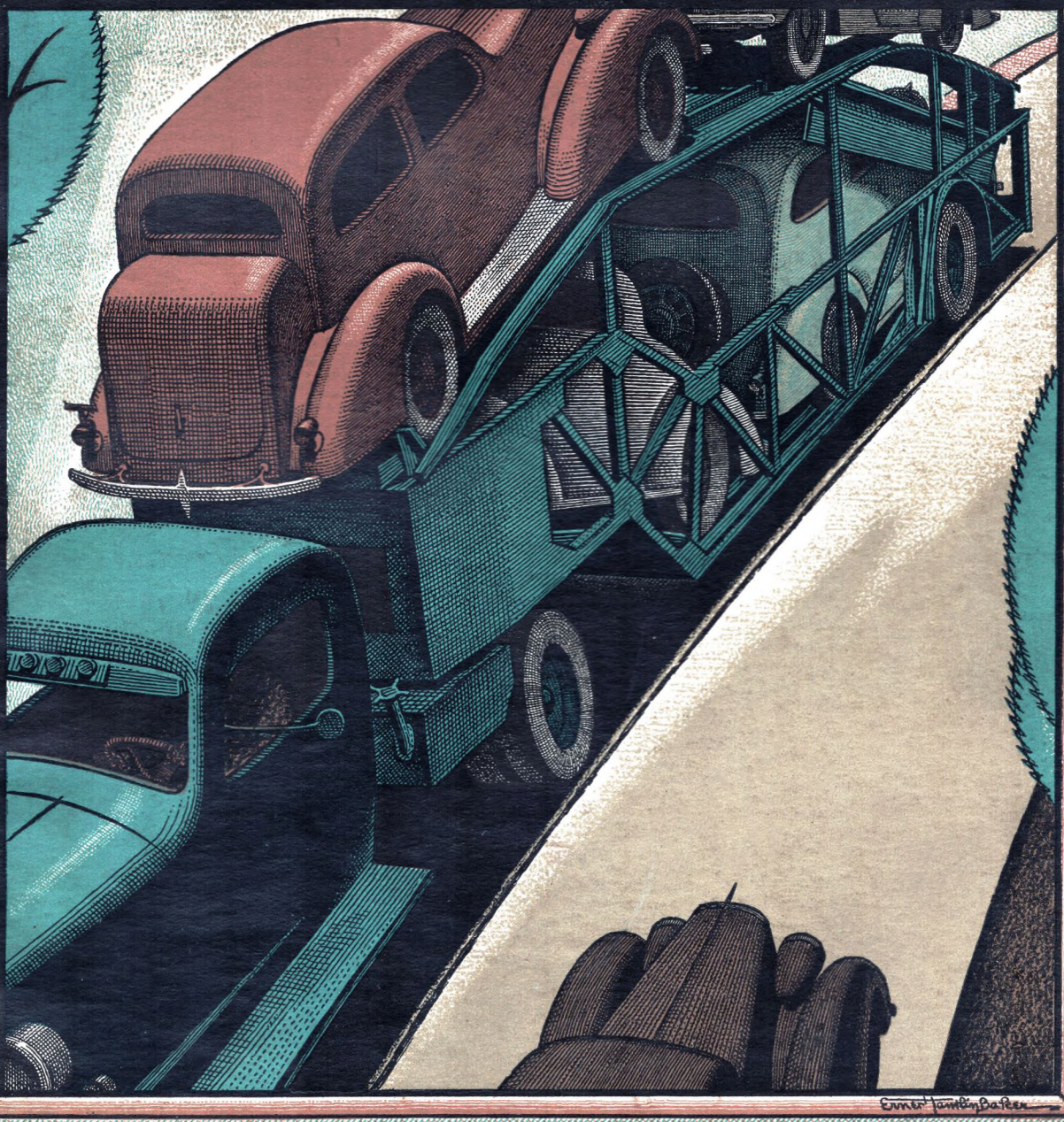
Fortune

One Dollar a Copy NOVEMBER 1936 Ten Dollars a Year



It's An Old English Custom

SOMEONE once said that Dickens was England's greatest chef because he did his cooking with pad and pencil!

Let the quip pass. There is no call to defend the culinary genius of a nation that has given plum pudding to the world. Imagine a Thanksgiving or a Christmas feast, devised in the grand manner, with this traditional sweet not ready for a grand finale!

The castle cooks of Britain were inspired indeed when they spiced luscious fruits and baked this old-style goodie at holiday time. And Heinz plum pudding is the true English kind: rich, fruity, delicious—ready to heat and serve.

Listen, also, to the ingredients that go into Heinz mincemeat—tender, lean beef, suet, Valencia seeded raisins, plump Grecian case currants, firm juicy apples, lemon peel, aromatic candied citron, Oriental spices. And finally, the most important ingredient of all—irreplaceable, essential—ancestral skill!

Two other members of the famous 57 Varieties you'll never again want to wait for from one holiday to another are: light-textured Heinz fig pudding and date pudding, made of choicest fruits, as only our chefs know how!

Silver Backgrounds

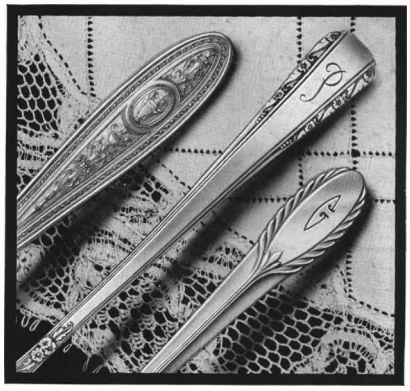
AGAIN a new social season brings new fashions in table linens. The immediate background of your silver shifts—as it will again and again in the seasons to come.

But finely designed sterling is never outdated. Such sterling becomes part of the texture of family tradition, and gains in beauty and value as the years go by.

The artists and skilled craftsmen of International Sterling set themselves to create silver that is worthy to endure—silver that is unvaryingly good in design and flawless in workmanship.

Choose your sterling from their collection...and have silver that will always be a source of pride and pleasure.

Sterling Silver Division, International Silver Company, Wallingford, Conn.



REAL LACE ON HEMSTITCHED LINEN

. . . and against it, silver in three of International Sterling's enchanting patterns. *Courtship* and *Trousseau* (center and right) originate new ways of decorating a handle. *Wedgwood* borrows its rich design in low relief from 18th Century England.

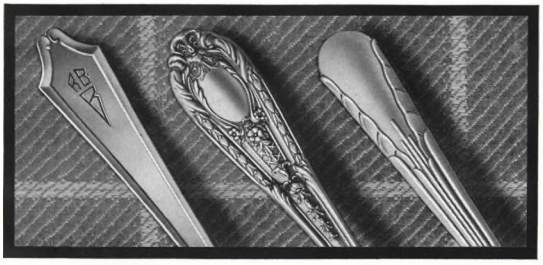
LINENS BY MORSE, INC.

IVORY SATIN DAMASK

A fine rayon damask cloth is high-lighted for formal dinners this fall. Its shining splendor is a foil for the patrician loveliness of International Sterling's new *Courtship* silver. Side panels, carved with delicate precision, frame a beveled center panel which offers a perfect background for a monogram. Look at the tines of the *Courtship* forks. They're round, not flat—sculptured. Turn a piece of silver over. .The back is finished as exquisitely as the front. Feel how each piece is balanced to your hand. Here is silver of heirloom quality.

SWISS-EMBROIDERED DOILY

. . . a piquant background for three silver classics by International Sterling. *Simplicity* is a Colonial design. *Empress* is a modern adaptation of a traditional motif. *Continental* is modernism of the North European school.

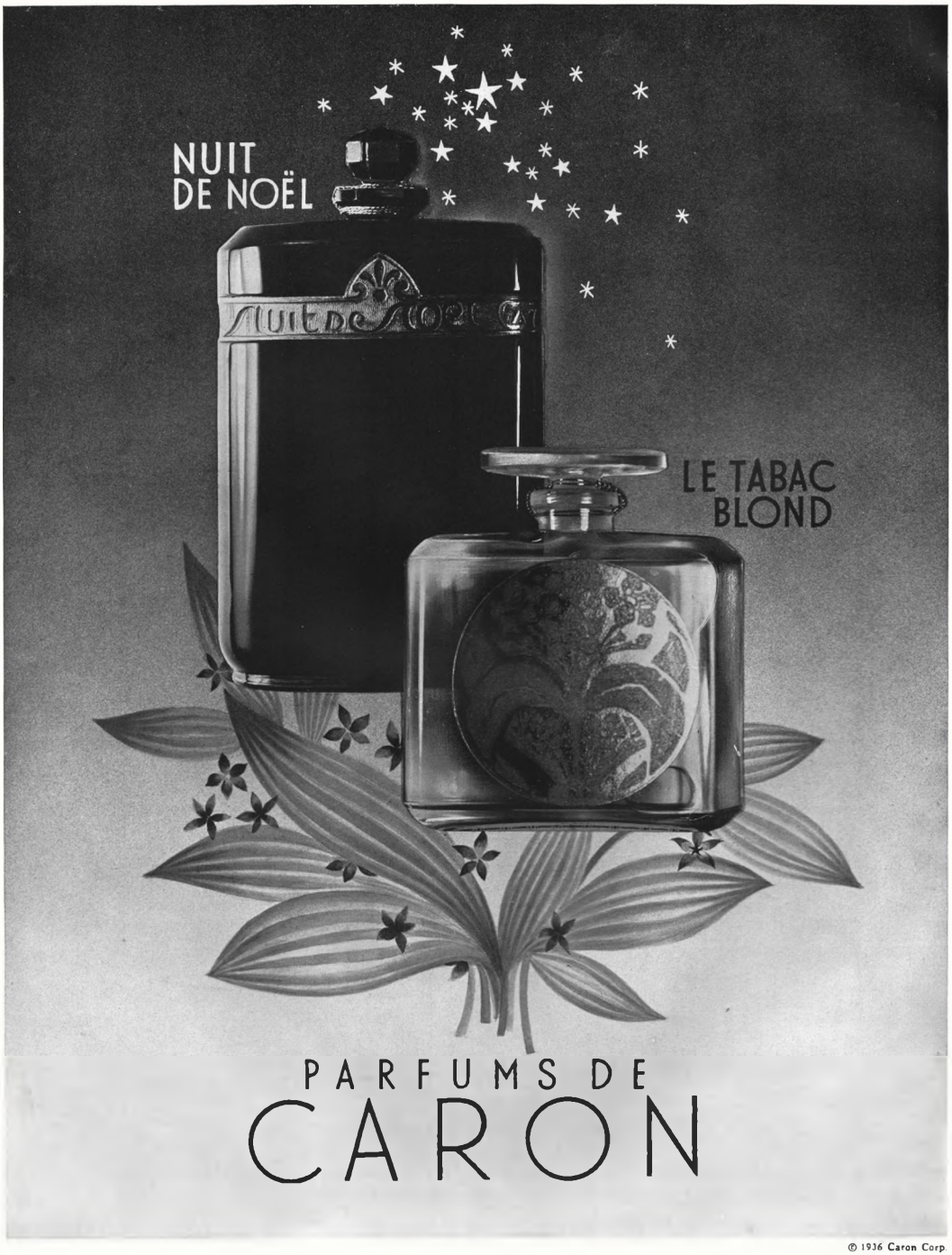


MINUET • FONTAINE • ORCHID

A cosmopolitan trio by International Sterling. *Minuet* is American Colonial. Its arched top was suggested by an early highboy. *Fontaine* was inspired by the French school of design under Louis XIV. *Orchid* is an original and fascinating modern.

GADROON • 1810 • PRIMROSE

Three witnesses to the range of choice offered to you by International Sterling . . . *Gadroon*—reproducing a motif famous in 18th Century England. *1810*—an Early American reproduction. *Primrose*—a pierced Renaissance design of great richness.



FORTUNE is published by TIME INCORPORATED, at 160 Maple Street, Jersey City, N. J. Entered as second class matter at the Post Office at Jersey City, N. J., under the act of March 3, 1879. Subscription rates: One year in the U.S. and possessions, Canada, Cuba, Mexico, Central and South America, $10; elsewhere, $12

"I don't know much about the 'Vista'...

BUT I'M 'NUTS' ABOUT THE VIEW"

MANUFACTURERS who hope to move their merchandise in quantities of hundreds of thousands of units a year must be careful to keep their sales messages within intellectual earshot of the millions who are the real prospects for their goods.

Glittering words that spring naturally enough to the cultured tongue are more than likely to rebound from the average ear like water from the proverbial mallard's back.

For example, while the apartment hunter from Lake Shore Drive or Park Avenue might say, "I'm charmed beyond words by the *Vista*"... the chances are better than even that the average man or woman would observe: "I'm tickled pink with the *scenery*," or "I'm 'nuts' about the *view*."

Yes, a lively appreciation of art and literature is all right in its place... but the manufacturer whose advertising must sell the man in the street can ill afford to sponsor a copy elegance that overshoots a large portion of his logical market.

Praise of our advertising by our wives or golf "buddies" may appeal to the literary complex in many of us... but heaven help the advertiser of a volume product who places rhetoric or pictorial beauty above a ready intelligibility by those prosaic-minded millions whose patronage, or lack of it, spells the difference between success and failure.

This by no means implies that advertising copy must mutter and mumble ingenuously in order to win the understanding of the great masses of people. But it does mean that our advertising efforts must embody every possible concession to popular tastes and limitations.

Copy, headlines, and illustrations—all should be characterized by comparatively simple handling and treatment. All should "ease" their way into the average person's mind without a single obstruction.

True, such a down-to-earth sales talk may not be the way to promote $20,000 pipe organs or imported automobiles. But if the product to be sold is food or clothing ... tooth paste or tires ... spark plugs or face cream—it is this ordinary, every-day language of average folks that most effectively moves the goods.

Perhaps you would like to see how this kind of advertising looks in action. Possibly you would be interested in going over some of the typical campaigns prepared by us—campaigns which talk the language of those ordinary but almighty individuals without whose patronage no large advertiser could profitably remain in business for more than twenty-four hours.

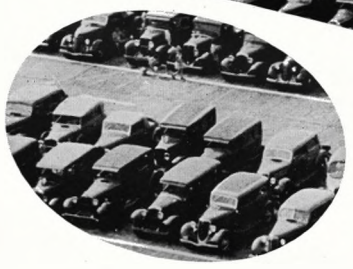
A request by any interested executive will arrange an interview. No obligation, of course.

RUTHRAUFF & RYAN, INC.

Advertising

NEW YORK CHICAGO

ST. LOUIS · DETROIT · LOS ANGELES · SAN FRANCISCO · LAKELAND, FLA. · SEATTLE



Who buy the NEW AUTOMOBILES?

THE automobile industry draws its strength and prosperity from one fundamental source—the purses of those who buy the new automobiles. New-car buyers provide the real motive power that keeps assembly lines moving.

Therefore, no single piece of information is more valuable to the automotive industry than the answer to these two questions:

Who buy the new automobiles? Where can our advertising reach them most effectively?

This group is easily identifiable, since each individual name and address is a matter of public record.

Beginning at the time of the Automobile Show last November, and continuing for eight months, an impartial research agency asked buyers of new cars in New York City and suburbs—including northern New Jersey, Westchester County, Brooklyn, Queens, suburban Long Island, Manhattan, Richmond, and the Bronx—this simple question: "Of the New York newspapers you read *regularly*, which ONE do you prefer above all others?"

In the replies of 10,769 automobile purchasers, ten New York newspapers were named, but—

32.4% said their first newspaper preference was The New York Times. The number of preferences for The Times was 30% greater than that for any of the nine other New York newspapers named.

This investigation proves again a fundamental fact that has helped build many great advertising successes in New York not only for the automobile industry, but for all types of businesses: Wherever you find The New York Times, you will find the buying leaders, the most responsive, profitable type of customers an advertiser can win for his product.

THE TIMES *Gains Continue*

Year after year, ever since 1919, The New York Times has led the New York field in advertising volume. This position of rising leadership is continuously maintained and given growing vitality by The Times advertising gains, which so far this year exceed 1,400,000 lines.

In circulation, too, The Times marches steadily forward. Week-day net paid sale is at the highest point in The Times history, 21,000 over the same period last year. Sunday sale, too, shows an increase of 31,500 over 1935.

The New York Times

"All the News That's Fit to Print"

MAN WITH A *Memo book* ABOARD

Mem. Never occurred to me before what tremendous strength must be required in the inside structure of those huge wings. They tell me the inside looks like a honeycomb of Aluminum beams and such. Never realized Aluminum was so strong. Knew it was light.

Mem. Asked the co-pilot about the motors. Said *they* were nearly all Aluminum, too. Not only because Aluminum is light. Seems that the extra heat conductivity of Aluminum makes the motor more efficient. Said I ought to look, sometime, at all the wonderful Aluminum castings and forgings in the engines.

Mem. No paint on the exterior of this ship! Looks great, in spite of all the weather it's been through. So that's what they mean when they say Aluminum is resistant to corrosion!

Mem. Thought I'd make a list of all the things in the ship made of Aluminum. Started with chairs. Discovered the list would have to include practically everything aboard. No wonder they talk about versatility. Beauty, too.

Mem. Look into this business of Aluminum when I get home.

* * * * * *

In this organization you will find the "know-how" which will help you to utilize the fullest advantages of Alcoa Aluminum Alloys in your product. An airplane is just mass-in-motion. So is every moving or mobile part of simple or complex machines. The lightness and strength of Alcoa Aluminum has made the airplane of today. It can make your product better, too. Our engineers are at your service. Aluminum Company of America, 2102 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA

ALCOA · ALUMINUM


TOPS
White tie, tails and topper call for the whiskey that meets the occasion without apology—Kentucky Tavern—6 years old—aged *two extra years* beyond the bottled-in-bond requirements. Yet at about the price of four-year-old whiskey.
Whether in a cocktail, neat, or in a tall nightcap, its deep, rounded flavor and fragrance are equally evident. 100 Proof Straight Kentucky Bourbon Whiskey, bottled in bond under United States Government Supervision.
Glenmore Distilleries Co., Inc.
Founded on Public Confidence
Louisville—Owensboro, Kentucky
This Whiskey is 6 YEARS OLD
GLENMORE'S
KENTUCKY TAVERN
REG. U.S. PAT. OFF.
STRAIGHT BOURBON WHISKEY
ONE QUART
100 PROOF
BOTTLED IN BOND UNDER THE SUPERVISION OF U.S. GOVERNMENT
DISTILLED AND BOTTLED BY
GLENMORE DISTILLERIES CO.
INCORPORATED
H.S. BARTON, DISTILLER
OWENSBORO — KENTUCKY

Do You Know the reasons Why

The Trend To Dictaphone Sweeps On

Even more arresting than the mounting sales of Dictaphone are the matter-of-fact reasons for them. Many of these are covered in a booklet that's easy to read. It explains how executives double their ability to get things done with this modern dictating instrument. It illustrates by example how improved thinking, improved office control, improved flexibility throughout the staff—all march into an office on the heels of Dictaphone.

The booklet's title is "What's An Office Anyway?" The coupon below will bring it to you. And after you've read it, a working demonstration of Dictaphone in your own office is yours to command. Mail the coupon now—and take a look *behind* the rising trend to Dictaphone.

Exclusive Nuphonic recording and reproduction of the improved Dictaphone duplicates the human voice almost perfectly.

DICTAPHONE

Some Companies That Have Recently Swung to Dictaphone

Lawrence Warehouse Company
San Francisco, California

Interwoven Stocking Company
New Brunswick, New Jersey

Board of Education
Minneapolis, Minnesota

Phillips Packing Company
Cambridge, Maryland

Dictaphone Sales Corporation, F-11
420 Lexington Ave., New York, N.Y.
In Canada—137 Wellington St., West, Toronto

☐ I want to see your representative.
☐ Please send me my copy of "What's An Office Anyway?"

Name .....

Company .....

Address .....


Life Insurance
for fathers
THE PRUDENTIAL
HAS THE
STRENGTH OF
GIBRALTAR
THE PRUDENTIAL INSURANCE COMPANY of AMERICA
EDWARD D. DUFFIELD, President
©
Home Office, NEWARK, N. J.

OPPORTUNITY

. . . is pointing to West Coast Territories

THE GREAT WEST! . . . intriguing, irresistible since covered wagon days, is no less so today . . . as streamlined trains and high-powered transport planes blaze the trail. With new markets to be captured and present markets to be cultivated, industry again lays its plans for sound expansion. Opportunity is looking for management up and down the coast!

This vast area is prepared for the greatest expansion it has ever seen . . . ready with "opportunity" *sites*, strategically located, close to metropolitan centers, on main highways, along the great Western Railroads where transportation of every kind is quickly available . . . where the needs of each manufacturer can be quickly and economically met.

Ideal are the industrial sites provided for the building of modern branch factories, assembly plants and warehouses. Heavy-duty streets, gas, electricity, city water and spur tracks are provided. Junction railways connected with all major lines eliminate switching charges. Near by are banking facilities, branch post offices and telegraph offices.

Whether you are interested in leasing 10,000 square feet of floor space or in building a complete new and modern plant to serve the San Francisco Bay district, Los Angeles, Seattle or other coast markets, Austin can give you costs and confidential information without obligation. This co-operation is available through the Austin office in your territory.

THE AUSTIN COMPANY

ENGINEERS AND BUILDERS

CLEVELAND GLenville 5400 · CHICAGO SUperior 6101 · PHILADELPHIA Rittenhouse 8670 · ST. LOUIS MAin 1058
NEW YORK WHitehall 4-6393 · DETROIT MAdison 8874 · LOS ANGELES Richmond 2231 · OAKLAND Highgate 3424
PITTSBURGH ATlantic 3877 · TORONTO, ONT. Midway 3915 · SEATTLE ELliot 7020

THE AUSTIN METHOD

When you build on the West Coast you will have progressive neighbors such as these

The Sherwin-Williams Company
General Motors Corporation
Goodyear Tire & Rubber Co., Inc.
H. J. Heinz Company
Grinnell Co., Inc.
Continental Can Company, Inc.
Boeing Airplane Company
Crown Zellerbach Corporation
General Electric Company
General Foods Corporation
Colgate-Palmolive-Peet Company
Hooker Electrochemical Company
Douglas Aircraft Co., Inc.
The Philip Carey Company
American Brake Shoe & Foundry Co.
Sears, Roebuck & Company
The Oliver Farm Equipment Company
Liquid Carbonic Corporation
Sealright Pacific Company
Safeway Stores, Inc.
California Corrugated Culvert Company
The Bristol Company
Link-Belt Company

Facilities as Modern as

THE Super CHIEF

Santa Fe

That Carries You to the Coast

THE accuracy of reproductions printed through the use of Rapid electrotypes, stereotypes and mats is the best assurance an advertiser can have that his campaign will drive sales over the goal. Rapid accuracy, plus Rapid's ability to meet deadlines anywhere, explains why advertisers consistently order more Rapid printing duplicates than any other kind.

The Rapid ELECTROTYPE CO.

CINCINNATI

New York · Chicago · Detroit · Cleveland · Atlanta · San Francisco

ATLANTIC ELECTROTYPE & STEREOTYPE CO., 228 E. 45th St., New York
HOFFSCHNEIDER BROS. ..... 500 Howard Street, San Francisco
NORTHERN ELECTROTYPE CO. ..... 47 Burroughs Avenue, Detroit

LARGEST PLATE MAKERS IN THE WORLD

Million dollar smile !

WATCH HER FACE WHEN SHE TRIES THE NEW ROYAL

That Smile means Easier, Faster Typing

Dollars Saved . . . Dollars Earned!

ROYAL WINS ON WORK!

For the girl at its keys, the New Easy-Writing Royal *humanizes* typewriting more than any other typewriter. Its many exclusive features provide the conveniences of operation which permit her to concentrate upon her notes. That is why typists using the New Royal are always accurate—happier and more efficient. The result is lower typing costs . . . one of the reasons why *Royal sales are now the greatest in the entire history of the Company!*

Invite a demonstration in *your* own office . . . Compare the Work!

ROYAL TYPEWRITER COMPANY, INC.
2 Park Avenue, New York City

World's largest company devoted exclusively to the manufacture of typewriters. Also makers of the Royal Portable for students' use and in the home.

Check these FIRSTS that make Royal FIRST

First in SPEED . . . Greater volume! First in EASE . . . With Touch Control*, Shift Freedom, Finger Comfort Keys—nearly a score of exclusive improvements! First in CAPACITY . . . Not only is volume greater—but the quality also is enhanced! First in ECONOMY . . . Lower typing costs throughout—and records prove it! First in DURABILITY . . . These New Royals can take it—day in, day out!

*Trade-mark for keyboard device

ROYAL WORLD'S NUMBER 1 TYPEWRITER

The Compleat Hatter

John Cavanagh Ltd.

Park Avenue at 47th Street New York

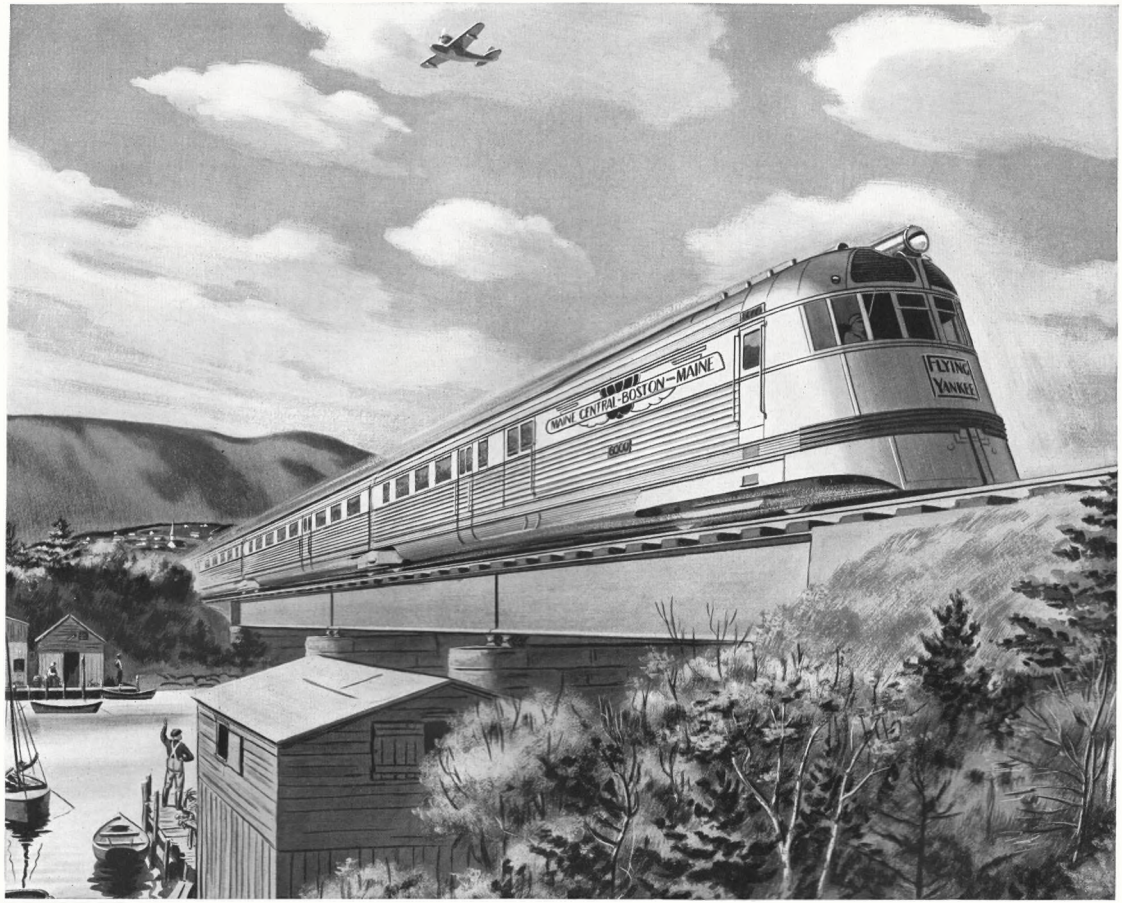
for Men and Women

The favorable comments so frequently given Cavanagh Hats at select gatherings have contributed greatly to the continued success of this establishment. The Compleat Hatter is deeply conscious of this recognition by his many patrons, and accepts it with gratitude.

THE STYLES CARRIED BY CAVANAGH ASSOCIATES COMPLEMENT IN EVERY DETAIL THE STYLES SHOWN IN THE NEW YORK SHOP OF JOHN CAVANAGH, LTD.

Cavanagh Associates

Akron, Ohio • Canton, Ohio	WALKERS	Dayton, Ohio	WALKERS	Milwaukee, Wis.	MACNEIL AND MOORE	San Francisco, Cal.	KRAN, LTD.
Baltimore, Md.	WARNER & CO.	Detroit, Mich.	CAPPEN & CAPPEN, LTD.	Minneapolis, Minn.	MALMSTEDT	Seattle, Wash.	LITTLER
Chicago, Ill.	CAPPER & CAPPER, LTD.	Houston, Texas	NORTON'S	Newark, N.J.	LYNDON E. STOTTENBURGH	Springfield, Mass.	THOMAS, INC.
Cincinnati, Ohio	THE H. & S. POGUE CO.	Indianapolis, Ind.	L. STRAUSS & CO.	Oklahoma City, Okla.	CONNOLLY'S	St. Louis, Mo.	D. & J. WILKINSON, INC.
Columbus, Ohio	WALKERS	Louisville, Ky.	ROCHE & ROCHE	Pittsburgh, Penna.	WILL PRICE	Washington, D.C.	GOLDHEIM'S
Dallas, Texas	NEIMAN-MARCUS CO.	Madison, Wis.	MACNEIL AND MOORE	Salt Lake City, Utah	MAURICE ANDERSON	Wilmington, Del.	JAS. T. MULLIN & SONS



Famous Modern Trains

"Flying Yankee"—Boston & Maine and Maine Central

MAKING HISTORY IN NEW ENGLAND

ALONG the rock-ribbed coast — from Boston to Portland and Bangor — flashes one of the most famous of Budd-built trains. The clear chime of its whistle against New England hills today sets the time for town and countryside that once thrilled to the long-drawn-out call of the Iron Horse.

• Most appropriate that New England, which did so much to promote the railroads of America, should be a leader in the modern transformation of the rails. For the "Flying Yankee," of the Boston & Maine and Maine Central Railroads, is a new kind of train, deriving its basic principle from the most successful automotive and airplane structures.

• Budd-built of stainless steel, the "Flying Yankee," without power plant, weighs no more than a sleeping-car, yet it is one of the strongest and safest things on wheels.

• Operating on a scheduled run of 740 miles a day, the "Flying Yankee" completed 225,439 miles in its first year, despite New England blizzards and devastating floods. In that time it carried 94,524 passengers. Because it did not displace other trains, it brought in actual additional revenue of $266,863.92.

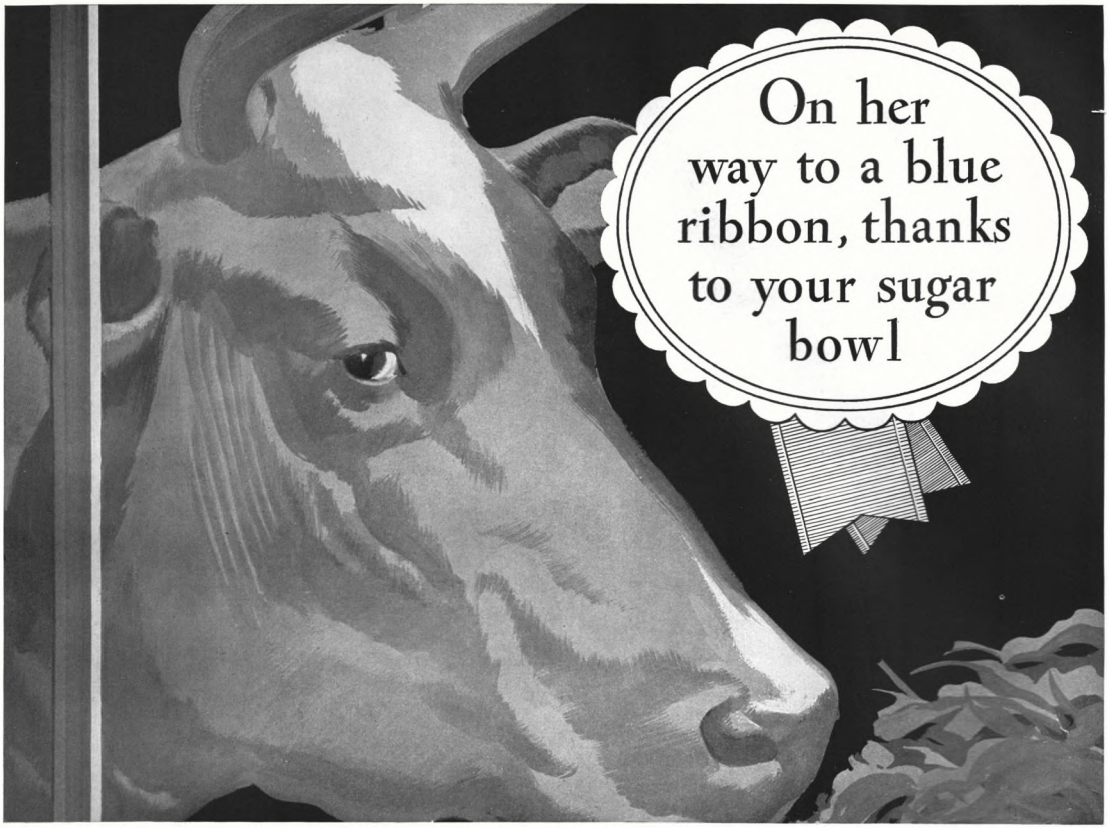
• From the New England coast to the snow-capped Rockies, Budd-built stainless-steel trains are proving by increasing public demand, and by the hard test of daily performance, that here is one modern solution to the railroad problem. Here is the most modern of all transportation units, always filled to capacity because it satisfies the requirements of the traveling public. Here is a train that can operate profitably, with fares at 2 cents a mile!

Do you want the inside story of Budd-built streamlined trains? . . . Let us send you: "The Conquest of Weight."

EDW. G. BUDD MANUFACTURING COMPANY

PHILADELPHIA AND DETROIT

BUDD METHODS SAFELY ELIMINATE DEAD-WEIGHT



IMAGINE a cow thanking you for eating beet sugar! But well she might; because without beet sugar there would be no beet pulp—and beet pulp has contributed to practically every world record set for milk production in years . . . When you extract sugar from the sliced root, the economic usefulness of the big, white beet is just beginning.

Local, then state, then national records, and finally world records and more world records have been set by Robert and Catherine Roemer's dairy cows—heavy eaters of dried beet pulp—Fort Collins, Colorado

Any dairyman can 'slug' a cow with grain and rich concentrates for high milk production—a little while! And soon have a burnt-out cow or a dead one! But dried pulp works differently. True, it is a very rich food, *actually comparing with corn in feeding value.* But unlike heavy grain, dried pulp is succulent, fluffy, bulky. It stimulates appetite. It promotes health. It sustains milk flow. California to Maine, Sweden to Little America, dried pulp is famous for 'keeping cows on green pastures all winter.' It is demanded also for meat-cattle and sheep, for race-horses and poultry.

An industry engaged in developing American natural resources, improving American agriculture, and supplying American markets with an all-American food product

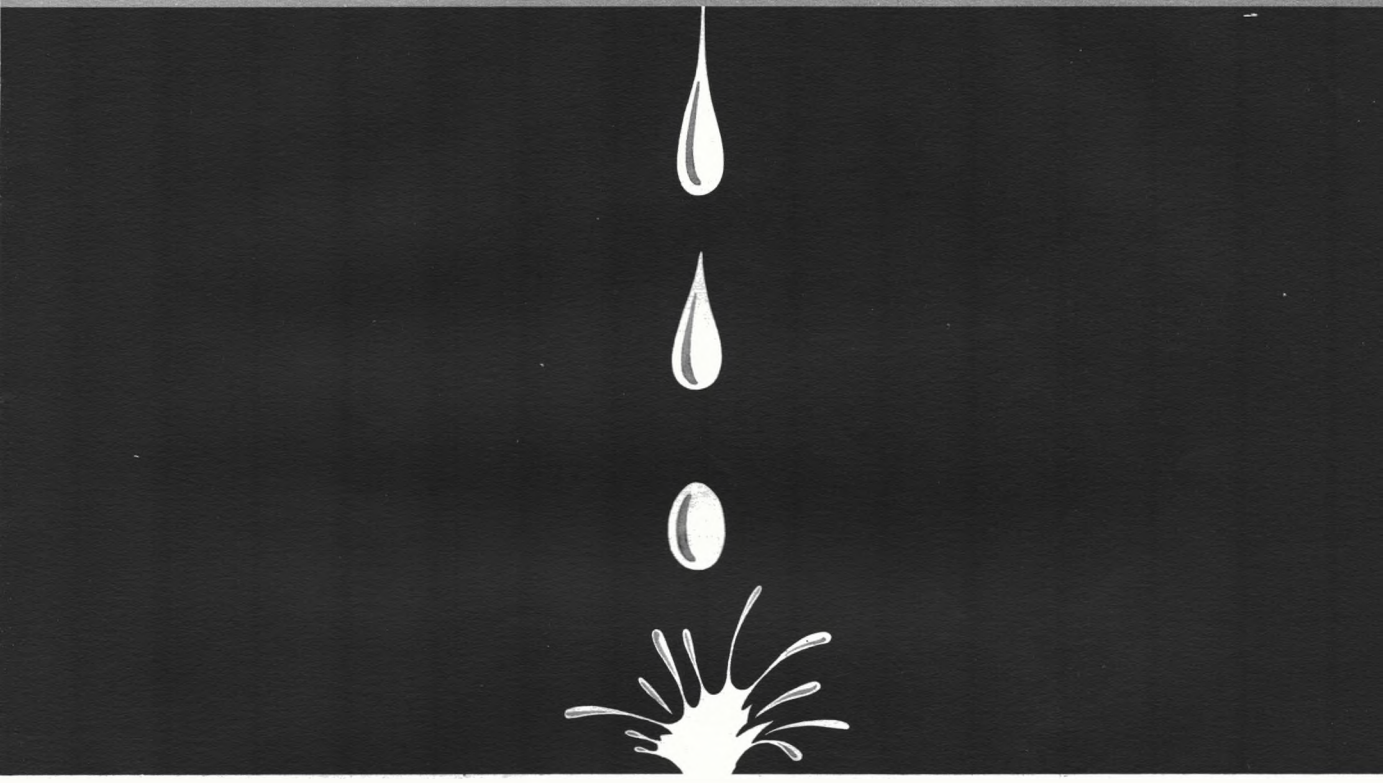
Dried pulp is only *one* of the valuable by-products of America's efficient beet sugar industry. 'The Silver Wedge,' a booklet sent on request, tells the story of other by-products—wet pulp, molasses, beet tops, etc.—and the far-reaching benefits of this industry to other agriculture and to other industries. It will reassure you to know how much the beet is doing *in addition to* supplying thirty million Americans with pure sparkling sugar.

UNITED STATES BEET SUGAR ASSOCIATION

726 GOLDEN CYCLE BUILDING COLORADO SPRINGS, COLORADO

"Unforeseen events . . .

so often change and shape the course of man's affairs."



Here Comes Trouble

DOWN they come, hour after hour, out of a sullen sky . . . drilling into your roof . . . boring tirelessly to find a way into your plant . . . searching for your merchandise, equipment, machinery, your hard-won dollars!

Today, after five years of neglect, thousands of roofs are inviting trouble. Clogged drains, sun-cracked surfaces, loosened flashings, broken tiles, seams parted by freezing, unsuspected today, will cause heavy damage when winter storms break over them.

And just as frequently, water damage comes from broken or defective piping, plumbing or heating systems. Complete protection is provided by the Maryland comprehensive policy covering losses from water, steam, rain or snow.

Inspection service is part of the policy. It includes check-up on roofs, tanks, windows, piping, and on deterioration or weakness in plumbing or heating systems, and goes far toward preventing the Unforeseen before it happens.

Maryland protection for all types of business and residential property is available through 10,000 agents throughout the United States and Canada.

THE MARYLAND

MARYLAND CASUALTY COMPANY • BALTIMORE • SILLIMAN EVANS, PRESIDENT

The Maryland writes more than 20 bonding lines, including . . . Fidelity . . . Bankers' Blanket . . . Contract . . . Check Alteration and Forgery . . . Depository . . . Fraud . . . Public Official Bonds . . . Judicial. More than 40 types of Casualty Insurance, including . . . Aircraft . . . Engine . . . Automobile . . . Burglary . . . Boiler . . . Elevator . . . Accident and Health . . . Fly-Wheel . . . General Liability Plate Glass . . . Electrical Machinery . . . Sprinkler Leakage . . . Water Damage . . . Workmen's Compensation.

*STRANGE, ISN'T IT . . .

. . . that food has found no real interpreter in advertising . . . no interpreter like Dickens who made us 'most reach onto a page for a helping of Mrs. Cratchit's plum pudding . . . "bedight with holly". . . no chronicler like O. Henry who makes us fairly hear the wooden churn clumping up and down . . . taste the sweet butter . . . feel the cool mists rising out of the summer cellar where the old stone crock stood.

Strange, isn't it . . . with an hundred million dollars devoured by food advertising last year . . . that the big-wigs of food-dom indulge themselves in realistic color photography, yet so often let the words, dearly bought, stir not one pang of hunger . . . Strange, isn't it?

Food . . . the one thing in all the world that all the world needs. And will not the world buy those foodstuffs which use words to arouse the appetite.

The kind of words, say . . . which you will find in the attached campaign of which I am the author. Would not the same rush of idiom and beat of words make folk hungry for spicy pickles, or mushroom soup, or mayonnaise . . . or what have you? All of which I submit with this note to you: the author is now among those gainfully employed but would like to write similar copy for Erwin, Wasey & Company.

* This is an exact reproduction of an application for a job in our copy department. As you will see by the penned notations at the top of the page, the applicant started with us on August 1, last.

ERWIN, WASEY & COMPANY, INC., ADVERTISING

420 Lexington Avenue, NEW YORK • 230 N. Michigan Avenue, CHICAGO

PHILADELPHIA MINNEAPOLIS SAN FRANCISCO LOS ANGELES SEATTLE LONDON PARIS STOCKHOLM THE HAGUE HELSINGFORS OSLO

MARTELL

for over 220 years
the choice of those who
know **COGNAC** *brandy*

The long-continued and world-wide preference of connoisseurs for Martell is the best proof of its generation-after-generation supremacy. Keep a bottle of this famous Cognac Brandy in *your* home—for the after-dinner liqueur; as a highball; in cocktails; and for emergencies that require a stimulant of recognized value. And when dining in hotel or restaurant, always *insist* on Martell.

1715

MARTELL

The COGNAC *Brandy*
for every occasion

BOTTLED IN COGNAC, FRANCE, SINCE 1715

84 PROOF

PARK & TILFORD Import Corporation, 485 Fifth Avenue, New York, N. Y.

Exclusive U. S. Representative

The New York Trust Company

Member of the Federal Reserve System, of the New York Clearing House Association and of the Federal Deposit Insurance Corporation

100 BROADWAY

40th Street and Madison Avenue — Fifth Avenue and 57th Street

CONDENSED STATEMENT OF CONDITION

At the close of business, September 30, 1936

ASSETS		LIABILITIES		
Cash on Hand, and in Federal Reserve and Other Banks	$78,342,982.88	Deposits	$379,422,405.33	
Exchanges, Collections and Other Cash Items	35,963,304.84	Outstanding and Certified Checks	15,204,206.07	394,626,611.40
United States Government Securities	170,452,786.43	Dividend Payable October 1, 1936		625,000.00
Reconstruction Finance Corporation Notes	2,500,000.00	Agreements to Repurchase Securities Sold		346,709.77
Other Bonds and Securities	31,960,185.03	Accounts Payable and Other Liabilities		1,969,246.37
Loans, Discounts and Bankers' Acceptances	114,437,388.31	Acceptances and Letters of Credit		4,892,954.99
Interest Receivable, Accounts Receivable and Other Assets	2,758,929.34	Acceptances, etc., Sold with Our Endorsement		41,721.96
Real Estate Bonds and Mortgages	4,953,480.31	Reserve for Contingencies		11,427,051.43
Customers' Liability for Acceptances and Letters of Credit	4,612,435.83	Capital	12,500,000.00	
Liability of Others on Acceptances, etc., Sold with Our Endorsement	41,721.96	Surplus	20,000,000.00	
Equities in Real Estate	897,885.23	Undivided Profits	3,129,181.26	35,629,181.26
Banking Premises—Equity and Leasehold	2,637,377.02			
	$449,558,477.18			$449,558,477.18

United States Government obligations and other securities carried at $40,628,899.12 in the above statement are deposited to secure public and trust deposits and for other purposes required by law.

Trustees

MALCOLM P. ALDRICH *New York*	FRANCIS B. DAVIS, JR. *President, United States Rubber Company*	ARTEMUS L. GATES *President*	HOWARD W. MAXWELL *New York*
ARTHUR M. ANDERSON *J. P. Morgan & Company*	HARRY P. DAVISON *J. P. Morgan & Company*	F. N. HOFFSTOT *New York*	HARRY T. PETERS *New York*
MORTIMER N. BUCKNER *Chairman of the Board*	RUSSELL H. DUNHAM *President, Hercules Powder Company*	B. BREWSTER JENNINGS *Standard Oil Co. of New York*	DEAN SAGE *Sage, Gray, Todd & Sims*
JAMES C. COLGATE *James B. Colgate & Company*	SAMUEL H. FISHER *Litchfield, Conn.*	EDWARD B. LOOMIS *President, Lehigh Valley Railroad Co.*	LOUIS STEWART, SR. *New York*
WILLIAM F. CUTLER *Vice-President American Brake Shoe & Fdy. Co.*	JOHN A. GARVER *Shearman & Sterling*	ROBERT A. LOVETT *Brown Brothers Harriman & Co.*	VANDERBILT WEBB *Milbank, Tweed, Hope & Webb*

The Philadelphia Inquirer

OFFICE OF THE PUBLISHER

To My Greater Inquirer Audience
And to Advertisers with Vision:—

On August 5th last, I assumed the greatest responsibility of my life. I bought The Philadelphia Inquirer . . . by myself and for myself and immediately assumed active control. Now, after eight enlightening weeks, filled with unceasing toil and gratifying results, the following facts and figures become more important to the Greater Inquirer's readers, advertisers and prospective advertisers than at any period in the 108-year history of this great newspaper.

- How and Why I Bought The Inquirer.

A nation-wide reputation was entirely the basis for my purchase. I bought sight unseen, having never been in the magnificent Inquirer plant. Frankly, I sensed its tremendous worth, fine background and unlimited resources for creating a paper second to none in America, both in reader-interest and advertising value.

- What I Mean to Achieve.

There's something more to recreating the Great Inquirer than just money yield. With me an ideal is involved . . . an ambition and a dream to be realized . . . so I shall endeavor to build and build so surely, so solidly, so securely that this great paper with its splendid staff shall perpetuate in the minds and hearts of Philadelphians a place that is monumental.

- What I Have Accomplished.

My first and very significant achievement is the publishing of the largest Sunday newspaper in America. I accomplished this by adding more and more features . . . and special sections . . . something of human appeal to every member of the family. Editorially and pictorially too, The Inquirer has been "stepped-up" . . . made fresher, keener, more exciting and entertaining. The response has been amazing. At this writing our circulation increase for sixty-three days is 45,000 daily and well over 100,000 Sunday.

AND THAT'S ONLY THE BEGINNING!

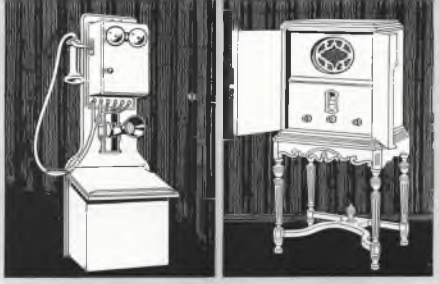
For based on present performance, I can say with assurance, that by New Year's in excess of 1,000,000 Sunday, and more than 350,000 daily, will be the net count.

- What All This Means to YOU, Mr. Advertiser.

This sum total of outstanding activities can only mean an ever widening market for your product, faster turnover, greater volume, and substantial sales increases. Why not "go places" with the GREATER INQUIRER?

M. L. Annenberg

NEW YORK, H. A. McCandless; BOSTON, M. L. Tyler; SAN FRANCISCO, Keene Fitzpatrick; CHICAGO, DETROIT, ST. LOUIS, Guy S. Osborne, Scolaro & Meeker, Inc.



The "*Old*" is Out

Certainly there is no place in the modern scheme of things for a wall type telephone. ¶ Yet in many tastefully decorated homes we find the console type of radio simply because up to now there has been nothing more fitting available. ¶ But now comes the Zenith Zephyr design in an end table radio—to stand where the radio really belongs—by the arm of a chair or divan—a really handsome and harmonious piece of furniture with the radio completely concealed yet instantly available.

So—the "old" is out—

The "*New*" is Here

Zenith Zephyr End Table Radio
MODEL 6-S-147
$84.95
Prices slightly higher in West

ZENITH
LONG DISTANCE RADIO
ZENITH RADIO CORPORATION, CHICAGO, ILLINOIS

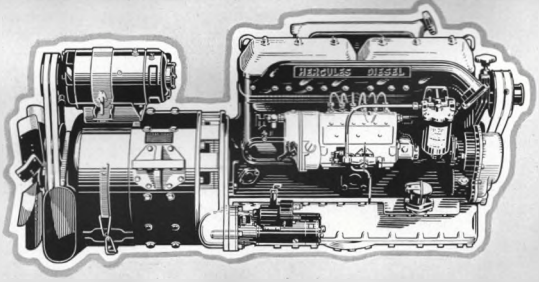
We believe that as the cradle telephone replaced the wall type, the end table radio will take the place of to-day's Wall Consoles

America's Most Copied Radio—Always a Year Ahead

HERCULES ENGINES

LEADERSHIP—Hercules Diesel Engines are helping to make transportation history. Progressive bus manufacturers have designed new and improved transit vehicles, combining all of the advantages of the modern, high-speed Diesel and the latest, most efficient electric drive. It is a tribute to the established leadership of Hercules engineering that two of the foremost bus manufacturers of the United States have each selected Hercules Diesels for these new and advanced vehicles. Large operators like Public Service Coordinated Transport of New Jersey are greatly interested in the possibilities of Diesel electric power for passenger transportation, and are putting these new vehicles into service. Hercules is gratified again to have played an important part in aiding the transit industry to improve the comfort, safety and operating cost of transit buses.

The Hercules DRX8, 4⅜ x 5¼, 6-cylinder, high-speed, heavy-duty Diesel Engine with modern electric generator.



This installation is mounted transversely in the rear of the new Diesel electric coaches powered by Hercules.

HERCULES MOTORS CORPORATION, Canton, Ohio

America's Foremost Engine Manufacturer • Power Plants from 4 to 200 H. P.

Off the Record

Pigeon Proofing

ALTHOUGH he has nothing against pigeons personally, Samuel S. Rosen, President of the Guarantee Exterminating Co. of New York City, doesn't like to see them loafing on public buildings and making things untidy. And for that reason Mr. Rosen has gone to a lot of trouble to develop a pigeon-proofing process designed to make buildings so uncomfortable for pigeons that they'll stay in the parks where they belong. The idea of pigeon proofing, Mr. Rosen says, is not to harm the pigeons but to annoy them. The process is rather simple. A bunch of Mr. Rosen's pigeon men swarm over the building that is to be proofed and apply a sticky composition on every ledge where a pigeon could possibly alight. Result is that when a pigeon tries to loiter around a pigeon-proofed building his feet get all tangled up in the composition, which bothers him since a pigeon finds dirty feet repugnant. According to Mr. Rosen, pigeons have long memories and they stay away for quite a while. Cost of having pigeon proofing runs anywhere from $60 to $1,000 a year, depending on the size of the building—and that includes servicing six to twelve times a year. The servicing is necessary because dust frequently covers the proofing composition and ruins its effect, and also because ingenious pigeons sometimes cover the composition with a mat of twigs. Mr. Rosen started to develop pigeon proofing in the middle of 1934, and his first job was to pigeon proof St. Patrick's Cathedral in New York City, where the pigeons were so flagrant that Mr. Rosen regarded them as a public scandal. That was in December, 1935. A month later he pigeon proofed the front of Temple Emanu-El and since then has done about twenty-four apartment houses. An exterminators' strike has prevented him from doing much proofing recently, but he expects to do a fine business next year. One thing Mr. Rosen is anxious to do is to pigeon proof the new addition of the American Museum of Natural History, which is dedicated to Theodore Roosevelt, free of charge. As an admirer of Roosevelt I, Mr. Rosen thinks it would be a pretty tribute.

Angry Shavers

FOR the privilege of removing the nation's whiskers electrically, Schick Dry Shaver, Inc., and the Dictograph Products Co., Inc., are currently belaboring each other in a fierce and noisy battle.

The Schick *vs.* Dictograph feud will be nine months old this November—provided the U.S. District Court in Brooklyn doesn't end the fight with a decision before then. For both Colonel Jacob Schick, head of Schick Dry Shaver, and Archie Moulton Andrews, head of Dictograph, which makes the Packard Lektro-Shaver, are suing each other—Colonel Schick for patent infringement, Mr. Andrews for alleged breach of contract and also, as a Schick stockholder, for mismanagement. Colonel Schick thinks Mr. Andrews stole the idea for Lektro-Shaver from him, while Mr. Andrews contends that the Colonel didn't have the idea in the first place. According to Mr. Andrews, a fellow named Appleyard conceived the electric shaver in England in 1911, though he never got around to manufacturing it. But not even Mr. Andrews can deny that Colonel Schick made the first workable electric shaver.

COLONEL SCHICK, who, as a lad in 1895, distinguished himself by riding a bicycle across the continent, originally turned his attention to the problem of shaving in 1915 while spending a few months in Alaska recovering from a dysenteric disorder contracted in the Philippines during his first hitch in the army (1898-1906). The Colonel, it seems, was chewing reflectively on a piece of moose meat while sitting on a snow pile in front of an open fire when he suddenly found himself wondering if there weren't some device every male in the U.S. would have to buy. In the course of his thinking (the Colonel's guide had gone to a trading post three weeks away, so he had plenty of time to think) he happened to rub his chin, and forthwith the Colonel began to think up new methods of shaving. By the time he got to the Arctic Club in Seattle he had definitely decided that the easiest way to remove whiskers was with an electric shaver. Thereupon he wrote a letter to the Gillette Safety Razor Co., asking permission to experiment with his shaver in their laboratories. Gillette paid no attention to him. Then the Colonel went into the army again. He served as provost marshal in England from 1915 to 1919, and, after a brief spell as engineer in an English stocking plant, returned to America in 1921. A few months after his return he invented the magazine razor, which enabled the shaver to discard an old blade and insert a new one simply by plunging the handle up and down. With the backing of Irving W. Bonbright, the Colonel organized the Magazine Repeating Razor Co. and stayed with the firm until 1927, when it failed to develop his electric shaver. Using the money he made out of his magazine razor, the Colonel was able to go to work on his electric shaver, and by 1928 he had patents on the device. By 1931 the shaver was on the market, retailing for $25.

Essentially the shaver was pretty simple. At the top was a thin, flat strip of metal perforated with slots designed to catch the whiskers. Beneath it another strip of metal similarly perforated could be agitated back and forth by means of a small electric motor. Once the whiskers were in the upper slots, the bars between the lower slots moved over and cut them off. With his shaver enclosed in a Bakelite case and a cord attached, Colonel Schick was ready to go. The first year the plant at Stamford turned out 3,000 shavers, which were sold immediately. Two years later, with the price down to $15, 60,000 were being sold. This year the Colonel, who is usually rather optimistic, expects to top 800,000. The machines are sold wholesale for $10, and whatever profits there are go to the Colonel, who owns all but twenty of the 56,000 shares in Schick Dry Shaver, Inc. And that brings us to Mr. Andrews, for he owns those twenty shares, having purchased them through an ex-Schick employee.

MR. ANDREWS, onetime Director in Trans-Lux Daylight Picture Screen Corp., New Era Motors, Inc., International Ticket Scale Corp., etc., who, at the moment, is being badgered by the SEC for alleged stock manipulations in Dictograph, first became interested in electric shavers in 1933 when Colonel Schick gave him permission to sell the Schick shaver at the Chicago World's Fair, along with Mr. Andrews's Lektrolite cigarette lighter. After the fair was over, Mr. Andrews claimed he'd been given midwestern distribution rights. But the Colonel denied the claim and revoked Mr. Andrews's license in the bargain. Mr. Andrews was very angry. A year later in December, 1935, he brought out the Packard Lektro-Shaver. In 1936 he brought suit against the Colonel for mismanaging Schick Dry Shaver, Inc.

The Lektro-Shaver, retailing for $15, differs from the Schick Shaver in that its cutting strips are rounded, and instead of having many slots for the beard it has a single horizontal slot all the way across. Besides that its cutting strips run with a swirling motion. Nevertheless, nobody can convince the Colonel that the Packard isn't basically identical with the Schick, and that accounts for suit No. 1. But despite the suit, Mr. Andrews has gone right on selling Lektro-Shavers and claims he has sold some 250,000 of them to date. He has plants at Stamford, Connecticut, and Jamaica, Long Island. The Colonel also has a plant at Stamford, and is building another plant there. (In nearby Portchester is the plant of Clipshave, Inc., runner-up to Schick and Packard, which has sold 30,000 shavers at $10 retail since it was organized in September, 1935.) Besides that, the Colonel has acquired a plant at St. Johns, Quebec, from which he intends to take a flier into the world market.

No matter who wins the suit, both the Colonel and Mr. Andrews are determined to stay in the shaver business. But the Colonel is so sure of winning that he won't for a minute share the hope of Mr. Andrews that out of the welter of lawsuits some

[*Continued on page 36*]

Announcing the

LINCOLN-ZEPHYR V-12

for 1937

NEW LOW PRICES FROM $1090

(F. O. B. Detroit)

THIS new car, the LINCOLN-ZEPHYR V-12 for 1937, has a year's superb record behind it. But it is still years ahead of the times! It is not a new model. It is the car, refined and improved, that pioneered a new type of transportation. It is the car that looks into the future to give new kind of value today!

• This year, more than ever, the LINCOLN-ZEPHYR is priced below its specifications. In modern design, 12-cylinder power, safety, roominess, comfort and convenience, it sets entirely new standards in this field. And as it breaks with tradition in value, so it breaks with tradition in design!

• No other car has the LINCOLN-ZEPHYR'S beauty. And beauty, here, has a reason. Beneath the swift flowing streamlines of the LINCOLN-ZEPHYR is a welded one-piece structure unique in the automotive world!

• Powering this unusual car is the Lincoln-built engine. It is of the V-type—has 12 cylinders—is built alongside the Lincoln engine in the Lincoln precision plant. *It is the Lincoln-built engine of the medium-price field.* Its 110 horsepower is more than sufficient, because of the car's aerodynamic design and light weight, to give performance as new as it is stimulating.

14 to 18 Miles per Gallon

For all its size (the springbase is 133 inches), for all its power, the LINCOLN-ZEPHYR is running up amazing records on the road. Owners report 14 to 18 miles per gallon! But credit is due here not to the engine's efficiency alone. Streamlining, and a high power-to-weight ratio increase the efficiency of the engine's performance—give fresh meaning to LINCOLN-ZEPHYR design.

• Talk with the neighbor who now owns a LINCOLN-ZEPHYR. Get his impressions. If joy in motoring means to you what it has meant to him . . . as thousands of letters tell us . . . then you need this car now!

• The new LINCOLN-ZEPHYR V-12 for 1937 is now on display.

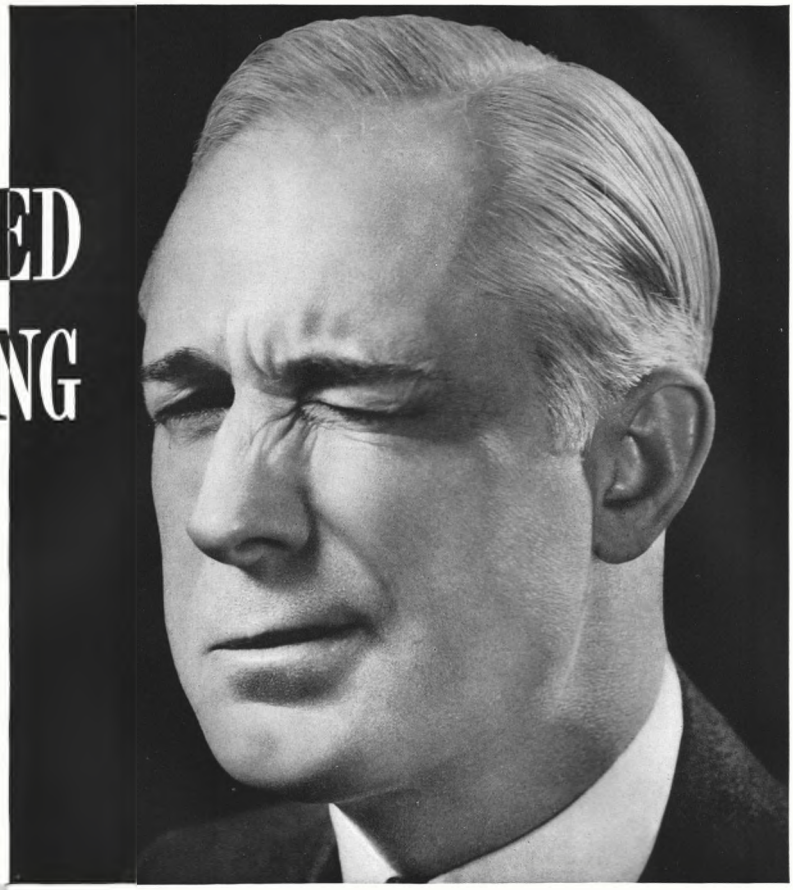
Features that make the LINCOLN-ZEPHYR V-12 outstanding in the medium-price field.

V-type 12-cylinder 110-horsepower engine.
Body and frame in a single unit.
Wheelbase 122 inches. Springbase 133 inches.
Low center of gravity.
Conventional running-boards eliminated; body width increased.
A "front-seat" ride for every one.
14 to 18 miles per gallon.
Built by Lincoln in the Lincoln plant.
Authentically streamlined.
The "flowing" ride—a new rhythm of motoring.

Liberal terms through Authorized Universal Credit Company Finance Plans.

Lincoln Motor Company

And so they ENDED SQUINTING



Taylor Engineers again answer a vital industrial need. Now they make thermometers easy to read, quickly and accurately -with their new "BINOC" TUBING

FOR YEARS there has been an earnest wish in the minds of men in industry. "Give us a mercury-and-glass thermometer," they asked—"an industrial thermometer that is EASY TO READ. Give us one that we can read without squinting—that won't fool us with bore reflection."

Here was a serious need-correction of a fault in an indispensable instrument of industry. But as on many other occasions, Taylor Engineers found an answer in "BINOC" tubing, called one of the greatest advances ever made in glass thermometry.

Basically different in design is "BINOC" tubing. Divorced from artificial aids to easier reading. Built with a new, triple-lens tube construction which makes it optically correct and assures marvelously easy reading. Taylor "BINOC" ends squinting. It marks previous thermometers as obsolete.

"BINOC" One of Many *Taylor* Developments

The record of past years proves Taylor's skill in meeting and supplying the needs of every major industry. Add to "BINOC" other Taylor contributions to temperature measurement and control, such as—

"FULSCOPE" CONTROLLERS, adaptable to any number of control applications;

"DUBL-RESPONSE" CONTROL SYSTEM, which assures precision control in continuous processes especially notable in oil refining;

THE VALV-PRECISOR UNIT . . . ACCURATUS TUBING (r mercury-actuated tube systems . . . and Thermospeed Separable Well Tube Systems.

These Taylor developments and many others make a rich heritage of accomplishment to be passed on to American manufacturers. They are answers not only to demands of today and tomorrow for temperature, pressure, liquid level and rate of flow measurement and control. Whatever the control question, Taylor Instruments and Taylor Systems of Control are engineered to give definite results in speeding production, guarding product quality and uniformity, and keeping costs within lowest possible bounds. And to this end Taylor Service is always at the service of industry and its executives. Taylor Instrument Companies, Rochester, N. Y. . . . Toronto, Canada. Manufacturers in Great Britain—Short & Mason, Ltd., London, Eng.

Manufacturers of a complete line for the home of Indoor, Outdoor, Bath, Cooking and Fever Thermometers and Weather Instruments.

INDUSTRIES IN WHICH TAYLOR CONTROL HAS BEEN OUTSTANDINGLY SUCCESSFUL...

Air Conditioning	Paper
Brewery	Petroleum
Canning	Power
Chemical	Refrigeration
Dairy	Rubber
Food	Textile

Packing

If you would like to know about Taylor Instruments and Taylor Control in any of these fields, please tell us and we will place specific information in your hands.

Taylor

Indicating • Recording • Controlling

TEMPERATURE, PRESSURE *and* **FLOW INSTRUMENTS**

Different - but Symbols of the Same Idea

1/16TH OF AN INCH SAVES MILLIONS

The railroads use, annually, 350 *billion* gallons of water! Much of it normally contains mineral substances which form scale on the insides of locomotive boiler tubes and flues. A scale only one sixteenth of an inch in thickness can necessitate increased fuel consumption by 15%! But modern railroad research has found the way to soften water and to treat it chemically with the result that locomotive life, efficiency and safety have been tremendously increased. This is but one of the many rewards of the railroads' pioneering efforts along a wide front of studies. If all the research activities carried on by the American railroads were concentrated in one huge laboratory it would require an institution housing thousands of men and providing millions of square feet of floor space. Six railroads, two universities, and ten supply companies, for example, maintain a research personnel of about 1,000 people.

PIONEERING STILL GOES ON!

GO PLACES—NOW—BY TRAIN

Rates are low — Safety, Speed and Comfort greater than ever before!

No other transportation in the world can match the American railroads for speed with safety. And every modern convenience contributes to your comfort when you go by rail. Practically all through trains are air-conditioned—cleaner, quieter, healthier. You have modern lighting, excellent food, restful seats, comfortable beds, plenty of room to move around, and you get there on schedule. Yet with all the improvements railroads offer today, fares have been steadily lowered both in coaches and Pullmans.

THERE is scarcely a section of this nation that is not witnessing today dramatic evidence of the progressiveness of the American railroads.

This evidence may take the form of faster freight and passenger schedules, wider use of air-conditioned cars, door-to-door handling of freight, lower rates, or constant improvements in the all-important roadway.

Or it may find more spectacular expression in new streamlined trains — marvels of colorful utility linking fresh beauty to new standards of comfort and service for the traveler.

In whatever form you see these examples of enterprise — whether in the workaday running of the railroads or spotlighted in dramatic steam engines, impressive electrics or sleek new Diesels — you see different symbols of the same idea.

That idea is to provide the American people with *the safest, most serviceable and progressive transportation system in the world.*

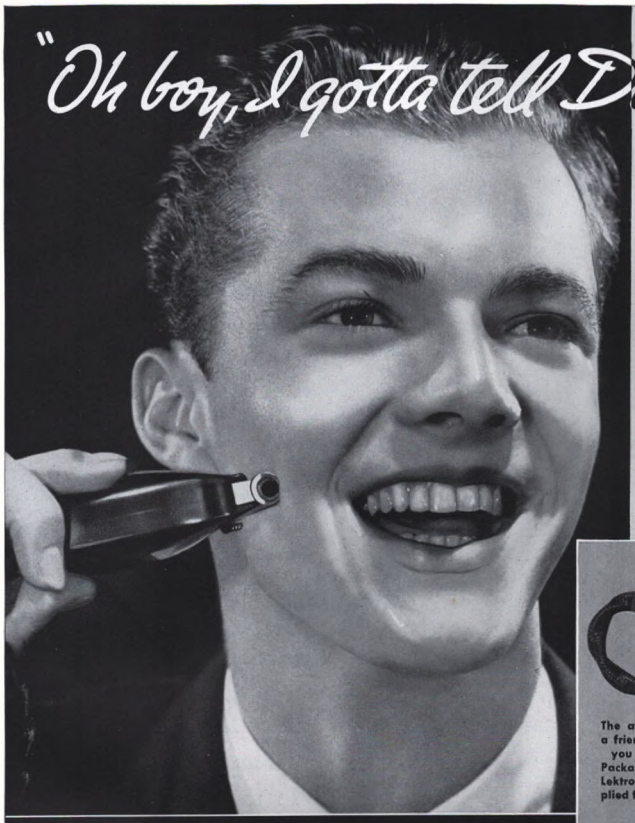
We believe if you'll look about you with an understanding eye, you'll see surprising proof of how superbly that idea is being served.

SAFETY FIRST— *friendliness too!*

ASSOCIATION OF

AMERICAN RAILROADS

"Oh boy, I gotta tell Dad about this!"



HE SHOULD, as one stepper to another. After all, we men should stick together. If this is Dad's night with the car, "business" requires that he look slick, and the Packard LEKTRO-SHAVER is what he needs. His blade-tortured face will purr to the gentle touch of that $200,-000 round-head cutter, and his chin will be satin-smooth to the tenderest touch.

No lather, no brush, no blades, not even water. That's the new shaving bliss that comes with the Packard LEKTRO-SHAVER, and it costs only $15, *for the next ten years of shaving, or more.*

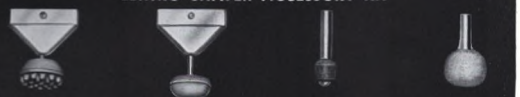
Go to the "Progress Counter" in your favorite department store and get a demonstration of the Packard Lifetime LEKTRO-SHAVER ($15) and its new accessories. Or drop into your favorite drug store, hardware store, haberdasher's, or any good dealer's. See the new Packard LEKTRO-SHAVER. Then you will realize how economically your family may have its own new pride and joy.

The autograph of a friend to whom you present a Packard Lifetime Lektro-Shaver, applied for 50c extra

FEATURES EXCLUSIVELY THE $200,000 ROUND HEAD MASTER CUTTER

PACKARD *Lifetime* LEKTRO-SHAVER

LEKTRO-SHAVER ACCESSORY KIT



1. Scalp Vibrator 2. Facial Vibrator 3. Emery Wheel Nail Filer 4. Nail Buffer

150 SERVICE STATIONS THROUGHOUT THE U. S. A.

'Phone nearest Dictograph or Acousticon office listed in telephone directory.

Lektro-Shavers are manufactured by Dictograph Products Company, Inc., precision manufacturers for 33 years, for Lektro-Shave Corporation, Licensees.

SOLE DISTRIBUTOR: Progress Corporation, 1 East 43rd St., New York City; 1056-58 So. Olive St., Los Angeles, Calif.; 180 N. Michigan Ave., Chicago, Ill.; 34 Adelaide St. West, Toronto, Canada; 39A Wellbach St., London W 1, England.

On sale at 1,000 department store "Progress Counters" and by 20,000 dealers everywhere. If they cannot supply you, use coupon.

SHAVING IN THE SKY ROOM!

New giant flagships of American Airlines, Inc., which provide non-stop flights between New York and Chicago, and overnight transcontinental sleeper service, feature Packard Lektro-Shavers and Lektrolites as standard equipment for passengers.

IN THE RITZ-CARLTON BARBER SHOP

At the Ritz-Carlton the patron luxuriates in a new shave-thrill, and decides to take a Packard home.

NO REFILLING NUISANCE WITH LEKTROLITE FLAMELESS CIGARETTE LIGHTER

THREE MONTHS WITHOUT REFILLING!... Ten million cigarettes now lighted every day on LEKTRO-LITES! You can light your cigarette in a whirlwind! No flame. No falling sparks. No odor. Works like magic. Your first puff lights the cigarette! The magic glow is 1200 degrees cooler than flame and releases no stain producing substances from the cigarette. Priced from $1 to $25.

THE PROGRESS CORP., 1 East 43rd St., New York (Dept. F-1-A)

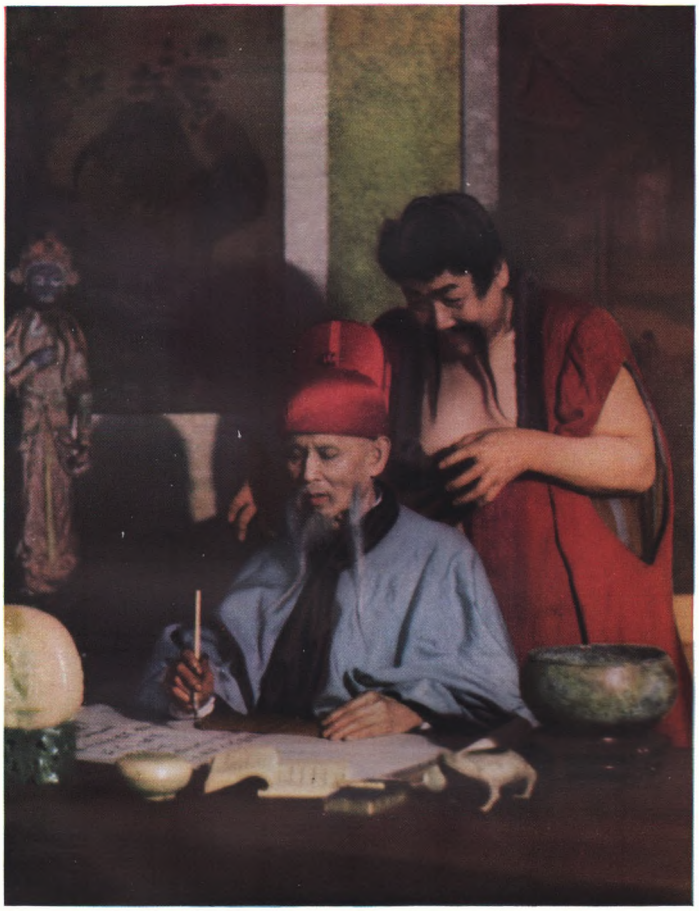
Enclosed find check ☐ money order ☐ for $..... for which please send me ..... "Quarterly" lighter in Nickel ($5);.... Chrome Engine turned (illustrated) ($7.50); ..... Chrome and Enamel ($10); ..... Midget ($1); ..... Table Lighter in Nickel ($5.00); ..... Chrome ($7.50); ..... Enamel ($15); ..... Packard Lektro-Shaver ($15); ..... Accessory Kit ($5).

Name.....

Address.....

City.....*State*.....

Sen Chu's figures were right, but the Tartar couldn't add!



Once, there lived in China, a sage called Sen Chu. A great mathematician, he believed implicitly that numbers could explain the pattern of human life, that they could foretell the future. Sen Chu compiled long columns of figures to prove China could never be invaded. His figures were right, but his answer was wrong. For Sen Chu, his brilliant calculations on the table before him, was choked to death by the hands of an invading Tartar . . . who could not add.

SOMETIMES like Sen Chu, when an advertiser lays out his sales promotion program, his figures are right but his answer is wrong. He forgets that the real power and influence that any newspaper exerts as an advertising medium in its community depend not alone upon the number of its readers but also . . . *who* they are, *where* they live, and *why* they buy the paper.

In the case of Scripps-Howard Newspapers, the *character* of their readers is determined by the very nature of their editorial and business policies.

Owned solely by the men who produce them, these newspapers are unfettered. They are free to give fearless editorial expression and to print the whole news without distortion, bias or partisanship.

Such policies automatically attract active and open-minded readers, the people who influence opinion in their communities. Such policies are the chief circulation appeal to more than 2,000,000 daily purchasers of Scripps-Howard Newspapers.

And 91.5% of Scripps-Howard readers live within the city-trading-zone of those 23 important markets in which the newspapers are published. Thus, your advertising goes where buying power is concentrated and, hence, sales costs are lowest.

When an advertiser uses Scripps-Howard Newspapers the *answer* is right as well as the *figures.*

SCRIPPS · HOWARD

NEWSPAPERS

MEMBERS OF THE UNITED PRESS . . . OF THE AUDIT BUREAU OF CIRCULATIONS . . . AND OF MEDIA RECORDS, INC.

NEW YORK . *World-Telegram*	BUFFALO . . . . . *Times*	INDIANAPOLIS. . . . *Times*	AKRON . . . . *Times-Press*	WASHINGTON . . . *News*	KNOXVILLE . . *News-Sentinel*
CLEVELAND . . . . . *Press*	CINCINNATI . . . . . *Post*	DENVER . . . . . *News*	BIRMINGHAM . . . . *Post*	FORT WORTH . . . *Press*	EL PASO . . . *Herald-Post*
PITTSBURGH . . . . . *Press*	KENTUCKY POST *Covington edition, Cincinnati Post*	TOLEDO . . . . . *News-Bee*	MEMPHIS . . . *Press-Scimitar*	OKLAHOMA CITY . . *News*	SAN DIEGO . . . . . *Sun*
SAN FRANCISCO . . . . *News*		COLUMBUS . . . . *Citizen*	HOUSTON . . . . . *Press*	ALBUQUERQUE . . *Tribune*	EVANSVILLE. . . . . *Press*

National Advertising Dept., 230 PARK AVENUE, NEW YORK • CHICAGO • SAN FRANCISCO • DETROIT LOS ANGELES • ATLANTA PHILADELPHIA • DALLAS

STOP WASHING DISHES!

ALL YOUR DISHES CAN BE WASHED ELECTRICALLY IN LESS TIME—AND CLEANER —THAN BY HAND FOR LESS THAN 1c PER DAY

G-E Dishwasher in both individual and combination sink cabinets.

NEW G-E DISPOSALL

Kitchen waste instantly disposed of right at the sink. Reduces garbage to thin pulp and flushes it out the drain like water. Quickly attached beneath any sink.

TIME-wasting dishpan drudgery should no longer hold a place in the routine of your kitchen. The endless, tiring grind of washing dishes every morning, noon and night has been changed to a quick, simple task by the General Electric Dishwasher. This marvelous electrical servant washes all the dishes in less than 10 minutes—and does it better and more economically than anyone can possibly do it by hand. For an operating cost of only one penny a day, the G-E Dishwasher abolishes the most hateful task of housework.

WHEN THE TABLE IS CLEARED THE DISH-WASHING JOB IS DONE

All your dishes—glassware, chinaware, silverware, pots and pans, too—are thoroughly and *hygienically* cleaned by a scalding spray of water much hotter than human hands can endure. The dishes are dried by their own heat and require no wiping.

NO CHIPPING—NO BREAKING

Your most prized pieces of finest china or glassware are safe with the G-E Dishwasher. They do not move, and are protected from the hazards of being handled by soapy, slippery fingers.

More than 100,000 electrical dishwashers are now in use every day in America. See a free demonstration of the G-E Dishwasher at your nearest General Electric dealer's or send coupon below for complete descriptive literature.

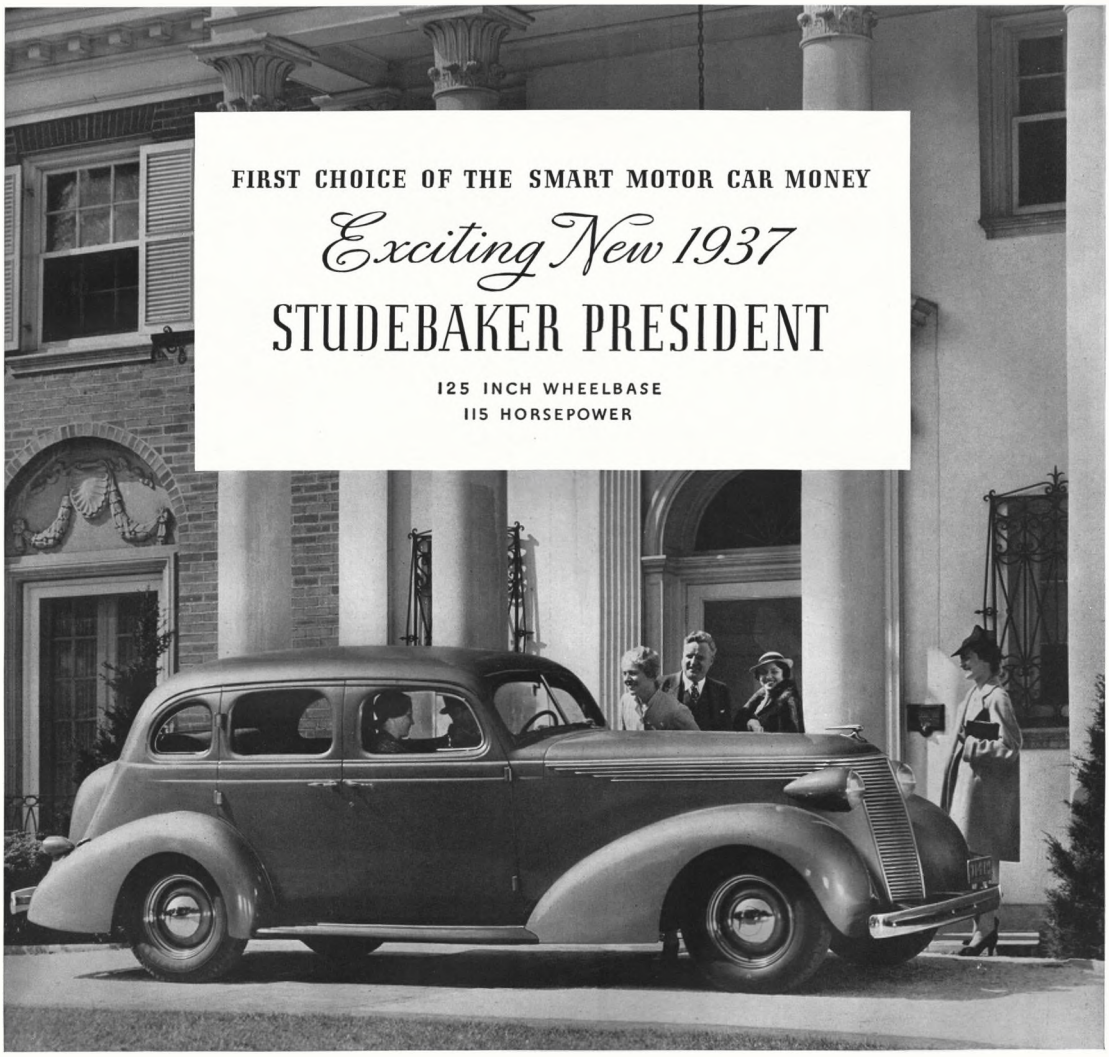
GENERAL ELECTRIC COMPANY,
Section DB-11, Nela Park, Cleveland, Ohio
Please send descriptive literature on G-E Dishwashers and G-E Disposall.

Name_____

Address_____

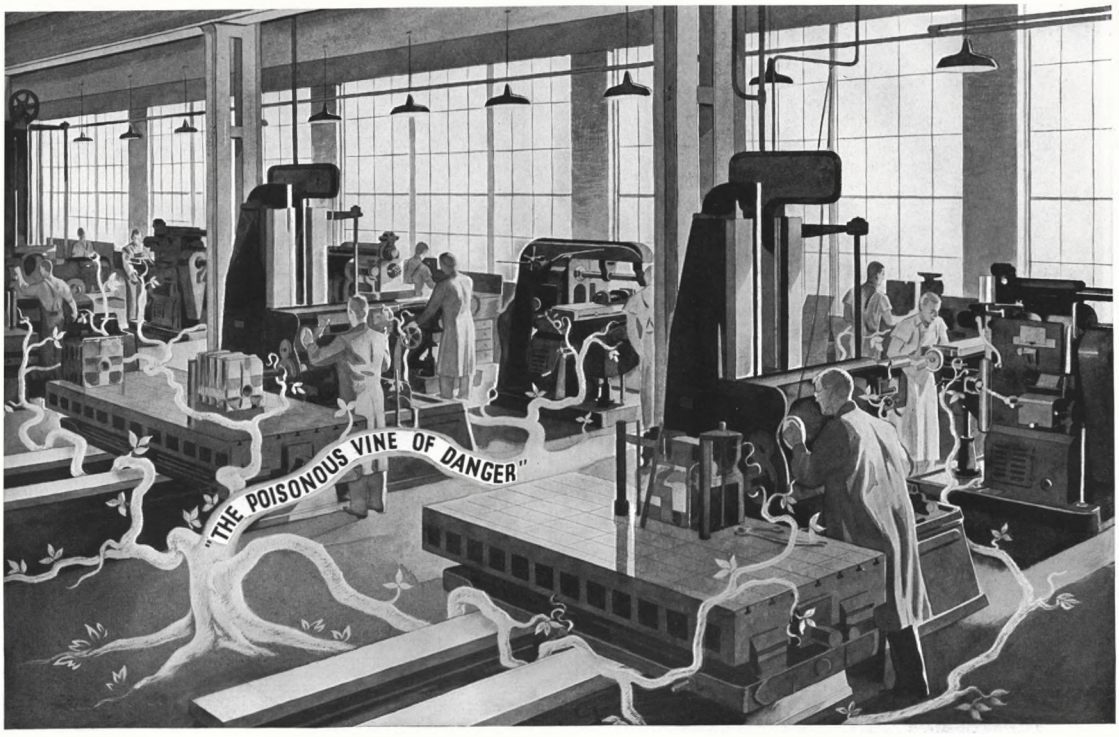
City_____ State_____

GENERAL ELECTRIC
Dishwasher



Smart motor car buyers who have examined and driven the exciting new 1937 Studebaker President Eight know that it excels many cars that are considerably more costly. • They find that the President is no step-child of a fine family but the surpassing achievement of the greatest group of skilled craftsmen in the automobile world. • Powered by a 1937 version of the great eight cylinder Studebaker engine that holds every stock car record from 3,000 to 30,000 miles, the President is probably the most sightly car on the motoring scene. • Engineered into it is that great safety advancement obtainable only in Studebaker cars—the automatic hill holder. And it presents the engine-saving, gas-saving automatic overdrive in its finest form, plus the added economy of the sensational new Fram oil cleaner. • Its solid steel-reinforced-by-steel body has a paint finish twelve coats deep—and the capacious President interior is rich with the simplicity and charm for which Helen Dryden's designing is famed. • A new lower frame, a new underslung hypoid gear rear axle and a flat 18-gallon gasoline tank give this President more usable space for luggage than any car of the times. Its doors stay closed tightly even if shut only lightly thanks to a revolutionary new rotary lock. • In addition to its unexpectedly low price, $965 and up at the factory, the purchase of a President is made still easier for those who are budgeting, through the Studebaker C.I.T. plan.

★ ★ ★ THE SPOTLIGHT CAR OF 1937 ★ ★ ★



no longer a threat to profits . . . for 50,000 executives.

MOST accidents don't happen—they *grow*. And not from chance . . . but from *conditions*—indifference in men's minds, carelessness in their hands, lack of efficiency in how they are directed.

For Danger is a red vine—twisting through an industrial plant like a serpent, coiling about men and machines, imperiling each square foot of space, threatening the flow of production.

THIS is how American Mutual sees danger . . . this is the attitude with which its engineers attack the safety problems of its policyholders. They do more than install mechanical guards . . . they dig down for the root of the vine that is poisoning profits.

So workmen's compensation insurance becomes more than a means of protection. To American Mutual policyholders, it is an integral part of production—truly an opportunity for profits—one from this economical safety work that lowers accident costs; another from medical service that aims to restore injured men to their jobs, saving their valuable skill; a third from the cash dividend that has always been paid.

Since 1887, all of our policyholders have received 20% or more each year . . . a total of more than $50,000,000. In 13 years, a manufacturer of automotive braking equipment has saved $276,339.70 in dividends.

To 50,000 executives, these three profits have made workmen's compensation insurance a matter for their active interest. They would recommend that you read "How Twelve Companies Saved More Than a Million Dollars", a booklet which will be sent upon request. Address Dept. 27, 142 Berkeley Street, Boston, Mass.

★ ★ ★

Among the Advisory Board Members of American Mutual are: Raye M. Fisher, *Treasurer*, The Midland Steel Products Company; James Duncan Phillips, *Vice President*, Houghton Mifflin Company; R. H. Polack, *Secretary-Treasurer*, Myles Salt Company, Ltd.; William Skinner, *President*, William Skinner & Sons; Louis W. Young, *Treasurer*, The Stanley Works.

Admitted Assets: $23,809,545.32 ★ Liabilities: $19,424,978.69
Surplus to policyholders: $4,384,566.63 ★ As of December 31, 1935

Workmen's Compensation, Automobile, Fidelity Bonds, Burglary, and other forms of Casualty Insurance written by American Mutual; Fire Insurance by our associate, Allied American Mutual Fire Insurance Company.

An American Mutual Policy . . . an Opportunity for 3 Profits

AMERICAN MUTUAL
LIABILITY INSURANCE COMPANY

★ BRANCHES IN 53 OF THE COUNTRY'S PRINCIPAL CITIES ★

BUSINESS TRIPS OVERSEAS...

When the markets of the world call your executives, buyers and salesmen to foreign lands, the problems of arranging their trips can be met efficiently by the AMERICAN EXPRESS TRAVEL SERVICE, a long established, internationally recognized travel organization. Some of America's biggest business firms make the AMERICAN EXPRESS TRAVEL SERVICE an auxiliary department, free from all departmental overhead.

To plan a trip completely and make the reservations requires technical skill and a knowledge of the ever-changing conditions in foreign lands.

The AMERICAN EXPRESS, with its Complete World-Wide Travel Service, with its offices girdling the globe, its correspondents in cities wherever travelers go, its interpreters at the principal seaports and frontier points, is in close touch always with every change in schedules of railroads, steamships, etc. and with the ever-varying hotel situation. Its rates and fares are complete.

Special arrangements can be made to place an experienced man in charge of the individual requirements of your firm. He will always be on hand—always ready at the end of the telephone—always willing to render efficient and prompt service.

American Express Travelers Cheques, the safe and dependable way in which to carry travel funds, can be mailed, wired or cabled to travelers enroute, in the United States or in foreign lands.

In all matters pertaining to your firm's travel requirements, have your secretary get in touch with

AMERICAN EXPRESS

America's Foremost Travel Organization

COMPLETE WORLD-WIDE TRAVEL SERVICE

65 Broadway . . . . New York
178 N. Michigan Ave., Chicago
605 Fifth Avenue, New York
91 Luckie Street, N. W., Atlanta
253 Post Street, San Francisco

American Express Travelers Cheques Always Protect Your Funds

Correct Evening Clothes

FOR

FORMAL AND INFORMAL WEAR

TAILORED BY

HICKEY-FREEMAN

Meeting the exact adherence to style correctness, excellence of materials, and perfection of fit, demanded by important social events

APPROPRIATE EVENING DRESS ACCESSORIES

F. R. TRIPLER & CO.

Outfitters to Gentlemen · Established 1886

MADISON AVENUE AT 46 STREET · NEW YORK

BY APPOINTMENT

A Citizen of the World

BURBERRY OVERCOATS

A realization of the fact that every day and night in the year Burberry Overcoats are in *constant use* throughout the civilized world is overwhelming evidence of their universal acceptance.

There is a Burberry Overcoat for every occasion. Formal, town and country, sporting.

Countries in which Burberrys are sold

Africa, South America, Australia, Austria, Belgium, Canada, China, Cyprus, Czecho-Slovakia, Denmark, Egypt, Esthonia, France, Federated Malay States, Finland, Germany, Gibraltar, Greece, Hawaiian Islands, Holland, Hungary, India, Iceland, Italy, Japan, Java, Jugo-Slavia, Latvia, Lithuania, Malta, Mexico, Morocco, New Zealand, Norway, Philippine Islands, Poland, Portugal, Siam, Spain, Straits Settlements, Sweden, Switzerland, Turkey, United States of America, West Indies.

For the convenience of Burberry patrons, selected dealers are located in the principal cities of the United States and Canada. An inquiry to Burberrys Ltd., 14 East 38th St., New York will bring prompt response of location and address.

