairman of the Conference.

From evidence of manufacturers' interest the show will be a sell-out a month in advance of the opening, according to Mr. Griswold. Exhibitors for the show now include: American Biltrite Rubber Co.; Columbus Coated Fabrics Corp.; Eagle Ottawa Leather Co.; Hawley Products Co.; Poloron Products; The Polymer Corp.; Rigidized Metals Corp.; U. S. Plywood Corp.; and Union Carbide Corp.

For additional information about the show write to Leonard Rogers, Orkin Expositions Management, 19 West 44 Street, New York 36, N. Y.

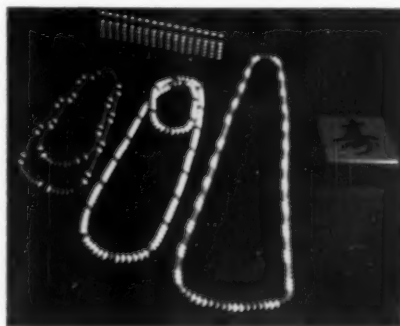
Herman Miller exhibits paintings

In line with the recent trend toward exhibits integrating the fine and applied arts, the Herman Miller Furniture Company is exhibiting a group of paintings by Xanti Schawinsky at its New York showroom October 6 to 24. The pictures were executed by a unique technique: the artist fastened shaped pads to his feet and danced on the canvas, producing large rhythmic patterns of color.

The Herman Miller Company feels that the paintings are significant not only because they are a kind of aesthetic expression which has more meaning on a wall than the traditional kind of painting, but also because "the relative rapidity of their execution makes them more economical and hence more widely available." Schawinsky, a member of the Bauhaus group in the '30s, will exhibit others of his recent paintings at the Bodley Gallery in New York October 6-20.

Korean crafts marketed here

The Korean exhibit at the New York Gift Show, August 24-29, displayed stone products, basketry, dolls, rubber shoes, and necklaces made of abacus beads, of the same form still used in Korea for counting. The beads are one of the new products designed by Smith, Scherr and McDermott,



as part of a \$250,000 ICA project aimed at reviving Korea's cottage industries. Shown above are several of the necklaces, which will retail in this country for less than \$3.00. Also shown above is a soapstone carving of an elephant created by a Korean artist which is on sale, as are the necklaces, at the Korean Trade Center in New York.

DYLENE polystyrene and SUPER DYLAN polyethylene used in new-type screw-feed container



This screw-feed deodorant is a brand-new approach in the deodorant market. So new, that a different method of packaging had to be developed—and two Koppers plastics were picked for the job.

Here's why:

(1) Mennen research chemists needed a relatively impermeable

material that would keep the deodorant fragrance sealed in the container. Answer—DYLENE!

(2) The functional design of the interior base, its wearability and toughness demanded a chemically inert plastic of dimensional stability. Answer—SUPER DYLAN!

Thus, not one, but two Koppers plastics, DYLENE and SUPER DYLAN, have been used to excellent advantage in the new Mennen "SPEED STICK" deodorant. Try one of these fine Koppers plastics in your next packaging operation: DYLLITE expandable polystyrene, DYLENE polystyrene, SUPER DYLAN polyethylene and DYLAN polyethylene.


Wire or write Koppers Company, Inc., Plastics Division, Dept. ID-98, Pittsburgh 19, Pa. TWX Call Number . . . PG533

DYLLITE, DYLENE, SUPER DYLAN and DYLAN are registered trademarks of Koppers Company, Inc.



Case is regular DYLENE polystyrene. Screw-feed mechanism is a combination of medium impact DYLENE polystyrene (the thumbwheel and screw) and SUPER DYLAN polyethylene (the interior base).

MOLDER: Owens-Illinois Glass Co., Toledo, Ohio

 Packaging Institute's
20th Annual
National Packaging Forum
Oct. 13, 14, 15, 1958
Edgewater Beach Hotel
Chicago, Ill.



Offices in Principal Cities • In Canada: Dominion Anilines and Chemicals Ltd., Toronto, Ontario

KOPPERS PLASTICS



American Airlines purchases jets

American Airlines, Inc. has just purchased 25 Convair 600 jet airliners (above), one of the world's fastest passenger transports. The 635-mile-an-hour jet liner will incorporate several new aerodynamic design features. It will be equipped with new leading edge wing devices and a newly designed wing trailing edge to permit low landing speeds. The four tapered projections on the wing's trailing edge permits the Convair 600 to fly efficiently at near-sonic speeds.

Capable of very high-speed transcontinental non-stop flight, the plane will be powered by four General Electric CJ-805-21 aft-fan jet engines, developed from the J-39 turbojet used in the Air Force's supersonic bomber, the Convair B-58 Hustler.

First flight of the Convair 600 is scheduled for August, 1960. It will be available for delivery in June, 1961, after extensive flight testing.

Bell announces telephone oracle

Sibyl—named for the priestess of ancient Greece who could divine the future—is a mechanized oracle developed by Bell Telephone Laboratories to help predict the desires of future telephone customers. Bell's computer-like machine can simulate a variety of future communication devices and systems and permit them to be tested with-

out the expense of building special equipment which would have only limited use. It is essentially a laboratory for studying the human factor aspects of future communication devices and services through use of simulation. The kind of information it will collect would typically include time required to dial, dialing errors, and number and duration of calls.

Sibyl will operate in the following manner. When the user operates the instrument, Sibyl will perform the functions of the special switching system such a phone would require. The information will then be translated into conventional dial pulses and relayed to an operating telephone exchange. The data collected will be used to determine how research should proceed further. Sibyl is the product of studies made by Dr. J. E. Karlin, R. R. Riesz (below left), H. D. Irvin (below, right).

SOM completes Reynolds building

Continuing a line of "modern classical" buildings — which includes the new Air Force Academy and the Connecticut General building—the New York architectural firm of Skidmore, Owings and Merrill has just completed a multi-million dollar office building (above right) for Reynolds Metals Company in Richmond, Virginia.

Designed as an aluminum showcase, the

building incorporates aluminum in the automatic sun louvers, movable office partitions, acoustical and light diffusing ceilings, a new line of office furniture, yarn draperies and carpeting, and most hardware. The exterior is almost completely aluminum and glass. Gordon Bunshaft, designer of the building, stresses, however, that "aluminum has been used only where appropriate. All aluminum items used are available today to any builder."

The square-shaped, four-level structure is capable of housing 1,000 employees, contains 293,673 square feet of floor space.



ASTE convenes in Los Angeles

"Tooling for the Space Age" is the theme of the American Society of Tool Engineers' Western Tool Show and Conference to be held in Los Angeles September 29-October 31, in conjunction with the society's semi-annual meeting. ASTE will place on display in the Shrine Exposition Hall more than \$5,000,000 worth of machines, machine tools, and related equipment.

In addition, a program of technical papers, panel discussions, and plant inspection tours will examine the role of western industry, particularly in relation to the production of aircraft, missiles, and the possible spacecraft of the future. Among the technical conferences will be two special symposia dealing with metal forming and metal removal. Copies of many of the papers can be obtained from ASTE, 10700 Puritan Avenue, Detroit 38.

Consumer buying panel to be held

The Education Committee of the National Home Furnishings League is sponsoring a series of panel discussions this fall in New York, dealing with the problem of the consumer buying for the home. The series, to be known as the Forum, will be held every other Wednesday from September 17 to November 12.

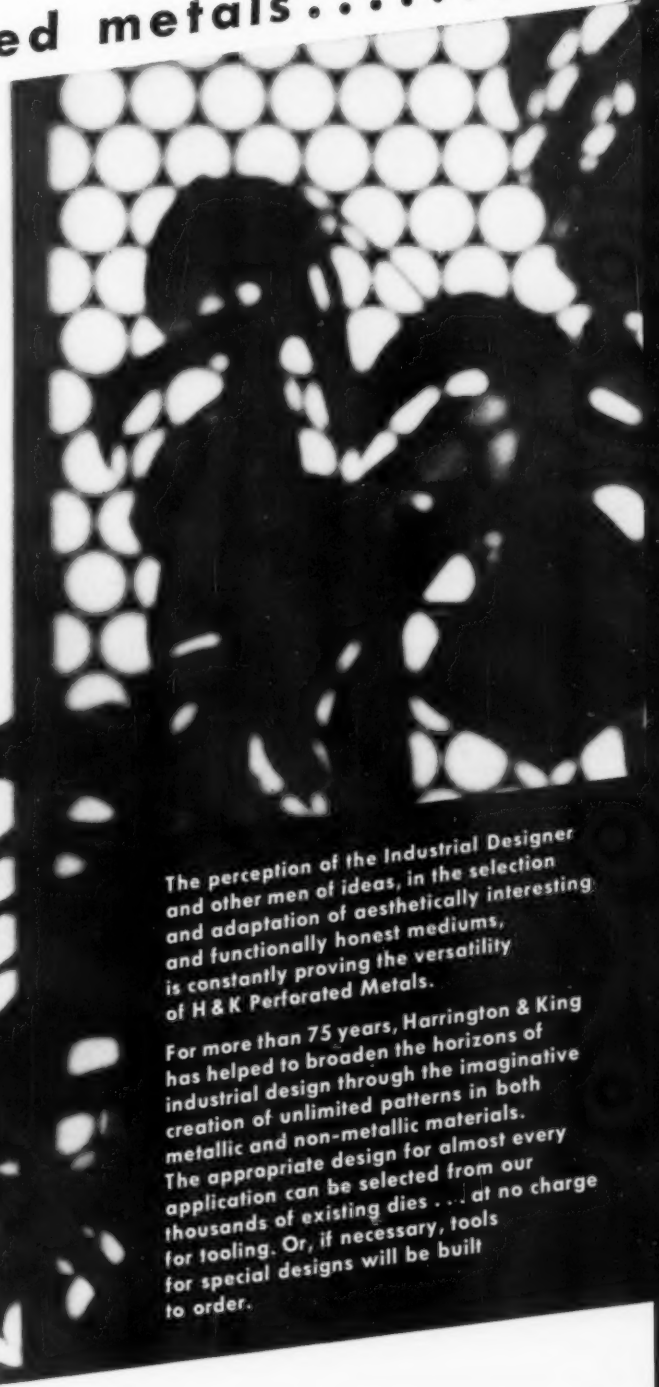
At each session, four or five panelists chosen from retailers, manufacturers, designers, editors, and architects will discuss the larger implications of the home decorating problems of a typical consumer: Mrs. Regina Gershater of White Plains, N. Y. At an extra session on November 19, James M. Fitch will present a summary of conclusions reached at the Forum. Chairman of the series is Hedy Backlin, curator at the Cooper Union Museum.



Idea!

... aesthetic functionalism

with **H & K** perforated metals.....



The perception of the Industrial Designer and other men of ideas, in the selection and adaptation of aesthetically interesting and functionally honest mediums, is constantly proving the versatility of H & K Perforated Metals.

For more than 75 years, Harrington & King has helped to broaden the horizons of industrial design through the imaginative creation of unlimited patterns in both metallic and non-metallic materials. The appropriate design for almost every application can be selected from our thousands of existing dies... at no charge for tooling. Or, if necessary, tools for special designs will be built to order.

*Product Development by William M. Schmidt Associates

H & K sales engineers will be pleased to work with you on your perforating requirements

Fill in and mail coupon to nearest H & K office

A few of the many H & K patterns, shown in reduced size-



THE Harrington & King PERFORATING CO., INC.

Chicago Office and Warehouse
5664 Fillmore St. - Chicago 44

New York Office and Warehouse
108 Liberty St. - New York

Please send me—

GENERAL CATALOG

STOCK LIST of Perforated Steel Sheets

NAME _____

TITLE _____

COMPANY _____

STREET _____

CITY _____ ZONE _____ STATE _____

Plaskon

Polyesters are

GOING



No doubt about it, polyester resins are really going places—and fast! Note the great variety of products pictured here—including laminates, premix parts and polyurethane foams—all made with PLASKON Polyesters. To meet this soaring demand, Plastics and Coal Chemicals Division has expanded its facilities for producing PLASKON Polyesters—*doubling* capacity!

Specialized Resins for Special Needs!

Wherever the great strength and light weight of reinforced plastic laminates are primary requirements, PLASKON Polyesters are likely candidates—because individual PLASKON Polyester formulations—rigid, resilient or flexible—offer special “built-in” molding advantages, including: pre-acceleration to speed pro-

duction, rapid impregnation, excellent release for match-metal molding.

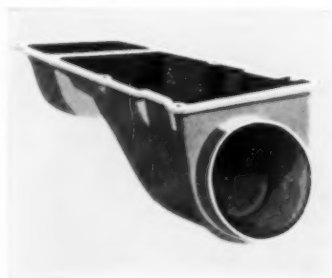
PLASKON Polyesters play a leading role, too, in the booming market for polyurethane foams. Strong, *rigid* foams for thermal and acoustical insulation, flotation chambers... or *flexible* foams for vibration or impact absorption... whatever type of polyurethane you're looking for, we can supply the right PLASKON Polyester.

If you would like to know more about PLASKON Polyester Resins—and how they can serve you—write to Plastics and Coal Chemicals Division, 40 Rector Street, New York 6, New York. In Canada: Allied Chemical Canada, Ltd., 1450 City Councilors Street, Montreal, Canada.



POLYURETHANE FOAMS

PLASKON Polyesters for rigid foams can be foamed easily in place (as in this boat hull or in wall partitions) or in inexpensive molds on a batch or continuous basis.



PREMIX MOLDING

PLASKON Polyesters offer a line formulated specifically for cost-saving premix operations, which permit the rapid molding of parts with varying thicknesses, intricate contours or molded-in inserts. Example: automobile heater housing.



PLACES



MATCHED METAL MOLDING

A wide assortment of PLASKON Polyesters designed especially for matched metal molding offer excellent mold release, higher gloss and less crazing than general purpose resins.

PLASTICS AND COAL CHEMICALS DIVISION

40 Rector Street, New York 6, N. Y.

In Canada: Allied Chemical Canada, Ltd., 1450 City Councillors Street, Montreal



(Printed in U.S.A.)

People

IDI has elected **James L. Hvale**, of Ekco Products Company, and chairman of IDI's Design Award Program, as Fellow.

Abe Feder (below) has been retained as lighting designer for the Union Dome now being constructed in Baton Rouge by Union Tank Car Company, Chicago. In order to maintain a high light level in the geodesic structure, he has designed a new mercury vapor lamp, said to be the most powerful reflector lamp in existence.

APPOINTED: **Ken J. Uyemura** as a member of Russel Wright Associates . . . **Norman W. Wilson** as Manager of Operations Research at Malt and Ness, design and engineering consultant, Buffalo . . . **Leonard R. Sainsbury** (below) as special assistant to the president, in charge of product development, at Peerless Photo Products, Inc., Shoreham, N. Y. . . **Paul A. Stewart** as manager of manufacturing for the Maytag Company . . . **William Cord** as product design engineer of Adams Engineering Co., Ojus, Florida . . . **James E. Zane** (below) as Market Development Engineer for the American Zinc Institute . . . **James E. Thornton**, **Carl E. Koehler**, **Dean M. Roush** and **James D. Harris** to the computer engineering staff of Control Data Corporation, Minneapolis . . . **James E. Leeper** as vice president of Philco Corporation.

. . . **Fred E. Hoffmanns** as director of engineering for J. M. Little and Associates

. . . **Daniel D. Webb** (below) to the staff of Visual and Industrial Design, San Diego

. . . **Seymour Murray Kent** as corporate art director of Lehn and Fink Products Corporation, New York . . . **James H. Atherton** as chief engineer and **Lester J. Vincent** as head of quality control at United States Radium Corporation . . . **Myron L. Duhl** as secretary and **Donald R. Long** and **Maurice B. Cossman** as vice presidents of Ekco Products Company . . . **Max W. Carbon** as head of the University of Wisconsin's Nuclear Engineering Program . . . **Kenneth H. Grim** as Manager of Application Engineering at Disogrin Industries, Inc., Mount Vernon, N. Y. . . **John W. Emerson** (below) as assistant professor at IIT's Institute of Design . . . **Walter Welkowitz** as director of engineering for Vibro-Ceramics, Gulton Industries, Metuchen, N. J.

Awards and competitions

The deadline for the fourth annual "Design in Hardwoods" competition, sponsored by the Fine Hardwoods Association, has been set at December 1. Six Highest Honor Awards and 30 Honorable Mention Scrolls will be awarded in four classifications: production furniture, custom furniture, architectural installations, and "miscellaneous," which includes all hardwood uses and arts and crafts objects not specifically covered in the other categories. Entry blanks can be obtained from the Fine Hardwoods Association, 666 Lake Shore Drive, Chicago 11.

The 1958 Thesis Award given by the National Institute for Architectural Education has been given to **David Bruce Falconer** of Yale University for his project: a boat yard for the building of small craft. The award is a trophy designed by Nivola. **Heinz Nordhoff**, and his co-workers, creators of the Volkswagen, will receive the Elmer A. Sperry Award for 1958. The late **Ferdinand Porsche**, will receive the award posthumously. The award is administered by representatives of the American Society of Mechanical Engineers, the American Institute of Electrical Engineers, the Society of Naval Architects and Marine Engineers, and the Society of Automotive Engineers.

Company news

Hugh F. Beckwith (below) has been named head of a new research and development department at the **E. F. Hauserman Company**, Cleveland, manufacturers of movable interior walls. Hauserman engineers collaborated on the movable interior wall systems for the Seagram Building in New York and the Connecticut General building in Hartford.

Metlon Corporation, New York, and **Rexor**, French metallic yarn producer, have completed an agreement whereby the French company will manufacture metallic yarns of Mylar polyester film, using the processes developed by Metlon. Rexor will also use the Metlon trademark. Production is scheduled to begin this fall.

Motordyne, Inc., Monrovia, California, manufacturers of small motors and electrical equipment for general industry, has

established a new Gyro Division, headed by **Oscar B. Robey**. The new department will produce precision gyroscopes for the aircraft and missile industries, as well as various gyro-type devices, such as "pancake" synchros and special torque motors. The **American Institute of Decorators** has been enjoined by the Supreme Court of New York from taking any action which will interfere with the rights of AID members to belong to the **National Society of Interior Decorators**. This order will remain in effect until further court action.

H. H. Scott, Inc., manufacturers of high fidelity components, have completed a new plant in Maynard, Mass. Architects are **Smith and Sellow** of Boston.

Jack Lenor Larsen has opened a new office: **Larsen Design Corporation**, specializing in soft goods. Head of the new project is **Win Anderson** (right), former Director of Design for Jack Lenor Larsen, Inc.



Construction has **Anderson** started on two research houses in South Bend, Indiana, and Knoxville, Tennessee. The South Bend House is sponsored by the Research Institute of the **National Association of Home Builders**, which is acting jointly with the **Masonite Corporation**, Chicago, to sponsor the Knoxville house. Both projects will attempt to show what can be done to create attractive, low-cost homes through the use of new building materials and equipment or through adaptations of known materials.

Design education

Pratt Institute has named **Albert Christ-Janer** dean of its Art School and Professor of Art. Mr. Christ-Janer was formerly director of the School of Arts and Professor of Art at Pennsylvania State University, where he was particularly concerned with establishing direct contact between the University and performing and producing artists.

Beginning this semester, **Robert H. McKim** will give an introductory course in industrial design for engineering students of **Stanford University**.

Emerson



Sainsbury



Feder



Zane



Beckwith



Webb

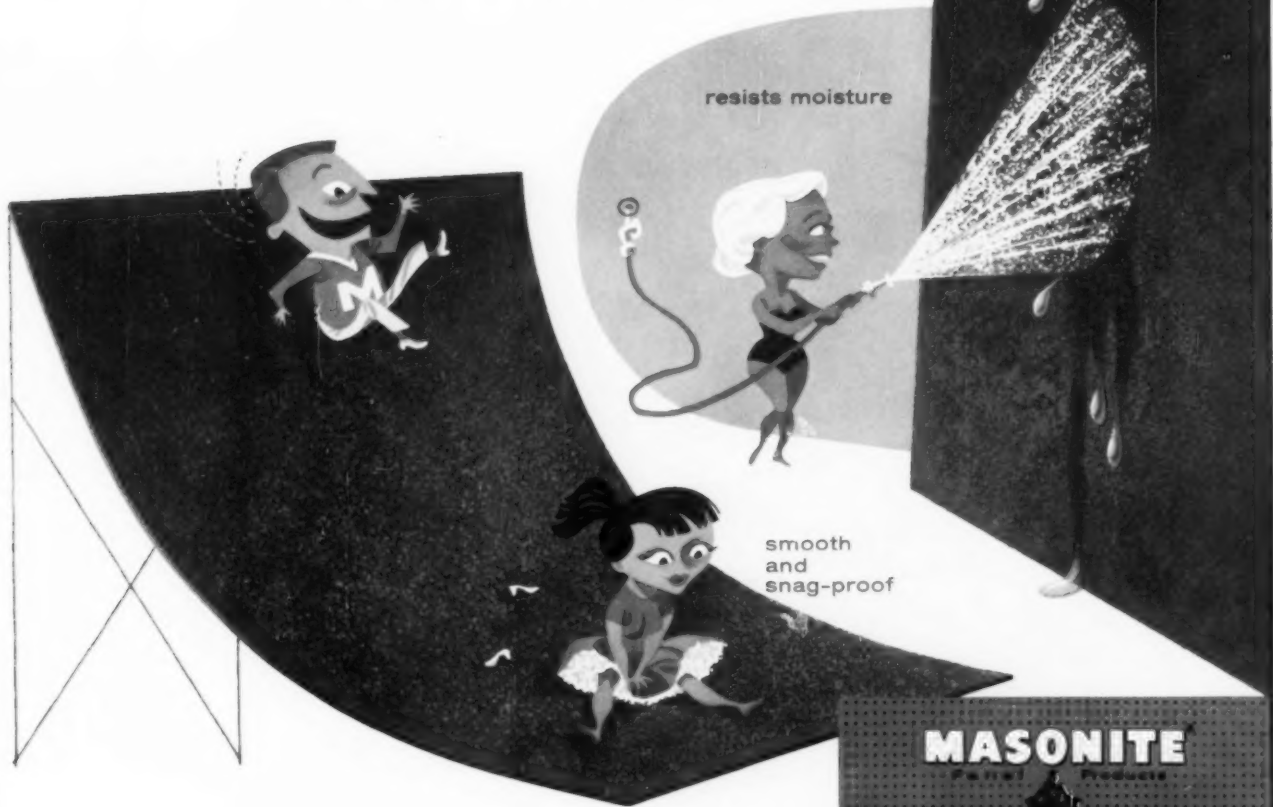


withstands
hard
wear



MASONITE MAKES THE NEWS

resists moisture



smooth
and
snag-proof

MASONITE
Panel Products

©Masonite Corporation—manufacturer of quality panel products

...by bringing you every one of the qualities
you want in a hardboard

Whatever your design or production need, Masonite
has the hardboard to do the job.

Masonite Corporation
Dept. 3-2
Box 777, Chicago 90, Illinois

- Please send latest design and production information on Masonite panel products.
 Please have your sales engineer call.

Name

Address

City State

Zone County

How can you use **SPRING-LOCK?**

THE FASTENER WITH USES UNLIMITED



As a standard removable fastener or a blind rivet

A quarter-turn locks, unlocks. Load-carrying steel arms lock securely, don't loosen under vibration. One-piece (no receptacle) simplifies blind fastening.



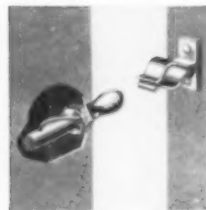
As a roller axle

Now used on range drawers, kitchen cabinets, file cabinets, desks. Cuts installation costs, saves time. Designed to suit. Available with or without roller.



As cup hooks

High-strength polystyrene or chrome-plated die cast zinc. Inexpensive, sturdy and good-looking. Simply and quickly installed with a twist of the wrist.



As a cabinet door strike

Millions in use on kitchen cabinets, automatic dishwashers, etc. Standard strikes available from stock, or custom designed for special contour requirements.



As a plastic shelf support

... with the heart of steel for extra strength. Millions now used by all major refrigerator manufacturers. Complete flexibility of head design.

What is your application for **SPRING-LOCK?**

Send us your application inquiries. Our engineers will answer you specifically and promptly. Or, write today for the Simmons Catalog. **SPRING-LOCK** samples are available upon request.

SIMMONS FASTENER CORPORATION

1775 North Broadway, Albany 1, New York

QUICK-LOCK • SPRING-LOCK • ROTO-LOCK • LINK-LOCK • DUAL-LOCK

See Our 8-Page Catalog In Sweet's Product Design File.



There is no substitute for stainless steel
in homes and home products

For the lady in the kitchen or the "chef" at the outdoor grill, there is nothing like the gleaming efficiency of Stainless Steel. Everything made of Stainless Steel has lasting beauty and is so easy to keep clean. No other metal contributes so much to better living.

Specify McLouth high quality sheet and strip Stainless Steel. McLouth Steel Corporation, Detroit 17, Michigan.

Mc LOUTH STAINLESS STEEL

Manufacturers and Designers are invited

to submit entries for

INDUSTRIAL DESIGN'S **5th** **ANNUAL** **DESIGN** **REVIEW**

which will appear in the December 1958 issue

A major feature in each December issue of INDUSTRIAL DESIGN, the fifth Annual Design Review will be a portfolio of the year's major innovations in industrial design. It will also help forecast the effect of these advances and developments in the designs of the coming year.

What Will Be Included?

The Review will cover every facet of industrial design: new and redesigned products, packaging, materials, professional and industrial equipment, as well as appliances, housewares, and other consumer products. A comprehensive review of this scope, highlighting the ideas and accomplishments of an entire year, provides a valuable permanent reference for designers and manufacturers alike. Last year's review served as a check list for the Committee on Selection and Procurement for the U. S. Pavilion at the Brussels Fair.

Who Is Eligible To Submit Material?

