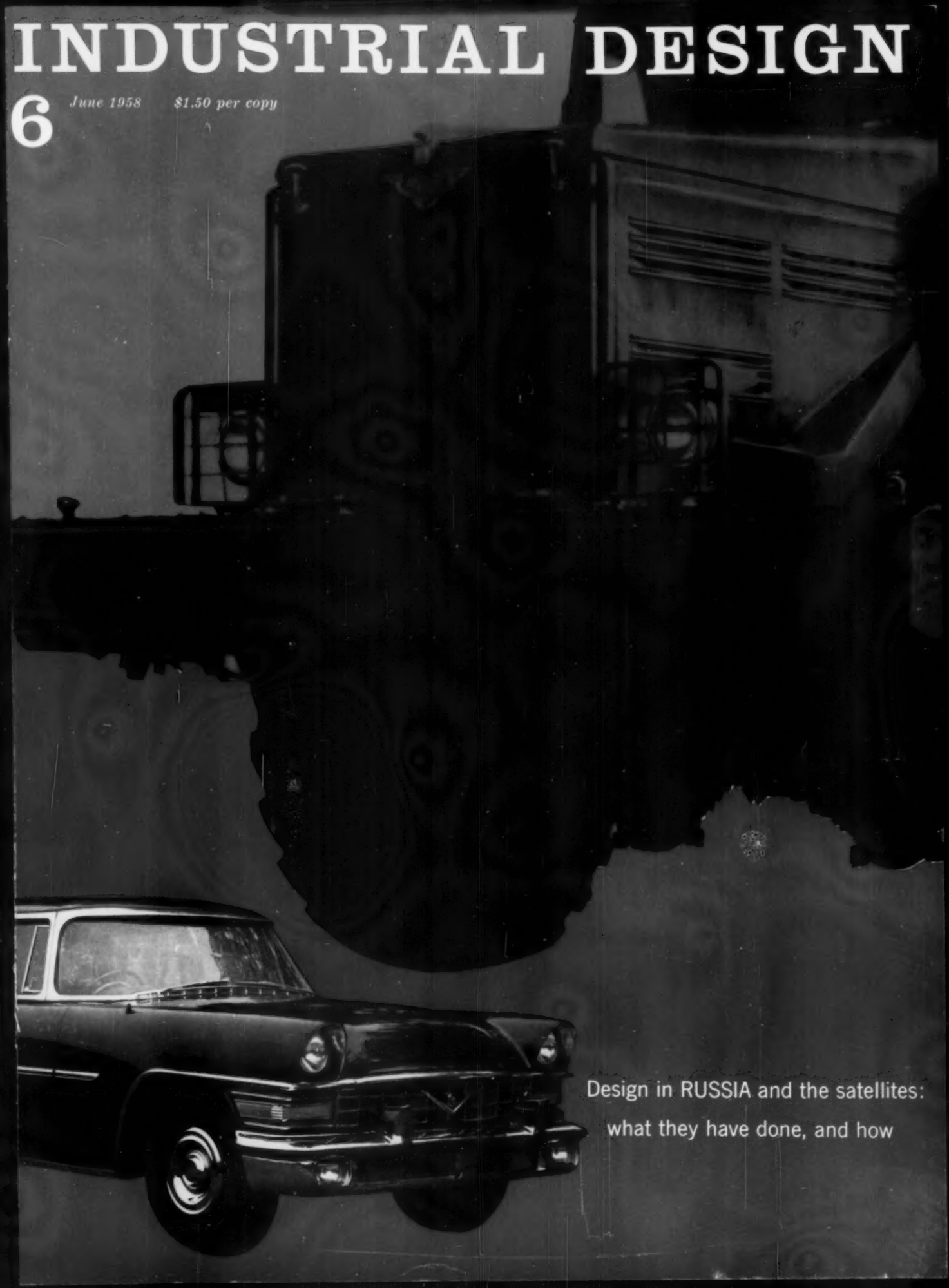
INDUSTRIAL DESIGN

6 *June 1958* *$1.50 per copy*



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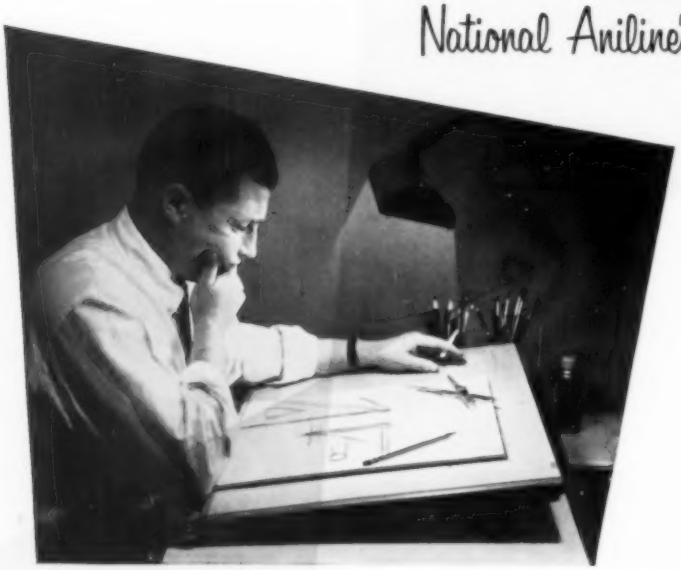

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JUNE, 1958 VOLUME 5 NUMBER 6

INDUSTRIAL DESIGN

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

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Coming

In JULY— The Brussels Fair, Part I: 30 pages of photographs and text on the fair as a whole.
In AUGUST—The Brussels Fair, Part II: a comprehensive reportage on the American Pavilion.

COVER: Jim Ward has chosen two examples of industrial design in Russia and its satellites: the car, to show a striking similarity to American design, and the truck, to reflect the more characteristically Russian heaviness and bulk. Story on pages 32-47.

FRONTISPIECE: The tail light of the German-made Taunus is shown here in photo-montage. Review of foreign cars is on pages 72-79.

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PUBLICATION OFFICES Whitney Publications, Inc.
18 East 50th St., New York 23, N.Y.
Charles E. Whitney, President and Treasurer
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ADVERTISING OFFICES

New York 18 East 50th Street
New York 22
Telephone PLaza 1-2626

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Tyler, Texas Weaver, Incorporated
P. O. Box 3142
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.

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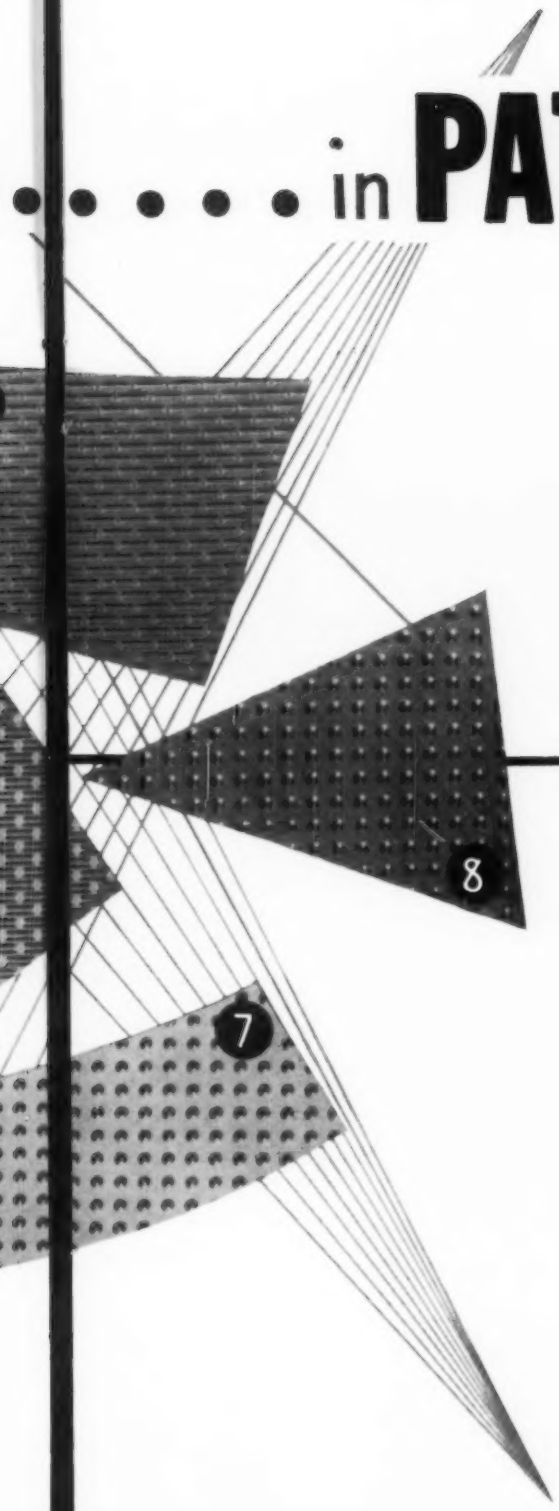

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LETTERS

Triennale re-evaluated

Sirs:
The letter of Mr. Aare K. Lahti in your March issue, criticizing the United States Exhibit at the XIth Triennale, should be answered and this ungrateful task has been assigned to me.

Mr. Lahti is, of course, entitled to his "negative reactions" and he is also entitled to express them. His criticism of Paul McCobb's original, gay and colorful setting is simply an error of judgment or a regrettable failure of appreciation. This setting contrasted brilliantly with the well executed but highly conservative displays of other nations.

34,750 of the visitors paying full admission filled out a questionnaire rating nineteen foreign exhibits in order of interest. These visitors voted the United States Exhibit second in interest only to that of Sweden, and that by only 928 ballots. Also our very competent and experienced exhibit managers, both of them multi-lingual, interviewed hundreds of visitors at random and recorded their expressions. Almost without exception these were enthusiastic and highly appreciative of the lightness and originality of the American Pavilion's interior, as well as of the interest of the exhibits shown there. No one but Mr. Lahti found it "cluttered."

The only reservations voiced were wishes that the exhibit might have been more comprehensive in its showing of American life. With that view, all of us who had anything to do with the show are in hearty agreement. We were sorry that limitations of time, money and space prevented us from preparing a more inclusive showing of American products, architecture, home furnishings and crafts. Government officials responsible for funds have expressed a fervent hope that such a comprehensive showing will be possible in the XIIth Triennale.

As to favoritism in allocating designs to ASID members, this certainly was not intended. Representatives of IDI collaborated diligently on the Committee for the selection of exhibits, and the allocation of objects shown to manufacturer and designer was made in accordance with forms filled out by the exhibitors. If members of IDI did not use that organization's initials after their names as frequently as did members of ASID, this is something that should be taken up with the IDI membership. For the first time the United States was officially represented in the Triennale. This was accomplished on a small budget and in a short time, through the unselfish efforts of a number of individuals who gave their time and energy and, in some cases, spent substantial sums of their own money, to accomplish the objective. Paul McCobb not only designed the setting and supervised its construction, but paid the expenses of himself and Mrs. McCobb to Milan and there they worked like Trojans to complete the installation on time. Other members of ASID made similar expensive contributions.

We hope that in 1960 Mr. Lahti will be equally generous in helping to make the American Exhibit the unqualified success it should be.
Walter Dorwin Teague
New York

Where credit is due

Sirs:
We would like to clear up a misunderstanding which has arisen in connection with the publicity releases covering the award to our products of a gold medal at the Triennale Exhibition in Milan.

In the information given to the Triennale and to you, it was stated that the engineer in charge of the products was, as was the case, Mr. Albert Zuckerman. We would like to point out, however, that the actual design of these prize winning products was created for us by Mr. Raymond Prohaska and not Mr. Zuckerman. Consequently, the honor pertaining to the receipt by our products of the gold medal belongs to Mr. Prohaska.
L. H. Bogen, Vice President
David Bogen Co., Inc.
Paramus, New Jersey

Change may be necessary

Sirs:
Noting Mr. Teague's hearty chortling over Mr. Latham's article (ID, February), I can't resist writing in my vote of dissent.

Perhaps Mr. Teague has forgotten the earlier years of struggle to establish his business when accounts were something less than the Air Force Academy. I would remind him of this, for what of those who are caught up in this "change for change's sake" dilemma? Is this not the very essence of our livelihood? Industrial designing *today* is more than just designing a better product to be made by machines. And how arbitrary "better" can be.

This recession is also cutting back the active work force in the design field!
Edwin Fitzwater
Ben Seibel Associates
New York

Patent question raised

Sirs:
I was particularly interested in your item "REdesign" on pages 64 and 65 of the May issue from this point of view:

Both of the items illustrated represent invention and development by an outside individual who then was able to interest and sell a company in his item. You do not say whether these individuals had adequate patent coverage, or if they were able to negotiate without such protection. It would be of interest to know how such free lance products can be handled and what sort of arrangements can be made either with or without patent coverage, and also to know what lump sum payments or royalties are involved.
Wesley S. Larson
Hazardville, Connecticut

Back copies available

Sirs:
I have a complete set of ID from Vol 1, No. 1. Anyone want them for a modest sum? I have to move and make room.
Fred McGowan
Tarrytown, New York

Errata

The following photo credits were omitted in "Art Nouveau and all that" (ID, April 1958); Page 38, photo by Joseph Heil, New York, reproduced through the courtesy of the Museum of Contemporary Crafts, New York; photos page 39, page 40, bottom, and page 41, right, by Paul Mayen.

The Munson-Williams-Proctor Institute's projected new building (reported in ID, December 1957, page 14, together with photograph of model with front wall removed) is in Utica, not Ithaca.

Ekco's line of stainless steel copper bottom cookware is not a new development, as implied in ID, April 1957, page 79. Ekco introduced this line in the fall of 1955.

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Crystal-clear and shatter-resistant, Du Pont LUCITE acrylic resin can give your designs new advantages, new sales appeal. You can obtain unusual decorative effects with LUCITE by back painting, staining, silk-screening, sand-blasting, carving, edge lighting or etching. And because LUCITE is easy to mold into intricate patterns, it permits great flexibility in design. Perhaps the versatility of LUCITE can be helpful in your future designs. Why not investigate? Write to: E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 216, Wilmington 98, Delaware.
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MOTOROLA TRADEMARK on two-way radio remote-control consolette, for example, is molded of red LUCITE, back-painted white. Unpainted left edge permits light to shine through trademark during transmission, indicating that unit is "on." Clock cover is molded of transparent LUCITE, for crystal-clear visibility. Molded for Motorola Communications and Electronics, Inc., Chicago, Ill., by Romar Plastics, St. Charles, Ill.

INDICATOR, DETAIL PAPER and SPECIAL COUNTER WINDOWS on the Class 51 National cash register are molded of tough, transparent LUCITE for visual control of postings and sight-audit of entries and balances. Manufactured by Molding Division of The National Cash Register Company, Dayton, Ohio.

DESIGNATION STRIPS on Executone intercom and sound systems are molded of clear, durable LUCITE which gives greater magnification to stations listed, makes them easy to read. Names can be hot-stamped on reverse side and then back-painted. Extruded by Ace Plastics Co., Jamaica, N. Y., for Executone, Inc., New York, N. Y.

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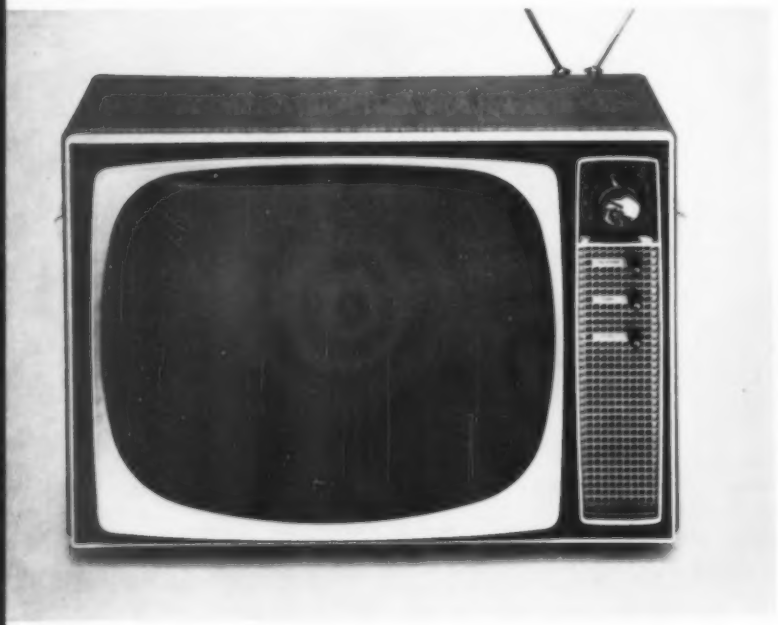
CHALLENGE TO INDUSTRIAL DESIGN: *Create a new TV cabinet unlike any in the industry and, without increasing production costs, give it the high style of fine furniture.*

G-E laminates silk-sheen vinyl to aluminum for striking new TV line



Selected for showing in the U. S. Exhibit at the Brussels Fair, this handsome TV set is prime proof of the teamwork between Design and Engineering possible with Colovin vinyl-on-metal laminates.

G-E stylists wanted to get away from the metallic finish which gives many TV sets a "sore thumb" look in the home. G-E engineers wanted to keep manufacturing costs low, rate of production high.

The solution — not compromise, but a custom design in Colovin vinyl laminated to aluminum. By means of multi-color printing and deep-texture embossing, the vinyl coating takes on, to the eye and to the touch, the richness of brocaded Japanese silk. Applied in .012 film, it has the shockproof advantage of high dielectric strength.

In production the laminate actually lowered costs. Since the material is pre-finished, it eliminated hand operations and expensive finishing equipment. Since it "tailors" like fabric, it required no fitting around corners. Since it can be worked as precisely as metal alone yet has greater resistance to damage, there were 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.

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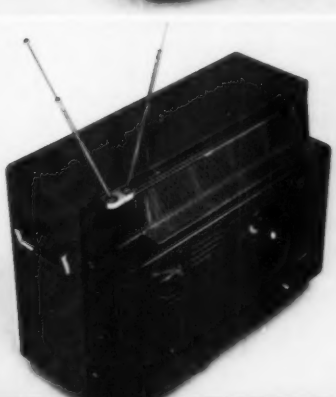

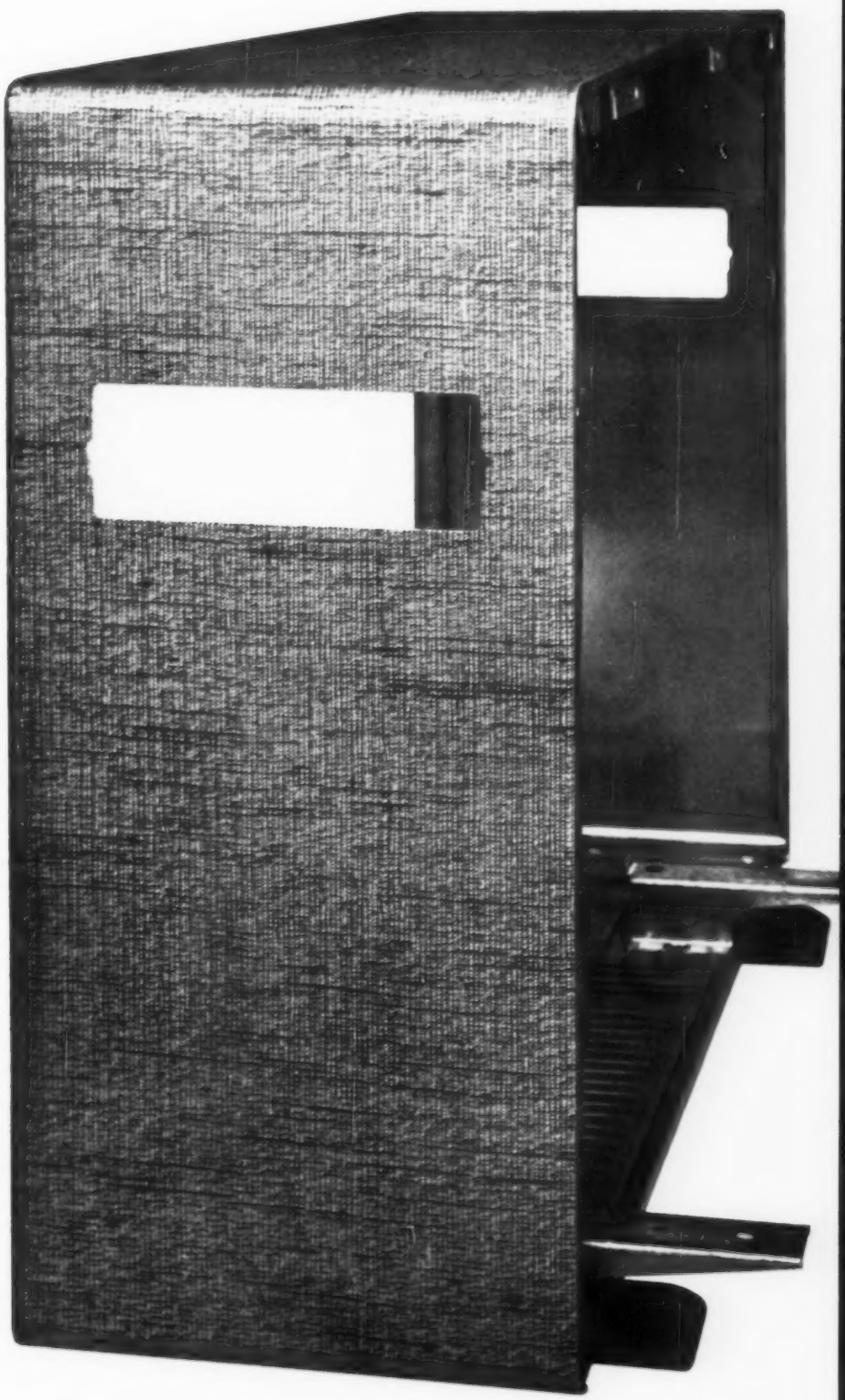

Vinyl-on-aluminum cabinet of G-E "Designer" TV. Note the almost invisible bonding of plastic and metal . . . the smooth corners with no distortion of the vinyl . . . the clean edges of perforations for carrying handles and chassis mounting. Colovin vinyl laminates can be deep-drawn, stamped, bent, punched or welded as precisely as metal alone.

Letter from BRUSSELS' "EXPO '58":

How you feel it in your bones, how it hits you in the wallet

Brussels, May 12: Since this magazine is concerned with design, you no doubt expect a letter from the 1958 World Exposition to be about design, architecture, extravaganza. This one will not be concerned with esthetics; next month's will. The process of digestion is slow, and this Fair serves up quite a stomachful.

Besides the eyes, however, one experiences a Fair in other places—in the back, the feet, and the pocketbook. These are not very often written about, but if you are a prospective Fairgoer my mundane experiences may make your visit easier. If you are but an armchair traveler, perhaps I can at least add color to your pipe dream.

For what it's worth, we are on Route 3 from Luxembourg to Brussels at 4:00 in the afternoon, without any reservations for the night but with a letter that promises to solve the problem — *if* we can reach the official "Logexpo" offices before closing time. It is May 1st, two weeks after the official opening of the Fair, and we are arriving under circumstances that may be typical for the thousands of foreigners expected this summer. (Estimated attendance by October: 35,000,000). I had written ahead to Exposition headquarters to reserve a hotel room (a courtesy usually afforded the press) and had promptly received word on an impressive "Expo" letterhead that the request had been turned over to "Logexpo," who would write details shortly.

Two weeks later details had not arrived. (They have not yet been received.) Unable to wait for confirmation, my husband and I drove north as planned, certain that a personal appearance at Logexpo headquarters would produce the missing details about our hotel.

All roads in Belgium lead to Brussels and were, as advertised, straight and efficient. The Belgians, since beginning this mammoth undertaking five years ago, have invested some $4,000,000,000 in modernizing their city to meet the onslaught of tourism, and a good share of this has gone into sleek roads leading to the hub of radially-planned Brussels and into fast "rings" or belt parkways at its inner and outer gates. We headed toward the hub, since the main Logexpo office was not on the outlying Fair grounds but at a mid-city address. Now it is customary in Belgium to mark a major avenue only once every four or five blocks, and to change the name of the avenue every six or seven blocks. Apparently no part of the improvement budget had been allocated to additional street signs, and it was no easy job for a foreigner speaking French (the official Belgian language) to locate a given address. Our confusion had to be translated into Flemish and Walloon and back again several times, and it was close to closing time before we found ourselves at the specified home (unmarked) of Logexpo.

Inside, there was a reception desk but no waiting room, and several other anxious visitors shifted feet with us as we waited for the record of correspondence to be checked. But there was none of our correspondence in the file, nor any record of our name. We were courteously but briefly aided by an English speaking staff-member who suggested the newly-built motel on the Fair's outskirts, where one could get a room simply by turning up in person. However, the map on the folder he provided did not extend, except for an arrow, as far as the motel. Thus aided by what we already knew, we headed for Heysel Park.

Once we met the stream of yellow markers that lead from all corners of Brussels to the Fair grounds four miles north, we were swept to a point within view of the omnipresent "Atomium." But from there to "Motel-Expo" was another matter. Immediately to the north of the Fair, where the "ring" extensions and throughways are still under construction, the marking program has barely begun. At successive intersections, policemen dealt out courteous but complicated and conflicting instructions for getting onto, and off, the "Autostrade." This was reputed to lead directly to the motel. It didn't.

No Russian complaints

The sprawling dust-choked field of low buildings that we finally stumbled on was, we knew, the lowest priced of three new motor courts, built to house some 5,000 transients. (We selected it over the others, Eden Motel and Park Motel, because they were respectively too far and entirely too near to the Fair grounds for our purposes.) We were efficiently greeted in a large, terminal-like reception building, where the first order of business was to fill out forms as fodder for IBM machines banked behind brisk clerks at a long counter. Our receptionist, in well-learned English, revealed the facts: a double room and continental breakfast came to 474 Belgian francs per day for two; 60 francs for parking the car, service included and nothing else to pay. How many days please? All reservations must be paid in advance . . .

When we mentioned, in honest innocence, the likely length of our stay at the Fair, he recovered from mild shock with a suggestion: Sign up for a few days, and if we wished to renew our room it would not be difficult; refunds were so difficult with those machines . . . "And," he parenthesized, "I want to say that the rooms have no heat. It is better to tell you now—many people have complained." While waiting for the machines to digest our three-days' offering and assign us a room, he volunteered a little more. "The Russians have rented one whole pavilion for the entire run of the Fair, where they deliver and take away busloads of people without any communication with us at all. In fact, the Russians are the only visitors so far who have not complained at all."

No style, no motel

The equivalent of 474 B. fr., roughly $10 a day, may not see you bunked in de luxe motels outside Boston, but it will keep you in unaccustomed style in the best hotels on the Riviera and even, with luck, in Paris. The barracks that greeted us behind Motel-Expo's shiny reception room, however cannot be called stylish and should not be called a motel. Space for a few lucky cars could be found on scant mud-banks along the roads outside each pavilion; most cars and busses, of which there were many, parked beside the reception room or at a central turn-around several hundred yards from some of the entrances to the "pavilions," each named after a renowned composer. Each housed several hundred people. Inside, these obviously temporary structures were freshly furnished; but their light-gage cardboard construction offered little in sound-conditioning, weatherproofing, or fancy sanitation. Our assignment in "Maison Gerschwin" (*sic*) had, in addition to basin and bidet unconcealed in the room, one pair of W.C.s for each wing of 20 rooms; showers could be arranged by appointment at a central depot.

Plain fare, fancy prices

Motel-Expo, then, was offered in all frankness as a temporary community, put up for

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Plastic Drink Dispensers Take Rugged Fountain Use

These attractive over-counter soft drink dispensers must resist impact, denting, corrosion, staining and scratching. So the Cornelius Company molds base, front and back panels of tough CYMEL® 1077 melamine plastic, which also provides the advantage of light weight—important in shipping and installing. Dispensers can be kept sanitary simply by washing with hot water and soap or detergent. Ordinary care will keep them bright and gleaming for a fountain's lifetime.

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Break-resistant, glass-clear droppers that can be boil-sterilized are among the growing number of products being made of versatile CYMAC 201 methylstyrene-acrylonitrile copolymer. Plastic Assembled Products, Inc. produces pipettes in sizes from 1½ inches to 3½ inches on high-speed injection molding machines, twenty-four units at a time. Dropper closures, in every color for quick product identification, are molded of Cyanamid's BEETLE® urea molding compound.

the convenience of transient Fairgoers (and to enable tiny Belgium to invite the world to its audacious party). As a stopping place for a few days it was certainly adequate. The minimal staff was courteous, and the simple breakfast was served in the room with a promptness recommended to the attention of the Statler chain.

On the fourth day, we decided to investigate the dormitory offerings of the outlying towns. We found communities as far as Ghent and even Bruges rapidly accessible by the Autostrade (about an hour of easy driving to the latter), and would recommend that prospective Fairgoers with cars have no hesitation in considering daily commutation from these points, or others such as Namur or Hal (see Guide Michelin.) Pressure of accommodations is not great at this writing.

Without orientation

We hurried back to the Fairgrounds the night of arrival, entering through the central reception room of the *Grand Palais*, set up with telephones, post office, information booths of various kinds in all languages (including a Logexpo office which, it is my hunch, might have located those hotel rooms that the downtown headquarters felt were non-existent.)

Wondering how to attack the Fair on foot, we asked for a map. There was none. The official guidebook had no plan at all. We were offered a small brochure (10c.) that showed sectors of the Fairground for eight efficient tours, but, without adequate labeling or a good overall plan, it was useless for either orientation or close study. Nor was any comprehensive plan of the Fair in evidence within the *Grand Palais*, nor at the main gates, nor on the street corners, nor at the press office. (The only really useable map we ever found, virtually a Black Market item among Fair personnel, is issued by ESSO, whose service stations are conveniently loacted in the midst of large parking lots outside two of the ten main gates.) Nor is there, for that matter, any other form of orientation within the Fair. Terse street signs tell only street names and bus stops, with no indication of the direction toward exhibits or even sections of the Fair. Rest rooms are hard to find, nor can this visitor remember seeing any clocks in conspicuous or useful places, except at the foot of the Atomium. (Perhaps time is an American obsession, but not an impractical one at a mammoth Fair where all exhibits—save the American pavilion—shut down at the stroke of 6:00 p.m.)

As for prices, Motel-Expo illustrates the point and the trend. Nothing comes free, from either the exhibitors or the hosts, and this includes a number of the basic facilities for surviving a few days of such a marathon. (Parking, 60c.; public rest rooms, 5c. to 15c., etc.)There is a charge for mounting the Atomium (40c., I seem to recall) once you have paid general admission (60c.). Transportation—about which more will be said in later instalments—is all at resort levels. A ride in the aerial lift (40c.) is the only way to get across the 500-acre park directly. An open touring bus (30c.) meanders lazily around the byways for the convenience of sightseers, but has no rates for anyone who merely wants to go from point to point. The only personal vehicle, a motorbike taxi for two, costs $1.20 for an hour even if you hire it for a ten-minute trip in a moment of imminent collapse. Personnel of the individual exhibits, with virtually no way to get around the Fair on business, are perhaps even harder hit by this peculiar deficiency than visitors—who can, after all, sit down (if they can find a place) or stagger home when they've had enough.

Remember, too, that these are American prices translated from Belgian francs at a favorable rate, representing costs in our economy, the level of which most European nations and nationals do not enjoy.

In actual efficiency in preparing the site and exhibits, the Belgians did better by themselves. Nearly 50% of the Exposition material, including local industries and a large Belgian Congo section, was erected under Belgian sponsorship, and on the opening day most of it — certainly the conspicuous part—was ready for review. The landscaping of the lavish and lovely park in which the Expo is set was unfinished, but sufficiently under control to give a lush and colorful impression behind the first wave of visitors. The scores of gardeners scurrying about for weeks after the opening appeared, contrary to fact, to be adding only finishing touches.

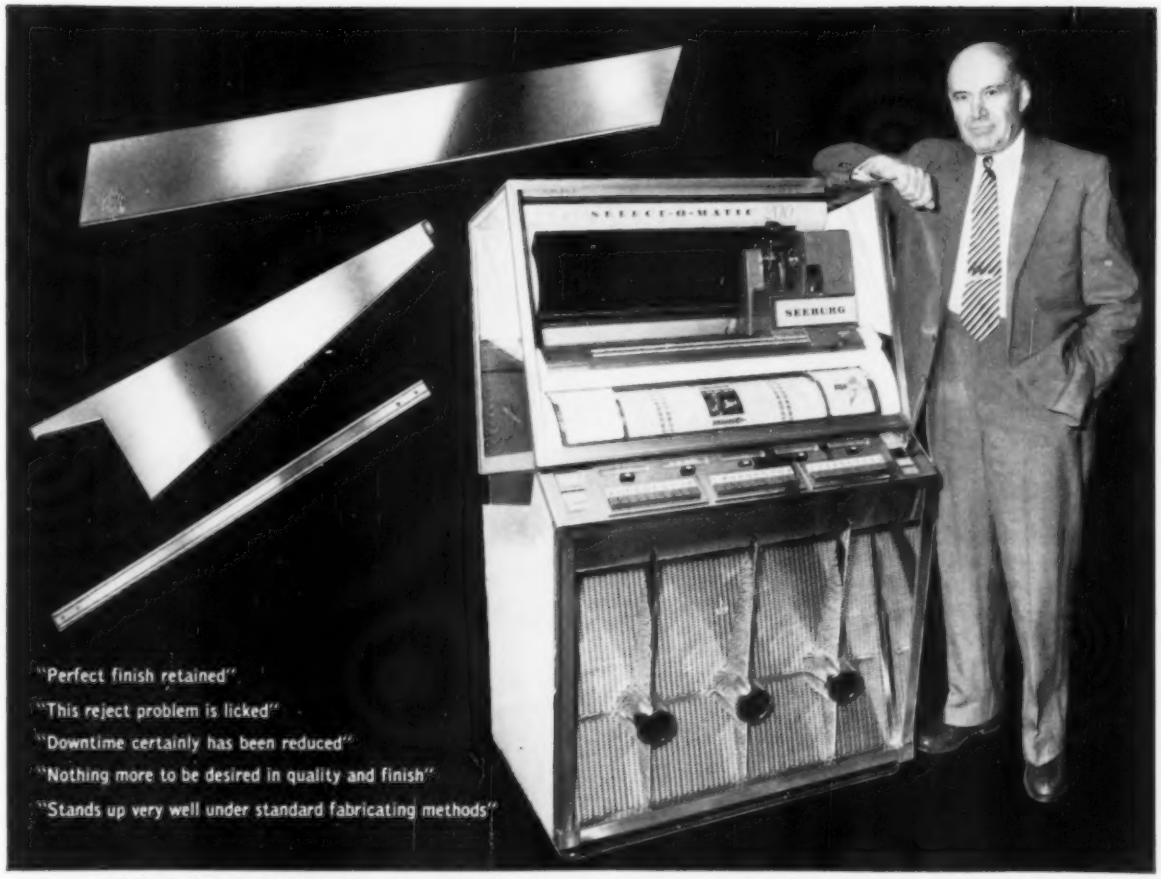
This is more impressive in light of the fact that a number of participating nations could not approximate this degree of finish on a single pavilion. Many masqueraded bravely on opening day but some very prominent ones made no pretense at all. Their doors simply did not open. In early May, Morocco and France were scrambling to assemble exhibits under the very feet of viewers. Italy postponed its opening three weeks and simply refused visitors. At this writing Brazil, Spain and Le Corbusier's pavilion for Philips have not yet been seen. Yet these absences have, strangely enough, very little effect on the bustling and established (though not really crowded) air of the Fair.

There are, of course, stories behind stories that explain some of the national disasters. They relate to labor shortages and material costs at the Fair, and in particular to a 5% tax levied by Belgium on all local labor and materials purchased by participating nations—not clearly revealed to them until after the contracts had been signed and the individual appropriations approved.