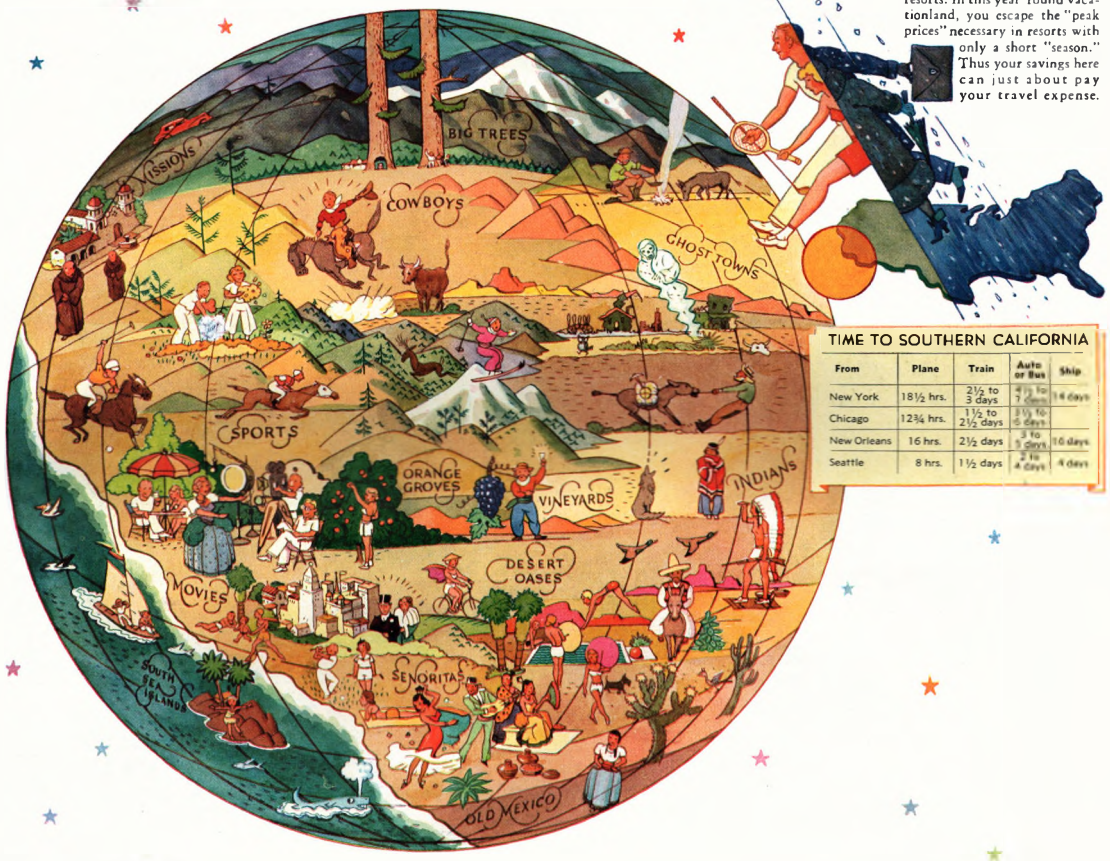
BURBERRYS *LTD.*
of LONDON, ENGLAND

BURBERRYS LONDON

STEP INTO A DIFFERENT WORLD THIS WINTER . .

[TIME, COSTS *REDUCED!*]

Time required for a California trip has been sharply reduced. (See table below.) Transportation costs are at record low levels, and besides that, impartial surveys have shown that costs *in* Southern California are 15% to 32% under 20 leading U. S. resorts. In this year 'round vacationland, you escape the "peak prices" necessary in resorts with only a short "season." Thus your savings here can just about pay your travel expense.



TIME TO SOUTHERN CALIFORNIA

From	Plane	Train	Auto or Bus	Ship
New York	18½ hrs.	2½ to 3 days	4½ to 7 days	14 days
Chicago	12¾ hrs.	1½ to 2½ days	3½ to 6 days	
New Orleans	16 hrs.	2½ days	3 to 5 days	10 days
Seattle	8 hrs.	1½ days	2 to 4 days	4 days

THERE ARE lots of fine places to choose from when you take a winter holiday, but few, we submit, that offer the *variety* of fun, the sense of change and stimulating new experience you find in Southern California.

It's true: as you cross the mountains and glide into these fertile valleys, it's a different world, with a world of fun, adventure and surprises on every side.

Not just palms and sunshine and lazy South Sea peace . . . interesting cities like Pasadena, Beverly Hills, Santa Monica, Long Beach, Glendale, Pomona . . . the fascinations of Hollywood with its celebrities from everywhere . . . Los Angeles County's out-of-the-ordinary citrus, oil and shipping industries . . . the map can't begin to show it all. But we have a guide book:

FREE: ***Automatic Trip Planner***

This 80-page Official Guide Book —widely acclaimed by travel experts— plans your trip for you from start to finish: what to see and do, how to get here, time required, itemized cost schedules, plus over 100 photographs, maps, etc. . . . authentic facts available only through this non-profit community organization. Coupon brings it FREE by return mail, along with the new, free California Picture Map.

ALL-YEAR CLUB OF SOUTHERN CALIFORNIA

Come for a glorious vacation. Advise anyone not to come seeking employment, lest he be disappointed; but for tourists, the attractions are unlimited.

SOUTHERN CALIFORNIA

MAIL COUPON TODAY

All-Year Club of Southern California,
Div. E-11, 629 So. Hill St., Los Angeles, Calif.

Send me free book with complete details (including costs) of a Southern California vacation. Also send free routing by ☐ auto, ☐ rail, ☐ plane, ☐ bus, ☐ steamship. Also send free booklets about counties checked: ☐ Los Angeles, ☐ Santa Barbara, ☐ Orange, ☐ Riverside, ☐ Inyo, ☐ San Diego, ☐ Ventura, ☐ San Bernardino ☐ Kern, ☐ Imperial.

Name _____

Street _____

City _____

State _____

(Please Print Name and Address)

HAVE YOU NOTICED?

how those who "stick with Johnnie Walker" . . . . . .

BORN 1820 . . .
still going strong

. . . have a familiar brisk stride in the morning!

THE FINE friendliness of Johnnie Walker Scotch Whisky is not mere chance, but the result of four generations of Scottish care and skill. Since 1820 John Walker and Sons have collaborated with time to produce sound, honest whisky. Choice and ample stocks of fine old Scotch are stored away in the Walker warehouses to assure Scotch whisky at its best . . . this year and through the years to come. Not a drop ever goes into the famous square bottle until time has gently smoothed it into the mellow, delightful whisky that all the world knows as Johnnie Walker.

That's why . . . before dinner and after . . . at bars or at home . . . it's a sensible idea, to "stick with Johnnie Walker." An evening with this genial gentleman means a fresh and pleasant tomorrow.

86.8 proof.

JOHNNIE WALKER

BLENDED SCOTCH WHISKY

DISTILLED, BLENDED AND BOTTLED IN SCOTLAND. All Red Label 8 years old; Black Label, 12.

CANADA DRY GINGER ALE, INC., N.Y., SOLE DISTRIBUTOR

FROM 60 TO A QUICK STOP *in the rain* WITHOUT SKID-SWERVE OR TAILSPIN

*The Dual 10 stops quicker at 60 in the rain than ordinary tires stop at 50 in dry weather!**

With its exclusive quick-stop wrinkle feature the General Dual 10 not only stops 50% quicker, but every stop is straight in line—without side slip or tailspin.

Protection like that from the dangers of the skidding weather ahead is vital to your safety this winter.

It is economical to put on new Dual 10s now because they "wear in" more slowly in colder weather—providing the maximum skid protection when you need it—with the minimum loss of tread rubber.

General's patented low pressure construction, for years, has provided the greatest protection from blowouts. This low pressure, combined with the new Dual 10 tread, gives you a double safeguard against the two greatest hazards of motoring.

Do as thousands are doing—equip your car now with General Dual 10s. Your General Tire dealer has a convenient winter purchase plan.

The General Tire & Rubber Co., Akron, O.
In Canada—The General Tire and Rubber Co., of Canada, Ltd., Toronto, Ont.

**Based on standards set by the National Safety Council for stopping on dry pavements.*

The New
GENERAL
Dual 10

plan will emerge to pool patents after the fashion of the automobile manufacturers. Meanwhile the Colonel would like to look into the problem of increasing the life span of man to 120 years. He says he'd try to clear it up now if he weren't so tied up with shavers.

Ding to Beep to Boo-oom

YOU probably won't hear much about the automobile horn at the National Automobile Shows this year, but that doesn't mean that it isn't being discussed pretty energetically behind the scenes. Since 1930 noise haters, led by various noise-abatement committees, have become increasingly strenuous in their attacks on automobile horns. Prime charge against the horn is that it scares people instead of warning them, thus inducing nervous disorders of all kinds. In answer to this charge, automobile manufacturers point out that the only horns that will work successfully on the high-speed cars of today are the electric air horn and the high-speed vibrator, which are just about as mellifluous now as the horn manufacturers can make them. The suggestion that cars carry two separate horns, one soft for the city, the other loud for the country, doesn't appeal to the manufacturers at all, since an extra horn would increase their costs. And sometimes, when the noise-abatement committees bother them too much, the automobile manufacturers must get all choked up thinking of the days when the automobile went its loose and raucous way, carrying a warning in every clamp and fender, and nobody minded much when a driver tooted his horn just to draw attention to the fact that he was driving a car.

THE first warning signal on an automobile wasn't a horn but a bicycle bell. Operated by a pedal, the bell was superfluous since practically all pedestrians in the early 1900's ducked into doorways the minute they laid eyes on a horseless carriage. As soon as people got used to automobiles, the bulb horn was introduced, which produced a *honk, honk*, much like the cry of a wild goose. It was standard equipment on cars until 1906 when the Gabriel exhaust horn appeared, followed by the Aermore exhaust horn. Immediately the bulb horn was thrown into disfavor, for the exhaust horn had an authoritative military tone that impressed everybody. The exhaust horn consisted of a number of hollow tubes which, when a pedal was pressed, swung against the exhaust pipe and went *whoo-oo*. Simplest exhaust horns with four pipes cost $10. But there were fancier ones costing up to $175, which sounded like bugles. By 1910 the motor-driven horn, which was invented in 1908 by Dr. Miller Reese Hutchison of the Klaxon Co. and developed in 1909 by Emanuel Auriero of the E. A. Laboratories in Brooklyn, began to be very popular. The motor-driven horn was purely functional and its sole purpose was to make pedestrians get out of the way. It consisted of a studded disk attached to the main shaft of the motor, so arranged that upon rotation the studs would strike a bump on the diaphragm rapidly, giving off an unpleasant *oo-ooga* sound. Then in 1911 Sparks Withington put its Sparton, another motor-driven horn (also *oo-ooga*), on the market, and it wasn't long before Sparton and Klaxon, which was later taken over by Delco-Remy, had the horn business pretty well in hand. They kept it in hand until the early twenties when the speed vibrator came in with a *beep*. Developed first in Germany by Inventor Robert Bosch, the vibrator worked like the disk in a telephone, the diaphragm vibrating in response to electric impulses. Next, horn makers tried out a compressed-air horn, but it didn't catch on very well because of the complicated apparatus involved, although busses that have air brakes still use it. Also tried out were vacuum horns, which utilized the intake manifold vacuum to agitate a diaphragm. These were not much good at high speeds and had to be constantly revamped as engine changes were made. Finally in 1930 the electric air horn was developed and in a couple of years it was the most popular horn on the

[*Continued on page 50*]

CHARTING THE COURSE

America is today finding its way to new horizons. With intriguing seas ahead, the Mimeograph becomes an increasingly important tool in safe navigation. First in the field of stencil duplication, it has pioneered every far-reaching betterment of the art. On performance, it rates as the standard duplicator of the world, with a range of effective action which defies imitation. Today its complete mastery of its job is highlighted by clear-cut reproductions of cartoons, charts, diagrams, pictures—almost any kind of illustration workable in line. From simple typing to elaborate design, the Mimeograph makes finely printed copies at low cost and with matchless speed. For better navigation in business and education, learn what it can do for you today. Address A. B. Dick Company, Chicago, or see classified telephone directory for local address.

MIMEOGRAPH

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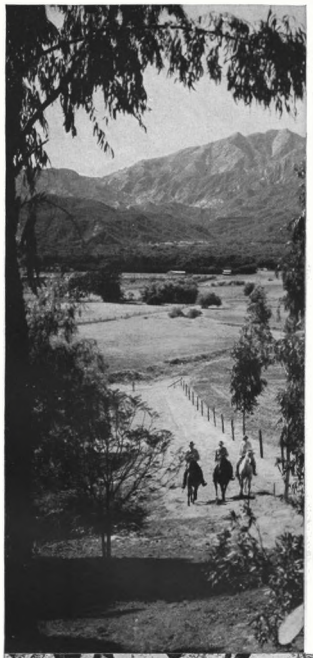
in Lovely

OJAI

PRONOUNCED O-HIGH

RE-LIVE CALIFORNIA'S GOLDEN ERA

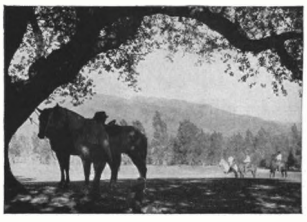


IN A VALLEY a thousand feet above the sea, surrounded by foothills that buttress the majestic peaks of the Coast Range, nestles the village of Ojai. Three centuries of romance have given color and charm to its history. Nature has excelled herself in providing fertility and beauty. Days filled with sunshine under blue skies; evenings in cool, invigorating air suffused with the perfume of flowers, sweet grass and fruit blossoms. All the amenities of refined and cultured living immediately at hand in a quiet and peaceful retreat that is unspoiled by traffic or industry.

Fortunate are those who discover Ojai and the richness of its offerings of varied opportunities for peaceful quiet and healthful play. Schools, churches, parks, playgrounds and markets are provided. Hundreds of miles of easy trails lead through the fascinating Santa Barbara National Forest. The ocean is only fourteen miles distant, with Santa Barbara and Los Angeles conveniently near by motor. Horseback riding, hunting, hiking, tennis and golfing on the links of the Ojai Valley Country Club lend variety and activity according to one's taste. Illustrated folder on request.

THE OJAI VALLEY COMPANY

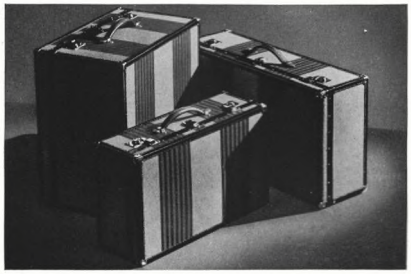
DRAWER F



OJAI, CALIFORNIA

Three hotels provide ample accommodations in any style you may prefer—in the village, at the foothills, or in the country. The Ojai Valley Country Club opens December 15. Come to Ojai for rest or play amid the groves of oranges, lemons, grapefruit, avocados, palms, flowers and the beauty of mighty mountains. Live in the healthful atmosphere of Southern California where its world-renowned climate is at its best.

CHIEF OSHKOSH LUGGAGE



Chief Oshkosh is made for people who have lots of traveling to do, and don't wish to be perpetually buying new luggage to do it with.

Suit Case—**$40** *Hat Case*—**$55** *Shoe Case*—**$50**

Our booklet "Luggage Prescriptions" is worth reading. Copy on request.

OSHKOSH TRUNKS, INC.

Makers of fine luggage . . . 10 East 34th Street, New York

Also sold in fine stores in the principal cities.

Prices slightly higher west of Denver.

Your home for the racing season or the entire winter, amidst sun-flooded gardens in full bloom

The Town House

Wilshire Boulevard opposite LaFayette Park

LOS ANGELES

One of The World's Fine Hotels

Hotel rooms from 6.00; suites, 1 to 5 bedrooms from 12.50
Rates by month or year on request
M. E. MORRISON, *Managing Director*

The Renaissance Room

Through the years the elegance of the Gotham's appointments has gained world-wide popularity. The Renaissance Room famous for its cuisine, the smart modern Alpine Grill and the Gold Room Cocktail Lounge will be pleasant memories of your visit . . . The Gotham is located in the fashionable shopping district, convenient to the theatres and all parts of the city . . . Single rooms from $4.

Max A. Haering, Resident Manager

The Gotham

FIFTH AV. 55th ST., NEW YORK

● *The newest thing in office lighting is this combination of mercury and incandescent lamps in the general office of the Cannon Mills at Kannapolis, N. C. Each of the totally indirect luminaires contains one 400-watt mercury lamp and four 200-watt* MAZDA *lamps. Illumination of about 30 footcandles is provided.*

Advantages offered by new combined lighting

1. Mercury lamps are approximately twice as efficient as other available light sources. Thus the one 400-watt mercury lamp in each of the fixtures in the above installation gives 16,000 lumens for about 450 watts, while the four 200-watt incandescent lamps, or a total of 800 watts, give about 14,000 lumens.

2. A combination of equal lumens of mercury and incandescent lamps simulates and blends well with daylight.

3. Combination lighting is actually cooler than straight incandescent lighting since mercury lamps give approximately twice as much light for the same heating effect.

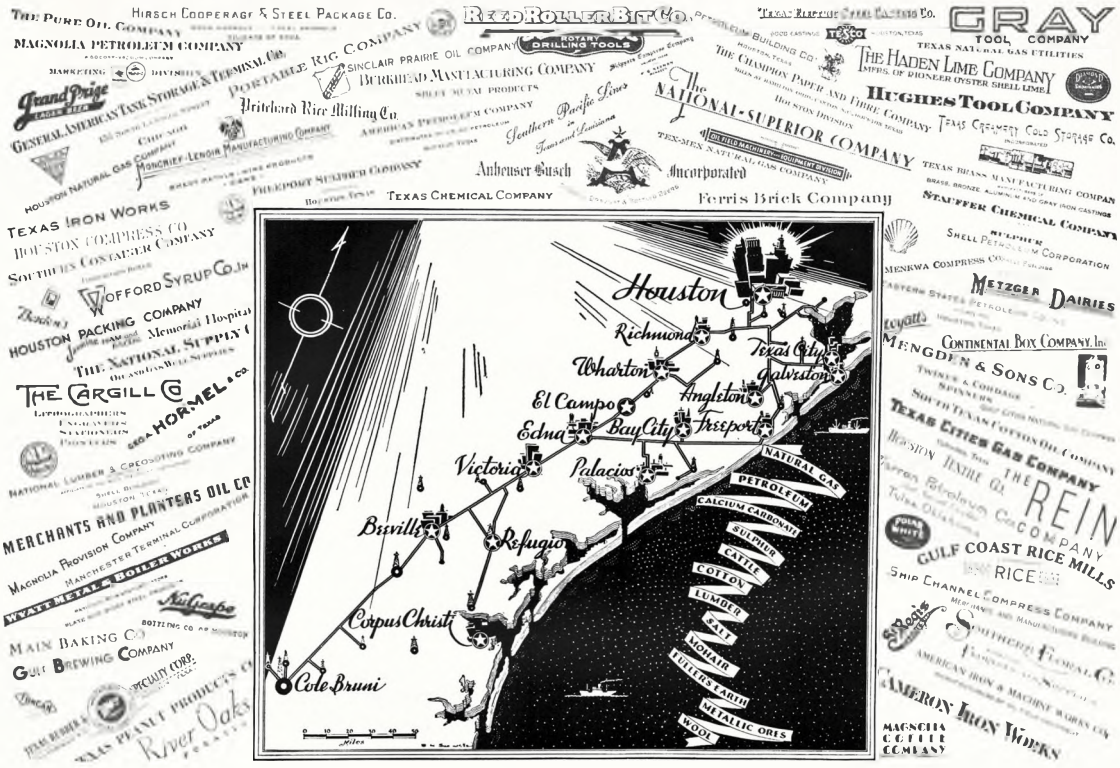
Combined Mercury and Incandescent lamp installation simulates daylight

To meet the rapidly growing demands of providing offices and industrial plants with better light for better sight, General Electric now offers a brand new kind of lighting . . . a combination of mercury and incandescent lamps. ● When blended in equal parts, the color of light produced simulates daylight. Particularly adapted for office work, it blends well with daylight, makes white papers appear whiter, makes offices appear larger and cooler. ● This new kind of lighting is now being satisfactorily used in many offices and industrial plants. For further information and details, write to either address given below.

GENERAL ELECTRIC

GENERAL ELECTRIC VAPOR LAMP CO.
807 ADAMS STREET, HOBOKEN, N. J.

INCANDESCENT LAMP DEPT. 166
NELA PARK, CLEVELAND, OHIO



A proved industrial territory—but there's still room (and profits) for the pioneer

Prosperous 1936 has paved the way for long-needed industrial changes in the United States, and before the year's end, many managements will undoubtedly plan to expand their industries southwestward, to join the already considerable industrial development along the Texas Gulf Coast. Here pioneer industries, many of them our customers and good friends of long standing, have proved the industrial possibilities of the rich region we serve. They have demonstrated that the resources of South Texas, the coast country, can support a variety of industries, the diverse character of which is astonishing: chemical works, oil refineries, pulp mills, meat packers, cotton mills, sulphur mines, foundries, machinery manufacturers, wood preserving plants, vegetable oil refiners, coffee roasters, and many more.

But this rich assortment of large industries is only the small beginning of industry in a land long devoted to the plow and the branding iron. New industries are still pioneer industries in South Texas and theirs today are the opportunities and the definite advantages of the pioneer: factory sites with both rail and water transportation: new markets—here (6,000,000 Texans!), in the Middle West, on both coasts, in Spanish America, Europe and the Orient: and first choice among an abundance of natural resources. South Texas has, moreover, a mild and equable climate from year's end to year's end, a progressive and industrious people, and an inexhaustible supply of natural gas, the dependable, economical industrial fuel.

The fact is inescapable: South Texas is the locale of the next great American industrial expansion. It is a fact you cannot afford to overlook: indeed, it will pay you handsomely to investigate South Texas for your own company.

Before you complete your plans and prepare your budget for 1937, send for a survey of South Texas which we will gladly prepare for your company without cost or obligation. Our surveys are highly individualized and strictly confidential: on an average, it takes our research department about 30 days to assemble the data for each survey. The result is just the sort of report you would expect from your own engineers . . . In order that you may have one of these reports when you make your plans for 1937, we suggest that you send for a survey as quickly as possible. Address Houston Pipe Line Co., Houston, Texas.

HOUSTON PIPE LINE CO.

Subsidiary of Houston Oil Company of Texas

GEO. A. HILL, JR., President

Wholesalers of Natural GAS

They Voted FOR SOUTH AFRICA

THEY traveled 35,700 miles and visited 39 ports . . .

And then—on this popular big steamship, homeward bound from its cruise around the world, the captain conducted a poll among the passengers to determine what sights and experiences had pleased them most. THEY VOTED FOR SOUTH AFRICA—AS THE MOST INTERESTING COUNTRY ON THE CRUISE!

No wonder they chose South Africa—with its startling variety of color! Victoria Falls—Johannesburg and Kimberley, with their romance of gold and diamonds—easily reached by modern railway, airplane and motorbus . . .

From the haunting mysteries of the veldt to Capetown's curving water-front with its red roofs and scent of magnolia, outflung white beaches and fashionable resorts—South Africa, like her native witch-doctors, weaves a magic spell!

35,700 miles, 39 ports . . . and

The VOTE was overwhelmingly for SOUTH AFRICA

DETAILED INFORMATION FROM ALL LEADING TOURIST AND TRAVEL AGENCIES

Arizona Biltmore

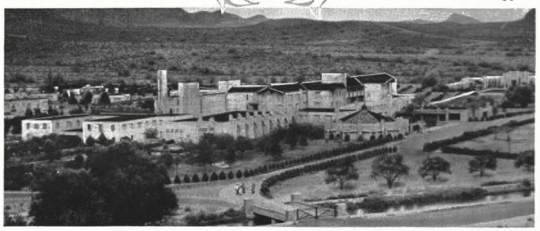
IN THE DESERT · PHOENIX

For Perfect Comfort and Relaxation

AN ELEGANT HOTEL in a delightful setting. Exquisite food. 25 miles of riding trails. 18 hole Golf Course. Luxurious Pool! Cabañas! SUNSHINE every day!

WRITE NOW FOR BOOKLET 32 pages fully illustrated with telling photographs. Mr. HARRY BOYLE, manager Arizona Biltmore Hotel (in the desert) PHOENIX

Beautiful here November, December and January



PRIVATE SCHOOLS

FOR BOYS

CULVER MILITARY ACADEMY

A Distinctive Educational Institution for boys of high school and Junior College age. Keeps abreast of the most modern trends in education. Charts the course individually for each student. Prepares for all colleges. Broad range of subjects including courses in Commerce, Majors, Music, Dramatics. Experienced leaders. Infantry, Cavalry, Artillery, Band. All sports including boating, rowing (shell crew), polo, swimming and golf. Moderate cost. *Catalog.*

CULVER EDUCATIONAL FOUNDATION
112 Pershing Court Culver, Indiana

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An outstanding national boarding school. Prepares boys for all colleges. 79th Year.

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The Schick has no blades. You do not need water, soap nor any facial preparation whatever. And the Schick pays for itself.

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NEW YORK

Thanks a Million

A Proclamation by Chessie

WHEREAS: *This is the Season for giving Thanks;*

THEREFORE: *To the friends who love me . . . and keep my picture in their homes . . . write me nice letters from all over the world . . . publish books about me . . . send me Valentines in February and catnip mice at Christmas . . . begged to adopt my children . . . wanted to know about Papa . . . believed me when I promised they'd Sleep Like a Kitten and Arrive Fresh as a Daisy when they traveled in genuine air-conditioned comfort on George Washington's Railroad . . .*

AND ESPECIALLY: *To the fellow who said, "Who ever heard of a Gol Darned Cat advertising a Railroad."*

TO ALL OF THEM: *Thanks a Million!* Chessie

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THE SPORTSMAN • THE F. F. V.
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Here's the Guarantee THAT WON'T "EVAPORATE"

FIND YOUR CAR ON THIS CHART

IMPORTANT! The price per gallon of an anti-freeze means nothing unless you know *how many gallons* you will need during the *entire* winter. You can't get that information on a boil-away anti-freeze. But you *can* get it for Eveready Prestone . . . and here it is. See how reasonably you can get two-way protection *all winter long* against both freeze-up and rust with *one shot* of Eveready Prestone—one shot because it won't boil off, no matter how warm the weather gets between the cold snaps. If your car isn't on this chart, your dealer has a chart showing all cars, and amounts needed for temperatures to 60° below zero.

Find your car and read from left to right. The first figure shows the protection you get with one gallon of Eveready Prestone in the cooling system; the second with one and a half gallons—and so on. "+" means above zero. "—" means below zero. If your car has a hot water heater, add ¼ gallon to the quantity called for.

MODEL	1 GAL.	1½ GAL.	2 GAL.	2½ GAL.
Auburn				
6-52, '34; 6-53, '35; 6-54, '36	+12	− 4	−27	−59
8-100, '32; 8-101, 8-105, '33	+15	+ 2	−16	−42
850, '34; 851, '35; 852, '36	+17	+ 6	− 9	−28
Buick				
40, '34, '35, '36	+ 6	−18	−54	
60, '32; 50, '33, '34, '35	+10	− 8	−34	−62
60, 80, 90, '36	+12	− 4	−27	−59
80, 90, '32; 60, '33, '34, '35	+15	+ 2	−16	−42
80, 90, '33; 90, '34, '35	+19	+ 9	− 3	−19
Cadillac				
370-D, '34, '35	+14		0	−21 −50
355-D, '34, '35; 80, 85, '36	+16	+ 4	−12	−34
452-D, '34, '35; 90, '36	+19	+ 9	− 3	−19
370-A, '31; 355-B, '32; 355-C, '33	+21	+13	+ 3	− 9
60, 70, 75, '36	+22	+15	+ 8	0
Chevrolet				
Stand.; '33, '34, '35	−12	−62		
Master; '33, '34, '35	− 6	−47		
'31, '32	0	−34	−62	
All Models—'36	+ 8	−12	−43	
Chrysler				
6-'32, '33, '34, '35	+12	− 4	−27	−59
8-'31, '32; AF, Imp. '35; 6-'36	+15	+ 2	−16	−42
Roy. 8, Imp. 8, '33; Air 8, '35	+16	+ 4	−12	−34
70, '31; DeLuxe 8, '36	+18	+ 8	− 6	−23
De Soto				
6, '31, '32, '33; 8, '31	+10	− 8	−34	−62
6, '34; Airflow 6, Airstream 6, '36	+16	+ 4	−12	−34
Airflow, Airstream, '35	+12	− 4	−27	−59
Dodge				
6, '32, '33, '34, D2, '36	+ 8	−12	−43	
Senior 6, '30; DU, '35	+12	− 4	−27	−59
8-'32, '33	+15	+ 2	−16	−42
Ford				
A, '30, '31; B, '32, '33	0	−34	−62	
V-8, '32, '33, '34, '36	+18	+ 8	− 6	−23
V-8, '35	+16	+ 4	−12	−34
Graham				
80, 90, 110, '36	+10	− 8	−34	−62
73-Spl. 6; 72-8, '35	+14		0	−21 −50
74 6, '35; 80, '36	0	−34	−62	
6, 8, '33; 6, 8, '34; 75, '35	+16	+ 4	−12	−34
Hudson				
6, '36	+ 3	−25	−62	
8, '31, '32, '33; 6, '35	+12	− 4	−27	−59
8, '35, '36	+17	+ 6	− 9	−28
8, '34	+19	+ 9	− 3	−19
Hupmobile				
18, '31; Cent. 8, '32; 321, '33	+10	− 8	−34	−62
417, 421, '34; 521, '35	+10	− 8	−34	−62
322, '33; 422, '34; 518, '35;	+17	+ 6	− 9	−28
6-618-G '36	+17	+ 6	− 9	−28
326, '33; 426, '34; 527, '35;	+19	+10		0 −15
8-621-N '36	+19	+10		0 −15

MODEL	1 GAL.	1½ GAL.	2 GAL.	2½ GAL.
Lafayette				
'34; '35; '36	+15	+ 2	−16	−42
La Salle				
50 (Str. 8) '36	+10	− 8	−34	−62
350, '34; 35-50, '35	+15	+ 2	−16	−42
345-B, '32; 345-C, '33	+21	+13	+ 3	− 9
Lincoln				
Zephyr, '36	+21	+13	+ 4	− 7
136,'33,'34,'35,'36;145,'34,'35,'36	+23	+17	+10	− 2
Nash				
60, 70, '31, 960, 970, '32	+ 3	−25	−62	
1130, 1070, 1170, '33; 1220, '34	+12	− 4	−27	−59
3620, 3640, 3640A, '36	+14		0	−21 −50
1280, '34; 3580, '35; 1080, 1180, '33	+17	+ 6	− 9	−28
Oldsmobile				
F-30, '30; F-31, '31; F-35, '35; F-36, '36	+ 3	−25	−62	
F-32, L-32, '32; F-33, '33; L-35, '35; L-36, '36	+ 3	−25	−62	
L-33, '33; L-34, '34	+12	− 4	−27	−59
	+15	+ 2	−16	−42
Packard				
120-'35, '36	+14		0	−21 −50
Sup. 8, '33; '34; 8, '33, '34, '35	+16	+ 4	−12	−34
Sup. 8, '35	+18	+ 8	− 6	−23
745, '30; 845, '31; DeLuxe, '32	+21	+13	+ 3	− 9
12; '33, '34, '35, '36	+25	+21	+10	+ 3
Pierce Arrow				
41, 42, 43, '31; 54, '32; 836-A, '34	+21	+13	+ 3	− 9
1601-B, '36	+21	+13	+ 3	− 9
840-A, '34; 845, '35	+22	+15	+ 6	− 5
1602-03 (12), '36	+24	+20	+15	+ 9
Plymouth				
'30; PF, PG, '34	+ 6	−18	−54	
PA, '31; PB, '32; PE, '34; PJ, '35; Pl, P2, '36	+10	− 8	−34	−62
PC, PD, '33	+10	− 8	−34	−62
	+ 3	−25	−62	
Pontiac				
'30; '31; 6-'32; '35	+ 6	−18	−54	
8-'33, '34, '35; 6-'36	+ 8	−12	−43	
8-'36	+12	− 4	−27	−59
Reo				
6-21, 6-25, '32; FC '35; Roy '35; 6D, '36	+15	+ 2	−16	−42
8-25, '32; S-2, '33; S-6, '34	+15	+ 2	−16	−42
	+16	+ 4	−12	−34
Studebaker				
Dict. 6, '36	+ 6	−18	−54	
Comm. 8, '31, '32, '33; Dict. 6, '34, '35	+10	− 8	−34	−62
	+10	− 8	−34	−62
Dict. '31, Comm. 8, '34, Pres. 8, '33, '34, '36	+14		0	−21 −50
	+14		0	−21 −50
Pres. 8, '31, '32, '35; Comm. 8, '35	+17	+ 6	− 9	−28
Terraplane				
6, '32, '33; 6 Spec. '35; 6, '36	+ 3	−25	−62	
8, '33; 6 DeLuxe, '35	+10	− 8	−34	−62
6, '34	+14		0	−21 −50

NATIONAL CARBON COMPANY, INC. *specifically* GUARANTEES

that Eveready Prestone, if used according to printed directions, in normal water cooling systems, will protect the cooling system of your car against freezing and clogging from rust formations for a whole winter; also that it will not boil away, will not cause damage to car finish, or to the metal or rubber parts of the cooling system, and that it will not leak out of a cooling system tight enough to hold water.

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GENERAL OFFICES: NEW YORK, N.Y. BRANCHES: CHICAGO • SAN FRANCISCO
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DON'T BE CONFUSED BY A NAME

Many brands of anti-freeze are being marketed under various names. Most of them are based on alcohol, and because they are not plainly labeled, it is easy to become confused. So before you buy any anti-freeze, just ask your dealer how much alcohol it contains. For alcohol—no matter how it is treated or what it is called—is subject to evaporation, leaving you without protection.

But you won't have to worry if you get Eveready Prestone. It contains no alcohol, is definitely guaranteed.

The words "Eveready" and "Prestone" are the trade marks of National Carbon Company, Inc.

$2.70 A GALLON

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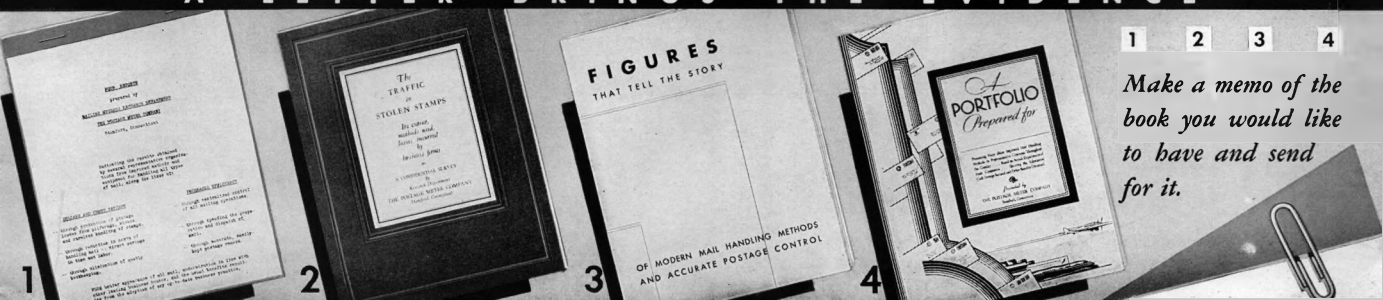

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Make a memo of the book you would like to have and send for it.

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It's so easy to reach those lands of age-old mystery that you've always longed to see . . . Egypt and the Sudan, the Persian Gulf, India, Burma and Ceylon, the Straits Settlements, China and Japan, Australia and New Zealand, East and South Africa. Cross to England by Cunard White Star and sail from there on any Liner of the great P & O fleet that covers all the East . . . including the famous new sister-ships Strathnaver, Strathaird and Strathmore. Enjoy the utmost luxury of this western world while you travel to the wondrous realm beyond Suez!

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Your Atlantic crossing by Cunard White Star now becomes the first lap on the fastest and most luxurious travelway into Europe — or to Africa, the Far East, Australia and China. Large four-engined airliners take you half-way around the world . . . 12,742 miles, London to Brisbane, in 11½ days! Or you can fly nearly 8,000 miles from London to Capetown in 9 days! All major European points as well as Egypt, India, Siam, the Straits, Australia and China . . . can now be reached on through ship-and-'plane tickets . . . Special rebate available. Apply to local travel agents or the General Agents for Imperial Airways in the United States:

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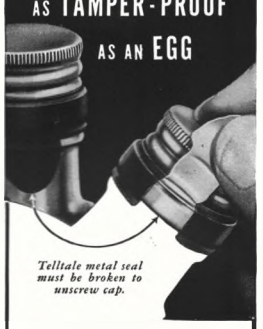
AS TAMPER-PROOF
AS AN EGG



Telltale metal seal must be broken to unscrew cap.

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FINE WHISKIES SINCE 1857
Seagram's
See Page 63
YOU'RE SURE OF GENUINENESS

Alseco
ANTI-COUNTERFEIT SEALS
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market. Similar to the speed vibrating type, the electric air horn operates by compressed air in the horn itself, using battery electricity as its motor power. Since 1933 most of the more expensive cars, including de luxe models of Chevrolet, Ford, and Plymouth, have had a pair of electric horns as standard equipment. One horn is tuned high, the other low, and together they make a mellow chord.

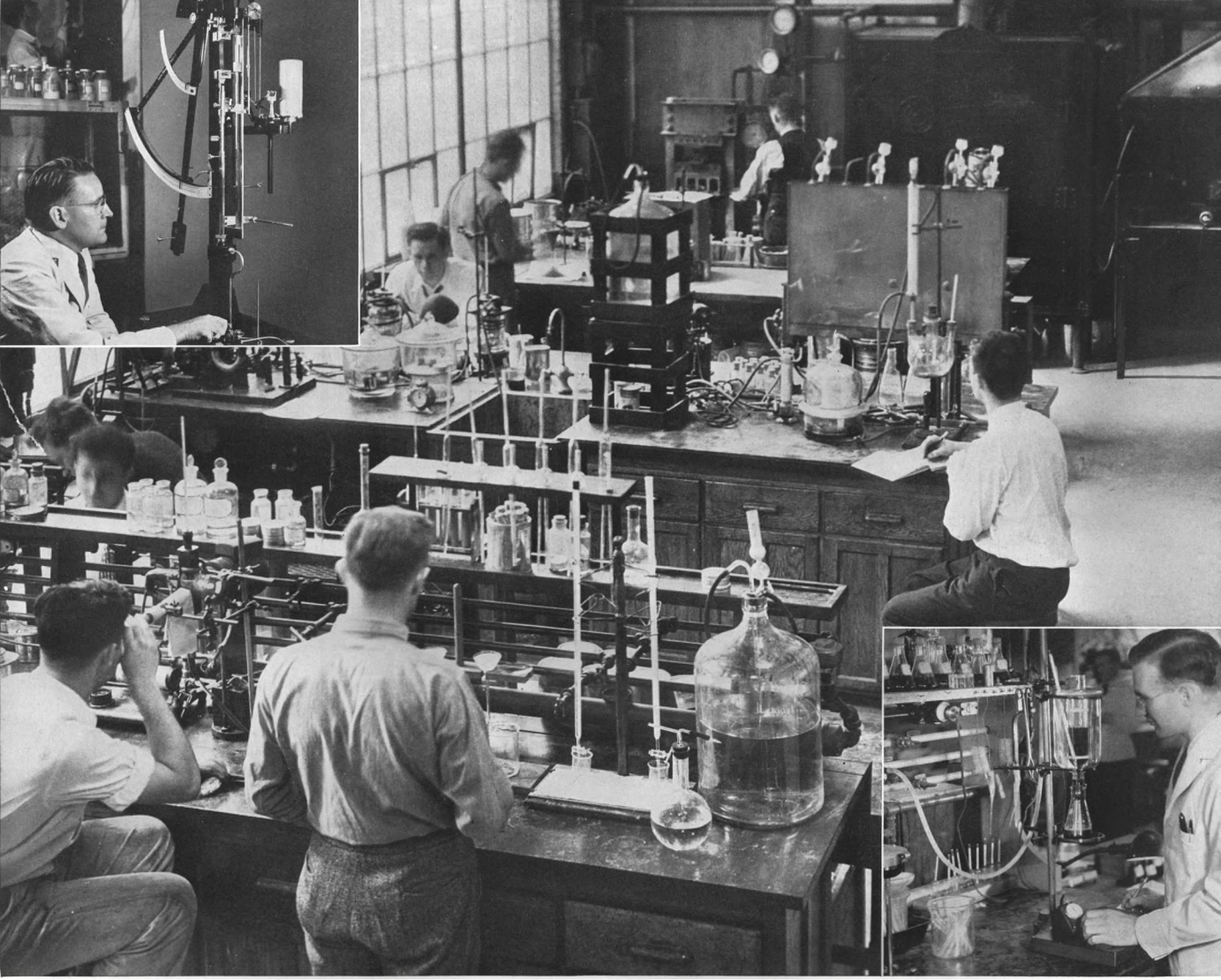
Nobody knows what the automobile manufacturer pays for horns. But if you take the retail price (ranging from $1.50 to $35) of any horn and divide it by four you'll arrive at a pretty good approximation. Leading horn makers now are Delco-Remy, the General Motors subsidiary, Sparks Withington, whose big account is Ford, Electric Auto-Lite, which makes most Chrysler horns, Schwarze Electric, United American Bosch, and E. A. Laboratories of Brooklyn. E. A. Laboratories has developed an affable horn named Torovoce (voice of the bull) that makes a *boo-om* sound, and Delco-Remy has produced a horn that will sound either loud or soft. But the automobile manufacturers find them too costly, so the problem of the harsh horn is still up in the air.

Crafty Commuters

THERE are a lot of Connecticut commuters in the dining car of the New York, New Haven & Hartford's Gilt Edge Special these late afternoons, but they're not doing much eating. They're not doing much drinking either, for that matter. They're usually sitting in air-conditioned comfort stretching a couple of fifty-cent highballs over the hour and a quarter it takes them to get from New York to Bridgeport. And that's because Connecticut commuters are wily fellows who know a little simple arithmetic. Fare on a coach to Bridgeport is $1.15, but fare on a Pullman comes to $2.20 (plus a customary quarter for the porter) since under the new rates anyone who takes a Pullman is charged $1.70 as a first-class passenger plus fifty cents for his chair. However, a coach ticket is all you need to get into a diner, so when the Connecticut weekender catches the train in Grand Central Terminal he deposits his bags in a coach and heads for the diner. Then come his lingering highballs, and by the time he reaches Bridgeport and has left a quarter tip he finds himself with a nickel more than if he had ridden in a Pullman, a dim glow, and a couple of the small, one-drink bottles they use in the diner to take home to his kids.

Phone Hygiene

IT IS the morbid contention of the Hygienic Phone Service of New York City that you may contract any one of forty-eight diseases from your telephone, including measles, chicken pox, barber's itch, and ringworm. But not, Hygienic points out cheerfully, if you use its phone service. For a monthly fee ranging from twenty to twenty-five cents per phone, depending on whether you have more or less than 300, Hygienic will visit your office weekly and remove, according to the Hygienic count, fifty to 2,000 colonies of bacteria from every telephone in two minutes flat. Actual servicing is done by a corps of fifteen girls, who dress trimly in uniforms of royal blue, complete with overseas caps and Sam Browne belts. So far—it's only four months old—the company has serviced some 10,000 telephones in New York City and hopes to get plenty more business once the country becomes phone-germ conscious. What it is the Hygienic girls rub on the telephones, nobody in Hygienic seems to know, not even Walter A. Morris, the President. All he can say is that it's nonpoisonous, noncorrosive, and eighteen to twenty times more powerful than carbolic acid. The company imports the disinfectant from Robert Young & Co., Ltd., of Glasgow, which supplies a similar mixture to a hygienic-phone-service company in London. It was from England, where telephones have been regularly disinfected for the past twenty-five years, that the Hygienic got its phone-service idea. Mr. Morris is wondering why nobody thought of it before.



ANSWERING INDUSTRY'S CALL FOR BETTER MATERIALS

UNTIL a comparatively few years ago industry was dependent upon materials which nature provided.

Although many of these products rendered valuable service they were far from satisfactory. Through the inventive genius of man, new materials were developed that proved superior to the products of nature, and helped industry solve an infinite number of problems.

Many of these man-made new materials were the result of chemical research, and, today, these new materials which were unknown a generation ago have become the standard products of industry.

Among the most valuable and useful of these is a group of several hundred materials sold under the trade name "Bakelite".

In practically every branch of industry, one or more types of Bakelite materials are performing a useful service in improving quality or production efficiency.

Some of these products cannot be identified as they are used as an ingredient, as in the case of resins for paints and varnishes, or as a bonding agent for high speed abrasive wheels.

Other forms of Bakelite materials are visible to the eye. For example, gears and pinions that have eliminated the nerve shattering noise of all-metal gear trains, and molded instrument cabinets which have replaced those of wood and metal.

These are but four of the hundreds of ways in which industry's demand for better materials has been answered by Bakelite products. Today, there are almost 2,000 varieties available to industry. Each material has been formulated to meet a different requirement and widely varied specifications.

BAKELITE

REGISTERED U. S. PAT. OFF.

"The registered trade marks shown above distinguish materials manufactured by Bakelite Corporation. Under the capital "B" in the symbol is the numerical sign for infinity, or unlimited quantity. It symbolizes the infinite number of present and future uses of Bakelite Corporation's products"

The Material of a Thousand Uses

It would take volumes to describe the character of these materials and their possibilities. If you have a problem involving product improvement or greater manufacturing efficiency, it is probable that you will find the use of one or more of these Bakelite materials of definite advantage to you.

We cordially invite you to consult us. We have a staff of trained engineers at your service for this purpose.

We also suggest that you write for illustrated booklets 27M, "Bakelite Molded", 27L, "Bakelite Laminated", and 27S, "Bakelite Synthetic Resins."

Bakelite Corporation, 247 Park Avenue, New York, N. Y.
Bakelite Corp. of Canada, Ltd., 163 Dufferin St., Toronto

The Photographs show

Upper Left: Elasticity test of Bakelite Resin Paint Film. *Lower Right:* Viscosity test of Bakelite Resinoid. *Center:* One of the many departments in Bakelite Research Laboratories.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF MARCH 3, 1933

Of Fortune, published monthly at Jersey City, N. J., for October 1, 1936.

State of New York } ss.
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Paul West, who, having been duly sworn according to law, deposes and says that he is the Business Manager of Fortune, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of March 3, 1933, embodied in section 537 Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, Time Inc., 135 East 42nd St., New York, N. Y.; Editor, Henry R. Luce, 135 East 42nd St., New York, N. Y.; Managing Editor, Eric Hodgins, 135 East 42nd St., New York, N. Y.; Business Manager, Paul West, 135 East 42nd St., New York, N. Y.

2. That the owner is: Time Inc., 135 East 42nd St., New York, N. Y.; that the names and addresses of stockholders owning or holding one per cent or more of total amount of stock are: Brown Brothers Harriman & Co., 59 Wall St., New York, N. Y.; J. P. Morgan & Co., (for the account of Henry P. Davidson), New York City; E. DuSossoit Duke, Green Farms, Conn.; Mrs. Mimi B. Durant, c/o Nat'l. City Bank of N. Y., 167 East 72nd St., New York, N. Y.; General Publishing Company (H. R. Luce), 15 Exchange Place, Jersey City, N. J.; William V. Griffin, 140 Cedar St., New York, N. Y.; Irving Trust Co., (Benefit of Elizabeth Busch Pool), New York City; New York Trust Co., (Account of Edith Hale Harkness), 100 Broadway, New York, N. Y.; New York Trust Co., (Account of William Hale Harkness), 100 Broadway, New York, N. Y.; Louise H. Ingalls, c/o D. S. Ingalls, 1652 Union Trust Bldg., Cleveland, Ohio; R. L. Johnson, c/o Time Inc., 135 East 42nd St., New York, N. Y.; Margaret Z. Larsen, c/o Time Inc., 135 East 42nd St., New York, N. Y.; Roy E. Larsen, c/o Time Inc., 135 East 42nd St., New York, N. Y.; John S. Martin, c/o Time Inc., 135 East 42nd St., New York, N. Y.; Samuel W. Meek, Jr., c/o H. A. Schafuss, Charles D. Barney & Co., 14 Wall Street, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

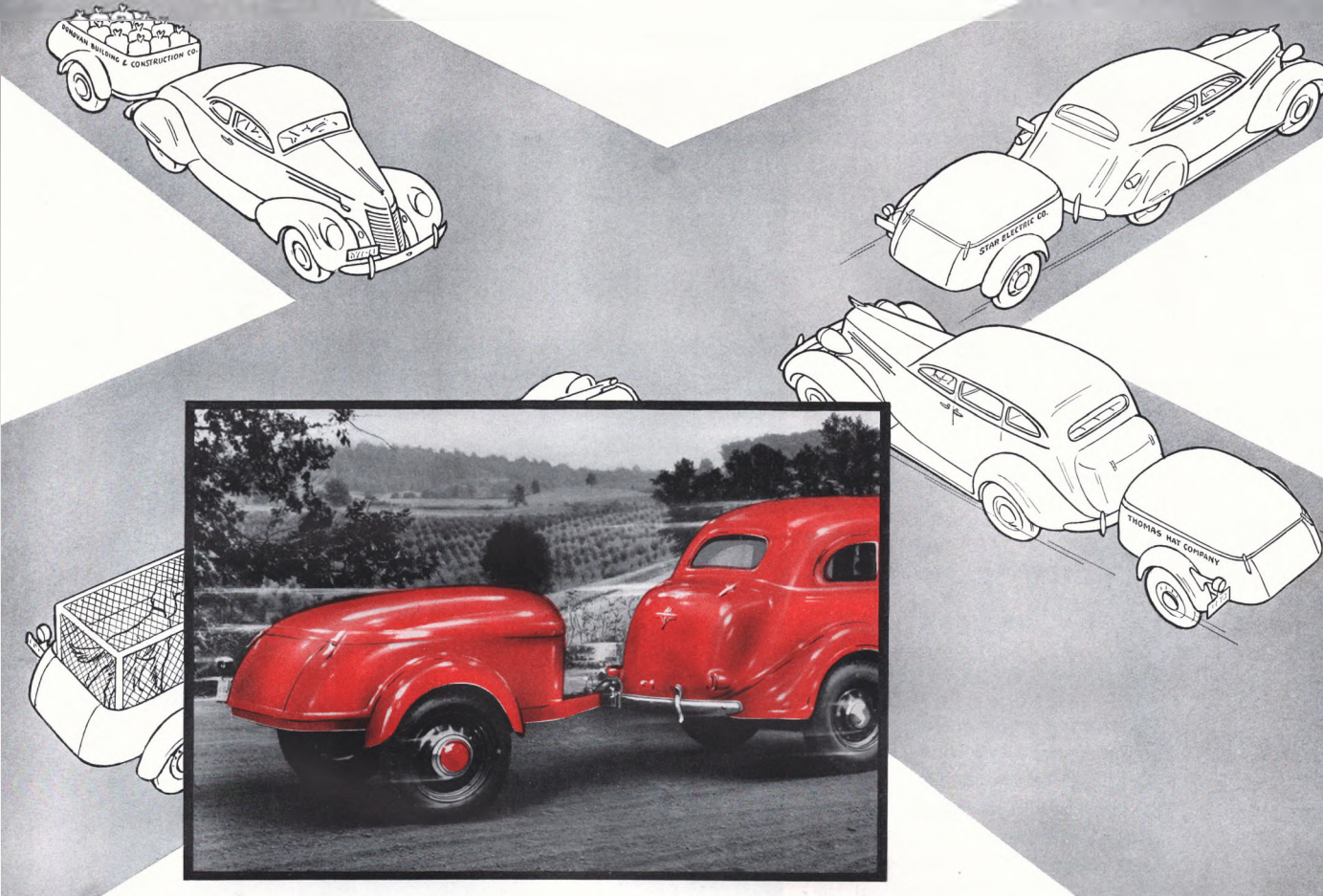
4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

Sworn to and subscribed before me this 24th day of September, 1936.

Herbert E. Mahony
[Seal]

(My commission expires March 30, 1938)

Paul West,
Business Manager.



Mullins Introduces
An Essential New Unit of Transportation

Executives responsible for the operating costs of passenger car fleets now being used to carry samples, tools, supplies and other materials will welcome the Red Cap Trailer. It saves them money in first cost as well as in operating expense.

Compact, fully engineered, with rugged, all-steel construction—the Red Cap has real capacity—1200 pounds. Two roller bearing wheels assure stability. Rubber sealed top with lock protects contents from water, dust, dirt, and tampering.

The Red Cap is low in first cost—a complete, efficient business unit—the practical answer to the transportation and demonstration problems of salesmen and service groups. Yet it adds next to nothing in gasoline consumption.

In addition, it is ideal for sportsmen, tourists and merchants. *Red Cap is as important to the automobile as the baggage car is to the Pullman.*

And there's advertising value in the Red Cap. It attracts unusual, favorable attention. It can be made a rolling billboard for your company, service and product.

Ask your automobile dealer about the Red Cap. See it on display at the New York and Chicago Automobile Shows. Fleet Owners! Let us show you how Red Cap can increase fleet operation efficiency and reduce costs. Automobile dealers should write for details about the liberal Mullins direct dealer franchise.

MULLINS MANUFACTURING CORP.

TRAILER DIVISION • SALEM, OHIO

MULLINS RED CAP UTILITY TRAILER

The Newest ACHIEVEMENT by NATIONAL SILVER COMPANY

King Edward PATTERN In Silverplate

Pure artistry of design . . . delicate charm . . . majestic elegance . . . these are the subtle qualities by which the new King Edward pattern in fine silverplate will immediately capture and delight the heart of every woman who sees it. And, as the product of master craftsmen whose lives are devoted to maintaining a traditional high quality, King Edward pattern will evoke joy and pride of possession day after day . . . year after year. Let your silverware dealer show it to you.

99 Piece Set — Complete Service for 8

16 Teaspoons, 8 Dinner Forks, 8 Dinner Knives, 8 Soup Spoons, 8 Salad Forks, 8 Cocktail or Oyster Forks, 8 Butter Spreaders, 8 Iced Tea Spoons, 8 Coffee Spoons, 8 Bouillon Spoons, 6 Table or Serving Spoons, 1 Sugar Spoon, 1 Butter Knife, 1 Cold Meat Fork, 1 Berry Spoon, 1 Gravy Ladle. Hollow Handle mirror finished stainless steel knives included. The New Long Handle Fashion Knives and Forks may be substituted where desired. Set includes a Luxurious Tarnish Proof Gift Chest $50

Write us for name of your nearest dealer

NATIONAL SILVER COMPANY

Established 1891

NEW YORK · CHICAGO · LOS ANGELES · DALLAS · SEATTLE · SAN FRANCISCO

"Yes, suh-Everybody's on the go again"

Business and pleasure are filling faster trains, swifter buses, deluxe ocean liners. Terminals and airports are all a-bustle. Trips and tours make the liveliest social talk these days—America is traveling again!

Your trip, for business or pleasure, will be more exciting...more comfortable...more economical if you stop at the popular N.H.M. hotels in their seven strategic cities. They offer you comfort and conveniences that thrill the most experienced traveler. Delicious food in gay restaurants. Pleasing service that makes you return again and again.

THE "National" HOST

YOU'LL ENJOY THE SERVICE AND ECONOMY OF THESE N.H.M. HOTELS

IN NEW YORK

HOTEL NEW YORKER...Frank L. Andrews, Manager. Connected by private tunnel with Pennsylvania Station. 2500 rooms with tub and shower bath, radio, Servidor, and running ice water. Rates from $3. Garage in connection.

IN NEW YORK

HOTEL LEXINGTON...C. E. Rochester, Manager. 3 blocks from Grand Central Station. 801 cheery rooms, with radio, bath and feather-soft beds. Rates from $3 a day.

IN CINCINNATI

NETHERLAND PLAZA...W. O. Surlbarth, Manager. One of America's most beautiful and distinguished hotels. 800 rooms with tub and shower bath, radio, and running ice water. From $3 a day. Garage in hotel building.

IN DETROIT

BOOK-CADILLAC...Durries Crane, Manager. Rendezvous of Detroit's social and business leaders. 1,200 quiet, beautifully furnished rooms with bath. Rates from $3 a day. Visit the colorful new Esquire Room.

IN CHICAGO

CONGRESS HOTEL...John Burke, Manager. On Michigan Boulevard, over-looking Lake Michigan. Big, comfort-planned rooms, with new furniture and decorations, from $3 a day with bath. Gay new restaurants.

IN DAYTON

HOTEL VAN CLEVE...Richard E. Daley, Manager. Finest hotel in Dayton, with 300 modern, homelike rooms, with bath. From $2.50 a day. New Mayfair Room.

IN DALLAS

HOTEL ADOLPHUS...Fuller Stevens, Manager. The largest hotel in Dallas. 825 rooms with bath. Rates from $2.50 a day. Home of the glamorous new Century Room.

IN MINNEAPOLIS

HOTEL NICOLLET...Neil B. Messick, Manager. Minneapolis' most beautiful hotel, located near railway stations and business center. 600 large, modern rooms. From $2.50, with bath. New Minnesota Terrace and Jolly Miller Cafe.

N.H.M. HOTELS

NATIONAL HOTEL MANAGEMENT CO., INC. RALPH HITZ, President

Washington Office: 986 National Press Building, Metropolitan 3717 · Boston Office: 7 St. James Avenue, Telephone Liberty 1213 · Cleveland Office: 437 Terminal Tower, Telephone Cherry 5126

***For* Man or Woman—**
***From* Man or Woman**
IT'S THE GIFT!

MEET THE NEW
Streamline
Refillable
SPARKLET SYPHON

Modern..Useful..Handsome
Economical..Durable

"Handsome is as Handsome Does," with the New Sparklet Syphon! A quart of fighting, fizzy club soda, whenever you want it, for 7½¢—a penny a drink! And *so* simple: snap in the magic refill bulb, a twist of the wrist—there she is! A quart—a case—all you want. Bulbs need no more space than a deck of cards. The New Sparklet comes in Chromium or Enamel. Weight—2¼ lbs. Height—under a foot. Fool-proof—all metal, no glass. A life-time gift . . . one to remember you by!

★

Sparklet with 5 refills, chromium finish $6; enamel finish, $5. Bulbs: 5 for 40¢, 10 for 75¢, 25 for $1.75. At all good Department, Drug, Housewares Stores and Specialty Shops

SPARKLETS CORPORATION
515 MADISON AVENUE, NEW YORK CITY

"THE CHRISTMAS TRAIL"

In this book are hundreds of gifts

Everything we sell is for sport and pleasure—articles of special interest to all who love outdoor life. From world-wide markets we gather gift merchandise—much of it made only for us—and all of it worthy to bear our name.

With this "gift shop in a book" we bring our store into your home for you to choose at leisure. Your mail orders receive prompt, careful service.

Send for "The Christmas Trail"

ABERCROMBIE & FITCH CO.
The Greatest Sporting Goods Store in the World
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HEART OF THE GREAT ARIZONA DESERT

San Marcos

ANNOUNCES THE OPENING OF THE WINTER SEASON · DECEMBER TO MAY

This aristocratic hotel, with its individual bungalows, soon begins its 24th season . . . offering an enchanting experience in the art of living . . . all the refinements of metropolitan luxury in a picturesque setting of the great Southwest. Glorious desert and mountain splendor . . . romantic bridle trails . . thrilling rodeos, with real cowboys . . swimming, fishing, tennis, and one of the finest 18-hole golf courses in America. Very select clientele. For illustrated booklet and reservations, address Robert Foehl, Managing Director.

SAN MARCOS HOTEL AND BUNGALOWS
ON THE DESERT CHANDLER, ARIZONA

250 ACRES OF LUXURIOUS PLAYGROUND IN THE

JOURNEY'S END

Soft beds, fine linen, deft service, Continental cuisine, scintillating atmosphere, and every other comfort — when Essex House is your journey's end. Single rooms from $4 — Double rooms from $6.

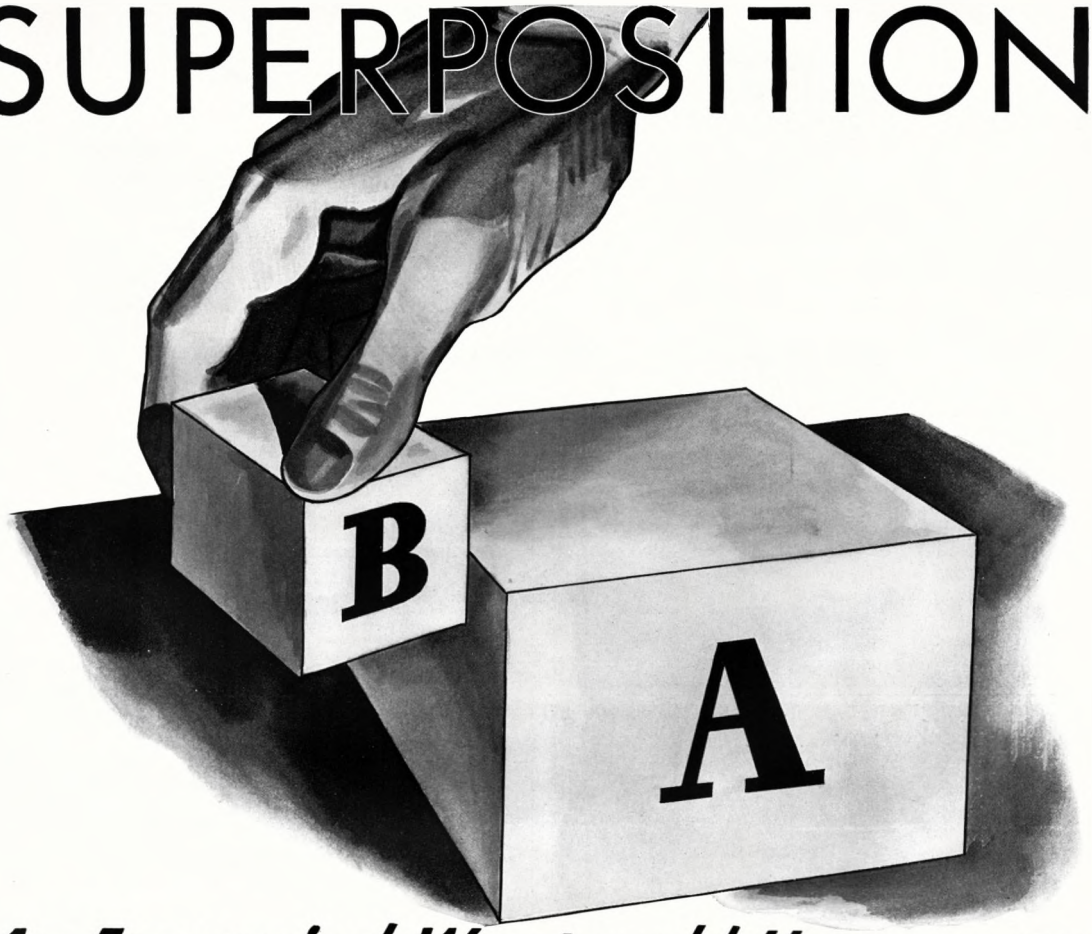
ESSEX HOUSE
and Casino-on-the-Park
160 CENTRAL PARK SOUTH
NEW YORK
Oscar Wintrab, Managing Director

WE'VE *Inaugurated*
A NEW RESIDENCE IN WASHINGTON

NEW in everything but name—and fame! New from lobby to roof-top. Filled with modern comfort and luxury. The meeting place of smart official Washington. Diverting new restaurants. Gracious service. Make it your Washington address. Single rooms from $3.00.

HOTEL
RALEIGH
PENNSYLVANIA AVE. AT 12th ST.
WASHINGTON, D. C.
C. C. Schifferle, General Manager

SUPERPOSITION



An Economical Way to add Horsepower

TWO hundred and fifty thousand dollars a year is the estimated gross saving in power costs through superposition* by a paper company which recently called upon Stone & Webster Engineering Corporation to enlarge its power facilities. This is by no means an isolated example.

A rubber manufacturer, a large utility and a tannery, among other of our clients, are currently realizing the advantages of superposition which, in addition to added capacity and lower unit power costs, include modernization of existing power stations and extension of their economic life.

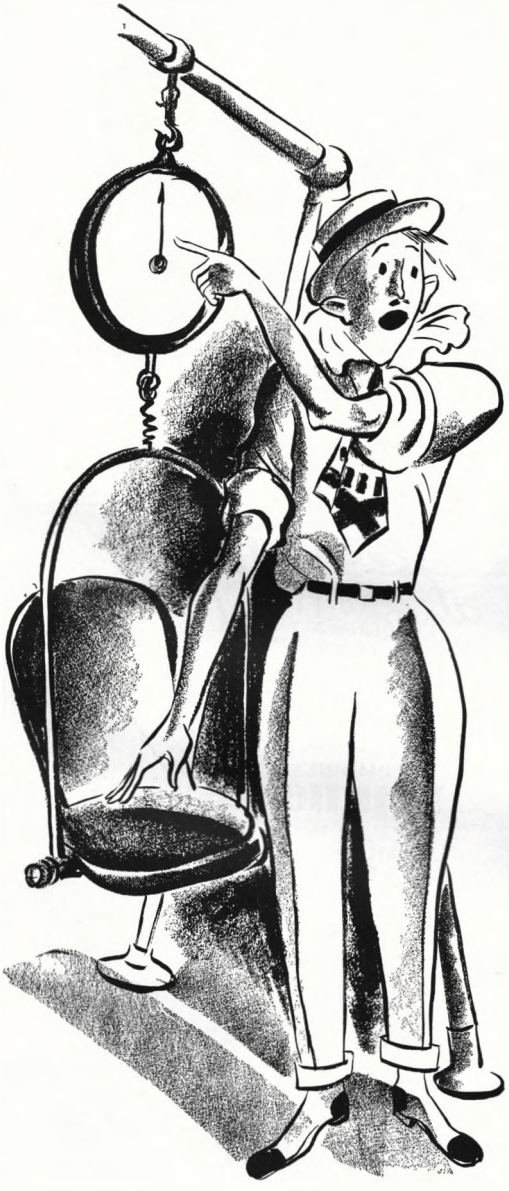
Where conditions are favorable, superposed extensions to existing power stations, in the application of which Stone & Webster Engineering Corporation has pioneered, afford a means of economically adding capacity. But whatever the aspects of the power problem, the services of this co-ordinated engineering and construction organization, broadly experienced in the technical and economic phases of power generation and currently engaged in the design and construction of power facilities, should prove helpful in arriving at the right decision.

*Superposition utilizes power equipment, operating at high steam pressures and temperatures, in such a way that the steam exhausted from the new equipment is used in the lower pressure generating facilities in existing stations.

• STONE & WEBSTER ENGINEERING CORPORATION •

ARE YOUR PACKAGING MACHINES OLD-FASHIONED

"WEIGHT GUESSERS ?"



SHORT WEIGHT never won good will. Overweight has never produced profits. Wherever else it may be acceptable, weight guessing does not pay in your packaging room.

If your machines, either through age or inefficiency, are "weight guessers," get rid of them. And in your consideration of machines to replace them, remember that accurate performance has always been an outstanding attribute of Pneumatic equipment.

Pneumatic has had over forty years of experience in solving hundreds of different and unusual weighing problems for all types of products. It has developed certain basic and patented design principles which have been proved sound under actual factory operating conditions. This background of weighing knowledge and time-tested design gives Pneumatic a head start whenever they are assigned a new problem.

One famous company tested three makes of automatic weighers, including a Pneumatic, in one of its plants. As a result, Pneumatic weighers were installed in all its other plants. Through such performance comparisons Pneumatic has gained its reputation for "lower cost per container" operation. Let Pneumatic engineers tell you more.

BEECH-NUT EXECUTIVES SAY:

H. VOSBURGH
Coffee Production Mgr., Brooklyn

"In addition to their advanced design so well evidenced by continuous efficiency day in and day out, we have found that the weight accuracy record of Pneumatic weighing machines is remarkably high."

D. M. McBEAN
Chief Engineer

"During the present year we have installed Pneumatic weighing machines at both our Rochester and Brooklyn coffee roasting plants. Our choice of Pneumatic equipment has already proved to be a very sound investment."

ALLEN H. SAUL
Coffee Production Mgr., Rochester

"Correctly built and ruggedly constructed production equipment is an important factor in lower cost packaging. Pneumatic equipment fulfills our need for weighing machines that stand up year in and year out."

PNEUMATIC SCALE

Packaging & Bottling Equipment

LOWER COST per Container

PNEUMATIC SCALE CORPORATION, LTD.
72 Newport Avenue, Quincy, Mass. (Norfolk Downs Station)
Branch Offices in New York; Chicago; San Francisco; Los Angeles; Melbourne, Victoria; Sydney, N. S. W. and Leeds, England

ON THE PULSE BEAT OF YOUR BUSINESS

WHAT do you know about the people who sell your products, goods, or services? Are they following out your aims and policies? What impressions are they creating in the minds of your customers? Do they build public confidence and good will, or destroy it?

Your customers are sitting in daily judgment on the commodities you sell and the services you offer—always ready to praise or condemn. What are their reactions . . their opinions of your organization and your products?

It has been Willmark's specialty for over twenty years to analyze the human factors which determine business success or failure. Willmark is the one organization equipped to probe and diagnose the concealed weaknesses in your business — testing your strength at the point of sale, sounding your public, spotlighting deficiencies which drive away customers.

A Willmark test may be a business transaction, an informal interview, a friendly chat. The typical commercial traveler at your hotel, the marketing housewife, the patron at your store, the tourist buying gasoline — we are any and all of these.

All Willmark shoppers, survey analysts, and field researchers are permanently employed. They are specialists in making accurate, authentic reports and surveys. They are carefully selected for their intelligence, dependable memory and keen observation—and are thoroughly seasoned by day-to-day experience in servicing over 11,000 business units in 1500 cities throughout the nation.

Through Willmark you can eliminate guesswork and obtain authoritative facts on your people and your public. Willmark gives you the up-to-the-minute knowledge which enables you to correct organization weaknesses and enforce sound business policies. Willmark puts your hand on the very pulse beat of your business.

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COAST-TO-COAST
IN THE UNITED STATES

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We will gladly send free booklet, "Forward March" and full data on this program to any interested executive, without obligation.

WILLMARK SERVICE SYSTEM

BUILDERS OF BUSINESS • 250 WEST 57TH ST., NEW YORK CITY

If you see Philadelphia as a self-satisfied and tradition-bound old metropolis, you'd better look again, because—

Something HAS HAPPENED IN PHILADELPHIA

A LIBERAL NEWSPAPER— THE PHILADELPHIA RECORD— NOW HAS THE LARGEST GUARANTEED MORNING CIRCULATION IN PHILADELPHIA—AND PENNSYLVANIA

● You can't find any one in Philadelphia who is indifferent towards the *Record.*

The Record *is not that kind of newspaper.*

The truth is, a lot of people still can't understand how a liberal, fighting newspaper could become a dominant force in Philadelphia, long regarded as the cradle of American conservatism. But something has happened!

The explanation is simple when one fact is considered: *Philadelphia has changed—and the* Record *reflects this change!*

The *Record* has no competitor in this reflecting role. Every other Philadelphia newspaper appeals to its percentage of conservative people, but THE RECORD'S APPEAL TO ITS MORE THAN 300,000 LIBERAL FAMILIES IS EXCLUSIVE! Nothing takes its place.

These 300,000 *Record* families are scattered proportionately to population throughout every economic and social stratum and section and neighborhood of Philadelphia's metropolitan market of over 600,000 families. That's approximately one-half the market! And the *Record* is *first* newspaper with these families. In this market, interestingly enough, the *Record* is either *first* or *last* in every individual ranking of Philadelphia's newspapers. People either love or hate the *Record.*

The result of this situation is that if you want to reach these 300,000 *Record* readers with your advertising message, the *Record* is the only avenue of friendly approach to them. Your advertising message is received in the same friendly spirit of acceptance.

You can't cover Philadelphia with one newspaper — and you can't make a dent or get a toe-hold in a liberalizing market, except through the medium that reflects and stimulates this change—the Philadelphia Record!

National representative:

GEORGE A. McDEVITT COMPANY

444 Madison Avenue, New York City, N. Y.
12 South 12th Street, Philadelphia, Pa.
1633 Palmolive Building, Chicago, Illinois
445 New Center Bldg., Detroit, Michigan

MEMBER OF AUDIT BUREAU OF CIRCULATIONS • SUBSCRIBER TO MEDIA RECORDS, INC.

AS SERVED IN THE HOME OF *William Rhinelander Stewart*

Mr. Stewart is a member of one of America's oldest families, which has been socially prominent in New York and Newport since the early 17th Century.

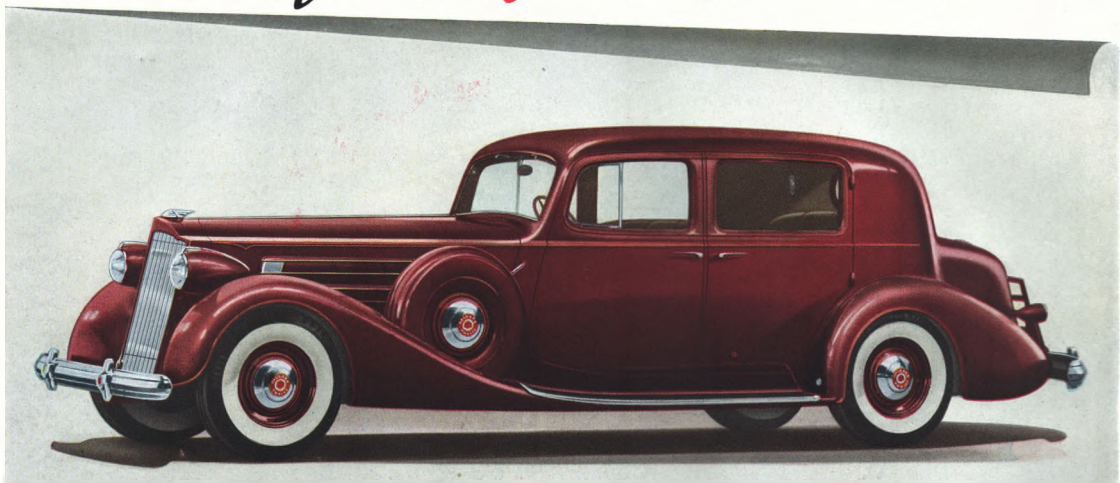
IN SEAGRAM'S "V.O." men of taste find a unique delicacy and mildness together with a warm, mellow friendliness. "V.O." accords with their high standards of good living. Fragrant with authoritative character, "V.O." is a proud member of the Seagram family of fine whiskies that goes back 79 years.

Seagram's "V.O."

MASTERPIECE OF SEAGRAM SKILL

RARE OLD CANADIAN WHISKEY · AGED IN CHARRED OAK CASKS

FOR 1937—get the plus of a Packard



THIS ACHIEVEMENT

This year Packard introduces to the fine-car buyer Completely Re-balanced Design—an epochal advance in the building of fine motor cars.

THESE BENEFITS

The new Re-balanced Design makes the new Packards ride as no other cars have ridden before . . . it makes individual front-wheel suspension function as it never has before . . . it makes hydraulic brakes operate in a way new to motoring . . . it revolutionizes fine-car performance.

Revolutionary? It will make you forget all previous ideas of fine-car performance

THE NEW 1937 Packard Twelve and Super-Eight are endowed with an engineering advance of such consequence, that they are *demonstrably* the finest motor cars the world has ever seen.

* * *

A sweeping achievement is Packard's *Completely Re-balanced Design.* Because of it, these Packards set entirely new standards of performance, comfort, and handling ease.

This *Re-balanced Design* makes possible the full utilization of all the advantages of *Packard's own Safe-T-Flex individual front-wheel suspension* — the finest suspension ever built into a car. It brings new efficiency to the Packard-improved hydraulic brakes—*the most effective, most nearly perfect brakes* that ever safeguarded human life! It enables the new Packard Double-Trussed Frame —a frame some *400% more rigid*—to contribute a luxury of ride, a stability and roadability entirely new to motoring.

As a result, these new Packards are the most delightful cars in the world to drive. They convert the roughest roads into ribbons of concrete. They ask you only to *whisper* to the wheel. They perform so beautifully you almost suspect them of *anticipating* your wishes.

* * *

Today if you would buy a fine car soundly, you *must* ride in a Packard . . . you *must* drive a Packard! Your Packard dealer will be delighted to put one of these cars at your disposal. Judge it thoughtfully and thoroughly, and we feel certain you'll agree that the wisest motor car investment is to *"get the plus of a Packard."*

PACKARD

The Twelve $3420

The Super-Eight $2335

ASK THE MAN WHO OWNS ONE

Volume XIV

Fortune

Number 5

Contents for November 1936

Cover by Ernest Hamlin Baker

for December

Anaconda Copper . . . . . Lucky Strike . . . . . Van Sweringen

Rockefeller Center . . . . . Archaeology

Cleveland Art . . . . . Dolls . . . . . Silver Foxes . . . . . Gas Masks

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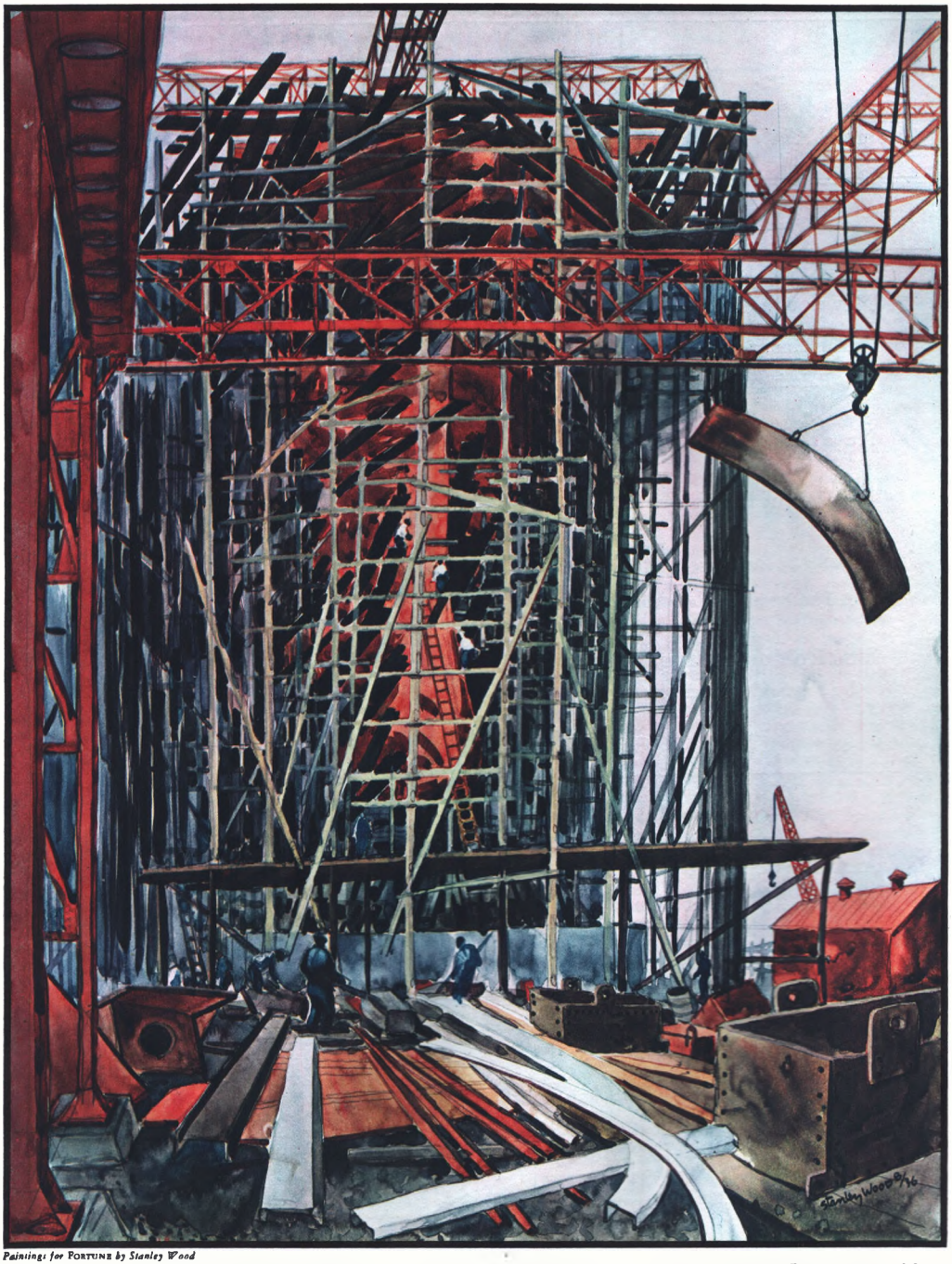


Paintings for FORTUNE *by Stanley Wood*

AT NEWPORT NEWS MEN ARE DWARFS: THIS IS THE BOW OF THE AIRCRAFT CARRIER *ENTERPRISE*

Ships on the Ways

The Newport News Shipbuilding & Dry Dock Co., oldest U. S. shipbuilder, is a $20,000,000 yard with $70,000,000 worth of naval vessels abuilding; is owned by a man of letters, nourished by the government, made a profit of $10,200,000 in fourteen years.

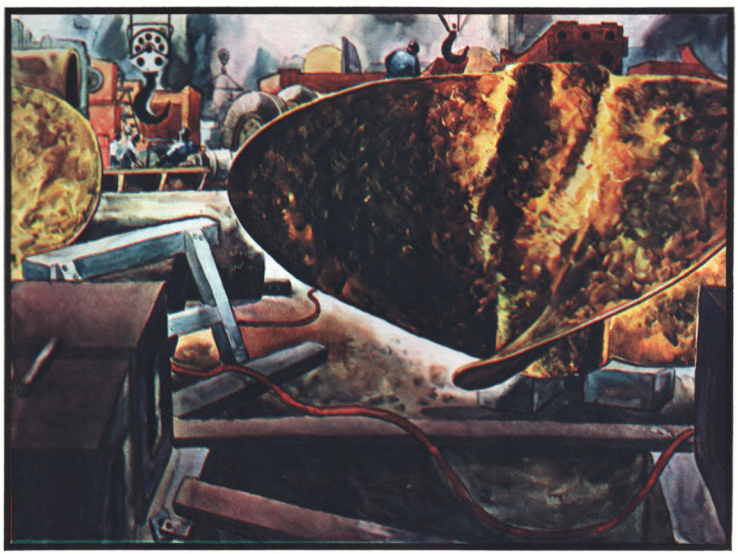
FOR thirty minutes the SS. *Coamo*, 11,000-ton passenger and freight steamer of the New York & Porto Rico Steamship Co., bound from San Juan to Santo Domingo, steamed through a calm as dead and unearthly as that which surrounded the Ancient Mariner. She had crossed the southeastern edge of a Caribbean hurricane and was now afloat in its hollow core. The barometer had dropped down out of sight and there was no doubt in the skipper's mind what was going to happen. Presently, out of a murderous sky, the *Coamo* was struck on the port beam by a column of air traveling at 120 miles an hour—about as high a wind velocity as was ever recorded.

She shuddered and listed over to starboard twenty to thirty degrees. The sea heaved itself up over her bows and topmost deck, broke the windows in the pilothouse, tore away the skylights on the boat deck, smashed the hatches, ripped off tarpaulins, and poured through doors, windows, portholes, and contorted ventilators. The master on the bridge watched her wallow in these seas, knowing the terrific forces at work upon her hull and aware that if any of her plates should become sprung she would fill and sink. But three hours later when she emerged from her ordeal not a single plate was opened. And when she steamed into New York harbor four days later, on September 9, 1930, and the reporters thronged around the skipper and the chief engineer, the latter magnanimously declined to take any credit for his share in the exploit. "Don't praise me," he said, "praise the builders. They made a fine ship."

Other ships have survived Caribbean hurricanes, to be sure. But the risk to life and property in these contortions of nature is so great that every effort is made to sail around them. When a ship does come through successfully the men who built her experience a glow of pride not unlike that which a construction engineer might feel if his skyscraper had withstood an earthquake. And for the exploit of the *Coamo* credit goes to the most solidly established shipyard in the U.S.—a $20,000,000 yard with a strange history, the arbitrary creation of an empire builder who treated it as a problem child, and now the fief of his esthetic heir. The Newport News Shipbuilding & Dry Dock Co. of Newport News, Virginia, was built by the late Collis P. Huntington, railroad magnate, who knew nothing about ships, and it will probably be given away by his son, Archer Huntington, to a number of museums to which that bookish gentleman has devoted his life. But in spite of its extraordinary origin and even more extraordinary destiny as the income producer for gray-haired curators and librarians, it is the only remaining yard in the U.S. with a ship tradition behind it nearly equivalent to what you find in Britain at John Brown & Co., on the Clyde, or at Swan Hunter & Wigham Richardson, on the Tyne. It is the oldest and the most completely equipped. It ties the Bethlehem Shipbuilding Corp. in volume. And none makes better ships.

DOWN through Virginia the James River flows toward the Chesapeake Bay in an ever widening scraggle. At its mouth, near the northern extremity of Hampton Roads and hard by Old Point Comfort and Fort Monroe, is the town of Newport News. It is a clean and orderly community in a flat and sunny land; and at the edge of it, where it touches the gentle water of the Chesapeake Bay, there rise the shadowy hulks of the Huntington men-of-war.

Anyone who is interested in the physical aspect of American industry would do well to pause at the grassy moat that separates this yard from Washington Avenue, before entering the trim brick administration building on more serious business. At that distance the blue-gray men-of-war and the great red cranes that hang over them look like toys. Everything that is not brick is painted a dull red, a color that would be monotonous were it not for little oases of green grass separating the storage yards and the switching yards and the steel-blue railroad tracks that finesse their way down among the red sheds to the blue water. Red and green are the notes. And it is all so spick-and-span and orderly and precise that the visitor might be pardoned for supposing



MORE THAN 25,000 HORSEPOWER

. . . will drive this propeller for the *Enterprise*, launched in October. Cast at Cramp-Morris in Philadelphia (subsidiary of Baldwin Locomotive), it was polished at Newport News. Total cost, about $8,000.

TRANSITION FROM PAPER TO STEEL

A ship exists first in blueprints. The structures depicted therein are, in turn, scribed full scale on the floor of the vast mold loft shown above. Wooden templates are then "lifted" from the scribed lines (i.e., cut and shaped to fit) and are marked with all rivet holes, connection attachments, etc. Accuracy is vital because the templates guide the shaping of the final steel parts on the bending slab and in the shops. Having been worked to template size the parts are lifted to the ship, temporarily bolted, finally riveted.

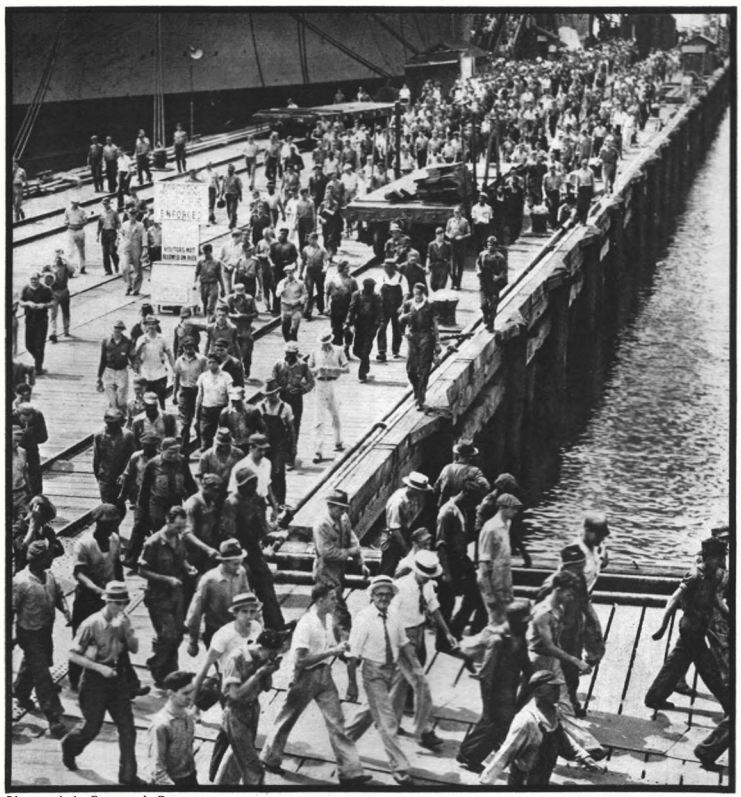
Note: The two decorative figures on these pages were taken from old U.S. clipper ships and are in Archer Huntington's Mariners' Museum at Newport News. The history of the one on this page is unknown. The one on the opposite page was taken from a ship called the *Columbia*.

that he had wandered into, not an industrial maelstrom, but the kind of Dutch village he used to read about when he was a child.

Of course the moment he proceeds down into the yard that illusion is dispelled. Order remains, but the Dutch village vanishes and the scale of things becomes titanic. There are two whole miles of berthing space where ships from all lands tie up for minor repairs. Or if their owners want the hulls scraped or the rudders fixed or plates lifted out of their flanks and new ones inserted, the vessels await their turns at three big dry docks, where they will sit (at ten cents per gross ton per day) dwarfed by the scaffoldings that shroud the unborn ships on the shipways. There are six 700-foot shipways and the two 1,000-footers, each of the latter big enough to hold two freighters.

This river front smells of grease and paint and rope and is all tangled with air hose and black electric lines and water pipes, and vibrates incessantly to the snarl of the air riveters, throaty when working in the deep hulls, high and staccato on the superstructures. Behind is a foundry that can produce 150,000-pound iron castings; a shop to machine them up to a diameter of thirty-five feet; diverse shops for the manufacture of patterns and molds and paints; lofts in which an entire ship can be laid out full scale on the floor; warehouses and storage yards and a water-turbine factory that built nine 84,000- to 100,000-horsepower units for U. S. S. R.'s Dneprostroy and others. And high above the two aircraft carriers and the two cruisers now abuilding, the rumbling cranes, gawky but facile, heave completely assembled bulkheads through the air, and red steel plates, and girders, angle bars, frames, forgings, and machinery; and easily lift a 150-ton turret from a flatcar and set it down upon some precise spot on a battleship's deck.

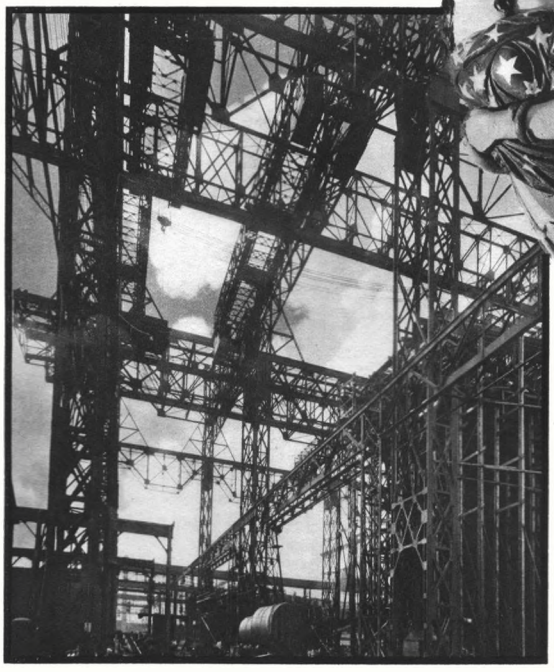
OF THE two opposite impressions—the fairy tale and the industrial fact—both are correct and both important to an understanding of this unique business. Let us first sketch in the corporate outline. Newport News Shipbuilding has 100,000 shares of stock outstanding, and of these Archer Milton Huntington owns 22,233. The rest are divided up among various Huntington trusts, estates, and cultural institutions, but chiefly the Henry Edwards Huntington



Photographs for FORTUNE *by Ritlase*

QUITTING TIME

ENGINE PARTS ARE MACHINED



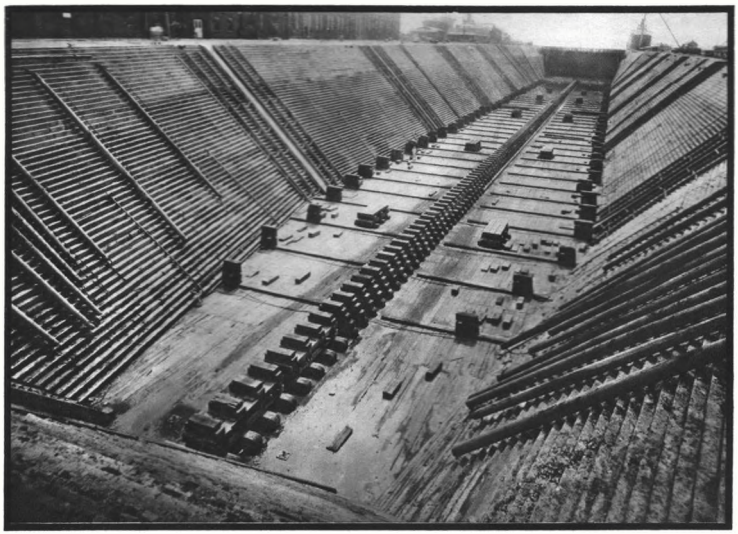
. . . AND PUT INTO THE SHIP BY THE CRANES

Newport News is the most fully equipped yard in the U.S. For instance, it makes its own turbines. The machine shop shown above (left), besides doing conventional machining, can machine parts up to thirty-five feet in diameter for turrets and other purposes. The yard also has two semisubmersible shipways (the only ones in the U.S.) in which the stern of a ship is actually immersed before launching. Over them the elaborate trestlework shown above (right) supports ten bridge cranes, the whole having been built by the Emergency Fleet Corp. in 1919 for $4,100,000 (about two-thirds repaid by Newport News in 1920). Below is the 860-foot dry dock. If your eyes are good you can see a man standing on the bottom of it beside the ninth upright block on the left.