We invite contributions from designers (independent and staff), engineers, and manufacturers of finished products or of the materials used in these end products. We would like to make our selections from the largest group of designers possible, so feel free to submit as many entries as you wish.

How Do You Participate?

From designs placed on the market since September, 1957, choose those which you would like included in this annual review. These designs should represent the most significant work of your firm or design office. Perhaps a design has made a particular contribution in its field, has overcome special practical problems, offered unusual features or merchandising ideas.

How To Prepare Entries

Send us one or more reproduction photos of each product (unretouched "salon" type), labeling each photograph clearly with the names of the product, the designer, staff member, or department in charge, and the manufacturer. *On the same label please include a brief note stating what you consider is unique and distinguished about the product you have selected, and in what respects the use of materials, components and manufacturing techniques was unusual.*

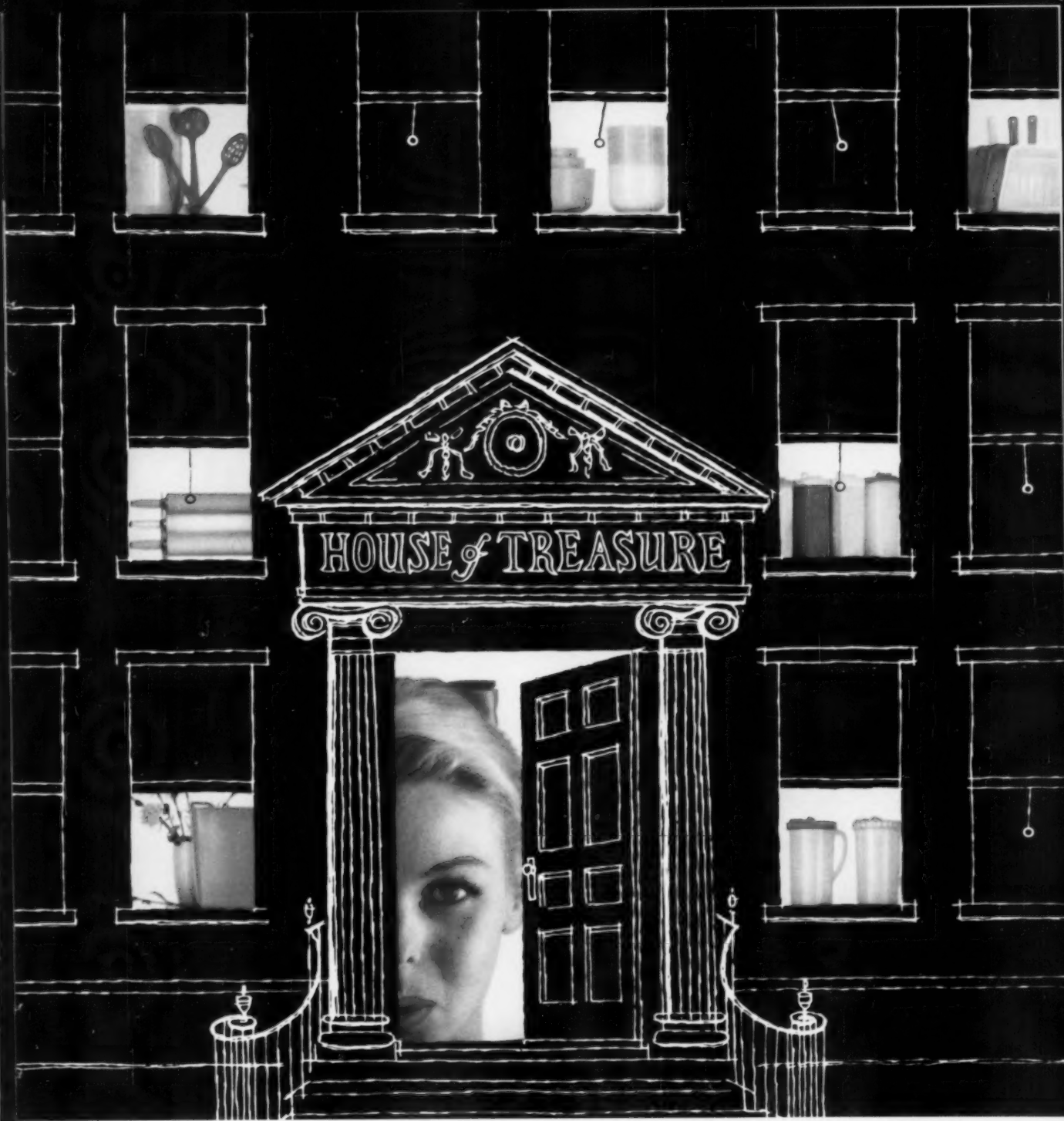
The following categories, though not in any way definitive, may give you some ideas for evaluating your products:

1. inventive designs: solutions based on new practical improvements in function and operation
2. notable solutions to familiar problems and established product types
3. designs without prototypes; that is, designs for objects never manufactured before, which embody new approaches to unfamiliar problems
4. engineering developments
5. apt and unusual use of materials, components, finishes
6. packaging design
7. new ideas for merchandising products
8. designs that had unexpected or outstanding consumer acceptance (with brief sales story)

There is no restriction on the number of photographs or designs submitted. *Closing date for contributions has been extended to September 20th, 1958.*

INDUSTRIAL DESIGN

Whitney Publications, Inc. 18 East 50th Street, N.Y. 22, N.Y.



CELANESE

PRESENTS

THE 1958 TREASURE HOUSE OF FORTIFLEX HOUSEWARES

Celanese® Fortiflex®

FORTIFLEX—THE NEW CELANESE PLASTIC

BY ROYAL PLASTICS CO., INC.



the secret is
"controlled
polymerization!"

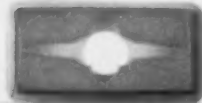
BY IRWIN
CORPORATION



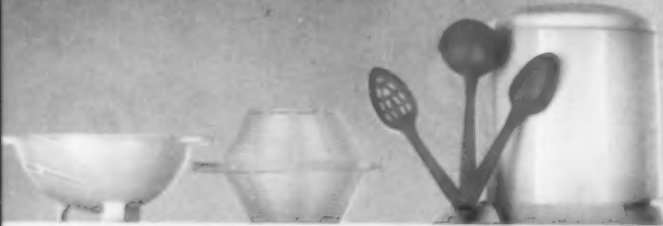
BY GOTHAM INDUSTRIES, INC.



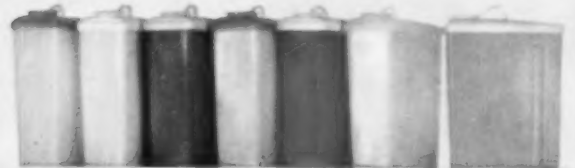
BY RUBBERMAID, INC.



BY DAPOL PLASTICS, INC.



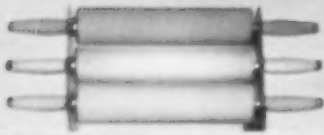
BY PLASTIC METAL MANUFACTURING COMPANY



BY IDEALWARE, INC.



BY THE J. C. DAVIS CO.



BY IDEALWARE, INC.

the secret is
"controlled polymerization!"



BY REPUBLIC MOLDING CORP.





Fortiflex, the great, new Celanese Plastic, has created a new world of opportunity for designers and manufacturers of plastic housewares. The product of "controlled polymerization," Fortiflex makes possible housewares that *can be boiled* . . . retain their shatter resistant toughness in freezer temperatures . . . are rigid instead of flabby . . . resist harsh chemicals . . . and have a smooth, lustrous surface. The Treasure House of Fortiflex housewares—made by America's top manufacturers—is expanding daily. This folder introduces many of them for the first time. For prices and other information, we suggest that you write directly to the manufacturers listed on the last page.

HOUSEWARES made of *Celanese* FORTIFLEX
are available from:

ROYAL PLASTICS CO., INC.
North Providence, R. I.

GOTHAM INDUSTRIES, INC.
1453-A Merchandise Mart, Chicago 54, Ill.

DAPOL PLASTICS, INC.
53 Northboro Street, Worcester 4, Mass.

UNITED PLASTIC CO.
17 Simonds Road, Fitchburg, Mass.

IRWIN CORPORATION
Nashua, N. H.

RUBBERMAID, INC.
1205 E. Bowman Street, Wooster, O.

PLASTIC METAL MANUFACTURING COMPANY
3550 N. Spaulding Avenue, Chicago 18, Ill.

THE J. C. DAVIS CO.
18663 Weaver Avenue, Detroit 28, Mich.

IDEALWARE, INC.
184-10 Jamaica Avenue, Hollis 25, N. Y.

REPUBLIC MOLDING CORP.
6465 N. Avondale Avenue, Chicago 31, Ill.



Fortiflex... a *Celanese* plastic

CELANESE CORPORATION OF AMERICA, PLASTICS DIVISION, 744 BROAD STREET, NEWARK 2, N. J.
PRODUCERS OF FORTIFLEX, FORTIGEL, AGETATE, POLYESTER AND PVAC PLASTICS AND RESINS

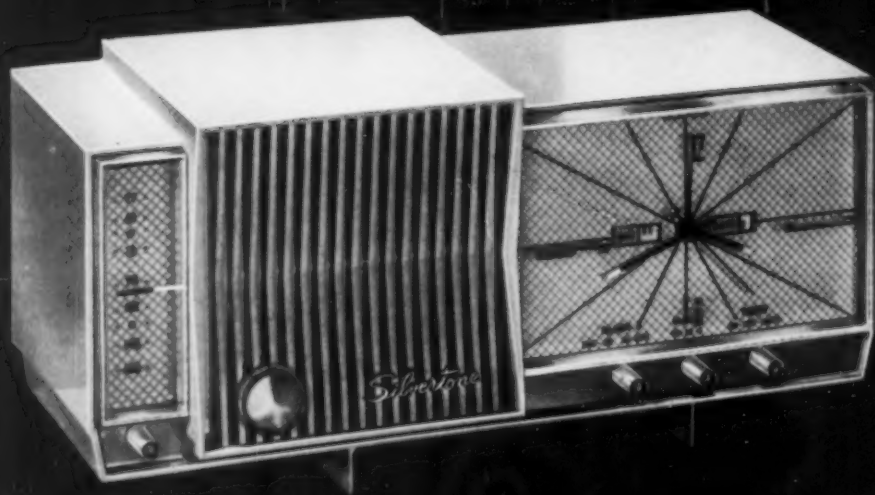
Celanese Fortiflex



IF you have ever watched your child at play—secure, happy, unafraid—you have seen the strongest argument in the world for investing part of every pay in United States Savings Bonds. For bonds, which can protect her present and insure her future, are savings you cannot lose. They're Government-insured up to any amount. They pay 3¼% interest when held to maturity. And they make saving for security easier—because you can buy them automatically through the Payroll Savings Plan where you work. Or regularly where you bank. Why not start your bond program today? Make life more secure for someone you love.

The U. S. Government does not pay for this advertisement. It is donated by this publication in cooperation with the Advertising Council and the Magazine Publishers Association.

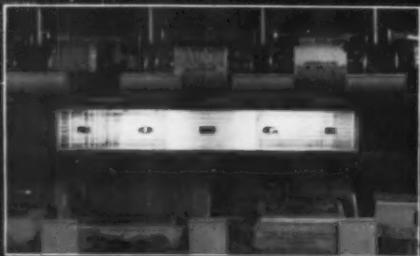




*New insight
in design*

CLOCK-RADIO dial faces of strong, optically perfect LUCITE, assure sharp, clear visibility. (Molded by G. Felsenthal & Sons, Inc., Chicago, Illinois, for the 1958 Silver-tone Calendar-Radio, Sears, Roebuck & Co., Chicago.)

with Du Pont LUCITE



NAMEPLATE-LENS of LUCITE will not discolor... has tremendous impact strength at low home-freezer temperatures. (Molded by Stimsonite, Div. of Elastic Stop Nut Corp. of America, Chicago, Illinois, for Norge Sales Corporation, Chicago.)



EUREKA VACUUM CLEANER gains a touch of long-lasting beauty from sparkling, durable medallion of LUCITE. (Molded and decorated by the Hoosier-Cardinal Corp., Evansville, Ind., for Eureka-Williams Corp., Bloomington, Illinois.)

Versatile Du Pont LUCITE has an unusual combination of properties... structural as well as decorative. Combined with creative "know-how," LUCITE acrylic resin can prove to be an invaluable material for producing exciting new products to serve a multitude of consumer and industrial needs.

The outstanding range of properties of LUCITE can be applied singly or in combination. It has excellent durability, impact strength and shatter resistance. In addition, LUCITE is beautiful, light in weight and can be attractively colored. It has optical properties comparable with those of the finest glass. The applications for LUCITE range from signs and displays, lighting and industrial parts, to household fixtures, appliances, ornaments and personal articles.

• LUCITE may very well prove to be the material you will want to utilize in your next design. If you would like further property and application data, write E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 211, Du Pont Building, Wilmington 98, Delaware.



REG. U. S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY



The Client and the Designer

The netherworld pictured here is what one author calls "subspace"—a sort of material subconscious; the revealing $\frac{7}{8}$ of an iceberg that is normally submerged; a jungle of the bottoms of things where legs cross, chairs dig their chrome prongs into the executive carpet-nap and rock precariously, and shoes may be nudged off gently and unseen. It is the underside of a process.

Above the table heads nod, lips purse, brows wrinkle; voices lift in hard sells and soft, as cigars and ideas burn for awhile and are snuffed out. Fingernails get chewed to decision, scratch pads collect the charcoal scars of conference: client and designer are meeting. How they get to that solid walnut meeting ground, and what they do when they get there, matters to us all.

The client and the designer must communicate with each other.

That irritatingly obvious statement is apparently harder to accept than it looks. On the surface everyone agrees with it, but surface communication is inadequate: the client and designer must communicate in depth. Clients, however, often fail to see the necessity of telling the designer what they consider family secrets. Furthermore they may enrich the confusion by regarding the designer merely as someone who applies something (magic, art, chrome, his name for promotional use—what difference does it make?) to the already excellent products created by engineers. He has his job to do, why can't he do it without all these irrelevant questions?

This attitude is marvelously illustrated by a story told for a few hundred years by the great raconteur Lou Holtz. It's about the very stubborn man who had a toothache, and reported dutifully to the dentist.

"Which tooth hurts?" the dentist asked.

The patient replied "You're the dentist. You have the education. *You tell me* which tooth hurts."

The dentist pulled a molar out. "Was that it?"

"No."

He yanked another. "Was *that* it?"

"No."

And so it went, until finally the dentist had extracted all of the man's teeth but one. Holtz concludes the tale with the triumphant non-sequitur, "That was 20 years ago, and to this day the dentist doesn't know which tooth hurt!"

Communication is necessary

That's no way to get results from dentistry or design. To be most effective a designer needs company information that may seem to the client to have no direct bearing on the design problem, information that may normally be classified as "confidential." As a professional, the designer is used to the confidence of those who retain him, and he cannot do his best without it. Therefore in "Becoming a Client" (page 43), manufacturers are advised to speak openly. The designer has got to know which tooth hurts.

*"What are you thinking of? What thinking? What?
I never know what you are thinking."*

T. S. Eliot, "The Wasteland"

Those nervous lines from "The Wasteland" are suggestive: designers too have been known to inhibit communication. Some tend to think of a client as something

they "have," rather than someone they collaborate with, and clients are understandably wary of being "had." There comes a time in *The Relationship* when the mature client, who doesn't believe in magic, wants to know what the designer has in mind. He has a right to know.

Communication is difficult

But let us not minimize the extreme difficulty of design communication. Dave Chapman recently reported an experience that will cause lots of heads to nod understandingly. The Chapman office had been invited to submit design proposals to a manufacturer interested in a total overhaul of his design program. "For some time," Chapman says, "we had been beefing about how industry did not understand design, did not know how to use it, or what to expect of a well-considered design program. I told my associates that this time we were going to speak to management in *their* words and on *their* terms."

They spent about two months and \$2,000 on what they believed to be a lucid, simple and direct outline, until an executive who happened to be passing through remarked, "Gee, it's beautiful. But what are you trying to say?"

So the designers completely reworked the presentation until they had what they thought was a "streamlined simplified version that could easily be understood by a high-school boy." This was shown to another top-level executive who studied it for half an hour, then exploded: "Why in hell don't you designers talk so people can understand you?"

After more work, a third supposedly pellucid version was at last presented to the Board of Directors. They liked it very much—so much that they invited Chapman to come right over and explain what it meant!

The industrial designer's frequent failure to make his purpose known is one of the major curiosities of the profession. For although their natural mode of expression is graphic, most designers are at least as articulate as other professionals. In the classic professions, lawyers talk an insufferably bloated and private jargon; doctors, despite the demands of the bedside manner, are hard to follow even when played by Jean Hersholt or Lionel Barrymore; Indian chiefs barely grunt. Yet each of these succeeds where the designer so often fails: in explaining himself.

Of course the heart of the matter is that the industrial designer's contribution is not as clear-cut as that of the other professionals, and it probably never will be.

One reason for this is that design service is never the same for any two projects. Every design enterprise therefore takes a lot of understanding, and a certain amount of faith. But as hard as it is for the designer to express himself, he has somehow got to do it, and that's why designers search so earnestly for "techniques of communication."

Communication is possible

We doubt that they will find them, and we doubt that techniques are the answer. The problem, like most design problems, is conceptual rather than technical. When a designer cannot communicate, the trouble may be not that words fail him—or that charts and sketches do—but that he has not wholly established for himself what he has to communicate to the particular client in question. Perhaps the best way for a designer to be sure of making himself understood is to do what he so often advises industry to do: totally re-think the resources he brings to each new assignment.

This is nothing less than the application of design principles to the designer's own client relations. Industrial design has been described by men in it as a profession in its adolescence. To men not in it—to clients—it has at times exhibited the usual adolescent traits: a bewildered groping for identity, a propensity for boasting, and a confusion of roles. In a desperate effort to be understood, the designer has tried to convince artists that he is an artist, and businessmen that he is a businessman, while he is in fact both—in a way that neither artists nor businessmen may suspect. It is important to remember that the client knows who *he* is: he *is* a businessman; and if all he wants is another one, he knows where to look and it isn't in the design profession. As A. B. Barnhart suggests, the client doesn't hire you to be like him; he hires you to be like you.

Once designer and client have determined what they expect of each other, they had better set it down—for clarity as well as protection. If Gordon Bunshaft is right in calling successful design collaboration a kind of marriage, then nuptial vows must be made and recorded. The result is a contract, and its purpose, according to Lee Epstein, is definition. How much definition? It depends on the people involved. For several months the only contract Henry Dreyfuss had for designing the *S.S. Constitution* was a note scribbled on the back of an old envelope. At that stage it was enough.

So far we have been speaking as though the only kind of communication between client and designer is verbal. This is not true, for communication is deed as

well as word. There is no indication that Floyd Patterson ever actually said anything to challenger Roy Harris, but he communicated in a way that was understood all over the world and in Cut and Shoot, Texas. Client and designer, too, reach each other largely by what they do, and by their attitude toward it. The client's pride in his product and the designer's pride in what he can do to enhance it make an excellent basis for good relations.

Whatever else the trials of client and designer may be, they are not imaginary. The process is hard. Yet the truly wonderful thing is that design does happen. It happens successfully enough to warrant our inquiry into the relationship that underlies the process.

The trouble with studying a relationship, however is that you can't see it. No one can do a sketch or a mock-up showing just where the areas of understanding and cooperation lie. We started out to investigate what we called "the client-designer relationship," and found, naturally, that all we could really investigate was some clients and designers caught in the act of relating to each other.

The details vary, as you will see in the following articles. But you will also see that the principles hardly vary at all, and one of them is behind every article in this feature. It is simply this: whether the designer is working for an insurance company or an airline, the government or the Pope—the only meaningful basis for collaboration is mutual professional respect.

Clienthood may be hell, and more than one client claims to have found it so. But unlike the thruway to that celebrated region, the road to clienthood is not paved by anything. Client and designer work together not to produce a smooth road (although that may be a by-product of value to those who come by later), but to produce a way of dealing with the bumps ahead. The next 35 pages show how some clients and designers have gotten over some bumps together, to the profit and pleasure of both.—RALPH CAPLAN.





Raymond Loewy Associates' four partners—front: Raymond Loewy; back: William Snaith, John B. Breen, A. Baker Barnhart.

WORKING WITH CLIENTS

*by A. BAKER BARNHART
partner, Raymond Loewy Associates*

*How one large design office adjusts
to service various clients*

Like advertising men, industrial designers have become the subject of a very fascinating but frequently absurd mythology. Many of the contributing legends cluster about the client-designer relationships—how they work together, who decides what, and who “wins.” On that subject, it is not true that:

1. The client's wife makes the final design decision on the basis of her personal taste;
2. Getting tickets for “My Fair Lady” or buying him dinner at “21” ever assured either the loyalty or the happiness of a client who didn't like the design service he was paying for;
3. The designer is likely to stomp out of a client meeting because an intransigent sales manager has offended his dignity by demanding that a design be corrupted.

For the simple truth of the matter is that the best continuing client relationship endures because the design has worked in the way the client needed it to work: it helped sell his product or service.

Any other reason for a healthy client relationship is salad dressing.

But it is meaningful to ask just how the designer manages to deliver what the client wants, and here we come to the essential ingredient of every smooth-running collaboration: communication. For if design programs falter and client relationships are consequently less than cordial (and why not, if a company is paying for something it isn't getting?), someone, designer or client, may not be interpreting facts correctly, or is not being fed useful information.

The basis for total communication is mutual trust, respect and understanding, and a common language. The designer must be sure that he understands exactly what the client company expects of the design, and the company must set up a system to interpret this to him. In discussing how these arrangements are made, the neat subject of client relationships breaks up into as many ways as there are types of design activities and design clients.

The complexity of setting up systems for communicating with the client company must not be underestimated. While the desire for design service, and the decision to buy it, may come from top management, the people within the company and within the design organization must be able to exchange the precise knowledge that pushes a program forward. We conduct design panel meetings, both as critical sessions and to insure that design efforts are aimed towards the client's goal—a goal that is defined and redefined continually throughout the development stages. If the same evaluation is not made within the client company, or if the objectives are not clear within the design of-

fices, communication breaks down.

Designers must remember that they employ graphic or plastic forms to convey the bulk of their design information. However stoutly a client protests that he can read these perfectly, we know that it is often not so. A design sketch, a comprehensive, a partial mock-up are, at best, only approximations.

Besides the difficulties of cutting through words or drawing techniques to achieve mutual understanding, client and designer stand at opposite poles in their attitudes towards the end product. The client's involvement with his product is total. He is protective. He is sensitive to criticism of his product even if the design suggestion is made only to help him to an improved product. Further, the client is strongly prejudiced about certain aspects of his company operation, and he may resist the invasion of his privacy by a designer who suspects that prejudice and not reason affects a certain decision.

Client relationship is sustained, of course, by the partnership of men assigned from each side to maintain the liaison. In the design office—whether that man is the project director, a research specialist or a designing partner—his role is interpretive. He always represents the impartial design opinion, while his company counterpart may talk production or sales, or engineering or architecture.

Industrial design is so ramified that few clients grasp at the outset the potential of the service they have contracted for. Similarly, a designer usually has only the obvious or published picture of a company's business and production methods—to say nothing of its distributional techniques. Until the relationship between client and design office has been cemented in the actual work progress, neither can fully appreciate the potential services to be performed nor the areas to which continuing design study might be applied. All our healthiest client relationships are the results of "getting to know you".

Today our office is organized to solve client problems seated in merchandising or distribution. Whether a company sells transportation, a product, or a service, it faces the necessity of impressing its image and its individual offering on the consciousness of the eventual customer. The client company registers only surprise and relief when it finds that this industrial design service penetrates to the heart of its problems and not simply to the visible end product.

At this point, some do's and don'ts:

1. Write an explicit and practical original contract.
2. Don't upset deadlines if at all possible.
3. Never design "down". Among the witch's tales repeated around beer hall tables where design critics

gather are those having to do with the perfect design that was turned down. It doesn't happen. We design our best for anything we take on as an assignment, and find that the response from the client is in direct relation to the excellence of the design. Clients don't go to designers for pale versions of what they already own. They come for the best possible design, and they believe we can deliver it. Probably the origins of these murky legends lie in the contracts designers have signed with clients who really wanted only art service or the use of the designer's name in advertising and promotion; in short, a client who didn't want design. Watch out for him and turn him from your door.

4. Relish the working relationship and the work. There is no doubt that the business of creating a new design or a new program of action is an exciting business. Both client and designer can and do go into a sort of creation-of-the-world when a design program is set up. All the facts are new; possibilities are numberless.

When Raymond Loewy was about thirty years old, he said he wanted a big design office instead of a small studio in order to be ready in case someone someday gave him a chance to do the interiors of an ocean liner. It happened. Every designer sitting at a board harbors a longing for an assignment custom-tailored to his talents and tastes. When that account comes into the office he is like a bridegroom, and if you think his frame of mind doesn't reassure a client, then you don't know that enthusiasm for the job on both sides is a requisite of successful design partnerships.

In talking about something so highly personal as client relationships, one must not underestimate the fact that industrial design is a stimulating profession, that it represents to many clients, still, a somewhat radical step to take in solving their intramural problems. *In relation to a client the designer's liaison man must always react like a designer.* He does neither his client nor his firm any service if he assumes the point of view of the soberest businessman of them all.

5. Teach and learn. A few weeks with a passionate beer salesman and the designer can wax eloquent on the subject of case loadings. Time with a designer, and a chief engineer who once couldn't distinguish between yellow and green fights fiercely for a particular shade of blue in a plastic nameplate—mutual education.

We have been talking generally about client relationships. Now let us see what is different in each case—the way in which a design office is galvanized to service a given project.