The sum of these impressions is oddly out of phase with what goes on at the Exposition itself. No one can complain that the Belgians have not invested all available money, time, and talent in preparing for this oversize spectacle. Some of their failures are inherent in the task itself: one feels at times that even a big nation would have spread itself too thin here. Other errors are purely human, yet the remainder, one suspects, are failures of spirit and perhaps motive. It is true that Belgium has staked billions on this Fair, and deserves a reasonable return on the investment. It is also true that much of the investment is capital—in the form of permanent improvements to the nation and its capital; and that much is calculated—for the influx of visitors is swelling the national coffers and individual pockets of 9,000,000 Belgians beyond all measure. In inviting scores of nations and industries to exhibit, and millions of guests to pay to visit, Belgium has obligated itself as host to a rich and important offering. By and large it is realized. Yet one feels a suspicion of greediness where graciousness should be—that the host has given too little thought to the essential human problems, to helping the visitor get at these riches comfortably and at a fair price. The fibre of its hospitality—attractive hostesses notwithstanding — does not seem to be a pure reflection of the humanism that is the theme of the exhibits.

Still, a world's fair is a world's fair, and from monumentality to frivolity its scope can never be spoiled by the mere irritations that in one form or another are bound to be there. Suffice it to say, at this sitting, that when we finally stepped out of the *Grand Palais* and into the crowd that first evening—mapless, bathless, feckless—the sky was gray and the Atomium a silver sparkle, and the illusion began to take hold. We entered a world of escape from present reality, a world of man's aspiration—the world that a world's fair should be.

Jane Fiske McCullough



K. R. Craft, Vice President, The Seeburg Corp., Chicago, with one of the company's famous juke boxes. The brilliant reflectivity and durability of Nickeloid pre-plated metals is an important factor in the product's eye-catching good looks.

NICKELOID METALS SAVE 4 PRODUCTION STEPS— REDUCE REJECTS FOR THE SEEBURG CORPORATION

Standard fabricating methods are used to stamp and form juke box trim. Nickeloid Metals eliminate machinery tie-up; rejects are less than 1%.

Stamping Nickeloid chrome steel, protected with Mar-Not adhesive-backed paper which is easily peeled off. Finished part will need no polishing.

Pre-Finished Design Material is Easily Worked With Standard Fabricating Methods

The Seeburg Corporation uses Nickeloid *pre-plated* chrome steel to achieve functional beauty and attention-value . . . economically. Before switching to Nickeloid, the company did its own cleaning, plating and buffing. The job required four — sometimes five more operations than are now necessary. According to Mr. Craft, "The tremendous cost of plating and buffing was not only more expensive and much more time consuming, but the finished product had to be inspected, and the rejections on plated and buffed metals was very much higher than it is with Nickeloid. Economically, the Nickeloid Metals have proved themselves in production."

Using standard fabricating methods, Nickeloid Metals need only be stamped and formed — then assembled. By capitalizing on this pre finished *method* of production, this leading manufacturer has eliminated the machinery formerly required for plating, polishing and buffing — saved four or five production steps, and is producing a better end product *with less manpower.* Can you use these advantages in *your* operation?

At the Design Engineering Show — See Nickeloid Metals, Booth 103-A

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NICKELOID METALS SINCE 1898

AMERICAN NICKELOID COMPANY

PERU 7, ILLINOIS

NEWS

Britishers win good design awards

Light fixtures and water faucets, buffets and bathinettes were among the twenty products that received certificates for outstanding design this year at Great Britain's Design Center in London. The products were selected by a committee of five from among nearly 5,000 items displayed at the Center, and the awards were presented to manufacturers on May 8 by the Duke of Edinburgh.

The month of May marked the Design Center's second anniversary and the second year for the presentation of good design awards, now an annual event. The Center has been used by more than 1,000 manufacturers as a centralized showroom which allows buyers to see a wide selection of good contemporary design under one roof. For the public the Center has provided up-to-date ideas in home decorating and furnishings. In addition to information about products on display, the Center has a design index with pictures of some 9,000 consumer items and complete background information, including manufacturer and price, is supplied in all cases.

Certificate winners this year are: H. R. Stapleton's slide viewer for Rank Precision Industries, John Neville Stafford's occasional chair for Stafford Furniture Ltd., William Petzall's water tap for Barking Brassware Company, F. C. Hobden's curtain fabric for Clyde Manufacturing Co., Keith Vaughan's textile for Edinburgh Weavers, Humphrey Spender's textile for Edinburgh Weavers, A. Ingham's tablecloth for John Shields and Co., M. O. Rowland's polythene bathinette for Ekco Plastics Ltd., David Queensberry's enameled casseroles for Enamelled Iron and Steel Products Co., Robert Heritage's sideboard for Archie Shine Ltd., K. H. Patterson's luggage for S. E. Norris and Co., John Galloway's carpet for William C. Gray and Sons Ltd., Tom Arnold and Pat Albeck's earthenware for Ridgway Potteries Ltd., James E. Gray's basin for Shanks and Co., C. T. Howard's oil convector heater for Tallent Ltd., Neville Ward's carpet for Tompkinsons Ltd., Audrey Levy's wallpaper for Wall Paper Manufacturers Ltd., Robert Welch's toast rack for J. and J. Wiggin Ltd., and Hulme Chadwick's knifecut pruner for Wilkinson Sword Limited.

Among the twenty prize-winning products were (left to right, top to bottom): Hulme Chadwick's pruner, K. H. Patterson's luggage, H. R. Stapleton's slide viewer, David Queensberry's casseroles, William Petzall's tap, M. O. Rowland's plastic bathinette.

How many ways can you profit with new **CORVEL*** Fusion Bond Finishes?

No "ordinary" finish can match the challenging opportunities offered by CORVEL Cellulosic Finishing Powders.

CORVEL gives a premium appearance in beauty and controlled sheen—retains gloss and color. It assures uniform coverage even on sharp edges, corners, and projections. There's no worry about sag or drip marks, no bridging at intersections. And CORVEL finishes resist water, salt spray and sunlight—provide superior toughness, impact and abrasion resistance.

Parts can be clad uniformly in just one dip with thicknesses far exceeding those generally obtained with ordinary paints or enamels.

CORVEL finishes are applied by the WHIRLCLAD® Finishing Process. The heated object is dipped into a fluidized bed of CORVEL powders. The powders, which are in a state of "whirling suspension", assume flow characteristics similar to a liquid and bond by fusion to the part.

CORVEL Fusion Bond Finishes are resin powders of various types specially formulated for use with the WHIRLCLAD Finishing Process. This new production process for cladding metals and other materials with plastics is licensed exclusively in the U. S. and Canada by Polymer Processes, Inc., an affiliate company.

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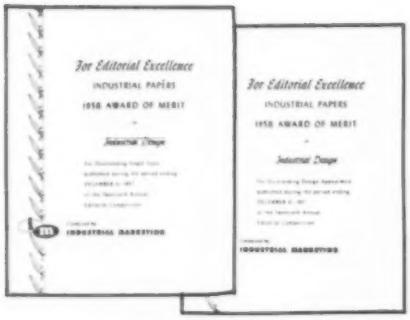

ID wins editorial awards

For the fourth successive year, ID is a winner in the Annual Business Paper Editorial Achievement Competition, sponsored by *Industrial Marketing*. The Annual Design Review and Product Planning issues won awards for, respectively, the best single issue and the best graphic presentation during 1957.

Jets go down to the sea

Alaskan fish are currently being astonished by the world's first jet-propelled fishing boat with forward-drive jets, now operating in the waters off Cordova, Alaska. The boat is propelled by twin hydrojets developed by Hanley Hydrojet, Inc., of Prospect, Ohio, and powered by two 160-horsepower Hercules turbocharged diesel engines. Built by Nichols Boat Works Co., Hood River, Oregon, the craft is operated by the Copper River Cannery Co-op.

The new boat offers three major advantages: it can work over and around nets without fouling its propellers or ripping the nets; because of its 14-inch draught it can work over shoals and tideflats; and because there is no problem with moving drive shafts, the drive unit can be located all the way forward, leaving the rest of the boat free for storing fish.

The tender reaches a speed of 10 knots and has a load capacity of 12 net tons. Of all-steel construction, it has a double bottom which serves as a storage tank for 1,000 gallons of gasoline and 500 gallons of water to service other fishing craft.

Pratt exhibits at IBM Gallery

Students of Pratt's Industrial Design Department have been exhibiting their year's work at the IBM Gallery in New York. The exhibit was selected by the Pratt faculty from the work of second, third, and fourth year students as a representative display of projects completed during the year. "Art in everyday products—better things for more people" is the theme of the show, which closes June 21.

The exhibit is a diverse one, ranging from sculpture (the work of second-year students) to model interiors of restaurants, houses, and stores, by students in their fourth year.

Conference on U. S. roadscape

A city planning conference held at Yale last month was warned that the American roadscape is in danger of becoming "history's greatest junkheap" unless we act quickly. The conference, called by Christopher Tunnard, head of Yale's Graduate Program in City Planning, based its discussion on the provisions of the Federal-Aid Highway Act of 1956 and the possible counter-measures to be enacted by individual states. Hans A. Linde, legislative assistant to U. S. Senator Richard L. Neuberger, said that the 1956 Federal law "makes a positive contribution" to the formulation of standards for a billboard control program, but, he pointed out, the same citizens' groups that won Congressional approval of the law must now continue to seek state participation in the program, described as "the first national zoning bill ever enacted."

As an alternative to long strips of "commercial jungles" which are beginning to stretch across America, the conference suggested "service clusters" where motorists could pull off the road and examine a series of smaller signs containing more information than is now visible on billboards which must be passed at high speed.

New form for Connecticut church

An unusual building concept, called by its creators "space construction," has been used in Stamford, Connecticut's new First Presbyterian Church (below). The new structural method, developed by Wallace Harrison of the New York architectural firm of Harrison and Abramovitz and by Felix J. Samuely, British construction engineer, uses no pillar support at all. Wall sections are "crimped" to remain rigid. One hundred and fifty-two panels of precast concrete—some weighing as much as 11 tons—have been fitted together in this way to form the sanctuary, which is faced in gray slate. The 234-foot building can accommodate 800 people at one time.

Early in the planning, the elongated megaphone form which had been developed for acoustical reasons, began to emerge as a fish shape. It was quickly decided to emphasize the fish form because of its significance as an early Christian symbol. (*Ichthus*, the Greek word for fish, had a special meaning for early Christians, its letters being the initial letters of the words, "Jesus Christ, God's Son, Saviour.")

Parts of the six-story-high walls are formed of inch-thick stained glass embedded in large precast concrete and steel

frames joined together in prismatic designs. The effect of the design is rather subdued on the exterior but a brilliant effect of jewelled light is achieved on the interior where walls of almost solid glass soar to a height of 60 feet at the highest point. The northern wall is an abstract representation of the crucifixion; the southern wall, of the resurrection. The glass in the narthex suggests the sacraments with the word "Pax" at the peak of the window. All designs were evolved by Gabriel Loire of Chartres, France, from templates by Mr. Harrison.

A parish unit, designed by architect Willis Mills, lies to the right of the sanctuary. A long, low building of fieldstone and glass, it acts as a frame for the main building. It covers two thirds of an acre and houses a small chapel, class rooms, a fellowship hall, administrative offices and library-lounge.

MEET A MATERIAL . . .

SO SHOCK-RESISTANT IT KEEPS GOLF CLUBS FROM "LOSING FACE"

Waggle . . . swish . . . *wallop* . . . 250 yards . . . smile. Meanwhile, back at the "wallop," a Vulcanized Fibre insert costing only a few pennies has saved the face of a $20 driver. Over and over again, this tiny wedge of cellulosic fibre takes the smashing 2,980 pound blow of club against ball and comes back for more. A spectacular demonstration of the strength and stubborn toughness of Vulcanized Fibre, but even more eye-opening are scores of other applications which prove this material's *unique combination* of properties. See for yourself. Send for our new kit of samples and give them your toughest tests. We'll wager you find a product improving idea—as others have been doing for 99 years

Here's the insert that takes a pounding

Yet the really impressive thing about this unique material is its almost unbelievable range of uses. For example: impact-resistant rail joint insulation for railroads; circuit breaker arc chutes; hard, glass-smooth shuttle armor and textile bobbin heads; dense, durable gears, cams and cutting blocks; lightweight, sanitary ligature reels; protective washers for hypodermic needles; flexible, tear-resistant backings for abrasive discs; oil- and solvent-proof parts of many kinds.

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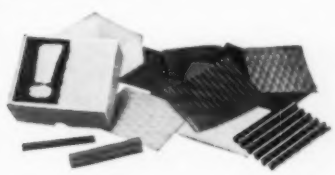
Among engineering materials, you'll find Vulcanized Fibre unique and surprisingly economical. It weighs only half as much as aluminum. It has outstanding arc resistance, low thermal conductivity, excellent resilience and high abrasion resistance. It absorbs sudden repeated shocks and impacts without failure. And it can even be formed or deep drawn into intricate shapes—as well as machined, polished, painted, embossed and combined with other materials, such as laminated plastic, aluminum, wood, rubber, asbestos or copper! It's available in many forms and sizes.

Send for samples today—and ask about the use of Vulcanized Fibre in any product that's giving you trouble. Dept. D-6.



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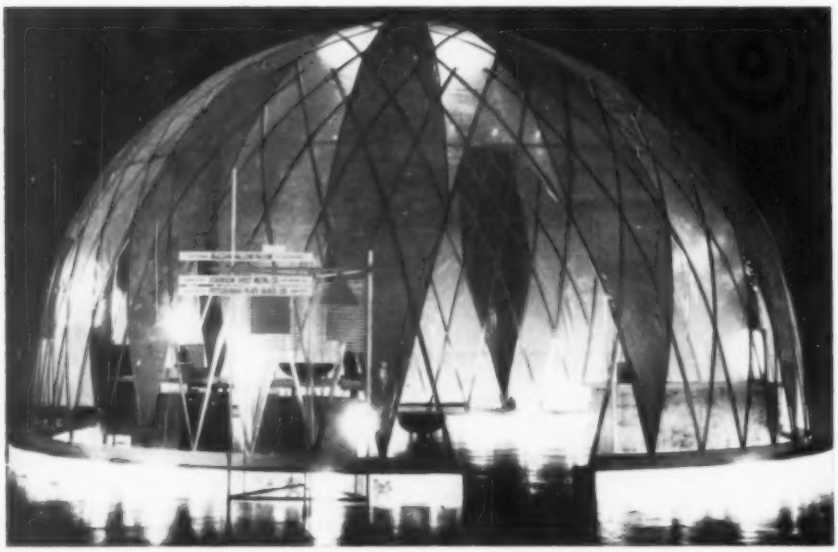

Student projects shown at the exhibit include: belt sander by Dan Novotny; packages by R. L. Trussell, James Tilton, Ann McCabe, Rosemary Wallace, Gloria Silver; "Outdoor" house model by Dan Ford; and a wooden body contour measurer by Floyd Starr.

Iowa State design students hold Tenth Annual Exhibition

The Tenth Annual Design Exhibition of the State University of Iowa, which was held May 6 to June 10, marked the tenth anniversary of the university's design section. Theme of the exhibit, "Time Focus," dealt with ideas for solving a few of the environmental problems of the twentieth century.

The design section, under the direction of John H. Schulze and J. Hood Gardner, operates on the principle of "learning, by designing and creating, to solve specific problems." Working under this principle, the 250 students start on a single design problem at the beginning of the school year and continue working on it until the end of the year. The culmination of their work is the spring design exhibition, at which the best of these projects are shown (see selection above).

This year the exhibition was housed in the Flex-dome (top picture), a cooperative project, developed by Mr. Schulze, Associate Professor of Design, and Stanley Bye, a senior student in design. Embodying a new building concept, the 150-pound dome is a portable structure which can be erected in less than two minutes. A 19-foot tube when collapsed, it opens into a dome 12 feet high and 75 feet in circumference. The ribs are locked into position by a compression ring near the top of the dome (see top photograph). The formed aluminum ribs are covered with a translucent polyethelene film. Some suggested uses for the new dome are as a Civil Defense emergency hospital, beach house, garage or camping quarters.

Museum School gives spring party

Eight guests of honor at the Philadelphia Museum School of Art's third annual Spring Scholarship Party on June 4 received citations for "the distinction they have brought to their profession." Other events included in the celebration were the opening of "Young Designers, 1958," an exhibition of more than 1000 student designs; the first Philadelphia display of couturier fashions, lent by DuPont; and a fashion show with students modeling their own designs. More than thirty artists contributed works to be distributed as prizes.

The guests of honor presented with citations were: Henry Dreyfuss, industrial designer; Roy E. Larsen, president of Time, Inc.; Jacques Lipchitz, sculptor; Herbert Matter, advertising designer; Norman Norell, fashion designer; Pola Stout, fabric designer; Andrew Wyeth, painter; and Charles E. Whitney, publisher of INDUSTRIAL DESIGN.

The student design exhibition represents the departments of advertising design, art teacher education, dimensional design, fabric design, fashion design, fashion illustration, illustration, industrial design, interior design, photography, drawing and painting, graphics, and typography. It will remain open through July 5.

Creativity Institute in progress

Members of the fourth annual Creative Problem-Solving Institute are now participating in three days (June 23-25) of lectures and seminars on the campus of the University of Buffalo. The sessions, which are sponsored jointly by the University and The Creative Education Foundation, are intended to provide training in methods of developing personal and organizational creativity.

Three hundred representatives of education, public service and business have been divided into small groups for discussion and practice of techniques described during the general sessions. For members who have attended past Institutes, a supplementary sub-program has been provided, and there is a special program for wives of institute members.

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Going places

F. Schumacher and Company has opened a new showroom at 305 East 63rd Street, New York. The office was designed by **Virginia Connor Dick.**

Changes of address: **Habitat, Inc.,** to 336 Third Avenue, New York . . . **Donald Deskey Associates** to 575 Madison Avenue, New York . . . **G. C. Dewey and Company, Inc.** to 202 East 44th Street, New York.

Education

The **University of Cincinnati** opened its new College of Applied Arts building on June 11, giving the College its first complete home. Douglas Haskell, editor of *Architectural Forum*, and principal speaker at the dedication ceremony, discussed "Back to the Arts." Beginning next September, the College of Applied Arts and the Graduate School of Arts and Sciences will offer a master of fine arts degree in cooperation with the Art Academy of Cincinnati.

Appointments in the **Harvard Graduate School of Design** include: **Edward Keene True** and **Huson Taylor Jackson** as Professors of Architecture, **Vincent John Solomita** as Assistant Professor of Design, and **Albert Szabo** as Assistant Professor of Architecture.

Cosmo P. Campoli has been appointed Assistant Professor at **IIT's Institute of Design.**

Wassyng

Jones

People

APPOINTED: **John T. Bailey** as chief design engineer of Vitro Engineering Company, New York . . . **Howard D. White** as president of Revco . . . **W. Paul Breckley** as planning director of the Approved Kitchen Dealers of America, Inc. . . . **Gene Vedder** (above) as a partner of Zierhut Associates, Van Nuys, California . . . **L. William Ullrich** (above) as head of Electromold's new Product Research and Development department . . . **Seymour Wassyng** (above) as director of packaging for Joseph E. Seagram and Sons, Inc. . . . **William Balderston, Jr.** as Products Manager in Philco Corporation's Accessory Division . . . **Otto H. Kilian** as vice president and **James H. Langenheim** as vice president and director of design at Pereira and Luckman . . . **Herbert E. Boekel** as designer-draftsman for Bauer and Corbett, Newark . . . **Benjamin Vogel** as assistant to the vice president of the New York modelmaking firm of Ivel Construction Corporation . . . **Grant A. Morrison** as manager of product design and application engineering at the Metallurgical Products Department of General Electric . . . **Peter R. Hayes** as assistant industrial design consultant with Alcoa . . . **Walter S. Shafer** as Director of the Department of Commerce's Office of International Trade Fairs.

ELECTED: **Garrett P. Orr** as president of the Art Directors Club of New York for 1958-1959 . . . **Richard J. Neutra** to honorary membership in the Venice Academy . . . **Roy R. Neuberger** as president of The American Federation of Arts.

Awards

ASID has announced the eight winners in its 1958 national student competition. Awards went to **Theodore Peterson, William Baron, Howard Noel,** and **Ed McCauley,** of the University of Illinois; **Rodney Hatanaka** and **Kenneth Fenne** of the Illinois Institute of Technology; **Carl Fischer** of the Art Institute of Chicago; and **Robert Filipek** of the Minneapolis School of Art.

For their work on Amtico's Stardust Vinyl Flooring, **Paul MacAlister** and **Flolydia Etting,** Chicago, won a First Award in the 12th annual AID Home Furnishing Design Competition.

Ullrich

Vedder

Henry R. Shepley received the Gold Medal for Architecture at the Joint Annual Ceremonial of the American Academy and the National Institute of Arts and Letters May 21.

Four Pratt students: **Emanuel S. Perry, Grant Saylor, Fred Schwab,** and **Arthur Warheit,** have won United Artists Scholarships of $1000, given annually to Juniors who show outstanding performance in the field of graphic arts and illustration.

Eight graduates of Columbia University's School of Architecture have received William Kinne Fellows Memorial Traveling Fellowships: **Lucile Fonfara Young, Nikita Zukov, Thomas K. Dahlquist, Nathan Silver, Joseph Feingold, Robert Rotner, Jeh V. Johnson, and John Beyer.** The fellowships carry a grant of $2500.

Company news

Philco Corporation has reorganized its Consumer Products Division as the result of a year-long study, in which **Arthur D. Little Inc.** cooperated. In both the Appliance and Electronics Divisions the functions of product planning and operations are now separated. Heads of the new departments are: **Harold W. Schaefer,** Vice President-Product Development and Planning for Appliances; **Armin E. Allen,** Vice President-Product Development and Planning for Electronics; **E. S. Brotzman,** Vice President of Electronics Operations; and **William A. McCracken,** Vice President of Appliance Operations.

The Industrial Division of the **Armstrong Cork Company** has created a product planning department. Manager is **E. W. Jones** (below, left).

A delegation of American plastics manufacturers is now visiting Russia as a result of the U.S.S.R.-U.S.A. exchange agreement of last January. The team is headed by **C. Russell Mahaney,** president of **The Society of the Plastics Industry, Inc.** The Soviet delegation will arrive in November, in time for the National Plastics Exposition.

The plastics department of **Monsanto** has a new market development department, combining five formerly separate marketing functions. **Theodore S. Lawton** is director of the new department, supervising advertising and sales promotion, automotive sales development, creative design, industrial and building applications and market research.

Sam Cinkes Associates, New York designers and packaging consultants, have been retained by **Reliance Products Sales Corporation,** Woonsocket, Rhode Island.

U. S. Radium Corporation's exhibit at the recent International Trade Fair in Casablanca consisted of a battery of cylinders (below). Set into the end of each cylinder was a radioactive krypton-excited lamp for

low-level emergency marking application. Provision for viewing was made at the opposite end of the tube. These are the first commercially-available lamps utilizing radioactive gas, and the company expects them to provide marking illumination for periods of up to 10 years or more. They are visible at 500 yards.

Peter Muller-Munk Associates will undertake a study of the U. S. cast-iron kitchenware market for the Swedish firm of **Husqvarna Vapenfabrik.**

ALUMINUM IS FORM . . . ALCOA IS ALUMINUM

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Cast it: Aluminum can be cast in sand, die, plaster and permanent molds. Shape is no problem; size is no problem; thinner, more uniform walls are possible. Cast in aluminum for smooth surfaces, close tolerances, high-density nonporous parts.

Coin it: Many aluminum alloys are ductile enough to permit coining of amazing detail. Fidelity of base, and no protective plating is needed. Semi-coining, a combination of embossing and coining, eliminates the labor of hand-chasing aluminum surfaces.

Draw it: Odd shapes, as well as the usual rectangles, cylinders and hemispheres, are not unusual with aluminum. Most shallow draws can be made on single-action presses, the highest speeds possible. Tooling costs are kept low; cast-iron tools can be used for short runs.

Extrude it: Complicated cross sections call for aluminum extrusions. Strength can be added where it's needed, weight greatly reduced. Die costs are moderate, tooling simplified. Welding, forming, riveting, machining and expensive assembly work are eliminated.

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

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

Machine it: Aluminum can be turned at the highest speeds and feeds (to the most precise tolerances possible). Extremely fine finishes are attainable. Tools last longer. Plating is eliminated. Color matching from part to part is assured by nonfading anodic colors.

Stamp and form it: Aluminum can be stamped with standard tools and techniques, allowing for simple spring-back in forming dies. No additional tool costs are involved. Sharp, clear letters, figures and decorations are raised. Aluminum's easy machinability prolongs die life.

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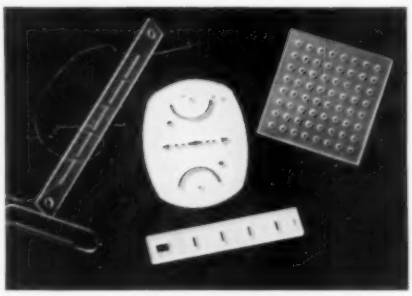

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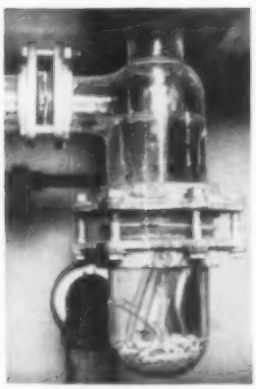

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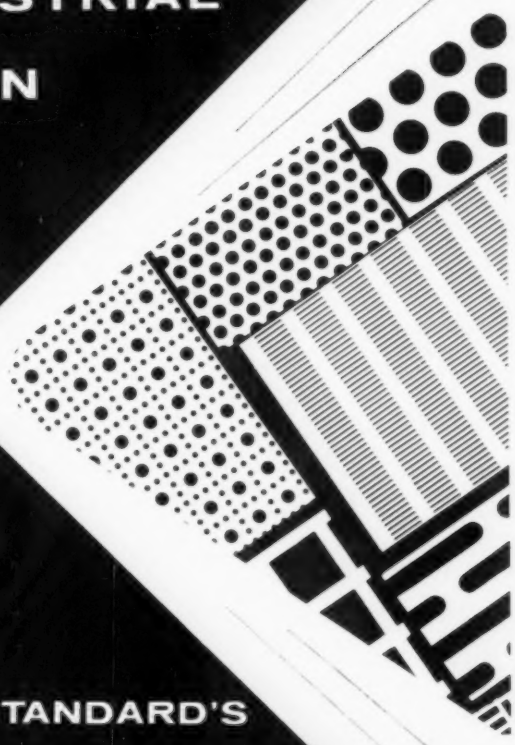

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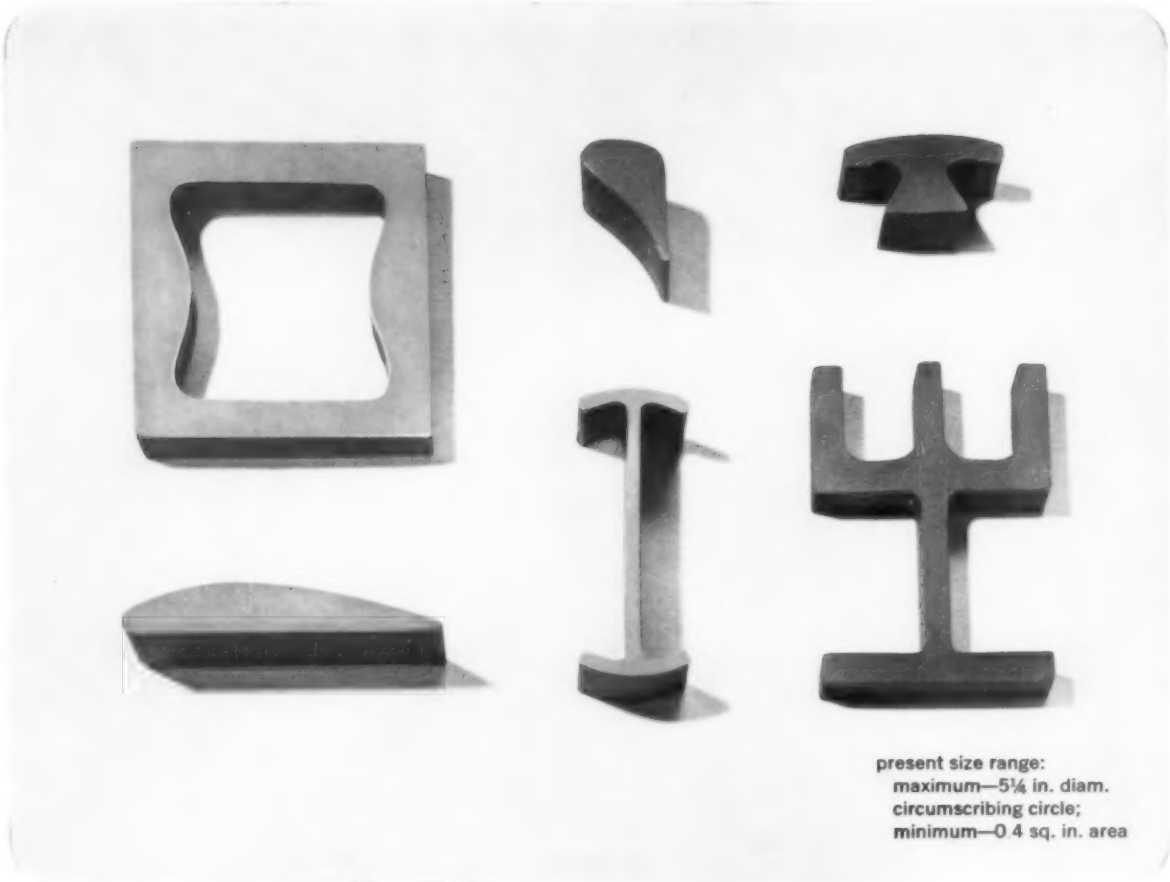

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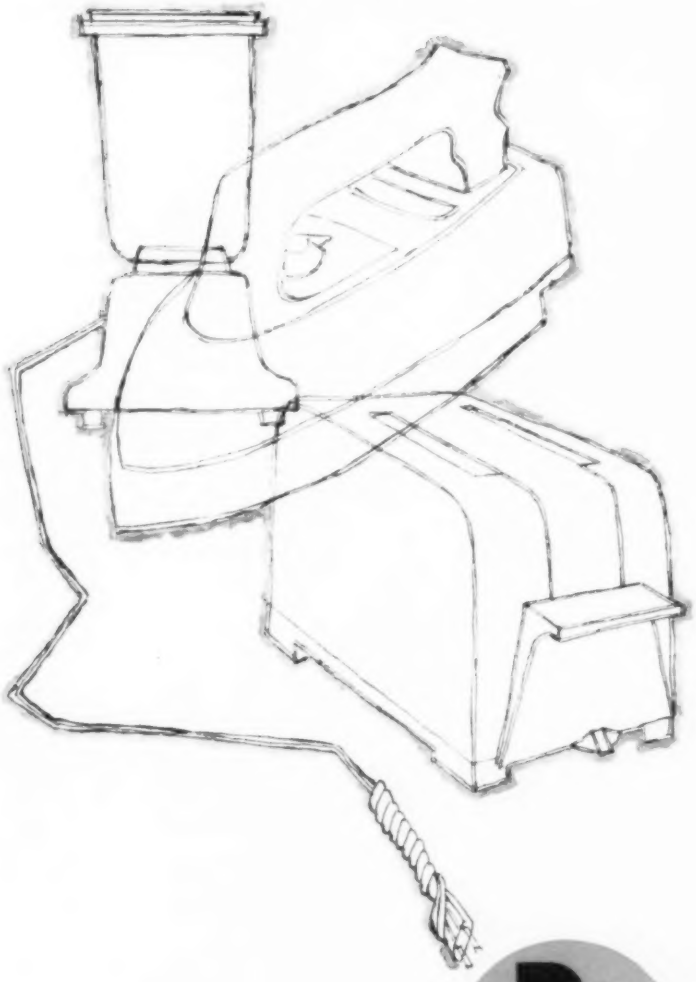

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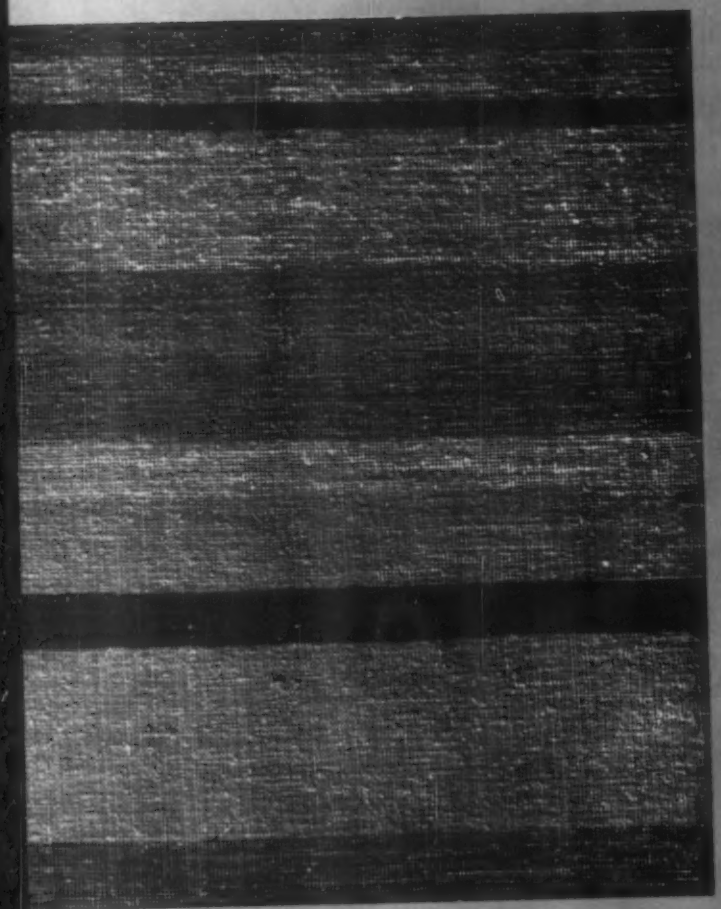

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Across the platform and into the bush

June is a month of brides and hay fever and college graduates. Industrial designers probably have no more trouble with their wives and noses than the rest of the population has, but the graduates raise a question that American design offices have never quite resolved. Do you hire a graduate who has the beginnings of wisdom but isn't prepared to earn his salt on the board the day after commencement? Or do you hire the young man who does professional-level renderings but has no background for ever making them more than renderings unto Caesar?

The perfect solution, of course, would be a job applicant who draws expertly and is equipped to think broadly, but there aren't many such applicants. Design education in this country is varied (See ID June, 1955) but the extremes are sharp and influential. There are schools that limit their responsibility to equipping young designers with the professional skills requisite to earning a living, and there are schools dedicated to the philosophy that an understanding of the cultural bases of civilization is the best preparation for the responsible practice of design. Practically speaking, graduates of the former institution find a ready market for their talents. Graduates of the latter, however, find that hiring is more often done on the basis of the moment's competence than the future's brilliance. A prominent designer-professor assured us recently that short-sighted hiring policies are driving his best students out of the design field.

Today this is too bad; tomorrow it may be tragic. For what the profession needs most are not competent design technicians but designers who can read and write. As the industrial designer finds a secure place in the upper levels of management, he begins to realize that a deft hand is not enough to keep him there, and design executives, like all contemporary executives, have discovered the liberal arts—at least as a subject for speeches. Again and again we are told of "the pressing need for cultivated, broadly educated men." Yet when the chips are down (and they are down every June) preference goes to the graduate who may never have heard of Plato—or for that matter, of Moholy-Nagy, either—but is already a fair-to-middlin' comp man. The justification is that fair-to-middlin' comp men are what we need right now, and when we need high-level cerebration we can hire it away from another office. Of course we need young comp men. But unless we have the imagination to risk hiring thinkers, the time will come when mature design thinking will have to be sought not at another office but in one of the other disciplines. Which is where it all started thirty years ago.

