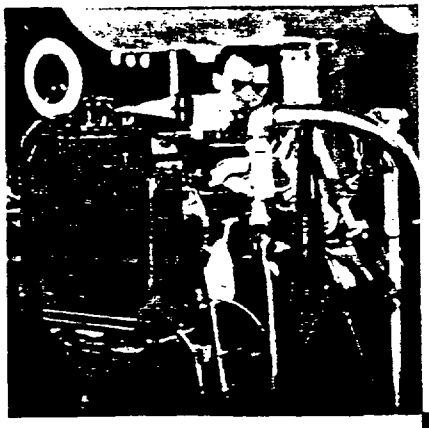
ETHYL NEWS INDEX—1954

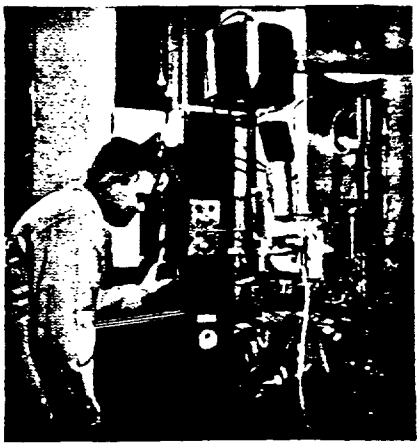
ETHYL NEWS INDEX—1954 (continued)

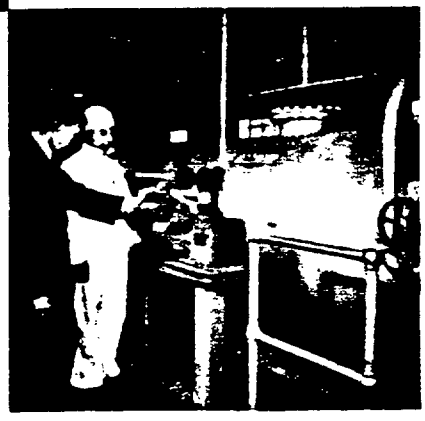
PETROLEUM

SPECIAL ISSUE

ETHYL NEWS







JANUARY—FEBRUARY 1954

ETC 28988

BEHIND THE NEWS

The services that Ethyl Corporation performs on behalf of the petroleum industry in connection with the utilization of "Ethyl" fluid are many and varied. Depicted on the front cover are a few of these "extras." Readers will recognize scenes portraying Ethyl's road testing, farm, engine research, product supply, gasoline testing and safety services.

One of our writers, returning to his desk after an absence of several hours, happily announced that he had just seen his first 3-D motion picture. This did not tally up because he was supposed to be gathering material for "Industry's Black Magic" (page 9). But it turned out that the writer wasn't goldbricking after all. The 3-D movie he had attended was a brand new one on the subject of carbon black, sponsored by a leading manufacturer of the product.

Add intelligence about Wayne University (see "Fellowship at Work," page 12): It was named in honor of Gen. Anthony Wayne; it is among the nation's 20 largest collegiate institutions; it includes 10 schools and colleges and offers more than 50 curriculums; and it expects its present enrollment of more than 16,000 students to double by 1965.

Benjamin Franklin was one of the leading printers of his time. So pronounced and timeless was his success in the art, in fact, that Printing Week nowadays always coincides with the week of Mr. Franklin's birthday in mid-January. One of the highlights of the annual observance is the display in major cities of the outstanding examples of printing produced in the United States during the previous year. Understandably so, we think, we were delighted that ETHYL NEWS was singled out for honors as a showpiece of the highly-selective 1954 Printing Week exhibition in New York City.

ETHYL NEWS

Thom Yates, Editor
Richard F. Cook, Associate Editor

JANUARY-FEBRUARY 1954

Published by Ethyl Corporation, 100 Park Avenue, New York 17, N. Y., manufacturer of "Ethyl" antiknock compounds, used by oil companies to improve the antiknock quality of aviation and motor gasoline.

Edward L. Shea, President
Stanley T. Crossland, Vice President and Treasurer
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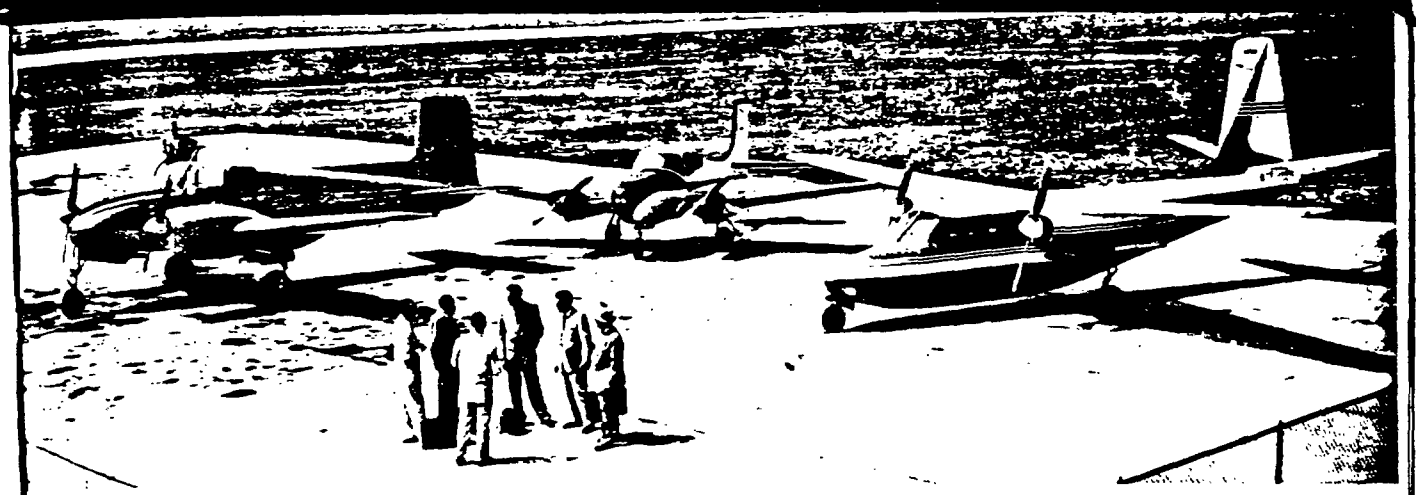
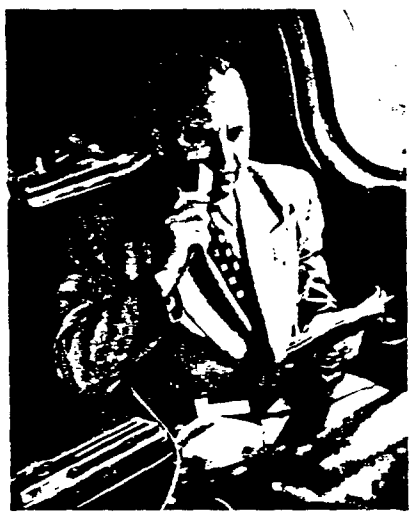




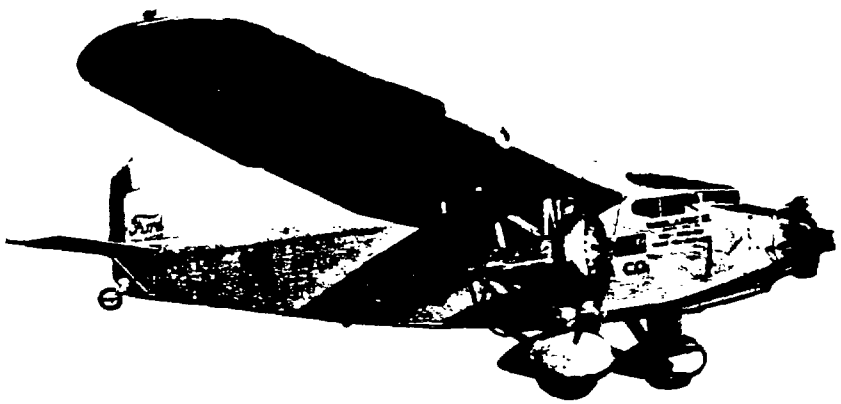
Business on the Wing

The oil industry leads in the use of company airplanes

AMERICAN BUSINESS is flying high these days in more ways than one.

A tremendous boom in "business flying" set in right after the Axis knuckled down and it hasn't stopped yet. In fact, it's going stronger than ever and nobody knows quite when—or even if—the interest will level off. Putting it statistically, in the nine years since war's end the number of airplanes operated by corporations and business firms has quadrupled to 10,000. By 1956, according to one estimate, there may be almost twice that many corporately-owned aircraft in operation.

The petroleum industry, with its far-flung operations, naturally is the pacesetter. Almost one of every five planes owned by all business is an oil company craft. With more than 1,700 planes, the petroleum industry operates a fleet larger by hundreds than the combined fleets of all scheduled domestic and international airlines. Obviously the type of aircraft flown by oil and other companies varies from large multiengine transports to single-seaters and even helicopters. In size, company fleets range from one single-engine job to dozens of planes for a wide variety of functions.



A PIONEER in the use of business aircraft. Phillips Petroleum flew this Ford trimotor plane back in the early 1930's.

One of the largest air armadas is that of the Sinclair Oil subsidiaries. This numbers 22 aircraft, which are based in 11 different communities in 8 states. Five are single-engine units, used exclusively to patrol company pipelines. The other 17 craft, with a total of 124 seats, are available mainly to transport company personnel and property throughout the widely-scattered operations areas. A central shop is maintained in Sinclair's own hangar at Tulsa Municipal Airport. All overhaul, maintenance and rebuilding work is done there by the company's own corps of mechanics.

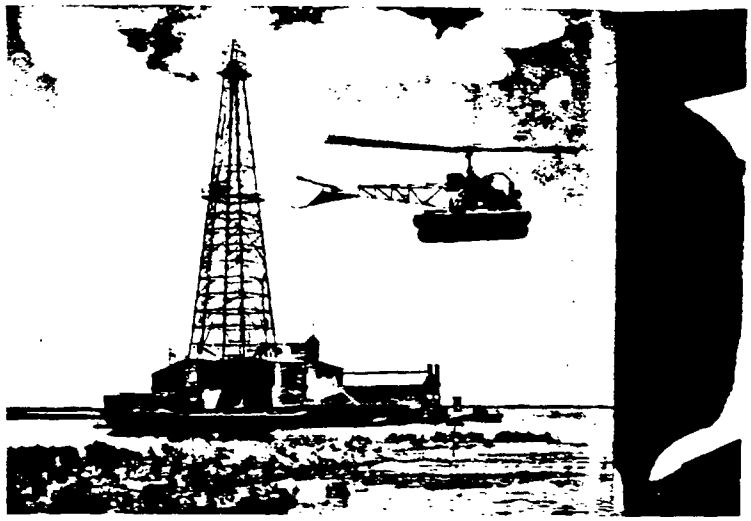
By far the leading use of business aircraft is to speed executives and other key personnel from one place to another for meetings, conferences or a firsthand study of a field installation or customer problem. Some business planes are outfitted as "flying offices." Winging along at 200 miles an hour in such craft, personnel are able to take care of office paperwork in comfortable privacy and to catch up on correspondence.

Company Airlines

Several of the large companies, oil as well as those in other industries, operate what constitutes almost their own airlines, according to the Aircraft Industries Association. The AIA cites Arabian-American Oil as an example. Its 21 planes carry personnel and equipment across two continents. Each year company planes fly about 5,000 passengers on transatlantic flights. Aramco, reports AIA, employs 325 people in its "airline," 42 of them pilots.

As a matter of policy, however, most companies do not fly their aircraft in competition with commercial airlines, but rather as a supplement to that service. Phillips Petroleum, for instance, operates its own fleet of planes. Even so, its employees fly more than a million miles a month on scheduled airlines on company business.

But it is not always possible to obtain commercial flight accommodations, particularly in last-minute or emergency situations. It is then that the immediate availability of a company aircraft is appreciated. A telephone call usually is all that is needed to have a company plane idling on the field, ready for take-off, by the time the hurried employee reaches the airport.



HELICOPTERS are well adapted for aerial exploration.

Another consideration is that these planes can take off and land at virtually any of the nation's 6,000-plus airports, whereas the larger commercial airliners now utilize only about 10% of these landing fields. That means that the business aircraft can fly passengers directly to almost any community in the land.

In addition to transporting people and equipment, oil companies find many other tasks for their planes. Cessnas, Pipers and other single-engine craft are counted upon to help patrol more than 300,000 miles of petroleum and natural gas pipelines. Oil exploration from the air, employing modern electronic devices, is becoming increasingly common. In some instances even helicopters are used to obtain information. Shell Oil, for one, relies upon the "eggbeater" for surveys of inaccessible areas in its search for new oil-producing land.

The distinction of being one of the oldest continuous

HEADQUARTERS for the Ohio Oil Company air fleet is this modern Findlay, Ohio, hangar.

LIGHT PLANES are invaluable for patrolling pipelines.

users of business aircraft belongs to Phillips Petroleum. It purchased its first plane in 1927 and its first so-called executive transport in 1930.

Phillips was a pioneer in sponsoring various airplane events and demonstrations to promote the advancement of aviation. So was The Standard Oil Company of Ohio. Sohio sent its first plane, a sister ship of Lindbergh's "Spirit of St. Louis," around a wide part of the country to stimulate interest in the building of airports. Also, Sohio flew the first commercial autogiro in its home state as a means of encouraging aviation research.

Needless to say, only the most skilled of pilots man business aircraft. Most companies go out of their way to make clear the authority of their pilots. Shell Oil's policy in this matter is typical. It states that the pilot is "the sole judge of mechanical, weather and other conditions covering flight. His decision regarding how, when and where the plane will be flown is final." Many of the men who fly the dozen or more planes that Shell operates on lease are veterans of World War II. Each pilot's health is checked twice a year.

Excellent Safety Record

Organized programs of pilot training and extraordinary plane maintenance have paid off handsomely in the safe operation of the 10,000 business aircraft now licensed in the United States. So outstanding is this safety record that insurance companies actually consider company plane pilots twice as good risks as house painters.

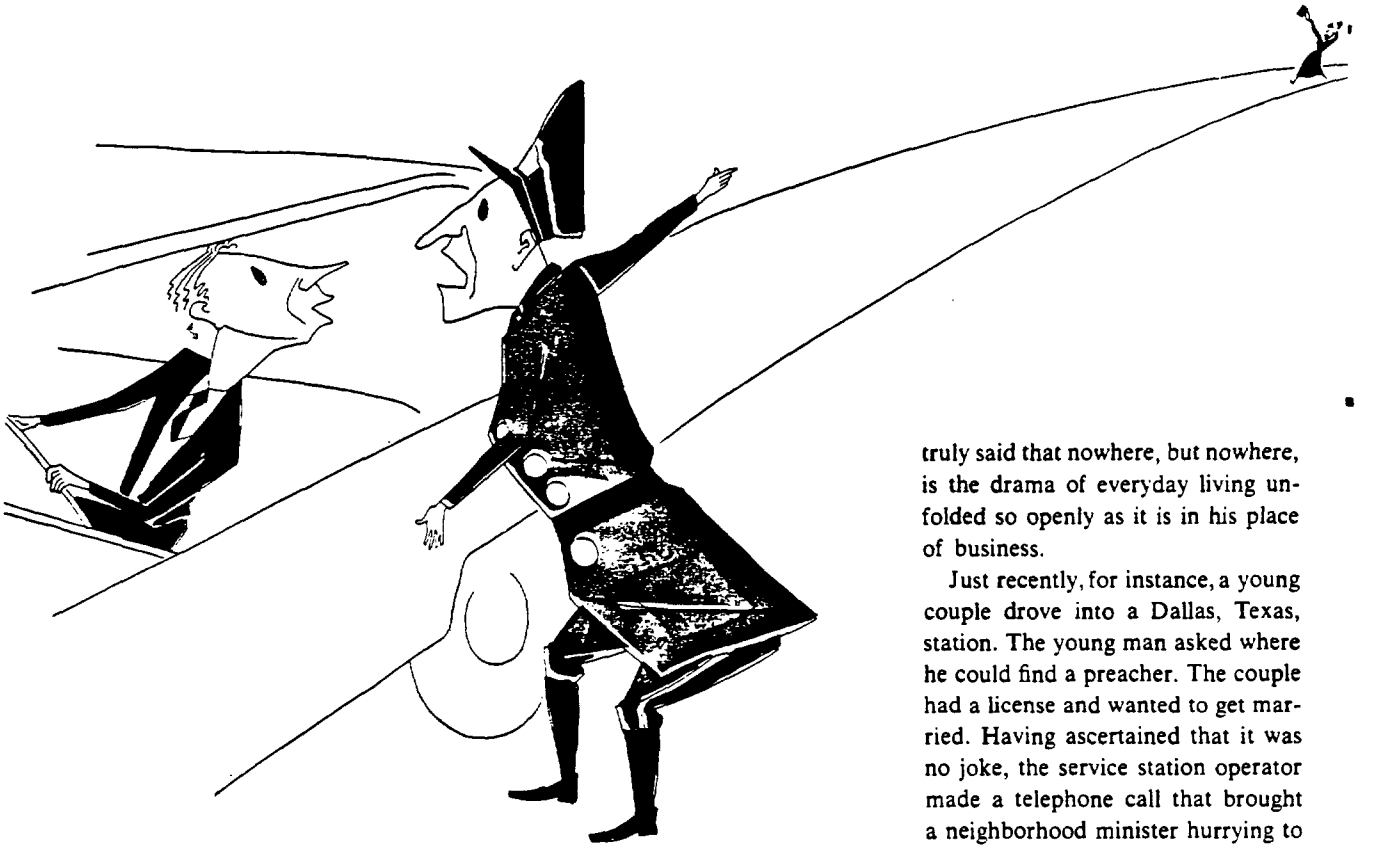
At its annual meeting in St. Louis a few months ago, the National Business Aircraft Association honored 16 companies for flying their planes one million or more miles without mishap. At the head of the list was The Ohio Oil Company, with a record of more than five million miles of accident-free travel. Ohio Oil began

AMONG the oil executives who travel by company plane is B. Brewster Jennings, Socony-Vacuum president, shown talking with his pilot.

flying operations in 1946, now has a fleet of 17 planes. Also honored for safe flying was the Sinclair group, with almost three million accident-free miles.

In actuarial terms, business aircraft during 1952 compiled a safety record of less than 0.5 fatalities per 100 million aircraft-miles flown. This record is particularly outstanding in view of the fact that more than two-thirds of business flying is off the major airways and that landings and take-offs are made at airports of all sizes and descriptions. The near-miracle represented by this record is apparent when one considers that grandfather's horse and buggy was a reckless vehicle of destruction in comparison with modern business aircraft. It claimed 30 fatalities for every 100 million miles the collective dobbins traveled.

American business has an investment of about $200 million in its over-all aviation activities and is spending nearly $75 million yearly to keep the aircraft in operation. It is certain that this investment will increase considerably during the coming years as more and more companies turn to ownership of aircraft as a means of convenient, dependable, swift transportation. #



truly said that nowhere, but nowhere, is the drama of everyday living unfolded so openly as it is in his place of business.

Just recently, for instance, a young couple drove into a Dallas, Texas, station. The young man asked where he could find a preacher. The couple had a license and wanted to get married. Having ascertained that it was no joke, the service station operator made a telephone call that brought a neighborhood minister hurrying to

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A MOTORIST loafing through Kansas wheat country one day last summer was more than surprised when highway policemen flagged him down. He hadn't broken any laws, the officers quickly assured him. They just wanted to tell him that he had forgotten something at a service station about 130 miles back—his wife!

It seems that while the man was in the service station office his wife had gone to freshen up. After paying for the purchase, the motorist drove off. The dealer called police as soon as the stranded wife made known her plight but it was several hours before the unsuspecting driver was hailed.

Back at the station, he sheepishly explained to his wife: "I thought you had gone to sleep in the back seat."

The incident is not a common occurrence but it is one of those many things that "can happen only at a service station." Catering as he does night and day to people of all temperaments and personalities, the station operator really gets to see life as it is. It has been the scene. Then and there, on the apron of the station, the couple were married. After congratulations and handshakes all around, they rode off on their honeymoon.

In Burghill, Ohio, a gasoline retailer played a leading role in one of life's more serious moments. A car swung into his establishment and a distraught husband asked for help. His wife had suffered a heart attack while they were riding along and needed immediate assistance. The quick-thinking dealer had his own wife telephone the local fire department's resuscitation squad and then administered artificial respiration to the victim until the Pulmotor crew arrived.

Helping people in distress stands high in the service station man's creed of business. But sometimes that's a two-way street and the station operator is aided in return. Witness what happened to a dealer in Burdett, Kansas.

He was awakened by the telephone's ringing at 2 o'clock in the morning. "I'm in your place of business,"

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said the voice at the other end. "Will you come down and sell me some gasoline?" After convincing himself that it was no gag, the operator hurried to his station and found the customer waiting.

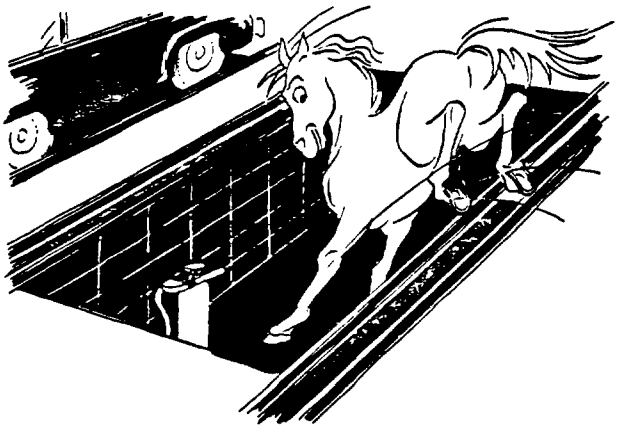
Seems the man was low on gasoline when he entered Burdett. The service station was dark but he tried the door anyway. To his surprise, it was unlocked. The motorist called the telephone operator and she rang the owner at his home. After buying a tankful of gasoline and apologizing for disturbing his benefactor's sleep, the traveler drove on. The dealer locked the station door—for sure this time—and went back to bed.

Other good samaritans were two employees of a service station in Hooven, Ohio. Soon after making a sale they found a billfold near the pump island. A card in it identified the wallet's owner as a Cleveland clergyman. Police were notified and they succeeded in locating the motoring pastor about half an hour later. He returned to the service station to claim his billfold. In appreciation, he handed the employees copies of a sermon he had been giving in churches in the area. Its theme—a lesson obviously not needed by the conscientious attendants—was, "Jesus will enable you to overcome temptation."

Unfortunately, not everyone is as honest as the two attendants. Service stations are a favorite target for thieves, and, as more than one dealer can attest, this kind of lightning does strike the same place more than once.

In fact, one Kansas City operator considered it an unusual morning last summer when he found he had no visitors during the preceding night. His place was entered four times in a single week. In Portales, N. M., thieves broke into a station by removing an air conditioner and then took the unit along with them.

An intruder at an El Monte, Calif., station poured—but it wasn't tea. He passed up money, tires, batteries and other merchandise and just concentrated on pouring six cans of brake fluid over the floor of the station office. It was adding insult to injury so far as a Denver operator was concerned when thieves not only ransacked his establishment but loaded the loot in his station wagon, which was parked inside, and crashed it through the locked overhead garage door to make their exit.



But if service stations often are the victims of thieves, their personnel are adept at rounding up criminals. After their Independence, Mo., station had been burglarized for the fourth time, the co-owners developed an ingenious device for nailing the next person who tried it. They rigged up an intercommunication system, with the microphone under the counter in the station and a speaker in the bedroom of the nearby home of one of the partners. Then it happened. One morning about 4:30 the sleeping operator was awakened by voices and noises coming over the speaker by his bed. Armed with a shotgun, he was at the service station in a flash. The intruders made a fast getaway in a car, but it's pretty certain they won't be back.

Not only people are involved in the unusual happenings at service stations. Animals and insects often get into the act, too.

Bees, for instance. They may be honey-makers but they don't do a thing to sweeten up business at a serv-

ice station. Dealers in Keyser, W. Va., and Beaumont, Texas, can vouch for that. Each was visited by a swarm of the insects. The Keyser bees flew in and buzzed all over and around the pumps one busy Saturday afternoon. The station owner twiddled his thumbs and turned away customers for two hours until the beekeeper showed up and induced his winged friends to return home to their hives. The Beaumont dealer wasn't so fortunate. He had to advertise in the newspaper for someone—anyone—to come and get the bees that had taken over his place. A man who was waiting at the station when it opened at 6 o'clock the next morning claimed the swarm.

Not a Nightmare

Horses are an oddity at service stations. They present an even stranger sight in a lubrication pit. But that's just where one dobbin ended up in a Wheeling, W. Va., establishment. His rider sought temporary shelter in the station when a heavy storm struck suddenly. In moving about, the animal stumbled and landed—ignominiously but unhurt—at the bottom of the grease pit. It was freed a half-hour later by means of a makeshift ramp of planks.

A cat, not a horse, plagued attendants at a Dallas service station. They found the feline upon raising the hood to service a customer's car. The cat didn't appreciate its new-found freedom. It resisted the attendants' efforts to make it comfortable and dashed across the street under an automobile stopped for a red light. The cat then jumped up on the car's springs and rode happily off.

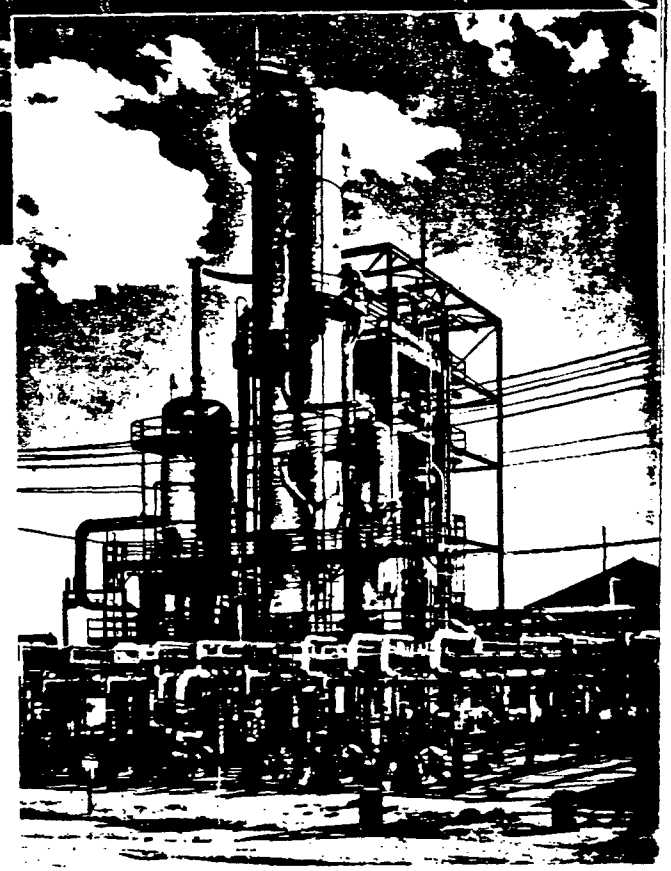
A puppy trapped in a burning service station in Danbury, Conn., displayed more sense. He jumped into a restroom toilet bowl and stayed there until the fire was put out. The dog was singed here and there, but no doubt was glad to be still alive.

And so are the little vignettes of life acted out at the service stations of the land. They are, the dealer will tell you, the things that go to make his job interesting. But a retailer in Holyoke, Mass., will experience none of these events. After 18 years in the business he has given up his station. Why? Doctors have just found that he is allergic to—you guessed it—petroleum. #

Strange things happen every day at service stations around the country. Here are a few of the gems of 1953:

- A car crashed into a Woodside, Calif., station for the eleventh time in the past few years. All of the accidents occurred when cars went off the road rounding a sharp turn by the station.
- An owl perched atop a gasoline pump is a common sight in a certain Minnesota station. The bird is a neighborhood pet and the mascot of the station, which, appropriately, is located in the community of Sleepy Eye.
- When a new station opened at a busy intersection in Spokane, Wash., its first customer was a man who had operated a station on the very same spot nearly 30 years before.
- Service station operators favor sharp competition, but they also believe in fair play. When a station in Round Lake, Ill., burned out, competing retailers immediately placed their equipment at the disposal of the hard-luck dealer's customers until he could get back into business.
- A dealer in Midway, Wash., was debating whether to rebuild and modernize his station when a truck settled the question. It slipped its brakes, rumbled across the highway and rammed into the station. No one was hurt but the building was wrecked.

THE RISE OF SUNTIDE



The nation's newest refinery towers over land where Texas cattle once roamed

UNEQUALLED by any other industry is the petroleum industry's near-$25 billion expenditure during the past eight years to improve and increase the production, transportation, refining and marketing of oil and its products.

The bulk of this postwar capital investment has gone, of course, to enlarge and modernize existing facilities. Thus, even in the face of such an outstanding accomplishment, it remains a noteworthy event when a refinery is built from scratch.

Newest of the refineries that have been constructed in this country since the end of World War II is that of Suntide Refining Company, at Corpus Christi. On land where large herds of Texas cattle once grazed, the plant has risen in an area that already claims five active refineries, and so stands as a new symbol of the competitiveness that marks the petroleum industry.

The Suntide operation also serves as a timely and typical illustration of the industry's willingness to expand as necessary to meet the nation's staggering requirements of petroleum and petroleum products.

Even in advance of the refinery's formal opening this spring, Suntide Refining Company has announced its intention to spend several million dollars beyond the original multimillion dollar investment in order to increase alkylation facilities and to double daily crude oil capacity to 70,000 barrels at a later date.

The Corpus Christi refinery project was taken over by Suntide Refining soon after the company's incorporation early in 1952. Sunray Oil Corporation will provide a minimum of 25,000 barrels of crude daily, and

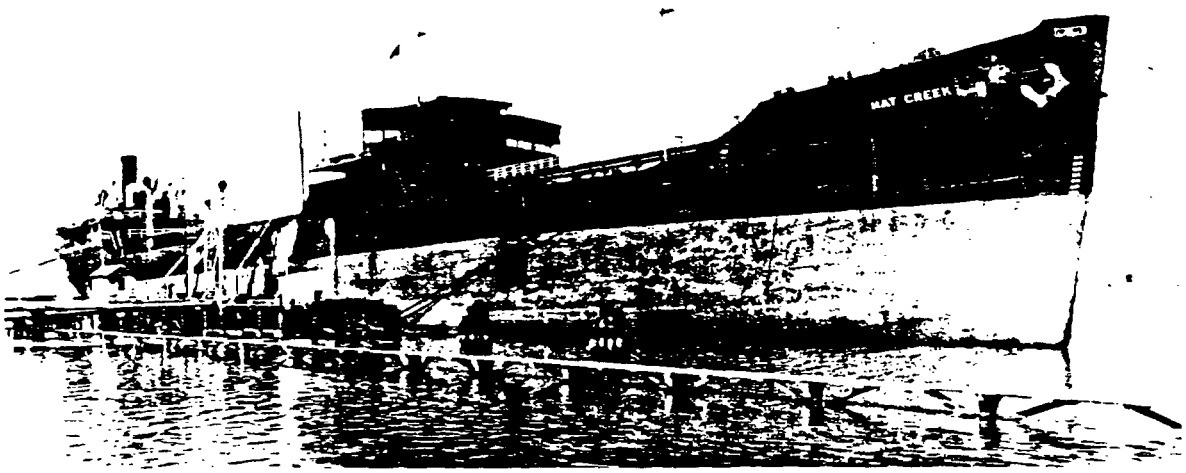
has made available two top personnel experienced in refinery management. They are Floyd L. Martin, who is now president of Suntide Refining Company, and Ted C. Bodley, vice president and secretary of the new company. Mr. Martin had been associated with Sunray for 22 years and was executive vice president the last three of those years. Mr. Bodley was manager of crude oil supply and transportation for Sunray. Another vice president with long experience in the petroleum industry is Herman G. Gunter, manager of the new refinery. Prior to affiliating with Suntide, he had served in executive capacities with three leading oil companies.

Suntide plans to market chiefly on the East Coast, selling its products to other oil companies. However, facilities are available for shipping up the Mississippi and to Gulf Coast points, as well as by pipeline and railroad to inland markets.

to a chemical known as tetramer, used in the manufacture of industrial detergents. This material presently is in extremely short supply, so Suntide's output will do much to help ease the situation. Finally, in addition to the light products, the refinery will turn out considerable quantities of diesel fuel, jet fuel and kerosene.

Storage facilities for the refinery total about 1.7 million barrels, including sixteen 80,000-barrel tanks and three 55,000-barrel containers. The larger tanks formerly were located at the Longview, Texas, terminus of the Big Inch pipeline. They were de-riveted, knocked down into sheets measuring six by ten feet and then transported to Corpus Christi by truck.

Within a reasonable distance of Corpus Christi are crude oil reserves estimated at 1.5 billion barrels. For the most part, the refinery's crude will come from the Keeran field, about 72 miles away. A pipeline, owned



TANKERS can be loaded at the rate of 10,000 barrels an hour at Suntide's docks.

The nearly-completed Suntide refinery, a few miles northwest of Corpus Christi proper, obviously is the most modern possible. As an integrated unit of the latest design, it will produce maximum yields of high-octane gasoline and diesel fuel as its principal products.

Upwards of 35% of the refinery's daily production of motor gasoline, it is planned, will be premium and the rest, of course, regular grade. In addition, an appreciable quantity of the highest grade aviation gasoline (115 145) will be manufactured and made available to the armed forces. These facilities can be directed to the production of commercial aviation fuel of 100/130 grade if necessary.

One of the gas streams, propylene, will be converted by Sunray Coastal Pipe Line Company, runs from this producing area to Corpus Christi. Crude also will be obtained from several other major trunk pipeline companies in the area by exchange. To bring the crude from the terminals to the refinery, and to carry finished products from the refinery to dock facilities on the Corpus Christi ship channel, Suntide has built two 14-inch products lines and an 8-inch crude line.

Wedded together, the crude, the pipelines, the storage facilities, and the complex equipment that make up the modern Suntide Refining Company refinery represent another step forward in the petroleum industry's program of fulfilling the nation's insatiable appetite for oil products. #

BLACK MAGIC

By Frank L. Remington

IN THIS ERA of synthetic fabrics, atomic energy and jet propulsion, the importance of many basic materials long known to man often is overlooked. One item in this category is carbon black.

Used for one thing or another since the dawn of civilization, carbon black has multiplied in usefulness until it has become a necessary ingredient of hundreds of today's products—from cosmetics to candy, from rubber to radios. In its many forms it is used in science, manufacturing, communications, transportation and agriculture. Over 1.5 billion pounds—about 10 pounds for every man, woman and child—are made and used in the United States every year. Demand and production are constantly increasing.

The most commonplace and yet most spectacular use of carbon black is in automobile tires. It has been used in tires for so long that most people don't realize they ever were any color but black. But carbon black does more than color the rubber. It makes the difference between tires wearing out after seven or eight thousand miles and giving five times that mileage.

Just as carbon black lengthened the life of natural rubber tires, it made possible the use of synthetic rubber tires. The cold rubber now used in tires relies upon carbon black to perform a most essential function. Without the resistance to abrasion that the product provides, a few hundred miles of travel and one or two sudden starts or stops would find vehicles traveling on cold rubber tires down to their wheel rims.

Automobile tires contain upwards of four pounds of tailor-made carbon blacks. This results in an over-all tire industry consumption of more than a billion pounds each year. The black material is such a big part of our so-called rubber tires it has been estimated that 400 billion of the 500 billion miles American motor vehicles travel annually are not on rubber at all—but on carbon black. The rubber merely holds the carbon black together.

Rubber—mostly for tires, but also for conveyor and power belts, raincoats and overshoes, medical and surgical equipment, floor coverings and other uses—takes more than 90 percent of the country's carbon black. But in one of its more than 50 forms the sooty material is used in a long list of other diverse products: Paints, printing ink, leather finishes, linoleum, plastics and insulation; telephones, phonograph records, radio tubes and batteries; typewriter ribbons, carbon and photographic papers, cosmetics, fertilizers and insecticides; asphalt, cement, candies and food.

A Fluffy Substance

A special electrically-conducted black, when included in airplane and tank truck tires, grounds static electricity that could ignite flammable materials.

Carbon black is a semicrystallized form of carbon, one of the most common and plentiful elements occurring in nature. It is similar in appearance and composition to the "dirt" Grandma cleaned from the chimneys of kerosene lamps. It is a fluffy, velvety substance made up of incredibly fine particles so tiny that a billion of them could fit on the dot of this "i."

It is primarily this fineness rather than its color or

A versatile material with varied application

chemical composition that gives carbon black its value. One pound of the type used in tire treads, for example, has a total surface area of about 11 acres. Somehow—even the best-informed industry scientists aren't sure how—this extreme fineness and the resulting extensive surface area enable carbon black to strengthen, toughen and increase the durability of the products in which it is used. This quality plus its permanence and ability to absorb light contribute to its versatility.

Tracing carbon black's history, archaeologists have found evidence that a form of it was used by primitive man. He gathered it from hearthstones and used it to make the crude drawings that decorated the walls of his cave.

The ancient Chinese collected the black on ceramic bowls and cones held over burning oil. The early Egyptians are known to have printed hieroglyphics on papyrus with ink containing lamp black. Centuries later Gutenberg employed the same material to give body to the ink used in his famous printing of the Bible.

In the United States, a factory erected at New Cumberland, W. Va., in 1872 produced the first commercial carbon black. Today about 90 percent of the world's supply is manufactured in this country.

Product of Petroleum

Like so many other 20th century necessities, carbon black is a product of petroleum. It is made by burning or cracking oil or natural gas in the absence of sufficient oxygen to consume all of the carbon. Of the three principal manufacturing methods to date—the channel, thermal and furnace processes—the latter is supplanting its two predecessors.

The channel process, most widely used until a decade or so ago, makes use of small natural gas flames impinging on a relatively cold, moving metal channel. The carbon particles collect on the channel and are scraped off and collected at regular intervals.

In the more modern furnace method either natural gas or oil is used as the raw material. Combustion and cracking take place in an insulated refractory chamber. By controlling the fuel-air ratio and the furnace temperature many types of carbon black can be produced. Carbon-laden gases pass to a cooling tower after which electrostatic precipitators and cyclone collectors gather the particles.

Carbon black made by the furnace process usually possesses superior physical properties and can be made in a variety of particle sizes for specific applications. Modern furnace-method blacks impart a high degree of resistance to abrasion. For this reason they are particularly well suited for use in automobile tires and other products in which long wear is important.

The present trend in carbon black manufacture is to the use of oil as the principal raw material. For economic reasons, the use of natural gas is declining due to increased demands for it as a fuel.

There are now about a dozen carbon-black-from-oil plants in operation throughout the country, with others under construction or scheduled to be built in the near future. When all of these facilities are in operation, the country's capacity for carbon black made from oil will be close to a billion pounds a year. That is more than the total of all carbon black production a decade ago.

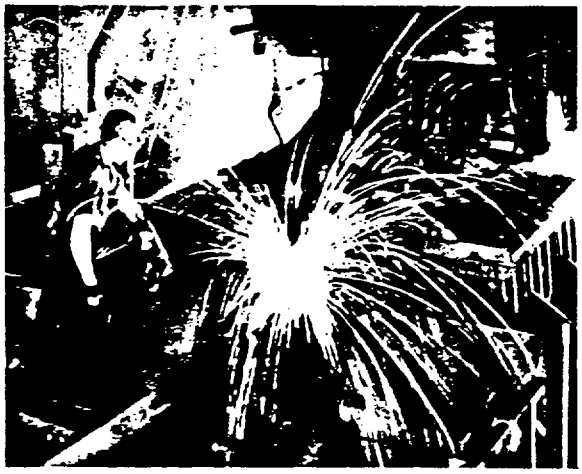
A Bright Future

Carbon black seems to have a bright future indeed. It is a versatile material with almost innumerable uses. Apart from its industrial and commercial applications, its high light-absorption qualities have made it important in solar heating, ice melting and in increasing plant growth by raising soil temperatures. For the same reason, traffic engineers find it an economical means of softening light glare from highways by mixing it with concrete.

With an impressive list of past accomplishments to its credit and its current importance well established, it's no wonder that carbon black so often is described as industry's black magic. #

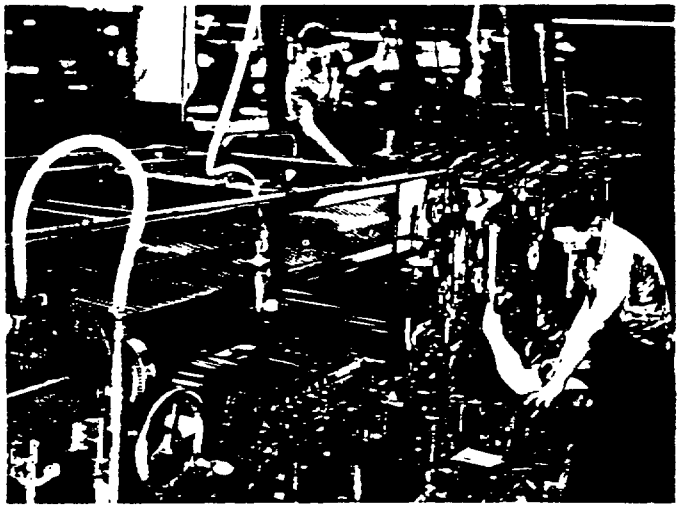
THE TIRE INDUSTRY is the largest consumer, but it also is used in floor coverings . . .

in the manufacture of certain types of steel . . .



carbon black is an ingredient of many products.

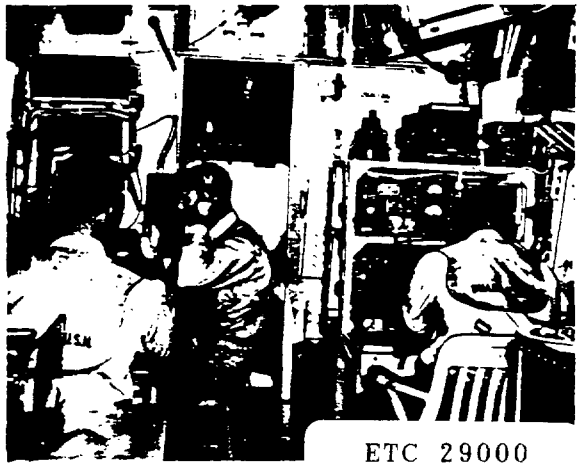
in fertilizers and insecticides . . .



in printing inks . . .

in carbon paper, typewriter ribbons, telephones . . .

and in radio tubes, resistors and batteries.



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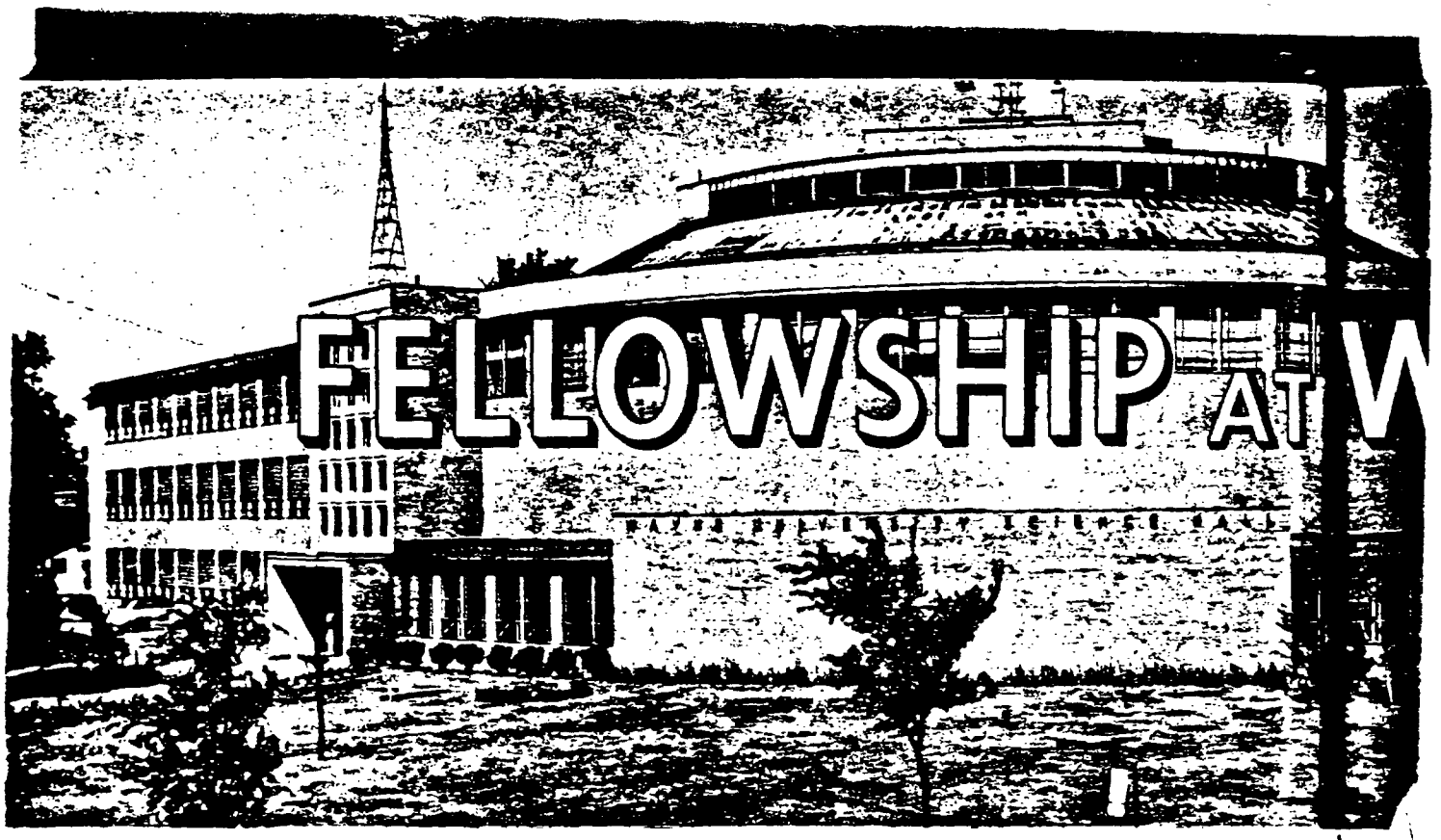


Bernie Gillis is typical of those who hold industry fellowships

By Thom Yates

THIS YEAR, as every year, thousands of young men and women are furthering their higher education with a strong financial assist from American industry.

Industry aid to deserving individuals, and to colleges and universities directly, totals millions upon millions of dollars annually and takes many forms. There are, to name a few types of assistance, scholarships, grants-in-aid and contracted research. Another leading form of aid is the fellowship. This provides the financial support that so many promising graduates need in order to carry on their work leading to a master's or doctor's degree. There are about 20,000 fellowships (worth some $15 million) in force during the current academic year. Most of these are endowed by industry.

Exactly what kind of youth is being helped under the industrial fellowship program? Bernard Thomas Gillis is about as typical as they come. He will be 23 years old on March 7, stands 6-3, weighs 192 pounds, is a keen sports enthusiast, worked his way through college, and recently got married on little more than the proverbial shoestring.

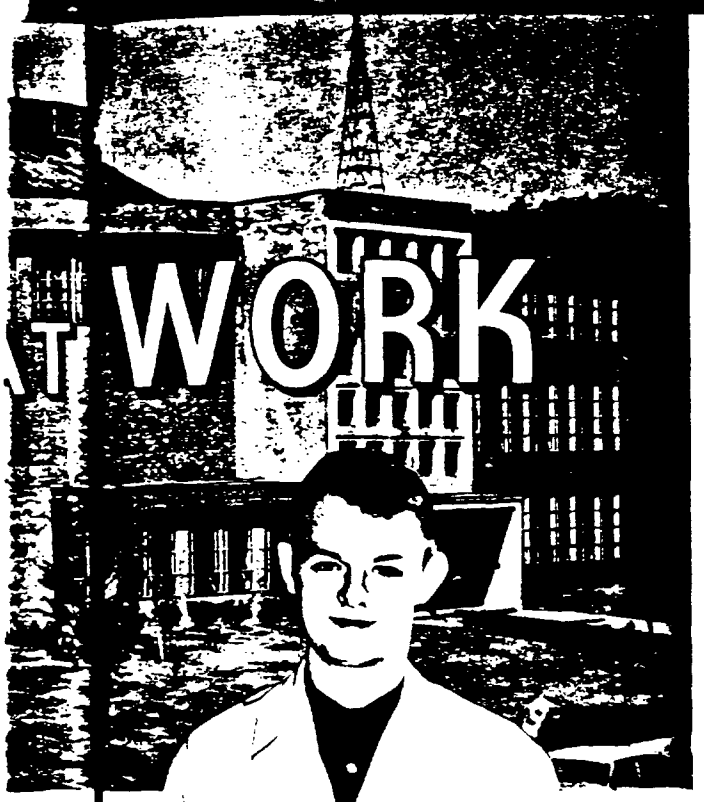
Right now he is applying himself in the classrooms, libraries and chemical laboratories of Wayne University. At Detroit's municipal university—second biggest of its kind—Bernie Gillis is working for his doctor's degree under an Ethyl Corporation fellowship, one of 21 currently sponsored by the Company at universities the nation over. He receives a stipend of $1,400 for the year plus a minimum $300 for tuition.

He's Shooting High

Soon to embark upon his life's work, Dakota-born, Iowa-reared Gillis has high hopes and fond dreams for the future. He will not seek fame for fame's sake but he naturally wants to climb as high up the ladder as his talents will carry him. A leading organic chemist of his generation? Owner of his own chemical company? Both ideas appeal to Gillis, but he knows that the answer depends on how much energy, enthusiasm and imagination he himself contributes to his career.

He already has a foot on one rung of the ladder. With his professor, Dr. Calvin Stevens, and another chemist, Gillis co-authored a paper presented at the American Chemical Society meeting in Chicago last fall. The paper has been accepted for publication in the Society's *Journal*.

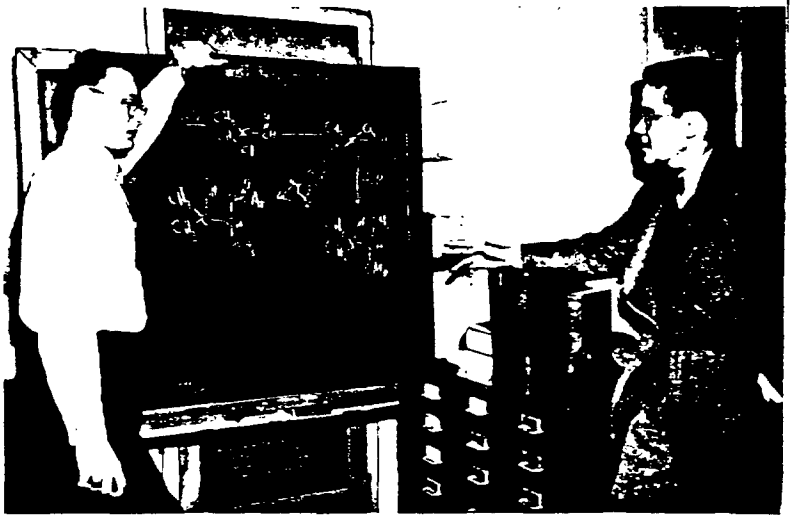
The paper was a progress report on the Wayne group's study of epoxyethers, a new type of chemical



compound first isolated by Cal Stevens some six years ago. As his project under the Ethyl fellowship, Gillis is adding to the knowledge of epoxyethers, which are useful intermediates in obtaining chemical compounds that are hard to synthesize otherwise. He attends six classes and seminars a week, two of them evening sessions. The rest of the time he is free to work in the laboratory or do literature research at Wayne's strikingly modern Kresge Science Library. Here is housed one of the most complete collections of science volumes and periodicals in the world.

Life at Wayne is a lot different than it was at Loras College, where Gillis got his B.S. two Junes ago. Located in Dubuque, Iowa, Loras is a typical small-town college. In Bernie's undergraduate days the all-male enrollment was 1,500 (it's about half that now). His was the happy, carefree life of the average college student. He made the varsity basketball team in his freshman year—no slight feat at a strong "basketball school"

WAYNE's modern Science Hall is Bernie Gillis' "workshop."

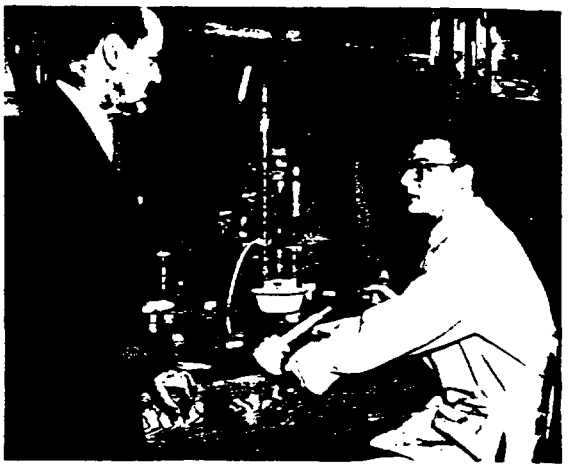


A BLACKBOARD session with his professor, Calvin Stevens.

GILLIS' busy program calls for six classes a week.