Client relationships begin at the preliminary meeting to discuss the writing of a specific proposal or, earlier, when a client comes to present his needs before the designer for the first time. Usually a partner and a



divisional head are present with the man who has introduced the client to the organization. He may be any member of the staff who is responsible for establishing the initial contact. Until the project is analyzed the final determination of which designer will be responsible for the job has not been made.

Our designers are classified by their skills and training. They operate in divisions of product design and development; graphics and packaging; transportation design; retail planning and design; market plans and merchandising research; specialized building design. And of course their skills are complementary.

Few client problems fall exclusively within a single work division. We do not often set up a permanent design team assigned to an account from start to finish, but this varies according to the length of the contract. A short-term project can be processed by a single team; not so a continuing, comprehensive project. Within each work division a secondary design committee operates to review its work and to reassign the men within it as required. Further, designers are drawn from one or another department as the type of client changes. We have many accounts in which every division of the firm has been involved at one time or another. This flexibility is important.

Therefore, we avoid establishing the final design control and client contact until it is pretty thoroughly determined what man hours and what departments are involved. Finally, a single man in the design office is charged with client liaison, and with the responsibility for knowing everything relevant to the account. He must also coordinate the work of divisions in this firm through the department heads.

Our liaison man is always an active designer, or at least has been one. It's unlikely that an account executive without design training can interpret or judge or direct design programs. It is not enough to be "design-oriented" (whatever that means), for the communication that must be maintained with the client is not a social relationship—or even purely a business one. It is a relationship based on facilitating design work and decisions, and it depends on a designer's knowledge.

Typical of a healthy, long-term client relationship is ours with Shell Oil Company. The initial contract called for us to examine all Shell facilities and make recommendations for implementing sales of gas and oil products through their stations. Negotiated and discussed at the partner level, this project was then assigned to one general overseer of client relations who would also represent this firm in all meetings.

The first phase of the project was the study, made by a team of three men from the research, products and graphics divisions, and reported to a partner of the firm. Our account supervisor then made the initial



Comprehensive program for a comprehensive company is the elaborately organized project for the Shell Oil Co. Three divisional design directors each deal with appropriate divisional executive at Shell. Size of company and scope of its activities called for unusually detailed system of checks. One of first design stages was to get corporate identification on all pumps. Shown at left is one of the results: plastic gas-pump plaque, with new design feature: controlled background.

Tsun Yee



Selling points are dramatized in styling of Proctor toaster. Design derived from idea of toaster as appearance of fine table setting, not simply an instrument for toasting bread. Form departs from rounded shape associated with toasters as kitchen aids, the appearance features being end panels, color-adjustment device, starter arm, sculptured handles.

presentation at a series of four meetings with Shell, attended by ten to 30 officials from all divisions of that huge corporation. Contact throughout the study period was established with Shell's Vice President in Charge of Marketing.

It is not to be assumed that two men on telephones funneled all information to the study team. For at all times many people in the client company talk to as many designers who are working on the project in the Loewy organization. Their contacts, however, usually relate to special queries or tasks.

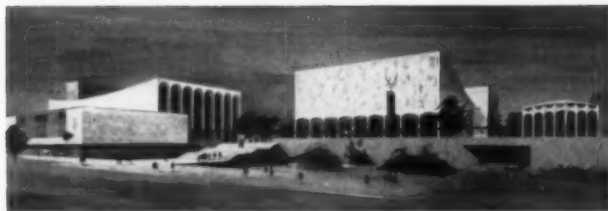
After Shell decided to proceed with the design phase of the proposed comprehensive program, this was announced to the Loewy partner in charge of the initial survey. Then a meeting of partner, account supervisor and design panel (drawn from each work division) decided how to spread and assign the work and assign the individual designers.

The Shell account is now rolling into its fifth year under this work and client relations system. As the projects have accumulated there have been three divisional design directors involved: two within graphics, and one from product design. While the account supervisor still confers with, and reports directly to, the Shell official heading the Marketing Division, each of the three design directors deals with qualified executives in Shell divisions that are directly affected by



Variety of projects, but unity of divisional responsibility (graphics and packaging), characterize Loewy's program for Canada Dry. Designer has been retained since 1952.

Entire program for United Air Lines is supervised from RLA's Chicago office, but during development stages design studios were set up right in the plants. Design goes from interiors to uniforms to exterior markings of DC-7 Mainliner shown here.



Cultural center for Montreal is example of how a design office expands to meet client needs. Loewy augmented research staff to conduct initial survey. Account executive is an architect.



the design plans, thus assuring full communication.

It is not surprising that so admittedly time-consuming a series of checks was essential in this case when one considers the size of the company (it employs over 40,000 people), the authority of the men who head its many divisions, and the fact that, since it is the seventeenth largest corporation in the United States, many design revisions can involve millions of dollars. Also, the nature of their marketing problem is such that it will be many years before the design metamorphosis has been completed.

A different kind of problem—calling for a different set-up to handle client relationships—is Canada Dry Corporation's. Loewy has worked for this company since 1952 on over 200 individual design projects through the present month. Until very recently all their projects fell in the work division of graphics and packaging, so a design project director within that division was made account supervisor.

He deals directly with a Vice-President in Charge of Advertising and Marketing. Here the working relationship stays so close to one division that the reports and panel meetings can be reduced considerably.

The account supervisor states that this is possible only because, over the years, he and the assistant to the company's Vice-President have developed graphic techniques for presenting design recommendations

briefly and convincingly. Since the company has not established the most efficient system of coordination within its own staff, these presentations often serve to do it for them. The Loewy account supervisor on this account has learned, with the help of the client liaison man, to check decisions through the company itself when he fears that some division that has not been alerted to the design plans may be affected.

Raymond Loewy once said that the maximum healthy life of a client-designer relationship is 16 years. We have a retail client for whom we have been working, off and on, for over 14 years. The client relationship has become stronger as changes in retailing practice and competition have occurred, and the designer (Snaith) and his client can almost measure the progress of each venture in terms of profit. This is one of those intensely personal relationships in which two men are firmly convinced that no other single man has the ability as professional or businessman to satisfy the other's needs. Another such unique client relationship was Raymond Loewy's with Paul Hoffman of the Studebaker Corporation.

An interesting new project, a cultural center for Montreal, Canada, calls for still another system of setting up productive client relationships. In the first phase of the project our man in charge of client relations was also director of the initial research pro-



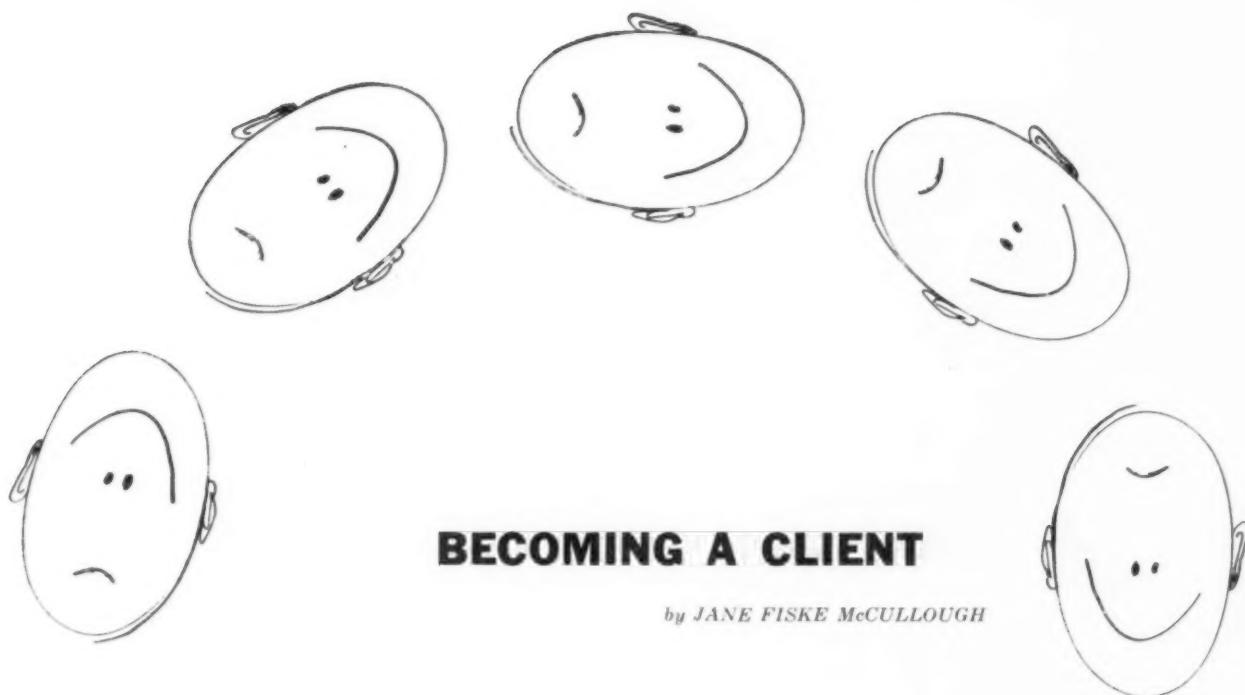
gram. In this instance, we augmented our staff of researchers to conduct a survey, the results of which were formalized in a published report.

The assignment of the working project director to this account could not be made until the Loewy partner had outlined a second proposal to the client in which the supervisory authority for all agencies to be involved in this huge project was defined. Now that this organization is to coordinate the entire program, the account executive is to be an architect.

In each case the choice of the account supervisor is influenced by the position and training of the client's representative. In the case of Proctor Electric Company, for which we have just completed the design of a toaster, the simplest client relationship could be set up directly between the Loewy work division head and Proctor's Director of Engineering Research. Here the kinds of decisions to be made and the information to be traded dealt so particularly with production and engineering details that the introduction of other principals was not essential.

Then there is the case of United Air Lines where, to insure the closest possible working relations, separate design studios were actually set up within plants where development work was progressing. The closest client relations were conducted in these work areas. Still, the entire program is supervised from Chicago by the head of our office there. This particular working relationship is varied: the "client" changes with the divisions affected, and a third company, Douglas, is involved in the work as well. Therefore, client relations here include not only relations with the United people but with other companies from which they are buying equipment and which they are employing to supply design components of their service.

Although we believe that the real basis of a good client relationship is *service*, we must admit that the personalities of the men involved are important in sustaining interest in the program, loyalty to the company, ease of communications. The professional qualifications of the designer or his client contact are not sufficient to offset misunderstanding if there is a clash of personalities. When this occurs, as it rarely does, the account supervisor can be changed or—and this happens even less often—we can ask the client company to review the working set-up it has established. For the gentle art of client relationship is rooted in diplomacy, in establishing easy commerce of men who are working together, in continually renewing the client's enthusiasm for the design that is being developed for him, and *in the designer's ability to articulate his ideas*. When words fail him he always has his pencil. And it is the pencil that most of his clients are buying.



BECOMING A CLIENT

by JANE FISKE McCULLOUGH

The last time anyone asked us point blank about selecting a designer wasn't so long ago, so the details of our somewhat involved reply are still fresh in mind. It was a social occasion, which lessened the likelihood of a serious question and heightened our effort to see the question through.

The prospective clients were a young couple who owned their own business, manufacturing holloware and cookware in a special metal alloy with some unique thermal qualities. Their products, so far as we knew, were attractive and practical, yet they felt it was time to add some new shapes and re-evaluate the old, all of which they themselves had designed. Among the faceless sea of names in the design world, whom should they approach?

They weren't totally adrift, as one question proved. They made it clear that their corporate position could not support any elaborate design forces or special technical skills. They would be satisfied with a sensitive and sympathetic person with whom they could work closely.

Why did they want to redesign? (For better sales results.)

What was the primary market? (Eastern and western giftware and specialty stores.)

Were they planning to do more in developing and promoting the unusual cooking qualities of their ware? (Hadn't thought of it.)

Did senders and receivers know on sight how to make use of the pieces, whose shapes seemed solely decorative? (No—they made and sold pieces willy nilly for cooking, serving, ash trays, side dishes, without indications as to use.) Etc. etc. etc.

We were already out of bounds. These were questions for a designer to be asking. Yet they made a point of relevance to two clients in search of a designer. Clearly they didn't need someone to sculpt some sensitive new shapes for them. They first needed someone to help them analyse their market and sales potential. After digging further in this direction he could—if they were honest and he were good—come to some conclusions about what to redesign *for*.

How to go about it

There are several approaches to clienthood. Some people fall into it, like a big manhole after too many martinis. Some people calculate it to the last inch, like a military maneuver. Some worry into it, like marriage, and others just wake up one day and find themselves with a designer. We've noted that these approaches reflect various motives. Some clients are determined to find Great Talent, and stalk the field with a kind of artistic Geiger counter. Others want a Great Bargain, and ruffle up the field as if it were an August White Sale. Some make it—and some never do. It is, after all, a lot of work. Personally, we are convinced that becoming a client is more than just a matter of finding a designer, and here are a few of the often-overlooked steps we recommend to the attention of anyone who seriously aspires to this state.

1. Getting into a cliental frame of mind

Adulthood, fatherhood, clienthood—all new experiences require some inner preparation. The last can be approached mystically (introspection, beds of nails, etc.) but perhaps it can better be done calisthenically, by



exercising your will and boosting your confidence toward realizing a number of things:

a. You are about to make a decision (with or without the blessing of the second vice-president and chief engineer) that involves personal opinion. It cannot be made on a calculator or sales chart. In some cases it cannot even be verified by evidence. It requires that you know what you want and what you like. Have the courage to recognize a designer whose work you like, and trust.

b. You can profit from flexibility. Don't assume that you know all the answers, at least at the start. Be prepared to learn, to ask questions as well as answer them. Be prepared to change your outlook. You probably will anyway.

c. Don't look for *the* answer, either. Some clients condemn themselves to disappointment by believing that a designer will pull one perfect all-powerful white rabbit from a hat, stroke his moustache, and stroll away. On the contrary, the satisfied client usually finds *he* works nearly as hard as the designer, and that white rabbits are really born out of an endless series of joint decisions.

d. Be prepared to share your time and knowledge with the designer of your choice. Delegate design supervision only when it makes sense from the designer's point of view. Any given design is for a purpose, and the man who does it has to know what that purpose is. The more insight and information he gets from the people closest to the source of policy, the more quickly and astutely he will hit his mark.

e. Can you afford to hire a designer? When you enter an unknown marketplace, there's always a temptation to gird yourself with protective budgets: doing so seems to provide a solid armor for your own inexperience in hiring design talent. But there's more than one way to measure the monetary value of anyone you may hire. A man who does 5% of the production work, by actual volume, may deserve a flat 5% fee. But his purpose may be bigger, and his contribution more profitable, than you can ever predict in advance; a 20% fee might ultimately be a bargain. So keep your mind and budget (and Board of Directors) flexible until you know what you're paying for. Then, when you review a candidate's ideas and fees, decide first if you can afford *not* to hire him as your designer.

2. On with the research

With your thinking thus framed, you are ready to start the active phase of the search.

a. Start systematically. Unless you have the benefit of informed personal recommendations, there is probably no shortcut to a really good choice. The first step

might be a review of published work, in both professional magazines (such as ID's Annual Design Review) and general ones. When you see a design that you like in *any* field follow it up. (A letter to the manufacturer will usually yield the designer's name and address.)

b. Decide your radius of interest. If the problem is small, a designer from the immediate vicinity may be indicated (and easier to find.) If your problem requires special talents or personality, consider the whole field. The right person or firm may, in either event, be right in your city, or he may be 3000 miles away. However, distance is worth considering.

c. Know that there are differences among design organizations, as well as among designers. Some of these are explicit, some subtle. The "large" organization is recognizable not only by the number of employees but by its nature of operation: by the number of clients handled, the size of accounts, the number of organizational personnel, by an emphasis on efficiency and special facilities, a business-like method of distributing work and responsibility that often makes it most congenial to big corporate clients. The "middle-size" office may have 5 or 25 employees, but its essential characteristic is a more closely knit structure around a leading designer or team or partners, as well as less specialization, a more informal distribution of work and, often, a less formal relationship with clients. The "small office" is, in practice, a one-man office, with one designer doing the gamut of work for a limited (and usually selected) number of clients who prefer close contact and greater consistency to elaborate organizational facilities.

Of course, there are plenty of exceptions. Some designers, by virtue of specialties (packaging, furniture, display) fall outside these categories. Designers' personalities are always a critical factor. Some middle-size offices are patterned after big offices, others strive to offer the intimacy of a one-man operation, and so on. Such specific details will come out only on investigation. But knowing the prototypes can help you decide *where* to begin your investigation.

d. Contact professional organizations after you know what you think you want. (You may change your mind later.) The ASID* and the IDI* can each supply names of their members by geographic region, and by other categories (size, specialty) if desired. Other organizations can supply similar lists of professionals.

*American Society of Industrial Designers, 15 East 48th Street, New York, N.Y.
Industrial Designers Institute, 441 Madison Ave., New York, N.Y.

e. Narrow down the list to the number you and your staff can conveniently interview. Three might be a minimum, twelve a good round number. Whether you

visit their offices (which usually adds valuable impressions to the research) or invite them to call on you, depends on time, budgets, and the scope of your project.

3. Some tips on talking

The appointments are made, the ashtrays are emptied, you are about to collect some critical data. We suggest that you:

a. Listen carefully and talk freely. You want to look at a presentation or portfolio, but it is as important to find out about your prospect's background, attitudes, objectives. Give him a good audience. See that he explains himself and his work, not slickly, but soundly.

Then let go about yourself, your company, product, problems. See how he reacts to your side of the story. Collaboration will be one part of his job—whether with you, staff designers, executives, or engineers—so it's important to judge his interest in helping you.

b. Talk turkey. You'll want to know how each candidate works and charges. *How to set up fees and contracts* is another article (dealt with overleaf); the point here is that fee talk belongs in the interview, neither as the foremost consideration nor the hindmost thought, but as a natural correlary to considered collaboration. A designer shouldn't be judged by his fees alone—high price is no more a sign of competence than low price is the sign of a bargain.

4. And now to go

The conference room's cluttered, the ashtrays are full, the talking is over, decisions begin. Keep these reminders jotted on your cuff:

a. Choose an approach, not a product or style. If your problem is dishpans, don't expect to find an experienced dishpan man. Few designers will present work in your field, nor is similarity of experience the best proof of a designer's ability for a given job. (In fact, those working on products similar to yours will usually refuse, on ethical grounds, to accept your account if it could be considered competitive.)

Industrial design is a field of generalization, not specialization. An industrial designer helps you solve problems by his ability to grasp each problem afresh, to find an answer that is at once imaginative and realistic.

b. Beware of a "safe choice," a compromise that you propose only because it may sit well with your firm, staff, boss, or directors. There are, of course, lots of unknowns before you have worked with a designer—but if your hunches aren't on the positive side, you probably aren't ready to halt your research.

c. A test situation is possible for clients who are willing to make an investment before making a final decision. For various reasons, both practical and ethical,

most candidates will refuse to do speculative design on products to "prove" their aptitude for a new job. (For one thing, visuals alone wouldn't prove much. Full research would be too costly to undertake on speculation, and could easily lead to exploitation.) But by another procedure, suggested by one designer, it is possible for a client to proceed with his eyes open without being unfair to candidates:

After you have narrowed down your group of prospects, retain several (four would be good) of the most promising to plot the steps of a practicable design program for your company or product (exclusive of visual design). Since you are paying for all of the studies, just as you would for any other consultation, they are yours to use, disregard, or combine; the resulting ideas would alone justify most of the expense. In addition, you are then in a position to select the designer whose approach impresses you most, to carry out the concrete plans. And having tested him on a broadly framed problem, you are more likely to know how comprehensive his help will be on all future problems.

5. Expectations, great and small

Now that you've made it to clienthood, what returns can you expect on your investment of time and care? More, we expect, if you observe these points:

a. Don't be a blank. Have some thoughts of your own. Your ideas and views are part of a designer's research, and—particularly as long as you're willing to change or enlarge them—they add to the results.

b. Give him the largest possible problem. Perhaps, when you started your search, you wanted a can opener restyled for a more pleasing appearance (like our friends with the holloware shapes.) But by the time you're underway, another truth may be apparent: "pleasing appearance" may be more of an limitation than you think. Appearance is usually less successful when applied to a finished product than when it grows as an expression of function and engineering. In the long run, a designer may serve you best by very special talent: *design thinking*. This means the ability to relate the product to the market, to the user, to the objectives of the whole company. This kind of creative evaluation—whether in the garb of informal design analysis or formal product planning—should ideally precede decisions about engineering or appearance, and by giving the designer the maximum chance to contribute this thinking, you give him a maximum chance to help you.

c. Don't expect miracles. Design, like statistics and practically everything else, is only as good as the use you make of it. Half the burden of the designer's success rests on your facing *your own* problems before choosing him, and then while using him.



THE PAPER IT'S WRITTEN ON

Contracts of all kinds—for royalty, retainer, flat fee, or straight time arrangements—should be a positive factor in the client-designer relationship.

by LEE EPSTEIN

An oral agreement, as Sam Goldwyn said, isn't worth the paper it's written on. Maybe this is because so many of us have poor memories, but I prefer to think it is because of the plain misinterpretations we make of one another's speech. For a contract—a good contract—is really nothing more or less than a communication that defines and sets the boundaries of a collaboration. Admittedly, the final form of a contract is more complicated and detailed than this, but if it doesn't clarify these points, it isn't worth . . .

Contracts written for designers and their clients have, like industrial design itself, taken their cues from the past. My first experience, in the early forties, as counsel for a designer was as much a learning experience for me as it was a service experience for the designer and his client. As this was new legal ground, mistakes were bound to be common. For instance, designers were designing products only to find that their client-manufacturers, pleased with the success of the designs, were making "adaptations" of the designs and manufacturing them under other brand names.

Confusion over such easily clarified matters as who pays for prototype models often caused hard feelings and proved costly for both client and designer. The American Society of Industrial Designers was the first to suggest a format for designer-client contracts when, in 1948 it published for its members "Proposed Contract Forms" which, I was selected to write, with members of the committee. My source was a collection of the existing contracts which member offices had been using. Without them the job would have been staggering. Solely an attempt at contract consistency, it was not intended to be the last word on contract design—if there is such a last word. Most contracts take their individual form from the immediate requirements of the job and from the personal relationship the agreement expresses.

Four needs, four contracts

While it would be difficult to fit actual working contracts into clearly-distinguished "types," almost all contracts are designed to satisfy one or several of four different needs. The simplest form usually is a contract for *consultation*. Ordinarily the only product in a consultation relationship is a written report. As a result, these contracts are less detailed than the others, and often are simply written as letters of agreement stating the purpose of the association, its duration, and monies to be paid. Incidentally, if the consultation is successful, it is often a prelude to a longer relationship, requiring more formal agreement.

For example, as a result of a fruitful consultation arrangement, a client might try the designer on one particular job, with no obligation to do further business

with him after its completion. For this he might hire on a *flat fee* basis, or under the terms of a *straight time* contract. Under the fee agreement, the payment is fixed, while a straight time contract pays the designer for the hours spent working on the job. Because it is hard to predict accurately the working hours involved, both designer and client are protected by the inclusion of a clause insuring minimum and maximum payments.

The *retainer* contract is necessarily more complicated because it covers a broader range of work and a longer span of time. Essentially it offers the client the services of the designer, in stated design areas, for a monthly fee, usually based on a one-year or six-month total figure. If the cost of services rendered by the designer's staff, his own extra services, supervision, etc., has not been figured in the monthly retainer, it is included in the monthly bill at cost, plus a percentage for overhead.

Perhaps the precedent for the *royalty* agreement is to be found in the structure of literary contracts—possibly it stems from the early designer's association with the theater. Although the royalty arrangement is more exacting in detail than other contracts, when it is properly constructed it has been popular with both client and designer. By giving him a stake in the success of the product, the client can feel his designer is constantly "up" for the job, while the designer can spend heady evenings figuring his share of total sales. It sounds like, and can be, peaches and cream; but there are several factors necessary to make it so. The big problem comes in the lag between the time the designer starts to work and the time his work begins to bear fruit and royalties. This lag must be adjusted by a guarantee against royalties—usually based on the time spent in designing, production, and merchandising. This payment is later deducted from the initial royalty returns. It must also be clear when production will—under circumstances of good faith—start, and for how long royalties will be paid.

These descriptions are only the barest outlines of contractual forms, and I must repeat that just as there is no set form for solving a design problem, neither is there a single form for setting up a design contract. The finished working contract is usually a combination of two or more forms and is tailored to fit the need.

Anticipating conflicts

Most conflicts in the designer-client relationship can be predicted, curiously enough, before the contract is signed. Usually, a good contract can be written around the major points of discussion during the negotiations. Of course, this is when fees, among other things, are decided, but this is also when methods of payment and the nature and scheduling of the work should be determined. If discussions are thorough in this pre-contract

stage, many of the obstacles not only to writing, but also to keeping, a contract are removed.

Serious misunderstandings which arise during the work come more often from conflicts over the design itself than from financial disagreements. The designer, feeling a dual responsibility (to the client and to the product), sometimes finds fault with changes made in the product design between final accepted form of the prototype model and what appears on the production line. Manufacturers are understandably less sensitive to the significance of "small" alterations, and sometimes make them without consulting the designer. While some changes are inevitable, the designer feels, with justification, that to be included in these decisions is not only his right but his responsibility.

This sort of misunderstanding can be most serious when the designer has sold not only his talent, but also the right to use his name, or the name of his office, in connection with the promotion of the product. The use of the designer's name for sales purposes presents one of the most abstract and delicate of contract problems. If the designer has no control over how his name is used and how the product is manufactured and merchandized, his professional reputation may be jeopardized. Also, once the contract is ended, there is the question of what rights the designer has in regard to the subsequent design and development of the product, which may have become known to the public as one of his designs.

Although the principal was not an industrial designer, this aspect of design contract problems is illuminated by the case of the rights of Norman Granz, producer of the popular "Jazz at the Philharmonic" recorded series. Granz sold the series, records, name and all, to another producer, with the stipulation that it be issued and presented in its original and complete form. Several of the pieces were cut; Granz sued and won. The decision pointed out that not only had there been an action in bad faith by the new producer, but that Granz's name had by this time become associated with the product (even though he no longer owned it), and that the alteration in the score was an abrogation of the contract and damaging to his professional name.