American industry has learned the hard way. For years it has paid lip service to culture while it paid executive salaries to business school mechanics. Then top management discovered that they had peopled the business world with executives who were unpromotable because they understood nothing but their corner of the business world. So they began sending them back to school to "get cultured." The results have been astonishingly good (although often "getting cultured" has been equated with "getting polish") but the waste is shameful. It is easier to *train* a man who can think than to *educate* a man who can only sketch.

And that's the difference. Time was when all a designer needed was training; now, like his counterparts in all professions, he needs education as well. Many schools, in the process of educating designers, find it impossible to train them fully. They reason that this can be more efficiently done on the job, anyway. It can be; but only if there *is* a job.

It is always tempting for prospective employers to act on the principle that a bird in the hand is worth two in the bush. But that bush-league philosophy is valid only when the birds are equal. They seldom are, and a nightingale in the bush may finally be worth a whole flock of handy sparrows.—*R. S. C.*

Design and production in the satellites and

RUSSIA

The Kremlin has not yet put a Moskvitch in every garage, but it has upped production of consumer goods to $36 billion. An investigation of these products reveals the relation between design, economics and politics

by ANN FEREBEE

Although the Russian pavilion at Brussels has provoked a certain admiration, the quality of Russian consumer products is generally reported to be low. Yet while many of her products are blatant copies of Western models of five, ten and twenty years ago, it is a mistake to write this off as simply a native lack of ability on the part of her designers. In Russia, land of paradoxes, one of the most ironic paradoxes is that the new world of socialism has literally been built with the accoutrements of the old world — velvet drapes in the lounges, cupids and gilt at the Metropole Hotel, an oriental carpet adorning the interior of a modern jet airliner (see page 43). Clearly we must adjust our thinking; direct comparisons with the design situation in this country will not do. To understand how a country can lay an oriental carpet in a pioneering jet aircraft we will have to look at Russia's accomplishments and boasts.

With the advent of a nuclear stalemate, the emphasis in the struggle between East and West is shifting more and more onto economic grounds. Indeed, a subtle shift has already taken place in Soviet propaganda. Recent public pronouncements, broadcasts, and exhibitions, as at Brussels, tend to soft-pedal the theme of class warfare in favor of an appeal to the enlightened self interest of the consumer — at home and abroad. At times, in fact, Mr. Khrushchev's language as he discusses competitive co-existence makes the world sound like a huge market in which two giant corporations compete for the approval of the customer.

Communism, in the current Soviet view, is superior to the capitalist form of economic organization because it can perform precisely what capitalism only promises: the fullest possible satisfaction of consumer wants. Thus, in the area of economics, Russian values seem identical with those of the American middle class: leisure, security, and an abundance of consumer goods in the greatest possible variety and of the highest quality. If the Russian state has demanded sacrifices for the sake of capital accumulation, it justifies this policy on the grounds that it was first necessary to create the industrial base for a consumer economy independent of the capitalist countries. Communist ideology has nothing in common with asceticism; its vision of "the good life" has always been the satisfaction of material needs. While Russia extolls the Puritan virtues of toil, abstinence and frugality, these have never been stressed as ends in themselves. Just as the West, once its industrial base had been created, became culturally and psychologically oriented toward consumption, so Russia is more and more consumption-oriented. Apparently, to a large extent, then, the

Sovfoto

"What we achieved through our struggles in the past is not sufficient for us. We want more—tomorrow. Mr. Thompson watch out. We're stepping on your tail." Nikita Khrushchev to Llewellyn Thompson, U. S. ambassador to Russia, April 21, 1958.

struggle between East and West for the allegiances of individuals and nations is being waged within a common system of values. Despite vital social and political differences, both systems explicitly offer themselves as viable economic models for the fullest satisfaction of consumer needs.

For the present generation in Russia the great Revolution of 1918 is now a textbook memory. Well on their way toward "building socialism," the Russians, like their European and American counterparts, now want cars. Whether or not they will be capable of competing with the United States in auto production and other consumer fields long considered our special province, they have, this past year, certainly tackled the problem with determination. The Sixth Five Year Plan, covering the years 1955 to 1960, projects a jump in national income of 160 per cent, an increase of about 10.5 per cent per year. According to most American economists these figures are greatly exaggerated. The true rate of growth at present is probably a little better than half what is projected, or six to seven per cent annually. As the charts on page 35 indicate, the actual volume of goods produced, at least in the consumer field, is meager for a nation of 200 million. Although her actual rate of growth is higher, the U.S.S.R.'s gross national product would be no more than one-third

USSR

Bulldozers at work on new Russian canal indicate little emphasis on appearance, but they are sturdy for the job.

ours. For Americans, however, the important — and somewhat uncomfortable — fact is that the *pace* of economic development in Russia is still about *twice* that of the United States.

The Sixth Five Year Plan, according to the Kremlin, will bring a 6.11 per cent increase over 1957 in consumer goods. Plans for Moscow, the fifth largest city in the world, include these goals for 1958: increase in truck production by 31 per cent, increase in radio production by 50 per cent. Moscow also intends to have 450 automated and semi-automated lines and 200 mechanized conveyór lines in operation by 1965. A major reason for this rapid increase in consumer goods is political. After a war causing severe deprivations and a post-war period of more deprivations, the popular demand for more goods was finally acknowledged by Stalin shortly before he died by a hike in non-essential production. Post-Stalin leaders have made further increases in consumer goods in order to consolidate their rule and gain greater support from the people. Today Khrushchev is not only promising the people more goods, but also better goods. According to Kremlin plans there will soon be more automation and mechanization and specialized technical training for personnel. A second reason for the increase in consumer goods — as well as other types — is the remarkable growth in the number of factories in Russia. Before the Revolution, Russia was an agrarian country with little of its income derived from industrial production. With the advent of the Five Year Plans in the 30's the number of factories and industries increased sharply, but the demand for armaments during the Second World War increased the number of factories to over 200,000 and made Russia the second most powerful country in the world in volume of industrial output.

An increase in consumer goods will, of course, improve Russia's position in regard to foreign trade. In the underdeveloped countries of Asia, Soviet economic growth is making a big impression. The figures hammered at them are frequently exaggerated (as indicated earlier), but the goods actually exported to Asia are sufficient to impress her people. These "uncommitted people" can be won over to Communism if the Soviets can demonstrate that their economic "way of life" leads to a higher standard of living faster than the Western way. At this point Russia's Asian customers do not make the demand for quality that most American and European exporters must meet. As far as trade with the satellite nations goes, the current plan calls for a "division of labor." Poland will produce what she can most economically produce; Russia, China, Czechoslovakia and other nations will do the same and then trade with one another. It is an efficient economic plan — also an excellent way of keeping the satellites absolutely dependent upon Russia. At this point the sheer quantity of goods required for her other markets is sufficient to keep Russia from eyeing the European Common Market any time in the near future.

Consumer goods competition

How soon could Rusia compete with the U. S. in total production of consumer goods? If she kept expanding at the present rate it would take fifteen to twenty years; by cutting down further on armaments, the time might be reduced to ten or even five years. This projection, of course, presumes that our own rate of growth will remain fairly constant in the coming years and that there will be no major depression.

The Soviet Union is indeed "stepping on our tail." Can the socialist planning which discourages competition between manufacturers and fails to provide the incentive of individual gain result in successfully run industries? Will the quality of consumer products be high if consumers cannot — by buying competitive products — reject those they do not like? It is easy to assume that our standard of living is dependent upon our economic system, but maybe we should examine evidence in Russia's favor. A major attempt to solve their efficiency and production problems was announced last year with the inauguration of the Gosplan, or state planning of the economy on the basis of geographic localities rather than by various industries. The new plan has sweepingly reorganized Soviet economy on decentralized lines, synthesizing local initative with central planning. The 105 new economic councils, with jurisdiction over three quarters of the entire industrial output of the U.S.S.R., are vested with all rights necessary for operating the economy. The Central Planning Commission, however, maintains

authority over wages, prices, and proportional development of the entire economy. The former Central Industrial Ministries failed to meet expanded management requirements, and centralization tended to derange normal relations between enterprises of different ministries located in one city or area but divided by departmental barriers. The Gosplan *should* increase efficiency of the notoriously inefficient Russian industry, but it brings in its wake new problems. The economic councils, in competing with one another, may tend to withhold goods. And if each is not completely informed of the others' effort — a major undertaking in itself — waste in work and production, which socialist planning should eliminate, will be unavoidable.

In retail trade Russian executives already feel the Gosplan has cut distribution costs, increased supplies, and reduced prices. A store, under the new plan, places its order with its local industrial council. If the producing factory is in the same industrial area, the buying section directly contacts the selling section of an area where the wanted goods are made. When ready, the goods are shipped to the store. Previously, stores placed their orders through the Ministry of Trade from which they were sent to the particular production ministry involved. The production ministry then forwarded the order to the factory. The goods next followed the same channels in reverse before finally reaching the store which first placed the order.

Despite increased emphasis on production of consumer goods, they are discriminated against even under the Gosplan; in relocation planning priority is given to other factories. For instance, consumer goods generally must travel much farther than heavy goods to their destination. Many production problems persist because of ridiculously rigid standards which reflect

From USSR Magazine through Sovfoto

This arms plant in Tula now makes sewing machines. Output will go up to 4 million by 1960.

Russia now has a consumer goods magazine called New Wares. *It is similar to a mail order catalogue.*

Expansion of Consumer Goods in the U.S.S.R.*

	1940	1950	1955	1956
Motor vehicles	154.4	362.9	445.3	464.6
Radios and tv's	161.	1083.	4024.	4254.
Refrigerators	3.5	1.2	151.4	224.
Washing machines	—	45.7	87.	195.3
Sewing machines	—	502.	1611.	1914.
Cameras	355.2	260.3	1022.5	1194.6

*In thousands of units

Economic Expansion in the U.S.S.R.

	National Income	Gross Industrial Output
1913	100%	100%
1928	119%	132%
1940	611%	852%
1950	1003%	1176%
1955	1716%	2729%
1956	1922%	3021%

neither the level of production nor consumer demands. A suit with a button hole only a fraction out of line will be downgraded and sold at a 150 ruble discount. Fabric sold in lengths of one to three meters will be downgraded in bolts of 30 to 40 meters because of a defect in only a small part of the material.

Poor working conditions and old fashioned equipment in factories which produce consumer goods also bring down quality and quantity of items in this area. While many of the new factories use the best and most up-to-date production methods, auxiliary work is often done by antiquated methods. Internal transportation, for example, is often done by hand or by push cart. Many plants are overcrowded, untidy, and poorly lighted. However, Nevin L. Bean, technical expert at Ford's Livonia, Michigan plant who was in Russia in 1955, reports that new machines are "very well designed and built." Describing advanced automation techniques, Mr. Bean mentions a ball-bearing plant where a one-man production line takes in forgings at one end, and pops out complete packaged bearings at the other. By 1960, Mr. Bean was told, the plant will have 30 such lines in operation. As yet most consumer factories do not get the benefits of such advanced methods. Except for factories turning out *new* lines of consumer goods, plants for non-essential products often use equipment 40 to 50 years old!

An example of Russian influence in East Europe is Poland's Zeran Automobile Factory (bottom), now turning out the Pobeda (Russian model above) under the name, Warszawa. Since Poland does not make all the parts for the Warszawa, many must be imported from the USSR, which gives Moscow complete control over this item. The Pobeda is no longer produced in Russia.

Quality of Russian goods

What is the quality of goods produced under these uneven conditions? At best it is extremely uneven, but no matter what the quality of a product it is snapped up by the man in the street. Author John Gunther says that when he was in Russia the waiting list for the Pobeda (below), a four-cylinder passenger car selling at $3,000 (at par), numbered one hundred thousand in Moscow alone! Frequently the prices of consumer goods have nothing at all to do with their value. Pricing is used by the government as a form of rationing.

Research, difficult in this field, has not revealed the existence of industrial designers in the usual sense, and indications are that designing, which is not highly regarded, is given to the best draftsmen, or to whoever has time for it. It is not surprising, then, that non-consumer goods which depend chiefly on engineering for their appearance — road trucks, aircraft, medical instruments — are superior in design and function to consumer products. These items are equal to, and in some cases superior to, Western products. But styling of consumer goods is often overblown, pompus, showy, naive. Engineers responsible for design of consumer goods often adopt the worst faults of mass-produced goods in the West, presumably to save time, expense, and consumer research. Automobiles, for instance, are now heavily chromed and two-tone, although demand for even the simplest type of motor transportation is terrific.

The Russians themselves are not unaware of their difficulties. In an unusually frank article which appeared in the Soviet magazine, *Novy Mir*, last summer, engineer G. Rovinsky had this to say: "When we began to build cars, we naturally copied the example of the country with the most highly developed car-making industry — the U. S. In the years since, we still look to the U. S. in selecting new models. Nobody is going to detract from the achievements of the American automobile industry, but our copying is done slavishly and uncritically. Thus, for example, American cars produce up to 300 hp. Although the advantages of a powerful motor are obvious, it also has disadvantages: greater expense, greater weight and more complication. Most of our cars are operated in towns. Our motor-highway network is underdeveloped and traffic intensity is low, so we must take this into account when we select an engine. However, our factories unfortunately do not engage in such analysis. They only copy engines from the most successful

APPLIANCE DESIGN RANGES FROM THE UNUSUAL TO THE OBSOLETE

Sovfoto

↑ *The Temp-5, now being made in the Moscow Radio Factory, includes push-button radio, magnetophone and automatic phonograph. Designers are D. Gendelev, K. Abramyan, and V. Averin.*

Modern Photography

↑ *The Moment is Russia's answer to the Polaroid Land camera (right). Materials and workmanship in this copy are good and the push-button release is easier to use than the Polaroid lever, but film and chemicals supplied are inferior, picture results poor.*

Sovfoto

← *This refrigerator has a cooling unit based on thermo-electrical and semi-conductor elements, is being shown at the Brussels World Fair.*

↓ *This 36-hour, spring-wound alarm clock with dove emblem is called "Peace." Accurate and well finished, it costs $19.*

Popular Science

Popular Science

Popular Science

↑ *Sturdy Soviet typewriter is dated in comparison with ours. It has front margin rests and a line space adjustable in half line steps.*

← *Combination padlock uses four-letter code and opens when hexagonal buttons at the bottom are turned the proper way. Could be jimmied easily.*

Sovfoto

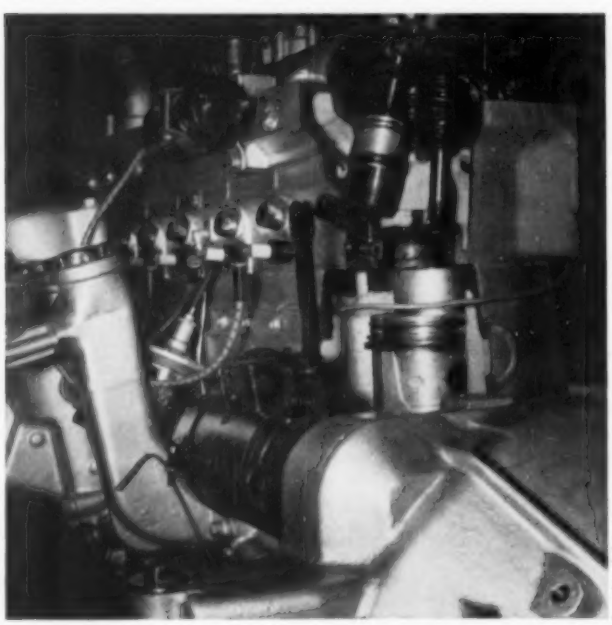
USSR

Carpenters work on model of American-influenced Zil, which sells for about $10,000, at the Likachev Auto Plant in Moscow. The two-tone Chaika (right), made at Gorky Plant and being shown at Brussels, resembles the Zil in many details such as wrap-around windshield and bumper, grille, and headlight detail. Most of the 7-passenger Zils, primarily for diplomatic use, are black, have small oriental rugs on the floor, powerful engines.

IMITATION AND EXPERIMENT

Sovfoto

The Moskvitch is one of Russia's newest cars and follows the current trend toward two-tones and lots of chrome stripping. It is a small 4-passenger car, somewhat resembling the Hillman, with a 45 horse power motor. Wide distribution is planned for it.

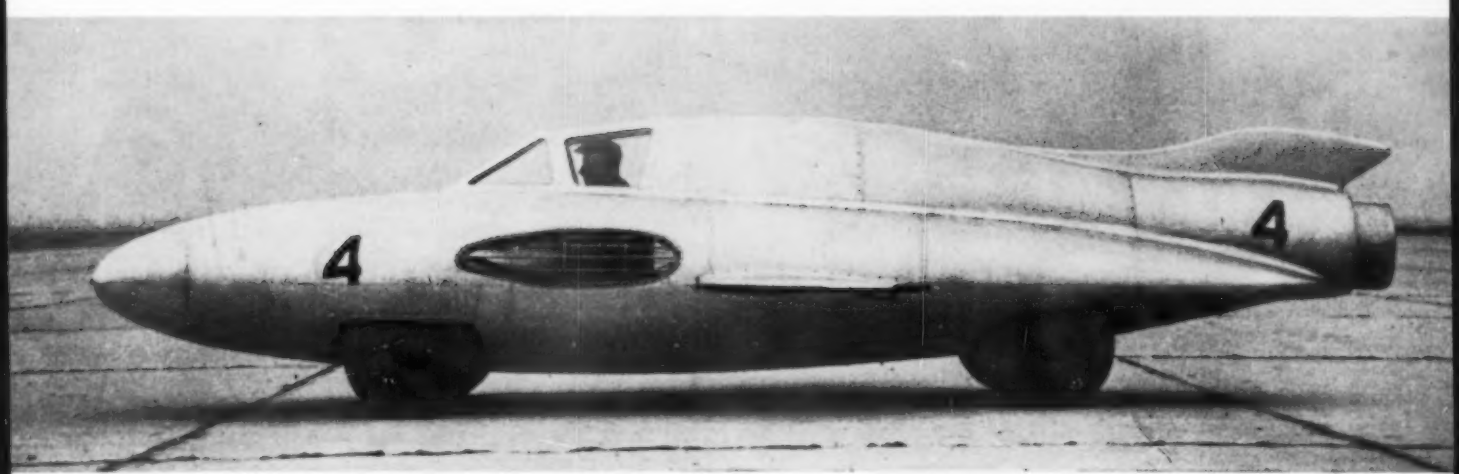


Popular Science

This unusual Russian engine, reportedly using 20 per cent less fuel, runs on a mixture so lean it cannot be fired by a spark. The carburetor delivers original mixture to the cylinder, and a richer one to a second smaller cylinder (near top of photo). A piston then compresses the richer charge, forcing it past a valve into firing chamber behind plug. Fired by spark, it jets into main cylinder igniting lean mixture there.

SZL is a 2-passenger midget car made by Senpukhor Motorcycle Works. Sedan and convertible models do 50-60 mph, get 60 mpg, have rear-mounted 8-10 hp engines.

The Bielka (Squirrel) has door which opens in front rather than side. It is low powered with a top speed of 95 kilometers per hour, but it gets 50 miles to the gallon. The engine is rear-mounted and the wheels quite small. The pickup van at right, built on the same chassis, is open at the top and side with only a cloth cover for bad weather. Spare tire is mounted on front of this truck.



Photos this page: Sovfoto

The experimental shop of the Gorky Works has produced a turbo-jet racing car with no gear box, no shaft, and no engine in ordinary sense. Wheels are not linked in any way with drive. It is fuelled by paraffin (kerosene) and travels over 300 km.p.h.

USSR

The powerful TU-110 has four turbojet engines, cruises at a speed of more than 620 miles an hour, and carries about 100 passengers. This ship, like the TU-104 which won him a Lenin Prize recently, was designed by the well-known Andrei Tupolev.

PLANE DESIGN SHOWS CONFIDENCE

USSR

The Moskva, or IL-18, is a four engine turboprop which can handle 12 ton commercial loads at cruising speeds of better than 400 miles an hour. Designed by Sergei Ilyushin, it comes in tourist model, seating 100; passenger, seating 75; and freight.

Berfola

The Flying Whale is a transport ship that carries large machine tools and even small buildings or a city passenger bus. It is fast, can take off and land on very small fields and is quite economical. Oleg Antonov designed the Flying Whale.

The Ukraina, designed by Oleg Antonov, is a four-engine turboprop which cruses at 370 miles an hour. Three passenger compartments, including special children's cabin, accommodate 84 passengers, but the tourist model carries as many as 126 people.

USSR

The MI-6, literally a flying boxcar, carries payload of 24,000 pounds at record altitude of 7,874 feet. Designed by Mikhail Mil, it has two turboprop engines, could carry two cars or a bus.

USSR

Russia's atomic-powered ice-breaker has a 44,000 horse power engine. The first atomic ice-breaker to be built, it has been shown in model form at the Brussels World Fair and other exhibitions.

Deniga

foreign cars. Eclecticism and mechanical copying lead nowhere in the solution of technical problems.

"We still lag behind in the field of experimental research. We know that jet propulsion has a great future, but our car designers appear not to have thought much about it yet (see photo page 39). Also, there is the problem of direct fuel injection that has been solved by many carmaking firms abroad.

"In the designers' office of the Likhachev car factory we see the problems with which designers are supposed to cope. Their projects range from truck and bus making to designing ice boxes and bicycle parts. How can they under such conditions work consistently to develop a new car?

"The outward appearance of the car speaks for the cultural level of the designer. We consider huge tail fins and front ends like shark jaws to be tasteless, even though there are plenty of such designs in America. However, except for the Pobeda, we do not have a single car showing originality in design, and the appearance of our cars at best is that of a crossbreed.

"How soon and how nearly can the automobile demand of Soviet customers be satisfied? At present many models of small and midget cars are being built abroad. If the large capacities of our car and motorcycle plants were used, we could build 300,000 small cars per year at a price of 5,000 to 6,000 rubles."

As Mr. Rovinsky suggests, one of the major problems in Russian design is the lack of originality. This holds for toasters and tv sets as well as for automobiles. If one recalls that the borrowing of machine forms often occurs in the early "catching-up" stages of a nation's technological development — in the nineteenth century Germany borrowed from England, and the rest of Europe from Germany — what is now occurring in Russia is not so laughable. In fact, as far as Russia is concerned, the reverse process has already set in: the Poles have evidently borrowed the die forms from the Russians to make their Warszawa, a copy of the popular Russian Pobeda (see photo, page 36). The elimination of design research with the accompanying financial savings is another important factor in Russia's race to catch up with the rest of the world.

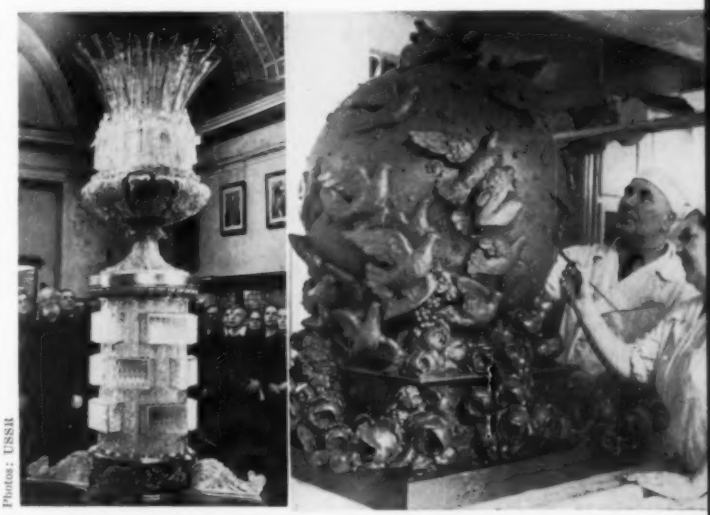
Aesthetic problems in the USSR

If Sputnik demonstrates Russia's ability to solve scientific problems, what about her ability to solve aesthetic ones? A glance at the history of Russian art (chart page 42) indicates they have been dependent on Western taste throughout most of modern times and seldom have had the self-confidence to produce a strong native art. The Soviet opposition to modern abstract art probably has been based less on its emphasis on style at the expense of communicable content, than on its being derived from a culture they regard as decadent.

It is interesting that only in Nazi Germany and in Soviet Russia has the wooing of the masses through the medium of art been taken so seriously. In both cases the results are remarkably similar: a mixture of realism and sentimentality, of narrative and morality. Vladimir Kemenov, a contemporary Russian critic expresses the function of Soviet artists this way:

"Soviet artists openly espouse the ideas of Bolshevism, expressing the advanced ideas of the Soviet people, who at present represent the most advanced people of the world, for they have built up socialism, the most advanced form of contemporary society. As opposed to decadent bourgeois art, divorced from the people, hostile to the interests of the democratic masses, permeated with biological individualism and mysticism, reactionary and anti-popular, Soviet artists present an art created for the people, inspired by the thoughts, feelings, and achievements of the people, and which in its turn enriches the people with its lofty ideas and noble images."

The effect of such attitudes is perhaps best seen in the significant architectural competition of 1933 for the Palace of the Soviets. The winning plan for the Palace (which has never been completed) was that of Iofan, a conservative architect working in a neo-classical vein. Scientific and utilitarian organization have been

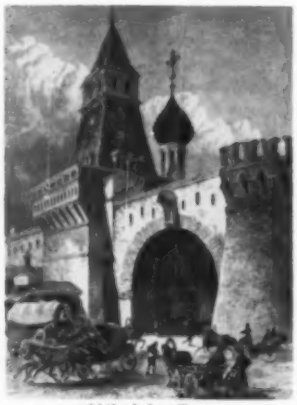


Photos: USSR

The gamut of Russian taste runs from sleek, well-engineered jets to bedizened baroque. The 10-foot crystal vase was made by workers of the Leningrad Glass Works and presented to the Museum of the Revolution. The chocolate cake, called Peace for the World," was made by the Krupskaya Confectionery Factory in Leningrad and is now being shown in Brussels. Russian taste becomes more extravagant when there is no practical rein, such as the engineering required for a plane or tractor, to check it.

From Peter the Great to Nikita Khrushchev: Russian taste reveals a dependency on the West.

Peter the Great
1689-1725



Rebuilt 1820 *Nikolsky Gate*

Even before Peter the Great succeeded in making a window into Europe, Russian art and architecture was often based on Western models. The onion domes of St. Basils (built a century before Peter and seen in background, left), which we are apt to think of as indigenously Russian, were adaptations of the domed architecture of Byzantium. Both Peter and (the later) Catherine the Great imported architects who built in French or Italian styles. During the nineteenth century Russian architecture became, like that of the rest of Europe, neo-classical and eclectic, as in the Nikolsky Gate of the Kremlin Wall (in a surge of nationalism, even the onion domes returned to vogue for a time).

N. Lenin
1917-1926

1919 *Third International Monument*

The architects of the Revolution fell heir to the academic and meager architectural world of Czarist Russia. But just as the former society was overthrown, so were most previous architectural notions discarded by the Revolutionary architects. What sprang up was a variety of fresh ideas: constructivism (as in Tatlin's monument to the Third International), suprematism, and elements of the international style. As early as 1911 Russia was already in the avant garde of modern art. In those days such people as Matisse visited and worked the country and groups of cubists and futurists lived in Moscow and Leningrad.

Joseph Stalin
1924-1953

1934 *Palace of the Soviets*

The socialist realism which replaced the exciting art of the Revolution emphasized "art for the people and the people for art." Only pictures with an obvious social content were favored, and paintings called "Mayday," "Capturing the Winter Palace," or "The Bolshevik" were, and still are, the officially approved fashion. Abstract art was discouraged as early as 1921, although modern tendencies in architecture continued until the late '20's. The few modernists who remained, such as Lissitzky, Tatlin, and Malevitch faded into obscurity as their work was replaced by the grandiose neo-classicism popular during Stalin's reign.

Nikita Khrushchev
1953-*present*

1958 *Model for a City*

Contemporary architecture in Russia is less grand, more practical than it was in Stalin's heyday, but it still aims at a type of building that will satisfy the trend toward collectivization. Painting today is as apt to be impressionistic as to be the romanticized and moralistic variety of the '20's and '30's (but this is all "official" art. Reportedly, an elite group—just as in this country—appreciates abstract art, and there is an underground abstract movement now). But most Russian artists have been cut off from the West for twenty-five years now, and if the mammoth, cold and unimaginative Brussels pavilion is any sign, the future does not look promising.

abandoned in his plan in favor of the now typical cluttered-classic of Moscow's skyscrapers. Its megalomaniacal intent is evident in a change in the final plan which increases the height of the statue of Lenin from 235 feet to 325 feet! Iofan's plan was considered a worthy symbol of the successful establishment of the new regime. The Russian pavilion now at Brussels, a showplace for world architecture, is certainly a turn away from the phoney neo-classicism of Stalin's time and represents an attempt to be "modern" in a heavy-handed way, but it is cold, axial, mercilessly humorless and dehumanized.

While the doctrines of socialist realism might have been expected to create a puritanical severity in Russian design, this has not happened. The Communist art doctrines, in fact, have been applied mainly to the fine arts and seem to be means of expressing anti-Westernism rather than a tool for producing real goods and real architecture. But Russia's art policies have had an *indirect* effect on design. Suppression of contemporary abstract art has robbed those responsible for designing Russian products of access to aesthetic patterns and ideas which, in the West, have had a real relevance to designers' work with forms. Certainly, socialist realism, with its exclusion of all but representative art, has precluded the possibility of the fertilization of the applied arts via abstract art.

Creativity under a dictatorship

We might like to assume that Russia's lack of originality in the plastic arts is an indication that creativity has been killed by totalitarianism. But the relationship between art, creativity, and politics is not that simple. How does one explain, for instance, that in Russia the products of science and engineering — when they are *not* consumer-oriented and not related to architecture — have a beauty one associates with good engineering? It is also important to remember that the "monolithic Russian state" has shown itself surprisingly flexible since Stalin's death. Given the outstanding achievements of Russian science, it seems likely that Russian design may also become an important force should the day come when her leaders decide that intelligent design, like Sputniks and tractors, is an important factor in the development of successful products.

When one contrasts design in the Soviet Union with design in the Russian satellite countries differences are immediately apparent. Some of the satellites — particularly those nearest the West, like Poland and Czechoslovakia — have a long and respectable tradition in industrial design. In many of them — particularly in Poland — there is a *conscious* effort to incorporate folk traditions and folk motifs into mass-produced items such as china and textiles. At the same time Western influences are much stronger. They are seen in the highly sophisticated graphic work of Poland as well as in the handsome heavy machine design of Czechoslovakia. Finally the satellite countries—again, this is especially true of those nearest the West — use men *trained* in industrial design in the creation of many of their mass-produced products. The future of these countries in matters of design, as in matters of economics and politics, is, to say the least, uncertain. It would be foolish to predict whether they will fall more strongly into the Soviet orbit or reach a condition of political semi-independence as Yugoslavia has done. The only certainty is that beneath the thin authoritarian crust which exists in these countries today, elements of instability break through in nearly all fields.

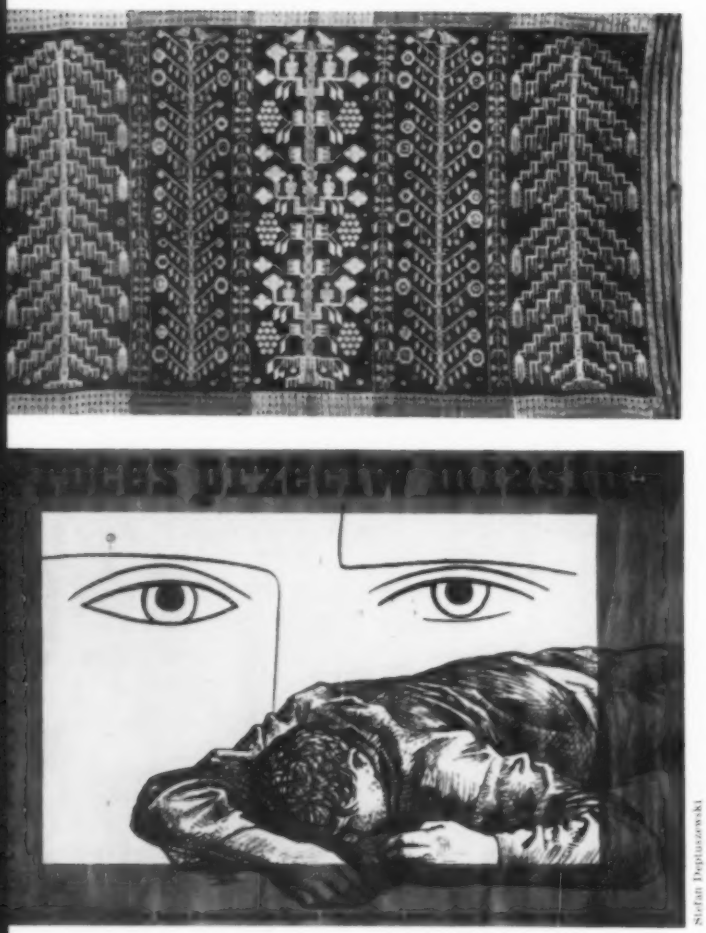
The major fact of contemporary life in the satellite countries is that the Soviet Union is now their chief source of scientific, industrial, and technical knowledge. Every major industrial project in Eastern Europe in the last dozen years has been built with Soviet aid.

USSR

Conflict in Russian taste is exemplified in interior of IL-14, designed by Sergei Ilyushin, which carries gas-light-bourgeois oriental rug down middle of its otherwise utilitarian interior.

Charles deM. Barnes

Russians have outstanding sense of craftsmanship in firearms, other traditional fields. This target pistol, which is being shown at Brussels, has hand-enclosing handle, little kick back when fired.



Stefan Deptuszewski

Tapestry by Olima Jaroszewiczowa, which is based on traditional folk art; and movie poster by Wojciech Zamecznik, which is based on contemporary Western graphic techniques, illustrate two of the outstanding trends in Polish art and design at this time.

Thus the dominance of Soviet influence is insured for a long time to come. But if Russia dominates the economics and industrialization of these countries, the West dominates in matters of culture, thought, and, finally, style. Though inundated with Communist propaganda, with Marxist dialectics, with socialist realism in their schools, there is evidence that young East Europeans are wondering why Western culture has a vitality and vigor that makes the Moscow version look drab by comparison.

Polish design

Politically, at least, the situation in Poland differs markedly from that in Czechoslovakia. With a population of 28,000,000, Poland is the largest of the satellite countries. Unlike Czechoslovakia, she has a long history of antagonism with Russia. She suffered greatly under Stalin's reign and probably the only thing that keeps her within the Soviet orbit today is armed tanks (although majority favor some form of socialism). Nowhere in Eastern Europe is there greater questioning of Russian authority and greater intellectual ferment.

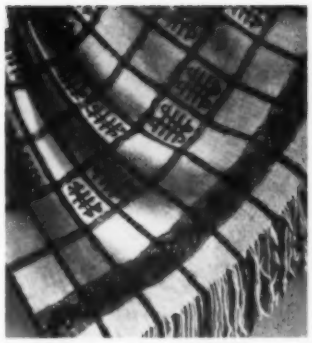
At the end of the war when industry was nationalized, industrial design in Poland was organized into a Craftsmanship and Production Department under the Ministry of Arts and Cultures. The Research Institute of Industrial Design within the Ministry of the Consumer Goods Industry was created in 1950, thus linking design directly with the government.

Because goods have been in such short supply in Poland for many years, manufacturers have not been forced to care about the appearance or quality of their products. Until Polish goods can catch up with the demand for them, design considerations will probably take a back seat despite such devices as Design Commissions for selection of design.