ETC 29002

DR. GEORGE H. COLEMAN, chairman of the Chemistry department, offers his counsel.



DR. O. E. KURT, Ethyl fellowship committee secretary, visits Gillis in the laboratory.

like Loras—but did not continue his athletic career long. There just wasn't time enough for both sports and his handyman job at Dubuque's Mercy Hospital – and Bernie needed the $30 the job paid each month. He was earning three-fourths of his college expenses.

Wayne University, in the heart of Detroit, has what is known as a "sidewalk campus," with patches of grass and trees only here and there. Its enrollment exceeds 16,000. Wayne sprawls over several city blocks, is not "open" like Loras. But none of these things does Gillis mind. He is more mature now. The "rah-rah" phase of learning is behind him. He has new responsibilities. He has a wife. And he has a burning desire to make good on the Ethyl fellowship and get out into industry and apply what he has learned.

Wed Less Than Year

He first met his wife at the hospital back in Dubuque. She was studying to be a nurse. After a five-year courtship, Bernie and Arlene were married last August in Iowa City. They piled themselves and their personal possessions into the 1940 Chevvy sedan they bought secondhand for $100 and pointed the car in a general northeasterly direction—toward Detroit, toward Wayne and toward the new milestone on the road to a career.

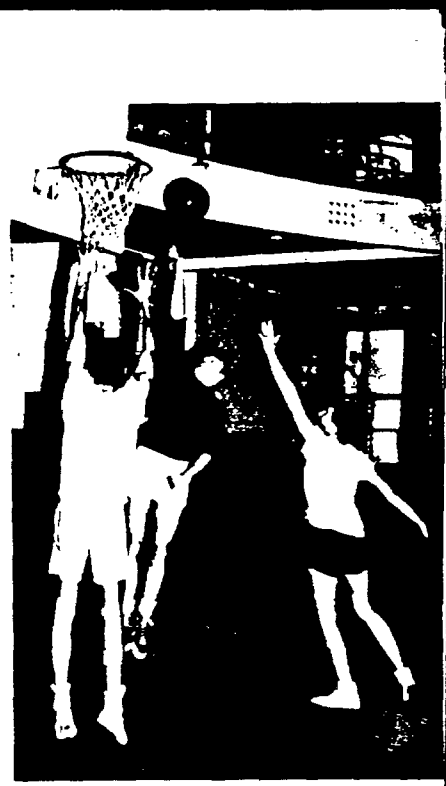
To their surprise, the prewar auto made the trip from Iowa in one piece and without incident. In fact, it's still the family car.

Home for the Gillises is a three-room apartment. It's about a 10-minute walk from the university and not much more from Grace Hospital, where Mrs. Gillis is a full-time nurse. There are 32 apartments—all alike —in the house. Several other Wayne married students live there and so do quite a few schoolteachers. These people are the Gillises' chief friends in Detroit.

Bernie and his wife like sometimes to linger at the dinner table and dream out loud over a second cup of coffee. Their future goals are the same as those of every other young American couple. A home in the country. Their own family. A job that offers opportunity. A chance, through community and professional service, to strengthen the freedoms that make America strong and to enjoy those freedoms in peace and prosperity.

In helping Bernie Gillis (and the thousands he represents) to achieve that future through a fuller education, industry is – literally and figuratively – extending the hand of fellowship. #

ENTERTAINING other married students is a big part of the Gillises' social life.



● BERNIE GILLIS operates on a well-balanced schedule that provides adequate time for study in Wayne's brand-new Kresge Science Library, an occasional basketball workout, corridor visits with university friends, necessary trips around the "sidewalk campus" and, finally, late evening relaxation at home.

ETC 29004

Spotlighto

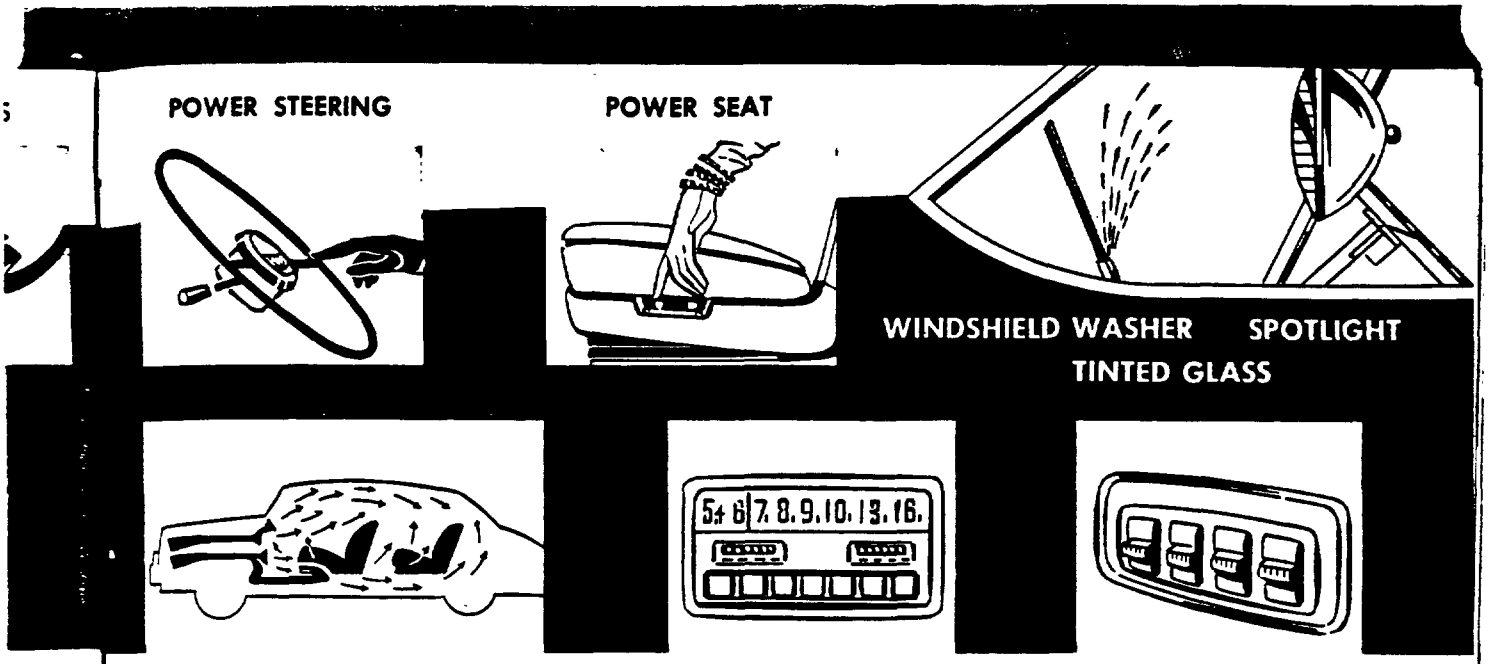
*By Siler Freeman**

BY THE TIME another year rolls around, automobile-loving Americans will have paid out more than $9 billion (wholesale value) in buying up the nation's 1954 production of passenger cars. Not all of that sum will represent the cost of the basic product by any means. A good percentage of it will go to pay for the many accessories that make U. S. automobiles the most stylish—and the safest—in the world.

This truly is the Accessory Age of automobiling. Now available for car purchasers who desire any or all of them are more than 70 items of optional equipment. Many of these are factory-designed and factory-installed. Others can be purchased from an automobile dealer, service station or other retailer and added to the car later. The list includes everything from the newest power driving features to a full-sized umbrella that folds up for storage in the glove compartment. You can pay as little as a few dollars for an accessory, such as a tissue dispenser. Or you can pay as much as $600.

The latter figure is the present approximate cost of built-in air conditioning, one of the very newest of the extra features. Also on the new list is a unit that automatically closes car windows and convertible tops the minute it starts to rain.

*For many years, until recently, Mr. Freeman was automotive editor of *The Detroit Times*. He is now Detroit editor of *Motor* magazine.



ıt on ACCESSORIES

If air conditioning and the "weather guard" unit are in the future, many other major accessories unfamiliar to the general public even a few short years ago are fast on their way to becoming almost standard equipment. Automatic transmission and power steering are in this category.

Just how readily the car buyer accepts optional features that promote driving ease, safety and comfort is found in the report of one automobile manufacturer. Fifty-four percent of the buyers of its 1953 models ordered power brakes, 52 percent tinted glass, 40 percent power steering and 30 percent automatic headlight control.

By Public Demand

In providing the extra equipment that often nearly doubles the price of the basic automobile, manufacturers are heeding the dictates of the motoring public. Some motorists, it is true, load their cars with accessories purely for show. But, by and large, the functional optional features incorporated into the modern automobile are there because both manufacturers and drivers realize that they make American cars not only the safest and most stylish but the most comfortable and easiest to handle as well.

Accessories and optional equipment are almost as old as the automobile itself. The first horseless carriages followed the lines of the wagons they replaced. They were high, heavy, cumbersome and not comfortable or beautiful by present-day standards.

But soon came accessories to brighten up the early models, make them safer and more useful. In fact, several integral parts of today's cars were once accessories—fenders, bumpers, horns, four-wheel brakes and windshield wipers. The car top, windshield, headlamps and speedometer were extras until 1910. Safety glass, adopted as standard equipment in 1928, was a high-priced accessory before that time.

Even the electric self-starter began as an accessory. It was founded on necessity because of the many casualties resulting from hand cranking. Now accepted without thought as to its origin, the self-starter probably did more to popularize the motor car than any other single item. It was responsible for women taking their place behind the steering wheel.

The self-starter can be classified as one of the first "safety" accessories. Others have come along with the years and have been incorporated into the automobile so that they are not even thought of now as accessories. Four-wheel brakes, for instance, figure importantly in making the modern motor car, with all its stepped-up horsepower and speed, safer and better.

Others, of more recent origin, started out as extra cost items during the postwar days of hard-to-get new cars. Now they are much-desired safety features.

Two examples are directional signals and the wind-

shield washer. The automatic signals, which give better warning of turns than hand signals to both following and oncoming drivers, are fast becoming an item demanded by law. More than half of the states now require them on new cars. The built-in windshield washer has won its right to become almost standard equipment because of its obvious aid to visibility.

Comfort items are even more numerous and equally popular. The leading accessory of all still is the heater. Number two on the popularity list is the car radio. It adds to the illusion that the modern automobile is a "living room on wheels." Of the more than 100 million radios in America, nearly 25 percent are car radios.

Rising to new heights are automatic transmission and power steering. The latter, newer in its conception and perfection, has come forward fast in the past year or two. In fact, power steering has taken the market by storm and, with its popularity, prices are coming down. Women were its first enthusiastic supporters because power steering removed the last barrier to equality at the wheel—they could park in the same space as readily as males. Then men began to realize that power steering not only took the effort out of driving but was a safety factor in emergencies, such as hitting an unexpected rut or rough shoulder at high speed.

Both automatic transmission and power steering stand a good chance of becoming standard items on most cars in the future. That also holds true for power brakes.

The automatic headlight dimmer has had tougher going as a postwar accessory. It works smoothly and efficiently but it can't dim the lights on an approaching car. Still it offers safety possibilities that cannot be discounted. Back-up lights also are a future standard item. Tinted windows are an extra cost item to which many drivers have given their full approval.

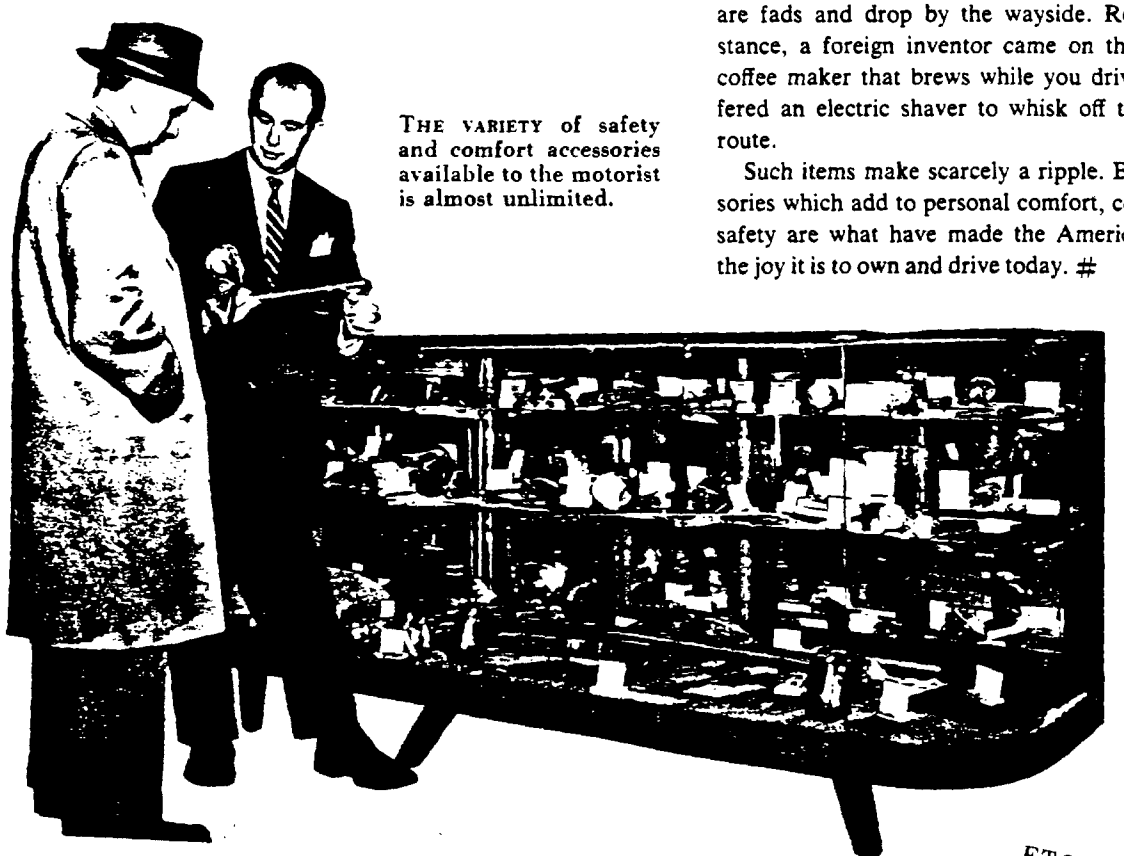
The automobile air conditioning system must remain a luxury item for some time, although simplification of design and lower weight and compactness are already bringing it down in price. There is talk of combining air conditioning with the heating and ventilating system as a single unit. With greater sales volume, this step could in time make it almost standard equipment on the medium- and high-priced models.

Some Are Passing Fancies

Wire wheels are strictly a "window dressing" accessory. No one can see them replacing the sturdy, dependable and safe steel disc. The "sparkle" they impart is being duplicated in new wheel cover designs which go over standard wheels.

Accessories are constantly coming on the market. Fertile minds design them and eager manufacturers try them out. Some, as noted, become so entrenched that they naturally become part of the car design. Others are fads and drop by the wayside. Recently, for instance, a foreign inventor came on the scene with a coffee maker that brews while you drive. Another offered an electric shaver to whisk off the whiskers en route.

Such items make scarcely a ripple. But those accessories which add to personal comfort, convenience and safety are what have made the American automobile the joy it is to own and drive today. #



THE VARIETY of safety and comfort accessories available to the motorist is almost unlimited.

ETC 29007

John Herrick: a profile

ONLY A LIMITED number of gifted men earn success in more than one career during their lifetime. Fewer still are those who succeed in a whole array of varied pursuits and then pass along the benefit of their experience and the fruits of their labors to generations that follow. One of these select few is John P. Herrick.

Oilman, newspaper editor and publisher, schoolteacher, banker, historian, author, real estate operator, insurance executive and philanthropist, Mr. Herrick has done a "heap o' living" in his lifetime. Now past 80, he retains fully his zest for life and his confidence in mankind. "I have great faith in people," he says. "I'm optimistic about my fellow man."

Of the many occupational pursuits that he has followed, John Herrick is probably best known as an oilman. A veteran of the early and often hectic days of oil in western New York, he became an influential and respected oil producer. At one time he had an interest in more than 150 wells. In furthering the interests of his industry, he helped to organize the Pennsylvania Grade Crude Oil Association and was a founder and is now president emeritus of the New York State Oil Producers Association.

In recent years, this spry, alert, white-haired gentleman has divided his time between his home in Olean, N. Y., near where his adventures in oil began almost six decades ago, and an apartment in Los Angeles. His life is far from inactive. He has written two books in the last four years. He retains a continuing interest in the college students who study under the many scholarships he has established. He writes for several newspapers and he is an inveterate traveler.

The career of John Herrick started in the early 1880's on the edge of the oil fields of western New York and Pennsylvania. Into this exciting atmosphere he came at the age of 17 to teach school. But his life as a schoolmaster was brief. By 1886 the masthead of the Sharon *Leader* and Ceres *Courant*, weekly newspapers in the region, listed 18-year-old John P. Herrick as editor and publisher. Five years later he established the Bolivar, N. Y., *Breeze*, in the heart of the bustling Allegany County oil fields.

Early Interest in Oil

While he was to continue as an oil region publisher for more than 20 years, the youthful optimist soon was captivated by the excitement of oil and the opportunities it presented. "As fast as I made a dollar with my newspapers," he now recalls with a reflective look in his eyes, "I invested it in oil leases. And while I suppose you'd say that in the long run I've been successful, I've also invested in some failures."

Experience, hard work—and good luck, he insists—paid off. Over a period of years he became one of the best known and most successful producers in the New York-Pennsylvania region.

His interest in petroleum has taken Mr. Herrick to practically every major oil-producing area in the United States, and twice he has made surveys of European oil fields. He has observed the industry in action over a long period of time and it is quickly apparent from his conversation and from his writing that he's proud to have been a part of it.

"Oil has undergone quite a revolution," says this man who recalls when forked-stick diviners, mediums, fortune tellers, clairvoyants, astrologers and men who followed hunches tried their hands at locating new fields. "Nowadays," he says, "no one spends a dollar drilling for oil without first consulting geologists and geophysicists."

John Herrick has lived to see great progress also in the other branches of the industry. He has witnessed the transition from spindly little pipelines a few inches in diameter to huge far-reaching systems pumping millions of barrels across the country. He has seen leaky wooden storage tanks give way to colossal steel reservoirs. He has watched the driller's bit eat thousands of feet into the earth to tap oil pools when once well depth was measured in only hundreds of feet.

With a background and valuable experience in schoolteaching, newspapers and oil, Mr. Herrick went on to success in real estate, banking and insurance. But he has been no man to rest on his laurels. Constantly he has looked about for ways to reinvest some of the capital he has accumulated. In America's youth – he calls our young people the country's greatest natural resource—he has found a fruitful field of investment.

Endowed Scholarships

About 20 years ago, he established the first of 26 perpetual free scholarships he has endowed at colleges and universities. "They just snowballed," he observes. "There are so many deserving young people. It's wonderful what they can do with just a little help."

Recipients of Herrick scholarships are selected by the board of admission at the institutions where they are offered, but Mr. Herrick requires that they be well qualified and in need of financial assistance. Through the colleges and through correspondence which his wife carries on with the students even after they have graduated, he keeps advised of their progress.

To John Herrick, the scholarships do double duty. They assist needy students and at the same time help perpetuate the memory of great Americans. Of those established at the University of Missouri, Alfred University, and Pennsylvania State University, some have honored Theodore Roosevelt, a "personal friend and a wonderful man"; Benjamin Franklin, "the greatest man of his day"; and Edwin L. Drake, who "died friendless and in poverty after setting this great oil industry in motion." Others honored by scholarships are Generals Pershing, MacArthur and Eisenhower.

Mr. Herrick this year added a scholarship at St. Bonaventure University to honor the memory of Father Joseph De La Roche D'Allion, the Franciscan missionary who visited the oil springs near what is now Cuba, N. Y., in the year 1627.

Many of the scholarships are not limited to students in any specific courses. Those honoring Colonel Drake, however, are for the benefit of high school graduates studying at Penn State who intend to pursue an oil industry career in geology, mineralogy or engineering.

University Trustee

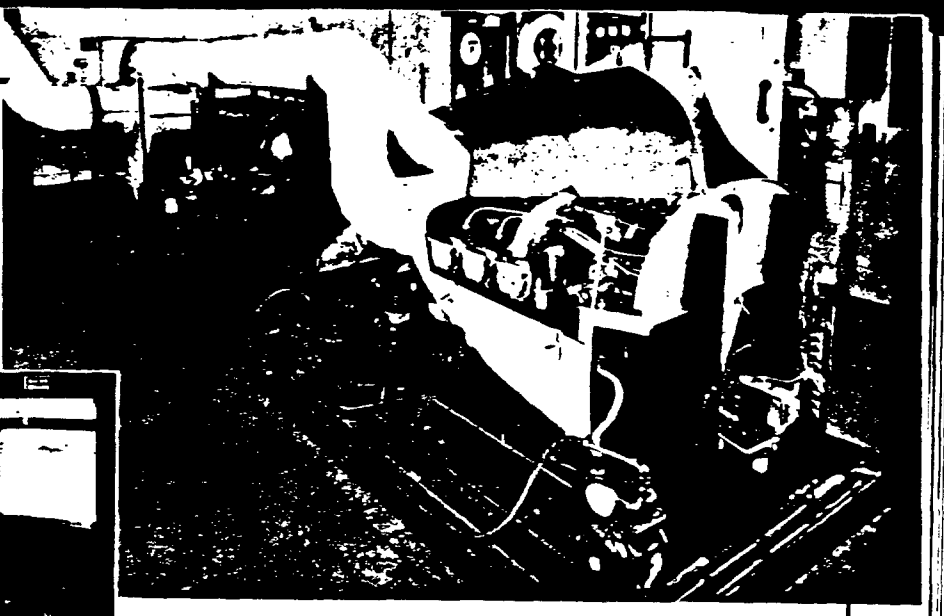
Although he never enjoyed the benefits of a college education himself, Mr. Herrick holds an honorary degree from Alfred University and has served on that institution's board of trustees for a number of years.

Besides his scholarships, Mr. Herrick keeps busy by writing, an interest which began with his first newspaper work. Most of his newspaper articles today deal with the early romance of the oil industry. No one to live in the past, though, he is quick to point up the progress that has been achieved in his lifetime.

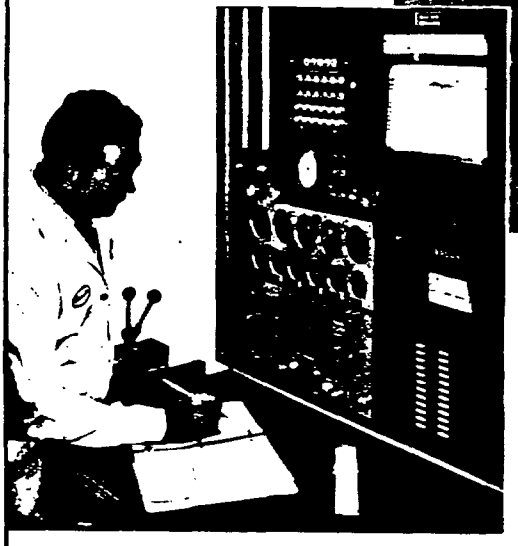
There are three books on which Mr. Herrick's name appears as author, and all are the outgrowth of his personal experiences and of diligent research on his part. "Founding a Country Newspaper" appeared in 1938, and was followed in 1950 by "Empire Oil," the story of petroleum in New York State, and in 1952 by "Bolivar, New York—Pioneer Oil Town."

As alert as many men half his age, Mr. Herrick is a quiet and mannerly gentleman with a ready smile and a warm handclasp. When not traveling or contemplating one of his favorite philanthropic or writing projects, he occasionally finds time for deep sea fishing or for trout fishing in the clear, cool mountain streams of Wyoming.

If there's a philosophy that has guided John P. Herrick through his long and fruitful life, it probably is summed up best in a remark he made to a well-wisher on his 80th birthday. "I've had a lot of wonderful opportunities," he said, "to repay the world for all the good things it has given me." #



THE ARMY tests are being conducted on this special engine installation at the Ethyl Laboratories.



The Army Wants to Know

Can light airplanes be operated on all-purpose gasoline?

ACCOUNTS of the recent hostilities in Korea, and previously of the battles of World War II, are filled with reports of the heroic missions achieved by small and seemingly-fragile light aircraft. These planes have performed outstanding service in artillery spotting, swiftly transporting field commanders, delivering messages and on occasion even evacuating wounded and speeding critically-needed supplies to otherwise inaccessible locations.

But if the exploits of these planes have been well publicized, what may not be known generally is that they actually are a part of the Army's ground forces. This presents a problem. It means that in addition to all the other supplies and equipment that must be transported into combat, the field forces must also have available aviation gasoline and aviation lubricants to satisfy the requirements of their own little air corps.

Now there is a movement under foot to streamline the large inventory of impedimenta. The Army is investigating the possibilities of operating its light airplanes on the all-purpose gasoline and lubricants that are used by military automotive vehicles. As a part of this investigation, the Army has requested the Ethyl Corporation Research Laboratories in Detroit to assist in evaluating the performance and durability of light plane engines when operated on automotive-type gasolines and lubricants.

In connection with this program, a special installation has been made in Ethyl's dynamometer laboratory. An elaborate air circulation system simulates flight conditions for the engine being tested. The temperatures at four different locations in each cylinder are measured and recorded by sensitive instruments twice a minute. In this manner any tendency toward preignition, which causes a sudden increase in temperature, is indicated immediately.

Results of these tests, when evaluated, will assist authorities in determining the feasibility of operating the Army's light planes on motor fuels and lubricants – another contribution toward increasing the efficiency of America's ground troops. #

Down-to-Earth Ch

The world series of plowing attracts experts in an agricultural skill almost as old as man

By Richard F. Cook

IN THE WHOLE PANORAMA of agricultural history, the pictures most typical of farming are those of plowmen tilling the soil. Such pictures start with primitive man scratching the surface of the earth with a crude hand-held wooden implement. They culminate in a farmer at the wheel of a powerful tractor with brightly burnished steel plowshares biting deep into the land, turning the green to brown.

Plowing is one of the oldest steps in land cultivation. It still is one of the most important. The success of an entire crop—the future of a farm—begins with plowing. Plowing affects seed germination, plant growth, crop yield, weed infestation and soil erosion. Good plowing makes good farming.

Like the many other skills that go to make successful farming, plowing prowess comes only after long years of intensive training and experience. Different types of soil and different crops require different kinds of plowing. The slope of the land, the incidence of rocks and the threat of erosion all pose problems. The vagaries of the seasons and the weather are factors, so time is important. Plowing must not only be done well, it must be done at the right time.

Since plowing has long been the universal hallmark of farming, plowing matches have been one of the most challenging and valued competitions to the farmer. Throughout the world, those who make their living from the land have for years demonstrated their plowing skill at local, state and national levels.

A few months ago, while the eyes of the sports world were focused on the baseball World Series, the eyes of the farm world turned to the rolling fields outside of Cobourg, Ontario, 70 miles east of Toronto. There a

CROWDS of interested spectators witnessed the match.

h Champions

world series of another kind was being held. Champion plowmen from 11 countries of North America and Europe were competing in the first world championship plowing match. Staged in conjunction with Canada's 40th annual International Plowing Match, it attracted some 100,000 spectators.

Over the huge tent city that had sprung up on the edge of Canada's No. 2 Highway flew the colorful flags of the nations represented. In the well-trodden grass streets of the tent city the accents of several European tongues were heard, and the distinctive clothing of the competitors and their countrymen was seen. Inside the tents were exhibitions and demonstrations by farm machinery and equipment manufacturers and oil refiners and marketers. Adding to the gaiety and holiday atmosphere were the inevitable refreshment concessions that supplied everything from a cup of tea to a full dinner.

Serious Business

If there was a touch of carnival atmosphere in the tent city, there was none on the plowing fields. Contestants turned to their work with a skill and determination indicative of the importance of their chosen occupation to a hungry world.

For two days champion furrowers from Canada, the United States, Great Britain, Denmark, the Republic of Ireland, Finland, Holland, Sweden, West Germany, Norway and Northern Ireland pitted their skill against the land and against each other.

On the first day, they worked their allotted half-acre of stubble land; on the second, an equal area of grass-

JIM ECCLES demonstrates the skill that earned for him the honor of being named plowing's first world champion. . . . At top, Eccles is pictured behind his newly-won trophy, the Esso Golden Plow, with J. A. Carroll, president of the World Championship Plowing Organization, and L. D. Fraser, of Imperial Oil, who presented the award.

EXPERIENCED judges evaluated the work of plowmen.

COMPETITORS from Canada... Holland... Finland...

land or sod. They competed under a set of rules designed to be fair to the different schools of plowing represented. Judges, themselves all expert plowmen and officials of plowing organizations in the countries competing, examined the work of the furrow-turners.

As the sun set on the second day and the first shadows of darkness settled over the plow-marked fields, the judges returned their verdict. James G. Eccles, a dairy farmer of Brampton, Ontario, was declared the world's champion plowman. Second place went to Odd Braut, of Norway, followed by Robert Timbers, of Stouffville, Ontario, who two days before had been crowned Canada's national champion. Fourth, fifth and sixth places were awarded to Allan Helin, of Sweden; Leslie Dixon, of Great Britain; and Olav Nedberg, of Norway, respectively.

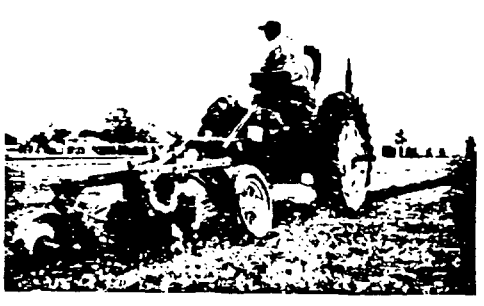
At a banquet that evening, winner Eccles was presented with the most coveted trophy in the plowing world—the Esso Golden Plow. Donated by Imperial Oil and affiliated Esso companies in Europe and North Africa, the plow is a copy of a 17th century English implement, the forerunner of practically all modern plows. Imperial Oil also donated the Esso Silver Plow, a trophy awarded annually to the Canadian champion. Esso companies sponsored the trips of the two-man plowing teams and their managers from the countries of Europe to the Ontario match. Imperial was their host while they were in Canada and provided the fuel used in the tractors at the competition.

Like other plowing matches, the events at Cobourg pointed up farming progress over the years. Forty years earlier, when the first Canadian match had been held, 31 horse-drawn plows and one lone odd-looking primitive tractor had been entered. Now there were hundreds of competitors in more than 45 different classes, but only a few classes were open to horse-drawn plows. Scores of modern high-compression tractors drew two- and three-bottom plows through the soil at speeds that far outdistanced the single-bottom horse-drawn ones.

Promotes Goodwill

Besides emphasizing agricultural progress, the world championship match provided an opportunity for the plowmen of the many nations to get acquainted and to exchange information about their specialty. More important, perhaps, it helped promote understanding and goodwill between the farmers and the countries they represented.

In a world where the plow remains an essential tool for feeding hungry millions, it might well be a universal symbol of understanding. Certainly that is the hope expressed in the Latin quotation engraved on the base of the Esso Golden Plow: *"Pax arva colat"* (May peace cultivate the fields). #



the United States... Sweden... and West Germany.

Layouts and art direction this issue by Carsten Grande.
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ETC 29014

Why is automotive progress like a man washing his hands?

Did you ever try to wash *one* hand? You know it's all but impossible. As the old saying goes, "One hand washes the other."

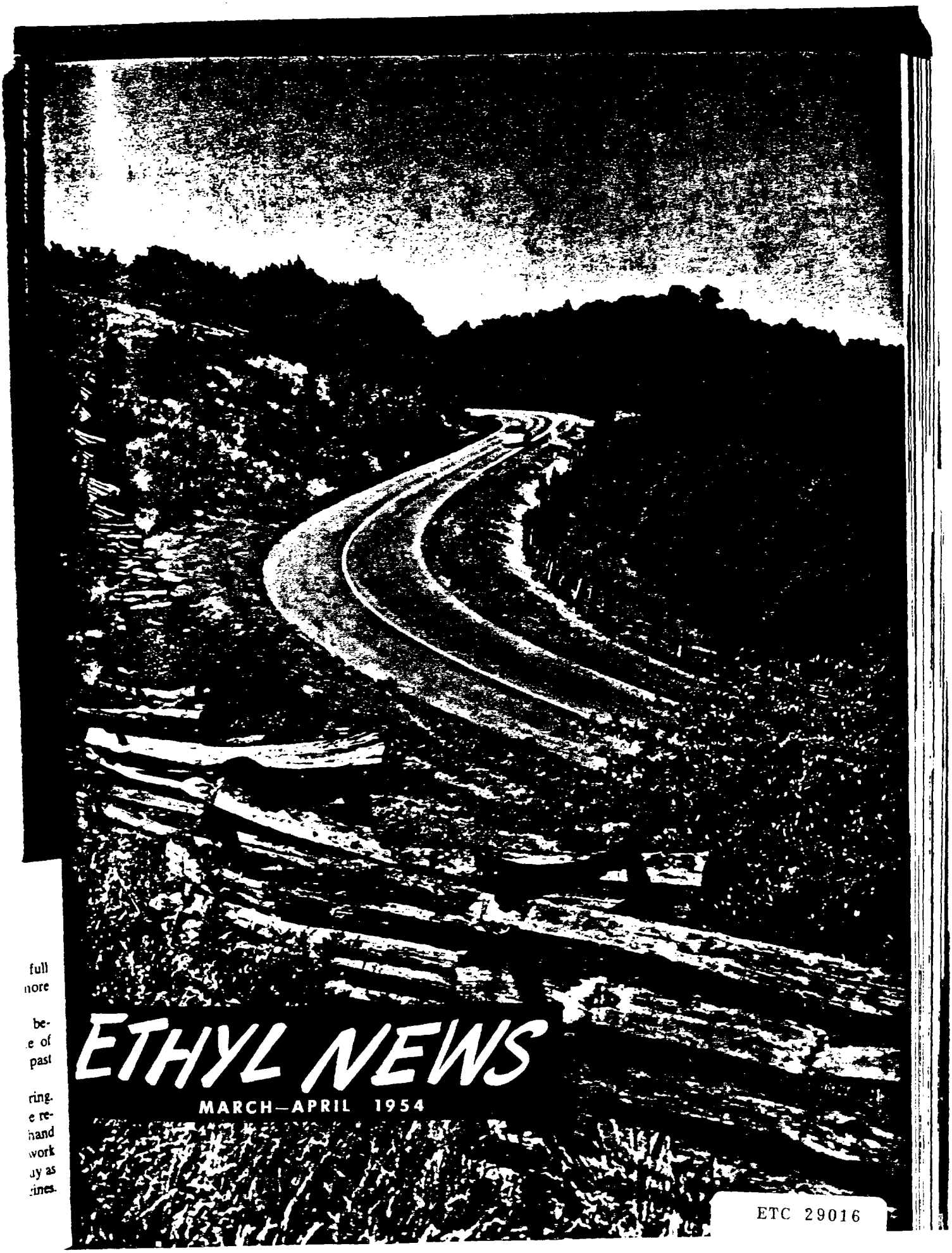
Improving transportation is also a two-handed affair. One "hand" is the automotive industry. The other is the petroleum industry. Again and again, progress in one has been made practical by a complementary development in the other.

For example, it was the proved ability of the oil industry to provide high octane fuels, through improved refining methods and the use of "Ethyl" antiknock compounds, that prepared the way for higher compression engines. And to prove that it works both ways, the engineering genius of the automobile industry took full advantage of better gasolines to produce more and more efficient engines.

Ethyl people, recognizing this interdependence between engines and fuels, have made it the keynote of Ethyl's research and cooperative projects for the past 30 years.

We hesitate to predict what future progress will bring, but one thing is certain—that this progress will be the result of two of America's greatest industries working hand in hand. And Ethyl research people will continue to work with both industries and to serve in a very special way as liaison between them on problems of fuels and engines.

ETC 29015



ETHYL NEWS

MARCH—APRIL 1954

ETC 29016

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BEHIND THE *NEWS*

The lone car making its way along picturesque Blue Ridge Parkway, near Rocky Knob, Va., on our cover, is the forerunner of the millions that will be traveling roads and highways throughout the country in the warmer weather of the next several months.

As if railroad timetables, weather conditions, shifting franchises and the desires of 16 major league clubs were not enough, the lateness of Easter and accompanying Holy Days this year caused an additional complication in arranging the schedules for the current baseball season (see "Right on Schedule," page 4). Because of the religious significance of Good Friday, no games were planned for that day.

With a New Hampshire girl as his wife, several years' residence in the state, a degree from the University of New Hampshire and a favorite vacation spot in the foothills of the White Mountains, our reporter admits that he might be just a bit prejudiced. But he came back from his late-winter trip to the Enfield, N. H., town meeting (see "Town Meeting," page 9) with glowing reports of New England hospitality. During his stay in town, scores of local citizens went out of their way to make him feel welcome. The purpose of his visit was announced at the town meeting and the resulting cooperation, he says, helped make his task not simply less difficult, but downright enjoyable.

Charles Harris, the Middleboro, Mass., dowser whose photograph helps illustrate our article on the subject ("Dig This," page 16), must be one of the more versatile wielders of the divining rod. He tells us that in addition to the cherry stick with which he is pictured, he has achieved marked success using a pair of brass rods, and has found water for wells as deep as 75 feet. One of his satisfied clients is the town of Cotuit, on Cape Cod, which engaged him to find water to help satisfy the community's increasing demands.

ETHYL NEWS

Thom Yates, Editor
Richard F. Cook, Associate Editor

MARCH-APRIL 1954

Published by Ethyl Corporation, 100 Park Avenue, New York 17, N. Y., manufacturer of "Ethyl" antiknock compounds, used by oil companies to improve the antiknock quality of aviation and motor gasoline.

Edward L. Shea, President
Stanley T. Crossland, Vice President and Treasurer
Herbert A. Savage, Secretary

HORSE SENSE IN HORSEPOWER

By A. R. Lauer

OF THE 1954 automobiles, eight models boast 200 horsepower or better. Only two of last year's models were so powerful.

The majority of the new models offers higher horsepower than last year. The minimum increase is four horsepower. Three models carry as many as 55 more "horses" than they did in 1953.

Average horsepower of all current makes and models is over 150, a sizable jump over last year's 133.

* * *

What does this added power under the hoods of the nation's motor cars mean? There is sharp disagreement on this point.

Some view it as a continuation of what they call the "horsepower race"—a race, they say, only death can win. This thinking stems in part at least from a completely erroneous mental association of high horsepower with wild, uncontrolled car speed.

Those who take the opposite view look upon the increased horsepower that has been built into automobiles year after year as a genuine and measurable contribution to vehicle performance and highway safety.

Accident statistics and engineering reports clearly support the latter group—those who consider horsepower the driver's friend in need and not his mortal enemy.

The facts as they stand cannot be refuted. There is no validity to the widespread belief that as horsepower

". . . a car's ability to move out of a tight road situation may spell the difference between life and death."

ETC 29018

has increased, car speeds and the highway death rate have increased proportionately. As more and more horsepower was being engineered into our passenger cars, in fact, the motor vehicle death rate dropped steadily until now it is the lowest ever.

This rate is 7.0 fatalities for every 100 million vehicle-miles. Twenty years ago the rate was more than twice as high. Measured another way, fatalities for every 10,000 registered motor vehicles now number 7.2, another all-time low. In 1934, when there were only 25 million vehicles as against more than twice as many now, the rate was more than double that of today. As for total deaths, more people were killed on the highways in 1937 and 1941 than the 38,300 who died in motor vehicle accidents last year. The average road speed at that time, it should be noted, was about 40 miles an hour. Now it is closer to 50 mph.

None of this is intended to minimize what is still an appalling traffic toll. There is no group nor individual who would not immediately wipe out this penalty of motoring if such were possible. But what these figures do show—and show rather clearly—is that horsepower, in itself, is not the killer many imagine it to be.

If we go back 20 years, we find that the death rate, by whatever yardstick, was more than twice what it is now. Horsepower in the 1934 automobiles averaged 111. It is more than 35 percent higher today. But—the automotive death rate has not climbed with horsepower. In fact, it has continued a downward trend. On a graph, the rising "average horsepower" line and the falling "deaths per 100 million vehicle-miles" line have continued their separate ways until now the former is at its highest point and the death rate at its lowest.

Value of Horsepower

What leads the average person to associate higher horsepower with higher speed is a general misconception of the value of each added horsepower.

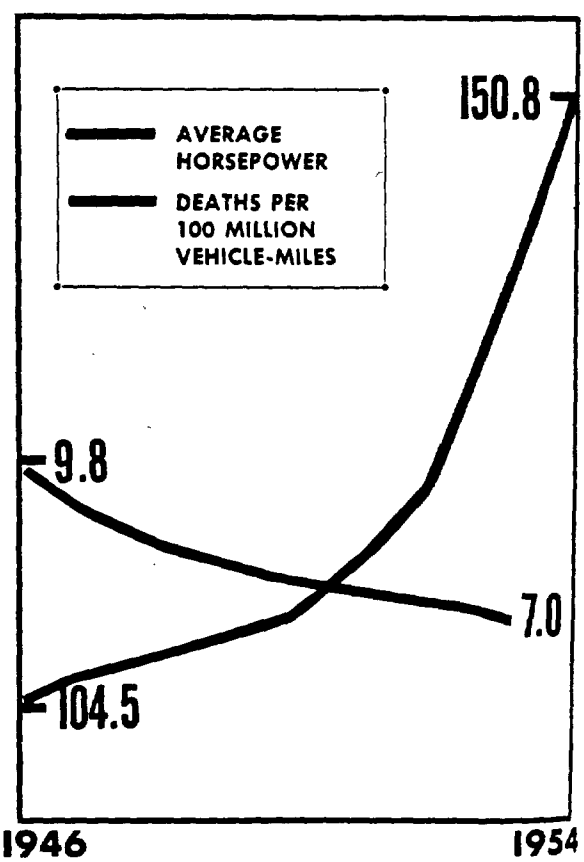
Many motorists seem to think that one added horsepower permits a gain of one mile per hour in car speed. Automotive engineers tell us, however, that it takes *five* or more additional horsepower to increase speed by one mile an hour at the upper speed ranges. It must also be remembered that a great deal of the increased horsepower is used to operate accessory equipment, such as air conditioning and the various other automatic devices found in modern automobiles. This dissipates some of the added horsepower.

Even with advanced horsepower, motorists are driving at almost the same average highway speed that they did at the close of World War II—about 50 miles an hour. Under most driving conditions, that is not considered excessive on the open highway.

Speed alone is not the villain it is made out to be. Speed undeniably does become a menace, however, when improperly used. To illustrate: 60 miles an hour is the normal limit along most stretches of the New Jersey Turnpike. But let fog close in, as it often does at the northern end of the Turnpike, and even 35 miles an hour could be speeding under such conditions of limited visibility. Again, on ice, a speed of only 20 mph may be dangerous.

Up to the Driver

The burden thus falls where everyone agrees it rightfully belongs—on the shoulders of the person behind the wheel. He is the decisive factor in nearly every highway accident that occurs. That applies whether the car is powered by 68 horsepower (the lowest of any 1954 model) or 235 (this year's highest). A keen observer



Proof that horsepower, in itself, is not a killer is provided in this graph. While average horsepower has risen sharply in recent years, the death rate has declined.

will note, proportionately, as many or more speed violations and hazardous driving practices by drivers of lower-powered cars as by those of higher-powered cars.

It is true that added horsepower often has been a selling feature of automobiles — but not necessarily with the emphasis on higher speed. Instead, horsepower increases have been made to improve vehicle performance, to better fuel economy and to cut engine wear.

Because it allows fast acceleration or "extra zip" in the middle-speed range, increased horsepower actually may well contribute to the safe operation of a vehicle in the hands of a skillful driver. The difference between a close shave and an accident is a matter of seconds. It is during those few seconds that a car's ability to move out of a tight road situation may spell the difference between life and death.

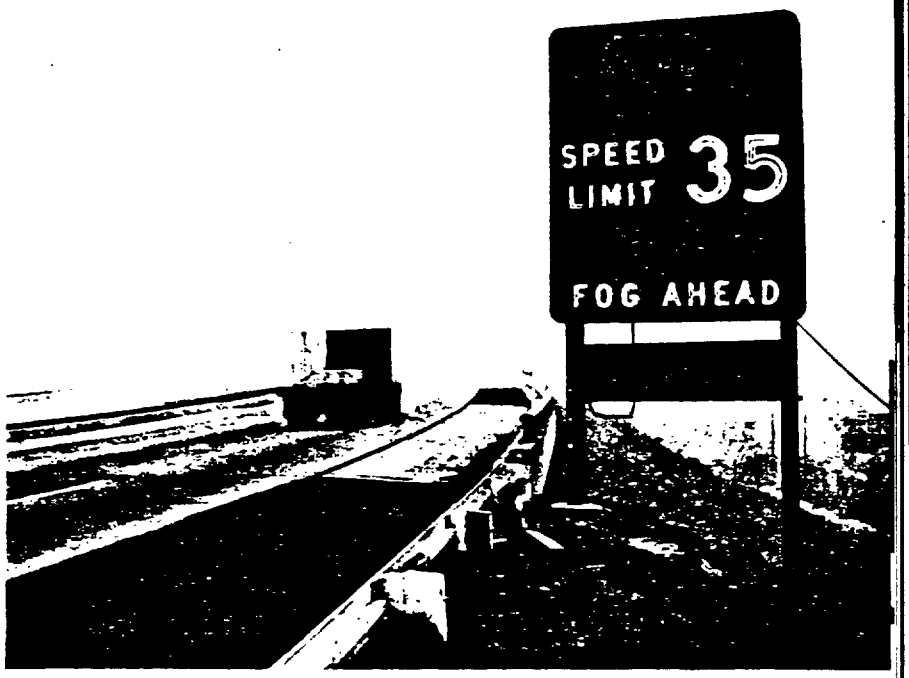
Improved acceleration resulting from added horsepower is, therefore, a definite safety factor. The average motorist may need a sudden burst of speed to prevent an accident only once or twice in his lifetime. It is comforting to know that the power for that emergency, if and when needed, is readily available.

Oddly enough, there are those, although sincere in their desire to reduce highway casualties, who do not recognize this safety factor. Bills have been introduced in several state legislatures to require the installation by automobile manufacturers of governors to hold car speeds down to specific limits.

One View of Governors

In a recent editorial, *Collier's* summed up the widespread opposition to speed-governors. ". . . it seems to us," said the magazine, "that laws compelling manufacturers to put governors on high-horsepower engines would not accomplish the purpose for which they are intended. It is as if cutlers were compelled to make dull knives, lest someone should cut himself on a sharp blade. The better solution, of course, is to teach the knife wielder or the car driver how to use the instrument in his hands with skill and wisdom."

The proper use of the power of the modern automobile is a lesson that all Americans must learn at the earliest moment. =



"...35 miles an hour could be speeding under conditions of limited visibility."

The author of this article, Prof. A. R. Lauer, is director of the Driving Research Laboratory, Industrial Science Research Institute, Iowa State College. He also is a well-known consultant on fleet personnel selection and driver testing and training.

His views on how highway accidents may be reduced are summarized in these words:

"Every driver education course in the country should emphasize the proper use of power.

"Speed zoning of certain areas along the highways with adequate marking is necessary.

"Every driver should know and abide by his particular range of safe speeds.

"Our studies over the years have indicated a need for each driver to have his personal speed range stamped on his operator's license. If this were done—and enforced—there would be no feeling against increase in horsepower of automobiles. A sensible and well-qualified driver will not misuse horsepower."

Right on Schedule

Baseball games don't just happen—they're planned that way

WHICH TWO teams always open the major league baseball season at home?

How many Sunday home dates is each team entitled to during the baseball season?

Games may be played on any night of the week but one. Which one?

Right now, those teasers and scores more like them are foremost in the mind of a man who has surrounded himself with railroad timetables, calendars, weather surveys and an assortment of other apparently unrelated data. The decisions he makes—based on thousands of mathematical possibilities—may well determine the two teams that play in the 1955 World Series.

The man who is making these important reckonings is Harry Simmons, secretary of the International League. Because pennants can be won or lost on the breaks of the schedules, it is a baseball rule that they be prepared by someone not associated with either major league. Harry Simmons inherited the job two years ago from an ex-banker in Boston, Clement Schwener, who had made up the schedules for more than a quarter of a century.

When he sits down, as he did a few weeks ago, to draft the following year's lineup of games, Simmons has a hundred-and-one items to take into consideration. These are the standard year-after-year factors. When you pile on an unexpected turn of events like the transfer last fall of the St. Louis Browns' franchise to Baltimore, the schedule-maker could become an aspirin company's No. 1 customer.

What specifically are some of the things Simmons has to keep in mind?

Well, for one, all clubs in both leagues must get an equal break on Sunday and holiday dates. Sundays at home usually number about 12 and the best a club can get is two of the three baseball season holidays as home dates. Simmons must also keep in mind that no road trip should extend more than three weeks. Then he must remember that Washington and Cincinnati always open their seasons on home grounds, and sometimes a day in advance of the regular season. April 19, Patriots' Day, means special treatment as a holiday in Boston.

Weather a Culprit

Weather figures very prominently in the schedule-making. Both the American and National League schedules are based on four trips east each year by the western clubs and four trips west by the eastern clubs. One year the western teams travel east first; the next, the eastern teams go west first. There is good reason for this. A detailed study of past weather conditions shows that more games are rained out during the last week of April and the first week of May than during any other two-week period. Hence, with one-half of the teams at home one year and on the road the next, the weather factor is equalized.

The possibility that bad weather may play hob with close pennant races in the last few weeks of the season also has to be taken into account. Simmons has done that this year by providing three complete open dates after Labor Day in the American and two in the National League for rescheduling rained-out games.

The various state and city "blue laws" are of no direct concern to the schedule-maker since they do not

Schedule-maker Harry Simmons with some of the many "tools" of his trade.

prohibit the playing of games but merely stipulate the starting and finishing hours. Even so, Simmons must be familiar with those laws and keep in mind that teams unable to complete their scheduled games during the permissible hours may have to re-book those games for a date later in the season.

In Baltimore, Boston, Brooklyn, New York City, Philadelphia and Pittsburgh, for instance, all Saturday night games must be halted at 11:59 p.m. regardless of the game situation. Thus it is possible that a game held up by rain or one with lots of hitting and run-making may not get through the four and a half innings that constitute a "completed" game before the one-minute-to-midnight curfew. That means the contest has to be rescheduled for a different date.

With Trains in Mind

If Harry Simmons is a walking encyclopedia of railroad information, it is because timetables play a key part in the preparation of the baseball schedules. Not all players enjoy flying. Therefore, the major league schedules must be made up with train times in mind.

The most confining "hop" in the National League is the one from St. Louis to Pittsburgh—not because of the distance involved, but simply because of the way the train schedule works out. The rules say there must be an interval of at least four hours from the time a visiting team arrives in a city until game starting time. Traveling by American League teams this season will be somewhat complicated by the fact that Baltimore is a "western" club.

Adding to Simmons' headaches are such economic factors and major league rules as: Teams from the same city never play at home at the same time (the New York Giants and Brooklyn are exceptions) and games must be played in the stadium for which they were originally scheduled unless every club in the league agrees to a change in site.

Following custom, Simmons will have his 1955 schedule ready for presentation to the American and National Leagues by the middle of this August. It will provide for each team to play the others 22 times, but it will not show night games. The clubs themselves indicate which home games will be played under lights, but none can be scheduled for Sunday night.

For four months or so, all clubs will scrutinize Harry Simmons' handiwork from all angles. Most of the teams will make several changes in his schedule draft, mostly along the lines of combining single Sunday and Monday games into Sabbath doubleheaders and providing for night games which now are such an important part of baseball. Occasionally a team will find Simmons' schedule just about perfect. The St. Louis Cardinals, for instance, made only one switch in the current season's games as outlined by Simmons. They were scheduled to open the season by entertaining Chicago in a two-games series. The Cards cut this to a single game and rescheduled the Cubs for a later open date.

Whatever woes Harry Simmons may have now in seeing that 16 baseball teams are just where they should be on each of 167 playing days pale as he views the future. Ahead lies certain major league status for Los Angeles and San Francisco. And who knows? Maybe even for Seattle, Denver, Houston, et al. ≐

EVER SINCE that day 33 years ago when Thomas Midgley's long search for an antiknock compound led to the discovery of tetraethyl lead, Ethyl Corporation has been contributing to the effective utilization of fuels in internal combustion engines. Through the years, the Company's research laboratories, automotive engineers, chemists and fuel technologists have worked closely with oil refiners and engine manufacturers to improve engine design and performance, and to develop better and more effective fuels and fuel additives. In the course of this work, nearly one million hours of multi- and single-cylinder dynamometer engine tests and 100 million vehicle-miles have been accumulated.

Two of Ethyl's most recent contributions are fuel additives which are providing practical solutions to problems that have been of concern to

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"Ethyl" Diesel Ignition Improver

WIDELY KNOWN as DB-36 amyl nitrate during the several years in which it has been extensively tested, the diesel fuel additive has been designated "'Ethyl' diesel ignition improver."

It has been accepted by diesel engine manufacturers, diesel fuel producers and diesel engine operators. It is in commercial use in Navy diesel fuel and premium-grade automotive diesel fuel on the West Coast, in city bus fuel on the East Coast, and in regular-grade automotive diesel fuel and in railroad diesel fuel in several parts of the country.