The lawyer's job in all of this is more than that of an arbitrator or keeper-of-the-peace. While he sometimes acts as business agent and negotiator for clients and designers, his first job is forecasting — looking ahead for trouble and eliminating it. Contracts are not conceived as the basis of a lawsuit; they have a much more positive function. In the process of understanding one another, the client and the designer define and give structure to their association. This is their contract—and the best one is stuck in a drawer and never looked at again.



THE TEAM APPROACH *a round-table*

discussion reveals how Connecticut General got what it wanted from designers

Frazar B. Wilde, *client*

Gordon Bunshaft, *architect*

Florence Knoll, *interior designer*

Lester Beall, *graphic designer*

"I like to do things better than anybody else ever did, and I want to do it at a profit. Anybody can do things if they throw away the pocketbook. But I like to have everything better than anyone else has—starting with the people here, the building, the products—at a profit, because that's the only way you can make an extra contribution."

What can you do with a client who talks like that? The shining, pond-flanked glass and steel structure shown on the opposite page is one answer—the one Skidmore, Owings and Merrill gave to the client quoted above: President Frazar B. Wilde, of the Connecticut General Life Insurance Company, in Hartford.

Completed last year, the building has already become one of those American paradoxes, the *brand-new legend*. This is attributable partly to architectural distinction (the American Institute of Architects named it "one of the ten buildings in America's future," and more recently gave it a First Honor Award) and partly to its uniqueness as a business structure. Despite Ambrose Bierce's charming insistence that the life insurance business is really a form of gambling (you bet the company that you will die sooner than their actuary's figures say you will), it has been regarded generally as staid and conservative. If it is not so regarded any

longer it will be largely because Connecticut General broke with tradition by building in the country instead of the city, building low instead of high, building plain (but glamorous) instead of fancy.

Right after World War II, C.G. directors realized that for the sixth time in its life the company had outgrown its plant. Since they seemed always to be needing more room, they concluded that what they really needed was more than room—it was flexibility for future expansion. Once this was decided, their move to the suburbs was as inevitable as Marjorie Morningstar's. (And they took almost as much time making it.)

Out in the country, the building could sprawl rather than rise. This had never been an issue in office buildings, but the planners discovered a good reason for making it one: this was not to be an office building in the usual sense. Studies disclosed that "the issuing and service of an insurance policy bears many resemblances to an assembly line operation in a factory," and could therefore be most efficiently performed horizontally instead of vertically. Or as client Wilde crisply noted, "The work doesn't want to go upstairs."

To create an environment in which the work could go wherever it wanted to, the company retained a design team that included Skidmore's Gordon Bunshaft, partner in charge of design, and William S. Brown,



Ezra Stoller

partner in charge of coordination; Florence Knoll, Director of the Knoll Planning Unit; graphic designer Lester Beall; and sculptor Isamu Noguchi.

Beall literally came in by the front door: the company's symbol, used on all stationery and some promotional literature, was a line drawing of the Florentine door of their Hartford building. Since the new building made the stationery obsolete, Lester Beall was called in to redesign it. He stayed to do a complete new graphics program.

"I don't think we've ever worked more closely with a client or had a more demanding one," Bunshaft has remarked. Because other designers appeared to feel the same way, it seemed worth ID's editorial while to ask Frazar Wilde exactly what he demanded, and how (and whether) he got it. It seemed equally useful to ask the designers how *they* had worked with the client and with each other—and to do the asking while they were all in the same place at the same time.

The result is the following tape-recorded transcript of a loosely moderated round-table discussion held, logically enough, in the new building itself. Isamu Noguchi was out of the country at the time, but the other principals were all present and ready to discuss with alacrity an unusual client-designer relationship they were proud of having sustained.—R.S.C.

MODERATOR: Despite appearances, this is not Night Beat, although we hope that at least some of the material we cover will be equally, if not similarly, provocative. We want to explore the relationship between the architect and the client, the other designers and the client, and the architect and the other designers. Together you have created an unusual building, and we want to find out how you related to each other while doing it . . . particularly how the designers related to the client. This ought not to be a question-and-answer affair, and I hope you'll all raise whatever relevant points come to mind. But since we have to start somewhere, I think a good initial question might be addressed to Mr. Wilde: How did this particular combination of architect and designers come together? I assume the architect came first. How was he chosen?

WILDE: Well, he was chosen by a group of officers going over the list of American architects . . . and then interviewing those firms we thought might execute this project. The final determination was made by the board on the recommendation of the officers.

MODERATOR: Was the idea simply "We need more room and have to have another building"? Or did you feel it should be a *different kind of building* even before you thought of an architect?



Portrait photograph: Jim Ward

"I have to accuse myself of trying to be a perfectionist."

Frasar B. Wilde

WILDE: The latter. We decided that downtown wouldn't lend itself to our problems, and tried to get an architect we felt would be most likely to execute the type of building we had imagined would be most useful.

BUNSHAFT: It's my impression that your people were doing what we call programming—analyzing what they would need in 1960, 1970 and things like that, not just what they would need immediately. You were doing that five years before you even got involved with an architect, weren't you?

WILDE: Well, even earlier than that in one sense. It just happens to be one of my weaknesses to try to look ahead. It was a continuous evolutionary process, but I'd say it was about ten years ago that we made a major decision in the official family that we could not successfully expand downtown.

MODERATOR: Then to be a really effective client you have to be prepared before you even become a client.

WILDE: You are a better client if you've thought about your problems because it gives the architect something to start from.

MODERATOR: I understand that as early as ten years ago you had corresponded with a Professor Voss, an advisor, relative to the new building.

WILDE: He was picked before the architect—I think it was sometime prior to 1953. We picked him because I knew of his work.

MODERATOR: His work as an architect?

WILDE: No, as a building consultant.

MODERATOR: What does that mean exactly? What is a building consultant?

WILDE: He had a particular technical capacity in the materials field—really nothing to do with design.

BUNSHAFT: He's involved in engineering and testing materials. When a building leaks he knows what causes it and how to correct it. He's a sort of doctor of buildings. I think we might say that here he became a doctor of preventive medicine . . . I gather he gave some advice on selecting the architects or on buildings in general. I don't know. I wasn't around then. But we had Voss and another important contributor not here today—the Turner Construction Company. They gave their judgement, and if we had doubts or if the Turner people had doubts, we used Voss on testing.

WILDE: There was another reason for having Voss. We knew when we settled on this design that we were going to use material and construction that was unusual and untested by time. After all, these skin-wall buildings are very new and have been exceptionally

troublesome. We knew that, and brought in a specialist, hoping he'd turn out to be an expert.

MODERATOR: Would you mind saying something about the criteria you used in selecting this particular architectural firm for the job?

WILDE: We looked at buildings and talked with many people about builders, and with some architects—particularly architects we knew we were not going to use because they didn't have the back-up staff, but whose experience and judgement we felt was good. It came down to two firms in the end, and the Skidmore firm had a little more of what we thought we wanted.

MODERATOR: When the first pictures of the building were shown, I remember someone remarking that "those people were 'out for architecture.'" I took that to mean that you intended not just to get a utilitarian building that would meet the needs of an expanding company, but also to make an esthetic contribution. Do you think this is a fair statement?

WILDE: Nothing could be further from the truth. I told Mr. Bunshaft and his associates that we wanted the most efficient building that could be built. If it turned out to look well, we'd be pleased. I remember that speech.

MODERATOR: How did that speech affect you, Mr. Bunshaft?

BUNSHAFT: Here, as I see it, is what I'd call the ideal dream arrangement of architects, contractors, owners and designers. It never happens like it happened here—nobody ever analyzes their needs as thoroughly as Connecticut General did even before they got an architect. You know, the big thing in doing a building is the question of what the hell do you need. Connecticut General found out what they needed and then got all the people that should be in it. We've had clients come to us and ask for references. Say we did some insurance company in New Orleans—well, they'll call up the president of that company and ask him how he liked it. Well, these people didn't do that; they sent people down to look at the buildings. They spent about six months selecting an architect and they really got serious about us only after six months. It was assumed they were going to get a good building and when you assume you're going to get a good building you don't say "We want one that is utilitarian and pretty." These things are integrated in one. When someone says "We want a good utility building that's pretty," they don't know what they're talking about—they usually say "We want it cheap" too.

MODERATOR: Why was the contractor called in so early?

BUNSHAFT: The contractors were very handy in the

early days of running up estimates. Having the contractor there meant that he could start the foundations before the drawings were truly complete. In fact you might almost say the drawings never were complete on this job. It was a wonderful arrangement. The design on this job is still going on. But if you make complete working drawings you get your design done and from there on in it's a battle every time you want to change something.

KNOLL: That's an awfully important point—that the design was going on all the time. Most of us designers have suffered tremendously because the whole thing was to be designed immediately and there was no time left after contracts were set to really get to know the problem and do something.

BUNSHAFT: We're jumping all over the lot, but let me say that the owner recognized that architects and designers were human beings and can make mistakes—the mistakes were corrected as we went along, and without too much beating on the head.

WILDE: If a particular design of an area didn't come off, either Mr. Bunshaft or his man who was here all the time, or Mrs. Knoll, might say "We'd better change that." Because we were not frozen, it could be done. Now it took a little longer, and whether it cost more or less will always be debatable, but the result was infinitely better.

MODERATOR: You say you were not frozen. Just what is involved in being "unfrozen"—is it simply a matter of attitude on the part of the client?

BUNSHAFT: Not just the client—everyone was involved. But being unfrozen was an attitude, and the attitude was created by the owner.

MODERATOR: If you don't hire a contractor on the basis of a proposed building, what basis do you hire him on?

BUNSHAFT: We hire him on a fee basis—that's done all the time now. He's part of the team, because you want to get his knowledge of estimating, his knowledge of when to buy your steel. You can order steel on a tonnage basis before you have working drawings.

MODERATOR: This building seems to take its form largely from the conception of the insurance business as a horizontal operation. Is this an old saw in the insurance business, or did it originate with this project?

WILDE: Well, the insurance business is normally and historically vertical, and it's still that way in the country as a whole, but largely as a result of our experiment here they are giving more emphasis to the horizontal, although none that I know of have gone as far as we have. The reason they're vertical is twofold: first, if the location is downtown ground costs enter in and you



don't have much choice. Secondly, people think in traditional terms, unless you have the imagination and courage to depart. Through collaboration with Mr. Bunshaft and Mrs. Knoll we overcame a great defect in horizontal living—monotony.

MODERATOR: How was this managed? Traditionally, I suppose, a horizontal operation is most nearly comparable to a factory operation. But how do you design one without making it *look* like a factory?

BUNSHAFT: After a lot of analysis it suddenly came to us that this isn't an office building, and I think the insurance companies are in error when they think they're offices. They aren't at all. We call it light industry. There are lots of girls and a lot of little things, like electronics, and it is a factory in a sense. But we have this beautiful countryside, with intimate courts, big views, intimate views—we break it up with color, that's the idea of the courts.

WILDE: That was dedicated to increased employee efficiency in the broad sense. We have to put some people inside—they can't all be by outside windows. But to make them feel just as important and just as good as someone else they have a nice court they can look out on. I might say—apropos of traditionalism—that we had a very knowledgeable group of people come in and look over our shoulder at the design when it was semi-frozen, and they took an exceptionally dim view. It was simply based on traditionalism.

MODERATOR: Who were these knowledgeable people?

BUNSHAFT: Various experts in maintenance, and men who had a great deal of experience with buildings.

WILDE: As I said, they were the victims of tradition. I think there was one brave soul who thought it might work. I think the number of man hours applied to this building in trying to get the best solution to all the problems is quite high. But when you think of the space and how much buildings cost, and how long you expect to live in them—a result that's a product of work by competent people is worth all the effort it took.

MODERATOR: Who was the panel co-ordinator and decision maker? Was there a person or panel on all design decisions?

WILDE: Every major problem was started on by one of various officer groups. They reached a conclusion and batted it up to a higher authority, which again was a group, and the collective judgment was usually taken. However, someone has to be finally responsible, and this was usually myself, if there was a close question or perhaps something that I, out of sheer conviction,

thought would work better in a different way. But I did not deviate very often from the collective judgement. One funny thing—you won't ever see it, so I'll tell you—this is the only office building in the world that has no clocks that can be seen by people at work. They're all concealed behind the water fountains. I was assured by all my associates that you simply can't run an office building without a clock. Well, we're running it. That was just a pet phobia of mine, but it's only on something like that that I butted in. Of course I would sometimes push a thing to a conclusion.

MODERATOR: Were the architects and designers members of these committees or were they just called in?

WILDE: It's a matter of liaison, which is terribly important, and the architect and Mrs. Knoll spent a good deal of time with it and so did members of my staff and it was all plotted not on paper alone but on little models—is that still around?

BUNSHAFT: It's still down there. Frazar, may I outline how the job worked. We would make things and present them to a sub-committee which Frazar created of, shall we say, younger people in the organization, not vice-presidents. There were about five of them. If we disagreed with what they wanted we might take it to the executive committee, of which Frazar was chairman. But the sub-committee would recommend what was to be done and we'd make our presentation.

MODERATOR: May I interrupt for a second—How was the sub-committee chosen? Were these men who knew something about architecture?

WILDE: No. They were chosen almost 100 per cent on the basis of knowledge of operations.

BUNSHAFT: They were people whose knowledge would aid in translating the client's needs. In respect to the executive committee, any committee is only as good as its chairman and Frazar can't say it but I can, "Here's a strong chairman and that's why it's going the way it is." Committees don't create buildings—there has to be someone leading it to a head. Actually it was a very close relationship between the architect, the designers and the owner. I called it a marriage without sex: a very friendly, intimate relationship that went on for four years. It's still going on.

MODERATOR: So there was no elaborate system for effecting a collaboration between all these people—nothing except the relatively simple meeting of sub-committee and executive committee. One reason we ask is that you had on your own side—on the architectural and design side—a larger staff than on most jobs. Did you have a coordination problem with Mrs. Knoll and Mr. Beall? For instance, if Mr. Beall is picking a color for

graphics, I assume he would have to coordinate with you or with whatever was going on.

KNOLL: We had committee groups discuss these things right here in the building. There was a model made of every single major room in the whole building. These models were shown to the committee at large and I think they were enormously helpful for everybody. No one's mentioned the mock-up, but that was certainly part of the design process: decisions on everything from flooring to the walls to the ceiling to the lights were actually made in the mock-up.

MODERATOR: Then it wasn't a matter of designers getting together in a group and working out a presentation.

BUNSHAFT: There's a small detail left out. Nothing was presented to the client that hadn't been cleared with the architects, and there was never any presentation made to the owner where there was disagreement. That applies to the basic presentation, but when we tried something in the mock-up we'd all go and look at it and Mrs. Knoll would say, "I think it's very beautiful" or "This ought to be brown" and I might say, "Well, maybe brown's good, let's try that" or "Let's try blue." And Frazar might say "I don't like brown."

KNOLL: More likely he'd say "I don't like black." I think the basic relationship between the interior designer and the architect has to be one of agreement to start with or it doesn't work. They can't have different basic design theories.

WILDE: Most buildings call in an interior decorator after all the architectural detail is set. Mrs. Knoll has architectural training—she doesn't hang curtains, except as an incident. Gordon got her in early so she could contribute in the execution of architectural details. He put them up—his office was responsible—but Mrs. Knoll would criticize and change constructively, with Gordon's permission, in many cases—quite a different thing from an interior decorator. Interior decorators do furniture and hang curtains and they sometimes help harmonize with the basic design, but this is a much better deal.

BUNSHAFT: This closeness from the very beginning pays off. The design of the building took about a year, and at that point we made a model. Up to that time the owner had never seen how the building was going to look. But it didn't seem to take a moment for anybody to agree to it, because they'd lived through the whole damned development of why the thing took the shape it did, and it seemed very natural. I'm trying to recall when Frazar brought up this question of a woman to help.

KNOLL: I'll tell you when it was. My firm was hired at



"There were no tensions on this job until it was done."

Gordon Bunshaft



the time they started digging the hole.

BUNSHAFT: There's a lot of stuff going on now about how you must have somebody to help you decide the size of the office and from that you do a building. Well, there are some architects working that way. However, this was done from our own plan layouts, and then Mrs. Knoll came in and we started on that.

KNOLL: Yes, the module determined the size of the offices. But it was the mock-up that determined that we downgrade all the sizes. The mock-up helped us all see that we could go down a size in all the offices, and because of the flexible system of the building it was perfectly easy to do.

WILDE: We have news for you. I've downgraded again—which I wanted to do in the first place. I was the victim of traditionalism on my staff. Actually the size of the office was influenced by the new furniture. We tried out samples in the mock-up, and until we tried the light modern style the offices didn't work—they looked crowded. And just by the luck of having Mrs. Knoll favor the light style, the offices worked.

KNOLL: As a matter of fact the furniture was designed to fit the module in this building. All the chests and cabinets are exactly the same width as the paneling and the desks. Everything throughout the building is actually modular.

WILDE: But the point is, Florence, if you hadn't led us away from the conventional, it wouldn't have worked. We had to go to tables rather than desks to make those offices look well.

MODERATOR: Was there much of a problem in justifying to the client the great expense of the mock-up?

BUNSHAFT: No. I think the big thing here is that in the old days anyone that designed used to *tell* an owner what he was getting. Today it's a joint effort and sometimes we think we ought to charge the client for an architectural degree. As a result some good architecture is occurring because it isn't the whim of one genius—it's an intelligent effort of a client and a designer.

KNOLL: A typical remark used to be "I don't know what my decorator is giving me. I'll see when I get it."

BUNSHAFT: Or "Here's what I want, and I'm going to Europe and I'd like it done on October 3rd." I guess that's all behind us.

MODERATOR: Mr. Beall, just when did you come into all this?

BEALL: Well, I came in and looked it over in the summer of 1955. I went through a rather extensive



"The client improved the scheme by objecting."

Florence Knoll

briefing within the company and learned something about its operation. You certainly should know something of the people you're designing for. Also the people you're designing with. Our first problem was the development of some kind of mark or symbol, and at a relatively early stage the interior designer and the architect and I got together—we were all involved in the development of this symbol. And we worked very closely with Bill Paynter—Connecticut General's director of advertising—and I'd hate to tell you how many designs were developed that only Bill and I saw. But we made a strong effort to tie ourselves to what both Mrs. Knoll and Gordon were doing. This was a very unusual opportunity for me because it was a very exciting thing to work with them. And the thoroughness and great respect for detail and for likeness naturally had a strong influence on our work. The three of us had many meetings with Bill Paynter until we got the presentation in shape. We only presented two or three different marks. You tell them.

KNOLL: Well *we* decided on one of the marks we wanted to use, but we couldn't get a decision so we just went ahead and used one of them on the cafeteria trays. I think that's the way it got started.

BUNSHAFT: When you make a presentation to the executive committee—the first time you talk, you get a feeling maybe they like it, maybe they don't. Then there's a pause. Nobody actually says "Okay it's approved." Then we run out the next thing and if there's a pause and nobody says anything, that means *that* was approved. I couldn't get used to it. I'd want to nail it down, so I'd say "Well, is it approved?"

MODERATOR: What do you do when the answer is, as you suggested earlier, "I don't like black?" Does that mean categorically "No"—or do you then go on to argue about black?

BUNSHAFT: Mr. Wilde doesn't like white either. No, I think we argue. We have respect for each other and will disagree and if sometimes we were throwing black around perhaps a little loosely, we took it out. And if in some places we thought it was important we'd fight for it. Frazar might give in.

KNOLL: The original model of this floor showed a great deal more white than we have now, and we got violent reactions from Mr. Wilde and the whole committee. So we revised and came back with a compromise between the original scheme and the objection.

BUNSHAFT: There are several ways of doing a good thing. It wouldn't be a compromise in the sense that it would be giving in and therefore weakening the concept. It would be just another concept.

MODERATOR: Do you feel there were no major compromises in the sense you have described? That is, isn't there something here of which you feel "Boy this really would have been good if I could have done it my way!"

KNOLL: No. That's not true in the whole building.

WILDE: I don't think any of us have that feeling.

BUNSHAFT: If there are any mistakes here it's because of our inability to do better. There are no mistakes because of compromise of owner, architect, decorator, designer, whatever.

KNOLL: The client did improve the scheme by objecting, and I think this happens in any design process.

BEALL: An example of the thoroughness with which everybody performed is the whole business of identifying certain sections of the building—the various departments, the stairs, the men's room and ladies' room, and so forth. We came out and took a tremendous number of photographs. Finally we did mock up full-scale certain identifying marks and had a presentation out here and Mr. Wilde almost had a stroke that day, but this is the real point: we ended up using—oh, just a few words around—men, women, stairs—and that's about all. It turned out to be the way it should have been done, but I don't think we could have arrived at that if we hadn't gone through this preliminary thing. This was another case in which going that far eventually saved a lot of money, because if we had charged into something, and had a lot of signs fabricated, then after they were put up you decided you couldn't live with them, it would have been a sad commentary.

MODERATOR: On the other hand, is there anything a prospective client might have to learn about *how* to live with a design?

BUNSHAFT: Maintenance is the important thing. A building is like a human being—it's not something you build once, then forget about. Somebody has to take pride in it from the time it's taken over. That's a disappointing thing designers have run into. The building is beautiful and you know everything is shipshape and you come back in three years and if somebody isn't interested it's kicked around and the building gets that dirty look to it. In this case it isn't that way. This building is better now than when it was finished.

MODERATOR: Is this true of graphics as well? Are steps being taken to assure its being a continuing program?

BEALL: Well, we've developed a style book that I think is unique. I don't know of any company that has ever done this. Of course maintenance in graphics is in some ways a more difficult problem. A building is set. Even though the interior design may be changed



"You can't set too tight a pattern or you kill the creative urge of the people involved."

Lester Beall

to the extent of someone's moving a table or chair around, the table and chair remain intact. But in graphics things can be eliminated and then forgotten or discarded. So in this style book we are attempting to provide everyone that works with the company's printed material with certain standards, procedures and information. For example we have chosen 18 specific colors to be used for all printed literature. They will be pre-mixed and will save a tremendous amount of money as far as time in the print shop is concerned because the man creating a job will be able to pick out the color by number, and the printer can just take it out of the can. We've also set up regulations relative to the use of type and we're putting it in a form we think will be stimulating to the people using it. You can't set too tight a pattern or you kill the creative urge of the personnel involved, and of course the problems vary to a certain extent. You might say we've laid down principles more than we have set up rules.

WILDE: We are still working on some things we're not satisfied with. We don't have signs around here yet because I'm not satisfied with either their wording or their location. I have to accuse myself of trying to be a perfectionist. I don't know why, but with some things I don't care at all. It doesn't bother me if a car is dirty, but if it isn't perfect mechanically I'm annoyed—everything had better work and be perfect. I like to do things better than anybody else ever did in any respect, and I want to do them at a profit. Anybody can do things if they throw away the pocketbook. But I like to have everything better than anybody else has—starting with the people here, the building, the products—and do it at a profit, because that's the only way you can make an extra contribution.

KNOLL: Incidentally, speaking about the people here, it's very interesting. After the move to this building they suddenly all seemed much younger, better dressed, brightly-colored.

MODERATOR: We'll have to stop soon, and I have a couple of questions. First, was Noguchi in on the meetings, on the collaboration?

BUNSHAFT: No.

MODERATOR: Was his a fairly independent project?

BUNSHAFT: I know you're interested in design, but to keep this thing relative, let's remember that one of the most important people involved in this building—and this is unusual for an architect to say—is the contractor. Keep that in mind. Noguchi would be four per cent in relation to the Turner Company's 40 per cent. Now we have a landscape group in our office and they're very good, but when it came to the courts and gardens we thought it ought to be something special

and we asked Frazar if we could hire Noguchi to do some studies for these courts. He's a very brilliant fellow, and he worked and made a little model of the courts and we worked on them and finally came up with a presentation and I think three of them were accepted; and one we didn't like and we changed it and did it ourselves.

MODERATOR: One last thing—and perhaps the most important. There's been a lot of talk about an integrated design program and it seems to have been achieved here. I think everyone would agree that a complicated project involving several designers needs to be integrated if it's going to be successful. The interior designer needs to know what the architect has in mind, and they both have to know what the graphic designer is up to. The report you give is a very happy one. But how does it come about? How do you achieve integration? I know that the answer is not just to get competent and highly talented people together. This is done all the time on projects that are actually not integrated at all and are very unhappy and turn out to be one conflict after another in which somebody always loses—and as often as not it's the client. What do you think was the big difference here? Luck?

WILDE: If people are both competent and of good will, they will work things out no matter how much they may be called prima donnas. But you have to get them together and you have to maintain personal liaison. The difference is that in many operations things are spread out and fed into a central source which makes the decisions. They are not participating before the final decision. Anybody resents changing his final creations, but if there is preliminary evaluation and discussion, psychologically you've got more chance of doing it.

BUNSHAFT: I'll be very plain with you. The only tensions on this job came in explaining to the press who did what, who should get credit for what. In my opinion—and I'm a difficult fellow—there were no tensions on this job until it was done. Somebody wanted to know who walked in when, and who did this to whom and why. Did Mrs. Knoll design that chair? Or did you pick that green carpet? And actually it's very difficult to explain.

MODERATOR: Oh, we're a disruptive element all right.

BUNSHAFT: This is easy—we're all in the same room. Usually this happens in different rooms, as it *didn't* happen in the design. But the essential thing is mutual respect for each other.

KNOLL: You need one strong person to keep the thing going.

WILDE: I'm not a strong person. I just have my ideas about how things should come out.

MODERATOR: But it *is* preferable to have a strong client?

BUNSHAFT: If we hadn't we might have ended up with a Swiss Chalet.

MODERATOR: What about the client who says "Design me something," and then goes off?