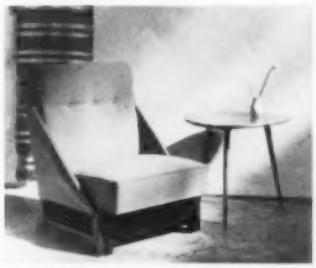
Czechoslovakian design

Czechoslovakia, with a population of 13,000,000, is the most prosperous of the satellites. A comparison of the Czech exhibit with that of Poland and Yugoslavia at the recent World Trade Fair in New York makes this quite evident. With an historical cultural interest in Russia, Czechoslovakia at least tolerates its Communist regime. But even here Western literature and art — and certainly Western product styling — are replacing the Russian models which flourished briefly after the war. As a matter of fact, Czechoslovakia has a remarkably long history in the field of industrial design. In 1885 a Museum of Industrial Art was founded with the intention of arousing "the interest of the public in applied art." The museum

Krystyna Szczepanowska, who has written on tapestry, here utilizes a folk motif in a fabric which was put into mass-production. Miss Szczepanowska was educated at the Polytechnical College at Lwow, but many young fabric designers study at the College of Art in Lodz. The Star 21 truck (below), highly manoeuvrable and sturdy, came out in 1957.



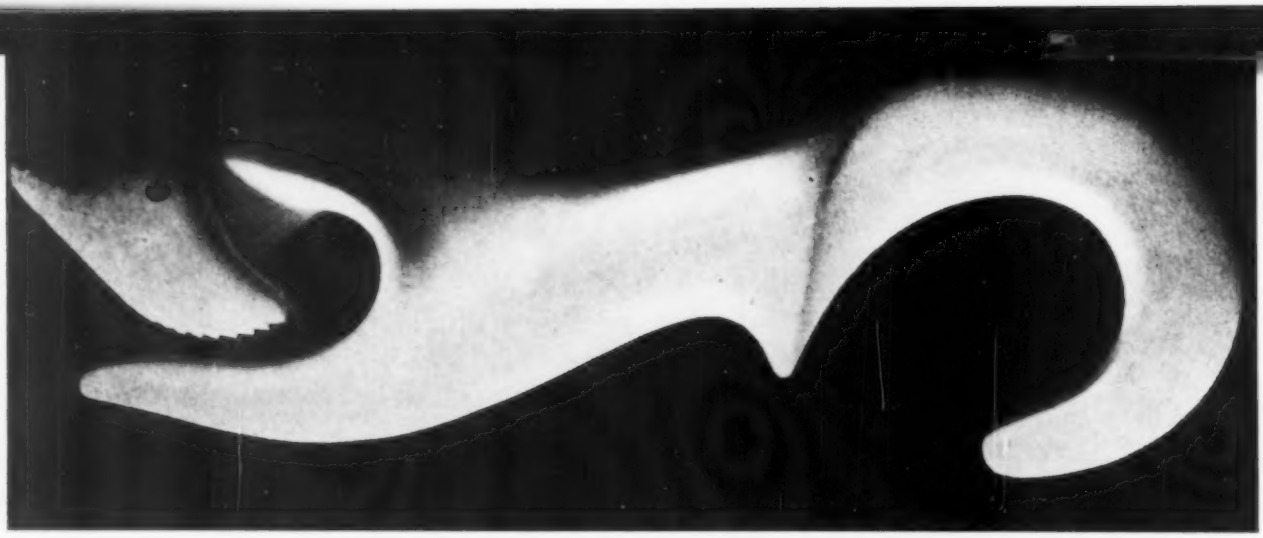
Chair is by Maria Chometowska, a young designer interested in form simplification.



Miss Chomentowska has also designed chair opening into bed.

POLAND *emphasizes folk tradition in design, works to catch up in styling of mass-produced goods*

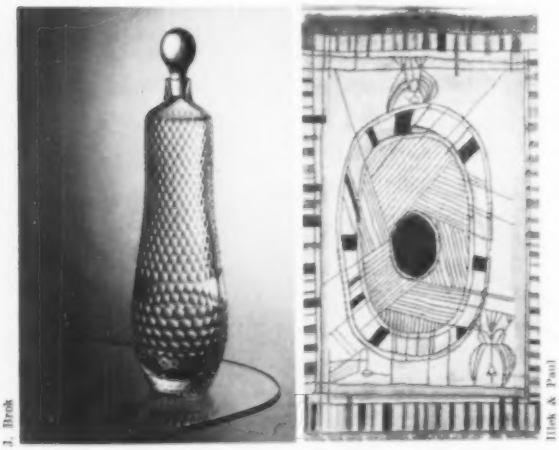
Wanda Telakowska, who has written broadly on the arts and art education, is Vice-Director for Warsaw's Institute of Industrial Design. The main activities of the Institute are research in industrial design based on experiments carried out in the Institute's laboratories, education and training of young designers, dissemination of good design, studies to utilize folk art designs in mass produced goods (especially textiles), and, most important, development of usable designs for industry. Recently, a Test Production Division was created where designers can supervise the manufacturing process of their own work in "short series" production. In addition to the Institute of Industrial Design, design centers have been set up to operate for each industry. Factories usually obtain their designs from these centers. The Ministry of Handicrafts and the Central Union of Cooperatives furnish designs used by the smaller industries. Commissions for Design Selection, made up of representatives of distribution, industry, and art make final design selections.



Zdenek Kovar, who designed this model of a hook used in hanging leather skins, is a professor at the Czechoslovak State Industrial School. One of the country's leading designers of machines and tools, Kovar has been featured at Prague's Industrial Museum.

CZECHOSLOVAKIA

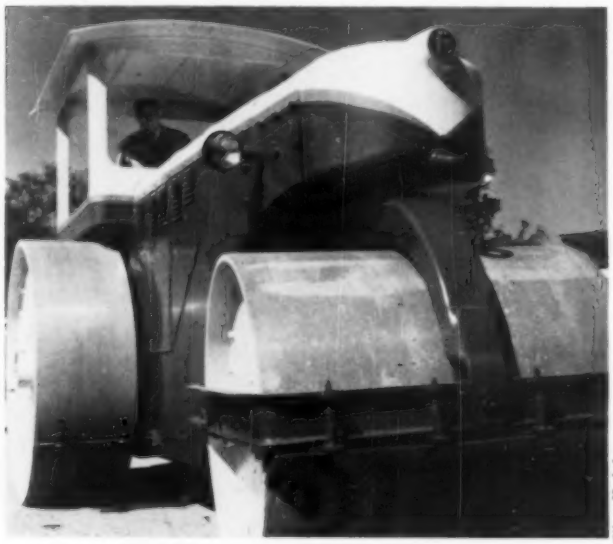
advanced design combines with long tradition



J. Brok

Hick & Paul

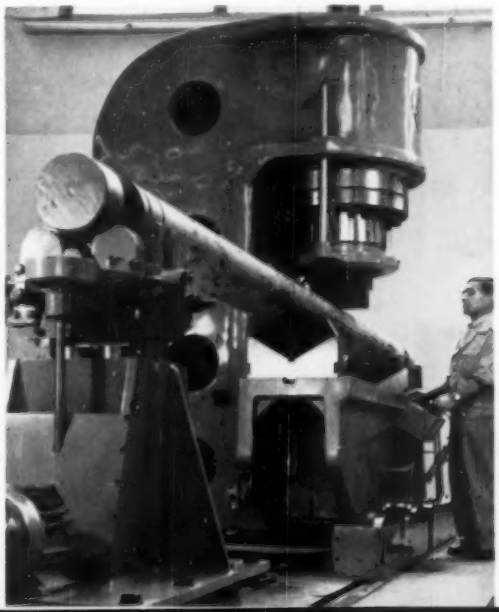
Decanter of lead crystal by Jirina Zertova and executed by Bohemia Glassworks and hand knotted carpet by A. Kybal, of textiles, show Czech craft tradition.



Vilem Heckel

Steam roller, the NV 15, has hand and hydraulic control and speeds between 1.5 and 5.8 kilometers per hour. Made by Strojexport, it has a Skoda engine.

This handsomely styled heavy duty machine, called a guy-straightener, operates hydraulically and is used to bend or straighten bar stock in steel mills.



Vilem Heckel

is still in existence in Prague today. The Prague School for Applied Art was established the same year, and as early as 1891 an exhibition of applied industrial art was held in Prague. Interest in applied art and industrial design continued into this century, with the foundation in 1913 of Jan Lotera's Union of Czech Work, patterned after the German Werkbund. Adolf Loos, LeCorbusier, Oud, and Ozenfant all had a strong influence on Czech design in the '20's, especially as it made itself felt at the Works for Applied Art at Brno, the chief center for modern furniture in the country. Czechoslovakia suffered terribly in the depression and again in the years of the German occupation, from 1939 until 1945, but advanced design work continued.

Shortly after the war, as the Communists came to power, all industry was nationalized. Socialization of Czechoslovakia of course influenced the situation of the designer there. Today most designers are organized into a special section for industrial art in the Union of Czechoslovak Plastic Artists. Designers may either work directly in government industries as permanent employees or else in research centers which provide designs and direct designing activities for a whole industrial sector. In some cases it is possible for them to work on an independent contract with various concerns.

Despite the difficulties which Czechoslovakia has been through in the last two decades, the quality of industrial design there today is high. Although the Bohemian glass-ware and the textiles for which she is traditionally famous have not yet regained the place they held before the war, her heavy industrial equipment stands out among European design.

While the Soviets attempt to demonstrate that their economic way of life leads to a higher standard of living than the West's has failed in its more sophisticated-satellites, the mere fact of their rapid rate of growth has already had an enormous impact on Asian countries who feel that the Russian experiment in rapid industrialization is peculiarly relevant to their own experience. And if the Russian attempt has not been wholly successful in its satellites, it has certainly failed so far in Western Europe. There the standard is higher, the taste more sophisticated, than Russia's and the people have had the experience of a viable economy which has, at least in part, succeeded in meeting their matèrial demands.

Only a short while ago it seemed incredible that the Soviet Union could challenge the West on grounds of consumer competition; and, in spite of Mr. Khrushchev's challenge, they are not yet in a position to wage successful political warfare on this issue. But past and projected rates of Soviet expansion are sufficiently impressive to indicate that Russia *may* — in the not too distant future — become a society in which the needs of her consumers will be met. In the meantime, even if she does succeed in equalling the quantity of consumer goods produced in the West, Russia's nascent designers and her engineers will still have to solve the very knitty problem of quality. ●

Warner Wolff

Norman Bel Geddes 1893 - 1958

Death came suddenly to Norman Bel Geddes in New York on May 9, 1958. It was the simple, inevitable finale to an improbable life which was seldom simple, and never inevitable. For Norman Bel Geddes charged through his 65 years powered by what friends and former associates have unanimously called "genius." He was guilty of all the excesses which that label implies—massive fantasies, a cavalier attitude toward money, and an absolute conviction of the brilliance of his endeavors. But beneath these eccentricities lay a passion to create, a passion whose giant scope aroused public awareness to the possibilities of industrial design. The geography of Geddes' ideas roamed from functional ashtrays to twenty-engine airplanes, lending a sense of glamour to a young profession seeking to establish itself.

Geddes (*Bel* Geddes was an imaginative holdover from his early marriage to Helen *Belle* Sneider) was attracted to industrial design after years of success in the theatre, where he had left his extravagant, and often colossal, mark on scores of productions. He wrote in his book *Horizons* (1932) that he resented the condescension with which the few artists who had at that time been drawn into industry regarded their labors as only a means to finance their creative endeavor. "I, on the other hand," he wrote, "was drawn to industry by the great opportunities it offered creatively." Industrial design gave him occasion to blend beauty, utility, and profit into one. His intense, inquisitive mind sought, created, and solved a staggering variety of problems. A master salesman, he could impart his enthusiasm for the most grandiose schemes to the most conservative industrialists, making them feel that vast sums of money spent on Geddes-ian projects were, ipso facto, money well spent. Yet the sales potential of his designs was often deemed questionable; Geddes was a visionary who thought in terms of the future without the industrial designer's customary regard for current demand or the compromises of mass production.

Despite Geddes' intolerance of irrelevant little things, he was absorbed by the most intimate minutiae of his projects. His obsession with perfection demanded that each of the hundreds of thousands of models constructed for the $7,000,000 General Motors exhibit at the New York World's Fair — including miniature clotheslines and 10,000 moving automobiles—be scaled exactly to size. Association with industry left its mark on Geddes' working habits. Industrial organization fascinated him, and he designed a series of extremely complicated progress charts which served only to bewilder his staff. He dictated memos at top speed into three different dicatating machines, checking up on every phase of his organization. Employees would sometimes find notes tacked to their desks, saying succinctly: "I notice that you failed to have a bright idea yesterday."

His preoccupation with his work made Geddes extremely impersonal in his relationships with other people. Though he was often accused of tremendous egotism, Geddes was absorbed not in himself but in any work he was doing at that moment. Yet he had a tremendous respect for other people's talent and ideas; he only demanded of them the same high standards which he imposed upon himself.

Few aspects of life escaped Geddes' attention. He could photograph a large library on the mating habits of wild animals, or contemplate a movie version of Helen of Troy using ants as actors, with the same dynamism he gave to his work. Money, he felt, was designed to be spent, and his profits often went for models of projects for which he had no commissions, and little chance of selling.

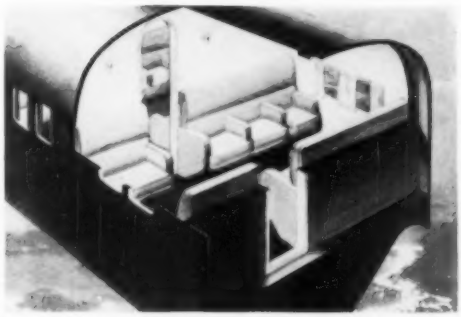
If the ultimate measure of a prophet's success is the truth of his prophecies, then fact long ago made Norman Bel Geddes a man of the ages. As long as change remains the way of modern life, designers everywhere will continue to absorb his influence. *G. D.*

Industrial Design has asked two contemporaries of Norman Bel Geddes to comment about him. The first, Gilbert Seldes, is the distinguished author, critic, and commentator on contemporary affairs. Among his books are The Seven Lively Arts *and* The Public Arts.

I knew Norman fairly well for about fifteen years, and during the middle five I wouldn't speak to him. That episode ended at a big party when we ran into one another and Norman announced to whoever else was there that I thought he had done me a dirty trick—"and he may be right" he added with his irresistible boyishness and brashness.

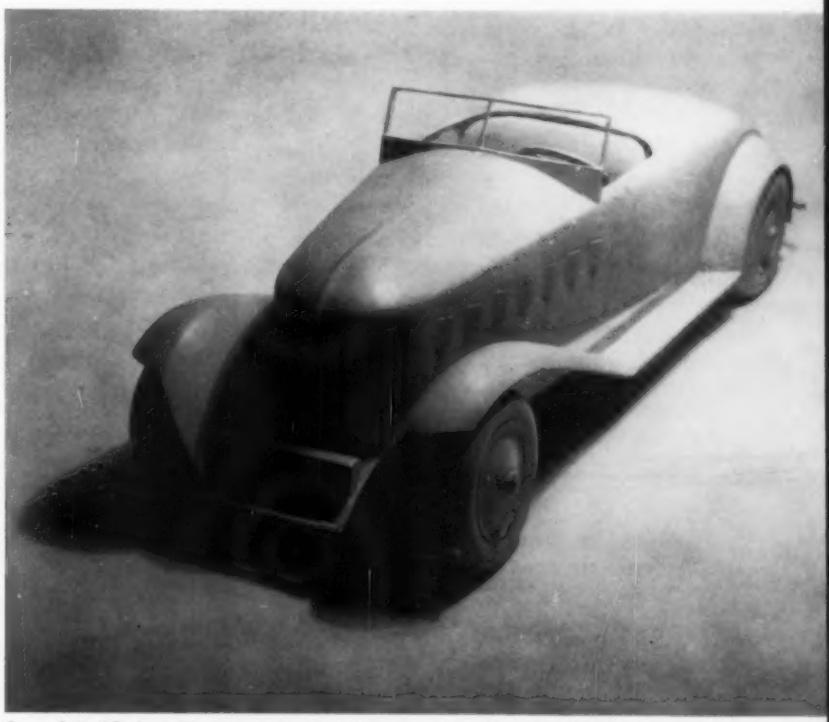
Professionally I knew him only as a designer for the theatre, but I am pretty sure that his qualities in that field were the same as in industrial design. He had been asked by a group of distinguished Philadelphians to produce five plays, all comedies, ranging from ancient times to the near present. The first was to be "Lysistrata" and Norman asked me to put into viable prose a rhymed version they had decided upon. He let me throw that version away and make a new one and this was the one which, thanks to his magnificent and altogether inappropriate setting, and his inspired and robust direction, broke all records for revivals from the Greek. The set was a blood-red temple on many stage-levels which would have done beautifully for Oedipus, yet somehow the comedy seemed funnier played against it. The direction, which I have just called "robust," I called "vulgar" when I was fighting Norman—but I knew, in either case, that it was his appetite for low comedy that made this play a smash hit, and all I could say for my part of it was that the text I had written didn't stand in the way of Norman's gleeful joy in the down-to-earthness of Aristophanes.

There was another aspect of the production which may have had a parallel in his industrial designing. The intent of the Philadelphians was to re-establish their city as a theatrical centre. Most, perhaps all, of the money came from a family ready to spend—this was 1930, remember, and dollars were hard—as much as $100,000 for the five productions. Before the curtain rang up on the *first* production, Norman had spent over



Interior of Pan American China Clipper (1934). *Equipment was designed for light construction and easy convertibility from day to night use.*

Model of Geddes' Lysistrata *set. Many of his stage sets, namely* The Miracle *and* The Eternal Road, *are still remembered, though plays are forgotten.*



One of Geddes' earliest ventures into industrial design was this motor car done for the Graham-Paige Company in 1928 *to meet their demand for a car which would be in style five years from that time. Paige rejected design as too modern.*

$90,000 on it alone. The model of the set had cost over $1000. It also cost a lot of overtime to cut the actual set down to size so that we could get it into the 44th Street Theatre. On the other hand, the show paid off, the investors even made a profit, and I lived for a year or so in the illusion that royalties would never end.

Norman gave me a horse once. He had a "racing-stable," an electrical game which couldn't be rigged, and a lot of his friends used to come to his basement and play. This game was only one of several; the most important of them was a naval operations game which was, I understand, used by naval brass when we got into World War II. Norman must have loved that. He was enormously gregarious, he seemed never to be alone. And he liked to multiply himself—with retainers, staff, the apparatus of big business. About three years ago I was in Jamaica and after I returned home there came to me a telegram Norman had sent to my hotel—not only the telegram, but his office carbon of the original, and two or three other papers indicating why it had not been delivered. It always seemed to me that he had five carbons made of everything.

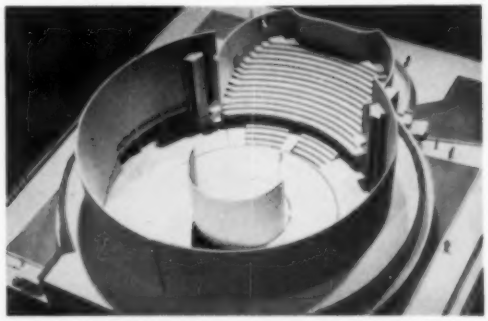
And for all that, he was a terribly private person about whose early life one knew very little. He never spoke of his time before coming to New York. It was by accident that I discovered he had written and published, at his own expense, I believe, some rather esoteric poetry. During our Philadelphia period a man came up to Norman and said, "I think I knew your folks." "I doubt it," said Norman, and walked away.

He was one of the dominant trio of stage designers (Robert Edmond Jones and Lee Simonson were the others) during one of the great periods of the American theatre. He first came to almost notorious fame when with Max Reinhardt he transformed a theatre into a cathedral for "The Miracle." It was rumored at the time that Jones came into the theatre, cried out, "Anti-Christ!" and fled, but it isn't true. Bobby Jones disliked the realistic side of Norman's work, but he also knew there was imagination in it—of the kind the modern stage could use.

I suspect that Norman got a lot of pleasure out of industrial design because this put him where he always wanted to be—in the thick of things, trying everything, and doing half a dozen things at the same time. He probably never enjoyed life more than when he was doing the Futurama—it was so big and so expensive, and yet it was a toy for people to see free.

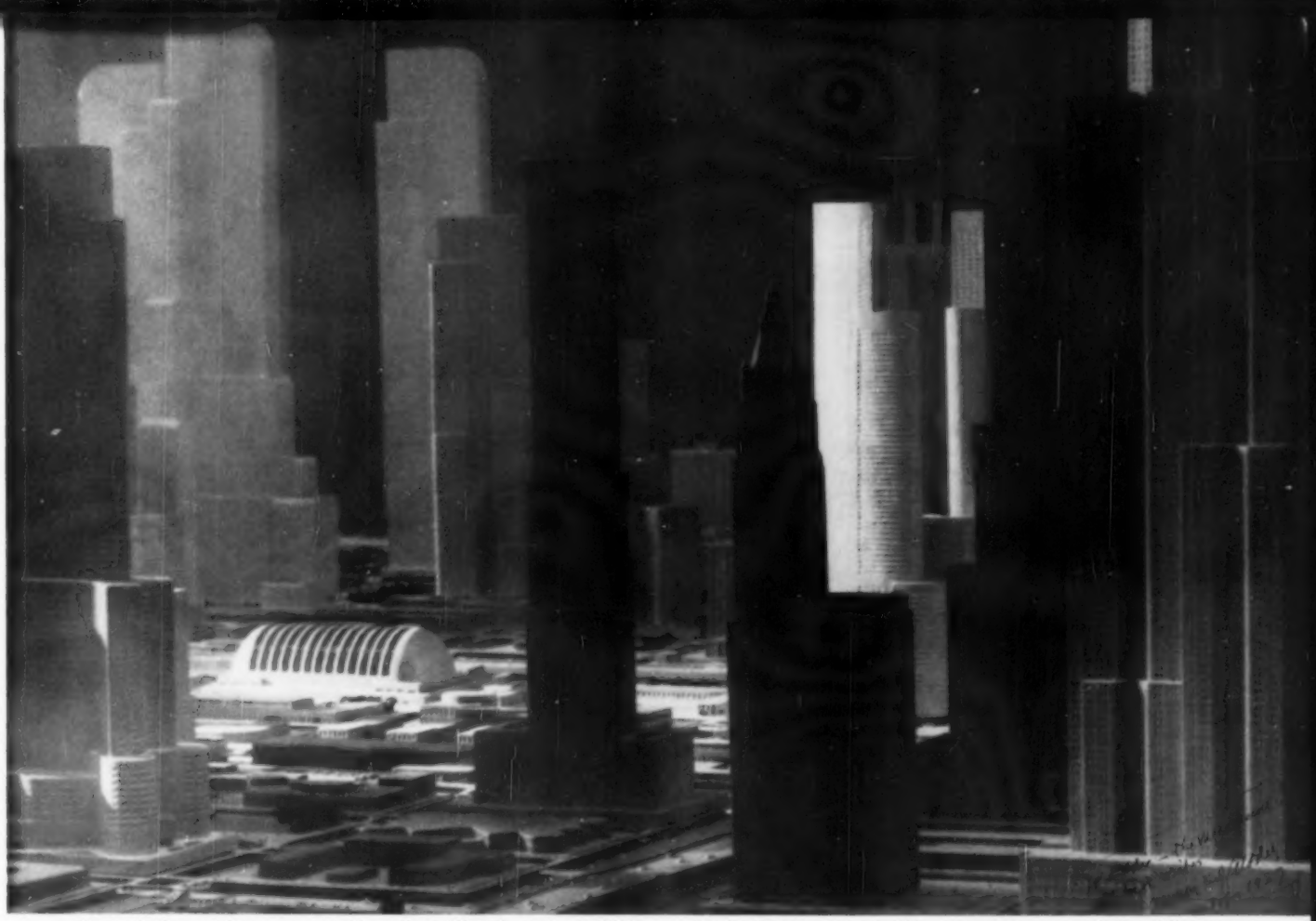
Photo (right) courtesy of Eddie Kook.

Model of electric typewriter built for International Business Machines, 1941. Geddes' imagination was at times prophetic. As far back as 1931, he predicted helicopters and rooftop heliports, electronic doors, and household television.



Model of television theatre which Geddes built for National Broadcasting Company in 1955. The network has not yet constructed the theatre.

Sheet steel, all-white enamel stove designed for Standard Gas in 1932. This was first all-white stove, and has no gadgets or decoration.



General Motors' Futurama at New York World's Fair. Exhibit contained 500,000 model buildings, 50,000 cars, and 10 million trees.

Henry Dreyfuss spent the first three years of his professional life in the employ of Norman Bel Geddes. He writes below of the tremendous influence which Geddes exerted over him, and which he will continue to exert over all designers. Mr. Dreyfuss is the author of Designing for People.

The first report was brief: Norman was gone. The sad news unlocked nostalgic memories of the man to whom I was apprentice, office boy, and then assistant, for the first three years of my professional life.

At that moment in his life, the world knew Norman Bel Geddes as a stage designer, one of the truly great men of the theater. But he was much more.

Norman Bel Geddes was the modern counterpart of the 15th Century master craftsman. To back his often grandiose schemes, he turned to today's businessmen just as the master craftsman turned to the Medici. And like his 15th Century predecessor, Norman could turn his talents in any direction. With equal facility, he could produce a plan for a city or a design for a gas stove; a block-long war game or a fantastic concept for a production of the Divine Comedy; a butcher's scale or a sports arena; an outboard motor or an ocean liner; an automobile or a World's Fair exhibit.

His imagination was prodigious. He once told me that he needed a blank wall opposite his desk. It represented the unknown, the untried, the realm he loved most to start into. It was his crystal ball. Such an imagination demanded boundless courage. He had the audacity to step through that blank wall into worlds where no one had dreamt of setting foot. And he had no fear that people would scoff, though many did.

Norman always retained the enthusiasm of a young man and had an amazing gift for making his excitement contagious. A master of stage lighting, he was a master at spotlighting an idea. Great designs seemed even better when he talked about them.

He was both a practical man and a visionary, living in an ivory tower and showering ideas on those of us who stood below. Miraculously, these ideas took three-dimensional form: they were built, manufactured, staged. And their impact was unforgettable.

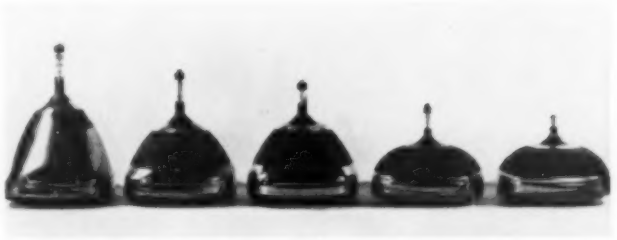
But equally powerful were the ideas that never left the drawing board, the dreams that remained dreams. Some were rejected as wild and impractical. Others were simply never followed up, for lack of time and funds. But somehow they got into the air and were absorbed by hundreds of other designers, who drew inspiration, in some unaccountable way, from a man they may never have known. Today, many of Norman Bel Geddes' visions are on sale in every department store. To be an industrial designer is to breathe an atmosphere that Norman Bel Geddes helped to create.

REdesign

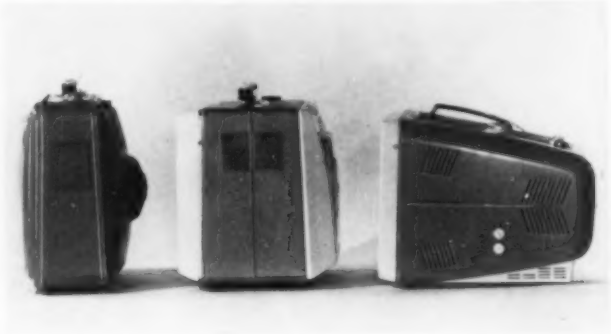
PHILCO CROPS THE NECK OF THE PICTURE-TUBE TO BE FIRST WITH SEPARATE-SCREEN TELEVISION

Early this month, the Philco Corporation unveiled the results of a project begun two years ago: the separate screen television set. Of the line that was introduced, perhaps the most dramatic—and the clearest forerunner of wall picture tv—is the tandem set shown opposite. The idea of separating screen from chassis (and, in the process, of stripping away the bulky furniture which housed them) is not new. The industry has been talking about it for years. But a major obstacle has been the depth of existing picture tubes, whose very size would have defeated the purpose of the separate screen. Yet, as Philco found out, even had costs permitted development of a shallower screen, there was still another problem. Secrecy—an essential of such a project—would have been impossible to maintain, for the very good reason that a single manufacturer supplies all the glass envelopes for the industry's tubes—and he could not, of course, consent to such an operation. Accordingly, it wasn't until the new, flattened 110° tube appeared that separate screen tv became thinkable. Yet even then, the long neck of the tube would have made it impractical—until Philco engineers did something about it. They redesigned the cathode in a flat shape, packing many of the neck's components inside the tube itself. The result was that two inches were chopped off the neck of the tube—a greater saving, according to Philco, than even a 130° tube could have effected. (The difference two inches can make is apparent in the photograph of the evolution of portables, at right below.)

This accomplishment in turn demanded another: redesign of the chassis. Former chassis, scaled to longer tubes, sprawled 16" deep; chassis of the new line are as short as 6". Working to cardboard templates made by the design staff under Herbert Gosweiler, Philco's engineers regrouped components in what amounts to a complete departure from normal chassis arrangement. Moreover, by devising a way of mounting the tuner separately, they were able to cut the height from 18" to 8"; this technique also permits outside controls to be located at will. Tubes in the "Predicta" line are cased in plastic, subtly toned to enhance the flat look of the screen: greenish gray over the face, lighter gray over the rear, calculated to encourage set's contours to fade into the surroundings.



Above: *Evolution of picture tubes from early 70° to new 110° points up problems faced by designers in shaping cabinets. Tube at extreme right is Philco's new S-F; next to it is standard 110° tube with longer neck.* Below: *Portables illustrate progress in tube development, trend towards thinner sets; new 11½" deep model (left) shows how engineering of separate screen sets was applied to produce a more realistic portable. Chassis is fitted around base of tube, with all parts exposed for servicing.*



Screen and chassis of tandem set are linked by wide cable flat enough to lie under carpet. Separate speaker is also provided for use when screen is at a distance from cabinet. Production models have handle that carries brass tubing right around screen.

When a manuscript entitled "The History of Boys' Socks, 1947-1957" came into the office, the editors were nonplused. Upon reading it, they were still nonplused but delighted. Here was a consumer who had something to say to designers, and could say it. Even the remoteness of the subject seemed a point in its favor, for the sock, as the author points out, is a "pure" item. In the belief that consumers should be heard as well as sold, ID dispatched a letter saying, "O.K., you win. Who are you?"

The answer: "I am a catalog consumer with a clinical turn of mind, interested in catalog merchandising as a means of modifying the design of some industrially produced goods, and as a vehicle for influencing the quality of consumership. I teach in the art department at Long Beach College. My husband is chairman of the art department at Long Beach City College. We have four sons all with large feet."

Design by mail order

When we first moved to the country our boys were young. Teaching, muddy roads, rock walls, and a half-finished house precluded shopping trips. Coincidentally, someone had given the boys a "wishing book," i.e. a Sears Roebuck Catalog, and in a matter of days the boys had ceased to teeth on *Tom Swift* and had taken up the headier stuff in the catalog.

Soon we were all addicted to the catalog, and to the magic words, "Order by 'phone any hour of the day or night—Saturdays and Sundays included." So, at one-thirty a.m. on Saturday (a contemplative hour) I would order. I ordered not "good" or "better," but "best." This procedure had nothing to do with critical consumership; I had been raised that way— that is, to buy the best even if it isn't any better.

However, as washdays went by, certain questions kept recurring in my mind: "Why don't *they* make fast color socks"? Later, "If *they* can make fast color socks, why can't *they* make fast color T-shirts"? Or, "Perfectly good socks (that is, not faded) with holes in the heels! Why don't *they* reinforce the heels"?

One after another, as if on cue, my requests were granted in the catalog: Heels were reinforced. T-shirts acquired fast color. Size thirteen was included. Heel reinforcements were brought above the shoe's edge. T-shirts and socks were made to "go together".

Survival of the fittest

When the "best" socks became holey I put them in the darning basket and, as mates turned up, I darned them. Since socks for which no partner turned up remained in the basket, I gradually acquired a basketful of single socks which would have delighted Darwin, so aptly did they demonstrate the evolution of an idea, the survival of the fittest.

This sock chronology revealed some remarkable truths to me, an art teacher with a special interest in industrialization. It mirrored a rare consumer-produ-

Producer and consumer meet in the "wishing book," where wishes come true next year

by JUDITH RANSOM MILLER

cer relationship in which the consumer and producer each *describe* what he wants/has to buy/sell without seeing/showing the product. Their descriptions are not fashionable, promotional, or general, but amount to what engineers call "specifications". Commonly, the specifications on which engineers and clients agree are translated into permanence. Mistakes endure steel and concrete. Although the engineer may get another chance, the client, as any house owner knows, seldom does.

However, in a design category like that of boys' socks a different set of disciplines is in force. Ideas and influences of producer and consumer can interchange recurrently—*if* there exists a two-way communications chain. The catalog is a link in such a chain, operating on a direct and literate request-and-offer basis.

Boys' socks for the purpose of this article are a "pure" item. They are relatively immune to promotional gimmicks (at least in the Catalog) and are produced on machines which allow great latitude as to fibre content, yarn weight, denier, ply. A knitting machine can be adjusted to produce any size, varying numbers of stitches and wales to the inch, and a great variety of "patterns". It will accept different fibres, blends of fibres or combinations of fibres. Additionally, the item "sock" over a period of more than a century of industrial production has reached a validly standard form. From a design standpoint it is significant that machine production and hand production of socks differ only in rate, precision, quantity, and to some extent, weight of yarn used.

Designer meets consumer

Since World War II extensive and directly perceivable innovations have appeared in boys' socks. Changes resulting in very real improvements in performance were made without re-tooling and with little added to production costs on their account.

Significantly, changes appeared in socks merchandized through the Catalog long before they were available in socks sold over the counter. (In fact, some of these changes are not yet available on the counter.) The reason is that catalog sales "scoop" the news in market research and bring the designer-producer into an almost direct contact with the consumer. Volume sales and rapid turn-over are hinged on built-in machinery for testing the performance of a product. Since the consumer has a choice among "economy", "good", "better", "best" and "4-star" in many categories, and since the choices are accurately described, important statistical comparisons can be made: On the scale of quality, where is the point of greatest volume? Which of the several "bests" is preferred? How do the choices of a particular consumer this year compare with her choices of last year? What percentage of the total sales fell at each point in the quality scale in 1948?—in 1958?

The chronology of colorfastness

Quite obviously consumer reactions are reflected in orders placed, and most important, new demands grow out of the satisfactions of old ones. Anticipatory decisions can be made through checking trends and by measuring sales correlations of related catalog items. The spread of "colorfastness" throughout the catalog in a period of seven or eight years is an example of a significant trend. (Automatic washing machines, progenitors of the need for fast-color items, appear for the first time in the catalog in 1950.)

In 1944 the best quality socks were described as to fibre content (cotton), and processing (mercerization), style (rib or elastic cuff), weight (2-ply), color (blue, wine, brown, green), size (8-11). There was no guarantee as to colorfastness. T-shirts and washing machines were not listed.

By 1947 the color range in boys' socks had broadened to include red and navy blue, and colors were guaran-

teed "color fast". T-shirts were listed with the advice, "Wash separately". A washing machine was listed.

By 1949 the catalog read, "BOYVILLE socks, finest quality DURENE cotton, mercerized, 'multi - ply' combed cotton, strong, smooth, lustrous. *Nylon re-inforced at heels and toes.*" A standard washing machine with automatic timer was listed.

By 1950 the catalog read, "Strong nylon re-inforced HEEL GUARDS give twice the wear . . . thorough abrasion tests prove beyond doubt you get twice the wear . . . Sears Laboratory tests prove that HEEL GUARDS give over twice the wear of regular socks because they're nylon re-inforced . . . [at] . . . heels, toes, *vital wear points directly above heel* . . . proportioned sizes for juniors and boys . . . Fine long staple DURENE (reg. U. S. Pat. Off.) 2-ply mercerized cotton construction throughout . . . Washfast colors will not fade or stain . . . Extra bright solid colors." T-shirts were listed as "Washfast, 2-ply knit . . . full combed cotton, heavier fabric, two threads twisted into one to make lasting yarn . . . stripes matched at sides . . ." Automatic dryer is listed in the catalog; automatic washer is announced as available through Sears Roebuck retail stores.