Estate in California, the American Academy of Arts and Letters and the National Institute of Arts and Letters, both in New York, the Brookgreen Gardens in South Carolina, and the unique Mariners' Museum at Newport News. Not a single officer of the company, not even President Homer L. Ferguson, dean of U.S. shipbuilders, owns a share.* Conversely, not a single stockholder has had any serious training as a shipbuilder and none has any intention of working at the yard. The separation between ownership and management is therefore complete, and Newport News provides an ideal sample for theorists on that aspect of American industry.

Now the fact is that, while Newport News has never been a fabulous earner, it is a money-making proposition. And in view of the depression that fell upon the shipbuilding industry after 1920, the earnings can at least be described as extraordinary. For there are no other equivalent earnings in the industry. Since 1920, forty-nine U.S. shipyards capable of building steel vessels have been wiped out, taking with them more than 300 launching ways. But Newport News has remained and has even entrenched itself more strongly year by year. It has only two economic peers—Bethlehem Shipbuilding Corp.'s Fore River plant (eleven ways), which made a huge pile during the War and has since about equaled

**A few officers hold Directors' qualifying shares whose title remains with the Huntingtons.*



THE *YORKTOWN* FITTED INTO THIS WITH SIX INCHES TO SPARE

A FREIGHTER IN DRY DOCK READY TO HAVE HER BOTTOM SCRAPED

Newport News's business, and the New York Shipbuilding Corp. (five ways), which went through a violent reorganization in 1931. Since its founding in 1886, Newport News has built 327 ships and done a gross business of $381,860,000. But during the fourteen years from 1922 to 1935 inclusive—that is to say, during the shipping depression of 1922-28 and the industrial depression of 1929-34—it did almost 60 per cent of that vast business, or $232,250,000 worth of work on 126 vessels and a dozen sidelines. On this the profit was $10,235,000, or 4.4 per cent—modest but creditable for a depression.*

It is not easy to spot any one explanation for this somewhat extraordinary record. Since 1915, at any rate, when Mr. Ferguson became President, Newport News has had the ablest management in the business; but as the reader is quite aware, management alone cannot dispel a depression. Skilled designers and skilled craftsmen might account for some of Newport News's success, though Philadelphia's old Cramp Ship & Engine Building Co. had these and went under anyway. But if one were determined to produce a single reason for the survival of this yard, it is to that same split between ownership and management that one would turn. In an accurate sense, the prosperity of Newport News is an outgrowth of the wisdom and loving-kindness of its absentee owners. On the one hand the Huntingtons, knowing nothing of ships, have been wise enough to know that they knew nothing and have interfered not at all with the management; on the other, possessing a fortune of a hundred million or so in their own right, they have looked upon Newport News as a delightful industrial experiment and, with the exception of a few occasions, have never unduly pressed it for dividends. Indeed, since the company started paying dividends in 1906, they have drawn only $12,650,000 out of the business in that way, and since 1927, when Archer Huntington inherited control, only $2,400,000, or an average of about $270,000 a year on a business that was making an average of $1,200,000. As a result of this wise restraint during fifty years, gross additions to plant, largely from earnings, and exclusive of facilities paid for by the government during the War period, have totaled more than $31,000,000. So important is the attitude of these absentees that an account of their ownership is appended to this article on page 73. Our province here is management.

The late Nye Committee, which gave Newport News no opportunity for rebuttal in its hearings in 1935, made estimates somewhat higher than this. The net profit over the same period, it contended, was $12,860,000, or 5.5 per cent. This figure was reached by disallowing certain items for depreciation and overhead.

Gentlemen's club

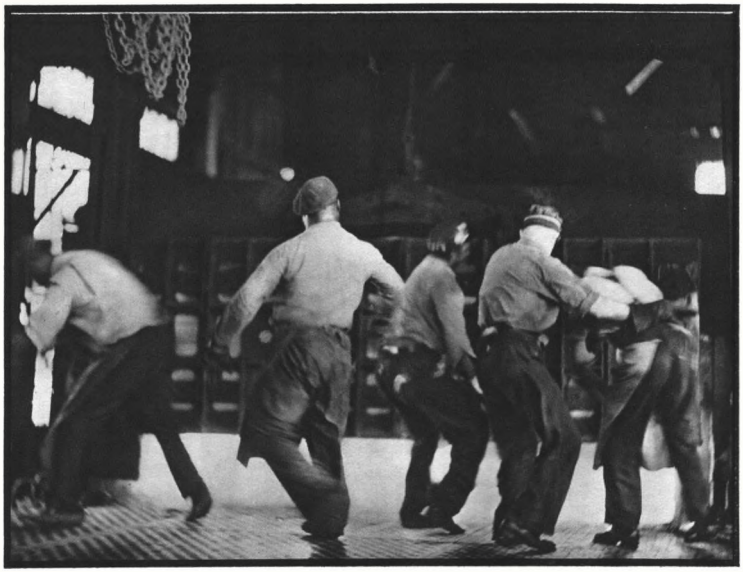
A U.S. shipyard is not often in the public eye, the most conspicuous being the New York Shipbuilding Corp., which is unionized and publicly owned. But Newport News has exercised the democratic right of privacy more fervidly than most—more fervidly, one is tempted to say, than any business of equivalent size in the U.S. Its attitude toward finances is that of the nineteenth-century gentleman; its attitude

BOW OF THE $19,000,000 AIRCRAFT CARRIER *YORKTOWN* LAUNCHED LAST APRIL

toward its employees is that of a paternalistic seigneur. You will find neither earnings statement nor outside labor union. You will find an aggressive, faithful, paternalistic management that has no legal corporate control and does not ask for any; a management that has certain clear beliefs—that believes, for instance, in big reserves and southern hospitality and Jeffersonian democracy (mixed with just a dash of Hamiltonian industrialism); that believes in lean, handsome men with well-defined eyebrows and firm chins and well-tailored suits, mostly of blue, and a naval manner; that believes in its responsibilities as citizens of a town created outright by the business, and in good local high schools and good local football teams and conservative driving on the highways and clean streets. Between the town of Newport News and the Newport News Shipbuilding Co. the difference is merely a technical one, and local wits have dubbed the golf club the Newport News Shipbuilding and Country Club. So if you are one of the younger executives without much money for traveling you build Newport News ships by day and come back and talk about them to your wife at night. For you, the Newport News Shipbuilding Co. is about the most important thing on the map of the U.S. But the insularity of this tight little, right little world does not make you restless because it is not the insularity of the small, squalid western town but the pleasant, grassy, sunlit insularity of a southern gentleman. And if your wife complains about it from time to time, you can always point out to her that it would have been just as bad had you decided to go on with the navy.

The influence of the navy upon Newport News is paramount. This is mostly because, as we shall see, the navy is the yard's indispensable No. 1 customer. But it is also fair to note that President Homer Lenoir Ferguson and Vice President Roger Williams are former navy men. Mr. Ferguson is a compact, terrier-like executive with a boyish shock of gray hair. He has a big nose and wears horn-rimmed glasses in front of a pair of aggressive brown eyes, and he talks through the side of his mouth in a manner that might be described as tough if he were not so obviously sensitive. He reeks, so to speak, of the shipyard, and though he has been President of the company for twenty-one years he seems more like a General Manager than a President. On the other hand, as No. 1 citizen of a community of 35,000 people, his interests are extremely broad, embracing civics, banking, and community welfare of every description. Whenever the citizenry want anything done they get Mr. Ferguson to do it. And he does it.

As manager of the nation's biggest independent shipyard, Mr. Ferguson possesses two somewhat unusual assets. The first is the fact, already referred to, that he does not own any stock—has even turned down Archer Huntington's offer to make him a gift of a substantial block. The asset value of this circumstance might not be immediately apparent to a man with less shrewdness, but the fact that he is hired just like anybody else (for the extremely modest salary of $35,000, plus his share of the executive bonus, which touched a high of $56,500 in 1933) makes it possible for him to drive the rest of the executives at least



STEEL IS HEATED IN THE FURNACE . . .

The chief reason why the U.S. cannot compete against foreign nations in the building of ships is the cost of labor. Consequently every effort has been made at Newport News to get this cost down. This is not accomplished by low wages, the average wage at Newport News (excluding salaried employees) being about seventy-five cents an hour or $6 per day. Rather, Newport News attempts to lick labor costs in terms of skill. It maintains an apprentice school with twenty-eight instructors and 335 undergraduates who receive from thirty-eight to sixty-four cents an hour. About 65 per cent of the work in the yard is contract or piece work involving bonuses for efficiency. Some 23 per cent of the 8,400 employees are Negroes, many of them skilled, and they get exactly the same pay as whites for the same work. The two pictures on this page show a skilled gang at work and illustrate the fact that a ship is built by hand. They are shown (above) taking a heated steel plate from the furnace and (below) shaping it on the bending slab.

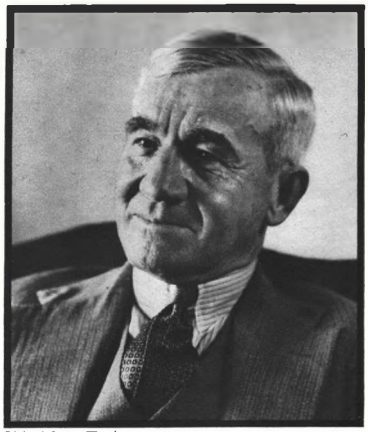
. . . AND POUNDED INTO THE REQUIRED SHAPE

as hard as he drives himself and gives him a good talking point with the men besides. His second asset is the navy. The story is that he flunked his mathematics entrance examination for Annapolis and was so shocked by this shortcoming that he resolved to enter the extremely mathematical field of naval construction. He entered Annapolis at the age of fifteen, specialized in the technical side, graduated No. 3 in the class of 1892, and completed his training at Glasgow, Scotland, under the great marine architect Sir John H. Biles. He was sent to Newport News as assistant superintending constructor and made such a favorable impression he was offered a job in 1905.

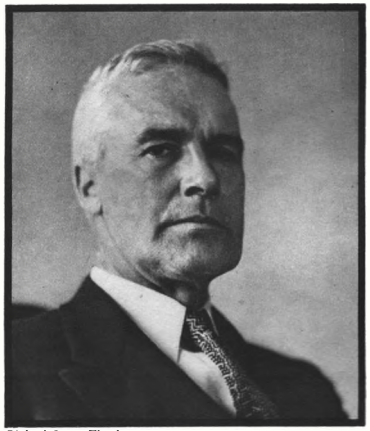
Now for a personable man with character as well as brains, the navy is just as good as an exclusive club. It is an asset that no shipbuilder can underrate, and at Newport News Mr. Ferguson shares it with Vice President Roger Williams. Ruddy of face and square of shoulder, Captain Williams is the naval gentleman personified. He is easy of manner, soft of speech, and handsome. He was a line officer in the navy, having commanded the destroyer *Duncan* off the British coast during the War. In 1920 he resigned with the rank of commander and entered the International Mercantile Marine, biggest U.S. shipowners, where he served as manager of the operating department for ten years. In 1930 he stepped into Newport News as Vice President and is heir apparent to the presidency.

The outsider attempting to set up a shipbuilding business in competition with these two would find himself at a loss. Washington would seem to him like a big place full of confusing influences. Naval inspectors would look like ogres. And the whole idea of building ships would appear too perilous to justify the big capital risks. But for Messrs. Ferguson and Williams the shipbuilding world is not like this. On the one hand, many of the naval inspectors and engineers were their classmates at Annapolis. On the other, both men know their way around the industry. Mr. Williams's ten years as an operator provided him with many friends among the purchasers of ships, and his is a familiar figure at the quaint, conservative India House in New York, where the shipping fraternity eats lunch.

The Nye Committee did a lot of talking in 1935 about collusion, but what the committee failed to see was that collusion among shipbuilders isn't necessary. Newport News has been a training ground for U.S. shipbuilders for the past thirty-five years, and every big yard in the country has a Newport News man in some key position. Just as Newport News itself is a closed corporation in terms of ownership, so the entire shipbuilding industry is a closed industry in terms of management. Too arcane to enter haphazardly, it is also too proud of its heritage to collude. And it is just as absurd to say that Mr. Ferguson reached an agreement with his competitor Bethlehem concerning



Richard Carver Wood
PRESIDENT HOMER L. FERGUSON



Richard Carver Wood
VICE PRESIDENT ROGER WILLIAMS

a certain ship as it is to suppose that he didn't know approximately what Bethlehem could build that ship for.

This industrial exclusiveness, reminiscent of British methods, has grown up on the shores of a country whose industrial life is otherwise not patrician in tone. And it has grown thus by reason of certain industrial factors peculiar to itself. These factors are far-reaching and profound in their effect, and any survey of Newport News as a business must take account of them. Here, then, it is time to make a brief detour.

The U.S. merchant marine

THE U.S. flag flies at the stern of 1,920 ocean-going ships of 2,000 gross tons and upward, totaling about 11,000,000 tons altogether. It is a vast fleet second only to that

[*Continued on page 176*]

The Huntington Dynasty

Three men in succession have controlled the premier U. S. shipyard—an empire builder, a collector, and finally a man of letters.

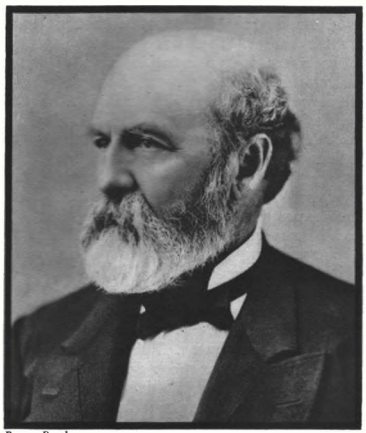
THE ownership of Newport News is one of the notable curiosities of American industry. However indispensable the business may be to the rebuilding of a peacetime merchant marine, the fact remains, as pointed out in the previous article, that it is a business supported chiefly by the U.S. Government for the purpose of creating engines of war. For those engines, in the course of the last fifty years, the people of the U.S. have paid Newport News $200,000,000. And the profits on that somewhat staggering sum, which we have accounted for elsewhere, have accrued to Archer Milton Huntington, his relatives and donees.

This fact becomes curious as soon as you become acquainted with Mr. Huntington. Mr. Huntington was born in New York sixty-six years ago, is six feet five inches tall, weighs 240 pounds (he once weighed 337½ but has never looked fat), breaks chairs when he sits on them, and sometimes puts down the telephone so hard that it etches a semicircle on the mahogany table top. His is a rugged physique. His interests, however, are the reverse of his formidable appearance. He is a gentle man—one is tempted to say a recluse—devoted solely to history, literature, and the arts: esthete, scholar, poet, benefactor, and founder of thirteen museums.

Although in the end it was Mr. Huntington's $25,000 that Newport News contributed from 1926 to 1928 for the lobbying expenses of William B. Shearer, who boasted that he had broken up the Geneva disarmament conference in 1927, Mr. Huntington is not by conviction a big-armament man, and he dismissed Newport News's Vice President Frederick P. Palen, who had hired Mr. Shearer. Mr. Huntington's life is uniquely devoted to encouraging an interchange between Anglo-Saxon and Spanish cultures, and in pursuit of this ambition he has dug up the old Spanish empire (once the cultural center of the world). He dug both metaphorically and actually. With a big inherited fortune at his disposal, he dug up an entire Roman city near Seville, and in order to unearth traces of early Spanish and Portuguese navigation he financed expeditions as far afield as the ancient city of Gôa in India. He collected rare Spanish books and introduced to the U.S. the artists Sorolla, Zuloaga, and Mesquita, together with that fervid painter of semisavage Argentine gauchos, Cesáreo Bernaldo de Quirós. He became a scholar in Cervantes, translated the *Cid* himself, published several volumes of travel in Spain, and drew heavily upon that lyric land for the imagery of his own verses. All this work was crowned in 1904 when he set up the Hispanic Museum on Audubon Heights (156th Street and Broadway, Manhattan) on eight lots of land with an endowment that now totals $2,000,000. Spain in her glory has been his lifework.

Mr. Huntington would own (and still does vote) considerably more than a majority of the stock of Newport News if he had not given most of his former holdings to his various institutions. Being childless, he will doubtless leave the remainder in similar hands. At the present writing the ownership of the Newport News Shipbuilding & Dry Dock Co. stands as follows:

1. Archer Huntington, 22,233 shares.
2. Mrs. Anna Hyatt Huntington, his wife, the noted sculptor, 7,411 shares.
3. The Mariners' Museum at Newport News, 22,233 shares. This extraordinary institution, which contains a hodgepodge of nautical gadgets from all ages together with a library of 20,000 volumes on ships and the sea, is surrounded by an 811-acre park and roads that meander pleasantly around a big artificial lake. Retired officials of Newport News act as guides and supply salty anecdotes concerning the curious and wonderful collection of marine relics, including figureheads (two are shown on pages 68 and 69), wine bottles from a British ship sunk during the siege of Yorktown, old cannon, and sea chests fished up from the bottom of the York River. There are also unique scale models of many of the illustrious ships of history,



Brown Brothers
FOUNDER COLLIS P. HUNTINGTON

THE BOW OF THE CRUISER *BOISE*, NOW ON THE WAYS

including many of the merchant ships turned out by Newport News.

4. Brookgreen Gardens, South Carolina, 14,822 shares. This was formerly Archer Huntington's own estate, a strip of land along the coast of South Carolina above Georgetown. The cement house is Moorish in design on a desolate wind-blown dune and is connected with the mainland by a causeway. Feeling that the South was lacking in museums, Mr. and Mrs. Huntington gathered together the finest collection of American sculpture in the world, built a small museum for it, transformed part of the encircling estate into a public park. There have been as many as 1,000 visitors a day. Another part of the Gardens has been converted into a wild-life sanctuary, which is one of three he has created on the east-coast wildfowl flyway. The others: in the Adirondacks and at the Mariners' Museum.

5. The American Institute of Arts and Letters and the American Academy of Arts and Letters, 7,411 shares. These two interrelated institutions are characteristic Huntington social dividends. They are housed in a single $3,000,000 building on Audubon Heights next to the Hispanic Museum and their endowment (partly contributed by the late Mrs. Collis P. Huntington) totals about $1,000,000. The academy, which is presided over by Nicholas Murray Butler and comprises fifty venerable authors, painters, composers, and architects, is fed by the institute, which has a membership of 250 and includes a sprinkling of governors and professors. The purpose of both: to encourage literature and the fine arts as a counterbalance to a materialistic age.

6. The Henry Edwards Huntington Estate, 25,879 shares. This estate is a trust for the benefit of several Huntington heirs. The trustee is the Securities First National Bank of Los Angeles, and the Chairman of this bank is the distinguished Henry M. Robinson. Mr. Robinson is at the same time Chairman of the Board of Newport News. He is also Chairman of the Board of the great Henry E. Huntington Library of San Marino, California; and while the library owns no Newport News stock its portfolio does carry $980,000 worth of good Newport News 6 per cent bonds, due 1972. While the library thus owns no equity in Newport News, it well may at some future time, and in any case it deserves a place in our catalogue. The bonds are part of an original issue of $13,900,000, all but $1,900,000 of which has been repurchased by the company.

Surrounded by satiny greenswards and ornamental gardens, which include a famed five acres of Japanese gardens and 16,000 equally famed cacti, the library, which is at the same time a museum, contains a collection of first editions that the curators of the British Museum might envy. Noteworthy items: the source book of Chaucer's *Canterbury Tales;* a fine Gutenberg Bible; a first folio of Shakespeare's comedies, histories, and tragedies; the Latin manuscript of the voyages of Amerigo Vespucci; the neatly penned *Autobiography of Benjamin Franklin*. Here too are some of the finest English paintings: Gainsborough's *Blue Boy*, whose purchase from the Duke of Westminster

through Sir Joseph Duveen for something over $700,000 stirred British editorial writers to extremes; and some of the best works of Reynolds, Lawrence, and Raeburn.

The founder

FOR about a year, when he was eighteen, Archer Huntington did actually consider the possibility of going into the yard and he did a certain amount of work there. However, the life did not appeal to him; and his interests being what they are today, it is not unusual for him to visit the town of Newport News for the purpose of browsing through his Mariners' Museum, without so much as dropping in at the yard. This is not to say that he takes no interest in Mr. Ferguson's show—on the contrary, he will talk to the Newport News executives by the hour, and he lays claim to a kind of prescient sixth sense concerning their affairs when major issues are at stake. But this interest in the yard is not so much practical as paternal. It is, so to speak, dedicated to the memory of Archer's father, the late Collis Potter Huntington, whom he profoundly admired.

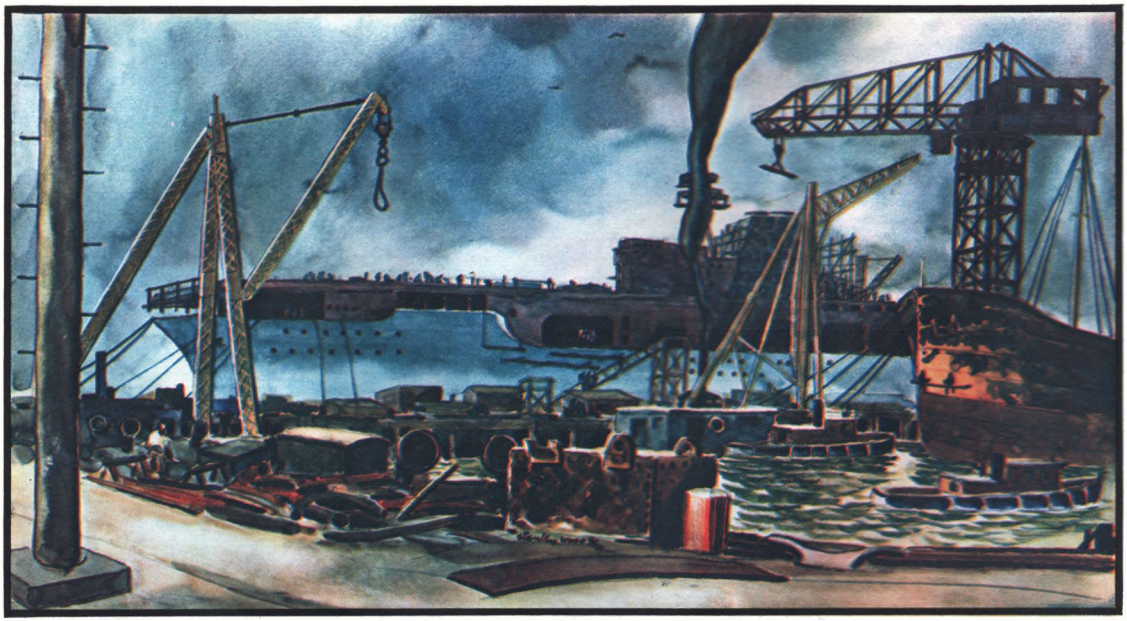
That rugged empire builder of the days of Commodore Vanderbilt and James J. Hill had raced the Union Pacific to the Pacific Coast with the Crocker-organized Central Pacific; had flung down the Southern Pacific, jamming little roads to the wall in the good old mid-nineteenth-century manner; and had picked up the incomplete Chesapeake & Ohio cheap. With the idea of linking the two coasts by a single system, he bought a couple of small roads to hook the Chesapeake & Ohio to the Southern Pacific and at the same time he extended the C.&O. line across Virginia to the sea. The plan broke down at the western end, and in the final accounting Collis was left with a financially isolated C. & O., the eastern terminal of which was a sandy beach where the inhabitants of the neighboring hamlet of Newport News were wont to come on Sunday afternoons to pick wild plums.

One characteristic of this spot, however, attracted the empire builder's eye. It had a fine natural harbor, almost exactly halfway between Maine and Florida. His C. & O., moreover, had a natural gradient down to the coast so that coal could be delivered from the interior with a minimum expenditure of horsepower, the empties being toted back up the grade by a single locomotive. With cheap coal, the next steps would follow automatically. He could bring ships to the harbor by setting up a ship-repair business—eventually a town. He had built the Central Pacific on the backs of Chinese coolies; he could build Newport News on the backs of Virginia Negroes.

And thus it came about that in 1886, at sixty-five, Collis Huntington decided to inject himself into the shipbuilding business. Some years later, when someone objected that he would have to live another fifty years to complete his vast projects, he replied, "I intend to." He put up $100,000 and opened the subscription books for what is now the Newport News Shipbuilding & Dry Dock Co. but was then called the Chesapeake Dry Dock & Construction Co., and he was provoked to discover that no one wanted to subscribe. Eastern financiers couldn't see the virtue of a shipyard in a plum patch on the banks of the turgid James, nor did they believe that Negroes could be employed successfully in such a technical industry. To form a group Huntington actually gave stock away. But later, when it looked as if the yard might succeed, he characteristically sent his office boy around to persuade the "promoters" that it was no good, and get it back again.

Many a wrinkled craftsman at Newport News remembers the founder with his shaggy beard and G. A. R. hat, and remembers having talked to him. His shadow still lies over the yard he built, together with the motto that he bestowed upon it: "We shall build good ships here, at a profit if we can, at a loss if we must, but always good ships." To back this idea of quality he poured millions into the business, but just how many no one has ever been able to say. He believed that quality would sell ships, a point already referred to in the article on the yard itself. And in 1906, when the company struggled out of the red never to slip

[*Continued on page 190*]



THE AIRCRAFT CARRIER *YORKTOWN* AT THE FITTING-OUT PIER

One of the most advanced naval vessels in the world, the *Yorktown* was launched and will be ready for her trials next spring. She is 809 feet long, contains two acres of flying field, and can carry more than a hundred planes. With 100,000 horsepower she will make more than thirty-two knots.

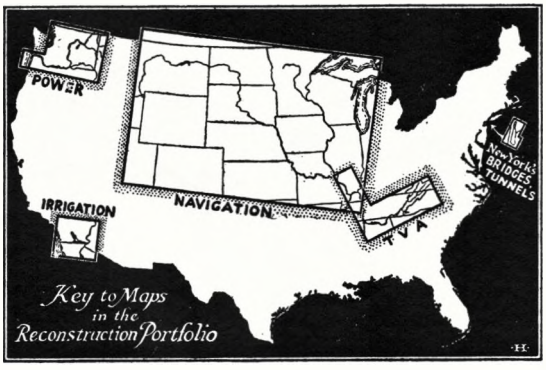
A Portfolio

of New Deal Reconstruction

FOR three years everything wore out and by the end of 1932 you could have said that the U.S. was down at the heel. For the next three years there was repair. And in 1936 you can say that the job of reconstruction has pretty well cleaned up the surface of the U.S. and here and there carved, plugged, and tied that surface together until men could use it. By and large the citizens of the U.S. are ready to admit that most of this overhauling badly needed doing. What does disturb many of them is not the repairing of the old but the building of the new, the fear that the federal government has rushed headlong into a construction program that may leave the country heavy with buildings that should never have been built. Certainly the New Deal has started some things that do not now appear as if they would ever justify the money spent on them. And you can say that the New Deal has failed to do what it started out to do by priming the business pump, that there are still 9,000,000 unemployed U.S. citizens and that the construction business is still only a little less than one-third of what it was in 1929. But the one thing you cannot say is that the New Deal has failed to give the U.S. the biggest house cleaning it has ever had. On November 3, U.S. citizens will have a chance to say whether that house cleaning has been worth the candle. But the fact remains that the huge works of the New Deal are here to stay, for better or for worse.

Of the $11,400,000,000 that has gone into fixing up the country, some $4,900,000,000 has left little outward impression. It was spent for those on direct relief, for farm relief, and for the credit agencies like the RFC and the HOLC and the FDIC. But the remaining $6,500,000,000 has left its mark for all to see. From this sum railroads have borrowed, and states and local governments have both borrowed and received outright grants to rejuvenate and remake the surface of the land. Evidence of that reconstruction may be found spread across the forty-eight states, across Alaska and Hawaii, across Puerto Rico and the Virgin Islands.

No one knows exactly how much it has all amounted to, physically. For one thing, the work has gone so fast, the main idea being to get as many men on as many projects as possible. And the New Deal agencies have often overlapped on work projects, and have been so continuously started up and disbanded and coordinated that until recently no one has taken the time to get even good round numbers on the national overhauling. In a political year the lack of these round numbers is an astonishing phenomenon, and it is even doubtful whether the last-minute government survey begun in September will by November have told U.S. citizens just how far New Deal reconstruction has gone.



The telling would be impressive. It would be of the changes that had been wrought in the land itself, of roads scraped and flattened and widened into concrete ribbons imbedded in the earth; of trees hacked down and trees planted; of ditches guiding water into dust-dry farms and out of soggy, stagnant swamps; of typhus-bearing rats wiped out and malaria-bearing mosquitoes left to die without their breeding swamps; of rivers dredged and blocked against a day of flood and rivers lined with stone and brush and cement to stay their hungry friction; of earth striped and ridged and pegged against the seep and wear of rain.

And there would be those things that had been added to the land: dams wedged in the rivers and power plants squatting by the dams; Chicago's $100,600,000 sewer and garbage treatment plant; tennis courts on the roofs of warehouses and murals on the walls of city halls; historic landmarks recorded, then strengthened against collapse; Cleveland's $11,700,000 housing projects; schools and libraries for the sake of education and post offices and courthouses for the sake of civic pride; new operating rooms for hospitals and sleek hooded engines for railroads; Los Angeles's $220,000,000 aqueduct; Indian mounds unburied and lighthouses made tight; parks in place of slums and whole towns to house those dispossessed. Of all these things and more the New Deal could speak. And to those who cry "boondoggle" and point to the relief workers leaning on their shovels, the New Deal can reply that of the $11,400,000,000 that has been spent some $2,000,000,000 is in loans and capital stock in federal credit agencies that are probably recoverable. And that well over $2,500,000,000 has passed into the cash registers of private industry to pay for the tools and cement and lumber and steel and the other materials for this reconstruction job.

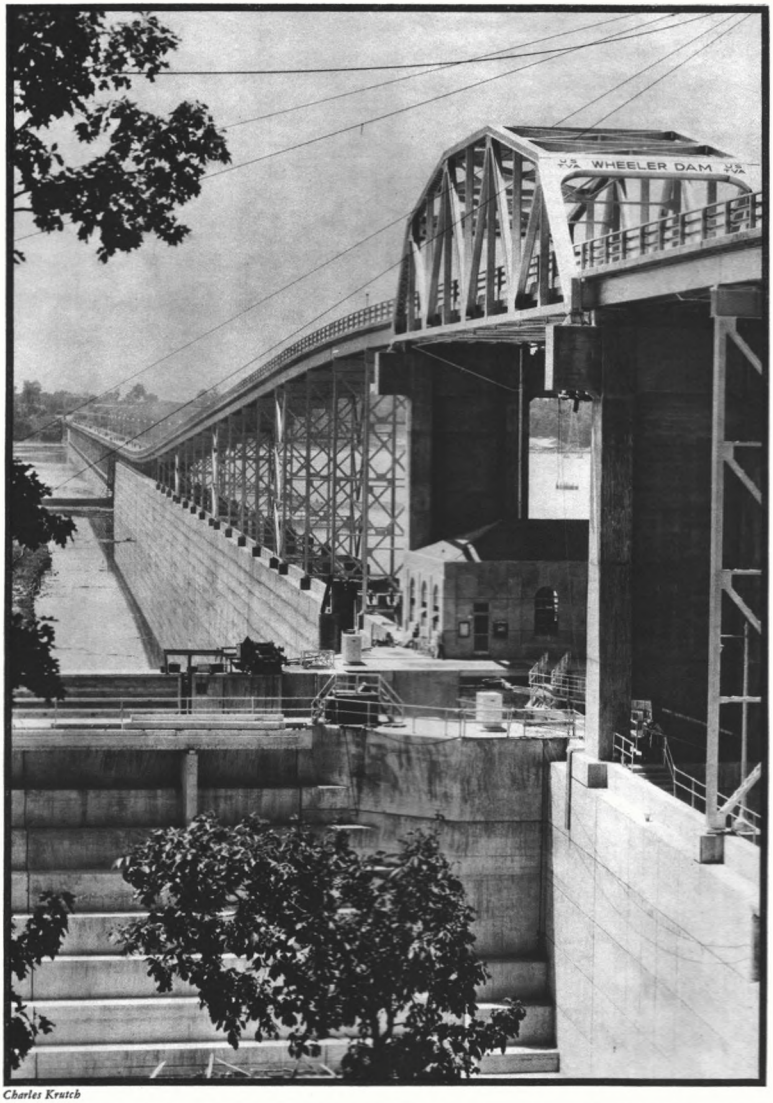
In that job there is much that must be considered only temporary repair, a kind of patching up of the U.S. pants. But there is much that will remain. On the following pages are pictured eight New Deal projects that when completed will constitute a permanent change in U.S. topography. Together they account for about $600,000,000, less than 20 per cent of the federal money allotted for pump-priming construction since 1933. One of them (TVA) is a frank experiment and four (Mississippi River control, All American Canal, and two Manhattan traffic channels) are undertakings that should almost certainly justify their existence within a short time.

But the benefits from the other three, the Grand Coulee, Bonneville, and Fort Peck dams, are strongly disputed. Grand Coulee and Bonneville are the first steps in the Columbia River development, which contemplates an eventual power capacity of 8,000,000 kilowatts in an area now inhabited by fewer than 3,000,000 people. This is about 24 per cent of the total power capacity in the U.S. in 1935. Utilities men do not see how so much energy can ever be sold. And the New Deal answer is at best a pious hope that by the time the project is finished many an industry will have shifted to this last U.S. frontier to receive its triple blessing of cheap power, cheap transportation, and an agriculturally perfect climate. As for the Fort Peck Dam, the War Department estimates that its annual savings in navigation, channel maintenance, soil erosion, and flood losses will come to $15,500,000. But these estimates do not agree at all with those given by a board of district army engineers in 1933 when PWA first asked for an opinion on the project. And it is widely held that Fort Peck's greatest value lies in the fact that it has put 7,000 men to work in an area where relief jobs are scarce.

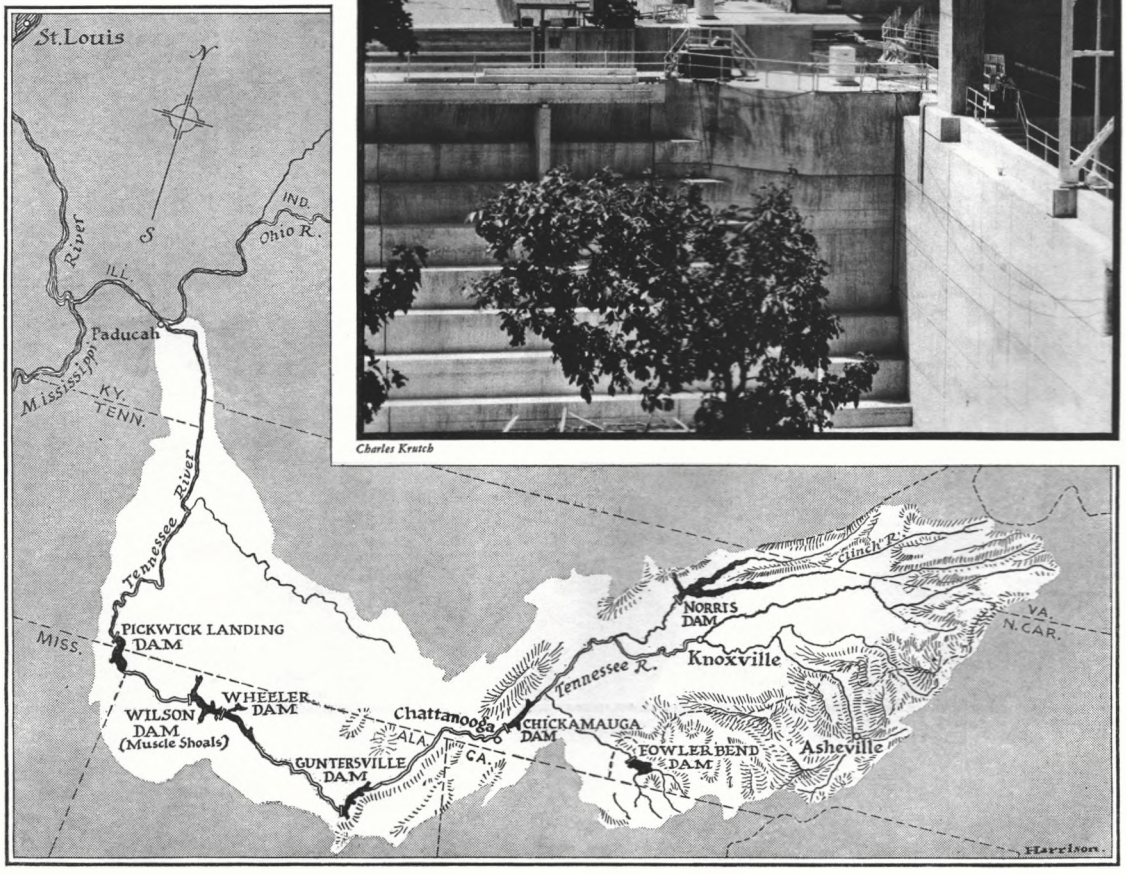
With the exception of TVA, the ideas behind these eight illustrations are not new ideas, many of the plans going back ten years or more. But it was New Deal money that started these enormous works abuilding, and they will be around for a long time to come in spite of whatever doubts the engineers and utilities men may have about them.

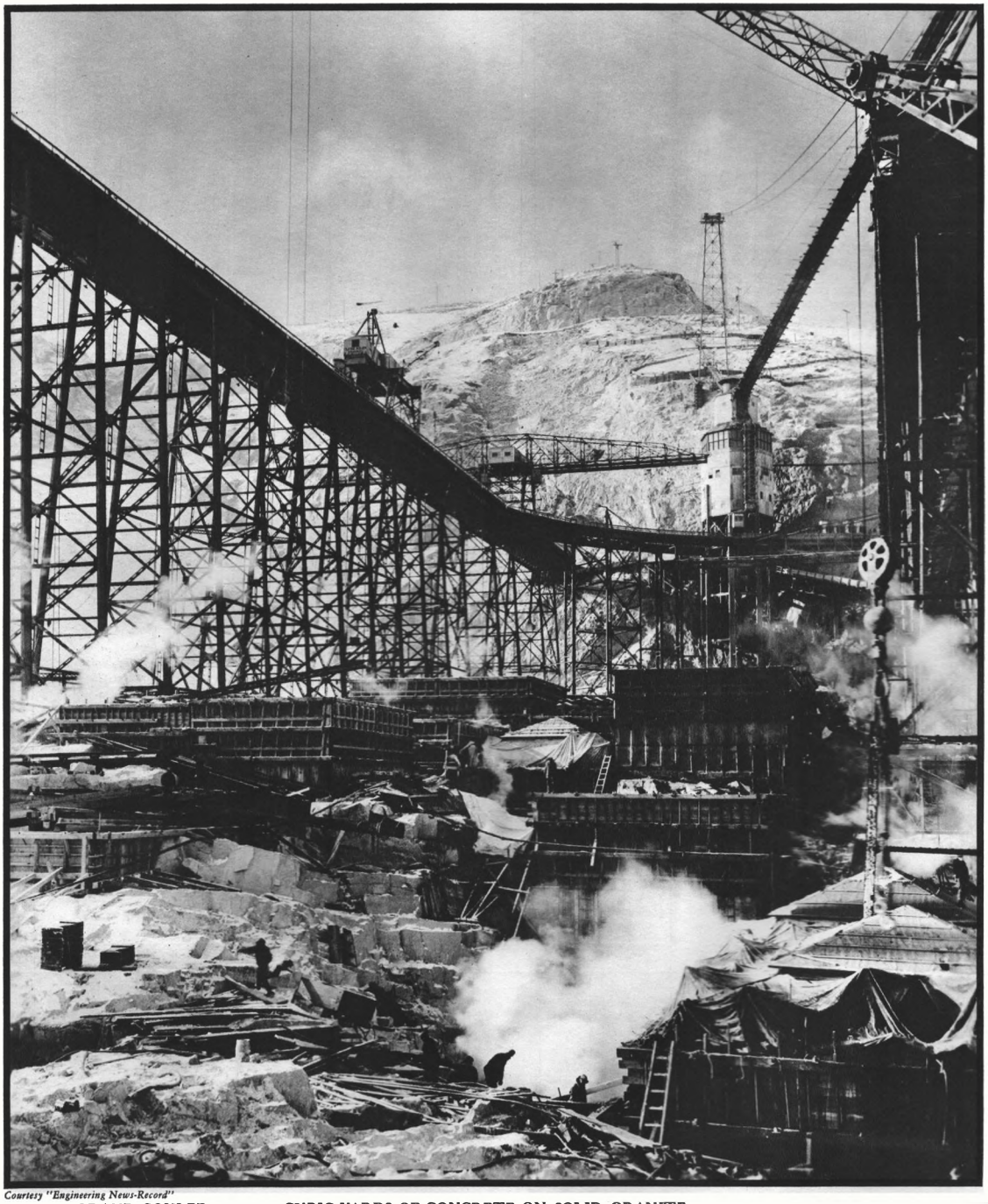
TRIAL IN THE VALLEY

Socialist Norman Thomas has called it "the only genuinely socialistic project in the New Deal . . . a beautiful flower in a garden of weeds." Public-utilities men have been calling it names unprintable for three years. But the Tennessee Valley development cannot yet be accurately damned or praised, for it is a permanent laboratory, not an emergency pump-priming venture. No one can say how much it will cost. So far Congress has given the TVA $151,000,000, but $34,000,000 more will be needed before 1940 to finish the work now going on, plus $144,000,000 for dams to be completed by 1944. To curb and deepen 650 miles of the Tennessee River and to shackle it with generators by which to judge the rates of private power plants, to show the mountaineers how to read and reason in a civilized state and the factory workers how to live in the country, to develop the resources of the valley without the waste of former U.S. pioneering—these are TVA's aims. At the right you see the nearly completed $29,000,000 Wheeler Dam, which with Wilson Dam and three others now under construction (Pickwick Landing, Guntersville, Chickamauga) will open half the length of the Tennessee to boat and barge.



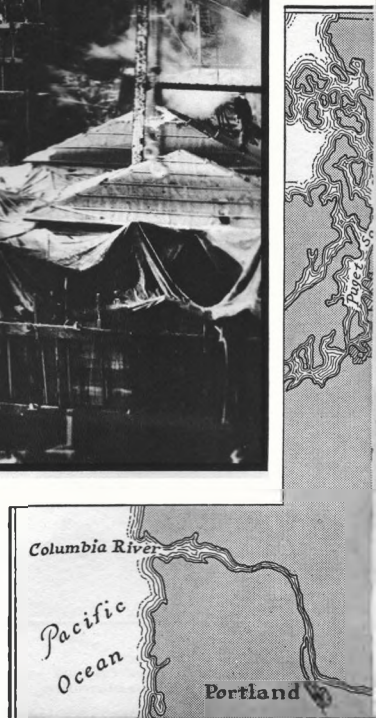
Charles Krutch

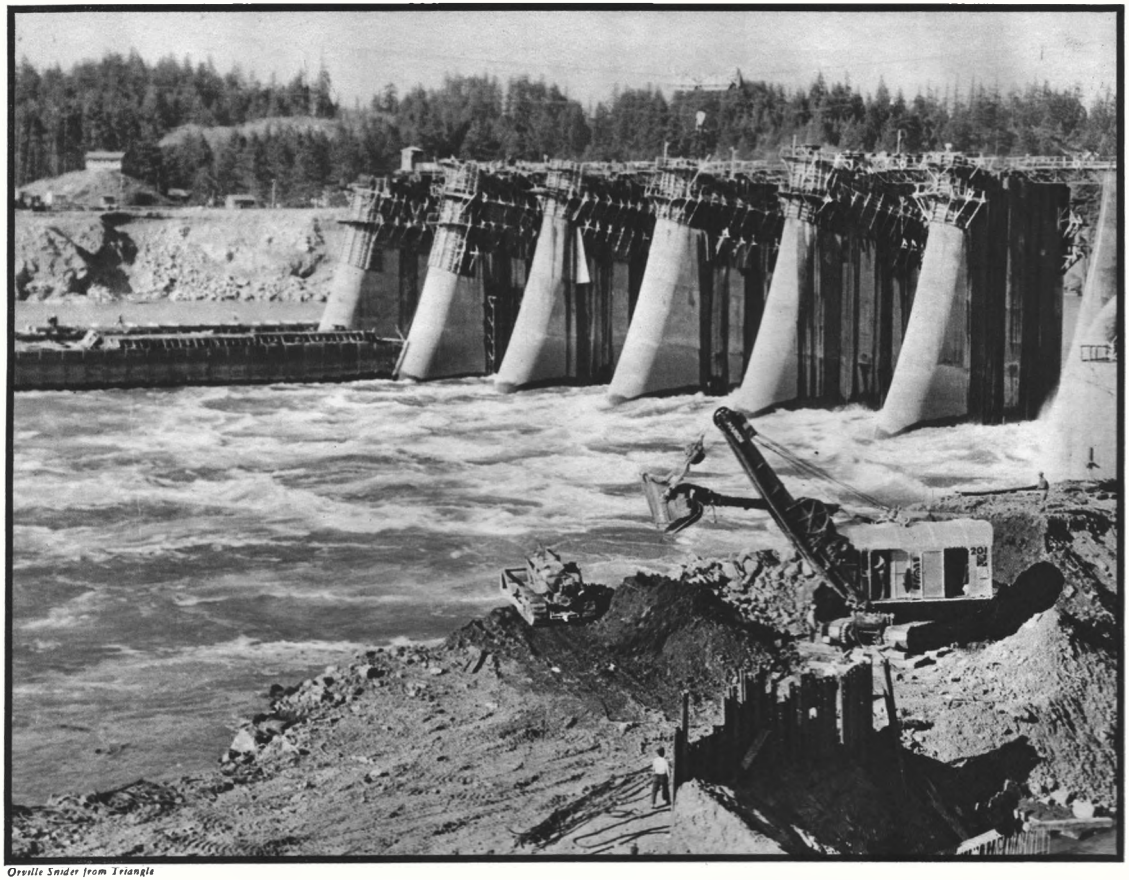




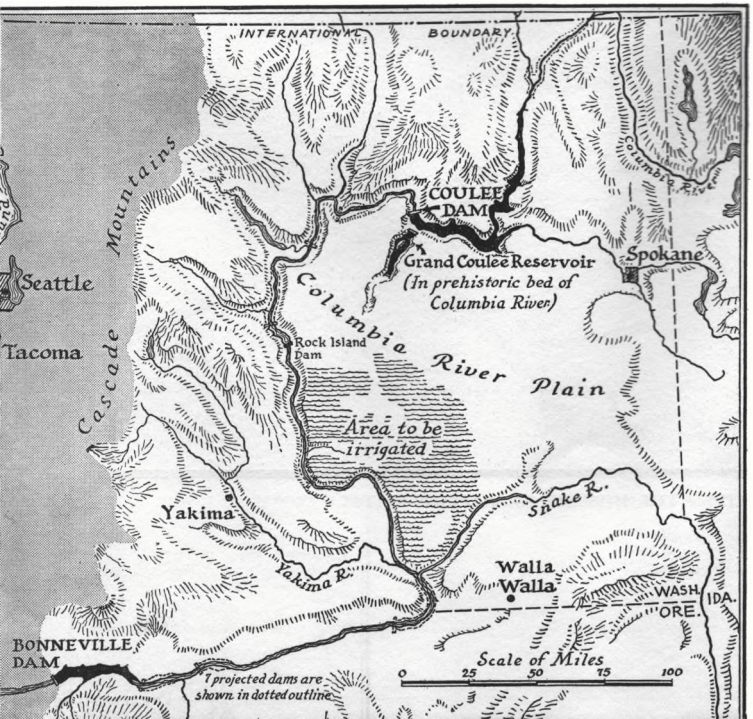
Courtesy "Engineering News-Record"

GRAND COULEE: 3,500,000 CUBIC YARDS OF CONCRETE ON SOLID GRANITE





Orville Snider from Triangle

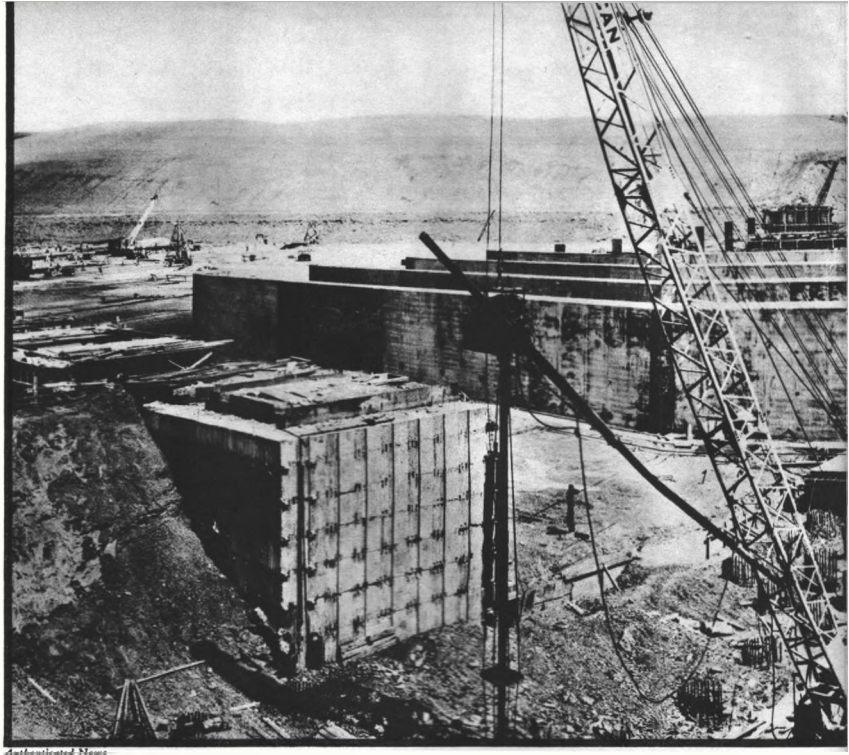


NORTHWEST POWER EMPIRE

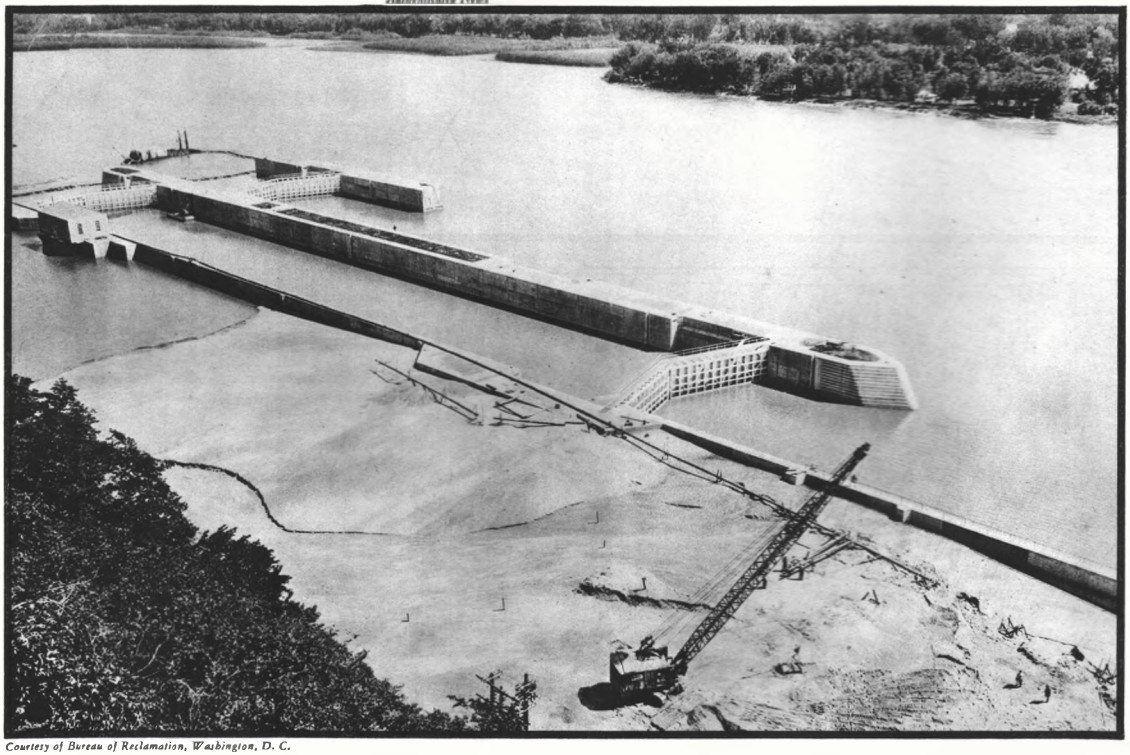
The Columbia River tumbles out of the Canadian Rockies and for 775 miles snakes across the state of Washington with such headlong speed and volume that it has long been known as the greatest potential hydroelectric source in the U.S. An army survey begun in 1928 called for ten dams to trap the Columbia's waters for power and navigation, one of them a mammoth dam to shunt part of the river into a prehistoric gulch whence it would flow into long irrigating fingers through 1,000,000 dried-up but fertile acres that lie upon the inland slopes. One of the ten proposed dams has already been privately built. Shown on these pages are the shaggy outlines of the two dams now being jammed across the river by the U.S. Government. Grand Coulee (opposite page) is the behemoth of power dreams, the most massive construction job yet attempted by man. It is planned in two stages. Stage 1, to be finished in 1940 at a cost of $60,000,000, calls for a foundation dam 177 feet high but will produce no power. Stage 2, to cost $118,000,000, would jump the dam to 550 feet and give Grand Coulee a power capacity of 1,890,000 kilowatts. By that time the irrigation plans should come to life at a cost of some $198,000,000, making Grand Coulee's total cost around $376,000,000. Bonneville (above) will cost $42,400,000 (ultimately $67,000,000), will add 86,000 kilowatts (ultimately 430,000 kilowatts) to the power total, and will back up the river so that ships can push eighty-five miles inland from Portland to haul down wheat and apples and Douglas fir and salmon. By 2000 A.D., the Columbia River development will, so run the plans, be complete at a cost of some $772,000,000. But behind this northwest dream hangs the fear that industry will not be there to use the power.

RIVER CONTROL

Fifteen miles above St. Louis the Missouri pours its dirt-yellow waters into the Mississippi. Both streams are by nature less than six feet deep above this point, although since 1878 the U.S. Government has pinched the Missouri with dikes, scraped its bottom, stabilized its banks so that today there is a six-foot channel between St. Louis and Kansas City. But river steamers still cannot use the cheap water road moving past the Twin Cities, 600 miles north on the Mississippi. The government is therefore planning to build twenty-six dams along the Mississippi above St. Louis to provide a nine-foot channel all the way from the Twin Cities to New Orleans. To each dam belongs a lock; and at the bottom of this page you see the lock already built at Dubuque, Iowa. When the project is finished all of the $148,000,000 authorized by Congress in 1930 (but most of it not appropriated until 1933) will have been spent. As for the Missouri's channel, army engineers have undertaken the Fort Peck Dam, 1,800 miles up the river in Montana, with which they hope to maintain an eight- to nine-foot channel between Sioux City and St. Louis. But there is a good deal of doubt that Fort Peck will produce enough benefits to justify its cost of $108,600,000—in 1933 a board of army engineers refused to recommend the project to PWA, and it has been pointed out that the Fort Peck Dam would reduce Missouri floods by less than a foot. At the right are eight of the fifteen piers to go into the Fort Peck spillway channel being cut through the bluffs three miles east of the dam to handle flood overflows. The dam itself will be an earthen ridge four miles long, half a mile wide at the base, choking the river back into a lake 180 miles long.

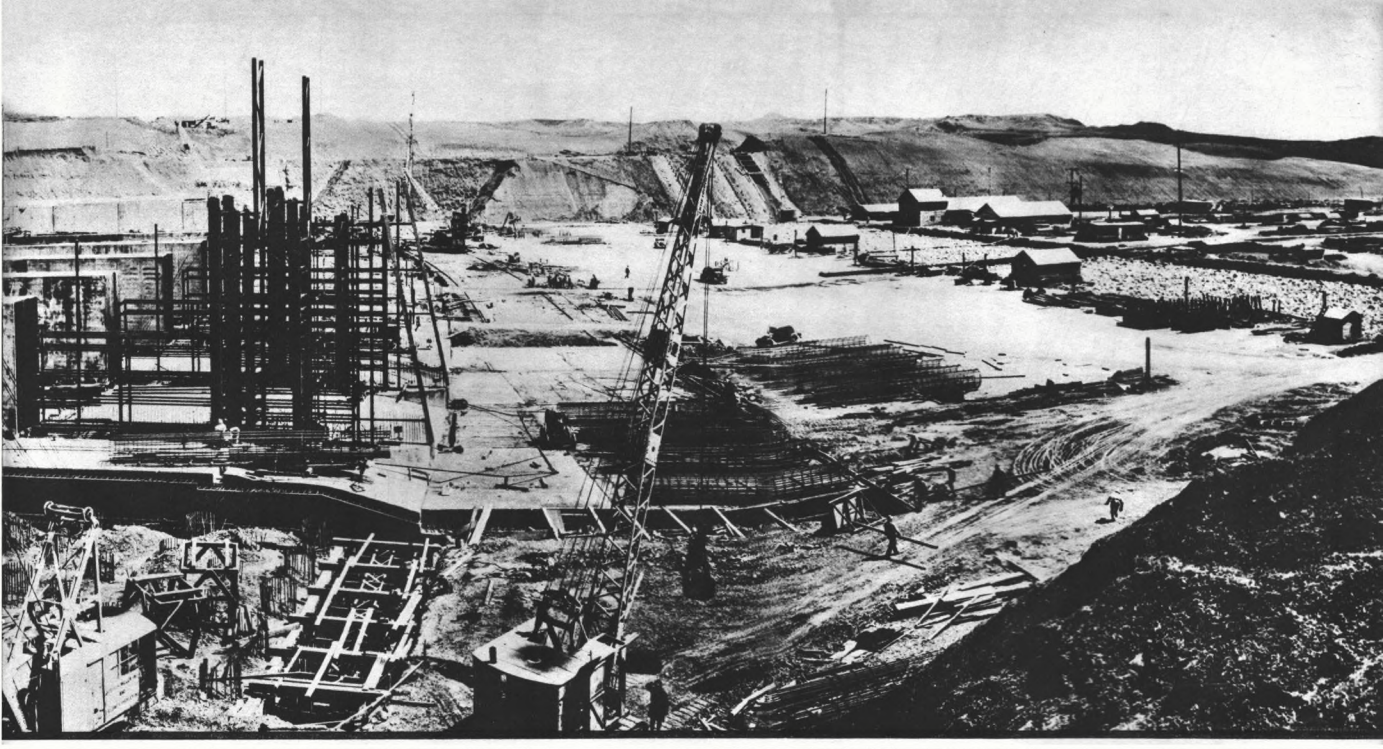


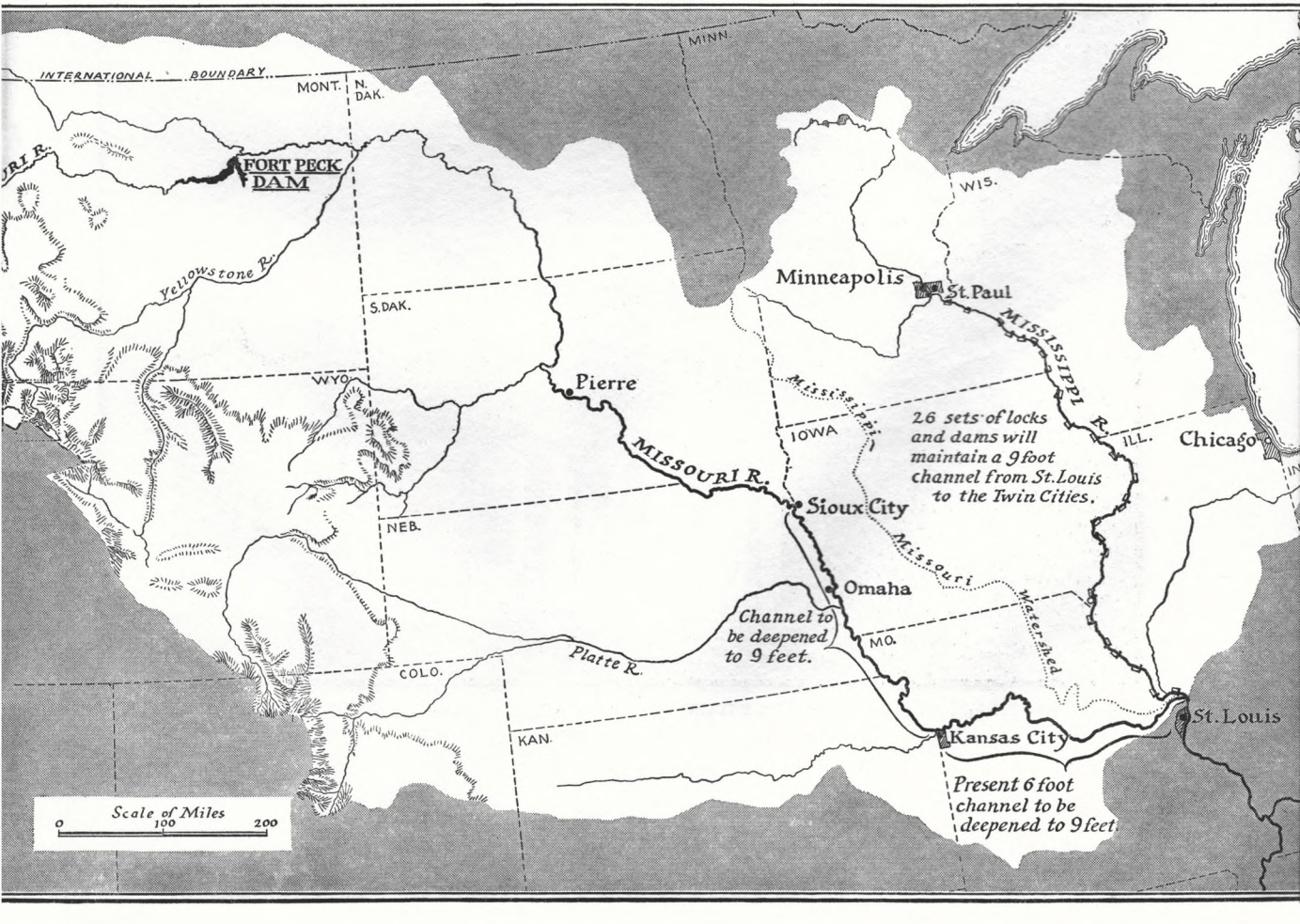
Authenticated News

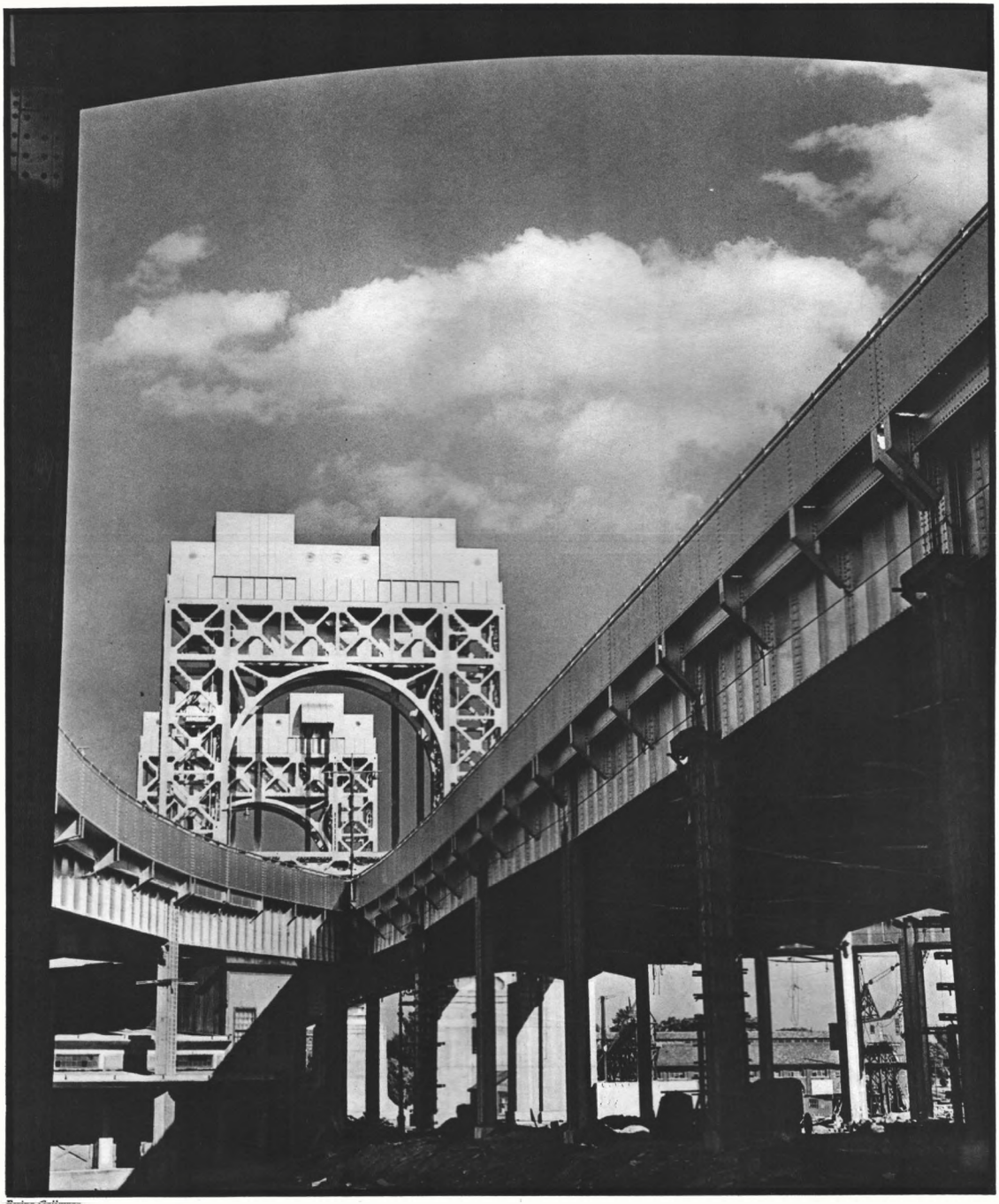


Courtesy of Bureau of Reclamation, Washington, D. C.

FOR EVERY LOCK LIKE THIS, A DAM TO DEEPEN THE MISSISSIPPI'S SHALLOW WATERS ABOVE ST. LOUIS

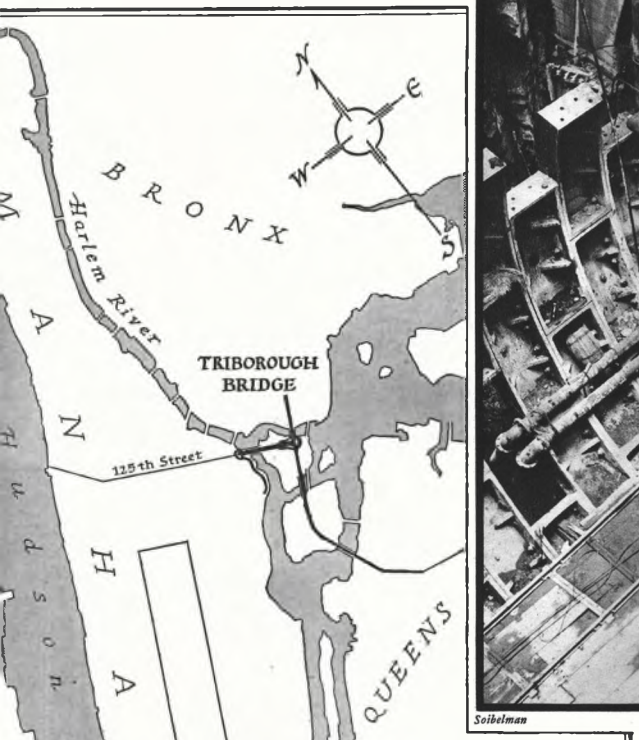


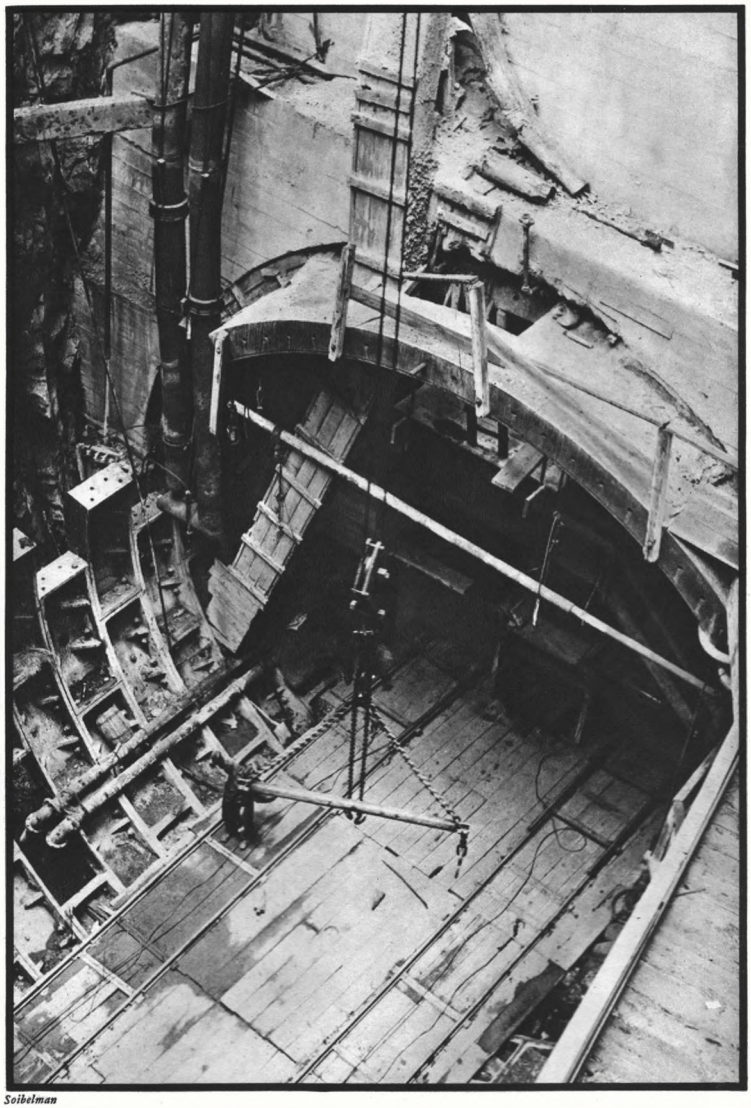

INTERNATIONAL BOUNDARY
MONT.
N. DAK.
MINN.
WIS.
FORT PECK DAM
Yellowstone R.
S. DAK.
WYO.
Minneapolis
St. Paul
MISSISSIPPI R.
Pierre
Mississippi R.
IOWA
ILL.
Chicago
MISSOURI R.
26 sets of locks and dams will maintain a 9 foot channel from St. Louis to the Twin Cities.
Sioux City
NEB.
Omaha
Missouri Watershed
Channel to be deepened to 9 feet.
MO.
Platte R.
COLO.
KAN.
Kansas City
St. Louis
Present 6 foot channel to be deepened to 9 feet.
Scale of Miles
0
100
200



Ewing Galloway

THE WORLD'S LARGEST LIFT BRIDGE IS ONLY ONE LINK IN NEW YORK CITY'S TRIBOROUGH BRIDGE

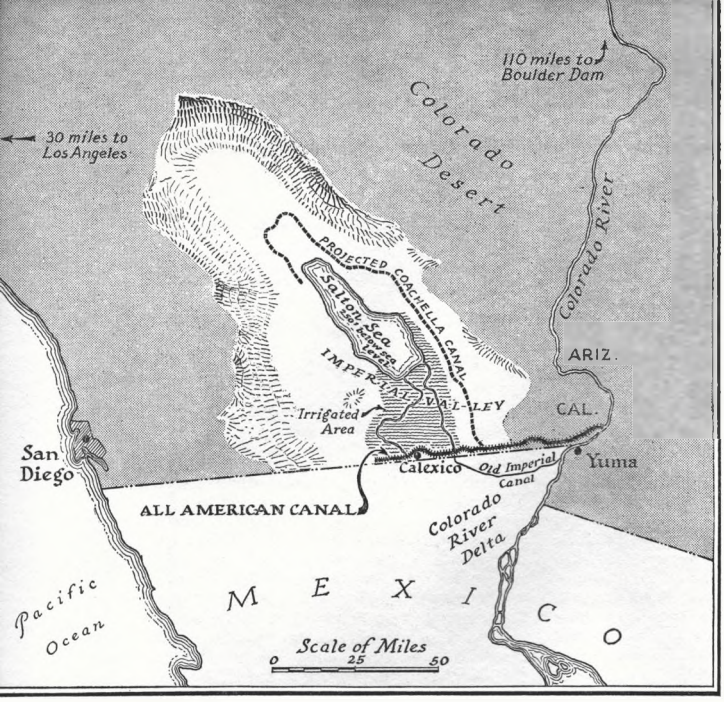




Soibelman

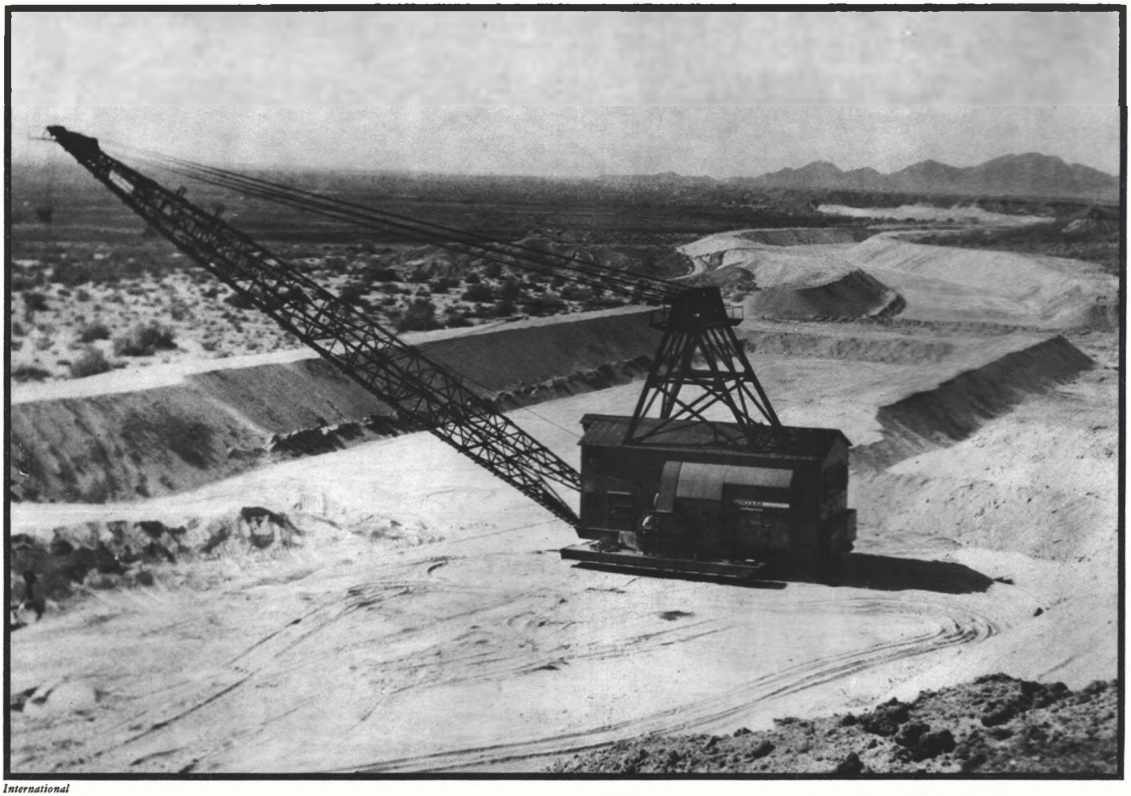
MANHATTAN HAS THIRTY-FOUR EXITS

. . . but only fifteen of them are for automobiles. On these two pages are shown the latest efforts to ease the traffic flow into, out of, and between New York City's boroughs. On the opposite page is a view of one of the four spans that lift the seventeen-and-a-half-mile Triborough Bridge highway over the flat islands and polluted currents of the East River. The Triborough Bridge really got under way in 1934 with a PWA grant of $9,200,000, a PWA loan of $35,000,000, and was finished last July at a cost of $60,300,000. Shown above is the Jersey mouth of the 8,000-foot Midtown Hudson Tunnel, to be finished in 1938, through which will dive some 5,000,000 of the 35,000,000 cars that pass between Manhattan and New Jersey each year. The completed tunnel will cost $47,400,000, of which $12,300,000 is a PWA loan and $4,780,000 a PWA grant, the Port of New York Authority financing the balance with its own bonds. Another attempt to relieve Manhattan traffic is the double-tube Queens Tunnel (see map), a $58,365,000 PWA job that is expected to handle 10,500,000 cars in the first year after its completion in 1940.



THE ALL AMERICAN DITCH

The Imperial Valley in California is part of the Colorado Desert, where the temperature may zoom to 125°, drop 60° during the night. Carpeted with the mud of the Colorado River's ancient delta, the valley lacked only water to make it a potent natural hothouse. Thirty-five years ago an irrigation canal was gouged into it from the Colorado. Today the valley is one of the richest fruit and vegetable gardens in the country, and the Imperial Canal has been and still is the main reason why California's winter produce is the first to reach the market. For forty-five of its fifty-odd miles this canal runs through Lower California, where according to the original agreement the Mexican farmers are entitled to tap off one-half of its precious waters. But because the waters of the Colorado are loaded with silt the Imperial Canal has gradually filled up in spite of the $1,000,000 spent on dredging it every year. Today the old canal carries only one-fifth as much water as it did in 1901 and the Mexican drain on half of the available supply has become a serious handicap to California's farmers. Long have they asked for an All American Canal, and in 1928 when Boulder Dam was approved, $38,500,000 was authorized for the purpose of digging a water ditch that would not only be entirely on U.S. soil but would be equipped with settling basins for dropping out the Colorado's silt before it got into the canal. But by 1932 when the government had settled the local disputes over contracts, it was decided to postpone the ditch digging until Boulder Dam was finished. With a PWA loan of $9,000,000 in 1934 the digging began, and the canal should be finished in 1939. Below you see the world's largest dragline excavator (sixteen tons at a bite) at work on the world's largest irrigation ditch, which will provide California's farmers with twenty-five times as much water as they have been getting and will slake the thirst of some 500,000 acres. Over half of the eighty miles of canal has been dug, but there may someday be a 130-mile Coachella branch around the Salton Sea (see map). Yet to come are many a siphon to carry up and over the walls of the canal the sudden, soil-carving freshets caused by frequent cloudbursts, and many a bridge and many a mile of hard-packed earth lining to resist the wearing water of a stream whose flow will equal that of the Potomac at Washington.



International

CALIFORNIA'S MAN-MADE RIVER WILL BE 230 FEET WIDE, OVER TWENTY FEET DEEP

Beech-Nut

. . . began life with ham and bacon, grew into candy, burgeoned as chewing gum, proliferated as coffee and tomato juice. Its annual gross from all products: about $20,000,000. Profits: $2,270,000. Biggest money-maker: gum, in which it is runner-up to Wrigley.

IN 1890 Ephraim Lipe, a Mohawk Valley farmer, lit a fire of hickory wood, rigged up a barrel to catch the smoke, and hung a ham in the barrel. That was a distinctly ordinary act, about as individual as carting a load of apples to the local cider mill or getting the hay in while the sun still shone. Everybody smoked his own ham in those days, and Ephraim had no idea his particular meat was marked for glory. But his neighbors around Canajoharie that fall began smacking their lips over the hams that successively emerged from the Lipe barrel. The cure, it seemed, was very delicate, very elusive. Ephraim took the praise modestly and would have let it go at that. But his son Raymond, who was given to pensive horseback rides, began meditating about the commercial possibilities of the cure as he cantered over the back roads on a frosty day with a friend, John D. Zieley. And when Raymond allowed as how a company might be formed to sell the Lipe ham, John agreed. They decided to take in Raymond's brother Walter and John's brother David. And when John returned from the ride he broached the idea to his father, a retired Canajoharie miller.

The miller was a man of means. And the miller was also astute; he didn't want to back a company that lacked staying power. Accordingly he looked around for the stayingest name in town and hit immediately upon that of James Arkell, a manufacturer who had invented a machine that made square-bottomed paper bags for flour. James had a son, Bartlett, who looked like a chip of the old block. And so the miller offered to lend the boys a total of $10,000 *provided* they added Bartlett Arkell to their company. And that was how the Beech-Nut Packing Co. came into being.

Today the Lipes and the Zieleys are no longer in Beech-Nut. The Zieleys and Raymond Lipe got out of the management in the nineties; Walter Lipe disposed of his interest in 1921. Bartlett Arkell, however, is still President at the age of seventy-four, which proves the canniness of the miller's hunch. The company would probably have gone under if it had stuck solely to hams; it would have been compelled to buck all of the big Chicago packing companies in an era of improving refrigeration that made cheaper products more acceptable to more people, and quality alone would not have been sufficient to save it. But the Arkell staying power manifested itself in a series of leaps to bacon and sliced beef (packed in sightly glass jars), to lard, peanut butter, baked beans, cheese, tomato products (catchup, chili sauce, juice), sea food, fish bait, gelatin, chewing gum, candy, mustard, ginger ale, macaroni, salad dressing, coffee, biscuits and crackers, black fruit cake, and strained foods for babies and convalescents. Some of these products never got beyond the experimental stage; some made money for a time but failed to last. Cheese, sea food, and ginger ale, for example, are no longer made by Beech-Nut. But individual failures have made little difference; the point to be remembered is that Bartlett Arkell's company always had some profitable new lines emerging from the experimental stage whenever an old standby was petering out.

In casting about for new products Beech-Nut has sometimes been inventive, but inventiveness is not its chief claim to distinction. It pioneered in methods of bacon packing, it preceded Life Savers in the compressed mint and candy-fruit-drop field, and it was four years ahead of Heinz with peanut butter. But cough drops, stick chewing gum, ginger ale, and crackers all have lineages that are much older than that of the Beech-Nut company itself. Beech-Nut Beechies are similar to Chiclets, which first came on the market in 1899. Hills Bros. started to vacuum-pack its coffee in San Francisco in 1903; hence the Beech-Nut vacuum coffee tin is nothing new under the sun. And the Beech-Nut bid for the tomato-juice business of the U.S. followed after College Inn's, Welch's, and Kemp's (Sun Ray) educative pioneering.

With this lack of consistent pattern in mind, one ceases to look among images of pioneer or copycat for the key to Bartlett Arkell's business character. Bart Arkell doesn't care whether a product is new with Beech-Nut or as old as the hills; but its *content*, as distinct from its *form*, must be Beech-Nut's own. If Beech-Nut has a trick, it is to take a number of things that are successfully manufactured by the mass-production food companies and to produce

CANAJOHARIE MADE BEECH-NUT; BEECH-NUT REMADE CANAJOHARIE

Photograph for FORTUNE *by Aitkin*

THE CIRCUS IS FREE; SO IS THE GUM. BEECH-NUT GIRLS GIVE AWAY MORE THAN 65,000,000 SAMPLE STICKS A YEAR

The main theory behind the Beech-Nut circus trucks, of which there will shortly be eight going up and down the roads from town to town and state fair to state fair, is "Catch 'em young." But the 226 Beech-Nut sample girls recognize no age limit in passing out gum, cough drops, fruit drops, mints. The sampling method is known to the trade as "flash" advertising and it must be followed up by a steady pounding from billboards, car cards, periodicals. Beech-Nut used also to pound via the radio but gave it up. Reason advanced: "Nobody gets up from an easy chair at night to go out and buy gum."

each item on a small scale with a content designed to catch the quality trade. *De gustibus non est disputandum* is an axiom that holds good in the foods business as elsewhere, but Beech-Nut has an apostolic certainty that its products are the best. And the variety of quality goods that are produced in a small way total up to something very substantial. Beech-Nut bacon is comparatively little business, and so is Beech-Nut coffee. But when you add bacon to gum to candy to tomato juice you find yourself with a company that in the aggregate is well over the threshold of big business.

THE line of growth toward the big-business category has curved upward with a fair persistence that contrasts with the sharp up-down behavior of certain individual Beech-Nut products. In 1905, when the company first reached an annual gross sales of $1,000,000, bacon was the money-making staple. By 1915, when the gross was $5,000,000, peanut butter and chewing gum were to the fore. In 1920 the gross leaped beyond $10,000,000; in 1936, after a depression slump that failed to interrupt dividends, it will more than double $10,000,000. By this time bacon and ham and peanut butter had all taken a back seat; the profitable products were gum and candy, coffee and biscuits. But the rod and staff of the company is the gum. Here Beech-Nut is approaching a real quantity-production basis. Wrigley, which supplies about 48 per cent of the gum that is consumed in the U.S., has an annual gross sales of around $19,000,000. To this chunky sum Beech-Nut is runner-up, with an annual gross of $11,000,000 from its gum and candy, which in its bookkeeping it lumps together. From the gum alone Beech-Nut grosses $8,500,000 (estimated), which puts it ahead of American Chicle's approximate gross of $8,000,000 by a stride.

In candy Beech-Nut's only competitor is Life Savers, Inc. Life Savers has a firm grip on most of the mint-tablet market, but in the packaged-fruit-drop market it is a different story, with Life Savers doing an estimated 65 per cent of the business here and Beech-Nut most of the rest. Beech-Nut's position in the coffee trade is more difficult to estimate. Many big roasting plants whose figures are unavailable do a whopping private-label business and also a roasting business with hotels and restaurants in cities like New York, Chicago, New Orleans, and San Francisco, and Beech-Nut's comparative relation to these is not known. But in relation to some competitors, Beech-Nut's place can be more or less determined, although the following estimates are no more than tentative. For instance, its annual purchase of 75,000 to 100,000 bags of green coffee does not compare with the Atlantic & Pacific's 1,750,000 to 2,000,000, nor with Maxwell House's 900,000, nor with Chase & Sanborn's 800,000. Kroger Grocery buys some 200,000 bags of green coffee a year, and Hills Bros. on the Pacific Coast takes perhaps 300,000. Of the 13,200,000 green bags delivered to U.S. warehouses in 1935-36, Beech-Nut accounted for some three-quarters of 1 per cent. Its percentage share of the nation's cracker business is also small in comparison to that of the leaders; Beech-Nut is not to be mentioned in the same breath with National Biscuit and Loose-Wiles so far as cracker volume is concerned. Here Beech-Nut sticks to a few specialties, leaving the full-line trade to the big fellows.

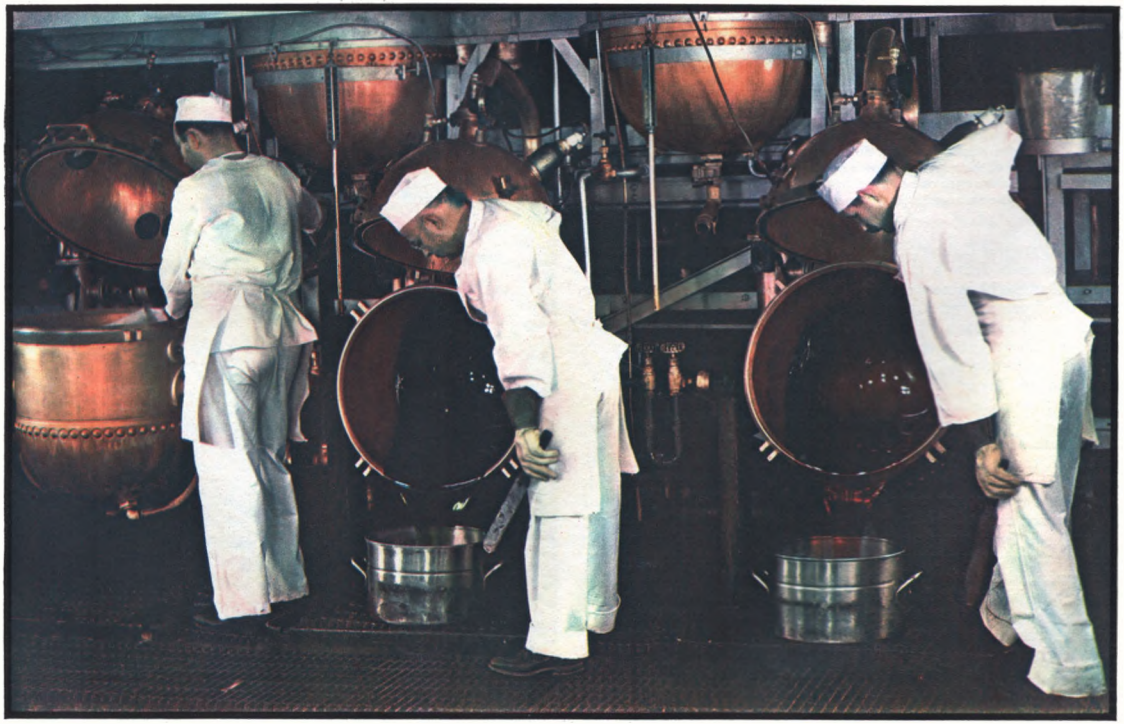
With gum, candy, coffee, and biscuits ticked off, you just about cover all of Beech-Nut's claims to importance as a volume producer. Beech-Nut's consumption of raw tomatoes is 13,000 tons per year, but this is negligible when compared to the 235,000 tons used by a company the size of

Campbell. However, if you fail to mention Beech-Nut when you are talking about volume or tonnage, its management will not be unduly alarmed. For Beech-Nut does not aim to fill every stomach in the U.S.; its desire is to fill the stomachs of those who are willing to pay a little more for something that carries with it the assurance of being tasty. It might be said that the sole common denominator of the various Beech-Nut products is the human mouth, for Beech-Nut has seemingly always been willing to pack, can, or bottle anything that may be sipped, eaten, or chewed upon. Actually, however, the common denominator is the palate; Beech-Nut is willing to produce anything that can be swallowed, but the "anything" must be savory and within its productive capacity or Beech-Nut will not touch it. And once Beech-Nut hits on a good formula it stands by it until four of the seven Directors have become convinced that they have an even better one with which to replace it.

IN ITS forty-five years of making an appeal to the nostrils and the taste buds of the American public Beech-Nut has burst out of a rented room in a crossroad store and grown into two large plants in its home town of Canajoharie, another large plant in Rochester, and still another in the Bush Terminal in Brooklyn. In Brooklyn it roasts and packs its coffee and makes its chewing gum for the Atlantic seaboard and Pacific coast markets, shipping products to the latter by boat through the Panama Canal. Rochester is dedicated to tomato products and biscuits and to coffee that is destined for rail shipment to the Midwest. Canajoharie makes chewing gum for the Midwest, but roasts no coffee, packs no tomato products, makes no biscuits. Candy, cough drops, macaroni products, peanut butter, jelly, bacon, ham, strained foods—these are the distinctive Canajoharie line.