KNOLL: It's unsatisfactory for me.

WILDE: Someone always has to make a decision on certain debatable areas and you can get into trouble with folks who are part of the organization but who have not had the time to study it. A board of directors makes trouble because they don't have time to put on a problem, but aren't willing to delegate. Now we were very fortunate in that our board was willing to rely largely on me. Somebody has to step up and make a decision in matters of logic. Otherwise you go round and round, or you compromise.

BUNSHAFT: I know a great many designers sort of make the client feel they have a mysterious quality: "You're hiring me as the great artist, I say it should be purple and no more discussion." We don't work that way.

MODERATOR: Designers often talk wistfully about the desirability of having what they call "a free hand." Is it fair to say this: if a free hand means being free of client restrictions then you are actually *not* free to do a design job for the client because his restrictions are part of an expression of his needs, and you've got to rub up against them. Otherwise you're designing in a vacuum.

BEALL: It isn't so much that free hand, it's that feeling of respect. This is what you want because you have to work with certain requirements. My God, there's no problem if you don't have requirements.

BUNSHAFT: Did you ever try to design a dream-house? What the hell, it doesn't exist.



The Designer's Garden of Famous Clients

It probably all started with the Ark, although the matter of identifying designer and client is too complicated to go into here. In any case the problem of the relationship between client and designer has always been with us, although in some ways civilization—by softening the client—has softened the lot of the designer.

First things first: money. In the days when the designer didn't *get* a retainer because he *was* a retainer, it wasn't healthy to be too insistent about fees; in fact, if the back fees piled up too high it was safer to leave town than to sue. Even Leonardo thought himself lucky to be placated with some suburban real estate instead of the hard cash called for in the contract.

But money isn't everything, as Nelson Rockefeller might have observed (see page 63) and as Lee Epstein does observe (see page 47); there are other factors in the designer-client relation. Loyalty, for example. How does the client insure the secrecy of his process? The Pharaohs did it by walling the architect up inside the pyramid, to make sure he wouldn't show grave robbers the way in. (Codes of ethics established by the ASID and IDI have happily now made this practice unnecessary.) Or the designer can become too closely identified with his client, as Marie Antoinette's consultant no doubt reflected on his way to the guillotine.

But clients are, despite all legends to the contrary, people, and people don't change much—don't even change enough—as the examples on the following pages illustrate. —U. McH.

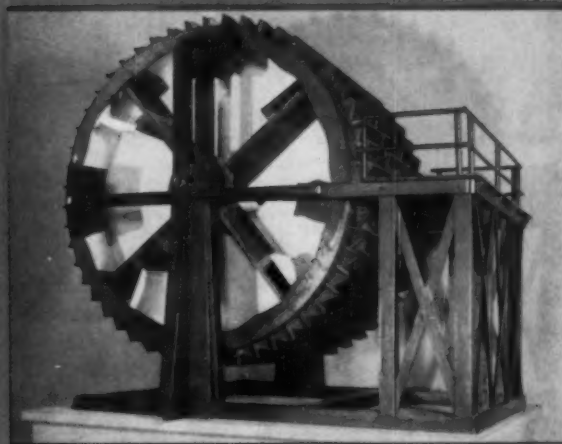


The client's wife: Beatrice d'Este, Duchess of Milan



The duke's staff designer: Leonardo da Vinci

The fifteenth-century Duke of Milan, who had stolen his nephew's throne, employed a whole circle of poets and artists to celebrate the justice and wisdom of his rule. Leonardo, when he wasn't planning masques and pageants, had to design fortifications, a new cathedral, statues to the glory of the Sforzas, and, after a plague decimated Milan in the winter of 1484-85, new sanitary facilities for the city. Even during the Renaissance, the client's wife sometimes had little projects of her own, and Leonardo, in his spare time, designed for Beatrice d'Este's boudoir the slave-powered air-conditioning unit shown below.



As the drum rotated, water moving from one compartment to the other forced cool air out into the ventilator's shaft.

Model by Dr. Roberto Quattrini



William Morris, feeling that it would be immoral to bring his bride into a house as ugly as those his fellow Victorians were building, commissioned his friend Philip Webb to design him a house. When it was finished, Morris could find nothing on the market fit to put inside it (except his bride), and this was the beginning of the design firm of Morris Associates, staffed largely by pre-Raphaelite painters and poets. Webb designed most of the furniture for Morris' house and later for the firm, finding his inspiration, according to the pre-Raphaelite canon, in the Middle Ages; attempting, as Rossetti put it, to design chairs "such as Barbarossa might have sat in." While Barbarossa probably would not have sat in the chair here shown, lots of other pre-Eamesians did—in parlors from Kansas City to Little Wapping.



William Morris, relaxing in a chair of the same name, by designer Webb

Wedgwood and Morris show art can be business, business can be art



Client: Josiah Wedgwood



Designer: John Flaxman

Josiah Wedgwood was the first mass producer to observe that art pays. Descended of a long line of potters, he started his career as an apprentice, and, having a shrewd head for business, soon established his own pottery. He then hired a twenty-year-old sculptor named John Flaxman to run him up some artistic dinnerware that would also sell well. Anything Greek would sell well in those days in England (Pompeii had just been discovered) and Wedgwood's be-garlanded and be-nymphed vases and plates were enormously popular. Flaxman subsisted on the pottery account for a number of years before graduating to tombstone design, and ended his career as a member of the Royal Academy

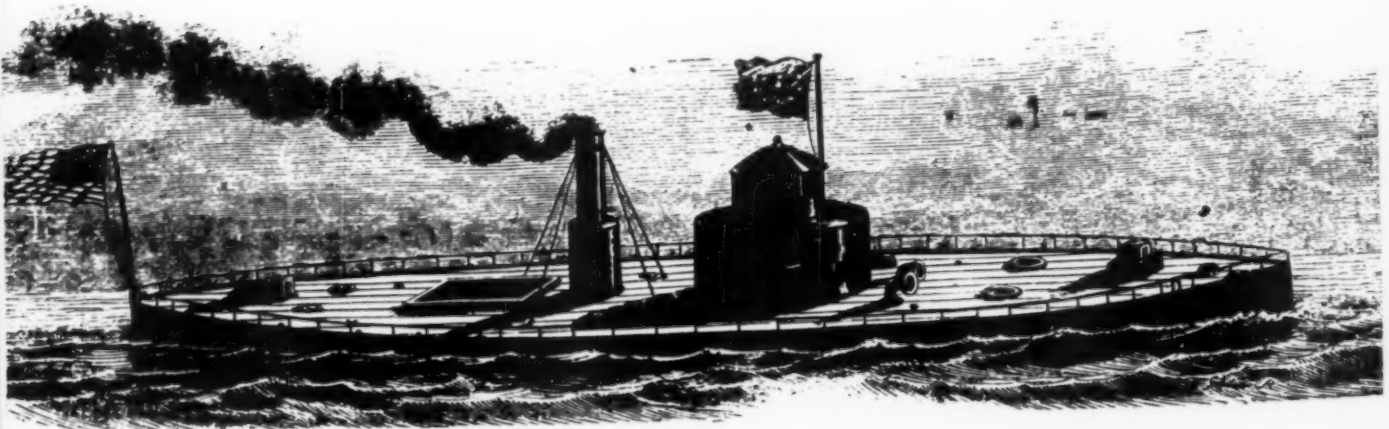


Secretary of War Stanton



Engineer John Ericsson

The Monitor: design for the Government on a free-lance basis



The building of the Monitor represents a primitive phase of design for the military, and a phase few designers would like to see repeated. Swedish engineer John Ericsson had been peddling his naval designs for years, but could find no client until the advantages of re-design were forcibly brought to public attention by the construction of the Confederate ironclad Merrimac. Finally a group of patriots agreed to put up the money for Ericsson's design at their own risk. The Navy contracted to buy the finished ship, subject to final approval. (The plan was both patriotic and lucrative: the Monitor, which cost \$195,000 to build, was sold

to the government for \$275,000. Ericsson received five per cent of the gross.)

North and South raced to complete their ships: the Monitor lost by one day. The Merrimac appeared in Hampton Roads March 8, 1862 and sank a Northern warship. The Monitor made her way hastily down the coast with a volunteer crew (since it would have been inhuman to draft a crew for so hazardous a mission) and engaged the Merrimac March 9, finally forcing the competition to withdraw. The Monitor had made no trial voyage and had, in fact, actually won a battle before being accepted by the client.



Client: François I



Designer: Benvenuto Cellini

Cellini's services for his clients often extended beyond the area of design. For Pope Clement VII, who had ordered a solid gold button, Cellini (according to Cellini) single-handedly slew the constable of Bourbon, who was then attacking Rome. The good impression this made was, however, diminished when Cellini was thrown into prison for embezzling the jewels from the papal tiara during the state of emergency. He then established himself in France, at the court of François I. But here he encountered an obstacle to harmonious client-designer relations not previously discussed in this issue: the enmity of the King's mistress. Cellini, who could recognize an insurmountable obstacle when he saw her, finally tore up his contract and retired to Florence.



Product: a saltcellar for the King

Flies in the ointment: the client's heirs and the client's mistress



Client: Pope Julius II



Designer: Michaelangelo

In 1505, Pope Julius II commissioned a tomb for himself, thus making Michaelangelo the world's first package designer. His work, however, suffered a number of interruptions. Resenting his status as captive designer, he escaped to Florence, and it took three years of papal wheedling to get him back. Also, Julius was negligent in his payments, and Michaelangelo had occasionally to down tools while he pursued his client and his fee.

But it was after the Pope's death that real trouble set in, as it usually does when a strong client is replaced by a committee. His heirs downgraded the design again and again, and when, after five contracts and 37 years, the tomb was completed, Julius would not have recognized the original design. But, satisfied or not, he was inside it.



Product: a tomb for the Pope



*The failure to communicate:
a revolutionary and a Rockefeller
reflect a basic disagreement
about the role of the designer.*



No financial misunderstandings marred the relationship of client Nelson Rockefeller and designer Diego Rivera; their association came to grief, in fact, when Rockefeller got more than he had bargained for: the head of Nikolai Lenin on the wall of Rockefeller Center. Rivera was paid off, and the mural was removed. The following fragment of E. B. White's famous poem "I Paint What I See" phrases the client's dilemma:

"It's not good taste in a man like me,"

Said John D.'s grandson Nelson,

"To question an artist's integrity

"Or mention a practical thing like a fee,

"But I know what I like to a large
degree

"Though art I hate to hamper;

"For twenty-one thousand conservative
bucks

"You painted a radical. I say shucks,

"I never could rent the offices—

"The capitalistic offices.

"For this, as you know, is a public hall

"And people want doves, or a tree in
fall,

"And though your art I dislike to
hamper,

"I owe a *little* to God and Gramper,

"And after all,

"It's *my* wall . . ."

"We'll see if it is," said Rivera.



To see what differences, if any, there are between client-designer relationships in this country and Europe, *ID* interviewed Jaap Penraat, one of the Netherlands' foremost designers, recently arrived from Amsterdam to take permanent residence in the United States. Among Mr. Penraat's European clients were Philips, Werkspoor, and Proost. He has also received many commissions from the government of the Netherlands, including trade fair exhibits at the Milan Triennale and the Utrecht Fair. More recently, Mr. Penraat was a member of a panel of designers in charge of procuring furniture for many of the pavilions and buildings at the current Brussels World's Fair.

Mr. Penraat, from your experience in dealing with all kinds of clients, large and small, private industry and government, can you say that there are differences between the ways in which the American industrial designer works with his client and the ways his counterpart does in the Netherlands?

I would say, to speak generally, that there are many differences, and some of them are quite interesting. The first one that suggests itself to me is that in Europe the industrial designer is more of a professional man than a business man. Here—at least this is my first impression—the designer is as much a business man as he is a professional. I do not mean to say that one side is better than the other: I think there are advantages and disadvantages on both sides.

In the Netherlands and, I think, in most western European countries, the industrial designer enjoys a social and professional status akin to that of a physician and surgeon. They are both members of the professional class. In fact, the code of ethics of the designer is in some ways similar to that practiced by a doctor or a lawyer. For example, an industrial designer cannot approach a client: it is the client who must go to the designer. The designer cannot advertise himself. These restrictions are explicitly stated in the rules of the Society of Industrial Designers, and, as in the old Guild system, the government—the Department of Justice, to be precise—must approve of its laws and bylaws. There is in Holland a close connection between the government and the various professions.

In theory and, to a large extent, in practice, both these restrictions are true also of this country.

Yes, but here, I think, is one of the differences. In the

A DUTCH DESIGNER VIEWS HIS CLIENTS

Jaap Penraat discusses some differences in European client-designer relations

Netherlands, if a designer were to approach a prospective client, it would not only result in his expulsion from the Society, but the prospective client would tend to avoid further contact with him. Sometimes a curious thing happens. If a designer were to approach a manufacturer with an idea that the latter considers good, and needs, the manufacturer might actually use the idea but, feeling that the designer had acted unethically, could with impunity choose another designer to pursue and develop the idea. It is his way of censuring the designer for his unethical act. The real censure, of course, would come from the Institute for Industrial Design—which I would like to talk about and which is different from the Society of Industrial Designers—which would drop him from their rolls. As you might imagine, it is a rare event for a designer to break any of the rules.

In this country, a design office very often has a public relations staff, and it is occasionally responsible for getting new business. Is there an equivalent institution in the Netherlands?

No, not in the Netherlands.

How then does a designer in Holland get a client?

Well, it's sometimes a little like a young unmarried girl who sits by her telephone and waits for it to ring. But there is another way, too. That is where the Institute for Industrial Design comes in. The Institute is set up by the government as one of its agencies. Half its financial support is provided by the government, half by manufacturers. Its purpose is to foster a deeper appreciation of industrial design on the part of the industrialists; to show them how they can improve their products through industrial design and, as

a result of that, how they can increase their profits. The Institute gathers together examples of work by designers, and there are always displays of some of their latest projects and how they were done. Films are presented showing the uses of industrial design. A manufacturer in search of a designer can go to the Institute and inform it of his needs or desires, and the Institute can recommend to him one or more designers qualified to do the work.

Why is the government interested in this Institute?

It feels that by improving products and product design export sales will be increased. Incidentally, the Institute has another function, too. A manufacturer can go to it and ask for advice or ideas on a given problem. The Institute will call in two or three designers chosen impartially by an elected jury of member designers and a counsel from the Dutch S.I.D., acquaint them with the problem and ask them for recommendations or advice to give to the manufacturer. The designers act as free-lance consultants, and their services are paid for by the Institute. Any industrial designer in the country may be asked. The Institute often enables a young industrial designer to get a start: if it should feel, for example, that a given problem does not require the extensive background and experience of an older designer, it might direct a client to a young man who has just opened his office.

How does a designer become a member of the Institute?

Usually he has to have completed a few design jobs, or perhaps have contributed to a trade fair project. Or, if he's a young man, he can submit some drawings of ideas he has been working on although he has not yet been hired by anyone. When he applies, a jury of designers judge the work and decide on his membership.

How do you feel about the Institute?

I think it's quite wonderful. It is beneficial to everyone—manufacturer, designer, and the country.

Are your services engaged in other ways?

Oh yes, of course. Usually it is done directly. A manufacturer has a problem and comes to the designer.

Does a European client tell you his long-range plans?

Usually not, unfortunately, because the client hires you for a specific problem. Industrial design is an even newer field in Europe than it is in America. The industrialists are still learning to use it more effectively.

Will a client call you in on a problem if he feels that his staff department cannot fully cope with it?

No. That is again different from here. If a company has a staff design department it does not hire an outside consultant; if it does, it is extremely rare. I have done work for the Philips Company, but only to design

their workers' dwelling units: the radio and television sets are designed by staff men.

What kind of contracts do you usually draw up?

Just a letter of confirmation.

Would that be true if your client were the government?

Yes. In fact, sometimes even that is not necessary if you have a reputation. When the Milan Triennale was being mounted last year, I got a phone call from The Hague one day, asking me if I could go to Italy and supervise the installation of some of the displays. I packed a bag and went, spent a week and a half there, and when I returned I billed the government.

Is the client likely to object to your fee? That is, will he tend to negotiate with you?

No more than a patient can negotiate with a doctor. Besides, the client usually has an idea of your fee before he calls you.

Do you feel that the industrial designer in the Netherlands is adequately paid for his services?

Yes, definitely. The designer never charges more than the minimum rate he is allowed by the Institute. [The minimum man-day rate.] This minimum rate has in the course of time become the "maximum"—by custom.

When you have completed a project, who decides whether or not your solution is acceptable?

The designer. Of course the client and the designer have discussed the program as it developed, but in the end the designer is the judge of the solution. After all, the client comes to you because he needs your services. If he knew what is acceptable and what is not, he wouldn't need a designer.

Besides, there is the matter of styling. In Europe we do very little of it and that only recently for export reasons. It is in the realm of styling that a given design solution may or may not be acceptable, but in true industrial design—getting to the heart of a product—a solution will seldom fail.

But there is another, more important, reason for the good relationship between client and designer in Europe and why the designer is allowed to be judge of his design. Most European manufacturers have been in their particular business all their lives, and they are very familiar with the product they manufacture. One manufacturer does not come out with a disparate line of goods, with a smattering of knowledge of each. He knows his product and his company, as his father before him knew it. So that when he gets from his designer the solution to a problem, he is well-equipped to evaluate it quickly and accept it as quickly.

Thank you, Mr. Penraat.



The United States Government as Client

The world's largest and wealthiest client, the Government is in its business relationships strict and impersonal—but it is also rewarding to work for.

The United States Air Force is unquestionably the world's wealthiest client. By act of Congress, it spends between \$17,000,000,000 and \$19,000,000,000 annually. Of this sum, the largest bulk is disbursed by the Air Materiel Command at Wright-Patterson Air Force Base in Dayton, Ohio—approximately \$12,000,000,000 a year, an amount which is larger than the combined annual expenditures of General Motors, E. I. du Pont, Standard Oil of New Jersey, and A. T. & T.

The Air Force, aside from being a large consumer of manufactured goods, is a frequent employer of industrial design offices. Among them, the New York firm of Becker & Becker Associates has received a good-sized share of contracts in the nine years the office has been in existence. Becker & Becker have been employed by the Office of International Trade Fairs of the Department of Commerce (trade fairs in Paris, Stockholm, Osaka, and Milan—holding a record among designers for having done four such fairs in the space of one year); the Atomic Energy Commission (an exhibit in Rome for the International Congress on Atomic Energy); the Department of State (the automation and the atomic energy exhibits at the Brussels World Exposition); and the Department of Defense—their most recent contract with them being a space-analysis project for the headquarters of the Air Materiel Command at Dayton.

Becker & Becker is not a small office either in size or in character; and it is an active one without being spectacular. The staff is set up for broad organizational strength rather than a single personality pushing in one direction. In the course of time, its working methods have been carefully worked out to the point where its operational procedures are characterized by a quality of conservative dependability, which permits the office to function efficiently while allowing the chief

responsibilities to remain with the principal staff members and, of course, the two partners—Nathaniel and Jules Becker.

The firm got its first assignment from the Air Force around the beginning of the Korean War. With military emphasis today being placed largely on the Air Force (which has the greatest share of the defense budget), and with the Air Force's primary concern being swift tactical mobility, the designers, on their own initiative, suggested to them that there might be a way to cut down the time taken to move ground support equipment from one place to another, and proposed that their office explore the difficulties and offer a solution. The proposal was accepted, and, after careful study and planning, the designers suggested that the Air Force use a "modular container system." That is, all ground equipment, including tools, warehouse supplies, desks, files, bookshelves, and so on, could be made in the form of packing cases which would open out to be tool chests, desks, files and shelves. These "packages" would be built on a module so that they could be stacked together at a gathering point, massed, consolidated, and strapped, and then easily moved by fork-lift truck to waiting air transports. In testing this solution, the Air Force found that an installation which previously took two to four days to move out of an area could now be evacuated in a matter of hours; and the solution was accepted.

There are as many advantages in working for a branch of the government as there are disadvantages; and both are somewhat singular. For aside from being a tremendously wealthy client, the Air Force is one of the largest "firms" in the world. Its employees, from buck private to commanding general, number upward of 910,000 men, and its operation is global. The servicing of these men and their installations, the acquisition



and maintenance of their equipment—from a chair in the company clerk's office to a wing of Jet F-104s—is performed by the Air Materiel Command at the Wright-Patterson Air Force Base. The size alone of this organization, the compass of its material needs, is impressive in its complexity and surprising in its smooth functioning.

This complexity and size account for one of the advantages that a designer has in working for a branch of the government. Because of the power of the client and the funds at his disposal, many problems of opportunity and means are more easily solved than if the designer were dealing with a private client. In private industry an appropriation for a program must be related, directly or indirectly, to profit. For the Air Force there is no question of sales or profit: there is only need—the needs of an organization set up by legislation for the common defense. To this end, funds are allotted it each year, and if a problem requiring the services of an industrial designer should arise, those funds may be disbursed for the most essential thing at the moment: solving the problem.

Sometimes these problems are tough and intriguing ones, one-of-a-kind problems for the solution of which the government must call on the industrial designer. The Modular Container System is an example of this. It was a job that presented a new challenge to the designers, and it was one which, once solved, would probably never come up again in quite the same form. It was while working on this project that Becker & Becker discovered another benefit of working for the government: they had placed at their disposal means that a private client could not often provide, namely the possibility of calling on *any* manufacturer whose facilities were deemed useful for the project. For the government there are no "competitors": two rival companies can and do work side by side under the direction



The fork-lift truck moves modular containers to loading platform of waiting air transport. The modular container system was Becker & Becker's first assignment for the Air Force. Each case opens out to be a piece of ground support equipment. The difference in bulk and ease of moving can be judged by comparing modular units with hodge-podge of old-fashioned crates at left.

of the designer to accomplish successfully a given project.

Space-analysis program at Wright-Patterson

The Wright-Patterson Air Force Base project is a large one and, although it is not yet completed, it is one worth reviewing because it points up many of the problems—and benefits—of having the United States Government as client. The designers' task was to survey the office space of the largest single group of government employees outside the Pentagon—over one and a quarter million square feet of space used by Air Force administrative personnel. The assignment was to recommend how best to use and improve this work space. Becker & Becker interviewed key Air Force personnel to determine departmental functions, examine known problems and deficiencies in working areas, and learn special office requirements. Detailed inspections were made of buildings and offices, and extensive statistical information was gathered on building conditions and the amounts and kinds of space in use by various administrative and logistical functions. The results of this survey were collected and analyzed, and a management report was prepared which specifically outlined the space requirements and recommended the steps to take to correct existing deficiencies. After Air Force officials examined the Becker & Becker report, the designers were asked to provide the services necessary to implement their recommendations on a large portion of the facilities originally surveyed.

Since the government does not "own" its funds but has them only in trust, so to speak, for the public, it is held accountable by the public for the wisdom of all expenditures; every disbursement must be strictly justified and supported by proof of its necessity. Of course it is true that in private industry also the expenditure of capital must be justified to the shareholders, but it is nevertheless possible to convince the



An exhibit from the Milan Fair—one of four trade fairs Becker & Becker did for the Department of Commerce in the space of one year. While the designers were working on their fair program, the Office of International Trade Fairs had a turnover of executive personnel of nearly 100%—a frequent problem in working with many of the branches of both the government and military.

shareholders that although a given expenditure is not absolutely essential to the current healthy functioning of the company it would in the long run be beneficial to it in an intangible way. A program of corporate identity is a fairly frequent example of this. But in the government, except in wartime or other times of crisis, there is no "corporate identity" program, and the designer is paid only to accomplish the task at hand, neither more nor less. One of the reasons for this difference is a slight but very important one. In a private company, the top executives are expected to make decisions which may sometimes be described as radical. By contrast, in the government, any one person or any one group that the designer deals with is first, last and always a public servant. No one in the government feels he can "stick his neck out" or commit himself to anything without authority to back him up.

It is precisely in this area that an industrial designer can play a crucial role in his relationship with the client-government. Since the government cannot act without justifying every move it makes, it is part of the designer's job to supply his client with the necessary support through fact-finding. This must be as full, as nearly exhaustive, as possible because it may—and in the case of the Becker & Becker report on the Wright-Patterson Air Force Base, *did*—travel up through channels to the Undersecretary of Defense and Congress. This is especially important when a branch of the government knows that a problem exists, and that time and money should be spent on its solution, but cannot implement its ideas without a factual survey to support its belief in their efficacy. According to Jules Becker, it is the designer's job to uncover the facts and, if they so warrant, to supply the necessary support to the government.

The government is abstract and impersonal

In working on the Air Force project and others, Becker & Becker have found that from the point of view of financial commitment and expenditure the government is a somewhat abstract entity. Approval of a program is impersonal to a high degree, for many agencies and committees must pass on every proposal, each group viewing it from its special point of view. And the most important group of all is the one whose only job is to spend money and to whom all expenses must ultimately be justified: the General Accounting Office. The government permits itself to make a specific appropriation only with specifically qualified approval of a specific, clearly defined project.

Correlative to this impersonality in the approval of a program is the impersonality of business relationships. There can, of course, be a friendship between Nathaniel and Jules Becker and General Rawlings, Commander at Dayton (part of "the client"). But the friendship is characterized by a carefully maintained

distance, and any attempt to bridge that distance—having a cocktail together, exchanging token gifts, or anything that could be construed as even remotely "social"—is frowned upon. But this impersonality takes a more important form than this: there is no sustaining of good will with a possible resultant retainership, as there might be with a private client. When Becker & Becker's two-and-a-half year study of systems and equipment used by the Air Force ground personnel resulted in a 450-page volume ("Handbook of Instructions for Ground Equipment Designers"), the Air Force was satisfied enough with it to make the report a required reference for all Air Force prime contractors. However, when the services of an industrial designer were needed for the Wright-Patterson project, General Rawlings could not—as a private client could—simply hire Becker & Becker to do the job because he was familiar with the quality of their work. The contract for the project had to be negotiated, and, in spite of their apparent previous success, Becker & Becker were once again just one more design office negotiating for it.