Acceptance of this additive enables the petroleum industry to produce larger quantities of acceptable quality diesel fuels, adds flexibility to refinery operations and simplifies storage and transportation problems. To diesel engine operators and manufacturers it means that more fuel of the desired quality will be available throughout the country.

In helping boost the output of diesel fuels, "Ethyl" diesel ignition improver eases a supply situation that has been growing more acute. The increased use of diesel power, particularly on the nation's railroads and in automotive vehicles, has been accompanied by a six-fold increase in demand for diesel fuels since 1941. For the future, it has been estimated reliably that by 1960 demand will be about nine billion gallons, or almost 50 percent greater than it now is.

To keep pace with the growing diesel market, many refiners have turned to the use of distillates from catalytic cracking operations and straightrun distillates from naphthenic crudes. While these stocks generally have high heat content and low pour and cloud points —all desirable characteristics—they tend to be somewhat low in ignition quality. This shortcoming often causes difficulties, particularly in starting diesel engines at low temperatures and during warm-up or operation at low loads. Low ignition quality increases the time lag, or "ignition delay"—the interval between the time the fuel is injected into the cylinder and the time it is ignited by the heat of *(Continued on page 8)*

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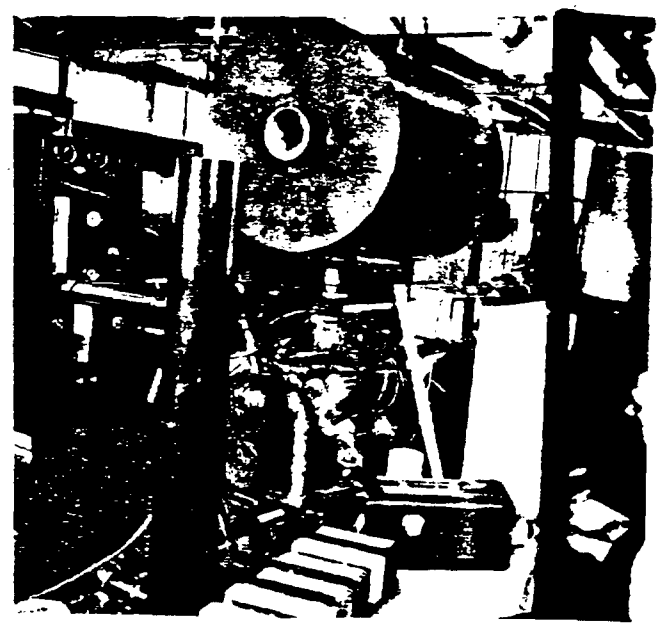

Ethyl's extensive research and testing facilities made possible the development of the new fuel additives.

ETC 29023

automobile and diesel engine manufacturers, oil refiners, car owners and operators of diesel-powered equipment. The two new Ethyl products are an ignition control compound which reduces preignition and spark plug fouling in passenger car engines, and "Ethyl" diesel ignition improver, which upgrades the ignition quality of many middle distillates and thereby converts them to diesel fuels of satisfactory quality.

Before they went into commercial production, both products had been, of course, subjected to extensive programs of research and testing. Too, samples for evaluation were made available to the industries directly concerned with their use. The results of these tests and the full-scale use to which both products are now being put have demonstrated their effectiveness.

d Preignition

Ignition Control Compound

SINCE IT WAS ANNOUNCED last November, Ethyl's ignition control compound has aroused wide interest throughout the oil industry. Already, it is being used in premium grade gasoline in commercial quantities by some 20 refiners in the United States and Canada and is being purchased for export to more than 15 foreign countries in Europe, Asia, Africa and the Pacific by another half-dozen American companies. Use of the additive in motor gasoline is effectively reducing preignition and spark plug fouling.

In performing its dual role, the ignition control compound serves to reassure the automotive industry that present and future engines made better through improved fuel utilization will not be limited by preignition and spark plug fouling. For the oil industry, it eliminates the necessity of adding octane numbers to gasoline merely for the purpose of suppressing preignition.

When it first approached the problem of preignition and spark plug fouling, Ethyl Corporation was aware that formation of the deposits which create the problem is influenced by a number of factors including engine design and fuels, fuel additives and lubricants.

Engine designers, in their efforts to reduce the formation of deposits, had investigated several mechanical solutions. One of the most promising of these was the development of more compact combustion chambers to provide less surface on which the deposits could accumulate. This modification has been effective to some degree, but as compression ratios have been increased, the deposits, even in the reduced areas, often are enough to cause preignition. Moreover, future trends in engine design point to higher compression ratios and leaner fuel-air mixtures, both of which tend to increase preignition.

For its part, the oil industry has been faced with the problem of producing gasoline that would effectively eliminate all the noises that motorists call "knock," whether it is true knock or the result of preignition. In many instances this has involved raising the octane number of the gasoline higher than that required to overcome knock, because many automobiles require a higher octane fuel to overcome preignition than to overcome knock.

In its approach to the problem of preignition and spark plug fouling, Ethyl Corporation, for many years, has studied the use of fuel additives. Finally, it found one which, more than any other tested, satisfied the rigid requirements that had been established for commercialization of such an additive. That one is the haloalkyl phosphorous compound *(Continued on page 8)*

Ignition Control Compound

(Continued from page 7)

that is now being widely used in the oil industry.

At the time of the product's introduction, the research and development work on Ethyl's ignition control compound was discussed with members of the petroleum and automotive industries. Representatives of both industries expressed great interest in the additive. Oilmen were interested from the standpoint of availability of an effective means of controlling two increasing problems. The automotive industry's interest was on the basis of eliminating two barriers to further engine development and increasing customer satisfaction with present engines.

In performing its function, the ignition control compound acts to alter the composition of deposits so as to reduce their harmful effects.

The deposits which cause preignition and spark plug missing tend to accumulate in combustion chambers and on spark plugs under conditions of low-speed, low-temperature city driving. When the plugs heat up during acceleration or periods of high-speed driving, the deposits lose electrical resistance. This permits the current to leak away, and the plug misfires.

Deposits on combustion chamber walls may become incandescent when they reach certain temperatures. This can cause the fuel-air mixture to ignite before it is fired by a controlled spark jumping across the gap of the spark plug, and is the most common cause of preignition.

Test Results

In evaluating the effectiveness of Ethyl's ignition control compound, fleets of passenger cars have traveled some 2½ million vehicle-miles. Comparisons of fuels with and without the additive have shown that the Ethyl ignition control compound reduces preignition frequency up to 70 percent. Other tests demonstrate that it lowers the octane requirement to suppress preignition below that required to overcome knock.

In tests for spark plug fouling, fuels treated with the additive have enabled some passenger cars to operate more than double their previous mileage before missing due to fouling occurred. In other cases, cars have run approximately five times farther without missing.

Backed by Ethyl's more than 30 years' experience in providing useful additives to the petroleum industry, the ignition control compound provides an effective and economical solution to the dual problem of preignition and spark plug fouling. #

☆ "Ethyl" Diesel Ignition Improver

(Continued from page 6)

compression. A prolonged delay at this critical point in the engine cycle can lead to knocking and misfiring, with possible engine damage, smoke and objectionable exhaust fumes, and loss of power.

By raising ignition quality of low-cetane distillates of otherwise good quality, "Ethyl" diesel ignition improver makes them acceptable diesel fuels.

Tests which Ethyl Corporation has conducted (several in cooperation with oil companies and engine manufacturers) have demonstrated that the cetane number of all kinds of diesel fuel—regardless of the type of crude from which they are obtained, the refining method used, or the sulfur content—can be raised successfully with "Ethyl" diesel ignition improver. On the average, four cetane numbers can be gained from the addition of 0.1 volume percent. Moreover, these added cetane numbers generally are equal in quality to natural cetane numbers.

A Handy Tool

Besides enabling refiners to produce larger quantities of diesel fuel by including stocks that formerly were unusable for the purpose, the new additive constitutes a handy tool for delivering fuels of uniform cetane quality. It adds flexibility to refinery operations by reducing the amount of selective blending required to produce diesel fuels of satisfactory cetane number. Further, "Ethyl" diesel ignition improver enables refiners, if they wish, to blend stocks for the desired pour point, flash point or volatility.

In addition, the additive simplifies oil industry storage and transportation problems. Often one product can be maintained and distributed for both heating and diesel fuel purposes. The portion for diesel use can then be upgraded as needed.

"Ethyl" diesel ignition improver is a selected blend of primary amyl nitrates. Since it is non-flammable, relatively non-toxic and insensitive to either thermal or mechanical shock, only ordinary care is required in shipping, storing and blending. The additive is a liquid at temperatures down to −190° F., and can be mixed readily in all proportions with diesel stocks.

While amyl nitrate in various forms has long been known in principle as a cetane improver, the Ethyl blend is the best from a combined cost-effectiveness standpoint. This has been demonstrated in extensive research, testing and development work and in the full-scale commercial operations where it is used. =

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Wherever Enfield citizens met, local issues were discussed for days before the actual meeting.

town meeting

On the second Tuesday in March, when the sap had just begun to flow in the maple trees and remains of winter's snow were gray patches in the shadows of the woods, New Hampshire towns, as they had for generations, held town meetings. In halls up and down the state, the citizenry assembled to elect local officials and to speak its mind on items of municipal business listed in the "warrant," the agenda for the meeting.

Town meeting is a democratic New England tradition that dates from before the Declaration of Independence. It is held during February and March in hundreds of towns in Maine, New Hampshire and Vermont, and in those in Massachusetts, Rhode Island and Connecticut where population increases have not caused it to become unwieldy and therefore impractical.

In Enfield, N. H. (pop. 1,600), interest in this year's town meeting ran unusually high. Besides such routine items as electing town officials, approving the budget and voting road improvements, there was the touchy question of preservation or replacement of the old covered bridge over the Mascoma River on the Enfield Center road. No one questioned the sentimental or picturesque qualities of the old structure, but there was a sharp division of opinion based on practicality, safety, and assurance of financial aid from the state that would accompany a new bridge.

The pictures on these pages show how Enfield discussed and settled the bridge issue and others of local importance.

While his partner, James Reagan, pumps gasoline, Archer Cummings, service station owner and businessmen's association president, discusses the warrant with teacher Muriel Jondro.

Dan Gosselin, 28, paymaster at the American Woolen Company's Baltic mill and one of New Hampshire's youngest town meeting moderators, presiding.

Selectmen in a pre-meeting huddle: Thomas Lorden, local funeral director, who spearheaded opposition to the covered bridge; Eugene King, whose service as selectman dates from 1924; and Arthur Rock, 82, whose term expired on meeting day.

School closed at noon so teachers could attend the meeting. Though students were not required to be present, many watched from the balcony.

Agnes and Chester Fairbanks cast their votes on the controversial covered bridge issue. Clarence Arnold, a supervisor of the checklist, uses candy tin to collect ballots.

Mrs. Nellie Pierce, librarian and leader of the faction favoring preservation of the bridge, spoke eloquently and often in behalf of the old structure.

A motorist's-eye view of the bone of civic contention. One of few remaining examples of "salt-box" bridge design, it was built in 1862.

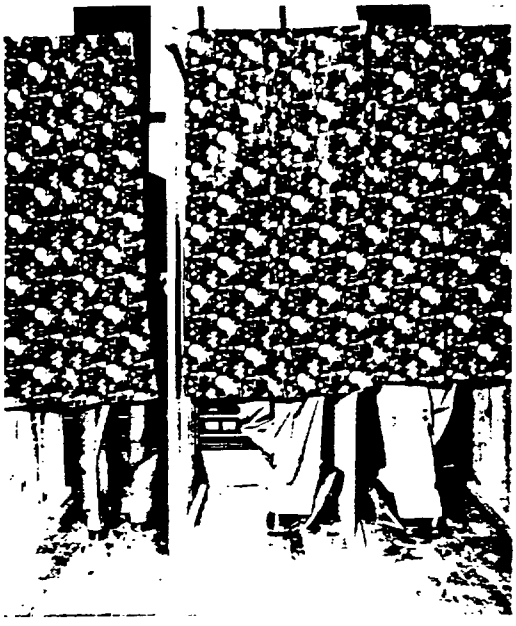
A luncheon of baked beans, brown bread, cole slaw, apple pie and coffee was served in the town hall basement by local women.

Planning Board Chairman Glendon Poland speaking against a measure authorizing selectmen to sell town-owned real estate.

con-
per-
ilots.

After marking his choices for town officials, Clifford Goss turns in his ballot. Voting was so close on two offices, a recount was required.

ETC 29028



Balloting started when the meeting officially opened with the reading of the warrant. It continued throughout the day until polls closed at 5 p.m.

The meeting over, votes counted and new officers sworn in, it was after 10 o'clock before selectmen left for home. Police Chief Francis LaBounty, who doubles as town hall sexton, bids them good-night from the doorway.

Whitney Hall, Enfield's civic center, was built in 1900. On the first floor are selectmen's office, library and American Legion and GAR meeting rooms. The opera house, where town meeting is held, occupies the entire second floor. Tower of unpainted brown shingles was added during World War II as aircraft spotters' post.

The "battle of the bridge" raged for almost half of the three hours required for the meeting. After a heated debate, Enfielders voted to replace the old structure with a new one of concrete and steel. They also: Elected a selectman, cemetery agent, overseer of the poor and nine other officials; sanctioned, in a close vote, games of beano in the town; voted $100 to the Dartmouth-Lake Sunapee Region for publicity and advertising; and transacted "further business that legally came before" the meeting.

Tempers had flared, personalities had been injected into the discussions, but after the issues had been voted most differences of opinion were forgotten. The people of Enfield, like those of many other New England towns, returned to their homes thankful that, in a world where freedom is fast disappearing, they still could practice democracy. #

this Business of Freedom

A 252-year-old leather company is a study in American free enterprise

ON A SIDE STREET in downtown Philadelphia, hidden from Independence Hall, Betsy Ross House and the city's other historic sights, stands a different kind of monument to American freedom. Unlike well-known points of interest, this one is not listed in guide books, visited by sightseers or studied by schoolchildren. Yet in all the 48 states it would be hard to find an establishment more unique and at the same time more typical of America.

This landmark is the main office of one of the nation's oldest—the second oldest, to be exact—business firms, J. E. Rhoads & Sons.

Older by almost three-quarters of a century than the United States itself, the company is a study in the freedom of opportunity provided by the American system and in the enduring qualities of privately-financed business. For more than 250 years now J. E. Rhoads & Sons has continued in business, successfully concentrating on a single pursuit—the tanning and working of leather. Throughout its long history the concern has remained under the personal direction of the members of one family.

Found in the Rhoads story is the key to its own success and to that of many of the country's older business organizations. The company is a living case history of the growth of American industry from a handicraft operation to a modern manufacturing system; how industry has survived and prospered in spite of changing conditions and keen competition.

Evident From Start

Free enterprise has been evident in the Rhoads story from the start.

Joseph Rhoads, founder of the firm, had no advantages. He was the son of a religious emigrant. But like many other enterprising Americans he saw a potential market for a product—in his case, leather for clothing, farming and handicraft purposes—and so he set out to supply it. He cleared some extra land, built a vat or two, dug a few pools and troughs, and started tanning. The year was 1702. The place was Marple, Pa.

Today, 252 years and eight generations later, the Rhoads family is still operating the firm.

Sound financing, wise management, the loyal and

able support of its employees, and an uninterrupted succession of male Rhoads are responsible for the company's record of endurance. Most important of the reasons for its success have been the ability to anticipate the changing markets for industrial leather goods and to organize the research, manufacturing and sales methods to satisfy those markets.

In the words of Philip G. Rhoads, a partner since 1935, the company's creed has been to "keep up with the times, be leaders in our field, render real service to our customers, be desirable people to work with and for, and keep the organization sound and solid so that it will have a good chance to survive in the unknown future."

During the firm's first 150 years or more, it experienced and survived the problems that were common to handicraft industries of the times. Operations and capital were limited—confined pretty much to long hours, hard work, careful supervision, pride in quality of product and saving for expansion.

The Rhoads homestead in Marple.

Then came the 1860's, probably the most crucial period in Rhoads' history. These years encompassed a great transition from hand to machine labor—a result of the Industrial Revolution. Power transmission was a part of the change and leather belts were to play a big role.

Jonathan Rhoads, then the firm's head, was alert to the times. He shifted from the tanning of soft calfskins to the processing and manufacture of industrial leather from heavier cattle hides. He moved manufacturing operations to Wilmington, Del., to provide for expansion and he adopted labor-saving mass production methods. From then until now, J. E. Rhoads & Sons has been a recognized leader in its field, pioneering in research, manufacturing and new products.

In enlisting the help of science, Rhoads early in this century set up a chemical laboratory to work out basic and specific manufacturing problems. Later a physical testing laboratory for gauging product uniformity and durability was added. The plant was relocated twice to provide added space and improved facilities.

Always striving to improve its products, Rhoads worked with an old German tanner of Doylestown, Pa., and developed a rounded leather belting superior to anything of its kind on the market. To this new type of belt the name "Tannate" was applied. Since then the trade name has been promoted until it has become synonymous with all of the company's products. Rhoads belts now drive machines in all parts of the United States and throughout the world.

Industry has experienced other great changes since the hand-tool-to-machine transition of Jonathan Rhoads' time. When technological changes have threatened to curtail use of certain of its products, Rhoads has studied and successfully developed others to take their place. Such a move to adjust to changing conditions was the introduction of leather packings for pneumatic and hydraulic equipment. The production and sale of packings have increased almost continuously down to the present.

Through the years, J. E. Rhoads & Sons has built an organization of skilled and loyal employees, many of whom have been with the firm 25 years or more. The family atmosphere has extended beyond the partners to members of the entire staff. As a result, employee turnover has been exceptionally small and labor relations harmonious.

What's Ahead

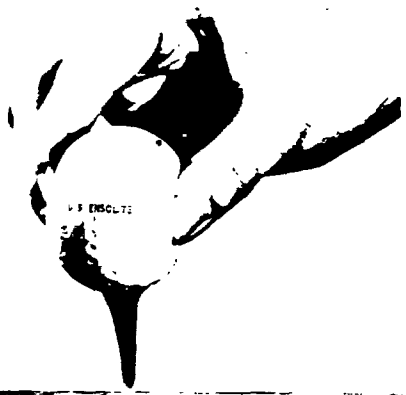
The present organization is directed by Edgar, Philip and Richard Rhoads, seventh generation members of the family, and John, an eighth generation descendant of the founder. Each of the partners is responsible for one or more phases of the company operation.

For the future, the Rhoads firm, like many other American businesses, is seeking to develop new products and to provide for the plant expansion that is so urgently needed. But no matter what the product or how produced, Rhoads has no intention of modifying its sales agreement. This unique guarantee states: "If our product sold under this guarantee does not prove more economical to you, considering increased production and durability, than similar products of other manufacturers which you have used under similar conditions, we will upon its return make you a refund of whatever part of our original charge you claim is a fair adjustment."

Drawing on more than 250 years of experience and operating on principles such as these, J. E. Rhoads & Sons intends to remain a solid, if small, part of the American industrial scene. #

Left, transparent plastic instruments made of petroleum - derived methyl methacrylate are used in surgery.

This new sensitive practice golf ball is expanded cellular plastic, a product of oil.



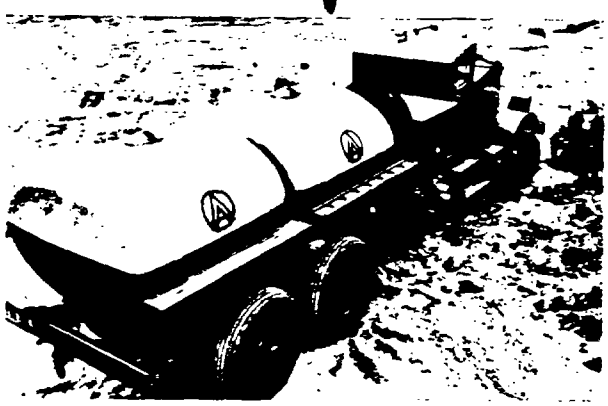
This Is Oil, Too

WITH EACH PASSING DAY, it becomes more and more apparent that petroleum is just about the most versatile and most useful of all the natural resources bestowed upon us.

One fact alone indicates the tremendous industrial importance that petroleum has achieved, aside from its major use as a fuel and lubricant: Within the past 25 years, hydrocarbons from petroleum and natural gas have become a source of raw materials for more than 2,500 different chemical products.

Today, largely through the magic of petrochemistry, petroleum, in one form or another, is used (if not required) in the manufacture of such varied items as cosmetics, tires, insecticides, piping, and fingerprint remover. It also goes into such other products as synthetic fabrics, floor coverings, plastic bottles, fertilizers and adhesives.

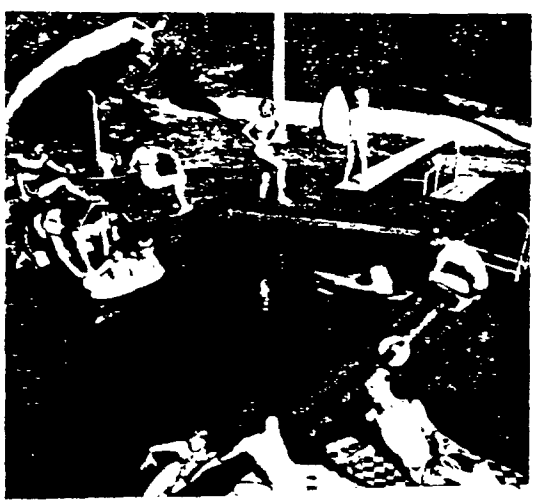
A few of the countless other unusual uses of oil are pictured on this page. #



Above, plastic containers on some new tank trucks are made partly from oil.

The tough hide of circus and zoo elephants is preserved and softened by regular applications of oil.

Below, home swimming pools are made of vinyl plastic, an oil product.



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dig this

Dowsers-for-oil abounded in the 1860's and 1870's when industry pioneers turned to almost any aid, however seemingly fantastic, in their search for petroleum.

A few weeks ago, a man with a forked peach tree branch clenched firmly in his hands walked gingerly about the farm of a neighbor not far from Springfield, Illinois. Armed only with the Y-shaped tree branch and a strong belief in his own ability, his aim was to find a water supply much needed in that drought-stricken part of the country.

Suddenly, as the man was about to take another step, the point of the branch "pulled down" toward the ground. When the farmer dug at the spot, he located two underground streams of water, sufficient at the outset for the daily needs of his family and 75 head of cattle.

The man with the forked branch, of course, was a practitioner of the ancient and honorable science—or superstition—of dowsing.

Dowsers are willing to try to locate anything from oil to buried treasure. The claims they make range from absolute guarantees of success (or no charge!) to mere hopeful appraisals of their chances of good luck. Where this leaves the average probability of success is anyone's guess, but the interesting fact remains that many people reared on a farm can remember at least one or two dowsers whose wells gave forth water undeniably and plentifully.

The whole thing seems to have started back in Roman times, if not earlier. As later ages were to have their palmistry, phrenology and tea leaf-reading, so did the Romans have their *virgula divina*. These "divine sticks," cast on the ground much as in the modern game of pick-up-sticks, fell into patterns (so the belief was) of portentous significance which could be revealed only by the professional augurs. Such great Roman writers as Cicero and Tacitus described with vast respect the mysterious powers of these ancient soothsayers.

Not until the 15th century, however, is there any record of the use of the forked stick to locate the resources hidden deep in the earth. Miners in the Harz mountains of what is now Germany employed such sticks while prospecting for minerals. Imported to England in the time of Queen Elizabeth, they fell into disuse there as mining declined. But then, one alert man reasoned, if the sticks could be made to locate ore deposits, they could be used as well to indicate hidden sources of water. He tried it. It worked, or, at any rate, an audience was convinced that it worked. So was born the dowsing rod.

The history of dowsing from that time on has been one of virtuosity, specialization and adaptation to the

Charles Harris, of Middleboro, Mass., a dowser for 20 years, shows how he holds a divining rod and the position to which it is "pulled" by underground water.

particular problem that presented itself at the time.

Temperament and taste vary the sort of rod or twig used. Many dowsers in America have settled on the hazel as the tree peculiarly attuned to responding to the mysterious "pull" of underground waters. But there are devotees of the cherry, peach, willow, beech and holly. A few dowsers, perhaps in deference to the improvements of a mechanical age, even swear by watch springs and metal rods.

Not Only Water

Nor is there universal agreement respecting the kind of resources to which a dowsing rod is—or is not—sensitive. The overwhelming majority of dowsers professes the ability to locate only water. Indeed some restrict their claims modestly to possession of a power to locate merely *running* water and in only certain localities. From time to time, however, dowsers appear who, like their German forebears, swear to their talent to locate various metallic ores and minerals—especially petroleum.

Dowsers-for-oil abounded in the 1860's and 1870's when oil industry pioneers turned to almost any aid, however seemingly fantastic, in their search for the vast reserves of petroleum we now know are concealed in the earth. Records of the time indicate a rather notable lack of success. Dowsers often were beheld peering into dry holes with a visible air of puzzlement before announcing pontifically that the wildcatter (by now soured forever on dowsing) had not dug deep enough —or perhaps too deep. Other dowsers merely vanished into more obscure parts of the country after collecting their fees—and before the accuracy of their "gifted" predictions could be tested by sweating well drillers.

In truth, the oil dowsers never did come through in promised fashion. Had they done so, the petroleum industry would not find it necessary to spend the tremendous amounts of time, money and enterprise it does to locate oil's hiding places. A few quick non-dowsing statistics: Last year more than 49,000 wells were drilled at an average cost of more than $50,000 each. Some of the individual wells cost $1 million or more. On the average, only one out of 44 wildcat wells turns out to be an economic producer. Dowsers to the contrary then, there is no cheap or easy way to find oil.

Books on Dowsing

But skepticism of the reputed skill of the dowser is by no means unanimous. Kenneth Roberts, for one, believes passionately in the power of the truly gifted dowser. The noted novelist has written two books on water dowsing and has organized Water Unlimited, Inc. This is a corporation devoted to the discovery by dowsing of water flowing underground even in presumably arid localities—if, of course, such water exists. The corporation's chief dowser claims sufficient power to be able to dowse not only on the land itself but also on a map or merely a sketch of a particular piece of land.

A well-known English scientist, Sir W. F. Barrett, after watching the activities of a number of dowsers with a rather jaundiced eye, concluded that the movement of the dowsing rod is controlled, perhaps unconsciously, by the dowser himself, not the "pull" of underground water on the rod. However, he went on to admit, it remains conceivable that the dowser—rather than the rod—is responding to some stimulus sent forth by the hidden liquid to which "ungifted" persons are not sensitive.

And so dowsing continues to have its supporters and denigrators. Oilmen and hydrologists, of course, are almost universally disbelievers. But even they might be inclined to remark wistfully from time to time, "Wouldn't it be nice if dowsing really worked?" #

Our passenger cars sport a wide variety of distinguishing crests

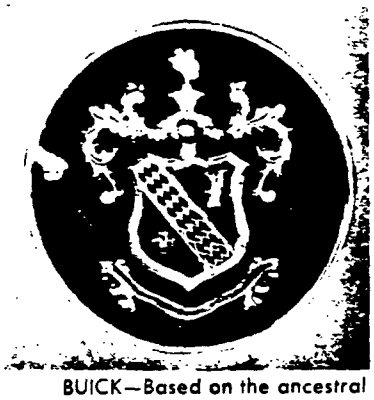
OFTEN SEEN, but seldom studied, are the crests that grace American-made passenger cars.

These crests—or emblems, medallions and insignia, as they are also called—are found in various positions on the automobiles. Some are placed at the front center of the hood; others at the steering wheel's center, on the hub caps, or on the trunk lid.

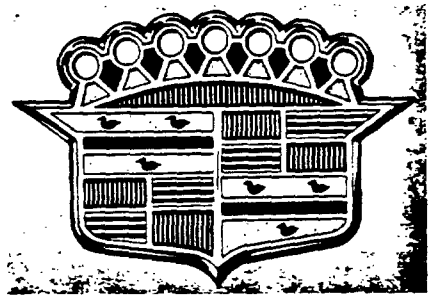
Wherever they appear, they serve to distinguish the car as much as its styling, body design and other characteristics. Automobile manufacturers obviously treasure the crests as valuable business assets. Millions of dollars have been spent through the years to promote their use, and some of the crests are copyrighted in many countries of the world.

As can be seen on these pages, the crests run a wide range of design. At the two extremes alphabetically, for instance, are the Buick crest with its (in the language of heraldry) "Buck's head erazed in chief, and a cross couped and pierced" and the simple, yet distinctive, "W" of the Willys. ≠

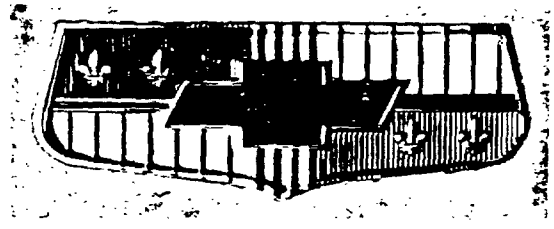
Highway



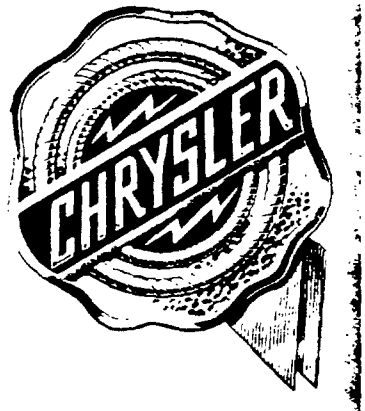
BUICK—Based on the ancestral arms of the ancient Scottish family of Buik (as the name was then spelled). Featured are a buck's head and cross, separated by a band.



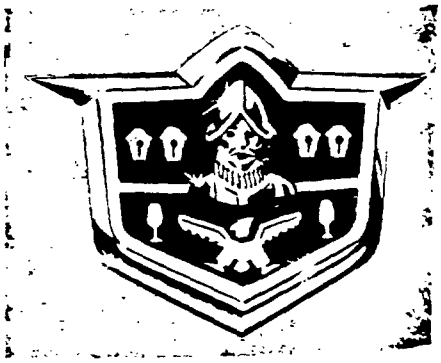
CADILLAC—The coat of arms of Antoine de la Mothe Cadilloc, French explorer who founded the city of Detroit. The seven pearls in the coronet atop the shield indicate that nobleman's descent from as many ancient courts of France.



CHEVROLET — Lacking heraldic significance, the main figure reportedly was designed by W. C. Durant after he had noticed this type of emblem in a hotel room wallpaper pattern during his travels.



CHRYSLER — This "seal of quality" has been the official Chrysler medallion for more than 30 years.



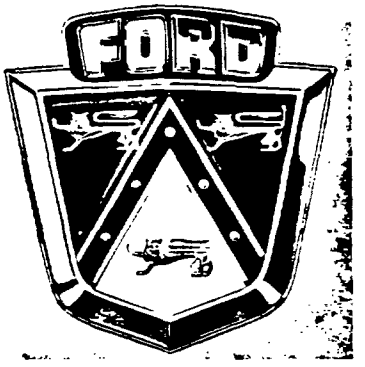
DE SOTO—Adopted from the coat of arms of Hernando de Soto, discoverer of the Mississippi, after whom the car is named.

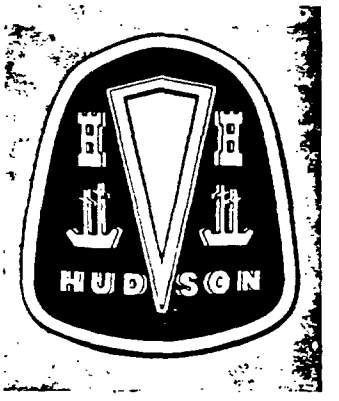
Heraldry

DODGE—One of the most elaborate and colorful of car crests, its origin has never been confirmed. Prominent are a bear and a knight's helmet.

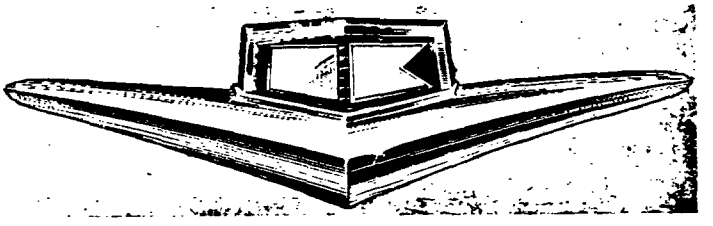
HENRY J—No doubt about this emblem of one of the nation's newest passenger cars. It is designed from the signature of Henry J. Kaiser.

FORD—In use since the 1950 models, the crest was derived by stylists from a coat of arms dating back to 17th century England. In each of the three fields is a golden lion.





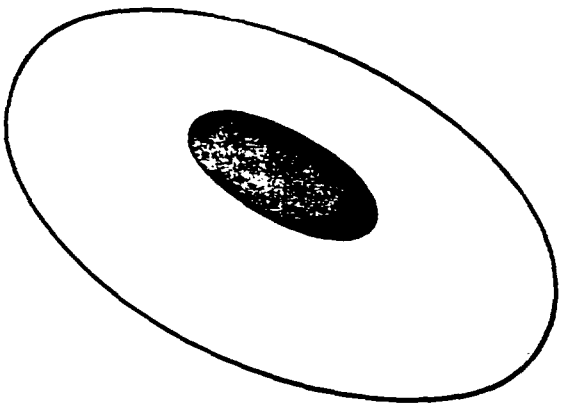
HUDSON — The fortresses on either side of the triangle symbolize the "strength and integrity" of the manufacturer; the ships, "the adventurous spirit" of its engineers.

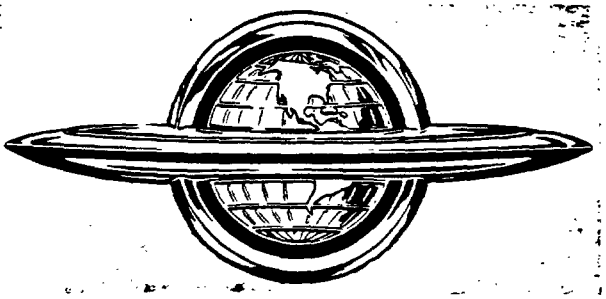


KAISER—This emblem, created by automotive stylists, features a split block K mounted atop a spread-eagle standard.

LINCOLN — Prominent on this crest, as on those of some other makes, is a knight's helmet. The shield's central figure, recently changed, once resembled more a sunburst than a cross.

MERCURY—In addition to the head of the Greek god, Mercury also displays this crest. It is gold with a red shield.





OLDSMOBILE — Like some other car makes, Olds employs two emblems. This one appears on the outside of the vehicle. On the steering wheel is a crest of heraldic significance.

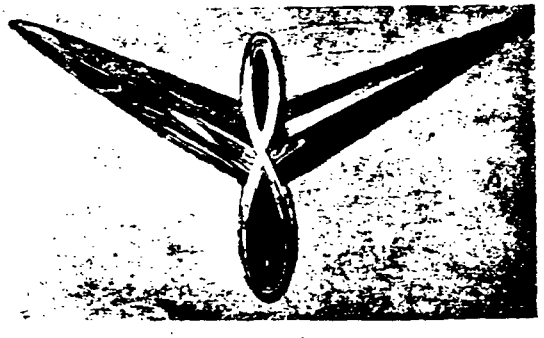
PACKARD—The Packard family coat of arms has appeared on all models since 1928. Atop the shield is "a cormorant in her piety pricking blood from her breast to feed her young."

NASH—Of fairly recent vintage, the crest is the creation of design stylists. There is no special import to the markings.

PONTIAC—The car was named after the famed Indian warrior and not the Michigan city in which it is made. It is only natural then that it features a likeness of Chief Pontiac.

PLYMOUTH — The emblem has appeared in many forms during the past 25 years, but always carries as its central figure an illustration of a sailing ship like that used by the Pilgrims in their historic voyage to America.

STUDEBAKER — This is the insignia of the 8-cylinder model. Other Studebaker models also bear the V-shaped emblem, but with an "S" instead of the "8."



WILLYS — The unadorned bevelled "W" has embellished all cars of this make since the vehicle's inception in 1952.

Meeting the Demand

Ethyl is expanding plant capacity to help refiners meet greater calls for gasoline

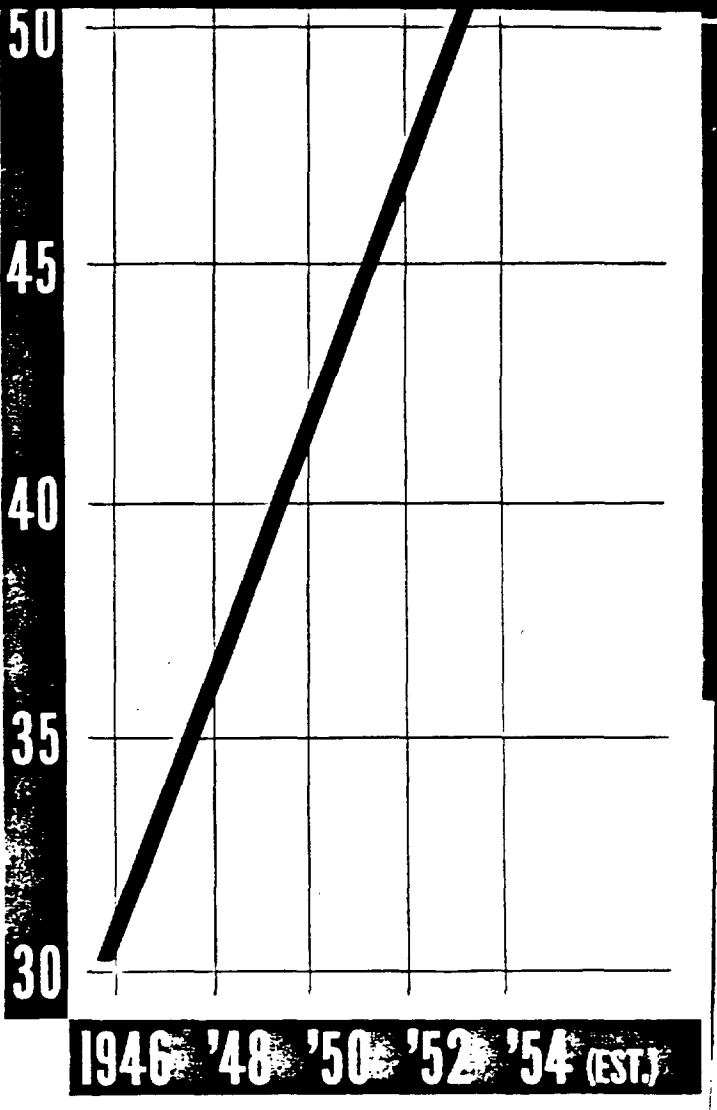
AS THE RESULT of growing demands for "Ethyl" antiknock compounds, Ethyl Corporation has launched a 12-month program of expansion in its manufacturing facilities. When completed, the program will provide an increase of approximately 15 percent in the Company's production capacity at its manufacturing centers at Baton Rouge and Houston.

This increase in Ethyl's manufacturing capacity is indicative of the importance of "Ethyl" antiknock compounds to modern automotive and aviation gasoline.

Each succeeding year since World War II has brought progressively greater calls for gasoline of ever-increasing quality. Mindful of its key role in helping oil refiners meet these calls and of the importance of its antiknock compounds to the petroleum industry and the nation's economy, Ethyl Corporation already has invested well over $100 million during this period to increase its production capacity.

In the major phases of this postwar expansion program, the capacity of the Ethyl plant at Baton Rouge, already the largest of its kind in the world, was greatly expanded, and a new manufacturing center was built at Houston. This second plant increased the Company's productive capacity by approximately one-third and provided an additional source of antiknock compounds at a time when the Korean war and the demands of national defense coupled with civilian consumption were calling for unprecedented quantities of high-quality gasoline.

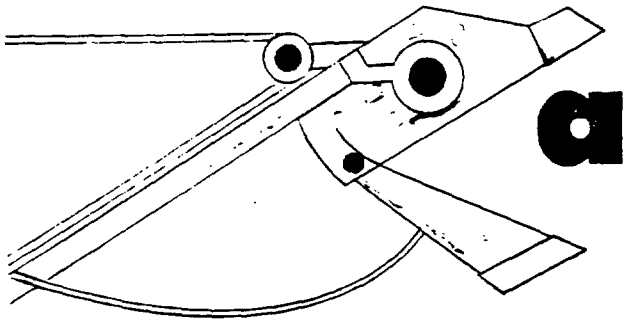
Ethyl's present plant expansion comes during an era when an increasing automotive population is establishing new record demands for motor fuels and when reliable estimates are for still larger gasoline consumption in the next few years.



In the postwar era, gasoline consumption has soared from 30 billion to more than 50 billion gallons annually.

Modern refining methods and techniques and expanded refining facilities, of course, will play a large part in enabling the oil industry to provide ample supplies of high-quality gasoline. In addition, refiners will continue to use antiknock compounds to add flexibility to their operations and to add economically the octane numbers that will raise their gasoline to the desired level of octane quality.

In again expanding the productive capacity of its manufacturing plants, Ethyl Corporation is providing further assurance to the nation's oil refiners that ample supplies of these needed antiknock compounds will be readily available. #



a look a

The ancient metal plays an important role in modern technology

IN APPEARANCE, construction and "get-up-and-go," there's virtually nothing about automobiles that makes you think of lead. Their lines, their finish and their performance are bright and sprightly. Lead, on the other hand, because of its weight, its softness and its dull gray color, usually is associated with ponderous sluggishness. "Heavy as lead" is one expression that comes to mind.

And yet it is lead that helps make possible the quick starts, the rapid acceleration and the dependable performance that have come to be an accepted part of modern automotive transportation. The automobile is, in fact, the largest single consumer of lead in our 20th century technology, and automotive use of lead is still on the increase.

In Batteries, Gasoline and Solder

Almost half of the 1.1 million tons of metallic lead that will be consumed in the United States this year will go into the batteries that start our cars, trucks and buses; into the tetraethyl lead that improves the quality of the gasoline that powers them; and into the solder that secures their radiators, wiring systems and many other parts.

Automotive uses of lead, of course, are developments of this century, but the metal itself has been serving man for thousands of years. With gold, silver, copper, tin and iron, it is one of the six so-called prehistoric metals. Its use is as old as the ancient Chinese, Egyptians, Greeks and Romans and as modern as atomic energy. In one of its significant new uses, for example, lead provides a shield against the harmful rays encountered in harnessing the atom.

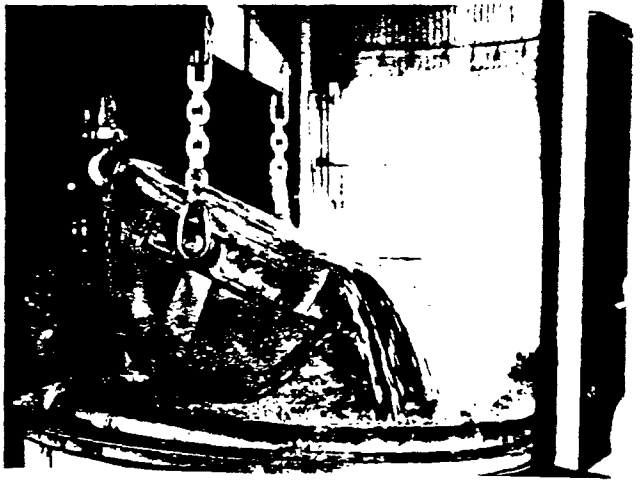
Many of the qualities and characteristics that made lead attractive and usable for the ancients still are important considerations in its employment in modern science and technology. Among these are its softness, plasticity, weight, low melting point, ability to alloy readily with other metals, and its resistance to corrosion.

Lead is essential in the manufacture of chemicals, paints, building and plumbing materials and insecticides; in communications, chemical construction, metallurgy and a variety of other industries. It is an ingredient or the chief material in white lead, a paint pigment; red lead, a corrosion preventive for steel; casting metals; type metal; lead foil; ammunition; galvanizing and annealing materials; lead sheets, traps, pipes and bends; cable coverings; and many other industrial and commercial products besides the batteries, tetraethyl lead and solder already mentioned.

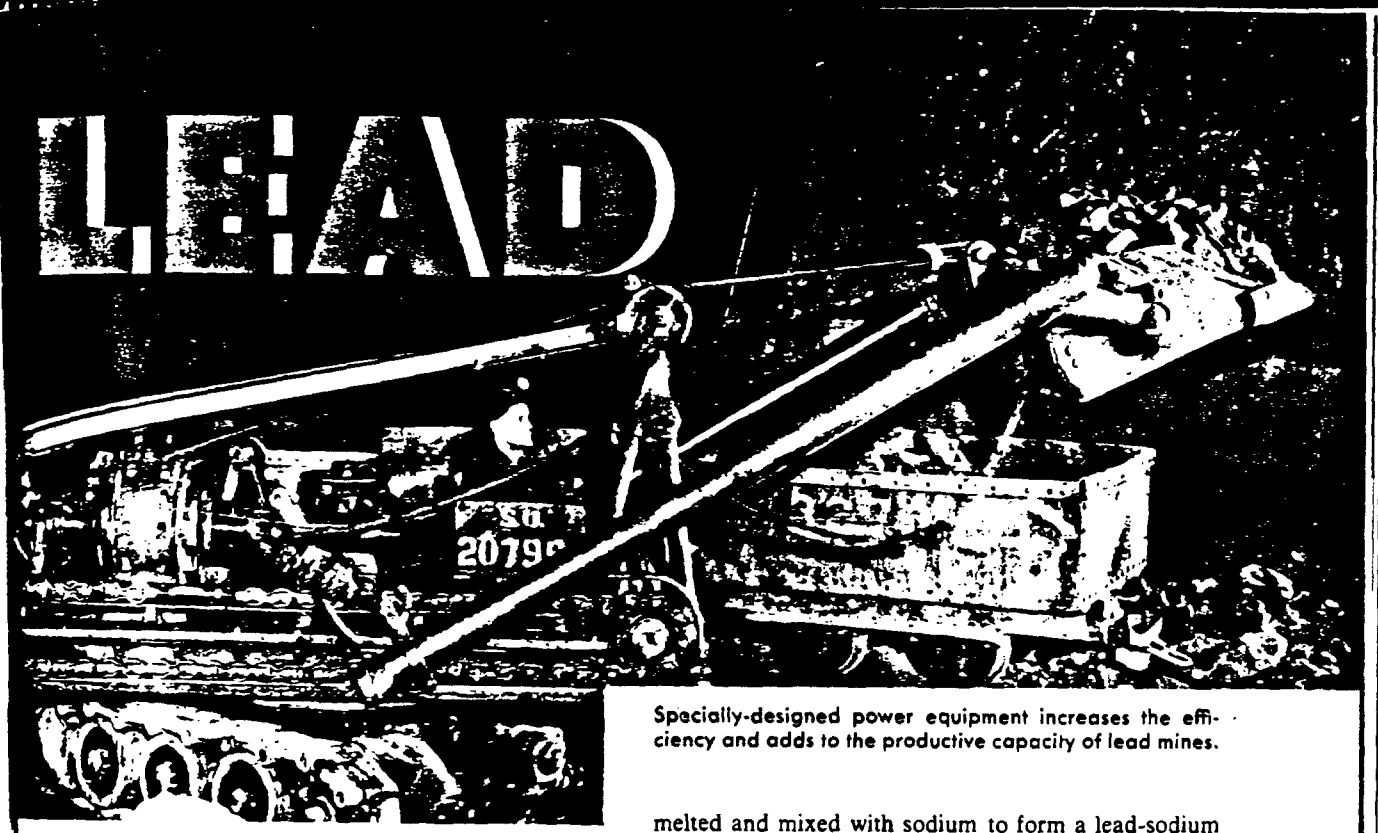
In recent years, the story of lead consumption has been one of marked changes. Uses that once were major ones have, in several instances, gone into a decline as plastics and other metals and materials have taken lead's place. At the same time, uses that a decade or two ago were insignificant have moved to the fore.

During the 1920's, for example, cable coverings and white lead were two of the most important uses. Recently, with the development of plastic cable coverings and the introduction of microwave communication, less lead has been used for cable coverings. White lead also has decreased in importance as titanium and other materials have taken its place in paints.

Molten lead is upgraded to a high degree of purity through a series of smelting and refining operations.



LEAD



Specially-designed power equipment increases the efficiency and adds to the productive capacity of lead mines.

The tremendous postwar growth of the nation's automotive population, on the other hand, has resulted in vastly increased use of lead in storage batteries, tetraethyl lead and solder. So much so, in fact, that batteries and TEL rank first and second among all lead-consuming products.

As the world's foremost manufacturer of antiknock compounds, Ethyl Corporation is the second largest corporate consumer of lead. At the Company's two integrated manufacturing plants, at Baton Rouge and Houston, metallic lead is one of the basic raw materials from which tetraethyl lead, the active ingredient in "Ethyl" antiknock compounds, is made. The lead is melted and mixed with sodium to form a lead-sodium alloy. The alloy is reacted with ethyl chloride to produce raw tetraethyl lead, a colorless oily liquid. This liquid is steam distilled and treated further and is blended with dye and other chemicals to produce "Ethyl" antiknock compounds.

Like over-all United States consumption, Ethyl's supply of metallic lead comes from three principal sources, each about equally divided: Domestic production, foreign production and reclaimed scrap.

At the beginning of the last century most of the world's lead came from the mines of England and Spain, but by 1900 the United States had become the leading producer. Commercial deposits now are found in many other parts of the world. The United States, Mexico, Canada and Australia are the major suppliers

Lead-acid storage batteries provide power for starting, lighting, ignition and accessories in automotive vehicles.

In the use of atomic energy, lead provides a shield against harmful radiation.

to the world market. Yugoslavia and several countries in Africa and South America also are producers.

Of the world's lead mines, those in St. Francois County in southeast Missouri are among the largest. In the 140 years that mining operations have been in progress more than seven million tons of pig lead have been produced from southeast Missouri ore. With the exception of the rich Broken Hill mines in Australia, this is greater than any other area in the world and accounts for approximately one-third of all United States output. In this country, lead is also found in commercial quantities in Idaho, Arizona, Utah, Colorado and Montana.

In the various localities where it is found, lead occurs in several mineral ores. Galena, a sulphide of lead, is the most common of these. Galena veins vary in thickness from a fraction of an inch to many feet. Commercial deposits usually are found at very great depths.

In exploring galena deposits, diamond core drills are used to penetrate the ground and bring up samples of the earth's strata in areas where outcroppings indicate the presence of lead ore. Drilled from 500 to 1,000 feet apart initially, holes are sunk closer and closer together until it becomes possible to outline from the surface the areas covered by the ore bodies. In actual mining operations shafts are sunk to the depths of the ore vein. Digging, or "drifting," as the miners call it, is done along the course of the vein.

The productive mines of southeast Missouri have long been the leading source of lead in the United States

To assure uninterrupted production, Ethyl Corporation maintains inventories of lead at its manufacturing plants.

Mechanized Mines

Modern technology has been harnessed to increase the efficiency and productive capacity of many of the more advanced lead mines. Specially-designed pieces of power equipment scoop up ore rock and load it for transportation to the mine shaft, where power hoists carry it to the surface. Electric railroads powered by locomotives up to 25 tons in size have for years been the principal means of subterranean transportation. A recent development, providing greater flexibility and economy in mining operations, is the use of automotive vehicles for underground ore movement.

Some lead ores are rich enough to smelt directly into metallic lead as they come from the mine, but these are scarce. Most must be "milled" into "concentrates" at the mine head by one or more of several crushing, grinding and flotation operations. With a concentration of only 2½ to 3 percent of lead in the ore, transportation of the unmilled ore any distance would be economically impractical.

At smelting plants, the concentrates are reduced to metallic lead in huge furnaces, usually after being roasted to reduce the sulfur content. Smelting operations are followed by a series of refining processes to remove impurities that may give the lead excessive hardness or other undesirable characteristics.

The refined lead is cast into bars, or pigs. In this form it is shipped to fabricators and processors who convert it into the antiknock compounds, battery plates, solders, building materials, paints, chemicals and the many other metals and materials that are so necessary to modern living. #

LAYOUTS AND ART DIRECTION: Carsten Grande.