Out of the welter of quality products that range from transparent Luster-Mint candy drops to chile sauce made from that pride of the Rochester region, the John Baer tomato, Beech-Nut did a net-sales business of $18,500,000 last year. (The net-sales figure is the company's; it

CANDY DROPS: ORANGE, LIME, LUSTER-MINT . . .



READY FOR THE COOLING SLAB: THE KETTLES COOK UP BATCHES FOR TWENTY DIFFERENT CANDY FLAVORS

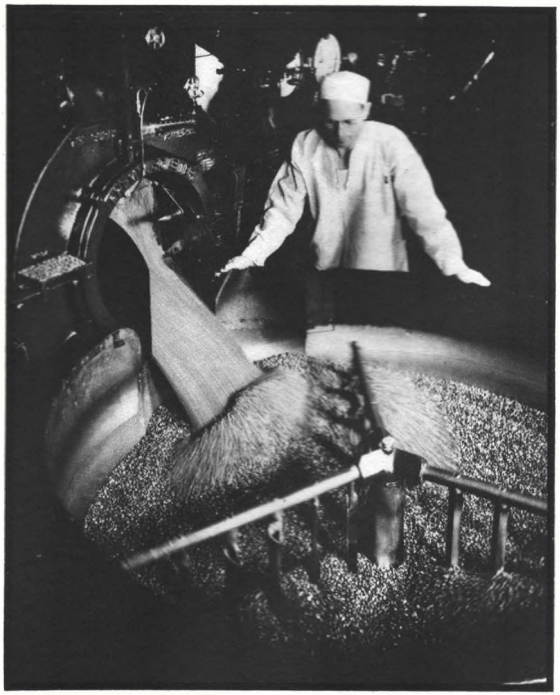
A NINE-GIRL TEAM PACKS THE LONDON ASSORTMENT

Putting this variety box of "sweet goods" together is the highest paid packing job in the Rochester plant. Since payment is by the piece, all the girls suffer if any one of the nine falls down on the job. But their coördinated skill is such that it enables each one of them to earn some $20 a week—which is quite a bit more than the average Rochester stenographer can make.

is arrived at after deducting freight charges, discounts, and returns and allowances from a gross that can be figured at $20,000,000.) This volume of business enabled Beech-Nut to earn $5.20 a share on its 437,524 shares of common stock. Regular and extra dividends per share for 1935 totaled $5; in 1936, reflecting increased business, Beech-Nut has paid $5 to date. The high that the company earned per share was $6.51 in 1928; in 1932 the low point of $3.78 was reached. From all these figures two things can be readily deduced: that Beech-Nut is doing well at present, and that the depression—which reduced the costs of raw materials without curtailing what might be called the effective appetite for chewing gum and candy—held no real terrors for the Beech-Nut management. Moneywise this management is smart and conservative; it has kept the company clear of funded debt, and of its preferred stock it has retired all save forty-five shares. (These shares are being held by a couple of estates whose administrators see no reason to surrender a 7 per cent investment.) Indicative of Beech-Nut financial soundness is its $4,000,000 cash in the bank and $5,000,000 in government securities. Its total assets amount to $21,000,000 and its earned surplus is more than $8,000,000. The ratio of current assets to current liabilities is thirteen to one. Just to dramatize the business acumen of Beech-Nut, it may be said that if you had owned one share of its stock in 1899, that one share would now be swelled by stock dividends to 236 shares. At the current stock-market level you could sell your shares for approximately $23,000. But you probably wouldn't.

Beech-Nut has grown and prospered by running counter to what have been considered normal consolidative trends in American industry. The company that can sell many products to the same customer can obviously save on its sales costs, but, broadly speaking, Beech-Nut sells its several items to different customers and these different customers must be tackled by different promotion methods. There is no natural advantage to be gained by putting gum and candy (which are sold to wholesale jobbers) together with ham and biscuits and tomato juice (which go direct to retailers). The Beech-Nut advertising budget must be spread over many products, some of which are consumed at mealtime, some between meals. Which is another way of saying that the company cannot shoot the promotional works on gum, as Wrigley can, or on candy, as Life Savers does; nor, on the other hand, can it emulate Heinz of the fifty-seven varieties and give its advertising all to food products destined for one spot: the housewife's market basket.

The disadvantages of scattering its advertising ammunition are, however, compensated for by the cross education provided by the Beech-Nut brand, which, so the management rightly feels, is sufficiently high class to recommend Canajoharie ham and spaghetti by implication every time you bite into a stick of Beech-Nut peppermint. It is no idle boast that "Beech-Nut sells by flavor"; it does. The company feels that the quality of its coffee should enable the average retailer to sell a vacuum-packed one-pound tin for twenty-nine cents, as compared with the twenty-seven-cent price of one of its large-scale quality competitors. Its bacon sells for upward of fifty-five cents a pound, whereas the bacon that your butcher normally slices for you is fifty cents a pound or less. And while Beech-Nut keeps to the traditional nickel price for its gum, it pours an extra measure of chicle into that gum just to make it chew better.

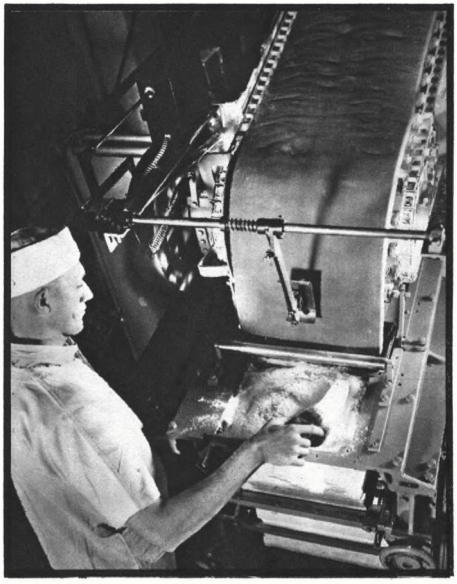


COFFEE BEANS POURING FROM A BROOKLYN ROASTER

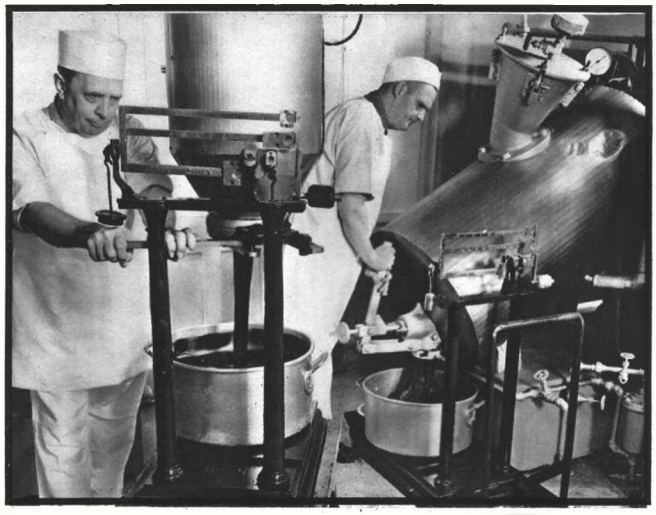
When you apply heat to the green bean you caramelize its sugar content, break down fats and waxes. The result is the flavor that is released by grinding.

If you remark that "Beech-Nut is good, but oh, so high priced," you can make its sales department wince. For Beech-Nut prices, so the management insists, are perfectly fair and provide only reasonable compensation for the care that is lavished on each product. If you are a grocer, your opinion of the Beech-Nut prices depends a lot on the type of neighborhood to which you cater. But most grocers like Beech-Nut because its products are in a lucky position. At one extreme of the retail trade there are nationally advertised, mass-produced foods—like the products of General Foods or Campbell Soup. Everyone buys these products, but the grocers don't make much, if anything, on them; hence they don't take any great pleasure in selling them. At the other extreme come the unpublicized products of the private packers and canners who have little prestige. These products bring a good profit, but aside from corn, peas, tomatoes, and similar items they turn over slowly and the grocer has the devil's own time in clearing them from his shelves. Beech-Nut occupies a happy place in between the popular loss leader and the troublesome private brand; its products command a price that gives the grocer up to a 25 per cent profit and they have sufficient prestige to insure a steady demand.

SYMBOL of Beech-Nut quality is the upper New York state town of Canajoharie, which, appropriately, is Indian for "the pot that washes itself." Like Aliquippa, Pennsylvania, or Weirton, West Virginia, Canajoharie is practically a one-industry town; but with that statement the resemblance ceases. Its population of 2,700 lives neither in dilapidated shacks nor in so-called model buildings whose unimaginative uniformity of construction gives them about as much impression of life as a set of false teeth. A few of the Canajoharie houses are owned by the company but they are the indigenous structures of the Mohawk



CHEWING-GUM STRIP GETS A SUGAR BATH



WEIGHING HOT CHICLE FOR A BATCH OF BEECH-NUT GUM

FIVE STICKS TO A PACKAGE; TWENTY PACKAGES TO A BOX

Beech-Nut makes gum at Canajoharie and Brooklyn in thirteen mixing machines, each of which has a capacity of 500 pounds. Basic ingredient of the gum is chicle, drained from Central American sapota trees in the rainy season. Machete-bearing native *chicleros* climb the trees, cover them with spiral crosshatchings of cuts, and connect these cuts with central canals that drain the latex into canvas bags. The liquid thus collected is boiled, poured into molds to harden into bricks, which, after reaching Canajoharie or Brooklyn, are dried out for thirty hours at a temperature of 90° Fahrenheit, then melted and filtered through double cleaning screens. Cleansed liquid chicle is poured into the mixers and stirred automatically with pulverized sugar, corn sirup, and flavoring. Next comes cooling and rolling (see left). Rolled gum is fed into "breaking" machines that cut twenty-two sticks with one click of the punch press: 3,300 sticks a minute. These sticks are piled into trays ready for the wrapping machine, which first covers them with paper-backed aluminum foil, then with the Beech-Nut label. The wrapping machine also adds a paper band and a Cellophane cover to every five sticks and disgorges 120 finished packages to the minute. Women box the packages (see above), and a conveyer carries the boxes to another wrapping machine, which seals them into waterproof jackets. Biggest selling Beech-Nut gum flavors are peppermint and spearmint, but the company also makes pepsin candy-coated gum and an Oralgene gum that contains milk of magnesia. Oralgene is for mouth hygiene and is *not* a laxative.

PICKING OVER THE CRAB-APPLE CROP FOR A CLEAR AMBER JELLY

region, indistinguishable from non-company houses owned by rugged-individualist shopkeepers and farmers elsewhere in the valley.

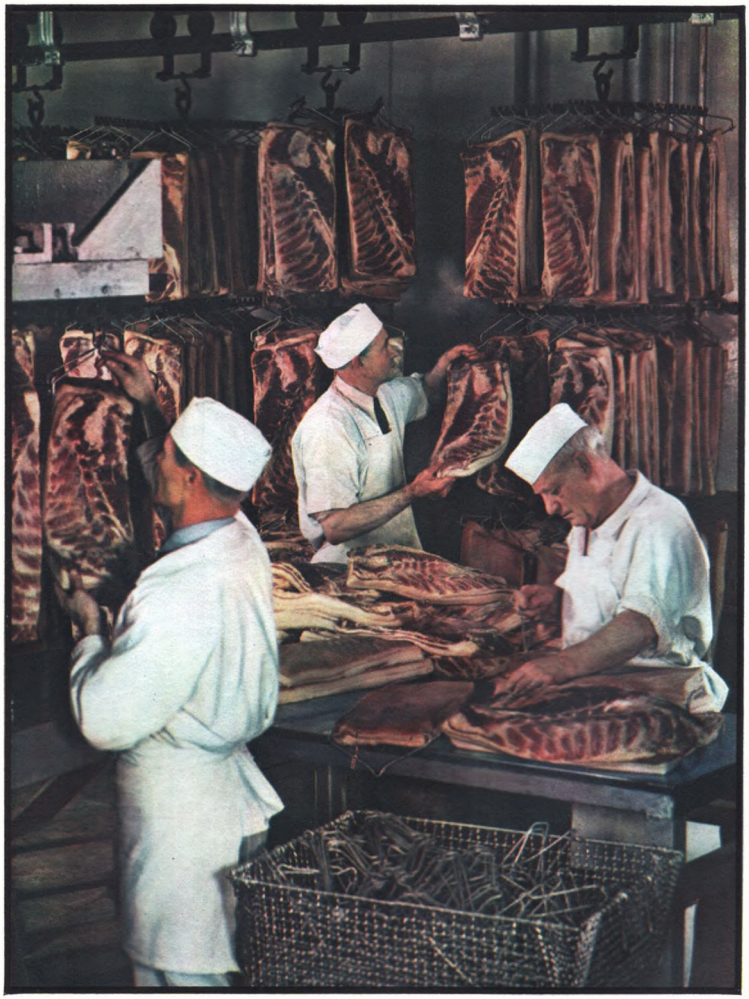
But if Beech-Nut hasn't tried to give its workers company dwellings with a fake model aspect it has tried to bring about an impression of orderly beauty in things that can stand the touch of the conscious artificer. In 1914 Bartlett Arkell was in Budapest and noticed that the lampposts in that city supported not only lights but boxes of flowers. Today the Canajoharie lampposts broadcast light by night and the colors of petunias by day. The Beech-Nut factories, built along the filled-in site of the old Erie Canal, are constantly absorbing new coats of fresh white paint, and Bartlett Arkell has had a passion for sticking young elms into the ground whenever and wherever there is an excuse for a tree. When the local Hotel Wagner started going from bad to worse, Beech-Nut bought it and renovated it to maintain a good place for visitors to sleep and eat. The local art gallery and library, which are gifts of Mr. Arkell's to the town, are not the ordinary

AFTER FIVE DAYS AND NIGHTS OF HICKORY SMOKE THESE BEECH-NUT HAMS ARE READY FOR WEIGHING

sterile benefactions of the ordinary Lord Bountiful. In the art gallery you can find copies of Rembrandt (to please the Dutch of the Mohawk). You can also find good Winslow Homers, a good George Bellows, and a good Thomas Eakins along with more conventional stuff; and the library can supply you with Sherwood Anderson as well as with *Little Lord Fauntleroy*. For those who insist on discovering impure motives behind all capitalist benefactions, it may be said that it is obviously good advertising to keep the home of Beech-Nut clean, pleasant, and progressive. Eight or nine thousand people stop in Canajoharie each year and apply for guides to take them through the factories; and if the town itself were depressing a natural association of ideas might cause this eight or nine thousand to cease chewing Beech-Nut gum.

THERE is a personal as well as a commercial reason, however, for the Beech-Nut pride in Canajoharie. That personal reason is apparent when you take a look at the company's seven Directors, all of whom have sentimental ties to the Mohawk Valley or to life in a small town. Bart Arkell, the President, was, as we have seen, the son of a local gilded-age inventor and enterpriser; his son, W. Clark Arkell, who is one of the Vice Presidents, has had Canajoharie and Beech-Nut grained into him practically from birth. Frank E. Barbour, the other Vice President, became Canajoharie-minded through marrying Bart's sister; he calls himself a "carpetbagger" but he lives with a native's relish for local lore in the big stone house known for miles around Canajoharie as Arkell Hall. Lyell T. Hallett, the Director in charge of the Rochester plant, is another outlander who became a man of the Mohawk through marriage; his wife is the sister of Walter Lipe, one of Beech-Nut's five founders. E. W. Shineman, the company Treasurer, began his working life as a Montgomery County farmer but broke away from the furrow by teaching school and attending Albany Business College. J. Stafford Ellithorp Jr., the cautious, smart Secretary and manager of manufacturing, was pointed toward Beech-Nut from the start because his father, a Canajoharie grocer, had chosen to head the conserve and peanut-butter departments when Beech-Nut first branched out from hams and bacon. The only real outsider on the board is the plump and merry Guy W. Sharpe, a native of Michigan who yields to no one in his knowledge of such various things as the peppermint-oil market, the proper specifications for hams and bacon, and the intricacies of business life under the New Deal dispensation. But Mr. Sharpe was born in the farming center of Coldwater, Michigan, a town that still retains the innocent look of a picture on the dust jacket of an early Booth Tarkington novel, and Canajoharie is enough like Coldwater to suit him to a T.

This Beech-Nut country-boy directorate is suspicious of the Pelion-on-Ossa type of business agglomeration that made such an appeal to the mind of the twenties. And the suspiciousness is not a matter of after-the-fact wisdom; it existed before the 1929 crash. When General Foods was spectacularly welding such things as Post Toasties, Maxwell House Coffee, Jell-O, Log Cabin Syrup, and Vitapack Nuts into a resplendent pre-depression entity, it began to make sheep's eyes at Beech-Nut. The country-boy heart of the Beech-Nut directorate undoubtedly fluttered a bit over the General Foods proposal of honorable merger, but the emotion was short-lived. Bartlett Arkell didn't like the idea of losing control of his tidy factories, and he said so. Thus Beech-Nut got past the Lorelei. The Arkells and their close associates have always been able to keep more than 50 per cent of the stock in their own hands, even through the period in which United Cigar Stores held a goodly block of Beech-Nut securities. With the voting control behind him, Bartlett Arkell is still the same power that he was in 1899, when he took charge of the then rickety finances of the Beech-Nut company and proceeded to put the Beech-Nut brand on the food map of the U.S. His care for the company extended to the upbringing of his son Clark, who went to M.I.T.—subject of an article on page 107 in this issue—and afterward took a varied course in industrial sprouts that included a year as a cost accountant, another period as superintendent of Beech-Nut's subsidiary paper-box plant at



"CLEAR, SEEDLESS BACON FROM BARROW HOGS AND VIRGIN SOWS"

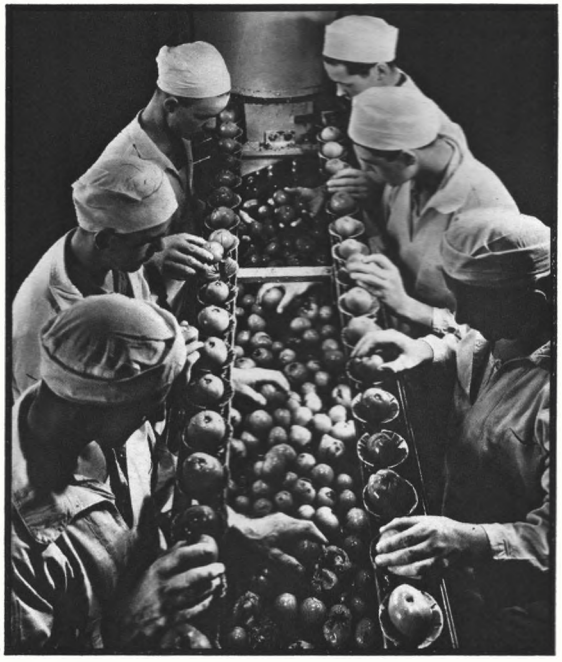
SPAGHETTI HANGS HIGH FOR SWEATING AND DRYING

Fairmont, West Virginia, and a year with the Tabor Manufacturing Co., maker of molding machines, which was among the first to try out the Taylor ideas on scientific management. And before he became Executive Vice President, Clark Arkell had worked in every department of Beech-Nut.

Today at seventy-four Bart Arkell is still hale, rubicund, sure of himself. It was Bart Arkell who gave the company its first name: the Imperial Packing Co.—so baptized because Bart had lived at the Imperial Hotel in New York when he was helping his publisher brother with the editing of *Judge* and *Leslie's Weekly*. And it was Bart Arkell who, at the instigation of an art-connoisseur friend who owned a casino at Saratoga, changed the name of the company to Beech-Nut in 1899. Imperial, the friend had argued, was an unfortunate, undemocratic name for a ham, whereas Beech-Nut was redolent of the woods and of the kind of smoke in which hams are brought to their best flavor.

In the nineties Bartlett Arkell had his finger in two promising pies: besides tackling Philip Armour for periodic help in the proper concoction and packing of Imperial hams, he was busy with his partnership in the rug-importing company of Van Gaasbeek & Arkell. Armour was very generous with the young Imperial-Beech-Nutters, but it was the rug partnership that proved the salvation of the Beech-Nut Packing Co. For in 1899 Beech-Nut—or Imperial—was tottering; it owed $60,000 to the Canajoharie National Bank. Bartlett Arkell was the only one in the company who could raise that $60,000 when it was demanded, and to do so he was forced to sell out his equity in the rug business and borrow from his family. For his personal assumption of the company's debt Bartlett Arkell took $60,000 worth of stock in a company that was reorganized with a capitalization of $150,000. Walter, the Lipe who had remained with the company, dug into the Canajoharie production end, and Bartlett, who had already discovered a couple of engineers and hired them to perfect a vacuum closure for bacon jars, went out into the world to investigate ice machines and modern refrigeration. A fire that destroyed

PEANUT BUTTER: THE HUMAN HAND ENTERS



TOMATOES MARCH THROUGH THE CORING MACHINE

BEECH-NUT'S SEVEN DIRECTORS ALL WORK IN THE BUSINESS

Four of them were born around Canajoharie; two married into the Beech-Nut family circle; one is an outlander, but a small-town man. The result is a steady-going company.

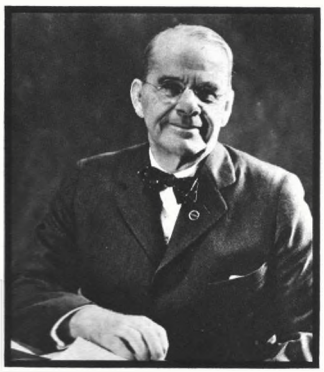
Houck

BARTLETT ARKELL: TO HAM HE ADDED GUM

At seventy-four President Arkell still watches over Beech-Nut, the town of Canajoharie, the golf course at Manchester, Vermont, and the prize-winning window boxes of his Manhattan home.

Houck

SON AND HEIR: CLARK ARKELL



CHICLE MADE FRANK BARBOUR

the older part of the Beech-Nut plant failed to interrupt a success that dates almost from the day of the 1899 reorganization.

The success, as has already been indicated, has been due to the flexibility of the Arkell management, and this flexibility included skepticism in the face of men with a reputation for authority. In 1898 Philip Armour advised Bartlett Arkell against using a glass jar for his bacon pack; he thought it would advertise the fact that bacon contains grease. But Mr. Arkell disagreed. With his new vacuum-pack method he and Walter Lipe proceeded to put bacon and sliced beef over as things of beauty. And when Beech-Nut first hit an annual gross of $1,000,000 in 1905, the Beech-Nut vacuum-packed jars were primarily responsible for the showing.

But dangers lurked around the corner. An example of Enemy No. I of eternal prosperity via the vacuum bacon pack might be seen down the Mohawk River, in Schenectady, where General Electric engineers were soon to begin experimenting with the great American refrigerator. Good, roomy, electrically operated iceboxes meant that bacon didn't have to be sealed in glass jars against the approach of rancidity. And the invention of the Cellophane wrap killed whatever esthetic advantages the Beech-Nut jar had retained.

But even at that, Beech-Nut might have gone on making lots of money out of its bacon sold in packages. For many housewives originally bought Beech-Nut not only because they liked its taste but also for its cardboard thinness, which insured a crisp fry. Consequently, when butchers began installing their own mechanical slicers and cutting their own bacon to micrometer dimensions, some housewives began deserting Beech-Nut for something that was practically as thin and a little bit cheaper. The nutty flavor of Beech-Nut bacon did, however, hold breakfast-table connoisseurs.

BARTLETT ARKELL and Walter Lipe could not have foreseen things like Cellophane. But sensing that change was the only certainty, they began quite early to spread their lines. In 1903 they went in for conserves: jams, prunes, dates, jellied fruits, and so on. Here again they were leading with something vulnerable. For when sugar prices became prohibitive during and just after the War people lost the habit of buying costly conserves. And the development of Certo—which enables any housewife to whisk up a jelly without waiting for the operations of nature's pectin—kept them from going back to expensive ready-made stuff.

The early record of Beech-Nut is spattered with minor casualties. Vinegar, cheese, sea foods, canned fish bait, granulated gelatin, Oscar's sauce, salad dressing—all of these were tried and discarded for one reason or another. Oscar's sauce, concocted after the recipe of the Waldorf-Astoria's famous maître d'hôtel, went well in New York City, where it connoted something, but it failed to appeal elsewhere. And the canned fish bait evidently failed to appeal to the fish.

In 1919 Beech-Nut went in for ginger ale in competition with Clicquot. Had a seer

[*Continued on page 206*]

STAFFORD ELLITHORP

. . . clever, conscientious, his finger in production, his hand in sales.

ED SHINEMAN

He makes the Beech-Nut Packing Co.'s pennies go a very long way.

GUY SHARPE

. . . buys bacon, ham, peppermint oil, keeps a weather eye on politics.

LYELL HALLETT

In Rochester the John Baer tomato crop is his annual worry.

HANDCRAFT OUTPOST

Few pipe makers in the U.S. do handwork exclusively, but attached to some Manhattan retail shops is a craftsman who probably spent the first six months of his apprenticeship in the old country merely watching the master at his tools. These are the tools—not much changed in three-quarters of a century save that a motor, not foot power, now turns the pipe maker's lathe.

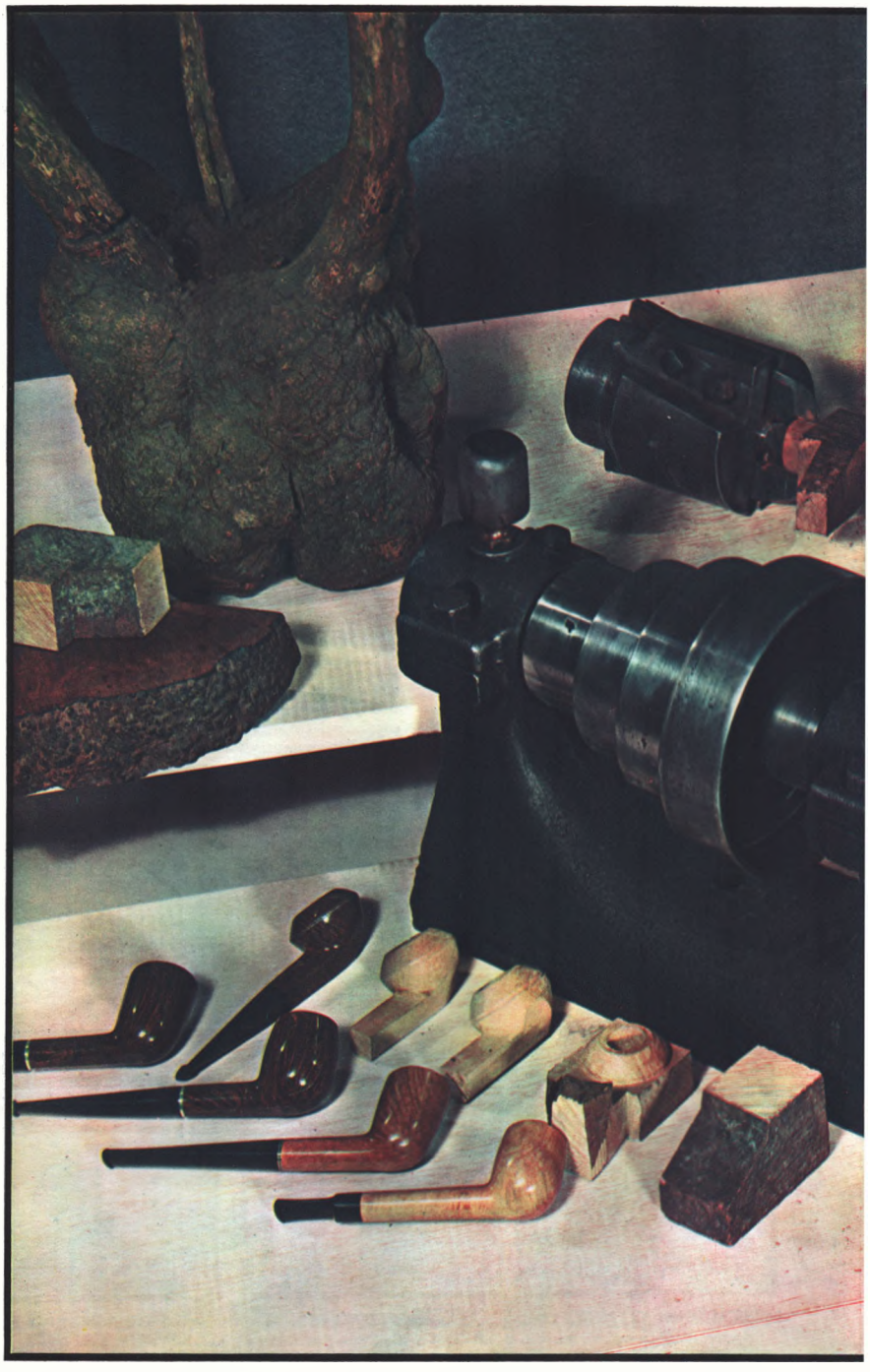
Brier, because of its appearance, its density and resistance to charring, is the material for pipes. Other woods share most of the qualities, would be rejected by hobbyists because of poor grain, softness, or a too definite taste. Pipe makers buy brier sight unseen in small blocks like that in this picture's left. Roots (the cusped, molar-like lump at upper left) come from high rocky ground on the Mediterranean shores of France, Italy, Algeria, and Corsica.

To the left of the lathe are five stages in the finishing of a bulldog *stummel* (bowl and shank). Below are William Demuth & Co.'s Dublin, egg, and golf models in dark, sun-tan, and virgin finishes. (Demuth makes few handmade pipes for sale—these are original models.) To the right, small tools for skilled guidance on the machine rest, rough and finished amber for stems, hard-rubber mouthpieces. A fat calabash, no longer made by Demuth but currently enjoying a slight revival, is above the tools.

Along the background are light and dark aniline stains, a cotton buffing wheel, plus Turkish meerschaum, its edge a gray hunk at the extreme right. The incrustation is sandpapered away to make the sleek, lobed white lump below.

The pinkish and gray and black bars beside the carboys of stain serve in the finishing of brier. The pink contains pumice, the gray and black are tripoli, a fine abrasive earth from Italy. Each will be rubbed into the surface of the buffing wheel for a stage in the polishing. The final polish will be a wax rub; your hobbyist refuses high gloss—though lesser pipe smokers must be content with a glossy lacquer spray.

This is the second in a series of color photographs, by Arthur Gerlach, of the products of craftsmen and of the tools of their trade.

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The Robinson-Patman Act

FORTUNE presents a legal opinion upon the constitutionality and the effects of this legislation, whose interpretation is today one of the most complex problems of U. S. business.

By REYNOLDS ROBERTSON

Member New York Bar; Assistant Clerk U. S. Supreme Court 1922-28; law clerk 1930-34 to Mr. Chief Justice Hughes; 1934-36, with Cravath, deGersdorff, Swaine & Wood.

"ANTI-CONSUMER legislation" is only one expletive from a barrage of criticism leveled at the latest addition to the federal anti-trust laws, the Robinson-Patman Act, passed in June, 1936, during the closing days of the last Congress. That a price increase in a wide variety of products will accompany readjustments in distribution methods caused by the new statute has been forecast by many. As to the probable nature of such readjustments, predictions vary.

The mildest is that it will eventually disturb and change the buying and selling practices of all manufacturers, jobbers, and merchants, large and small. It has been prophesied that the Act, if interpreted to forbid nationally-equalized delivered prices and to compel sales f. o. b. factory, will result in the replacement of mass-production factories by smaller regional producing units in order to retain national trade. From this would follow the breakdown of mass distribution as we now know it, together with a depopulation of metropolitan centers consequent upon the shift of working and service populations.

Again, by the limitation of price differentials to those justifiable on a cost-to-seller basis, the Act is seen as giving the coup de grace to traditional wholesale, jobbing, and retail methods of distribution, shaken as they already are by chain-store competition; and the same limitations of the Act are also seen as spelling the eventual doom of the chain store and the preemption of the field by consumer cooperatives. Retaliation by the chains through factory-output buying has been suggested as a possible result.

Another forecast has it that the Act may well operate to level prices and then to freeze them by the hazards it imposes upon change—which is one form of governmental price fixing. Further, it has been recalled that the provisions of the Interstate Commerce Acts authorizing the fixing of transportation prices by the Interstate Commerce Commission are derived from statutes which originally did no more than forbid discrimination.

Equally diverse have been the interpretations of the meaning of the Act. In part the Act, like prior federal anti-trust legislation, is framed in language having "a generality and adaptability comparable to that found to be desirable in constitutional provisions"; but it also attempts to be more definite than previous anti-trust legislation in its prohibition and limitation of particular practices. The result is a series of more or less specific prohibitions, themselves ineptly framed, which are at war, on the face of the Act, with the generality of its exceptions and provisos. Its enemies damn it as wholly unintelligible, and even its proponents admit that a long course of administrative and judicial construction will be required to make clear the bearing and the limits of its several provisions.

Uncertainty as to its meaning is not confined to niceties or to questions of application to obscure situations, but extends to flat disagreement in official circles as to whether the new Act does or does not outlaw such basic and widespread practices, for example, as the trade or functional discount, or discriminations in terms of sale (i. e., method and time of payment).

WHATEVER may be thought of these varied prophecies and interpretations, this much is clear: apart from recent familiar legislation which has been condemned as unconstitutional by the Supreme Court, the present Act, in any view, represents the most far-reaching encroachment upon "liberty of contract," and upon the right to control and use private property, that has yet been attempted in this country.

At the same time the prospects of having the Act declared unconstitutional as a whole and on its face appear to be negligible. He would be bold indeed who would prophesy that the Supreme Court cannot so construe the provisions of this statute as to make them workable, and at the same time preserve the essence of constitutional right—despite the indefiniteness of some provisions of the statute and the great ambiguity of others and despite the seriousness and difficulty of the constitutional questions which will inevitably be presented. The Court successfully met perhaps as great a call upon its statesmanship in connection with the construction and validity of just as indefinite a law in this same general field some twenty-five years ago. In the Standard Oil and American Tobacco decisions in 1911, the Court, rejecting alike the literal construction urged by the government and the extreme views presented by the companies, construed the equally stark language of the Sherman Act in the light of the history of its subject matter in this country and in England, in the light of our established institutions, and with a view to the evils with which Congress intended to deal. It reached a conclusion as to the meaning of the statute which made the Sherman Act workable, saved its constitutionality, and at the same time preserved freedom of trade among the states and a large measure of business liberty. Without admitting that the result is a statute now suited to our needs, the fact remains that the Court there solved a problem essentially the same as will confront it under this Act; that it did so by rejecting literalism as well as the extreme views both of government and of business; and that the result is the law today.

WHAT the Court will do, and when and how, is something else again. Decision will be conditioned by the circumstances of particular cases as they come before the Court, for it is an axiom of constitutional law, to which the Court has "rigidly adhered," that it will not go beyond the necessities of the case before it in passing upon the validity of statutes. This is not a statute imposing a tax which can be challenged as wholly unconstitutional (as in the AAA case); nor does it enact a code of conduct and compel "acceptance" of it by penalty—thus opening the door to refusal to accept followed by a general attack upon the whole scheme as unconstitutional (as in the NRA and Guffey Coal cases). There is nothing devious about the plan of this statute, and for that very reason a general attack upon it as a whole will be much more difficult than in the cases just referred to, if not, indeed, impossible. This statute enacts what purport to be standards for the conduct of interstate business and gives to them the positive force of law, leaving them to be enforced

judicially, case by case, as transactions deemed to violate those standards occur. The Sherman Act, framed on the same general plan, was on the statute books and was being enforced for twenty-one years (1890 to 1911) before the Supreme Court first gave it what is now its accepted construction and thereby sustained its constitutionality.

No definite constitutional pronouncement can be made until construction is settled. On the other hand, no construction can be given which would render any provision unconstitutional unless it is the only "fairly possible" construction. Again, constitutionality is often conditioned upon the operation and effect of the statute, and that is largely a question of fact to be determined in particular cases. With these limitations in mind, it is possible to make certain predictions as to the principles which will be applied in solving questions arising under the Act.

Commerce power

THE Act is based solely upon the authority of the federal government conferred by the commerce clause of the Constitution, and it must fall unless it be an exercise of the power granted by that constitutional provision. In its recent decision in the Carter case, dealing with the validity of the Guffey Coal Act as an exercise of the commerce power, the Supreme Court pointed out two basic tests which every statute sought to be supported under the commerce clause must pass:

"The commerce clause vests in Congress the power—'To regulate Commerce with foreign Nations, and among the several states, and with the Indian Tribes.' The *function* to be exercised is that of *regulation*. The *thing* to be regulated is the *commerce* described. In exercising the authority conferred by this clause of the Constitution, Congress is powerless *to regulate* anything which is not *commerce*, as it is powerless *to do anything* about commerce which is not *regulation*." [Emphasis added.]

NRA and the Guffey Act fell because they violated the first of the two tests stated in the last sentence of the above quotation. The labor provisions of the Guffey Act were held invalid because the transactions sought to be regulated by the Act related to production, not to "commerce." NRA, invalidated in the Schechter decision, dealt with subject matters which were not commerce and attempted to cover all commerce as well, whether interstate or not.

The present Act is not open to objection on such ground. It satisfies the first of the two tests above stated by the Court and to that extent is a valid exercise of the commerce power. Its subject matter is clearly "commerce," i. e., transactions involving the purchase and sale of commodities. That its coverage is limited to commercial transactions having such connection with interstate or foreign commerce as to be within reach of the commerce power is also clear, although not expressed. Since Section 1 is made a part of the Clayton Act, its scope is limited by the definition of commerce already contained in that Act, by which commerce wholly intrastate is excluded. And while Section 3 of the new Act is not made a part of the Clayton Act, and while its prohibitions are not expressly limited to interstate or foreign commerce, its language with respect to coverage is identical with that used in Section 1. Congress plainly must have intended it to have the same interpretation in this respect.

In brief, then, the Act is within the commerce clause as to subject matter and coverage. If the administrative agencies seek to extend it to intrastate commerce in situations to which the federal power does not extend, it will be the administrative action, not the statute itself, that will be held invalid.

WE NOW come directly to the inquiry which is the nub of the matter—does the specific means by which Congress has chosen to "regulate" interstate commerce constitute a valid "regulation" satisfying the second test under the commerce clause?

The present statute deals with regulation of prices in commercial

[*Continued on page 159*]

Outline of the Act

The Robinson-Patman Act amends and supplements existing federal anti-trust laws. It contains four sections. Section 1 takes the place of old Section 2 of the Clayton Act. Section 2 merely preserves existing causes of action under old Section 2 of the Clayton Act. Section 3 is new, imposing criminal liability for price discrimination and price cutting in interstate commerce. Section 4 protects coöperative associations. The significant sections are 1 and 3.

The Civil Section

Section 1 is the civil section. Summarized: subsection (a) forbids the seller of any and all commodities to discriminate in price between different purchasers of commodities of like grade and quality "where the effect of such discrimination may be substantially to lessen competition or tend to create a monopoly in any line of commerce, or to injure, destroy, or prevent competition with any person who either grants or knowingly receives the benefit of such discrimination, or with customers of either of them"

—unless the price differentials "make only due allowance for differences in the cost of manufacture, sale, or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered" (but the Federal Trade Commission may fix "quantity limits" when "available purchasers in greater quantities are so few as to render differentials on account thereof unjustly discriminatory or promotive of monopoly")

—but sellers may select their own customers "in bona fide transactions and not in restraint of trade"

—and price changes are permissible "in response to changing conditions affecting the market for or the marketability of the goods concerned."

Subsection (b) makes proof of the fact that there has been "discrimination in price or services or facilities furnished" sufficient to establish a prima facie case of law violation. This authorizes the Commission to issue a cease and desist order

—unless the person accused affirmatively shows "justification"

—but "nothing herein contained shall prevent a seller rebutting the prima facie case thus made by showing that his lower price or the furnishing of services or facilities to any purchaser or purchasers was made in good faith to meet an equally low price of a competitor, or the services or facilities furnished by a competitor."

Subsection (c) prohibits the use of brokerage commissions or their equivalents as discounts from selling or buying prices.

Subsection (d) prohibits the payment of advertising allowances or their equivalents unless such payment "is available on proportionally equal terms to all other customers competing in the distribution of such products."

Subsection (e) forbids the seller to discriminate between purchasers for resale by supplying services or facilities "upon terms not accorded to all purchasers on proportionally equal terms."

Subsection (f) makes it unlawful "knowingly to induce or receive a discrimination in price which is prohibited by this section."

The provisions for enforcement of this section are those contained in the Clayton Act: (a) cease and desist orders issued by the Federal Trade Commission, which may be enforced in civil proceedings in the courts; and (b) civil suit for triple damages by any person injured by violations.

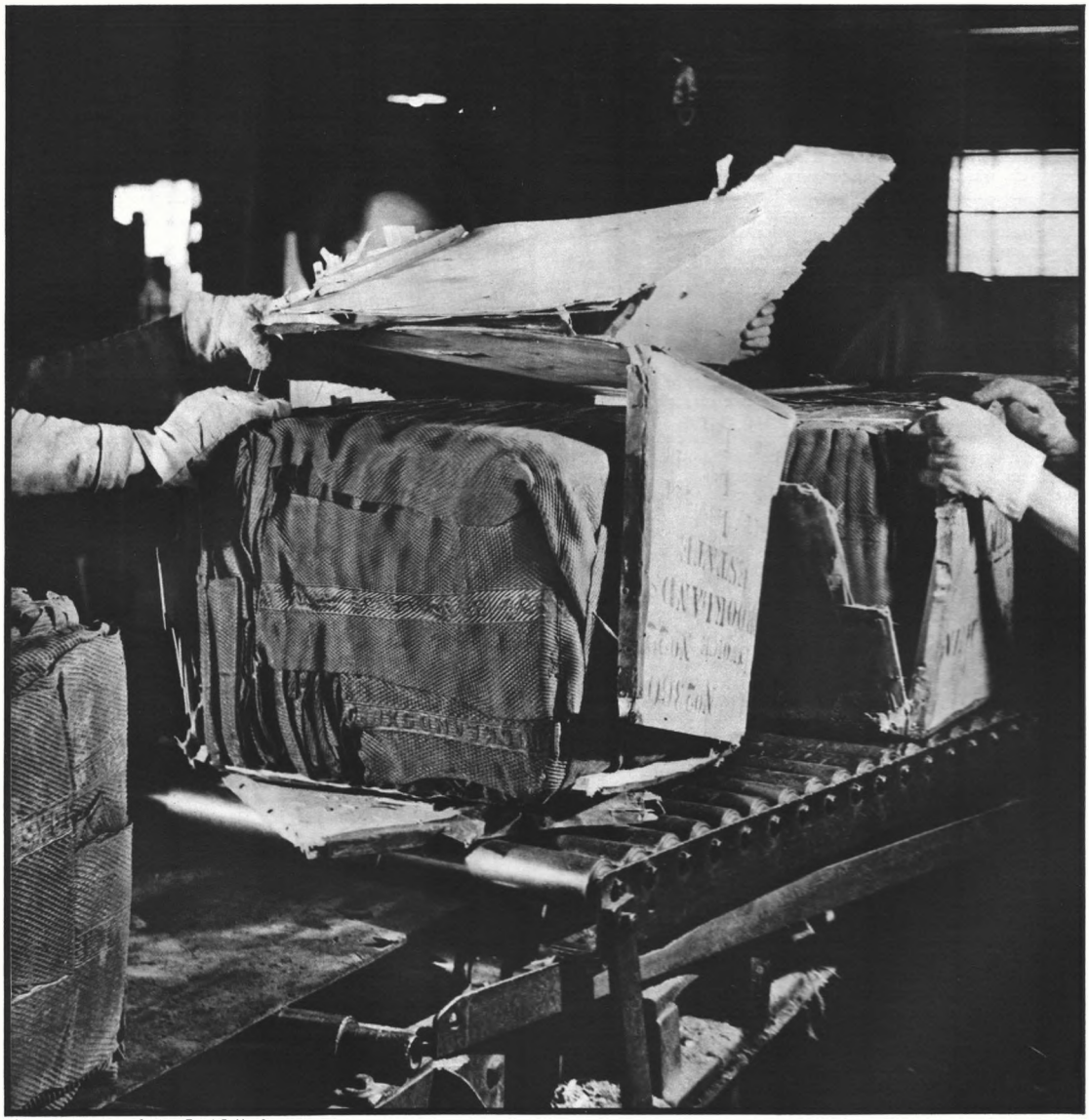
The Criminal Section

Section 3 is the criminal section and is wholly new. In transactions of sale in interstate commerce, it prohibits, upon pain of fine and imprisonment:

—the granting or receipt of any discount, rebate, allowance, or advertising service charge greater than that "available at the time of such transaction" to competitors of the purchaser in respect of goods of like grade, quality, and quantity;

—selling goods at prices lower in one part of the United States than in another, for the purpose of destroying competition or eliminating a competitor locally; and

—selling goods "at unreasonably low prices" for the purpose of destroying competition or eliminating a competitor.



Photographs by Rittase at Goodyear Tire & Rubber Co.

MOSTLY FROM THE MIDDLE EAST COMES CAOUTCHOUC . . . which is raw rubber, to feed the monstrous mills of Akron. Here you see rubber at the tail end of its existence as a raw material and the beginning of its career as a tire. Rubber reaches the tiremaker in such 250-pound blocks as these, tightly wrapped sheets packed in straw matting or burlap or plywood boxes. The wrappings are removed, the block is sliced up, and the rubber is washed, cleaned, and chewed in a machine that is called a plasticator but works like a meat grinder. Resembling prune whip with not enough cream in it, the bunchy sheets, which are now fit to be worked, are sent to the mill room (on the opposite page), where seven-foot rolls, turning at different speeds, smooth out the rubber and grind in warm oils and waxes and chemicals required for curing.

The Rolling Tire

. . . rolls on this year to make a $400,000,000 business. Because tires roll so far, tire sales have run downhill, taken the tire industry along. But at present the tire rolls quietly, out of the gutter of price wars—but near a bumpy stretch marked Labor Relations.

FEW things in common use seem more simple than the pneumatic tire. For the average motorist, lulled by technical excellence in many forms, the elementary facts of its existence begin and end with the observation that it should last 20,000 miles or he will know the reason why. Even in Akron, where the tire ordinarily means nearly everything next to God, the tire's simplicities are sometimes forgotten when the city's oligarchy of tiremen goes out to internecine war. Of the whole tire industry, according to Bill O'Neil of General Tire & Rubber Co., the tire itself is the least confounding item. "It is," he booms, "just a bag of wind."

Whatever William Francis O'Neil may think in the private councils of his gambler's mind, the definition carries an ironical truth. Ten years of warring in the profitable but inexorably declining replacement business, which means supplying your car with new tires when the old ones wear out; of throat cutting in the rarely profitable but volume-generating original-equipment business, which means selling tires to automobile manufacturers; of squeezes and dumping in the crude-rubber market—these events, to tiremen like O'Neil, must have made the casing seem a cork afloat in a hurricane. But all this does not obscure—rather it emphasizes—the role of the tire in a motorized civilization. Whether just a bag of wind or a brilliantly engineered subtlety in fabric, rubber, and chemicals, the tire is no economic trifle.

In 1928, when the tire industry reached its all-time high, 78,000,000 casings were sold, which, plus inner tubes, represented a gross business of around $750,000,000. Last year's sales of 49,500,000 tires plus tubes fetched approximately $360,000,000. Now that is important money. But the real importance does not emerge until you discover that by far the biggest share of this money, some 90 per cent, went to exactly four companies in the following estimated amounts: Goodyear, $108,000,000; Firestone, $85,000,000; U.S. Rubber, $68,000,000; Goodrich, $65,000,000. Behind them trailed Bill O'Neil's General, so far behind with a volume of $18,000,000 as never to be grouped with the Big Four, yet so far ahead of Fisk in No. 6 position as not to deserve to be classed among the small fry, especially as O'Neil affects to scorn the original-equipment business, which accounts for a substantial part of the volume of the Big Four.

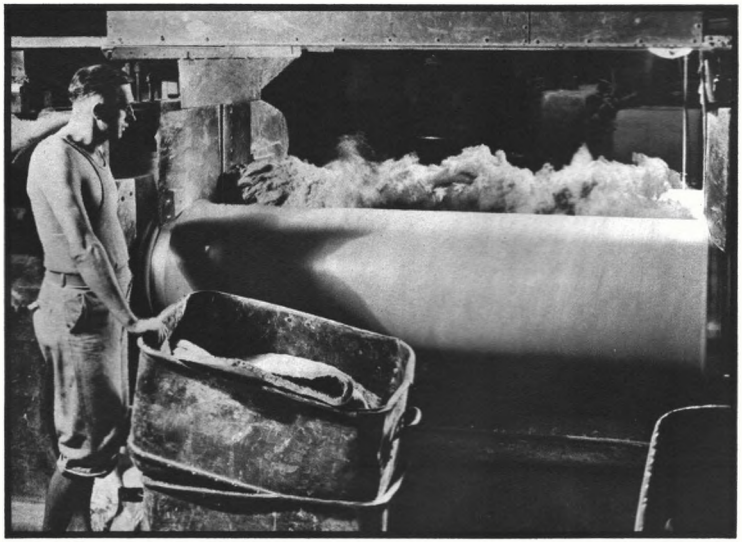
Now the Big Four plus General are something more than tire companies. Primarily they are rubber companies. They make all sorts of goods—mechanical rubber and rubber heels and hot-water bottles and rims and batteries. Goodrich alone manufactures 33,000 items. Goodyear's whole business, including rubber plantations and a couple of coal mines, swelled its 1935 take to $164,864,000. But with perhaps the single exception of U.S. the public knows these companies best as tiremakers and that is what they really are—Firestone's business being 70 per cent tires, Goodyear's two-thirds, and Goodrich's and U.S. Rubber's being slightly over half tires. Ranked on the basis of their individual share of the country's tire business, they would stand about as follows:

	Percentage
Goodyear	30
Firestone	24
U.S. Rubber	19
Goodrich	18
General	5

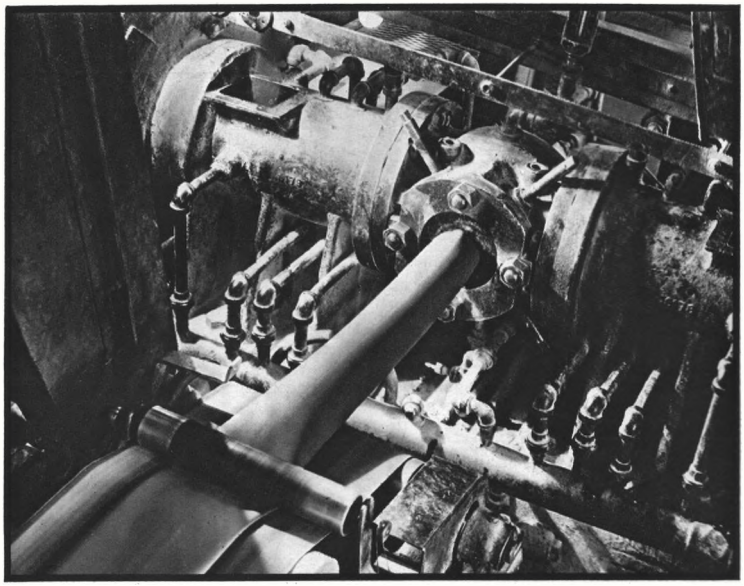
leaving a mere 4 per cent of the business for companies like Lee of Conshohocken, Mansfield, Dayton, Fisk, Seiberling, and Pharis. Or you might put it another way. The first five have capacity to produce some 50,000,000 casings and the rest something like 20,000,000. And that aggregate capacity is about 30 per cent more than 26,000,000 automobiles are able to use.

ONCE the tire industry was both friendly and unbelievably profitable. About a quarter of a century ago Goodyear paid three stock dividends of 100 per cent and in 1920 one of 150 per cent. In the beginning there was room for everybody—Harvey Firestone, with $45,000 in his pocket and an order for 8,000 tires from Ford, was able to break through the patent monopoly on clincher tires held by Goodrich, Fisk, Diamond, U.S., and Michelin, and establish himself in the business. As late as 1928 there was room in the U.S. for nearly a hundred tire companies if not for 106,000,000 casings they had the capacity to produce.

Of those entities only thirty survive.

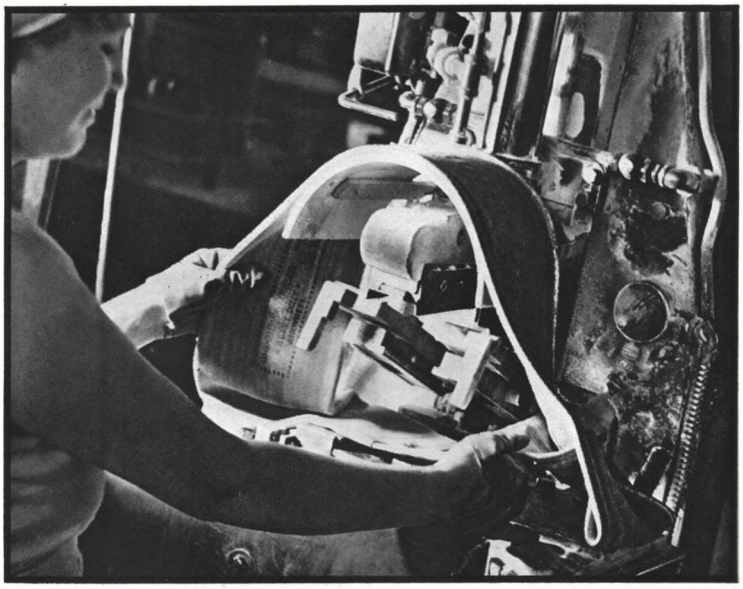


THE SQUIRMING RUBBER IS SMOOTHED FOR ITS CHARGE OF CHEMICALS



LIKE SAUSAGE FROM A HOUSEWIFE'S GRINDER

. . . the inner tube emerges endlessly from an extruding machine in which a huge worm-driven screw forces the rubber stock through a die that gives it shape and size. The roller you see near the bottom of the photograph flattens the stock for stamping and cutting. The same tough rubber that goes into tire treads goes into tubes. Tubes are a big part of the tire industry. Sales amount to $45,000,000.



AT THE SPLICING MACHINE, THE TUBE STOCK

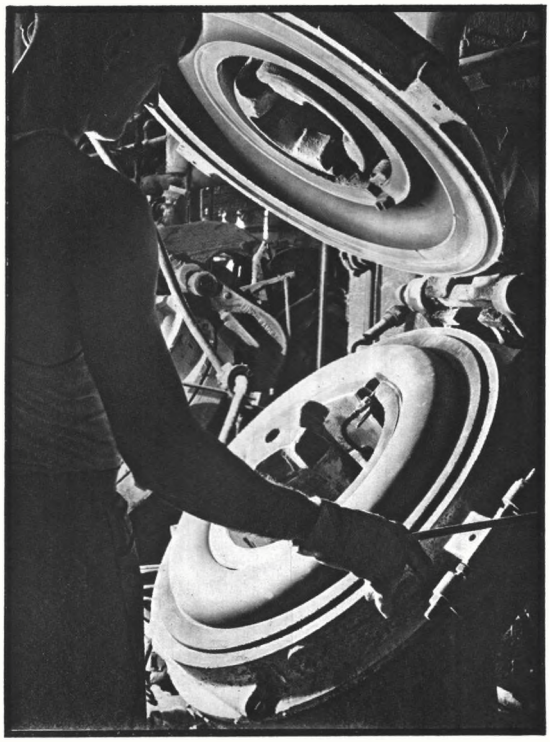
. . . having meanwhile been cut to length, is electrically spliced in fifteen seconds after both ends have been brought together. That splice, incidentally, the tiremakers claim to be the strongest part of the structure. On the opposite page you see two final steps in tube technology. For the water test the tubes are inflated, stretched to twice their normal size, and marched down a long tank of water for telltale bubbles.

Debts and competition blasted out Swinehart, Ajax, Owen, India, Mason, Murray, and many another name that used to exhort you from crossroad billboards. Hood and Miller were absorbed by Goodrich; Goodyear took over Kelly-Springfield. These were not the only casualties. Once there was an army of 120,000 independent dealers to sell you tires; today only half that number. Departed is Cyrus S. Eaton, who schemed to heap Goodyear and Goodrich on top of the steel companies and public utilities of his pyramiding midwestern industrial empire. And departed likewise is General Lincoln Clark Andrews, who left prohibition enforcement to rule the rubber industry in 1928 only to find that somebody else was writing the rules. Though the big companies persist, their stockholders know of three mostly by hearsay. Goodyear has not paid a full dividend on its preferred stock since 1932, Goodrich since 1931, U.S. Rubber since 1927. U.S. has not paid a cent on the common since 1921, Goodrich since 1930, General since 1932, and Goodyear nothing since a twenty-five-cent dividend in 1932.

Bright exception is Firestone. Steadily through the depression Firestone has met the $6 dividend on the preferred and thrown a bit of sweetening to the common. For that Firestone's stockholders can credit the smallness of the company's funded debt and the absence of such heavy interest charges as were devouring the profits of the other companies. Firestone's funded debt amounts to $16,000,000, compared to $58,000,000 for U.S., $55,000,000 for Goodyear, and $39,000,000 for Goodrich. General has none at all. To rid themselves of back dividends accumulating against the preferred both Goodyear and Goodrich have recently revamped their outstanding stock issues. That has helped matters a little. Helping also was a marked rise in earnings during the first half of 1936, from Firestone's 22 per cent gain to an estimated 67 per cent for U.S. But that gain is only relative. It will have to go somewhat higher before the common stockholders are able to push in between the preferred stockholders and the deficits.

Akron, the tire capital

CERTAINLY that upturn, however much it has brightened the financial statements, hasn't greatly improved Akron's mood. This smoky, lumpish Ohio city, straddling the height of land overlooking the deep-channeled and chocolate Cuyahoga River, is and always has been a city in flux. It gives the impression of never having sunk its roots past the shallow clay soil. Only the plants, Goodyear and General on the outskirts to the east, Firestone to the south, Goodrich near the center, have the quality of permanence. Huge fortresslike structures, belching smoke by day and glowing with hidden fire at night, they breathe for a city that could not live and might never have deeply lived without them. U.S. Rubber,



TUBES ARE VULCANIZED IN WATCHCASE MOLDS

It takes seven minutes and a temperature of 300° Fahrenheit to cure an inner tube. Precision instruments control the time and the temperature and automatically flip open the mold at the end of the curing period.

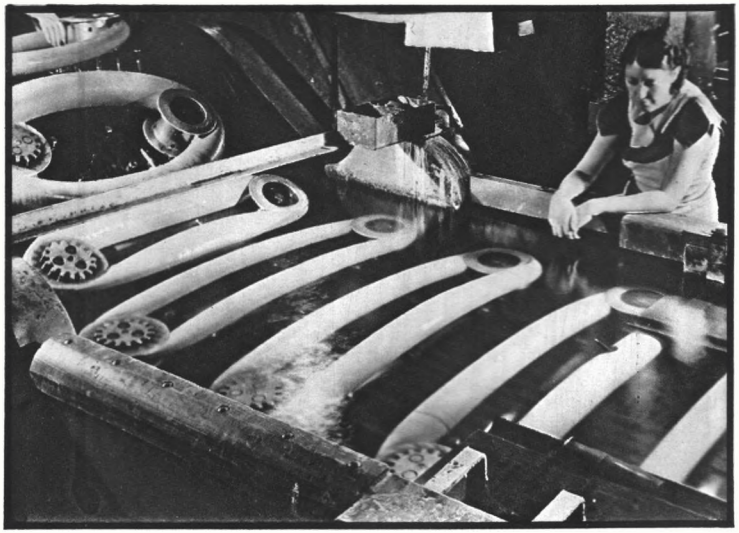
to be sure, is not there. It is stuck away in Detroit with motors. Even so, Akron and its rubber-breathing suburbs hold some 50 per cent of the nation's tire industry.

The first and quiet Akron was given over to oatmeal and reapers and matches. Then in 1870 the first Goodrich started a rubber factory there to escape the killing competition in New England. Other rubber enterprises sprang up around him. The Seiberlings, Frank A. and Charles W., founded Goodyear in the 1890's. Firestone, the farm boy, came along in 1900. Four years before that Goodrich had received from Alexander Winton, the automobile manufacturer, an order for a set of pneumatic tires: so little did the company think of it that it made Winton pay in advance not only for the tires but also for the molds required to make them.

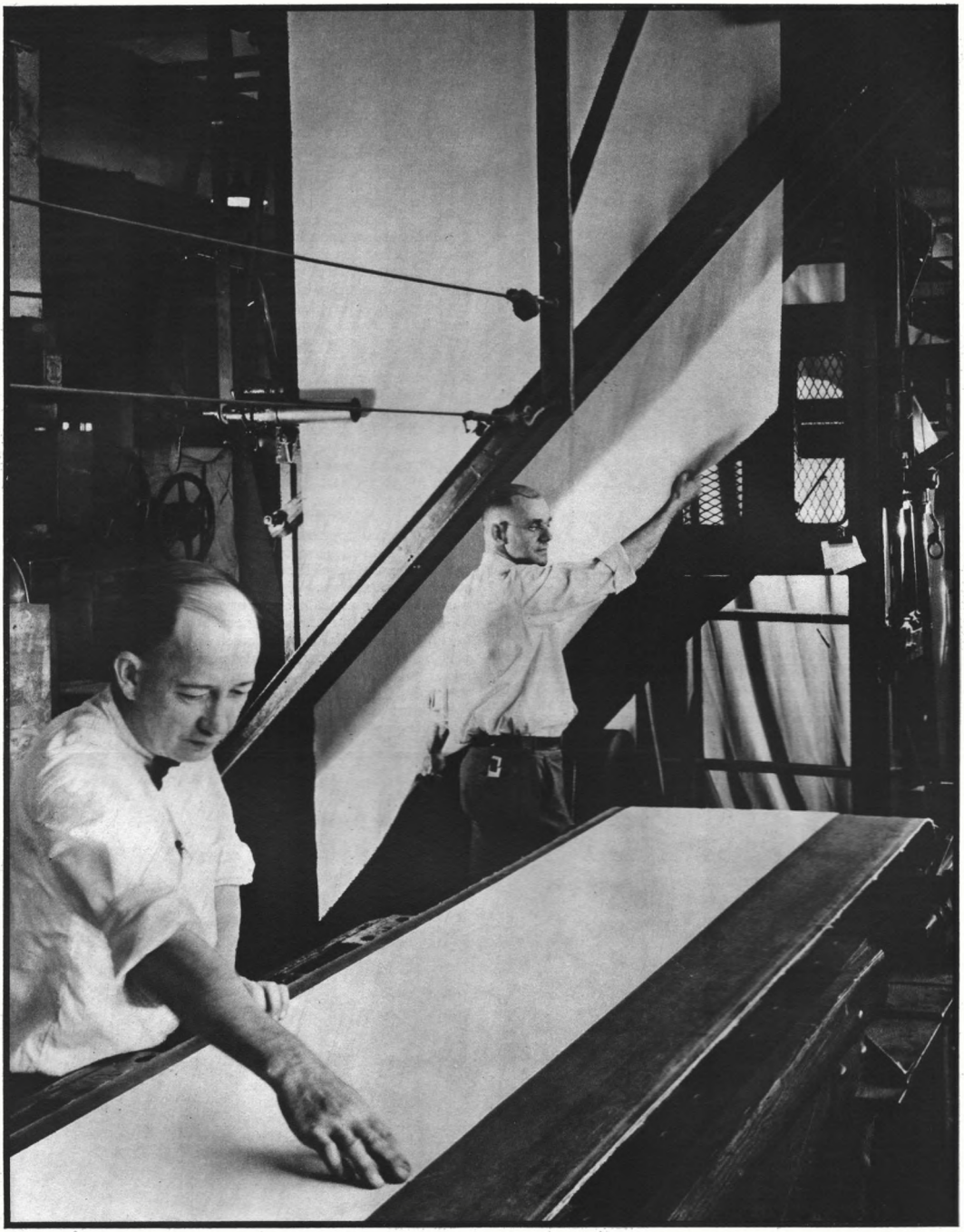
Thus simply did it all happen. A decade later the first Model T came off the line. Bicycle and carriage tires became less important. Soon Akron was able to call itself the fastest growing city in the world. In ten years the population trebled to 208,000. By 1920 there were 75,000 gum workers in town. Men were sleeping three shifts to a bed. Hungarians, Germans, Irish, Polacks from the steel towns came to Akron in droves. Still they were not enough. Employment scouts tapped the pent-up labor reservoirs of the South. Tall, contemptuous mountaineers from West Virginia, poor whites from Tennessee and Georgia—the day coaches brought them in by the thousands. Akron was a silk-shirted, swaggering, hell-bent town where a tire builder could make $60 a week. It was a floater's town too. Waves of men washed in and out of the cobblestoned streets. But the hillbilly, though he came and went, always came back, and it is said even now that any West Virginia politician after the Calhoun County vote will concentrate his campaign in Akron, Ohio.

Today Akron's population stands around 250,000. The towers of smoke climb to the sky: there is the same sweetish, solid taste of rubber in the mouth: the streets pulse and blacken with rivers of men released by the six-hour shifts: there are the same characterless cottages clustered around the factories and flowing north of the business district into the Flats near the viaduct. But Akron has changed. The jobs have shrunk to 40,000. Where Goodyear once had a labor turnover of 65,000 men a year in 35,000 jobs, the problem now is to get turnover in 14,000 jobs. Technology has made it possible for the hillbilly tire builder to turn out sixty tires a day where he once produced six. And that has begun to disturb him. Both Green's A. F. of L. and Lewis's C. I. O. have been active. How much they have influenced the worker is still indeterminable. This year's uneasy cycle of sit-downs are his invention. He is a hard-drinking, hard-fighting, passionate guy, this hillbilly gummer. Not so many years ago he made the Ku Klux Klan a force to reckon with in Akron. If his twisted bigotry should suddenly crystallize into militant unionism, the tire oligarchy that rules the city's 40,000 gummers and dwells in not too pretentious homes around the soft swales of the Portage Country Club, on West Hill, may have to overhaul its social philosophy.

Until now that philosophy sensed no contradiction between a speed-up in the curing pits and such paternalistic handouts as company-built homes and playgrounds and golf courses and semi-pro baseball teams for the gummers. But last year this philosophy began to waver. Sit-down followed sit-down, hobbling production, yet the oligarchy, making only weary and routine gestures, conceded practically every demand, whether it had to do with the pace of the conveyer belts or the appointment of a nonunion umpire for a softball game. Only Goodrich finally said to hell with schedules and stopped production for a couple of days to see what



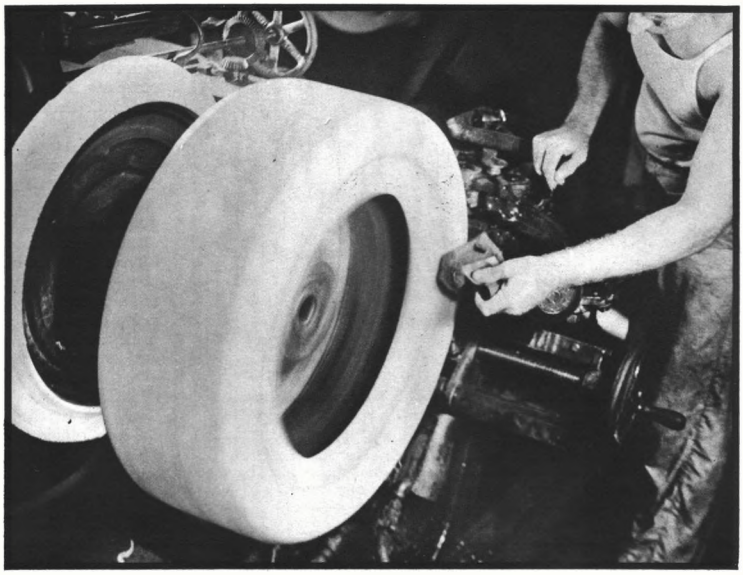
THE WATER TEST WILL FIND A LEAKY TUBE



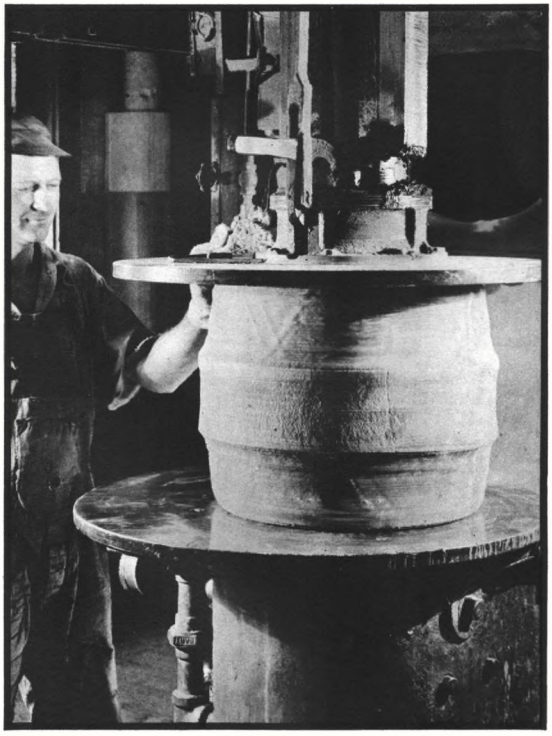
ON THIS BIAS THE RUBBERIZED FABRIC IS CUT INTO EXACT PLY LENGTHS, SEAMED, SENT TO THE TIREMAKER

would happen next. As for the much celebrated Firestone executive mechanism, of which it is said that an order from on top travels down through the organization like a brain command along a nerve conduit, when the impulses there tried to flow the other way, the company met the sit-downers suavely, kept peace with trifling concessions.

THERE are four great names in Akron's tire industry—the peppery and lightning-fast Harvey Firestone, who might have been even more powerful than he is if he had not chosen to be an isolationist; serious-minded, big-bodied Paul Weeks Litchfield of Goodyear, who drives hard, doesn't drink or smoke but likes a game of poker, and works in an old-fashioned office surrounded by lithographs of Washington, Jefferson, Lincoln, Gladstone, and Theodore Roosevelt. There is the studious James Dinsmore Tew of Goodrich, who is St. Paul's and Harvard bred, and sits behind the cleanest big executive desk in America. And finally there is roughhewn, good-natured Bill O'Neil of General, who on occasion has poured oil on the troubled waters between Litchfield and Firestone, only to find himself fleeing the scene with an incendiary's match in his hand. And since this is a story of tires, a fifth name must be mentioned—Lucius D.



FIRST STEP: TIRES ARE BUILT ON DRUMS LIKE THESE



SECOND STEP: BUT THEY DON'T LOOK LIKE TIRES

THIRD STEP: UNTIL SQUEEZED INTO THIS SHAPE

FORTY-FIVE MINUTES IN THE CURING PIT

. . . is the time it takes to convert the shapeless forms shown on the preceding page into the slick, hard outlines of a tire. The sulphur has accomplished the vulcanization, the accelerators and the age resisters and the anti-oxidants have worked their magic, and the molds, heated to a temperature of 265°, have bitten their impress into the treads. Pit workers are paid around $1.25 an hour.

Tompkins, Vice President in Charge of U.S. Rubber's Tire Division. In the historic sense that the others are, Tompkins is not an old-line tireman, having risen to command via U.S. Rubber's plantations in the Middle East. More than that, the simple fact that his company is not in Akron gives him a geographical if not an economic detachment from Akron's besetting problems.

IN THE past (September, 1930) FORTUNE has sketched the biographical outlines of the Big Four tire companies. Subsequently (February, 1934) it held up for examination the brilliant convalescence of that great wounded giant, U.S. Rubber, under du Pont management. Here a larger objective is attempted—to present the tireman, not as a corporate entity, not in the familiar aspects of Mr Firestone or Mr. Litchfield, but in terms of the oncoming problems of 1937, which of themselves make his horoscope perhaps more portentous than that of any U.S. industrialist. His problems swing on many axes. How lasting is the quietude that has fallen over the price cutting and the dealer swiping and the quarreling over mass outlets such as those of Montgomery Ward and Sears, Roebuck? What effect will the present British-Dutch restriction on rubber production have upon an industry of which a single company, Goodyear, swallows one-tenth of the world's output? What are the technological problems, and what new fields is technology likely to open up? How will men like Litchfield and O'Neil and Tew and Firestone, who almost never sit down at the same table, who have little in common except a lust for one another's business, meet a united labor front if it ever materializes?

THE TIRES, STILL HOT, PASS THE INSPECTION GIRLS WHO SPRAY ON THE HOUSE FLAG

Since distribution is foremost among these problems, discussion of it inevitably comes first.

From Builder to User

THE involvements of getting a tire from builder to user are, in the view of nine and a half users out of ten, all of a piece. What matters it how a tire arrives at a place where it can be bought, so long as it contains much mileage at little cost once it gets there? A refinement in manufacturing may add 1,000 miles to a tire's life, and a shift in the distributing method may take fifty cents off the price. One achievement serves the user as well as the other. And over the years there have been enough achievements of both kinds to make the tire consumer the most favored individual in the industrial market place. Virtually all tires are good tires. Virtually all tires are cheap, in terms of value required and received. Mr. J. P. Morgan and Father Divine can buy Rolls-Royces and Mr. Tony Maniscus of the Bronx cannot. But if Mr. Tony Maniscus can buy a Ford he will ride on rubber as durable and as comfortable as the rubber on any other car.

These things being so, almost everybody thinks that the tire industry has proved itself a bang-up industry, successful and beneficent. Only the tiremen, various gentlemen of financial and banking connections, assorted merchandising experts, economists, and simple business commentators would argue differently. By some of them the tire industry has been called "one of the most unsuccessful in business history." It has also been called, less formally, "insane," "cutthroat," "senseless," "completely nuts." And that is because the process of moving tires from builders to users has developed through a fantastic turmoil. The spectacle afforded by the tire industry is the odd one of a business commended by consumers and berated by its own members.

The bill of complaints drawn up against tires takes in overcapitalization, inordinate interest charges, and excessive capacity. But probably the most persistent complaint is centered on tire distribution, and is, specifically, that the process is cluttered up by volume manias, personal feuds, and competition run wild. The air over Akron, as analysts of the industry have noted time and time again, is perfumed not only by rubber but by Mr. Firestone's commercial fuming at Mr. Litchfield and by Mr. O'Neil's commercial fuming at both.

Bland, jowlish Paul Litchfield has been anathema to Harvey Firestone since 1926. That was when Mr. Litchfield, in his first year as President of Goodyear, fixed his name to a contract calling on Goodyear to furnish Sears, Roebuck & Co. with special-brand tires on a cost-plus basis—the first such contract in tires' history between a major manufacturer and a mass distributor. There is some evidence that Harvey Firestone tried to arrange a similar tie-up with Sears's rival, Montgomery Ward. But he never did; instead, he branded the Goodyear-Sears relation a match arranged in hell, flooded both his own and Goodyear's dealers with circulars interpreting it as the basic evil of the industry. As to that interpretation, there are cons as well as pros. But no one in the tire industry could deny that the moment Goodyear and Sears signed up, a new day, thunderous and stormy, dawned on Akron. For good or for evil, the Goodyear-Sears arrangement introduced more new elements into the merchandising of tires than any other single development since tires became big business along about 1910. The arrangement is no more; it ended last summer for reasons that we shall examine later on. But it left plenty to remember it by.

ONE of numerous figures that the tire industry has to put in the form of "estimate" for want of precise knowledge is the figure covering the number of tire dealers. The estimate most generally accepted is 180,000. You could say 250,000 and no one could seriously dispute you. The main point is that there are somewhere in the neighborhood of 200,000 places where you can buy tires, and that changes in the relative proportions of the various *kinds*

[*Continued on page 142*]

For FORTUNE *by Jeffery White Studio, Inc.*

HARVEY FIRESTONE'S FAVORITE PORTRAIT

. . . was painted for him by Ward Traver. At the age of sixty-eight, which he will be next month, Harvey Samuel Firestone is still the most important element in the executive system of his company. He has been in the tire business longer than any major figure still in it with the exception of Frank Seiberling. And there is no reason to believe that anything but the infirmities of age, which have yet to manifest themselves, will remove him from it. He is slight (five feet five); well-groomed (with cane and boutonniere); modified Republican (he spoke for Hoover and will vote for Landon but has conceded Roosevelt his points); active (as Episcopalian and dairy farmer as well as tireman).

Harvey Firestone cannot be said to be a typical tireman if only because the tiremen are too disparate to be typified. Goodyear's Litchfield is a production man, U.S. Rubber's Davis is a financial man, Goodrich's Tew is an engineer. But Firestone continues the main stream of the lusty times in which the industry cut its teeth: as a highly individualistic, highly talented salesman.

The Firestone pattern reaches its closest approximation in automobiles, in the person of Henry Ford. The two H. F.'s met first in 1894 when Firestone was a salesman for the old Columbus Buggy Co. in Detroit. And since 1906 the bulk of Ford cars have been shod with Firestone tires, and the Firestone family rides in Lincolns. Personalities were the cause, and business the effect, of this long-standing relationship (augmented for so long by the late John Burroughs and Thomas Alva Edison). Both were and are of the genus lone wolf; each is paternalistic and each reserves ultimate authority; Ford has never had any use for "the bankers," and Firestone, although Banker Harris Creech of the Cleveland Trust sits upon his board, is far from Wall Street minded. Firestone remains the only major tireman in literal control of his company. And there are five sons, all active in the business now, to follow after.

Gerlach

MATHEMATICAL LABORATORY: "RULED SURFACE OF THE THIRD ORDER"

Massachusetts Tech

. . . is science's apostle, industry's handmaiden. Its 2,600 students (this year) may study over forty varieties of science and engineering in its $15,000,000 plant. Next June its graduates will join an alumni body to which belong the heads of General Motors, General Electric, Goodyear Tire, Eastman Kodak, Stone & Webster—and ten du Ponts.

THE students of the Massachusetts Institute of Technology have, among other useful pieces of campus apparatus, a college yell. Who first devised it, and when, are matters already lost in the mists of the Institute's seventy-five years of history. But the half-dozen words of the yell are so bluntly forthright that some ten years ago the late President Samuel Wesley Stratton used to spend long hours wondering how he could successfully suppress it for fear of the harm it might do the school in the opinion of the outside world. The yell was this:

We are happy!
Tech is hell!
T-E-C-H-N-O-L
(retard)
O – G – Y !
Tech-*nol*-ogy!

The yell goes on today, unaffected by Dr. Stratton's qualms and meeting with no objection from his successor, Dr. Karl Taylor Compton. And it continues to indicate to the world at large that in the schooling of young scientists, architects, and engineers the Institute presents just about the toughest and most exacting curriculum to be found in any undergraduate educational institution in the U.S., and that the Institute's student body takes it and likes it and has a good time. As a result of these interactions it is safe to say that the Institute continues today to be what it has been for most of its three-quarters of a century existence: the fountainhead of applied scientific and engineering education in this country. There must, of course, be qualifications for that statement, but they are not so important that they cannot wait.

You may test the preëminence of the Institute in more than one way. First at hand are the rough and inaccurate calipers of total endowment: the Institute is backed by some $32,000,000. Such a sum is, of course, overshadowed by colossal endowments like Harvard's $135,000,000 or Yale's $98,000,000 but it in turn overshadows the $10,000,000 of California Tech (FORTUNE, July, 1932), the Institute's nearest competitor in prestige as a technological school. Divide the Institute's endowment by its total enrollment, which will be about 2,600 students this year, and you get a per capita figure of some $12,300—again unapproached by any school with which the Institute is comparable. Look at the ratio of faculty to students and you discover that the Institute has an instructor for every 6.3 students enrolled. The Institute is not the oldest school of its type in the U.S.—that distinction, if it can be assigned at all, belongs to Rensselaer Polytech—but it was founded on a broader base than any other, has steadily diversified its curriculum, and today brings its students and faculty together in a physical plant that is an international model of completeness and modernity.

But these figures are crass figures; they suggest eminence but they do not confirm it. For confirmation you would best turn to the Institute's roll of alumni: there you will find eminence aplenty. In engineering there are names, of past or present glory, like John R. Freeman, '76, who wrestled with China's Yellow River and put it in its place; Allston Dana, '08, Engineer of Design for the George Washington and Triborough bridges in New York; or Donald Douglas, '14, whose Douglas Aircraft Co. has been in the forefront of transport-plane design. More scientist than engineer is Willis R. Whitney, '90, who was for twenty-eight years head of the research laboratories of General Electric, is now G. E.'s Vice President in Charge of Research. His successor, William D. Coolidge, was M. I. T. '96. There was Chemist Arthur Amos Noyes, '86, who taught at the Institute for over thirty years, was its Acting President for two of them, and left it in 1920 to devote himself to the directorship of the Gates Chemical Laboratory at California Tech. And there is Astrophysicist George Ellery Hale, '90, for years Director of the Mount Wilson Observatory and, with Noyes and Robert A. Millikan, co-establisher of Cal Tech. Dr. Hale knows more about the sun than any man ever did before him, living or dead. And he has for some time: his most famous invention, the spectroheliograph (a spectrographic camera, plus telescope plus clockwork), he presented as his undergraduate thesis at the Institute back in 1890.

M. I. T. Photographic Service

OFFICIAL STUDENTS' ROUGHHOUSE USED TO BE THE "TECHNIQUE RUSH"

Color Photographs by Gerlach

THE INSTITUTE'S PRESIDENT IS PHYSICIST KARL TAYLOR COMPTON, PH.B., M.S., PH.D., D.SC., LL.D., D.ENG.

. . . but the institution over which he presides has never given anyone an honorary degree and doesn't propose to. In the six years of his presidency Dr. Compton has brought the Institute's prestige to a new high. Few on the faculty, not even the Physical Director, can often lick him at tennis. Behind him in his big office hangs a portrait of the late George Eastman, who in twenty years' time gave the Institute $20,500,000, made possible its present plant.

THERE is another strength of which the Institute is fond of boasting. That is the strength of its alumni in the country's industry. Here the record is impressive indeed. Charles A. Stone and Edwin S. Webster, both of the class of '88, were plotting the future of their great firm before either of them had graduated; since that day Stone & Webster has built over a billion dollars worth of engineering construction. Gerard Swope graduated from the Institute in '95, had started winding armatures for General Electric even before that, now presides with bristling efficiency over all the affairs of that $400,000,000 company. One of Mr. Swope's classmates is Alfred P. Sloan Jr., President of $1,500,000,000 General Motors. Only a year later than these came Paul W. Litchfield, '96, who as President of the Goodyear Tire & Rubber Co. enjoys an eminence in that industry more fully described in the article beginning on page 99 of this issue.* There is Arthur C. Dorrance, '14, of enormous Campbell Soup Co. in Camden, and his neighbor J. Howard Pew, '03, of the rising Philadelphia family whose business is Sun Oil and Sun Shipbuilding. There is Francis Russell Hart, '89, now President of United Fruit and before that Vice Chairman of Boston's biggest bank—First National-Old Colony—and Philip Stockton, '99, President of First National. It is thus clear that if you think of the Institute's alumni as made up entirely of Plain Blunt Men you must correct that view. The suave Charles Hayden, senior partner of Hayden, Stone & Co., long famous for holding more important directorships than any other U.S. tycoon, is a product of the Institute's class of '90, and the steely William C. Potter of Guaranty Trust followed Mr. Hayden from the Institute into the world of finance seven years later. And Elisha Walker, President of the Bank of America, was M. I. T. '02.

But the great, powerful, dynastic name in the Institute's alumni rolls is the name du Pont. T. Coleman began the family's famous procession through the Institute in the class of '84. Alfred I. was '86, Pierre was '90, Henry Belin was '94, Irénée was '97, Lammot was '01. Five members of the second generation were graduated in the teens or twenties, and two are students now. What these No. 1 managers of U.S. industry learned of engineering they learned at M. I. T.—and where du Pont management is, there will be also many a Tech man, in

Another Institute graduate whose firm draws attention in this issue is W. Clark Arkell, '10, Vice President of Beech-Nut Packing (page 85).

position high or low. And the du Ponts have not been ungrateful alumni: a rough approximation of their gifts to their alma mater would show a figure of some $2,750,000. They form the Institute's most solid link with U.S. industry and business.

You will also find many a maverick in the Institute's alumni body. The late Frederic Bullard, musical composer of the Yo Ho school (he wrote the *Stein Song*, which is the Institute's most solemn hymn), was a member of the Institute's class of '87. The muralist Edwin Blashfield was M. I. T. '69. The sculptor Daniel Chester French, whose statue of Lincoln adorns the Lincoln Memorial in Washington, was M. I. T. '71. Funnyman Gelett Burgess was once a civil engineer, class of '87. The Institute's Department of Architecture will forever be famous for having the late great Louis Sullivan in its class of '74. Indeed, the Institute can point with pride toward alumni of almost every stripe save one. It has seldom produced any rebels. The Institute atmosphere is bourgeois, which might be argued a good fault, but there is also a faint touch of the smug about it. Avid though it is for scientific and technological progress, it is one of the most socially and politically conservative institutions of learning the country over. You are either a right-thinking Republican or else the suspicion is strong that you are a Long Haired Fanatic. There exists one well-known exception: the liberal writer economist Stuart Chase was nurtured for two years with the class of '10 before he switched to Harvard. But neither the Institute nor Mr. Chase dwells on that. Perhaps you will want to add to that list of one the distinguished name of economist William Z. Ripley, '90, but probably not the name of statistician Roger Babson, '98.

TO CALL the Massachusetts Institute of Technology "Boston Tech" is to incur from it the same sort of indignation that rises in a San Franciscan when he hears his city spoken of as "Frisco." You may call the Institute "the Institute" or "M. I. T."

PROVINCE OF INSTRUCTOR VOSE: PHOTOELASTICITY

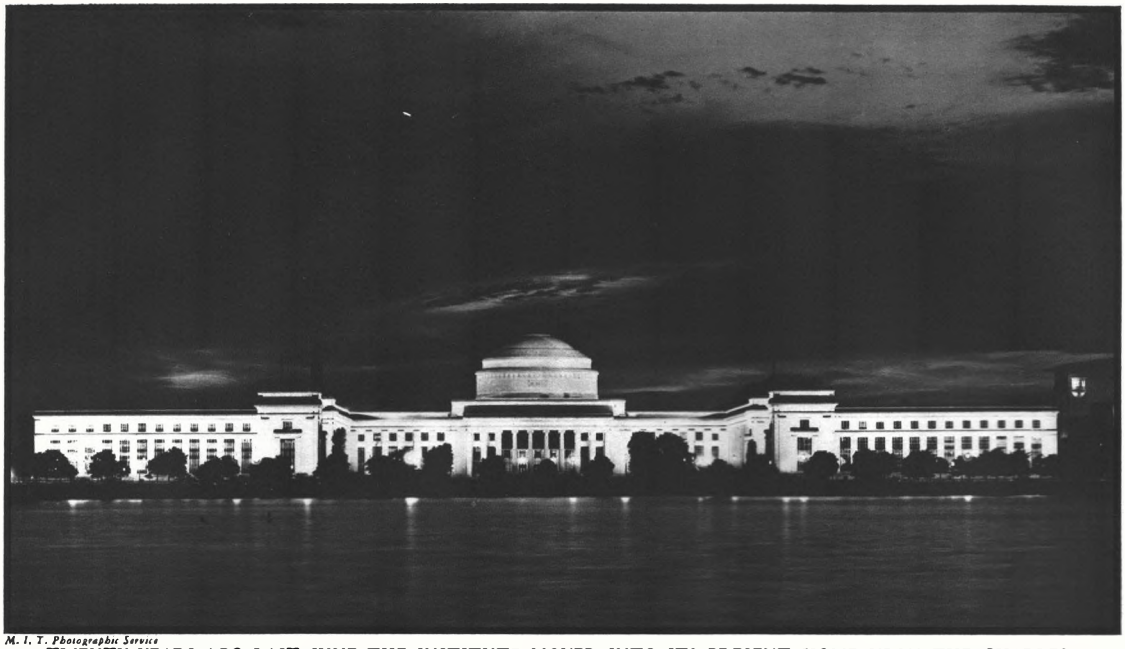
PHOTOELASTICITY

. . . is no great shakes as a research method for determining strains and stresses but as a teaching device it does a bang-up job. Look first at the transparent sheet to the left of Instructor Vose's head: it is a model for, let's say, a steel plate pierced with rivet holes. Polarized light strikes it from a source left of the picture, is condensed through lenses, and reflected back to the ground-glass screen in gaudy butterfly colors, the result of wave-length interferences set up in the transparent model. As the machine that holds the model is made to increase or decrease its tension, the stresses change, and the interference patterns change with them.

SPECTROPHOTOMETER

. . . is the word for a machine that measures light, one spectrum color at a time. Any color, as the eye sees it, has three characteristics: brightness (pure white is 100, pure black is 0), wave length (shortest is violet, longest is red), and purity (the closeness with which the color approaches the limiting purity of the corresponding spectrum color). Thus there is no color imaginable that Professor Hardy cannot accurately specify with three numbers. An olive green might, for example, be designated as 14—572—45 —the 14 indicating a low brightness, 572 indicating the yellow-green region of the spectrum, the 45 indicating a relatively strong color. In the foreground are "roll-outs" of printing inks which the Hardy device will analyze, for which it will automatically trace a curve showing relation of wave length to reflectance.

PROFESSOR ARTHUR C. HARDY (RIGHT) DEVISED THIS: A SPECTROPHOTOMETER



M. I. T. Photographic Service

TWENTY YEARS AGO LAST JUNE THE INSTITUTE MOVED INTO ITS PRESENT HOME UPON THE CHARLES

. . . and the façade you see here masks a profusion of other buildings behind. Mostly they are interconnected, someday all will be. Alumnus Welles Bosworth was architect; Alumni Stone and Webster did the construction. Because the land upon which the Institute built its home was a squishy tidal flat, engineers drove almost 20,000 piles as a foundation before a stone was set in place. As expected, the buildings have settled—to a depth, under the heavy dome, of nine inches. Beneath the dome, of all places, is the Institute's central library, filled with some 250,000 books, pamphlets, periodicals.

or "Tech." Slightly more formal is "Technology": that is what its telephone operators say when you call KIRkland 6900. But "Boston Tech" became obsolete in 1916 when the Institute, thrilled with a newfound affluence, moved out of the solid, American Renaissance buildings that centered around Boylston Street between Berkeley and Clarendon and settled itself—all but the architectural school, which still stays on Boylston Street—into a great limestone palace, domed and pavilioned, in Cambridge on the River Charles. It was a move attended by a tremendous pageantry. Alumni thronged to reunions. Sister institutions, scientific and otherwise, sent delegations to participate, and there were speeches and jubilees and fireworks and floodlighting. Ralph Adams Cram, then head of the Department of Architecture, played the part of Merlin, complete with robes, wig, and staff, in the *Masque of Power*, which he had devised for the occasion, and gave himself the job of standing in the bow of a barge, the *Bucentaur*, and ferrying the Institute's charter, archives, faculty, and other impedimenta across the Charles. That being done, the Institute settled down to work, and its modern period began.

This June the Institute celebrated the twentieth anniversary of that move. Two new main educational buildings have been added since then, and six new dormitory

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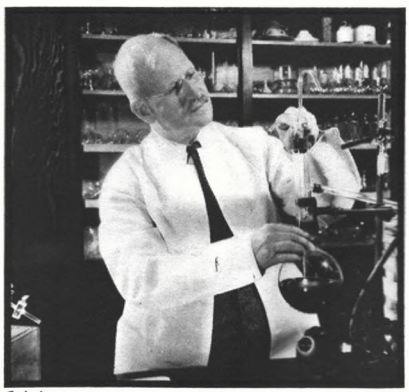
VICE PRESIDENT BUSH



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DEAN OF SCIENCE PRESCOTT

M. I. T. Photographic Service

THE DEAN OF ARCHITECTURE

. . . is William Emerson, whose department is the only one to remain aloof from Cambridge. It still clings to its Rogers Building on Boston's Boylston Street.