There is another difficulty that a design office may encounter on government projects, and that is the change in personnel either through promotion or transfer. A designer may begin a project with one government staff and end it with an entirely different one, so that time must be spent acquainting and familiarizing the new personnel with the existing problem, the work done to date, and the direction in which the designer is proceeding. This difficulty is not restricted to the military: it is true of other government branches. For example, between the time Becker & Becker first began working with the Office of International Trade Fairs and the time they completed the agreed-upon projects, the executive staff of OITF had a turnover of nearly 100%—only one man remains who was there



An "office" in the administrative section of Wright-Patterson Base. At the crowded desks above, contracts were written, processed, and signed. The proximity of the desks to each other made for heavy experience in reading contracts upside down—the competitor's contract. The designers' space-analysis program will—among other things—improve these, and similar, conditions.



in 1957, a frequent problem in working with many of the government's agencies and bureaus.

Contractual agreement

In all of this, however, the biggest single problem area in working with the government is in contractual agreement. The government is heavily experienced in writing contracts and knows how to protect its interests; it is up to the designer to learn how to protect *his* interests. Open-end contracts, for example, would in their necessarily relative vagueness be too hard to justify to the Pentagon and the General Accounting Office. Consequently, contracts with the government must be extremely carefully worked out, both to satisfy its requirements and to protect the designer. One of the things Becker & Becker have learned on the Wright-Patterson job is to state every phase of the project as explicitly as possible. As in any contract, the more specific a clause is the more effective is its binding power. Much anticipated red tape can be avoided by including in a given clause not only what the scope of a segment of the project is or when that phase of the project is to be completed, but also, on the client's end: how much time the government is allotted in which to review the phase and approve it, by what date the approval must be submitted to the design office, and, on receipt of that approval, when the next phase may be begun. In this, the government, in signing the contract, binds itself to terms which cannot be harmful to the designer in terms of time schedules and budget. If the government fails to meet the terms it has agreed to, it is subject to censure not only by the designer but—far more effective than that—by the government itself. The saving in time and money to the designer is considerable with this forethought; and the government never defaults without in some way compensating for the default.

All contracts with the government are methodically processed: there are many regulations coming from government bureaus relative to the expenditure of money, and all of these regulations must be obeyed to the letter. Occasionally there are delays in contract approval because of this, just as there are sometimes delays in payment. And some of the regulations present other difficulties. For example, the government has worked out a relatively fair per diem rate, but times change before the per diem rate does, and the government allowance almost invariably falls short of the cost incurred.

Because of government strictness, many design offices that work with the government keep two separate records: one for the government and one for private clients. Becker & Becker have found that the way the government wants its records kept is useful for them too, and they use only one set of records, for government and private client alike.

Unlike private industry the government cannot spend future funds. Private industry, of course, doesn't like to and won't if it can avoid doing so, but there are times when it can persuade itself that in the long run it would be more economical for it to spend more money than agreed upon. There is no such possibility for the government. When an allotment has been spent, there is no more until the next appropriation comes through. It is rare for the government to exhaust its funds sooner than expected, but it sometimes happens. One such instance occurred last year when the director of the Office of International Trade Fairs overspent the funds at his disposal, with the result that the General Accounting Office put a hold on all money and activity. Becker & Becker were then engaged in designing exhibits for the trade fairs of Osaka and Milan, and it was their practice to send a designer from their office to supervise the installation of their exhibits for the last three weeks before the opening of the fair. With the funds frozen and a hold placed on activity, they were not able to do this in the case of Osaka; however, Nathaniel Becker went to Milan, but he did so at the firm's expense.

The rewards and pleasures

But despite all these inconveniences, delays, and problems, the office of Becker & Becker expresses pleasure at working for the government. There are several reasons for this, and one of them is the designers' identification with the government. It is almost as though there were no difference between designer and client because the designer is, however indirectly or abstractly, a part of the client. Consequently, a designer, according to Nathaniel and Jules Becker, in making decisions on a government job, feels *personally* responsible. This feeling of personal commitment is further enhanced by the turnover of personnel. The designer feels that although government personnel may be here today and gone tomorrow, *he* is constant, and he will see a project through. So that if in private industry a designer feels a job has been well done because people like it and the company experiences an increase in sales, in working for the government he is more apt to have a feeling of well-being which borders simultaneously on the spiritual and the patriotic. According to the Becker brothers, their firm as a whole feels a satisfaction and a sense of prestige in having accomplished a task for the government, and their projects for the client-government have attracted to their office designers who are interested in doing that kind of assignment.

Another reason for their pleasure in having the government as client is the stimulating projects. Trade fairs are an example. "No private client," says Nathaniel Becker, "could call you in on a project as a

designer, a research scientist, a Broadway producer, a scenarist, display man, and diplomat. The government does in its trade fair programs."

They feel further that, in working with the government, they deal with "dedicated individuals": executives whose motives are more than just personal profit. Otherwise they would undoubtedly be filling more highly remunerative positions in private industry. The only fault the designers find with their client is that it has poor public relations in the sense that very often it does not sufficiently acquaint the public with the problems it comes to grips with. In their opinion—and at this point they are in a position to know—the government works under handicaps that no private industry could tolerate, such as the inevitable, ubiquitous and notorious red tape of its operation.

Design and the country

More than that, it very often must change the course of a program because of a political shift in world affairs, and these changes can be swift and imperative. As an example of this, in Osaka, the government initially asked Becker & Becker to do a consumer-oriented exhibit, but when Sputnik I went into orbit midway through the project, the government, in a last minute decision, told the designers that the exhibit would have to be changed to an industry-oriented one for its own propaganda reasons. To work with the government means to hazard such changes without a corresponding change in delivery date. But to judge by the office of Becker & Becker Associates, the rewards of inner satisfaction, the pleasure of personal commitment and identification, and the challenge of newer and more unusual projects, more than compensate for the inconveniences, and give the designers that peculiar gratification of knowing that they have, in however small a way, affected the economic and political destiny of the nation.

The government's operations and interests are farflung. Shown below is partner Jules Becker, boarding plane in the course of working on a design project for his client—the United States Government. Place—England.



Nathaniel Becker (right) greets U. S. Ambassador Amory Houghton and (behind him) Tony Bouilhet, President of the Paris Fair. Ambassador Houghton is a representative of "the client"—one among many such.

The Designer and the Client  *the end.*



Every high spot on the surface of the earth has become a possible vantage point from which huge concave dishes can scan space. The relatively new fields of radio astronomy and space vehicle tracking — and men's innate desire to know more of what is happening beyond the earth's atmosphere—have created a demand for many large antenna systems that transmit and receive radio frequency energy. The heart of these systems, the giant paraboloidal antenna, seems to symbolize today's scientific search: it is an immense man-made receptacle tilted upward to receive invisible information from space—information that must be analyzed and understood before men dare venture into this paradox — a vacuum full of unknowns. By tracking artificial satellites, these antennas gather some information from space. And, when they are used as radio telescopes, they detect radiations in space that cannot be seen by the human eye or photographed by familiar methods. These radiations carry information about the universe similar to ordinary light, but, unlike visible light, are not obstructed by thick regions of interstellar dust.

On top of a hill at Boulder, Colorado, three antennas 60' in diameter have just been erected. This installation is currently being tested by the National Bureau of Standards and is the result of General Bronze Corporation's program to develop universal systems for radio astronomy and space vehicle tracking to meet the anticipated 1960 need of over 500 such systems to picket the globe. General Bronze, who began this project about a year ago, knew their systems would have to be designed for easy and fast erection in the field and at a price that would make widespread use by the military and universities financially feasible. To keep production costs at a minimum, to simplify assembly, and to overcome the major problem of field replacement of parts, structural sections were standardized and — as far as possible — made interchangeable.

The miscellaneous collection of pipes and panels shown above look little like the component parts for a precision instrument 70' high and weighing some 80,000 pounds. But in seven days, six men backed up by the proper materials handling equipment can transform them (as shown on the following pages) into a giant instrument of the space age. And precision is not enough: the assembled system must withstand winds of 120 miles an hour with a coating of ice 3" thick.

Dish development—large scale



Antenna system components as delivered to installation location by the manufacturer.

*Prefab techniques are key to
easy assembly of
systems for radio astronomy and
space vehicle tracking*

Precision, of course, is the most important consideration in the design of the General Bronze antenna system. The step-by-step, day-by-day assembly operation shown on these pages, spectacular as it might be as an illustration of fast construction, would be worthless if precision were sacrificed at any point to achieve speed and ease of erection. Operating parts, such as a control panel and driving mechanisms, are pre-assembled by General Bronze and shipped to the installation locations as complete components. Essentially, however, the entire structure is designed for on-



first day 1



2

the-spot assembly by untrained workers. For example, on the Boulder project illustrated here, local labor was used. The value of part standardization becomes very evident as the progress of the assembly is followed.

The first step in the antenna assembly is to pour a concrete slab foundation. The *first day* of construction shows the rapid growth of the tower framework (1, 2), climaxed, on the same day, by the addition of a major component — the pedestal (3). The pedestal is a prefabricated unit weighing 20,000 pounds and containing the mechanisms that drive and control the movement of the antenna reflector. Five identical drive systems in one pedestal assembly give the antenna both azimuth and elevation motion necessary for complete sky coverage. General Bronze engineers rejected several possible gear and clutch arrangements before selecting an electromagnetic, or eddy current clutch. This clutching principle (see ID Jan., 1957, Direct Magnetism Simplifies Power Drive) eliminates complicated gearing and clutching devices and consequently reduces cost; it promotes smooth transmission from low to high speeds, permits higher accelerations with a motor that is smaller than would be normally necessary since the drive motor is continually turning at full speed, and gives noise-free operation, an important



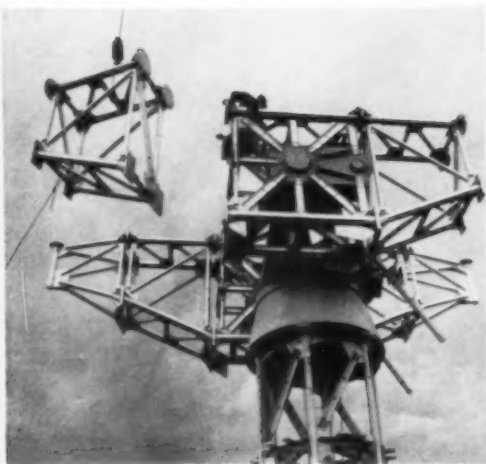
3

factor in any electronic device. In this installation, the antenna is driven at a speed of 1/10 of a revolution a minute.

The tower framework consists of standardized members, with flanges welded to each one. These flanges are simply placed face-to-face and bolted together. The bolts, too, are standardized and no special tools or wrenches are needed to join the parts.

On the *second day*, large prefabricated assemblies are added (4, 5) to make up the trunion trusswork that carries the load of the entire assembly of the 60' reflector. The ten pieces attached at this stage are designed in three patterns, again for interchangeability.

The framework for the antenna itself begins to take shape on the *third day*. First a heavy inner ring truss is assembled (6). This is a vital stage, since the concave reflector exerts an enormous strain under the slightest wind load. Sixteen identical triangular structures make up the ring truss that is designed to form a ring of a specific shape that maintains the contour of the reflector under operating conditions. The accuracy of the reflector surface must be maintained at tolerances better than 1/16 the wavelength from the focal



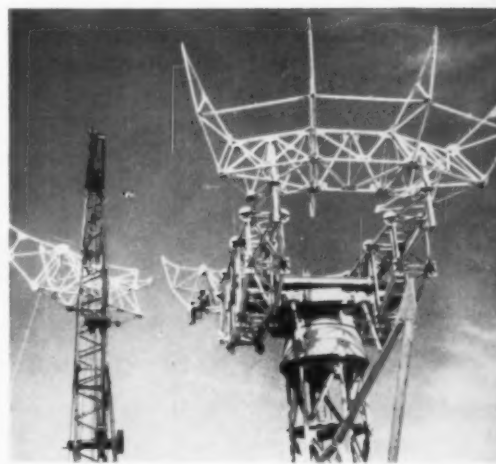
second day 4



5

point to any point on the reflector under working conditions. This means that the surface of the dish shall deflect no more than $\frac{3}{4}$ of an inch under a 60-mile-an-hour wind load.

General Bronze believes that the success of the market for these systems for use as radio telescopes lies in the ability to produce them within the limited budgets that universities have for the training of radio astronomers. The development of the packaged antenna system will make radio telescopes which will automatically track radio signals from space on all bands of frequencies, available at costs that are as much as 50 per cent less than system produced on a per-unit basis.



6 third day



7 third day



8 fourth day



9 fifth day

Third day operations also include the addition of the flat truss (7), a circle of spokes that supports the panels that make up the reflector surface. Like the ring truss, there are 16 identical parts in the flat truss, but these need not be as heavy since the load is not as severe. It can be seen from pictures 6 and 7 that the ring and flat trusses can be added at the same time.

The reflector panels are attached on the *fourth day* (8). The 28 panels that make up the concave dish are aluminum mesh and produced in three different sizes and shapes. They are put together with four panels in the center, eight in a circle around these, and sixteen on the

perimeter. All panels have the same ratio of curvature and are interchangeable within each ring. The counterweight is also added on the fourth day. It can be seen in picture 8, hanging just below the pedestal and attached to the trunion trusswork. The counterweight is simply a box that can be filled with concrete or other material to give it a total ballast of 16,000 pounds.

Once the reflector is completed, the supports or spars for the antenna feed and radiating system can be mounted on the *fifth day*. The supports (9, shown on the left), are made of fiber glass and designed to prevent change of focus during operation. To do this, the ends are

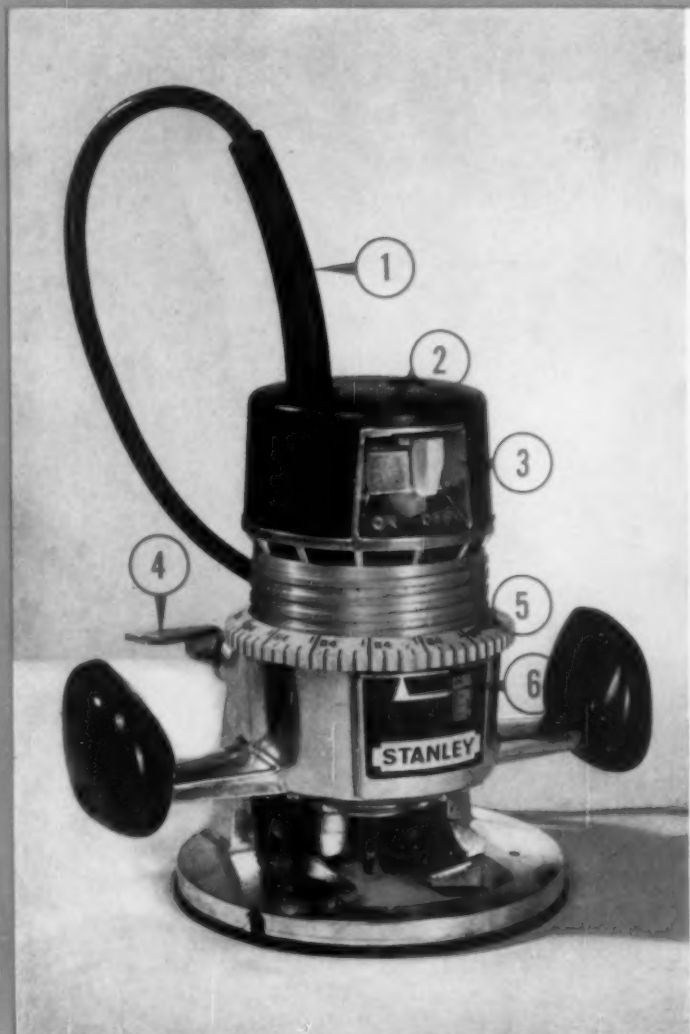
supported on the heavy ring truss and held together at the apex with a connection that prevents rotation under operating loads (see facing page).

The antenna as it appears on the *sixth day* (right) is almost completed. After a sheet steel casing is put around the tower and a control console hooked up, the system is ready—one week after construction began—to do its job as part of the defense complex by searching out and tracking ballistic missiles, to tell us how satellites are behaving as they orbit the earth, or, as a radio telescope, to probe deeply into space to help us piece together data scattered in the far corners of the universe.



POWER ROUTER SERVES TWO MARKETS

When Stanley Electric Tools (a division of The Stanley Works) in New Britain, Connecticut, gave Laird Covey the job of redesigning a power router, the first consideration was the market. Covey and the group at Stanley—chief engineer James Godfrey and project engineer Kestutis Damijonaitis—knew it would have to include a number of new features in order to be successfully marketed to small wood, plastic, and metal industries as well as advanced home-workshop mechanics. Designing to meet marketing objectives, Covey and Thomas Helms of the same office had appearance aims too. They particularly wanted to do everything possible to give the router a low, sturdy, and work-hugging appearance. Because a power router of this type is a highly competitive item, the Covey-Stanley design group decided to highlight features which make the machine both simple to operate (for special appeal to amateurs) yet highly accurate (for professional operators). For instance, the depth adjustment ring (5), governing depth of cuts to be made, makes extremely accurate (up to one quarter of 1/64 of an inch) adjustments, yet its large, graduated surface may be read at a glance. The combination on-off switch and shaft lock (3) was another important innovation. This recessed switch is pushed up in the off position, thus locking the shaft and preventing the switch from flipping to the on position when the chuck is being adjusted, or a bit is changed. In developing a series of appearance innovations, the Covey office incorporated a black drawn cover to cut the apparent height of the machine. They also cantilevered the base which, along with the handle supports, creates a broad horizontal line opposing the natural vertical shape of the instrument. Covey also proposed that the yellow and black color scheme, used in Stanley corporate printing and packaging, be adopted for the new router line. The new router comes in two models: 7/8 horsepower at \$62.50 and 1 1/4 horsepower at \$82.50.



- 1** Strain relief for cord, increasing safety and convenience of router, has now been added to most company products to unify company line.
- 2** Windows in brushholders allow inspection of carbon brushes without removing them from router when drawn cover is removed.
- 3** While chuck is being adjusted, combination off-on switch and shaft lock makes it impossible to start motor because lever is in off position and pulled up.
- 4** Thumb lever holds or releases router motor. Exerts over 1,000 lbs. pressure.
- 5** Depth adjustment. Release thumb lever and turn adjustment ring to bring bit into

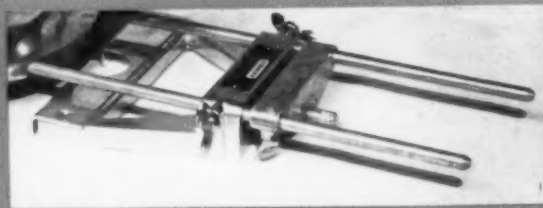


contact with working surface. Tighten thumb lever and spin ring up out of way. Bring adjustment ring to meet top of straight line rule (giving desired depth of cut.) A flick of thumb lever drops bit to the desired depth. Finer adjustments made by turning ring.

6 Straight line rule works in conjunction with adjustment ring to give relatively broad settings.

7 Hand grip shape was decided upon after series of human engineering studies. They fit all hand sizes and are convenient when held in positions for all types of work.

8 Base light spots the guide line while air vents blow chips and dust out of the way.

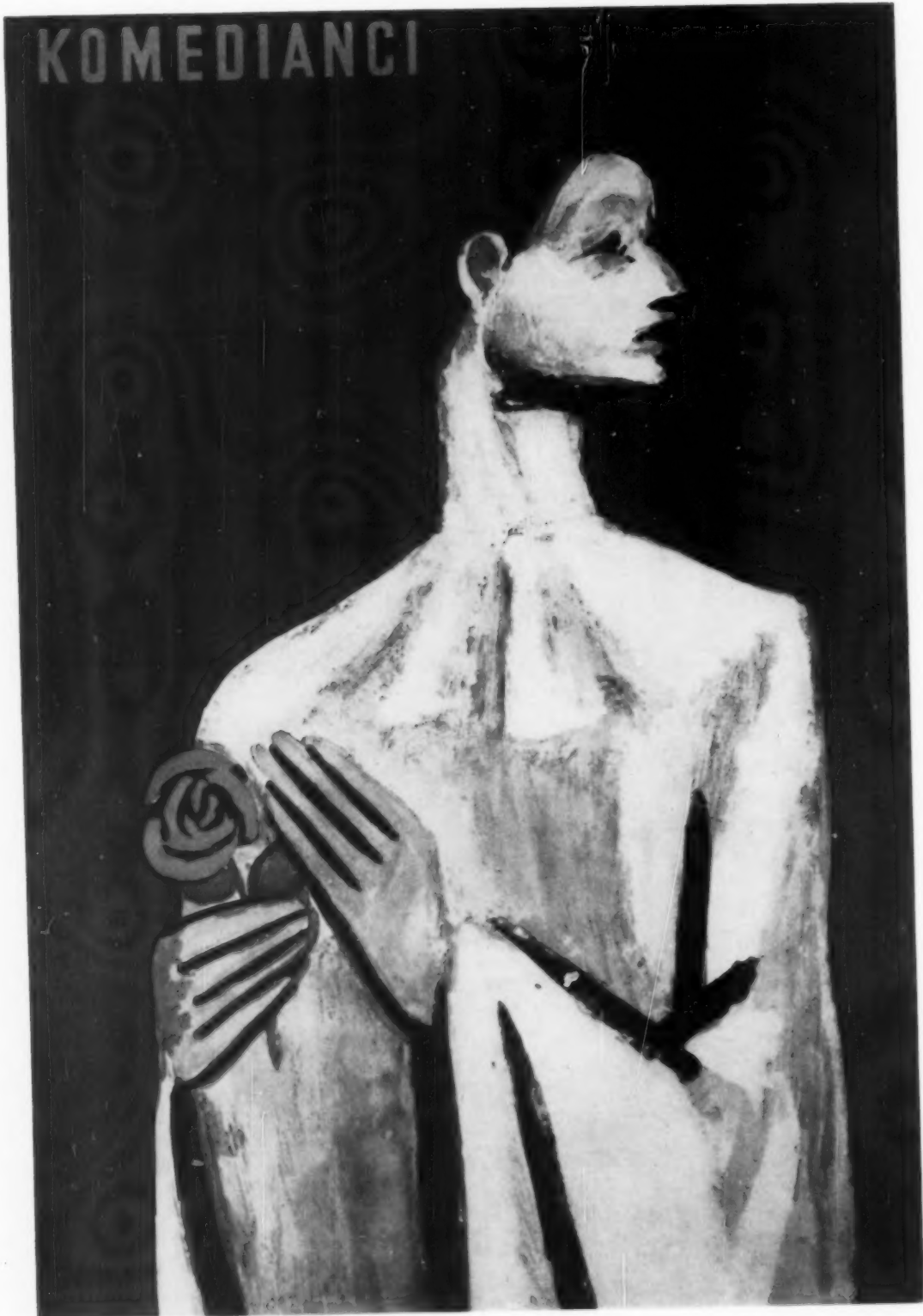


Router guide may be attached smoothly beneath surface of base rather than through projections on the top surface as on earlier models. New router has several other accessories.

These earlier models of the router were taller than present model. Hand grips were rounded and two legs substituted for the present cantilevered base.