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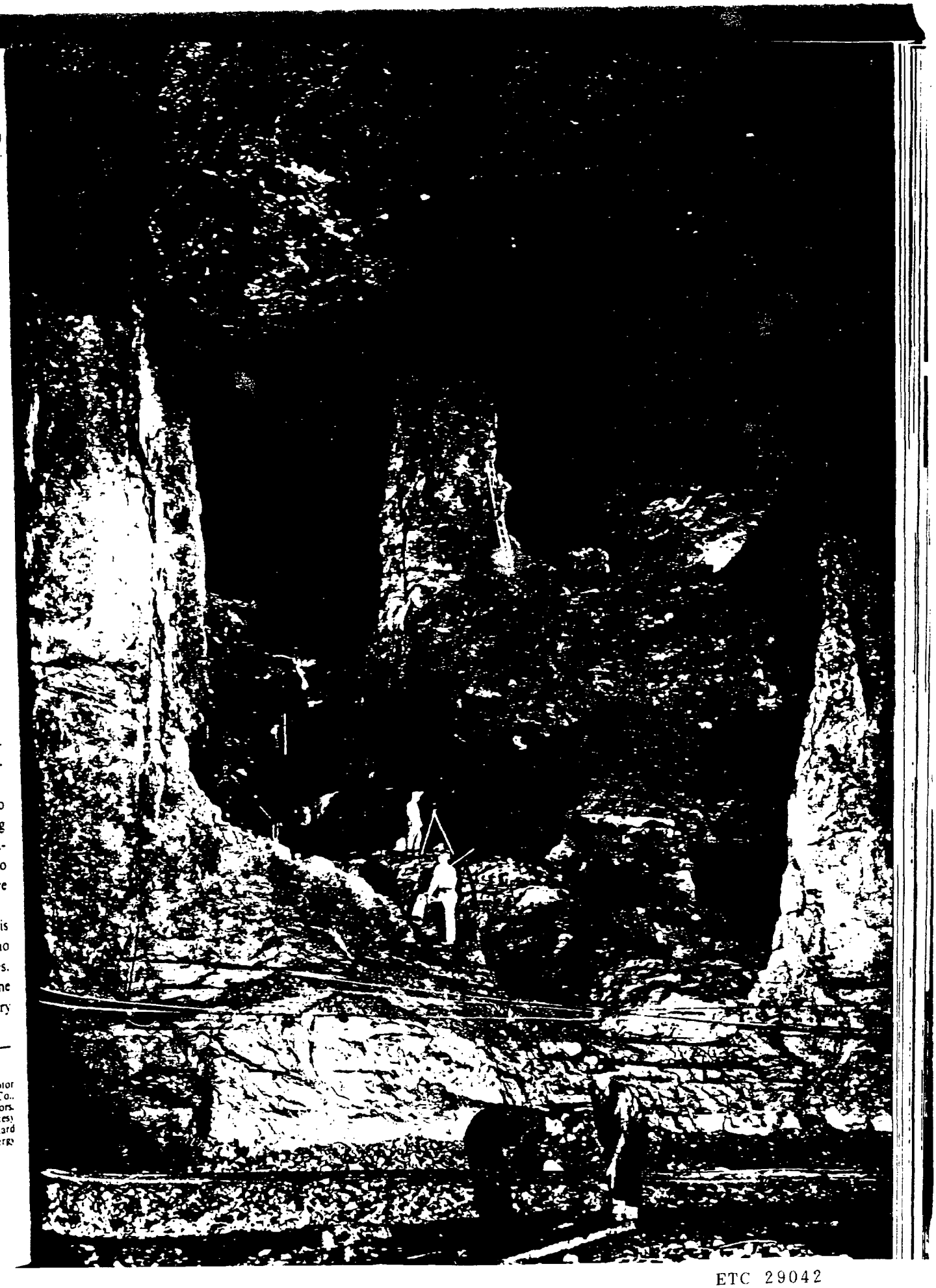

ETC 29042

The man who is never at his desk

The girl who answers the phone for one of Ethyl's automotive engineers must have a pretty frustrating job.

These men are almost never at their desks.

You see, helping bus, truck, and taxi-fleet owners get more efficient operation is not something you can do very well from an office swivel chair. So Ethyl automotive engineers spend the bulk of their time out in the field working with oil-company sales and technical people in their contacts with fleet service managers.

This offers two important benefits to refiners. Ethyl customers get quick and direct cooperation. At the same time, knowledge gained from direct contact with the field enables our laboratory people to keep research directed in the most productive channels.

Our "get out in the field" operation is by no means confined to our automotive men in the field. Engineers from Ethyl's Research Laboratories are constantly at work with farm-tractor people, passenger-car builders, and airplane-engine manufacturers on developments that in the long run may prove important to gasoline refiners and distributors.

These hours our men spend away from their desks are the most valuable hours. They provide the first-hand knowledge and experience that enable us to give refiners the most effective assistance.

We feel – and we think you'll agree with us – that reliable technical service is an important ingredient in Ethyl antiknock service.

ETC 29043

ETHYL NEWS

MAY—JUNE 1954

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BEHIND THE *NEWS*

Glistening under a warm summer sun in the color photograph on the front cover is Ethyl Corporation's West Coast storage terminal at Wilmington, Calif. Convenient to the many refineries in the Los Angeles area and to others in the Far West, the terminal, like its East Coast counterpart at Edge Moor, Del., maintains reserve quantities of "Ethyl" antiknock compounds to meet promptly the special needs of customer oil companies.

In the specialized field of agricultural journalism, Ladd Haystead, whose byline appears on "Blueprint for Abundance" (page 1), is a recognized authority. Since childhood, which he spent with one foot on a farm and the other in a print shop, he has had wide experience as a farmer and writer. He has been everything in farming from chore boy, through hired hand, to foreman, supervisor and owner, and is the author of many articles and books on farm subjects. A native of the Pacific Northwest who makes his home in Rutherford, N. J., Mr. Haystead now is, among his other activities, an agricultural consultant, publisher of a farm digest, and counselor to the Committee on Agriculture of the American Petroleum Institute.

One of the oldest and the newest of the many services that Ethyl Corporation provides for its customer oil companies are featured in this issue. "The Screen's the Thing," on pages 16 and 17, tells of increased "Ethyl" gasoline advertising during the peak driving months, and "For Better Sales and Service," on pages 10 and 11, explains Ethyl's recruiting and training program for service station personnel. Premium gasoline advertising has been provided by Ethyl since its antiknock compounds first were used in gasoline, while the R. T. program is the latest addition to its list of services.

ETHYL NEWS

Richard F. Cook, Editor

MAY-JUNE 1954

Published by Ethyl Corporation, 100 Park Avenue, New York 17, N. Y., manufacturer of "Ethyl" antiknock compounds, used by oil companies to improve the antiknock quality of aviation and motor gasoline.

Edward L. Shea, President

Stanley T. Crossland, Vice President and Treasurer

Herbert A. Savage, Secretary

Blueprint for Abundance

By Ladd Haystead

Agricultural assets, present and future, refute predictions of a food shortage

A FEW YEARS AGO a new cult appeared in the area of American agriculture. These people, quite sincere and with well-documented arguments, sent a cold chill down consumers' backbones by stating bluntly that within the current generation we would run out of adequate food, fibre, fats and oils; that, in short, America would become a have-not nation. The predictors of such tragedy are called neo-Malthusians, after the political economist who forecast, more than a century ago, that the world's birth rate was overtaking its food potential.

True, the present birth rate is the highest in history. True, there is very little more new land that we can count on to add to productive resources. And, true, we are constantly depleting our present land supply by loss from erosion, the expansion of cities and towns, and the building of roads and parks.

Still, when you balance all these liabilities against the assets, present and in the works, you get an entirely different picture that is on the optimistic side.

To start with, any competent agricultural observer will tell you without fear of argument that we aren't beginning to farm as well as we know how. While two million farms contribute better than 90 percent of our commercial output, three million more contribute scarcely enough to be a market factor. Very often the latter are too small to be worked economically and

usually the practices prevailing on them are outmoded and inefficient. Rarely do they take advantage of the host of machines, chemicals and techniques which have brought about the modern agricultural evolution.

Why don't they?

First, there is a natural reluctance on the part of many farmers, particularly the older ones, to give up the "safe" and traditional for the new. Hybrid corn was around for 20 years before it began to gain wide acceptance. Second, lack of capital resources (including credit) stymies many who otherwise would try the new techniques. Third, successful use of the new ideas demands a sharply upgraded management ability which many do not have or are not in a position to acquire either through temperament or educational background. And, sadly enough, there are many who take the ills and negatives of farming as heaven-imposed factors which are to be accepted with fortitude but not actively combatted.

Take waste and spoilage. Nobody has an accurate figure, but it is generally agreed that about $5 billion worth of agricultural products are lost annually because of weeds, insects, rodents, fungi and such storage hazards as weevils. Yet, nearly all of that waste could be eliminated by universal usage of chemicals and techniques presently available.

Acts of God

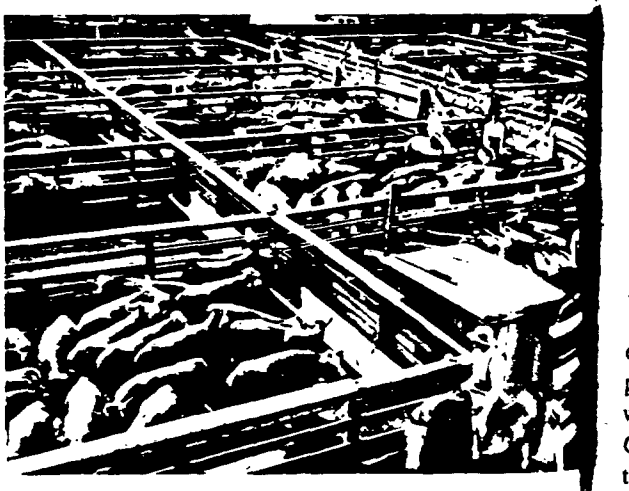
A great source of loss is from acts of God—damage by hail, storm, flood, drought and the like. Only a starry-eyed dreamer would say that such things could be brought under man's control by, say, 1975. But some of them at least seem to be on the way to control.

Work already done indicates that hailstorms may be decreased by cloud seeding. Floods can be minimized by upstream dams. Storm-resistant strains of plants are coming in a steady stream from the plant breeders' laboratories. Drought can be fought—if not conquered—by portable irrigation systems, by new drought-resistant plants such as the Coastal Bermuda grass now giving a good account of itself in the Texas drought, by heavier fertilization and by proper land usage.

That last is currently to the point. The "black blizzard" that hit the old Dust Bowl in February was caused, in part, by careless and unwise use of land during the wheat boom of recent years. Such unmoral conduct could be ended by enactment of a land-use law.

Stopping the forces of destruction, or even decreasing them substantially, is but one of the many ways that farm production can be stepped up, if and when we need it. For instance, the national average produc-

One accomplishment of scientific farming is the reduced time now required to develop marketable poultry.



Other gains have been scored in the raising of beef cattle and increasing the milk production of dairy cows.

tion of a dairy cow is only a little better than 5,000 pounds of milk annually. Yet in some dairy sections a cow that does not produce 10,000 pounds or over is cut out of the herd. There is no reason—with present knowledge of nutrition, available feed, veterinary science and its concomitant medicaments, and artificial insemination—why the national average should not be as high as any good herd average.

A few short years ago, a poultryman who could bring off a three-pound broiler in 13 weeks was reckoned an astute operator. Now if he doesn't do it in eight weeks with consequent savings all along the line, he soon may be out of business. You can take two or more years to feed a steer to a market weight of a thousand pounds, and many growers are doing just that. But today's smart cattleman does the job in one year—and gets a higher grading out of the animal. Thus the present beef herd of the nation could have its production upped mightily with no more land or knowledge than we possess right now.

Why Not Again?

We still haven't assayed the biggest of all reasons why we may be wondering what to do with surpluses in 1975. If production could go up so dramatically as it did in the World War II decade, what's to stop it from doing it again?

Have our scientists, technicians, machinery designers, chemists, plant breeders and the host of other people with agricultural skills done all they can? Shall we shut down the Patent Office as someone around Civil War time suggested because "there is nothing left to invent"? Are we going to stop conservation and the greater yields it brings with only 37 percent of the job done? Are we going to halt the Bureau of Reclamation's ambitious programs (although one might wonder why the Bureau is so active today when we don't know what to do with all the crops we raise on existing land)? Can we predict that nobody can build a better tractor, create new insecticides, herbicides and antibiotics, or find a way to cure Bang's disease? In short, in this dynamic land with its freedom of mind, isn't it almost impossible to stop Progress?

It is reasonable to suppose that by 1975 we will be doing the fertilizer job that we know now ought to be done. We will know vastly more about soil tillage, plant nutrition, soil conditioners and the control of pests. Farm machinery will be even more refined and improved. There will be a great many more self-propelleds. We will do more processing or partial fabrication in the field (with such as forage harvesters).

Chemicals are destined to play an increasingly important role in the farming of the future, the author predicts.

There will be fewer but bigger farms, all fully mechanized. More preparation for the market will be done on the farm with less preventable waste.

Most of all, chemicals will grow in farm usage. From seed to harvest, chemicals now can play an important part in every farm undertaking—but only a few farmers so use them. Twenty years from now virtually all farmers will take for granted what a relatively few do now.

One question might be raised that demands a straight answer: What about the declining manpower on farms? Will there be enough help to get in the much larger crops of 1975?

That can be answered by pointing to the 1940 decade when millions of workers departed the farm at the time gross production was increasing 40 percent. Machines don't get tired. A seven-man haying operation 15 years ago is a one-man (plus tractor and equipment) job today. Huge threshing crews of 30 to 40 men have been cut to two men on the combine and one man to pick up the loaded trailers and haul them from the field. The list could go on through almost every crop with no end in sight. Almost weekly some new labor-saving device or machine is added. Currently it is the bulk handling of milk—taking the fluid from cow to tank truck without the use of human hands.

In years to come, then, instead of many farm *laborers* there will be a comparatively small force of highly trained, very skillful *technicians*. Slide rules will replace "rule of thumb" just as they have in industry.

Hence, the neo-Malthusians notwithstanding, I believe that the Ezra Benson of 1975 still will be trying to figure out how we can find more export markets for our farm produce. Both oil and chemicals will find the farm still a major consumer, and the American housewife will enjoy an even larger selection of food when she goes to the super-supermarket. #

The VOICE of FREEDOM

By Thom Yates

IF YOU HAD LIVED in conquered Hungary one recent winter, you would have been allowed to turn on the heat in your home or office only when the outside temperature dipped to a ridiculously low level. This was the Communist way to conserve fuel and at the same time subject humans to undue suffering for the welfare of the State. But your shivering body soon would have told you that the "official" temperature readings nearly always were faked – on the high side. Then things changed. A voice from the other side of the Iron Curtain broadcast the true temperatures, and the Red puppets were forced to abandon their devious scheme.

Or, if you were a slave laborer at the Jachymov uranium mines in Czechoslovakia, you would have found conditions in the work camp as deplorable as man's mind could conceive. Suddenly one day you would have noticed a change of heart in the guards. They not only showed signs of kindness, but even attempted to curry prisoners' favor. Again the voice from the West had spoken.

There is nothing mysterious or secret about this all-powerful voice. It is Radio Free Europe, one of the few remaining links with freedom still available to the 76 million oppressed people of the nine captive satellite countries that separate Russia from the rest of Europe.

RFE broadcasts almost without letup around the clock, piercing the Iron Curtain with messages of truth –and hope. In keeping alive the oppressed peoples' love of freedom until liberation can be achieved, Radio Free Europe also is keeping the Kremlin constantly off balance.

No one can better interpret what keeping the Soviets off balance means than Admiral H. B. Miller, executive director of the Oil Industry Information Committee. "Min" Miller recently completed a term as president of the Committee for A Free Europe, of which RFE is the striking arm. As such, he visited and revisited the free capitals and key cities of Europe for a year. He saw firsthand the results that Radio Free Europe is achieving. Wherever he went, he was followed by Communist radio and press bleatings about "Miller, the bloody representative of the American oil capitalists." Coming from Moscow, the Admiral considers that one of the nicest compliments ever paid him. It also is a testimonial to RFE's success in harassing the Soviets and their henchmen.

The effectiveness of RFE is exhibited another way. It has been estimated that RFE renders at least 12 Red Army divisions hors de combat. In other words, the Soviets must deploy that many more divisions as garrison troops to keep check on restive populations than would ordinarily be required to do the job.

Does RFE really get through to the captive people? "Min" Miller can tell you about that, too. One bit of proof is that the Soviets spend about $100 million a year—many times as much as it costs to operate RFE –in conducting the world's greatest "jam session" over the airways of Central and Eastern Europe. But more direct proof comes from the thousands of escapees who make their way into friendly hands. Without Radio Free Europe, they agree unanimously, the spirit of the captive people might have been broken long ago.

Despite the millions it spends in trying to jam the

RFE broadcasts, the Soviets have not been able to stop the flow of truth across the Iron Curtain. Radio Free Europe maintains 26 short- and medium-wave transmitters in Western Germany and Portugal. Each can be used on a different wave length. By using specially designed directional antennas, RFE is able to put signals of over one million watts into each of the satellite countries. Further, to insure being heard, RFE daily masses all its transmitters to each country for half-hour periods. This so-called saturation broadcasting is almost impossible to jam.

Mail smuggled past censorship, the Communists' own shrieks of protest, Red newspaper denunciations of RFE, and Red cabinet members' broadcasts "refuting" RFE's "truthcasts" – all these attest that Radio Free Europe programs are the most listened to and the most respected and believed of any behind the Iron Curtain. This fact, to put it mildly, has a most unnerving effect on the Kremlin and its puppet governments.

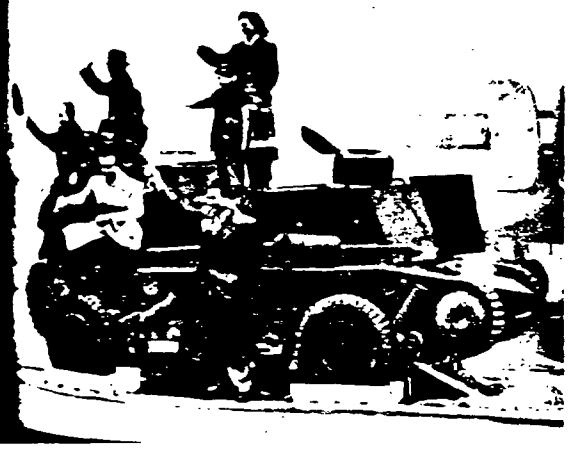
Red Faces Red

Imagine, for instance, the consternation in Soviet political circles when RFE scooped the Communists with news of Stalin's illness and death. Hours before the Reds got squared away on their party line about his passing, Radio Free Europe filled the air in saturation broadcasts with the news that "Stalin is dead! Your Communist oppressors no longer have a leader!"

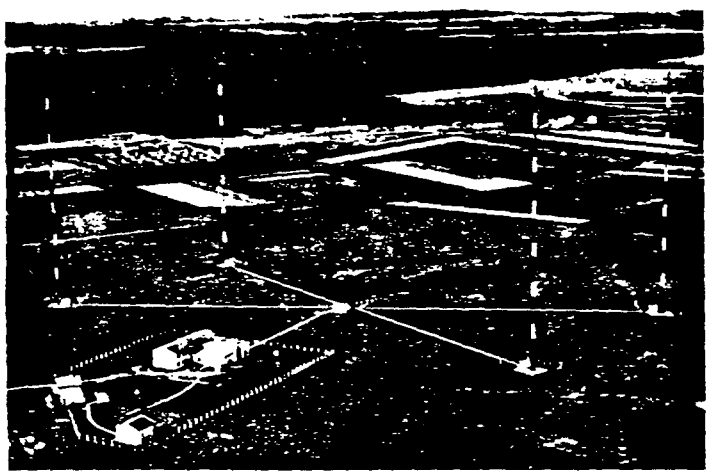
Picture, too, the stew that Red puppets in Poland found themselves in when they fell for an RFE-prepared plot. To set the trap, RFE aired fictitious statements by fictitious persons. Not daring to let the anti-Red statements go unchallenged, the Polish press "interviewed" the non-existent persons and published their "denials" of the RFE quotes. Red faces in high Red places were common when Radio Free Europe exposed the plot to its listeners in Poland.

Radio Free Europe was formed in 1949 as an

The Czechs who crashed the Iron Curtain in a homemade tank exemplify the ardor of Europe's oppressed millions.



RFE "truthcasts" help combat the hate-America campaign conducted by the Soviets in the satellite countries.



From powerful transmitters in Western Germany and Portugal, messages of hope are broadcast to captive people.

independent American enterprise by a committee of private citizens, and is financed by the contributions of American businesses and individuals. (Donations can be mailed to Crusade for Freedom, in care of local postmasters.) That is one big difference between RFE and the Voice of America, with which RFE often is confused on this side of the Atlantic. Voice of America is an official United States Government operation. It broadcasts to many countries, not just the Soviet satellites, and so can devote only a limited amount of time each day to any one country. For the most part, it tells about the wonders and glories of the United States.

Radio Free Europe, on the other hand, offers little information about the United States as such. Rather, it employs known and respected exiles and escapees from the target countries—writers, political leaders, entertainers, editors, etc. They speak to their fellow-countrymen not as propagandists for another nation but as free men talking to men who are determined to be free. To appreciate what this means, imagine for the moment that a Soviet-type dictatorship has been imposed upon the United States. Then imagine that there has sprung up in Canada a great radio station of Americans-in-exile. Suppose that men and women you knew and trusted—men and women like Dwight Eisenhower, Bing Crosby, Walter Reuther, Margaret Chase Smith—broadcast messages of hope and encouragement over that station. Would you listen to it and believe what they said? You bet you would!

To keep up with the news, RFE maintains 16 bureaus from Stockholm to Istanbul. Refugees fleeing to the West are interviewed almost as soon as they touch foot on free soil. They are questioned about living and working conditions back home — even on such fine points as bus schedules and the price of eggs. Further information is gleaned from the hundreds of Iron Curtain newspapers and publications that come RFE's way, and from monitoring broadcasts emanating from the Communists' own radio stations.

Two-way Squeeze

That is how Radio Free Europe is able to bring about a change in, say, the guards at the Czechoslovakia uranium mines. Calling guards by name on its broadcasts, RFE tells them that it knows how brutally they are treating the slave workers and that unless they change their ways they will "never escape trial and punishment when liberation comes." The guards are caught in a two-way squeeze. They know that with at least 80 percent of the people in Iron Curtain countries still strongly anti-Communist (most authorities agree on this), liberation surely will come one day. More immediately they fear what the Communists call a "show trial." The Reds stage such demonstrations every now and then to ease public censure. The idea is to show that the guards, in acting so brutally, had violated orders; that the Communists never wanted the people abused or exploited. Usual results of the show trials are dismissal of the "disobedient" guards and a general bettering of conditions at the labor camp.

When such miracles as this can be accomplished in the eyes of captive people, it is little wonder that citizens of the satellite nations tell RFE "You give us hope . . . the Reds are jumpy . . . you spark our will to resist . . . keep it up." RFE intends to do just that. It will not only "keep it up," but plans in the days ahead to expand its coverage through more hours of broadcasting and more and stronger transmitters.

In more ways than one, Radio Free Europe definitely is on the beam. #

TEL REFINERY TOOL

By Christopher C. Vogel

TETRAETHYL LEAD so often is thought of purely in terms of obtaining gasoline antiknock quality that its corollary role in refining operations is sometimes overlooked. Tetraethyl lead is a refinery tool. Indeed, considering the fact that it is found in over 95 percent of all motor and aviation gasolines, tetraethyl lead is one of the most widely used refining tools.

If TEL's value as a refinery tool could be summed up in one word, that word would be "flexibility"—flexibility in operating a refinery, flexibility in meeting competition and the public's changing octane requirements, flexibility in planning for the future.

Considering TEL's primary role, refiners know as a general rule that TEL is the most efficient and economical means of obtaining antiknock quality under most trying circumstances. Up to 3 cc. of TEL per gallon is used in motor fuel. In many cases, this maximum use level is also the most efficient use level. Even where the economics of a given refinery dictate that TEL use be held a little below the maximum, the refiner always has at hand, at no capital expense, an octane improvement method about which he knows the exact economics. And no doubt arises from such unknowns as operating costs, yields and maintenance.

TEL helps refiners to capitalize on the important premium gasoline market in two ways. It makes it possible to increase the production of a premium of a given octane number. It also permits a premium fuel of higher octane number to be produced.

TEL, moreover, permits the optimum production of both premium and regular. A refiner can take maximum advantage of interchanging fuel components between grades, diverting high quality materials to the premium grade and regaining the octane quality thus lost in regular by adding TEL. The same flexibility helps a refiner to produce aviation gasoline—and still keep his motor fuel market. TEL thus is a key blending tool.

At the same time, TEL helps to overcome occasional fluctuations in antiknock quality at refineries, and thereby maintains uniform quality. The flexibility of TEL permits refiners to use as much—or as little—TEL as is actually required to maintain that product uniformity.

By increasing the flexibility of gasoline production, TEL helps to increase the flexibility of refinery opera-

TEL provides much of the flexibility required in round-the-clock refinery operations.

tions throughout the year. As gasoline fractions go into heating oil, as heating oil fractions go into gasoline, the leverage of TEL helps refiners to achieve the desired distribution of products season by season.

In the summer, for example, some refiners must charge more gas oil than their crackers can handle. As a result, the surplus is cracked in thermal equipment. The resulting thermal naphtha is frequently so low in octane number that, considered alone, it cannot be improved to marketable quality. But by adding it to their gasoline pools—and increasing the TEL content—the refiners are able to market this naphtha and also meet peak demands. The same situation holds true for marginal straight-run naphtha.

TEL also helps refiners adjust to fluctuations in fuel oil demand. Consider a refiner who has to charge more crude oil in order to meet a seasonal heating oil demand, and yet has only limited marginal capacity in which to process the crude. The low octane gasoline produced from such crude would in all probability be unmarketable, except for TEL.

On the other hand, consider a situation where crude costs are high and the demand for distillates is low. In this situation, refiners want as much gasoline—and as little middle distillates—as possible. By using TEL, they are able to cut down on yield-reducing gasoline improvement processes and at the same time minimize the production of lower-priced heavier fuel byproducts from costly crude.

Besides helping to overcome fluctuations in demand, TEL also helps to make certain needed processes possible. A good example of this is seen in heavy fuel oil, which has been a marked problem in some areas.

Coking Processes

Unable to dispose of their residual fuel oil completely, a growing number of refiners have been turning to coking processes which convert the heavy fuel oil into gas, gasoline and coke. As it happens, gasoline produced by thermal coking is inferior in octane number. By pooling this gasoline with their other stocks—and adding TEL—refiners are able to market the fuel. Accordingly, coking operations become feasible.

As a refinery tool, one of TEL's most important benefits to refiners relates to long-term marketing plans. Refiners are constantly looking ahead to the future, gauging the quantity and the quality of the products they will be called upon to produce. With TEL, they have flexibility and latitude in projecting future improvements and additions to capacity.

For example, suppose a refiner has scheduled new

TEL helps refiners to capitalize on the premium gasoline market by enabling them to increase premium production and raise octane number readily.

The fle
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During wars and periods of national emergency, TEL helps provide increased quantities of high-quality gasoline for military as well as civilian use.

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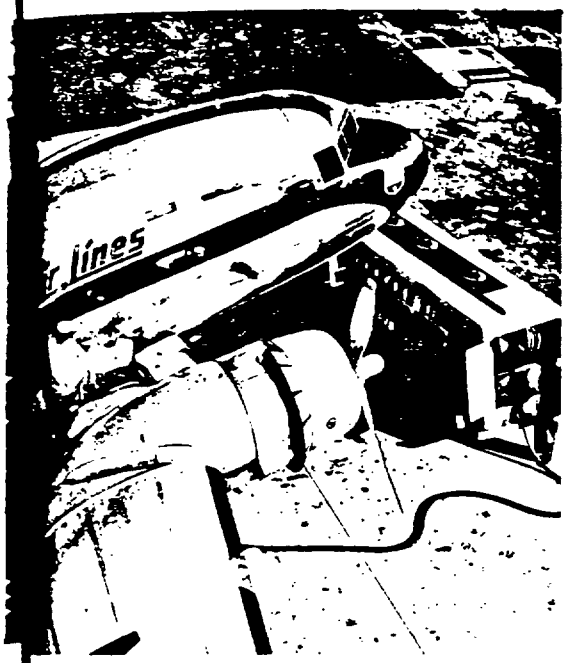


The flexibility provided by TEL makes it possible for refiners to produce aviation gasoline and at the same time continue to manufacture motor fuels.

Low-octane gasoline produced by refiners striving to meet seasonal heating oil demands can be upgraded to marketable quality by the use of TEL.

octane improvement facilities during the next five years. New plants aren't built overnight, and making the completion date of a new unit coincide exactly with market demands is almost impossible. With TEL, however, a refiner can either defer the start of new construction, or miss its completion date, by as much as a year or more.

In the same sense, a refiner may be planning an expansion in plant facilities – and may meanwhile be studying one or more experimental processes under development. Here, too, TEL gives him time – time to complete his development work, compare his experimental process with present commercial processes, and determine which process is best suited to his needs.

Guard against Overbuilding

Once again, it is to the refiner's best interest to build new equipment only to the extent economically justified, thereby minimizing outlays of capital. With TEL, he can guard against overbuilding by using TEL for incremental quality improvement should his installed capacity at any time be inadequate.

These, then, are some of the practical considerations which guide refiners in their day-to-day use of TEL. During war or periods of national emergency, TEL does double duty–giving the final lift in antiknock quality to high octane materials diverted from motor to aviation gasoline and offsetting the loss of the high octane gasoline fractions taken out of civilian fuels.

As can be seen, then, TEL plays a real and vital role in the operations of any refinery. How big a role that is can be seen in one fact: If all the motor gasolines produced in the United States were pooled together, their average octane number would be 88 at present levels of TEL usage. But without TEL, that average octane number would drop to 76. In terms of regular and premium gasoline, the average motor fuel, without TEL, would drop from 86 to 73 octane number for regular and from 93 to 84 for premium.

It is some 31 years since tetraethyl lead was first introduced in gasoline. One of the remarkable things about TEL is how it has enhanced each advance in refining technology during this period. For as each major process has come along, TEL has continued to step in and make good gasoline better. Reflecting its increasing value, the oil industry uses more TEL today than ever before, twice as much, in fact, as only six years ago.

Today, as when it was first introduced, TEL enables the oil industry to produce the most efficient gasolines, to conserve crude petroleum, and to achieve other worthwhile economic benefits. In so doing, TEL stands as one of the industry's most useful refinery tools. #

A NEW ETHYL PROGRAM WILL HELP SERVICE STATION DEALERS HIRE

For Better Sales a

OBVIOUS, even to the most casual observer, is the great transformation that has taken place in retail gasoline outlets in the last few decades. Simple *filling* stations where "gas, oil and water" once were dispensed to a relatively few intrepid car owners long since have given way to complete modern *service* stations that supply the needs of America's 50 million motorists.

A number of factors, of course, have contributed to the great change. But heading the list are men—the men who own, operate and staff the stations. It is these men —dealers and attendants—who, by their constant attention to duty and their eagerness to help have established a universal reputation for service.

Oil companies, large and small, are justifiably proud of this enviable reputation of their retail outlets. As a part of their efforts to continue the service and increase the sales of their products, the marketing departments of many companies are stepping up their efforts to help dealers select and train good, steady, reliable attendants —a problem that has become more acute recently.

Always anxious to serve better its customer oil companies, Ethyl Corporation has followed with a great deal of interest the oil industry's efforts in this direction. Knowing how vitally the service station personnel problem affects the entire industry, Ethyl conducted a far-reaching survey in an effort to shed some light on the causes of the problem and to develop workable solutions. When it became apparent that the problem was one in which it could be of service, Ethyl formulated the recently announced nationwide program to supplement the efforts of the oil industry in attracting and holding high caliber service station attendants.

The Ethyl program, which is concerned with recruiting and training employees, is designed to assist the industry in building and maintaining a better and more stable service station force. It is intended to help dealers recruit capable personnel and help their employees become better salesmen for the products at the stations.

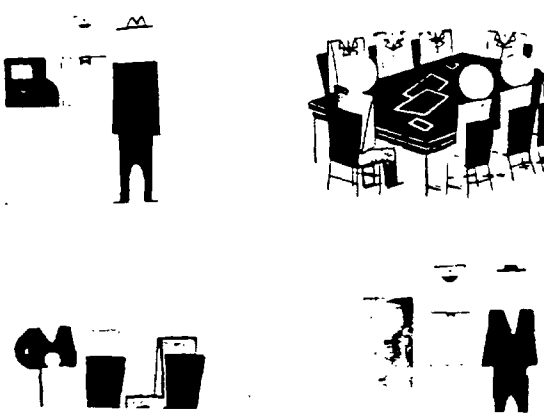
Ethyl's first step was to talk with a number of people who have an interest in, and a knowledge of the recruiting and training of service station personnel. Then followed the survey in which nearly 5,000 representative dealers throughout the country were queried.

Survey Findings

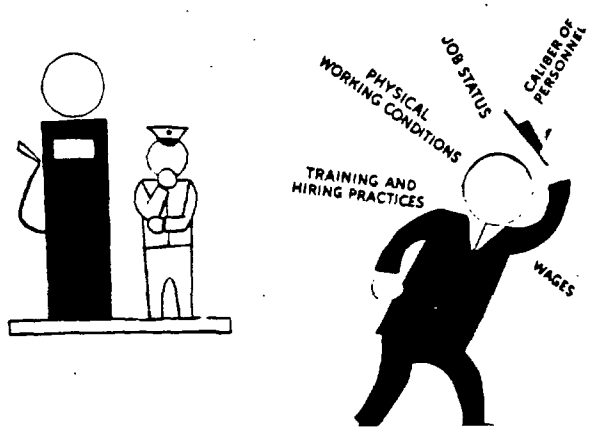
The survey pointed up the fact that while dealers themselves are enthusiastic about the service station business, fully half of them find that it is difficult to hire competent men, either part-time or full-time. Less than 50 percent of their employees have been with them longer than one year, they report. Moreover, of the 4,562 interviewed, 2,917 stated that they had lost attendants during the year. Nearly half of the men who left did so because they were "unsatisfactory."

As far as the dealer is concerned, high turnover can be very costly, due to inexperienced help during the break-in period and the cost of training a continuous

Ethyl's first step was to talk to people familiar with the service station personnel problem.

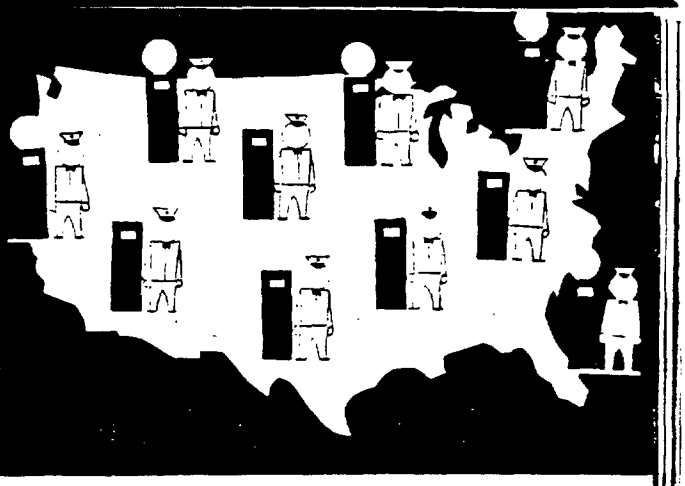


From surveys and other sources it was developed that a number of factors influence employee turnover.



LERSHIRE AND TRAIN ATTENDANTS...

es and Service



The Ethyl survey reached nearly 5,000 dealers.

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line of new men. From the viewpoint of the oil company, aside from the loss of product sales, there is the problem of having a reservoir of good material from which to select new dealers.

Equally important is the effect on the public, which has been educated to expect prompt, courteous, efficient service. Motorists are quick to criticize service which does not measure up to these high standards. Further, since the man at the pump is the average citizen's only contact with the oil industry, the attendant's performance is important from a public relations standpoint.

Since the oil industry believes that the service station business is equal to or better than other lines of work on the basis of income, working conditions, enjoyment, security, opportunity and return on investment, it is felt that an effective information and recruiting program can help attract larger numbers of potentially capable attendants.

A feature of the recruitment portion of Ethyl's program will be a new motion picture intended to create a desire among young men to enter the service station field. Available for showing to business groups, schools, and dealer organizations, it will stress the opportunities the work offers. For the dealer, the film re-emphasizes the importance of his business, portrays those qualities he should seek in a job applicant and shows him how to interview and select candidates for jobs at his station.

In addition, there will be a booklet for distribution to those who are wondering what line of work to enter.

Another feature will be a recruitment kit for the service station dealer, which will tell him where to recruit, how to hire, and what to do with new employees. It also will include interview questionnaires for the dealer to use, and other practical aids.

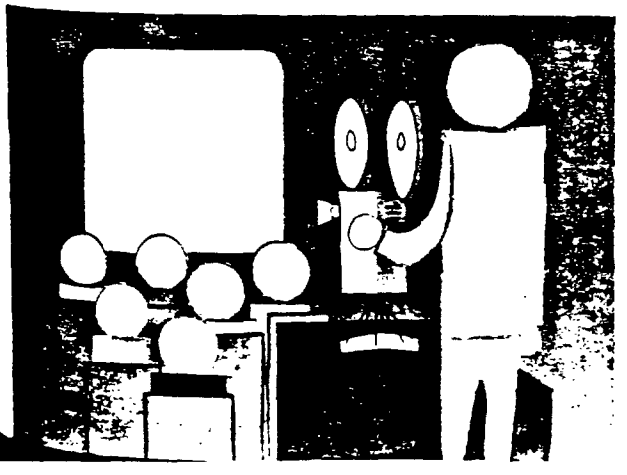
Advertising Campaign

The motion picture, the booklet and the dealer kit will be ready for oil company use by the latter part of August. They will be followed, in the fall, by an advertising campaign, directed to students, to interest them in service station work.

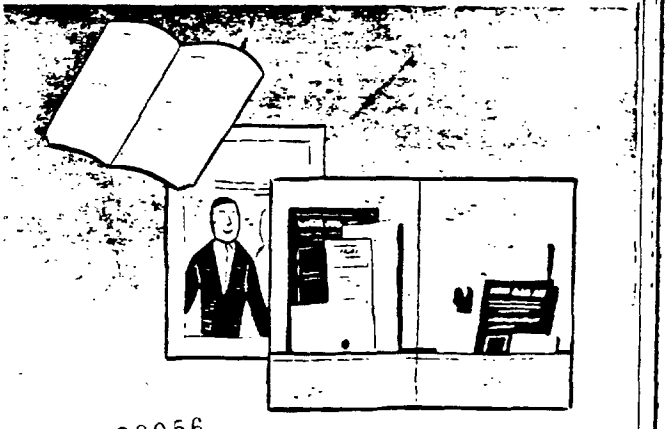
The training phase of the program will emphasize product information. Based on Ethyl's wide experience in educational and training programs with scores of oil companies, it will help instill in service station employees a new appreciation of the products they sell.

Plans call for the recruiting and training program to be carried on cooperatively with Ethyl's customer oil companies, which in turn will take it to their dealers. By working along these lines, Ethyl hopes to assist oil companies and their dealers in improving the effectiveness of their service station attendants. #

A feature of the new program will be a motion picture pointing up the advantages of service station work.

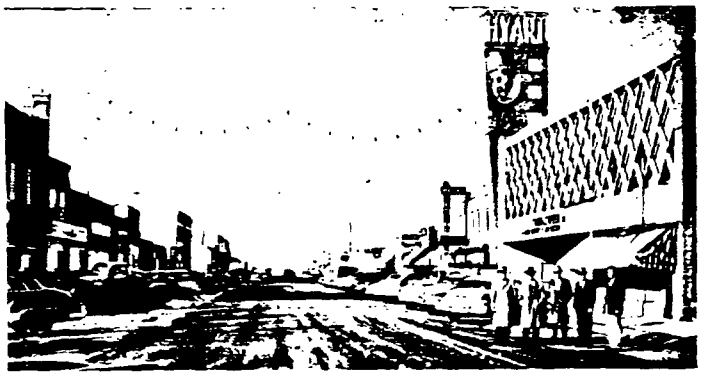


A booklet and recruitment kit for dealers will be included in the supply of materials.



REFINING TO

PETROLEUM and its products have become so woven into the fabric of life in America that in towns and cities throughout the country evidence not only of their use but also of their manufacture has become more and more commonplace. The term "refining town" no longer means only such giants as Philadelphia, Bayonne, Port Arthur, Houston, Long Beach and Bakersfield. Today the skeletal steel of refinery towers and the smooth roundness of storage tanks punctuate the skyline in some 36 of the 48 states. Scores of small towns are the homes of refineries which together are helping to satisfy the nation's seemingly insatiable appetite for oil. Pictured on these pages are scenes from a few of the many smaller communities that are a part of "Refining Town, U.S.A." #



LOVELL, WYO., on the Shoshone River, near the Montana border, is the site of an Ohio Oil Company refinery.

Looking west on Broadway, the main business street in DRUMRIGHT, OKLA., where Tide Water Associated operates a refinery.

Two petroleum processing plants, those of Leonard and Mid-West refineries, are located in ALMA, MICH.

TOWN, U.S.A.

The 78-year-old courthouse is a landmark in WARREN, PA., where the offices and manufacturing facilities of United Refining are located.

The facilities of Continental Oil and New Mexico Asphalt & Refining in ARTESIA, N. M., produce about 80 percent of the gasoline consumed in that state.

The David A. Howe public library and community center building in WELLSVILLE, N. Y., site of a Sinclair refinery.

One of the country's northernmost refining towns is SUNBURST, MONT., where The Texas Company operates oil processing facilities.

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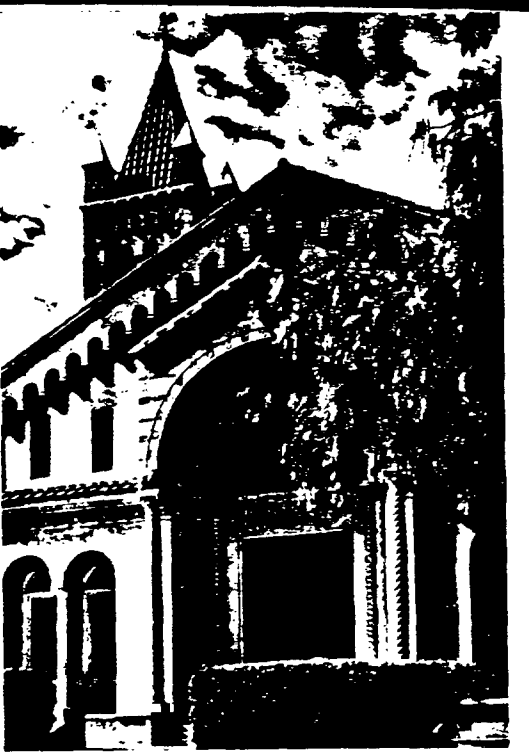
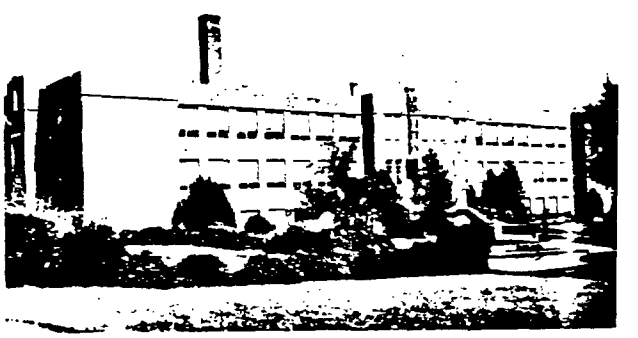
REFINING TOWN, U.S.A.



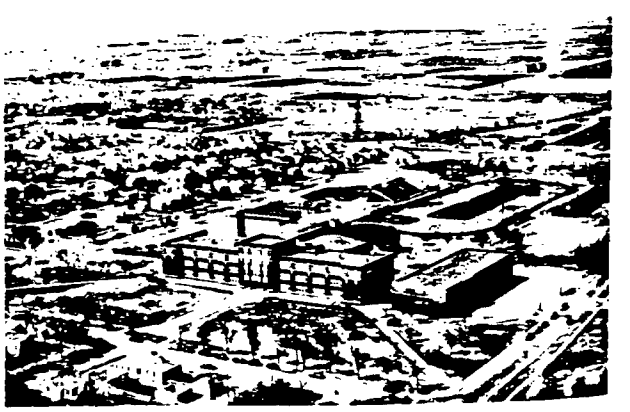
Santa Maria Union High School and Junior College in SANTA MARIA, CALIF., where Sunray Oil, Douglas Oil and Western Asphalt & Refining manufacture oil products.

The offices and refinery of Cosden Petroleum in BIG SPRING, TEXAS, make this county seat of Howard County an oil town.

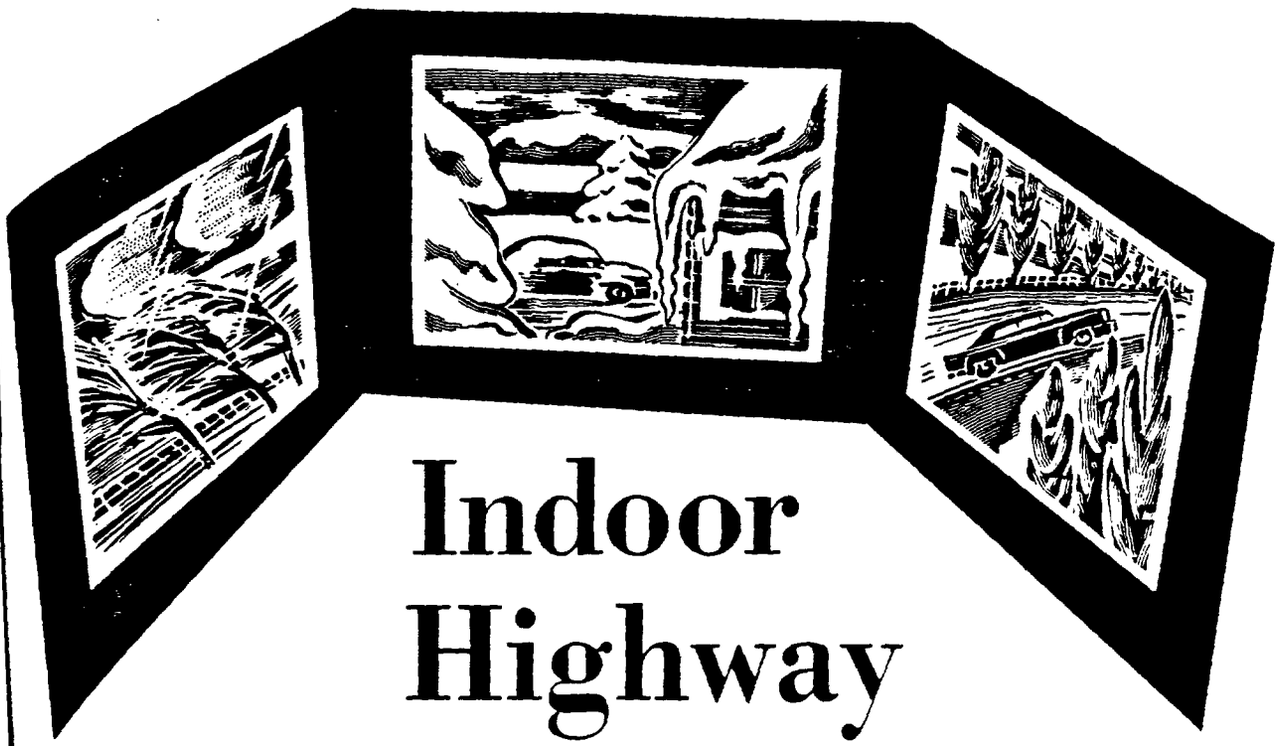
The Jefferson Davis parish courthouse in JENNINGS, LA., "Cradle of Louisiana Oil" and site of Evangeline Refining's refinery and a Stanolind recycling plant.



MOUNT VERNON, IND., on the Ohio River in the southwestern corner of the state, boasts this spacious high school and the refinery of the Indiana Farm Bureau Cooperative.



Another river refinery town with an imposing school building is SCOTTSBLUFF, NEB., on the North Platte, site of a Cooperative Refinery Association plant.



Indoor Highway

MOTOR VEHICLES traveling a new highway to be completed in Southern California next spring will encounter frigid temperatures ranging as low as zero, it can be reliably predicted even at this early date. The freak weather—for that usually balmy section of the country—will not be the result of any eclipse, solstice or other celestial phenomenon, however.

The vehicles being subjected to the freezing blasts—and to temperatures as high as 120°—will be traveling a special "indoor highway" to be constructed at Ethyl Corporation's research laboratory at San Bernardino for automotive fuel and engine studies.

The fingertip availability of such extremes of weather, and of any desired temperatures between, is one of the chief advantages of new testing facilities which will be housed in a new wing extension to be added to the Ethyl laboratory's main building.

Chassis Dynamometer

Heart of the new equipment will be a "controlled weather" chassis dynamometer setup, a power absorption device which will permit the rear wheels of vehicles being tested to rest on rollers so that they can be operated indoors under actual driving conditions. Thus "road" knock rating work can be carried on at any time without interference from traffic, inclement weather, or other complications which often delay such studies on the open highway.

Modeled after similar equipment at Ethyl's main research laboratories in Detroit, the new installation at San Bernardino is the end result of more than 25 years of design, construction, and use of chassis dynamometers for the precise evaluation of gasoline quality.

The pin-point accuracy required in knock rating gasolines in vehicles necessitates a controlled environment and climate that may be reproduced day after day. This the indoor highway provides in full measure.

Artificial Weather

Here, practically regardless of the outside weather, octane number requirements of vehicles and the road octane numbers of gasolines can be accurately measured under standardized conditions of temperature, humidity, road gradient and wind velocity. Furthermore, a given set of weather conditions can be exactly reproduced at a later date, thus allowing comparisons of newer cars and gasoline stocks with older ones.

The range of temperatures, altitudes, and road gradients in the vicinity of the San Bernardino laboratory creates vehicle operating conditions that are representative of most areas of the United States and, therefore, are utilized extensively for durability and endurance testing. But since Southern California does not generally experience naturally cold weather, the new indoor equipment at San Bernardino is expected, in addition to its other advantages, to prove especially valuable in cold starting and engine warm-up studies, and tests having to do with carburetor icing. #

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The Screen's the Thing

Drive-in movies and TV are helping to sell more premium gasoline

MAIN STREET TRAFFIC in the small Iowa town never had been much of a problem before, but it certainly was that night 40 years ago. A crowd of people had overflowed the sidewalk and was standing in the street. Horses and buggies were stopped, streetcars halted, and the few automobiles in town backed up for a couple of blocks.

Before the local one-man police force reached the center of the throng, he had spotted the cause of the jam. It was the Alexander boys and some newfangled idea of theirs.

On one side of the street, above the family shoe store, they had stretched several bed sheets. On the other, they were using an old stereopticon machine to project animated slides on the makeshift screen. Interspersed among the pictorial slides were advertising messages bearing the sponsor's name.

Thus, the annals of advertising history record, was born the outdoor movie theater and motion picture advertising—media of entertainment and advertising that today are reaching new heights of popularity and effectiveness.

The fact that outdoor screen showings were pioneered four decades ago may come as news to those who have viewed their emergence, along with that of television, as the two great post-war phenomena of the entertainment world. But while the birth took place that long ago, most of the growth of drive-in theaters has come in the last few years.

Before World War II, there were but a few roadside theaters scattered across the country. As late as 1947, with building restrictions relaxed and automobile travel in full swing, there were less than 1,000 of the new fresh-air movie "houses." This year, however, industry surveys reveal, more than 4,500 drive-in theaters are showing Hollywood creations to enthusiastic patrons. And the end is not in sight.

What's responsible for the great boom in outdoor entertainment and what kind of an audience is it that is attracted to "through-the-windshield" viewing of motion pictures? Most of the answer to this twofold question is found in one word: Families.

Increases in family attendance which have been in evidence for the last several years will continue this year. It has been predicted that family groups will make up 70 percent of drive-in theater audiences in 1954.

Answer a Need

Drive-ins are popular because they have answered a need for the young families of America. They solve the baby sitter and the parking problem, for they eliminate both. Parents can go out for an evening's entertainment while the youngsters sleep in the back seat. They can go dressed in their shorts or slacks, and even take a sandwich, if they want. These and other conveniences help explain why drive-in theaters today account for 20 percent of the nation's total box office receipts.

While the drive-in theater has come into its own only recently, motion picture advertising, the other product of that small-town Iowa experiment of 40 years ago, has been helping to sell the products of some of the country's leading manufacturers for some 35 years.

Two of the most popular entertainment media of the post-war era carry Ethyl's gasoline sales message to millions.

Long before their distribution was expanded to include the outdoor movie-goer, commercial films were in wide use in conventional theaters.

Taking advantage of film advertising—before the big new drive-in theater audience—Ethyl Corporation is a leading user of such films, or Minute Movies, as a part of its effort to help oil companies increase their premium gasoline sales during the peak driving months. Over the last several years, Ethyl has found that spectators at drive-in theaters are an ideal audience for a gasoline sales message. As motorists seated right in their own automobiles, they are receptive to an explanation about the difference top-quality gasoline can make in their car's performance. Surveys conducted at service stations in areas where these messages are presented at drive-in theaters disclose that many of the

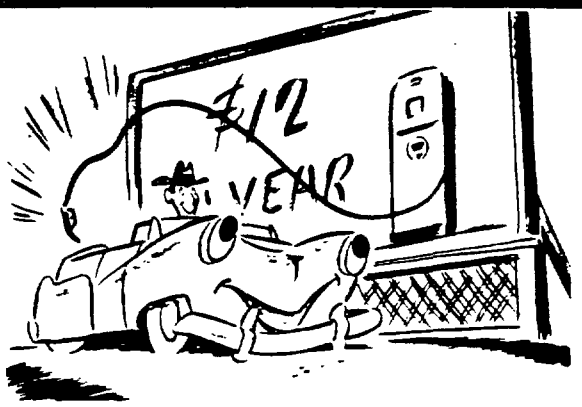
Jimmy Powers, nationally known sportscaster, emcees the popular television program, "The Big Playback."

premium gasoline sales can be traced directly to the Ethyl Minute Movies.