In 1951 these two entries appeared for the first time: (1) "Our best Washfast Hosiery—20% nylon, 80% cotton. Popular Argyle Slack Socks. Blazer striped ribbed crew tops." (2) "Matching Outfit. Includes T-shirt with one pair socks. Washfast blazer striped combed cotton knit shirt. Stripes matched at side seams . . ." In the item listed as (1) the socks had a pleasantly faded heathery look which apparently lacked sales appeal, as the sock never appeared again in the catalog. The term "fast color" from an advertising standpoint must refer to colors which look "un-faded" initially.

In 1953 the Catalog listed, "Tough, super-sturdy 100% spun nylon boys' socks" at an 85% increase in price over the next highest priced sock in the same catalog. These were, of course, not fast color, but were quick-drying and easily laundered. Automatic washers were now available through the catalog.

In 1956 the Catalog billed Boys' Striped Crew Socks as "4-Star" and advertised them with a six pair, six months guarantee. The listing ran 225 words and contained the following data: Best quality, cotton and nylon, 2-ply Durene, mercerized, reinforced with nylon above and at the heel, on toe and sole, pre-laundered for retention of perfect fit, washfast, double the wear of ordinary socks, resistant to abrasion, ravel resistant elastic cuff, cotton insole to soak up foot moisture. Washfast T-shirts, flannel shirts, pajamas, cotton shirts and yardage were all listed. Both automatic washers and dryers were included.

The "engineered" sock

In 1957 a nylon stretch sock (helanca) with cotton insole costing 23 per cent more took over the preferred position of "4-Star." (The cotton inner lining in the nylon sock is a concession to the facts that many children are allergic to nylon, that nylon is hot to the foot and is not moisture absorbent, and that, in some instances, it is thought to encourage fungus growth.) The stretch sock first appeared in the catalog about 1954, but by 1956 it showed signs of "engineering."

In 1957 the 1956 "Durene Striped Crew Sock" appeared in the Catalog with a remarkable innovation: a message containing a size-buying guide, specific guarantees, and a statement of fibre content was printed clearly on the sock.

In 1958 the Catalog lists a dramatic re-design of the structure of the sock, a re-design based on the characteristic of stretchability. The sock does not define its

own heel, but depends on the wearer's heel to do so. It is, in fact, a sort of knitted, snugly fitting sack for the foot. The underside and the back of the sock stretch lengthwise; the part which covers the top of the foot and the front of the leg stretch crosswise. (Slide #10) Cotton-nylon, not fast-color.

Since many socks are pre-laundered for the purpose of increasing dimensional stability, the use of cross-dyeing as a design factor could become practical. Socks could be knitted as grey goods, as many solid color socks now are, and then dyed in different lots. If several fibres were used in the knitting in such a way as to produce a pattern (argyle, stripe, etc.), a pattern which will be practically invisible before the sock is dyed will emerge clearly by way of the dyeing process—this result can be achieved with one immersion. With three fibres tri-color socks could result, in a variety of sets of three colors. Production costs could conceivably be reduced through the application of this principle. (It is probable that research costs would be great.) At the same time, variety and improvement of performance could be achieved. I believe that the cross-dyed sock will first appear in the catalog.

Style and function

As I review my notes I see that I have disregarded some salient aspects of the problem: Catalog sales represent less than five per cent of the total sales in the sock industry. Catalog buyers (I am told) are a specialized breed, concerned mainly with performance. The counter buyer's primary interest appears to be style, fashion, appearance; he probably even judges performance by appearance or "feel." In times like these, when there is a high level of disposable income, performance is a negligible consideration in the overall picture. A representative from a major American hosiery mill said to me quite sincerely, "Performance has nothing to do with it. You can't hardly buy a poor sock today. Same as automobiles — they're all good. The whole thing is style." I read into his remark that, if the consumer had wanted better performance, he would have asked for it. I believe that the consumer first doesn't know what the question is, but that, if he did know what it was, he wouldn't know whom to ask—unless, of course, he were a Catalog buyer.

Recently I stopped in a major Los Angeles haberdashery to buy hosiery for my sons, now grown and wearing size 13 socks. I wanted socks without elastic cuffs and knitted with a "fatter" foot, since my sons' feet are both wide and thick in addition to being long. There were no size 13 socks available. The salesman said that this size goes first. When I saw that he had no socks without elastic cuffs in cotton, I said that I would look elsewhere. He said, "You're wasting your time. There isn't a store in town that has the sock you are looking for". He pulled up his trouser leg and showed me his sock. He had cut the elasticized cuff off of it for the sake of comfort. Then he went on to say, "I tell the salesmen everytime they come in that what we need is a cotton sock, soft and stretchy, fuller through the foot, *no* elastic in the cuff, re-inforced in the heel. These synthetics are hard on the feet! Also, boys have bigger feet today."

He needs a "wishing book." In the 1958 Spring and Summer Catalog there is a new listing which reads, "New Ban-Lon Proportioned Fit Hose. They're the BIG news in socks today and for two BIG reasons: *one* they're knit in not one but three widths; *two*, they're knit of fine gauge BAN-LON, noted for its greater softness, resilience, moisture absorbency and more gentle elasticity." The sizes provided for list widths AA to EEE and sizes 10 to 14. (Nothing is said in the Catalog about the source or chemical nature of BAN-LON.)

Design for the military:

A MASK FOR CIVILIANS, A LOCK FOR THE ARMY

A GAS MASK PROTECTS CIVILIANS AGAINST RADIOACTIVE PARTICLES

After seven years of research and development, the Army Chemical Corps and Federal Civil Defense Administration have come up with a non-combat gas mask which can be mass-produced at low cost in sizes to fit the entire population. The mask has been developed by Johnson & Johnson, New Brunswick, N. J., and is the result of the collaborative effort of Army and CDA officials, Johnson & Johnson engineers, and the design firm of Peter Schladermundt Associates.

The new mask is a modification of a prototype developed some time ago by the Army Chemical Center at Edgewood, Maryland, and offers protection against chemicals, bacteria, and radioactive particles from atomic explosion. It weighs about eight ounces—over a pound less than the standard combat mask—and can be mass-produced at a manufacturer's cost of about two dollars.

Early in the project it was determined that the most practical method for mass production would be to house the mask components—filter, exhalation valve, and eye lenses — in injection molded plastic forms of varied sizes. Since the filter is die-cut in the flat, it was obviously most expedient to handle the molding operation in the flat and devise a means of fusing the filter to the housing during molding.

The filter material comes to Johnson & Johnson in large sheets. It is die cut, and each filter is sandwiched between identical shapes of glass filament screening. The edges are heat-sealed, and then a Geon Latex is sprayed onto the perimeter of the filter. This has the double effect of inhibiting absorption of the Geon (polyvinyl chloride) by the porous filter material during the molding process, and of acting as an adhesive binder, fusing the filter to the housing. The bond thus formed is strong and impenetrable.

The masks are produced in standard injection presses and are vaguely saucer-shaped before assembly. After molding, the two halves of the bottom edge of the mask are heat-sealed together, forming a seam extending from mid-point under the chin. The seam is trimmed, then welded back upon itself to produce a smooth, flat surface.

Transparent vinyl discs are heat-sealed into the eye-piece frames and a head harness, capable of a 300% stretch, is attached. A valve for exhalation of expired air is affixed below the chin and a fiber board baffle plate, to prevent eye lenses from fogging during exhalation, is riveted in the inside of the filter area.

According to John D. Wark, associate at PSA and project supervisor for the mask, "working with the military was fine. They understood our problems and therefore had some appreciation of the difficulties we encountered. An ideal client to work for."

Peter Schladermundt Associates and Johnson & Johnson had 15 bronze heads cast, representing all head sizes and shapes. Later the range was narrowed to six sizes. Mask adjusts to contours of wearer's head.

A SIMPLE, LOW-COST FASTENER LOCKS ARMY FIELD REFRIGERATORS

Designed by the Egmont Arens office for use in the Quartermaster Corps' walk-in demountable field refrigerators, this new lock (right & below) was classified as a low-priority item, which meant it had to be produced on a severely limited budget. No ball bearings could be used, no springs, no precision machining. At the same time, it had to be easy to work and sure in its locking operation. Its job: to pull two gasket panels together a distance of ⅝".

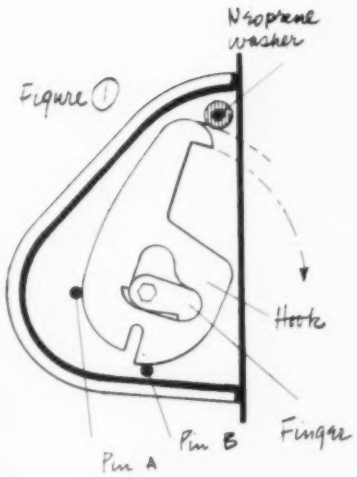
Until this fastener or lock was invented, the Army had been using five different commercial ones, some of which didn't work as they were supposed to. In the case of one, for example, the hook would retract without having *caught* the eye, leaving the panels only resting together, unlocked. Since the lock is not visible, its locking operation cannot be left to chance or guesswork; if the panels (4' x 8' x 6") are not joined together in a snug fit, there is no insulation of the cold air inside and no protection from the weather—and GI pilfering—from the outside.

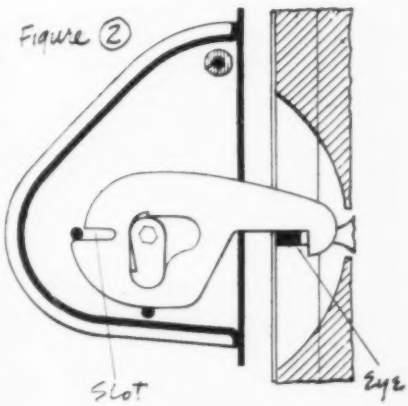
The Arens lock is simpler in principle and much more effective than the commercial ones formerly in use. Locking action is started by turning the finger clockwise (see sketch at right—fig. 1). The hook, riding against pin A and pin B, is forced around to a horizontal position (fig. 2). Unlike some of the old fasteners, the hook cannot withdraw until the full horizontal has been reached. When the hook reaches the horizontal position, the slot at the back of it aligns itself with pin A and the continuing clockwise rotation of the finger forces the hook to retract. The hook, having engaged the eye, pulls the two panels together. The finger is then overcammed by 5° (fig. 3) and cannot come loose until turned counter-clockwise.

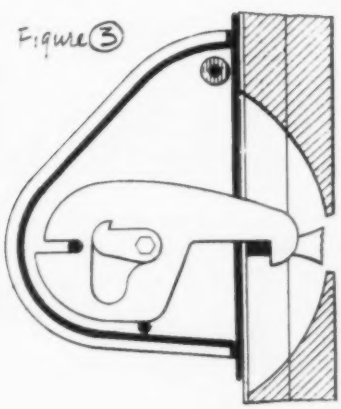
Each panel is shipped completely assembled, the lock joined to the outer skin by a brass or aluminum bushing, its recessed shoulder loose enough to allow the shaft to turn. To avoid damage in transit, the neoprene stopper holds the hook flush.

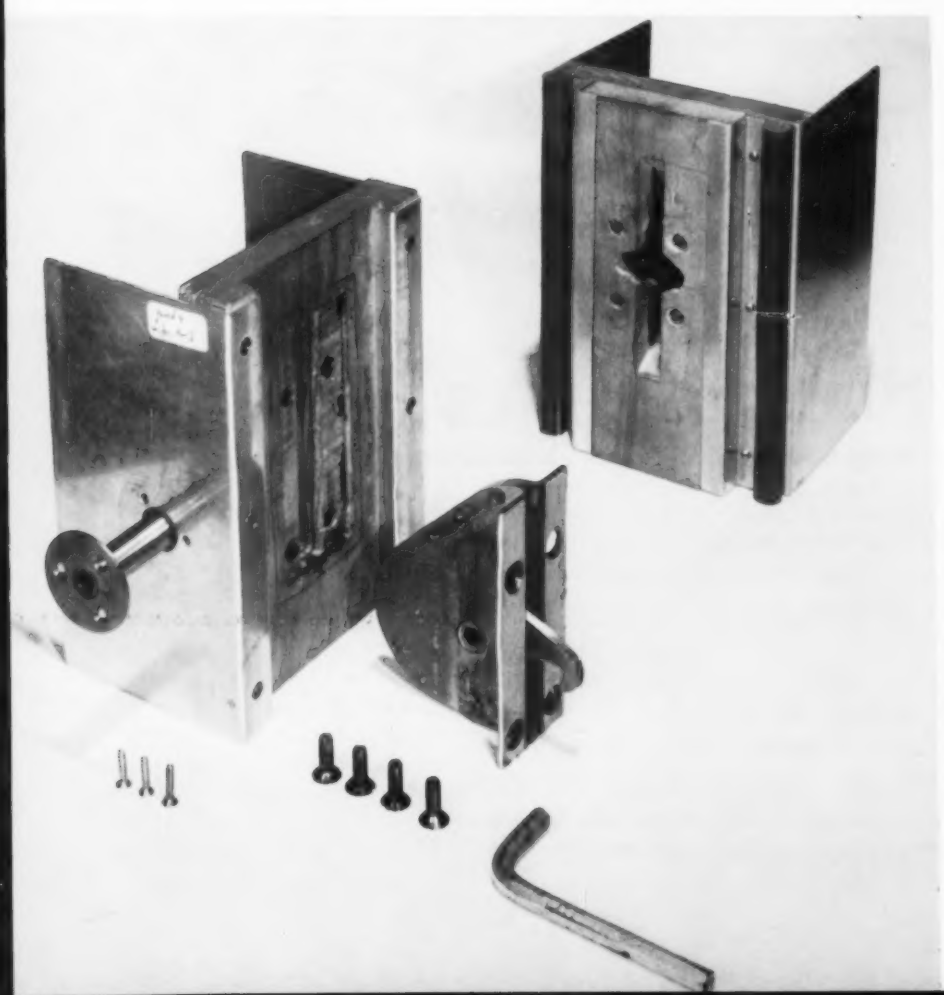
According to Whitney A Stuart, co-inventor of the new lock, designing for the military was a smooth operation. He feels that this was partly due to the patience and understanding of the Army's project director, Frank W. Lewis, who conferred with the inventors once a month.

Says Stuart: "If in dealing with the military there are occasional delays in payment due to government red-tape, there is also, to offset that inconvenience, not only a pleasant sense of accomplishment on the part of the designer but often something more. And there was this time: a patent for this lock was issued and asigned to Egmont Arens, who controls the non-military rights and usage."

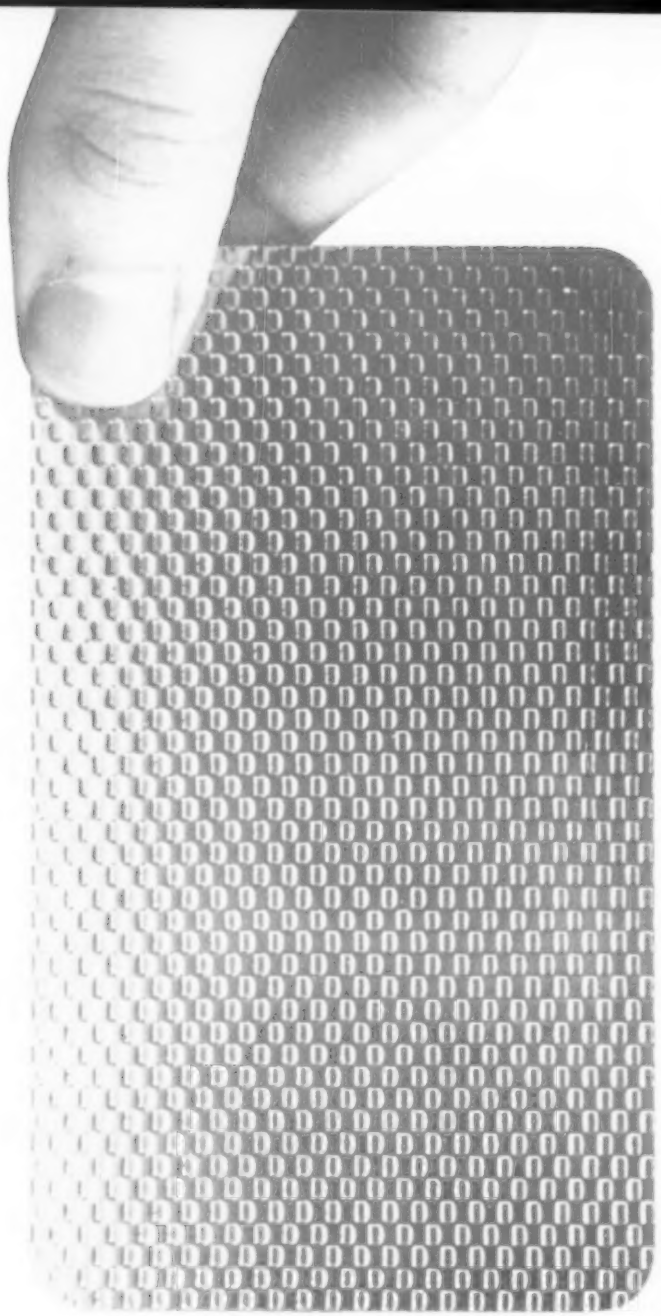








The new Arens lock is made chiefly of two pieces of metal: the hook and the finger (above). Designed for the Quartermaster Corps' demountable field refrigerators, its job is to pull two gasket panels together a distance of ⅝". It is set into walls of the refrigerator—made of panels measuring 4' x 8' x 6"—and, when locked, it insures insulation and protects against weather and pilferage. Each panel is shipped completely assembled. Shaft can be turned by an Allenhead wrench, or, in emergencies, a bayonet tip can be used.



Production Specialties

3

TEXTURING METALS

Design of patterns can be varied in color and depth of texture

Abundant in mechanical advantages and useful in highlighting certain product features, pattern metals have stimulated the market potential of many new appliances. The design features inherent in decorative metals, and the variables in the production cycle, are examined here, along with the facilities and work methods of Croname, Incorporated, Chicago manufacturer of pattern metals.

In a simplified way, the flow chart at right tells all there is to the fabric-metal story from a production angle. It shows the four basic steps for putting a metal pattern or fabric through the manufacturing cycle from a drawing or cloth sample to the finished product in which the design appears to be "woven" into the metal. No secrets are involved here, no methods that are especially unique. It is pretty common knowledge that the color pattern is applied to the metal by a lithographic process, and that the ribbed, ridged, or generally contoured surface is obtained by embossing. What may, however, not be sufficiently evident is the full scope of the production potential—the complexity of pattern and the variety of products that can be yielded from such a simple, straightforward process.

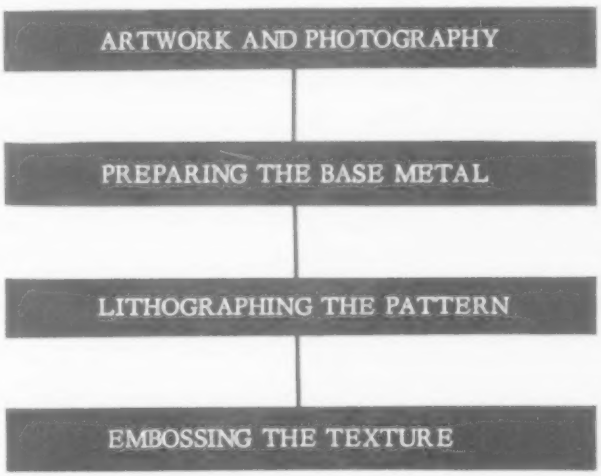
Certainly it need not be pointed out that metals used for decorative purposes offer many mechanical advantages (their durability, rigidity, and strength in comparison to cloth fabrics are all too obvious) and that metals given patterns and, in some cases, the textures of cloth fabrics, can find application on product surfaces where undecorated metal cannot be used. What was in the minds of the directors of Croname and other decorative metals firms was to further the application of metals for decorating consumer products (air conditioners, vending machines, cars, interior decoration, tv sets, radios and other appliances.) Contrary to the concept that the best surface quality of every material is its own, Croname's staff — eager to develop a new product category—combined the properties of metal with the patterns of decorative paper and the texture of cloth.

By the time Croname embarked on a program to develop their pattern metal line, named CroRoto, and a selection of fabric metals called Croweave, they had been treating metals for increased product appeal for nearly half a century. They were among the first metal manufacturing companies to make metal nameplates (using a patented machine for automatic roll embossing) to which they added embossed emblems, symbols and trademarks. Following the development of finishing techniques (applying color by spraying and lacquering, chrome plating and anodizing) Croname put on the market a line of thin metals—aluminum, brass, bronze, stainless steel—with a variety of patterns embossed on a plated or single color surface (see CroRoto products on following page). To this they added perforated metals wtih lithographed patterns (radio grilles for Crosley, among many others) and, in an attempt to combine their facilities and long experience to find and form new products, organized a product research and development group which developed Croweave, a line of multi-color embossed fabric-metals. These are now available in stock and experimental textures.

Four fundamental steps make up the manufacturing cycle for embossed fabric-metals (see flow chart this page). Although these steps are fixed, regardless of metal type and pattern, the operations at each step are flexible so that a great product variety is possible. The operations occur in four basic steps in the following sequence:

1) *Artwork and photography*—Black on white detail drawings are made to full scale for each color pattern of the fabric to be metal "woven." For a continuous or repetitive pattern, only a small section need be drawn; step and repeat cameras are used to reproduce the design across the photographic film, thereby obtaining a reproduction of the full size total pattern. (For example, for a design made up of three colors and a base color, three full-scale line drawings are prepared by Croname's art staff; these are then photographically transferred and properly registered on film). Lithographic printing plates are prepared from the film.

2) *Preparing the metal* — The sheet metal base (gage ranges generally from .012 to .040) is given the base color. How this is done depends upon the metal—i.e. aluminum

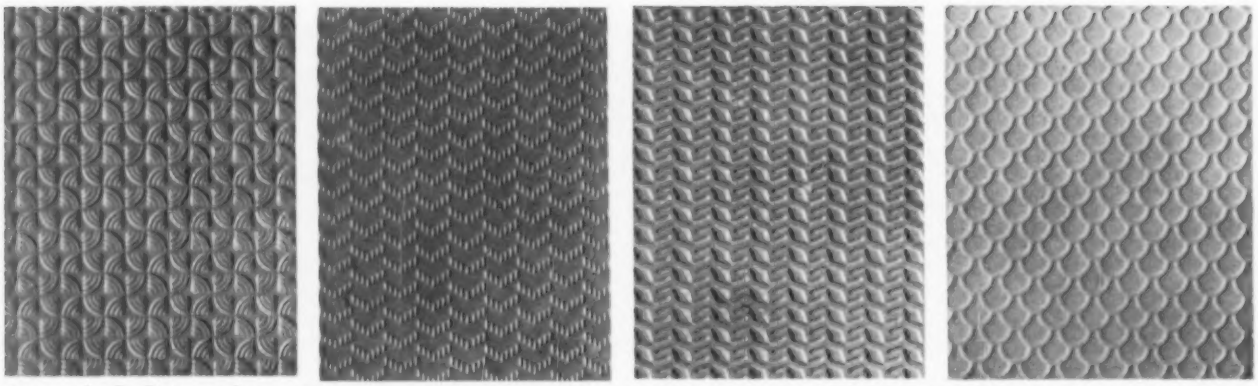


can be anodized, other metals are sprayed with paint and then with a coat of transparent lacquers.

3) *Lithographing the design-pattern* — The design is transferred to the base metal lithographically on presses specially developed for this process. Color changes are made at this point of the manufacturing cycle. Substituting one color in a three color design-pattern, for example, will of course cause a totally different tone in the total pattern; colors are applied to the press one at a time, and color schemes for each pattern are easily varied, ordinarily at no extra cost. To obtain a durable finish, a vinyl coating is applied to the lithographed metal.

4) *Embossing the texture* — Croname's CroRoto line of embossed patterns is used to emboss the texture by processing the sheets through steel rolls, one or both of which carry the pattern. By using a variety of rolls (meshing rolls, coining rolls, etc.) a wide range of contoured surfaces can be achieved.

Some of the different types of pattern metals produced at Croname using this process, follow on the next pages. *A. G.*

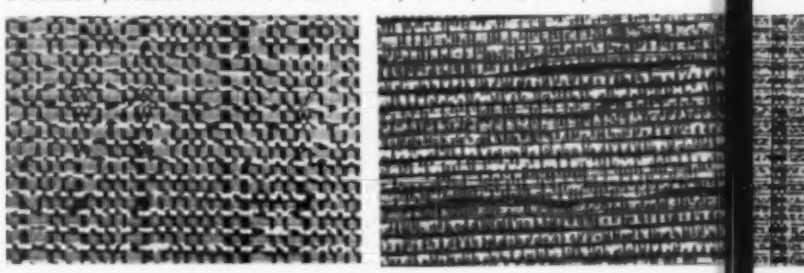


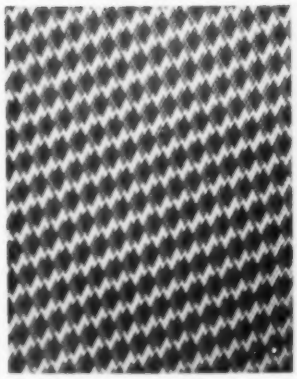
Croname's CroRoto products offer patterns embossed on plain or one-color metals. Patterns above are part of experimental line.

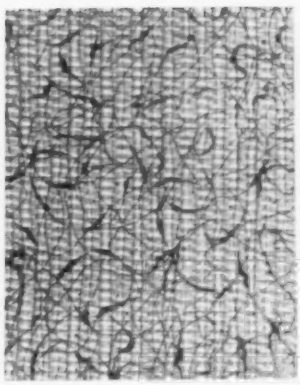
CroRoto single-color embossed patterns (above), earliest among Croname's textured metal products, are roll-embossed and require no lithographic reproductions. The treated metals are processed through presses on which the pattern rolls are mounted. The plain and perforated, bi- or multi-level one-color textures, with an average thickness of .025, and a maximum width of 16", have properties that can lengthen a product's life and influence its overall appearance. Using pattern metals with plastic, for example, will break up the monotony of a one-color, flat surface; directional patterns can be applied in a way that will appear to alter a product's dimensional proportions. Pattern metals are also a camouflage for marks, dents and scratches—thereby prolonging a product's look of newness. It is also possible to combine the pattern with product identification and/or instruction. For example, in the Kenmore range, Metal Matic, both company and product name are embossed in the textured metal backplate; in another product, the Viking radio, name and emblem are embossed in the perforated grille of pattern metal. Embossed materials can be especially advantageous when combined with structural materials such as plywood and plastic foam, whose strength and rigidity can be vastly upgraded with a thin metal facing. Aside from their structural characteristics, textured metals are inexpensive and can bring a new quality to a marketed product without necessitating retooling or elaborate redesign.

Croweave multi-color embossed fabric-metals are composed of three basic elements: weave, color, texture. Croname's stock line is made up of a combination of these. The tweed, bark cloth, and twill patterns shown below are produced in large runs in the following color combinations: tweed—red and black on gold or clear metal, white and black on gold or clear metal; bark cloth—terra cotta, white and black on gold or clear metal, or transparent blue, white and black on gold or clear metal; twill—white, black or yellow on gold or clear metal, or turquoise, white and yellow on gold or clear metal. The textures of the fabrics depend on the embossed patterns selected for the finished design. Croname offers their full line of CroRoto patterns for the texturing. Any variety of contouring can be built into the metal by specifying the ratio of raised to depressed area and the angle of high points. Like CroRoto, Croweave fabrics are available in all nonferrous and most ferrous alloys in gages ranging from 0.12 to .040, in widths up to 16" and length up to 31". Croweave textures can also be manufactured on a perforated base. The mechanical properties of these materials are similar to those mentioned for single-color patterns, but the complexity of pattern gives Croweave products a look of roughness not obtainable with the single-color material, and makes it applicable to appliance surfaces where this impression may be desired (lamp bodies, car interiors, coffee-table tops are among some of the many product applications).

Croweave products imitate the textures of tweed, bark cloth, twill.

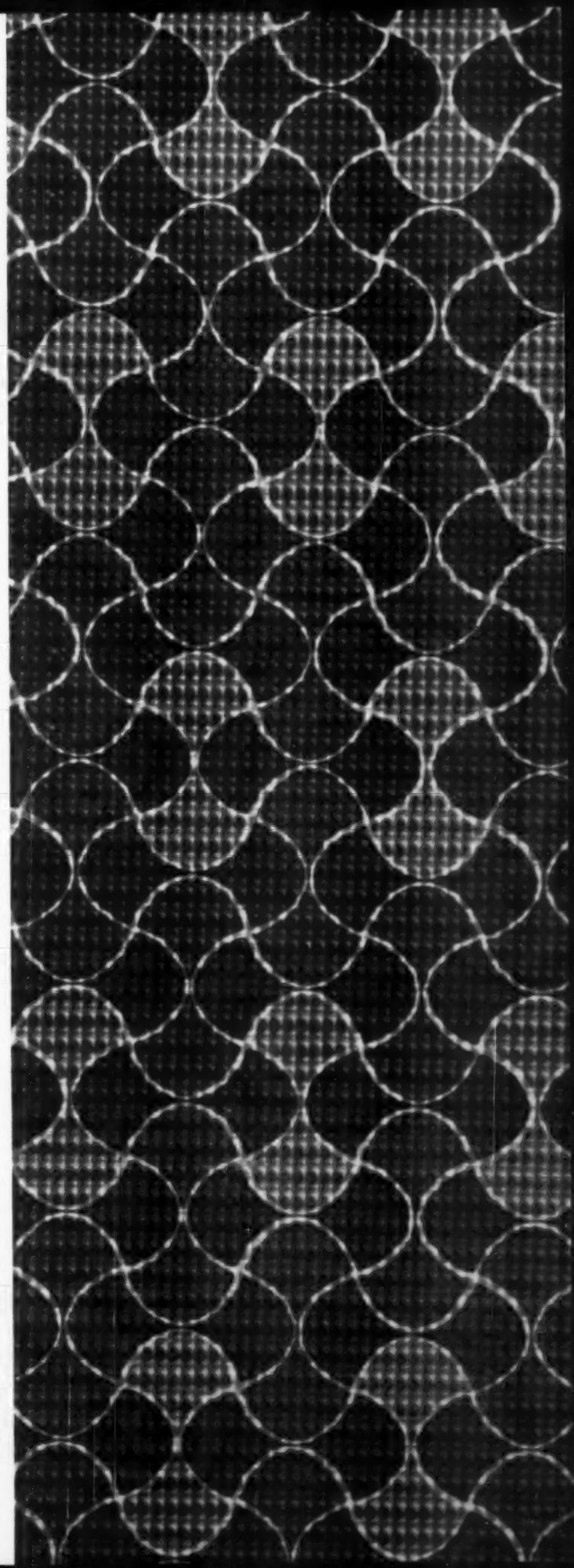


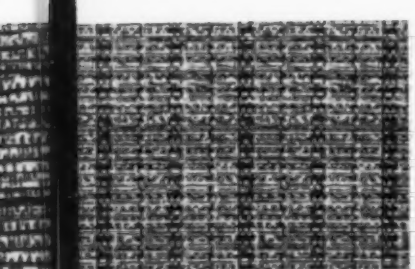




These Croweave patterns are not stock but experimental items.

Croweave experimental patterns, such as the ones shown on this page, are prepared by Croname's art department and indicate the flexibility of the Croweave process. The requirements for weave, color, and texture (these relate to three of the four production steps shown on page 61) can be varied almost beyond restriction to obtain a desired fabric-metal. In addition to the standard Croweave stock items, Croname is offering experimental materials in up to five color combinations, some of which are produced by overprinting. To retain the metallic tones of the base materials, translucent color patterns can be applied by the lithographic process. But it is also possible by design selection to eliminate any feeling of metal, should that be thought desirable. The various textures are achieved so far, by using the embossed patterns Croname has on hand from their earlier products manufacture. But it is, of course, possible to process materials with embossed patterns for which Croname does not now have the appropriate tools. Provided the production runs are large enough—and they would have to be considerable to meet the costs of new embossing rolls—any texture is possible. As pointed out earlier, certain limitations now exist in length and width of most Croname materials, but these can easily be extended to any desired size. Pattern metals can also be blanked, stamped, bent, etc., as part of the overall Croname production cycle, and by proper selection of coatings, they can be made to resist heat and humidity.





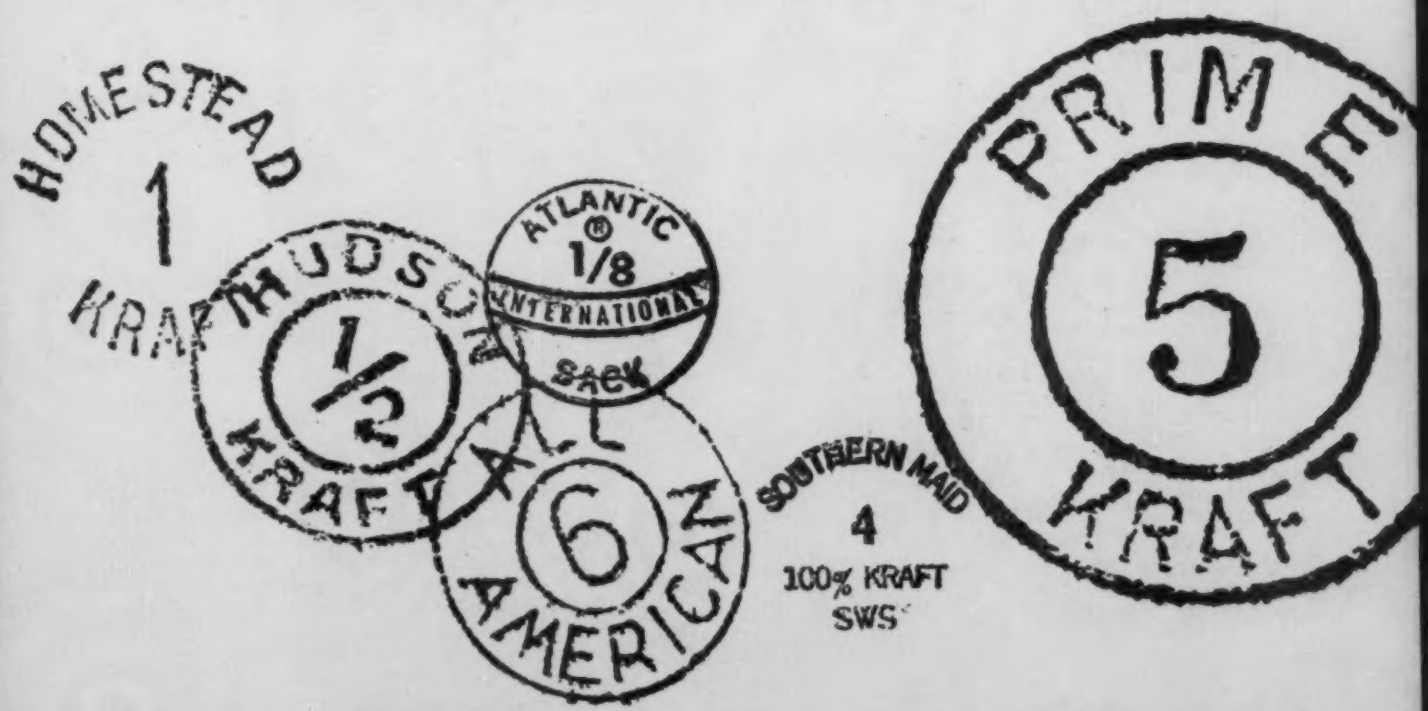
The familiar old brown kraft paper bag is homely,
but its trademarks—like the graceful tree
above, and other forms presented here—often show
a boldness handsomely alien to the bag's humility.