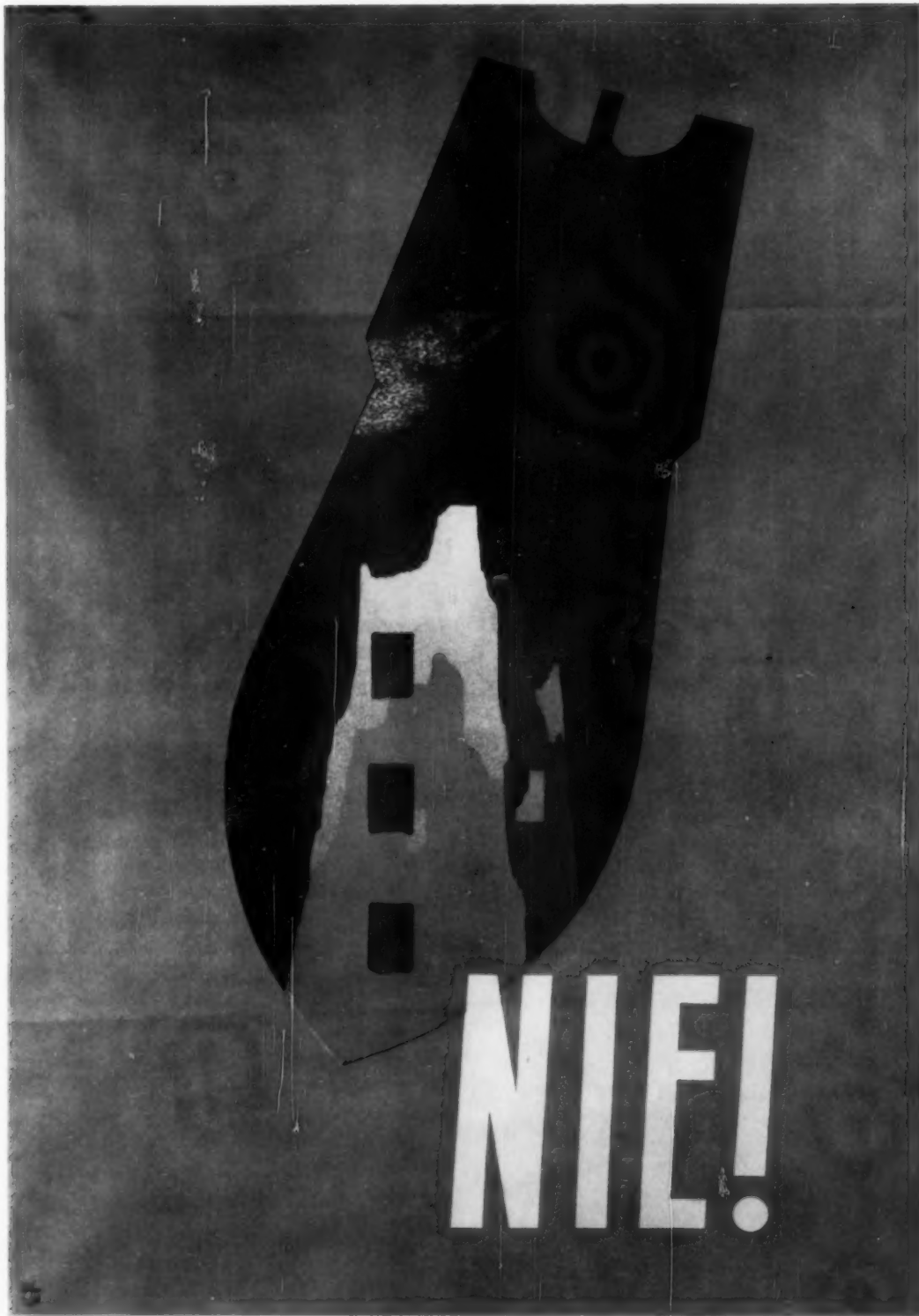


KOMEDIANCI



Julian Palka: "The Children of Paradise"

POLISH POSTERS



Tadeusz Trepkowski: *No!* (government poster)

One of the most exciting aspects of the European graphic scene has been the emergence in Poland—during the past dozen years—of a remarkably vigorous group of poster designers. In the pre-war years Polish poster art showed the kind of promise evidenced by Poland's winning the Grand Prix at the Paris International Exhibition in 1937, when the work of such men as Trepkowski (above) and Tomaszewski (page 83) had already become popular. But today the art has matured and is flourishing: students come from the poster studios of academies in Warsaw, Cracow, and Katowice to apply their art to this burgeoning field. The result, as



Jan Lenica: *Exhibition of Polish Folk Art*



Jan Lenica: "Igor Boulichov"



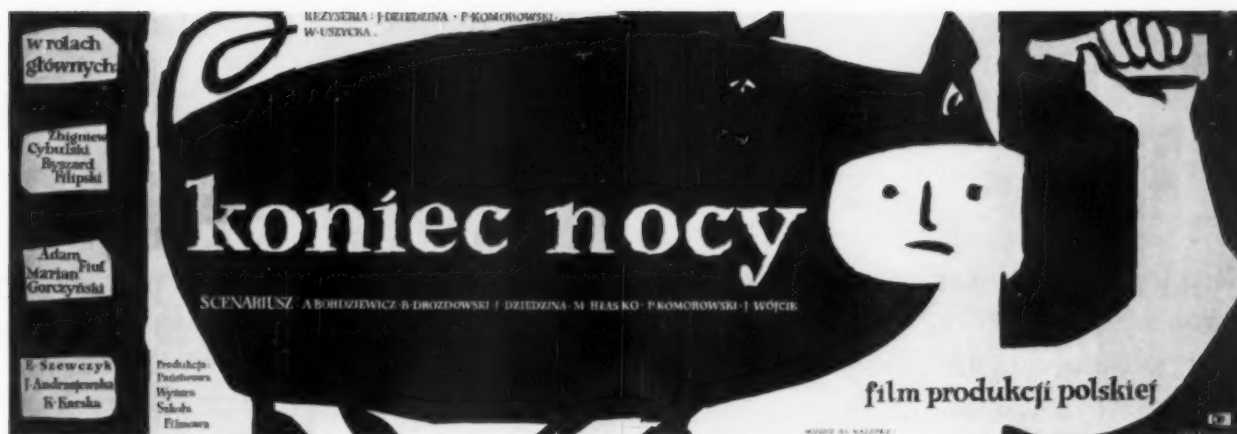
Wojciech Zamecznik: "Escape to France"

Julian Palka's work (opposite) and the other samples here suggest, is a poster art that is specifically Polish.

Poster art in this middle European country differs sharply from the main school of European poster design as represented by the angularity and precision of Swiss and German work. Nor is it similar to American work, the best of which often depends on psychological calculation for its effect. Certainly it differs from the heavy realism and stagnant dogmatism of contemporary Russian posters. Rather, Polish design features a conscious emphasis of esthetic elements, as in the work of Lenica and Mlodozieniec. Its most striking quality is frequently the dependence on a painterly technique rather than on typography, montages, or photographs. The result of this emphasis on the painterly is a style that is lyrical, warm, often lighthearted. Letting their fancy run free, these artists depend heavily on color for their effect.

If these posters have an imaginativeness and spontaneity one might not expect to find in state-supported art, the Poles have a ready explanation. Jerzy Olkiewicz, writing in the handsome art journal *Projekt*, says that the excellence of current graphic work actually results from the relationship of the designer to his employer, the state. Poland's socialist government seems to demand less as a patron than private industry, which has a more personal concern in results and tends to supervise the designer more. At the same time, the state, as employer, has a less commercial, more educational approach than private industry. For instance, according to Danuta Wroblewska, also a *Projekt* editor, the Polish government wants to raise the taste of the public, and takes satisfaction in the notion that the poster is a form of art which reaches mass audiences in small villages as well as in cities.

If the state has been a good patron in the field of poster design it has been a hard master in the field of the fine arts. This as it turns out has been good for poster design. The government's rigid imposition of socialist realism on painting (especially in the years following World War II) has had the effect of drawing many artists away from fine art and into poster design, where the dictates of socialist realism are less emphatic. Designers have especially gravitated toward the film poster (published primarily by the Graphic Art Publishing Enterprise and the Central Film Hire Bureau). Besides enjoying the absence of political restriction, Polish designers like film poster work because, with so few films on the market, they do not have to resort to high-pressure selling techniques. In comparing their situation with that of American designers, Poles say that there is less pressure in Warsaw than on Madison Avenue. But more important, the film poster has given Polish designers an experimental medium for new forms and new ideas.—A. F.



Jan Młodożeniec: "End of the Night"

Waldemar Świerzy: "O' Cangaceiro" (right)



Henryk Tomaszewski: "Bellissima"



Jan Młodożeniec: "Joan of Arc"



Julian Palka: "Hamlet"

DESIGN REVIEW

The logic of materials and methods was, for the pioneer chair designers of the Twenties, the *raison d'être* of appearance. Now, with the principles absorbed, designers no longer need to insist on logic as the only determinant of final forms. Instead, they are free to refine and develop shapes, and to devise new ways of treating the various functions of chairs—reclining and rocking, stacking and coming apart.



← Charles Eames has said in discussing his new chair, "When you've committed yourself to casting . . . you find yourself face to face with sculpture." Given the grooved aluminum castings which are the side frames of this chair, it becomes possible to make the body simply of fabric held in tension between the frames (and reinforced by stiff inserts). Tension is maintained by cast aluminum stretchers which keep sides apart, and by the rolled terminals. Base swivels, and padded effect of naugahyde is gained by electronic welding. From Herman Miller, \$156.



↑ George Nelson's "pretzel" chair shows some of the problems of designing for laminated wood—multiple bends, for instance, and varying thicknesses. These are solved by special woodworking techniques: the arm-and-back strip gets a Moebius-strip twist; laminations of different lengths are compiled to achieve tapered shape. From Herman Miller. Chair, with cushion, lists at \$116.



↑ Bent and carved elements give this rocker its extraordinary personality, combining folksiness with austere dignity. Designer N. M. Koefoed used teak arms and back, fumed oak frame. From Selected Designs Inc., \$110.

↓ JG Furniture Company's chair recalls the standard office chair, but brings it up to date with new refinements. This Danish import is made of beech and leather (or fabric upholstery), lists at \$130.



↑ Unmistakably Scandinavian in its soft carving and straightforward design, this chair by Hovmand Olsen tempers its simplicity through use of two rich woods: teak and fumed oak. Black plastic is wound around hand-grip. From Selected Designs Inc., \$45.



↑ Paregi's hoop chair reduces the familiar plywood shell to the barest essentials necessary for its support in order to add the luxury of an upholstered body. Black metal frame (cross-braced forward of gravity) adds to sense of space and "suspension." From Laverne, \$116.



↑ Arne Vodder revives the old system of carriage mounting — via springs and leather straps—to produce the runnerless rocking chair above. It has teak frame and lists at \$315. From George Tanier, Inc.



← Danish armchair from JG retains the continuing trend in upholstered furniture to mount a large mass on a seemingly slight and open structure. Here, sculpturing of beech supports and disguises the solidness of these members. \$220.

↑ Dux' reclining chair looks like a typical, neat Scandinavian lounge chair—except for its small, knobbed lever. This adjusts pitch to any of eight positions; or, when fully released, permits chair to be rocked. Price is about \$200, depending on wood finish and fabric.



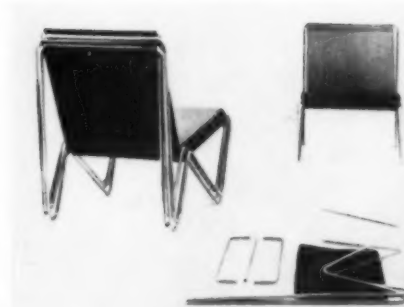
→ Jacob Jensen's stacking armchair is one of the most unassuming of recent designs. Its subtlety lies not only in the soft radius of each joint, but also in the slight flare of the arms—which leaves room for rear legs of stacked-on chair to pass through. From Mills-Denmark, in teak, \$115.



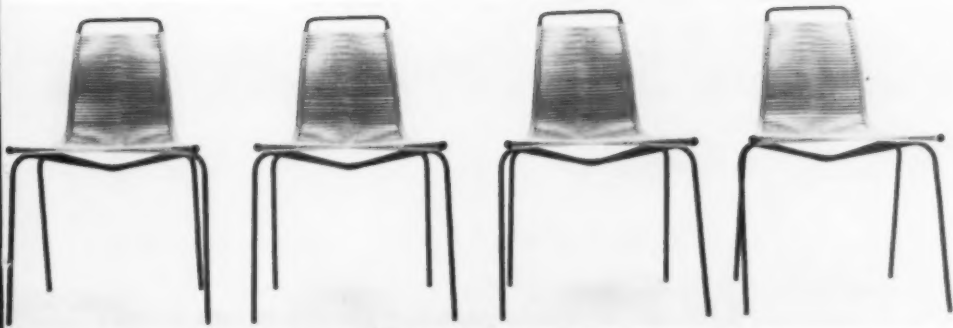
† Martin Borenstein's unusual chairs, above, were designed as part of a line of modular, interchangeable furniture. Back and seat are one unit which drops into place in frame, is held by positioning blocks. Back tilts to occupant's

position. Prices: \$65 and \$75. Bench, designed for Brown-Saltman as part of the "Variations" line. It can accommodate two or three removable seats. As in chairs, base, finished in "pastel" walnut, doubles as table or cabinet support. \$99.

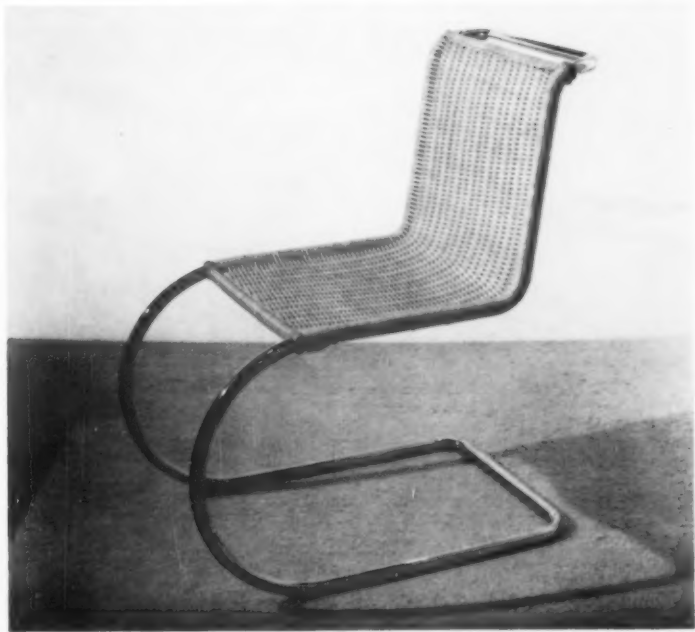
↓ **Metal strips and leather**—the elements of this chair—are an established part of the vocabulary of the modern movement. As manipulated by designer Paul Kjaerholm, they yield a chair of rare—and understated—refinement. Part of the secret of its grace is the consistency with which the materials have been handled in terms of two dimensions. From Georg Jensen, \$230. (Also with cane seat, \$150.)



↑ **Simple assembly**, as evidenced by the group of parts lying in the foreground of the photograph, is a feature of this chair. Less obvious is the graceful resulting profile. Designed by Verner Panton and available from Tanier. \$30 with poplin sling, \$60 with leather.



↑ Paul Kjaerholm designed an inexpensive chair using steel tubing and hemp line. It retails for \$36. (With chrome-plated tubing and cane, price is \$51.) From Georg Jensen, Inc.



↓ Verner Panton's chair is one which is also not only a table, but a see-saw, a rocking boat, and many other things. Such, at least, are the possibilities of this design, which consists of back, seat, arm rest and table. Parts can be bought separately, total cost is \$26.25. From Tanier.



↑ Mies van der Rohe, in 1926, designed this cane and chromed steel chair. It is interesting to compare this supremely logical expression, characteristic of the period, with designs like Kjaerholm's which derive not only from the logic of structure but also from refinement of shape. The Mies chair, from Laverne Inc., \$166.75.



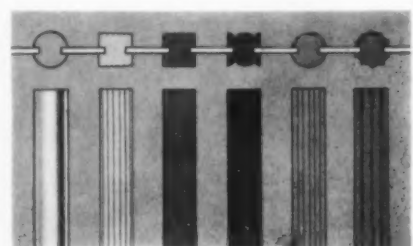
↑ Verne Larsen's chair is characteristic of current experiments with shape rather than structure. The molding of plywood can become less a matter of logic than a display of virtuoso craftsmanship. From JG Furniture Co., \$70.

Movable interior-walls system offers increased design flexibility in partition shape and appearance



The installation of interior walls shown on this page, and the picture (lower left) illustrating a completed wall assembly, are part of a new movable interior-wall system in the recently completed Milliken building, the new headquarters of Deering-Milliken & Co. Inc., in mid-Manhattan. This is the second large-scale installation of the new wall system called Horizon, which the E. F. Hauserman Company of Cleveland introduced some months ago. There was an earlier application of the walls in some offices in the new Seagram Building in New York, but the Milliken installation is the first in which full use is made of the overall potential: the flexibility of the walls themselves and of their decorative appearance. Interior walls and partitions on the entire second and third floors of the Milliken building are of the new Hauserman movable product.

The construction principle of the new system is based on modular fabrication and assembly. Fabricating a product in parts permits standardization of the parts, which in turn results in cost reduction. Ease and flexibility of assembly are possible due to the interchangeability of parts. The system allows the architect to specify the parts — panel, post, materials for panel finish—in a variety of materials and/or shapes. The panels are available in metal, wood, plastic, glass or in any desired combination. Posts may be specified as recessed, protruding, flush, oblong, fluted, round, oval, or in any combination. Any desired material may be applied to the panel if a special kind of finish is desired. In the Milliken installation, for example, three different materials made up the total design pattern: the original eggshell satin finished steel was retained on some walls, natural undyed linen was applied to some panel



surfaces, and for the doors a cherry wood veneer was used. Due to part fabrication and assembly, the two sides of a wall can be given distinctly different appearances. In the middle picture on the opposite page, a workman is cementing the paper-backed fabric to one surface of a wall whose other surface can be given a different type of finish to harmonize with the overall room design. The architect and interior designer can manipulate the wall as a variable component in the Horizon system—it permits integration with other design components (materials, structure) used in the building.

Posts and joints. The drawing at the bottom, opposite page, indicates some of the shapes available for the posts of the system. The square, smooth, round or serrated models may be ordered in a finish to match or contrast with the rest of the installation; when a glass screen is used as the panel, posts made of aluminum are available if a glass-metal wall design is intended. To attach the panels, tight-fitting butt joints or inserts can be specified. The use of inserts makes a horizontal or vertical panel arrangement possible. But whatever arrangement is used for panel attachment, the Horizon system enables the designer to specify the interior walls in a variety of styles: floor-to-ceiling, off-the-floor, or off-the-ceiling.

The modular measure. Panels, posts and other parts of the Horizon system are manufactured by Hauserman on a mass-production basis. Although prefabricated, the system offers sufficient flexibility of composition and assembly to give the finished walls all the aspects of a custom job. But it is, of course, much cheaper than the custom designed and fabricated wall.

The key to the mass production and economy of this Hauserman system lies in the fact that a modular unit is used—all system components are produced with reference to a 4" modular measure. Four or multiples of four are used for specifying the width, height, thickness of each panel for fabrication as well as customer requirements. It is this construction and assembly method which makes the Horizon movable walls a *system*.

The assembly. Methods for assembling components of the Horizon walls vary, since the system lends itself to a custom design for each job. Nevertheless, some

basic assembly principles apply to all Horizon installations, all of which can be relocated in a matter of hours. In all cases, the assembly sequence is as follows: a) post units are anchored to the floor through floor stampings; to compensate for irregular floor levels, the posts rest directly on the floor through one or more interlocking shims. b) Panels are interlocked with the posts which carry the panel weight; the joint is sealed by inserts or tight-fitting butt joints. c) Finishes are applied to panel areas where specified.

In the opinion of the manufacturer this new system of interior walls brings to interior planning what creative designers have been accomplishing in the design of building exteriors.

"A new originality" says Mr. Hauserman, "freedom of design, expressiveness in interior concepts is now possible. Architects' vision and creativeness will do the rest." Manufacturer: The E. F. Hauserman Co., 7516 Grant Ave., Cleveland, Ohio.

New sandwich panel fastener

To provide greater strength for a variety of sandwich-type panels, the Delcon Company, Inc. has added a new structural-type fastener to its line of honeycomb and sandwich panel fasteners. The new item is designed for use with panels now applied in aircraft, missiles, electronics and other industries. The fastener consists of two pre-assembled parts: the body and the expanding sleeve. In use, the fastener is retained in the panel by a splined interlock which also prevents rotation. The fastener is easily removed and replaced; it requires no filler to hold in panel. The new Delcon part is available in a variety of styles, sizes and in aluminum, carbon, and stainless steel. Manufacturer: The Delcon Company, Inc., 5224 Southern Ave., South Gate, Calif.

Trade marks in engraved brass, steel

A new type for personalized markings, advertising imprints, book-binding printing, etc., has been developed by Markem Machine Co. The Markem engraved steel and brass type permits rapid change-over and eliminates leading between lines by offering a wide variety of type arrangements. Engraved letters, figures and symbols are available in sizes from 6 point to 24 point, and in heights of 0.918", to 0.625" or 0.375". Larger types can be supplied. Manufacturer: Markem Machine Co., Keene, N. H.

Continuous-writing camera

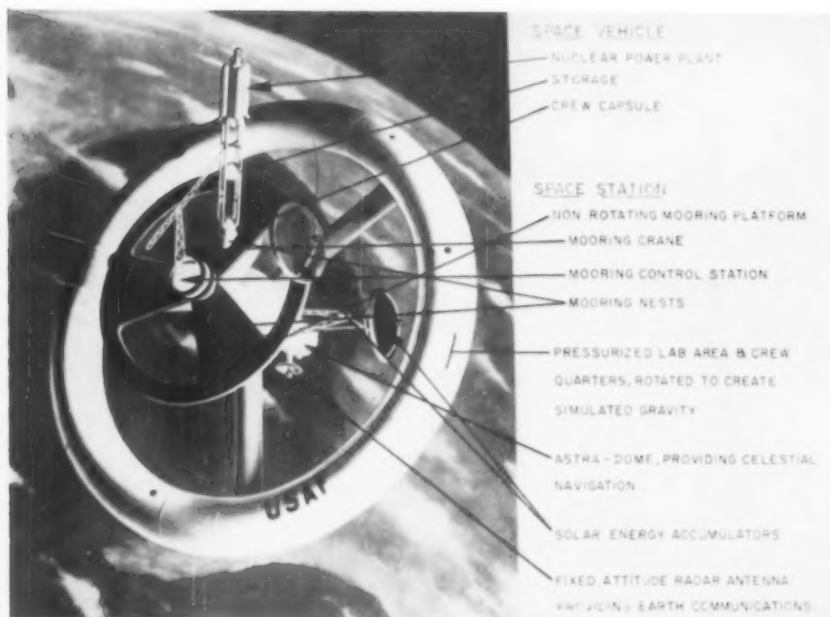
To record the flash-like behavior of an explosion in analytical terms, Beckman & Whitley, Inc. have developed a camera that will plot the motions of an explosion for research purposes. The instrument serves as a tool for the photo-instrumentation study of self-luminous transient events. The company's new Model 194 Continuous-Writing Streak camera produces a documentation which is a plot of space versus time. The instrument is useful not only for the study of explosions, but for such phenomena as flash-tube and spark-discharge. Since the camera is able to "write" continuously, it is not necessary to synchronize the camera and the event.

The instrument, which is mounted on its own control housing, uses standard 35mm film, arranged for daylight loading and unloading. The image itself is imposed upon the film by a rotating triangular mirror driven by a high-speed turbine. Several of these are available—the fastest, ranging from 200 to 5500 rpm, is driven by helium gas. With this arrangement, a maximum recording rate can be produced.

The finished record is about 18.5 inches



long. The model 194 continuous-writing streak camera is made-up of an events-per-unit time meter for accurate measurement of the mirror speed to provide a determination of writing rate; mirror-speed adjustments; and controls for the various shutters (capping shutter and explosive-actuated blast shutter) used to prevent re-writing in the case of long-duration events. The length of the finished useful record is identified by three marks which are placed automatically in the margin of the film. Manufacturer: Beckman & Whitley, Inc., 973 San Carlos Avenue, San Carlos, California.



Plans for space travel

Lear, Inc. is under contract with the Wright Air Development Center to study the requirements for manned space flight and to design and build a model of a crew capsule for a space vehicle. The drawing for the proposed vehicle and station is shown on top of this page. Lear has also designed for the Development Center a full-sized cockpit mock-up for future aircraft capable of operating in the Mach 5 range. The mock-up was built for Lear, Inc. by John O. Lockwood Associates at Grand Rapids, Mich., and was delivered to the Wright Air Development Center to aid the Center in its future aircraft panel study and development program.

While the Lear contract for research on space travel calls only for the design of a crew capsule, it is necessary for Lear scientists to carry on preliminary studies in all phases of space travel that will affect the operation of the capsule and the people in it. As is seen from the above sketch, the station would be wheel-shaped; it would measure about a city block in diameter and would be placed in orbit at an altitude of

about 22,000 miles above the earth's equator. The Lear model would accommodate three interplanetary space ships in its mooring nests. The design of the space capsule itself is an extension of Lear's cockpit design for a hypothetical aircraft envisioned for the 1960's.

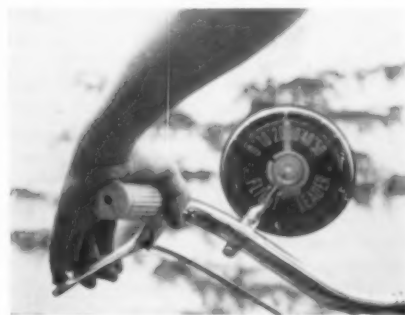
The capsule as well as the cockpit designs—the cockpit has been labelled Mark III—are based on the pilot-manager design concept whereby the pilot, like the director of a large corporation, is freed from routine tasks that can be performed by automatic devices or by the crew. This enables the pilot to concentrate on selected summary information from which he can make rapid management decisions. The panels in the cockpit are arranged to facilitate a logical and well defined division of labor among the pilot and the crew. Lear engineers say that the management of a high-performance vehicle is divided into three major areas: spatial translation, machine condition and environment.

Lear engineers have suggested the following devices in the area of spatial translation: a closed-circuit tv electronic viewer to provide the pilot with external views of his aircraft and surrounding areas not visible from the cockpit; a time-sharing panel from which the pilot can select various kinds of information, each of which he needs only for short periods of time; an attitude indicator, and similar devices.

Among the machine condition instruments, Lear engineers suggest overload-type circuit breakers that provide visual indication of overloading, while the environmental panel would contain controls for windshield defrosting, heat, airflow and cockpit temperature. Manufacturer: Lear, Inc., Grand Rapids, Mich.

Air-operated bicycle speedometer

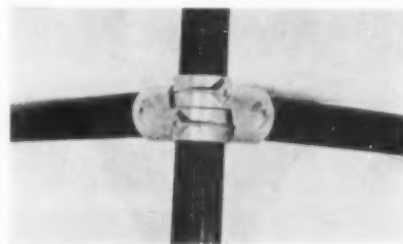
The operating principle of air speed indicators used on commercial and military aircraft has been applied to a new speed indicator for bicycles. Called the "Flight Leader," the new indicator works by air pressure and is clamp-mounted on a bicycle's handlebars. The indicator has a small orifice perpendicular to the front of its dial; when the bike is in motion, air enters this orifice and is forced around a tube inside the instrument. A fan blade on the base of a spring-mounted needle activates the needle according to the speed of the bike. The dial is 5" in diameter and is



marked from zero to fifty units in five. The face of the dial is molded of clear Plexiglas, the speed calibrations are marked in white, and the back of the indicator is molded of red Plexiglas. The "Flight Leader" sells at \$1.89 in auto accessory, department, variety and children's stores. Manufacturer: Sinko Mfg. & Tool Co., 7310 West Wilson Ave., Chicago 31, Ill.