In Ethyl's expanded summertime advertising, premium gasoline movies are this year being shown at over 350 drive-in theaters in 16 states for a period of 20 weeks. These theaters have an average weekly audience of approximately 2,000,000.

While the drive-in theater advertising is reaching a predominantly rural audience, Ethyl's 1954 television advertising is being seen by car owners in urban areas. Planned for a 26-week period, the TV series features, for the second year, the popular sports program, "The Big Playback." Launched in most areas in May, this fast-moving entertainment is now completely under way and is being seen weekly over 45 television stations with a potential coverage of 13.2 million TV sets.

Featuring Jimmy Powers, nationally known sportscaster, "The Big Playback" appeals especially to men,



Entertaining and at the same time hard-selling commercials are featured on TV and at drive-in theaters.

who, surveys show, influence most retail gasoline sales. It brings back on the screen thrilling moments in sports history. Outstanding episodes in baseball, football, boxing, track, racing, and other more unusual sports are recreated. The Max Baer-"Kingfish" Levinsky slugfest is shown; the Ohio State-Notre Dame gridiron battle of 1935 is replayed; Count Fleet is pictured winning the 1943 Kentucky Derby; and Babe Ruth's farewell appearance at Yankee Stadium is re-enacted.

Guest Stars

Too, on each show, a well-known sports figure appears as Jimmy Powers' guest and gives TV audiences the authentic story behind some of their outstanding exploits. Helen Jacobs of tennis fame, the Brooklyn Dodgers' Jackie Robinson, Wilbur Shaw of automobile racing, and the illustrious "Four Horsemen" of Notre Dame are a few of those appearing.

To help promote the premium gasoline sales of Ethyl's customer oil companies, both the drive-in theater Minute Movies and TV programs use entertaining and at the same time hard-selling commercials featuring the talented artist Tex Antoine. Taking a serious subject like knock, Antoine makes it easy to understand and fun to watch. He presents a compelling reason for buying the best gasoline—all with a few deft strokes of his pencil and a brief, convincing message.

In addition, the TV series includes messages from Jimmy Powers himself. Some of these concentrate on the added value of "Ethyl" gasoline, while others are designed to supplement the oil industry's public relations program. The latter are devoted to such subjects as safe driving and the bargain a motorist gets every time he buys a gallon of gasoline.

Thus, during the peak driving months, Ethyl Corporation is using the two most popular new types of entertainment—television and drive-in movies—to supplement the efforts of individual oil companies in telling of the advantages of top-quality gasoline. #

Each year more than 1.5 billion collective Americans clamber into motor cars not their own and pay (on the average) between 50 cents and a dollar to be taxied to destinations usually a mile or two away.

If not the backbone of the nation's urban transportation system, taxicabs are one of the main vertebrae. At last count, there were just about as many taxis in operation throughout the country as city buses, street cars, trolley coaches and rapid transit units combined. While all but the trolley coaches carry more passengers in the average year, the taxicab is the leader far and away in miles traveled. The latest figures available show that in 1953 the nation's taxicab fleet covered a total of more than 4.8 billion miles.

What the taxicab has in its favor over other means of public transport is that the passenger may select his starting point, route and destination. You can't, for instance, board a bus or street car at just any corner and tell the driver which way to go in reaching your destination, which, in turn, may be blocks off the regular route. But you can hop into a cab wherever you happen to be and get driven to Jones and Smith Streets by way of Green Boulevard, if that's the way you happen to prefer to travel at the moment.

See No Decline

It is this fact that is expected to maintain taxicab usage, in terms of passengers, at its present level. The number of people carried by each of the five principal means of urban transportation has fallen off each year since the peaks were reached in the 1946-48 period. But, relying on the "choose your origin, route and destination" advantage, the taxicab industry feels that it will continue to carry about 1.5 billion passengers in a normal year.

The big-city pedestrian who has tried unsuccessfully to hail a cab during a sudden shower or a rush hour might consider this incredible, but taxis in the United States now number about 76,500. Not included in that total are the so-called livery cars and cabs that are operated by individual owners. If they are counted, the taxicab total jumps to over 100,000.

As might be expected, the most taxicabs—some 12,000 of them—are based in New York City. Then, perhaps not as expected, comes Washington, D.C., with 9,000 units on the streets. Chicago and Philadel-

There are more than 100,000 vehicles that could answer the call when people who want to go places hail a...

"TAXI"

ETC 29063

phia are the only other cities with more than 2,000 taxicabs in operation. New Orleans, our 16th city in population, is a surprising fifth in number of cabs.

Specifications for taxicabs vary from city to city. New York's are the strictest of all. For instance, New York does not allow the use of luggage trunks. Cabs must be equipped so the vehicle trunk cannot be opened. Also, alone among the major cities except San Francisco, New York traditionally has not allowed front seat passengers and has insisted upon a partition between the driver and the rear seat. That partition marks the difference—in the trade, at least—between a taxicab and a limousine. The latter has a full front seat, allowing two passengers to ride beside the driver, and the front and back seats are not necessarily separated by a partition.

A local law soon to become effective in New York City permits any standard four-door five-passenger automobile to serve as a taxicab on city streets. No longer is the partition necessary and passengers may occupy the front seat next to the operator. The effect of this ruling is to permit any regular United States stock automobile to be used as a taxicab provided it meets the other specifications.

Perhaps the most familiar of all large-city cabs is the Checker. This is the only vehicle built specifically as a taxicab. Checkers flow off a Kalamazoo, Mich., assembly line at a rate of eight vehicles an hour, or between 6,000 and 8,000 a year.

As much as they look very much alike at first glance, taxicabs and passenger cars have many different characteristics. For one thing, in taxicabs, styling takes a back seat to other more practical considerations, such as passenger headroom. Purpose-built cabs are heavier and sturdier than private cars, and those factors help account for the low maintenance and operating costs that are so essential to the profitable operation of a taxicab fleet.

But it is inside the vehicle that the significant taxicab improvements have been made in recent years. Notably, steering has been made easier through mechanical changes, and indications are that power steering soon will be offered as optional equipment on the new cabs. As for other modern extra items now being featured on automobiles, automatic transmission and air conditioning both are future taxicab possibilities.

In addition to easier steering, another major improvement in taxicab design and construction of late is increased driver comfort. Seats that can be positioned up and down as well as forward and backward now make it possible for drivers to be more comfortable than ever before during their long hours of sitting behind the steering wheel. Front and side vision have been improved, more front seat legroom has been provided, and better driver compartment cooling has been achieved.

The Big Problem

But the big problem of taxicab operation is not one that can be overcome through vehicle improvements. That is the problem of traffic congestion. Of all the methods of urban transport, the taxicab is the fastest and most direct way of taking people from where they are to exactly where they want to be over the route they want to travel. But like the motor bus and street car and trolley coach, the taxicab finds it more and more difficult to negotiate its trips expeditiously due to the choking number of vehicles on the streets of our towns and cities.

Basically the problem that every city of any size faces is to transport a great number of people into the center of the community in the morning and then move them quickly back to their homes in the outlying districts in the evening. The eventual solution to that problem, more than one authority thinks, lies in fuller use of public transportation, both the mass carriers and the ubiquitous taxicab. #

Exit the Horse

IT HASN'T quite reached the point where the sight of a horse cantering down the street causes youngsters to rush to their mothers' sides and gasp "What's that?" in tones of mingled incredulity and fear. Nor has *Equus caballus* been completely relegated to the zoo, the bridle path, and the celluloid film of western movies. But it's more and more obvious with each passing year that "the old gray mare ain't what she used to be."

One look at the roads and highways of the country and it's apparent that as a means of transportation, the horse has all but disappeared. The once-familiar taunt of "Get a horse!" that rang in the ears of early motorists is echoing back over the decades in another form to haunt the children of those who hurled it. In those rare instances where a horse and carriage ventures forth in the face of an ever-increasing stream of cars, trucks and buses, the rein-holder is admonished to "Get a car!"

Even on the farm, where Dobbin's demise has been more gradual, the trend is unmistakable. Whenever and wherever he looks up from the manger, the horse sees the handwriting on the barn wall. The prospects for the propagation of his breed are far from encouraging. A number of developments of recent months bear nothing but ominous news.

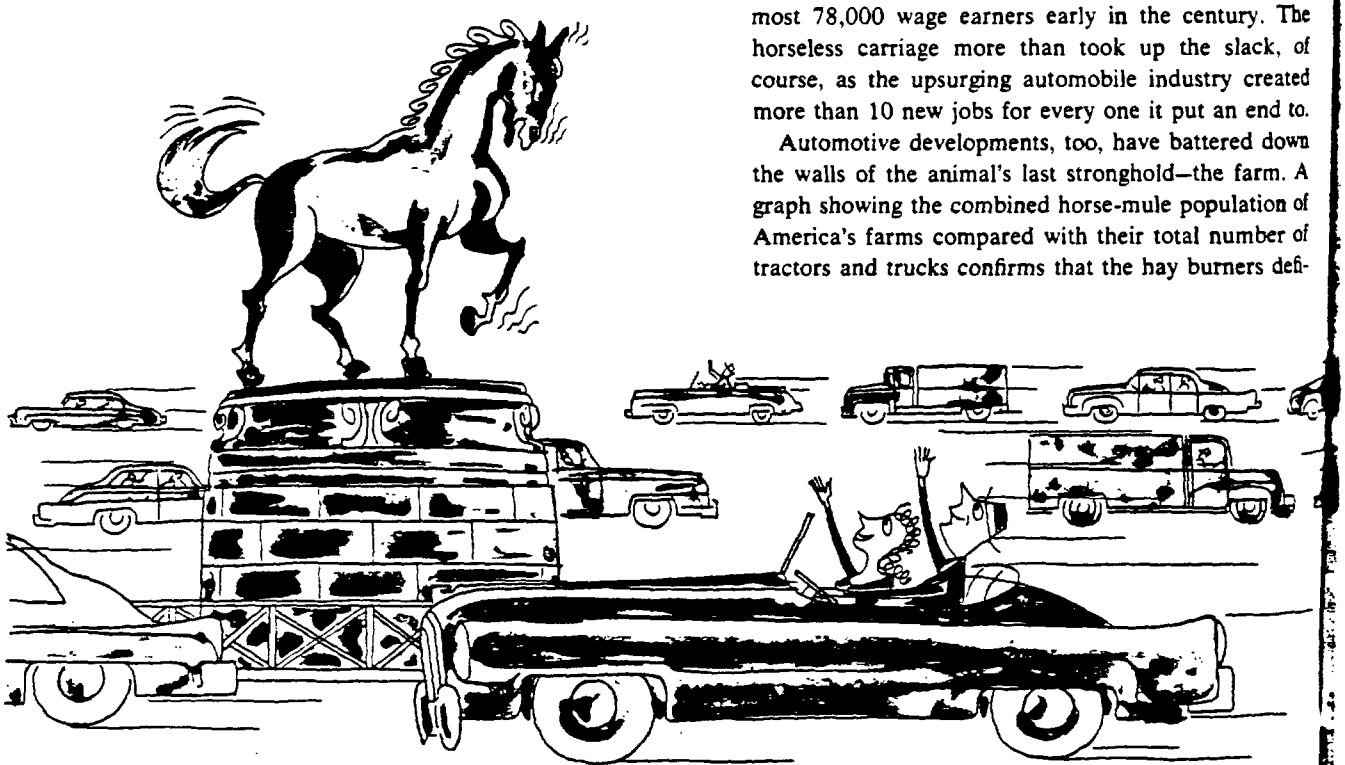
Among the signs of the times is the report that after enjoying 65 years of free rein, the Saddlery Manufacturers Association has finally called "Whoa!" to its activities and disbanded. Seems that membership had slipped to a mere 17 firms, and combined annual business had slowed from a $50-million-a-year gallop in 1910 to a $3-million walk in 1953.

Good-bye Gloves

Meanwhile, a Milwaukee glove-manufacturing concern, one of the oldest in the country, closed its doors with the observation that "Making gloves is a horse-and-buggy business." As glove-users, car owners are a flop, it develops. What do they do for cold hands? Why, just turn on the heater, of course.

And speaking of horse-and-buggy businesses, a census of manufacturers reveals that production of such horse-age vehicles as wagons, carriages, pushcarts, wheelbarrows and sleighs now employs little more than 4,000 workers. Quite a comedown from a peak of almost 78,000 wage earners early in the century. The horseless carriage more than took up the slack, of course, as the upsurging automobile industry created more than 10 new jobs for every one it put an end to.

Automotive developments, too, have battered down the walls of the animal's last stronghold—the farm. A graph showing the combined horse-mule population of America's farms compared with their total number of tractors and trucks confirms that the hay burners defi-



nitely are slipping while the gasoline burners are pulling ahead. For several years now, the truck-tractor population of the farms has exceeded that of the beasts of burden, and every year the gap is widening.

It was almost 20 years ago that Ethyl Corporation teamed up with petroleum and farm machinery engineers to develop the high-compression gasoline tractor. A whole new farm market came into being as American farmers by the thousands hitched their plows and their destinies to the tractor. That the exchange of organic for mechanical horsepower has been a profitable one is attested by the fact that while there are now fewer farm workers and the average farmer works fewer hours, total farm output is at an all-time high.

Even the county fair and that other farmers' field day, the plowing match, where with braided mane and tail and brightly colored trappings Dobbin once strutted his stuff, now bear evidence of his demise and that of his country cousin the mule. In Lansing, Mich., the State Agricultural Commission has announced that no longer will it offer prize money for fair horse-pulling contests. These exhibitions of equine strength apparently have lost all significance and provide "nothing but entertainment," the commissioners announced. "Our prize money must go to further the interests of agriculture, and it doesn't look as though horse-pulling contests do that any more."

Similarly, mechanization has killed off Mule Day in Paris, Tenn. This century-old celebration, where local politicians, youngsters, the Chamber of Commerce, and just about everyone else for miles around whooped it up in lively fashion, has been plowed under by the tractor. Seems there are only a few mules left in those parts, and those that do survive are much too old and feeble for such carryings-on.

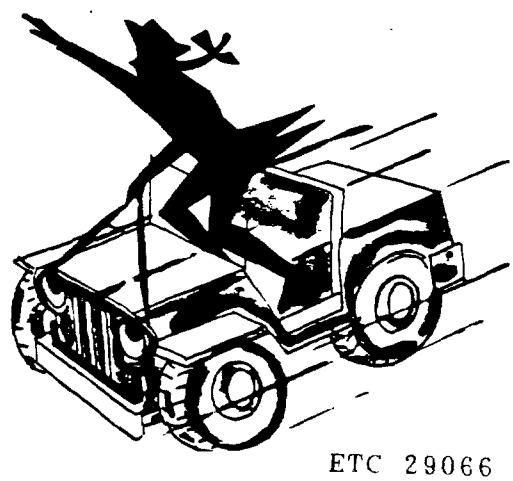
The International Plowing Match at Cobourg, Ontario, last fall, offered more evidence in the same direction. Hundreds of plowmen were entered in the more than 45 different classes of competition, but the hands of all but a few held steering wheels—not horse reins.

Retired from Service

In the United States Army, the caissons still go rolling along, but neither the horse nor the old army mule supplies the motive power. Everything is self-propelled or mechanized. An army horse population that totaled 325,000 during World War I had, by this year, all but disappeared. A nosebag count by the Quartermaster General in April turned up only 145 horses and 251 mules still on active duty.

And so it goes. On the streets and highways, on the farm, in the armed services, everywhere you look, the horse is becoming more and more a vanishing American. The animal that has played such an heroic part in world history is preserved more in statues and in memories than in usefulness in this automotive age.

The fact is, as an elder statesman of the horse family was heard to observe sadly recently, "If Paul Revere were to make his famous midnight ride tonight, he'd probably make it in a jeep." #



Knight Drivers

The day's work begins for a tonk truck driver at the loading rack where his vehicle takes on its cargo.

Tank trucks and the men who drive them have established outstandi cords fo

*By Franklin G. Wilson**

GEORGE was our car-pool driver the other morning. Traveling along a narrow, winding road, we drew up behind a gasoline tank truck—one of those big 4,500-gallon jobs. There was no chance to pass. George began to fidget.

"Take it easy," I counseled. "We've got plenty of time to get to work."

"I know, but I'm scared of that confounded truck," he grumbled. "Afraid it'll blow up."

"Oh come now," I kidded. "Did you ever hear of one blowing up?"

"W-e-l-l, not exactly. But I still feel uncomfortable."

George sighed with relief when the tank truck blinked for a turn down a side road. "Rolling bomb," he muttered, as he stepped on the gas when the highway was clear.

Tank trucks have had accidents, to be sure. So have baby buggies. So have people who slipped on a cake of soap in the bathtub. But over the years tank truck drivers have compiled an enviable safety record. The fire chief who got his name in the newspapers by referring to tank trucks as "rolling bombs" just didn't know his statistics.

In 1952, the record of 23,675 tank trucks was almost 417 million miles of travel, with only 1.63 reportable accidents per 100,000 miles. In other words, each truck was driven an average 61,350 miles before it suffered a mishap of any consequence.

The industry's outstanding vehicle record goes a long way toward explaining why the best means yet devised for transporting oil on the last and most important leg of its journey from well to consumer is the tank truck. If tank trucks were "rolling bombs," oil companies would be hard-pressed to find drivers for them, to say nothing of replacing wrecked vehicles and their valuable contents. The safety record is all the more impressive considering that tank truck drivers are on the road at times of heaviest traffic and in all kinds of weather.

Safety has greatly influenced the design of modern

Safety is the watchword on the highway . . .

*Director, Safety and Fire Protection Services, American Petroleum Institute.

Wayne Lacy, of Socony-Vacuum, demonstrates his successful fire-fighting technique to his fellow drivers.

...tandi...ords for safety and dependability

tank trucks. They are built of high-tensile steel. Their dome covers are equipped with automatic vents which make it next to impossible for the load to explode. In case of fire. the vents snap open and allow the vapors to escape and burn harmlessly above the tank. Modern trucks also are equipped, from stem to stern, with every other known device to make them ultra-safe.

Already noted is the fact that accidents involving tank trucks are few and far between. When mishaps do occur, the truck's cargo seldom spills or burns. If fire does break out, it usually is brought under control quickly, often by the operator himself or a fellow-driver. Oil company drivers are fully trained and properly equipped as first-class fire fighters.

Detroit witnessed vivid proof of these facts one September day a couple of years ago.

Wayne "Red" Lacy, who mans a tractor and tank truck train for Socony-Vacuum Oil, was flagged down while making deliveries in the Detroit suburbs. Up ahead, another tank truck had caught fire and its driver had been injured.

Lacy grabbed the dry-chemical extinguisher from his truck and ran to the scene. From his company training, he knew two things that were important to know at the moment: there was little danger of the truck exploding; and exactly how his extinguisher worked and what it could do. Shielding his face from the intense heat, Lacy climbed into a position where he could attack the flames that were shooting up above the dome covers. One shot from his extinguisher put the fire out.

Front Page Story

Red Lacy hurried back to his own truck before anyone had a chance to learn his name. But an alert newspaper reporter, who jotted down the license number of the truck, got in touch with the Socony-Vacuum people in Detroit. Result: a front page story about Lacy's heroism in which he proved that even should a modern tank truck catch fire there is virtually no chance of an explosion.

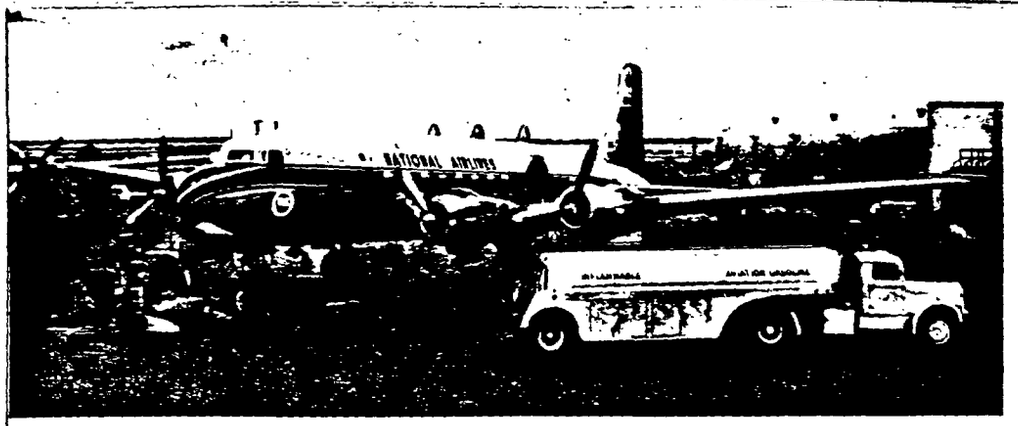
On other rare occasions when a tank truck is involved in a fire, the reporting often is more sensational and less accurate. Banner headlines and frightened whispers sometimes spread the myth that what is actually one of the safest vehicles on the road is a menace to the community. The result often is a flurry of protests to local governments and thoughtless proposals to restrict tank capacities.

Of course, all the safety precautions in the world can't protect a truck if it has a careless driver. That is why oil companies put their drivers through thorough training courses, including tests that would confound the average motorist. Every one of them must prove that he can think and act fast in an emergency.

Because tank drivers are professionals, they can maneuver their big vehicles with precision. Consider the

in making deliveries . . .

and at possible danger spots.



Tank trucks are the best means yet devised for transporting oil on the last and most important leg of its long journey from well to ultimate consumer.

actions of George Wagner, of the Ruan Terminal at Dubuque, Iowa. Late one afternoon he was moving up a long grade into a little Wisconsin town. Near the crest of the hill he saw in his rear-view mirror that a bakery truck was overtaking him at high speed. In the other direction, a line of five cars was about to meet him.

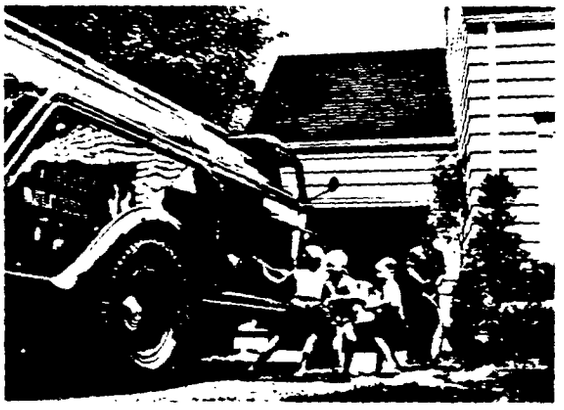
Just as the bakery truck started to pass, Wagner swerved his transport onto the highway shoulder and applied his brakes skillfully so as not to ram a culvert that might have upset his vehicle. The bakery truck managed to get back into its proper lane just in time.

Besides avoiding accidents themselves, oil truck drivers often render assistance to other travelers who have been less fortunate. Everyone almost certainly has at some time seen one of the big tanks parked at the roadside while the driver was helping a motorist.

Some mishaps might have had serious consequences without such alert assistance. Last year, for instance, Stanley Smithem, a driver for Union Oil of California, was en route to Marysville, Calif., when he came upon a parked but unattended lumber truck. A rear tire and part of the truck and cargo were in flames.

Smithem succeeded in putting out the flames with an extinguisher, but the tire continued to smolder. He ran back to his truck for a shovel and then heaped sand over the tire until the fire department arrived and quenched the burning rubber with floods of water.

With the increasing use of domestic oil burners, the tank truck driver has become a popular neighborhood figure.



Three Lives Saved

The fires which tank drivers help to put out are not always on the highway. On his fuel oil delivery route in North Philadelphia early one morning, Anthony Tulina, of Atlantic Refining, saw smoke belching from a store. Two terrified women were screaming from a second story window. A third was at an attic window.

Tulina cautioned the women not to jump and then rushed to the rear of the building where the fire seemed worst. He kicked open the locked back door and with the fire extinguisher from his truck directed a stream of chemicals into the blaze, keeping it in check until policemen came and led the women to safety.

There are today more than 150,000 tank truck drivers like Red Lacy, George Wagner, Stan Smithem and Tony Tulina wheeling their big units over the highways of the nation. Theirs is the important job of delivering essential oil products when and where they are needed. They do that work efficiently—and safely—because they know their jobs—from the ground up. ≠

A tank truck driver on night delivery in New York gives directions to a motorist near the United Nations building.

LAYOUTS AND ART DIRECTION: Carsten Grande.

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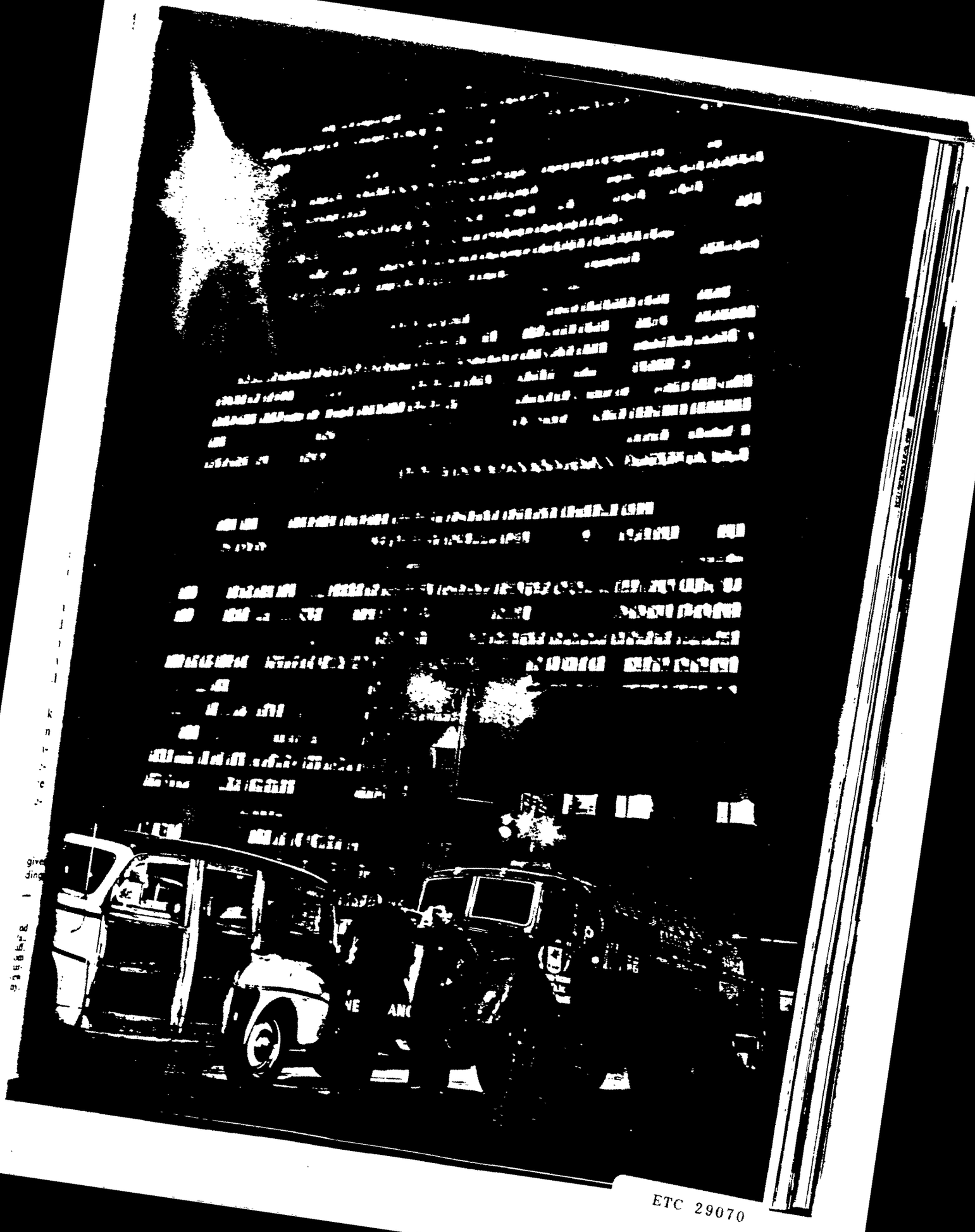


ETC 29070

TV in automobiles?

There are mighty few cars equipped with TV sets. In fact, in some states it's illegal for safety reasons to put a TV set in the front compartment.

But Ethyl has discovered how to bring TV commercials selling your best gasoline, right into the car. That is to show these commercials in drive-in theatres. Judging from the results, it's an excellent way to sell petroleum products.

During the past three summers, we used more than 500 drive-in theatres to supplement the coverage of our TV shows. Our minute movies reached an estimated weekly audience of 3,350,000 in 1953. But more important than coverage figures was the strength of the impression left with car owners.

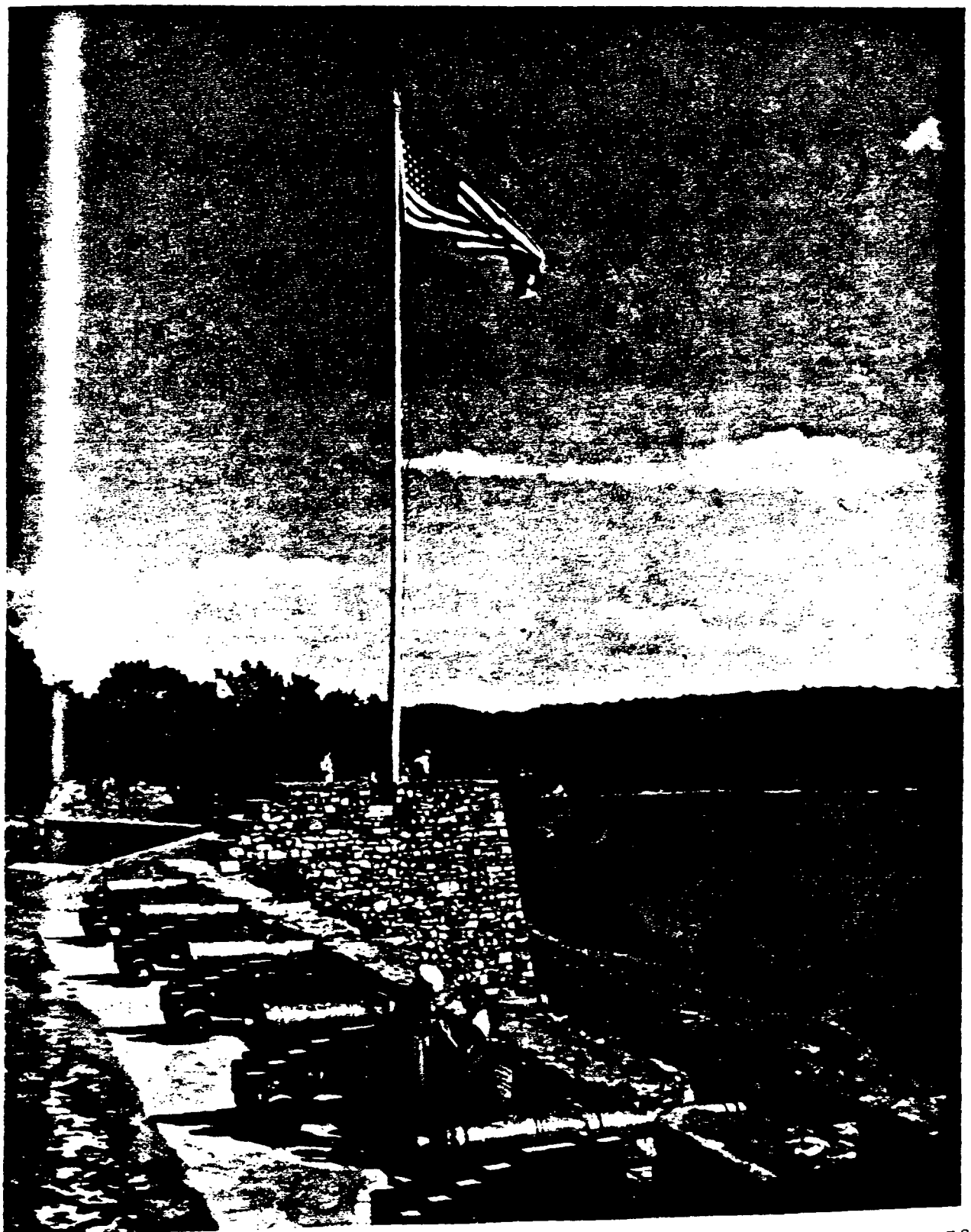
We checked with service-station operators within a reasonable driving range of individual theatres after the showing of our films. Again and again we were told premium sales had gone up and that many people mentioned having seen the Ethyl films.

In fact, these films proved so successful in influencing motorists outside the TV areas that we are including selected drive-in threatres in our 1954 advertising plans to help sell more "Ethyl" gasoline. We wondered if perhaps some of our friends in the merchandising and advertising end of the oil business might not be interested in hearing of this relatively new—but proved—way of selling petroleum products.

Ethyl's use of drive-in movies to help sell your best gasoline is another service we are happy to perform for our friends in the oil industry.

ETHYL NEWS

JULY—AUGUST 1954



BEHIND THE *NEWS*

Among the hundreds of historic points of interest visited by the nation's tourists this summer is our cover subject — picturesque Fort Ticonderoga, on the shore of Lake Champlain, in New York State. With modern automobiles supplying most of the transportation and oil company touring bureaus *(Information Unlimited,* pages 1-3) supplying many of the maps, routings and travel hints, vacationers are having one of the best summers on record.

Wherever there's a worthwhile project under way, it seems, there's always oil industry participation. So it's not surprising to hear that among the oilmen supporting the National Teen-Age Road-e-o (Driving for Safety, *pages 6-8) is H. D. Carmichael, automotive superintendent of Standard Oil of Kentucky, in charge of personal interviews of contestants in the national finals.*

Though there is a striking contrast in size and physical makeup between the large fish being caught by the Lou Marron-University of Miami expedition for billfish research *(Science Goes Fishing,* pages 17-19) and the tiny algae cells found in oceans, lakes and ponds, it's significant to note that scientists conducting studies of both are looking to the waters of the world as possible sources of more food for a growing global population.

Since the famous Nellie Bly was, among her other accomplishments, the "self-proclaimed inventor of the first steel barrel for oil products," (The Nellie Bly Story, *pages 20-22) it is only natural that American Flange & Manufacturing Company, a present-day manufacturer of such containers, should have more than a passing interest in her. So it was that American Flange devoted a great deal of research to a book on the world traveler, reporter, crusader and businesswoman that it published a few years ago.*

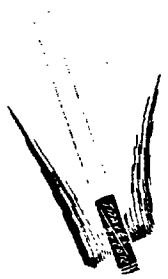
ETHYL NEWS

Richard F. Cook, Editor

JULY-AUGUST 1954

Published by Ethyl Corporation, 100 Park Avenue, New York 17, N. Y., manufacturers of "Ethyl" antiknock compounds, used by oil companies to improve the antiknock quality of aviation and motor gasoline.

INFORMATION UNLIMITED



Oil company touring bureaus help millions of motorists enjoy happier, safer, more worthwhile travels

No, the man at the touring bureau counter was assured as he was handed marked maps tracing a scenic auto route from New York to San Francisco, his request was not an unusual one. Many such requests are received almost every week.

In that case, the man came back, would the oil company kindly provide him with the names and addresses of two or three motorists who had asked for similar information in the last few days? You see, he wanted to make the trip to the West Coast all right, but he had no automobile. He was in hopes of persuading one of the other prospective travelers to take him along.

And then there was the woman who came into the touring bureau and requested an unusually large number of road maps. When asked where she was going, she replied, "Oh, I'm not going anywhere. I want these to wallpaper my son's room."

Of the several million requests that flood oil company touring bureaus every year, these two are, of course, exceptions. The overwhelming majority are from motorists who are sincerely seeking help in planning automobile trips. Right now, in what may be the biggest travel year in history, there are on America's highways and at its vacation spots motorists who are enjoying happier, safer and more worthwhile travels because of the assistance provided by the oil companies that maintain travel information services.

It's no wonder that these services have become so popular. They have been developed to such an extent in some cases that they supply prospective travelers with information that not only helps them plan their trips, but also tells them how to put their house in order before they leave, how to prepare the family car for the journey, what to take, how to pack, and even how to entertain the children en route.

This plus lots more helpful information adds to the success, enjoyment and often the economy of the travels. And it's all free for the asking.

Important Market

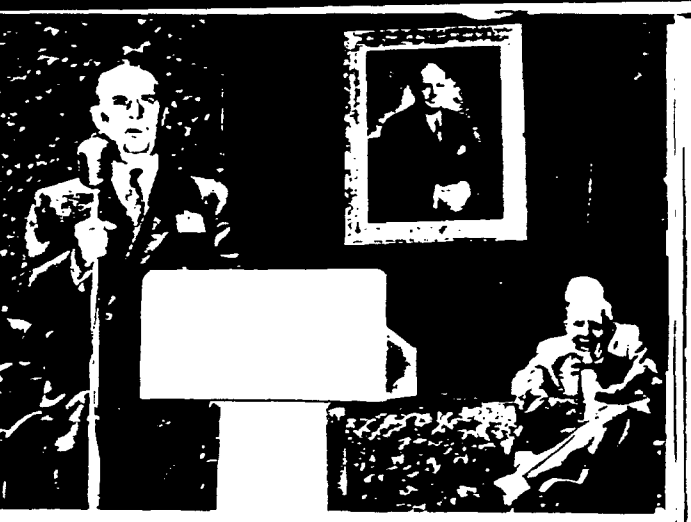
Just how important vacationers are to the oil industry is seen in a few quick statistics. It is estimated that 85 percent of the 75 million Americans taking a vacation this year will travel by automobile. The average family of four will cover 1,200 miles in a little over 10 days and will spend between $500 and $600 en route. Almost 20 cents of every vacation dollar will go for the purchase of gasoline, oil, automobile maintenance and repairs.

It has been as a part of their efforts to reach this huge market of vacationers by automobile that a number of oil companies have developed the services of their touring bureaus.

THOMAS MIDGLEY, JR. 1889-1944

ETC 29075

Portrait of a Genius



E. L. Shea, Ethyl Corporation president, speaking at the unveiling of the portrait of Thomas Midgley, Jr.

ONE JUNE DAY 38 years ago, a young man not long out of college reported for work with a research company in Dayton, Ohio, as "the new laboratory assistant." He finished his first couple of assignments in short order and asked what he should take on next.

Tucked away in a storage closet, the assistant was told, he would find a box of instruments that "the boss" had gotten together to study a problem called "knock." Why not get the box and see what he could do with the instruments?

Thus began the extensive and intensive search for a gasoline antiknock agent. Thus began, too, a long and fruitful association between two men. One of them, owner of the Dayton laboratory, was destined to become the most famous "boss" in the world—"Boss Ket," the beloved Charles F. Kettering, first president of Ethyl Corporation and still a member of its board. The other was Thomas Midgley, Jr., who although he had graduated from Cornell University in mechanical engineering, was to win lasting fame as a creative chemist.

Tom Midgley has been dead 10 years now, but his memory and his works live on. Particularly does Ethyl Corporation revere him because it was his discovery of the antiknock properties of tetraethyl lead that led directly to its formation. "Midge" served as an officer of Ethyl from its incorporation in 1924 until his death.

To honor anew the man who "contributed so greatly to more pleasant and efficient living," an employee ceremony was held recently at the Ethyl Research Laboratories in Detroit. The occasion was the unveiling—by E. L. Shea, Ethyl president—of a portrait of Mr. Midgley to hang in the lobby of the Laboratories' main building. A black-and-white reproduction of the painting, done by Thomas E. Stephens, appears opposite.

Mr. Midgley's tetraethyl lead research, the subsequent marketing of "Ethyl" gasoline and formation of Ethyl Corporation have been cited as "outstanding achievements in private enterprise."

Not only did the discovery of TEL as an antiknock usher in an era of great transportation progress, it also made possible the conservation of vast amounts of crude petroleum by promoting more efficient utilization of gasoline in an engine. Speaking at the Midgley portrait unveiling ceremony, Mr. Kettering hailed "Ethyl" antiknock compounds as "one of the most important economic factors in the world today." He estimated that the widespread use of tetraethyl lead in gasolines saves the motoring public about $2.5 billion annually.

Made Many Contributions

If he had accomplished nothing more than the discovery of tetraethyl lead as an antiknock agent, Tom Midgley would have been assured a niche in chemical history. But he succeeded in many other fields as well. It was Tom Midgley who produced Freon, the refrigerant that has been such a boon to refrigeration and air conditioning. It was he, with others, who saw the possibility of "mining" bromine from the sea. It was he who conducted researches into natural and synthetic rubbers that were years ahead of their time. It was he who collaborated in making the first flying bomb—three decades before the Germans used this weapon in World War II. And it was he who pioneered the first synthetic high-octane aviation fuel.

President and board chairman of the American Chemical Society (at the same time), winner of the major awards in the field of chemistry, recipient of honorary degrees, Thomas Midgley, Jr., was indeed one of those individuals who left more in the world than he took from it. #

Driving for Safety

That's just what youngsters are doing in the Teen-Age Road-e-o

A QUARTER OF A MILLION teen-agers in more than a thousand communities throughout the country are far more skillful and safety-conscious automobile drivers than they were a few months ago—all because of a nation-wide competition that reaches its climax in Washington, D. C., this August.

The competition is the Teen-Age Road-e-o, sponsored by the United States Junior Chamber of Commerce, American Trucking Associations, and Liberty Mutual Insurance Company.

The better drivers are the more than 250,000 youngsters who participated in the local and state Road-e-o's during the spring and early summer.

The Washington event is the national finals of the Road-e-o in which winners from the 48 states and from Hawaii compete for the honor of being crowned "National Teen-Age Driver Champion," a $1,250 scholarship, a striking trophy and other lesser awards.

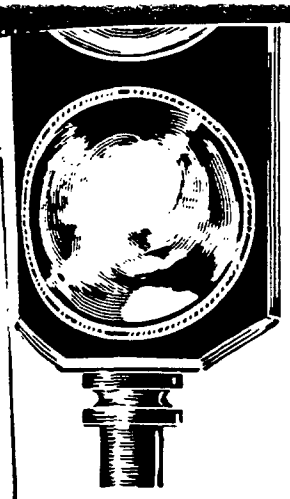
As national competitions go, the Teen-Age Road-e-o is quite new. It was launched just three years ago when the Junior Chamber of Commerce (Jaycees, for short) decided to do something about the high percentage of traffic accidents involving the nation's younger drivers and the adverse public attitude toward these drivers. But despite its recent origin, the program already has proved its worth. It has provided teen-agers with an opportunity to improve their driving habits and attitudes. In so doing, it has won the enthusiastic endorsement of safety authorities, newspapers, police officials, parents, the teen-agers themselves, and just about everyone interested in reducing highway accidents—particularly those involving less experienced drivers.

Poor Safety Record

Young drivers—those under 25 years of age—make up only about 15 percent of automobile operators on the road, statistics show. Yet they are involved in nearly 25 percent of all fatal accidents and in 19 percent of the personal-injury accidents. These percentages become all the more disproportionate in view of the better eyesight, sharper reflexes and superior physical condition with which young people are naturally endowed.

First event in Road-e-o competition is the straight-line driving test—between delicately balanced balls.

Serpentine driving, in which markers must not be touched, calls for unusual deftness behind the wheel.



Before moving outside for practical tests, Road-e-o entrants take a written examination.

The figures and the resulting skepticism toward teenage drivers on the part of older people were so disturbing to Junior Chamber of Commerce safety chairmen assembled in St. Paul, in 1951, they took steps to reduce them. Out of their concern, the nationwide program quickly sprang. That it has caught on is attested by the ever-increasing number of Road-e-o participants. From a relative handful two years ago, the totals soared to 80,000 in 600 communities last year, to the quarter-million in 1,030 towns and cities in 1954.

Patterned after the National Truck Roadeo of American Trucking Associations, the competition calls for skillful handling of an automobile, a thorough knowledge of good and safe driving practices, and mature judgment. It is open to drivers who will not have reached their twentieth birthday on or before the last day of the national finals. Each entrant is required to have a driver's license or learner's permit, and must not have been convicted of a "moving" traffic violation for six months prior to the contest.

Weeks and often months of intensive study and practice on the part of participants are first put to the test in local competitions held in April and May. First item on the agenda on Road-e-o Day is a written examination which accounts for 40 percent of the total score. In it, eager entrants are required to answer a number of questions on many phases of driving. Included are queries on handling a car on hills, curves and in traffic, driving in snow and fog, mechanical breakdowns, and such specific sticklers as the legality of passing on the right under certain conditions and freedom to exceed speed limits in cases of emergency.

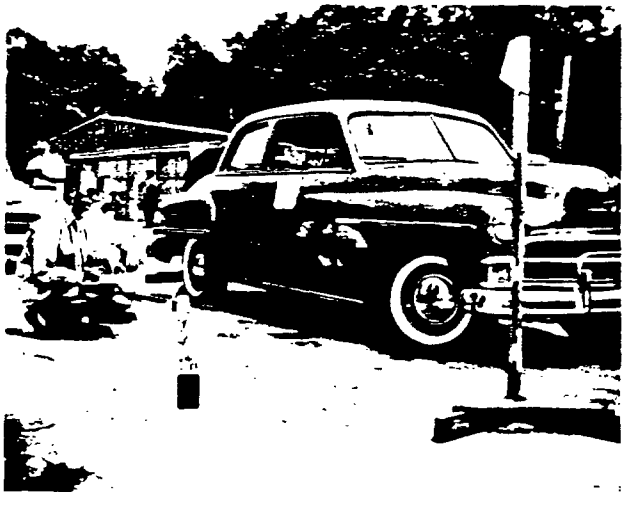
Challenging Tests

The written phase of the contest concluded, the Road-e-o drivers move outdoors for a series of practical tests. These are a stiff challenge even to the most expert.

Carefully scrutinized by judges whose score sheets call for ratings on even the smallest detail, the teenagers are required to: Drive forward and backward for 100 feet, keeping the car's left wheels in a straight path 11½ inches wide; drive forward and backward through

As in all other events, judges in the spot-stopping test are extremely meticulous in evaluating performance.

Parallel parking in a 22-foot space beside a simulated curb is another of the required skills.



a weaving, serpentine course 25 feet wide without touching stanchions or barrels that mark the route; attain a speed of 20 miles an hour, pass between two closely placed stanchions, reduce speed and come to a smooth stop on a designated white line; park parallel to a simulated curb in a 22-foot space; and negotiate a sharp offset curve.

If these tests don't make difficult reading, they do call for skilled driving. The performers' every move, even to the way in which they get into the car and the smoothness of their driving, is carefully scrutinized and evaluated. This coupled with the fact that the cars they drive are not ones to which they are accustomed adds to the severity of the tests.

Keener Competition

Winners of local contests have about a month for rest and further study and practice before they vie with other community champions for state honors. At the higher level the competition is keener and the tests more difficult. The problems on the written quiz are tougher, the practical phase of the contest calls for more expert maneuvering, and another requirement is added. Besides the type of driving already described, the teen-age driver at the state Road-e-o must drive in actual city traffic with a keen-eyed judge at his side.

The select drivers who reach the national finals undergo four days of competitions and tests in Washington. Besides competing in tests similar to those at the state level, they must undergo a psycho-physical reaction timing test, a personal interview, and the Seibrecht driver attitude scale.

It is true, of course, that only about 50 teen-age drivers reach the finals and only one can be singled out as national teen-age driver champion, but in striving for this coveted honor thousands of young drivers are becoming thoroughly familiar with the principles and practices of skilled and safe driving.

Many Cooperate

While the basic program is sponsored by ATA, Liberty Mutual and the Jaycees, many more organizations are participating at the local level. Insurance men, high schools, police departments, Kiwanis, Rotary and other service clubs, and similar groups are helping to organize the Road-e-o's, to interest the youngsters in them and to conduct them. In many communities, local automobile dealers provide the cars used in tests.

Evidence of the increasing popularity of the program is seen in the demand for Road-e-o contest materials which has been growing rapidly. Typical of the letters requesting material is that of a New Jersey police officer who had investigated an accident involving a teen-ager. The accident, the officer reported, was caused not by recklessness or speed, but lack of driver education, experience and use of proper judgment.

"It is because of this that I am requesting you to send me whatever information and materials you have concerning your Teen-Age Road-e-o, so that recurrences of this mishap will not take place," the officer wrote. "Your Road-e-o is the type of program we need to help end needless accidents on the highways. I wish we could have had such a program last year. If we had, this accident might have been avoided." =

Parents, policemen, school officials and members of civic and service organizations are contributing to the success of the Teen-Age Road-e-o program in many communities.

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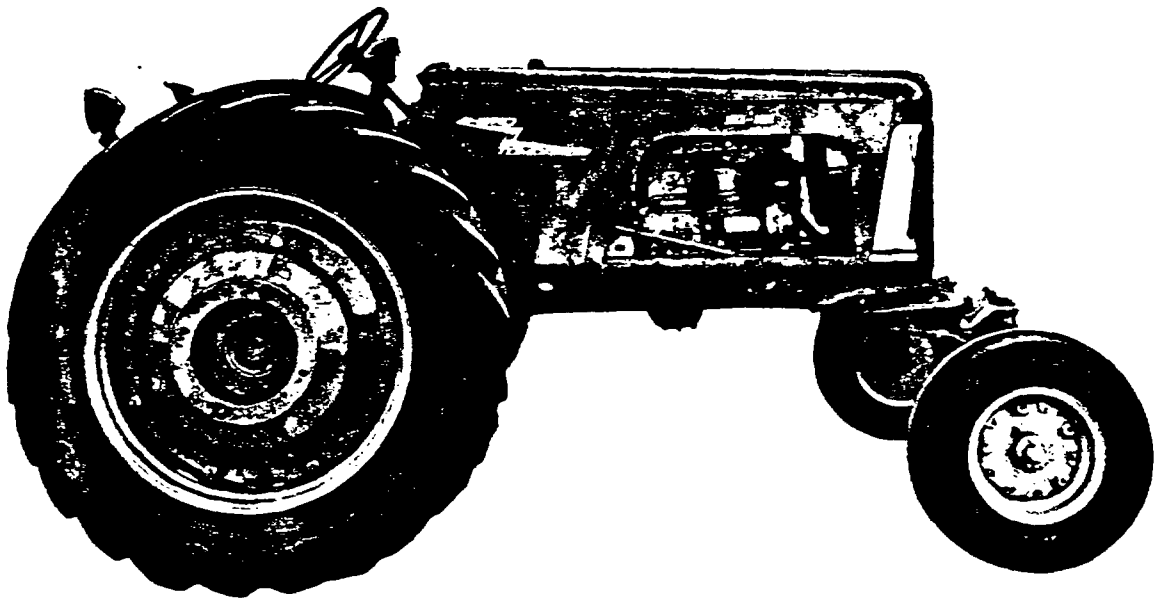


Ahead of Tomorrow

The XO-121 is a valuable research tool for planning future tractors

IT IS SOMETIME later in the 20th century. The exact year doesn't matter. Neither does the place. It could be a corn field in Nebraska, a wheat field in Kansas, or a rice field in Louisiana. Seated comfortably on a trim, sleek tractor, a farmer goes about his work swiftly and surely. Outwardly, perhaps, the tractor looks very much the same as tractors have always looked. But wonderful things have happened under the hood.

The engine is a far cry from those of, say, 1954. It is producing substantially more belt and drawbar horsepower—and with improved fuel economy. This is an engine of greatly increased compression ratio powered by gasoline of exceptionally high octane number.

* * * * *

An idle dream? Not at all. Things have been known to happen fast in agricultural circles. Why, only back in 1935, you could have counted on your fingers the number of tractors on America's farms that were powered by gasoline and equipped with high compression engines. Today, not even two decades later, the farmer finds the combination of gasoline and high compression indispensable in his task of feeding all of this country and much of the rest of the world besides. Eighty percent of the more than 4.5 million tractors now in use are so powered and so equipped.

Mindful of this overwhelming preference on the part of the farmer, and mindful too of the year-after-year improvement in gasoline antiknock quality that permits engines of correspondingly higher compression

Research and engineering personnel from Ethyl and Oliver cooperated in planning and developing the efficient engine.

A view of the tractor power plant on display.

ratio, The Oliver Corporation has embarked upon a tractor engine research program that looks far "ahead of tomorrow."

On the basis of results thus far, Oliver indeed likes what it sees.

As the first step in its long-range program, Oliver has brought the 12 to 1 compression ratio engine out of a dream world and made it a valuable research tool. It unveiled just such an engine recently at the annual meeting of the American Society of Agricultural Engineers in Minneapolis. The super power plant, with its compression ratio almost double that of current production tractor engines, requires specially-blended gasoline of above 100 octane number (Research).

The engine will never be produced commercially. Its value lies in the fact that it is a handy research tool which engine designers and fuel technologists can test, study, tear down, reassemble and use as a guide in the development of more efficient power for the farmer.

Ethyl Cooperates

Oliver calls its new research engine the XO-121. The X stands for experimental, the O for Oliver and the 121 for 12 to 1 compression ratio. It was Ethyl Corporation's privilege to cooperate at all stages in the development and testing of the XO-121. "We felt that since Ethyl had been over similar ground before with automotive engines," said an Oliver announcement, "its background would assist us in gaining the maximum potential benefits from high-compression design."