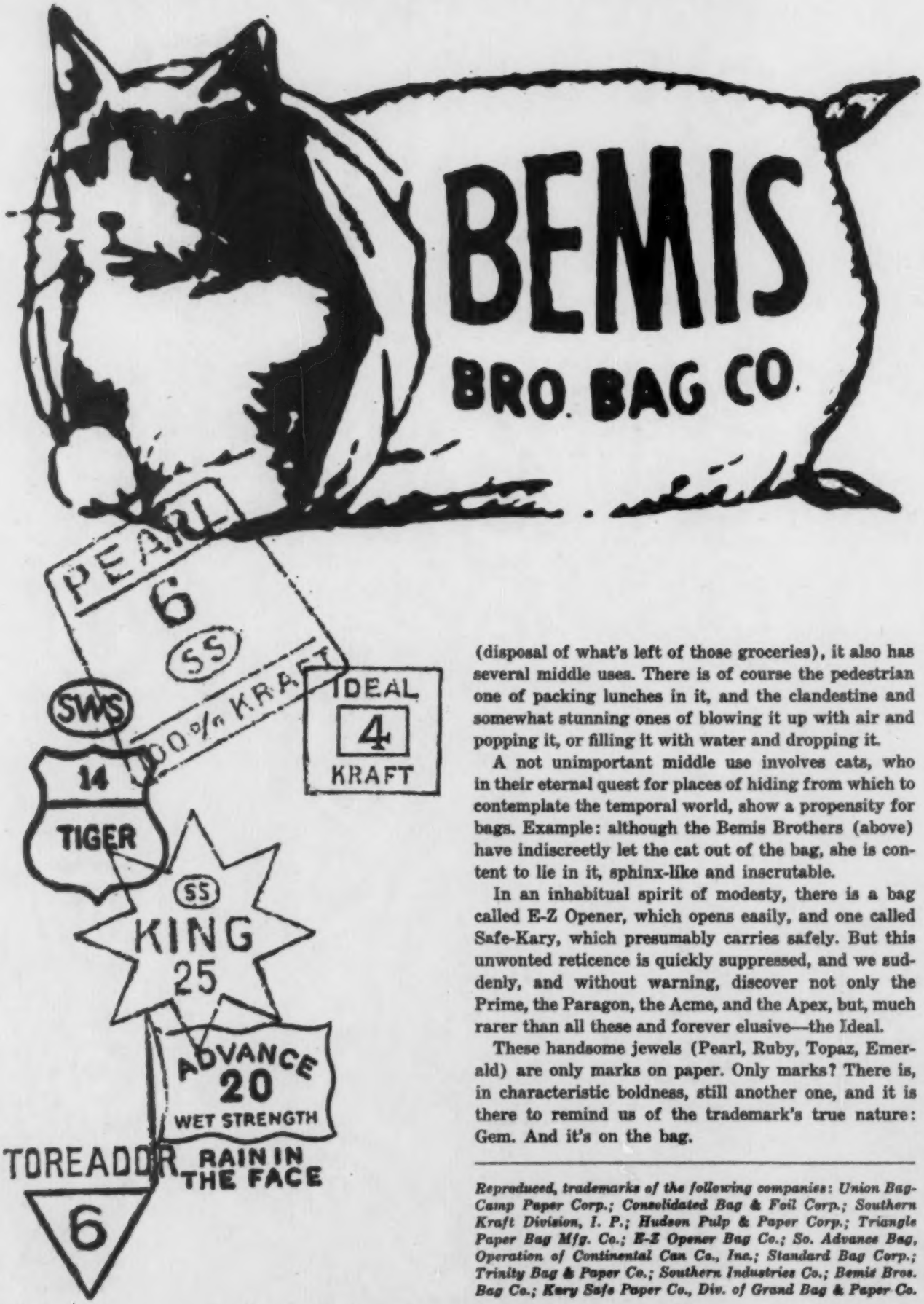
The Buffalo trademark of the old Union Bag and Paper Company dating from November 1, 1896.

On the top edge or on the bottom flap of every paper bag there is a trademark. These scarcely noticed designs sitting on their unpretentious packages draw audaciously, even flamboyantly, for their names and images from all domains of man's experience and study. From geometry, they borrow the triangle, the circle, and the trapezoid. From astronomy, they record the star, the comet, and the meteor. Zoologically they recognize the tiger, the buffalo, and the domestic cat; and, in geography, they name the Hudson, the Atlantic, and the Pacific. From heraldry, they bear the shield, the crest, and the bar, and from Indian lore they commemorate Rain-in-the-face, Wa-ha, and the Paleface. There are bags called Stags and sacks called Minimax. Toreadors and Troopers, Submarines and Dreadnaughts, Strongholds and Fortresses, Victors and Triumphs are all marks on paper. There is one, unaccountable, and somewhat quiet, that celebrates the old Hippodrome. And of course there is the Southern Maid. (There is *always* the Southern Maid.)

There are registered in Washington over 250 of these handsome and immodest marks. Not an excessive amount certainly when you consider that Americans buy, use, and dispose of some 100,000,000,000 paper bags every year, or nearly two bags a day for each of us. The world's largest paper bag plant, in Savannah, Georgia, proliferates these useful but short-lived packages at the improbable rate of 40,000,000 every 24 hours. But aside from these impressive figures, and unlike the poetic diction of its trademarks, the story of the paper bag is like its subject, humble, brief, and without incident. In its meager annals, the bag has only once achieved distinction, and that was with Colonel Stoopnagel's trenchant comment: "A bag is something without which the expression 'a bagful' would be entirely meaningless."

Although the paper bag is one of the few products with an initial use (carrying groceries) and an end use





(disposal of what's left of those groceries), it also has several middle uses. There is of course the pedestrian one of packing lunches in it, and the clandestine and somewhat stunning ones of blowing it up with air and popping it, or filling it with water and dropping it.

A not unimportant middle use involves cats, who in their eternal quest for places of hiding from which to contemplate the temporal world, show a propensity for bags. Example: although the Bemis Brothers (above) have indiscreetly let the cat out of the bag, she is content to lie in it, sphinx-like and inscrutable.

In an inhabitual spirit of modesty, there is a bag called E-Z Opener, which opens easily, and one called Safe-Kary, which presumably carries safely. But this unwonted reticence is quickly suppressed, and we suddenly, and without warning, discover not only the Prime, the Paragon, the Acme, and the Apex, but, much rarer than all these and forever elusive—the Ideal.

These handsome jewels (Pearl, Ruby, Topaz, Emerald) are only marks on paper. Only marks? There is, in characteristic boldness, still another one, and it is there to remind us of the trademark's true nature: Gem. And it's on the bag.

Reproduced, trademarks of the following companies: Union Bag-Camp Paper Corp.; Consolidated Bag & Foil Corp.; Southern Kraft Division, I. P.; Hudson Pulp & Paper Corp.; Triangle Paper Bag Mfg. Co.; E-Z Opener Bag Co.; So. Advance Bag, Operation of Continental Can Co., Inc.; Standard Bag Corp.; Trinity Bag & Paper Co.; Southern Industries Co.; Bemis Bros. Bag Co.; Kary Safe Paper Co., Div. of Grand Bag & Paper Co.

postscript to M/R

Statements and commentary

In January and February, ID reported on market research and how it affects the industrial designer. Some of the questions raised were: To what extent is the designer informed and guided by market, motivational, survey, and depth research? How beneficial is such guidance, and can the optimum limit of its efficacy be determined? Does research in any way inhibit the designer's creativity? Where and how do staff and consultant designers employ these research techniques? Does design risk becoming so inextricably combined with sales needs that it relinquishes its design position as such to become merely a function of sales?

The two articles made a survey of views on the subject, fully aware that no final answers could be made, only informed conjecture. It was in this spirit and for this reason that at the conclusion of the second article ID invited readers to comment. The response was warm, proving that to both designers and researchers alike M/R is indeed a live issue. Here is a sampling of comments provoked by the two articles.

J. Gordon Lippincott and Walter P. Margulies
Industrial Designers
New York, New York

Somewhere in the course of your series on market research you refer to the "if-you-can't-lick-em-join-em" attitude of some designers toward research. As we read through the article we couldn't help feeling that this phrase, in fact, summed up the opinions of Industrial Design itself on the subject. At any rate we sensed a lack of something this kind of series needs — a positive viewpoint, or thesis that ties the material together and gives it meaning.

What you did instead was to produce a rambling study, replete with details, and full of information, but in the end, we suspect, not very helpful to the designer. Your reporting was excellent as usual; your coverage quite substantial within the limits imposed by space requirements; you told about all kinds of research, but where exactly did it all end up? It was as if you had published a book and instead of making that book a new contribution to a given subject, you had instead merely printed a nice, comprehensive bibliography of material that had already appeared. Where, in short, was the fresh, incisive judgment that its readers have come to expect of Industrial Design?

We suspect it wasn't there because the editors of Industrial Design haven't made up their minds about the importance or lack of importance of market research to designers. What they *did* make up their mind to however was that they had better treat it editorially. And so they went ahead and produced this hodge-podge, got it out of their hair, heaved a collective sigh of relief and went back to those nice pure

design subjects.

Here, for instance, is an example of what we mean. At the end of your introduction to the second series you state: "What research has provided the designer are hard-figure terms to express his insights and the factual basis for breaking out of the mold of his personal tastes." Now this is not only a pretty superficial and bland statement but we doubt if it is true. If research does anything for the design field — and we at Lippincott and Margulies believe that it does—its benefits are certainly much more concrete and at the same time more profound than your summing up indicates.

The prime function of research is not to provide "hard figures" but instead to answer questions, and to aid the management-design team arrive at decisions. As you point out, there are a wide variety of research techniques used to answer these questions. A client or a designer can have a ball deciding which he likes best — quantitative surveys, depth interviews, TAT's, HTP's, tachtisiscopes, brightness meters, psycho-dramas, or perhaps a little bit of everying, just to be sure.

But the *technique* is really not so important, and here is where we think you go astray, for in spending so much time on this aspect you leave the reader with the impression that the main responsibility of the designer toward research is to select the right kind, from among the many offered. Actually, all the techniques are good; which one or which combination of them is selected depends on the question asked and the answers needed.

That's the rub: the basis of good research lies not so much in the technique used, but rather in the ability to diagnose the problem, and then to determine exactly what information you need to help solve the problem. Here's where creativity comes in; a good researcher needs it as much as does the designer. He has to ferret out the wheat from the chaff in the management's marketing situation, lay his finger on where the trouble might lie and follow his hunches in formulating really meaningful questions.

So we doubt that the "art versus science" conflict has much meaning today. These two worlds are really intermingled in modern marketing. And what's more, the scientist (researcher) has to be part artist in order to work effectively; conversely the artist (designer) has also to be part scientist if his work is to meet the precise and complex requirements of mass distribution.

Let's stop beating the dead dog then and look instead to the new danger which lies around the corner, if indeed it is not already here. It is the danger implicit in making research the "fashion," using its lingo, bandying its words around, and paying it lip service without really understanding what it's all about, or how the designer and researcher can work together to produce designs which meet the real needs and can be marketed in real situations. And just to give that dog one last punch, we fail to see how designs of this type should not also be pleasurable ones—pleasurable to look at, use, and above all to create.

Montgomery Ferar, Partner
Sundberg-Ferar
Royal Oak, Michigan

Your two-part series on market research for industrial designers was both stimulating and constructive. INDUSTRIAL DESIGN is to be congratulated on its intelligent handling of the subject. Too much of what passes for "market research" these days undeniably represents sheer mumbo-jumbo and flapdoodle.

It is our conclusion, based on a quarter-century of designing products for consumers and industrial users, that you can generally achieve more valid results by the application of empirical methods of research than you can by techniques that separate the research from the operation it is intended to guide.

This is not to deny the importance of research, but merely to emphasize that, in our opinion, it's the *kind of research* you do that counts.

Generally speaking, we believe in conducting our own market research, on an admittedly informal basis, rather than delegating it to the specialists in the weighted sample and the depth interview. This means that our designers get out into the field, talk to sales and service people, get behind counters and actually wait on customers.

We have found, moreover, that intuitive judgments based on instinct and past experience are frequently more valuable than theoretical conclusions resulting from so called "scientific" tests. The psychologists and survey experts have evoked all too many bloopers — usually through their failure to recognize some key factor in the situation—and following their recommendations blindly has proved costly to more than one manufacturer.

Please don't misunderstand me. We're not against market tests. In fact, our own clients not infrequently market-test our product designs before committing them to manufacture. For example, a maker of electric clocks recently ran a consumer test of several alternative designs we had suggested for a new model in order to determine which one the public preferred. But this, again, was an application of the empirical rather than the theoretical method. A number of our clients also have their own pipelines to consumers, through sales and service people dealing directly with the public. They are in a much better position to sense for themselves what their customers want, and have no need to rely on conclusions tentatively reached by academic methods.

People who are working with products all the time, and who are in constant close contact with the public, necessarily have the practical approach. This is the approach we and our staff believe in and are forever striving for—both as a means of determining what people *want*, or think they want, and what people *need* as well.

Human engineering, involving constant time-and-motion studies with stop watch and measuring tape, constitutes one of the most important facets of our work. This sort of research indisputably pays off — especially in designing products like computers for the Air Force, where every split second and every fraction of an inch has an important bearing on how effective the machine will prove in the hands of a human operator.

When it comes to consumer products, however, the successful designer must be endowed with something more than a chronometer and a set of calipers. Just as the successful journalist needs a "nose for news," the designer needs the ability to sense a coming trend.

More than a year ago, for example, we sensed the fact that the public would welcome a thinner type of television view. The idea made sense; first, because such a product would take up less floor space in compact modern living quarters; secondly, because it would harmonize better with other contemporary furniture, like bookshelves; and third and most important, because it would satisfy the public's craving for a new and different look in TV sets, while at the same time appealing to the public's sense of fitness, logic and good taste. The result was the Sylvania Silhouette receiver. Immediate acceptance of the new model by consumers the country over serves to confirm our feeling that the best sort of market research for designers is the do-it-yourself type, provided it's guided by sound instinct and channeled by experience.

Thank you for this opportunity of sharing with other industrial designers our thoughts on what is admittedly one of the most important questions confronting the profession.

Michael Zadro, Instructor
Pratt Institute
Brooklyn, New York

The term Industrial Designer presupposes first and fundamentally the existence of an artistic personality. Because of art and artists the world becomes more meaningful and accessible. Art is an essential function of the human being. Without it civilization would be a spiritual wasteland.

M/R when viewed in the light of these factors can be another useful element in the hands of designers. Its danger lies in its magnetic appeal to superficial individuals in providing concepts based on formulas and rigid sets of references. The function of the designer thereby becomes reduced to that of an interpreter of statistical data, losing sight of the importance of his intuitive self in searching for significant and contemporary art forms.

Designing down to static consumer response based on M/R data, which is often conflicting with similar data based on other types of research, is unworthy of an individual's creative effort in contributing to a culture. Often, if not always, the M/R pusher is completely neutral in regard to what his findings are supposed to sell. His appeal is not to the intellect but to the senses on their most primitive level. Contemporary advertising will testify to this fact only too well. Actually providing some benefit for the American public or simply deceiving it is not his concern; he just wants to increase sales.

Many designers unfortunately operate in a similar manner. Once the idealistic motive and personal responses and beliefs are relegated to a back seat position the designer's art will be all the poorer.

William Capitman, President
The Center for Research
in Marketing, Inc.
New York, New York

Eye movement testing has been sold to the American businessman as a cheap and easy way of measuring the effectiveness of a package. It is certainly cheap, but it is equally meaningless. It tells absolutely nothing about the marketing effectiveness of the package. In testing a package we are really not interested in the movements of the eye muscles. We are concerned with the ability of the package to communicate, the speed of communication, and the order in which its elements are communicated, as compared with its competition. Eye movement testing tells us none of these things. It is time that packagers, agencies and designers looked at the facts a little more closely instead of accepting meaningless measures which appear to be scientific, but in fact are without practical significance.

Malcolm Banes, Exec. V. Pres.
Alan Berni & Associates, Inc.
New York, New York

The concept of motivational research in package design is over-emphasized, over-exploited and largely immeasurable. The only true measurement of a package design's effectiveness is performance at the consumer level, which is measurable in actual sales and volume.

Competent package designers attempt to produce a package that is designed for the consumer and that the consumer will buy. The modern package designer does not seek the plaudits of the researchers of color and mood and repressed psychological urges.

The concept of color psychology is at least sixty years old and good designers are aware of its importance. But its current blatant over-emphasis is essentially distorted. We need such research, of course, but old-fashioned marketing know-how, easily and accurately tested by dollars and cents sales, is a far more realistic tool for moving the product.

David Mayer, President
Market Psychology, Inc.
New York, New York

Twenty-five years ago market research had to fight hard to gain acceptance as a productive tool for finding out who, where, whether and when people did what. Since World War II, and especially since the end of the pent-up post-war consumer demand, there has been tremendous pressure on the American economic scene for better predictive marketing methods—tools that would find out some of the *whys* of human behavior.

These new methods were drawn from the whole range of social and behavioral sciences — psychology, sociology, anthropology, psychiatry and psychoanalysis — and applied to practical social, economic and marketing problems according to statistical and scientific method. The familiar name for this combination of methods is *motivation research*, or M/R.

In the last few years motivation research — when properly conducted — has gained acceptance as an extremely valuable set of tools in our American consumer economy. The artificial schisms between quantitative and qualitative market research are disappearing, and we have in their place the functional concept of the use of the best combination of methods to solve our marketing problems in the most efficient way.

In his speech to the Economic Mobilization Conference in New York in May, 1958, President Eisenhower said: "One of the hopeful developments of recent years is that new knowledge is rapidly being accumulated about the aspirations and wants and motivations of our people. Many businesses are extending their research activities further into these fields in order better to find out what people want, and how products can better be adapted to their customers' needs. Thus business can serve us all the better. These vital activities should be intensified."

How did M/R achieve its increasingly important position on the American marketing scene? Most emphatically it has not been simply because of the publicity and public relations of certain practitioners of motivation research nor has it been an artificial boom.

The main reason for its appearance springs from the powerful needs of the economy itself. With the removal of wartime restrictions and the passing of the post-war boom, there was a fast-growing need for enormously improved methods of understanding the distributive and consumer parts of the economy.

In a real sense, the present recession is partly due to our inability to understand rapidly enough our distribution economy in general, and consumer and market psychology in particular.

What has happened has been that the laws of supply and demand, insofar as they operate, have been turned the other way around. Supply used to be the senior member of the two-way partnership; in the last 10 years demand

has emerged clearly as the senior partner.

In terms of our economy, this means that the simple time sequence of production, distribution and consumption has been reversed. Now, in the functional rather than the time sequence, consumption is actually the first and most important consideration, and production the last step in the process.

The old process of production leading to distribution leading to consumption was suited to the relatively easy-going Victorian era, when this country had new populations steadily entering from Europe and frontiers extending ever westward. It was easy to assume that if you produced a fairly good product, and packaged it perfunctorily, with the course of time distribution would naturally follow and consumption with it.

In point of fact we have reached our geographical frontiers, and in many ways are beginning to reach some psychological and other frontiers. We can no longer over-optimistically think the future is completely unlimited, and our thinking has got to be in terms of the economic realities today rather than Pollyannish possibilities of tomorrow.

Today, no realistic company tools up, hires a couple of salesmen and hopes for the proper reactions from the consumer. The process begins by first understanding the consumer, his needs, his motives, and if possible predicting his future wants and desires. Research, and especially qualitative or psychological research, is superbly fitted to understand this complex marketing situation.

Any man or any company choosing to ignore the new functional sequence of consumption-distribution-production is simply not going to succeed in today's competitive markets. This is the hard logic of our economic system today, and it will be even more so tomorrow.

The whole range of distribution services is benefiting from the application of qualitative research—testing the product even before it is conceived, measuring possible reactions to it as it reaches its final form, testing its package and the relations of the package to the product, pre-testing advertising, promotion, public relations, and point-of-purchase. The process is a full circle because production and packaging are oriented toward the consumer, and it is only in the minds of the consumer that the need for a presumptive and theoretical product can be established.

The consumer, as we all know now, is King.

The result is the new "total marketing concept" which places distribution on a policy level in a company at least equal to production (as outlined in MPI's "Map of M/R Uses", available to anyone requesting it). The new director of marketing has got to be a man who sees the functional relationship between all these processes. The man who does, and he is more likely to be the younger executive than the older one, holds the key position in his company.

The inner pressures of our highly technological economic system have been responsible both for the development of the total marketing concept and the development of qualitative methods to help understand the situation.

Another way this can be seen is in the large and growing number of marketing directors who are research-minded. A management consulting firm recently tabulated the sources of Directors of Marketing and found that most, as would be expected, came from the fields of sales and advertising. But an increasing number were coming up from research positions. Frank Stanton of CBS and Marion Harper of McCann-Erickson are familiar examples of research people at top levels.

Where the new functional heads of marketing will come from in the future will likely continue to be sales and advertising. The important fact, regardless of where they come from, is that all will be increasingly research-minded.

Not using research as an odd-ball specialty or a one-shot application, but using it functionally and continuously as a powerful, integral method is at the heart of a coordinated marketing strategy.

After ID's report on M/R was published, an article by Dr. S. I. Hayakawa, well-known semanticist and author of "Language in Action", appeared in the Spring issue of Etc., A Review of General Semantics. *Because of the pertinence of some of his remarks, ID presents here an excerpt from the article.**

". . . But what motivation researchers, many of whom call themselves Freudians, do not bother to investigate since it is too obvious, is rationality—or what Freud calls the reality principle . . . Motivation researchers seem not to know the difference between the sane and the unsane. Having learned through their "depth" techniques that we all have our irrationalities (no great discovery at this date), they fatuously conclude that we are equally governed by those irrationalities at all *levels of consumer expenditure—although it doesn't take a social science genius to point out that the more expensive an object is, the more its purchase compels the recognition of reality. The fact that irrationalities may drive people from Pall Mall cigarettes to Marlboro or vice versa proves nothing about what the average person is likely to do in selecting the most expensive object (other than a house) that he ever buys. [That is, a car.] . . .*

. . Now that American auto-makers, with hundreds of thousands of unsold cars on their hands, are in such deep trouble, you would think that they would turn away in disgust from the voodoo men who gave them such a bum steer. But they are slow to learn. Consumer Reports (April, 1958) quotes as follows from The Wall Street Journal: "Ford Motor has called on the Institute for Motivational Research to find out why Americans buy foreign economy cars."

Although the answer is right there in the question, I am sure that the Institute for Motivational Research is not so stupid as to point out this fact to the Ford Motor Company. I foresee, therefore, years of prosperity ahead for the Institute for Motivational Research, Inc. . . ."

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* Reprinted by permission of *Etc., A Review of General Semantics*

By way of replying to the two articles on M/R, Walter Landor & Associates transcribed a discussion that took place in their San Francisco office. The participants in the dialogue are, on the designer's side, Miss Lillian Sader, Messrs. Walter Landor, Don Short, Rodney McKnew and David Bowman. Dr. Herbert Kay, who leads off the discussion, is a research consultant.

Kay: How do you, as creative designers, feel about research? What might it do for you that it now does not?

Sader: Well, one feeling I have is that people cannot react properly to new things. They often react more favorably to things they are familiar with. If a design or certain elements in it are traditional or otherwise familiar, their reaction is "Here's an old friend."

Landor: What we need is a method of predicting how people would react after they have been exposed to the new packages for awhile.

Kay: I agree with that. But getting back to a different problem — I wonder whether it's true that a new design will usually be less acceptable to people than the old one. I do know of a few research studies which indicated that a new design was more successful on the shelf than the old one from the moment it appeared.

Sader: I would suspect, in those cases, that the design was *different* from the old one but probably not really *a new concept.* A package, for instance, can be different and still embody conventional, familiar symbols and colors.

Landor: Research people often overlook this matter, perhaps because they lack the designer's perspective. I feel we're on the right track toward

overcoming that problem because our research activities, particularly recently, involve close cooperation between research-minded designers and design-minded researchers.

Short: The great problem is overcoming familiarity. If people could take packages home and use the product, we might get a better measurement some way as to how the package would "wear."

Kay: This has been done, and probably could be done on a more extensive scale. Packages have been left in homes before, and reactions to them obtained both before and after the products were used. Of course, this can be a costly procedure, particularly when several different prototype designs must be reproduced in quantity. One problem with trying to predict reactions to the package six months from now is that other factors besides the design are involved. Advertising, distribution, and merchandising policies will affect the degree of familiarity a package will have — as much, maybe more than the design itself. As designers, aren't you interested just in evaluating the power of the new design itself as compared with the old design and present competition? Or are you trying to predict the net effectiveness after the designers, advertising agency, and distribution people finish with it?

Landor: We cannot control advertising and distribution policies, of course. But we always determine not only how a new design looks on the store shelf, but how it comes through in printed media and on TV screens.

Kay: I agree that you should feel responsible for trying to predict what will happen six months from now. If you produce a package which is vastly superior to the old one you have satisfied your obligation to the client.

Short: I think we should try to anticipate trends as much as we are able. If we fail to prognosticate people's reactions six months hence, we run into a real danger. We produce a design which we think is terrific but it doesn't get a good immediate reaction in the stores.

Kay: You want some method, when you produce a new design, to assure the client that sales will go up?

Short: Some indication that new approaches will be acceptable and will stimulate sales.

McKnew: I think people are subconsciously aware of being tested and don't always give their true reaction.

Kay: There are a lot of problems connected with disguised tests. For one thing, you have to convince the client that there is a good reason for avoiding a which-do-you-like-better approach. He has to feel that a more elaborate, more costly test is worth it.

Short: We can't test people about their desires or needs for things which they don't know exist. I mean that if the consumer hasn't seen a new kind of design, he can't very well tell you how he would react to it.

McKnew: You certainly can't count on a consumer to create designs for you.

Kay: I agree. Even though the research should point to new directions, particularly in the background stages, its primary purpose is to test what designers have already created rather than to draw up a blueprint for designers to work from.

McKnew: At times, I do sense a certain inhibition from research. In working on a design the safe thing is the one that is going to work. Maybe some off-beat thing might work a little better. But if the research techniques are not geared to evaluating off-beat approaches, it's a calculated risk. When this is the case, I think that creative people may tend to stick more to the tried and true, and feel more inhibited than usual about trying something they otherwise would fool around with.

Kay: I should think that research would save you time.

McKnew: It does. Usually, that is. My point is that we don't always have available a method that can evaluate an off-beat approach in the proper way. People don't react to a really new, off-beat design when they first see it in the same way as when it's been around for awhile and has become familiar.

Kay: Dave, do you feel you are inhibited in any way by research?

Bowman: I think it has been helpful as far as getting me started initially and getting directed in the right channel.

Sader: Personally, I don't find that consumer research by itself is very helpful. The consumer research itself is just one possible source of ideas. If I made it the only source, it would stifle my creative thinking to some extent.

Short: When we have to advise a client which final design we feel will best fit his needs, we use judgment combined with research to arrive at our conclusions. We think this is necessary to the extent that the research fails to answer all of the important questions which we ask.

Bowman: Occasionally, research provides information that could inhibit a designer. I seem to recall one research report that stressed a certain basic color. I think this might discourage a designer from trying other colors. By limiting himself to a certain color, a good design approach might not occur to him that would if he tried other color schemes.

Short: I remember that study. The identical product was put into cans of different colors. Consumers tasted the product and chose the one out of the red can.

Kay: Well, we're back to the old bugaboo of testing individual elements out of context. I think we'd agree that it's not cricket to test colors or other design elements apart from the designs in which they might appear. But one reason why inadequate research of this kind still flourishes is that some clients are unwilling to appropriate a large enough budget to do an enlightened research job.

I'd like to sum up this discussion from a research man's viewpoint. Research has failed to answer one of the designer's most important questions: how a design will stand up after it's been on the market for a while. Researchers must develop methods that will enable them to see into the future and predict how the consumer will react after he's become familiar with a really new design concept. On the other hand, it's unrealistic to expect the researcher to predict sales-curves solely on the basis of reactions to the package. We know that package designs have a direct effect on sales. But other things, too—advertising, pricing policies, merchandising strategy, and so on—are important factors which the designer cannot control. As for possible inhibitions of the creative mind, I think that a research report should never make a designer feel uneasy about trying a new approach which was not covered by the research. But when you have a well-conceived and well-executed research study, and when the research provides a direct, unambiguous answer to a question, a designer should take his cues from the research findings *even if they contradict his own subjective feelings.* After all, that's what the research is for.

Landor: To sum up the designer's point of view, we feel that consumer research is an invaluable aid to the industrial designer. A truly creative designer need never fear that research would handicap his creativity.

We find it valuable not only at the beginning to provide additional background information, and certainly at the end to help select the final choice amongst alternative designs, but have found it extremely helpful in the *middle* of the project as well. "Midway" research enables us to concentrate the remaining budget most efficiently on those design alternatives which give the greatest promise of success. "Midway" recearch more than any other kind of research stands or falls, however, on the closeness of collaboration between designer and researcher.

Obviously, research has not been able to answer all the questions which we as designers typically ask on a design project. We have taken it upon ourselves to spark the development of new, valid testing techniques for the mutual benefit of the research and design professions.

As you know, we are making headway in our continuing program of underwriting experimentation with new design-testing methods. We're going to share the results with all interested parties.

Photo: Lee Bolton; Display: Ward Bennett

DESIGN REVIEW

International Automobile Show

To visitors at the International Automobile Show in April, it may have seemed that a recession is in the eye of the beholder; for what one beheld at New York's Coliseum was nothing less than an ebullient sellers' market. No one was admonished to "buy now," but by the end of the week the show ran, dealers' pockets were stuffed with $25 million worth of orders.

Needless to say, imported economy cars were largely responsible for triggering the current boom, and are reaping most of its benefits. The reasons are by now commonplace: in contrast to the Detroit breed, they represent economy of price, size and fuel—and, perhaps, "conspicuous economy" as well. In terms of design, however, the show pointed up two matters intimately related to the boom. One is the increasing Americanization of foreign cars—notably among the British makes. Obviously in an attempt to appeal to what has been so widely promulgated as "American taste," these cars find themselves in the extraordinary position of taking on, quite literally, the coloring of the very cars with which they are competing. If, however, tail fins on diminutive bodies represented one extreme, European cars at the show exhibited a range of styling concepts between this and more distinctively European bodies—some sleek, some unabashedly "funny-looking," the rest in the undistributed middle. At the same time, it was interesting and instructive to observe the ways in which European designers tackle the problems of adding comforts and conveniences within the stringent limits of the economy car.

Granddaddy of them all, the People's Car, designed in 1930, *is perhaps the best-loved economy car in the world. Americans bought* 18,592 *VW's from January to March.*

Foreign cars race for U. S. market

PEUGEOT

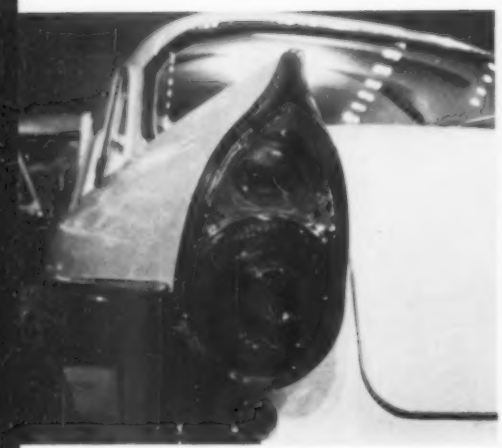
As its restrained good looks suggest, the Peugeot is a *solid* car. Its chrome-work refined almost—but not quite—to the point of obscurity, Peugeot exhibits some thoughtful details. One such is the hubcap (a) whose bolt, more than an adornment of a calculatedly simple surface, actually connects the cap to the axle, making for safety and easier tire changing. Similarly, part of the neat tail light assembly (b) flaps up to give access to gas tank—eliminating arbitrary protrusions *and* the problem of lost caps. Inside, Peugeot features a thickly carpeted floor, well-upholstered seats covered in grained plastic, a padded dash. Trunk (c) shows spare tire arrangement common to other European cars; but size of compartment (20 cu. ft.) is unusual. Sun-roof is standard on Peugeot; car is 168″ long, and its famous engine delivers about 30 miles to the gallon. Is it an economy car? Price is $2,175 (P.O.E.).

The other two cars shown here are, like Peugeot, typically European—as much in their rather special engines as in their distinctive bodies. DKW—*das kleine Wunder*—has a two-stroke, 3-cylinder engine with just seven moving parts. Shown is the Auto Union 1000, which, at $2,495, tops a line (with similar, 166″ long bodies) that starts at $1,995. Dash exhibits an assortment of unmarked knobs and levers; steering wheel, though flattened at the base, may still rest in driver's lap.

The Maico, also German-made and using a similar engine, presents an interesting contrast in body shape. Rear engine poses the problem of treatment of front hood: Maico's solution, a pair of chrome tridents branching from parking lights, (and *not* meeting in the middle) alludes to grille without faking one.

MAICO

DKW



FORD TAUNUS

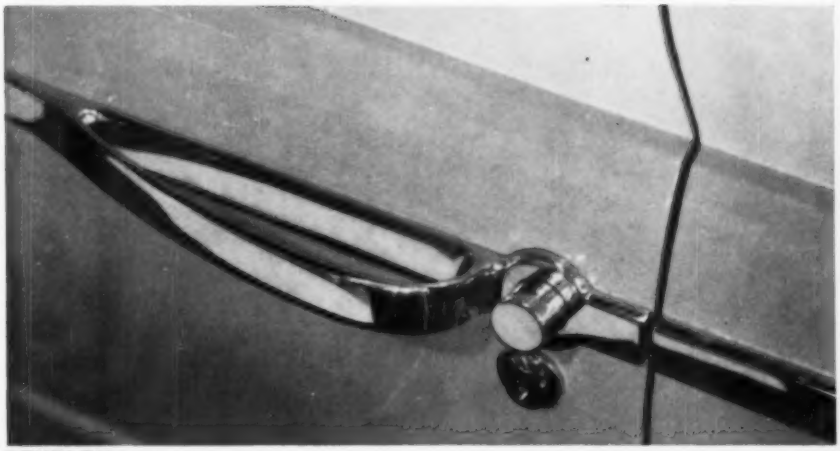
SUNBEAM RAPIER

Recently General Motors' president, Harlow Curtice, released a statement to the effect that GM had under study the question of producing a small car in the U.S. His statement also contained the reminder that GM has been producing small cars for years—in England, Australia, and Germany. If Detroit's giants do contemplate a small American car, GM's Vauxhall (the station wagon is glimpsed on page 78) and Ford's new German-made Taunus (top, above) may presage things to come.

The deluxe Taunus is a little over 172″ long (compared with the Fairlane's 207″), and sells for $2,162. Its styling suggests at least one thought worthy of consideration by European makers: when it comes to American styling, nobody can do it like we can! In terms of fuel economy, Taunus' 67 h.p. engine is claimed to give at least 35 miles to the gallon.