INVIDIOUSLY SINGLED OUT

. . . on this page are eleven out of the 545 personalities among the Institute's officers and faculty. The reasons: Lobdell because, although distinctly not the full-of-mellow-wisdom type, he is in the very center of Institute policy, polity, politics; Ford because his influence extends far beyond being crack manager of business affairs for the Institute whose investments still yield over 4½ per cent on book value; Keyes because his distinguished work on the utilization of steam at high temperature has led to extraordinary efficiency in generation of electric power; Harrison because he is in charge of the Institute's important work in spectroscopy and is that *rara avis*, a scientist who can write; Edgerton because his high-speed photography, among other things, makes legitimate and absorbing scientific news; Hunsaker because, while heading the Institute's department of aeronautical engineering (he designed the NC-4, first aircraft to cross the Atlantic successfully), he also heads the department of mechanical engineering and is fast ridding it of its onetime technical obesity. (For other men and other reasons, see the caption below.)

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DEAN OF STUDENTS LOBDELL

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TREASURER FORD

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CHEMIST KEYES

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SPECTROSCOPIST HARRISON

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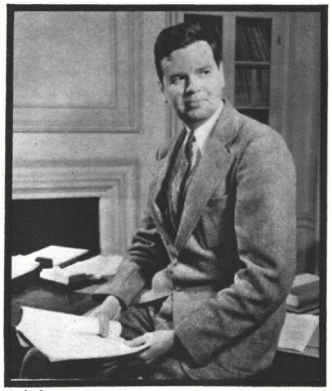
ELECTRICAL ENGINEER EDGERTON



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PHYSICIST SLATER

. . . finds inclusion here because he is a world authority on molecular mechanics; Lewis because he is the No. I U.S. chemical engineer; Van de Graaff for his pioneering direct-current high-voltage generator; Wiener for being one of the top six in U.S. mathematics; Rogers because, in a technical school, he can make English teaching stay taught.

LEWIS

VAN DE GRAAFF

WIENER

Gerlach

ROGERS

Gerlach

HUNSAKER

BIOLOGY STUDIES WATER POLLUTION

units. Before them stretches the expanse of the Charles River Basin, two miles down Massachusetts Avenue from the Harvard Yard. Behind them, unfortunately close, are a huddle of factories and nondescript buildings, plus a freight branch of the Boston & Albany. But as its need arises the Institute can more than double the area of its present classrooms and laboratories by advancing the basic plan for its buildings that Alumnus Architect Welles Bosworth devised—a plan that provides a set of separate but interconnected units, so that the whole educational apparatus of the Institute can be maintained under one roof. The Bosworth plan was ingenious; in its interior it is functional architecture solidly planned and efficiently used and having the drawback only of long, antiseptic, and fatiguing corridors—about three and a half miles of them, all told. In its exterior the Institute looks impressive without being very exciting; a bit formal and forbidding but less so since intensive landscape architecture has succeeded in making trees and shrubs and grass grow in a soil of tin cans and clamshells thrown up when land was made there thirty-eight years ago out of what was once a tidal flat.

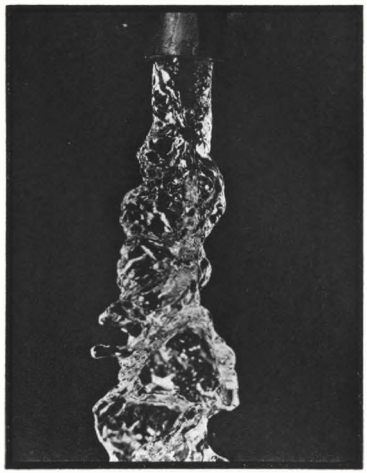
BUT the Institute's buildings do emphasize strength and success. It was not always so; when the Institute began, its first home was a room or two in Boston's flimsy and long-vanished Mercantile Building, on old Summer Street. Founder of this new sort of educational institution was a brilliant Virginian of Irish stock, William Barton Rogers, who had been a professor of natural philosophy at the University of Virginia (and earlier at William and Mary). To Boston he came in 1853, because only in Boston did he think he would find the atmosphere for the school he had in mind. From the Commonwealth of Massachusetts he got a charter for his new school in 1861. Among the fifty-odd incorporators whose imaginations he had fired were an Aspinwall, two Bigelows, a Cabot,

PROFESSORS DAVIS AND WAREHAM DEMONSTRATE DYE CHEMISTRY IN THE INSTITUTE'S BIG LECTURE HALL

two Daltons, a Storer, a Ware, a Pierce, and—still better—a Peirce; with such godfathers the Institute has never been troubled by an inferiority complex toward Harvard or any place else. Four years later, on February 20, 1865, Founder President Rogers began in earnest, and in his diary for that day he wrote with a slight ambiguity: "Organized the School! Fifteen students entered. May not this prove a memorable day!" When the fall came he had a faculty of ten, which had in it the germs of distinction; the chemistry instructor, for example, was a young Mr. Charles William Eliot, whose name was destined to be heard again.

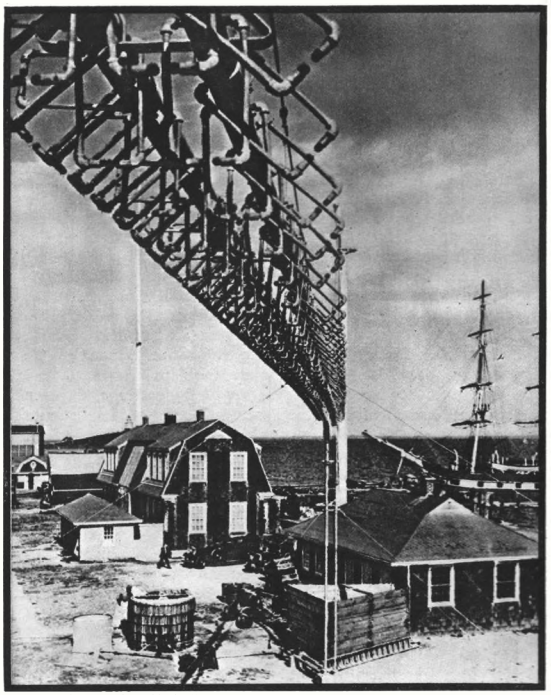
For eight of the years between the Institute's founding and the founder's death, William Barton Rogers was not the Institute's President. Illness forced him out in 1870 but he came back in 1878 and carried on again until 1881. A year later he established a precedent for Institute heads by dying in action: as President Emeritus he dropped dead while addressing the year's graduating class—in the words of a successor, who was to do almost the same thing, "at his post, in the very part and act of public duty."

The successor was Francis Amasa Walker, who left a Yale chair of history and political economy to come to the Institute in 1881. Under Walker the Institute went through a phase of its history that was strange indeed. Its miserable little endowment was not even up to half a million dollars in the mid-eighties; President Walker came to his office every morning wondering if the sheriff had that day finally padlocked the whole Massachusetts Institute of Technology because it couldn't pay its bills. Yet all this while the Institute was also growing. Walker's regime almost quadrupled its enrollment; in 1897, when Walker instantly and silently died of apoplexy, it stood at 1,200. The faculty increased from thirty-odd to over 150, and the number of branches of science or engineering to be studied there rose to thirteen. And it was in Walker's day that the Institute acquired not just a reputation but Its Reputation—"a place," said its stern President, "for men to work, not for boys to play." Thenceforth, in the lay mind, the picture of an M. I. T. alumnus became that of a scowling and myopic genius, who loved his polyphase duplex slide rule as a cowboy loved his horse, and who spoke in logarithms. We shall later see that that picture is less than the whole truth—but the Institute has treasured Walker's apothegm and quotes it today on any pretext.



THIS IS WATER, FLOWING

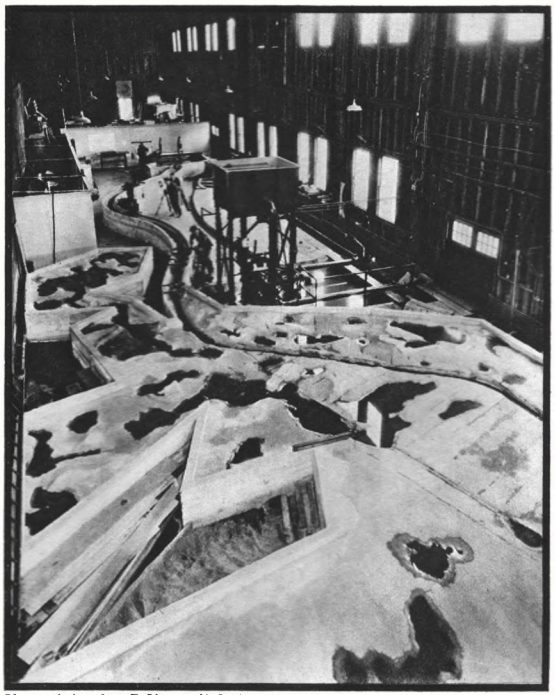
. . . and its bulky turbulence is revealed by Professor Harold E. Edgerton's camera. The exposure for this picture lasted 1/75,000 of a second, was made possible by an electrical circuit that can turn a light source on and off in just that instant of time.



Courtesy "Christian Science Monitor"

WITH THESE NOZZLES, THE INSTITUTE CAN DISPERSE FOG

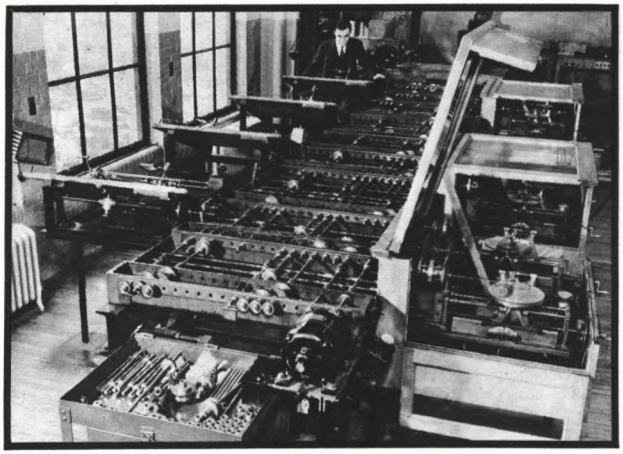
. . . by laying down a chemical curtain that turns the fog into drops of water, clears a corridor a hundred feet high, a hundred feet wide, and 2,000 feet long in which an airplane might safely land. Its status is still experimental.



Photographs from M. I. T. Photographic Service

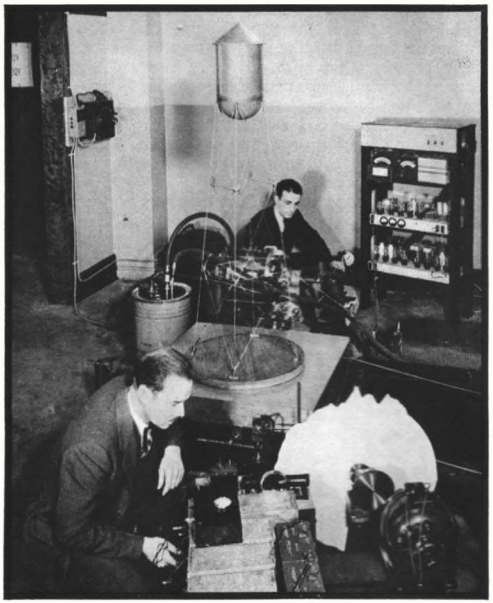
THE CAPE COD CANAL AT NINE FEET TO THE MILE

. . . which the Institute is studying to determine what the effect of tidal currents will be when the canal itself is widened to 700 feet, dredged to forty feet. In the foreground is Buzzard's Bay, drained to show the contours of its floor.

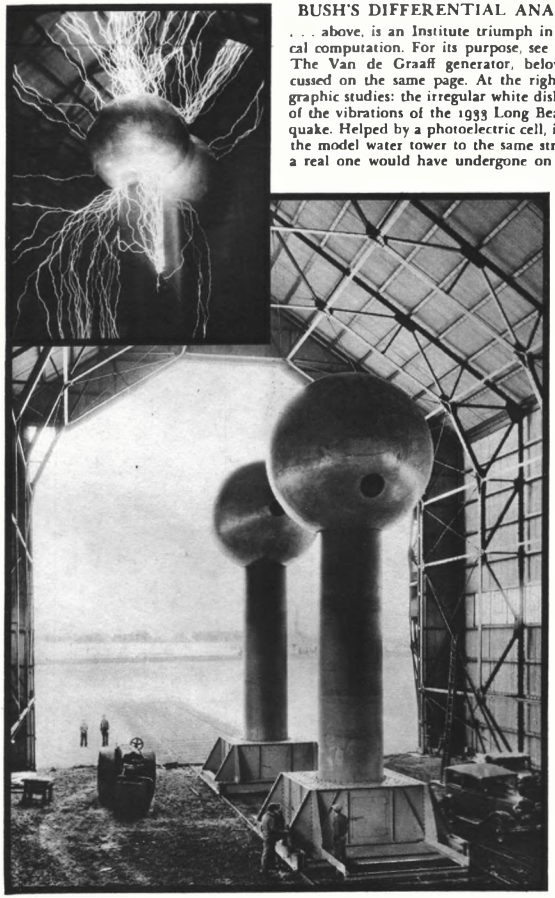


BUSH'S DIFFERENTIAL ANALYZER

. . . above, is an Institute triumph in mechanical computation. For its purpose, see page 140. The Van de Graaff generator, below, is discussed on the same page. At the right, seismographic studies: the irregular white disk is a plot of the vibrations of the 1933 Long Beach earthquake. Helped by a photoelectric cell, it subjects the model water tower to the same stresses that a real one would have undergone on the spot.



EARTHQUAKES MAY BE REENACTED HERE



THE VAN DE GRAAFF GENERATOR: 6,000,000 VOLTS

For three years after Walker's death the Institute carried on with a stopgap President in its own chemist, James Mason Crafts. Then, in 1900, the Institute turned to Henry Smith Pritchett. But Dr. Pritchett turned out to be a not particularly happy choice. He was—and as the emeritus head of the Carnegie Foundation still is—a distinguished figure in U.S. education. But his accomplishments for the Institute were not his most illustrious. The school was still hopelessly hamstrung for lack of proper endowment, and it began to occur to groups both at the Institute and at Harvard that the Institute might gain financial security and Harvard might gain great scientific kudos if a working agreement between the two were established. The Institute would move to the site on which the Harvard Business School stands today but be permitted to keep its own name. A. Lawrence Lowell was then Harvard's professor of the history of government and also a member of the Institute's Executive Committee, and such a jointure became his great ambition. Dr. Pritchett, worn with his financial battles, was distinctly not averse to the idea, despite the extreme likelihood that it would sooner or later have meant the end of the Institute's separate existence. The idea, tentative and confidential, broke in the newspapers, and there began the great merger fight of 1904. There was a good deal of yelling about it; there were even those alumni who stormed that Dr. Pritchett had been picked by Harvard influence for the Institute's presidency so that he could then sell the Institute up the Charles. That was a canard—but out of the merger fight the Institute's alumni for the first time discovered their solidarity. Their furious onslaughts buried the idea in 1905. But two years later the Institute needed a new President again. Dr. Pritchett had gone, and another interregnum was upon it.

IN 1892 a brilliant young Scotsman who had been brought up in New Zealand traveled some 12,000 miles to Cambridge University and, in St. John's College there, immersed himself in mathematics and mathematical physics. He emerged a prizeman and then began a second career in scholarship—this time in the law. Then he went back to New Zealand to teach in Wellington's

[*Continued on page 132*]

Richest U. S. Women

All have $25,000,000 or more. One uses gold faucets, one was rescued from the *Titanic*, one sells jigsaw puzzles, one keeps racing stables but is afraid of horses, one has "more money than she knows what to do with." A gallery of twenty-three.

WHEN you think of great wealth in the U.S., you not illogically think of Rockefellers, Fords, Mellons, Morgans, du Ponts, families who control several billions of dollars. But consider the collective wealth of U.S. women: $210,000,000,000. This sky-shooting sum rests, it is true, only on the solid base of its known fractional parts and it includes, to be sure, all the insurance policies made out to women by men who have yet to die. But such a sum (which means 70 per cent of the country's entire private wealth) can survive deductions. It will still be gigantic.

What does this indicate? That women have beaten men out in earning power? The explanation is simpler: the overwhelming part of their billions has been left to them.

This is a nation whose males learn at their mothers' knees that someday they must provide for their wives' welfare. This is a nation of skillful businessmen with whom it is a point of vanity to have their womenfolk do them credit, a point of pride to leave their womenfolk well off. The first of these aims conditions the second: the usual businessman's efforts to maintain his wife on a proper scale are enough of a strain to make it tacitly understood that she will outlive him. Statistics, moreover, bolster up this understanding: U.S. men have a shorter life expectancy than U.S. women.

Thus the great U.S. financial combine is not a group of mighty industrialists or Wall Street magnates, but a vast framework of comfortably off, well-to-do, and really rich widows, so that the country's wealth is in the hands, not of an oligarchy, but of a matriarchy.

Here follow brief portraits of the weightiest members of that matriarchy. They constitute the richest U.S. women, not because they amassed fortunes themselves but because they were the wives and daughters, the heirs and assigns, of some of the nation's richest men. Only one of these women may claim exception to this rule. Her wealth derives from America's only great woman fortune builder, the sensation of another age: Hetty Green.

These fortunes derive from two sources. About half of them were made in finance and the basic industries, about half in merchandise sold over the counter, with motorcars remaining to transport you from one to the other. In every case it so happens that the first type of fortune is older than the second and, as would be likely, of more solid social background.

Richest U.S. women are certainly not so many unrelated and distinctive personalities, but neither are they one obvious type. Within the group as a whole, once you start them all off with minimum fortunes of roughly $25,000,000,* they tend rather to split up into smaller groups on a basis of certain key qualifications and characteristics. Thus, of the twenty-three we are considering, fourteen are in *Social Registers,* nine are not. Just about fourteen (not by any means the *Social Register* fourteen) go in heavily for society, about nine avoid it. Half of the women take little or no interest in handling their affairs, half take an active interest. Eight of the women are young, eleven are middle-aged, four are old. Besides those who manage their estates, one woman is a sculptor, one has a bookshop, two are proprietors of racing stables. None of the women is strikingly active in politics, very few are active in religion, but better than half take an interest in philanthropy.

As for Sunday supplement detail: not many have planes, not many have private cars, a few have opera boxes, a few have fine art collections, many have yachts, many have horses, most have social secretaries, most have jewels, *all* have estates.

Herewith, then, richest U.S. women.

Mrs. Matthew Astor Wilks

IN 1909 John Jacob Astor's great-grandson married Hetty Green's only daughter. In 1916 Hetty Green died, leaving her daughter half of a $67,000,000 estate. In 1936 Hetty's son, Colonel Edward H. R. Green, died, ignoring his wife, and leaving his sister the other half of the $67,000,000 estate. In 1936 Edward H. R. Green's widow sued, with what success is still to be determined, to break her husband's will. On each of these occasions Harriet Sylvia Ann Howland Green Wilks has figured prominently in the headlines; on virtually no other occasion has she so much as appeared in print.

Hetty Green was one of America's most publicized women but died a recluse. Her daughter has avoided being publicized and repeated the seclusion. The common yardsticks yield up nothing. Yachts: none. Clubs: none. Public activities: none. Public charities: none. She has never given dinners at any of the smart restaurants, never bought dresses from any of the *grands couturiers,* never had a house at Newport or Southampton or Bar Harbor or Palm Beach. She is not a patroness of art or a hostess at musicales. Her husband, Matthew Astor Wilks, is dead, and she has no children. Socially, then, her activities are mysterious only because they do not exist.

On the other hand, she has lived in Brooklyn. She has lived in Hoboken. Before her marriage at thirty-eight to a man nearly sixty, she lived with her mother in whatever cheap apartment might serve as a sort of hideaway. Her mother was very cautious about Sylvia's possible suitors: they might be fortune hunters. There was a Duke de la Torre, and that was that. There was an Earl of Yarmouth, and a few years later he married Harry K. Thaw's sister. At length there was the socially flawless, financially respectable Wilks.

At her death Hetty Green enjoined her children to keep their money in the family—which, since neither had any children, meant leaving it to each other. By the time Colonel Green died his fortune had mounted tremendously, even though he was fairly free with money, and if Mrs. Wilks is successful in defending the lawsuit she will remain what she probably is today—the richest woman in the U.S. Ten years ago she admitted that she had more money than she knew what to do with. Like her mother, but not to the same appalling extent, she is thrifty; like her mother, but not with quite the same miraculous skill, she incessantly plays the stock market.

After her mother's death, she and her husband raised their modest scale of living somewhat, buying a $200,000 house in Greenwich, Connecticut, and traveling extensively; after her husband's death in 1926, she raised it even further, moving from West Eighty-first Street to an eleven-room, $11,000 apartment at 988 Fifth Avenue. This was briefly interpreted by a good many people as an intention on Mrs. Wilks's part

Certain women who are not considered here are potentially wealthier than certain women who are; but they have not yet come into their money. Examples: Barbara Field, Ailsa Mellon Bruce.

Morgan Photo

MRS. DODGE SLOANE

Wide World

MRS. A. G. WILSON AND DAUGHTER

to enter society, but she has continued to shun it as much since as before.

The Whitneys

IF YOU ask anyone what the name Whitney suggests, he will certainly answer—unless he fells you by referring to the cotton gin—that it suggests horses. Ask again, and he will possibly add that it suggests the largest estate ever filed for probate in the U.S. Again, and he may throw in a museum. (It is not improper to approach the Whitneys through parlor games, for Mrs. Payne Whitney loves them.)

The Whitney women have always been as active, as prominent, as newsworthy as the Whitney men. They have had backgrounds, interests, minds of their own. When they married, both the present Whitney dowagers simply exchanged one important name for another: Mrs. Payne Whitney was a daughter of John Hay, Mrs. Harry Payne Whitney a daughter of the late Cornelius Vanderbilt. Mrs. Payne Whitney remains, in spite of Mrs. Dodge Sloane (page 194), First Lady of the Turf; Mrs. Harry Payne Whitney remains society's best-known sculptor. Both women have been in *Who's Who* (alone among richest U.S. women) as well as in the *Social Register;* both are more than Whitneys by marriage.

It is as Whitneys by marriage, however, that both women rank among the U.S. richest. Harry Payne Whitney's net estate was valued at $62,808,000. Payne Whitney's was the largest ever filed for probate—close to $200,000,000. This disparity of fortune is the result of a family feud that arose between the men's father, William C. Whitney—lawyer, sportsman, traction magnate, Secretary of the Navy under Cleveland—and their uncle, Colonel Oliver H. Payne of Standard Oil. William C. Whitney remarried immediately after the death of his first wife, who was Oliver Payne's sister. Harry Payne Whitney accepted the marriage; Payne Whitney shared his uncle's outraged feelings and never spoke to his stepmother. Harry Payne was left the father's money, Payne the uncle's; and the uncle was much the richer.

Mrs. Payne Whitney would be easy to sentimentalize. She is the kind of woman who smiles at everybody, whom butcher boys extol, whom stableboys adore. She was a happy wife, she is a happy mother. Her children's friends are hers; her daughter Joan lives on the same estate, her son Jock is her partner in the Whitney stables. She dislikes society, she dislikes Newport, she has abandoned her opera box at the Metropolitan; more and more, since her husband's death, she has remained at her large place, Greentree, in Manhasset, Long Island.

But her keenness for horses is as vigorous

Rotofotos

MRS. HARRY PAYNE WHITNEY

Acme

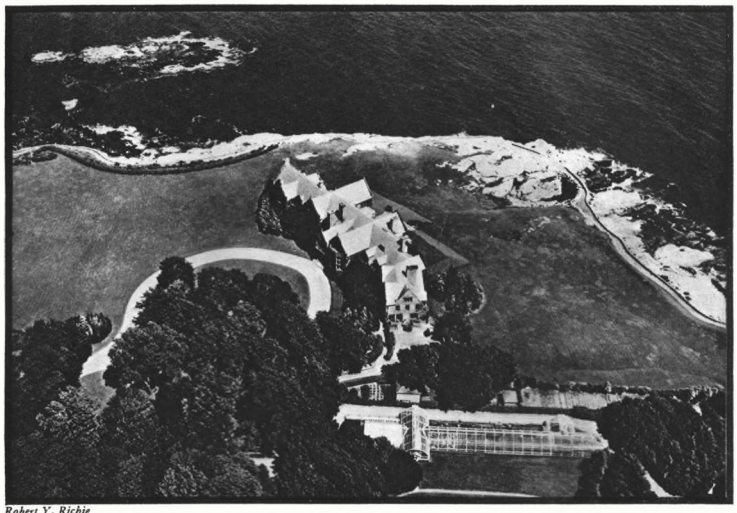
MRS. CHARLES SHIPMAN PAYSON

International

MRS. PAYNE WHITNEY

as ever. It increased her husband's interest in racing before his death and it has added more fame to the Whitney stables since his death than before. Besides the Greentree stables on Long Island, there is a stud farm in Kentucky and there are winter quarters in New Jersey. Mrs. Whitney is always at the races; this year she went even with a broken leg and watched from her car. And it is worth adding that she is as much interested in breeding horses as in racing them.

Mrs. Whitney looks after her own wealth. Some of it is represented very tangibly in horses, in gardens, in fine jewels, in a yacht, the *Captiva,* in the big Manhasset place, the town house at 972 Fifth Avenue, the 8,500-acre estate in Thomasville, Georgia. She looks after her charities also. The personal touch is evident at the annual Greentree Fete, held on her grounds for the benefit of the Babies' Milk Fund. Not merely are the house and grounds provided and the butler given his instructions. Mrs. Whitney and her daughter Joan—Mrs. Charles Shipman Payson—look after the job themselves, working busily at it for weeks and turning up for the occasion.



Robert Y. Richie

ROUGH POINT, THE DUKE ESTATE AT NEWPORT

MRS. PAYSON, who was also made one of America's wealthiest women by the terms of her father's will, in most ways takes after her mother, though in the most outstanding way she does not. Her interest in horses is polite (she has her own racing colors) but in no sense violent. But she has the same indifference to social formality, the same good nature, the same maternal warmth: during Christmas vacation you can see her lunching with her four small children at the Waldorf and having as good a time as they are.

Having a good time is the real key to Joan Payson's character. She married handsome redheaded Charlie Payson from a good Maine family, whose father-in-law left him over $1,000,000. They bang around with friends they have found for themselves—many of them Jock Whitney's friends as well: with Donald Ogden Stewart, Fred Astaire, Gary Cooper, and others. Mrs. Payson is crazy about dancing, crazy about parties, crazy about night clubs (when her cousin Eve Symington was performing at the Plaza's Persian Room, Joan Payson very often had a table there), crazy about bridge (and very scrupulous about collecting every penny she is owed). The word for her—by now it has become almost traditional—is "jolly."

The Payson wedding-anniversary party at Manhasset every Fourth of July has become, in its own way, as much of a tradition as the Rice ball at Newport. It is as lively as its guests choose to make it, with no hour set for going home: at ten the next morning people will be found playing golf in fancy dress on the Whitney private links.

In spite of her craving for fun and her genuine mothering of her youngsters, Mrs. Payson has found the time to run a children's bookshop in partnership with Mrs. Richard Kimball. Young Books, Inc., opened in 1929, has moved from a side street to Madison Avenue, has added toys and jigsaw puzzles, and is very successful. Both Mrs. Payson and her mother are said to have written anonymously some of the books she sells, but both deny it.

THERE is possibly something symbolic about Gertrude Vanderbilt Whitney's leaning toward marble, for she has all of its strong-mindedness and authority. There

Associated Press

THE JAMES H. R. CROMWELLS (DORIS DUKE)

International

MARY BIDDLE AND HER MOTHER, MRS. DUKE BIDDLE

is assurance in whatever she undertakes, from running the Whitney Museum to fighting for the custody of her niece Gloria Vanderbilt.

There has been nothing dilettantish about Mrs. Whitney's interest in sculpture. She has carved out, not simply monuments and fountains and arches, but a career. It has not lessened her fame to have been born a Vanderbilt but neither has it lessened her industry. From girlhood she has kept at work. Not all of her pieces, heroic in size as some of them are, scattered though they be in many parts of America and Europe, honored as they have been by Rutgers University and the deposed King of Spain, have won high praise from connoisseurs. (Even the inhabitants of Cody, Wyoming, who are something less than connoisseurs, were distressed when they found she had mounted their hero Buffalo Bill on a polo pony instead of an Indian pony.) Nor do critics feel that the Whitney Museum she founded in New York has always shown the keenest judgment in its purchase of pictures. But Mrs. Whitney's interest has never been a fad, it has often helped young American artists to get a hearing, it has disproved the theory that American millionaires never buy anything but European Old Masters, and at least in one direction it has very plainly been a force. By taking a studio in MacDougal Alley in 1907 she helped, perhaps more than any other one person, to make Greenwich Village a striking phenomenon of modern times.

Unlike her sister-in-law, Mrs. Harry Payne Whitney is austere and reserved. Though she is not a typical society woman, her scale of living is impressive: a 600-acre estate at Old Westbury, Long Island, where she has her studio, a town house at 871 Fifth Avenue, a residence in Newport, a box at the Metropolitan. She has an interest in horses (her husband was the premier American sportsman of his day), but most of her time and income are devoted to art. As recently as this year she had a one-man show at the Knoedler Galleries; what every critic stressed was the "romantic" character of her work.

Mrs. Moses Taylor

THESE days, when women in sports clothes drive to the Newport tennis matches in streamlined cars, those who hanker after the old formality and plush must be gratified by the sight of an elderly lady in taffeta driving in an immaculate carriage with two men on the box. Splendidly old-fashioned, she is that meeting place of glamour and caricature—the perfect dowager. Her life has culminated in a role toward which it always tended, for whether as well-born Edith Bishop or as solidly established Mrs. Moses Taylor, she symbolized wealth in the classic style. Which is as it should be, for she is the only one of the richest U.S. women whose wealth derives from the classic source: banking.

With such family connections as the Astors, Pells, and Harrimans, and the great fortune she inherited at her husband's death, Mrs. Moses Taylor might easily have a very important place in New York society. Far from wishing to dominate New York, however, she seldom cares even to inhabit it, uses a hotel when she does, and spends most of her time either at Newport or at her estate in Marrakech, Morocco, or cruising from one to the other on her yacht, the *Iolanda*. The Moroccan place is something of a favorite with her, but she takes a real interest in Newport too, and, for all her sticking to tradition, she is very popular.

Before her husband's death the Taylors spent much of their time on a magnificent estate in Mount Kisco that Mr. Taylor, banking son of an early President of National City Bank, farmed diligently. Since his death it has been cut up and is being sold off. There is a Legion Post in Mount Kisco named in honor of the Taylors' son, Moses, who was killed in the War.

Of Mrs. Taylor's four surviving children, one daughter married Mrs. Vincent Astor's only brother, Robert D. Huntington, and another, now divorced, married Charles Dana Gibson's son and Lady Astor's nephew, Langhorne Gibson. One son, Reginald, lives in Buffalo. The other, Francis, was cut off in his father's will for choosing to live in London, but he, in an indirect way, is responsible for his mother's now being so immensely rich. The bulk of Mrs. Taylor's inheritance from her husband was a great block of National City stock. Before the crash Mrs. Taylor asked the then President of National City, Charles E. Mitchell, to take Frank into the bank to

Acme

MRS. JOHN T. DORRANCE

Wide World

MRS. EDWARD V. HARTFORD

Lovick

MRS. VADIM MAKAROFF

. . . whose friends still call her Jo Hartford. She enjoys sports summer and winter, ashore and afloat.

represent her holdings and as a mark of friendship. Mitchell demurred, saying that the Taylor interests were already represented by one of their young Pyne relations. Mrs. Taylor repeated her request, and again Mitchell demurred. Whereupon she sold out every last share of her National City stock at exactly the moment it hit its pre-depression high; when it tumbled afterward she was still extremely wealthy.

But despite this unintentional coup, Mrs. Moses Taylor remains a dowager, not a businesswoman. When she is about to set off for somewhere, she has to phone the bank to ask if there is enough money in her account to pay the expenses of her trip.

The Carnegies

A FRIEND of Beau Brummell's once remarked, "X was very well dressed." "If you noticed it," said the Beau, "then he wasn't." Andrew Carnegie's widow and daughter have applied this rule to the whole of living. They have not only, like other wealthy women, rigorously shunned publicity—they have lived so as to make publicity impossible.

Balance, seriousness, good sense provide most of the explanation, but possibly Mrs. Andrew Carnegie has never forgotten a remark that her husband made to her at the time of their marriage, to the effect that no lady should ever be in the limelight. It probably accounts, in a woman otherwise socially forward-minded, for her opposition to woman suffrage. It probably explains how today at seventy-seven Mrs. Carnegie can walk down Fifth Avenue without being stared at, can walk into a shop without being spotted. Not so long ago she visited a Madison Avenue decorator's, looking like any other nice but dowdy old lady, and asked to see a screen "for an old-fashioned house." Failing to interest her in inexpensive screens, the clerk almost didn't show her an expensive one and only did show it with constant reminders of how much it cost. And when the screen was bought, she asked rather suspiciously for the name and address.

Louise Whitfield Carnegie comes from an old, conservative, wealthy American family. Carnegie courted her for several years and was fifty-two to her twenty-eight when they were married: it is supposed that he had promised his mother not to marry during her lifetime and waited till she died. The marriage was happy, the husband's influence lasting. Mrs. Carnegie still spends all her summers in Scotland.

It is impossible to know the extent of Mrs. Carnegie's wealth, for Andrew Carnegie provided for her and their daughter before his death. Her only public activities are matters involving public welfare. She has opened her gardens for charity, lent her house for student groups. She is interested in the League of Nations, which she says her husband prophesied. She contributed to Mayor La Guardia's campaign fund. Both she and her daughter are said to be actively interested in Buchmanism. As a result of her public-mindedness, she has received such honors as an LL.D. from St. Andrew's University in Scotland and the keys to the city of Edinburgh.

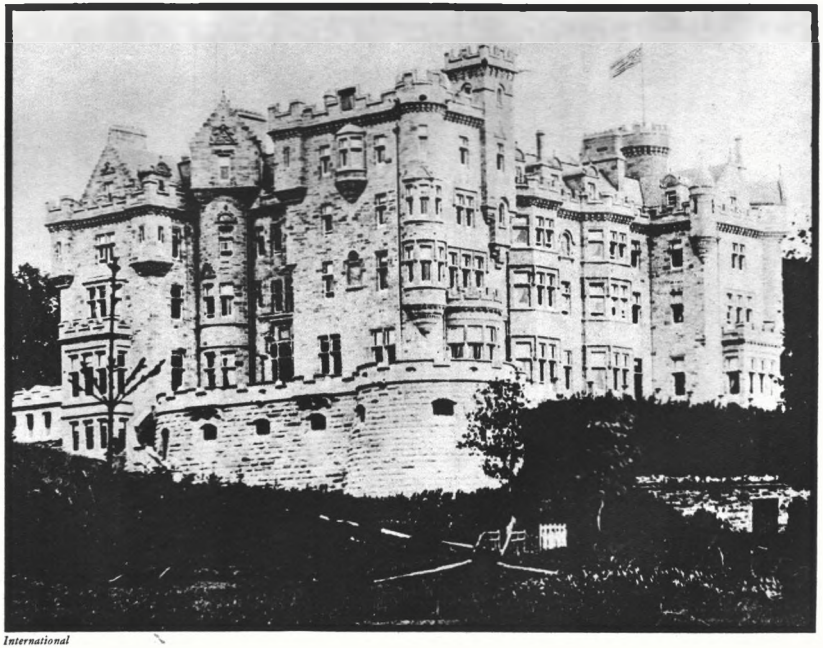
Her private life is exceedingly simple and quiet. Not more than fifty families in the *Social Register* are supposed to have

International

MRS. MATTHEW ASTOR WILKS

Wide World

MRS. ANDREW CARNEGIE



International

SKIBO CASTLE: MRS. CARNEGIE'S SUMMER HOME AS WIFE AND WIDOW

THE HAUGWITZ-REVENTLOWS

MRS. JAMES P. DONAHUE

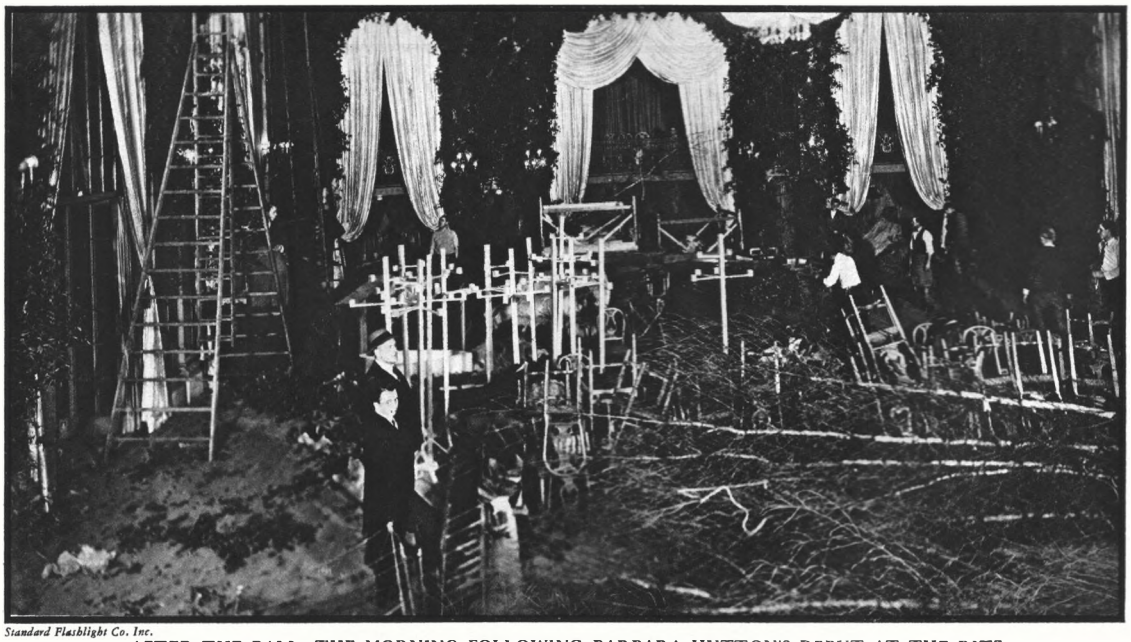
ever been entertained in her home. What entertaining she does is for close friends and members of the family. She dresses as simply as she lives, keeps a lookout on hand against reporters at her door (if necessary, she will phone their editors that they are not to blame for failing to interview or photograph her), and often slips out through the servants' entrance.

The Carnegie house at 2 East Ninety-first Street is the largest home in New York except Charles M. Schwab's. Its gardens and flowers have always been a landmark for bus riders, and for their benefit Mrs. Carnegie is reported to keep her flowers blooming all summer while she is in Scotland.

HER daughter, Margaret Carnegie Miller, beyond taking after the most conservative of mothers, has been further conditioned by the shyest and most conservative of husbands. She met Roswell Miller, a Princeton civil engineer who is now in the real-estate business, during her Spence School days, when his sister gave a house party. He is an intellectual—serious, reserved, interested in his family (they have four children), shooting, fish—and very little else. His interest in fish led him to clutter a room with built-in tanks, and once when one of the fish escaped, he and his wife stayed up all night trying to find it.

The Millers' life is closely related to Mrs.

[*Continued on page 192*]



Standard Flashlight Co. Inc.

AFTER THE BALL: THE MORNING FOLLOWING BARBARA HUTTON'S DEBUT AT THE RITZ

For this party in New York the night of December 22, 1930, Barbara chose and Max Schling, Fifth Avenue florist, executed a simple out-of-doors setting far costlier than great masses of hothouse flowers would have been. Bare birch trees were cut down and afterward covered with branches of fresh green leaves shipped to New York from California. These became a bower where Barbara and her stepmother, Mrs. Franklyn L. Hutton, received.

The Reader's Digest

. . . is a whacking success in magazine publishing, yet most of its staff never worked on a magazine before. Its circulation will stagger you, but it refuses to take advertising. Last year it made $418,000 for Mr. and Mrs. DeWitt Wallace—yet Mr. Wallace still looks worried.

ASK around a bit along Fourth Avenue in Manhattan where the publishing houses have their offices, or in the crowded barrooms near Grand Central where the advertising men huddle over six o'clock highballs, and you can pick up some astonishing stories about *Reader's Digest*.

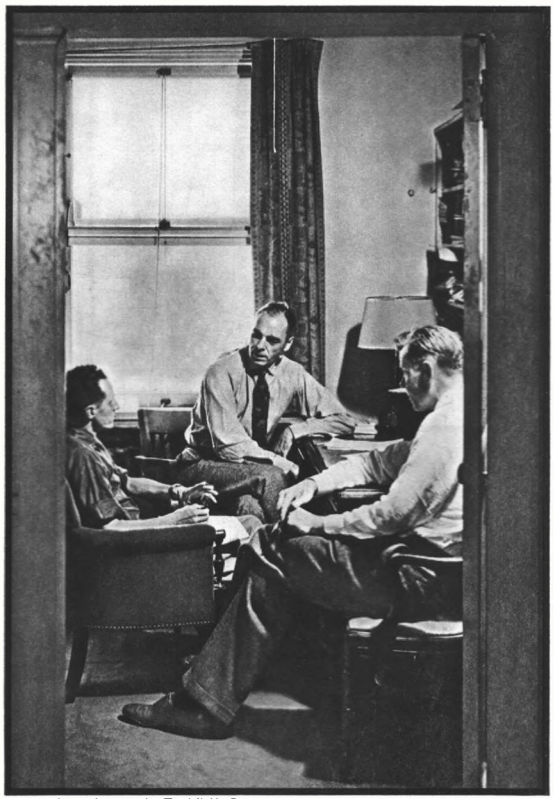
You will be told, for instance, that by the simple formula of condensing and reprinting nonfiction articles from other magazines every month *Reader's Digest* is making so much money that its owners, a Mr. and Mrs. DeWitt Wallace, don't know what to do with it. You will hear estimates of *Reader's Digest* circulation up to twice as much as the true figure. And you may be told that publishers of other magazines, resentful of this upstart phenomenon, once ganged together for an embargo on reprint privileges, exacting as their price of amnesty a written pledge by Mr. Wallace that *Reader's Digest* would never accept advertising.

Keep after them and you can collect rumors even more intimate and more specific. For example, that at Pleasantville, New York (population 4,540), where the *Digest* is published, the Wallaces order a community life like the late Elbert Hubbard's Roycrofters at East Aurora, and that the whole town arises at 6:30 A.M. to work from eight to three because the Wallaces believe that a sensible way of living. And that the Wallaces are anonymously Lord and Lady Bountiful to the countryside, credited with all kinds of benefactions, from the community swimming pool to a supposed safeful of IOU's. And that they net $1 on each subscription and live in lordly style and Mr. Wallace charters airplanes to go to Pacific Coast football games and has *two* autogiros . . .

The stories are, of course, specifically cockeyed (e.g., Mr. Wallace has not even one autogiro). But the true facts about *Reader's Digest*, viewed calmly and accepted as the straight record of a publishing show, are even more implausible.

Prime fact about *Reader's Digest* is its circulation, never before disclosed. The circulation, as of October, 1936, is 1,801,400 copies, which is the largest ever achieved by a magazine without fiction or pictures; and larger than that of any other magazine costing twenty-five cents a copy, except Hearst's *Good Housekeeping* (2,155,800). Last year, with a circulation over 1,450,000, producing revenue of $2,178,000, it spent so much money on salaries and other editorial costs that it showed a net before taxes of only $418,000—which, however, was the property of just two stockholders—DeWitt Wallace (52 per cent) and Lila Bell Acheson Wallace (48 per cent). It has an editorial staff nearly innocent of previous magazine experience, receiving salaries and bonuses up to $100,000 and more. It not only pays generous fees to thirty-five magazines for exclusive reprint privileges but even supplies certain of the magazines, gratis, with original articles which *Reader's Digest* proceeds to condense and reprint the following month. And through all its amazing success it clings to the village of Pleasantville, where the wayfarer may pace the streets without ever discovering that a magazine named *Reader's Digest* exists there.

PLEASANTVILLE is a commuter's suburb about an hour's run north of Manhattan on the New York Central. As you get off the train any station lounger can direct you to the *Reader's Digest*, and will do so with an air, not improbably adding that his sister works "at the Reader's." You go up the long sloping block of Wheeler Avenue, past the firehouse and Peter's Stationery and the four chain stores and the Bermudiana Luncheonette, to the corner of Bedford Road and then you ask the cop. If you want the business and circulation offices he points to the First National Bank Building on one corner (it is four stories and has the only elevator in Pleasantville). If you want the editorial office he points to the Mount Pleasant Bank & Trust Co. on the opposite corner. The latter building has a directory in the lobby with the names of three tenants—none of which is the *Reader's Digest*. But you



Photographs for FORTUNE *by Wendell MacRae*

THIS CLOSE AND NO CLOSER MAY A CAMERA APPROACH . . . the person of DeWitt Wallace, who for fourteen years has edited his *Reader's Digest* in a vacuum of "no publicity." Here he occupies the desk of Managing Editor Payne (left). At right is Ralph Henderson, who emerged from the Burmese jungle in 1925 to become the *Digest's* first staff member.

LILA BELL ACHESON WALLACE

. . . co-owner of the *Digest*, edits copy at home, reads manuscripts in bed, gardens, rides horseback.

trudge up a creaking flight of wooden stairs and come to a door with a sign. It reads "Please Keep This Door Closed." Beyond it are the *Digest's* editorial offices.

Inside there is a feeling that this is a decidedly different sort of magazine office. There is a large reception room empty of visitors, flanked on two sides by a dozen glass cubicles, each with a man diligently at work. The quiet of the place is startling. The typewriters click but do not clatter. For an hour at a time no telephone rings. Nobody bustles. Now and then a man crosses from his office to another's, but voices are not raised. Viewed from the windows the lush green hills beyond the station add a restful touch to the atmosphere of solemn, attentive labor. Suddenly a New York Central locomotive shrieks and thunders past the building directly under the windows. Nobody even looks up.

In the corner office sits DeWitt Wallace ("Wally" to his friends, "DW" on office memos). He is tall, lean, slightly stooped, and he is dressed in the tweedy elegance of the English professor with the private income. He is forty-seven and looks five years younger, although his hair is a bit gray. Generally ill at ease with strangers, he is always shy, soft-voiced, and speaks haltingly. Often he is absent in Manhattan, attending to magazine contracts or transacting editorial business in a publisher's office or over a leisurely scotch and soda in a good hotel bar. But mostly he is here in Pleasantville, running his editorial show, perhaps dispatching crisp memoranda signed DW to KWP, CWF, HAL, REH, and the twenty-odd others who make up his staff.

Beyond doubt it is the most curious editorial staff that ever put out a first-rate magazine. Of its thirty-two members only two had worked on a magazine before, and the others had done everything from selling linoleum to designing houses. Two were onetime clergymen and one was a missionary in India. All of the male editors in Pleasantville except one are married; and all—perhaps because they work in shirt sleeves—wear belts.

Top man of the staff is Managing Editor Kenneth W. Payne who, far from being a novice, had a long journalistic record behind him when he went to Pleasantville in 1930. Grandson of a newspaperman, son of a newspaperwoman, small, wiry Ken Payne studied at the Sorbonne, returned to his

IF YOU WANT TO FIND *READER'S DIGEST* YOU MUST ASK . . .

. . . AND SOMEONE WILL DIRECT YOU TO THE CORNER BANK . . .

. . . AND THEN YOU ASK AGAIN

For there is no sign in Pleasantville (pop. 4,540), not even on the directory of the Mount Pleasant Bank & Trust Co., to show that the editorial offices of *Reader's Digest* may be found there, one flight up and to the rear. But the cop on the corner, or anybody else in town, will gladly direct you or send you across the street to the business offices, from which the picture at the left was taken.

5,000 HOURS OF READING

. . . for *Reader's Digest* editors and researchers are in this stack of 500 magazines from which a single *Digest* issue will be distilled. The articles finally selected for condensation will total 150,000 to 250,000 words. When the editors get through with them, the wordage will be down to 50,000.

Cleveland home to discover that his acquired French mannerisms were not appreciated by his midwestern friends. A year of journalism study at Wisconsin de-latinized him, after which he worked for newspaper syndicates, free-lanced, edited *Popular Science*, was managing editor of old *McClure's*, and was managing editor of the *North American Review* when he met DeWitt Wallace. As managing editor of *Reader's Digest* he edits every shred of copy and greatly pleases Editor Wallace, who considers that they think alike and who even in 1934 paid him the sum of $102,467.

Oldest staff member in point of service is Ralph E. Henderson, mild and lanky, who was born and raised in the Burmese jungle, where his parents served the American Baptist Medical Mission. Harvard schooled, he went back to the jungle to teach for four years, returned to the U.S. in 1925 to job hunt. He found his way to the Wallaces' door, found them producing the magazine entirely by themselves. He was hired on the spot as business manager. (It is worth recording that when Mr. Henderson stepped from the train in Pleasantville that day and asked directions to *Reader's Digest* nobody around the station knew what he was talking about.) For three years, as business manager, he was the Wallaces' only associate. Now he is an associate editor editing condensations ("cuts" in *Reader's Digest* vernacular) of magazine articles.

One of the two ex-clergymen is Harold A. Lynch, a hulking, jovial gentleman with an abdominal laugh and an elusive suggestion of W. C. Fields. He was assistant rector at St. Mark's-in-the-Bouwerie in Manhattan and ready to quit the ministry when a vestryman friend told DeWitt Wallace about him. Editor Wallace sent for Mr. Lynch, liked him, made him successor to Ralph Henderson as business manager, at which he proved himself exceedingly able. Like Business Manager Henderson, he too became an associate editor sharing the same part of the work.

The other ex-clergyman is Charles W. Ferguson, stocky, curly-haired, spectacled. He graduated from Southern Methodist University to become a circuit rider in Texas and Oklahoma. Intelligent, literate, Mr. Ferguson turned his energies to writing, contributed to Mencken's *Mercury*, produced one bad book called *Pigskin*, one excellent book entitled *The Confusion of Tongues*, which remains a standard work on indigenous U.S. religions, and a third, *The Joiners*, to appear next spring. He was head of the Round Table Press, religious-book publishing house, when *Reader's Digest* discovered him, got him to write articles. He now edits the original articles prepared for the *Digest*.

Those are the top-flight editors: Wallace, Payne, Henderson, Lynch, and Ferguson—

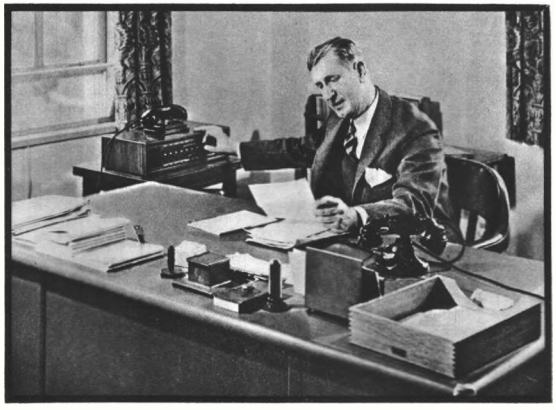
THE NO. 2 BOSS'S OFFICE AND THE NO. 1 BOSS'S OFFICE

(Left) Managing Editor Payne, with pencil, and Associate Editor Henderson. (Right) Editor Wallace surrounded by three associates: Charles W. Ferguson at his elbow, Harold A. Lynch in the far corner, and Maurice T. Ragsdale. The first five named compose *Reader's Digest's* editorial high command.

HOURS: 8:00 TO NOON, 12:30 TO 5:00, FIVE DAYS A WEEK

(Left) Harry H. Harper Jr., with researchers in Cleveland and New York, handles fillers and departments of short items. (Right) Fritz Dashiell, lately editor of *Scribner's*, works on original articles.

ONE DAY'S CIRCULATION MAIL: 10,000 PIECES



"THE MOST ENVIED MAN IN THE PUBLISHING BUSINESS" . . . is what one potent publisher has called Business Manager Arthur E. Griffiths. Reason: he manages a magazine that thrives on a self-multiplying circulation and is unharried by the precariousness of advertising contracts. By virtue of an elaborate cross-indexing system of his devising, Mr. Griffiths can boast that his 200 girl clerks dispose of all circulation mail within twenty-four hours of receipt, except in the Christmas rush, when 300 extra girls are needed.

not forgetting attractive Lila Bell Acheson Wallace who, although she has not worked in the office for the past five years, does a fair amount of editing at home and is responsible as ever for the tone of the magazine. And not forgetting Mr. Arthur E. Griffiths, English-born, onetime secretary of the New York *Journal of Commerce*. As business manager, in charge of *Reader's Digest* circulation, he has one of the most enviable jobs in the publishing world and he performs it with great skill. Grouped with them in the printed masthead of the magazine are the names of a half-dozen younger associates, but in the office hierarchy they are distinctly junior. It is the half-dozen oldsters who carry the weight and who lunch together daily at the Maples, a homely frame house shaded by trees a half block up Bedford Road, where they occupy a small private room upstairs, eat fifty-cent meals ordered in advance from a menu passed around the office, exchange shop talk, and gleefully match for the check, odd man paying for all. It is they who play poker together every couple of weeks, a thoroughly goofy game in which any card in the deck is likely to be called wild and every pot is settled by a complicated division between winner and loser. (A three-year graph of each player's winnings and losings, solemnly kept up to date by Editor Lynch, demonstrates that the law of averages plays a greater part in the game than individual skill. Mr. Lynch is currently high man.) And it is they who receive the highest salaries, as presently shall be related in detail.

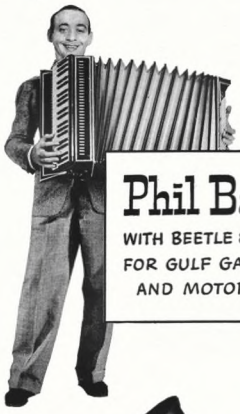
With ten of their juniors in the office they constitute the Pleasantville staff, as distinguished from a detail of three researchers stationed at the New York Public Library and a staff of ten researchers, headed by Editor Wallace's cousin Miss Lucy L. Notestein, at the Cleveland Public Library—a choice source of research by virtue of its open shelves. They work pleasantly together

[*Continued on page 126*]

Rossham from Black Star

RUMFORD PRESS: IT TAKES SEVENTEEN DAYS TO PRINT THE *DIGEST*

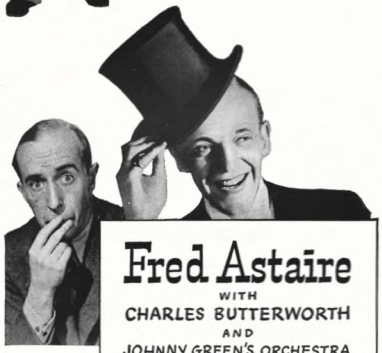
LOOK! THE YOUNG & RUBICAM NATIONAL RADIO SHOWS FOR 1936-37



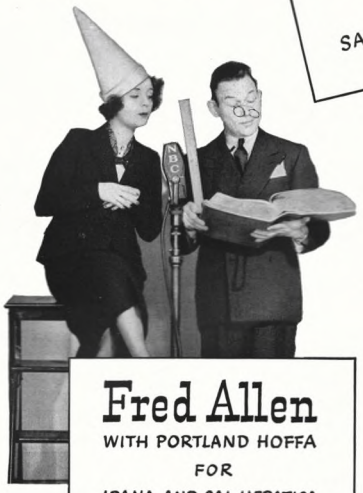
Phil Baker
WITH BEETLE & BOTTLE
FOR GULF GASOLINES
AND MOTOR OILS

Jack Benny
WITH
MARY LIVINGSTONE
FOR JELL-O

Helen Hayes
FOR
SANKA COFFEE

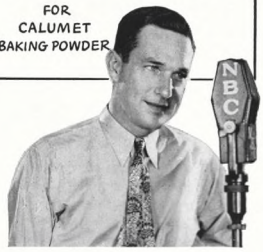


Fred Astaire
WITH
CHARLES BUTTERWORTH
AND
JOHNNY GREEN'S ORCHESTRA
FOR
PACKARD MOTOR CARS

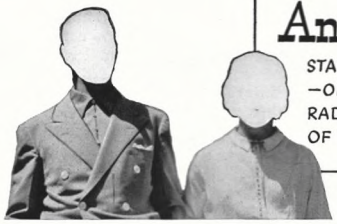


Fred Allen
WITH PORTLAND HOFFA
FOR
IPANA AND SAL HEPATICA

Phillips Lord
IN
WE, THE PEOPLE
FOR
CALUMET
BAKING POWDER



Stoopnagle & Budd
FOR
MINUTE TAPIOCA



And—
STARTING EARLY IN 1937
—ONE OF THE BIG
RADIO SURPRISES
OF THE YEAR

YOUNG & RUBICAM, INC. *Advertising* — NEW YORK · CHICAGO · DETROIT · HOLLYWOOD · MONTREAL · TORONTO

and don't seem to mind greatly that Editor Wallace is an exacting sort of chief who keeps an absence and tardiness record of the entire staff and requires each member to file a monthly report of work done, ideas accepted, books read, short items spotted, etc., etc. They occupy comfortable homes in the neighborhood, from which they drive to work at eight o'clock and to which they drive home at three if they've caught up with their work—with a half hour for lunch when the whistle blows on the firehouse down the street. After hours they read magazines for the office, or play tennis, or on rare occasions drop in at each other's houses for a cocktail and talk a good deal of shop. Now and then they are invited up to Grand View Circle where DeWitt and Lila Bell Wallace occupy a handsome house with a beautifully landscaped garden. And at some time each has walked across the lawn and through the hedge to inspect Mr. Pendleton Dudley's garage where, so far as Pleasantville is concerned, it all began.

ACTUALLY it began long before Pleasantville. It began in Pittsburgh in 1921 when DeWitt Wallace was fired from the Westinghouse foreign-publicity department —and even before that. DeWitt Wallace was born in St. Paul and went to school at little Macalester College, where his father, Dr. James Wallace, was President and at eighty-seven remains President Emeritus. Macalester proved too small to hold both schoolboy son and schoolmaster father; at the end of his sophomore year in 1909 DeWitt transferred to the University of California where, reflecting that the first two years in any college were probably more fun than the last two, he enrolled as a freshman again. After being a sophomore for the second time he quit school for good, worked in St. Paul for the Webb Publishing Co., which publishes farm magazines and high-school textbooks, and spent an ineffectual year trying to sell direct-mail advertising for Brown & Bigelow, biggest calendar printers in the U.S. He enlisted with the Thirty-fifth Infantry, and on the fifth day of the Verdun offensive Sergeant Wallace found himself in a dressing station with an ugly hole through his neck and a piece of shrapnel in his lung. By the time he was out of the hospitals and into his next job—with Westinghouse—he had had plenty of time to think over an idea that had been in his mind for six years—namely, that magazine articles took too long to read.

In his mind the idea expanded thus: that a considerable number of people wanted to be well informed, but the vein of worthwhile information of lasting interest was buried so deep and spread so thin through the wordy ore of U.S. magazines, no reader could spend the time and money to dig it out every month. Mr. Wallace proposed to do this for them, and to condense the chosen articles into a small, pocket-size magazine. To prove to himself that it could be done, while in the hospital he took scores of magazine articles and cut them to a fraction of their length without spoiling their meaning.

Reader's Digest

[*Continued from page 124*]

But he needed capital and he needed to canvass his prospective readers with the idea.

Things happened in a hurry. Because of the depression, Westinghouse decided practically to wipe out its foreign-publicity staff, and since DeWitt Wallace was the last to be hired, and since there was talk that he had another proposition in mind, he was first to be let out. He went home that night and in cold fury began to write promotion circulars for his magazine scheme. He kept at it for three months. Between times he borrowed money here and there—including $300 from his father and $300 from his brother Benjamin Bruce Wallace, now an expert on international affairs with the U.S. Tariff Commission—until he had $5,000.

At this time he was seeing as much as he could of Lila Bell Acheson, whom he had met when he was a California student. Since their first meeting she had traveled about the country with her Presbyterian minister father and her mother, and was deeply occupied with post-War social service. They became engaged and Lila Bell Acheson became a fully active co-founder, co-editor, and business partner in the Wallace magazine idea. In October, 1921, they established the Reader's Digest Association and rented a basement storeroom for an office at No. 1 Minetta Lane, in Greenwich Village, because the address appealed to them. They mailed out the circulars Mr. Wallace had written in Pittsburgh, got married, went on their honeymoon, wondering what the returns would be when they got back. The returns were pretty good. Thereupon the Wallaces fell to work in the Minetta Lane office and in February, 1922, produced the first issue of *Reader's Digest*, 5,000 copies, twenty-five cents a copy, $3 a year. They thought it would be fine if sometime they could make $5,000 a year.

With 7,000 subscribers on the books at the beginning of 1923, the Wallaces followed a real-estate advertisement to Pleasantville, up winding drives to the hilltop home of Pendleton Dudley, a prosperous Manhattan publicity man. Back of the house, sheltered by trees, was a two-car garage and pony shed. The living quarters above consisted of one long room with stone fireplace, a partitioned kitchenette, and a bath. That was home and headquarters for Editors Wallace and Acheson and *Reader's Digest* for the next three years. At the end of that time, having worked hard and long and having managed occasional vacations only by taking the magazine with them (except one summer when they skipped an issue "because of the preponderance of fiction in August magazines"), they had 20,000 circulation, two girl clerks in the pony shed, and a good piece of money in the bank. With the latter, having been captivated by the neighborhood, they bought the property adjoining the Dudley place and built a Norman-style home. A ground-floor study in the house became the new office.

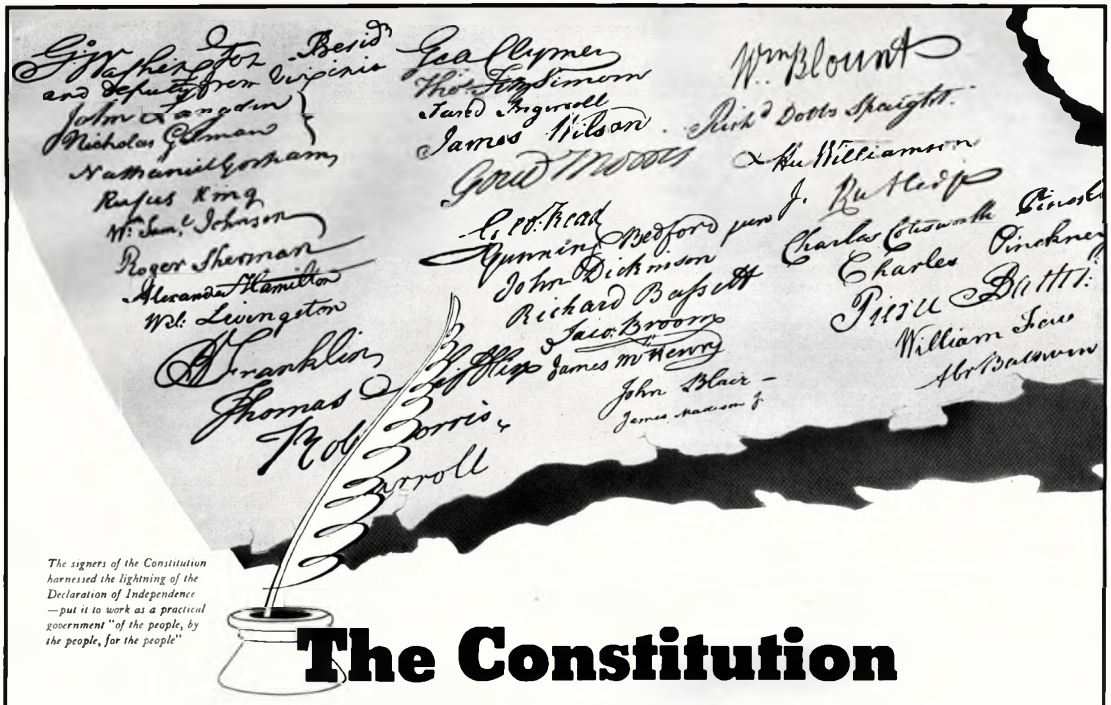
BY THIS time—1925—the Wallaces knew precisely what kind of magazine they wanted to publish and had worked out a basic editorial formula that they have followed ever since. In the beginning they had conceived of *Reader's Digest* as appealing chiefly to women. Their first circulation lists were top-heavy with names of professional women, nurses, etc., and the earliest issues were weighted with articles like "Do Women Dress to Please Men?" and "What Your Mirror Will Tell You About Your Character." They had even window-dressed the masthead with the names of two or three female friends and relatives as editors. That phase lasted only a few months until the Wallaces sighted a broader objective: to make the magazine appeal to an intelligent high-school student and to a college professor. The specific criteria for any article were three: (1) applicability (i.e., the reader should feel that the subject concerns himself), (2) lasting interest (it should be worth reading a year hence), (3) constructiveness. Nothing is taboo except defeatism. Preference is given to stories of good works.

The rightness of the formula was testified to by the fact that the circulation nearly doubled every year. It was 109,000 before *Reader's Digest* ever was offered on a newsstand. And by that time—1929—*Reader's Digest* had far outgrown the little-booklet stage and other magazines began to realize they had let something slip up on them. DeWitt Wallace had to leave his editorial seclusion and do business with people who wanted to sell their magazines to as many readers as possible even if they did contain more words than were necessary.

In the beginning the Wallaces helped themselves to their pick of articles from the press, and for the most part other publishers readily gave permission and felt recompensed by the publicity of a credit line. Things went along smoothly and in 1929 Editor Wallace, having tasted prosperity, took himself to Manhattan and nearly gave those same publishers apoplexy by shyly proffering checks in payment for the material he was reprinting. But the evidence of *Reader's Digest's* success had a disturbing effect, and presently *Scribner's*, taking the stand that the *Digest* was boring into its circulation, flatly withdrew the right of reprint. *Atlantic Monthly* and *Forum* threatened to do likewise, and for a time matters looked bad for Mr. Wallace. But he had a good friend in Kenneth Payne, then with the *North American Review*, who not only believed in *Reader's Digest* but was able to help persuade the rebellious editors that the reprint procedure helped them by stimulating a mass reader interest in high-quality reading. With Mr. Payne's help Mr. Wallace brought the wanderers back into line—and then up popped the imitators.

The imitators, which continue to appear and disappear, aped *Reader's Digest's* size, format, make-up, typography. Their combined

[*Continued on page 128*]



The signers of the Constitution harnessed the lightning of the Declaration of Independence —put it to work as a practical government "of the people, by the people, for the people"

The Constitution

Probably not one per cent of the people in the United States have ever read the Constitution. Yet as a basic idea it exists in every adult mind. It is the vague but formidable safeguard of life, liberty, and the pursuit of happiness—the set of ground rules under which the common man may develop his capacities for success, or failure.

Under its provisions, far more people have been attracted to this country than to any other part of the world. Comparable wealth in natural resources has been offered by other vast unsettled areas. Yet the flow of migration has been to the United States—to the Constitution.

Assailants of the Constitution are the quickest to seek the protection of its guarantees. One hundred and forty-eight years after adoption, it stands as the mother-idea of American national life to which all elements, by word or act, acknowledge their allegiance and their debt.

THE physical United States—3,000 miles of forests, plains, deserts, and mountains—was and is a great product.

But it took a mental concept of this product's relation to the needs of men and women—the Constitution—to give it pre-eminence among similar products. The value of the property today is the result of *idea* advertising.

You can name dozens of properties in pasteboard, glass or tin which owe their present value to the same method, consciously and persistently applied.

The great difference among agencies is one of belief in the necessity of a basic idea, and of ability to find an idea that makes contact with human need. J. Walter Thompson Company is never content merely to put products into print. Products go to market armed with an idea, or the advertising is unsatisfactory to this agency.

That is why, in so many conspicuous instances, the products advertised through this agency have become mental rallying points for the public—the products which come to mind when a purchase is to be made.

J. WALTER THOMPSON COMPANY

NEW YORK CHICAGO SAN FRANCISCO LOS ANGELES ST. LOUIS SEATTLE MONTREAL TORONTO and 10 offices in other countries

Reader's Digest

[*Continued from page 126*]

circulation was piffling; their editorial quality mostly poor; but by pestering magazines for consent to reprint, and by lifting material without even asking, they made themselves such a nuisance that *Reader's Digest's* status might have been jeopardized along with the rest. It worked out to the *Digest's* great advantage in the long run. For one thing, the appearance of the first imitator, *Fleet's Review*, on the newsstands jolted Mr. Wallace into putting *Digest* on the stands. (He had hesitated for fear it wouldn't sell.) More important, Editor Wallace easily established priority over the imitators and then clinched his position by proposing contracts with the other magazines giving *Reader's Digest* exclusive right to reprint an article a month. Most publishers signed. (Notable holdouts were *Saturday Evening Post* and *American*, which later came in; and the Hearst magazines, which still turn a deaf ear to Mr. Wallace.)

Terms of the contracts varied, but the top price paid by *Reader's Digest* to the magazines in those days was probably about $100 an article. As the *Digest's* income fattened, wise Editor Wallace never waited to be asked but voluntarily raised payments; and Manhattan magazine offices are full of stories about how De Witt Wallace came in one day and in his engaging, embarrassed way laid down a check for—say, $3,000, as advance payment on a new three-year contract at a higher rate. Specific contracts are understandably the tightest secret in *Reader's Digest* business, but there is good evidence that three years ago the top price was $10,000 for three years. And judging from the increase in *Digest* earnings and Editor Wallace's generous policy of participation, a wise guess might well put the 1936 top at over $30,000. No secret is the fact that in the case of more than one struggling magazine the *Digest* payments have come to make the difference between red ink and black.

CONTRACTS were well and good, but the episode of the imitators had spotlighted the whole question of reprint magazines. Were they all parasites, and *Reader's Digest* simply the oldest of the lot? The Wallaces answered by overhauling the *Digest* editorial formula, keeping the framework but adding original touches of their own. They increased the special departments of fillers, short pieces, compilations of items dug up by *Digest's* researchers. They added a sixteen-page condensation of a significant nonfiction book. They introduced original articles, conceived in the *Reader's Digest* office, assigned to outside writers, paid for handsomely (payments now run from $500 to $1,000). But what they did next was probably the most incredible performance in an incredible magazine history.

Long ago the Wallaces had observed that the big magazines with plenty of money to spend spent most of it on fiction; while the "serious" magazines that wanted high-grade nonfiction couldn't get as much of it as they wanted. By now *Reader's Digest* had the money and talent to produce a bang-up nonfiction article. So Editor Wallace turned around and offered his original articles free to magazines that wanted them. Since the practice began a year and a half ago, some sixty articles have been first printed in a dozen magazines like *Scribner's, Forum, Mercury, North American Review, Today, Rotarian*. The advantages are multiple. To magazines whose editorial standards are higher than their bank balances, a good article is a large gift. To *Reader's Digest*, it means cozier relations with the editors. Also it means better reprints from the small circulation magazines. But the only *direct* reward to *Reader's Digest* is the right to reprint what it created.

While all those things were going on *Reader's Digest's* circulation was skyrocketing. (For *Reader's Digest* circulation history, see the box below.) Also it was becoming a better magazine and a more complex organism. It grew from the sixty-four-page size to 128 pages. Its typography was improved, and in 1928 its printing was transferred to Concord, New Hampshire, where it became the largest customer of big Rumford Press. Above all, it acquired editorial technique.

THE routine is rigid. Sharp at eight o'clock in the morning, five days a week, the Pleasantville staff must be at their desks. The incoming magazines are received, divided into two categories. One is the general list of 200 weeklies and monthlies assigned to a half-dozen junior associates for first reading. The other is the "bone pile" of some 300 trade journals, scientific papers, and other lesser publications, which staff members are expected to dip into in their spare moments.

Each reader tackles the same thirty or forty magazines every month, carefully examining the articles and grading them on the contents page by a scale reminiscent of school theme marks. A sure bet for reprint is marked "1" (perhaps a "1+" or "1—"). A "2" mark means approximately "I think this is all right but let someone else read it." A "3" means "good subject but not this article." Basest rating is "N. U."—not usable. The marked magazines are routed to one of two associates, Henderson or Lynch, each of whom captains a team of three readers. The captains also read the marked articles, often readjusting the first reader's estimates and changing "1's" to "3's," or even "N. U.'s" to "1's." The surviving "1's"—sixty or seventy of them—are ordered cut as possible reprints, usually by the reader who spotted them. There is no prescribed space limit to the cutting; the writer is supposed to squeeze it as tight as he can, within the limits of style and color. He does this almost entirely by direct excision. When absolutely necessary a transitional sentence is written in, carefully copying the author's style. (Average reduction is to one-quarter length.) Fifty or sixty of the cuts, when passed by Messrs. Henderson and Lynch, go up to Managing Editor Payne who, with Editor Wallace, selects perhaps twenty-five or thirty for publication. As in the beginning, they still lay emphasis on the uplifting, with the result that the magazine, despite its diversity of contents, often reflects the intense earnestness of its editors.

The chosen articles account for about half the volume of a *Reader's Digest* issue. Part of the remainder is devoted to the book supplement, the subject of which may be current or may be twenty-five years old. Examples in the past two years: Arnold Bennett's *How to Live on Twenty-four Hours a Day*, (1910), Norman Archibald's *Heaven High—Hell Deep* (1935). Clifford Beers's *A Mind That Found Itself* (1923), Irving Stone's *Lust for Life* (1934). Book cuts, edited by Maurice T. Ragsdale, are among the most difficult jobs on the magazine, each cut taking a full three weeks before it is ready for final editing. One who cuts books with rare skill is Charles C. May, elderly Manhattan architect who has abandoned his profession to become a *Reader's Digest* associate and whose last designing job is a large new house for the Wallaces. (Best way to get rid of an importunate applicant for a job: let him try to condense a book.)

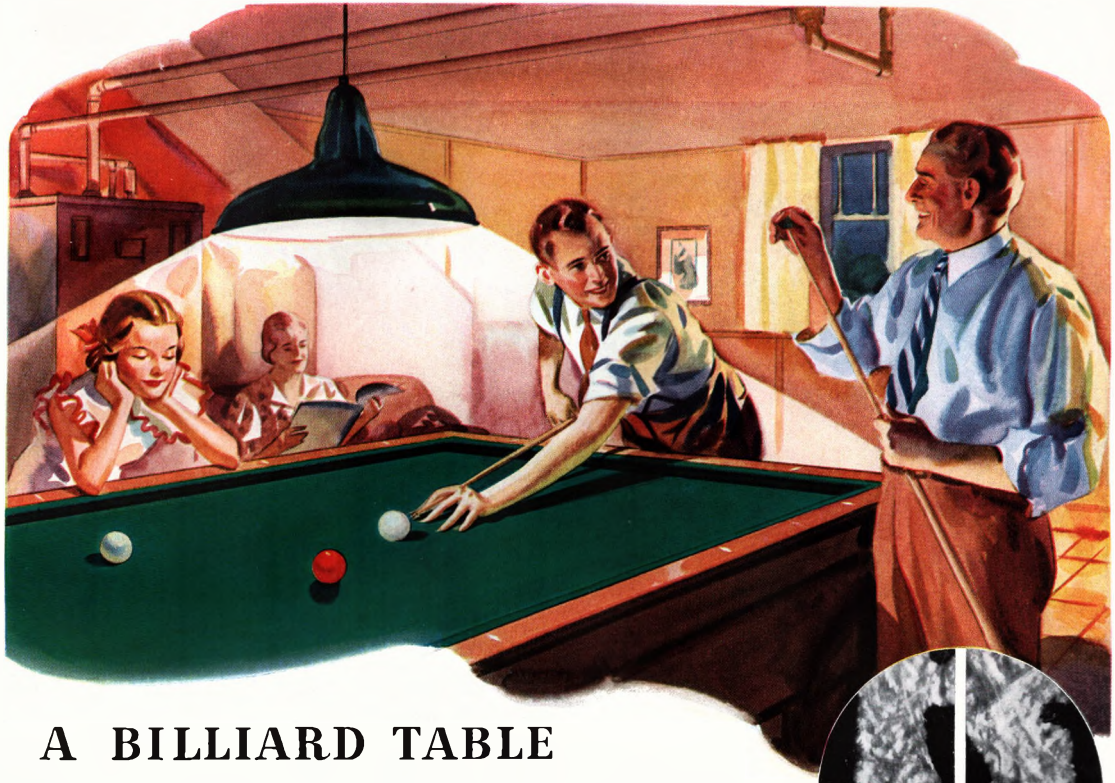
Balance of the issue is filled by one or two original articles plus the short stuff—fillers, crisp quotations, one- or two-page compilations of related paragraphs dug up from all conceivable sources on assigned topics. A

[*Continued on page 131*]

READER'S DIGEST CIRCULATION

At the end of 1922, its first year, *Reader's Digest* had 7,000 subscribers. Accurate records are lacking for the years up to 1929, when the magazine was first sold on newsstands. Herewith the record from that time on, never before made public.

Year	*Subscriptions*	*Newsstands*	*Schools*	*Total*
1929	183,500	106,500		290,000
1930	266,300	102,900		369,200
1931	277,200	105,600		382,800
1932	260,500	112,800	27,800	401,100
1933	289,000	190,800	34,800	514,600
1934	463,800	321,200	67,200	852,200
1935	769,200	571,600	116,700	1,457,500
1936	1,115,700	536,100	120,600	1,801,400



A BILLIARD TABLE IS KIND TO YOUR EYES

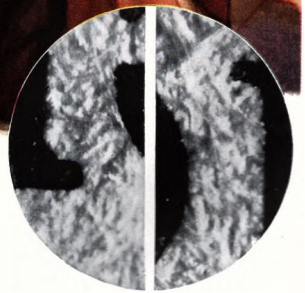
so is KLEERFECT and HYFECT

PLAYING BILLIARDS for hours, under the direct light of a powerful bulb, may be less tiring to eyes than glancing through a magazine under the illumination of an ordinary reading lamp. For specialists say: "It matters little how intensely an object is illuminated if there is no reflection back into the eyes." Billiard tables are covered with a special cloth whose surface absorbs reflections and kills glare . . . while some printed pages are like tiny mirrors reflecting the rays of light.

Scientific research has led to one of the most important modern developments in paper making . . . the discovery of the shade of white and a new printing surface which kills glare and makes reading easier on the eyes.

This combination of a neutral shade of white and non-glaring surface for printing papers, now obtainable in Kleerfect and Hyfect, has not only demonstrated that it is easy on readers' eyes but also unusually easy on printing budgets. Because although Kleerfect and Hyfect sell at low-cost book paper prices, they produce printing results which in the past were only possible on expensive papers.

Every buyer of printing should find out how Kleerfect and Hyfect can add to the readability of catalogs, mailing pieces and magazines. Write our advertising office in Chicago for samples. And, to learn how much these papers can save on your present printing costs get an actual estimate from your own printer.



BOTH SIDES ALIKE IN KLEERFECT AND HYFECT

Two-sided papers, with a notable difference in printing surfaces between the wire and felt side, have long been a bugaboo to printers. These microphotographs of the two sides of Kleerfect and Hyfect show that for practical purposes both sides are alike . . . making possible perfect printing results heretofore impossible except with the most expensive paper stocks.

This advertisement is NOT printed on either Kleerfect or Hyfect.

KIMBERLY-CLARK CORPORATION

ESTABLISHED 1872

NEENAH, WISCONSIN

CHICAGO · 8 SOUTH MICHIGAN AVENUE
NEW YORK · 122 EAST 42ND STREET
LOS ANGELES · 510 WEST SIXTH STREET

Kleerfect — THE PERFECT PRINTING PAPER

kind to your eyes

Hyfect — ALL-PURPOSE BOOK PAPER

NEW YORK LIFE INSURANCE COMPANY

New York Life Insurance Company's reproduction of the painting by John Neagle, through the courtesy of The Pennsylvania Academy of Fine Arts

"THE FORGE"

When you were a child, did you ever watch the mighty blacksmith at his forge? What a fascinating sight it was!

As he forged the glowing metal into a horseshoe or the rim of a wagon wheel, so also can you forge a strong financial safeguard for the future.

To "carry on," you will want an income for your retirement with protection in the meantime for your family . . . guaranteed by a strong, old, well-managed company like the New York Life.

For this purpose consider our new Annuity Endowment. It is issued in income units of $10-a-month. A good plan is to start one or more units from time to time until you have accumulated what you think you should have for your retirement . . . $100, $200, $300 a month, or more.

To illustrate: An insurable young man at age 25 starts one unit. His premium is about $30 a year for an income of $120 a year, payable $10-a-month, beginning at age 65 and guaranteed for life. He has the option of a smaller income at certain ages before 65. Later, as he can, he adds other units. If he died at any time before the income began, the Company would pay at least $1,000 per unit. Dividends could be used to reduce premium payments or to increase the retirement income and the insurance protection.

Remember, the sooner you start, the lower your premiums will be. Ask a New York Life representative for details based on your present age . . . Or write for our booklet, "Retire with a Life Income," to 51 Madison Avenue, New York, N. Y.

To Our Policyholders and the Public:

As the roaring fire and heavy hammer-blows test the strength of iron and its quality, so too the well-managed life insurance company is proven in the fires of economic experience.

New York Life has met test after test through all the years since it was founded in 1845 . . . the Civil and World Wars, plagues and pestilences, panics and depressions. Steadfastly, this mutual company has fulfilled every obligation it assumed. For New York Life policyholders it provides a strong financial safeguard for the future.

Thos. A. Buckner
President

The* NEW YORK LIFE . . . *A Mutual Company founded 91 years ago on April 12, 1845

SAFETY IS ALWAYS THE FIRST CONSIDERATION . . . NOTHING ELSE IS SO IMPORTANT

file of ideas is kept constantly alive by the excerpts editor, and most of the time of the Cleveland and New York researchers is devoted to digging up bits on telephone service, curious beauty-shop tricks, good deeds by private citizens, etc.—items that someday, a month or a year hence, may make up a page feature. A regular department entitled "Toward a More Picturesque Speech" presents witty figures contributed by readers at $3 for each one printed. An average of 15,000 quotations a week arrive, mostly quoted from current best sellers. Hardly a day goes by without someone's submitting Hervey Allen's "His face was as yellow and undecided as an omelette" (*Anthony Adverse*). But the record high is a bit from a *Collier's* story by George Brooks: "The clock hands were closing like scissors blades on midnight, snipping off another day." Exactly 302 readers sent that one in.

Such enthusiasm on the part of *Reader's Digest* readers is by no means exceptional; for *Digest* readers are not only numerous, they are devoted. They read it in bed, at meals, in schools, in taxicabs; while ironing clothes, while milking cows, while flying mail planes, while running traveling cranes. They have been known to change the color of their bathroom towels and soap each month to match the current *Digest* cover; and to be inoculated with solutions of the paper stock to overcome an allergy that caused violent sneezing. They rush out and buy the books condensed in the book supplement in such numbers that one book, Dorothea Brande's *Wake Up And Live*, was kited into the best-seller class a week after *Digest* printed it. They sent in 43,800 manuscripts in a contest for articles by amateur writers—articles of such quality that *Reader's Digest* awarded ten $1,000 prizes instead of the promised five and bought four others at $500 each. One contest article, printed by *Digest*, told about Covermark, a substance invented by one Lydia O'Leary to conceal disfiguring birthmarks such as the inventor herself had suffered. As a result of the article Lydia O'Leary, Inc., in Manhattan received 17,500 inquiries of which 350 arrived by air mail, 350 special delivery, 140 by telegram.

CONFRONTED by that sort of reader response, an advertising man goes into spasms of excitement—but to no purpose so far as *Reader's Digest* is concerned. The Wallaces simply don't want advertising in the magazine. They committed themselves at the start to get along without it and have resisted whopping inducements to change their mind. It is evident that *Reader's Digest* does quite nicely without advertising, as witness last year's revenue of $2,178,000.

A great many factors combine to produce that revenue, a highly important one being Business Manager Griffiths, who last autumn mailed promotion pieces to a list of 1,500,000, followed it with a 2,000,000 mailing last spring. Between times he continually canvasses the subscribers for lists of friends as prospects, and these are the most productive lists of all. Another circulation getter was the now famous article "— And Sudden Death," the spine chiller about automobile butchery, which kited *Digest's* newsstand sales and, more than a year after publication, is still being reprinted. Finally there is the fact that *Reader's Digest* has tapped a new public of nonfiction readers, and that a vast number of people who once loudly resented the idea of having their reading selected for them now consider *Reader's Digest* indispensable.

With such a following, and with the editorial wits to serve that following, *Reader's Digest's* position is snug. There are editors who consider it a competitive menace, taking 1,800,000 twenty-five-cent pieces out of the market every month, and who are not convinced that their own sales are helped much by the publicity of credit lines in the *Digest*. (To appease them Editor Wallace agreed to introduce a new *Digest* feature in November, a check list recommending certain articles in *current* magazines.) But while the editors may grumble, they probably will do nothing drastic—and for several reasons. First, they are not absolutely *sure* that *Digest* is a menace. They have their troubles, and many of them undergo recurrent overhauls in an effort to get out of the circulation doldrums. Last month, for example, *Scribner's* appeared in a new dress, and *American Mercury* altered its size to that of *Reader's Digest* and cut its price in half to twenty-five cents. But there is only the merest supposition—and no yardstick to prove—that they or any other magazines would be better off if the *Digest* did not appear with reprints every month. Second, to some magazines the steadily mounting contract payments by *Reader's Digest*, and the donation of original articles, are decidedly attractive. Third, the contracts all expire at different times, and no magazine feels like dropping out all by itself. Fourth, most publishers genuinely like Editor Wallace, enjoy doing business with him, and find it easy to listen to reason. Fifth—and possibly most important—at this point the publishing world would have more to lose than to gain by undercutting the *Digest*. For the *Digest's* practice of creating original articles, first undertaken in self-justification, has proved an anchor to windward—and more. If reprint rights were withdrawn, Editor Wallace could produce a first-rate magazine of original articles, plus book condensations and bright fillers, and become a dangerous competitor in the full sense of the word.

DEWITT WALLACE could make a lot more money than he does out of his magazine and people are constantly trying to show him how. They are appalled by the salaries he pays. A clue to which may be found in SEC figures for 1934, which showed that Business Manager Griffiths, like Managing Editor Payne, received $102,467, Ralph Henderson $32,567, Harold Lynch $20,750. Editor Wallace paid himself only $30,000 and Mrs. Wallace $12,000. But as sole stockholders the Wallaces collected dividends of $145,000. (Last year's earnings upped those dividends to $200,000.)

Editor Wallace might dispute the assertion that the editorial services required could not possibly be worth such big money; but he would certainly agree that his payments are high out of all proportion to most other magazine salaries. He explains it much as he explains his voluntarily high payments to magazines for reprint rights and his practice of sending checks to authors of reprinted pieces even when not obligated by contract. During *Reader's Digest's* few lean years salaries were necessarily low—perhaps $250 a month, and magazines were paid little or nothing. The present fat payments are by way of reimbursement for early sacrifices and reward for a helping hand. The spirit behind Mr. Wallace's generosity is that of profit sharing. That and an apparent distaste for accumulating more money than he can use to intelligent purpose. In all likelihood he is more than once a millionaire.

The old-timers naturally fare most fatly, but lesser employees are paid well, raised often enough, and plump Christmas bonuses extend down to the $65-a-month girl clerks in the circulation offices. Also Mr. Wallace has long talked about a plan by which the senior editors may begin a partial retirement by taking short monthly holidays and longer vacations instead of working full steam until age overtakes them. The editors thought it a fine plan, and Mr. Wallace started it off last year by having Ken Payne stay out of the office for one week after putting the issue to press. Mr. Payne tried it but found himself so deeply swamped for the next three weeks that he stayed on the job after that and nobody has tried to retire since.

SITTING securely as he is, DeWitt Wallace might be forgiven a touch of complacency. He has none. Naturally he and his wife live well. They have a Japanese butler named Yama, a Russian wolfhound named Sorvin who has a habit of running away and roaming the streets of Pleasantville until spied and reported by some villager. They entertain sparingly (taking no part in the community life of Pleasantville), occasionally drive to Manhattan for an evening at theatre or night club. They travel abroad almost every year (on one trip to Spain Mr. Wallace became involved by mail and cable in a week-long poker game with the boys at home). He plays erratic golf at the Lawrence Farms Club and he would have owned an airplane if he hadn't flunked the pilot test because of eyesight.

But Editor Wallace sweats and worries as hard as ever over his magazine. As if success frightened him, he refuses to give in to it, refuses to accept the fact that he is holding a pat hand with four aces. Some consider his shy, worried manner simply smart poker. But in all likelihood DeWitt Wallace actually keeps his fingers crossed.

Reader's Digest

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new Victoria College. In 1908 when he was thirty-seven he came to New York to teach mathematical physics at Columbia. Richard Cockburn Maclaurin didn't know a soul there when he landed. But his first Sunday night in the country he spent at supper with George Wendell of Stevens Tech, who, as an Institute alumnus and an Institute ex-professor, well knew the Institute's need for a President. It burst on Wendell that this was the man, and within six weeks of his arrival Dr. Maclaurin was being actively discussed for the job. The discussions ended nine months later with his election. Within three years this young outlander had found for the Institute its most spectacular source of wealth. Within seven years he had triumphantly installed it in its new $12,000,000 home on the Charles. Within ten years he had for the first time secured for it an endowment of the dimensions that its place in the world demanded. Within eleven years he was dead.

Before he came to the Institute Dr. Maclaurin had never raised a penny for so much as a church festival. Now it became apparent that raising money would be his principal job, would come well ahead of any such luxuries as mapping new educational and research programs. The Institute wanted to begin life all over again on a new site, and ever since, as President-elect, Dr. Maclaurin had taken tea with Charles A. Stone and seen from his window the mud flats in Cambridge across the Charles he had been fired with the idea of creating a center of science and education out of that unlovely spot. His first year was dreary; some alumni grumbled that the new President would never come to much. But before his second year was over, Dr. Maclaurin scored his first success: Coleman du Pont offered the Institute $500,000 provided "the alumni or others interested in the institution" would raise an additional $1,500,000.

Then, early in 1912, there came to Dr. Maclaurin a portentous letter from an alumnus. Frank W. Lovejoy, of the class of '94, General Manager of Eastman Kodak Co., wrote to say that Mr. George Eastman was interested in the Institute's work and problems and might feel like contributing something toward them. In the words of Dr. Maclaurin's biographer,* "Dr. Maclaurin lost no time in following up this suggestion"—and the two men met for the first time in New York City on a March night in 1912.

George Eastman had been interested in the Institute for a decade or so. In 1890 he had hired for his Eastman Co. a young mechanical engineer, Darragh de Lancey, of that year's class. So impressed was Mr. Eastman with de Lancey's abilities, native and acquired, that he had reached out more and more for Institute men to surround him. But never until this meeting with Dr. Maclaurin had Mr. Eastman given evidence that his interest in the Institute might go beyond that.

To George Eastman, at the old Hotel Belmont, Dr. Maclaurin talked that evening of the Institute's need for a complete new physical plant. Mr. Eastman listened, with no particular emotional show. Finally, in his strained voice, he uttered a five-word sentence.

"What sum will be needed?"

Dr. Maclaurin, surprised at so concrete a question, did a rapid bit of mental arithmetic and said, well about two and a half million dollars. Whereupon Mr. Eastman expanded into a six-word sentence and said:

"I will send you a check."

The Institute's dumfounded President somehow shook Mr. Eastman's hand, somehow agreed that a total anonymity should eclipse the donor, and somehow found his way to the midnight train for Boston, on which he spent a night of unrelieved sleeplessness. Not only had he made an incredible haul; he had established a friendship that was to bring the Institute $20,500,000 before the day in 1932 that George Eastman died by his own hand.

Then it was that "the mysterious Mr. Smith" began to make newspaper headlines for the Institute all over the country. Dr. Maclaurin announced the Eastman benefactions under that alias, and under it they steadily continued. Finally a gift of $4,000,000 strained the anonymity further than it could go: to give the Institute that much money Mr. Eastman would have to sign stock-transfer certificates that would reveal his identity. So a great dinner was planned for the Institute's alumni, at which they would hear Dr. Maclaurin announce the latest benefaction and reveal the identity of Mr. Smith.

There were some 1,100 alumni at this dinner, biggest out-turning in the Institute's history since the time of its move to Cambridge. There was, in fact, only one conspicuous absence, and that was at the speaker's table. Dr. Maclaurin had caught cold on a trip to New York and was in bed—meanly robbed of his triumphal moment. Professor William T. Sedgwick read his speech for him, and at the last moment the veils were torn away by General Coleman du Pont, presiding, and it was revealed that Mr. Smith was George Eastman. The alumni cheered and cheered, but over at the President's House, not a hundred steps away, there went out a call for two specialists and an oxygen tank. They did not avail, and five days later, on January 15, 1920, Dr. Maclaurin lay dead of pneumonia.