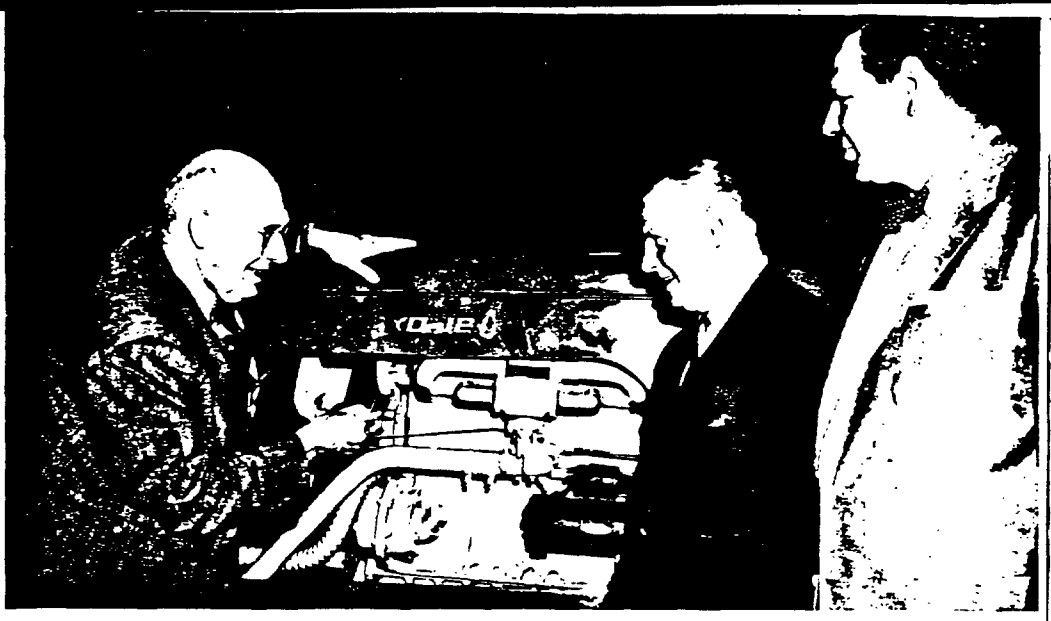
Details of the experimental engine were disclosed in a paper presented before the American Society of Agricultural Engineers meeting by T. H. Morrell, Oliver's chief engineer, and H. K. Dommel, the company's supervisor of experimental engineering.

The XO-121 had its conception about two years ago, they related. A gasoline engine was decided upon because "that continues to be the most widely used fuel" and because the antiknock quality of gasoline has been steadily increasing to the point where "the average octane number of today's regular gasoline is higher than that of premium gasoline of 1947."

It was the desire to determine the prospects of taking advantage of increased gasoline quality by engine design and to establish just what octane number increase means in terms of engine efficiency that led to development of the XO-121.

Explaining how the engine's 12 to 1 compression ratio was decided upon, Messrs. Morrell and Dommel said:

"Since the introduction of gasoline engines into the farm tractor field, compression ratios have in general moved upward to over 6 to 1. Even though the returns from a continued inching forward above 7 to 1 can be worth-while, we felt that there was much more to be learned by making a real leap into the future. The 12 to 1 compression ratio was selected since we felt that it was far enough ahead of present practice to yield a clear-cut answer to our major question: Will the high-compression route really yield major improvements in power and economy?"



Charles F. Kettering, Ethyl director; A. King McCord, Oliver president; and B. Bynum Turner, Ethyl's vice president in charge of research and engineering, admire the powerful new tractor engine.

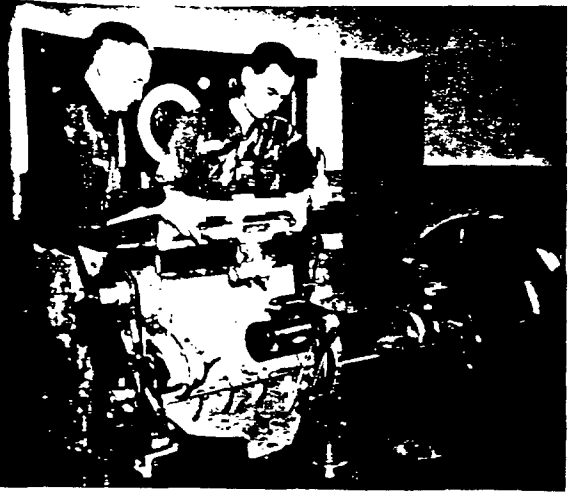
From extensive laboratory and field studies came, in most affirmative fashion, the "clear-cut answer" sought. In these tests, the XO-121 (mounted in a conventional Oliver "88" chassis) was matched against the Oliver model "70" tractor, introduced in 1935 and still remembered as the leader in high-compression efficiency for its time, and against the company's current production model "77." Since the displacement of all three engines is almost identical, the tests were extremely valid.

On a dynamometer in the research laboratory, the XO-121 delivered an amazing 92% more horsepower per cubic inch than the 19-year-old model and 44% more than the current production model. In fuel economy, based on horsepower-hours per gallon, the "ahead of tomorrow" experimental power plant was 36% and 30% better respectively.

Much the same success was achieved in field tests. Compared under varying loads and speeds at both part and full trottle, the XO-121 produced nearly double the belt and drawbar horsepower of the 1935 model. And it delivered almost 50% more power than today's.

On the basis of these results, The Oliver Corporation could rightfully boast that it "had constructed the most efficient tractor engine ever built."

Mounting the XO-121 on a dynamometer in the research laboratory for the measurement of its horsepower.



Practical in Construction

The test results become all the more impressive in view of the fact that the XO-121 is not a "hot rod" type of engine or "souped up" conventional tractor engine, and that the fuel required to power it is in no sense a "trick" gasoline. The experimental engine is quite practical in basic construction. Its components and the materials used are most ordinary as one thinks of pistons, carburetors, and other parts, although obviously each part has been carefully studied and integrated into the final design in such a way that it contributes its full share to the efficient production of power and fuel economy.

Having already proved that the principle of high-compression as a means of gaining power and economy in farm tractor engines is practical and sound, and that there are no operational problems which limit the use of compression ratios up to 12 to 1, the future role of the XO-121 is clear.

While it will never be seen on the farm, it will surely lead to tractors with improved performance. It will be a yardstick for new standards of tractor engine design and performance. The XO-121 will serve as a beacon to guide engine designers and fuel technologists in their never-ending effort to provide the American farmer with the very best in mechanized equipment. #

A GUIDEPOST TO

TWO HUNDRED YEARS AGO there issued from Benjamin Franklin's printing shop in Philadelphia a document headed "A General Map of the Middle British Colonies in America." If the title was ordinary, the map itself was not (as history was to prove).

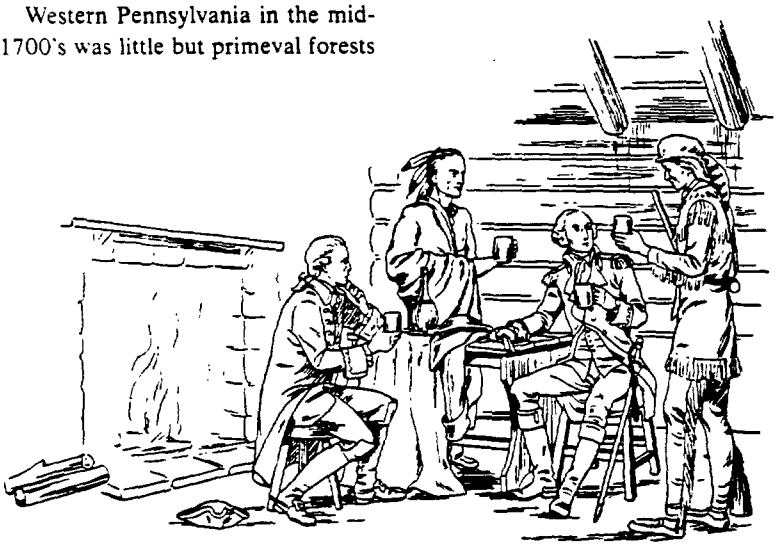
Drawn by Lewis Evans, then as now an obscure name, the map turned out to be a work of political, military and social significance. Certainly one of its outstanding features was the appearance of the word *petroleum* near the present site of Oil City, Pa. This, so far as is known, was the first prior notation on any document that oil existed at almost the very location where Colonel Drake brought in his epoch-making well in 1859.

Western Pennsylvania in the mid-1700's was little but primeval forests inhabited only by "wild Indians, bears and rattlesnakes." Precious few white men had visited the area. Remembering all that, just how could a man – particularly one such as Lewis Evans, who had never traveled that part of the Colonies – pinpoint the locale of oil?

The answer is found in an episode of history, little known even though it marked the entrance of George Washington upon the world's stage.

Flash back to a cold night in December 1753. Inside a log cabin at Venango (now Franklin), Pa., Washington and a motley group of men are huddled around the big fireplace. Mostly the men drink brandy and argue the future of America.

A few miles away, a black liquid bubbles to the surface from deep springs. Two of the men in the cabin are aware of the oil springs. A third is destined to learn about them and to tell Lewis Evans where to locate them on his map.



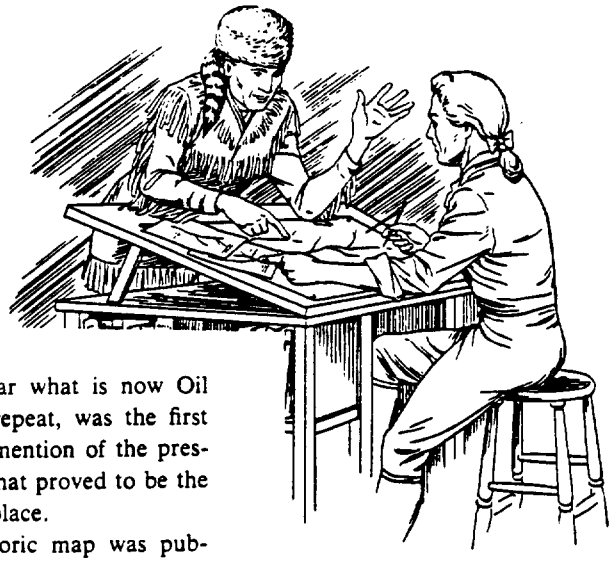
Washington, only 21, had braved the dangerous Pennsylvania wilderness to carry an ultimatum to the French army commanders from Governor Dinwiddie of Virginia. The message protested the encroachment of "the King of Great Britain's Territories" and demanded the "peaceable departure" of the French.

In the Party

One of Washington's companions was Tanacharison, chief of the Senecas. Also in the young major's party was John Davison, a rough trader who served as Indian interpreter.

The French commander who received the group at Venango was Capt. Philippe Joincare. He and Tanacharison were familiar with the nearby oil springs if none of the others was.

There is no proof that oil was a subject of small talk among the others in the wilderness cabin that December night while Washington and Joincare bandied words preliminary to war. Well might it have been, however, since later events indicated that the trader Davison had learned the location of the springs while accompanying Washington on this very mission.



After delivering his warning message, Washington returned directly to Virginia. He gave Governor Dinwiddie so alarming a report of French intentions that Virginia immediately began raising troops. The long and bloody French and Indian War was about to get under way.

Davison parted company with Washington and made his way to Philadelphia. There he delivered a report of his own—to Lewis Evans.

Evans, who made his living as a surveyor and draftsman, was preparing a map of the trans-Allegheny country. The need for a truly accurate map of the region was great. It was essential not only to define the extent of French and English territorial claims, but to settle controversies among the Colonies over boundary lines and to encourage settlement across the mountains.

Evans had undertaken a difficult task indeed. No surveys existed of the wild country, but—largely through his good friend, Benjamin Franklin—he gained access to many informative documents from official Colonial files. Helpful material also came from the journals kept by travelers.

Most of his information though was gathered from trappers, scouts and traders like John Davison—men who actually had seen the west.

Fresh from his exciting adventures with Washington, Davison painted for Evans a vivid verbal picture of the country around the French forts to the north of Pittsburgh. He told also about the oil springs. These Evans located on his map by writing "petroleum" near what is now Oil City. This, to repeat, was the first known written mention of the presence of oil at what proved to be the industry's birthplace.

The now-historic map was published on June 23, 1755, as part of a geographical pamphlet written by Evans and printed by Benjamin Franklin. "A General Map of the Middle British Colonies in America" received an enthusiastic public reception. Throughout the French and Indian War, it was relied upon heavily by the British in their military campaigns. At war's end, it provided a mine of information for settlers pushing westward. It was used extensively as a guide in land transactions and in the consideration of inter-colonial boundary disputes.

Ethyl Owns Copy

Few original copies of the map remain today. Of those still in existence, one is owned by Ethyl Corporation as part of its collection of historical petroleum documents and oil memorabilia.

With his map, Lewis Evans made an extremely important contribution to the American Colonies. He helped to set the direction and unlock the limits of the country's westward expansion. Even without this, his name would have survived in the histories of the oil industry. For it was Evans who first brought to light, for all to know, that oil existed in the rolling hills of Pennsylvania. It was Fate that made man wait another century to claim that legacy. #

Evans' map indicated the presence of oil at two places. At one of them, a century later, the industry was born.

Three decade

"ETHYL" (TRADE-MARK) ANTIKNOCK COMPOUND — ETHYL CORPORATION

Ethyl's history, which dates from before the Company's incorporation 30 years ago, is one of many contributions to progress

It was the year that Great Britain swapped prime ministers in midstream (Stanley Baldwin for J. Ramsay MacDonald), and America's voters decided that Calvin Coolidge should go on occupying the White House. It was a year of goodwill gestures between once-enemy nations. The French began pulling their troops out of the Ruhr and the Germans sent their dirigible, the ZR-3, on a visit to the United States. It was a golden year of the Golden Age of sports. Rogers Hornsby slammed his way to a still-record .424 batting average. Jack Dempsey and Bill Tilden were at their peak, and a golfer named Bobby Jones was attracting no little attention.

That was something of the world of 1924—the world into which Ethyl Corporation was born 30 years ago as the pioneer marketer of chemical compounds to improve the antiknock quality of gasolines. While August 18, 1924, was its corporate birthday, Ethyl actually had its beginnings years before. They go back to 1912, the year that Charles F. Kettering began the study of knock; to 1921, when Thomas Midgley, Jr., who was to become a founding officer of Ethyl Corporation, discovered the magical antiknock properties of tetraethyl lead; and to 1923, when the first "Ethyl" gasoline was sold, and later that same year when Standard Oil Company (Indiana) became the first major oil company to distribute gasoline containing "Ethyl" fluid.

These were some of Ethyl's early milestones. Many others mark the highway of progress down which the oil and automotive industries have traveled during the past three decades. Not all of Ethyl's contributions to this progress can be cited. But the following are some of the more outstanding:

les of service

1924

Formation of Ethyl Gasoline Corporation, with Charles F. Kettering as president and Thomas Midgley, Jr., vice president and general manager.

First spectacular public demonstration of superiority of "Ethyl" gasoline. Cars so powered finish one-two-three in famous Indianapolis race.

1925

Earle Webb becomes president of Ethyl when Mr. Kettering resigns to return to active research work. ("Boss Ket" has remained a director of the Company down to the present.)

First Company-sponsored advertisement appears—in *The Saturday Evening Post*. (Ethyl advertisements currently are seen on television and at drive-in theatres, as well as in national magazines, helping oil companies sell their best gasoline.)

Voyage of *S. S. Ethyl*, former Great Lakes cargo ship converted into floating chemical factory, proves that bromine, a chemical required in the manufacture of "Ethyl" fluid, can be "mined" from sea water on a commercial basis.

1926

Dr. Graham Edgar, Ethyl's director of research (and later a vice president), creates the octane scale, permitting for the first time uniform measurement of the antiknock quality of gasoline. (The octane scale remains the universal yardstick of gasoline quality.)

1927

Transfer of Ethyl research laboratories from Yonkers, N. Y., to Detroit started. Move puts laboratories in center of automobile manufacturing industry. (The Ethyl Laboratories in Detroit, among the most modern and best equipped of their kind in the world, continue to work with the petroleum and automotive industries on the interrelated problems of fuels and engines.)

With an increasing number of refiners using "Ethyl" fluid, it becomes possible for motorists to buy "Ethyl" gasoline throughout the country.

1928

First gasoline testing laboratory begins operations. (Ethyl now maintains five testing laboratories as a service to oil refiners and marketers. They are located in Yonkers, Baton Rouge, Kansas City, Tulsa and San Bernardino, Calif.)

1930

Company undertakes to supply oil companies with special "Series 30" engine for testing and knockrating gasoline. Both the engine itself and its knockmeter are devised and perfected by Ethyl.

First shipment of "Ethyl" antiknock compound by railroad tank car. Previous shipments made in drums. (Ethyl Corporation now owns and operates —exclusively for the shipment of antiknock compounds—several hundred specially-built tank cars.)

1933

Ethyl makes available its "Q" brand of antiknock compound for improving regular grade gasoline. Heretofore, only premium gasolines contained the tetraethyl lead additive. By adding antiknock compound to regular grade fuel, oil companies are able to offer motorists a better buy without increasing their capital investment.

1934

Plant for extracting bromine from sea water begins operations at Kure Beach, N. C. Plant produces ethylene dibromide, a major ingredient of "Ethyl" antiknock compound.

Ethyl Corporation engineers pioneer development of gasoline-powered high compression farm tractor, opening door to more efficient farming in less time and providing petroleum industry with a new market for its major products.

1935

Road research laboratory established at San Bernardino to take advantage of California's year-'round test weather and area's great natural proving ground. (Ethyl test vehicles have covered millions of miles in fuel-engine studies.)

RE S OF SERVICE • THREE DECADES OF SERVICE • *(Continued on page 16)*

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Three decades of service

1937

Operations begin at new "Ethyl" antiknock compound manufacturing plant in Baton Rouge. Construction of the plant started in 1936 as it becomes evident that present manufacturing facilities will not be adequate to meet ever-increasing demand for "Ethyl" antiknock compounds. (The Baton Rouge plant today is by far the largest of its kind in the world.)

1941

New bromine extraction plant at Freeport, Texas, goes into operation. Capacity of plant, operated by Ethyl-Dow Chemical Company, is more than 84 million pounds of ethylene dibromide a year.

1942-1945

Ethyl Corporation contributes to war effort in several ways, most important of which, of course, is providing record amounts of "Ethyl" antiknock compounds for military and civilian use. During the war, Ethyl increased its output of tetraethyl lead by 43 percent, to give America and her allies ample supplies of the vital product.

Other Ethyl contributions to the war effort: Construction and manufacturing efficiencies, changing the company from a net consumer to a net producer of scarce chlorine; assistance in two synthetic rubber programs; successful completion of some 50 major research projects for the armed forces; staging of hundreds of special gasoline handling shows for armed forces.

1947

To render fuller service to customer oil companies, Sales Department is reorganized on a regional basis. Regional headquarters are New York City, Chicago, Tulsa and Los Angeles, with district offices in other key cities.

Edward L. Shea named third president of Ethyl, succeeding Mr. Webb, who served for 22 years.

1948

Field terminals at Edge Moor, Del., and Wilmington, Calif., begin operations, providing oil companies with additional sources of supply of "Ethyl" antiknock compounds.

1949

Forty million dollar expansion of facilities and equipment at Baton Rouge plant completed. Increased production needed to help meet record demand for "Ethyl" fluid.

Ethyl Antiknock, Ltd., with headquarters in Toronto, formed to handle sale of "Ethyl" fluid to Canadian oil companies.

1950

Ethyl announces startling results of an exhaustive study of gasoline quality and gasoline prices covering the past 24 years. Study reveals that two gallons of modern gasoline do the work of three gallons of 1925 fuel and yet the price (excluding taxes) is just about the same. Ethyl develops series of road tests to dramatize the impressive "Two Equals Three" story.

1952

Opening of new Ethyl Corporation manufacturing center on the Houston Ship Channel. The plant increases Ethyl's tetraethyl lead capacity by about one-third. The most modern facility of its kind anywhere, the Houston plant opening climaxes Ethyl's $100 million postwar program of manufacturing capacity expansion.

1953

Ethyl announces development of an ignition control compound to be added to gasoline to reduce preignition and spark-plug fouling. (More than 75 companies now are using this Ethyl product.) Announcement of the ignition control compound follows by a year Ethyl's announced development of "Ethyl" diesel ignition improver (DB-36 amyl nitrate), an additive to improve the ignition quality of diesel fuels.

1954

Announcement of Ethyl's newest service to the oil industry—the "R. T. Program," through which the Company will help oil companies to recruit and train high calibre service station personnel.

To meet the growing needs for "Ethyl" antiknock compounds and to provide further improvements in its research services to the oil and automotive industries, the Company undertakes renewed expansion of its manufacturing and research facilities. =

Science Goes Fishing

Oilman Lou Marron devotes his angling process to a marine research project

SOMEWHERE off the west coast of South America, a trim cabin cruiser makes its way through the blue-green waters of the South Pacific. From a distance, the craft looks quite like other modern boats of similar size with which deep-sea fishermen of the United States are quite familiar. But a closer look reveals that this is something special.

The neatly lettered words *"Explorer,* Brielle, N. J., U. S. A." on the shiny mahogany transom tell that this boat is five thousand miles from its home port. And then there is the unusually broad beam, the tall look-out nest with its specially designed seats for two people, and the powerful lifting boom.

The boat in question is a fishing cruiser all right, but it is not bearing pleasure-bound fishermen on a vacation cruise. Instead, it is the floating headquarters, laboratory and workshop of a scientific marine expedition. And in refutation of the old adage about the incompatibility of oil and water, this water-borne research cruise is headed by an oilman—Louis E. Marron, chairman of the board of Coastal Oil Company, Newark, N. J.

Well known to the deep-sea fishing fraternity throughout the world as "Uncle Lou," Mr. Marron is co-sponsor of "The Lou Marron-University of Miami South American Pacific Expedition for Billfish Research" and is manager of the expedition in the field. For Mr. Marron, the research venture presents an opportunity to devote to the interests of science the wide knowledge of fishing he has gained in 30 years of outstanding salt water rod and reel achievements.

The expedition, conducted in cooperation with the Marine Laboratory of the University of Miami, of Coral Gables, Fla., hopes to reveal many of the hitherto unsolved mysteries of the zoology and hydrography of the South Pacific. New information about the large ocean fish is of vital importance, particularly at this time when many authorities are looking to the sea as a major source of food for the world's growing population.

Species in which Mr. Marron and the anglers and scientists accompanying him are primarily interested are the broadbill swordfish, marlin, big-eye tuna and other large fish of commercial and sports fishing importance. Almost nothing is known about the life pattern of these creatures—their migrations, growth rates, places and times of spawning, age at maturity, number of eggs laid, feeding habits, sex ratios, parasites, or longevity. Before marine zoologists can formulate intelligent plans for the sensible utilization and conservation of these important food fish it is necessary to determine such vital statistics. This is the expedition's goal.

The field, or more properly the water, phase of the work is expected to take six months a year for each of the projected five years of the expedition. Much of the remainder of each year will be spent in the Marine Laboratory studying the group's findings.

The area of marine research extends up the Pacific coast of South America from the northern part of Chile to Panama. While catching and studying the fish of these waters, the researchers also will engage in studies of the currents, winds, temperatures and chemical composition of the ocean they traverse and attempt to relate them to the fish life.

With the success of the expedition dependent on the catching of a large number of a variety of fish, Mr. Marron's wide experience in deep-sea fishing is of utmost importance. In one of the first phases of the work off Iquique, Chile, early this summer, for example, more than 100 striped marlin and swordfish were caught. All these fish were scientifically weighed, measured and dissected in order to obtain more information about them and to remove certain organs for shipment to scientists at the University of Miami Marine Laboratory for further study.

Skilled Fishermen

Adding their experience and skill to that of Mr. Marron in the fishing aspects of the expedition are Mr. Marron's wife, Mrs. Eugenie Marron, a champion angler in her own right who has held over nine world's records in her 20 years in the sport, and Mr. and Mrs. John Manning, of Los Angeles, both internationally known salt water fishermen.

Heading the scientific aspects of the venture is Luis Rene Rivas, research associate of the Marine Laboratory and associate professor of zoology at the University of Miami. Working with him are other scientists of the Marine Laboratory.

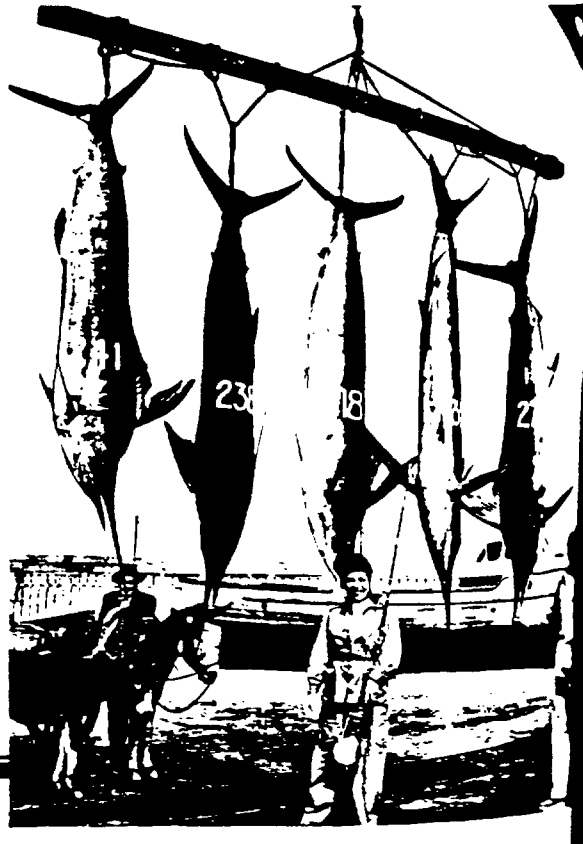
Launching its five-year program late this spring, the expedition did research on black, striped and silver marlin off the coast of Panama, and to the south. Later, it moved to the waters of northern Chile for work with broadbill swordfish, the marlins and other large fish of the area. Much of the summer is being spent off Talara and Cabo Blanco, Peru, with studies there directed mainly to black marlin and big-eye tuna.

Fished Many Waters

Extended fishing cruises in foreign waters are nothing new for oilman Lou Marron. Pursuit of his avocation has taken him to the Atlantic, Pacific, and Arctic Oceans, Iceland, Scandinavia, and the Mediterranean Sea. For three years he was a member of the United States team at the International Tuna Cup matches at Wedgeport, Nova Scotia, and he is holder of numerous trophies for his conquests over giants of the deep.

Blending a career in oil marketing with one in fishing has provided a full life for Lou Marron. As chairman of the board of Coastal Oil, he can look back on some 35 years in wholesale and retail fuel oil distribution. And he can remember without much difficulty when his business interests left him with much less time for fishing than they do now.

A native of New York City who has lived most of his



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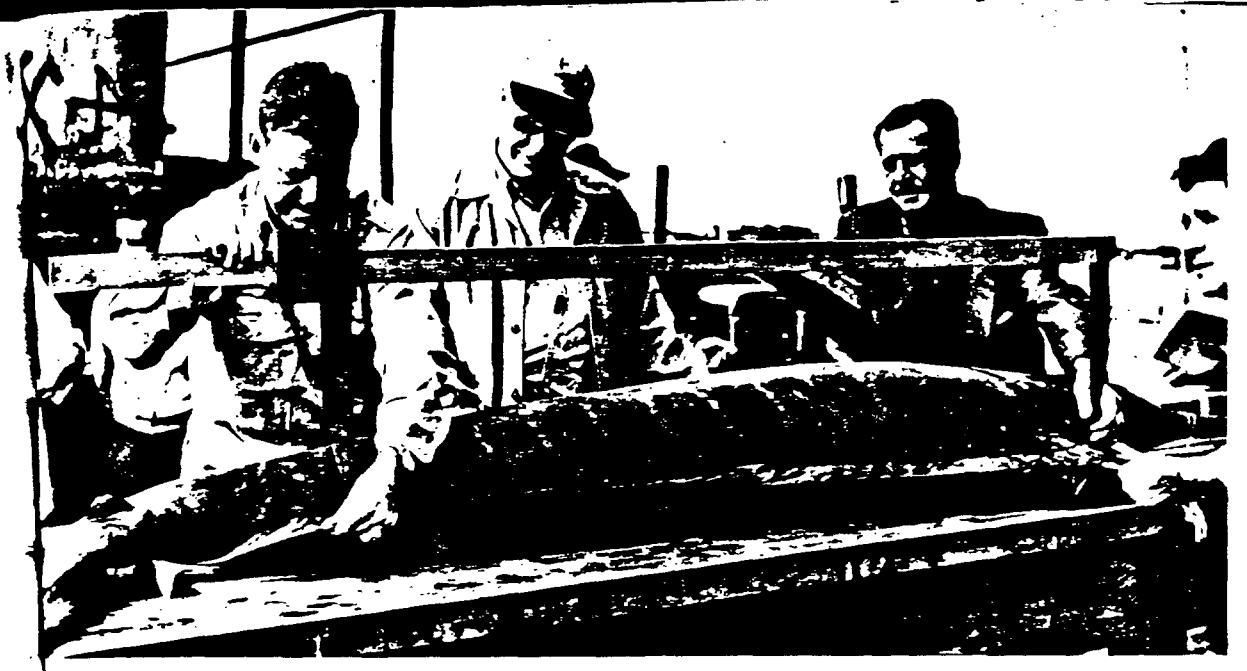


John Manning, Lou Marron's associate, watches intently as Luis Rivas, scientist-in-charge, measures one of the catches.

life in New Jersey, Mr. Marron started in retail fuel oil after gaining business experience in his father's coal dealership in Glen Rock, N. J. Though he had been an avid fisherman from his youth as a result of frequent trips to the Jersey shore, Mr. Marron never let sports interests interfere with business pursuits. From a single retail fuel oil outlet, he expanded first to widespread retail operations in northern New Jersey, and then into the wholesale end of the business, with the construction of a terminal on the Passaic River and later a deep water terminal at Newark. Large tankers from the Gulf Coast now unload millions of barrels of fuel oil every year into Coastal Oil storage tanks for distribution over a wide area.

The opportunity to relate a thrilling sports hobby to the interests of science in a project such as the billfish research expedition is very rewarding to Lou Marron. When he or members of his party land a big catch, they know that it's more than sport. It's an important step in the accumulation of information that may well enable scientists to point the way to new food supplies for the world's growing millions. #

Mr. and Mrs. Marron at a South American shore base with some of the giant fish they took from the Pacific in the first phases of the marine research expedition.

Custom-built and equipped expressly for the scientific fishing trip, the *Explorer* was shipped to its starting point aboard a steamship.

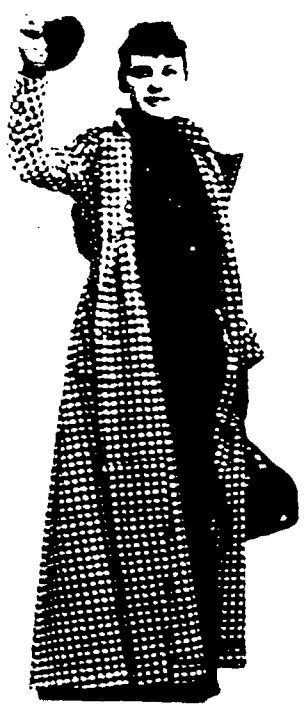
the Nellie Bly Story

Reporter, crusader, traveler, businesswoman and inventor of a steel oil barrel

SIXTY-FIVE YEARS AGO, Nellie Bly carved herself a slice of immortality by circling the globe in 72 days, 6 hours and 11 minutes. Slow time today, of course. But in Nellie's generation such a pace was blinding speed.

That trip—in which she raced the fictitious Phileas Fogg of Jules Verne's best seller, "Around the World in 80 Days"—was what has kept Nellie Bly's name alive even in this day of jet planes and atomic-powered submarines. But there were many other figurative feathers in the large hat with chenille dots that the fabulous Nellie so often wore. Miss Bly was one of free journalism's top-drawer lady reporters; she was a crusader for human rights; she was a successful businesswoman in an era when woman's rightful place was thought to be in the home. And she was, those in the petroleum industry particularly will note, the self-proclaimed inventor of the first mass-produced steel barrel for oil products.

Nellie Bly was born Elizabeth Cochrane, 87 years ago in Cochrane Mills, Pa., a town that her father had founded. She of the flossy brown hair and deep, searching hazel eyes was a girl of frail health during her school years. Also, it has been written, she was "shy and sensitive to the point of meekness." None of these, however,



VERNE'S 'BRAVO'

The French Romancer in Ecstasy Over the Achievement of "The World's" Voyager.

A Great Journalistic Triumph.

Verne Followed Every Step of the Journey on His Globes.

HIS PHILEAS FOGG OUTDONE.

An Extraordinarily Interesting Interview with the Wizard of Amiens—Mme. Verne Joins in the Congratulations—High Compliments for "The World" and Its Representative from All Sources—This One Achievement Has Made "The World" the Best Known Journal in Existence.

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[SPECIAL CABLE DESPATCH TO THE WORLD.]

PARIS, Jan. 25.—Just as soon as the cable message reached THE WORLD office in Paris that Nellie Bly had reached

Nellie Bly as she appeared at the outset of her famous world tour, and a newspaper account of her triumph.

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love—

was to serve as a handicap as she fashioned her legendary career. What she lacked in other respects she made up in brains and fortitude.

Judge Cochrane died, supposedly wealthy but actually a poor man, while his soon-to-be-famous daughter was still in her teens. So it was poverty that directed Elizabeth Cochrane's footsteps to Pittsburgh and the start of her multifaceted career. That began, quite inauspiciously, when she wrote an answer to an article in the old *Pittsburgh Dispatch* entitled "What Girls Are Good For." So outstanding was the reply that she was given a job on the newspaper at $5 a week. Also she was given a pen name. "Nelly Bly," a spiritual written by Stephen Foster, was popular at the time. That, decided her managing editor, would be Elizabeth Cochrane's nom de plume. The only difference was she assumed the "ie" ending of the first name.

Nellie Bly soon moved into the "big time" of New York City journalism. It wasn't easy, but she talked her way into an audience with the great publisher, Joseph Pulitzer. A book, "The Story of Nellie Bly," published in 1951 by American Flange & Manufacturing Co., Inc., tells of that interview: "The crafty Pulitzer knew a good thing when he saw it. He listened to her suggestions for stories. She had a flair for the sensational . . . Pulitzer was impressed, and perhaps also he was softened by her hard-luck story of being broke and alone in the big bad city. Nellie fired every gun in her actress' repertoire and Pulitzer fell before her persuasive personality as a whole nation was to do just two years later."

Inspiration had forsaken Nellie as she sat alone in her furnished room one Sunday afternoon in 1889 searching for an idea for her weekly newspaper story. "I might as well go around the world," she mumbled in desperation. Then, having said it, she asked herself, "Why not?"

She had to play the role of actress again to convince Pulitzer that it would be a dramatic promotion stunt for his *New York World,* but in four days she was ready. A girl of but 22, she sailed on Nov. 14, 1889. Her immediate destination was London, but her final goal was to be back in New York in 75 days, five less than Jules Verne's character had consumed in his storybook journey. Across Europe, through the Suez Canal and Indian Ocean, and on into China, Nellie sped by steamer, train, sampan, ancient wheeled cart, burro and every other

After a career in business, Nellie Bly returned to her first love—newspaper reporting—until her death.

available means of transportation. She spent Christmas in Canton; New Year's Eve aboard a Yokohama-bound vessel in wild seas.

At San Francisco she was whisked aboard a special train. All across the land she was acclaimed a heroine. Crowds buckled police lines for a sight of her. Men bore her bouquets. Pittsburgh and Philadelphia officially fêted her en route. Then when the special train lurched into the terminal at Jersey City, three stop watches clicked the exact second that Nellie alighted. She had done in little more than 72 days what the world had thought it impossible to do in less than three months.

Not one to rest on her laurels, Nellie took a deserved rest and then resumed her career as a crusading moralist in the columns of *The New York World*. Then, in 1895, when she was 28, she was married to a man 44 years her senior. He was Robert L. Seaman, a wealthy Brooklyn manufacturer and president of the Ironclad Manufacturing Company. It was to be a short marriage of nine years, terminated by Mr. Seaman's death.

He had given his wife the Ironclad company as something of a belated wedding present. It was a debt-ridden firm that made all sorts of sheet metal products, from coal scuttles to riveted boilers. But after five years of operating Ironclad under "modern efficiency processes, many of which I devised myself," Nellie Bly had in her control a company that did a gross business of one million dollars annually.

It was during a trip to Europe in the early 1900's that she noticed the use there of steel containers for glycerine. She determined to turn out similar barrels in the United States for "the transportation of oil, gasoline, and other liquids." A separate company was set up for the purpose and its female president said the firm could make 1,000 barrels a day "if I am let."

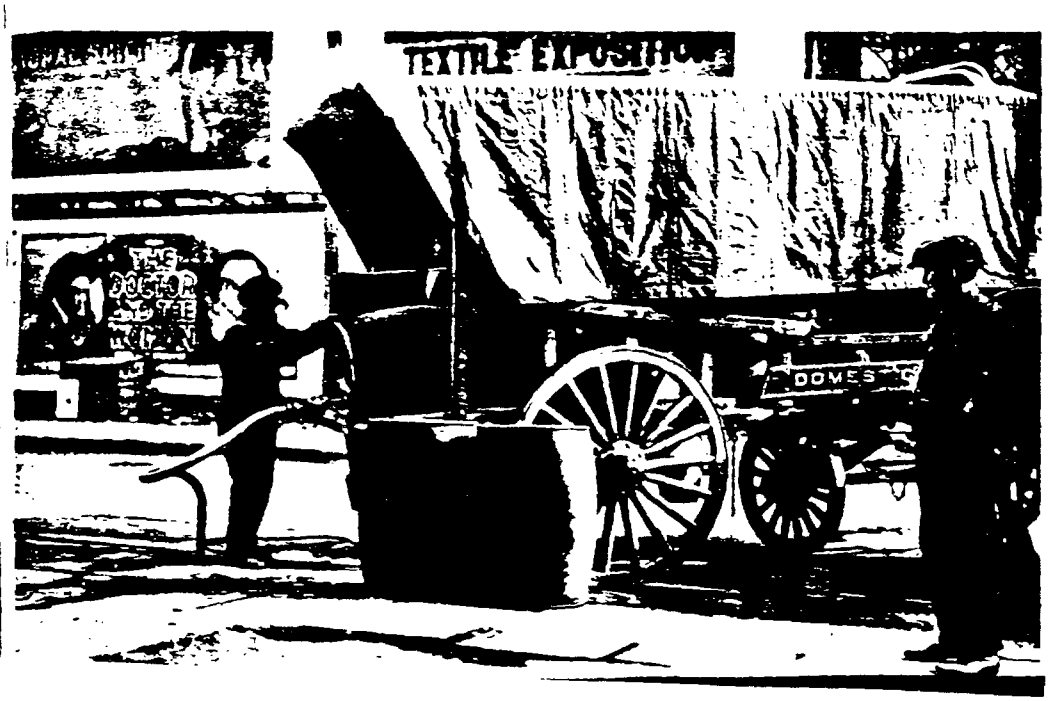
One of Nellie Bly's proudest boasts during her last years was that she had "worked out the steel barrel to perfection, patented the design, put it on the market, and taught the American public to use the steel barrel." A veteran employee of the then Tide Water Oil Company was to recall almost 30 years later that his firm had in 1908, or thereabouts, "bought the first drum from the famous Nellie Bly of the Ironclad Manufacturing Company of Brooklyn."

As her company grew and prospered, Nellie was unable to maintain intimate touch with all its operations. On paper, her firm was a sound one, the world's largest manufacturer of steel barrels. Actually it had lost $2 million through a series of forgeries of her signature.

Cleared of Indictment

She became embroiled in litigation. Her name was smeared. Her fortune was gone. In 1914 Nellie Bly was indicted for obstructing justice in the case by refusing to show her firm's records. Four days after pleading not guilty to the indictment, she sailed for Europe, a broke and broken woman. There she remained, mostly in Austria, throughout the war. But the longing to be home in America was too strong to resist. She returned in 1919 to surrender herself and face the five-year-old court charges. Nellie was cleared of the indictment and soon returned to her first love—newspaper reporting.

On the morning of Jan. 20, 1922, at the age of 56, she died of pneumonia on a New York hospital cot. Elizabeth Cochrane Seaman was no more. But Nellie Bly was to live on. ≠



The development of steel barrels for transporting its products was of considerable importance to the burgeoning oil industry in the early 1900's.

Gallonage Report

Gasoline sales figures issued by Ethyl serve refiners and marketers

With more than 3.5 billion gallons of gasoline going to fuel the country's motorized transportation in an average month, it's obvious that the production and distribution of this major product of the nation's oil refineries is a big business. It's just as obvious, too, that reliable figures on gasoline sales are essential to refiners and marketers of gasoline if they are to control current operations effectively and plan wisely for the future.

That is why the reports of gasoline sales throughout the country, issued monthly by Ethyl Corporation, are one of the most valued of the many services that Ethyl provides for the oil industry.

These reports, which Ethyl has been compiling and issuing for a number of years, are made possible through the cooperation of oil companies who willingly furnish their confidential sales data. These data are both useful and unique because they reflect actual refinery sales, reported regularly by oil companies supplying some 97 percent of the country's gasoline requirements. This cooperation enables Ethyl to present careful estimates of total gasoline sales by states and on a nationwide basis, and, equally important, sales in the different grades of gasoline.

The Ethyl reports show sales of both automotive and aviation gasoline and also provide a breakdown of motor gasoline sales according to the premium and regular gallonages involved—all of which are important to refiners and marketers throughout the United States.

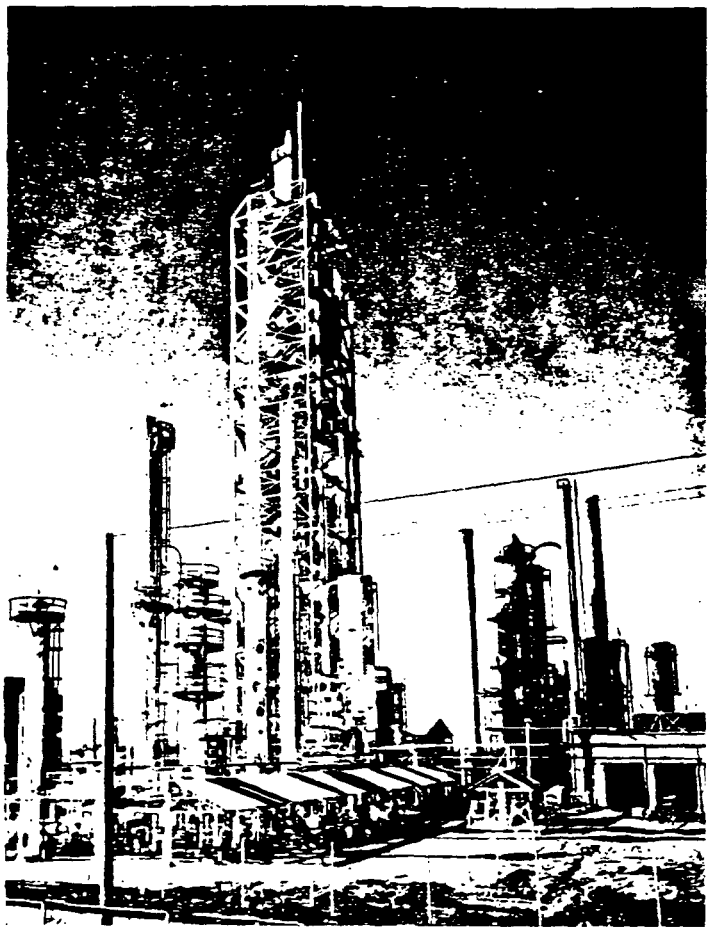
With the increasing size and scope of the oil industry's widespread operations, compiling reliable figures on gasoline sales presents a number of problems. Because of the very nature and makeup of the industry, millions of gallons of gasoline are constantly on the move—through hundreds of thousands of service station pumps, through bulk plants and pipelines, and in tankers and tank trucks around the country. This, in itself, makes it difficult to measure gasoline sales accurately at any one time.

Tax Receipts

Other obstacles are encountered in the utilization of data which might appear to indicate gasoline consumption. For example, motor fuel tax receipts reported by the individual states throughout the country often reflect sales of non-gasoline fuels, which cannot be accurately separated from gasoline sales. A second difficulty lies in distinguishing, in available gasoline sales data, motor from aviation gasoline on one hand, and premium from regular on the other. Still another problem is avoiding duplication in compiling authentic figures.

Based as they are on gasoline sales reported by oil refiners, the Ethyl reports present an authoritative picture of gasoline consumption.

A good indication of current trends in gasoline sales



The gasoline sales figures published by Ethyl reflect actual refinery sales reported by oil companies.

is seen, for example, in reviewing the Ethyl reports for the first six months of this year.

To July 1, an analysis of these reports shows, more than 22 billion gallons of motor gasoline had been sold in 1954. While these sales are just two percent higher than in a corresponding period last year, they do represent an all-time high. And they are 38 percent higher than in 1949, five years ago.

Regular grade gasoline sales amounted to over 15 billion gallons in the first half of this year, or one percent over the same period last year. This was approximately 4.5 billion gallons more than the corresponding regular grade gasoline gallonage sold up to July 1, 1949.

Premium gasoline sales outstripped the rise in sales of regular gasoline, increasing five percent over the first six months of 1953, as compared to the one percent increase for regular. Premium sales of seven billion gallons for this half year are a full 32 percent over their 1949 level.

Equally impressive is the ratio of premium gasoline sales to all motor gasoline sold, as shown in the Ethyl reports. Premium sales amounted to 31 percent of all automotive gasoline sold in the first six months of this year as opposed to 30 percent in the same period in 1953. While this year's premium sales ratio is below the postwar high of 39.4 percent set in 1946, it is interesting to note that actual premium sales are 34 percent higher than in the period January 1 to July 1, 1946.

Yearly Reports

Of the states contributing to this year's record gasoline consumption, California takes most of the honors. The Golden State accounted for the most premium gasoline—one billion gallons; for the highest individual total gasoline consumption—almost two billion gallons; and for the highest premium sales ratio—53 percent.

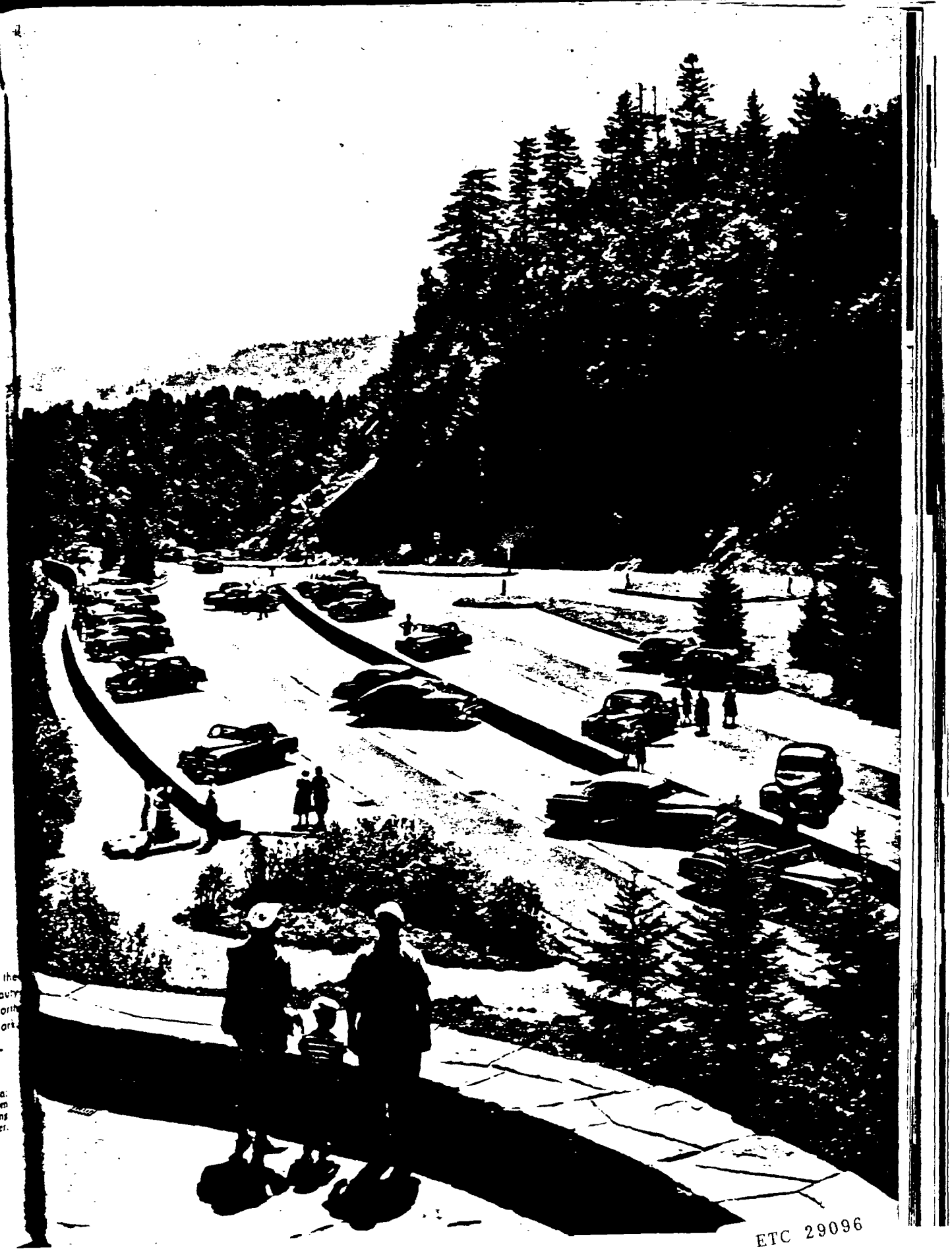
Consolidating its monthly reports, Ethyl also publishes yearly reports of gasoline sales which present figures for all categories covered in the monthly reports. These yearly reports show sales by states for every month of the year, and state and nation-wide totals by quarters and for the year as a whole. The annual report for 1953 was prepared earlier this year and was distributed several months ago.

With the cooperation of individual oil companies, then, Ethyl is able to prepare and present careful estimates of gasoline consumption in the individual states and throughout the country. These reports are designed to serve the oil industry as a useful tool in studying seasonal variations in demand, in gauging gasoline's growth year by year, and in making plans to satisfy the calls for this major product of the nation's refineries. =

Millions of gallons of the motor gasoline consumed in the summer months take vacationing Americans to beauty spots such as Newfound Gap on the Tennessee-North Carolina line in Great Smoky Mountains National Park

LAYOUTS AND ART DIRECTION: Carsten Grande.

PHOTO CREDITS: Cover, Ektachrome by David W. Corson, through A. Devaney, Inc.; pages 2 and 3, courtesy Shell Oil Company and Standard Oil Company (New Jersey); pages 6, 7 and 8, courtesy *The* (Mamaroneck, N. Y.) *Daily Times*, Town of Mamaroneck Police Department, and National Teen-Age Road-e-o: pages 9, 10 and 11, Emerick W. Owen; pages 17, 18 and 19, courtesy Louis E. Marron: page 20 (bottom left), The Bettmann Archive: pages 20 (bottom right), 21 and 22, courtesy American Flange & Manufacturing Company; page 24, courtesy Derby Oil Company: inside back cover, A. Devaney, Inc.



ETC 29096

News from down on the farm

It wasn't so long ago that most tractor dealers harvested a growing crop of complaints about valve failures every season. Now complaints about valve burning are becoming as rare as buckboards.

Why?

To make a long story short: Back in 1950, an Ethyl survey of 12,000 tractor dealers disclosed that valve burning was becoming increasingly serious. And, even though this was largely a mechanical problem, petroleum refiners and marketers also were concerned because they were hearing about it from their customers.

We knew that valve rotators had successfully prevented valve burning in heavy-duty trucks—and would be equally effective in tractor engines. So, as a service to the petroleum industry, we decided to tell tractor manufacturers, dealers and farmers of our experience.