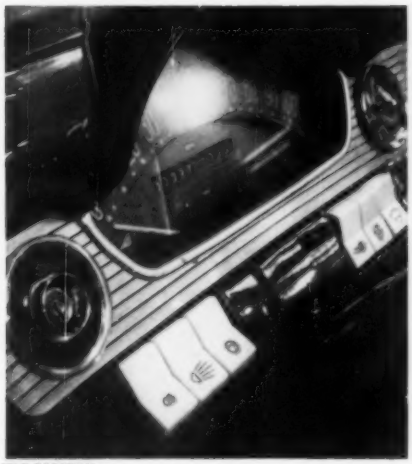
The Sunbeam Rapier, in a new model introduced at the Show, illustrates the way a basic and simple European body can be upstyled. The new Rapier, sportier-looking than earlier models, has a redesigned grille and bumper (returning, in fact, to the characteristic British upright grille) as well as a new color strip and flaring tail fin. However, on a car this size, such American styling touches do not really offend. Instrument panel is still the same orderly array of gages and well-placed knobs. In keeping with its jaunty looks, the Sunbeam now boasts a new 73 h.p. Rallymaster engine with a road speed of over 90 m.p.h. To be sure, at $2,649 (sedan is priced at $2,499), this is hardly an economy car —unless the term is confined to size (162″) and fuel economy (about 30 m.p.g.).

the quality detail

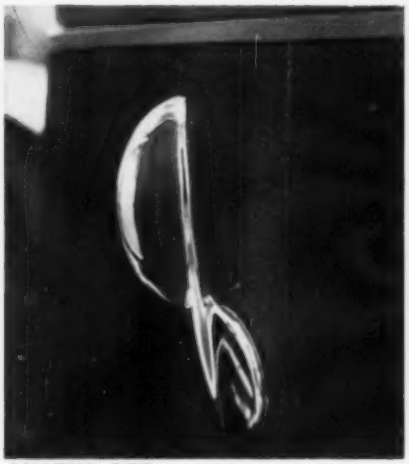


BENTLEY

MG "A"



TAUNUS



AUSTIN A55

AUSTIN A55

The quality of a designer's thinking may be revealed as much in his treatment of details as in total conceptions. The Bentley handle, for instance, in its unselfconscious formalism, seems to express the unhurried elegance of the entire car. The handle of the MG "A"—which *may* have been designed for speedy entry into the car—certainly provides the kind of filip aficionados love. It also provides a minimum of interference with the thrusting bullet-shape of the body. Taunus' dash shows a bold approach to instrument panel design, with toggle switches (borrowed from aircraft) defined by lively graphic symbols. The window pull and parking light of the Austin A55 demonstrate that sensitive details needn't be confined to expensive cars. But a glance at the Austin (page 77) may suggest that conflicting ideas were at work here.

creature comforts

HILLMAN

SAAB

Economy cars, to compete successfully not only in America but also in other foreign markets and in their home countries, are constantly faced with the challenge of adding to their initial price appeal by building in "extras." Hillman, for instance, has managed to offer an air conditioned sedan for under $2,000. The car, introduced at the Lime Rock, Conn., trials early in May, is the $1,699 Hillman Special sedan, which in turn is a somewhat stripped-down version of the 162″ long, four-door Minx. (This body, incidentally, also resembles that of the Sunbeam shown on page 74.) Economies were made in some obvious ways—one-color schemes instead of two, less chrome, plainer interiors; and some less obvious ones, which have the effect of producing a sport-car quality—bucket seats in front, gear shift on the floor instead of on the steering column. Cuts show vent for air conditioner, which fits into trunk of car, on rear window ledge; controls are below instruments on dash. Cost of unit is $275, and Rootes plans to offer it with its more expensive Hillman deluxe and Sunbeam.

Sweden's Saab, like the Triumph shown opposite, is a versatile, multi-use car. Rear seat and back are removable, so that car can be used as a utility wagon. (Even right front seat comes out to make room for extra-long cargo.) But seats, as photograph shows, can also be rearranged to produce a bed—said to avoid the unevenness often found in such arrangements. Saab's engine, like that of DKW, is a front-drive, two-stroke type; the body (13′ 2″ long) shown here is also used on Saab's new Grantourismo 750 sports sedan. Regular sedan sells for under $2,000, the sports model for over $2,500.

storage economies

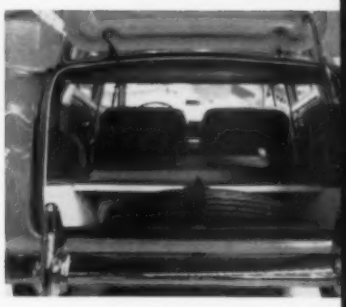
Next to the VW, Renault's Dauphine has proved to be the best-selling foreign car on the market. The reasons are not hard to find: selling at $1645, this little (155" long) car is possessed of a certain elegance, even dash (in marked contrast to its stubby sister, the famous Renault 4CV), and is well-known for its performance: it will do over 70 miles per hour, and give at least 40 miles to the gallon. With the engine at the rear, the front hood (designed to look tapered, although it isn't) lifts up to reveal a surprisingly roomy luggage compartment (7 cu. ft.) How do they do it? By storing the spare tire (see cut) under the car, just behind the panel where the license plate is mounted. Panel drops down to give access to tire and, as it can be released only from inside car, insures against theft. (It is interesting to note that this year Dauphine offers a range of optionals, including a flaring, chrome-bound color strip and an elaborate chrome grille.)

RENAULT DAUPHINE

The colorful plumage of the new Austin A55 boldly declares its purpose: to attract American dollars. Under it all, however, beats a staunch British heart, evidenced as much by its simple one-tone interior (using leather-look vinyl-coated fabric) as by its famous engine and performance (top speed is around 85, gas consumption better than 30 m.p.g.) Detail shows Austin's ingenious spare tire assembly which, located under car like the Dauphine's, frees 14½ cu. ft. of space in luggage compartment for storage. Trunk has shelf for tools, clips for jack and related gear. Austin's price: $2214.

AUSTIN A55

Half-sedan, half station-wagon, the new Triumph borrows a familiar station wagon device to gain more storage space (see cut). Back seats flop forward to create a 30 cubic foot carrying area, unencumbered by spare tire, which lodges in its own compartment below. Every way an economy car, the Triumph is a mere 144" long, gives 40 m.p.g. at its 65 m.p.h. cruising speed, and costs $1699. The concessions it has made to "glamor"—two-toning, the rather tudor-esque arch over the frail grille, clusters of tail lights—represent money which might better have been spent on the decidedly austere interior. An open storage compartment runs under the dash; instruments are grouped in the speedometer face.



TRIUMPH

the versatile station wagon

Indicative of the fact that American buyers are taking European cars seriously was the large number of station wagons included in the Auto Show. British wagons cropped up again at Lime Rock, where they were photographed to illustrate diverse approaches to a basic problem: the rear opening. Hillman Husky (1) eliminates the handle, provides instead a push-button alongside the door, in thoughtful anticipation of grocery-laden arms. At $1699 one of the cheapest of station wagons, the Husky offers 41½ cu. ft. of storage space when rear seats are folded down. Hillman's more elaborate and more expensive ($2299) four-door wagon (2) has a two-part tail-gate: gate drops down, top lifts up to clear roof for easy loading of bulky cargoes. Its capacity (again, with rear seats folded) is 66 cu. ft. GM's Vauxhall (3) offers 45 cu. ft. of storage space—but since this includes spare tire which leans against side wall, much of the benefit is lost. Price is about $2194. Triumph's four-door wagon (4) has a wide, side-opening rear door, allows for 38 cu. ft. of carrying space; price is $1899. Wagon has same under-floor tire storage as sedan. Morris 1000 (5), nostalgically retaining the wood panels of the old workhorse wagons, has double doors which open out like those of a delivery van. Total cargo space is 40 cu. ft. Price is about $1912.

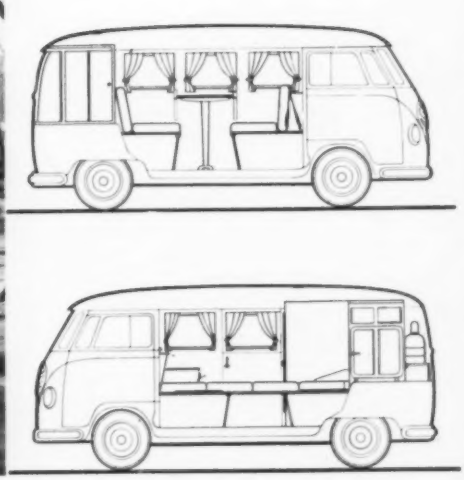
HILLMAN


HILLMAN

VAUXHALL

TRIUMPH


MORRIS



VOLKSWAGEN KOMBI

As some of the cars shown up to now indicate, thrifty Europeans often demand more of their vehicles than mere transportation. The multiple-use truck-bus-station wagons shown here demonstrate the versatility European designers can build into relatively small bodies —even to the extent of making the line between commercial and family use a flexible one. The German Matador, in its kombi model, is a 172" long vehicle which may be fitted with 3, 6, 9 or 12 seats, with the amount of carrying space varying accordingly. Shown at left, below, is the 12-seater, whose rear seats can be removed simply by twirling the wing nuts, to gain 42 sq. ft. of storage space. Price for this one is $2575; like others in the line, it has a 52 h.p. Austin engine.

Volkswagen has come up with a gay new use for its 165" long kombi (basically, a windowed van which, like the Tempo, has lift-out seats). Now it has become a trailer, specially fitted for camping—right down to a striped cabana-like tent which fastens on to the car. Interior fittings include seats and a table which combine into a double bed; full-length wardrobes, cupboards, a propane gas cooker and even a refrigerator. Interior finish is heat-resistant plywood. Price for all this (save the refrigerator, which is $100 extra) is $2737. But user must, by some state laws, provide cylinder for gas cooker. The Fiat Multipla, just 140¾" long, echoes the shape of the familiar Fiat 600 in a 4-5 passenger station wagon. (See ID, June '57). Rear seats, with metal backs, fold flat into floor to provide real station wagon carrying space —19 sq. ft. Seats can also convert into a bed that sleeps two adults and a child. Price is $1683.

TEMPO MATADOR

FIAT MULTIPLA

Report on the

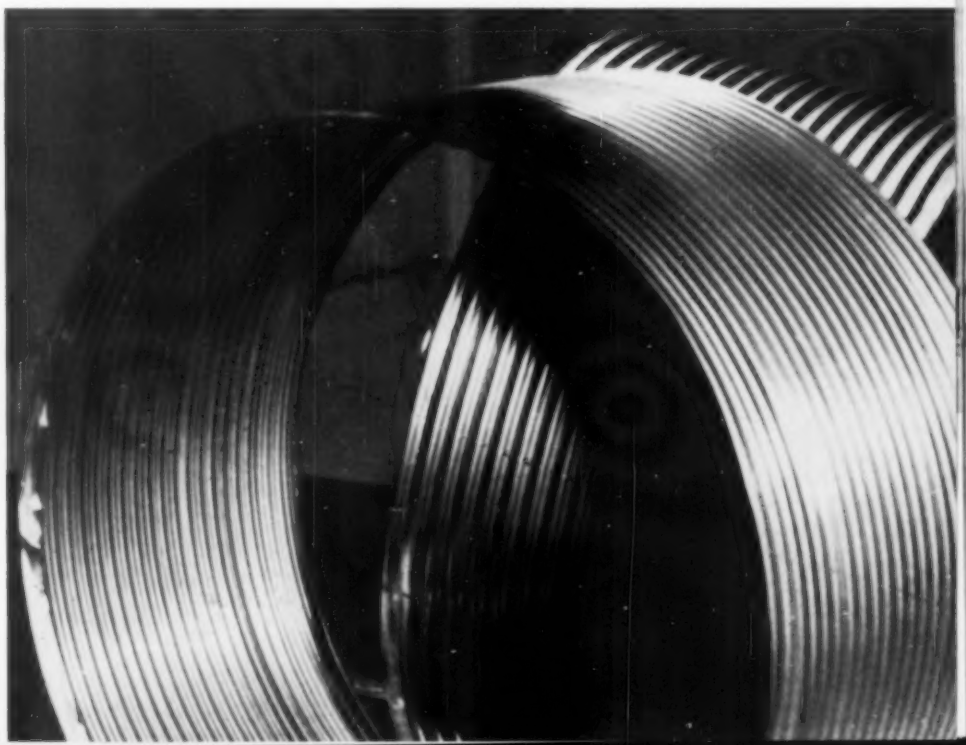
Third Annual Design Engineering Show

The Third Annual Design Engineering Show was the largest on record. It had more exhibitors and more visitors than the previous two. It even received attention on the N.B.C. radio program "Monitor" when commentator Alex Drier said a few words about the show and about the design engineer's function in industry, on the night before the opening at Chicago's Amphitheatre. But although there were some 12,000 individual products to be seen, a multitude of demonstration, and vast quantities of free literature handed out, something seemed to be lacking. Feeling that the missing element was an atmosphere of intimate exchange of ideas and information among exhibitors and visitors—the very thing that set the 1956 and 1957 Design Engineering Shows apart from many other expositions — in the hope of reaching a diagnosis, we checked our reactions with designers from Dave Chapman, Inc. who attended the show.

Dave Chapman said, "In common with many other trade exhibitions, the Design Engineering Show desperately needs a basic theme. This is a problem that the show management must face, and obviously requires the cooperation and understanding of the exhibitors for implementation. Participants in the show must ask 'what is the purpose of the show?' We do not feel that for all industries to display 'all the things we've got' is enough — this is one of the responsibilities and functions of the sales team. Our suggestion that the show be given a basic theme does not preclude display of all the things industry has to sell, but rather is a matter of a pointed emphasis on the *way those things are shown* and the *reason they are shown.*

"A basic theme — even as simple as 'what's new,' or 'year of change' — would provide every exhibitor a reference point for the design of his own exhibit and would also provide the visitor some reference point for establishing his own attitude toward what he is seeing. In trying to be all things to all people, the majority of our industrial

Steel foil, two-thirds the thickness of newspaper, is made by Ryan Aeronautical Co. for aircraft structures.



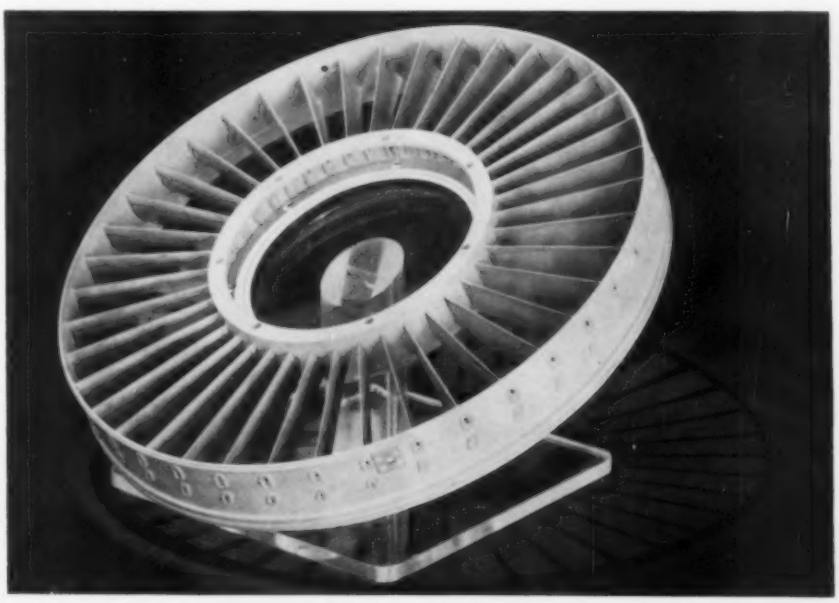
shows end up meaning very little to one group specifically or to the overall audience generally.

"The 1958 Design Engineering Show was not designed — it just grew. There was no visual control of visitor traffic or grouping of exhibits to help the visitor pick out the things to see that were important to him and give those of secondary value secondary attention. As designers, we are naturally eager to focus our attention on the consumer — in this case the show visitor. The industrial exhibition today too often puts heavy emphasis on what is being sold and not enough emphasis on service to the visitor. The design engineering exhibit should not become a materials and supplier parts depot."

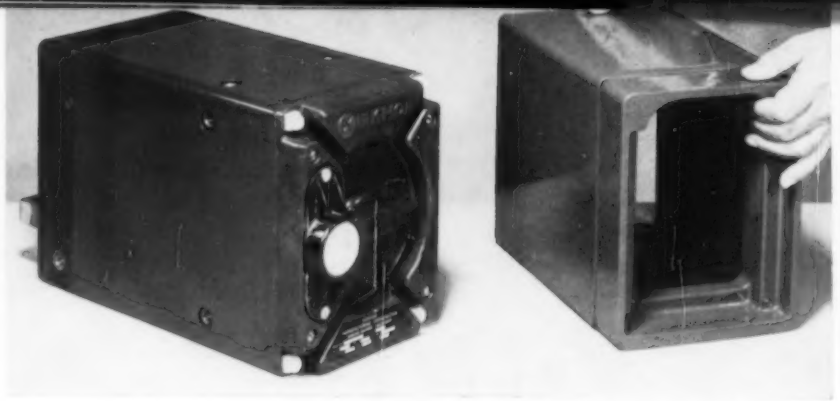
Speaking more generally, Kim Yamasaki, vice president and director of product design at Dave Chapman, Inc., said, "The Design Engineering Show is an extremely valuable exhibit for creative designers and engineers. When we suggest that it could have been more effective and even more successful, we remember that the show draws visitors from all ends of the country. They have a right to expect that the enthusiastic interest that lead them to the show in the first place will be rewarded by effective and stimulating display techniques and an overall show organization that will make their visit a pleasant and worthwhile experience."

Leather pattern on strip steel by Acme Steel can be used for interior trim in automobiles and as an inexpensive way to simulate other materials. This pattern is one of several stock designs in strip steel by Acme that are cold rolled with non-geometric patterns embossed into the steel.

Turboprop de-icer assembly has vanes that are mass-produced by investment casting by Haynes Stellite Co. The use of this method of manufacture made it possible to incorporate an air passage system within the blade itself, while the strength of a cast structure was maintained.



Miscellaneous iron powder parts show the versatility of sizes and shapes that can be obtained with powder metallurgy. Iron powder supplied by Republic Steel Corp.



Housing for resistance welding transformer has a housing clad with a cellulosic finish that is used to insulate the sheet metal enclosure. The cladding is known as Corvel and is produced by National Polymer Products, Inc.

Display techniques

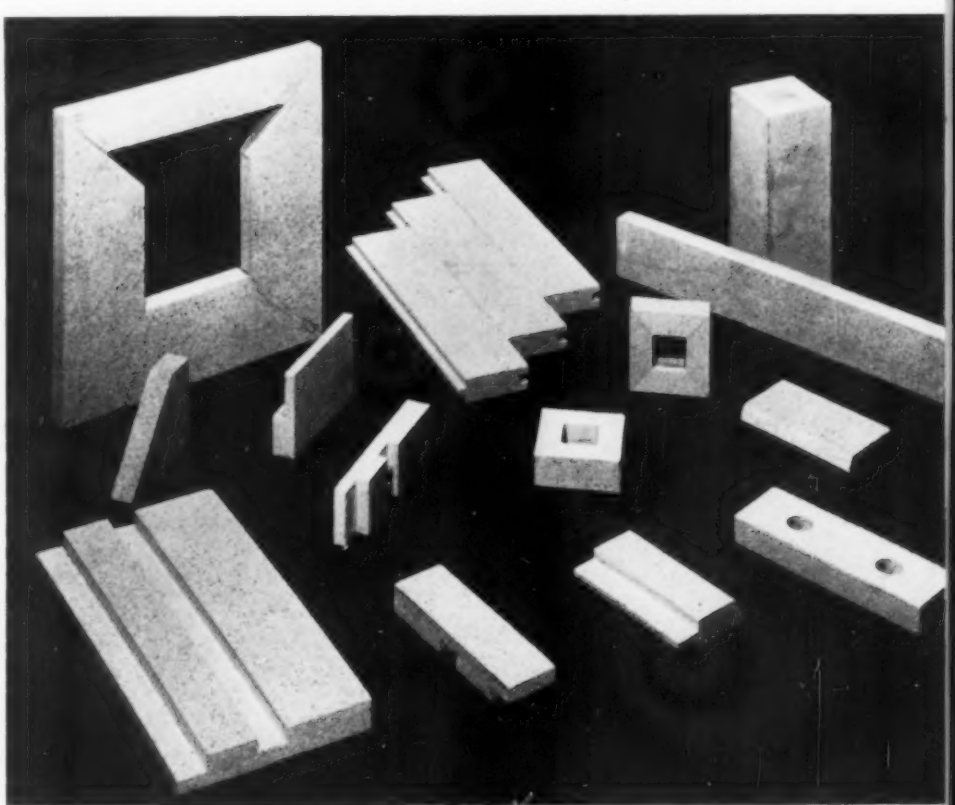
Regarding booths, Yamasaki said, "The general caliber of the displays, at the 1958 Design Engineering Show in Chicago was a cut above the average of industrial shows, and several show-management techniques were impressive. We refer particularly to the use of the automatic addressing service which supplied each visitor with a master addressing plate at the entrance to the show, allowing him to insert this plate in an addressing machine at each booth and automatically register with the exhibitor and enter his request for materials, information brochures, etc. It was unfortunate that there were not more such services planned to aid the show visitors."

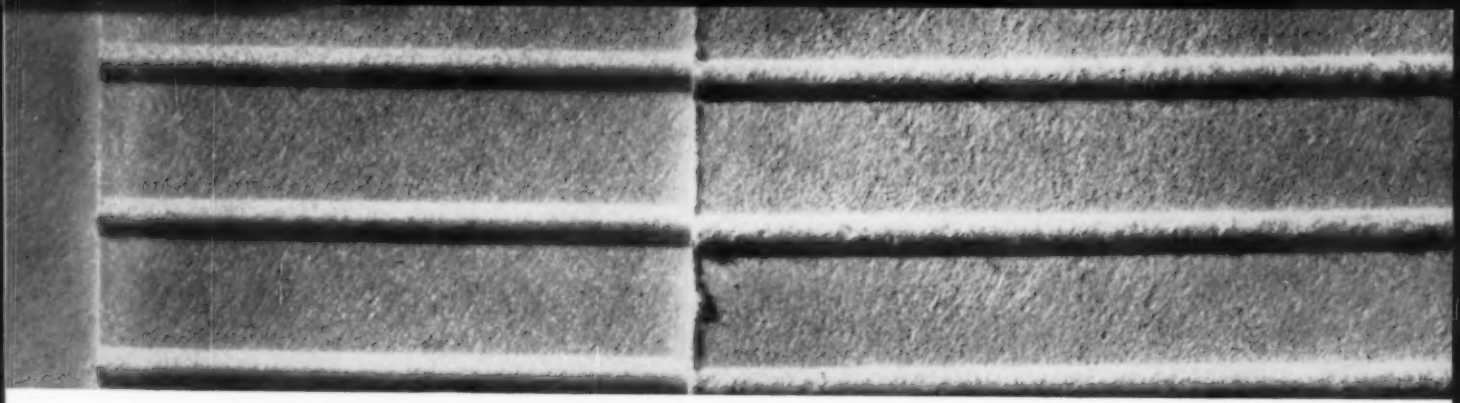
The above comments are not meant to imply, by any means, that the 1958 Design Engineering Show was a flop—it was a success. But they do raise the question "was it all that it might have been?" In three years, this exposition has become one of the nation's most important shows, and there is every indication that it will continue to grow.

Materials shine at show

For a cross-section of what was shown at the 1958 Design Engineering Show, a count of the number of exhibitors in different classifications that were represented is revealing. There were 113 makers of mechanical components represented, 71 in the power transmission equipment field, 109 electrical and electronic component producers, 59 metal manufacturers, 59 in non-metallic materials, 51 in adhesives and fasteners, 27 in finishes and coatings, 59 in shapes and forms, 68 in hydraulic and pneumatic components, and 38 engineering equipment services. Although there were equipment and component manufacturers, new materials, both metallic and non-metallic held the spotlight for innovation. The products on these pages are some of the more interesting examples of new developments in non-metallic materials.

New particle board by National Starch Products Inc. has dimensional stability, low thickness swell, smooth surface, and non-splintering edge. The refinement in particle size and uniformity of the new board makes for easy machining.

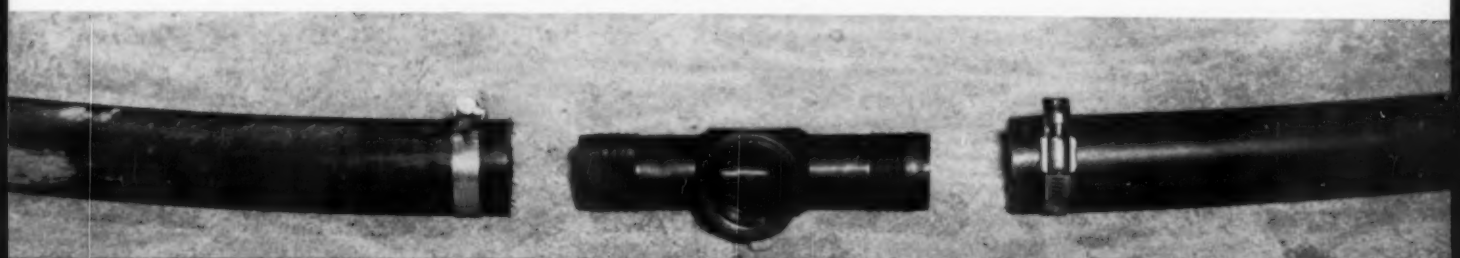




Heat-shaped fabrics made of Dynel acrylic fiber can now be used for clothing, furniture, and industrial parts. The new material can be produced in a rigid or semi-rigid form, depending on the weight of the material and the temperature and tension applied. Dynel is produced by Union Carbide Chemicals Company.

Large intricate shapes such as the grooved cylinder above can now be produced from Corning's new family of extremely low expansion ceramics. The materials are particularly suitable for use as furnace linings, crucibles, and applications where low thermal expansion is an advantage.

Increased use of plastic pipe is indicated by this example used for a sprinkler system and made of Republic Steel Corp.'s FE plastic pipe. A major advantage with plastic pipe is a reduction in installation time over conventional piping.



Panel members at the symposium were invited to speak as individuals, rather than as the official voices of the respective package design offices with which they were associated.

Package designers speak with accent on youth

PDC's third design symposium concerns itself with that sometimes forgotten man — the young designer

PANEL

Bernard S. Bresky
Design Associates

John DiGianni
Frank Gianninoto & Associates

Roy Madison
Package Design, Inc.

Robert G. Neubauer
Robert G. Neubauer, Inc.

Martin Prehn
Donald Deskey Associates

Walter Von Scheven
Raymond Loewy Associates

Walter J. Young
Jim Nash Associates

When the Package Designers Council and friends convened at Silvermine, Connecticut for its third design symposium a few weeks ago, there were a lot of new faces in the audience. This was no accident, for the meeting not only welcomed new faces, it was to some extent built around them. The symposium was dedicated to discussing professional problems with especial emphasis on the way they affect younger designers.

Like any young man preparing to enter any young profession, the neophyte designer needs to know how best to exploit his gifts. He needs inspirational advice, like Lester Beall's admonition "not just to look, but to *see*," and he needs concrete, if theoretical, advice like that given below by Roy Madison. He must know the facts of professional life—at least to the extent of realizing that there is no one set of them. He ought to know what various design offices expect of him, and what he may reasonably expect of them.

In listening to all the advice he can get, he will remember to consider the source. There are, after all, *types* of designers and the three questions any young designer might ask himself are: "What kind of designer do I want to be?" "*Can* I be that kind of designer?" and "How do I set about doing it?"

In line with this, and taking an attitude of "Ask the man who's been one," the PDC meeting featured a panel of seasoned package designers, each of whom spoke to a particular question. What they said was supplemented by both questions (inquisitive and rhetorical) and statements from the floor, and the sense of the meeting is in large measure recorded below.

Perhaps the most important aspect of the symposium was the plain fact of its existence. That such a meeting took place at all betokens a concern with new design talent that is commendable and too rare among professional organizations of all kinds. At a time when the package designer's role is both important and unclear, the designer at the threshold of a career needs information pertinent to a good crossing. More than that, he needs a sense of participation in the activities of his chosen profession.

The PDC does not intend to stop here, plans to sponsor a fall meeting on package design curricula and other educa-

Young designers like Anthony Nelson and Barbara Giddings participated in session.

tional issues. This will be followed by low-cost meetings throughout the year, aimed at attracting and meeting the needs of students and young working designers. And all of next year's PDC meetings will give some emphasis to the employee-designer.

In a moment of appraisal, Karl Fink, executive vice president of PDC and chairman of the meeting stated:

"PDC Silvermine '58 seemed to afford a good climate in which designers old, young, well known, and unsung could know each other and talk. I think we strengthen each other and perk creativity. Work in a variety of fields as compared to specialization will be discussed in future meetings—as will design misconceptions, and this should be helpful to the younger men.

"The young designer particularly needs to be aware of the designer's position as a contributor to culture as well as to industry. Together, perhaps more of us can find that culture and commerce are not diametrically opposed. In comparing notes we find that most of us make products better for people—we don't 'lead them around by the eye,' manipulate them visually—and this can be contagious among honest designers."

Mr. PREHN: The field of package design is extremely complex, for it is concerned with both marketing and merchandising, and the problems of today are a far cry from those of the cracker barrel era. Formerly packaging was done by an agency or within a family, but management today realizes the importance of package design done by specialists. There are approximately 300 independent design consultants in the field today, with anywhere from 1 to 35 persons employed in each organization.

A professional organization such as the PDC is an attempt on the part of the designers involved to set standards of practice, ethics, and training—and to create an awareness of the need for education which will provide talent. Schools unfortunately are not training talent for package design.

Mr. DiGIANNI: When talking to new talent we look for a fresh, original approach. We look for creative ability, for personality, for a person who will act as part of a team which will pull together. My own organization includes graduates of such schools as Pratt and Rhode Island, as well as three men who have only high school backgrounds. Schools in general are falling far short of the mark in facing problems of business. There should be more emphasis on merchandising and advertising, more familiarity with package material and processes of reproduction. Schools should cover more of these important areas, and Pratt is doing some work along these lines now.

Each assignment in our office is received in a meeting of the Executive Administrative team and the Design Director, and this is followed by a meeting with the design staff. There is no bull pen. The designer's contribution comes from within the organization.

What does our organization provide for the creative mind? A place where the worker can be happy. If this is satisfied, the other things follow. There are the added incentives of salary increases, profit sharing, benefits and insurance, of course. There is opportunity for all employees may speak their minds and discuss their problems freely.

Ethics? We all know the amount of personnel interchange among design offices, as well as the good friendships between designers. One may leave one organization and join another — but loyalty to an employer is essential, and one may not indulge in loose talk which might divulge confidential information.

Mr. YOUNG: The staff members of Jim Nash Associates have been with the organization an average of 7.4 years. Most of the staff comes from the larger schools—National Academy of Design, Pratt Institute, Brooklyn College, and Grand Central Art School. Most of them simply wandered into package design. We have no bull pen. Everyone contributes work on a design until the project is finished.

The size of an organization dictates to a large extent how you are going to handle a problem. Very often key designers do the contact work. However it is difficult to direct design and deal with the client too. An account executive in an advertising agency is the one who contacts the client and brings back his problems. He stays abreast of the client's day-to-day needs. What we are trying to do is to develop market-oriented designers, creative people who have worked in design, and who know how to contact the client and be able to discuss his problems with him. Growth in our organization depends largely on a man's personal bent. A designer ought to find out as early as possible whether he is board-oriented or word-oriented—he may be happier selling design than working at the board.

QUESTION FROM THE FLOOR: If one wanted a staff of 10, how many designers, contact men, secretaries should he have?

Mr. BRESKY: Three to four designers, three production people, two contact men, and two front-office secretaries.

Mr. MADISON: It depends on what kind of consulting office you have in mind. What would be true for one office would not necessarily hold for another.

Here are the costs of running a fictitious organization for one year. Let's say there are two partners—both creative, one outside salesman, a minimum amount of space, one secretary-bookkeeper-receptionist and referee. The studio staff would consist of one man for mechanicals and production, another for art and design.

The cost for the first year would be $56,200. This would involve team work for everyone concerned, which is necessary in any organization, large or small. It breaks down this way.


John DiGianni


Walter Von Scheven


Walter J. Young


Martin Prehn


Karl Fink

Annual rent: 1500 sq. ft. @ $3.50 per sq. ft.	$5,250
Salaries: 2 partners @ $150 per wk.	15,600
1 salesman @ $100 per wk.	5,200
1 secy. @ $90 per wk.	4,420
2 designers, 1 @ $150, 1 @ $100	7,800 5,200
	43,870
Furniture	5,000
Accountant @ $50 per month	600
Miscellaneous—2 air conditioners @ $250 each, telephone @ $50 per month, electricity $25 month, insurance, publicity @ $50 month, advertising, phone books @ $50 month, stationery — $250, travel and entertainment $300 month	12,350
TOTAL	$56,220

Mr. NEUBAUER: In 1935 when I started a home studio, I was designing, selling, billing, and so forth, becoming more of a businessman and less of a designer. So I hired a man who could do lettering and black and white, as well as an accountant because I didn't want to learn how to keep books. I discovered that the client was buying thinking rather than lettering.

In Connecticut we can't call in free lancers as easily as you can in New York. My studio now has a staff of nine. Three are black and white men and three more can do black and whites. I myself was born on the board and hope to stay on it.

Mr. VON SCHEVEN: Methods differ in various establishments. Even within one organization you cannot be rigid about your methods, for the type of project determines how to set up the work. After agreeing on a design, we turn it over to the comp man and later to a black and white man, thus freeing the designer for the next design job. Sometimes it is necessary to take the designer off one project completely and let it be completed by others of the staff, but if a special style is required, a personal one, the designer has to be kept on the job.

Mr. YOUNG: When a man comes up with the whole concept of a design, the entire job should be given to him for follow-through.

QUESTION FROM THE FLOOR: What do you say when a client asks you, "How can I be sure that this design is the *right* one?"

Mr. FINK. You might have a Plans Board or group of executives or others of the organization who sit down and start separating and making decisions as to what recommendations to give the client.

QUESTION: But what is the recommendation based on?

Mr. NEUBAUER: Lester Beall once used the phrase, "Intuitive rightness." The client has screened his designers before making a decision, and has faith in the intuition of the man he has chosen. Research, of course, does a reassuring job. Research today would seem to be a tool of selling. But the designer should let research overpower his belief in intuitive rightness.

Mr. FINK: How much information should each man on the job have to design a package most effectively?

Mr. PREHN: As much background as possible. From a human relations standpoint it makes him feel he is participating. And the designer will proceed with confidence when he feels he has all available information.

Mr. FINK: Miss Josephine Von Miklos recently did an important job for General Foods, a large corporation which usually works with design offices rather than individual designers. They called in three designers, gave them the identical assignment and commissioned them to prepare an initial presentation. Can you tell us something about it?

Miss VON MIKLOS: The sky was the limit. A new man at General Foods wanted to try something different for the Gourmet line. The foods in this line came from all over the world, so the most natural symbol seemed to be a compass. I held out for black and white because I felt it would stand out in today's market. Actually several packages did come out in black and white during the time we were working on the job. My secret method was to put in a lot of hard work.

Mr. FINK: Designers seem to have mixed feelings about being part of a three-designer assignment. I recently asked a General Foods executive: "If it were necessary to choose one designer from the start, would you have called Miss Von Miklos?" He replied that he probably would have called a person who had done more food designs.

Miss VON MIKLOS: General Foods was very fair with the designers. We were not shown each other's work. One could only do his best—and pray.

Mr.BRESKY: A design career is a way of life. It does not start at 9 and end at 5. One must be aware of design in all the things about him.

The transition period for a young designer—the period when one turns from a student to a professional—is difficult. He has to learn to work as a team member, yet still be a creative individual. He must be able early in his professional life to honestly evaluate his own ability, to acknowledge his limitations, and to develop satisfactorily into a working part of the organization. He must learn to give and take direction. He must acquaint himself with the methods of the organization and conduct himself in the framework of its policies. He must have a professional and mature attitude towards his work. Progress in design is a long, steady process of working, learning and improving.

Mr. FINK: This field is young and still growing. Industry more and more looks to specialists for answers. As more and more good design is needed, design firms will become more and more selective of personable young designers to complement their creative staffs. Design schools do not now offer the type of training needed for package design. They need the study of humanities to make young designers aware of things all around them.

I would like a word from Dick Rogers, PDC scholarship winner who studied under several New York designers dur-

Robert G. Neubauer

Roy Madison

Bernard S. Bresky

ing his scholarship course, and is now working for Lester Beall. Dick, how does packaging fit into the background of the young designer?

RICHARD ROGERS: I personally think I would not like to limit myself to packaging. I feel that any designer will develop best by getting into numerous areas.

QUESTION FROM THE FLOOR: Do clients accept a junior designer?

Mr. BRESKY: It depends on how the junior designer is presented.

Mr. FINK: If he is brought in from the beginning, as part of the design group, it would not be resented.

QUESTION FROM THE FLOOR: How do you feel about young designers attending shows and conferences?