*Henry Greenleaf Pearson, *head of the Institute's Department of English and History. His work, not yet completed, will be first published in 1937.*

M. I. T.

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THE tragedy of Dr. Maclaurin's death in the midst of his triumph marked the beginning of ten of the leanest years in the Institute's life. For a while it was governed by an Administrative Committee made up of three department heads. But, as was remarked at the time, the divinity that doth hedge a committee is not so much, and the Institute breathed more freely when Dr. Ernest Fox Nichols, a former President of Dartmouth and Dr. Maclaurin's old friend on the Columbia physics faculty, was chosen his successor. But Dr. Nichols came close to dying of heart failure in the very middle of his inaugural and never functioned as the Institute's President. The Administrative Committee went into action for another unhappy period until, in January, 1923, Dr. Samuel Wesley Stratton came from the U.S. Bureau of Standards (which he had created at the turn of the century) to take the presidency. His term lasted for seven years, but he was sixty-one when he came, and his attempts to create a new career for himself at that age made neither himself nor the Institute happy. He was a gifted scholar of engineering but he was inexperienced as an educator, too shy to be a competent public speaker. He did not have enough physical strength or administrative deftness to put many of his ideas in effect. The faculty split into a dozen cliques, and the Institute stood still.

Finally in 1930 the break came. The Institute bumped Dr. Stratton upstairs as "Chairman of the Corporation." (The Institute's Corporation neither needed nor wanted a Chairman, and when Dr. Stratton died in 1931 his office died with him.) For President it had found a young man—he was forty-two—who created in it the same sort of excitement that Dr. Maclaurin had created twenty-one years before. He was Karl Taylor Compton, who was Cyrus Fogg Brackett Professor of Physics at Princeton and head of the department. And if he was a shade less well known in the newspapers than his younger brother, Arthur Holly Compton of the University of Chicago, who had been awarded the Nobel Prize in physics in 1927, he was no less distinguished a scientist on that account.

Dr. Compton can sit in his big, walnut-paneled office today, with a portrait (good) of George Eastman behind him, a portrait (bad) of Dr. Maclaurin on his left, and reflect, if he likes, that the prestige and morale of the Institute are today breaking new highs—and that since they were both settling toward new lows when he came along six years ago, the presumption is pretty strong that he had something to do with the reversal. At forty-nine his hair is gray; if it were not you would probably take him to be somewhere in the middle thirties. His eyes are a mild blue and a bit heavy-lidded, but otherwise his features are so regular that they draw forth no characterization whatever. If you saw him, broad-shouldered but of average height and weight, swinging down the street in one of his well-tailored blue suits you would be more inclined to think of him as a good insurance risk than as the distinguished scientist he is. No demon's light is in his eye, no suppressed excitement quivers in his voice. His speech is not slow but it is measured and regular, and he is fond of the word "data." He has natural warmth but he can turn it off if he has to—although his reasonableness never deserts him, nor his patience either. Despite twenty years of research into the higher reaches of mathematical physics he knows the simple arithmetic of balance sheets and the simple reactions of psychology. He can handle people under stress; in the words of one colleague: "He's awful good at drawing teeth." And said another: "When I talk to Compton, I come closest to telling the truth." Anyone hunting for the final word to describe his characteristics would probably end up with the anticlimactic word *sanity*.

That being so, the Institute has in Dr. Compton its perfect President. For the Institute conceives of itself not only as a rigorous training school for science but also as a handmaiden of industry: equipped not only with courses but with an ideology for producing men whose combination of technical background and point of view will steer them toward the administration desks of high industrial affairs. This the Institute is currently accomplishing with an efficiency that has no flaw. You will not go far wrong in thinking of it as a starting motor for the country's industrial engine. Its interconnection is as close as that, and there is accordingly small cause for wonder that it takes more pride in the industrial progressiveness of its Mr. Alfred P. Sloan Jr. or its Mr. Gerard Swope than it does in the theoretical preachments of its Mr. Stuart Chase. Thorstein Veblen's books

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Can you RELAX?

PERHAPS, at this moment, you are frowning or hunching your shoulders, clenching your hands or holding your neck stiffly. Do you notice any physical strain? Now let the muscles go limp for just three minutes and notice how much "smoother" you feel.

When the muscles relax, the nerves to and from those muscles are relieved of tension and get much needed rest. If you are nervous and high-strung, the chances are that some of your muscles are tightened and are wasting your nervous energy.

In this high-speed age, "nervousness" is becoming more and more common. Too many people work, play, travel—even sleep—under tension. They pay little attention to fatigue until they near exhaustion.

You may not realize what a severe toll tightened nerves will take. Long continued high tension is often associated with high blood pressure, heart symptoms, intestinal disorders, insomnia or nervous irritability. One of the first signs of nerve tension is irritability, most likely to occur during the years when you strive with all your might to reach your goal.

Some persons can relax naturally, but for the majority it is an ability to be acquired only by practice. If you are one who cannot relax easily, try lying down regularly each day and train yourself in relaxing groups of muscles—those of the hand, arm, or face—until you can relax the entire body. When not called upon to work, every one of your muscles should be thoroughly relaxed.

Muscular and nervous tension can in many cases be overcome by a hobby or some healthful game, or by sufficient rest or massage. Warm baths may be helpful. But if, despite your best efforts, you are unable to relax, see your doctor. Most likely he will soon find the cause of your difficulty and start you on the road to better health.

Keep Healthy—Be Examined Regularly

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, Chairman of the Board ~ ONE MADISON AVENUE, NEW YORK, N. Y. ~ LEROY A. LINCOLN, *President*

M. I. T.

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are in its library, but Thorstein Veblen's name is seldom, if indeed at all, upon its professors' lips. And if Thorstein Veblen's ghost should pay a visit to the Institute it would discover that not one student in a hundred fundamentally gives a tinker's damn about anything that Thorstein Veblen ever wrote or what it stood for. The Institute exists to teach the facts of science and to enlarge the body of those facts by untiring research. It does not exist to upset the applecart. It is doing what its students, its faculty, its alumni, and the world it lives in want it to do—and never more so than under the sanity, reasonableness, and scientific brilliance of its present President.

THE efficiency of the Institute as an educational mechanism begins long before a new freshman reaches it. The Institute makes itself a hard place to get into. It isn't interested in pounding the laws of thermodynamics into your head by sitting down on the floor with you and playing at alphabet blocks. Nor is it interested in making it possible for you to call yourself an M. I. T. product if it doesn't like your looks. So this year the Institute has inaugurated a plan for the "stabilization" of enrollment. "Stabilization" means, for example, that out of some thousand freshman applicants this fall it is accepting no more than 575 or 600. If you were for two years in the upper fifth of your class in a school the Institute accredits, you *may* be able to get in without examination—the Institute keeps repeating that it wants to "admit on brains, not credits"; and if you are manifestly exceptional, it will cut all its red tape to let you in. Otherwise you take the College Board's or the Institute's own exams. But that doesn't necessarily get you by. For your school principal or headmaster must also recommend you; you must bring endorsements from two people of standing in your community; and you must write a little autobiographical essay explaining why you want to come to Tech. *Then* the Committee on Admissions looks you over, and if it decides that your character and intellect are both what they're cracked up to be, and that you show promise of development into what the catalogue calls a "useful and forceful" citizen, you become a freshman. But only then.

So the Institute culls its students. But the Institute does more: it hand-picks them also. Through its tight-knit alumni, through visits paid by its Dean of Students, its Admissions Officer, and others to some sixty cities in a year, the Institute hunts as actively for new talent as any Hollywood scout. But against this frank proselyting it would be hard to protest, for the Institute has no varsity football team, and the talent it seeks is just good brains to educate and send out into the world to add their luster to the Institute's name. Once again, however, these methods tend to confirm the school's conservatism—and if they notably heighten its academic standards they just as notably heighten its atmosphere of being a club that not everyone can join. To put it another way: the Institute is planning to breed its own thoroughbreds; it is less interested in thinking of the possible Mendelian advantages of cross-fertilization.

AT THE Institute you may study in any one of three Schools. The Architectural will give you three brands of architecture, differing in their admixtures of engineering or city planning. The School of Science will give you physics, chemistry, biology, public health, geology, even—if you want it—a course in the most abstract of pure mathematics. For all but one of these courses* (the exception is biology, in which the Institute does not rank as highly as it might) the School will put at your disposal some of the best brains and certainly the best equipment anywhere to be found. The School of Engineering will give you choices of study in any engineering variety you can think of: civil, mechanical, mining, metallurgical, electrical, chemical, electrochemical, sanitary, marine, aeronautical. If you cannot choose amid this richness you may solve your difficulties by electing a course in "general" engineering. And if you have an eye cocked at being more of an administrator than a technologist you may take a brisk and aggressive but less technically demanding course in business and engineering administration. Whatever you choose you may have the benefit of studying with a battery of 242 full, associate, or assistant professors; 93 instructors; 170 research associates and assistants; 24 lecturers—to a total faculty of 529.

TO TAKE a seventeen- or eighteen-year-old boy, innocent of anything but high-school chemistry, physics, and algebra, put him through a four-year mill, and turn him out making sense in a world full of entropy, thryatron tubes, three-stage turbines, indeterminate-stress problems, beta particles, line integrals, oscillographs, metadichlorobenzene, heat-transfer coefficients, and rupture moduli—that is no small chore. Particularly is it no small chore when (a) some employers are constantly complaining that the Institute's eighteen different formal courses and twenty-odd option combinations still don't give them graduates with enough specialization; and (b) the Institute graduate in after life mourns that the Institute didn't give him enough broadening nontechnical courses to make him able to appreciate the Good Life. But the Institute goes at the job undismayed. On the one hand, it is keeping up with technologies that are advancing faster every year. On the other hand, it is giving students more and better correlated courses in the humanities than they ever got before. By a deft job of educational balance it is plugging harder and harder at teaching the scientific fundamentals of engineering, resisting the outside demand for specialization in "sewage-disposal engineering" or the like, and at the same time, through a system of electives, seminars, honors groups, advanced standings, etc., maintaining a fine flexibility in the courses it offers to its upperclassmen. Much of this is made possible by the rigor of the Institute's admission policy; if you are going to accomplish anything with mediocre students you must strait-jacket them—but the more gifted can safely be helped to plan their studies tailor-made. The Institute sniffs at the technical art of pedagogy; it believes, in the words of Dr. Compton, that "the best teaching is in the atmosphere and by the example of creative effort."

No matter what you are studying at the Institute your freshman year will be identical with that of all your fellows except those in architecture. You will swiftly get a good dose of lectures and laboratory work in physics and chemistry; almost half of your time will be put on these subjects alone. The differential and integral calculus will become more or less apparent to you. Because the Institute feels that way about it, you will take a compulsory course in military science, but even if this idea appalls you, you will not mind long when you discover that Mil Science is one of a very few pipe courses and that the main thing you have to do to get a passing grade is to attend. Most of the rest of your time will be spent wrestling with drawing, descriptive geometry, and physical training—and also with your own language. The Institute has a crack English department under the guidance of Biographer Henry Greenleaf Pearson. Mostly, it is manned by Harvard graduates, and when Frank Aydelotte, now President of Swarthmore, was a professor in the department he devised some sophomore courses, the framework of which is still used, which with a high ingenuity teach such students as do not actively resist a good deal of literature and social and industrial history at the same time.

One curious fact about the teaching of English at the Institute is that most students resent the time they must spend on it but regret that it was not more after they have been graduated a few years. Another is that the English department, not the physics, chemistry, or any engineering department, is the habitat of the Institute's most consistently newsworthy professor. He is Robert Emmons Rogers, called Tubby, near whose knees young Technology men have sat for almost twenty-five years, and who is generally regarded as the most powerful leaven in the Institute's loaf. It was he who got international fame back in 1929 (next to the stock-market crash he was that year's biggest news) with his cynical advice to be a snob and marry the boss's daughter. He continues today to lecture to auditoriums filled with electrical and chemical and other engineers who have suddenly found an interest in the continental dramatists of the nineteenth century or in the great and gone littérateurs of New England. He affronts the Institute somewhat by writing a daily column for Mr. Hearst's Boston *American* and by having conducted, until recently, an open and unashamed friendship with Governor Curley. But the official Institute continues to be fond of him, even though he has, into the bargain, ruined more than one engineer by pointing the interests of the written word.

DURING sophomore year the students in different courses find their paths slowly diverging. All of them still get great jolts of physics and mathematics, still get English, still get military science. But into the bargain the mechanical engineer is having a great revelation in applied mechanics, the sanitary engineer is finding out a few fundamentals of biology, the science-course students are into analytical chemistry, and so on. By the third year every course in the Institute shows marked characteristics of its own, a requirement for a year's economics and a "general study" (the Institute offers forty-three such, ranging from The Bible as Literature to Biological Reproduction) being the only two unvarying elements. And when the fourth year comes the young scientist or engineer, if he is really serious, may have dedicated his life completely to a specialization, which may not, as we have seen, satisfy his first employer but which may nevertheless

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At the Institute a "course" is a four-year program of studies leading to a degree; what other institutions might call a course the Institute calls a "subject of instruction."

A BUTTON

A FINGER-TIP

AND THEIR NEW SIGNIFICANCE

Just a simple little push-button and the tip of a finger, but they signify the rounding-out of the most modern phase in elevator development. They are symbolical of Finger-Tip Control, offered by Otis to meet more perfectly every elevator need—freight or passenger. Better standards of service. Economy. New modernization possibilities.

Almost entirely automatic (usually but one human operation—the pressing of a button), Finger-Tip Control reduces the human element almost to the vanishing point. Which means that service does not vary with the ability of the operator. Result: A quality of service heretofore unknown in the majority of buildings. Economy, because the elevator does just what it should do without wasted effort.

The modernization possibilities are almost unlimited because Finger-Tip Control has been designed for *all types of buildings*, large and small, residence and office, industrial and commercial. Particularly important is the fact that this latest of elevator developments adapts Signal Control (master of the Finger-Tip Line) to moderate-speed machines. Now these installations may be modernized without the costly scrapping of a large part of the machinery, and smaller buildings may have the same type of service as their taller neighbors.

Finger-Tip Control gives a new tempo to vertical transportation. It is something that cannot be ignored by any one who has a building that must show a profit.

OTIS FINGER-TIP CONTROL
for every elevator service

call for a thesis on the subject of "Monochromatic Emissivities of Refractories" as its crowning glory.

Four years of satisfactory grades plus his thesis bring to the student his Bachelor of Science degree in whatever specialty he has elected. (Perversely, although its diploma is written in English, not in Latin, the Institute lists its graduates as S.B.'s.) If his sophomore work is not wholly satisfactory, the Institute may invoke the same "stabilization" mechanism that winnowed the freshman petitioners: the student may be "decoursed," or refused admission to the course of his choice on the ground that it is already filled with more desirable men. In that case the student may choose another, for which the quota is not filled—or in the hope that better work may later enable him to get back into the specialty of his first choice, he may, for not more than a year, assume "unclassified status." If he still does poorly, his course adviser, Registration Officer, the Dean's Office, and others will try to get at the heart of what is wrong with him; failing that, the student will soon be informed that he has "disqualified himself" and that he had better seek his education in some less exacting atmosphere. Every year some 170 men out of the Institute's 2,000 undergraduate enrollment are dropped for scholastic reasons.

But for the gifted student richer possibilities are open. We have spoken of the advanced standings and the honors groups. In 1934 the Institute went further and offered a five-year course for those who had the money and ambition to tackle it.* Essentially its idea is to spread the scientific and technical courses of the normal two upperclass years over three, making it possible for the undergraduate to fill up the chinks with more humanities and with rounder economics. The Institute's economics faculty cannot be called front rank, but the Institute has the acuteness to know that it has here an increasing challenge to meet—and, in the words of Economics Professor Freeman, "When an engineer gets off the track in economics, it's pretty bad." Eight new faculty members since 1930 now point the way to an improved department.

NOW curiously, despite their seemingly crushing scholastic loads, the Institute undergraduates have plenty of leisure time in which to drink beer, watch hockey games, sail on the Charles, "go out for activities," or neck their girls. The Institute has no football team; an occasional rahrah alumnus tries to pump up some interest in one, but the idea inevitably collapses, if only for the reason that the Institute curriculum must call for much laboratory work, and laboratory work takes too much time on the schedules. But it does have a crew. Back in 1924 the varsity beat Cornell, and the Institute went crazy. The 150-pound crew has occasionally cleaned up Yale, Harvard, Princeton. The Institute graduated an Olympic fencer in 1926 in the person of Joseph Louis Levis. Other than that the Institute pursues sport vigorously—50 per cent of the undergraduates indulge in some form of athletics—undiscouraged by its incessant defeats from highly coached teams. It has teams in sixteen intercollegiate sports, and thanks to its late alumnus, Endocrinologist Allan Winter Rowe, for years Secretary of the Advisory Committee on Athletics, it conducts its athletics with rigorous regard to amateurism. Since it has no reputation for prowess to lose, there is no alumnus to object. But the Institute sorely lacks a decent building for a gymnasium—Walker Memorial, the student center built by the alumni in 1917, was inadequate almost from the beginning—and it has a tremendous yen for a swimming pool, too.

This five-year course should not be confused with the five-year coöperative courses like those in chemical and electrical engineering. The essence of the coöperative course is to send the student out into industrial plants under Institute supervision, there to study the practices that he is also learning theoretically or on laboratory scale at the Institute.

M. I. T.

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The Institute's most recent sport manifestation is the sailing of dinghies on the Charles; the notion sprang from John Austin, president of last year's senior class and a sailing enthusiast. So swiftly did enthusiasm catch that Professor Erwin H. Schell, head of the Department of Business and Engineering Administration, rounded up $27,000, chiefly from the alumni; with that, the Institute put up a handsome sailing pavilion, complete with thirty-six dinghies made from plans for a one-design class drawn by Yacht Designer George Owen, professor in the Department of Naval Architecture. Sailing now rates as a major Institute activity. By such tokens it becomes evident that, in this scientific and technical institution, sport is conducted in the English tradition perhaps more completely than elsewhere in the collegiate United States.

Institute students take to the publishing business; they publish a twice-a-week newspaper, *The Tech*, a monthly undergraduate journal, *The Tech Engineering News*, which has three times running won the Yale Cup for the best engineering college magazine in the U.S. (There are over two dozen such magazines.) There is the *Voo Doo* comic monthly, and the yearbook, *Technique*.

Socially, the Institute undergraduates split into three fairly distinct groups. About 600 of the Institute's 2,000 undergraduates belong to the twenty-three chapters of national Greek letter fraternities (or the one local), which play an important part in student affairs and are regarded with enthusiasm by the faculty. Then there is the Dorms Crowd, mostly, but not wholly, made up of nonfraternity men, who live in buildings only a three-minute walk from the main buildings and who have a slight tendency toward Siwash prankishness, such as hoisting cows or automobiles to dormitory roofs and letting the Superintendent of Buildings and Power figure out how to get them down again.

Before the dormitories were built to their present capacity of over 400 students the Institute undergraduate body consisted, besides the handful of dormitory students, of the fraternity men, who were the campus big shots, living in chapter houses on Boston's Beacon Street or Bay State Road or Fenway across Harvard Bridge from the Institute, and an amorphous group that drifted dimly away from the Institute at night, to rooming houses or suburbs, returned next morning, clutching always a Boston brown bag. These latter were the no-accounts, except that their scholastic records were pretty good, and so contemptuous was the fraternity man's use of the term "brown bagger" that that useful piece of luggage was gradually forced off the campus. Today, with adequate dormitories, the social picture has changed. The augmented Dorms Crowd has discovered its political solidarity, and whereas it used to be that the fraternity man was almost always the success in student politics, the Dorms Crowd now comes closer to running campus politics than do the fraternities. And there has now arisen a third group—the commuters, whose families live in nearby suburbs, and whose 5:15 Club, composed alike of fraternity and nonfraternity men, occasionally wields a political balance of power. The only utterly lost group of students are the forty-odd coeds—most of them in science but some in engineering—who form a submerged 1/60 of the student population.

IT IS a queer fact, but there are plenty of statistics to back it up, that the greasy grind, slaving at his books, does not get as good marks at the Institute as the man who does a lot of extracurricular things as well. Last year, for example, the campus group with the highest average marks was made up of the officers of the M. I. T. Athletic Association. Men who study and put out *The Tech* twice a week or run student government do better in their classrooms than the men who just study.

The Institute officer who presides over these data, and presides also over the control of Institute order and discipline, is Dean of Students Harold Edward Lobdell. Short, plump, and given to the jovial wisecrack, Dean Lobdell is a product of the class of 1917 but does not hold the Institute's degree. The War got in the way of his last months of study, and never after he came back to it in 1919 as a full-time worker for its last big endowment drive was he able to find the time to take the last courses that would have stamped him a Bachelor of Science in architectural engineering. He became Assistant Dean in 1921, Dean in 1929. A classmate once began a public tribute to him by saying, "Whenever there's any work to be done, you'll always find Lobbie there—" then pausing fatefully, and ending up, "—*but somebody else is doing the work.*" This characterization has a grain of truth; the Institute's Dean manages to find himself in the midst of everything that goes on there even when he is not exhausting himself at it. He has an enormous political adeptness—too much, his detractors say—but he has devoted himself to the Institute's good with a fabulous zeal for close to twenty years. He administers his department with even more efficiency than characterizes the Institute at large. If he has to, he can put on a good cavalry-captain job of scaring the pants off freshmen, but in general his discipline is not the bone-crushing type. For the Institute has student government (not, however, one that undertakes to administer such muzzy affairs as an honor system), and in the undergraduate Institute Committee there exists a self-disciplinary mechanism that can go into action whenever there is need. The Dorms Crowd runs its own show too and can deal with its affairs as it pleases—except those concerning (the Dean's words) "liquor, women, and fire hoses." This limitation of jurisdiction is by its own request.

THE Institute was founded as an undergraduate institution. Such an institution it remains and plans to remain for all its foreseeable future. It does not see itself becoming, like a medical school, someplace you can enter only after an undergraduate career elsewhere. However, it has long taken

[*Continued on page 138*]

LEARN FROM A COTTON MILL ABOUT IRON FIREMAN FIRING

No other fuel
No other firing method } *Can equal Iron Fireman PERFORMANCE and ECONOMY*

• Every day scores of men learn how to cut fuel bills and, at the same time, get a better job of heating or power firing. It happened yesterday. It is happening today. Tomorrow it will happen again. *Sometime it will happen to you.*

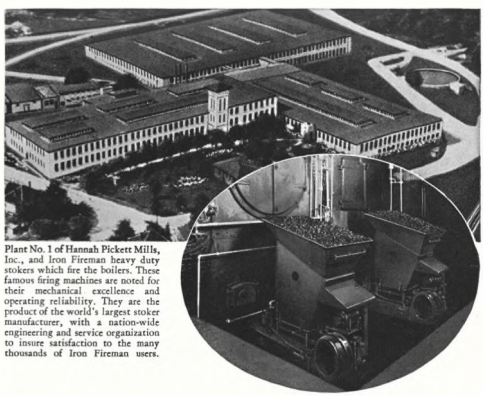
How soon will you learn what an Iron Fireman automatic coal burner can do for you in your residence, in your business, in any furnace or boiler for which you buy fuel?

Here's a case—Hannah Pickett Cotton Mills at Rockingham, North Carolina, which turns 20,000 bales of cotton into fabric each year. Here Iron Fireman automatic coal firing is cutting fuel costs 43.7%, an annual estimated saving of $3,148.19. It increased boiler efficiency 63%. See the test figures below.

SUMMARY DATA OF TESTS
Hannah Pickett Mill No. 1, Rockingham, N. C.

Method of Firing	Hand-fired	Iron Fireman
Date of tests	June 24/35	Oct. 10/35
H.R.T. Boilers No. 2 and 3	150 h.p.	150 h.p.
Coal, Clinchfield, B.t.u.	14,500	14,500
Duration of Tests	9 hours	8 hours
Pressures and Temperatures		
Average steam pressure	90 lbs.	110 lbs.
Draft over fire inches	.35	.20
Draft in uptake	.45	.23
Temperature in uptake	600°F.	400°F.
Water and Coal		
Average temperature feed water	120°F.	150°F.
Weight of water per gallon	8.25 lbs.	8.20 lbs.
Factor of Evaporation	1.133	1.105
Average gallons water per hour	214 gals.	730 gals.
Average pounds of coal per hour	332 lbs.	608 lbs.
Pounds of water evaporated per pound coal burned	6.57 lbs.	10.8 lbs.
Overall boiler efficiency	44%	63%
Average boiler h.p. developed	63 h.p.	191 h.p.
Maximum boiler h.p. developed	93 h.p.	240 h.p.
Cost per 1000 lbs. steam	40.7c	22.9c
Cost coal per ton	$5.35	$4.95
Previous annual coal consumption 1346 tons—1346 tons x 13,140 lbs. evap. equal 17,686,440 lbs. coal		$7,198.38
Present coal annual evaporation load 17,686,440 lbs. will be 17,686,440 x 22.9c equals		4,050.19
Annual fuel saving as per past 12 months, 43.7%		$3,148.19

And the Pickett case is not exceptional—it is only typical. The explanation is as simple as A B C: Coal is America's permanent fuel supply. It is by far the cheapest source of heat units in almost every locality. Rarely can any other fuel compete with coal, even when the coal is hand-fired. But when coal is fired by Iron Fireman, no other firing method can compare in performance or economy. The savings and betterments total to amazing proportions.



Plant No. 1 of Hannah Pickett Mills, Inc., and Iron Fireman heavy duty stokers which fire the boilers. These famous firing machines are noted for their mechanical excellence and operating reliability. They are the product of the world's largest stoker manufacturer, with a nation-wide engineering and service organization to insure satisfaction to the many thousands of Iron Fireman users.

Some day you will learn what these savings and betterments can mean to you.

FREE FIRING SURVEY

Any Iron Fireman engineer or authorized dealer is equipped to make a free survey and report showing your present fuel costs and results as compared with what they would be with Iron Fireman firing, and to estimate the cost of the change-over and the convenient terms on which Iron Fireman equipment may be purchased. Ask the nearest dealer, or write to 3100 W. 106th Street, Cleveland, Ohio. Iron Fireman Manufacturing Company, Portland, Oregon; Cleveland, Ohio; Toronto, Canada. Dealers everywhere.

IRON FIREMAN AUTOMATIC COAL BURNER

FOR COMMERCIAL HEATING • POWER • RESIDENTIAL HEATING

THE MACHINE THAT MADE COAL AN AUTOMATIC FUEL

M. I. T.

[*Continued from page 136*]

in a scattering of transfers from other colleges, and although the number was temporarily checked by the depression, it is again on the increase. Last year 170 men transferred to the Institute: some 9 per cent of the undergraduate body and enough to modify the provincialism of the New England undergraduate. About seventy-five are expected this year in the freshman class alone. Some of the transfers have sandwiched in one or two years at another technical school as an easier incline into the stiff schedules of the Institute; but most of them have prefaced their technological training with some liberal-arts study, in recognition that the alumnus of a technical school is likely to be a lopsided product whose scientific fundamentals may be unimpeachable but whose approach to the arts and humanities may be a trifle gawky. The increasing proportion of students with some liberal-arts background is welcomed by M. I. T. In fact this year sees the inauguration of a cooperative agreement with a few liberal-arts colleges under which, in five years—three spent at the former and two at the Institute—a student will receive a bachelor's degree from the arts college and from the Institute simultaneously. Add to this element the Graduate School, whose 550 members nearly equal the freshman class in size and whose enrollment seems to be following the general upswing, and it becomes apparent that the trend of the Institute is toward the maturer student.

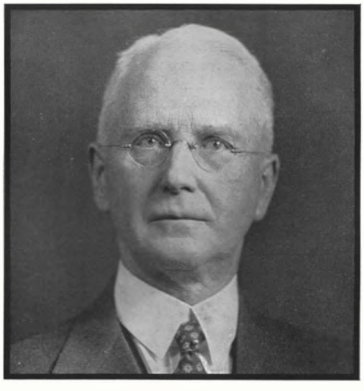
One of the soundest moves the Institute ever made came in 1932 with the organization of its large floating population of graduate students inside the boundaries of a definite Graduate School. Even before this time the Institute had granted about one-third of all the advanced engineering degrees held throughout the country; in fields like chemical or aeronautical engineering, where it had an unusual preeminence, it had granted about half. When the Institute set up its separate Graduate School it made itself even more of a mecca for advanced engineering education. The Graduate School (Harry M. Goodwin, professor of electrochemistry and physics, is its Dean) benefits the Institute's teaching and research alike. Teachingwise, the graduate forms a link of much importance between professor and undergraduate; frequently he holds an assistantship; and in an experimental laboratory it may sometimes be hard to distinguish as between faculty member, graduate, and undergraduate, who is teaching and who is being taught. Researchwise, it is the combination of faculty and graduate students that makes it possible for the Institute to carry on research on some 400 fronts at once. About a quarter of the group are holders of the Institute's own diploma; the rest come from almost 200 other universities and technical schools, distributed among forty states and fifteen foreign countries. Organization of the graduate dormitory units has given the graduate group social entity and a place in Institute life, in which a cosmopolitan atmosphere is a recognizable challenge to the scientific myopia of the local undergraduate. If the Tech undergraduate ever does get really interested in political, social, and economic affairs in his own right, it may well be the influence of the graduate student that will bring the miracle about.

Back in 1934 the American Council of Education made a study of graduate-school instruction, rating the work institutions were doing in thirty-five fields of knowledge as either "distinguished" or "satisfactory." The Institute offers instruction in eleven of these thirty-five fields. In ten of them its Graduate School was found distinguished; in the eleventh—biology—merely satisfactory. But that gave the Institute a higher ratio of distinguished marks to courses offered than any other institution studied. And it also made the Institute one of five U.S. schools where all graduate fields of study offered were either distinguished or satisfactory. The others: Princeton, Chicago, Harvard, Cal Tech.

THE fees that the Institute charges for its elaborate services are high: tuition is $500 a year, and even that does not come more than halfway toward meeting the out-of-pocket expenses it pays out in schooling one student for one year. But the Institute's high fee goes hand in hand with a combined scholarship and loan system so widespread and so successful in operation that M. I. T. approximates a kind of financial perpetual-motion machine supplying to a substantial proportion of its students a substantial proportion of the tuition fees upon which it relies for a substantial proportion of its operating expenses. And in the case of the Loan Fund, it is on the threshold of making money at it.

Up to 1930 the Institute depended upon scholarship awards to give financial aid to students, and these were necessarily associated with need as much as with merit. Six years ago, when the tuition had just been raised and the depression was closing in, Gerard Swope insisted that some way must be found to prevent good students from being stemmed off by high tuition. In thirty days he had collected (from seventeen alumni and George Eastman) $500,000, the nucleus of the Loan Fund, which has since been almost tripled. The Loan Fund takes care of the needs of students past the first year,* and scholarships are now restored to their first intent: primarily a recognition of merit.

**Students also help themselves. Six hundred and sixty-three last year earned $17,000.*



DEAN OF THE GRADUATE SCHOOL

Senior in age and rank is Dr. Harry M. Goodwin, Institute faculty member since 1890.

The Loan Fund Committee will lend up to $500 a year (full tuition) to students who, it is convinced, are needy *and* bright, and the student in return need only guarantee to pay his loan back at a minimum average rate of $100 a year as soon as he graduates—plus a 2 per cent interest. The plan has been going for six years, has lent over $900,000, and has only $14,000 worth of currently outstanding loans in default. Interest payments on the good loans wipe that out four times over. It works like this: the Loan Fund has this year paid in capital amounting to $1,500,000. Of this total the Institute has used approximately one-half during the last six years, but in continually reduced amounts—last year only $27,000. Payments on maturing principal of loans, interest, and extraordinarily large advance payments (when only a $50 installment was due men have been known to pay back from $300 to $1,000 in one chunk) will produce enough for the $110,000 in loans this year without drawing on any of the Loan Fund's capital account.

THAT is only one indication, and a small one, of the Institute's management of its own business affairs. With alumni like the Messrs. Swope, Sloan, Hayden, Hart, Stockton, and the late Everett Morss (Treasurer of the Institute for twelve years until his death in 1933) watching over it, you would expect that management to be astute—and it is. In Horace S. Ford (Bursar from 1914 to 1934, and thereafter Mr. Morss's successor as Treasurer) the Institute has as smart a financial officer as you will find on any campus anywhere. His is far from the undivided credit, of course, but the fact remains that currently the market value of the Institute's investments is 116 per cent of their book value—and that even in the worst of 1932 the figure never dropped below 65 per cent. This year 41 per cent of the Institute's endowment was made up of common stocks.

The Institute faculty went through the depression without a salary cut. When depression struck, the Institute took 10 per cent off all salaries and with that set up a salary reserve fund that it could spend for obligatory expenses if it could find the money nowhere else. But it always found it somewhere else and each year returned the 10 per cent. Yet without cutting a salary it trimmed $400,000 off its annual running expenses. Today expenses of running the plant and of administration are each about $300,000 a year; faculty salaries are not far short of $1,500,000. Full professors draw from $4,000 to $10,000 a year. The Institute shies from revealing Dr. Compton's salary—but $20,000 a year was the most frequent guess for the salary that Presidents Maclaurin and Stratton used to receive.

NOW part of the Institute's smooth philosophy of life is that since it has cost the Institute and the student a considerable sacrifice in money and other considerations to get him educated, he ought to be able to put that education to immediate practical use. Harvard may graduate Doctors of Music with a blithe disregard of whether they end up in a symphony hall or a flophouse, but the Institute takes a different view. For one thing, there is, of course, no such thing as an economic "demand" for the Mus.Doc., but there is an economic demand, ponderable and palpable, for

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Machines have huddles too

Wherever progress depends on teamwork, everyone concerned must know the plan of action. This, of course, is the purpose of the "huddle" in football. Who is to do what, where, when and how is revealed in the huddle so each may do his long planned, much practiced part.

This may not have occurred to you before, but factory men and the machines they operate must also have their "huddles." They do it in the twinkling of an eye through the medium of Motor Control. Simply pressing a button may put one or a dozen motors through a series of operations it took months to plan and develop.

This is why Motor Control is so important to profit-winning performance in Industry. Good control . . . Cutler-Hammer Motor Control . . . transmits instructions to machines in a split-second, clearly, correctly, definitely. No fumbles, no losses, no waste. You will find most alert executives insist on genuine Cutler-Hammer Motor Control, that machinery builders feature it, that a host of independent electrical wholesalers stock it exclusively. CUTLER-HAMMER, Inc., *Pioneer Manufacturers of Electric Control Apparatus*, 1320 St. Paul Ave., Milwaukee, Wisconsin.

C-H

CUTLER-HAMMER MOTOR CONTROL

What Is Motor Control?

Motor Control has no one form. Whether it is a little device like the cold control on your household refrigerator or an entire balcony of panels as in the steel mills, it starts, stops, regulates and protects motors to save time, trouble and expense. The name Cutler-Hammer is its greatest guarantee

PHOTOGRAPH BY STEPHEN J. HEISER

young scientists and engineers. Every year large corporations—Standard Oil of New Jersey, let's say, General Electric, du Pont, Eastman Kodak, and so on—send to the campuses their ivory hunters to seek out promising young talent. Particularly they come to the Institute—over 200 came last spring—whose bachelor's degree most of them value as they value a master's degree elsewhere. And when they come, the Institute is ready for them. Its own Placement Bureau has talked to the boy about what he wants to do. His professors have filed a report with the bureau on him, answering some twenty questions for the bureau about his mentality, character, performance. The Dean's Office has reported his scholastic standing and the degree to which he has gone in for "activities"—the ivory hunter sets much store by these. A Placement Training Committee has delivered to the senior class five lectures on industrial opportunities and how to apply for a job. As a result of all this, genial John Major Nalle, the Institute's Placement Officer, can show you that even in the miserable year 1933, 60 per cent of the Institute's graduating class had jobs by commencement day, and 88 per cent of the 1936 class were employed by October 1. Of the sixty-three unemployed men twelve are graduates of civil engineering or architecture, professions paralyzed by the depression and still far from recovered; eight are graduates of biology or mathematics, in which prospects are somewhat limited. Quickest employables currently are the chemical engineers; with the prestige behind them of what is undoubtedly the Institute's strongest engineering course and with highly active industries ahead of them, many may have jobs in their pockets before they are half through their senior year. Mechanical engineers and metallurgists come next. But in general, through the depression, Institute graduates, whether current or past, pretty well keep on getting jobs and holding them, and with business recovery it may not be long before the Institute can revive a past boast in the present tense: "Previous to 1930, practically every man who successfully completed his work at the Institute found an opening almost without effort on his part."

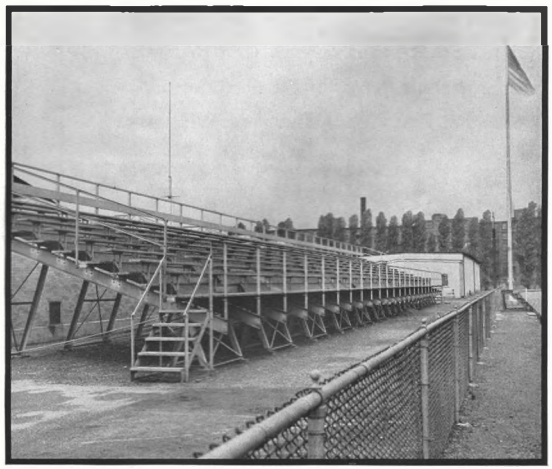
M. I. T.

[*Continued from page 138*]

YET it should be well remembered that scientific research of a high order goes on in the Institute's cloisters—conducted by faculty and alumni who have forsworn the business world's ambitions. In Dr. Compton the Institute has a head who emphasizes research more heavily than any other President the Institute ever had. (Not more heavily, however, than would Dr. Maclaurin, had Dr. Maclaurin had the luck to live beyond the days in which he had to grub for money.) In Vannevar Bush, the Institute's Vice President and Dean of Engineering, the Institute has a man whose rustic grin and cracker-barrel drawl about engineerin' conceal an unorthodox scientific mind of whiplash speed. It is Doc Bush's invention of a machine called the differential analyzer (you have probably read about it in the newspapers under the name of the "mechanical brain") that has made the Institute the world center of achievement in mechanical computation and made possible the solution of mathematical equations so complex that an army of men with pencils could not solve them in years. And in Samuel C. Prescott, Dean of Science, the Institute has an industrial and sanitary biologist trained under the late great William Thompson Sedgwick, who was often and not unjustly called America's Pasteur.

Fostered by these men, the Institute digs deep into the nature of the physical world. If you have heard less about the scientists of M. I. T. than about those in other institutions, that is partially because newspaper editors like stories about the composition of the atom and about cosmic rays, and the Institute has not been particularly self-conscious about these subjects. It is also because the Institute's scientists are at best not a fascinatingly articulate type. Yet the work of George R. Harrison in spectroscopy draws respect from scientists everywhere. Frederick G. Keyes, in chemistry, is one of the most brilliant research men in the U.S. John Clarke Slater, head of the Institute's Department of Physics, had made a name for himself at the age of thirty with his conceptions of molecular mechanics. In Warren K. Lewis, the Institute has the country's undisputed No. 1 chemical engineer. Jerome C. Hunsaker, in mechanical and aeronautical engineering, designed the NC-4, which in 1919 earned the distinction of being the first aircraft to cross the Atlantic successfully. Waldemar Lindgren is an economic geologist in a class by himself. And Norbert Wiener, one of the Institute's few genuine, blown-in-the-bottle Absent-Minded Professors, is among the half dozen top-flight mathematicians in the U.S.

Most of these men are busy on considerations so abstruse that it is futile to try to describe them. But the nature of many of them can be well set forth by considering the work of one man—young Robert J. Van de Graaff, inventor of the Van de Graaff high-voltage direct-current generator. Before Van de Graaff came along, the highest direct-current voltage on record was produced in Cambridge's Cavendish Laboratory in England, and it was 600,000 volts. But Van de Graaff is hitting at 10,000,000 volts, and he has already got above 6,000,000. What the engineering applications of this may be, no man can tell. But engineers know this: roughly the efficient range of commercial transmission of power is as many miles as you have kilovolts. With 250,000 volts (250 kilovolts) you can transmit current 250 miles. Today's technology of electrical transmission is limited to that, and the generation of current remains a local business. But with 2,500,000 volts (2,500 kilovolts) you span the continent; and the generation of power becomes a national and an international business, and the uses, prices, and production of power become something utterly new. The Van de Graaff generator will already produce 6,000 kilovolts. True, there is yet almost no knowledge of how, if ever, such voltages are going to be harnessed to useful work. The cautious Institute says there may be nothing in it. But the potential is there—and it is with that sort of potential that the Institute is working.



Photographs from M. I. T. Photographic Service

THE INSTITUTE SAILS DINGHIES ON THE CHARLES . . . BUT ITS ATHLETICS ARE NOT THE "SPECTATOR" TYPE

ALL IN THE SAME BOAT

CAPITAL AND LABOR in America are in the same position as the officers and crew of a ship at sea.

The officers can't operate the ship without the crew, and the crew can't chart the course without the officers.

If the ship is to reach port safely, all the members of its staff must do their part faithfully and well.

Attempts are being made to spread the belief that Capital and Labor . . . officers and crew of the great ship of Industry . . . are natural enemies with conflicting interests.

It is being preached that Capital cannot thrive save at the expense of Labor . . . and that Labor must destroy Capital in order to gain its own well-being and reward.

That is not true. *Capital and Labor are, or should be, partners in the greatest task that any people can perform . . . the satisfaction of human needs.*

Certain far-sighted business men of America have known this for a long time. They have put into operation various ideas and policies designed to make Labor a friendly and self-respecting partner in the production of this nation's goods. And in so doing they have proved what a fine thing this partnership between Labor and Capital can be.

PIONEERS OF PEACE AND PLENTY

The significant thing is, that the companies headed by these men . . . the companies maintaining the highest wage scales and the most liberal and enlightened employee relationships . . . are also from every point of view the most successful companies in America.

They offer to the public the best quality goods at the most reasonable prices, and they sell them in the greatest quantities.

They provide the best return on invested capital to their hundreds of thousands of small security holders.

They have the most contented and efficient workers in American Industry.

GOOD CITIZENSHIP IS GOOD BUSINESS

These companies have found that it is not only good citizenship but good business to deal fairly and generously with Labor . . . that constant strikes, high turnover and shoddy workmanship cost more in the long run than healthy working conditions and a respectable living wage.

And what is most important to the country as a whole, they have proved that it is possible for Capital and Labor to work together, and to like and respect each other. They have demonstrated through hard practical experience that Capital and Labor can and should be friends.

That is not a doctrine which will suit certain individuals.

It will not suit the professional labor agitator . . . for without trouble to feed upon, his job isn't worth a nickel.

It will not suit the old type of hard-shelled manufacturer whose eyesight is so poor that he can't see beyond the immediate dollar passing through his hands at the moment.

It will not suit the theorists, demagogues and politicians who are doing their best to create class consciousness and to stir up class hatreds.

But if Capital and Labor themselves will give it a fair trial, they will find that it will suit *them* very well indeed. It will lay, for them and for the American public at large, the foundations of a strong and enduring progress.

One hundred and sixty years ago, at the time of our nation's birth, Benjamin Franklin gave utterance to a homely but fundamental truth.

"We must all hang together," he said, "or assuredly we shall hang separately."

THE FUTURE OF AMERICA

America cannot afford to be divided. It cannot afford to have the great constructive forces of Capital and Labor tearing at each other's throats. If we are to go forward as a nation, we must have peace and co-operation aboard the ship of destiny. Crew and officers must learn to work harmoniously, as friends, together. After all, we are all in the same boat.

Tires

[*Continued from page 105*]

of place are taking place quietly and with insistence.

In the early days, i.e., up to 1920 or so, when tires were temperamental things requiring special competence in their handling, garages and repair shops did the most tire selling. But tires got better and simpler, and the automobile industry soared out of the 1921 depression into green fields of volume and profit carrying the tire industry with it, and pretty soon tire dealers were springing up like dandelions after a rain. Until 1926 they were of two kinds: big independents and little independents. In that year there were roughly 120,000 of them, and 90 per cent of the replacement tires sold passed through their hands. Mail-order catalogue sales, hardly viewed as competition by the dealer hierarchy, accounted for practically all of the rest. There was very little dealer stealing by the tire companies in those days because the market was expanding and the chief requirements of a dealer were that he know how to mount a tire, operate a cash register, and remit on demand. For the same reason a fair percentage of the franchises were exclusive. But these simplicities ended with the Goodyear-Sears agreement.

What the Goodyear-Sears contract meant to tire distribution was what the chain store has meant to distribution in general: mass selling, with all that is thereby implied as to the decline of the individual seller. The trend of the times was, of course, in this direction; if Goodyear had not led the way it is safe to say that another company would have. The trend of the times, in another sense, was supplying an ironic little motive to Sears's interest in the contract: the steadily increasing motorizing of the nation, which was booming tire sales so much, was sending Sears's farmers on shopping excursions to the cities, which was not helping Sears's business at all. But it is doubtful that even Mr. Litchfield himself was aware when he signed the first contract of what was to follow in its train. Within a little more than a year Sears had opened eighteen so-called "A" stores to sell general merchandise, including tires, four so-called "B" stores to sell hardware, including tires and accessories. By the end of 1928 there were nine more "A" outlets, 104 more "B." By the end of 1929 there were twenty-three more "A," seventy-nine more "B," and twenty-one known as "C," handling *only* tires and accessories. And in 1929 Sears—which four years before had sold only 700,000 tires to Montgomery Ward's 2,000,000—sold more than 4,000,000 tires to Ward's less than 3,000,000, the great majority of them through its stores. In the years that followed the number of stores increased, and it did not escape anyone's notice that most of the stores were set up where they would attract motorists' attention. Meantime the ball thus set rolling by Sears was cutting a wide swath through the whole tire industry, gathering speed and size as it went.

Beguiled by Sears's success, Montgomery Ward plumped into the chain-store business, made a pact with U.S. Rubber (in 1930), and drew ahead of Sears again. Western Auto Supply, operating over 170 stores in the South and Midwest, signed papers with both Goodyear and U.S. Hardware and variety chains of varying size and character appeared with manufacturer tie-ups of varying size and character. And in 1929 came the oil companies, perfectly constituted to distribute tires and sheepish for not having thought of it before. Some of them simply undertook to promote and sell national brands through their filling stations; others entered into contracts setting up private brands, which forthwith became as closely identified with them as the Goodyear-made All-State was with Sears or the U.S.-made Riverside was with Ward. In 1931 giant Standard Oil moved in with an Atlas tire supplied half by Goodrich and half by U.S. Rubber. That year tire sales by oil companies almost doubled. Two years later they had doubled again.

AND Mr. Firestone, during these days of shifting alliances, what of him? Either unable or unwilling to take on mass contracts, he very early came out with a counterattack: he set up his own chain of stores—six in 1927, a hundred more in 1928. Then, in 1929 before things went to pot, he took half the proceeds of a $60,000,000 preferred-stock issue and plunked it into a program of store building such that he now has 500 or more. And that started a new ball rolling through the industry. Which presented another odd picture: the manufacturers, Firestone excepted, had worked up a new machinery of distribution in the chain stores and now, led by Firestone, were going to work to compete with what they had set up.

U.S., which was doing very well for itself in the matter of mass contracts, did not join the new stampede. But all the other big companies did, and many a small one, too. Goodyear opened up in 1931 and soon was getting well on toward the string of over 300 stores that it has now. Goodrich started building its string at about the same time, currently has around 400. Even General, whose selling policies have generally followed their own pattern rather than the industry's, made a sharp turn and, in one sweep, wrote off a mess of bad dealer accounts, took over control of a number of outlets (without, however, giving them any special General identification), and signed up the Pure Oil Co. to distribute its newly purchased Yale tire. Way down the scale as a tire factor, Dunlop went into the retailing business to the extent of something over 400 units. Few of the stores brought into being after Firestone set the pace came up to the Firestone stores in general fanciness. His were full-line service stations, equipped to handle everything except major mechanical repairs and selling a wide variety of goods. The larger ones represent investments of $200,000 or more. But all the stores of all the companies represent the same thing basically: extension of the mass-distribution trend.

And the independent dealer, in the face of this trend, what of him? His fate is writ in a set of figures. As noted above, the independents did about 90 per cent of the renewal business in 1926. Mail order that year accounted for about 6 per cent; all chain-store sales together totaled up to a meager 3 per cent. And now, ten years after, the independents do about 59 per cent of the business. They have lost to mail-order chains, currently credited with 13 per cent or thereabouts, and to the oil companies, which now account for a rough 14 per cent, and to the company-owned stores, doing now around 10 per cent. Estimates vary widely, and one may be accepted as readily as any; say, then,* that of 120,000 independents holding forth in 1926, no more than 60,000 remain. The tiremakers would call that figure low. But there is none to deny that the fall has been great.

*Source, Rubber: A Story of Glory and Greed, *by Howard and Ralph Wolf (Covici-Friede).*

HARVEY FIRESTONE, five feet five, stubborn and proud, has claimed stoutly all along that the Goodyear-Sears maneuver, which initiated the metamorphosis, must be held responsible for the independents' fall from their eminence. The theory can be stated simply. Goodyear sold tires to Sears at lower prices than it sold to the independents. That gave Sears one important advantage. The average independent needs a profit margin of 25 per cent while a mass distributor such as Sears can get along on much less. That gave Sears another important advantage. The consequence was that Sears could sell tires for less than the independent possibly could. Ergo, argued Firestone, Goodyear was deliberately cutting the throats of the dealers who had built up its business for it, and so were all the other manufacturers in on the game.

So, determined to hold up his own volume, Firestone watched Sears like a hawk and met every price Sears posted. And Goodyear and Goodrich and U.S. and General and all the others would cut to stay in the running. Everyone gave fantastic guarantees against everything, free tubes with all tires purchased, trade-in allowances of awesome proportions. But all the variations were the same thing—price cuts in one form or another. The fact that cuts in the official list prices averaged two a year for eight years running after the Goodyear-Sears contract went into effect was nothing at all. Behind the lists, disguised price cuts and discounts rained down steadily. Dealer stealing flowered when Firestone bought English Bros., a big outlet in Texas, away from Goodyear. These were exciting days. Once there were fourteen 10 per cent discounts tacked on to the list prices. Ten 10's were nothing uncommon. And these were dangerous days, too. Independents were dying off like Spaniards. They were paying, in many cases, less than cost for their tires; but what their customers were paying them didn't allow for their 25 per cent margin or anything like it.

IT SHOULD not be assumed that Harvey Firestone's gun is always the first to fire, nor yet that all price cuts are the creatures of the manufacturers. Price cuts can and do originate with dealers as well—perhaps as much, numerically, as with the factories, though with less effect. They grow out of local rivalries; they are called into use as spurs to dull seasons; they are invoked to carry off old stocks and make way for new; they can and often do snowball until they engulf a city, a territory, are taken over by the manufacturers themselves, large and small alike. For the fact remains that all the serious wars are the work of the manufacturers either from the beginning or from the moment they become serious. Contemplate, as a special case in point, the fragile structure of national and commercial accounts.

A. T. & T. is a national account, and U.S. Steel, and General Foods, and any other large fleet owner operating nationally. A commercial account is a smaller, multi-car owner operating sectionally, a dairy, a department store, a food market, or the like. National and commercial together account for some 40 per cent (in dollar volume) of the total replacement sales. That is an influential segment of the business, influential enough to command

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THE OIL THAT NEVER HEARD OF THE DEPRESSION

THE OIL THAT NEVER HEARD OF THE DEPRESSION

As phenomenal a success story as was ever written for a commercial product, is the story of Gulfpride Oil.

Result of a new refining process developed, perfected, and patented by Gulf—the Alchlor process—Gulfpride Oil was introduced in limited quantities a few short years ago.

It was marketed quietly, without fanfare and without advertising. Yet immediately a phenomenon occurred that is rare in business life.

Initiated by the engineering element throughout America, who quickly appreciated this motor oil's extraordinary qualities, a steady swing to Gulfpride began. Word-of-mouth advertising carried its fame to a constantly increasing number of motorists. Users began circulating startling experiences.

One man, for example, drove his car more than 100,000 miles on Gulfpride—without ever needing a repair, without ever having the head off the motor, without ever adding one drop of oil between drains! Such tales became common.

It is no wonder that all through the Depression, when sales of other quality oils languished, motorists demanded more and still more Gulfpride. Plant capacity was doubled and redoubled several times. And still it was all but impossible to keep up with the demand.

Today, Gulf has completed great new refining units to produce even more of this world's finest motor oil—100% pure Pennsylvania. Yet it is possible that even this greater production will soon prove inadequate.

For Gulfpride is daily being "discovered" by new thousands of motorists. And it is a matter of pleasure to Gulf that the quality of the oil persuades most of these motorists to become its self-appointed salesmen. *Gulf Oil Corporation...Gulf Refining Co.*

A dog-lover suggested our putting it *this* way . . .

"I'VE been reading some of your ads," a friend of ours wrote us, "and it seems to me there's a perfect parallel between the way you make Four Roses Whiskey and the way we go about getting a champion field dog.

"You see, there's not a single blue-ribbon winner in my kennels that just 'happened'. Every dog was planned—before he was born. His parents and ancestors were carefully chosen—to blend in him all the forthright qualities that make a dog great."

* * *

Our friend is right. Four Roses achieves its greatness in much the same way his champion setters do.

For Four Roses is more than just *one* fine straight whiskey—it is a glorious combination of *several* great American straight whiskies, each outstanding for some particular virtue. *aroma* or *body* or *smoothness* or *flavor.*

With the inherited skill of over seventy years guiding us, we here at Frankfort bring these fine whiskies together. Carefully, sympathetically, we blend the noble virtues of them *all* in *one* matchless whiskey—*and that whiskey is Four Roses!*

Every drop of Four Roses is *whiskey*—and we sincerely believe that in its deep-flavored mellowness and silken smoothness you will find more satisfaction than you've ever before drained from a glass!

* * *

For the new edition of "Irvin S. Cobb's Own Recipe Book," send ten cents in stamps to Frankfort Distilleries, Incorporated, Louisville, Kentucky.

Frankfort Distilleries, Incorporated, Louisville and Baltimore, also make Paul Jones (92 proof), Old Oscar Pepper, and Mattingly & Moore (both 90 proof)—all blends of straight whiskies.

A BLEND OF STRAIGHT WHISKIES—94 PROOF

FOUR ROSES

★ *America's finest whiskey* *regardless of age or price* ★

respectable standard discounts. And only the largest company stores and independents or the suavest factory representatives handle it. But discounts are like peanuts, irresistible once begun. Mr. A., a dealer in B tires, calls on the C Company, whose cars are equipped with D tires. "Might I inquire what terms D is favoring you with?" says Mr. A to Company C. "Two 10's," says Company C to Mr. A. "Hmmm," says Mr. A, "would three 10's be of interest to you?" "Please be seated," says Company C. Pretty soon Mr. E, the dealer in D tires, hears of this. But three 10's is more than he, as a dealer, can take in his stride. So he sends a wire to his factory telling the sordid tale. Back comes a wire reading: "Make it four." That may end it, so far as Company C is concerned, or the wires may be hot for days. But in either case the war has just begun.

The precariousness of the commercial accounts lies in the fact that concessions have been made to allow employees of the account, often the employees' friends and relatives, to buy on the same terms as the company. The significance of which is that a little competitive operation with one company, instead of being confined thereto, sets up infection in the domain of the general consumer as sisters and cousins and aunts set out to shop for tires, using their discount rights for a bargaining tool. "I can get tires at 30 per cent off down the street. What do you say?" The tire industry has lost millions because of those simple syllables.

Tires

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IT APPROACHES the crux of the matter to inquire just why the tire industry has chosen to dance at the end of every whip waved at it. It is true enough that its demeanor for the past twelvemonth has been uncommonly dignified and stable and that it continues so at this writing. But its antics during the first half of the thirties were so fantastic as to force doubts of its essential health. And no understanding of its problems for 1937 or for any other year, or of its probable handling of them, can be reached except through a resolution of the doubts. The weird fact thrown up by the industry's doings as sketched above was that almost anyone or anything could upset its price structure and that the industry would do almost anything in response to the upset. Paul Litchfield has testified that "the usual method of figuring prices for retail dealers" is "largely a matter of meeting competition." But that doesn't answer the basic question. Why is the competition so consuming?

The answer lies in the simplest set of numbers in the industry: the figures on total sales by years. Only it doesn't show unless you break those figures down into their components. When you do you discover that while total sales hit their peak in 1928, slid to their bottom in 1932, and have since inched up year by year, replacement sales hit their peak in 1928 and have slid down every year since. What keeps the total sales up are the original-equipment sales, which this year are not far beyond whispering distance of their best year ever. But there is little or no profit on original-equipment sales. The tiremakers make their money on replacement sales; and the market is shrinking, steadily and alarmingly. If you put a group of men into a sealed chamber and slowly withdrew the air you would produce the same effect. And their actions would provide an analogy to the actions of the tiremakers.

The analogy would be, perhaps, a touch strong. But it would serve to make the idea graphic. Total tire sales in 1928 (as recorded by Standard Statistics) were 78,000,000; from that they dropped to 53,600,000 in 1930, to 40,200,000 in 1932; but last year they reached 50,000,000 and this year they will probably exceed that figure a trifle. Original-equipment sales contributed to the drop, falling off from 18,000,000 in 1928 to a shivery 6,000,000 in 1932; but they have been wholly responsible for the rise, bouncing back up last year to more than 19,000,000 and expected to touch 21,000,000 again this year. Replacements have gone right straight down: 51,800,000 in 1928, an even 39,000,000 in 1930, barely over 33,000,000 in 1932, less than 30,000,000 last year, around 29,000,000 estimated for the current year. The effect of such a falling off on the mortality of the independent dealership should not be overlooked. Price wars have not been the only plague to the dealer.

The reasons that original-equipment sales carry little or no profit are two: one is that the tiremakers' overcapacity and lust for volume render them susceptible to low bids; the other is that the automobile makers, spreading their business around, take advantage of the susceptibility. The Big Four have almost all this business. They justify it on the grounds that they do generally make a little profit, that in any case it cuts down the overhead, and that it's not without its advertising value. But the Detroit magnates are hard buyers; contracts have reportedly changed hands over a matter of seven cents on a set of tires. And it's perhaps significant that the du Pont control finds it cheaper to have a considerable proportion of General Motors' tires made outside rather than by its own U.S. in Detroit. Most stable of these relationships through the years has been Firestone's production for his good friend Ford. Firestone also makes tires for General Motors and Studebaker. Other tie-ups: Goodyear with Chrysler, Hudson, Nash, and Ford; Goodrich with General Motors (it makes half the Chevrolet tires); U.S. Rubber with most of the General Motors' divisions. Few of the motor men favor any of the tiremen with a 100 per cent order.

But original equipment, profitable or no, has eaten into the replacement market, the money market. That's because new cars used to be provided with four tires, nowadays come with five or even six. Even so, the real drop in the replacement market has come about for the eminently simple reason that tires are so much better than they were—a development that we shall consider at length later on.

Nor is it likely that the trend of the market will change its course appreciably in the years to come—except on the farm front, where rubberizing is counted on to follow the motorizing that has already established itself in farming technique. Not unless the steady technological improvements suddenly falter, or automobile ownership, already held to be close to saturation, suddenly bounds forward. It's quite likely, in fact, that the trend may point downward even more sharply than it has. For retreading is catching hold. Retreading is an inexpensive means of adding 50 per cent or more to a tire's life, employed principally by busses and trucks in the past but as well adapted to a light tire as a heavy one and noticeably coming to the attention of motorists. Figures are scarce; but at least 2,000,000 tires went through the retreading machines last year.

So here is an industry, highly centered and weighted down with excessive overcapacity, hit by depression in the very midst of a distributive revolution, and struggling with a diminishing market all the time. The situation was not helped by the decline in rubber prices, which led the small companies to cash in on their low inventory advantages, which added to the price wars (since the small company outlets, however few, are always in the key market centers). Attempts at control, including NRA's codifying endeavors, had virtually no effect. And then, of a sudden, came the great peace. Since a year ago this month there have been no price cuts at all.

For six months before that some of the most killing warfare of the entire fight had been waged. What happened now was that the generals who had decreed the blood strategies wearily came together in some Hall of Mirrors and decided that the goose was better alive than dead even though her eggs were getting smaller. There had been get-togethers before; the chief difference between this one and its predecessors was that this one worked. For a full year now the merchandising of tires has been both quieter and more profitable than it has been in years. Because there have likewise been interludes before, no one is hardy enough to predict the duration of the present quiet. Yet it is encouraging to note that there has been no such prolonged period since the middle twenties.

The alternatives for the tire industry are clear enough: will the contracting replacement market drive the industry into a repetition of its past warfare or will the industry that once had close to a billion-dollar business reconcile itself to a great deal less than that and split up its shares in it more amicably? One thing that will have a potent bearing on the matter will be the outcome of the case of the Federal Trade Commission *vs.* Goodyear, currently lying in the U.S. Circuit Court of Appeals in Cincinnati.

PRESUMABLY attracted by the clamor that Harvey Firestone was raising against the Goodyear-Sears alliance, the Federal Trade Commission filed suit against Goodyear on September 13, 1933, charging it with price discrimination in violation of Section 2 of the Clayton Act. On March 5, 1936, the Commission handed down its decision, which was that Goodyear had so discriminated and would have to "cease and desist" from doing so henceforth. Exhibits to the number of 24,000 had been introduced, testimony running a record 5,000,000 words. Dealers by the dozen had been called in as witnesses. Hearings had been held in eleven cities. The net of the Commission's findings was that Goodyear's cost plus 6 or 6½ per cent price (depending on crude-rubber prices) to Sears ran under Goodyear's price to its dealers by anywhere from 32 to 55 per cent; that allowing for all economies made possible by quantity selling the discrimination still ranged from 29 to 40 per cent, amounting to roughly $41,000,000 for the period considered (1926-33); that allowing further for all distribution and selling costs to dealers (determining which gave the Commission some of its most troublesome moments), the discrimination still ran from 11 to 22 per cent; and that such discrimination was not justified and had tended to foster monopoly and had upset the tire industry.

Goodyear admitted a 4 to 6 per cent differential, arguing that it was warranted as a

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quantity discount. Goodyear did not admit the Commission's right to ignore Goodyear's own accounting of its distribution costs. And the Commission's decision Goodyear promptly appealed. But the trend of the times was against Goodyear. Last June the Robinson-Patman Act, essentially an extension and strengthening of Section 2 of the Clayton Act, became the law of the land. And, however confusing its specifications, its essential tenet seemed plain enough: prices must be set on the same basis to all dealers. Wherefore, a cost-plus contract like Goodyear's with Sears was simply out. In July, pointing out that Section 2 of the Patman Act (preserving existing causes of action under the Clayton Act's old Section 2) was aimed right at them, Goodyear announced cancellation of the Sears contract. Middle of September Goodrich followed suit, relinquishing its 50 per cent share of the Standard Oil business.

The appeal of the Commission's decision has not been affected by cancellation of the contract. As a test case of transcendental importance to all companies engaged in mass selling, that will be carried on to the bitter end. Meanwhile, Sears has parceled out its requirements to a bevy of smaller manufacturers (Fisk and five or six other companies). And with Goodyear and Goodrich out of it, U.S. is the only important supplier of mass distributors left. Akron and Detroit have heard that U.S. may get out too. But Akron and Detroit have heard mostly that U.S. may go after all the Standard Oil business, may even go on to become predominantly a mass seller and let individual dealer sales go by the board. U.S. does not credit the talk with authority, but rubber gossip is not seriously hindered by that.

Between the Scylla of its declining market and the Charybdis of its fluxing distributive machinery, the tire industry enters 1937 to meet, in its merchandising, no one knows what. Goodyear and Goodrich may evolve ways of rewriting their mass contracts to avoid litigation. The small manufacturers may emerge as primarily mass suppliers, or U.S. may. The farm market may bloom and flower. And depending on these and other incalculables, the calm of the present may or may not give way to the rioting of the past. But the specter of the declining market would seem to be from this perspective immune to exorcism—unless the nation's tractor wheels can turn the trick. Otherwise the symbol of tire merchandising is a tire with a slow leak in it.

Cotton and Caoutchouc

INTO the casing that Bill O'Neil contemptuously calls "a bag of wind" goes many a chemical. But the two biggest single items in a tire—now, as always—are rubber and cotton. To feed its shrieking, slow-turning roller mills the tire industry must use 350,000 tons of crude rubber a year. To provide cord for the purring creel rooms with their thousands upon thousands of dervish cones, it must gulp down in its distant textile mills a round 230,000,000 pounds of raw cotton, mostly the longest-staple cotton grown in Mississippi, Louisiana, Arkansas, and South Carolina. Rubber accounts for some 37 per cent and cotton fabric some 18 per cent of the production costs of the average tire. Rubber and cotton have each had their hours of delirium in the past. And when they reeled, Akron reeled with them.

It was cotton, booming to a high of forty-four cents and collapsing to a low of eleven cents a pound, which so badly wounded the tire industry in the post-War panic. Everybody was hurt, but none more than Goodyear. Blindly buying right up to the break, buying futures as though it expected cotton fabric to vanish from the earth, Goodyear finally had to write off millions of dollars in inventory losses in the gray dawn of reckoning.

It was rubber, dropping from a pre-depression high of $1.20 in 1925 to less than three cents a pound in 1932, which wounded the tire industry again. All the way down the big tire companies were buying, were shoring up their inventories, thinking that at each quivering hesitancy rubber would steady and start up again. How much that bad guessing cost the industry there is no telling. You can get a hint from the fact that by 1934, when rubber was again rising, U.S. Rubber had written off some $50,000,000.

Cotton isn't the skeleton in the inventory locker that it used to be. For one thing, the price structure has been pretty steady between eleven and thirteen cents. More, the big companies have schooled themselves to hedge their cotton purchases. So cotton can't again become quicksand under their feet. Besides, they are soberly

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established in the textile business. The leading companies own huge mills in the South and New England that supply nearly all of their fabric requirements. Goodyear was the bell cow that led the rest deep into textiles and was itself driven there by its ruinous commitment for cotton fabric in 1921. That company found it cheaper to buy the factories than take delivery under the commitments. Once in, the necessity of maintaining a steady flow of fabric and guaranteeing its own specifications kept Goodyear in, and the other companies followed suit. And only Goodyear is involved in cotton plantations. Out in the Salt River Valley of Arizona the company owns a 32,000-acre plantation, purchased in 1916, which furnishes about 50 per cent of the stronger and more flexible long-staple cotton used in Goodyear's truck and bus tires.

Cotton, then, is no problem. Looking south, the tiremen see nothing to worry about in 1937. But when they look east and their glance comes at length to rest far east of Suez, in the hot tangle called the Middle East, huddled at the equatorial foot of Asia, they see or affect to see a great deal to worry about. Maybe not in 1937. Maybe not in 1938. But sooner or later it may bring another plague upon their houses.

For there is the world of caoutchouc or rubber in the raw, and its capital is Singapore. There are the loose and disjointed congeries of colonies and protectorates called British Malaya. And the mountainous spine and steaming foreshore of Sumatra, Dutch owned. And Java. And Borneo. And not so far away on the map are French Indo-China and Siam, also in rubber's isothermal zone and ambitious to become important rubber producers.

The realists of Akron have good reason to scan this region anxiously. It produces over 95 per cent of the world's rubber. Out of a 1935 world production of 873,000 tons the rest of the world produced only 19,000 tons. Of that production the 350,000 tons that the U.S. tire industry alone used was equal to 40 per cent of the whole.

Rubber in check

A NEW restriction plan is today operating against the natural flow of rubber. Already it has had two measurable consequences. By curtailing production, allowing demand (943,000 tons) in 1935 to run ahead of production (873,000 tons), restriction has rapidly reduced world stocks to around 488,000 tons, equal to six months' supply, which is about normal. It has, since first announced in 1934, boosted the price of rubber from eleven cents to around sixteen cents a pound. And the tireman, remembering what happened to him the last time the British tried their hand at this game, can't help being wary.

FORTUNE has already described the first or Stevenson plan (September, 1930). Briefly, in 1922 the British, who then controlled two-thirds of the world's rubber, sharply cut production in order to raise the price from the fourteen-cent level at which it was ruining their plantations. They never stopped until rubber hit $1.20 in 1925 and then there was a fearful drop, due to the fact that the Dutch, who were outside the scheme and who had been planting feverishly up and down Sumatra, began to flood the market. Discredited, the Stevenson plan died in 1928.

The difference between the Stevenson plan and the new plan is that the Dutch and the French and the British are all in it and heroically committed to self-imposed export quotas, which are adjusted as circumstances recommend by an International Rubber Regulating Committee meeting in London about four times a year. In those meetings the U.S. tireman, rubber's biggest single customer, has no official say. To be sure, he is technically present on an Advisory Panel of three, representing European and American rubber manufacturers, in the ruddy-faced and impressive person of Colonel A. F. Townsend, Board Chairman of Raybestos-Manhattan, Inc., and Chairman of the Rubber Manufacturers Association. But impressive Colonel Townsend, although he sits in on the quota discussions, has no authority to decide how much rubber will be released for the world. On the whole, you might say that all he can do is submit estimates on probable U.S. consumption and cool his heels until the verdict is announced.

Thus far, so far as the tireman is concerned, the control committee has done a pretty good job, making a decent compromise between the planters, who want to see rubber go up, and the tireman, who wants to see it low and steady. Lately rubber has hovered fairly stably at sixteen cents. Much

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VAT 69

BLENDED SCOTCH WHISKY

BY APPOINTMENT

BETTER Taste!...
that is why gentlemen
the world over have
a habit of saying

"Vat 69, please!"

86 PROOF

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Exclusive U. S. Representative

higher than that the tireman says it should not go. At that level the efficient planter can make a 25 per cent profit on his caoutchouc and the tireman can buy his raw materials at a price his consumers will easily absorb. The hidden danger is: how high do the Dutch and the British want to drive rubber? In the preamble to the restriction agreement the objective set forth is to adjust supply to demand and establish "a fair and equitable price" for rubber. What that price should be has never been disclosed. Still rankling in the tireman's memory is the recollection of the British commission that came avisiting some years back to sell him on the Stevenson plan, freighted with jovial assurances that as soon as crude crossed thirty cents, production would be stepped up.

Well, it was the Dutch, not the British, who stepped up production. However, in weighing the outcome of the present plan the tireman sees two hopeful factors. One is that the control committee, now that world stocks are again low, is easing restrictions, having boosted exportable allowances to 65 per cent of quota capacities. The other is the tireman's guess that if prices should ever get out of control, the natives in Netherlands India, with a potential production of 750,000 tons, would start dumping rubber, come hell and high water and Queen Wilhelmina's colonial troops.

You can't hedge rubber

THE worth of wheat or cotton in the mill to the miller or textile manufacturer is as plain as the nose on your face. They are worth exactly what they are worth on the exchange. No such knowledge arms the tireman. The rubber he has and must have in Akron may have cost half or twice as much as it is being quoted at in Singapore, New York, or London.

Now this is something that very few stockholders in tire companies have been able to get through their heads. They have seen the big companies make millions selling tires with one hand and erase millions in inventory losses with the other. That this should happen in supposedly farsighted corporations did not make sense. Nor did it make sense that the little tire companies should have done well at the same time. Obviously the big companies must be gambling and very badly at that. Gambling they were, but they had no choice. And the cards were stacked against them.

Elementary in the rubber situation is the fact that no matter what rubber costs, the big tireman must have a steady flow of rubber into his plants. Firestone, for example, consumes 14,000,000 pounds a month. To maintain that pale crepe river Firestone may have rubber stored in New York, more rubber on the high seas between New York and Singapore, and still more rubber under contract in the godowns (warehouses) at Singapore. Counting the leeway allowed the Singapore dealer in making delivery, the time it takes rubber to travel from Singapore to Akron, plus the need of having at least two months' supply in this country to meet production bulges, four months is about the narrowest margin the big tireman dares permit himself in plotting future purchases. He can't depend upon the erratic supply of spot rubber in New York. If he were able to pick up 1,000 tons of spot he would be lucky, since most of the rubber arriving in New York is earmarked for manufacturers. He might do better in London, London having a fairly large floating supply owing to the fact that it is the reservoir for Europe. In either case he would probably pay well for it.

Tires

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THEREFORE in the nature of rubber's geography the big tireman must always be at least four months long on rubber, must contract for it that many months before he expects to use it in the vulcanizing pits. Actually, in these times of restricted rubber production, the major companies may be building up inventories anywhere from four to ten months ahead. Here, then, is where the rub comes in. Consider Goodyear, which consumes 100,000,000 pounds of rubber in six months. Suppose that company is committed for rubber up to six months ahead and the market price sags just before the balance sheet is made up. So slight a drop as one cent a pound—and it is a quiet year that rubber doesn't shoot 25 per cent off the year's average—means taking a thwacking $1,000,000 loss in inventory.

Secreted in the realities of inventory is the clue to the difference between the big tireman and the little tireman. The little man has to play this game a different way. He has no capital or credit with which to buy big lumps of rubber in future. In the matter of rubber, he lives from hand to mouth. Of necessity he is almost always a bear. Unlike the leaders he cannot afford to maintain buying offices in the Middle East. To a large degree he must depend upon spot rubber in New York or London or unconsigned rubber inbound on the high seas. At times his poverty may be a protection, as it was in the early 1930's when falling prices kept coming his way. Just so it may fail him, as it has failed him over the last three years, when prices were rising and enriching the inventory values of the big fellows. When rubber got below three cents in 1932, most of the big tiremen contracted for great amounts of it, buying rubber up to two years ahead. In 1934, with New York spot prices averaging around thirteen cents a pound, the big fellows had rubber in their inventories the cost of which averaged only eight cents or so.

Even so, the tire company's stockholders don't like the look of it. Why, they have asked ten thousand times, don't the big companies play safe and hedge rubber as they hedge cotton? The answer is simple: as a practical matter, they can't. Of the nearly 500,000 tons of rubber arriving annually in the U.S., 72 per cent goes to the Big Four. That's how thin the market is. The only person that Mr. Litchfield could hedge against would be Mr. Firestone, and that wouldn't work out. The big tireman has nothing comparable to the cotton and grain exchanges wherein he can pass off his risks and square his position from day to day.

Mention the New York Rubber Exchange to a tireman and he will grin, dismissing it with a curt, "It's a crap game." The exchange doesn't deal in physical rubber. It deals mostly in paper warehouse receipts. The big companies rarely bother it, leaving the game to speculators. The average daily volume is only around forty lots (400 tons). It is not difficult to imagine what would happen if two companies of the order of U.S. Rubber or Goodyear were suddenly to step into the exchange and attempt to accumulate even a small percentage of their requirements.

Since gamble he will and gamble he must, the big tireman must play his hand close to his chest. He can never tell what the Chinese dealers, who have the Middle East supply of native-grown rubber by the throat, will do. They have queer spells of hoarding for the rise and frantic dumping. Above everything else, if he is in the position of General's Bill O'Neil, he will try to find out, by hook or by crook, whether Goodyear or Firestone is buying heavily, because that may mean a bulge that will presently flatten. It is a secretive business, whispers and rumors and telephones that never stop ringing and men stooped over a commodity ticker in quiet recesses behind the fortresslike façades of Akron.

That ticker, however, is heeded only as a man might heed a wet thumb in a wind. For the great bulk of the rubber bought by the tireman never gets on the ticker tape. Nor is it quoted in the auction room of Singapore's Post Office Building where Chinese dealers line up on one side and European plantation managers and dealers face them from the other. The great bulk of rubber is bought and sold on the telephone in Singapore as in New York. On a day when the New York Rubber Exchange is dully exchanging a few score lots, the dealers and brokers in the buildings around, who have Middle East connections, will have traded anywhere from 1,000 to 5,000 tons.

Although Singapore is the world's greatest rubber mart and the Big Four buy most of their rubber through agents in that city, it is not the only one. The tireman tonight may be filing by cable bids for tomorrow's sellers at Singapore, Amsterdam, Colombo, Hamburg, Manaus, London, Pará, wherever there is rubber. The time element gives the game an exciting edge, for rubber's markets live with the sun. Singapore is twelve hours ahead of New York, seven hours ahead of London. Tomorrow's market is getting ready to open in Singapore when Akron is going to bed, London begins to bustle just before Singapore shuts down, and New York comes in on top of London. If he plays carefully, holding off from Singapore in the hope of a better price at London, the tireman may save himself a useful sixteenth of a cent. He tries to be a frugal bidder. Though Goodyear buys in 500-ton lots at a clip, it is not too proud to pick up a 250-pound bale at Colombo.

The tireman's rubber plantations

A FUNDAMENTAL necessity of an orderly manufacturing business being a fairly stable cost of raw materials, you might ask: what of the enormous plantations owned by the big companies? Don't they guarantee the companies a fairly consistent price structure? To a slight extent—a slight but increasing extent—they do. The No. 1 (Goodyear), No. 2 (U.S.), and No. 4 (Firestone) American rubber companies all own rubber plantations. The greed of British planters and the unreasonable behavior of rubber prices in the 1920's have made this logical.

Biggest and most distinguished in the field is U.S., owning 135,000 acres gouged out of the Malayan and Sumatran jungle, 90,000 acres holding matured trees that could yield 60,000,000 pounds of rubber instead of the 42,000,000, or 33 per cent of U.S.'s needs, allowed under quota restrictions. In second place is Goodyear, owning 90,000 acres in Sumatra—55,000 acres planted and 35,000 in

bearing—plus a scattering of experimental plantings in Panama, Costa Rica, and the Philippines outside the restricted zone, which might be a useful ace in the hole in the event the British and Dutch and their French and Siamese collaborators applied the squeeze again. From this acreage Goodyear draws about 10 per cent of its rubber. Last come Firestone's $8,000,000 plantations concentrated in Liberia, with 110,000 acres under cultivation, 60,000 planted, and 10,000 in bearing, yielding now less than 5 per cent of the company's requirements.

It is unnecessary to discuss here the plantation problem as it affects the individual tireman. FORTUNE (February, 1934) has already looked at U.S. Rubber's career in the Middle East, an enterprise that has already paid profits of $40,000,000 on a $22,800,000 investment. The point to be emphasized is that the tireman is quietly edging out of the British-Dutch controlled rubber market, that he is well launched on a course that may eventually, if he keeps buying and planting acreage, give him command of his rubber.

BUT this retreat, if it can be called that, is not without its risks. Sumatra and Liberia are not Akron. Rubber agriculture means heaping distant, incalculable hazards upon an industry that has plenty already. You can lose money raising rubber. And once the tireman is sucked into rubber growing he finds himself torn between two ambitions—to make rubber go up so that he will show a profit as a plantation owner and to knock rubber down so that he can make more money as a tireman. Which is one reason why Bill O'Neil has kept General out of rubber growing. "God," he says simply, "didn't make any one of us smart enough to run all kinds of business."

Neither does Goodrich own any plantations. Mr. Tew has a reason for that, a curt and unexpected reason. Snaps Mr. Tew: "We're going to have synthetic rubber as sure as you live." As a matter of fact, synthetic is already here. Rubber has been synthesized in various forms, some having qualities superior to those of natural rubber. They are all products of polymerization, a trick that chemists play with molecular structures by piling one molecule on top of another. One of the best known is Duprene, a du Pont product. Tiremen have built automobile tires out of Duprene and say they're pretty good.

The present price of Duprene, which used to be over $1, is seventy-five cents a pound. That price alone would prohibit its use in a tire. Nevertheless synthetic is a pregnant and vital potentiality in the tireman's outlook. Even if synthetic could never be cheaper, which is improbable, it must permanently define rubber's price ceiling. Indeed, according to Mr. Tew, if rubber should ever hit fifty cents and linger, synthetic would be right down on top of it.

Finally, there is the matter of reclaimed rubber, or scrap rubber put back into circulation again. The principal source is old automobile tires, which are ground up and treated in various ways to remove the fabric. A considerable amount of reclaim—as much as 200,000 tons in past years—goes into rubber goods. Comparatively little, however, returns to tires and that little is used mostly in cheap tires and as waterproofing for the bead, the wire-loaded ring that holds the tire to the rim. Nevertheless, should the price of rubber ever again get out of hand, it is not at all improbable that the junkman, crying out for old tires to buy, would be able to do big business in Akron.

The Tireman and Technology

SO FAR as the murky crystals of Akron portend, one of the outstanding technological problems that the tireman will have on his hand next year is noise. As a matter of fact, he has long puzzled over it, but the unholy interest of the automobile manufacturers up in Detroit has brought the problem to the forefront. Having asked for non-skid and blowout-proof tires, which they couldn't possibly have, and for a tire life of 20,000 miles, which they finally got, the motor makers went after the tire builders on account of the sound, the scarcely noticed sound of the tire as it rolls over the road.

To the orchestration of sounds pounded out by this rivet-gun, elevated-train, horn-honking civilization of ours, the rubber tire, according to Detroit's indictment, has contributed five offensive notes. One: the thump as it hits expansion joints in concrete strips. Two: the pinging of gravel flung against the fenders. Three: the staccato beat on rough pavements and cobblestones. Four: the squeal of rubber through a sharp turn. Five and worst: the whine, like that of a gear growl, on asphalt. All familiar enough, and all but two, as the tireman pointed out, due to the road rather than the tire.

Nevertheless, the automobile people wanted something done about these noises right away, and such is the state of Akron that when Detroit commands Akron obeys.

Root of the problem is the quietness that has more and more been built into automobiles so that the sound of the tires suddenly came up like an indiscreet whisper in a lull at the dinner table. Curiously, when old man H. H. Franklin of the quiet-purring Franklin started fussing about tire noises some years back, the designers in Akron thought he was crazy. Roads weren't so good then, and what driver, they asked, was going to worry about tire noises when his ears were assailed by a cacophony of body squeaks and groans, fender rattles, chattering valves and tappets, the hum of the rear end.

But Packard, Buick, Nash, and Studebaker began asking insistent questions about tire noises. Packard said tartly that the only noise from its twelve-cylinder job was the hiss of air in the carburetor filter and the whine and rumble of the tires. Then mass producers like Chevrolet, Ford, and Plymouth took up the theme and the tireman got busy.

Where the noises came from was no secret. The thumps from expansion joints and cobblestones of course came from the road. They couldn't do anything about that. Squealing? Well, bad driving was partly to blame for that, though a wider tread would help, especially if the driver could be taught to keep up the air pressure in his tires. As for the whine, on that count the tireman pleaded guilty. It came from the non-skid buttons, the patterns of knobs (U.S.) and rounded triangles (Goodrich) and crosses and squares (Firestone) and diamonds (Goodyear) that have been standard, in one design or another, since the 1900's, when the celebrated Bailey treads, with rows of round buttons cured in the face of the treads, swung the industry from smooth tires. These endless files of buttons, hitting the pavement at the same beat, set up a rhythm that waxes and wanes with the speed.

There was one way these noises could be partially suppressed. That was to break up the tread patterns, make the buttons of different size. The analogy the tire designers favor is that of soldiers marching across a bridge. If you march them out of step you won't have the pyramiding of sound that builds up when they march in time. Anyhow, the tiremen were tinkering toward this end when Detroit demanded more silence still.

Whereupon the tireman, after nearly thirty years of designing tires with non-skid buttons, began turning from them to rib construction, that is, close rows of narrow ribs running in parallel around a tire's circumference. The shift is supposed to have eliminated nearly all of the whine and, with it, the plink of thrown gravel against the fender, since there are no longer any cross grooves in the tread in which pebbles can be caught. Chrysler, however, will continue to use a non-skid button tread on the rear or driving wheels. In purchasing silence, the tireman swears that non-skid qualities have not been sacrificed. An advantage of rib construction, he argues, is a flat-topped tread, which presents more rubber and therefore a larger braking surface to the road.

MEANWHILE interesting things have happened and will continue to happen to the balloon tire. The balloon was the only revolutionary step in tire design during the past fifteen years and the most important since the cord tire. Who actually invented the balloon is hard to say. In all probability the tire was the work of Firestone's big-domed and clever development engineer, James E. Hale. Even Bill O'Neil of General, perhaps the first to hit dealers' shelves with a balloon, grants that a little bird told him what Hale was doing in the Firestone laboratories on the other side of town and, by driving his engineers, he managed to produce his own balloon in a month.

To understand the evolution of the balloon it is necessary to look briefly over your shoulder and weigh what Hale was up to in 1923. Tires were pretty skinny then, having cross sections of only three to six inches, and they carried a fearful pressure, as much as seventy-five pounds per square inch. As cars got faster, the tire designers kept thickening the casings and boosting pressures, fearing the rim cutting that develops when tires turn soft. To Hale's mind this was a mistake. He reasoned that a tire should give a soft ride. He was sure the tire could be made to do that without impairing its life expectancy.

Reo tried out the first balloons in the fall of 1923. At the January, 1924, Automobile Show a few makes sported them. Practically all the cars at the 1925 show were equipped with balloons. When Ford and Chevrolet adopted them the following April the switch was complete. But it was the beginning of a long headache. The balloon arrived simultaneously with four-wheel brakes. No motorist of the middle 1920's will have forgotten the belly-wrenching catapulting out of the seat that followed a sudden application of the brakes. Gas consumption went up, speeds fell off as much as five miles per hour, and the sluggishness of the tires taxed the brakes, axles, and frames. Most annoying and dangerous was the shimmy that developed in the front wheels at speeds over forty miles per hour. For years

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Hale was damned up and down the motor belt. The tire wasn't at fault, he protested, it was just that the car wasn't ready for it.

The first balloons carried from twenty to thirty pounds air pressure and were mounted on fairly narrow rim diameters. Then Detroit, driven frantic by the seemingly uncontrollable shimmy, began to cheat a little. Orders flew to Akron to raise the pressures, increase rim diameters. Pressures crept back to as high as forty pounds, rim diameters widened.

In time Detroit licked the shimmy with a new front-axle design and improved steering linkages, so the ballast was again off the balloon. In 1931 was born the so-called "doughnut" tire. Goodyear, Firestone, Seiberling—all the tiremen fussed with it, but General's famous Jumbo was first. Pressures dropped as low as fourteen pounds, rim diameters to thirteen inches. Tire designers will admit today that many of the "doughnuts" were no good. The tire was too squashy and flabby. You had the feeling of riding on jelly. It smothered speed and made a car so sluggish that women nearly broke their backs trying to park one. Now pressures at twenty-five to thirty pounds are back to the more sensible levels of 1923.

Why tires last longer

IN THE matter of technology, designers like Hale of Firestone, Burgess Darrow of Goodyear, K. D. Smith of Goodrich, Bob Iredell of General, and Dr. Sidney M. Cadwell of U.S. Rubber, who among themselves have pretty much controlled tire design during the past fifteen years, believe with excellent right that the tire can hold up its head in any proud industrial company. In 1908 a Ford owner

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paid $35 for his tire, a Packard owner $125, and if either had casing enough left to patch and vulcanize after 2,000 miles, he was lucky. In 1914 the average tire life was 3,000 miles, in 1923 only 8,000. Nowadays for $12 to $15 a Chevrolet, Ford, or Plymouth owner can buy a tire that will deliver 20,000 miles—a cost of around sixty cents per thousand miles.

Which is all to the good—for the motorist. In so improving his product, the tireman steadily worked himself out of a job. Technology now emerges as one prime villain in the merchandising piece. It is particularly responsible for the unbroken sag in replacement sales from 51,800,000 tires in 1928 to 29,300,000 last year. Twenty years ago the tireman could count on selling seven or eight casings a year for every car on the road. By 1935 tires were lasting so much longer that he averaged only 1.18 tires to a car. Economists guess that 1929's peak registration of 26,500,000 cars will be the peak level for quite some years to come. That being so, and since tires are not likely to wear less, the tireman can blame his development engineers for the likelihood that his replacement sales for many years may never exceed 32,000,000 tires.

If his own technology did the tireman dirt in one direction, it helped him in another. The statement was made at the outset of this article that the industry's rated capacity of 70,000,000 tires is some 30 per cent more than motorists are able to wear out. Vigorously and reasonably, the tireman protests that this fact would be misleading unless qualified with the note that the capacity is based upon early tire sizes. In getting bigger, tires have also got heavier. The average tire weighs thirty-one pounds where it used to weigh only twenty-three. That has taken up some of the slack. And the technology that brought about the truck and bus tire has taken up some more.

Trucks and busses were tardy about quitting solid rubber for the reason that operators didn't trust pneumatics. Not until the late 1920's did pneumatics become standard equipment on these vehicles. Now they account for a substantial part of the tire business. You can buy sixteen-ply truck tires that will carry ninety-five pounds of air and ride a 9,100-pound load, or 36,000 pounds on a four-wheel rear axle, and last 35,000 miles. Or, if you are in the dirt-hauling business, working around dams and levees, you can buy a tire, tall as a man, weighing 500 pounds with the tube, and costing $525. Ten-wheel vehicles equipped with such tires can haul a 150,000-pound load out of a slimy pit or across a soft field. The reason they can lies in a principle the tireman calls flotation—a very low air pressure, a huge cross section, plus a tread design that gives traction. Encouraged by the success they have had with it, all the tiremen are hotly wooing the farmers, who have some 25,000,000 steelshod farm vehicles that now could be converted to rubber.

NOT by a long shot, however, has the tireman solved all his technological troubles. Consider the disputative matter of the blowout. There is no such thing as a completely blowout-proof tire, no more than there is—or ever will be—a blowout-proof boiler or valve. Tire

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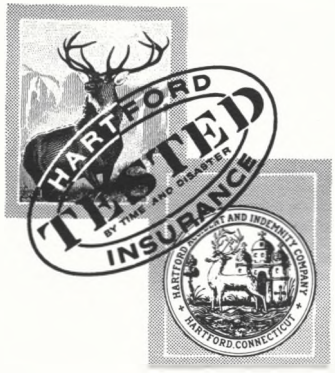

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failure causes blowouts, and the cause of tire failure, other than complete wear, is heat. Heat has always been a serious factor in tire equations, but it became especially serious around 1929-33 when the mass motor producers were jumping engine output from forty-five to sixty-five and seventy-five horsepower. Speeds went up and a terrific strain was put on the tires. Akron was caught napping. First warning it had was a deluge of complaints that tires were delivering only 14,000 instead of 18,000 miles and that they were popping in dreadful fashion. It didn't take long to find out what was wrong.

So far as it affected air pressure, speed was not dangerous. Even at very high speeds the pressure in a passenger-car tire will increase only from three to six pounds, though it may mount as much as twenty pounds in a big truck tire. The trouble came less from the friction of the rubber on the road than from the internal heat of the tire—the flexing of the side walls and shoulders, the effect of ply working against ply. In cold weather that didn't matter so much. But in hot weather it could be dangerous. The "hot spots" on a tire are in the shoulders. On a hot summer day the tire temperature in a small tire will rise as much as 75° above atmospheric temperature; in a truck tire as much as 150°. What happens is that the heat affects the characteristics of both the rubber and the fabric—may cause the rubber-coated cotton cord in the fabric to lose up to a third of its strength. That's one reason why motorists in states as hot as Florida and Louisiana oftentimes get less mileage out of their tires. Heat weakens the tire. If it weakens enough, the tire will blow.

There were several ways the tire designers could resist heat and they tried them all. One was to cut down the mass of the tread and at the same time wedge a little more rubber around the cord fabric at the "hot spots." Another trick was notching and grooving the tread, which had the effect of cooling the tire. The tire builders further combated heat by adding to the myriad chemical compounds used in tires certain anti-oxidants, such as phenylbetanaphthylamine, which resists heat and aging.

IT MUST be patent that rubber, though the most ponderable, is not the final constituent of the tire. If you were able to take a small six-ply tire and restore it to its original materials, then divide those materials into categorical heaps, you would end up with four heaps weighing altogether about twenty-four pounds and distributed as follows:

	Pounds
Rubber	13.71
Fabric	3.77
Wire	.57
Chemicals	6.12

The fabric, of course, is cotton cord twisted to the manufacturer's individual taste, which gives body to the tire. The wire is brass-covered piano wire, which goes into the bead. The compounds may be a mess of any number of evil-looking chemicals—fatty acids such as stearic and oleic acids: softeners such as liquid asphalt, pine tar, and vegetable oils and any number of synthesized heat and age resistants.