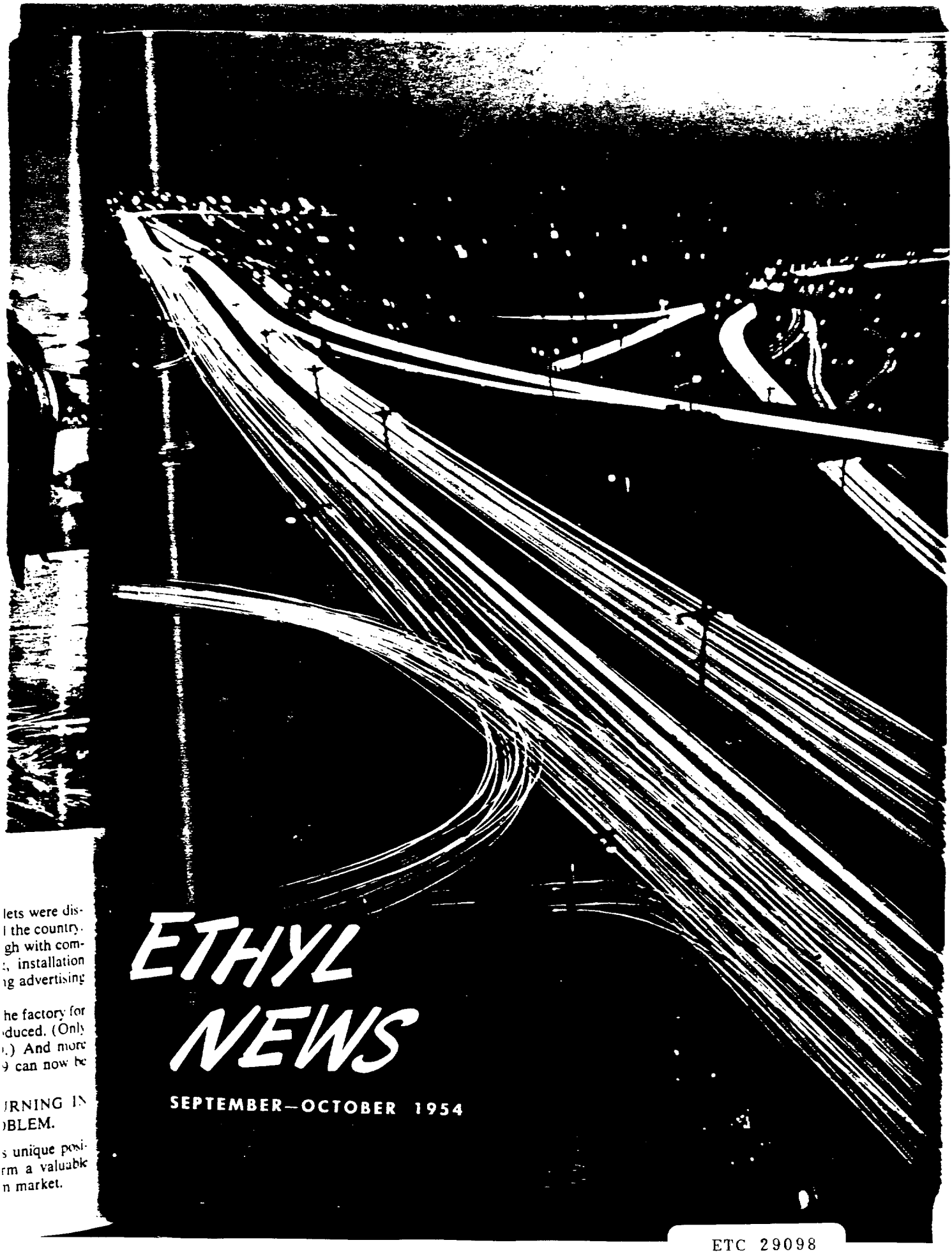
We organized an educational program promoting valve rotators. Nearly half a million rotator booklets were distributed and Ethyl valve-rotator films toured the country. Ethyl demonstration trailers followed through with complete information on valve-train servicing, installation methods and the like. And, of course, strong advertising was placed in tractor trade publications.

Result: Today, rotators are available at the factory for more than three-quarters of the tractors produced. (Only one model could be so equipped in 1950.) And more than 95% of all tractors made since 1939 can now be equipped with rotators.

MOST IMPORTANT, VALVE BURNING IN TRACTORS IS NO LONGER A PROBLEM.

This is another example of how Ethyl's unique position in the industry enabled us to perform a valuable service and protect an important petroleum market.

ETC 29097



ETHYL NEWS

SEPTEMBER—OCTOBER 1954

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BEHIND THE *NEWS*

Headlights and taillights from passing automobiles stretched the threads of gold and red across the nighttime photo reproduced on our cover this issue. The work of New York photographer J. Alex Langley, the picture was taken in Queens County at the intersection of Union Turnpike, Grand Central Parkway, Van Wyck Boulevard and Queens Boulevard. Photography enthusiasts may be interested to know that it was made by a Meridian camera with a Goerz Rectagon three-inch lens on daylight Ektachrome film. The exposure was for five minutes at F16.

In our January-February issue, an article by Siler Freeman, Detroit editor of Motor, *described modern automobile accessories and optional equipment and the big part they play in today's car market. Now along comes a piece by free-lance writer Mike Rivise* (Pesky Patents, *pages 8-10) telling of some of the many goofy attachments that have been patented for use on the family auto. Obviously, there's little similarity between the two. Mr. Freeman pointed out that progress and competition have led car manufacturers to adopt everything that makes a practical contribution to the comfort, safety and dependability of their products. Mr. Rivise is the first to admit that automotive gadgets like those cited in his article often get no further than Patent Office files, but he does think some of them are quite amusing.*

Speaking of suggestion systems, as we are in *The Power of Suggestion*, pages 19-21, there's a timely story out of the Carter Oil refinery at Billings, Mont. Seems the installation is interlaced with pipes of many sorts, including a number of high pressure steam lines. Determining which were the hot pipes by the touch system was resulting in too many burned fingers on the hands of maintenance crews. And spitting on the pipes was frowned on as an undesirable practice. Then one of the refinery workers came up with an award-winning suggestion – supply the pipefitters with water pistols. One squirt from the aqueous firearm and a hot pipe gives itself away in a miniature burst of steam.

ETHYL NEWS

Richard F. Cook, Editor

SEPTEMBER-OCTOBER 1954

Published by Ethyl Corporation, 100 Park Avenue, New York 17, N. Y., manufacturers of "Ethyl" antiknock compounds, used by oil companies to improve the antiknock quality of aviation and motor gasoline.

Edward L. Shea, President

Stanley T. Crossland, Vice President and Treasurer

Herbert A. Savage, Secretary

MILITARY ORDERS

The Armed Services Petroleum Purchasing Agency buys oil for our defense forces

AT AN AIRBASE *in Greenland, a jet fighter roars down the broad runway and takes off into the Arctic twilight.*

In the Far East, ships of the Seventh Fleet on patrol steam through the troubled waters of the China Sea.

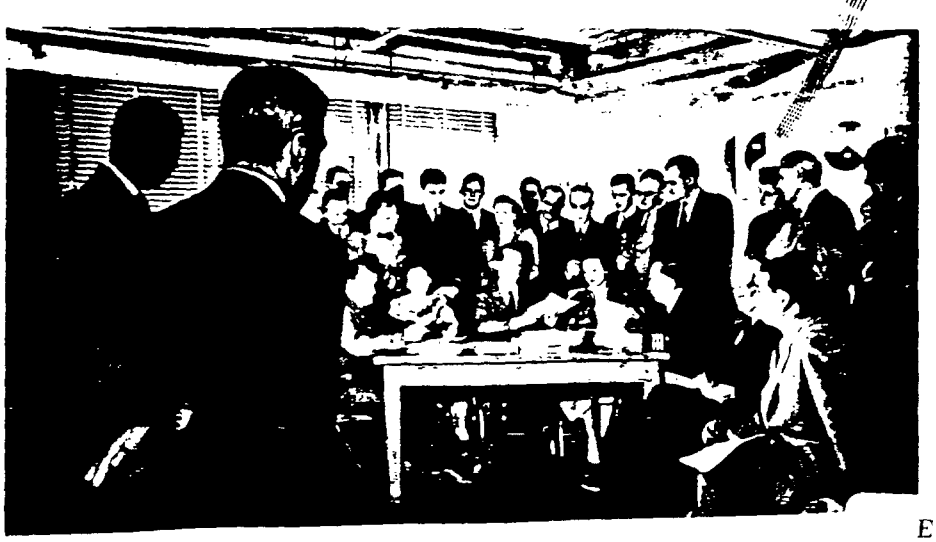
In West Germany, a convoy of Army trucks rolls smoothly down an autobahn.

* * *

In these and hundreds of other places in the United States and throughout the world, jet fuels, aviation and motor gasoline, diesel and fuel oils, and lubricating oils and greases are the lifeblood of America's armed forces. The big part they play on the ground, in the air and on the sea is seen in the whopping total of 172 million barrels of petroleum products purchased for the military in the last fiscal year, and in the cost of these products—almost one billion dollars.

Buying oil in such huge quantities and making sure that it is available around the globe where and when it is needed, obviously is a big business. It's so big, in fact, that a special joint organization of the Army, Navy and Air Force—the Armed Services Petroleum Purchasing Agency—was created and exists for no other purpose.

Now in its seventh year, ASPPA (pronounced *az'pā*) provides a case history of successful unification, in one function at least, of the armed forces. Directed by officers of the Army, Navy and Air Force on a rotating basis, and staffed by experienced civilians, the joint agency works for both government and industry. For Uncle Sam, it consolidates purchases of all petroleum products for the services under one roof, thus eliminating duplication and waste and fostering efficiency and economy. For the oil industry, the existence of one agency with standard specifications and a single method



Evidence of the competition to supply the huge oil requirements of the military is seen at this ASPPA bid opening.

ASPPA's directorship, a two-year tour of duty rotated among the three services, is currently filled by Col. Arnold C. Gilliam, of the Army.

On the last leg of their long journey from American refineries to Army uses in the field, quantities of motor gasoline are transported in five-gallon cans.

of operation simplifies for refiners and marketers the sale of their products to the services.

This fiscal year, ASPPA is buying some 42 million barrels of aviation gasoline, 69 million barrels of jet fuel, 12 million barrels of motor gasoline, 19 million barrels of diesel fuel, 44 million barrels of Navy Special fuel oil, and lesser quantities of marine gasoline, diesel fuel, heating oil, and lubricating oils, greases and packaged petroleum products. With the installations of the services stretching around the globe, with demand for different products varying from time to time and place to place, with availability of certain items and of storage capacity sometimes limited, these totals actually represent thousands of individual purchases from many different suppliers. A recent invitation to bid on fuel oil, kerosene, motor gasoline and diesel oil for ASPPA's Regions 3, 4 and 5, embracing 20 Midwestern, Southwestern and Rocky Mountain states, listed 1,387 separate prospective purchases.

In keeping in contact with suppliers of oil products, ASPPA maintains a file of some 1,500 qualified bidders. Through a careful system of indexing, it is able to determine at any given time what suppliers are interested in bidding on the different products and can thus circularize them with invitations to bid.

ASPPA purchases are made by two different methods—advertised bids and negotiated bids. Most purchases—exceptions usually are aviation gasoline and service contracts – are made by the advertised bid method. Qualified suppliers are informed of the quantity of each product required, points and methods of delivery, and when bids must be in. They are invited to submit prices and to attend bid openings, if they wish.

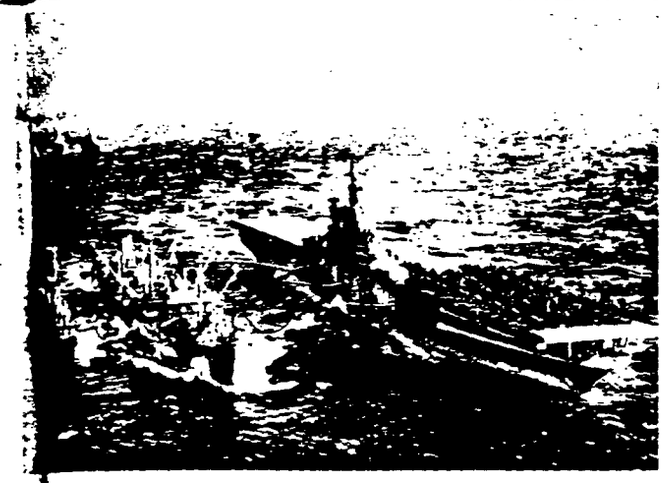
Bidders to whom contracts are awarded are notified and purchasing officers at military installations are informed. After the supplier has signed the contract which sets forth price, time and method of delivery and manner of payment, his subsequent dealings are with the purchasing officer at the place where deliveries are made. Payment is made by the branch of the service using the products.

In negotiated bids, suppliers are sent a *Request for Proposal* and submit bids in the same manner. Following receipt of these bids, ASPPA discusses prices and terms of delivery with suppliers and after the best possible terms have been arranged, awards the contract.

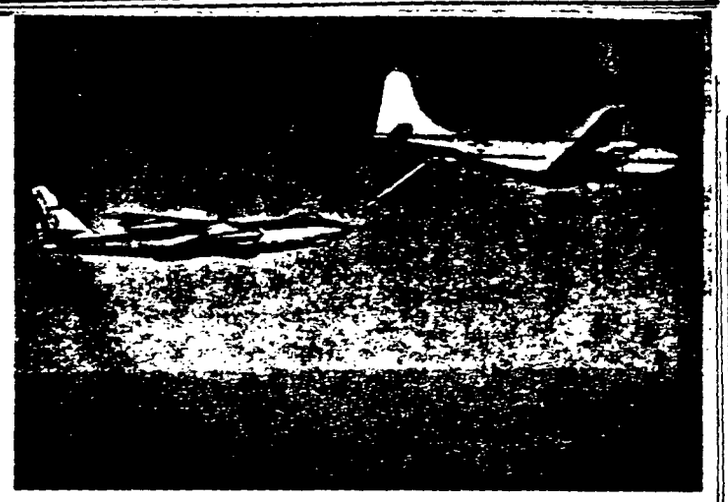
Competition Keen

With hundreds of companies competing to supply petroleum products to the services, the American public is the big winner. Besides centralizing all Army, Navy and Air Force oil buying in one agency and streamlining their specifications, ASPPA is able to buy the best products at the lowest prices. Evidence of this was well publicized recently in the case of an ASPPA contract on which some 218 companies competed and which was awarded to a South Carolina jobber.

Of the 1,500 companies on ASPPA's qualified bidders list, all but about 100 are in the "small business" (under 500 employees) category. While many of these companies are not in a position to bid on large quantities of such products as avgas, jet fuels and Navy Special, they often bid successfully on domestic post, camp and station requirements for smaller quantities of



The job of ASPPA is to provide petroleum products for the services wherever they may be needed. Here, a fleet tanker refuels two Navy vessels at sea.



Jet fuel, one of the principal items purchased by ASPPA, is about to be transferred from an aerial tanker to the tanks of a B-47 high in the sky.

motor gasoline, kerosene, fuel oil, and lubricants in their vicinities. ASPPA's small business specialist, currently Lt. Earl M. Pittman, SC, USNR, works closely with the smaller companies, advising them of invitations to bid and helping them to prepare and submit bids properly.

In active operation since May 1, 1948, the Armed Services Petroleum Purchasing Agency is an outgrowth of the experiences of World War II and the years following, when oil products for the military were purchased in large quantities but with less efficiency and economy. Before 1945, each service had its own specifications and made its own purchases, with the Army-Navy Petroleum Board working with the Petroleum Administration for War (PAW) in attempting to coordinate purchases and distribution.

Then as a step toward integration, the Joint Army-Navy Petroleum Purchasing Agency (JANPPA) was formed in 1946. This agency—not as joint as its name implied—was replaced by ASPPA two years later.

Under the Secretary of the Navy for the purposes of supervision and control, ASPPA works closely with the offices of the Assistant Secretary of Defense in charge of Supply and Logistics. Its directorate is composed of the supply chiefs of the three services—the Quartermaster General of the Army, the Chief of the Bureau of Supplies and Accounts of the Navy, and the Director of Supply and Services of the Air Force.

ASPPA's directorship, a two-year tour of duty rotated among the three services, is currently filled by Col. Arnold C. Gilliam, of the Army. Fourteen other officers, equally divided among the services, constitute the remainder of the military personnel who direct the work of the 114 civilian employees in the agency.

Petroleum product requirements are passed on to ASPPA by the Petroleum Branch of the Army, the Navy Fuel Supply Office, and the Fuels and Lubricants Branch of the Air Force. ASPPA's Purchase Division, through its aviation fuels, bulk fuels, domestic fuels and packaged products and specialties branches makes the purchases, and through its service contract branch negotiates and contracts for storage and servicing facilities. A special officer coordinates the alkylation expansion program with industry and government.

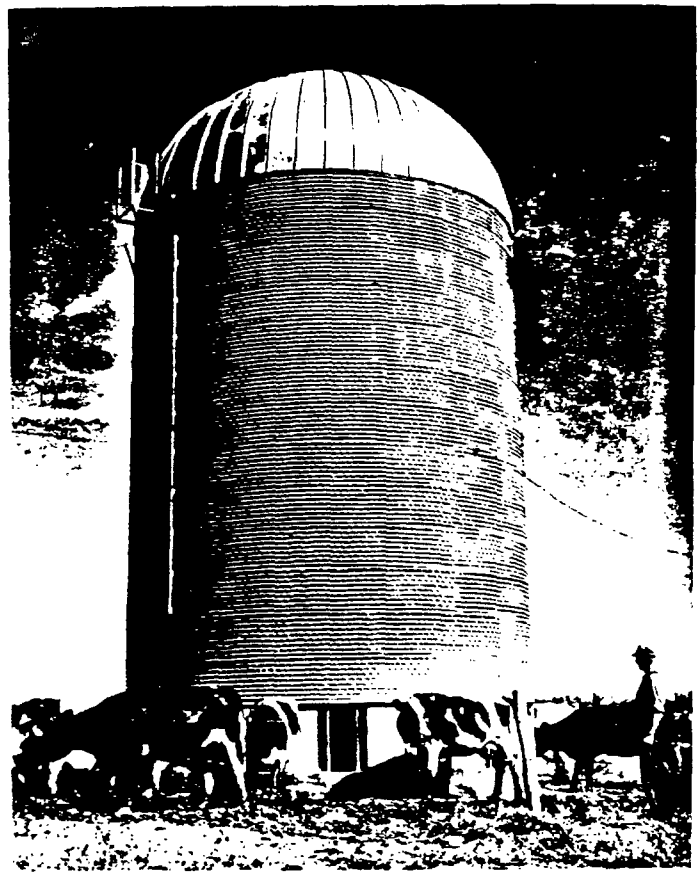
Works with Overseas Commands

The Distribution Division works closely with the area petroleum officers of overseas commands in coordinating the supply and distribution of products to the various theaters and replenishes supplies at domestic coastal terminals. These complex operations involve coordinating the movement of tankers with the Military Sea Transportation Service from the Gulf, East and West Coasts of the United States, from the Caribbean, and from the Persian Gulf to ports around the globe.

In buying and coordinating the distribution of petroleum products, ASPPA's work is as vital as the products it buys and as far-reaching as the bases where they are used. From its offices in the Navy's Bureau of Yards and Docks Annex in Arlington, Va., it reaches out to draw on the vast production of the American petroleum industry and put it at the disposal of the Army, Navy and Air Force wherever it may be needed. #

At set intervals, a time clock activates the conveyor belt system that carries poultry feed from a storage bin through the hen house.

Right, when they are hungry, Wulkan's dairy cows put their heads through apertures at the base of this silo and are gravity fed from the 60-ton supply of alfalfa stored above.

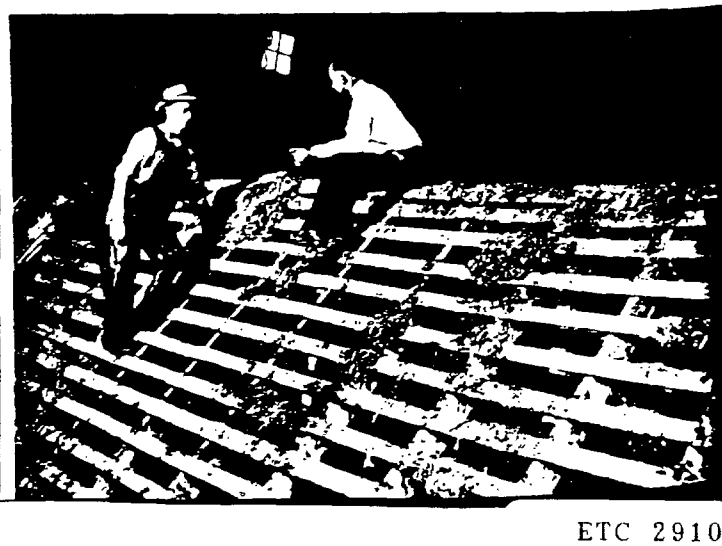


Push-button fa

Mechanized agriculture is on display at Lynn Wulkan's Minnesota showplace

An automatic waterer, electrically heated in winter, allows cows to quench their thirst at will.

Field crops are spread over this A frame and dried by hot air blown up from a portable drier spotted below.



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Lynn Wulkan is host to some 3,000 visiting farmers a year who come to study his mechanized operations.

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WHAT DOES A FARMER DO on his day off? Why he visits a farm, of course.

At least there are some 3,000 farmers who take this kind of a busman's holiday every year. They are the 3,000 who annually visit the 240-acre farm of Lynn Wulkan near Hector, in south-central Minnesota.

There's a good reason why these tillers of the soil make the trek to Hector. Lynn Wulkan's place is a working example of how modern agricultural engineering developments can reduce manual labor, increase profits and take lots of the uncertainty out of farming. Wulkan's is a "push-button" farm in many respects, mechanized from field to silo to barn and henhouse and back to field again. His crops are cultivated, harvested, transported, dried and stored mechanically; his livestock is fed automatically; and his barns are cleaned in mechanized operations.

Wulkan is a poultry and dairy farmer, and one of the first things that intrigues visitors is the cafeteria style in which his hens are fed. At set intervals, a time clock activates a conveyor belt system that takes feed out of a hopper and carries it through the laying house. The 500 laying hens hardly have to move; they just stand and peck to their hearts' content.

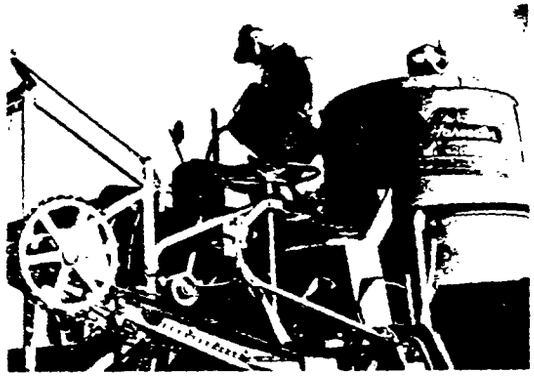
"Daily egg production is about 75 percent," Wulkan tells visitors with pride "—almost 50 percent greater than the average farm flock's output."

Egg production and his dairy herd account for most of Wulkan's income, but by using modern agricultural machinery he also raises such crops as flax, soybeans, alfalfa and corn. Most of the corn and alfalfa crops are used for livestock feed, and here he has another mechanical time-saver—a portable crop dryer.

Wulkan harvests his feed crops early, when the moisture content still is high, and then dries them with this

At the wheel of a tractor, Wulkan is silhouetted against the modern building where his machines are kept.

Two of the many labor-saving devices—a portable belt elevator for transferring grain and a crop drier.



Lynn Wulkan's son Wesley, who with his father operates the farm, is shown refueling a combine and, below, with a specially bred bull calf from the farm's herd.

forced hot air unit. This eliminates much of the hazard of adverse weather encountered during the later, more usual harvesting season. "Best of all," this progressive farmer reports, "my crops retain their quality. My alfalfa hay, for example, tests 22 percent protein content. That's six percent over the average."

This way, too, he saves two-thirds more of the leaves on his crops than when they are left in the fields to dry and fall off. "It's the leaves that have the food value, not the stems," he declares.

The flax and soybeans are cash crops. By drying them with forced heat he can store them safely until market prices are favorable for selling.

Wulkan's cattle barn is a picture of efficiency. A complete ventilating system draws off the humidity that could otherwise create an unhealthy atmosphere for the cows. Too, an automatic barn cleaner removes all manure via conveyors, dumping it directly into the spreader parked outside. Every second or third day the tractor is hitched up to haul it to the fields.

Milk-handling Equipment

Milking machines have been in use on the farm for three decades, indicating a long-time interest in mechanization. Also in the dairy barn is equipment for cooling milk, a hot water heater and other equipment needed in preparing the milk for shipment.

The Wulkan dairy herd feeds itself, too, through stanchion-like openings at the base of a self-feeding "haymaker" silo. Sixty tons of alfalfa are blown up to the top where an oil-fired dryer reduces the moisture content. When they are hungry, the cows merely put their heads through the apertures in the base of the silo and are gravity fed. During the winter there is an auger-type device which can be switched on to agitate the silage and keep it from freezing. Also nearby is an automatic waterer where the cows can quench their thirst as they desire.

Lynn Wulkan is no "checkbook" farmer. Farming is his life and the source of his income. His $100,000 investment in mechanization is devoted to making farming more profitable and life more enjoyable. Because of it he has time to serve as president of the board of the McLeod Cooperative Power Association and, appropriately enough, participate in the activities of the American Society of Agricultural Engineers as an associate member. It even permits him to get away for a little fishing once in a while, and to take a vacation in the winter.

When they hear things such as this, it's no wonder other farmers come to study his operations. ≐

Building for Service

Increased technical assistance to the oil and automotive industries is the goal of Ethyl's research expansion

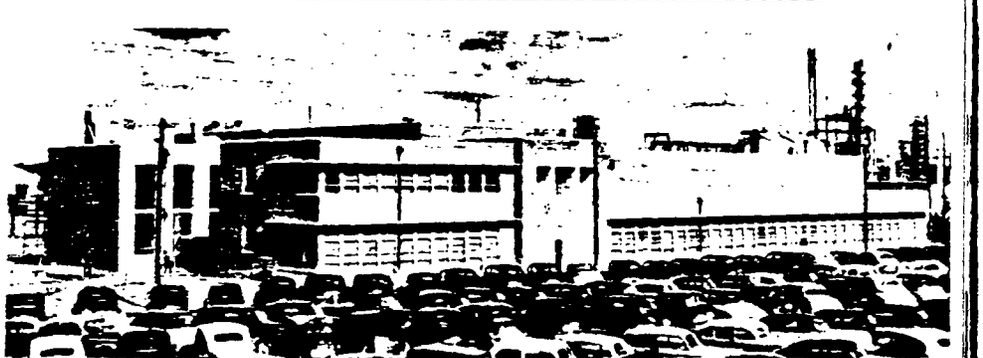
A MILLION-DOLLAR expansion program and a realignment of activities are included in Ethyl Corporation's plans for broadening the scope and effectiveness of its research and technical services to the oil and automotive industries. Part of Ethyl's continuing efforts to serve customers and related industries even more efficiently, the new steps are designed to increase the value of Ethyl's research contributions to oil refiners and engine manufacturers with whom the Corporation has worked closely for many years.

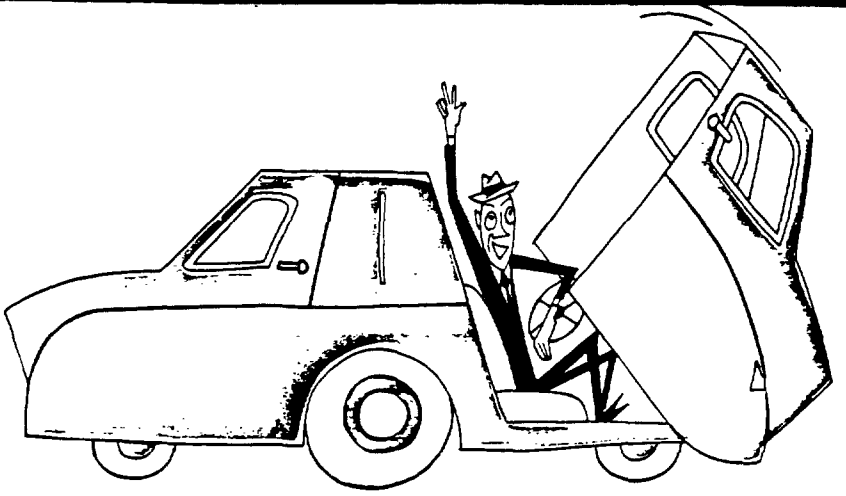
The expansion of research facilities is being undertaken at Ethyl's central research laboratories in Detroit and at its manufacturing center at Baton Rouge. Major additions to laboratories are being made at both locations in order to provide still larger facilities for research and development programs.

Additional wings to house new engineering and chemical laboratories will be built at Detroit. At the Baton Rouge plant, where the Corporation's pilot plant and development laboratory are located, a new two-story addition will virtually double the present development laboratory.

The expansion program is related to the recent realignment of Ethyl's research activities. Under the new organization plan, the Detroit laboratories are responsible for all research programs in the automotive products field, while research and engineering on chemical products and on manufacturing processes are concentrated in Baton Rouge. #

New additions to Ethyl's central research laboratory at Detroit, above, and to the development laboratory at the Baton Rouge plant, right, are part of the expansion.





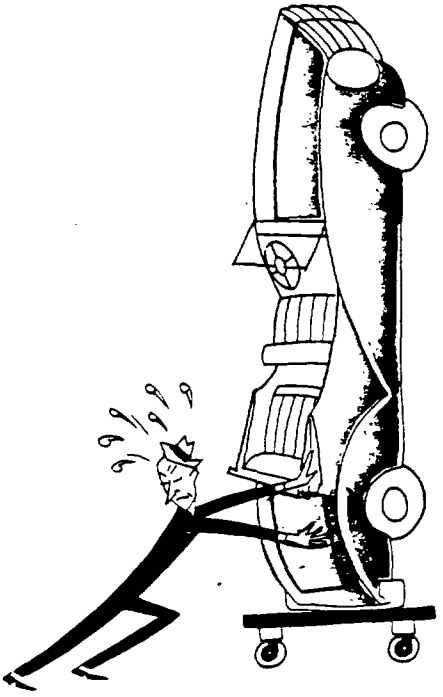
Pesky Patents

There's almost no limit to the long list of zany automotive gadgets

By Mike Rivise

IN MAKING THE AMERICAN automobile the safest, most comfortable and most stylish in the world, designers and manufacturers of modern passenger cars have overlooked no possibility—no practical possibility, that is. Standard items, plus a variety of accessories and optional equipment, combine to give today's motorist everything in the way of transportation luxury.

But besides the many innovations that have been incorporated into modern cars, there are, bulging the files of the United States Patent Office, scores of automotive ideas which, though patentable, have never been adopted by Detroit. And it's no wonder. Developed in all seriousness, most of these gadgets, even their inventors agree, aren't exactly suited for widespread commercial adaptation. Many provide nothing more than a good chuckle to automotive progress.

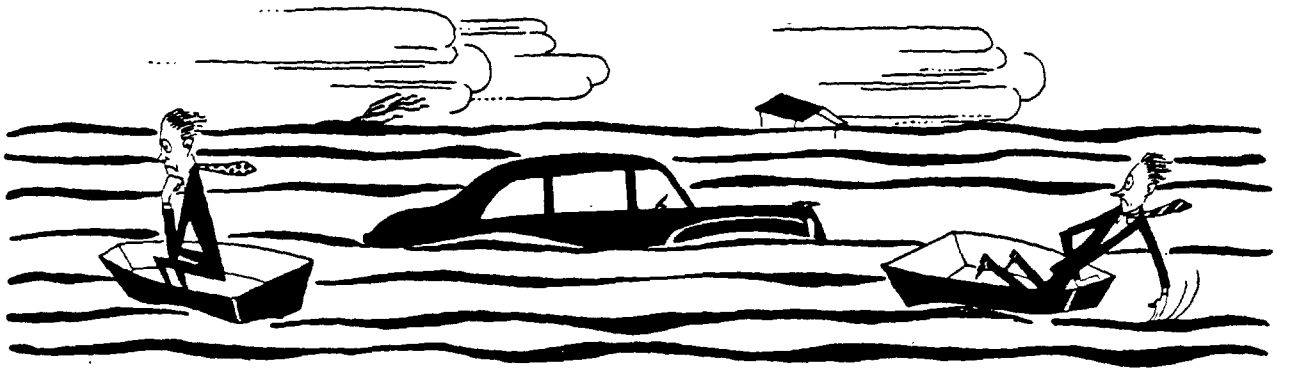


Some of these inventions are described pictorially; others rely on laboriously wordy explanations. Many are so complicated that a combined word-picture account of their purpose, method of construction and operation serves only to confuse the bewildered reader.

In the early days of the horseless carriage, weird automotive patents, of course, were a dime a dozen. But the surprising thing is that even in this day of power brakes, power steering, power windows and automatic transmissions, the odd ideas continue to pour in. Some are as modern as atomic energy and as timely as the recent Chicago floods and the high waters that accompanied the furious female East Coast hurricanes.

These floods and hurricane-driven high waters were anticipated by the inventor of a double-duty automobile luggage carrier. A two-piece hull, which when folded one piece over the other holds the baggage, may be opened up in case of flood to become a boat. Or, in the event of sudden incompatibility on the part of two car passengers, the two halves can be launched separately.

A citizen of France has come up with an auto-on-the-

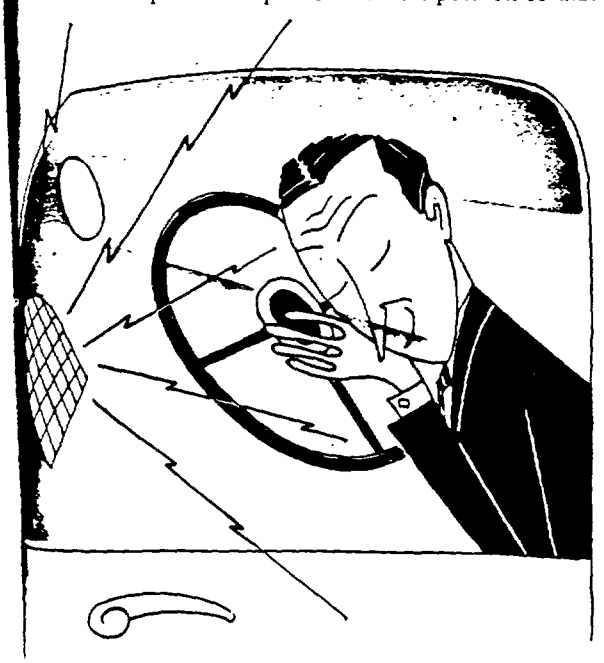


half-shell for which the U. S. Patent Office granted him protection just last year. One press of a button, and the forward position of this doorless vehicle falls forward and you enter or leave depending on your desire and location at the moment.

Solution to the parking problem, too, seems to have intrigued a number of would-be Edisons with an automotive bent—especially before the days of power steering. Their ingenious solutions now grace the files of the Patent Office, but few autos.

In one case, a foot lever, pump and rollers are attached to the rear axle. The driver simply noses the front of his car into the desired parking space and then starts pumping on the foot lever. Presto, the rear end of the car raises itself and then rolls sideways into position in the cramped quarters. At least, that is the way the patent reads.

Another parking solution that got the nod from Washington is even more spectacular. Its clever originator designed a platform fitted with casters and mounted vertically on the rear of the automobile. The idea is to tip the car up into a vertical position so that it comes to rest, front bumper high in the air, on the castered platform. The driver simply rolls it into any abbreviated parking space that may present itself. OK for weight lifters and circus strong men perhaps, but what about the rest of the world's weak mortals?



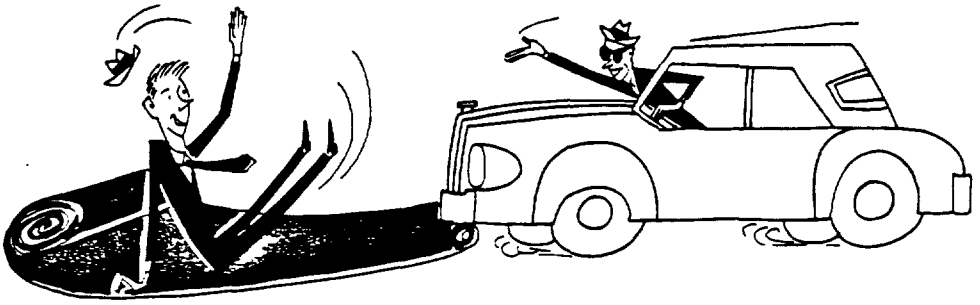
Even the absent-minded haven't been forgotten. It's not unusual to hear of a man whistling at a car—especially if there's a pretty girl at the wheel. But here's a switch that falls into the "man bites dog" category. Forget to remove your ignition key and this device whistles at you until you go back and retrieve it.

No Sleeping Allowed

The car also talks back in another patented invention that anticipates the eventuality of the driver falling asleep at the wheel. Just what activates the mechanism is not quite clear but just try dozing off and a red light on the dashboard flashes on and off, sending brilliant beams into your drooping eyes. Ignore this preliminary warning for just a few seconds and a noise loud enough to waken not just the snoozing driver but the dead themselves will blast you back into full consciousness.

One inventor concerned with the possible necessity of whisking his family to safety in the event of atomic attack has patented his plans for converting his sedan into living quarters. Sleeping, plumbing and cooking facilities that can be used while the vehicle is moving along at normal road speeds are included. The ingenious developer of this plan would move the engine, storage space, stove and sink to the rear of the car and install a table and adjustable seats in the passenger compartment. And, taking a page from George Pullman's book, lower and upper berths are provided where four adults can sleep comfortably without interfering with the driver, who presumably remains seated.

A gadget which even this clever man overlooked has been provided by another patent holder who's sure to gain favor with the ladies who want to check on the arrangement of their hair-do en route after dark. His invention: an illuminated mirror, and also for milady's



convenience, an extra supply of face powder and rouge.

Among the other comforts of home available on the road is one for the growing number of high-fidelity recording fans. This patented device makes it possible for them to drive and have their music too. It provides for a magnetic wire sound reproducer which can be mounted on the dashboard and plays the driver's favorite tunes through the car's radio loudspeaker.

Movie-goers Remembered

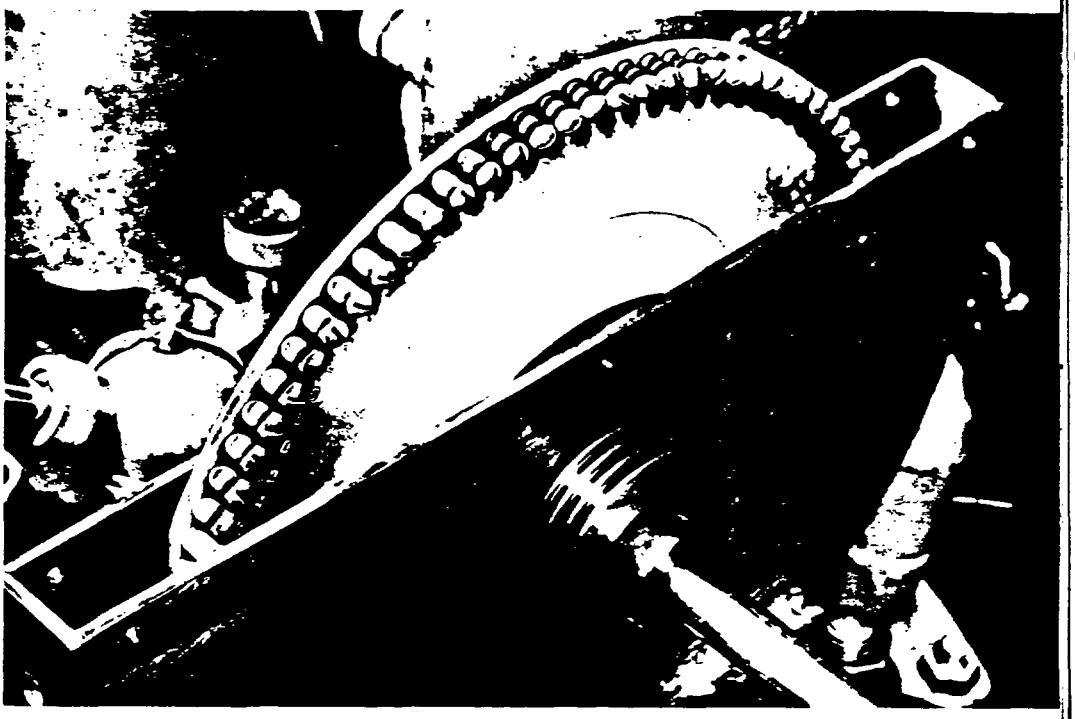
Even the drive-in theater-goer hasn't been forgotten by the parade of automotive patent holders. A Texan, perhaps while suffering from heat exhaustion at an outdoor theater, is the developer of a system for piping cool air into autos parked in front of outdoor movie screens. The refrigerated ozone is wafted gently through hoses provided by the theater owner and all the patron does is tuck the business end inside his car. Oh yes, he mustn't get so intrigued with the goings-on on the screen that he forgets to close his car windows – air conditioning the whole state of Texas might be too big a job for the equipment provided.

Safety and accident prevention are the basis of many of the bright ideas for automobile improvement on which the Patent Office has smiled. In one case, the device has taken the shape of inflatable safety cushions. These are installed on the steering wheel, the instrument panel and even on the back of the front seat—if you want to go so far as to provide protection for those lovable back-seat drivers. When the balloon-equipped vehicle is braked to a sudden stop or strikes a formidable object, compressed air from a tank under the hood rushes in to inflate the cushions and provide all hands with a happy landing.

This patent is somewhat reminiscent of one granted many years earlier for the protection of careless pedestrians. This provided for the automatic rolling out from the car of a thick blanket to protect the falling foot traveler from an abrupt and uncushioned arrival on the pavement. At the same time, wedges were to be mechanically inserted in front of the wheels to keep the onrushing car from steamrollering the prostrate form.

And for the peace of mind of the nervous passenger, there's a gadget that enables him to stop the car independently of the driver and beat a hasty retreat before his nerves are completely shattered. Realizing, perhaps, that this one would give the back-seat driver an unfair advantage, the inventor designed this device for use by front-seat passengers only.

On and on, the list of automotive patents goes. There's one for almost every part of the car and for every imaginable circumstance—even for the late-rising commuter. This one is guaranteed to let him finish that second cup of coffee and still make the drive to the station in time to catch the 8:15 in the morning. What is it? A time clock that can be set the night before to go off, start the car, and have the engine all warmed up when the tardy commuter comes racing out and across the back yard to the garage. #



"Whirling pin cushion"

That's the nickname for one of Ethyl's newest research tools

ONE OF THE latest devices to be used in Ethyl Corporation's continuing studies of combustion chamber deposits is the revolving disk pictured above.

Affectionately called the "whirling pin cushion," the disk was developed by Ethyl Research Laboratories to help determine what can be done about the deposits that build up in modern gasoline engines—one of the most formidable problems facing the petroleum and automotive industries. When researchers understand the nature of these deposits and how they form through the interaction of fuels, oil, additives and engine operating conditions, they will have made an important stride toward rendering the deposits harmless.

Although the "whirling pin cushion" is only one instrument out of hundreds in this research, its development may prove to be highly significant.

In using the "pin cushion," the new device is mounted in a special test engine. It is synchronized with the engine cycle so that the individual pins move past a specially constructed opening in the cylinder head of the test engine and pick up deposits as they are being formed—from exactly the same portion of the cycle each time.

Later, the deposits which have formed on each pin are "fingerprinted" by X-ray diffraction so that a comprehensive picture of their composition can be accurately formulated.

Through the development and use of the "whirling pin cushion," Ethyl researchers are now able, for the first time, to trace the step-by-step formation of combustion products at all phases of the cycle. This and other new test instruments in use at the Ethyl laboratories are helping to piece together the fundamental knowledge which will assist in opening the door to engines and fuels of far greater efficiency than are possible with the information available today. #

ETC 29110

For outstanding service to the American m

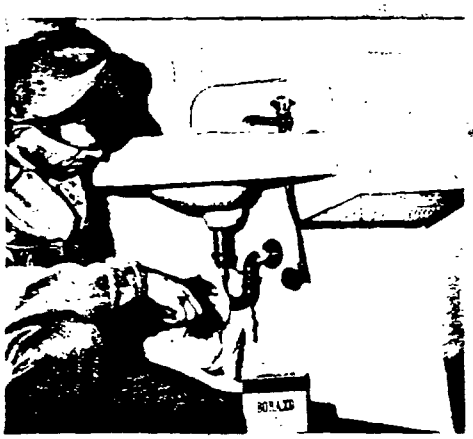
for "opening up" when we're stranded and out of gasoline at three o'clock in the morning . . .

for working night and day on holidays so the rest of us can have more fun . . .

for giving travel directions when we've made a wrong turn . . .

for putting on our chains in the cold, wet snow while we wait in the warm car . . .

for keeping rest rooms so clean we like to stop with the whole family . . .

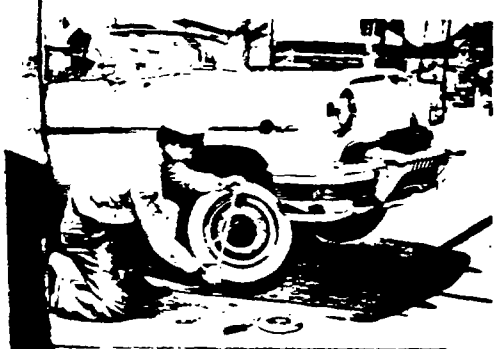


for being a friendly information bureau when we roll into a strange town . . .

ETC 29111

an motorist

AS ONE OF ITS CONTRIBUTIONS to Oil Progress Week this year, Ethyl Corporation published an advertisement citing service station men "For outstanding service to the American motorist." The advertisement, which was seen by some 30 million people, pointed out that there actually isn't any medal for these men, but "there should be one for all the big and 'little' things they do for the rest of us." Reproduced here is the illustration from the advertisement. The accompanying photographs picture some of the "big and 'little' things" for which service station men were cited. #



for helping us when we're stuck with a dead battery or a flat tire . . .

for offering us a real bargain. Although the gasoline they sell us is 50 percent better than the fuel of 1925, its price is only slightly higher (exclusive of taxes). In fact, a gallon of top-quality gasoline costs less today than a gallon bottle of distilled water!

ETC 29112

THE DAYS of OUR LIVES

The proposed new World Calendar offers many advantages, its advocates claim

AMERICAN BUSINESS, by necessity, works with the calendar, but is the calendar working with American business? That is the question some people are asking very earnestly today.

Our calendar is inconsistent, they say, noting how dates vary from one day of the week to the other, depending on the year, and with no apparent reason. Furthermore, the quarters are not equal, the number of working days in each month varies, and many of the holidays on our present calendar occur in the middle of the week, when they might come on either Friday or Monday, if efficiency is desired.

To alleviate these troubles and to bring balance into the method of reckoning time, the United Nations is now considering a resolution to streamline this Gregorian calendar that we are using.

Big Money-Saver

Supporters of the measure claim that in business alone the new calendar would save billions of dollars. It would simplify accounting, they say, release railroads from the task of making up new time schedules every year, aid schools, courts and other institutions in setting opening and closing dates for their sessions, and generally reduce confusion in an overly confused world.

In the proposed new calendar, called The World Calendar, there would still be 12 months and 52 weeks in a year. But each year would be exactly the same as the last and the quarters would be equal in length, containing 91 days, 13 weeks, or three months.

Each month would have 26 week days, plus Sundays; each year would begin on Sunday, January 1, and each working year would begin on Monday, January 2. Each quarter would start on a Sunday and end on a Saturday, and most mid-week holidays would be permanently eliminated.

To accomplish this reform, the first month of each quarter (January, April, July and October) would be allotted 31 days. All the other months would have 30 days each, February included. Since this adds up to only 364 days, and since there are 365¼ days in a year, an international holiday, called a Worldsday, would be inserted at the end of each December, but probably would not be designated December 31. Another Worldsday, also a holiday, would follow June 30 every fourth year to replace the traditional February 29 as leap year day.

Advocates of The World Calendar point to regularity and consistency as the outstanding virtues of the new method. For instance, Election Day, at present the first Tuesday after the first Monday in November, would always be on Tuesday, November 7, on The World Calendar.

Proponents of The World Calendar suggest that mid-week holidays be shifted to Monday. Long week-ends not only are good for the general health, they say, but also are beneficial to industry in reducing absenteeism. Standardization of holidays also would enable businessmen to plan ahead more accurately in anticipating such things as gasoline demand, retail trade, newspaper circulation, and electric power loads.

The only holiday with which The World Calendar does not deal is Easter. The question of when Easter should fall is a religious one, The World Calendar

The 1955 Calendar

FIRST QUARTER

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1			1	2	3	4	5			1	2	3	4	5
2	3	4	5	6	7	8	6	7	8	9	10	11	12	6	7	8	9	10	11	12
9	10	11	12	13	14	15	13	14	15	16	17	18	19	13	14	15	16	17	18	19
16	17	18	19	20	21	22	20	21	22	23	24	25	26	20	21	22	23	24	25	26
23	24	25	26	27	28	29	27	28						27	28	29	30	31		
30	31																			

SECOND QUARTER

APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2	1	2	3	4	5	6	7				1	2	3	4
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
24	25	26	27	28	29	30	29	30	31					26	27	28	29	30		

THIRD QUARTER

JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2	1	2	3	4	5	6						1	2	3
3	4	5	6	7	8	9	7	8	9	10	11	12	13	4	5	6	7	8	9	10
10	11	12	13	14	15	16	14	15	16	17	18	19	20	11	12	13	14	15	16	17
17	18	19	20	21	22	23	21	22	23	24	25	26	27	18	19	20	21	22	23	24
24	25	26	27	28	29	30	28	29	30	31				25	26	27	28	29	30	
31																				

FOURTH QUARTER

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1			1	2	3	4	5					1	2	3
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24
23	24	25	26	27	28	29	27	28	29	30				25	26	27	28	29	30	31
30	31																			

THE WORLD CALENDAR

FIRST QUARTER

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7				1	2	3	4						1	2
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30

SECOND QUARTER

APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7				1	2	3	4						1	2
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30	W

THIRD QUARTER

JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7				1	2	3	4						1	2
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30

FOURTH QUARTER

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7				1	2	3	4						1	2
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30	W

Worldsday, (a World Holiday), W or 31 December (365th day), follows 30 December every year.
* The Leapyear Day, (another World Holiday), W or 31 June follows 30 June in leap years.

The Gregorian calendar for 1955 and The World Calendar. On The World Calendar, all years start on Sunday, January 1, and have four identical quarters of 91 days.

Elisabeth Achelis, founder and president of The World Calendar Association, with Meghnad Saha, India, and James Avery Joyce, Great Britain, at a United Nations meeting on The World Calendar.

Association says, and is a matter for the various churches to decide upon among themselves. Under our present calendar, Easter can occur on any date between March 22 and April 25. Obviously, this 35-day variation has an important effect upon trade, with an "early" Easter frequently hurting it, and a "late" Easter encouraging people to buy.

Of Old Origin

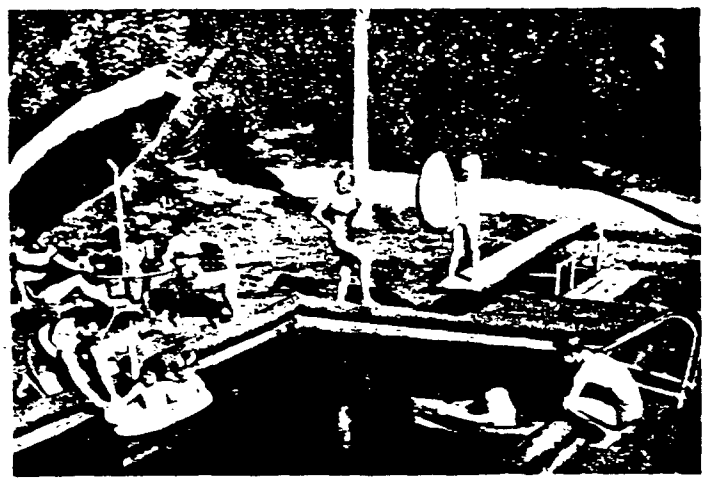
Although The World Calendar as currently proposed is the work of hundreds of scientific minds, its origin goes back to 1834, and an Italian priest, Abbe Marco Mastrofini. In that year he published a scholarly book with the impressive title: *Amplissimi Frutti da Raccogliersi sul Calandario Gregoriano Perpetuo.* Freely translated that is "Final Results of Research on Perpetualizing the Gregorian Calendar."

The Abbe proposed a year of 364 days, beginning with Sunday, January 1, and ending with a 365th "extra-calendrical" day to be designated a holy day or eighth weekday. In leap years there was to be another extra day which would be called "inter-calary day."

Thus, Mastrofini was the pioneer of the one or two stabilizing days which calendar reformers subsequently have adopted.

The problem of accounting for these extra days, while at the same time constructing a balanced calendar, was the block upon which other calendar reformers had stumbled. For the year is not exactly 365¼ days long. It is 365 days, five hours, 48 minutes and 45.51 seconds in length. This is 11 minutes and 14.49 seconds less than 365¼ days. Not much, but enough to amount to 19 hours in a century, and in 1,000 years to make the calendar about a week behind schedule.

This is precisely what happened under Julius Caesar's calendar. By 1582 the vernal equinox, when the sun begins moving northward again and so marks the first day of spring, was ten days late. It came on March 11, although the Council of Nicea of the Roman Catholic Church had decreed in 325 A.D. that it was to fall on March 21.



Long week-ends for more leisure would result from The World Calendar's shifting mid-week holidays to Monday.

The proposed method of reckoning time also would fix Election Day on a definite date, November 7, every year.

There was nothing to do but to correct the calendar by taking out ten days. This was done by Pope Gregory XIII, who directed that the day after October 4, 1582 should be called October 15. Thus, the present Gregorian calendar that has been in use for almost 400 years was established.

Pope Gregory also saw to it that this discrepancy would not come up again for thousands of years, by eliminating three leap years every four hundred years. Thus the years 1700, 1800, and 1900 were not leap years, but the year 2000 will be. This simple formula will keep the calendar approximately correct with the seasons for about 3,300 years.