Adjustable cross fittings

Wallace Supply Manufacturing Company of Chicago is distributing a line of Hosking tapered fittings that are made of Hittensile aluminum alloy and have high yield strength and adequate lengths for the loads which pipe or tube structures should be capable of carrying. The fittings lend themselves to any type of pipe or tube structure, including storage racks, railings, buildings, scaffolding, etc. The fitting shown below is the adjustable cross fitting #111 which, in effect, consists of two fittings joined together to provide alignment. Manufacturer: John H. Hosking Co., Cincinnati, Ohio; distributor: Wallace Supplies Mfg. Co., Chicago 14, Ill.



Classified Advertisements

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

Positions Wanted

CREATIVE INDUSTRIAL DESIGNER. 10 years Chief Designer for bicycle, lawnmower, chain-saw manufacturer. 2½ years studio experience. Client contact ability. Thorough background in engineering, production, advertising and sales. Desires challenging, responsible position with manufacturer or design studio. Excellent references. IDI Member. Box ID-194, INDUSTRIAL DESIGN, 18 East 50th Street, New York 22, New York.

INDEPENDENT INDUSTRIAL DESIGNER would like to provide accomplished professional services for one or two additional clients. Complete handling of design development from styling concept to blueprint. Wide manufacturing experience. Box ID-195, INDUSTRIAL DESIGN, 18 East 50th Street, New York 22, New York.

INDUSTRIAL DESIGNER, heavily qualified educational and design experience plus engineering background. Dynamic original ideas coupled with proven administrative and creative abilities. Ready for challenging career role. 33, presently employed. Box ID-196, INDUSTRIAL DESIGN, 18 East 50th Street, New York 22, New York.

CHICAGO INDUSTRIAL DESIGNER, 32, B.F.A. IN DESIGN. Seven years diversified experience: general products, furniture. Creative, with proven ability to increase sales. Knowledge of mechanical principles, manufacturing and material usages. Presently directing design program for manufacturer. Willing to relocate. Box ID-198, INDUSTRIAL DESIGN, 18 East 50th Street, New York 22, New York.

Help Wanted

ARCHITECTURAL AND DESIGN PERSONNEL AGENCY—MURIEL FEDER—A personalized placement service for top level architects, designers, engineers, draftsmen, interior decorators, and home furnishing personnel. Selective contacts arranged in a confidential and professional manner. Interviews by appointment. 58 Park Ave., N. Y. MU 3-2523.

HELEN HUTCHINS PERSONNEL AGENCY—Specialist Professional, Sales, Administrative Personnel for Industrial, Architectural, Interior Designers; Home Furnishings Manufacturers, Distributors, Stores, Publications, etc. Helen Hutchins' long association with a leading industrial design organization insures intelligent screening. 767 Lexington Avenue, New York. TE 8-3070. By appointment.

CREATIVE INDUSTRIAL DESIGNER, EXPERIENCED IN CONTEMPORARY EXHIBIT and display design techniques. Must be capable of evaluation and presentation through two and three dimensional mediums. Must follow through fabrication and be able to travel. Box ID-199, INDUSTRIAL DESIGN, 18 East 50th Street, New York 22, New York.

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-197, INDUSTRIAL DESIGN, 18 East 50th Street, New York 22, New York.

"THE ANATOMETER"—Design for people is a job for you the product man. Human body sizes vary; you must fit them if you can. Our pocket "Human Slide-rule" is an intimate device. 750 body dimensions—\$2.00 is the price. The "ANATOMETER" is a pocket-size plastic slide-rule containing 750 body dimensions of the U. S. Consumer Population, including males, females and children, compiled from the latest scientific reports of the United States Government. ANATOMETRIC ASSOCIATES, P. O. Box 204, Brighton Station, Rochester 10, N. Y.



Custom Molded RUBBER PRODUCTS

Special Mechanical Rubber Parts—Large or small, precision made to close tolerances. Difficult Rubber-to-Metal Applications—Chemically and mechanically bonded, the adhesion outlasts the base material. Oil Resisting and Heat Resisting Rubber. Complex Parts of Specially Developed Compounds.

Send prints, specifications and delivery schedule for estimates. Brochure on request.

THE TOLEDO INDUSTRIAL RUBBER CO.
2233 Smoad Avenue Toledo 6, Ohio

26 YEARS OF PIONEERING



DRY-WALL CONSTRUCTION PERFECTED WITH Homasote Big Sheets

\$60,000,000 of homes have been built with Homasote Big Sheets—since we began, in 1932, our pioneering in Dry-Wall Construction. Between 1932 and 1946, we spent more than half a million dollars in research, covering all parts and materials in home construction.

Among the outstanding facts is the value of using materials in Big Sheets, wherever possible. Why handle four pieces to cover 112 sq. ft. of wall—when it can be covered with one 8' x 14' piece? 22 joints are eliminated in every thousand square feet. Less than half as many nails required.

X-NAILING... Expansion problems vanish with X-Nailing. Snap diagonal chalk-line marks—corner to corner. Nail along these lines—one nail in each stud. The panel moves far less when fewer nails are used.

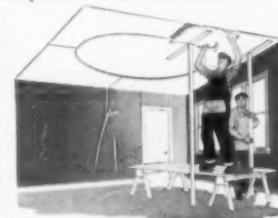
Here is continuous, crackproof coverage for any ceiling area. It is actually "continuous dry-wall" construction, with no perceptible seams. The whole ceiling literally floats—clear of all walls—free to expand or contract as a unit in either dimension. No ceiling joists are needed—the Wilson Air-Float ceiling hangs from trusses, rafters or collar beams. No alteration of pipes or wiring is required. Air-conditioning and indirect lighting are easily introduced. Old ceilings can be "lowered". Multi-layer ceilings are "natural" to this method. Not load-bearing, interior wall partitions are movable.

Ornamental Ceilings at minimum cost

Homasote Big Sheets lend themselves to many ceiling treatments—with and without beams. Every ceiling has the strength, the insulating and sound-deadening qualities always associated with Homasote.

Ornamental ceilings add interest—oval, diamond, square and rectangular patterns are easily and quickly built—and at far lower cost.

The 72-page Homasote Handbook gives complete application instructions for all Homasote products—from underlayments to ceiling to roof—from exterior finish to sheathing to interior finish. It gives the know-how of all our experience. Use the coupon to secure the Handbook and other Homasote literature.



HOMASOTE COMPANY
Trenton 3, New Jersey

Send the literature and/or specification data checked:

- "88", "48" and "44" Roofing Roof Deckings
 Wilson Air-Float Ceilings Grooved Vertical Siding
 One-Man Sheathing Underlayments
 Homasote (72 pg.) Handbook

NAME

ADDRESS

CITY ZONE STATE J-7

In Canada: Toronto, Ontario—P. O. Box 35, Station K

Dry powder vinyl finish

A powdered resin, named Corvel, is responsible for a new method to coat metals. A vinyl fusion bond finish, the Corvel finish has been processed for use in a fluidized finishing process called Whirlclad, a method under license from Polymer Processes, Inc. (1D June, 1956, Sept., '57) To apply a Corvel finish to a metal part, the part is



preheated to a temperature above the flow point of the vinyl and is dipped into a bed of the dry, fluidized powders which encapsulate the object and bond onto the metal surface. A cladding thickness of from 10 to 50 mils can be obtained in a single dip.

Corvel vinyls used on such products as dishwasher racks, washing machine parts, hardware, decorative panels or novelties, provide corrosion and chemical resistance. Corvel is available in a variety of colors and the manufacturers promise a high color and gloss retention when a Corvel coated product is used with detergents. The coatings can be applied to laboratory or plating equipment, battery cases, or as pipe linings where corrosive resistance is required. Manufacturer: National Polymer Products, Inc., Reading, Pa.

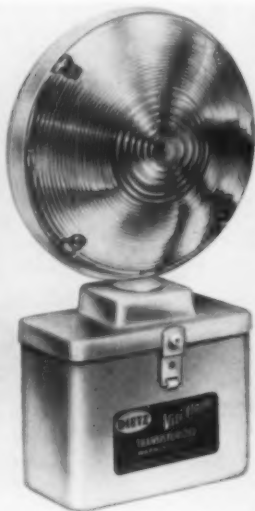


Temperature monitoring system

The Instrument Division of Thomas A. Edison Industries has developed a centralized monitoring system which permits continuous monitoring of temperatures in various areas. The system obsoletes independent scanning by electronic or electrochemical methods that are the conventional means of temperature control. The Edison system is actually a simple network con-

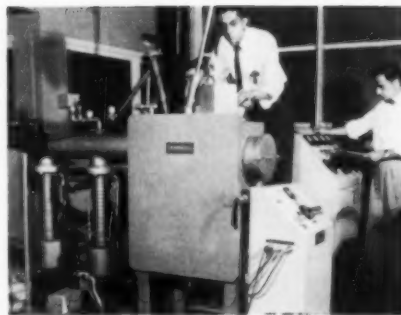
sisting of a group of Wheatstone bridge circuits in which resistance temperature detectors form one leg of each bridge. A current sensitive relay is installed across each bridge, and this relay operates when the bridge becomes unbalanced due to a high or low resistance in the detector of the bridge. A second relay operates an alarm light on the face of the panel and energizes alarm devices connected to the single monitor unit.

The basic set-up of the monitor consists of four bridge circuits which can keep a close check of and can monitor four temperatures. However, any number of monitor units can be grouped together with a single indicator to meet the requirements of either a small or a large installation. Switches on the face of the monitor unit permit reading any temperature at any time. Manufacturer: Instrument Division, Thomas A. Edison Industries, West Orange, N. J.



Transistorized flasher

R. E. Dietz Company has put on the market a new electronic flasher that provides sufficient wide-angle visibility to cover the entire width of a road. The new flasher was designed to meet highway warning specifications of those states having special wide-diameter lens requirements, and is especially useful for construction concerns, highway maintenance departments, police, fire departments, etc. The new model #697 has two plastic shock resistant 7" diameter lenses which enable it to flash warnings in two directions. The compactness of the flasher is due to its transistorized circuitry which also ensures its long life-span. The unit has a strength of 16 candlepower, and operates at 6 volts with two standard lantern batteries; its present flashing rate is 60 to 80 times per minute. Manufacturer: R. E. Dietz Company, 225 Wilkinson Street, Syracuse, New York.



Metallurgy research facilities

F. J. Stokes Corporation of Philadelphia is making available its vacuum metallurgy laboratory for use by outside firms. Interested in this availability will be companies carrying out small-scale research projects in vacuum metallurgy, who do not wish to invest in the necessary equipment or whose own equipment is temporarily overloaded. The facilities of the Stokes laboratory lend themselves to the melting of small quantities of material for experimental evaluation of new products; new processing and fabricating techniques can also be developed using the laboratory set-up. According to a Stokes spokesman, the laboratory offers one of the first custom-research facilities in the field of vacuum metallurgy. The laboratory includes an induction-heated vacuum melting furnace with a crucible capacity of 17 pounds and capable of handling ingots up to 15" high by 10" in diameter. Manufacturer: F. J. Stokes Corporation, 5500 Tabor Road, Philadelphia 20, Pa.

Revised computer vocabulary

The U.S. Air Force's Air Material Command, and the Remington Rand Division of Sperry Rand Corporation have jointly developed a method for using a limited vocabulary of verbs to instruct business computers. The method, known as AIMACO (Air Material Command Automatic Compiler), will use 30 verbs, but has flexibility of enlargement. The new system will make it possible for any business man to refer his accounting and computational needs to the computer in almost his own terms, without having to be familiar with the complex "language" of the machine. In the new system, instruction coding is not eliminated, rather, it too has been automated. To replace the task of manual translation from English to machine language, the system uses a large-scale computer to make this conversion electronically. This means it will not be necessary to train programming personnel to the high degree of proficiency needed for computer systems now used. Any business man can now instruct the computer directly, keeping in mind only the vocabulary limits. Manufacturer: Remington Rand, New York 10, N. Y.

Index to Advertisers

Allegheny Ludlum Steel Corp.....	Inside Back Cover
Agency—W. S. Walker Advertising, Inc.	
Allied Chemical Corp. (Barrett Division).....	22, 23
Agency—McCann Erickson, Inc.	
Aluminum Company of America (Corporate Division).....	Inside Front Cover
Agency—Ketchum, MacLeod & Grove, Inc.	
American Cyanamid Co., Inc. (Market Development)...	7
Agency—Hazard Advertising Co., Inc.	
Apex Coated Fabrics Co., Inc.....	95
Agency—Robert Marks & Co., Inc.	
Celanese Corp. of America.....	29, 30, 31, 32
Agency—Ellington & Co., Inc.	
Coating Products.....	13
Agency—Lawrence Kane & Artley, Inc.	
Columbus Coated Fabrics Corp.....	14, 15
Agency—Mumm, Mullay & Nichols, Inc.	
Croname, Inc.....	95
DuPont de Nemours, E. I. & Co., Inc. (Divins-Lucite).....	34
Agency—Batten, Barton, Durstine & Osborn, Inc.	
Eastman Chemical Products, Inc. (Plastics Div.).....	8, 9
Agency—Fred Wittner Advertising	
Gamble Brothers, Inc.....	95
Agency—Doe-Anderson Advertising Agency	
Harrington & King Perforating Co., Inc.....	21
Agency—Marvin E. Tench Advertising Agency	
Homasote Co. (Nova Sales).....	93
Agency—R. T. O'Connell Co.	
Koppers Company, Inc. (Chemical Division).....	19
Agency—Batten, Barton, Durstine & Osborn, Inc.	
Masonite Corporation.....	25
Agency—The Buchen Company	
McLouth Steel Corporation.....	27
Denman & Baker, Inc.	
Rohm & Haas Co.....	Back Cover
Agency—Arndt, Preston, Chapin, Lamb & Keen, Inc.	
Simmons Fastener Corp.....	26
Agency—Fred Wittner Advertising	
Standard Stamping & Perforating Co.....	11
Agency—Allen Advertising, Inc.	
Toledo Industrial Rubber.....	93
Agency—Wendt Advertising Agency	

pattern **PETE** says
"HERE'S HOW TO
DESIGN WITH
PATTERN METAL"



That's right Pete, Alert Designers can get this useful free catalogue and samples today with a post card or letter.

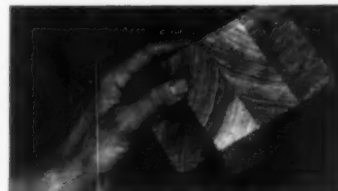
Your design friends who see the fabulous ideas in pattern metal on the 1958 autos and appliances will know why CroRoto is the "design leader in pattern metal." So fresh, so versatile, who would guess it's an economical stock material? Write today for the facts.



CroRoto
a division of
CRONAME INCORPORATED
6243 Howard Street Chicago 48, Ill.
PHONE SP 4-2100

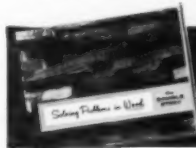
WHAT'S YOUR WOOD PROBLEM?

Gamble research
lengthens industrial floor life
up to 10 times!



THE PROBLEM. Ordinary industrial wood block flooring was proving a costly maintenance headache in plants where certain floor areas—loading docks, aisleways, intersections—were subject to heavy traffic loads.

THE RESULT of Gamble testing and development: a laminated end-grain hickory flooring specially made for these heavy-load "hot spots". Gamble engineered flooring lasts up to 10 times longer when subjected to day-in, day-out punishing loads that would quickly break up an ordinary floor. Chances are, Gamble can help with *your* problem.

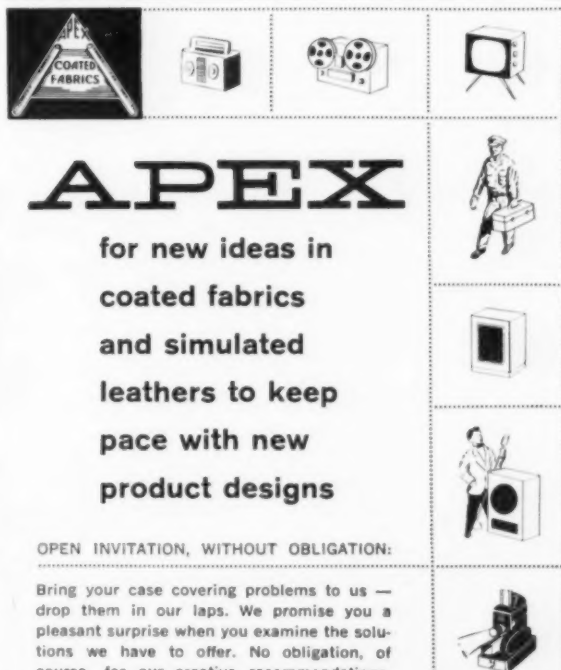


Send for **FREE** booklet
illustrating Gamble services

GAMBLE BROTHERS
Incorporated
4623 Allmond Ave.
Louisville 9, Kentucky

This 28-page booklet describes Gamble facilities and services in detail. Includes many photographs of unusual products designed, tested and perfected by Gamble Brothers. Write for your copy today!

If the problem involves **WOOD**—**GAMBLE** can help!



APEX

for new ideas in
coated fabrics
and simulated
leathers to keep
pace with new
product designs

OPEN INVITATION, WITHOUT OBLIGATION:

Bring your case covering problems to us — drop them in our laps. We promise you a pleasant surprise when you examine the solutions we have to offer. No obligation, of course, for our creative recommendations.

One phone call brings you a background of 32 years of creative service.

SPRING 7-3140

APEX
Apex Coated Fabrics, Inc., 12-16 East 22nd St., New York 10, N. Y.

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.



"The successful integration of color with design affects appearance, market acceptance, efficiency, buying urges and emotions, even executive decisions and employer-employee relations. Only recently has the value of experienced color engineering been properly appreciated. Translating consumer color wants into merchandise makes—and saves—millions of dollars for American industry each year."

Howard Ketcham
New York 17, N. Y.
Howard Ketcham, Inc.

INDUSTRIAL DESIGN is enthusiastically endorsed by executives in management, design, engineering, production, marketing, sales, and related activities. Like Mr. Ketcham, these men look to **INDUSTRIAL DESIGN** for authoritative reporting on total design — the cross-fertilization of company design policy, product development, and marketing.

WHITNEY PUBLICATIONS, INC. 18 EAST 50 STREET, NEW YORK 22, N. Y.

For Your Calendar

September 15-19. The 13th Instrument-Automation conference and exhibit, Convention Hall, Philadelphia.

September 17-18. Building Research Institute's Conference on Floor Construction Systems, Sheraton-Park Hotel, Washington, D. C.

September 18-19. Institute on Industrial Packaging at the University of Wisconsin, Madison.

September 23. Opening of "Swedish Textiles"; Museum of Contemporary Crafts, New York.

September 23-26. The Association of Iron and Steel Engineers' Convention and the 1958 Iron and Steel Exposition at the Cleveland Public Auditorium.

September 29-October 1. National Power Conference, sponsored by the Power Divisions of the American Society of Mechanical Engineers and the American Institute of Electrical Engineers, at the Statler-Hilton Hotel, Boston.

September 29-October 3. American Society of Tool Engineers' semi-annual meeting and Western Tool Show at the Shrine Exposition Hall, Los Angeles.

September 29-October 3. National Hardware Show at the New York Coliseum.

September 30-October 4. Annual high fidelity show sponsored by the Institute of High Fidelity Manufacturers, at the New York Trade Show Building.

October 1. SPE's regional technical conference: "Plastics in packaging" at the Hotel Statler, Hartford, Conn.

October 1-22. "Good Design in Switzerland." A Smithsonian Institution Traveling Exhibition at Yale University, New Haven, Conn.

October 6-10. Southern Exposition, Textile Hall, Greenville, South Carolina.

October 8-10. IDI's annual national conference at the Sheraton East Hotel, New York.

October 11. The 5th annual symposium of the Southern New England Chapter of IDI, at Silvermine, Conn. "Design Universale" is the theme.

October 14-16. The 13th annual Packaging, Handling and Shipping Show at the Chicago Coliseum.

October 15-16. New England regional conference on technical and distribution research and development at the Hotel Somerset, Boston. Sponsored by The New England Council in cooperation with the Small Business Administration and the U. S. Department of Commerce.

October 18-21. ASID's 14th annual design conference and meeting at Bedford Springs, Pennsylvania. The meeting is open to all industrial designers, who may register by writing to the ASID national office, 15 East 48th Street, New York 17, N. Y.

October 26-29. Conference on "The Evolution of Products" at Arden House, Harriman, N. Y. Organized by the Institute of Contemporary Art, Boston.

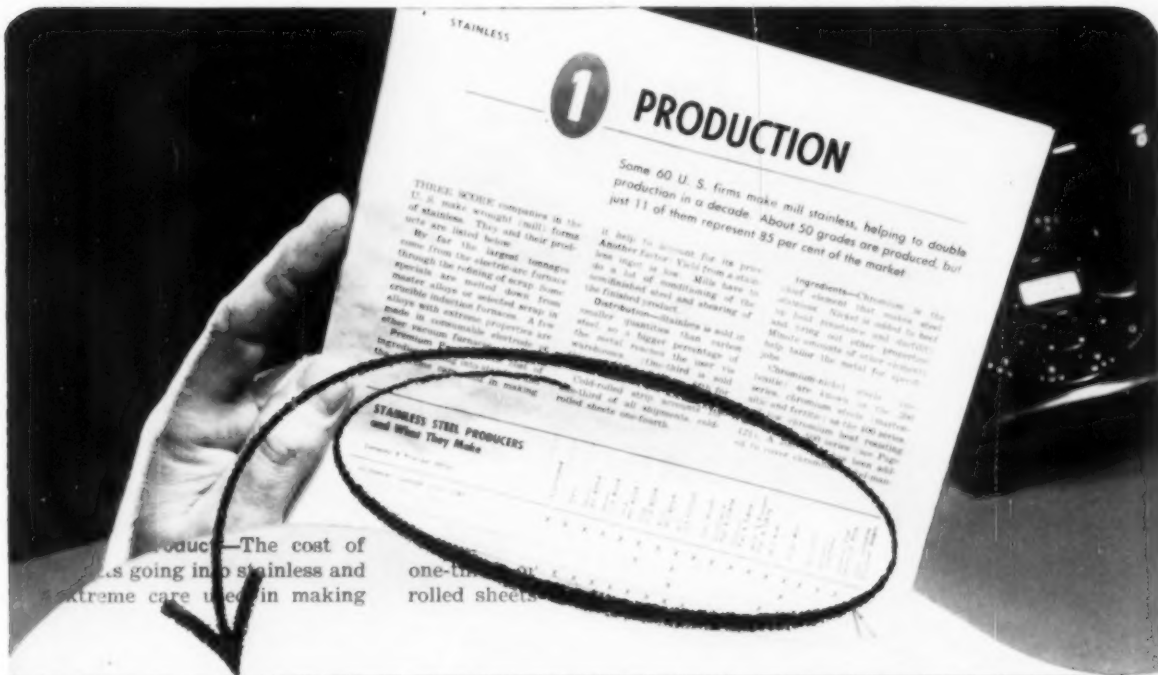
October 26-December 7. International Ceramic Exhibition presented by Syracuse Museum of Fine Arts to celebrate the 20th Anniversary of the Ceramic National. Syracuse Museum of Fine Arts, Syracuse, New York.

October 27-31. National Metal Exposition, Cleveland Public Auditorium.

November 1-16. 1958 Design Derby. Architect International Bureau, Dupont Plaza Center, Miami.

November 17-21. The 8th National Plastics Exposition. International Amphitheatre, Chicago.

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



STAINLESS STEEL PRODUCERS and What They Make

Company & Principal Office

Company & Principal Office	Semifinished	Plates	Sheets, Hot Rolled	Sheets, Cold Rolled	Strip, Hot Rolled	Strip, Cold Rolled	Bars, Hot Rolled	Bars, Cold Finished	Tube Rounds	Electricweld Pipe & Tubing	Stainless Pipe & Tubing	Mech. & Pressure Pipe & Tubing	Wire Rods	Drawn Wire	Extrusions	Stainless Clad Plates	Stainless Clad Sheets or Strip	Other, Including Structural Shapes
ALLEGHENY LUDLUM STEEL CORP. Pittsburgh	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Of the 60 producers of stainless steel...

only **ALLEGHENY LUDLUM** makes all sizes, shapes, finishes and analyses

In its November 4, 1957 issue, STEEL magazine published a complete run-down on the stainless steel industry. This article reveals that *only Allegheny Ludlum*, of the 60 some companies making stainless, produces all sizes, shapes, finishes and analyses.

This can save you considerable time and money. When you make Allegheny Ludlum your *one* source of stainless, you work with *one* sales engineer—*one* order, whether you buy sheet, strip, bars, tubing or whatever.

And, at the same time, you get the best technical service. A-L's crack research and development department is continually searching for new alloys, and better ways to use

today's. Its findings are freely available to you through sales engineers, technicians and special literature.

Allegheny Ludlum follows the product from the melt through to finished form, has greater quality control over the stainless you buy. And since A-L makes all forms of stainless, you get unbiased recommendations as to what is best for your individual needs.

Profit by Allegheny Ludlum's status as the only one-source integrated supplier of all stainless forms. Call your A-L representative today . . . see how he can save you money and time. Or write *Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.*

ALLEGHENY LUDLUM

for warehouse delivery of Allegheny Stainless, call RYERSON

Export distribution: AIRCO INTERNATIONAL

EVERY FORM OF STAINLESS . . . EVERY HELP IN USING IT





Plexiglas...hardworking and handsome



for Ronson . . . PLEXIGLAS® acrylic plastic provides gleaming beauty and rugged strength in molded shaver housings, and sparkling color in point-of-sale signs.

for Pepsi Cola . . . PLEXIGLAS gives eye-catching attractiveness and outdoor durability to molded medallions on *light look* vending machines.

for You . . . PLEXIGLAS can add sales appeal to *your* products by making them more handsome or hardworking or both. Our design staff and technical representatives will be glad to tell you how. Write for our full color brochure, "PLEXIGLAS for Molded Parts".



Chemicals for Industry

**ROHM & HAAS
COMPANY**

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

Canadian Distributor: Crystal Glass & Plastics, Ltd.,
130 Queen's Quay East, Toronto, Ontario, Canada.