Mr. BRESKY: We encourage attendance at meetings such as this. We believe it is part of a designer's education to attend symposia. There are four or five from our office here today.

Mr. FINK: It seems to me that a designer begins to take on more importance and responsibility in his organization when he learns to make decisions between one solution and another, when he can evaluate his work sensibly to the satisfaction of his employers. If he can evaluate his own work, he can evaluate that of others.

QUESTION FROM THE FLOOR: Would a department head share this opinion?

Mr. PREHN: It depends on the philosophy of the company and on the personnel involved. More ego is involved among creative people than among other groups, of course, but it's a pity when a valuable person feels he wants to change his position.

Mr. FINK: Sometimes a man finds himself in the wrong combination and it would be healthy for him to change jobs. But sometimes, if personalities conflict, it might be that he needs a better evaluation of himself.

QUESTION FROM THE FLOOR: Can you tell us more about hiring and interviewing?

Mr. BRESKY: It's a tough job finding new personnel—finding the right person for the job. It is as much up to the young designer to get into the right spot as it is for the organization to hire the right person. We have a policy which gives as applicant—for pay—a definite assignment which gives both employee and employer an opportunity for observation.

Mr. PREHN: Potential ability does show up this way, whereas it might not in an interview. It makes sense to give a person a try-out job.

Mr. YOUNG: Another suggestion is a two or three month try-out period.

PDC and the young designer

Mr. BRESKY: What provision does PDC have for bringing young people into the organization?

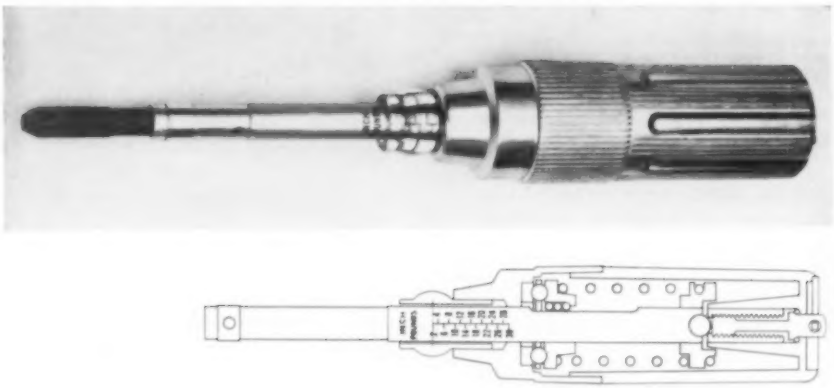
Mr. FINK: Building a professional organization takes time. PDC is now at the stage where young designers are definitely necessary to its growth as an inclusive and representative professional organization. We now have some 60 members. Several of them are employee designers and we hope to have more. Our purpose is a major one of education to help the profession grow and to strengthen it from within. To date our programs have not always been of the greatest interest for young people but today's meeting is a step towards remedying that. We want professionals and we want them to start with us early.

Margery Markly, Gertrude Nightingale.

Roger Malkin, Robert Vogele, Dick Rogers.

Hans Mahler, deep in thought.

TECHNICS *a catalog of new products, materials, processes and finishes*



Adjustable screwdriver

An adjustable, torque-limiting, calibrated screwdriver is claimed by its manufacturer, Richmont Inc., Monrovia, Cal., to offer a greater versatility and a higher degree of accuracy than similar existing models. Torque setting is facilitated by a disappearing key, recessed in the handle, and plainly marked and magnified calibrations on the driver's barrel. The desired setting is obtained by turning the key right or left; the tool may then be sealed for production use. Tests have shown that the screwdriver will hold torque settings between two and thirty inch pounds indefinitely. A new ball bearing movement assures torque accuracy within extremely close tolerances. There are no dials to watch. When torque is reached, the patented clutch releases automatically. The tool works for both right and left hand threads. Over 100 standard bits and sockets can be fitted into the ¼" hex bit holder. The screwdriver is 7-5/16" long and weighs 9 oz. The handle diameter is 1-5/16". Manufacturer: Richmont Inc., Monrovia, Cal.

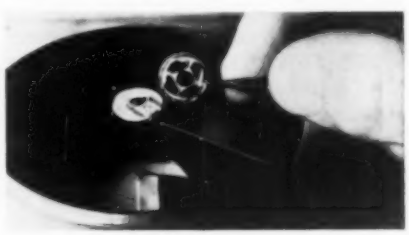
Automated reservation system

The Sheraton Corporation of America recently installed the hotel industry's first automated reservation system. This electronic system, called Reservatron, was built by the Teleregister Corporation of Stamford, Conn. It enables hotel clerks to determine within seconds what accomodations will be available up to a month in advance in any of 16 Sheraton hotels. The heart of Reservatron is an electronic memory drum, located at Teleregister's service bureau in New York, which retains up-to-the-minute information about every Sheraton guest room. A hotel reservations operator, seeking to follow up a query about any other hotel, has only to insert a small disc into a "keyset" (a small device resembling an adding machine), and flick a switch. Within seconds, the requested information is obtained from the memory drum—what rooms are immediately available in four different classifications, and the arrival dates of prospective guests over a four day period. The system stores and constantly revises such information for thirty-one days.

Sheraton officials predict that within a year Reservatron will double the hotel chain's present volume of reservation traffic which is currently being serviced by manual teletype. No cutback in reservations personnel is anticipated. By 1959, all of Sheraton's 45 hotels in the U.S. and Canada will be operating under the automated reservation system. Sources: Teleregister Corporation, Stamford, Conn., and Sheraton Corporation of America, New York, N.Y.

Laminated plastic in earth satellite

Tiny pieces of laminated plastic are being used as insulating spacers in an earth satellite instrument that will measure radiation reflected by the earth's cloud layer. The satellite is part of an experiment planned by the U. S. Army Signal Corps to help meteorologists gather data on cloud patterns, thickness, types, and moisture content for weather study and accurate long-range prediction. The optical system that will gather this data was developed by Perkin-Elmer Corporation, Norwalk, Conn. Two units, each weighing less than 4 oz., will be mounted in the satellite and will peer through holes in its shell at the cloud layers. Infra-red cloud radiation will be picked up by a f/0.7 mirror only 3" in diameter by 3/16" thick and focused on a detector unit which is cemented into place over the center hole of the laminated plastic printed circuit. The piece of laminated plastic shown in the illustration has a silicon solar battery soldered into it which provides signals to distinguish between night and day, and which also turns off the equipment when the satellite is on the dark side of the earth. The



plastic material, made by National Vulcanized Fibre Co., was selected for its light weight, dimensional stability, and wide range of operating temperatures. Manufacturers: Perkin-Elmer Corporation, Norwalk, Conn., and National Vulcanized Fibre Co., Wilmington, Del.

Transistorized temperature control

A transistorized amplifier relay system for remote control of temperatures in industrial applications has been introduced by Minneapolis-Honeywell Regulator Company. It is claimed by the manufacturer to be the first of its kind in the electronics industry. The low-cost system consists of a compact transistorized amplifier which serves as temperature controller, and a vibration-proof mounting containing a thermistor which acts as the sensing element. In operation, the mounting and amplifier

relay can be located as much as two miles apart. Application possibilities for the system are described by the manufacturer as unlimited. Typical uses envisioned by the manufacturer are in controlling temperatures in the rubber, plastics, machinery, lumber and packaging industries for a variety of specialized applications.

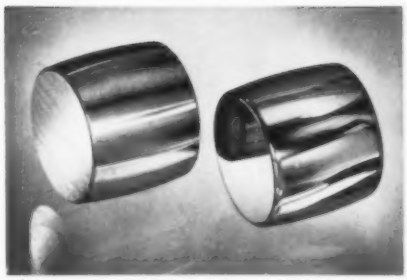
The system may be used to control air, surface, or immersion temperatures. Amplifier relays are available in eight overlapping ranges of approximately 100°F to permit control from —60° to +520°F. Control point is very stable, with shift of less than one degree for every 70-degree change in ambient temperature. One amplifier relay can be used with a variety of heat sensing units, and can be either surface or flush mounted, using a special box 5″ x 7″ x 2-⅞″ deep. Wiring between sensing element and relay need not be shielded since the bridge circuitry is d.c. powered and presents no capacity balance problem. The amplifier relay has a resistive load rating of 1500 watts at 240 volts.

Mountings for the thermistors are available in a wide variety of sizes and shapes to fit any application. They can be as small as 3/32″ in diameter by two inches long. The mountings can literally withstand blows from a hammer without damage to the sensing element because of the durability of the material, according to the company.

Manufacturer: Minneapolis - Honeywell Regulatory Company, Minneapolis, Minn.

Steel finish

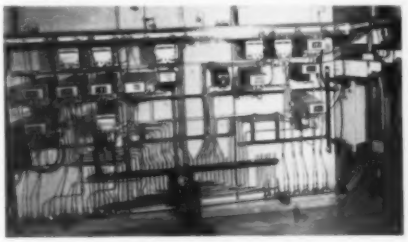
A new metal finishing process known as Cor-A-Brite, which produces a bright, lustrous finish on high alloy steels, has been developed and introduced by the Roto-Finish Company, Kalamazoo, Michigan. The major feature of Cor-A-Brite is that the entire process is completed with one chip mass in one standard barrel finishing machine. This eliminates the necessity of passing parts between several different operations, and assures uniformity in appearance and finish of the work pieces. Preliminary tests indicate that the quality of results obtained is in direct relation to the quality of the steel being finished. According to Roto-Finish process engineers, Cor-A-Brite will produce a better surface on hardened steels than it will on unhardened steels of the same alloy.



The steel bearings illustrated were processed to produce a bright surface with a microinch reading of 2 RMS after a ten hour finishing cycle. Stainless steel stampings can be finished so that die marks will be removed from their surface through the uniform grinding action of the process. Manufacturer: Roto-Finish Co., Kalamazoo, Mich.

Nylon tubing

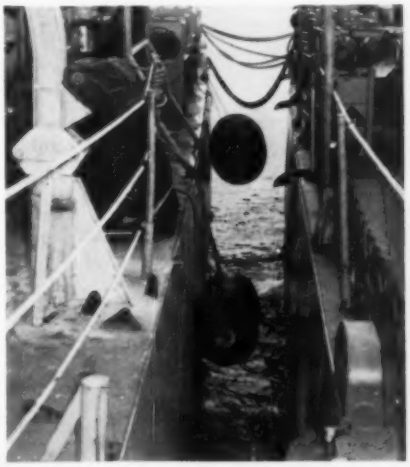
Color-coded nylon tubing has replaced copper in an instrument-air control panel installed at Allied Chemical's Edgewater, N. J. plant. It is the first system to utilize nylon in the automatic measure and control of liquid flow, temperature, and pressure. The Plaskon nylon was selected over copper in this application because of



a cost-saving of 50 per cent per running foot, increased corrosion resistance, greater ease of installation, and the ability of nylon to be color coded.

The nylon is used in conjunction with pneumatic activated measuring and control devices to register physical conditions at specific measuring points on the central control panel. Although a number of measurements are performed electrically at the valves, these are translated into air pressure by transduction. Use of this system makes regulation of plant processes involving ammonia and other harsh chemical materials safer and less expensive than direct measurement by an electrical system.

The installation utilizes ¼″ OD tubing with a 30 mil wall. Maximum working pressure is 800 psi and burst pressure 1600 psi for tubing of this size. Since the system utilizes only 3 to 15 psi air pressure, the nylon is well within safety requirements. The system uses the ISA color code to indicate all measurement areas. Manufacturer: Barrett Division, Allied Chemical Corp., New York, N. Y.



Pneumatic ship fenders

Barrel-shaped pneumatic fenders built by the Goodyear Tire & Rubber Company are now being used by the Navy to protect ship hulls. The fenders act as giant air cushions in absorbing shocks when two ships, or a ship and a dock, come together.

Navy officials ordered the new fenders to protect the hulls of a mothballed destroyer fleet in Rhode Island. When the experiment was successful, the Navy decided to try the pneumatic absorbers in working-fleet operations. It is now no longer necessary to dispatch destroyer fleets away from docking or nesting areas during heavy weather to ride out storms.

The new fender is constructed like a premium grade passenger tire. The carcass is much wider and the steel bead diameter is smaller. Metal plates are built into the ends and equipped with swivels so that the fenders will roll with a ship and cushion against shock. Manufacturer: Goodyear Tire & Rubber Co., Akron, Ohio.

Carrier-based flying saucer

A saucer-topped early warning airplane, designed for Navy carrier operations, has increased the effectiveness of security precautions against sudden air attack. The plane, Grumman Aircraft's WF-2 Tracer, will fill the Navy's most important role in national defense by providing early warning to fleet units of impending enemy air and sea strikes. Long-range detection equipment is housed in the huge radome on top of the aircraft. Since radar impulses travel in a straight line, the range of most detection equipment extends only as far as the horizon against low altitude targets. Therefore, by placing such equipment at high altitudes, range is extended to far greater distances. When operating from a carrier far out at sea, the WF-2 can transmit warning signals far in advance of any warning given by ground equipment. All-weather capabilities permit round-the-clock operation. Manufacturers: Grumman Aircraft Engineering Corporation, Bethpage, Long Island, New York.

Satellite models

The Ivel Construction Company, designers and builders of displays and exhibits, have recently completed construction of 300 plastic engineering models of Explorer I, the United States' first successful satellite. The Army contracted for the models to acquaint ROTC students with missiles and missile technology through the use of scale models.

Each model measures just under 7′ in length, with a diameter of nearly 6½″. In the nose of the model is a cutaway area 8″ x 24″, containing a four-color art panel illustrating major components inside the actual satellite. Identification of all pertinent parts and electronic systems is aided by a legend plate positioned on the model exterior. Manufacturer: The Ivel Construction Company, Brooklyn, N.Y.

Military aerial television

A new television strip camera has been perfected by Hycon Manufacturing Company to aid in front-line military combat surveillance for the Army. Such tactical surveillance represents a new advance in military intelligence technique. It is intended to fill the gap between front-line patrol activity—which is a dangerous and haphazard operation — and conventional long-range reconnaissance photography which fills a strategic purpose.

A typical application is the successful development by Hycon engineers of the light-weight KA-20 camera for drone aircraft. The KA-20 was specifically designed for maintenance and operation by comparatively untrained combat troops. Drone photography is particularly advantageous in tactical reconnaissance since the photographic detail required by front line commanders demands low-level flight by reconnoitering aircraft. The drone is small, fast, and difficult to hit; more important, it can be launched and recovered in any sort of terrain.

The drone camera is both light-weight and rugged enough to withstand the 15-G shock when the drone is recovered by parachute. Film is held in place by vacuum pressure emanating from Venturi tubes on the drone fuselage. Preset altitude settings automatically adjust the IMC (image motion compensation mechanism that moves the film during exposure in order to compensate for the speed of the low-flying plane.)

Though military requirements demanded a camera weighing 30 pounds, Hycon engineers were able to reduce the final configuration of the KA-20 to 17½ pounds. Resulting photographs are 9″ x 9″, giving the viewer a detailed picture of the terrain. Enlargements and contact prints can be made in the field.

An adaption of the KA-20 permits night surveillance of combat areas. In this case the camera shutter remains open, while another piece of equipment ejects a series of flash cartridges. As each cartridge explodes, a picture is automatically taken, while a photoelectric cell detects the flash and advances the film for the next exposure. Manufacturer: Hycon Manufacturing Company, Pasadena, California.

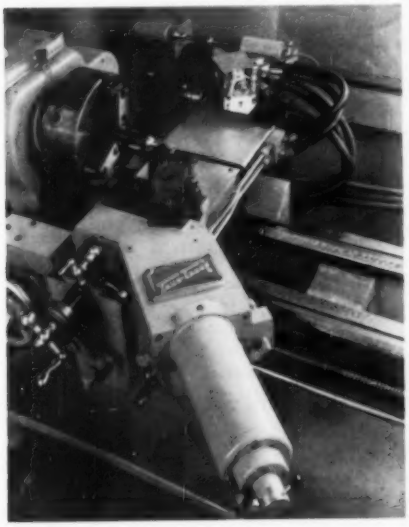
Remote controlled landing

A radio control system has been delivered to the U.S. Marines by Lear, Incorporated, Grand Rapids, Michigan, to permit the Marines to put their newest amphibious vehicles through rugged surf tests without endangering human lives. The landing craft are controlled by radio from helicopters hovering overhead. Using this technique, the "driver" guides the LVT's (Landing Vehicle, Tracked) with a portable electronic control panel. By moving

a steering stick, similar to an aircraft control stick, and manipulating the switches mounted on the panel, the driver can start and stop the engines of the vehicles, steer, shift gears, brake and apply the throttle. In short, he can control a whole fleet of LVT's from the air with greater ease and safety than before. Manufacturer: Lear, Incorporated, Grand Rapids, Michigan.

Lathe tracer attachment

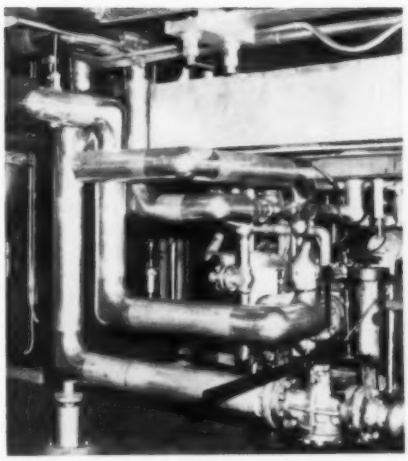
True-Trace Corporation, manufacturers of hydraulic and numerical machine tool controls, have developed a new lathe tracer attachment which increases the versatility of conventional lathes. Based on the precision True-Trace 180° single dimension tracer, the attachment is adaptable to virtually all makes of lathes. It converts standard lathes into contour machines, yet still allows normal turning by the lathe, inasmuch as the manufacturers have kept the longitudinal screws intact. Officials claim that the attachment is so easy to operate that relatively unskilled labor can perform such turning applications as step shaft tracing, contour turning, and facing operations involving both simple and com-



plex contours more quickly, economically, and accurately than is possible with manual operation. Newly designed cross and tool slides finished to precision tolerances maintain the high degree of accuracy. Manufacturer: True-Trace Corporation, El Monte, California.

New nylon fittings

Special nylon fittings for plastic pipe are said by the manufacturer, Plastiline, Inc., to bring new resistance to the corrosion and mechanical abuse encountered by flexible pipe installations in home, farm, and industry. The insert fittings are further characterized by overall toughness, light weight, and low cost. The high tensile strength and impact resistance imparted to the fittings by the Plaskon nylon from which they are molded protects them against the considerable abuse encountered in both installation and use. Uses for flexible piping incorporating the lightweight nylon fittings include jet well installations, industrial piping, and air conditioning. Manufacturer: Plastiline, Incorporated, White Plains, N. Y.



Aluminum elbow joints

Right-angle turns in insulated pipelines, a long-time trouble spot for insulating material, can now be enclosed quickly and economically with a new aluminum jacketing product manufactured by the General Aluminum Supply Company, Kansas City, Mo. A uniquely designed aluminum elbow has abandoned the form-fit custom usually followed with jacketing material at bends or ells. The elbow has a squared-off, rather than rounded, contour which gives it an unusual "humped" appearance. Having ample space to fit both sharp or gently curving turns without cutting away insulation, the humped elbow is said to greatly simplify application.

The elbows are easily installed by placing the deep drawn halves around insulated turns, then joining them with aluminum screws. The use of the new product will substantially reduce installation time and expense, as compared to cement and canvas jacketing, which heretofore has normally been applied to ells. Nine minutes is the average time needed to install each elbow.

During service, the corrosion-free aluminum elbows will eliminate the normally recurring costs of repairing exposure-damaged conventional coverings. The savings on installation, plus reduced maintenance costs, make the use of an all-aluminum jacket less costly than previously used materials, it is claimed.

The first installation of the new elbow was recently completed for the Kansas Light and Power Company. Over 400 of the preformed aluminum elbows were used for a thermal insulation jacket applied to a battery of steam-carrying pipelines. Manufactured in twelve outside diameters, the new elbow minimized the number of sizes required for the power plant job. The twelve sizes can fit 107 combinations of pipe diameters and insulation thicknesses, up to an O.D. of 12.81 inches. As the humped elbow is produced without ridges or wrinkles, aluminum pipelines take on a more attractive appearance. Manufacturers: General Aluminum Supply Co., Kansas City, Mo., and Aluminum Company of America, Pittsburgh, Pa.

Conversion drilling kit

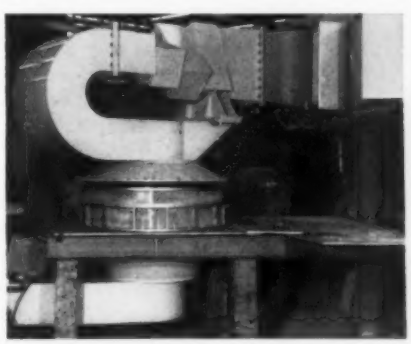
The Molco Drilling Machines Company, Washington, D.C., has developed a conversion drilling kit which will convert a standard core drilling machine to twice its normal capacity. The kit contains an additional high torque electric drill which supplements the power of the original drill. This increased power enables holes with 6" diameters to be drilled through concrete, brick, marble, and other hard masonry materials at the rate of an inch per minute.

Manufacturer: Molco Drilling Machines Inc., Washington, D.C.

Waveguide rotary joint

The largest waveguide rotary joint ever built has been delivered to the Air Force by the I-T-E Breaker Company of Philadelphia. A prototype warning system will utilize the large rotating section of circular waveguide, which will couple a huge radar search antenna to its source of UHF energy. An unprecedented 80 megawatts (million watts) of power will be transmitted in the UHF operating range by the six-by-four-foot aluminum joint.

Waveguide is the hollow conduit-like conductor that substitutes for wire or cable in high-frequency electric energy systems. The rotary joint is that section of waveguide that must jump the energy to be radiated from the stationary high-frequency generator to the rapidly spinning antenna.



For its size and frequency, the I-T-E unit is said to be exceptional in its relatively low voltage standing-wave ratio (the measure of power transmitting efficiency. The VSWR of the rotary joint is a low 1.2 over the 10 frequency bandwidth.) Though it is unusually large because of the high power requirements and relatively low frequency of operation, the rotating joint will sweep a huge antenna across the skies at 40 rpm with ease. Manufacturer: I-T-E Circuit Breaker Company, Philadelphia, Pa.

Manufacturers' Literature

A4 Steelstrapper. Acme Steel Company, 135th Street and Perry Avenue, Chicago 27, Ill. Booklet shows typical applications of the first fully powered steel strapping tool, plus pictorial operating instructions and specifications.

Asco Solenoid Valves. Automatic Switch Company, Florham Park, New Jersey. 8 pp., ill. Stock list on valves available for immediate delivery. Contains prices, valve ratings, flow diagrams, and engineering data.

Atomic Radiation. RCA Service Company, Division of Radio Corporation of America, Camden 8, New Jersey. 110 pp., ill. $1.60 postpaid. Explains theory, biological hazards, safety measures, and treatment of injuries caused by atomic radiation.

Automatic Activation of Primary and Secondary Batteries. Yardney Electric Corporation, 40-50 Leonard St., New York, N.Y. Describes a new activating method which allows Yardney primaries to be activated and operated in any position.

Availability Check List and Shell Data. The Deutsch Company, 7000 Avalon Boulevard, Los Angeles 3, Cal. An easily used wall chart for specifying AN connectors. Data includes contact information, service requirements, shell types, shell dimensions, pin positions, and clocking arrangements.

Catalog. Littleford Brothers, 457 East Pearl Street, Cincinnati 2, Ohio. Covers Littleford's complete operations in the fabricating field. Littleford fabricates all types of plate and sheet metal.

Clark-Aiken Lift Tables. Clark-Aiken Company, Lee, Mass. 4 pp., ill. Bulletin details the features and operation and lists the specifications of the company's three standard size tables.

Computer Grade Alumalytic Capacitors. Bulletin GEA-6819. General Electric Company, Schenectady 5, N.Y. 6 pp., ill. Gives detailed information on the description, operation, and application of filter capacitors designed for computer circuits where high reliability and long operating life is desired.

Contak Shading Films, Color Tints, and Symbols. Chart-Pak, Inc., Leeds, Massachusetts. 6 pp., ill. Brochure shows the 72 basic shading films, both in white ink to break up black areas, and in black ink for shading white areas. 26 symbols designed for geodesical map-making and other graphic and decorative applications are also shown.

Design Manual on Self-Locking Clinch Nuts. Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, New Jersey. 18 pp., ill. Reviews available standard and miniature types of clinch nuts for the avionic, electronic, and electrical equipment industries.

Dial Indicators. Petz-Emery Inc., Pleasant Valley, N.Y. 12 pp., ill. Catalog describes and illustrates the complete "Em-re" line covering all four A.G.D. groups.

Digest of Pilor Lights. Dialight Corporation, 60 Stewart Avenue, Brooklyn 37, N.Y. 16 pp., ill. Consists of data on a wide range of Dialco Pilot Light Assemblies, and the appropriate lamp types housed therein.

Manufacturers' Literature *(Continued)*

Ductile Iron Pipe Fittings. Kuhn Brothers Company, 1800 McCall Street, Dayton 2, Ohio. 8 pp., ill. Gives complete data on ductile iron pipe fittings. Includes comparative physical properties of various pipe fitting metals and explains the production control tests used by Kuhns.

Electrical Insulating Materials. General Electrical Company, Schenectady 5, New York. 12 pp., ill. Bulletin GER-1467. Describes in text, tables, and pictures the characteristics and application range of insulating materials which are chemically, physically, and electrically compatible.

Enclosed Variable Transformers. The Superior Electric Company, Dept. EN, Bristol, Conn. 4 pp., ill. Dimensions, ratings, features, mountings, and prices of powerstat variable transformers are featured in this booklet.

Gas Turbines. Clark Brothers Company, 702 Lincoln Ave., Olean, New York. 28 pp., ill. Brochure gives complete engineering and performance data on the Mark TA model, a compact 1150-Bhp gas turbine for industrial, refining, and process applications.

Glass to Brighten Your Products' Future. Lancaster Glass Corporation, Lancaster, Ohio. 27 pp., ill. Booklet covers the many types of glass now available, outlines various forming processes and finishing operations which make possible new design concepts. Illustrated are some of the very latest industrial, electronic, and commercial uses for glass.

Manufacturers' Literature *(Continued)*

Guide to Better Closures. Acme Steel Company, 135th and Perry Avenue, Chicago 27, Ill. 16 pp., ill. Brochure is intended as a guide for the evaluation of methods currently in use to effect economies and stepped-up production in the closure of fibreboard boxes.

High Reliability. Standard Pressed Steel Company, Jenkintown, Pennsylvania. 16 pp., ill. A summation of the new factors in industry in which reliability is the motivating force, both for the national safety and economy.

High Vacuum Valves. F. J. Stokes Corporation, 5500 Tabor Road, Philadelphia 20, Pa. Principal features of the Stokes ST gate type high vacuum valves described in the data sheet are their full-opening design with straight-through unrestricted flow, and a short flow path which results in maximum conductance.

Hydraulic Power Bulletin. Denison Engineering Division, American Brake Shoe Company, Columbus, Ohio. 4 pp., ill. Entitled "Hydraulic Power to 5,000 PSI," this bulletin covers constant volume and variable volume hydraulic pumps, pumping units, and hydraulic motors.

LaPine Apparatus Review No. 8. Arthur S. LaPine & Company, 6001 South Knox Avenue, Chicago 29, Illinois. 16 pp., ill. Features new high-speed centrifugal chromograph in full color. Balance of booklet describes LaPine's products.

The Levinthal Facility. Levinthal Electronic Products, Inc., Stanford Industrial Park, Palo Alto, California. 8 pp., ill. Presents the story of personnel, research, development, and manufacturing facilities, as well as product activities at the Levinthal plant.

Metal and Plastic Processes Folder. Ainsworth-Precision Castings Company, Department A, 3200 Guardian Building, Detroit 26, Michigan. Folder describes the variety of metal and plastic processes performed as a result of several recent corporate mergers.

Marvinol VR-51. Naugatuck Chemical, Naugatuck, Conn. 8 pp., ill. Describes Marvinol VR-51 which is especially designed for slush and rotational molding.

Mechanical Steel Tubing. Rome Cable Corporation, Rome, New York. 8 pp., ill. Detailed specification charts give complete information on size range, wall thicknesses, approximate weights, standard mandrel bend and standard 90 degree bends without mandrels.

Modular Executive and Secretarial Seating. Robert John Company, 202 South Hutchinson Street, Philadelphia 7, Pa. 8 pp., ill. Coordinated office decor is described in the catalog. Bulletin also features new versatile seating and novel arrangements with modular units.

Numerically Controlled Machine Tools. Cox & Cox, Management Consultants, 333 North Michigan Avenue, Chicago, Illinois. Discusses the implication of automated tools on the design area. Authors stress freedom from traditionalism. $25.00 per copy.

Perforated Materials. Harrington & King Perforating Co., 5664 Fillmore Street, Chicago 44, Illinois. 156 pp., ill. General catalog of all perforated materials in their stock.

Manufacturers' Literature *(Continued)*

Power Supply Catalog. Perkin Engineering Corporation, 345 Kansas Street, El Segundo, California. 8 pp., ill. Catalog illustrates and describes a complete line of DC power supplies, AC line regulators, and static invertors.

Powers Condensed Catalog. Powers Regulator Company of Canada, Ltd., 15 Torbarrie Road, Downsview, Ontario. 12 pp., ill. Nine basic types of temperature and pressure controls are described.

Price Book for Stainless Steel. Chase Brass & Copper Company, Waterbury, Conn. Price book consists of a heavy paper folder with an inside pocket. Into the pocket are inserted removable price lists of the most popular items of stainless steel in common forms, finishes, sizes and alloys.

Properties of Investment Cast Stainless and Low Alloy Steels. Haynes Stellite Company, Division of Union Carbide Corporation, 30-20 Thomson Avenue, Long Island City 1, New York. 40 pp., ill. Describes the investment cast properties of eight stainless and four low alloy steels. The stainless steels include types 310, 316, 347, 410, 431 low carbon, 431 high carbon, and 440 C. Low alloy steels covered are 4130, 4140, 6150, and Haynes 1000 steel.

Pyroceram. Corning Glass Works, Corning, New York. 8 pp., ill. Second in a series of reports on the family of crystalline materials made from glass by Corning.

Reali-Slim Bearings. Kaydon Engineering Corporation, McCracken Street, Muskegon, Michigan. Bulletin No. 54, 24 pp., ill. Describes the Reali-Slim bearings used by the aircraft and electronics industry.

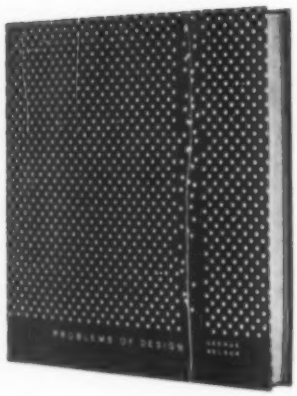
Reference Manual of Steel Equipment, No. 485. Equipto, Aurora, Ill. 48 pp., ill. Book analyses all types of steel shelving, drawers, lockers, work benches and tables, and other storage equipment.

Rotary Automatic Dock Ramp. Rotary Lift Company, Division of Dover Corporation, Department L, 1054 Kansas Street, Memphis 6, Tennessee. 4 pp., ill. Describes the fully automatic ramp which is actuated by power of a truck backing against the ramp bumper.

Stack Rack Capacitor Equipments. General Electric Company, Schenectady 5, N.Y. Bulletin GEA-6796. 8 pp., ill. Describes the sturdy, light-weight, factory-assembled aluminum stack racks designed to supply bulk kilovars on transmission, subtransmission, and distribution circuits.

Suspended Metal Lath and Plaster Ceilings. Metal Lath Manufacturers Association, Engineers Building, Cleveland 14, Ohio. Technical Bulletins 12-1 and 12-2 are now available. Features large illustration covering the size and spacing of all metal components for a metal lath suspended ceiling.

Technical Plastics Brochure. Synthane Corporation, Oaks, Pa. 28 pp., ill. Brochure describes Synthane's full line in detail, including properties, characteristics, and Government specifications.



PROBLEMS OF DESIGN

by George Nelson

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INDUSTRIAL DESIGNER, *7 years in plastics with unusual and varied experience seeks challenging position as account executive, sales promotion, market development. Age: early 30's. Will relocate. Resume and full information available. Box ID-178,* INDUSTRIAL DESIGN, *18 East 50th Street, New York 22, New York.*

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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.*

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DESIGNERS. *Major silverware manufacturer wants staff designers. Should be graduate of recognized design school or equivalent. Must be imaginative and creative, capable of originating modern or traditional designs. Ideal living conditions with income proportionate to experience and ability. All replies should state age, experience and income expected. Replies will be held in confidence and personal interviews arranged with those qualified. Box ID-179,* INDUSTRIAL DESIGN, *18 East 50th Street, New York 22, New York.*

PACKAGE DESIGNERS—*We are looking for two experienced package designers, men or women, with strong graphic design and lettering background, to add to our expanding staff.* ROBERT ZEIDMAN ASSOCIATES, *128-130 East 56th Street, N. Y. PLaza 8-0780.*

Miscellaneous

"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, Rochester 10, New York.*

"COMMUNICATIONS FOR DESIGNERS"—*a program of advanced studies in design, organized by the Center for Design Studies, division, Institute of Contemporary Art, Boston, July 12-27. Communication methods studied through lectures, seminars and workshops. For designers, engineers, educators, etc. Faculty members: Stewart Walker Holmes, Gyorgy Kepes, George F. F. Lombard, Ed W. Molloy, Gordon Smith, John S. Woodford. Academic Director, James R. Shipley. Inquire: Theodore S. Jones, Director, Center for Design Studies, 230 The Fenway, Boston 15, Massachusetts.*

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For Your Calendar

Through June 27. International Home Furnishings Market. Merchandise Mart and American Furniture Mart, Chicago.

Through June 30. "Twelve Scandinavian Designers." Smithsonian Institution Traveling Exhibition. Grand Rapids Public Museum, Grand Rapids, Michigan.

Through September 14. Exhibit by young American designers at the Museum of Contemporary Crafts, New York.

June 19. IDI's 8th annual Design Awards luncheon at the Ambassador East Hotel, Chicago.

June 22-26. The 16th annual exhibition sponsored by the National Association of Display Industries. New York Trade Show Building, New York.

June 22-28. Aspen Conference on "The City, Its Basic Elements, Its Connective Tissues." Aspen, Colorado.

June 23-25. The 4th annual Creative Problem-Solving Institute at the University of Buffalo.

June 23-26. The 2nd annual conference of American Craftsmen at Lake Geneva, Wisconsin.

June 23-26. The 5th National Store Modernization Show. New York Coliseum.

June 26-27. Midwest Section Conference of the Society of the Plastics Industry, Inc. French Lick-Sheraton Hotel, French Lick, Indiana.

July 7-11. New York Summer Furniture Show. New York Furniture Exchange.

July 7-11. National Housewares and Home Appliance Manufacturers' 29th exhibition at the Auditorium, Atlantic City, N. J.

July 7-August 30. AMA's 4th annual summer program at Colgate University, Hamilton, N. Y.

July 14-18. Semi-Annual Auxiliary Furniture Market. Shrine Exposition Hall, Los Angeles.

July 29-31. The 2nd Symposium Conference on Creative Arts Education. Syracuse University, Syracuse, N. Y.

August 1-10. Danish Industries Fair. Fredericia, Denmark.

September 3-5. The 1st National Conference on the Application of Electrical Insulation, at the Pick-Carter Hotel, Cleveland.

September 12. Society of Plastics Engineers regional technical conference: "Plastics in Automotive Application" at the St. Clair Inn, St. Clair, Michigan.

September 14-19. 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 29-October 3. American Society of Tool Engineers' semi-annual meeting and Western Tool Show at the Shrine Exposition Hall, Los Angeles.

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

October 18-21. ASID's 14th annual design conference and meeting at Bedford Springs, Pa.

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