Take alone the organic accelerators, quick-acting carbon compounds that besides speeding up vulcanizing time, also enhance enormously rubber's tensile strength. There are dozens of these from which the tire chemist can choose. Two of the commonest are the

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jaw-cracking mercaptobenzothiazole and diphenylguanidine. Such accelerators have reduced tire transit through the vulcanizing pits from three hours at 300° Fahrenheit to forty-five minutes at 265°. It is estimated that they have saved the tire industry $200,000,000 in molds and presses and plant equipment and the motorist $50,000,000 a year in added wear. The great George Oenslager of Diamond, when he introduced aniline in 1906, ushered in the age of organic accelerators. While aniline helped the tire, it didn't help Diamond's gum workers. It turned them blue at the lips. Not caring to look like that, they went next door to look for jobs at Goodrich. Right away Goodrich undertook to learn what its rival might be putting into its tire that would turn a gum worker blue: when it hit upon aniline, Diamond's great secret was out.

Structurally, tires are pretty much alike. If you were to peel back the tight layers of fabric in the carcasses of half a dozen standard tires, you wouldn't notice much difference, except perhaps in the shadings of color in the various ply strata. These shadings are due, in all probability, to the chemical compounds which the tire chemist calls pigments and which are often company secrets.

Whatever pigments or oils or fillers or accelerators your favorite tireman may fancy, you will certainly find in your six-pound heap of chemicals at least three substances in varying amounts. One is carbon black, which is nothing more than soot left by the incomplete combustion of natural gases. A curious fact about carbon black is that small quantities of it were used in the earliest tires to make them black. Years later, the chemists, after slaving over expensive zinc oxide, rediscovered cheap carbon black as the best reinforcing agent ever to fall in and out of the tireman's hands. As much as a third of a tread by weight may be common carbon black. The second substance is sulphur, without which vulcanization could never take place nor the tire remain rigid under its load. The third substance is zinc oxide, which activates the accelerators and serves as a reinforcing and cooling factor. If you find a lot of it in your heap, the chances are that it was also used to whiten the side walls.

All these compounds, which account for between 10 and 16 per cent of the total costs of the tire, add thousands of miles to its life. Without them the merely vulcanized rubber could not live beyond a few hundred miles of travel.

Management and Labor

INDUSTRIAL relations in Akron are no longer, if they ever were, of only local concern. John L. Lewis's Committee for Industrial Organization has been vital in the nurture of the United Rubber Workers Union, and the union has plumped strongly for the C. I. O., Akron workers having previously looked with little interest at the efforts of the A. F. of L. to supply them with craft unionization. Akron is therefore scheduled to be one of the numerous battlefields whereon the C. I. O. and the A. F. of L. will resolve their troubles. And not a few of the labor commentators think Akron, with its high concentration of industry, may see some of the fiercest fighting of all that may be in store on the labor front.

Even though Akron is very much an open-shop city, and even though the current union organizing dates from only three years ago, when NRA's Section 7a opened the way, Akron has had its fights in the past. Akron knows therefore that its tiremen are not inclined to any such thing as union recognition. It also knows that the West Virginia hillbillies who constitute a sizable percentage of the industry's working force can fight hard when they feel like it.

THE tire worker's complaint is not primarily or even secondarily with the wages he gets at work. The tire industry's average is high on that count, one of the highest in the country. Hourly wages in all the major companies run at an average, for skilled and unskilled labor, of between ninety-seven cents and $1, supervisory and executive salaries excluded. Weekly averages for the vast majority of the work run around $30. Nor does the tire worker find special complaint with the seasonal nature of the business. In consideration that its nature is such, its average for months worked per year per employee is fairly good: roughly three-quarters of the year. What the workers object to is the changing relationship between number of tires produced and number of workers employed; technological unemployment, charge the workers, has thrown them out by the thousands; and the speed-up, also say the workers, is making machines out of those who remain. The latter complaint is the chief specific one. The demand for union recognition and the closed shop is, of course, the top point at issue.

Management says "technological improvement," labor says "speed-up." Whichever the cause, the Bureau of Labor Statistics of the Department of Labor reported an elimination of more than 28,000,000 man-hours in the tire industry between 1922 and 1931, a period in which tire production moved from under 30,000,000 to nearly 50,000,000. Statistics have been cited to show that the average annual tire output per wage earner more than doubled in the same period, and poundage output tripled. Naturally, the industry runs pretty heavily to the Bedeaux system of bonus payments for output above a standard set task, and wherever the Bedeaux system appears, someone is going to yell "speed-up." But management can reasonably say that rubber workers have been progressively better paid for their work. And it was not, in fact, until this year that a twenty-year record of outward industrial peace in the tire industry was broken.

It was broken at Goodyear, one bitterly cold night last February. Seasonal layoffs were coming, and that night a group of sixty tire builders staged a sit-down in protest at first getting layoff notices and then being asked to work beyond their time because a blizzard was delaying the arrival of their relief shift. That was settled when Goodyear promised to rescind the layoffs while it studied factory schedules to see what might be done. But next day some 140 men tied one Goodyear plant up tight by stopping their machines and boxing their tools—and once again management gave in. The word went round that Goodyear was on the run, and the union, sure that the psychological hour had come, voted strike. Two days later all three of the Goodyear plants were shut tight as a drum. Picketing extended over an eleven

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Any business, large or small, may be one such. In the past year over 100 companies newly began advertising in FORTUNE. Some inquiring mind in each of those companies must have asked at some point, "What about *this* company becoming a FORTUNE advertiser?"

More than 400 concerns now use FORTUNE. Some sell to FORTUNE-readers-as-Executives, the ultimate power behind the okays in the purchasing department; others sell to FORTUNE-readers-as-People, men and women who travel, turn on radios, drive cars, want ice cubes, like good food, gleaming silver—

FORTUNE's million and more readers (89 percent of whom thumb through the advertising before settling down to read the magazine) may be a profitable market for your own product or service. Considered from this point of view, FORTUNE's advertising pages may suggest the desirability of securing more facts about this market and the low cost of reaching it. To such inquiries, either through your advertising agency or directly to FORTUNE, thoughtful attention will be given. Perhaps we may have the solution to your advertising problem—be it ever so "different".

48% of FORTUNE's advertising is directed to readers as executives-in-offices ... 52% to these same readers as people-in-houses.

Fortune

135 EAST 42ND STREET • NEW YORK

FIVE HUNDRED PER CENT ANNUALLY! A phenomenal "dividend" in any year. An incredible return in the early 1930's! *But here are the facts . . .*

In 1928, a world-famous roller-bearing company invested $1,700 in Johns-Manville Insulation. Fuel savings the first year were $9,000—a return of well over 500%. And each year thereafter, this insulation has paid for itself many times over. Savings to date total more than $50,000. And the insulation is still in service.

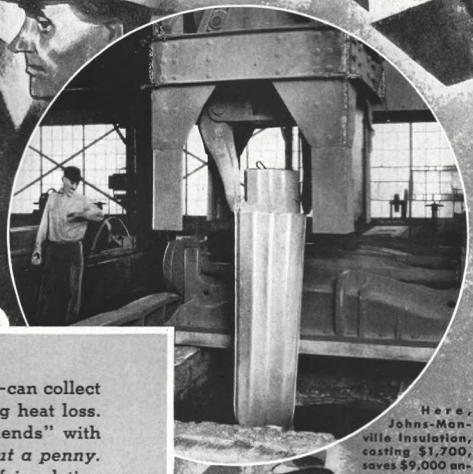
Unconvincing, if an isolated case. But it isn't! There are hundreds of performance reports in the Johns-Manville offices which prove conclusively that most plants—perhaps *your* plant—can collect comparable "dividends" by preventing heat loss.

And you can estimate your "dividends" with amazing accuracy—*before you lay out a penny.* Measuring the potential efficiency of insulation is an exact science with J-M engineers—they've 75 years of research and experience to draw on.

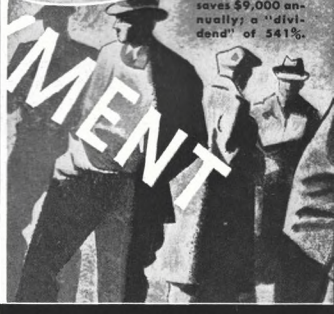
Naturally these virtually guaranteed "dividends" are possible only when the insulation is *right*—in kind, amount and application.

* * *

INTERESTED? Helpful literature on Johns-Manville Insulations for *your* industry is freely available. And an expert survey of your entire plant puts you under no obligation. Address Johns-Manville, 22 East 40th Street, New York.



Here, Johns-Manville Insulation, costing $1,700, saves $9,000 annually; a "dividend" of 541%.



JOHNS-MANVILLE

Controls HEAT, COLD, SOUND, MOTION.
Protects against FIRE, WEATHER, WEAR.

SAVINGS TO DATE $20,000

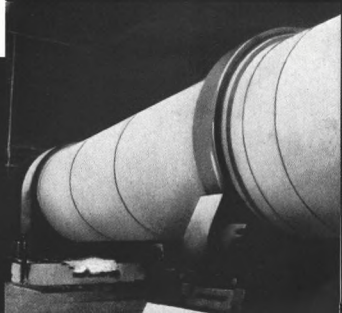
Rotary kiln at the plant of the Pennsylvania-Dixie Cement Corporation, Clinchfield, Ga., insulated with J-M Superex Blocks in 1929 at a cost under $4,000. Fuel savings to date, $20,000.

YEARLY RETURN 242%

Annealing oven at the Chicago Malleable Castings Co., West Pullman, Ill., insulated with J-M Superex and Sil-O-Cel Insulations in 1929. Cost of insulation, $345.35. Net annual fuel saving, $876.56. Return on the investment, 242% yearly.

YEARLY RETURN 418%

Open hearth furnace at a large Ohio steel foundry, regenerators and flues of which were insulated with J-M Sil-O-Cel Insulating Materials in 1927. Cost $2,763.80. Net annual fuel saving, $11,579.85. Return on the investment, 418% yearly.



Tires

[*Continued from page 152B*]

mile front to shut off all entrances. By order of the union, sympathy strikes were kept down. But around the Goodyear plants, filled with officials under siege for many a day and night, a crowd of some 12,000 to 14,000 men and women howled and stamped in the bitter cold—and although Goodyear insists that not more than a thousand of its own workers were in the picket lines, Goodyear production was completely halted for five weeks. Injunctions, newspaper advertisements, charges and countercharges, government mediation, and much besides sprinkled those five weeks. In the end, Goodyear and the union got together and arranged a peace, in which, among numerous other concessions, the company agreed to restudy its layoff policy. The union had tested its strength and found it adequate.

If Section 7a may be said to have given the big impetus to union organization in the tire industry, the Goodyear strike may be said to have crystallized the union as a force. There had been little violence for a strike so big, and the conclusion had been favorable. The effects of which had reverberations on both sides. Union organizing entered a new phase of activity, and the tire companies entered a new phase of preparation, revising their tactics to compete with a tried union instead of an untried.

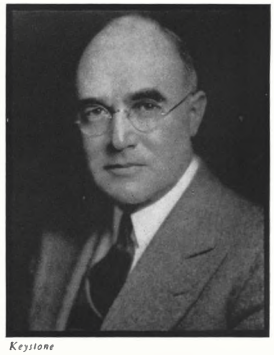
Both phases characterize tires' industrial relations at the moment. But both are confused by the phenomenon of the sit-down, in which the rubber worker has discovered a device much to his liking. Since the Goodyear strike, sit-downs have occurred with such regularity as to deeply embarrass the union leaders and infuriate the companies. In Goodyear alone fifteen sit-downs followed one after another in the first two months after the "settlement" of the strike, some for ridiculously trivial reasons, and have since continued. A sit-down of twenty men can tie up a whole plant. Management claims sit-downs show inability of the union to control its men. The union claims most of them are unauthorized and admits that some of them are unwarranted. At the first convention of the United Rubber Workers in September, the sit-down came in for discussion and reproach. That the problem remained unsettled was indicated a week or so later when Goodrich, generally successful in handling sit-downs, closed temporarily after a series of them.

Data on the extent of union organization are no more reliable in the tire industry than elsewhere. But it is not to be doubted that the proportions in the Firestone, Goodyear, and Goodrich plants are no more than half the union claims—90 per cent—though they may be well above the guarded estimates of 20 per cent made by some managements. In addition, Goodyear has its Industrial Assembly, an employee organization started in 1919 and relied on by many employees for their bargaining. U.S. Rubber, off in Detroit, has not yet appeared importantly in the union's picture. That it will is one of the simpler evaluations of the year to come.

Major gun in the Akron companies' artillery against unionizing is the threat of decentralization. All companies have plants outside Akron. Several of them have built, bought, or otherwise acquired additional extra-Akron facilities in the past year. The union, half believing and half belittling the seriousness of the threat, argues that if the tire companies move the union will move with them. But

[*Continued on page 156*]

Wide World
GOODYEAR'S LITCHFIELD



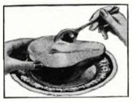
Keystone
GOODRICH'S TEW

Imagine Harry and Me advertising our PEARS in Fortune!

OUT HERE on the ranch we don't pretend to know much about advertising, and maybe we're foolish spending the price of a tractor for this space; but my brother and I got an idea the other night, and we believe you folks who read Fortune are the kind of folks who'd like to know about it. So here's our story:

We have a beautiful orchard out here in the Rogue River Valley in Oregon, where the soil and the rain and the sun grow the finest pears in the world. We grow a good many varieties; but years ago we decided to specialize on Royal Riviera Pears, a rare, delicious variety originally imported from France, and borne commercially only by 20-year-old trees. And do you know where we sold our first crop—and the greater part of every crop since?

In Paris and London, where the finest hotels and restaurants know them to be the choicest delicacy they can serve to discriminating guests. And they serve them at about 75 cents each! Our Royal Riviera Pears went to other distinguished tables too—to the Czar of Russia and to the kings and queens and first families of Europe. We got a great kick out of wrapping big, luscious, blushing Royal Riviera Pears in tissue and knowing they were going to be served on golden plates and eaten with golden spoons.



America's Rarest Fruit—Shall We Ship It Abroad?

But I'm getting away from my story. The idea that kept coming to Harry and me was this: Why must all this fruit go to Europe? Aren't there people right here in America who would appreciate such rare delicacies just as much as royalty? Wouldn't *our* first families like to know about these luscious, golden pears, rare as orchids, bursting with juice, and so big you eat them with a spoon? Wouldn't folks here at home like to give boxes of these rare pears to friends at Thanksgiving and Christmas?

So we made an experiment. We packed a few special boxes of these Royal Riviera Pears and took them down to some business friends in San Francisco. You should have seen their faces when they took their first taste of a Royal Riviera. They didn't know such fruit grew anywhere on earth.

Well, a banker wanted not only a box for home, but 50 boxes to be sent to business friends, to arrive just before Christmas. A newspaper publisher wanted 40 for the same purpose, and a manufacturer asked for 25. And that gave us another idea. We sent 11 sample boxes to important executives in New York, and back came orders for 489 Christmas boxes for *their* friends.

A New Christmas Gift Idea

That seemed to indicate there were plenty of men looking for something new as a Christmas remembrance for friends who "have everything." The next year, orders came in for several thousand boxes of these rare pears, and you never read such letters as we got afterward—not only from the men who had *sent* the pears and made such a hit, but from folks who *received* them and wanted to know if they could buy more.

Well, that's how Harry and I got the idea that there must be *enough* discriminating people right here in the U. S. A. who'd like to do the same thing. So we talked it over the other night and said, "Let's put an ad in Fortune—and see." We got a shock when we found what it would cost us to do it, but here we are—and *you* are going to be the judge.

Right now as I write this, it is late September, and out here in this beautiful valley our Royal Riviera Pears are hanging like great pendants from those 40-year-old trees. We'll have to watch them like new babies from now until picking time—not a leaf must touch them toward the last—trained men will pick them gently with gloved hands and lay them carefully in padded trays. They'll be individually wrapped in tissue, nestled in cushion packing, and sent in handsome gift boxes lithographed in colors, to reach you—or your friends—firm and beautiful, ready to ripen in *your* home to their full delicious flavor.

I envy you *your* first taste of a Royal Riviera—every spoonful dripping with sweet liquid sunshine. And you can just bet that every one who receives a box is going to have the surprise of his life.

We hope that right now you'll make up your list of business and social friends and let us send them each a box with your compliments. We'll put in an attractive gift card with your name written on it, and

we'll deliver anywhere in the United States proper, wherever there is an express office, express prepaid, to arrive on the date you name. And don't forget to include a box for yourself! A "Medium Family" box (10 pounds) is only $1.85. A "Large Family" box (double the quantity) is $2.95. At these low prices these pears cost a mere fraction of what you would pay for them in fine restaurants and hotels. And here's how sure we are you'll be delighted. If, after eating your first Royal Riviera, you and your friends don't say these are the finest pears you ever tasted, just return the balance at our expense and your money will come back in a hurry. Harry and I have agreed you are to be the final judge—***and we mean it.***

Just one more thing—there are far more folks reading Fortune than there will be boxes of Royal Riviera Pears this year. So, if you want to be sure to get some, we hope you'll send your order right along. We are putting a coupon down below, but a letter is just as good. Only, if you write, please say you saw this in Fortune.

HARRY and DAVID
Bear Creek Orchards, Medford, Oregon.

Bear Creek Orchards, Box 1201, Medford, Oregon.
Send Royal Riviera Pears to the list attached, all express charges prepaid, to arrive (date) .... Enclose a gift card bearing the following name
....
......"Medium Family" boxes (10 pounds) at $1.85 each.
......"Large Family" boxes (double quantity) at $2.95 each.
I enclose check (or money order) for $ ....
Name...
(YOUR name here—please PRINT plainly)
Street...
City.......................... *State*..................

Prices outside U.S.A. proper: Honolulu, $2.25 and $3.20. Winnipeg, $2.40 and $3.65. Montreal, $2.70 and $4.05. Vancouver, $2.00 and $3.10. Toronto, $2.65 and $3.95. Quebec, $2.80 and $4.15.

Tires

[*Continued from page 154*]

unionizing would be rendered more difficult, as both sides know. And to the companies the cost of the move would be prodigious.

The sum of the situation is, as with the merchandising situation, that the present is in the nature of an interlude. But the possibility only remotely exists that this interlude is anything other than the calm before the storm. Management and labor alike are looking for something to happen, probably on the occasion of the next seasonal layoffs, which are due shortly. Management has shown its preparations in the form of unusually high finished inventories: Goodyear has a three-month supply on hand, Goodrich will have a stock sufficient for three months by the end of the year. Labor showed its preparations at its first convention, in such exhortations to actions as this: "All the agencies of hell which money can organize will never defeat this movement . . ."

TODAY the tireman waits in the interval between two epochs in his tumultuous career. Behind him lies the receding wreckage left by ten years of internecine strife and the depression itself. Directly ahead is the oncoming front of labor. And ahead also, thanks to his own technical accomplishments, the discouraging probability that in the next few years to come his unit sales may never cross 60,000,000 tires, which would be 18,000,000 less than in 1928.

But do not take this as the horoscope of a ruined industry. There are some 26,000,000 cars in use in the U.S. Even if during the next few years there may not be a great many more, it is equally true there are not likely to be a great many less. As we have seen in the section dealing with technology, a huge and as yet untouched market may be opened up if the farmer can be persuaded to equip his tractors and reapers with rubber tires. So long as there are vehicles, tires will be needed to shoe them, and a great industry will be needed to supply those tires. That industry is, has been, and for a long time will be, a basic industry. If the deadwood at its financial frontiers could be cleared away, if the price-cutting wars could be held in check, if the senseless business of gaining volume at the expense of profit could be restrained within reasonable limits, and peace endures with labor, the tireman ought to be able to make money again.

So the real problem confronting the tireman is management—management in its psychological functions, in its attitude, say, toward merchandising, rather than in its corporate mechanics. On this selected basis, management is responsible for much of the grief in the tire business. That it recognizes its mistakes is implicit in the present lull. This may mean, of course, only that the giants have retired to lick their wounds. Nevertheless it is the most hopeful augury in the tireman's horoscope.

ERRATA

For the following errors in recent FORTUNE stories, FORTUNE hereby rebukes itself, and apologizes to those concerned:

¶In its article on Philadelphia, published in June, was listed many an activity of Mayor S. Davis Wilson. The list concluded: "Every Friday night he gives a fireside chat over station WCAU." The fireside chat is real enough, but the station over which it is transmitted is not WCAU but WIP, operated by the Pennsylvania Broadcasting Co.

¶In its September issue, devoted to Japan, FORTUNE published on pages 48 and 49 a map titled "The Expanding Empire of Japan." Shown there were two communication routes to the Orient: the fourteen-day steamship service out of San Francisco to Yokohama, the four-and-one-half-day Pan American air route out of San Francisco to Manila. Conspicuously missing: Canadian Pacific's ten-day route from Vancouver to Yokohama; several freight and passenger services out of Portland, Oregon.

¶In the same Japanese issue, on pages 76 and 77, FORTUNE spoke of girl hand workers shaping "celluloid toys" for the export trade. To this, proper exception is taken by the Celluloid Corp., which says: "Celluloid is a registered trademark of our company. Consequently any articles made both in the United States and abroad of substitute materials cannot be described as Celluloid, inasmuch as this would be a distinct violation of the privileges granted to us by the U.S. Patent Office. Actually, there is only one manufacturer of Celluloid in the world, and that is the Celluloid Corp. In the past we have made strenuous efforts to prevent importers of Japanese-made pyroxylin products to refer to them as Celluloid and we have succeeded."

"WE'LL GET THERE MAYBE MONDAY"

Color photograph by Anton Bruehl. Socony-Vacuum exhibit at Rockefeller Center, New York

Oil and "On Time" came in together... Socony-Vacuum helps 110 leading lines meet schedules

MAYBE SUNDAY, MAYBE MONDAY... it was all the same to the old iron horse. What with three stops an hour for fueling up with wood ...with frequent breakdowns... with squabbles for the right-of-way against oncoming trains... it was asking too much to know when and where you'd arrive!

Hardly was it a coincidence that oil and "on time" came in together. When petroleum products replaced whale oil and mutton-tallow, many revolutionary engine improvements followed. Bigger boilers ...greater power... super-heating... and high-speed reliability for every turning wheel. In the short space of twenty years, train speeds were more than doubled... and rigid schedules became the rule.

Today, Socony-Vacuum makes over 60 kinds of liniment for the sleek, speedy, streamlined Pegasus of the rails. In America, over 110 railroad systems depend on Socony-Vacuum products. Abroad, the Royal Scot, Flying Hamburger and many other famous trains operate more economically because of Socony-Vacuum lubrication.

And where rails can't go... on sea and through the sky... schedules are maintained with lubricants bearing the same familiar sign of the Gargoyle. On highways, too, motoring is made safe and sure by Mobilgas, America's largest selling gasoline, and Mobiloil, the world's favorite motor oil. Whatever your business... if you use oil you can benefit by our 70 years' experience in lubrication.

SOCONY-VACUUM OIL COMPANY, INC.

STANDARD OIL OF NEW YORK DIVISION · WHITE STAR DIVISION · LUBRITE DIVISION · WHITE EAGLE DIVISION · WADHAMS OIL COMPANY
MAGNOLIA PETROLEUM COMPANY · GENERAL PETROLEUM CORPORATION OF CALIFORNIA

SOCONY-VACUUM

FLAVOR, the invisible yet precious ingredient in all packaged foods, is an unwilling captive. Given the slightest opportunity, it escapes—and cannot be recaptured!

That's why leading packers of ketchup and chili sauce . . . mayonnaise and salad dressing . . . preserves and jellies . . . fruits and vegetables . . . pickles and fruit juices . . . are turning to Vapor-Vacuum Sealing (with Whitecaps)—a new, revolutionary food-packing process that eliminates the problem of closures.

There is a Whitecap for every type and size of glass food-container.

THE PROCESS

A simple mechanism, adapted to high-speed "straight line" production, sterilizes the cap, the exposed surfaces of the product and the container, with dry live steam . . . creates the highest commercial vacuum possible on hot or cold goods . . . and hermetically seals the package in a single operation.

VAPOR-VACUUM* SEALING

*Trade-Mark of White Cap Company

WHITE CAP COMPANY • NEW YORK CITY CHICAGO SAN FRANCISCO LONDON, ENGLAND

[Continued from page 97]

transactions in interstate commerce. Its prohibitions are in terms of price *discrimination* and price *cutting;* but any consideration of its validity as a regulation of interstate commerce must start with examination of the portions of the majority and minority opinions of the Supreme Court in the Carter case which deal with the validity of the price-*fixing* provisions of the Guffey Coal Act. The Court did not pass upon the validity of those provisions in the Carter case, and the question whether, and in what circumstances, Congress can fix commodity prices on sales in interstate commerce remains the great unanswered question under the commerce clause today. That question has a controlling bearing on the validity of the Robinson-Patman Act. The opinions in the Carter case do discuss this price-*fixing* question, thus affording illustration of two fundamentally opposing philosophies in the construction of the Constitution; and these must be examined briefly before consideration can be given to the validity of the instant statute as a regulation of interstate commerce.

Some commands and prohibitions in the Constitution may properly be read literally, dictionary in hand. An example is the provision that each state shall have two Senators in Congress. But from earliest days until the spring of 1936 there had been no dissent in the Supreme Court from the rule that the general clauses of the Constitution (such as the commerce clause) could not properly be read "with literal exactness like a mathematical formula." The Court has heretofore, in respect to the commerce clause, asked the questions: what is the *nature* of the regulations which it was intended Congress should have power to make in respect to interstate commerce, and are the "regulations" of this statute of that kind? These questions have been answered by recourse to the history of the framing of the clause and by consideration of our social institutions, the objects and purposes of the Constitution as a whole, the kind of government intended to be founded, and the judicial construction of the clause in other cases throughout our history. The Court has always insisted that such regulations be consistent with the "object and scope" of the commerce power and that they should not be measures which "destroyed that freedom of commerce which it was its purpose to preserve."

And yet in the Carter case three Justices (Justices Brandeis, Stone, and Cardozo) declared the price-fixing provisions of the Guffey Act a regulation of interstate commerce within the meaning of the commerce clause. They did so on the ground that the fixing of the price at which a commodity may be sold across a state line is a regulation of interstate commerce in the dictionary sense. If the views as to the construction of the commerce clause advanced by the three dissenters in the Carter case should become the rule of the majority of the Court in the future, the regulations of the Robinson-Patman Act, one and all, are within the commerce power and our discussion is at an end.

It is safe to say, however, that this novel method of construing the commerce clause will not be accepted by a majority of the present Supreme Court. The Robinson-Patman Act must, accordingly, pass the test to which all prior statutes under the commerce clause have been subjected when they came before the Court—are its commands and prohibitions reasonably related to the accomplishment of objects within the intended scope of the commerce power? The inquiry as to the scope of the power sought to be exercised in a statute overlaps the inquiry whether that statute violates the due-process clause.

Due process

SPEAKING broadly, the theory of the due-process clause of the Fifth Amendment as interpreted by the Supreme Court is that the Constitution was founded in the view that individual liberty in the business of earning a livelihood was the norm and that there should be a minimum of governmental interference with this basic right. The scope of the admitted powers of governments, state and national, must in this view be construed as including only such measures as are consistent with the continued preservation of individual liberty. Thus the Supreme Court has invalidated statutes infringing the right of the citizen to determine for himself in what trade or business he will engage, the right of the businessman to choose his customers and business associates, the right of the workman to choose his employer and of the employer to choose his employees, the right of the owner to fix the price at which his property shall be sold or used, or the right of employers and employees to determine between themselves, and without governmental compulsion, the wages which they respectively shall pay or for which they shall work. While these rights are not absolutes, they have been regarded as fundamentals of the society in which we live and as "indispensable requirements of the liberty assured" by the due-process clauses of the Constitution.

[Continued on page 160]

[*Continued from page 159*]

These basic guaranties have been enforced, however, with due regard to the nature of the business to which the regulation attaches. Businesses in their nature monopolistic may constitutionally be subjected to more stringent governmental regulation than others—extending, in the case of public utilities, to the fixation of their prices, for that is an appropriate and possibly the only efficacious means of preventing public injury from monopoly. Doctors may be required to prove their competence before they are permitted to practice medicine. But a state cannot say how many people shall engage in the ice business, for example, however much better off economically we might be as a nation if government planning boards could determine how many and which people should engage in each of the general callings. The possession of such a power in government, state or national, would plainly be inconsistent with the kind of society which is ours.

The tests which the Supreme Court applies in determining whether governmental regulations of business are or are not consistent with the basic concepts of individual business liberty are nowhere better stated than in a passage in its opinion outlawing the Oklahoma Ice Law:

"Stated succinctly, a private corporation here seeks to prevent a competitor from entering the business of making and selling ice. It claims to be endowed with state authority to achieve this exclusion. There is no question now before us of any regulation by the state to protect the consuming public either with respect to conditions of manufacture and distribution or to insure purity of produce or to prevent extortion. The control here asserted does not protect against monopoly, but tends to foster it. The aim is not to encourage competition, but to prevent it; not to regulate the business, but to preclude persons from engaging in it. There is no difference in principle between this case and the attempt of the dairyman under state authority to prevent another from keeping cows and selling milk on the ground that there are enough dairymen in the business; or to prevent a shoemaker from making or selling shoes because shoemakers already in that occupation can make and sell all the shoes that are needed. We are not able to see anything peculiar in the business here in question which distinguishes it from ordinary manufacture and production. It is said to be recent; but it is the character of the business and not the date when it began that is determinative. It is not the case of a natural monopoly, or of an enterprise in its nature dependent upon the grant of public privileges. The particular requirement before us was evidently not imposed to prevent a practical monopoly of the business, since its tendency is quite to the contrary. Nor is it a case of the protection of natural resources. There is nothing in the product that we can perceive on which to rest a distinction, in respect of this attempted control, from other products in common use which enter into free competition, subject, of course, to reasonable regulations prescribed for the protection of the public and applied with appropriate impartiality."

This review is pertinent to a proper consideration and understanding of the Robinson-Patman Act, because the Act seeks to apply stringently restrictive rules to the purchase and sale of every type of commodity. Some of these rules have been sustained in relation to interstate railroads, but it is not possible to say they can be sustained by the Court indiscriminately as respects all interstate commerce.

The present statute, in some respects, as in the quantity-limit provision, seeks to apply a governmental regulation appropriate to the necessary public control of railroads to all commodity buying and selling. The constitutionality of such provisions, if given the full scope which appears to have been intended, is open to the gravest question under the due-process clause of the Fifth Amendment. With respect to commodity buying and selling in general, the privilege of selling to whom one pleases, at what price and in what quantity one pleases, must still be regarded as the rule and not the exception.

Indefiniteness

INDEFINITENESS in a federal statute may give rise to two questions concerning its constitutionality: (a) whether it violates the due-process clause of the Fifth Amendment, and the guaranties of the Sixth Amendment, by failing to inform the individual what, precisely, is made criminal; and (b) whether it constitutes an improper delegation of legislative power to administrative officials.

While the present Act does not give an administrative body as broad and unfettered authority to make what law it pleases, as did the provisions of NRA condemned in the Hot Oil and Schechter cases, and while it does not confer upon private individuals the power to make binding law for their industry, as in certain labor provisions of the Guffey Coal Act condemned in the Carter case for this reason, the present statute is seen to be most indefinite when attempt is made to read its prohibitions in the light of its exceptions and provisos.

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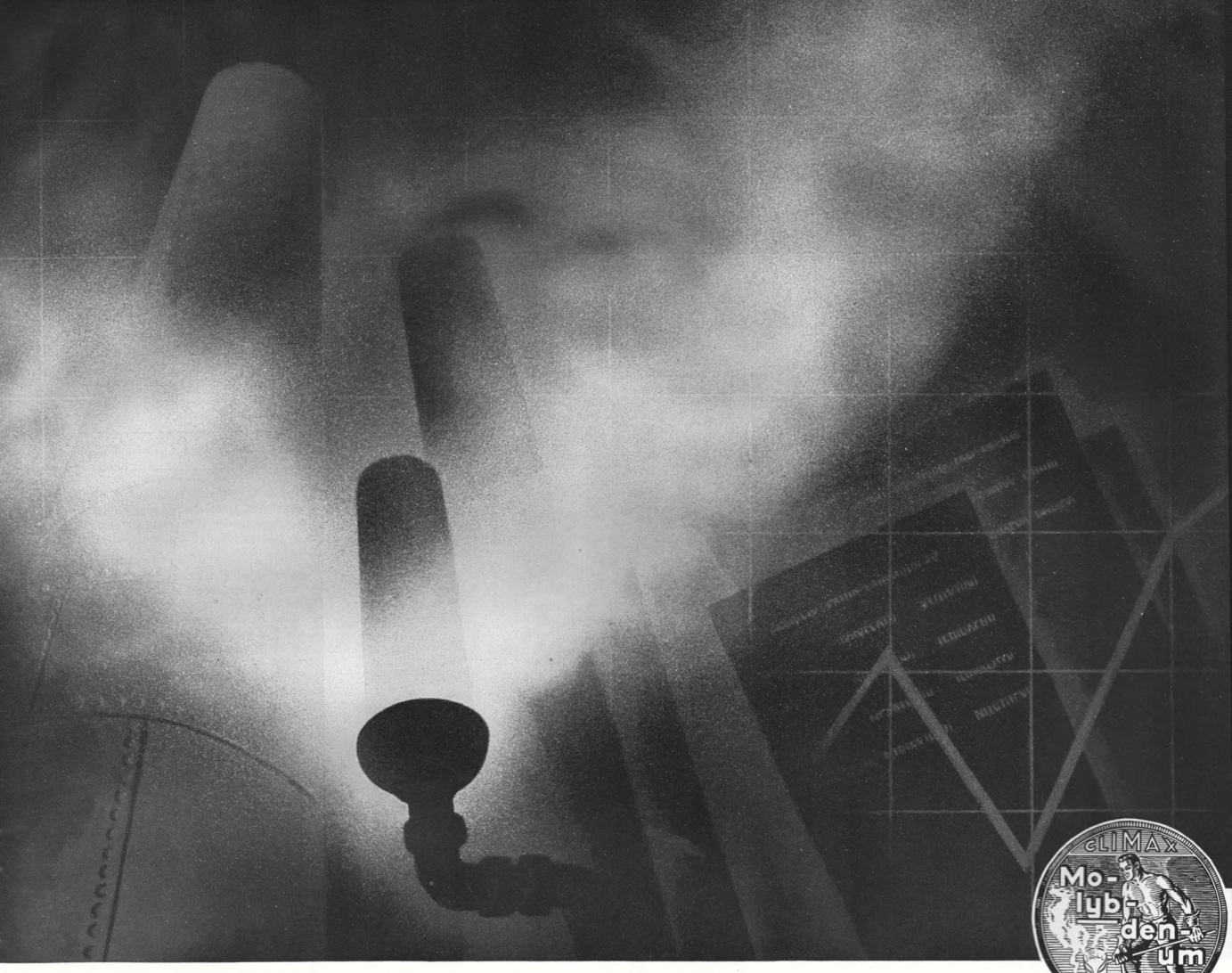

Costs—Sales—and Whistles

COST SHEETS and sales sheets on executives' desks. . . . They hold many a whistle-cord—the decision that either calls an industry to work or compels it to remain idle. In a wide range of manufactories it can well be said that "Moly blows the whistle" . . . because it is through the use of Molybdenum irons and steels that their production costs are kept within bounds that permit profitable competitive selling.

Molybdenum irons and steels reduce fabrication costs—in heat-treating, forging, carburizing, machining, nitriding. They assure greater uniformity of product . . . a consistently higher standard of quality. Through excellence and dependable performance, they lead to priceless good-will and inevitably to increased sales.

If your business involves ferrous materials or ferrous fabricating, investigate Molybdenum—"industry's most versatile alloying element." Its many-sided qualities for improving iron and steel are a matter of widespread record.

* * *

WE INVITE ADMINISTRATIVE, SALES AND PRODUCTION EXECUTIVES TO SEND FOR OUR NON-TECHNICAL BOOK, "MOLYBDENUM IN INDUSTRY," CLIMAX MOLYBDENUM COMPANY, 500 FIFTH AVE., NEW YORK.

MOLY

CLIMAX **Mo-lyb-den-um**

CUTS COSTS

CREATES SALES

[*Continued from page 160*]

But the text of the Sherman Act is of a like indefiniteness, and the Court has sustained it, in both its civil and its criminal aspects. That law is one, in the Court's descriptive phrase, "not specifying but indubitably contemplating and requiring a standard"; and the Court was able to save its constitutionality only by using collateral aids for determining legislative intent, and thereby ascertaining the standard which the statute was deemed to have contemplated. This very construction was later urged, in a criminal case, as the best evidence of the unconstitutional indefiniteness of the Sherman Act as a criminal statute. The Court rejected this argument upon the philosophy that in a highly complex society statutes cannot be too detailed, and that men must take some chances that they read the law aright.

It would not be safe to assume that a similar process may not be used to uphold the Robinson-Patman Act on this point. The battle as to the constitutionality of this statute will undoubtedly center on the major questions under the "regulation" requirements of the commerce clause and under the due-process clause.

Construction and Validity of Specific Provisions

I: Section 1 (a), main clause and first proviso

Subsection (a) of Section 1 of the new Act consists of a main enacting clause with four provisos. It will be convenient to consider initially the validity of the main clause and the first proviso. These read:

"That it shall be unlawful for any person engaged in commerce, in the course of such commerce, either directly or indirectly, to discriminate in price between different purchasers of commodities of like grade and quality, where either or any of the purchases involved in such discrimination are in commerce, where such commodities are sold for use, consumption, or resale within the United States . . . and where the effect of such discrimination may be substantially to lessen competition or tend to create a monopoly in any line of commerce, or to injure, destroy, or prevent competition with any person who either grants or knowingly receives the benefits of such discrimination, or with customers of either of them: *Provided*, That nothing herein contained shall prevent differentials which make only due allowance for differences in the cost of manufacture, sale, or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered:"

If the clause with respect to the "effect of such discrimination" were omitted, the effect, at least, would be clear. It would be the enactment of a flat and all-inclusive one-price rule, conditioned not upon the preservation of competition or the prevention of monopoly, but solely upon costs. Whether "discrimination in price," read in the light of the cost "differential" proviso, be construed as imposing a policy of f.o.b. factory prices on all,* or whether construed as permitting nationally equalized delivered prices but requiring that any variance must be justified on a cost-to-seller basis,† the result in either case is price fixing, since one sale fixes the price for all like sales.

WITHOUT the above-quoted limitations, these provisions of the statute would be invalid as having no reasonable relation with legitimate objects of the commerce power. A statute of Minnesota, lacking such limitation but otherwise indistinguishable in essence, was held unconstitutional in 1927 by the Supreme Court in the Fairmont Creamery case upon the ground that a flat prohibition of commodity price discrimination between different localities within the state, not qualified by the necessity of showing that a particular discrimination had the purpose or effect of destroying competition or tending to monopoly, had no reasonable relation to the accomplishment of the legitimate objects of the police power of the state. While this decision dealt with state power, the question of reasonable relation is the same in respect to exercises of the police power as it is in respect to exercises of the commerce power. Neither, under the present state of the Supreme Court decisions, gives the government concerned authority to enact any blanket policy that it wishes for the control of the price term in commodity sales in private industry. The rule which the government does enact must be limited to those instances where the proscribed practice

[*Continued on page 164*]

* *It seems unlikely that the Act can be construed as requiring this, in view of the defeat in Congress of a provision defining "price" "to mean the amount received by the vendor after deducting actual freight or cost of other transportation, if any, allowed or defrayed by the vendor."*

†*See Senate Report No. 1502, Seventy-fourth Congress, second session: "The bill neither requires nor compels the granting of discriminations or differentials of any sort. It leaves any who wish to do so entirely free to sell to all at the same price, regardless of differences in cost, or to grant any differentials not in excess of such differences."*

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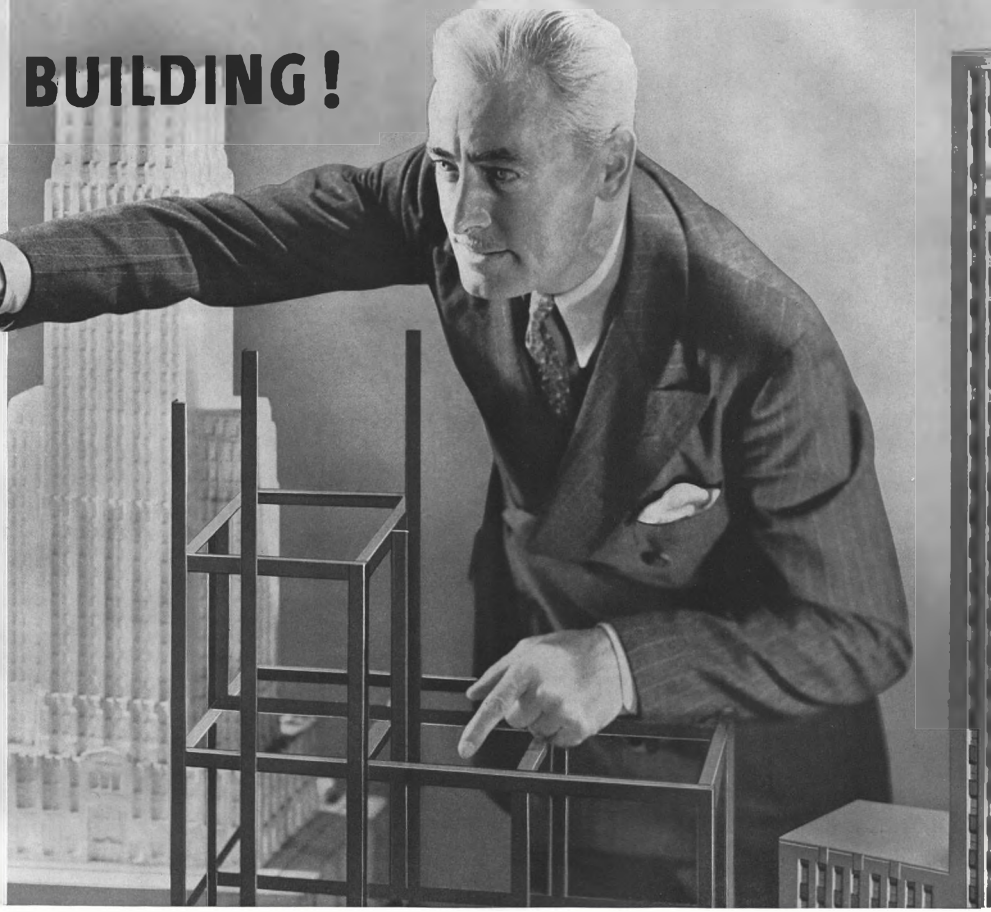

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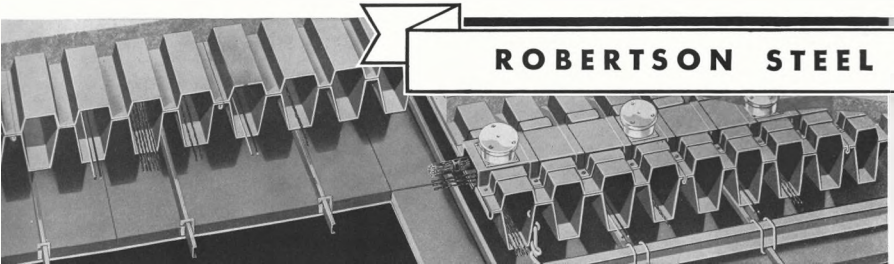

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[*Continued from page 162*]

is undertaken in a specific case with the intention, or is of such a character as necessarily to have the effect, of destroying competition or tending to monopoly. The Fairmont decision makes clear that all discriminations in price between different purchasers, not justifiable on the basis of cost to the seller, do not necessarily have that effect. By enacting a flat rule such as this statute would enact if it did not contain the clause relating to effect on competition and monopoly, the government would be curbing normal activities of the many in order to reach vicious practices of the few. This it may not do.

But where a statute limits its prohibition to particular instances in which price discrimination is undertaken with the intent or has the effect of suppressing competition and tending to monopoly, it is constitutional. In *Central Lumber Co.* v. *South Dakota*, decided in 1912, the Supreme Court sustained the constitutionality of a state anti-price-discrimination law which, by its express terms, limited its operation to instances where the discrimination was undertaken intentionally and for the purpose of destroying or preventing competition; and in the Van Camp case, dealing with old Section 2 of the Clayton Act, which was expressly limited to price discriminations the effect of which might be substantially to lessen competition or tend to create monopoly, the Supreme Court did not question its validity.

The emphasis in reading the initial clause and first proviso of the first section of the present Act must therefore be upon the qualification: "where the effect of such discrimination may be substantially to lessen competition or tend to create a monopoly in any line of commerce, or to injure, destroy, or prevent competition with any person who either grants or knowingly receives the benefit of such discrimination, or with customers of either of them."

The first half of this disjunctive limitation is identical with the limitation contained in old Section 2 of the Clayton Act, and, on the basis of the Central Lumber and Van Camp decisions, it must be concluded that the statute is constitutional as applied to transactions falling within this part of the limitation. It is not restricted to instances where the described effect occurs in the line of commerce in which the seller is engaged; but extends to lessening competition or tending to create monopoly in the line of commerce in which the purchaser is engaged. But it does not operate to extend the prohibition of price discrimination to the mere possibility of the consequences described—it must appear, in the circumstances of the particular case, that there is a probability of lessening competition or an actual tendency to monopoly.

The latter half of this limitation is an entirely new provision and is intended substantially to enlarge the categories of consequences which will render price discriminations illegal. But the new categories are all similar in kind to those contained in the first portion of the limiting clause, and their validity would seem to be sustainable upon the same reasoning. Possible grounds of objection would appear if the word "injury" were given too broad an application by the Commission, for in normal competition the businessman "injures" his competitors in some sense of the word. The new clause should be applied in consonance with the Court's reminder that: "If real competition is to continue, the right of the individual to exercise reasonable discretion in respect of his own business methods must be preserved."

The conclusion, then, is that the main clause of Section 1 (a) of the Robinson-Patman Act, and the first proviso thereto, do not prohibit every price discrimination of the type described, but only those of that type which are shown to have the effects described. It is valid on its face.

II: Section 1 (a), second proviso

This proviso, which is wholly new, reads:

"*Provided, however,* That the Federal Trade Commission may, after due investigation and hearing to all interested parties, fix and establish quantity limits, and revise the same as it finds necessary, as to particular commodities or classes of commodities, where it finds that available purchasers in greater quantities are so few as to render differentials on account thereof unjustly discriminatory or promotive of monopoly in any line of commerce; and the foregoing shall then not be construed to permit differentials based on differences in quantities greater than those so fixed and established:"

So long as the Federal Trade Commission administers this proviso only in cases where quantity purchases are so few that it can be shown that a quantity differential beyond a certain point would be promotive of monopoly, the section can be sustained. The difficulty will arise in instances where the Commission finds that quantity differentials above a certain point will be "unjustly discriminatory."

When framing this provision Congress was repeatedly told that a precedent existed in the fact that the Interstate Commerce Commission had always refused to permit transportation differentials based on more than carload quantities. As previously noted, the analogy between buying and selling commodities in interstate commerce and

[*Continued on page 166*]

ARCHITECTURE AMERICAN STYLE

Not the architecture of leisure, but the architecture of action. Not spires for the sake of spires, but towers of usefulness, symbolizing mass consumption and "the American way."

Smoking chimneys and the up-curves of advertising show that American business is definitely on the march. The cards are again played well out from the chest—that too is "the American way"—but we believe there is enough Scotch in the national make-up to insist on competitive bids, even in the buying of advertising service.

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EACH OFFICE AN AGENCY IN ITSELF, EQUIPPED TO GIVE FULL SERVICE TO CLIENTS: New York, Chicago, Cleveland, Detroit, Denver, San Francisco, Los Angeles, Seattle, Portland, Ore., Montreal, Toronto, Winnipeg, Vancouver, London, Paris, Frankfort, o. M., Buenos Aires, Rio de Janeiro.

[*Continued from page 164*]

charging rates for transporting those commodities in interstate commerce is not complete. As applied to commodity selling, this provision is capable of indiscriminate use for the suppression of mass production and distribution as evils in themselves, without regard to monopoly or monopolistic tendencies. Such application of this provision of the statute cannot be sustained, in the present state of the Supreme Court decisions, as a permissible and legitimate end of the commerce power.

III: Section 1 (a), third proviso

"*And provided further,* That nothing herein contained shall prevent persons engaged in selling goods, wares, or merchandise in commerce from selecting their own customers in bona fide transactions and not in restraint of trade:"

This is identical with a provision previously contained in old Section 2 of the Clayton Act. How much real liberty it leaves to the individual in the selection of his own customers is of course determinable with reference to the scope that is given to the particular prohibitions of the statute, some of which have already been discussed, the remainder of which will be considered in the succeeding discussion.

IV: Section 1 (a), fourth proviso

"*And provided further,* That nothing herein contained shall prevent price changes from time to time where in response to changing conditions affecting the market for or the marketability of the goods concerned, such as but not limited to actual or imminent deterioration of perishable goods, obsolescence of seasonal goods, distress sales under court process, or sales in good faith in discontinuance of business in the goods concerned."

This is permissive, and is constitutionally unobjectionable if not construed—and it cannot properly be construed—as purporting to outlaw all price changes other than those described. The real questions as to the constitutionality of this statute relate to the scope of its prohibitions, not to the scope of its permissive provisions. Every price *change* necessarily involves a discrimination between the purchasers who bought before and those who bought after. As already indicated in the preceding discussion, the primary prohibition of the statute will not itself be constitutional if construed to prevent price discriminations not shown to have the effects in respect to monopoly and competition already discussed. The privilege of the businessman to change his prices cannot be considered to have been extinguished.

V: Section 1 (b)

"(b) Upon proof being made, at any hearing on a complaint under this section, that there has been discrimination in price or services or facilities furnished, the burden of rebutting the prima facie case thus made by showing justification shall be upon the person charged with a violation of this section, and unless justification shall be affirmatively shown, the Commission is authorized to issue an order terminating the discrimination:"

This provision is wholly new and, though relating only to procedure, is one of the most important provisions in the Act. It does not apply either in criminal prosecutions or in suits for damages, but only in proceedings before the Federal Trade Commission. *It is unconstitutional unless construed so as to rob it of the major part of its force.*

The section provides that upon proof of discrimination, without regard to its intent, effect, or possible justification, a violation of the law is presumed. The presumption is not conclusive, but that alone does not save its constitutionality. The test of validity under the due-process clause of a statutory provision creating a prima facie presumption is the reasonableness of the relation between the fact proved and the fact presumed therefrom. In the Fairmont case the Supreme Court said of a statutory provision forbidding price discrimination without regard to its effect: "We think the inhibition of the statute has no reasonable relation to the anticipated evil." Under the test set forth above, this section of the Act, considered as a prima facie presumption provision, is, therefore, clearly unconstitutional.

There appear to be but two ways in which its constitutionality can be saved. One would be for the Supreme Court to repudiate its statement in the Fairmont case and accept the view that there is a reasonable relation between price discrimination, in and of itself, and a tendency to monopoly or suppression of competition. The other would be to adopt the narrow construction given to a similar statute in the Turnipseed case, i.e., to construe it not as creating a prima facie presumption to be weighed against opposing proof, but as creating a temporary inference of fact "that vanished upon the introduction of opposing evidence." This interpretation would emasculate the subsection.

If given the broader construction and held unconstitutional, the

[*Continued on page 171*]

I Like to Buy My Steel From Inland

INLAND QUALITY STEEL PRODUCTS

Inland makes a wide range of high quality steel products as listed below. • Inland set the pace for the industry in building their large, wide type Continuous Strip Mill, and has had the advantage of four years of experience in perfecting its operation. • The Strip and Sheets rolled on Inland's Continuous Mill are recognized as unsurpassed in the industry.

Principal Products

SHEETS STRIP TIN PLATE
PLATES STRUCTURALS PILING
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Why do I like to buy from Inland? Well, there are many reasons—I'll name several. First—They make good steel. • Perhaps even as important is the fact that they are a good sized well coordinated unit. • Their experienced field men are in constant touch with their executives. They can give me immediate answers. They know what they can roll—when they can roll it—and they make good. • They have not only the desire, but the ability to take care of me in an emergency. Even when the problem is a most difficult one, they understand and help me solve it. • They take a personal interest in my business: that's why I like to buy my steel from Inland.

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The American standard of living is the envy and marvel of the world. Its maintenance and advancement depend directly upon the amount of wealth we are able in future to create. Now ask yourself this: How shall we best create that needed wealth? By dividing what we have? By "stabilization" under restriction or regimentation? By imposing limitations upon agriculture and industry, the sole creators of wealth, so that both produce fewer things at higher prices for fewer people? *Not one of such proposals squares with American experience or with the process which brought the*

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ESS SERVES AMERICA!

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Before its new cars are introduced, General Motors checks engineering developments, style trends, improvements in convenience and advancements in design with the tastes and desires of the public by sending out more than a million letters to car owners. Thus, on a scale which early industry could not undertake, it safeguards its employes, its stockholders and the buyers of its cars against the errors or penalties of guesswork.

American standard of living to its present matchless place! On the contrary, we outstripped the nations of the world because the energy and enterprise of our people were free to *multiply* wealth, to *go forward* instead of "stabilize," to succeed in the productive task of making *more* things at *lower* prices for *more* people. Have conditions changed? They have to this extent: today in America more people want and need more and better things than ever before! In the satisfying of these wants is America's opportunity to serve progress in a measure never heretofore known, and to attain for our people a standard of living beyond anything we have dreamed!

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HIS NAME LIVES ON LIKE THAT OF ANY MASTER . . .

KENTUCKY was an open book to Col. E. H. Taylor, Jr. Yet in all his native state his questing revealed no whiskey so ripe and rich and golden as the bourbon of his ideal.

So he set out to outstrip existing excellence and turn his ideal into liquid reality. And today the world counts Old Taylor among its few superlatively great whiskies.

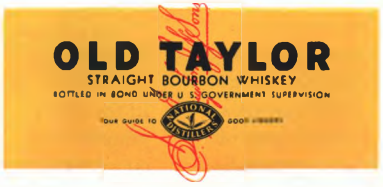
Through a score of years stretched the work of "Old Taylor," as the Blue Grass familiarly knew him. Against repeated failure he resolutely matched precious time and persevering patience.

Finally came reward. Aging-barrels were broached. The bourbon he had dreamed of flowed forth. He signed it with his name.

Thus swiftly told is the story of this Kentucky straight bourbon, four and one-half years old, full 100 proof and *bottled in bond under U. S. Government supervision.*

Old Taylor of our day is identical with "Old Taylor's" bourbon of half a century ago. For every tiny detail of his final formula has been zealously preserved as truth itself.

If you would know the master's nectar, ask for Old Taylor in bar or store.



NATIONAL DISTILLERS PRODUCTS CORPORATION
NEW YORK, N. Y.

[*Continued from page 166*]

result would not be a complete invalidation of the Act, for the section is plainly separable and could fall without disturbing the rest.

VI: Section 1 (b), proviso "*Provided, however,* That nothing herein contained shall prevent a seller rebutting the prima facie case thus made by showing that his lower price or the furnishing of services or facilities to any purchaser or purchasers was made in good faith to meet an equally low price of a competitor, or the services or facilities furnished by a competitor."

This proviso is narrower than the provision in old Section 2 of the Clayton Act for which it was substituted. That provision permitted "discrimination in price in the same or different communities made in good faith to meet competition," while this section permits a discriminatory price lowered only so far as to equal a competitor's price. Its ambiguity caused considerable discussion in Congress. It was explained that it did not justify national price cutting to meet local competition, and it was said on the other hand that it did not legalize price discriminations solely because a competitor indulged in them.

Difficulty with this ambiguous proviso can be avoided by the reflection that it is permissive and that the important things in this Act are the prohibitions. What is important is that price discriminations, whether or not made to meet equally low prices of competitors, are valid unless in the particular case they have the effects in respect to competition and monopoly which have already been discussed. If they do not have those effects they are valid, irrespective of anything in this proviso. And so long as the Fairmont case remains binding law, those effects will have to be proved against the discriminator in Commission proceedings, in damage suits, and in criminal actions alike.

VII: Section 1 (c), (d), and (e) These three subsections are similarly framed, have similar objects, and may be considered together.

Subsection (c) prohibits anyone from being the broker for both buyer and seller in the same transaction; prohibits either the seller or the buyer from receiving compensation for acting as his own broker —all with the obvious purpose of preventing the use of brokerage commissions or other equivalents as discounts from selling or buying prices. Subsection (d) forbids the seller to give an advertising allowance or its equivalent on account of facilities or services furnished by the purchaser, unless he also makes it available "on proportionally equal terms" to all other of his customers competing with the recipients of the allowance. Subsection (e) prevents the seller from supplying services or facilities to a customer purchasing for resale unless he makes the like available to all other purchasers "on proportionally equal terms."

These sections do not deal with discriminations in price per se but with discriminations in compensation for, or the furnishing of, services or facilities in connection with the sale. On its face, each of these sections is an absolute—it does not qualify its prohibition with a provision that it shall be necessary to show that in any particular transaction the granting of an allowance or a service to one customer and not to another had an effect inimical to the competitive system or creative of monopoly. Attempt will probably be made by the Commission to enforce these sections literally, admitting of no exception even where the practices prohibited would have no injurious effects. The argument will be that these are practices of a recurring nature which Congress from its studies has found generally to have deleterious effects, and that the Court must, therefore, abide by the judgment of Congress as to the usual and probable effect of the practices and let the sections stand as absolutes. In support of this argument all the usual bromides and clichés respecting the presumption of constitutionality of acts of Congress, the wide freedom of choice possessed by Congress of various means of accomplishing the objects of the commerce clause, the fact that it is for Congress and not the Court to determine the public policy of the United States, will be called upon.

BUT when all is said and done the Court must ultimately decide the question of effect for itself, and recent decisions indicate its full intention of doing so. And there are a number of clear reasons why the above arguments do not have force in respect to subsections (c), (d), and (e) of Section 1 of the Robinson-Patman Act. The statutes considered in the Stafford and Olsen cases were the Packers and Stockyards Act and the Grain Futures Act dealing with regulations of practices in great markets having a local situs but a great effect upon interstate commerce. The practices indulged in on those markets could directly stop the flow of interstate commerce. In its subsequent decisions in the Schechter case and in the Carter case, the Supreme Court discussed these Stockyard and Grain cases and pointed out that those decisions

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must have an application restricted to the particular kind of thing with which Congress was dealing—which is quite distinct from the nationwide regulation of commodity prices and practices in connection therewith under this statute.

Another and very significant point of distinction is that there are no congressional findings of fact in this statute in respect to the effect of the practices denounced in these subsections upon the free flow of interstate commerce. The statutes considered in the Stafford and Olsen cases contained long findings of fact by the Congress with respect to that effect. No doubt findings were omitted from this statute because similar lengthy findings in NRA and in the Guffey Act had failed to cause the Court to agree that black is white. Whatever the reason for the omission, the present statute contains no findings, and one can scarcely rely upon the argument that Congress has found that these practices must be absolutely prohibited because of their recurring nature and their effect upon the free flow of interstate commerce.

Finally, and, it would seem, conclusive against the construction of these three subsections as enacting an absolute prohibition of the practices described, is the fact that they are obviously designed to aid in the enforcement of the prohibition of price discrimination itself, to the extent that price discrimination is forbidden by the main clause of Section 1 (a). Section 1 (a) does not forbid all price discriminations or even all price discriminations not justified on the basis of cost, but forbids only those that are in fact shown in particular cases to have described effects in respect to competition and monopoly—a qualification essential to the constitutionality of the main clause of this whole Section 1 itself. Obviously, if Congress cannot prohibit price discriminations in the selling of commodities without reference to whether the discrimination in the particular case has the deleterious effect upon competition and in respect to monopoly, it cannot, in prohibiting certain practices in aid of the price-discrimination prohibition, forbid those practices where they do not in particular cases, in respect to particular commodities and lines of industry, have the same effects.

PLACED in the same section with the main prohibition against price discrimination, and obviously mere aids to its enforcement, subsections (c), (d), and (e) should not be construed as absolutes, but as having application in particular cases only where their use is shown to have the same effects in respect to competition and monopoly already discussed in connection with the main clause.

In respect to subsections (d) and (e) this conclusion receives added weight by reason of the fact that they do qualify the prohibition so as to permit the practice described to be followed with respect to a sale to one purchaser whenever the allowance or service is made available to competing purchasers "on proportionally equal terms." In Congress itself and in comments upon the Act since published, the ambiguity of this "proportional" clause has been commented on. "Proportional to what?" There is no answer on the face of those subsections themselves. Taking Section 1 as a whole, however, it is possible for the Court to say that "proportionally" means proportional to the value to the seller.

Unless subsections (c), (d), and (e) are construed by the Court to be so qualified and are applied by the Commission to particular cases in the light of its qualification, they must be regarded as unconstitutional.

VIII: Section 1 (f)

"That it shall be unlawful for any person engaged in commerce, in the course of such commerce, knowingly to induce or receive a discrimination in price which is prohibited by this section."

This makes the receipt as well as the granting of price discriminations unlawful to the extent and in the situations already discussed.

IX: Section 3, clause (1)

"It shall be unlawful for any person engaged in commerce, in the course of such commerce, to be a party to, or assist in, any transaction of sale, or contract to sell, which discriminates to his knowledge against competitors of the purchaser, in that, any discount, rebate, allowance, or advertising service charge is granted to the purchaser over and above any discount, rebate, allowance, or advertising service charge available at the time of such transaction to said competitors in respect of a sale of goods of like grade, quality, and quantity;"

This is the criminal section of the Act. It has a much narrower application than the civil section. If the opening few lines of this clause stood alone, the clause would probably operate to make criminal all price discriminations in any of the forms condemned in Section 1 of the Act; but the clause does not stop there and plainly makes criminal only those particular discriminations described following the words "in that."

But in respect to the particular practices prohibited, this clause, like subsections (c), (d), and (e) of Section 1, does not in terms limit

[*Continued on page 174*]

These are the

HOMES

they live in

What kind of people read the Herald Tribune? Some of their homes are shown on this page . . . little homes and big homes, but

comfortable homes, all of them; homes which are likely to have the new refrigerators, new washing machines, better radios. For these people live well. We *know* that. . . . In thousands of letters to the Herald Tribune Home Institute they tell of their keen desire to better their homes . . . 330.000 of them each morning (almost half a million on Sundays) look to the Herald Tribune for news of the world and

news of good merchandise — news that is paced in today's tempo and yet holds faithfully to fact . . . Men and women so actively interested in a higher standard of living that they are prize prospects for any advertiser . . . They have many needs,

and many wants . . . More important, they have the mind and the money

to fulfill them.

EACH OF THE HOUSES PICTURED ON THIS PAGE IS THE HOME OF AN ENTRANT IN THE NEW YORK HERALD TRIBUNE 1935 YARD AND GARDEN COMPETITION.

NEW YORK
Herald Tribune
A MASSED MARKET WITH THE MIND AND MONEY TO BUY

[*Continued from page 172*]

its prohibitions to those instances where there is shown the deleterious effects in respect to competition or monopoly required by the main clause of Section 1. If the prohibitions of this clause of the criminal section were intended to be absolute, that is, if what was intended was a flat prohibition of the described practices without reference to their effect in particular cases, the clause is unconstitutional for the reasons already dwelt on in discussing the civil section.

It would appear to be clear, however, that the Court should read this clause, like subsections (c), (d), and (e) of Section 1, as qualified in relation to effect, just as is Section 1 (a) qualified in express terms. The key word is "discriminates," and that may be regarded as referable to the proscribed practices when having the effects set forth in Section 1(a). And the last authoritative statement in Congress before this Act was passed—i. e. the House Conference Report (Report No. 2951, page 8)—tells us that Section 3 is intended to be in no way inconsistent with Section 1. Said that report:

"It contains the operative and penal provisions of what was originally the Borah-Van Nuys bill (S. 4171). While they overlap in some respects, they are in no way inconsistent with the provisions of the Clayton Act amendment provided for in Section 1. Section 3 authorizes nothing which that amendment prohibits, and takes nothing from it."

X: Section 3, clauses (2) and (3) "to sell, or contract to sell, goods in any part of the United States at prices lower than those exacted by said person elsewhere in the United States for the purpose of destroying competition, or eliminating a competitor in such part of the United States; or, to sell, or contract to sell, goods at unreasonably low prices for the purpose of destroying competition or eliminating a competitor."

These clauses are directed against price cutting, the second clause being directed at local price cutting by a national or regional seller and the third clause against uniform price cutting throughout the whole of the seller's territory. There is nothing in these clauses to prevent the lowering of prices either locally or nationally for any purpose connected with the normal operation of the seller's business. What is clearly aimed at is the use of price cutting as a temporary expedient to suppress competition. The prohibitions of these two clauses of this section are by their terms expressly limited to price cutting done for the purpose of destroying competition or eliminating a competitor. Price cutting of that character has had a long and odorous history in this country; and, under the anti-trust acts, proof of such price cutting was competent, among other things, as demonstrative "of a purpose to acquire dominion and control of the . . . trade, not by the mere exertion of the ordinary right to contract and to trade, but by methods devised in order to monopolize trade by driving competitors out of business."

The object of these sections in the present Act is to condemn specially and explicitly a practice which was already regarded as an element of restraint of trade under the Sherman Act. The prohibitions, limited as they are to acts done with a bad purpose (and the purpose must be proved by the prosecutor), do not show on their face any ground for successful constitutional attack.

Conclusion

WITH respect to its subject matter and coverage, the Act is constitutional. It will probably be sustained as against the challenge of indefiniteness and of delegation of power. In the present state of Supreme Court decisions the specific prohibitions of the Act cannot constitutionally be given as broad and all-inclusive an application as is perhaps warranted by their terms. It is more likely that they will receive a limiting construction to save their constitutionality than that they will be held unconstitutional as too broad.

Under this Act the businessman can no longer legally pursue what have heretofore been regarded as normal and legal sales and buying practices, without taking careful regard to the effect thereof upon his own competitors and upon those of his customers. He will have less liberty in the conduct of his business, but it can by no means be said that the statute outlaws all differences in price or in the furnishing of services and facilities in connection with commodity sales, even when not justified on the basis of cost.

Finally, there can be said of this Act what the Supreme Court said of the later ramifications of the Milk Control Law of New York which it initially had sustained in the Nebbia case: "The present case affords an excellent example of the difficulties and complexities which confront the legislator who essays to interfere in sweeping terms with the natural laws of trade or industry."

The seventh wonder of the world was the Colossus of Rhodes. The seventh largest American industry is PAPER. Paperboard is the colossus of the industry. And largest among producers of paperboard is

CONTAINER CORPORATION OF AMERICA

Newport News

[*Continued from page 73*]

of Britain, which has 2,500 ships totaling about 15,600,000 tons. But between the British fleet and the American there is this fundamental difference. Whereas 84 per cent of Britain's is employed in the international carrying trade, only 28 per cent of the U.S. merchant fleet is so employed. The U.S. merchant fleet breaks down somewhat as follows:

Service	*Ships*	*Gross Tons*
Great Lakes	430	2,300,000
Tankers	340	2,400,000
Inactive (government owned)	211	1,300,000
Coastwise (domestic)	455	2,000,000
International	485	3,000,000

Considering this list purely from the point of view of Newport News, all but two of the classifications can be eliminated. The ore ships of the Great Lakes are built on the Great Lakes. A few tankers have been built at Newport News, but the Sun Shipbuilding Co. of Chester, owned by Philadelphia's aggressive Pew family, takes most of this business. The 211 "inactive" ships are merely hulks owned by the government and are forlornly tied up in the James and Hudson rivers and on the Gulf of Mexico, without the breath of life. It is chiefly upon the coastwise fleet and the international fleet that Newport News depends for orders. The coastwise fleet is protected from foreign competition by an old law, passed by Congress in 1817, which prohibits international competition in coastwise trade. Its economics are therefore somewhat similar to those of any other protected domestic industry, and since 1921 it has purchased twenty-two passenger and freight steamers from Newport News, which was about 70 per cent of that yard's merchant-marine business.

NOW the U.S. international fleet is the second biggest in the world, though shading that of Japan by a 66,000-ton hair. (Germany is fourth with 2,700,000 tons, then Italy, France, the Netherlands, and Norway, in that order.) It might be supposed, therefore, that Newport News would derive most of its business from this vast source. But since 1921 the international carrying trade has ordered only ten ships from Newport News. The reason for this is that a ship for the international carrying trade is an international rather than a domestic commodity. It is an economic frontier. It is that spot in the ocean where one national economy, unprotected by a tariff wall, touches upon all others. And since the original cost of a ship is with it from birth to death, it follows that the shipbuilder himself is really competing in an open and unprotected market against foreign shipbuilders. The hull that he makes is a manifestation of his nation's standard of living against all other standards.

On the face of it, therefore, and other things being equal, the nation with the lowest standard of living is the best equipped to build and operate ships in the international carrying trade. Though of course other things are never equal. With a standard of living much higher than that of Japan, Britain outranks Japan on the seas four to one (though it should be noted that Japan has recently been gaining). But in the case of the U.S. the standard-of-living law has worked perfectly. When ships were built of wood U.S. materials were cheaper than British materials, and skilled Yankee workmen were contented with $1 a day plus perhaps an interest in the vessel. Consequently, from 1783 to 1860 American skippers successfully challenged Britain, and 75 per cent of U.S. water-borne trade was carried in U.S. bottoms. But the introduction of steam and steel favored Britain, and at the same time the U.S. transportation problem changed from a water problem to a land problem. From 1865 until the World War, while Britain was applying technology to the sea, less than 15 per cent of U.S. foreign trade went in U.S. bottoms. And during the last decade of that period, less than 10 per cent.

The first indication of the World War at Newport News was a stream of British ships putting in for urgent repairs. Thereafter, the land behind the Chesapeake & Ohio terminal, for which Newport News was originally constructed as an outlet, began to pile up for miles back with bales of cotton and miscellaneous merchandise seeking passage across the Atlantic. But there were no ships. After more than a year of this, during which time Newport News was repairing and dry-docking 1,200 a year, Congress passed the Shipping Act of 1916, first of four modern shipping acts, which proposed to build up a merchant marine with government aid. But this act had barely begun to take effect when the U.S. entered the War. Within twenty months contracts had been let for 2,300 merchant vessels to cost $3,000,000,000, and the U.S shipbuilding industry became the biggest in the

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Illustration shows how forms, "Fanfolded" into a continuous unit, are fed through an Underwood Elliott Fisher Automatic Feed Machine. Note carbon rolls that take care of the insertion and removal of carbons automatically.

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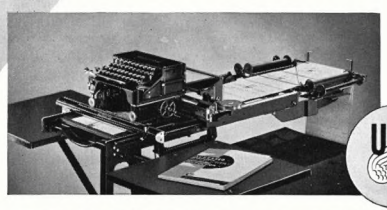

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Newport News

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world, with almost 200 yards employing 350,000 men.

The War hit Newport News like a hurricane. That right little, tight little town was made the point of departure of the southern branch of the naval convoy system, and the streets echoed to the ironshod tread of thousands of raw draftees. The plant was expanded to the tune of $9,500,000, largely financed by the government. Out of this came one 32,000-ton superdreadnought, the *Mississippi*, only battleship built by a private yard during the War, twenty-five destroyers, two half-completed battle cruisers, eight naval tankers, two troopships, and one half-completed battleship. Taxable income jumped from $400,000 in 1914 to $3,300,000 in 1917, $4,000,000 in 1918, $4,900,000 in 1919, $5,800,000 in 1920, and $4,800,000 in 1921. But the War was over. In 1922, subsequent to the Washington Disarmament Conference, the navy dramatically canceled $70,000,000 worth of work in progress on the ways. And Newport News, in common with all the shipbuilding fraternity, was left faced with the stark reality of the merchant marine.

The phantom fleet

IN THE history of American industry there has never been anything quite so fantastic as the situation of the merchant marine at that time. In 1920 the Shipping Board was in possession of 1,936 ocean-going vessels and it proceeded to work them off into private hands to the utter demoralization of any market for ships there might otherwise have been. To date it has managed to sell 1,449 ships that cost $2,300,000,000 for the net sum of $337,000,000. Of the 250-odd remaining, it has operated about a hundred on "managing operator" agreements at a net loss to the government (according to Mr. Farley) of $120,000,000. It was this forced liquidation of the bulk of the government's ships at some $33 per dead-weight ton as against a normal purchase price of about $150 a ton, together with the forced operation of the remainder, that created the shipping depression. From 1922 to 1928 not a single vessel for the transoceanic trade slid down U.S. ways. From 1922 to the present time (fourteen years) only 117 ocean-going vessels of 2,000 gross tons or more have been built for the coastwise and the international trade combined. But most of these ships have been small, their total tonnage being 1,000,000. Newport News's thirty-two ships represent some 50 per cent of that tonnage.

Essentially, then, the U.S. merchant marine of 1936 is that same war fleet. One of the slowest in the world, most of it wallows along at ten knots. Oldest of any of the eight fleets tabulated above, 88 per cent of its decrepit ships are fourteen years old or more, and 16 per cent are twenty years old or more. It is more expensive to operate than any fleet in the world. But while in any other industry this degree of obsolescence would be a bullish factor presuming an enormous replacement demand, in the shipping industry this is not the case. For the U.S. fleet is a phantom fleet. It played its role in 1918 and 1919. It has no regenerative power. It serves no necessary worldwide economic function, and, from that point of view, would not be missed if it were to sink to the bottom of the sea.

But the effect upon the U.S. herself of the loss of this fleet would be another question. Possibly it would be cheaper to permit Britain and others to carry our foreign trade rather than to attempt to rehabilitate the merchant marine in the teeth of world economic forces. There are figures to prove both sides of this question, but the final answer does not lie in figures. The final answer, as the Roosevelt Administration sees it, is that the loss of the international merchant marine means the virtual loss in the U.S. of the art of shipbuilding; and means, further, a repetition of the 1918-19 shipping emergency in the event of another war. The present Administration is determined to have a merchant marine and in order to get it has hatched the Merchant Marine Act of 1936, replacing the Jones-White Act of 1928 by which shipowners were granted subsidies disguised as mail contracts. The present act provides for outright subsidization with no disguise at all. Under it the government will pay the difference between the cost of building a ship in the U.S. and the cost of building an equivalent one abroad, and will besides lend ship purchasers up to 75 per cent of their bills. The act will be administered by the Maritime Commission, which will be to the sea what the I. C. C. is to the land, and of which Rear Admiral Henry A. Wiley (who once commanded the U.S. fleet) has been appointed temporary chief. It will be the commission's duty, among other things, to make

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"I Place Every Confidence *in my* CHIEF STEWARD

He'll gladly tell you what he thinks of his Monel Metal Equipment"

says SIR EDGAR T. BRITTEN, *Captain of the Queen Mary and Commodore of the Cunard White Star Line*

1. This is Chief Steward Jones of the Queen Mary. Let him tell you in his own words how *he* places confidence in the Monel Metal equipment aboard his ship:

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5. "Wherever we handle food we can't be too careful. Those steam tables are Monel Metal, and of course, they'll never rust."

6. *Dine afloat in the crack liners of either the Atlantic or Pacific, or ashore at the leading hotels... whenever you patronize the finer eating places, your food is almost certain to be prepared and served by aid of Monel Metal.*

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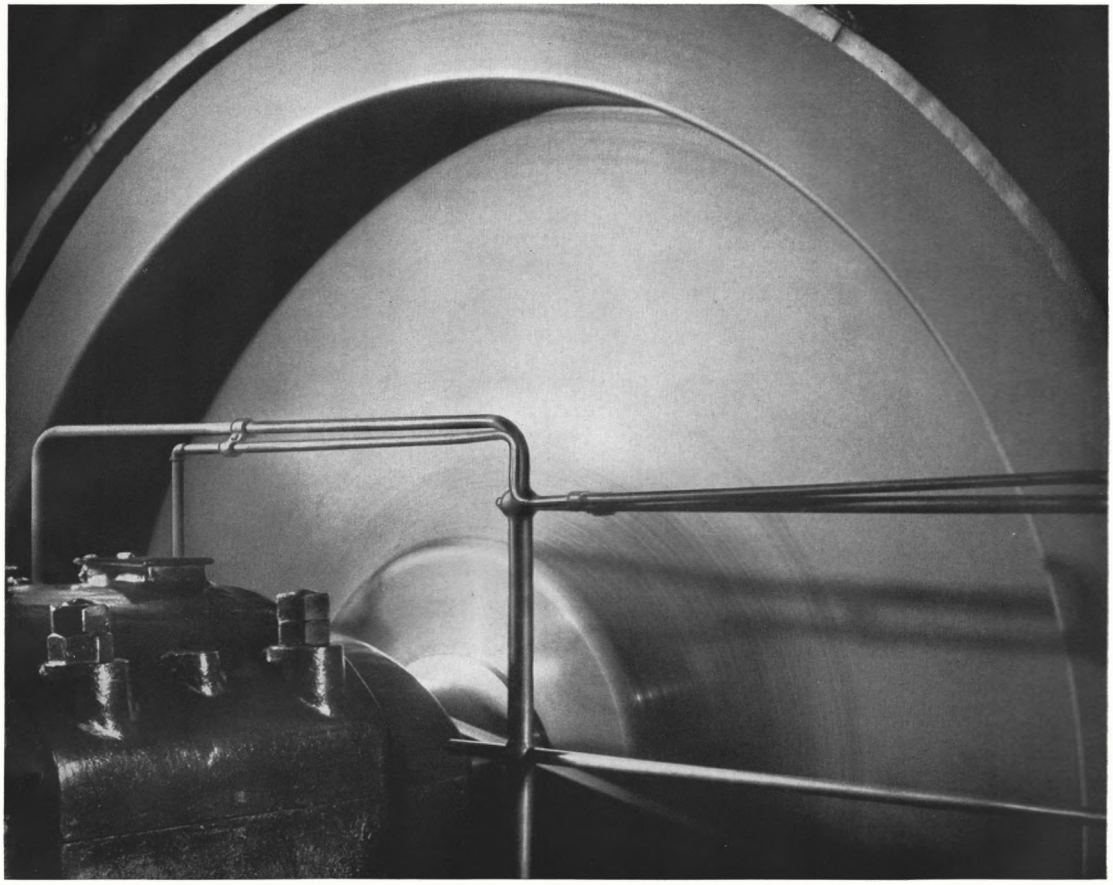

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Losses paid: over $421,000,000

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Newport News

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a survey of the merchant marine, to determine what replacements are required, to devise means of inducing exporters and importers to use American ships, to fix minimum manning and wage scales, and to estimate the differential between U.S. and foreign vessels.

To build a ship

BEARING these fundamental shipping facts in mind, let us now return to the Chesapeake Bay and proceed into the shipyard. Let us go down through the thirty-nine administrative departments and the fifty-seven yard departments to the 8,400 employees, representing forty-one different crafts, scurrying in and out of the great structures, climbing the scaffolds, perching on precarious platforms 100 feet in the air, tossing red-hot rivets, gesturing with gloved hands to the cranes. From their manifold operations one clear fact emerges, namely, that for all the many and wonderful technological advances in the world, a ship remains a handmade article. This is the relentless, one is tempted to say the overwhelming, fact of the shipbuilding industry.

Consider first the naval architects and marine engineers, a class of experts so scarce in the U.S. that when the government wants to build a major vessel in one of its own navy yards it not infrequently calls upon the designers at Newport News and other private yards. These men make the plans for fitting together parts which no man has ever been mad enough to count but which will run up into the tens or hundreds of millions, depending on one's definition of a "part." However many there are, they will include some 525 different materials and articles ordered from about 550 different manufacturers in the forty-eight states. They will be curved in irregular shapes difficult to design for maximum strength and minimum weight, and supported upon no fixed foundation (as a building would be, or a bridge) but upon the ever-changing and often violent sea. For a $2,300,000 ship like the *Coamo*, 1,200 drawings will have to be made. For an aircraft carrier such as the 23,000-ton *Yorktown*, now at the finishing dock, 4,700.

Once the drawings are approved they are transformed into full-sized drawings on the huge floor of the mold loft, as illustrated on page 68. Wooden templates are fitted to this full-scale drawing with infinite care, and then the templates are sent out around the yard to guide the shaping and fitting of steel. As the hull takes shape, there pours from the machine shop, the paint shop, and the warehouses an ever swelling stream of finished parts and materials, of pumps and gears and cranks and fixtures and interminable wire. What these workers are really building is a self-contained city for maybe 2,000 men, complete with fresh- and salt-water supplies, plumbing, incinerators, heating, ventilation, lighting, sleeping quarters, kitchen, hospital, and telephones; a city, moreover, that has to propel itself through the water and steer itself and find its way through the dark or in a fog; and a city, finally, completely protected against bomb or torpedo or shell, gastight, light-tight, armored, equipped with ammunition hoists and bomb hoists, elevators, machine-gun nests (each with its own storeroom), signaling devices, pumps for flooding compartments on one side or the other, fire and bilge pumps, and artillery. Or, if this should happen to be a passenger vessel, the equipment of war could be eliminated, only to be replaced by the equipment of luxurious peace.

Now if these floating cities that Newport News builds could be defined in terms of certain functions common to all, or even to several, the builder's work could to a certain extent become standardized. But about the only thing that ships have in common is that they float. Beyond that simple fact all is variation, and hence, high-priced. So far as warships are concerned, the development in the art of war is such that it would usually be madness to make this year's destroyers identical with those of last year: and even if it were not madness, the navy always wants to try out different ideas. But when a variation takes the simple form of a change in the location or type of turbines, it affects the entire shape of the ship and the arrangement of practically everything in it.

In the merchant marine confusion is created by the different uses to which a vessel is to be put. Shall it carry passengers or freight? And if freight, what kind of freight? And shall it be constructed so as to be able to enter the shallow waters at the mouth of the Yangtze or the great deep-water harbors of the Atlantic? After brooding over these possibilities a Henry Ford of shipbuilding might conceivably devise certain compromise types, like

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the Burntisland British tramp for instance, the nearest thing to a standardized ship in the world, capable of performing certain limited functions on any one of the seven seas. We shall return to this possibility later. But the point to be noted here is that no Henry Ford ever has arisen in this industry, no less a person than Henry Ford himself having tried in 1917-19 and having somewhat ingloriously failed. Every ship remains different from every other ship and consequently a product for the human hand.

Shipbuilder's economics

THESE basic factors—size coupled with variation—are productive of a number of extraordinary results. Observe, in the first place, the balance sheet of Newport News. Here you find a physical plant, including real estate and buildings, whose cost value, as of August 31, 1936, is set down at $17,000,000, but which, after depreciation, is valued at only $8,400,000. This depreciation is figured for the most part on the basis of replacement once every twenty years, which is certainly not extortionate. Below these fixed assets you find current assets of $8,800,000 (including an inventory of nearly $1,000,000), of which $5,300,000 is represented by cash and investments ($3,000,000 in U.S. governments) and $1,200,000 by uncompleted contracts. As already stated, Newport News management believes in big reserves, and this substantial cash account provides ample verification. There is an additional reserve of $2,400,000 in securities, allocated to a pension fund that the company is building up. And there are deferred charges of about $200,000, bringing the total assets up to about $19,800,000.

With these assets Newport News has under construction two aircraft carriers worth about $19,000,000 apiece, one cruiser (the *Boise*) at about $11,700,000, and another (the *St. Louis*) at about $13,200,000. In addition, it has two destroyers under contract at $4,000,000 each. (There are no merchant ships on the ways or even under contract.) Total of work under construction or contracted for is thus in excess of $70,000,000. And one is faced with the disconcerting spectacle of a manufacturer producing a single sales unit worth as much as his entire business and more than twice as much as his plant. All the units now under construction are worth more than three times as much as Newport News. If you were to employ a different method of accounting you could set down under current assets the difference between the total of the contracts on hand and the amount that Newport News has collected on them (as of August 31, about $26,000,000), offsetting this on the liability side by the difference between the contracts and the amount already expended on them. This procedure is actually followed in certain Newport News balance sheets not published by the company, but it creates an entirely false impression of the assets, which may as a result jump up or down $10,000,000 in a single year, or more than the value of the plant.

The missing factor in the above account, which cannot properly be entered into a balance sheet but which nevertheless belongs there, is that of time. As in all building industries, the turnover at Newport News is just as slow as the value of the product is high. If one were arbitrarily to divide the $70,000,000 worth of Newport News contracts by three, which is about the number of years it takes to build an aircraft carrier (destroyers may take only two) it would be seen that the average annual turnover is only slightly in excess of the value of the business. This average, of course, is fictitious. For all purposes of estimating costs and purchasing supplies it is necessary to use the actual time that each vessel will be on the ways. And the length of this time is one of the shipbuilder's major woes. When a shipbuilder signs a contract he virtually goes short of the market on pumps, floor coverings, interior decoration, and everything else he has to buy. The purchase of these things at advantageous times in the market is out of the question. The resulting inventory might in certain cases be worth more than he is.

A second result of the slow turnover is an enormous overhead item on each unit of sales. Let us suppose that you have ordered a $5,000,000 ship. Of the total purchase price, Newport News will spend about 43 per cent or $2,150,000 on materials, both raw and finished, and another 27 per cent, or $1,350,000 on direct labor. About 10 per cent, or $500,000, has been figured into the yard's bid as potential profit. These three items together constitute 80 per cent of the purchase price and can be scientifically estimated; but to determine the remaining 20 per cent, all is guesswork and rule of thumb.

[*Continued on page 184*]

What's all this talk about O.C.+

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HEWITT has persistently expressed as its goal in the production of industrial rubber goods—the continued reduction of industry's operating costs. Every length of hose or belt shipped from our plants is dedicated to that purpose. For instance, the new smooth bore construction, pioneered by HEWITT, for oil suction and discharge hose brings to the task of loading and unloading oil tankers and barges an added efficiency of 20%—25%. A substantial reduction in operating costs. The production of all HEWITT hose and belting is watched over by master craftsmen, the best in the industry. They do not believe there are any short cuts to perfection.

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Newport News

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This $1,000,000 represents, of course, the cost of operating the plant whether there are nine ships on the ways or only one, and to figure it into his costs in advance the shipbuilder has to guess his market two or even three years ahead. He goes long on this market, just as he went short on materials, and if he builds more ships than he expected he either reaps a bigger profit, or else, estimating his overhead at fewer dollars per ship, can lower his future bids to get more business. But here he runs into a snag. On the one hand, there usually isn't any more business to be had; on the other hand, even if there were—even, that is to say, if Newport News should manage to fill all of its nine launching ways and have more offers besides—the shipbuilder could not use the business because he could not get rid of his product quickly enough. By no technology, by no laborsaving device, not even by putting more men to work, can he *materially* increase his turnover. For it is all handwork, which not only eliminates the machine but even eliminates (for the most part) the possibility of putting on extra shifts. It is demonstrable that a ship fitter coming on in the evening cannot carry on the work of another ship fitter efficiently.

Cost cutting

THE net result of these forces is to keep the cost of ships high. The same forces are at work in all countries, but owing to the enormous labor differential between the U.S. and the rest of the world, the U.S. level is highest. And, within an extremely narrow margin, it looks as if it would stay there. Limited as he is by the human hand, the shipbuilder cannot join the luckier American industrialists who, having the same labor handicap, have more or less overcome it by using labor skillfully. Exactly what the shipbuilding differentials are between the U.S. and foreign countries no man at this moment knows—one of the first jobs of the new Maritime Commission will be to estimate them. Roughly, if the cost of building a ship in the U.S. is taken as unity, then the cost in Britain is about .6. Some small percentage of this differential is accounted for by the cost of materials (though a few ship materials are cheaper in the U.S. than elsewhere). But the greatest part of it belongs to labor. Which means that the greatest part of it is practically fixed.

In lieu of the laborsaving machinery that mass-production manufacturers would use to reduce this differential, Newport News has resorted to various kindred devices. It was fortunate enough to learn a number of these by experience. When the government canceled $70,000,000 worth of warships on the ways in 1921 and the bottom fell out of the merchant-marine market besides, Newport News had the choice of finding work or else closing up. The list of products it tried to build at that time reads like an abbreviated Sears, Roebuck catalogue and now makes the executives smile. It repaired locomotives, built an aqueduct in Oakland, California, built a bridge over the Rappahannock, erected a twenty-story office building in Charlotte, North Carolina, got into the international water-turbine business, manufactured traffic lights, and transmission towers, and 9,000 freight cars. With the exception of the turbine business, which has been continued, practically all of these lines resulted in losses and have been abandoned. The loss on railroad cars alone was $720,000. But against those losses the company can set down an intangible profit, because it learned more than the average shipbuilder ever learns concerning industrial methods.

This also led to substantial labor savings. Piecework is a relatively simple matter in a mass production industry where the machines are fed raw materials on conveyers with no delay. But in a shipyard, with materials scattered over 140 acres or so and some of them late and some of them lost, it is impossible to operate piecework without special control of deliveries. To effect this, Newport News developed its so-called Materials Control System, perhaps the most advanced cost-cutting mechanism in the shipbuilding world. It is operated by a committee of department heads, which meets every two weeks and compiles detailed reports of the status of work in each department. All items in the ship are listed upon thousands of pages of files, are fitted into a schedule, and made to converge upon the hull at a precise time. If any article is late, this fact is known in advance and the schedule is adjusted.

The result of this system has been, on the one hand, to increase actual wages, and on the other, to increase the output per dollar of wage. Thus, to take an actual instance, a ship fitter was given the job of installing foundations for

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ANOTHER YEAR DRAWS to a close and another Christmas approaches. The year has yielded its full quota of new inventions, new gadgets, new gifts. And still, unchallenged, FORTUNE remains "the gift for friends who have everything."

There is this about FORTUNE as a gift: even externally it has the look of a fine gift; it has a solid handsomeness as it lies on the table in a gracious room.

But the real FORTUNE is inside the covers . . . stimulating, comprehensive, rich with the facts and the art of this exciting age we live in . . . a history of today and a book to save for tomorrow. Thus, when you give FORTUNE, you are making a gift with pleasing overtones. Quietly, month after month, you are complimenting the tastes and wide interests of the people to whom you choose to send it.

The special Christmas gift rates below apply only until the first of January.

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Newport News

[*Continued from page 184*]

the twelve-inch searchlights, range finder, and emergency radio equipment on the *Yorktown*, and the price offered for the work by the company's estimators was $150. The ship fitter's basic wage was eighty-six cents an hour—he could not get less than that and if he did the job in 175 hours he would make exactly that. He actually did the work in 149 hours, which yielded him a $22.15 "bonus" over the basic wage.

The U.S. Government

SUCH, roughly, is the predicament of the U.S. shipbuilder. For the past fifteen years his market has been saturated by ships dumped upon private operators by the government. With costs that are intrinsically higher than those of his foreign competitors and with an industrial pattern that does not permit any substantial slashing of those costs by technological improvements available to most other U.S. industrialists, the shipbuilder has not been able to break through the vicious circle of the status quo. Nor does it appear that, barring another war, he will ever be able to do so.

Not, at any rate, on his own. It so happens, however, that the government needs ships, and it is this fact and this alone that has kept Newport News in business during the past fifteen years. Government assistance is of two kinds, direct and indirect. Direct assistance is provided in the construction of warships. Indirect assistance pertains to the merchant marine (which the government favors as a necessary auxiliary in case of war) and has been provided for by the various shipping acts of which the Merchant Marine Act of 1936 is the latest example. Of the thirty-two merchant vessels built by Newport News from 1922 to 1935, inclusive, twenty-one (worth $71,000,000) were financed under the provisions of the Jones-White Act.

As for direct assistance: this has been the biggest single factor in the company's income for forty years. Exclusive of the four warships now on the ways, Newport News has built seventy-one vessels for the navy since 1896, when the first ones, the *Kearsarge* and the *Kentucky*, were built. These have included thirteen big battleships worth $80,000,000; and when the U.S. fleet was reviewed by Franklin D. Roosevelt off New York harbor in 1934, six of the ten battleships were Newport News's. Today the four outstanding survivors of a long and honorable line are the *Pennsylvania* (1916), the *Mississippi* (1917), the *Maryland* (1921), and the *West Virginia* (1923). In addition to these, Mr. Huntington's yard has built seven cruisers worth $39,200,000, one aircraft carrier worth $17,000,000, twenty-nine destroyers worth $41,400,000, seven Coast Guard cutters, two colliers, three gunboats, and one monitor. And the total bill for all this work was $183,600,000, or almost exactly half the business of the yard since it was founded. The two aircraft carriers, the two light cruisers, and the two destroyers now under construction or contract are worth, as we have seen, some $70,000,000. Which will put the total of direct government support up in the neighborhood of $250,000,000.

THE commercial possibilities of shipbuilding will remain hopelessly limited so long as the industrial factors just outlined dominate the building of ships. The question that the landlubber cannot refrain from asking is whether the industry is really as helpless commercially as shipbuilders themselves believe. Faced with the spectacle of what has been accomplished in almost all the other major U.S. industries in the way of slashing costs (including the aviation industry, which hardly ranks yet as a mass production industry), it is almost inconceivable that more progress could not be made with ships. The fact is that while most other American products can compete against the rest of the world, if not on the ground of cost then on the ground of quality, U.S. ships can compete on neither ground.

The word "quality" is here used in a somewhat special sense. Newport News ships have quality —if they didn't the navy wouldn't buy them. Indeed, this kind of quality, this building-in of extra-honest durability is one of the things that runs costs up at Newport News. That is not the kind of quality, alas, that one has in mind when speaking of the U.S. automobile. The quality of a U.S. automobile is the quality of performance, a big package for the money. This is the kind of quality that also sells plumbing fixtures, refrigerators, and other typical U.S. wares. On the other hand, in the case of the transport airplane or the business machine, the quality consists of being so far out in front in a developmental way that no foreigner can hope to build them for even a reasonable,

[*Continued on page 188*]

PLUS STRENGTH

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DIAMOND ROLLER CHAIN

Look for the Diamond ◆ *on Every Link*

Newport News

[*Continued from page 186*]

let alone a competitive price.

A Newport News ship, in common with all other U.S. ships, has not got quality in this sense. It is not a bigger package than anyone else can deliver for the money; nor, on the other hand, is it any further developed technologically than a British ship or a French one. If anything, the shoe is on the other foot. And it is here that the layman is apt to insist that the shipbuilder's first step in increasing the size of his package should be some form of standardization. As a matter of fact, considerable standardization has already taken place—with the Americans lagging behind. In 1919 the simple matter of dimensions for plates was a veritable chaos. Rolled plates were being ordered in at least three different, non-interchangeable ways, some specifications giving weights per square foot, some thicknesses in sixteenths of an inch, some using the decimal system. It frequently happened that the quantity required of a given thickness was too small to justify changing the rolls at the steel mill, and there resulted delay and formidable cost. In 1919, forced into action by the War, the industry reduced the varieties of steel plate for ships from 131 to twenty-seven and the different thicknesses of sections from 408 to 115. The British, however, had had such standard sections since 1904: which provides one good glimpse (ex standard of living) of how your Britisher manages to dominate the seas.

A somewhat spectacular experiment, likewise born of the War, was the prefabricated ship—an ungainly ship with straight lines whose parts were made inland and sent to the yard for assembling. Nothing has been done with this idea since, though these ships still ply the seas. A certain amount of progress has been made in the standardizing of minor lines, chiefly ship fixtures, under the guidance of the American Marine Standards Committee, a government institution. But the shipbuilder's answer to any suggestion of basic standardization is that ship operators will not confine their specifications within the limitations of standardized, or rather semistandardized plans. Aside from the esthetic factors, which are considerable, it is claimed that an operator can save more money in the end by having a ship built by hand to perform specific functions than by purchasing a compromise type at less original cost. No statistics have been compiled on this, however, and the question is really an open one. It does not seem unreasonable to suppose that if a number of standard designs were evolved, certain operators could make use of them.

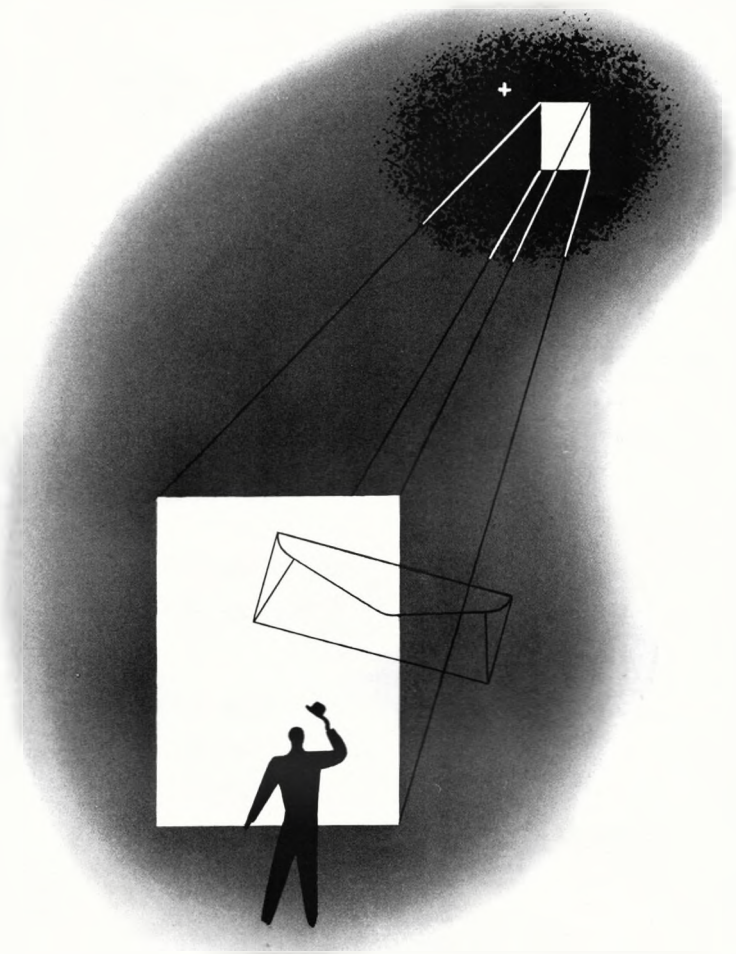
Indeed, to bring all this criticism to a point, it would seem that the shipbuilder's attitude toward the ship operator, and through him, the public, has not been nearly aggressive enough. After fifteen years of a saturated market a certain lack of initiative is perhaps inevitable. In any case, it exists. As a merchandiser, the shipbuilder is a total failure. One good reason why he can't sell his ships to ship operators is that he has failed to sell them to the public. The U.S. has no merchant vessel of which it is truly proud; and in an age of advertising the average citizen's scant knowledge of the merchant marine, and hence his lack of interest in it, is almost shocking. The only times he ever thinks about it are when a Newport News's *Morro Castle* burns or a Senate Committee carps.

One good reason for this is the lack of spectacular developments in the design and specifications of ships. The automobile manufacturer maintains his sales pace largely by obsolescing his product as rapidly as possible. The same principle applies even more forcefully to the aircraft industry. A certain amount of this kind of stimulation has been indulged in by European shippers on the North Atlantic, where many a vessel has been retired for obsolescence long before she was actually worn out. The public, or for that matter exporters and importers, can scarcely be expected to become excited over a bunch of old hulks wallowing around the seas of the earth at twelve or fifteen miles an hour. When the U.S. puts forth her best efforts she produces a ship like the U.S. Lines' *Washington*, which is as good a ship as anything in her class and extremely popular with the public. But the U.S. has never stepped out to build a ship in the *top* class, and so long as she holds off, the public may be expected to remain somewhat apathetic. Curiously enough, aside from the merchandising value of a great ship like the *Normandie*, this is the one kind of ship in which U.S. yards have a chance of competing against European yards. If the newspaper cost of the *Normandie* ($55,000,000 in old francs) is anywhere near right, it is safe to say that Newport News could have equaled or even bettered it.

Five years ago these criticisms

[*Continued on page 190*]

RESPECTED TODAY AND PROTECTED FOR MANY TOMORROWS



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[*Continued from page 188*]

of the shipbuilding industry would have been meaningless. Not only was there no adequate subsidy, but the merchant marine was still young enough to be useful. Today, however, those worn-out ships have served the useful purpose of opening up some seventy-eight U.S. trade routes, many of them entirely new. The U.S. flag has become a regular visitor in harbors that scarcely ever saw it before, and although waning, the U.S. is the second power on the seas. The subsidies provided for by the new act should be ample to create merchant-marine replacements. The powers granted to the Maritime Commission should enable it to integrate the industry as it has never been integrated before. And—final blessing from a shipbuilder's point of view—world disarmament has badly broken down and a naval race seems imminent, beginning with two new U.S. battleships early next year. This will bring down overhead costs in all the big yards. It is a golden opportunity for the phoenix—if the shipbuilding industry is such—to arise from the ashen remains of the clipper ships and set forth again upon the seas.

The Huntington Dynasty

[*Continued from page 75*]

back for very long, he was proved to be right. He also believed that the government would eventually aid the shipping industry, and in 1928 (and more forcefully in 1936) this happened too.

Transition

BUT Mr. Huntington did not live to see the fulfillment of either of those predictions. He died in 1900, thirty years or more short of the necessary fifty that he had boasted he would live. He had already turned over the supervision of the business to Calvin B. Orcutt of New York, a buyer and seller of coal for the C. & O., frog-gy eyed, moustachioed, meticulous to the point of pomposity, and without technical training. Under this man's absentee supervision, the yard had been chiefly constructed by Walter A. Post, a competent engineer, who thereafter attended to most of the details of management besides. One of Post's tricks was to pick up bright young men as he went along. He had already selected one acolyte, a suave technician from Rensselaer named Albert Lloyd Hopkins. And he had had his eye on Homer Ferguson from the day this boyish naval constructor arrived in 1905.

There then occurred three deaths in fairly rapid succession. Orcutt died in 1911; Post died of overwork in 1912; and Hopkins went down on the *Lusitania* in 1915. As a result, Ferguson found himself at the head of the company in 1915, only ten years after he had joined it. And he turned out to be the man who was to convert the empire builder's dream into a reality.

Meanwhile, however, the ownership had changed hands. Mr. Huntington had left his stock in equal portions to his widow and his nephew, Henry Edwards Huntington, a tall, distinguished man with a curious trick of repeating the last words of every sentence. He it was who founded the library in San Marino. His penchant for collecting art treasures began about 1912 and nearly ran the company on the rocks, for Henry was the only one of the three successive owners of Newport News who ever clamored for dividends. Fortunately the War came along before all the honey had been taken from the pot, and the problem of building up reserves was temporarily dispelled. In 1922 the company declared a 400 per cent stock dividend, but no cash. And Henry died in 1927. Of the $11,600,000 in dividends paid out during fifty years, $9,200-000 or 79 per cent was paid during his ascendancy.

These three men, the empire builder, the collector, and the present man of letters, are the only three who have exercised any stock control over Newport News. It is a strange dynasty, and a short-lived one, since Archer has no children. But on the whole it was just the kind of dynasty that was needed to pull the yard through. Archer is a wise man; and while it pleases him to dabble in the affairs of Newport News and to bestow upon it the aura of his enthusiasm, he is nevertheless able to contemplate it with a certain detachment that was peculiarly timely during the hard years of the shipping depression. This is not to say that he never has any positive ideas—for one thing, the present management bonus system was his invention. But at least his detachment is sufficient to enable him to contemplate with equanimity the possibility of the U.S. Government's taking over the yard. He even thinks that this is likely,—let us say, at the outset of the next war, when the gray-haired curators of his museums may have to worry about the value of an armaments business, not he.

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LEFT AND ABOVE: *Unretouched photographs showing the beauty of concrete walls. Interior walls, open-textured concrete masonry, combining striking modern appearance and good acoustical effect in one economical structural material*

Balaban & Katz' new Will Rogers Theater, Chicago
C. W. and Geo. L. Rapp, Inc., architects
Lieberman & Hein, structural engineers
Paschen Bros., Inc., contractor

Richest U. S. Women

[*Continued from page 120*]

Carnegie's. They have the same interest in education and good works, the same indifference to society, the same ultraconservatism (they never, for example, serve liquor). They spend most of their summers at Skibo Castle with Mrs. Carnegie, their winters in a house on Ninetieth Street overlooking her gardens.

Margaret Miller herself is perhaps more the product of influences than a natural-born homebody. Far from stodgy, she is more like a typical Junior Leaguer, with a sense of humor and a capacity for participation, who has been deflected into a tradition. That tradition is accurately summed up in a family-group painting by John Hunter, where Roswell Miller appears dressed in a purple smoking jacket and the light is provided by the extremely massive Carnegie chandelier.

Mrs. Alexander Hamilton Rice

PERHAPS only Philadelphians can fully appreciate what it means to be born an Elkins and marry a Widener, but if you're not from Philadelphia you can safely allow yourself to be impressed by the fact. Or you can go to Newport, where Eleanor Elkins Widener is now Mrs. Alexander Hamilton Rice, and you will come away reassured. You will catch sight of Mrs. Rice's place Miramar, the most formal and magnificent of Newport's many formal and magnificent establishments, and though you may not catch sight of Mrs. Rice, you will learn that she is one of America's authentic *grandes dames*, annually the hostess at Newport's most important function and as a leader of Newport society rivaled only by Mrs. Cornelius Vanderbilt.

Mrs. Rice inherited two big fortunes—one from her father, William Elkins (gas, coal, oil, and street railways), and one from her first husband, George Widener (street railways, oil, coal, and gas). Widener and their son Harry went down on the *Titanic;* Mrs. Rice was saved. It was in Harry's memory that his mother performed her most impressive philanthropy: the building of the Widener Memorial Library at Harvard. Dr. Rice, her second husband, is himself a millionaire, is well known as both a geographer and an explorer, and in between her social activities Mrs. Rice accompanies him on his trips, which are chiefly to South America, and thoroughly enjoys them. Rice has hacked his way through the jungle, eaten monkey meat, discovered white Indians with cannibalistic instincts, and for months at a time been missing and given up for lost.

Rice is younger than his wife, who is now nearly seventy, though she does not look it. Her entertaining is distinctly in the grand style, with wonderful food, perfect service, immense luxury. Her invitations are prized by the younger and older set alike, and her ball during Tennis Week, staged for several thousand guests, is not only the greatest event of the season but also the test of anybody's social standing. Mrs Rice always personally bids her guests goodby at 9 A.M.

Her whole life—saving her excursions into the wilderness—is spaciously without being showily maintained. Her charities are on the same scale as her entertainments. Besides the imposing Miramar, she has a white stone Fifth Avenue mansion, a large place in Palm Beach, Palmeiral, and a home in Paris. Her husband is a member of the best clubs in New York, Philadelphia, and Boston, and they both belong to most of the organizations that canonize ancestry—the D.A.R., the National Society of Colonial Dames, the Society of Mayflower Descendants, the Society of the Cincinnati, the Society of Colonial Governors, the Society of Colonial Wars. Her special emblem is pearls, of which she has a rope worth something better than $1,000,000.

The Dodges

THE first generation of the Dodge family got famous trying to put horses out of the running in the field of utility; the second generation has got famous trying to put them in the lead in the field of sport. The point to be emphasized is less the irony of the transformation than the speed with which it was accomplished. At the turn of the century the Dodge brothers were a pair of struggling machinists; when they died within eleven months of each other twenty years later, their business was sold to Dillon, Read & Co. for $146,000,000. They left behind them two widows, one of whom was born to be a small-town housewife, the other of whom had once been her husband's secretary. The one has become a somewhat flustered society matron; the other

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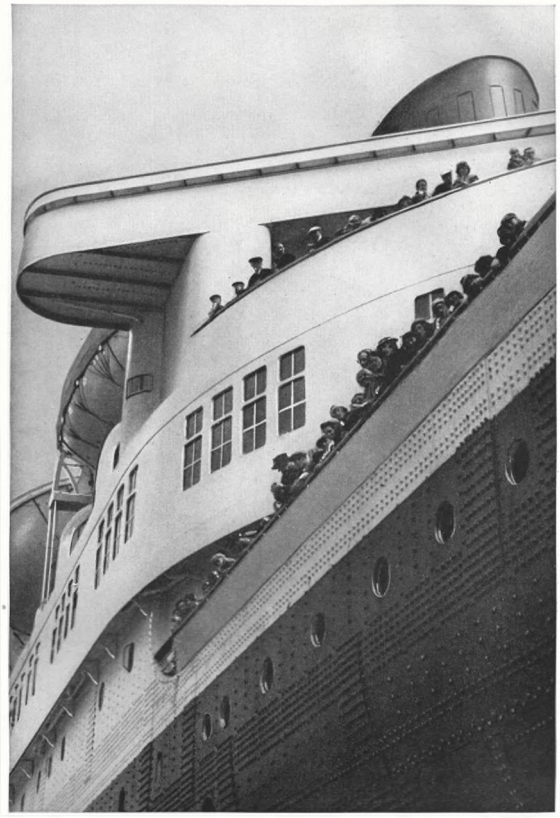
MORNING ARRIVALS ABROAD



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Via Cherbourg, Southampton, Bremen.

Bremen
Europa

To EUROPE: — November 7; 21, December 5; 16; January 6; 16; 23, February 3; 10; 20; 27.

Bremen: Dec. 16, gala sailing for Christmas Abroad.

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Deutschland: November 5; December 3, and on Dec. 27.

New York: November 8; December 10. New Year's Cruise of 4 days to Bermuda, sailing on December 31.

Hamburg: November 19; and on December 15, the gala sailing for Christmas Abroad.

Hansa: November 26; and on December 20 with Christmas Celebration at Sea.

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Richest U. S. Women

[*Continued from page 192*]

has become, more than anything else, a business executive. Both have remarried.

The once housewifely Mrs. Horace E. Dodge is now Mrs. Hugh Dillman, with headquarters in Detroit and Palm Beach and much time out for travel. The house in Grosse Pointe, Detroit's socialite suburb, is a miniature Palace of Versailles, contains a piano of Louis XV's, chairs of Marie Antoinette's, two paintings by Gainsborough, and one of Mrs. Dillman by Gerald Kelly. The house in Palm Beach, which is almost more luxurious, running to such kickshaws as gold faucets, was bought from Joshua Cosden, who entertained Edward VIII when he was Prince of Wales. The Palm Beach ménage is a gay one, for Hugh Dillman, a former actor and a former husband of Marjorie Rambeau, is very popular with Palm Beach's younger crowd. Young enough himself to be Mrs. Dillman's son (she is past sixty), he fills up the house with his friends, and his wife's position in Palm Beach society is due less to her wealth than to her husband's bonhomie.

Mrs. Dillman, though still a trifle ornate in too much flowered satin, has launched herself in society with superb éclat, having no further interest in business since she lost $1,500,000 in a Florida real-estate development project she financed along with Mrs. Edward T. Stotesbury. Besides the two great mansions, she has a $1,500,000 yacht, the *Delphine II*, gives thousands annually to support the Detroit Symphony Orchestra, and has collected some extremely handsome jewels. Her most valuable piece—a pearl necklace that belonged to Catherine II of Russia and might have cost some $800,000—she has given to her only daughter, Delphine Dodge Cromwell Baker Godde. Mrs. Godde, who was distinctly post-War younger set in every respect, is chiefly interesting as the subject of a sentence with a highly complicated matrimonial predicate. Now living in London with a French-born husband, Mrs. Godde first married James H. R. Cromwell, the present husband of Doris Duke, next married the late Raymond T. Baker, also once the husband of Margaret Emerson, Bromo-Seltzer heiress, once the wife of the late Alfred Gwynne Vanderbilt.

MATILDA RAUSCH DODGE WILSON, once the secretary and later the second wife and the widow of John F. Dodge, has nothing in common with her former sister-in-law Mrs. Dillman except their early poverty and their present wealth. In fact, since their husbands' deaths they almost never meet. She has entirely eschewed society in favor of business and organizational work. The organizational work is spread out over education, philanthropy, history, and religion. It was through church activity, indeed, that she met her present husband, Alfred George Wilson, a lumberman. With him, besides carrying on the Dodge philanthropies, she works at new ones. They have adopted two children from a Chicago foundling home. Mrs. Wilson also has two children by Mr. Dodge and is stepmother to three other children of his.

Of Mrs. Wilson's business acumen it is only the beginning to say that she looks after her own estate and looked after that of the Dodge children before they came of age. She played a distinct part in the disposal and sale of Dodge Bros. She owns and operates a 2,000-acre farm estate in Rochester, Michigan; she built, owns, and operates the Wilson Theatre in Detroit. She is actively interested in the Graham-Paige Motor Co., although she has resigned as a Director, and as Chairman of the Board of the Fidelity Bank & Trust Co. of Detroit (which later closed its doors) she was often alluded to in Wall Street as America's "No. 1 Woman Banker." She was also the second woman to organize an individual investment trust; Edith Rockefeller McCormick was the first.

Mrs. Wilson is dark, sensible, pleasant, entirely without frills. There is no flavor of yachts, jewels, or swank resorts about her, no *Social Register* listing: her most notable "piece" is a magnificent dollhouse she had built for one of her children, her most exciting diversion is a game of bridge.

OF JOHN F. DODGE'S three daughters by his two wives, Isabel Dodge Sloane, a daughter of the first one, is far outstanding. She began life in a mechanic's household but grew up in time for a fashionable finishing-school education, a Detroit debut in 1912, and a general habituation to wealth. Then her marriage to George Sloane put her, alone among Dodge women, in the *Social Register*. The marriage ended with a divorce in 1930, since which time Mrs. Dodge Sloane's life has been passionately centered in racing. Starting with one horse back in 1924, she now has more than

fifty, and her great ambition is to be known as First Lady of the Turf—a title that most people would agree still belongs to Mrs. Payne Whitney. Her stables today are worth $1,000,000 and she spends $150,000 or more on them annually; but with such horses to her credit as Cavalcade and such seasons as 1934, when she was the biggest money winner in the U.S., she sometimes gets large revenues back. Strangely, she does not ride and is even afraid of horses.

Mrs. Sloane has been called one of America's ten best-dressed women. Constantly traveling from track to track, she carries her friends with her as her guests. After a big winning she took fifteen of them to Bermuda. If they need outfitting, she provides it.

Her friends and employees like her for her generosity, her vivacity, her good sportsmanship. Many other people do not. Newspaper reporters, for example, dislike her because she treats them ungraciously.

Mrs. John T. Dorrance

DR. JOHN T. DORRANCE started his business career as a chemist for the Joseph Campbell Preserve Co., a canning concern owned largely by his uncle. In the course of sixteen years he transformed that minute enterprise into the largest canning company in the country and in doing it he became President and sole owner of the business. The idea of soup—the idea, to be more accurate, of Campbell's *condensed* soup—was his; the reward, by the time he died, was $120,000,000.

Dr. Dorrance and his wife were not socially prominent—in the earlier years he was wrapped up in his work and his family—and for years they lived in a house close by the experimental farms his company operated at Cinnaminson, New Jersey, eight or ten miles outside of Camden where stood his canning plant. Through the week he would devote his energies to making and selling Campbell's Soups, then at the weekends you would find him on the experimental farms next door to his home studying ways to propagate bigger and better tomatoes. This was all very well until the daughters approached the debutante age. It was then that the Dorrances bought a country estate at Radnor, Pennsylvania, along Philadelphia's Main Line and in the heart of its hunting and riding country. Woodcrest dispensed with tomato culture. There was no experimental farm, but in its place a spacious parklike approach, stables, greenhouses, tennis and squash courts, and a swimming pool; it is turreted and towered, terraced and landscaped, and its high main reception hall is remarkable for the rare Gobelin and Beauvais tapestries that cover its walls.

Dr. Dorrance succumbed to the charm and luxury of his new home; Cinnaminson and the tomato fields thereafter lost their compelling interest. He did continue to regard the New Jersey house as his home (or at any rate that is what he stated in his will), and he traipsed back from time to time to the Cinnaminson place and at length died there. The daughters—there are four of them, besides a son who is still a schoolboy—tumbled instantly into the new scheme of things, came out at big, gorgeous Bellevue-Stratford parties, rode horseback, flew, got arrested for speeding, curtsied before Queen Mary, were accepted everywhere, and made good marriages. (Only one daughter is still single.)

Mrs. Dorrance—the former Ethel Mallinckrodt of Baltimore—accepted this new life in a less spectacular way. She simply adapted herself to the role of a society woman. She did it well; today, if not quite tops in conservative Philadelphia, she is well established at Bar Harbor, almost on a footing there with Mrs. Edward T. Stotesbury. Despite the rather brilliant luxury surrounding her daughters and the large amount of entertaining she has done for them, she herself has not gone in for splash, keeps no yacht, has no fine jewels except some pearls that she often forgets to wear, employs no social secretary, wears simple clothes, and buys only what clothes she needs. Her tastes remain what they used to be, quiet, sometimes commonplace—things like sewing and bridge, together with a great interest in flowers, which she grows and exhibits. Although she likes music and has a box at the Philadelphia opera she has no flossy cultural pretensions, no desire to identify herself with great names.

Instead she is a good deal of a businesswoman. When Dr. Dorrance died, he not only left her a fourth of his estate but also named her one of his executors (which let her in for a lively time, since both Pennsylvania and New Jersey clashed as to which should collect the inheritance taxes, with both of them ultimately collecting around $15,000,000 apiece). She is a Director, to fill her husband's place, of the Campbell Soup Co. and makes regular visits to its Camden plant. She administers her own charities, using Campbell's lawyers to investigate and check up on cases.

Mrs. Dorrance seems to have struck a balance between her former life and her present one. If she now spends her summers at

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Richest U. S. Women

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Bar Harbor instead of Atlantic City, if she has added an assured manner to a largely unpretentious personality, she has remained the mistress and not the slave of her fortune. Her behavior is an expression of her values. When her daughter Peggy's Best Philadelphia friends spill champagne on her best needlepoint and smash her jade, she is not impressed by such proof of the *sang pur;* neither is she furious; she simply makes plain that the athletes in question are not to come to the house again.

The Hartfords

IF YOU (or Sinclair Lewis) should ever choose to write a novel about a typical American family of great wealth, it would be instructive to have a look at the Hartfords. Even what is different about them seems, somehow, to be *typically* different and to carry the routine American flavor. Their fortune is new, it is large, it is magnificently plebeian—to wit, the profits from the A & P. The women who share in it occupy worlds as unlike as Newport, Rhode Island, and Orange, New Jersey. The Newport member of the family had a Jewish father and her daughter has a Russian husband. The member in Orange keeps out of the papers as a matter of course, but the member in Newport pays people to keep her out.

It is Edward V. Hartford's widow who lives in Newport—where she never lived as Edward V. Hartford's wife—in a house that she acquired, rather ironically, from one of Newport's greatest snobs, Commodore Elbridge T. Gerry. Her husband's wealth included not only his share in A & P earnings but also a good deal of money acquired through inventing the Hartford shock absorber. Mrs. Hartford, born Henrietta Pollitzer, has been accepted by Newport: even though she is not in the *Social Register* she has achieved the better than social equivalent of an invitation to the Alexander Hamilton Rice annual ball. She dresses smartly, is able to look young even though she is over fifty and was a grandmother at forty. She spends money, but not ostentatiously. The Newport house is huge and Elizabethan; the grounds, fronting Bellevue Avenue, are impressive; the greenhouses excellent; the tennis courts superb.

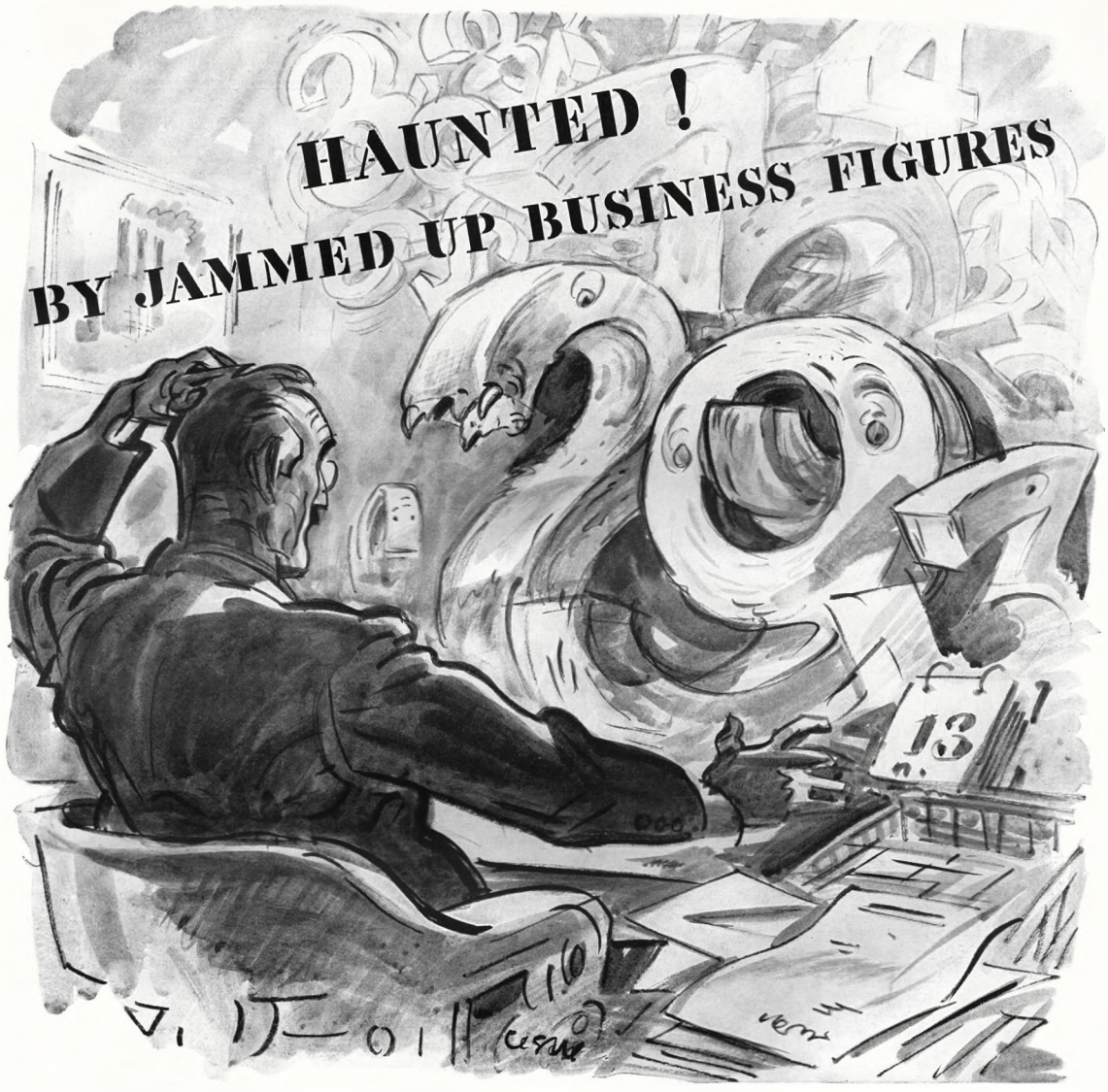
The tennis courts were built chiefly for the enjoyment, perhaps also for the domestication, of Mrs. Hartford's son, George Huntington Hartford II, who has added a routine touch to the typical American saga of wealth by leading a vivid youth, going in for sport, buying expensive Old Masters—and being the apple of his mother's eye.

GEORGE'S sister, Marie Josephine Hartford O'Donnell Makaroff, co-heiress with her mother and brother of Edward V. Hartford's wealth, and with an income variously reported anywhere from $1,000,000 to $5,000,000 annually, first married C. Oliver O'Donnell, who was society and whom she divorced, and then Vadim Makaroff, a Russian caviar importer. Their life in general is one of very luxurious sport: Makaroff's hobby is sailing and he has competed with their racing yacht, the *Vamarie,* in the Bermuda and other deep-water races, they have a ski lodge in Canada for winter sports, and Mrs. Makaroff keeps a string of steeplechasers. Tirconnell, her extremely lavish estate on Long Island with its severe and charming Georgian house, is run on the grand scale, with liveried doormen, squads of servants, and a tennis house the size of a small armory. Here the drinks are made at a cork bar by an old Broadway bartender, passed around by Filipino boys, and served to guests who may be splashing in the pool, sweating in the Turkish bath, playing backgammon for high stakes in the upstairs lounge room, or playing tennis under a powerfully lighted glass ceiling.

In such a setting Mrs. Makaroff surrounds herself with guests. Ask a half-dozen people what she is like and you will probably be told that she is charming, that she is hotheaded, that she is a grand sport, that she is selfish, that she is amusing, and that she is opinionated. But ask anybody who knows her at all and you will be told that Jo Hartford, as people still call her, is the very pattern of a young and terribly wealthy woman—constantly entertaining, constantly spending, constantly taking up new diversions, constantly traveling, and—like other wealthy women—constantly afraid that people are after her money.

MRS. W. B. REILLY, the former Maria Josephine Hartford, has none of the personality of her socially energetic sister-in-law and her pleasure-loving niece. She has presumably never gone society tufting, presumably never been art-conscious, apparently never been travel-mad, apparently

[*Continued on page 198*]



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Richest U. S. Women

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never been sport-loving, and definitely never been charity-minded in any spectacular way. She has had two husbands (the first, John Clews, is dead) and she has two children. Her home is a wide-sprawling, new, brick Tudor edifice in Orange, New Jersey, and there she keeps her own counsel.

Mrs. Joseph E. Davies

THE Post fortune (Postum, Post Toasties, and allied products) was the result of a nervous breakdown. At forty Charles William Post, farm-machinery salesman and itinerant inventor, went to a sanitarium in Battle Creek (home of Corn Flakes), got interested in food fads, concocted a cereal drink. Today his only child, Marjorie Post Close Hutton Davies, owns among many other things the largest sailing yacht in the world and 500,000 shares, or almost 10 per cent, of General Foods Corp. stock.

With Mrs. Davies this does not mean owning emptily. The key to her character is an edged, energetic participation in things, which has given her the staying power to carry on three separate and extremely active careers: business, philanthropy, social life. From the day her father died in 1914, leaving her Postum, Post Toasties, and allied products, since forged into General Foods, she has closely supervised the management of her affairs. During most of her marriage to Edward F. Hutton from 1920 to 1935, her husband held the title of Chairman of the Board, but his wife, besides holding the stock, was altogether conversant with the corporation detail. Since their divorce and her remarriage to Joseph E. Davies, Hutton has resigned as Chairman of the Board and Mrs. Davies has become the first woman ever to sit on it as a Director.

Mrs. Davies has shown the same sure hand in philanthropy and public service. During the War she provided the funds for Base Hospital No. 8, the largest of its kind at the signing of the Armistice; recently she gave up much time to act as Vice Chairman of the Unemployment Relief Committee; in 1931 she founded in Hell's Kitchen a large food dispensary feeding more than 700 people a day—with chefs, white-clad waiters, course meals, second helpings, small tables for family groups. She joined the U.S. Flag Association's crusade against crime, for which she was decorated with the Cross of Honor along with Amelia Earhart, Lindbergh, Coolidge, and Hoover, and for which she was given the title Lady of the Flag.

But it is as a society woman that Mrs. Davies has achieved her most spectacular effect. She has many assets for the role: in point of income (though less so in point of solid capital) she has huge means—over $1,000,000 a year; in point of background, though born to neither wealth nor social prominence, she comes of old Virginia and New England stock. And she is extremely good-looking. Being socially very ambitious, she has without question sought to translate all this into power. Her successes and failures are perhaps due to the same factor—her vivid but rather harsh and dictatorial personality. She has real friends and real enemies.

Mrs. Davies loves to entertain and does so sumptuously. Although as a businesswoman she feels the social responsibility of wealth and is said to have cut down on her pleasures since the depression, there is a certain mystery as to where she did it. At what she described as her "simple, quiet, and dignified" wedding to Mr. Davies, twenty-five servants waited on fifty guests and the flowers cost $4,800. In 1931, when as Mrs. Hutton she built her huge sailing yacht the *Hussar*, which as Mrs. Davies she has renamed the *Sea Cloud*, she gave the contract to shipbuilders at Kiel, although it was the height of the depression and American shipyards were standing idle. By building the yacht in Germany she was obliged to sign on a German crew for the first year.

Edward F. Hutton gave up being a Wall Street broker in order to enter General Foods. Joseph E. Davies is a corporation lawyer of reputation, hailing from Washington, and there are no indications that he will follow Mr. Hutton's example. All the talk, on the contrary, is that Mrs. Davies is very eager to have him appointed as U.S. Ambassador to the Court of St. James's and that she is contributing generously to the Roosevelt campaign fund. There is a certain piquancy to this thought since Mr. Hutton was one of the backers of the Liberty League. Mrs. Davies's marriage to a Democrat has caused her society friends to shake their heads sadly and make references to Communism.

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Louisa Carter was educated in Virginia, at Warrenton and at Chatham Hall . . . made her debut at the Baltimore Cotillion. She is enthusiastic about fencing, riding and swimming

"I agree with my grandfather ...he chose an Elgin, too"

writes **LOUISA BOWDOIN CARTER** *of Green Spring Valley, Maryland*

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● Accomplished, gay and altogether charming . . . a true daughter of the Carters of Virginia!

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Richest U. S. Women

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The Woolworths

MORE than 2,700 Woolworth stores contribute to the income of Helena Woolworth McCann, Jessie Woolworth Donahue, and the Countess Haugwitz-Reventlow, whose mother was Edna Woolworth Hutton. For want of sons, the family fortune has descended in the female line: first to Founder Frank Woolworth's widow Jennie, then, when she died intestate, in three equal shares to her two surviving daughters and to her granddaughter.

The three women differ vastly. One has scrupulously avoided publicity, one has had too much of it, and one has had distinctly the wrong kind. The first is in the *Social Register*, the second was in and has come out, the third has always been out. Mrs. Charles E. F. McCann is a socially very correct matron who, with her daughters, has become part of the best Long Island polo-playing set; Barbara Hutton Mdivani Haugwitz-Reventlow, the sure-fire sensation of the tabloids, the glamour girl of the rotogravures, is an American whom two foreign marriages have converted into a foreigner; Mrs. James Donahue is the gay, good-humored widow of a gambler who, after ruining any social aspirations she may have had, committed suicide.

Woolworth wealth is recent wealth, and Helena McCann's rise to social position has been the result of making no social mistakes. She got no foothold through her marriage in 1904 to Mr. McCann, a Tammany lawyer and a nephew of Richard Croker. Nor did she gain anything through the stagy career of her niece Barbara, whose enjoyment of the limelight she detested. Her own daughters were brought up impeccably and made good sound marriages, one to Wyllys Rosseter Betts Jr., the other to Winston Guest. Only her son Frasier has refused to play the game: destined for polo and all polo signifies, he turned literary, married a girl his family did not approve of, and leads a life very different from theirs.

The McCanns arrived in the *Social Register* in 1928 and today they are established. Sunken Orchard at Oyster Bay provides a perfect setting for what they want to be. Together with the twelve superb gardens (the French gardens won the Gold Medal of the American Institute of Architects), it cost Mrs. McCann $3,500,000.

Mrs. McCann is conservative but she lives all the same in the grand style. She has two yachts, the *Helena* and the *Chalena*, on which she constantly entertains as well as travels. She belongs to almost a dozen clubs, shares a box (opening nights and odd Mondays) at the Metropolitan, goes in for flower shows, and is a patroness of music. She has arrived, but she continues to have ambitions: reputedly one of them, which might not please the Joseph E. Davies, is to have Mr. McCann appointed Ambassador to England. Helena McCann could serve nicely as the model for a portrait of a freely spending society woman, which, with her 565,000 shares of Woolworth stock (current annual dividend: $1,356,000), she is very well able to be.

HER sister Jessie Donahue this year disposed of 9,900 shares of Woolworth stock but has 594,250 shares left. That makes it not too difficult to enjoy the atmosphere of Bradley's in Palm Beach, where an eyewitness once saw her lose $10,000 in eight minutes, and where her husband lost for her some $900,000. If Mrs. Donahue once had social aspirations like her sister, she has good-humoredly given them up. In her husband's lifetime they built a huge place next to the Beach Club at Southampton, but nobody much came to call. They thereupon built an elaborate swimming pool, very nice to swim in but no more successful than the house as a means of fetching Southampton. Thoroughly snubbed, they departed, Mrs. Donahue's sense of humor surviving the struggle, and since then the big house has remained closed.

Although Mrs. Donahue is anything but top crust she gets a very good time out of life. Gay, likable, generous, scarcely intellectual, she lives for pleasure, and she achieves it in the company of the night-blooming, on-the-march, El Morocco–St. Regis Roof set. She dresses royally, with Romanov crown jewels and $75,000 sable wraps. Her two sons, Woolworth and James P. Donahue, are rather badly spoiled playboys entirely unlike their cousins the McCann girls, whose path seldom crosses theirs.

THE problem of Barbara Hutton Mdivani Haugwitz-Reventlow is less one of providing facts than of dispersing fictions. Her story was blown up to such proportions that it ceased to be hers. It was, of course, a natural.

[*Continued on page 202*]

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NATIONAL STEEL

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There was pathos: she was motherless. There was excitement: she was unthinkably rich. There was romance: she was beautiful. There was glamour: she married a prince. For a long time Barbara wallowed in the publicity. Then, just as it had annoyed the family from the start, it finally got too annoying for Barbara. That phase, which might be called the American phase, has ended. There has been a complete change of attitude and Barbara today is equally weary of America and publicity.

The metamorphosis is everywhere attributed to her first husband, the late Prince Alexis Mdivani. He was a deft, polished Continental who married an immensely rich American girl with a lovely face but with no sophistication, no style, and too much flesh. He made her over. He gave her chic; he gave her presence; he gave her the European point of view; he gave her slimness—by making her diet so strenuously that for three weeks at a time she took nothing but black coffee and grievously upset her constitution.

And she loved that, as she had loved her debutante publicity. She loved being a princess also: there were more crowns, of varying sizes, embroidered on her linens, embossed on her writing paper, worked into her upholstery, than the Queen of England would require. But in many ways Barbara has persisted in being herself. At twenty-four, as at eighteen, she is generous, luxurious, impulsive, and pleasure-loving, and completely lacks a sense of both social and financial responsibility.

She has nothing to do with handling her money (her father, Franklyn L. Hutton, Edward F. Hutton's brother, handled it during her girlhood, and handled it extremely well) but much to do with spending it. Her generosity is perhaps part of an incurable itch to spend money. She spends it on herself with abandon in the way of clothes, jewels, and flowers, and she always has an air of luxury about her. For contrast, however, she has no yachts and only her London house, formerly owned by both Lord Rothermere and Otto Kahn. She keeps no residence in America.

Her new marriage has more to offer than her first one; her new husband, though less vivid, is far more human and not a fanatical perfectionist about his wife's appearance. Barbara can once again revert to her desire for all the fun in life that money can buy.

Mrs. Charles H. Babcock

MR. and Mrs. Charles Henry Babcock are a young couple who live with their three small children in a nice large suburban house at Greenwich, Connecticut. Mr. Babcock is a youthfully bald Wall Street broker and commutes mornings on the 8:52, evenings on the 6:08. Mrs. Babcock, who is dark, slender, and very well turned out, was a North Carolina girl. She plays bridge and occasionally golf, rides but owns no horses of her own, belongs to a number of clubs in Greenwich but isn't terribly active in them. She manages her own household, spends a lot of time with her children. Once in a while she goes down to New York, meets Mr. Babcock for dinner and the theatre, and once in a great while they go on to a night club. Mrs. Babcock has a sister and a brother-in-law, Mr. and Mrs. Henry W. Bagley, who also live in Greenwich, and though the two couples go with different crowds, they enjoy being near one another.

Richest U. S. Women

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Last August when Mrs. Babcock was twenty-eight she received a birthday present of some $90,000,000. For, prior to being Mrs. Charles Henry Babcock of Greenwich, she was Mary Katharine Reynolds of Winston-Salem, and her father, R. J. Reynolds, was President of the R. J. Reynolds Tobacco Co. (Camels, Prince Albert, *et al.*).

When Richard J. Reynolds died in 1918, Mary Katharine was still a child and her share of the estate was only $1,782,000. But during the eighteen years it remained in trust for her, what with accumulated savings and the rise in Reynolds stock, it converted her from simply a wealthy heiress into one of the richest women in the U.S. During those years she lived, by the terms of her father's will, on an annual allowance of $50,000; during those years she acquired the perspective of moderate, rather than great, wealth, and is now determined to retain it. Because both her parents died when she was young and she and her sister spent years traveling through Europe as orphans with a chaperon, she has the deepest feeling for simple home life. Because the Reynolds family has been dislocated by headline tragedies, she wants more than anything else a sane, normal, unobtrusive existence.

However, she retains some Reynolds sentiment and recently bought Reynolda, the huge family place in Winston-Salem, which is more like a community than an estate, and which she plans to restore to its former level of efficiency and run on a commercial basis. Besides its house, gardens, greenhouses, and farm produce, it contains such things as a U.S. post office and a plant to supply the neighborhood with heat.

What Mrs. Babcock will do in the way of philanthropy it is too early to say. But she has shown considerable interest in the fund that she, Mrs. Bagley, and their brother Richard established from the residue of the Smith Reynolds estate after provision was made for his two wives and two children. Mrs. Babcock is against spending it on buildings (even though her own hobby is to design houses) and in favor of using it to promote health in new directions—e.g., having dentists tour the North Carolina back country in trailers.

The Dukes

JAMES B. DUKE, after leaving almost $100,000,000 for the philanthropies of the Duke Foundation, had enough left over from tobacco profits to make his daughter Doris, now Mrs. James H. R. Cromwell, one of the richest women in the U.S.

Then for years, as though this fact weren't impressive enough, Doris was erroneously but persistently played up as the richest girl in the world. She hated it; she abhorred being front-page news and her very abhorrence became front-page news. Even more ironically, her life, except for her wealth, contains nothing of even third-page interest.

She is the levelheaded, slightly self-conscious daughter of a levelheaded father who died when she was thirteen and whom she adored. She knows that wealth means responsibility. As a Trustee of the Duke Foundation she attends its monthly meetings whenever possible, investigates its work, even makes incognito visits, arriving in old clothes in an old car, to find out what is going on. She has the managers of the Foundation run her estate but she checks their records. She distributes her charities through a special nonprofit corporation and watches the details.

This is clearly the same girl who at fourteen, after she came into the 2,400-acre estate at Somerville, New Jersey, where she grew up, decided to operate it, against her mother's advice that it be sold. Today it is a vast gentleman's farm, and its Victorian house has simply become a smart Victorian house. It has always remained Mrs. Cromwell's favorite place to live; in fact, she owns no other houses—the Fifth Avenue and Newport places are her mother's; the Palm Beach place is James Cromwell's mother's.

Mr. Cromwell, whom she married in February, 1935, is a son of Mrs. Edward T. Stotesbury and a former husband of Delphine Dodge Godde, well liked, well balanced, a fine boxer, an indifferent businessman, and a writer on social and economic subjects.

The social life of the Cromwells is not formidable. Doris doesn't like Newport and only goes there for short visits. She prefers small restaurants to large ones, home parties to night clubs, people of achievement to society people. She particularly likes music, though, unlike such other wealthy women as Mrs. Vincent Astor and Mrs. Christian R. Holmes, she has never supported musical enterprises. Most of all she likes to travel and, as she puts it, whenever it becomes possible to do some extensive traveling, there are a lot of places she wants to see.

BENJAMIN N. DUKE, as the poorer brother, couldn't go in for $100,000,000 foundations as James B. Duke did, but he managed to make his daughter, Mary Duke Biddle, one of America's richest women also.

Mary Biddle is twenty-five years older than her cousin Doris and not very much like her, but they do have things in common. One: a dislike of publicity. Two: an interest in music—Mary plays the piano and used to be given to musicales. Three: an interest in Duke University. Mary graduated from Duke when it was still Trinity College; she too is one of its Trustees, and her daughter will one day graduate from it also. Four: a reputation for not wasting money.

Unlike Doris also, Mrs. Duke Biddle has not an ounce of personality. She is plain, quiet, conservative, expensively dressed but lacking in chic, and of recent years has almost dropped out of society. This is everywhere set down to her divorce from Anthony J. Drexel (Tony) Biddle Jr., present Minister to Norway, whom she married when she was twenty-nine and he nineteen. He was her antithesis: a sportsman and playboy, crazy about entertaining, ecstatic about going places. His wife did her best to keep in line—waded in house parties, brought back trunkfuls of clothes from Europe (once paying a record duty of $77,000). But it was not her métier and she used to complain that it would be nice if occasionally there were artists instead of athletes around the house. The divorce and Anthony Biddle's subsequent remarriage left his first wife bitter enough to change her son's name, for private use, from Anthony J. Drexel III to Nicholas: nevertheless she is bringing him up to be, like his father, a diplomat.

Faces of the Month

International

TOM K. SMITH AND PHILIP BENSON

SMITH AND BENSON—In 1935 the American Bankers Association spurned the official candidate for its second vice presidency, Elbert G. Bennett, friend of the New Deal, elected Orval W. Adams, ardent anti-New Dealer. This year the A.B.A. found no fault in the official candidate, elected Philip A. Benson of the Brooklyn Dime Savings Bank to its second vice presidency. Since Mr. Benson is tepid toward the New Deal, progressives aren't very hopeful about 1937 when the term of Tom K. Smith, new President of the A.B.A., expires.

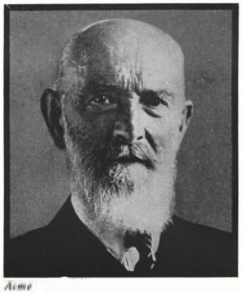
European

IRVING AND HEYWOOD BROUN

BROUN—Following the death of his friend Fred F. French, Irving Broun, fifty, older brother of famed Scripps-Howard columnist Heywood Broun, has been made chief executive of the various Fred F. French companies. A Harvard man, Irving Broun went into the oil business after graduating from the university, joined Fred F. French in the real-estate business thirteen years ago.

BOSCH—In Stuttgart recently, workers in Robert Bosch A. G. celebrated the fiftieth anniversary of the company, also the seventy-fifth birthday of the founder, vigorous old Robert Bosch. Owner of one of Germany's leading corporations, Robert Bosch pioneered in developing the magneto, by 1912 had turned out a million magnetos. In 1917 the Alien Property Custodian took over his U.S. unit. After the War, Robert Bosch reëntered the U.S. market, competed with his old U.S. Bosch Co. Not until 1930 was a truce arranged by which the U.S. company absorbed the Bosch subsidiary, marketed German Bosch products.

HAMILTON—When the United Aircraft Corp. decided that managing Pratt & Whitney Aircraft and acting as President of United Aircraft Exports Corp., two of its divisions, was too much for one man to handle, Charles W. Deeds, who was holding down both jobs, went back to managing Pratt & Whitney Aircraft exclusively. Into the presidency of United Aircraft Exports Corp. goes big, ebullient Thomas Hamilton, United Aircraft's foreign representative since 1930.



Acme

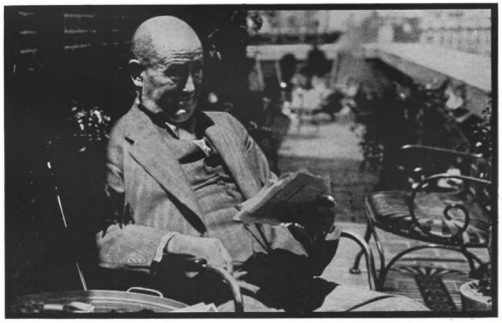
ROBERT BOSCH

Wide World

THOMAS HAMILTON

BRADY—Last year the Baldwin Locomotive Works began to solicit stockholders' approval for a 77B reorganization. But one stockholder has vehemently disapproved. Thus William Augustin Brady, seventy-three, old-time theatrical producer, has made financial news. Owner of 2,300 shares of Baldwin common, Mr. Brady objects to reorganization because it would "virtually wipe out common stockholders" and because he does not think the fact that reorganization was thought necessary in 1935 means that it is still necessary this year.

PINKERTON—Pinkerton's National Detective Agency has turned up often in U.S. labor history and is turning up again—this time before the Senate Civil Liberties Committee. Pinkerton officials have testified that the company made $1,000,000 sniffing out labor activities for U.S. corporations in 1935, is doing $550,000 for the first seven months of 1936. Head of Pinkerton is Robert Allan Pinkerton, Harvard '27, fourth Pinkerton in the detective business.



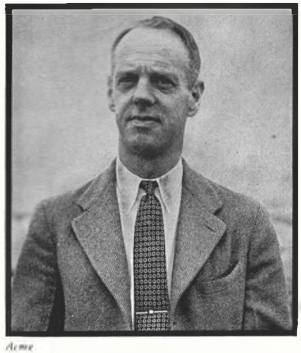
Associated Press

WILLIAM A. BRADY

TUNIS—With a book called *Was College Worth While?* John Roberts Tunis, Harvard '11, has inspired many a loyal Harvard alumnus to write indignant letters to editors. *Was College Worth While?* is a survey of Harvard's class of 1911 that draws some dismal conclusions about the value of a Harvard education. Mr. Tunis's average Harvard man is forty-six, makes $4,445 (1934), prefers the sports page of the newspapers to any other reading matter, has the literary style of a grammar-school boy, and dislikes Franklin Roosevelt. Mr. Tunis concludes that he and his fellow classmen have "done little for the world at large, beyond the fact that many of us have been good citizens, raised families, and paid taxes."

Harris & Ewing

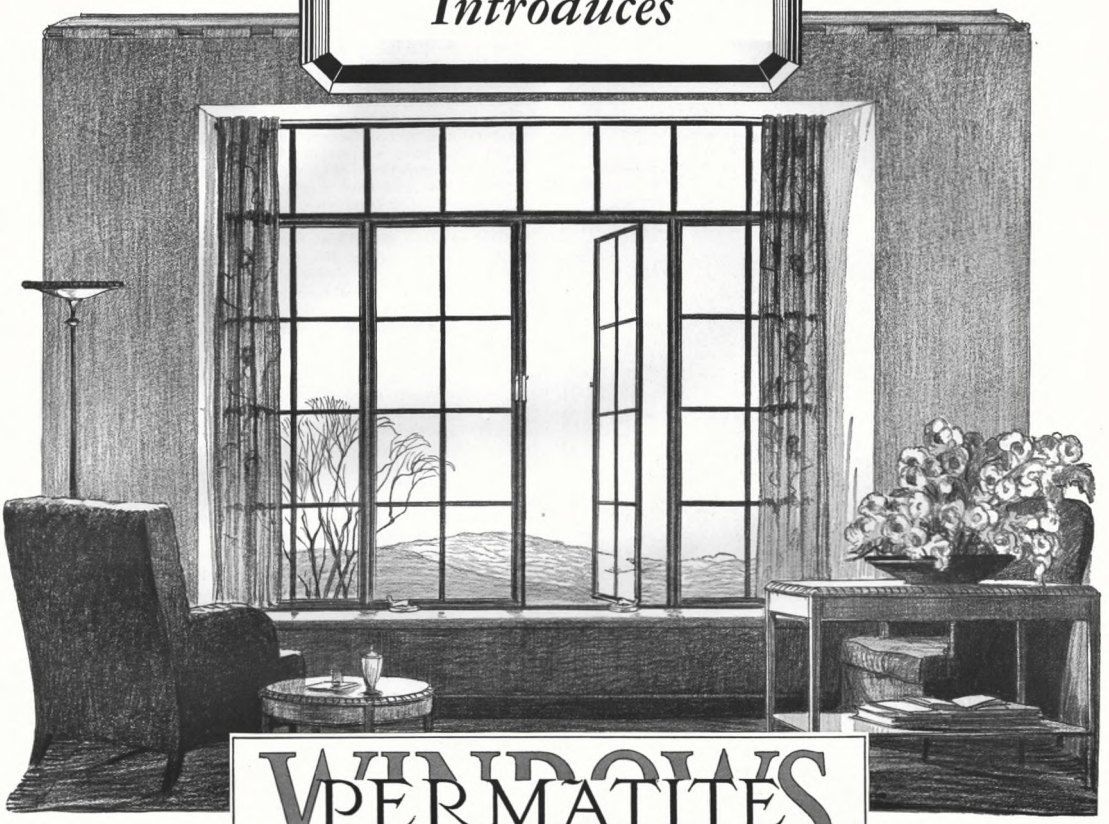
ROBERT PINKERTON



Acme

JOHN R. TUNIS

GENERAL BRONZE
Introduces



PERMATITE WINDOWS

Double-hung and Casement Windows
OF BRONZE OR ALUMINUM
priced to meet the needs of the house or building of moderate cost.

THE average person gives little thought to the window through which he looks every day. Only when the window sticks, rattles, lets in rain, snow, dust, noise, or draughts, runs up fuel bills through improper sealing—is it likely you will consider the window.

Architects, contractors, builders, have long agreed that bronze and aluminum made the ideal window material. Non-rusting, non-warping, non-sticking; permanent, beautiful, easily operated, requiring no paint or upkeep; rain, air, dust, noise and rattle proof, they make the perfect closure and are widely used where the expense is warranted. It remained for General Bronze to produce a new window, the patented Permatite Window, which offers all these advantages, but at a price suitable even to houses and buildings quite moderate in cost.

If you are building or remodelling, look into Permatite Windows, or ask your Architect, Contractor, or Builder about including them in his plans. We have a booklet available for distribution giving full details.

GENERAL BRONZE CORPORATION
34-19 TENTH STREET • LONG ISLAND CITY, N. Y.
makers of windows, doors, entrances, grilles, railing, tablets, and statuary in Aluminum, Bronze, Nickel and Iron

Beech-Nut

[*Continued from page 93*]

been on the Canajoharie payroll he would have predicted a brilliant future for this product. He would have prophesied that prohibition would increase the per capita consumption of gin, thereby giving an astounding push to the market for ginger-ale setups. He might even have warned Beech-Nut of the competition of Canada Dry, which was to have a prodigious success a few years later.

But the seer, so far as Beech-Nut is concerned, would have been unutterably misleading. Not that the taste for gin and ginger ale did not become a national malady. The trouble in 1919 was functional to Beech-Nut, a matter of plant location. Clicquot could thrive, for Clicquot was situated in Millis, near Boston. But Beech-Nut ginger ale, bottled in Canajoharie, was just too far from a metropolitan market. Faced with its marketing difficulties, Beech-Nut gave up its carbonated-beverage department in 1923, the year after Canada Dry started to produce in the U.S. in New York City. The Canajoharie-minded Directors were not sorry to see ginger ale go. And for a characteristic reason: they didn't like to see carloads of dirty, empty return bottles coming into clean little Canajoharie to be filled up again.

If the breaks had kept going this way during the first thirty years of Beech-Nut's life, Canajoharie would today be decaying into a minor lock port on the Mohawk River barge canal. But with peanut butter added to the Beech-Nut list in 1905, beans in 1906, and candy and tomato products in 1908, Bartlett Arkell had better luck. Beech-Nut peanut butter has had but one real competitor: H. J. Heinz. Beech-Nut candy has stood up against the threat of Life Savers. And tomato products, after the American public had gone off on one of its dietary stampedes, took a surprising turn that could no more have been foreseen than the collapse of the conserve market.

It was chewing gum, however, that went furthest toward making Beech-Nut what it is today. And all because Bartlett Arkell's sister had, in 1908, become the wife of Frank Barbour, who is remembered by an older generation of football fans as the quarterback of Pudge Heffelfinger's famous Yale team of the early nineties. Frank Barbour was general passenger agent of the New York Central's Green Mountain division at Rutland, Vermont, and liked railroading well enough to stand off two offers from Beech-Nut. But Mrs. Barbour yearned for the home town of Canajoharie, and Frank Barbour capitulated in 1910.

The problem immediately arose of what to do with his energies. Bartlett Arkell conned a long list of possible products, bethought himself of the profits of the American Chicle Co., in whose formation his brother had had a hand, and uttered one word: gum. So Frank Barbour found himself making annual trips to Belize in British Honduras, headquarters of the chicle contractors who hire native crews to engage in the ticklish business of extracting the sap of the sapota, or sapodilla, tree, which grows on the jungle ridges of Yucatan and Guatemala.

THE decision that annually dressed Frank Barbour in a sun helmet and set him to staring at the dripping spiral slashings on the sapota tree was the most important in Beech-Nut's corporate life. The packaged- and canned-food business is notoriously competitive, and the capacity of the human stomach is, as economists are forever gravely rediscovering, extremely inelastic. But the American taste for chewing gum is apparently as insatiable as the cow's lust for grass cud, and to date three companies—Wrigley, American Chicle, and Beech-Nut—have managed to hold practically the whole of an ever widening market. Just after the War, when the price of sugar mounted so disastrously, Beech-Nut had a scare; it didn't change its formula, but it countered by skittishly raising the price of the gum package to six cents. But nature soon had its way; sugar fell from twenty-five back to around five cents a pound, and it has remained in that valley ever since. Beech-Nut followed nature by putting the gum package back at its normal point of a nickel. And, since five-cent sugar means a tidy profit for five-cent gum, the profit margin from providing America with peppermint and spearmint mastication has been stable for fifteen years. During the depression ebb—1932, 1933, 1934—Beech-Nut got by on gum and candy alone. And the gum was much more important than the candy in keeping the company out of the red.

Today Frank Barbour no longer fares forth into the tropics to make deals with chicle contractors. Beech-Nut has a financial interest in the Chicle Development Co., which handles the routine of supplying contractors with enough money to outfit jungle expeditions

[*Continued on page 208*]

THE GRASS IS GREENER

Actually greener—because the estate owner lavishes time and care and money on the property he loves.

Symbolically greener—because the market fenced in by the words "Estate Market of America" is richer in needs, richer in wants, richer in the ability to satisfy those needs and wants. And because prestige acquired in this market carries *double weight*, both inside and outside the market itself.

Only one magazine—Country Life—is *exclusively* on the other side of that fence. Only one magazine—Country Life—concerns itself *exclusively* with the varied problems, interests and activities of the estate owners of America.

Advertisers who are using Country Life need no reiteration of these facts. Advertisers who are *not* might well ask themselves: "Have we been overlooking the greenest pastures of all?"

COUNTRY LIFE

● *Salesman Extraordinary to your Biggest Consumers*

Beech-Nut

[*Continued from page 206*]

and of shipping chicle once it has been gathered. Frank Barbour has of late years been responsible for the Beech-Nut public relations. A man with a lurking sense of humor and an overt sense of hospitality, he enjoys his role of spokesman and of manager of the company's Hotel Wagner. And his lighter words and activities are balanced by his quotation of impressive figures about Beech-Nut's welfare capitalism.

This welfare capitalism has earned the company a reputation for paternalism. But if you mention that word within hearing of Vice President Clark Arkell, he will smite you with a glance and tell you that you are hopelessly off the track; Beech-Nut is not paternalistic, it is merely friendly. However that may be, Beech-Nut has had as much conscience as the next company about its 2,600 workers. All office and factory employees are eligible for Christmas bonuses of $3 per capita for each year of service, and old-age pensions amount to 2 per cent of salary at seventy multiplied by the number of years of work. From 1906 to 1919 a company pianist played from two to five in the afternoon in the meat or the conserve departments; Bartlett Arkell thought music had charms for workers no less than for the savage breast. But with the improvement of belt-line processes came noises that were discordant, so the pianist was relegated to a noon-hour stint in the Beech-Nut Recreation Hall.

If Beech-Nut gives its workers physical examination even unto the blood test and insists on a daily manicure for all those who directly handle food, it is not that it puts cleanliness next to godliness in any abstract fashion. For visitors at the Beech-Nut plants come away enormously impressed with the spotlessness and the care of everything. The welfare may be for the employees, but it redounds to the financial glory of Beech-Nut. To which the management would reply: "And why should it not?"

Besides, it is not extremely difficult for Beech-Nut to carry out its desired policy of paying good wages, to provide good working conditions, and to kill the specter of indigent old age. For labor costs are not an overshadowing bogy in the life of a food-products manufacturer; he can put most of his work on the labor-saving belt line. His primary worries are about the cost of raw materials. A penny rise in the pound price of sugar means far more in Beech-Nut's life than demands for a five-day working week, which with the coming of NRA Beech-Nut granted along with a concomitant raise in the basic rate for piecework to make up the lost hours to its employees. The average Beech-Nut bacon packer, for example, gets $24 for a forty-hour week, which is better than average pay for labor of the sort.

BEECH-NUT will not give you any inkling of how much it buys of certain specific raw products, for, with the traditional secrecy of the foods business, it fears revealing to competitors the exact origins of the pennies that go to make up its gross-sales dollar. The 100,000 annual green-bag coffee purchase figure quoted at the beginning of this article is the estimate of the trade; it does not have the official sanction of Bob Robinson, the Beech-Nut purchasing agent. But Bob Robinson will reveal one set of figures—that bearing on the annual Beech-Nut consumption of sugar. In 1935 Beech-Nut bought 13,500,000 pounds of cane sugar, paying for it some $600,000. Since the sugar is used in gum and candy *and* in many of the food products, competitors can glean nothing important from Beech-Nut sugar figures.

Beech-Nut purchasing demands a wide variety of special knowledges, which is why Mr. Robinson's job is that of coördinator as well as buyer. Mr. Barbour still keeps an eye on chicle; Guy Sharpe buys the ham and bacon from Kingan of Indianapolis and others and the peppermint oil from A. M. Todd of Kalamazoo, whose tight little business was explained by FORTUNE on page 98 of its March, 1930, issue. Peanuts are bought by Ed Roche; coffee is frequently investigated at its source by Allen Saul of the Rochester plant, who makes trips to Colombia and Venezuela. Mr. Robinson's farming background makes him the logical buyer of Durum flour for macaroni, corn sirup for gum, shortening for crackers, and maple, beech, and hickory logs for the smokehouses.

Conversion of raw materials into the finished article is largely done by the usual automatic mixing and belt-line conveyer methods. But with bacon, which is the first product to which a guide will introduce you at Canajoharie, Beech-Nut still sticks more or less to the methods of 1905. Beech-Nut bacon is dry-cured by men who rub a mixture of salt, saltpeter, and brown sugar on the surface of the slabs. After resting for some thirty days in bins kept at a

[*Continued on page 210*]

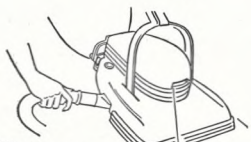
HOOVER *adopts* DOWMETAL

The First *Basically New* Cleaner in 10 Years

New wonder-metal lightness

Most efficient cleaner ever built

15 happy new conveniences



There's a slot in the side of the Hoover One Fifty—a Connector in the Handy Cleaning Kit. Slip Connector in slot—you're ready to clean furnishings . . . instantly. No stopping motor, turning over cleaner, or disconnecting belt.

You'll be amazed and delighted with the lightness of the Hoover—easy to lift—easy to operate. This wonderful lightness is made possible through the use of magnesium metal which is actually a full third lighter than aluminum.

A complete set of appliances for all types of cleaning, together in this Handy Cleaning Kit. It hangs on doorknob or stands on chair when you're cleaning—hangs on closet hook when you're through.

THE HOOVER *One Fifty* CLEANING ENSEMBLE

● You've never seen a cleaner like it—in looks, in lightness, in helpful devices . . . or in basic idea.

Here, for the first time, is a whole cleaning ensemble . . . a cleaner for rugs and carpets that converts, in an instant, into a cleaner for draperies, lamps, radiators, bare floors—all the furnishings in the house.

Here is new lightness. The amazing airplane metal, *magnesium*, one-third lighter than aluminum, is used for the first time in a household product by Hoover to give adequate strength with minimum weight.

Here is unique beauty . . . pure functional design by the modern designer, Henry Dreyfuss.

Here are new work-saving conveniences such as you've never dreamed of . . . 15 major improvements in the most complete Cleaning Ensemble ever made.

It is the most efficient Hoover cleaner ever built. It has the most powerful, effective cleaning action yet contributed to the science of home cleaning—Positive Agitation, the patented, exclusive principle that prolongs the life of rugs by removing destructive embedded grit.

These features are exclusive to Hoover or patented and you can get them in no other cleaner:

Magnesium Metal Lightness
Plug-In Tool Connector
Automatic Rug Adjustor
Time-to-Empty Signal
Easy-Empty Filtaire Bag
Clip-On Plug
Spring-Cushioned Chassis
Handy Cleaning Kit
Comfort Handle Grip
Instant Bag Lock
Non-marring "suede" finish in stratosphere gray

Own this new Hoover One Fifty Cleaning Ensemble on startlingly low terms. Try it without obligation, through the trustworthy representative of a leading merchant in your city.

$1.50 A WEEK MONTHLY MONTHLY

Also the popular low-priced Hoover "300," complete with cleaning tools, for as little as $1.00 per week, payable monthly.

Woman's Home Companion November 1936

DOWMETAL

MAGNESIUM ALLOYS
LIGHTEST OF ALL STRUCTURAL ALLOYS

IN the new Hoover—just announced—Hoover designing engineers have surpassed all their previous accomplishments in design, performance and convenience.

First among its features is amazing *lightness*—made possible through the adoption of Dowmetal (magnesium alloys).

Being a full third lighter than aluminum, yet possessing exceptional toughness, strength, and durability, Dowmetal enabled Hoover designing engineers to achieve the optimum in lightness without the slightest sacrifice in that rugged dependability which has made Hoover a first, and lasting choice in millions of homes.

In its adoption of Dowmetal, Hoover joins with a large body of manufacturers benefiting from the economic and sales advantages of products made lighter.

THE DOW CHEMICAL COMPANY • *Dowmetal Division* • Midland, Michigan

Beech-Nut

[*Continued from page 208*]

temperature of 40° Fahrenheit, the bacon is then removed, washed with hot water to remove excess cure, and hung over smoldering hickory or maple or beech wood for five days and nights in one of Beech-Nut's seven smokehouses—a smoke bath that is six or seven times as long as the average. The bacon rinds are then sheared off by expert skinners who can follow the contours of the bacon far more skillfully than could any machine. From the entire process of smoking and skinning there is an 18 per cent loss in shrinkage.

Normally, Beech-Nut uses two carloads of bacon in a week. After the smoking this bacon is delivered to the meat-packing department, where it is sliced in a semifrozen condition by a machine that cuts it into 540 strips a minute. Uneven slices go to make up the Erie Brand; small pieces are sold as scrap. Only the uniform slices from the center of the slab are put forth as Beech-Nut. These are packed by girls who average seventy-eight one-pound boxes or 120 half-pound boxes to the hour.

When you pass from bacon to peanut butter you enter the world of modern automatic production. Beech-Nut peanut butter is made from a combination of Virginia peanuts (rich in flavor) and an American-grown Spanish variety (rich in oil). After roasting, the combination is fed at the rate of two or three carloads a week into blanching machines where revolving brushes remove chaff, split each nut, and shake out the bitter heart (the nubbin at the top of a peanut). The chaff is pulled by suction into bags and sold as cattle feed; the hearts are separated from the nuts by a perforated shaker and sold as vegetable fat to soapmakers. The blanched peanuts flow, after further cleaning and sorting, into grinding machines where they are crushed to a butter that is mechanically mixed with salt, and girls stand ready with jars to catch the butter as it is squeezed through nozzles.

Canajoharie chewing-gum production particularly delights Mr. Barbour in his role of public-relations counselor, for visitors who come to the gum rooms with the notion that industrial processes are scissors and snails and puppy dogs' tails go away with the idea that Beech-Nut's methods, at any rate, are sugar and spice and so forth. The men who work in the mixing rooms live in a child's heaven of floating powdered sugar and the piercing sweet sting of peppermint oil; when you come out of this room your eyes are watering and your shoes have a sugar frosting. The sugar bath is the nearest thing to dirt that Canajoharie admits.

BESIDES hams, bacon, peanut butter, and gum, the Canajoharie Plant No. 1 has space for macaroni products, a few jellies, and the new strained-foods kitchens. The strained-foods division is not yet important to Beech-Nut from a volume standpoint, but the management hopes that new notions of infant and convalescent hygiene will lead to great things.

Plant No. 2 at Canajoharie houses the candy department and the printing press that turns out boxes and labels for both candy and gum. The latest Beech-Nut candy concoction is the Rumbos drop, a rum-and-butter candy that has yet to be tried out on the market. Candy making in general is a matter of more conveyers, more adaptations of the punch press which smash down on powdered sugar with 2,000 pounds pressure per square inch to fashion the mint tablets. Fruit drops are stamped out of melted sugar that has been mixed with fruit acids and flavoring on a batch mixer and then pulled out thin and spun into cooling viscous ropes. Men with huge knives turn the cooling mixtures on the slabs as if they were so many gigantic pancakes.

At Rochester and at Brooklyn there are still other conveyer belts. Beech-Nut's Rochester flour bins, mixers, dough troughs, cutting machines, and traveling ovens, all of which combine to turn out a variety of crackers, are similar to the equipment described in the story of the National Biscuit Co. that appeared in the August issue of FORTUNE. Beech-Nut happens to bake its biscuits at Rochester for reasons of proximity to the flour market; it puts up its chili sauce, its catchup, and its tomato juice in the same place because of the nature of the Rochester—Lake Ontario—Genesee Valley growing season, which particularly favors tomatoes.

To make certain of a good annual crop of John Baers, Beech-Nut enters into contract with 300 farmers and supplies them with selected young tomato plants every spring. The Beech-Nut tomato packing is like that of other houses, but it does claim one distinction over some of the tomato-juice canneries in the U.S.—it puts its fruit through coring machines. Reason offered: the core of the tomato, when crushed and squeezed,

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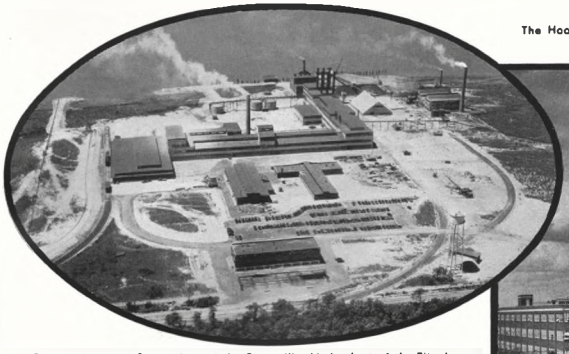
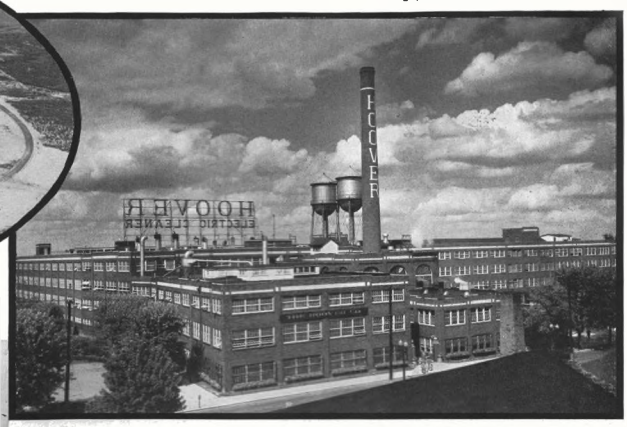


Crane valves and fittings helped the Sayreville, N. J. plant of the Titanium Pigment Co., Inc. prepare for production demands.

The Hoover Company, North Canton, Ohio, where Crane valves and fittings perform essential service in the new Hoover die casting plant.



In this hide glue plant of New England Chemical Industries, Inc., Crane valves, fittings and piping perform important service in the production process.

Crane Quality

IS THE KEY TO INDUSTRIAL PREPAREDNESS

● When new industrial units are undertaken or the modernization of present ones is planned with a view to major productive activity, Crane valves, fittings, fabricated piping, and plumbing materials, offer a bulwark against the wear and tear of prolonged use.

America is "digging in" for intense and fruitful production, as clearly shown by the fact that Crane materials are being specified at a greater rate than for several years past.

Crane valves, fittings and fabricated piping meet every industrial requirement in the generation of power and the transportation of fluids. Crane plumbing and heating materials hold an equally significant position in the building industry.

At the core of this preference for Crane materials is Crane quality—surpassing the need of the moment, achieving a standard around which all industrial and construction equipment rallies for long-term, economical production.

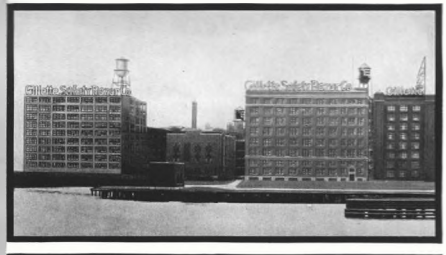
There are Crane branches and distributors in every industrial center and a service organization to provide every piping need. There is an answer in the vast Crane line for your most difficult problem.

CRANE

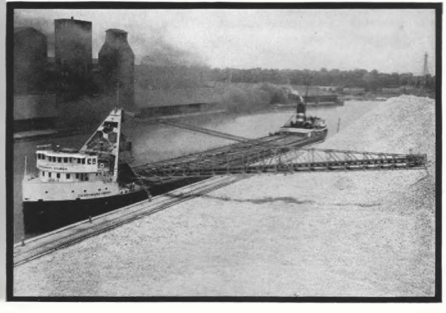
CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILL.
NEW YORK: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL



Gillette Safety Razor Blades are produced in this plant with the aid of such modern and dependable equipment as Crane valves, fittings, and piping.



★

Crane valves, fittings and plumbing material were important factors in the conversion of the S. S. Consumers Power by the American Ship Building Company, Cleveland. This vessel was made into a self-unloader, extending its range of economical transportation services to docks without unloading equipment.

Beech-Nut

[*Continued from page 210*]

imparts a bitter flavor to the juice that Beech-Nut does not like. Since tomato canning is a seasonal activity, Beech-Nut suspends its Rochester baked-bean and mustard production during late August and September to make room for the seasonal workers who return year after year for jobs on the tomato-juice belt lines.

Beech-Nut coffee roasting and packing is supervised by Allen Saul of the Rochester plant, but most of it is done in Brooklyn, where six roasters, each with a capacity of 500 pounds, operate continuously. Four kinds of coffee are used to make the Beech-Nut blend, 50 to 60 per cent of which comes from Colombia, the rest from Venezuela and Brazil. The Beech-Nut vacuum-packed coffee is of two types, steel cut and drip grind.

TRADITIONALLY, markets in the canned- and packaged-food business must be maintained by dint of a continuous rat-tat-tat of advertising. Beech-Nut is a steady user of various mediums but its budgets and methods vary greatly from year to year. In 1935 its appropriation was not unusually large. Where Wrigley newspaper advertising amounted to approximately $1,600,000, Beech-Nut's budget for newspapers was considerably less. And where Wrigley spent around $925,000 on radio, Beech-Nut allotted for one radio season $560,000 for time and talent. This year the Beech-Nut appropriations are larger in spite of the fact that the management has given up on radio entirely. One of the big things at the moment is sampling. By the end of the year Beech-Nut sampling girls, working at strategic spots in strategic seasons, will have given away some 90,000,000 separate Beech-Nut gum and candy samples.

For the rest, Beech-Nut promotional work includes the use of billboards, car cards, magazine space, display racks in cigar and candy stores and on newsstands, offers of trial tins of coffee or jars of peanut butter, and decalcomanias (pictures transferred from processed paper to the glass of grocery-store windows). While no definite figures are available, the Beech-Nut total 1936 appropriation for advertising and merchandising will doubtless run in excess of $1,500,000.

Beech-Nut distribution splits into two categories. Gum and candy are sold net to the jobber; they used to be sold at a list price less discount, but the discount was eliminated in order to prove to the retailer that any extra profit is the jobber's and not Beech-Nut's. Individual orders for gum and candy are small, but since Beech-Nut has an estimated million gum and candy outlets the sum total of sales is large. Beech-Nut sticks to the jobber for gum and candy disposal because otherwise the million outlets would demand a small army of salesmen tracking all over the country.

In distributing its food products Beech-Nut deals directly with the retailers for a reason. It started to give up on grocery jobbers in 1927 because many of them were more interested in pushing their own private-brand merchandise bought from canneries and packing houses that do not produce a nationally-advertised line. Warehouses in seventeen large cities and sales-division offices in almost as many centers provide a direct and prompt service to the 300,000 retailers who may stock Beech-Nut products. "Store-door delivery" means that Beech-Nut pays freight charges by rail and water to its warehouses, from which goods are delivered by truck to the individual grocer. Perishable products, such as box bacon and biscuits, are largely limited in sales to the northeastern area. The Beech-Nut system of discounts is of two types: one a graduated quantity discount based on the amount purchased, the other for cash (2 per cent for payment in ten days). Special discounts are allowed on seasonal products (such as tomato juice in September, when it is important for Beech-Nut to clear the cases from its plant) and on products on which Beech-Nut is making a special sales drive.

TIME was when Beech-Nut advertising featured a family called the Happy Little Beech-Nuts. And happiness is still the impression that Beech-Nut zealously strives to convey. In line with their traditions of simple contentment, the seven Beech-Nut Directors pay themselves salaries that total a mere $108,000 in all. An old apothegm has it that happy is the nation whose annals are blank, and Beech-Nut, if you are thinking in terms of industrial wars and rumors of wars, is just such a nation. When you step off the Central at Palatine Bridge, which is across the Mohawk from Canajoharie, you get a quick impression of bucolic simplicity as you gaze over at the white factory buildings and the green hills beyond. And that impression stands up to the end.

Swaying palms are always graceful, inspiring. Plenty of time ashore at Havana, Panama, Mexico.

TROPICAL TRAVELOGUE

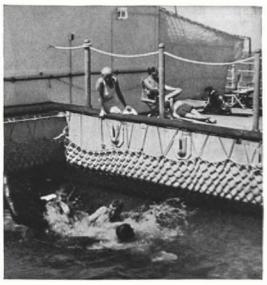
of a "Big 3" fortnight's voyage to—*or from*—CALIFORNIA

The CALIFORNIA, PENNSYLVANIA *and* VIRGINIA . . . *Largest, most Popular Ships in Coast-to-Coast Service . . . now add a call at colorful Acapulco,* MEXICO, *on both Eastbound and Westbound "cruise voyages" via* HAVANA *and the* PANAMA CANAL

For a refreshing drink after your swim, there's a source of supply located beside the pool.

Dr. N. S. Keeler finds the broad, well-shaded promenade deck a grand spot for relaxation.

The Panama Canal Locks. You go through by day . . . so you won't miss any of the sights.



Pleasant hours just "laring" on deck or splashing about the pool. (Two pools on each ship.)

On cool, tropical evenings you dance on deck with congenial partners . . . to a *good* orchestra.

"Two can play that game!" Frederick Zobriat tells the cameraman on a beach near Havana.

Low "between-season" rates now in effect
save you $35 to $125 on 1st-Class Tickets

ACAPULCO, fascinating port of Mexico's West Coast, is now a regular stop on *both* East and Westbound voyages over the "Big 3" Sunshine Route. Schedules remain the same—fastest from coast to coast. Below are some of the vacation voyages and cruise tours you can take on the "Big 3." Special "between-season" rates on 1st-class fares, effective for only a few weeks more, make it advisable to plan your trip without delay.

Coast to Coast, 1st Class from $190 (from $225 at certain seasons). **Tourist Cabin from $125.** All rooms are *outside* rooms. 25% reduction on round trip now in effect.

Circle Tours to California or Mexico, one way by sea, one way rail or air. Special home-town to home-town combination rates. Wide choice of overland routes and stopovers.

9-Day Havana All-Expense Tour from New York from $140 for everything aboard ship; room, bath and meals for three days in Havana and sightseeing.

16-17 Day All-Expense Cruise Tours to the Caribbean, Panama and South America. Sailings all year round. Special folder on request.

Ask your travel agent for further details.

The "Big 3"

s. s. CALIFORNIA **s. s. VIRGINIA**
s. s. PENNSYLVANIA
(33,000 tons each)

Panama Pacific Line

International Mercantile Marine Company, 1 Broadway and 601 Fifth Ave., New York. Offices in principal cities.

NOW APPEARING IN FORTUNE

November, 1936

Correction in October Index

AMERICAN EXPRESS TRAVEL SERVICE
Agency—The Caples Co.

This month the **NATIONAL BROADCASTING COMPANY** *is ten years old.*

In those ten years it has grown to be the World's Largest National Advertising Medium.

A RADIO CORPORATION OF AMERICA SERVICE

Take advantage of the NEW LOW RATES for *Long Distance Telephone Service*

OVER the years, Long Distance has written a remarkable record of broader horizons and lower costs. Here are a few examples:

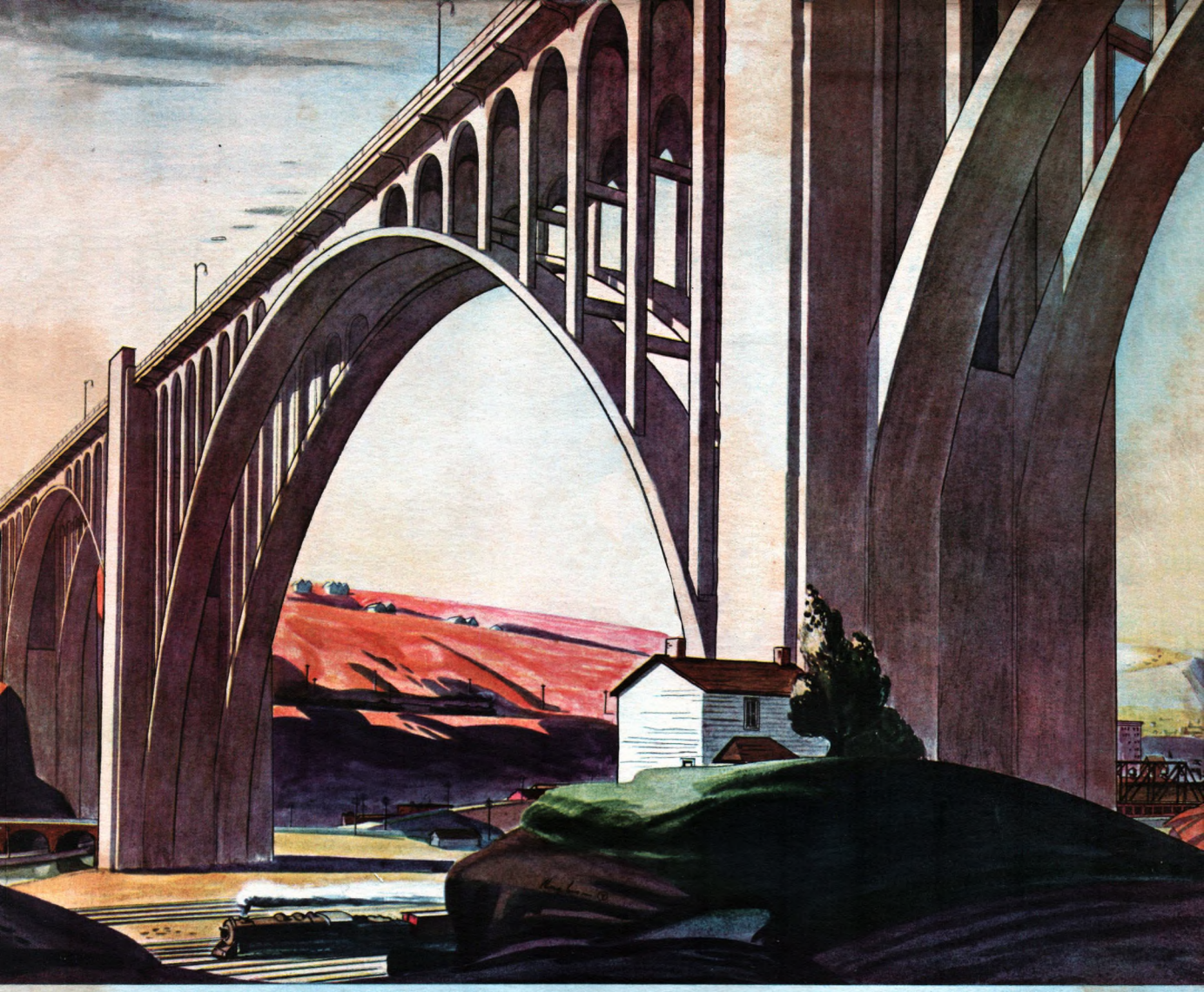
NEW YORK to	*Year Opened*	MINIMUM RATES *Then*	*Now*
Cleveland	1891	$ 2.75	$ .95*
Chicago	1892	4.50	1.45*
Denver	1911	11.25	3.25*
Salt Lake City	1913	14.25	3.75*
San Francisco	1915	20.70	4.50*
London	1927	75.00	15.00*

*3-minute station-to-station night and all day Sunday rates.

Continuous improvement in Long Distance service —with never-ending research and development of equipment, improved operating technique, earnings permitting construction of adequate facilities, and loyal, efficient work by thousands of telephone men and women—has been accompanied by constantly lowered rates.

The latest reduction—September 1, 1936—for calls to most points where the station-to-station day rate was $1.10 or more, is the seventh in ten years.

The map above shows three-minute, daytime station-to-station rates. Even these are much lower at night and all day Sunday when *you can call anywhere in the United States for $5 or less.* Far-away friends and relatives, branch offices and customers, are "nearer" now than ever before.



LASTING MONUMENTS

With its graceful columns towering mountain-high above the busy lowland it spans, the George Westinghouse Memorial Bridge affords Lincoln Highway travelers a smooth, fast route for entering or leaving the city of Pittsburgh. It affords them also a commanding view of another tribute to the memory of George Westinghouse—the headquarters plant of the electrical manufacturing company which his genius founded and has inspired throughout its fifty years of achievement.

Yet neither this bridge, which fittingly symbolizes the span of Westinghouse service . . . nor any Westinghouse plant, however impressive . . . can compare as a memorial with the legacy bequeathed to the world in large measure by George Westinghouse—the universal use of electric current. Broadly speaking, the entire alternating current system, which permits the widespread distribution of electricity, owes its birth and early development to his keen perception, courage and tenacity. The name of Westinghouse is perpetuated thus throughout every modern use of mankind's most powerful ally.

Electric arc-welding is one of the many fields in which Westinghouse enterprise has won recognition of leadership. Quite appropriately, all reinforcing metal in the Westinghouse Memorial Bridge was welded by this modern method.

In this Golden Jubilee Year, the Westinghouse organization honors its founder . . . and pledges continuous perpetuation of his ideals through the expansion of electricity's usefulness to the world. Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pennsylvania.

50 YEARS OF ACHIEVEMENT

WESTINGHOUSE 1886 W 1936 GOLDEN JUBILEE

DEEP INTO THE BIG WOODS. No luxuries here, as "Herb" Welch—famous Maine Guide—makes noon camp and serves up beans, johnny-cake, and coffee hot from the camp-fire coals, winding up with Camels all around. Hearty outdoor appetites welcome the sense of digestive well-being that smoking Camels encourages. As "Herb" says: "I've lived on one meal a day—and I've dined on the best that the State of Maine offers—but no matter what I'm eating, it always tastes better and digests better when I smoke Camels."

WHEREVER...
WHATEVER...
WHENEVER
YOU EAT—

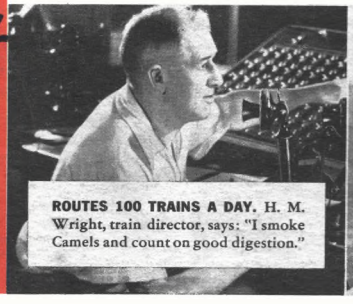
For Digestion's Sake... Smoke Camels!

Costlier Tobaccos

Camels are made from finer, MORE EXPENSIVE TOBACCOS . . . Turkish and Domestic . . . than any other popular brand.

Smoking Camels helps to bring a sense of well-being

YOU eat over a thousand meals a year! Food is varied. Place and time often differ. Sometimes you are free of care—at other times, worried and tense. Yet, thanks to Camels, you can help digestion meet these changing conditions easily. Smoking Camels speeds up the flow of fluids that keep digestion running smoothly. Tension eases. Alkalinity increases. You enjoy your food more—and have a feeling of ease and contentment after eating. Mealtime or *any* time—make it Camels—for digestion's sake, for Camel's invigorating "lift," for mildness and fine flavor. Camels do not get on your nerves.



ROUTES 100 TRAINS A DAY. H. M. Wright, train director, says: "I smoke Camels and count on good digestion."

GLIDER CHAMPION. Mrs. D. Holderman says: "A few Camels, and I eat with relish—feel at ease afterward."