As with any proposal with far-reaching effects, there is opposition to The World Calendar. Among its vigorous opponents are two religious groups – Seventh Day Adventists, and some Orthodox Jews. Both groups firmly maintain that the use of the "Worldsday" device will make one week every year eight days in length, and that the seven day week was divinely ordained, and to change it would be sacrilegious.

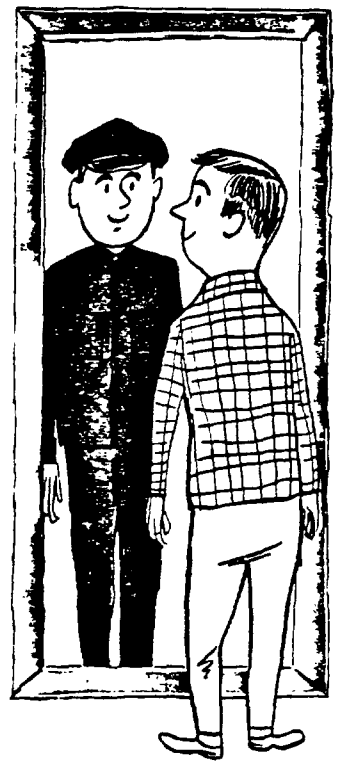
Organized Backing

Support for the movement is organized in The World Calendar Association, a non-profit organization with headquarters in New York and affiliates in many cities of the world. Heading The WCA is Miss Elisabeth Achelis, a dedicated and long time proponent of calendar reform. Besides the greater order which she holds this new calendar would bring into the world, Miss Achelis sees it as one major point upon which all the nations of the world might unite and set an example of international cooperation.

Along with Miss Achelis there is an impressive list of individuals and organizations in a variety of fields who favor calendar reform. Among these are the comptrollers of some leading American business firms. In answer to a survey, several hundred of these corporate officials indicated that the present calendar does cause business complications which a new calendar might eliminate.

Advocates for the change in calendars point to January 1, 1961, as the ideal date for the switch to be made with a minimum of difficulty. At that time both the World and Gregorian calendars begin the year on Sunday, January 1. But whether there is to be a change in the system of numbering the days of our lives is something that only time will tell. ≠

PICTURE OF OPPORTUNITY



A new motion picture, "Pick Your Tomorrow," is one of the major tools of Ethyl's Recruiting and Training Program

AN ALERT YOUNG MAN is wondering what line of business to choose for his life work. He is seeking independence, variety, contact with people, a good income and security. His investigation of several fields and his final decision that the service station business is the best one for him is the story of Ethyl Corporation's newest motion picture, "Pick Your Tomorrow."

Told in flashback, "Pick Your Tomorrow" is one of the major tools of Ethyl's Recruiting and Training Program, developed to help oil companies assist service station dealers in improving the caliber of their attendants. The 20-minute sound, color movie is designed for showing to high and trade school groups, to veterans, and to business, civic and youth organizations. It portrays the advantages of service station work with the aim of influencing promising young men to enter it.

The movie relates the lively adventures of the main character as he explores banking, factory work, retail store selling, and the service station business. Using an evaluation chart he has devised for himself, the young man scores each field on the four main qualities he seeks in a job. In the end, it shows how and why service station work scores highest for him.

While "Pick Your Tomorrow" lauds the service station business, it doesn't dodge the hard facts of service station life. It tells young men that they may have to work long hours at times, and will certainly get their hands dirty. On the other hand, the film stresses the openings for the average man to become his own boss, and to run his own independent business, with opportunity for an interesting, worthwhile and successful career.

For dealers, the film serves as a reminder that they are in a good business, and reinstills the feeling of pride that comes from the satisfaction of an important job well done. "Pick Your Tomorrow" also helps crystallize in the dealer's mind a picture of the type of man needed for service station work, and offers some helpful hints on how to interview and select men effectively.

Based on the results of a nation-wide survey of nearly 5,000 service station dealers, conducted by Ethyl

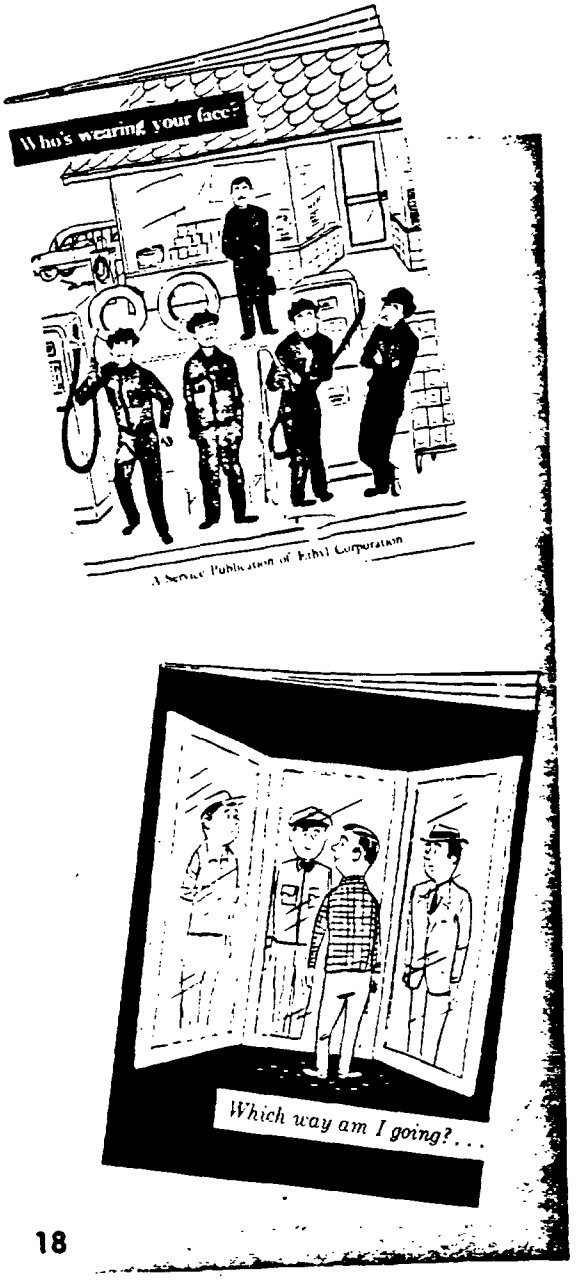
Designed to appeal to young men, the movie shows the main character telling his friends why he chose service station work.

In an interview with a successful dealer, many of the facts of service station life are fully explained.

ETC 29116

Corporation earlier this year, the Recruiting and Training Program is designed to help oil companies overcome the problems encountered in service station attendant employment and training. The survey pointed up the fact that dealers themselves are enthusiastic about the service station business but fully half of them find it difficult to hire competent men, and many report that their business is suffering from a high employee turnover.

In Ethyl's study of the problem, it was found that one of the best pools of potentially good service station attendants are high school graduates and young men coming out of the armed forces. Accordingly, the film and other phases of the R. T. Program have been shaped to appeal especially to them.



Besides "Pick Your Tomorrow," Ethyl has prepared and is making available to oil companies a booklet entitled "Which Way Am I Going?" The booklet may be used as a supplement to the movie or may be distributed alone. It advises young men to take a good look at themselves before choosing a career. Four yardsticks—independence, type of work, income and security—are suggested for possible job evaluation, and the service station business is presented in the light of these standards.

The booklet points up the opportunity for independence; explains the personal qualifications required of good potential attendants; tells that service station work pays as well as comparable jobs in most communities; and emphasizes that service stations supply needed goods and services in an important market.

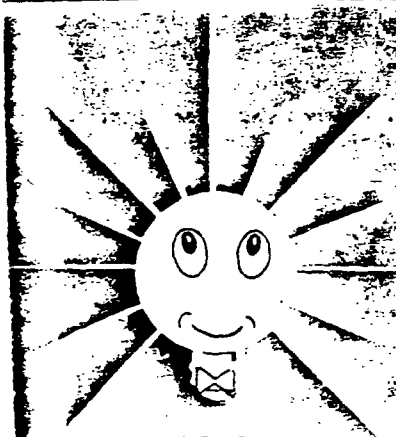
Designed for Dealers

A second booklet, also a part of the R. T. Program and designed for dealers' use, is entitled "Who's Wearing Your Face?" It points out to dealers that hit-or-miss methods won't get them the kind of men they need. "Who's Wearing Your Face?" reminds dealers that their attendants are their representatives and that the future of their business will be determined by the quality of the service these men render to their customers. It shows how such places as high schools, state employment services, church and youth councils, veterans' organizations, classified advertising and other agencies can best be used to obtain good employees.

Also in the booklet are suggestions on the qualities to look for in a good attendant—ambition, curiosity, friendliness, honesty, initiative, mechanical aptitude, enthusiasm and others. Sample interview questionnaires, score sheets for evaluating job applicants and employment application blanks also are supplied.

Supplementing the motion picture and the two booklets that it is currently making available, Ethyl is planning an advertising campaign designed to show young men the opportunities that exist in the service station field.

By pointing up the importance of the service station in America's automotive way of life and by emphasizing the opportunities that exist for young men in this field, Ethyl Corporation feels that its Recruiting and Training Program can assist the oil industry in building a better, more stable sales force at the front door of its business. #



The Power of Suggestion

New IDEAS are paying off for their originators and for American business and industry

A METHOD for developing ways to do things better, believed to have roots in medieval Venice, is supplying American business and industry with more than million new ideas a year and employees with awards totaling about $7 million annually.

Suggestion systems are in use in at least 8,000 firms of all kinds throughout the country. They are paying off for oil companies, research laboratories, stores, railroads, public utilities, automobile manufacturers, hospitals, mills, airlines and for Federal, state and local governments.

For suggesting ways of doing jobs more efficiently, economically, safely, or quickly, thousands of employees are being rewarded with cash prizes, bonds, company stock or gift merchandise. In addition, they are acquiring the desirable feeling that they are part of a company team, and that their ideas are wanted.

Universally Accepted

Suggestion systems have become so universally accepted that old wheezes are rapidly fading away. dom these days will a suggestion box in a plant, re or office contain anonymous forms advising the s to "go take a bath," or urge the dowdy telephone rator to "wise up and dress more attractively if you it to get ahead." Employees today don't guffaw at a oon showing the board chairman giving only "our mest thanks" to a mousey clerk for an idea to save company $2 million per year. They know the clerk ld be rewarded generously for any such valuable estion.

ne large manufacturing concern with many plants ughout the country is a strong believer in encourg employees to submit their ideas through the pany-wide suggestion system. In a single year re- y, it paid out nearly $2 million for some 33,000 otable suggestions.

Even the average size of awards for suggestions varies widely. In a typical recent year at nearly two dozen different firms, it ranged from a low of $11.30 to a high of $71.18, according to the National Association of Suggestion Systems.

A down-to-earth philosophy seems to be the rule among oil companies with effective systems. Socony-Vacuum is typical. The company believes the primary objective of a suggestion system is to help improve efficiency and economy. The cost of maintaining the system is carefully checked each year, and Socony is certain that it is a sound money-saver.

Certain leaders in the suggestion system movement

Suggestion boxes where ideas can be submitted on prepared forms are used in most systems.

One of industry's champion suggesters is George Kurtz, of Armstrong Cork, who has been rewarded for 605 workable ideas.

use a formula based on an idea's annual saving to the company in determining what a fair award should be.

Take the case of a woman employee at Eastman Kodak. The camera manufacturer awarded her $900, and then increased the total to $4,000 seven months later when a study showed her camera part design suggestion was saving more than had been anticipated.

A harried clerk at Chicago's Drake Hotel found that the cost of broken dishes per year was staggering. He suggested labeling sample pieces of glassware and china with their cost to the hotel, and displaying them in a case. Breakage was reduced by over $7,000, and the clerk got a reward of 10 percent.

About one out of every four employee suggestions is accepted, and successful suggesters usually are paid 10 to 15 percent of the first year's saving.

Many ideas involve changes or innovations so simple that industrial engineers have overlooked them. At the Johnson & Johnson surgical dressing plant in New Jersey, for example, a wrapper thought one long piece of waxed paper would do just as well as two shorter ones. When the company found she was right, she collected $2,500.

How do suggesters get their ideas? It's hard to say exactly. One General Motors employee can credit impatience for being $750 richer today. Process forms were annoyingly cumbersome in her typewriter. Irritated, she sat down at home that night and did an outstanding job of redesigning the form.

All kinds of human emotions, selfish and altruistic, can stimulate constructive thinking—anxiety to get a job done quickly, impatience with detail, a desire to become more productive, and of course, the hope of winning awards and earning recognition.

To be successful, a suggestion system must be set up and operated with thoroughness and finesse. No system can grow and prosper by itself. In organization and execution, considerable variety exists, but basic principles have become axiomatic. A system must be carefully planned, capably staffed and well publicized. Employees on all levels must know who is eligible for awards, and on what basis they will be given.

Most companies use suggestion boxes, where ideas can be turned in on forms, accompanied by a sketch or model if necessary. All suggestion system managers agree it is imperative to collect and process recommen-

dations quickly, and to make awards for acceptable suggestions without delay.

Suggestions usually go first to a central office which routes them to the head of the department involved. Investigators then weigh the merits of suggestions. In most cases, a committee decides whether an idea is worth adopting or not.

Tact and consideration must be used when ideas are not accepted. It is ideal if someone from supervision sees the employee personally and explains why his suggestion has been turned down.

Ethyl's System

Ethyl Corporation, with a system introduced last June, is a successful newcomer to the ranks of companies using suggestion systems. Indicative of the enthusiasm with which the Ethyl plan has been accepted is the fact that about 35 percent of all Ethyl employees submitted suggestions in the first four months as opposed to a national average of 22 percent. Close to 150 ideas have been accepted, with awards ranging from $10 to $535.

Ethyl's suggestion system is working for the benefit of customer oil refiners, as well as for the company and its employees. Awards have been paid for improvements in processing sodium and for handling ethyl chloride, essential chemicals used to make "Ethyl" antiknock compounds. Two checks went to an Ethyl sales engineer for suggesting a simpler and better method for filling customer-bound "Ethyl" fluid tank cars, and for improving an "Ethyl" fluid mixing plant. A variety of cash awards also has been presented for better maintenance methods, improved clerical and office procedures, and safety innovations.

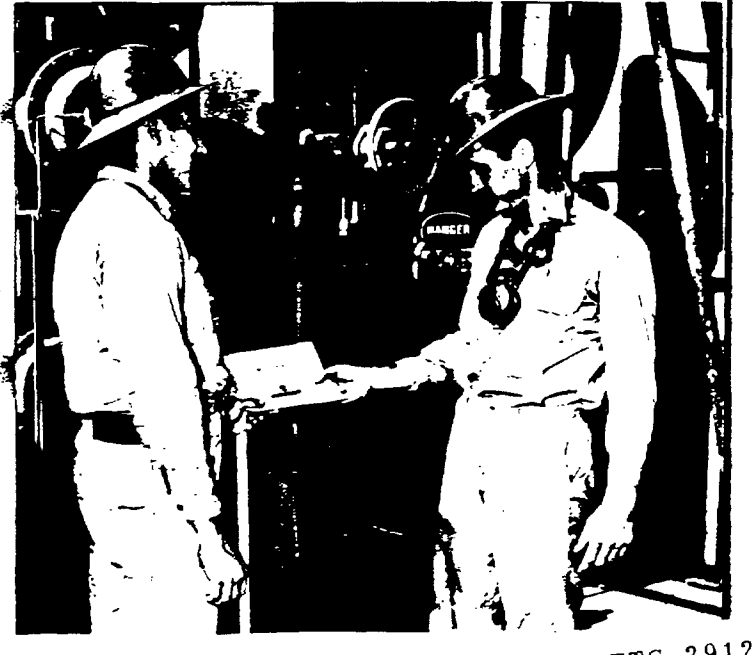
Some historical uncertainty exists on how suggestion systems reached this country. One account is that an American industrialist spotted a slot in a doge's palace in Venice, where public suggestions could be left. The American then brought back the idea for trial among employees at his plant.

The first system still operating here was set up by Yale and Towne Manufacturing Company, Stamford, Conn., in 1880. National Cash Register commenced operating its plan in 1894; Eastman Kodak and Bausch and Lomb Optical in 1898; General Electric in 1905, and Westinghouse Electric in 1910.

The greatest development came during and after World War II, including expansion of the idea into Federal departments and agencies. The Bureau of the Budget in Washington estimates a saving of close to $170 million after suggestion systems were introduced into the government.

Although suggestion systems have their opponents, substantial growth of the plans seems to assure them of a permanent and larger place on the American scene. If awards to employees represent 10 to 15 percent of the first year's savings to employers, business and industry would indeed be short-sighted if they threw away a chance to save more than $70 million a year.

A serious attitude toward suggestion systems is well established, but even today a proposal comes along now and then that's good for a laugh. An airline recently received this idea for reducing the take-off load on its planes: "Remove pits from dinner olives." #



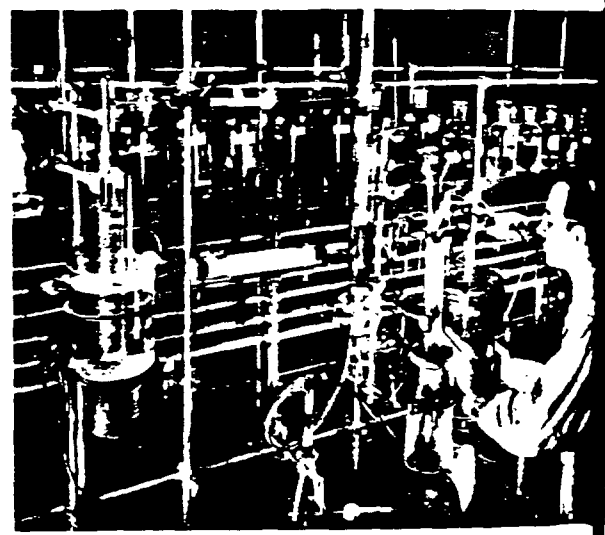
Before suggestions can be adopted and awards given, they must first be thoroughly investigated and approved.

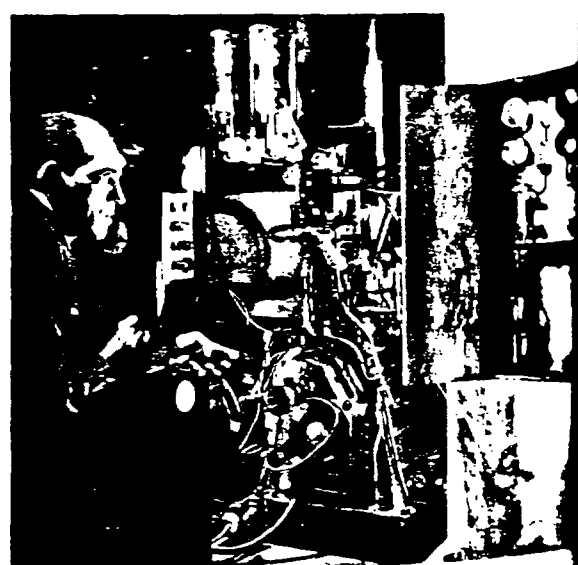
Fuel Additives and Engine Durability

Additives must pass many tests before they can be introduced to the public

THE INCREASINGLY WIDESPREAD USE of a variety of additives in petroleum products is widely recognized as one of the outstanding trends in oil refining in recent years. These chemicals, often added only in minute quantities, can work magic in changing the characteristics and improving the performance of motor fuels, lubricating oils and greases, and fuel oils. In gasoline alone, additives are helping to improve antiknock quality, lengthen exhaust valve life, increase stability, inhibit rust, prevent carburetor icing, and suppress spark plug fouling and preignition.

Introduction of a new fuel additive is no hit-or-miss proposition, however. Behind each one are months and often years of research and development work and exhaustive testing in the laboratory and on the road. For not only must the additive do the job for which it is intended, it must have no undesirable effects on engine durability. It must be trouble-free from the time it enters the fuel tank until the exhaust gases pass out of the tailpipe and clear the rear bumper.



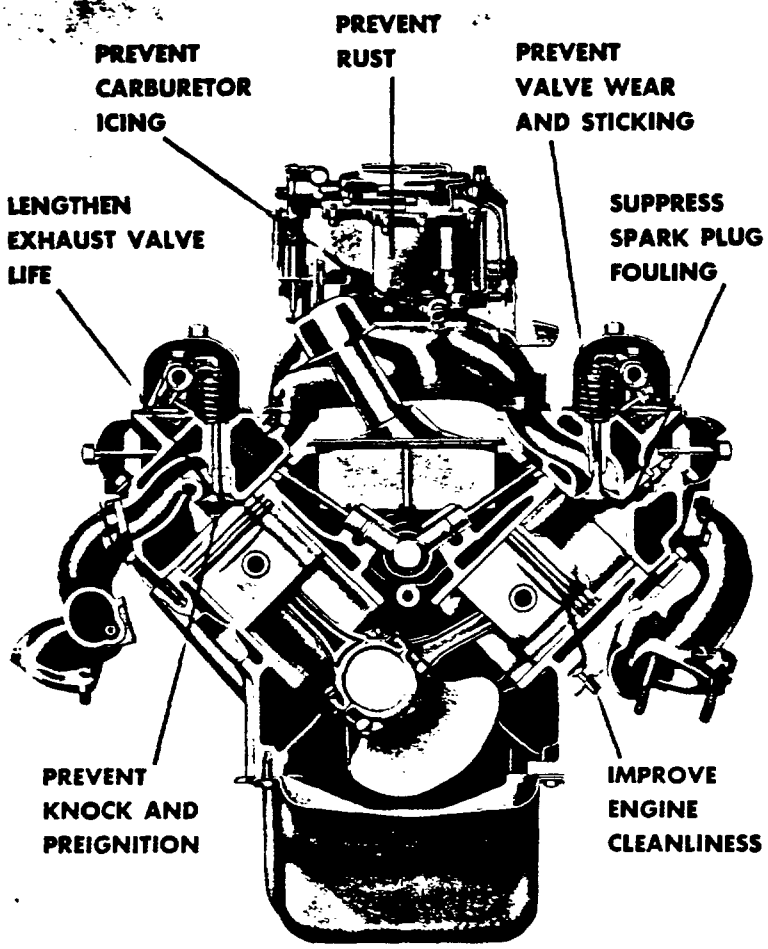


Behind the development of a new additive are months of testing in the chemical laboratory and in single- and multi-cylinder engines (below and right).

Durability Factors

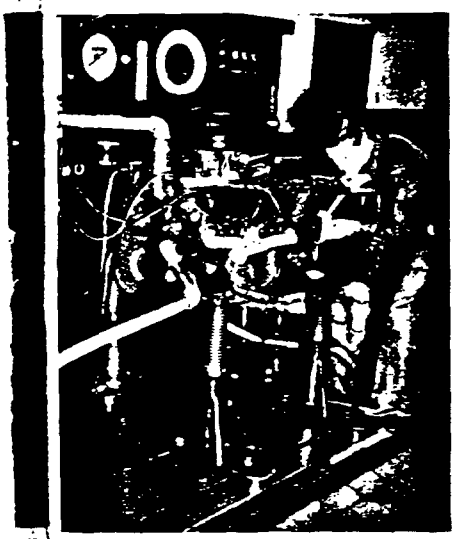
The ideal fuel additive should not attack fuel system parts, leave deposits in the intake system, raise the engine's octane-number requirement by leaving combustion chamber deposits or increase its preignition tendencies. It must not increase the tendency of spark plug deposits to short out the plug, increase engine wear, impair engine cleanliness, increase bearing corrosion, shorten intake valve life, or increase exhaust system corrosion. Of these durability factors, intake system deposits and exhaust valve life are among those requiring the closest attention in the development of new fuel additives.

As the word implies, durability means long life. In studying additives, durability tests establish the extent to which these additives lengthen or impair the life of the engine, or increase its tendency to wear out or per-



Fuel additives make many contributions to better engine performance

The accompanying article is based on a paper entitled "Fuel Additives and Engine Durability" by A. E. Felt, R. V. Kerley and H. C. Sumner, of Ethyl Corporation's Research and Engineering department. The paper was presented at the National West Coast Meeting of the Society of Automotive Engineers, at Los Angeles, August 16-18.



form unsatisfactorily. For example, if a certain compound shows promise of successfully suppressing preignition and spark plug fouling in gasoline engines, it must meet the durability requirements already described before it can be commercially produced and marketed.

Usually the product passes through four stages of tests. If it fails to pass any one, it must be rejected, or improved sufficiently to make it satisfactory.

Chemical laboratory testing is the first stage. Here the product is screened for such characteristics as storage stability, corrosiveness, effect on rubber, solubility, compatibility with other additives, and reactivity with the fuel itself or with materials likely to occur in the fuel system or crankcase of an engine.

Single-cylinder engine tests next help evaluate the product in terms of valve life, combustion chamber deposit effects and noticeable good or bad effects of the additive in general. Single-cylinder engine tests usually are preliminary to the multi-cylinder engine tests which follow. They have a definite place, however, since they provide important basic information while using a minimum of fuel and of costly experimental quantities of the proposed additive.

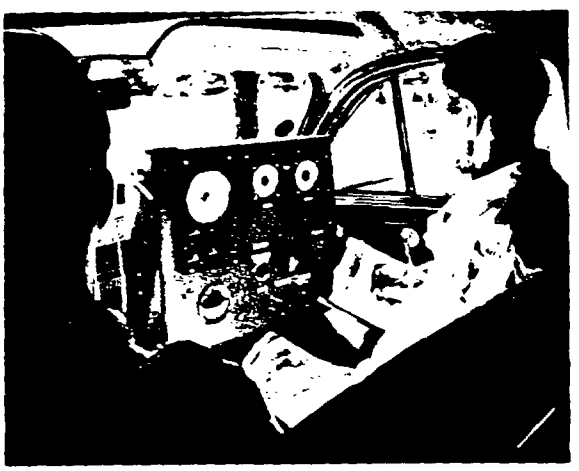
Obviously, single-cylinder engines do not perform exactly like multi-cylinder engines because of differences in design, in cooling, and in the distribution of fuel and air to the various cylinders of a multi-cylinder engine. The results of single-cylinder tests are merely indications which must be verified by tests in multi-cylinder engines.

Multi-cylinder engine tests in the laboratory, and later on the road, subject the proposed additive to conditions of much greater severity. Now the program of evaluation becomes extremely complex and expensive. Research management must select the types of engine and test methods which will best typify the conditions

the additive will encounter in actual day-to-day usage.

A number of variables are involved—temperatures ranging from arctic cold to desert heat; heavy-duty truck use and light passenger car operation; and variations in designs and materials among the different engines. Even in engines of the same make and model there are production changes from time to time or slight deviations from standard production dimensions and adjustments. Only a research organization with broad experience in engines can make the proper selection of test engines and methods.

Obviously it is impractical to test thoroughly every make of engine. Therefore the engines which are selected must typify a large percentage of all engines both in design and durability characteristics. It is impractical to attempt spark plug fouling tests on engines whose plugs do not foul during owner operation. Likewise, valve durability tests on engines known to be free of valve problems would be unwarranted. On the other hand, it is equally short-sighted to condemn a proposed additive because of poor results in an engine known to be chronically lacking in durability.



Sensitive instruments are used in evaluating the road performance of new additives. Fleet testing for thousands of miles provides additional important data.

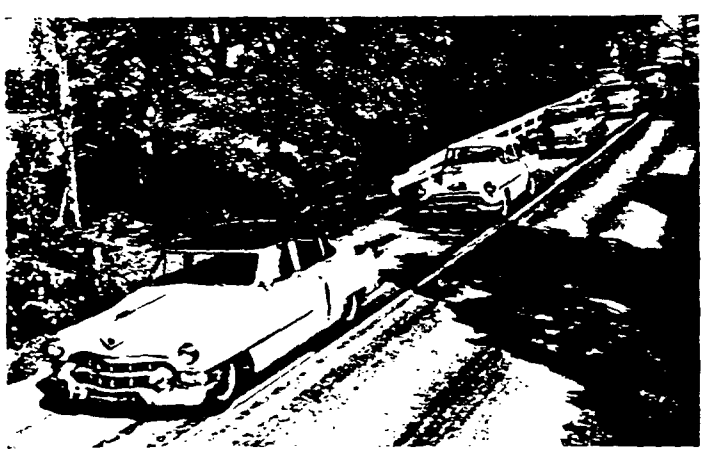
Single-cylinder engine tests and preliminary multi-cylinder engine screening tests eliminate those additives which drastically reduce durability in usually durable engines. Supplementary laboratory tests also are conducted, usually under severe conditions, to determine the additives' effect on such factors as engine cleanliness, bearing corrosion, intake manifold deposits, and wear of valve assembly parts and cams.

Fleet Tests

An additive which passes laboratory and road tests satisfactorily is almost invariably subjected to further testing by fleets of passenger cars or commercial vehicles. Such tests are cooperative in nature since the fleet operators must be willing to keep good records, permit time for periodic inspections of the engines, and be willing to use the special fuels and lubricants provided.

Tests in a large commercial fleet usually provide data on many vehicles in a short time at relatively low cost. Often, simultaneous tests are run in two or more fleets widely separated geographically and varying from each other in the types of vehicles, terrain traveled, operating conditions and climate. By this means, the research engineers obtain a much broader picture of the additives' performance than would be possible with laboratory tests alone.

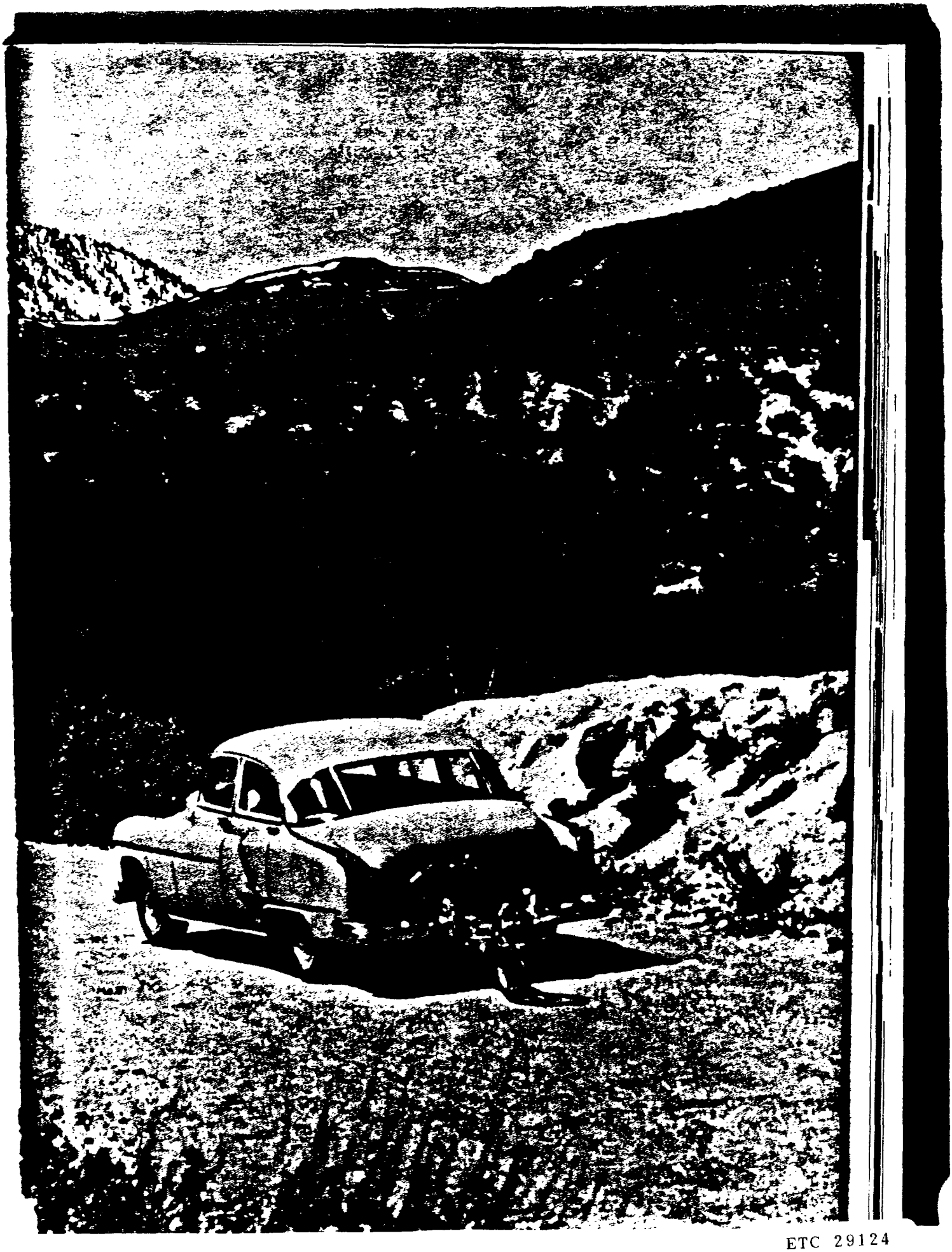
Thus, it is apparent that the oil industry and those who supply its additives spend millions of dollars and many research hours in testing and perfecting these miracle additives for petroleum products. The results of these efforts are readily seen in the outstanding performance of the fuels and engines that power the automobiles of today. #



A test car from Ethyl Corporation's laboratory at San Bernardino traversing some of the varied terrain that makes Southern California a valuable proving ground.

LAYOUTS AND ART DIRECTION: Carsten Grande.

PHOTO CREDITS: Cover, Ektachrome by J. Alex Langley; page 1, courtesy American Petroleum Institute; page 2, courtesy Armed Services Petroleum Purchasing Agency and U. S. Army; page 3, courtesy U. S. Navy and Boeing Airplane Company; pages 4, 5 and 6, Marty Nordstrom; pages 12 and 13, courtesy Standard Oil Company (New Jersey), Shell Oil Company and Esso Standard Oil Company; page 15, courtesy The World Calendar Association; page 16, Philip Gendreau and courtesy Lin-O-Plast Corp.; page 20, courtesy Armstrong Cork Co.



ETC 29124

Helping dealers to find the right man

Have you heard about the new program to attract and keep better-quality men in service-station jobs?

It's a new Ethyl service.

Called Ethyl's Recruiting and Training program, it will, we believe, be a valuable supplement to the work of individual oil companies, and the committees of the API and other associations which are concerned with this problem. Here, in brief, is the story.

First, to get the complete national picture, we asked more than 4,500 dealers employing more than 15,000 attendants to tell us about their personnel problems. Nearly all reported they had difficulties in recruiting, hiring and training their people. So much so, that nearly half of those hired left because they were "unsatisfactory," and nearly 60% of the men working as attendants had experience of only one year or less.

So we sat down with vocational-guidance people and men from the petroleum industry and worked out our R. T. (Recruiting and Training) program.

We reasoned, after a good deal of study, that if more people knew of the fine opportunities available in service-station employment, better men would be interested. So a film, booklets, and special kits were created to take this message to young men and their families.

We hope this new Ethyl service can help your dealers build a better and more stable service-station sales force. Our prime objective is to help the industry in one of its more vulnerable areas: the front door of its business.

ETHYL NEWS

API ANNUAL MEETING ISSUE

NOVEMBER
DECEMBER 1954

ETC 29126

ETHYL NEWS

Framed by the outline of a spherical storage tank, our cover photo, by Laurence Lowry, shows a section of Chicago, host city to the API annual meeting.

Richard F. Cook, Editor

AMERICAN PETROLEUM INSTITUTE ANNUAL MEETING ISSUE

NOVEMBER-DECEMBER 1954

Published by Ethyl Corporation, 100 Park Avenue, New York 17, N. Y., manufacturer of "Ethyl" antiknock compounds, used by oil companies to improve the antiknock quality of aviation and motor gasoline.

Edward L. Shea, President
Stanley T. Cresslend, Vice President and Treasurer
Herbert A. Savage, Secretary

FROM THE STANDPOINT of attendance, amount of work accomplished, value of papers presented, and any other yardstick that can be applied, the 34th Annual Meeting of the American Petroleum Institute was one of the most fruitful that has been held. Even the weatherman cooperated by supplying balmy days as the record-breaking total of 6,550 oilmen gathered in often-blustery Chicago, November 8 to 11, for an intensive round of committee meetings, group and general sessions, and other business connected with conducting the affairs of the petroleum industry. A complete cross-section of the industry was on hand as scientifically minded exploration and research men, producers, refiners, transporters and marketers of oil and its products, from companies large and small, met for the four days and more of the conclave. Following a custom established at the time of the first post-war annual meeting in 1946, ETHYL NEWS again is happy to devote its concluding issue for the year to photographic coverage of the API gathering. It is hoped that the hundreds of photographs that have been assembled in these pages will serve as a worthwhile reminder and memento of the record-breaking 34th Annual Meeting.

THE EDITORS

API 34TH ANNUAL MEETING

C. E. Skinner, Gulf Oil, and William M. Pritchard, Coastal Tank Lines vice president, sign in.

AN ALL-TIME HIGH in attendance was set at the 34th annual meeting of the American Petroleum Institute. The API registration staff was constantly busy as 6,550 oilmen signed in for the biggest of the Institute's gatherings. The record attendance pushed the all-time attendance at annual meetings to nearly 100,000.

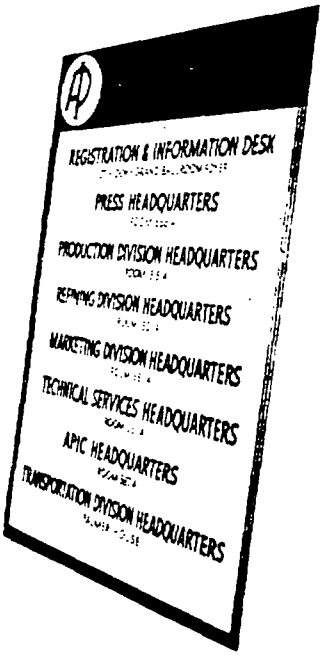
In 1953, the attendance had totaled 6,348, just 45 short of equaling the previous all-time high of 6,393 set in 1952.

The Conrad Hilton Hotel was again headquarters and meeting place for this, the 23rd annual meeting held in Chicago, except for the Institute's Transportation division, which was based at the Palmer House.

On these four pages are some typical scenes of the busy throng signing in for 1954.

Some of the thousands who attended the meeting wait their turn at the busy registration desk.

SIGNING IN



This sign in the lobby of the Hilton provided a quick directory for newcomers.

Chatting for a few minutes in front of the registration desk are C. E. Turner, of Phillips Petroleum, and G. B. Moody, Standard of California.

Roxie Dowling, of the registration staff, gives William R. Boyd, Jr., a meeting program as the former API president signs in.

Dr. K. G. Mackenzie, of his own firm, looks over a poster announcing the Fourth World Petroleum Congress to be held in Rome next year.

ETC 29130

SIGNING IN

Rodney S. Durkee, Lane Wells board chairman and David F. Cocks, Standard of Kentucky vice president, fill out their registration cards.

Chatting are Fred L. Hartley, Union Oil, and Gale Adams, General Petroleum vice president. Between them in the background is Everett Wells, Ashland Oil executive vice president.

Conferring in the lobby are R. H. Anders, J. A. Collins, and Phil S. Justice, all of Sun Oil.

G. H. Lovejoy
Shamrock O
Petroleum vic

The registration board provided a quick w nd out who

William Solberg, of Northwestern Refining, registers for his hotel room in the Hilton.

SIGNING IN

Discussing a point are J. L. Latimer, Magnolia president; H. L. Poole, Union Tank & Supply Co. vice president; and Vance Hyman, of Sipanam.

Gordon Gano, Cities Service Refining, and Vice Presidents H. O. Harder, of Sunray, and T. A. VanGriethuysen, of Continental.

. Lovejoy, Continental Oil; Leo J. Wilmeth, ırock Oil; and David C. Phillips, Falley ›leum vice president, exchange cards.

out who was attending the meeting.

Looking over the meeting program are O. H. Cunningham, Delta Refining, and R. A. Young, M.F.A. Oil.

API 34TH ANNUAL MEETING FU

A color slide projector sponsored by Research Project 48 interests F. C. Davern, of Esso Standard.

SINCE ITS INCEPTION in 1951, the Fundamental Research group session has been the official kickoff event of each API annual meeting. This year was no exception.

Following opening remarks by Howard G. Vesper, vice president of Standard Oil Company of California, and the presentation of two Certificates of Appreciation by Dr. Robert E. Wilson, chairman of the API board's Research committee and board chairman of Standard Oil (Indiana), the Monday morning session heard progress reports on the seven Institute research projects on the composition and properties of petroleum.

Hugh W. Field, chairman of the API advisory committee on Fundamental Research and vice president of The Atlantic Refining Company, presided.

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A portion of the large audience that attended the Fundamental Research group session in the North Ballroom.

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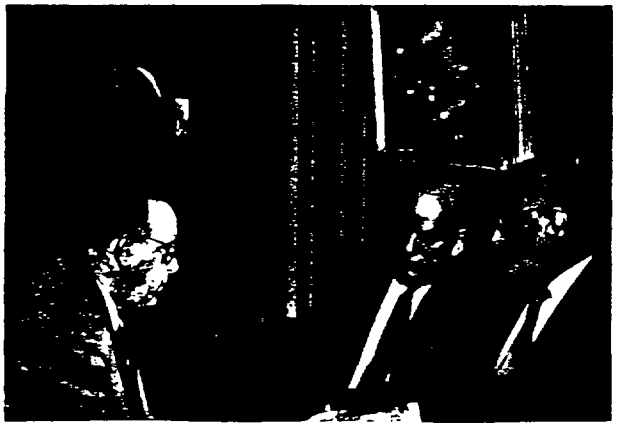
Seated outside the meeting room are Alphonse A. Corona, vice president of American Oil; D. J. Smith, American Oil president; and Bruce K. Brown, Pan-Am Southern president.

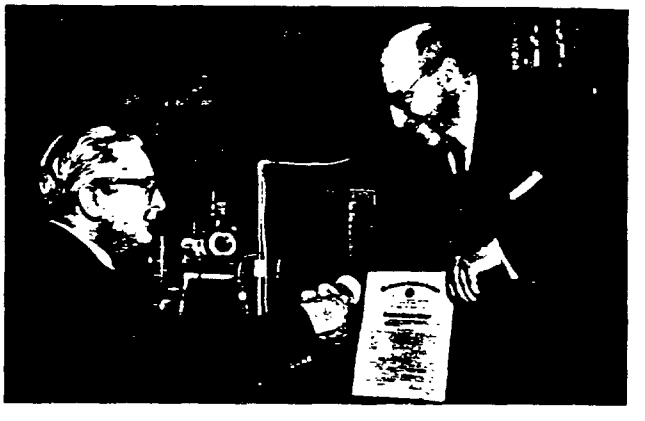


En route to the Fundamental Research session, N. E. Birch and M. J. Fowle, both of Atlantic Refining, take a moment for a corridor conversation.

FUNDAMENTAL RESEARCH

Among those heard at the group session were Wheeler G. Lovell, of Ethyl Corporation; G. R. Lake, of Union Oil; Arthur L. Lyman, president of California Research; H. W. Field, session chairman; W. D. Seyfried, of Humble Oil; Sherman S. Shaffer, also Humble Oil; and Harry Sutherland, of Shell Development.

Reporting for Project 50 was R. Robert Brattain, of Shell Development.



Dr. Robert E. Wilson presented Certificates of Appreciation to (above) Thomas V. Moore, of Standard Oil Development, and (below) Leslie C. Beard, Jr., of Socony-Vacuum.

The group session's opening remarks were delivered by Howard G. Vesper.

FUNDAMENTAL RESEARCH

The Sunday meeting of the Research Project 47 Advisory committee. E. R. Brownscombe, of Atlantic Refining, is chairman.

The Research Project 42 Advisory committee in all-day session Sunday.

Two Standard Oil Company (Indiana) men interested in petroleum research are Pike Sullivan and J. K. Roberts.

Audience members filing into the Fundamental Research session.

API 34TH ANNUAL MEETING

PUBLIC RELATIONS

THE AMERICAN PEOPLE will make correct decisions on governmental issues if they are properly informed, Louisiana's Governor Robert F. Kennon told a standing-room-only crowd at the Monday morning Public Relations session. In his address entitled 'Industry Must Speak Up," the governor stated that oilmen should see that the public gets full and frank information on all questions affecting the industry.

The audience also heard that the Oil Industry Information Committee had a "terrific" year in 1954, in a report from G. Stewart Brown, the public relations group's outgoing national chairman.

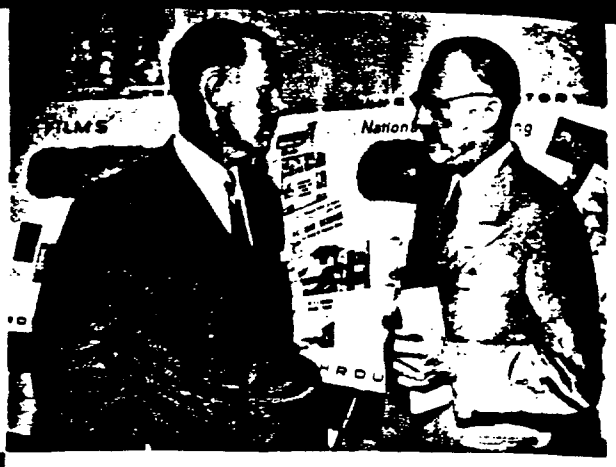
Above, H. S. M. Burns, Shell Oil president, who presided; R. F. Kennon, governor of Louisiana, and G. Stewart Brown, Standard of California public relations manager, both speakers; and W. R. Huber, of Gulf Oil, new OIIC national chairman.

Recipients of OIIC Certificates of Appreciation were: C. D. Hill, Carter Oil; E. A. Williford, Continental Oil; A. D. Eubank, Quaker State Oil; and D. R. Ferris, Gulf Oil.

Right, Public Relations Directors Emerson Smith, of Continental Oil, and James Haskins, of American Oil.... Below, part of the large audience that crowded the Grand Ballroom for the session.

ETC 29136

PUBLIC RELATIONS



Silhouetted against a display of Oil Industry Information Committee literature are L. F. McCollum, Continental Oil president, and S. A. Swensrud, chairman of Gulf Oil's board of directors.

Among those at the luncheon meeting of the Public Relations committee of the API board of directors were A. A. Stambough, Standard of Ohio board chairman; Col. T. H. Barton, Lion Oil board chairman; and H. B. Miller, OIIC director.

Three public relations men in a huddle are Conger Reynolds, of Standard of Indiana; Warren Drew, of Gulf Oil; and William Finnegan, Jr., of Humble.

A view of some of those in attendance at the Monday afternoon meeting of the OIIC Planning committee. Franklyn Waltman, of Sun Oil, is chairman.

ETC 29137

API 34TH ANNUAL MEETING — REFINING

PRESIDED OVER by John W. Newton, outgoing API vice president, the Monday afternoon Refining session featured significant talks by outstanding authorities in two fields. David Rockefeller discussed "The Businessman's Role in Foreign Policy," pointing out that business and know-how abroad can help erect a barrier against Communist aggression. Speaking on weather forecasting, Francis W. Reichelderfer, chief of the United States Weather Bureau, predicted that advances in electronics and nuclear fission will increase our knowledge of meteorology. In addition to the two talks, the audience heard the names of 54 candidates for membership on the Refining division's general committee.

John W. Newton, Magnolia Petroleum vice president and retiring API vice president for Refining, and David Rockefeller, senior vice president of The Chase National Bank, a featured speaker.

Above, E. B. McConnell, Standard of Ohio vice president, who was elected API vice president for Refining, succeeding Mr. Newton. . . . Above right, W. W. Scheumann, Cities Service Research and Development vice president, reported for the nominating committee. . . . Right, F. W. Reichelderfer, a session speaker.

REFINING

Seated in the audience at the Refining group session were T. R. Shaw, of Phillips Petroleum; H. G. Gunter, vice president of Suntide Refining; and R. W. Burns, of Carter Oil.

Photographed informally before the start of the meeting was this Sinclair Refining threesome: V. L. Brophy, H. L. Lussow, and E. J. Bassett.

Below left, also in the audience were C. W. Shaffer and Howard M. Johnson, both of Socony-Vacuum.... Below, numbered among the representatives of Canadian oil companies in attendance were J. G. Light, McColl-Frontenac, and D. L. Campbell and A. G. Farquharson, vice presidents of British American and McColl-Frontenac, respectively.

A general view of oilmen in the audience at the Refining session in the North Ballroom.

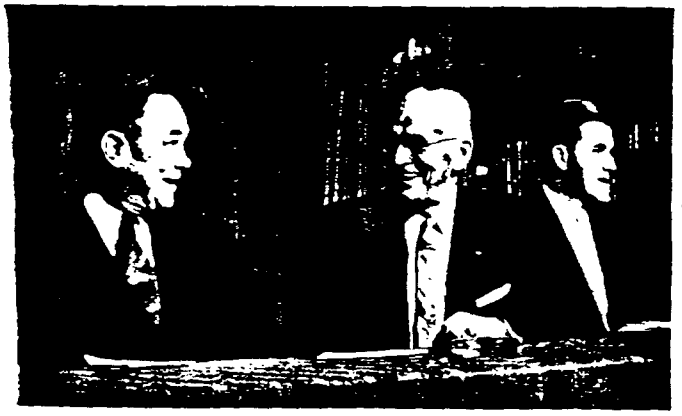
ETC 29139

API 34TH ANNUAL MEETING MEASUREMENT

FOR THE FIRST TIME in API history, a symposium was held on "Measuring, Sampling, and Testing Crude Oil and Petroleum Products." The audience at the Monday afternoon session was told that losses of petroleum and its products will amount to approximately $350 million this year, and "any improvement in the ability to measure could accelerate the development and evaluation of loss-reduction practices."

Oilmen from the United States and Canada participated in the panel discussions. They stressed the need to seek the best measuring accuracy which can be obtained economically. The trend should be toward the minimizing of manual operations insofar as practical, the speakers all agreed.

H. C. Packard, of Shell Oil, who presided at the symposium, presents a Certificate of Appreciation to Bert Martin, Service Pipe Line (retired).



Among those participating were P. E. Frank, Sinclair Refining; O. D. Stallard, Magnolia Pipe Line; and A. H. Newberg, Service Pipe Line.

Also active in preparing and presenting papers were J. H. McClintock, Esso Standard; J. D. Jones, Gulf Refining; George Supple, General Petroleum; and S. H. Dowdell, British American.

ETC 29140

API 34TH ANNUAL MEETING

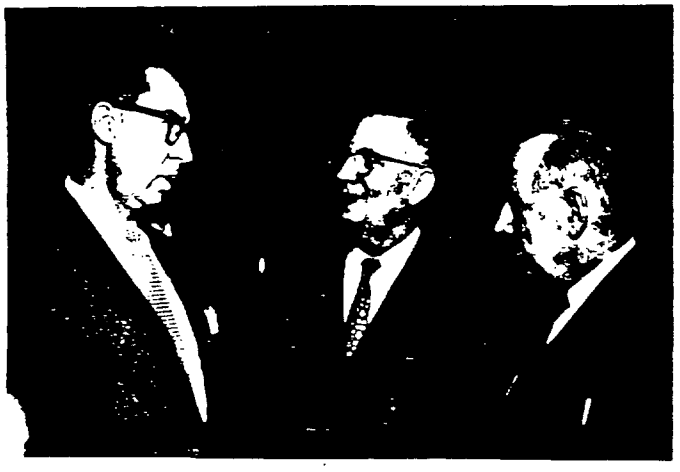
William Watson, of Clark Oil & Refining, and John Crawford, vice president of the same firm.

In the audience at a Transportation division committee meeting are H. D. Carmichael, of Standard of Kentucky, and M.D. Scott, of Standard of Indiana.

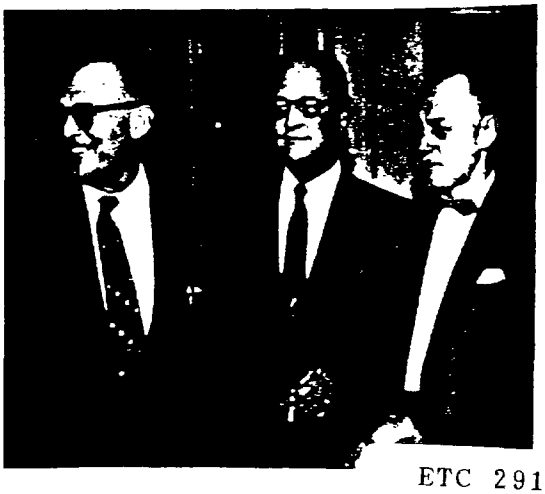
Jack Vyn, of Northwestern Refining, and D. D. Hornbeck, of Ethyl, between sessions.

Pictured in the Conrad Hilton lobby are Robert Yancey, Ashland Oil; C. O. Garbrecht, vice president of Bay Petroleum; and R. A. Whealy, of Ashland.

R. C. Murphy, of Ethyl, with Vice Presidents C. H. Thayer, of Sun, and W. R. Argyle, of Sinclair Refining.



This threesome consists of Lewis Gross, Taylor Oil and Gas; Fred Sewell, Taylor vice president; and Truman Gish, of Naph-Sol Refining.

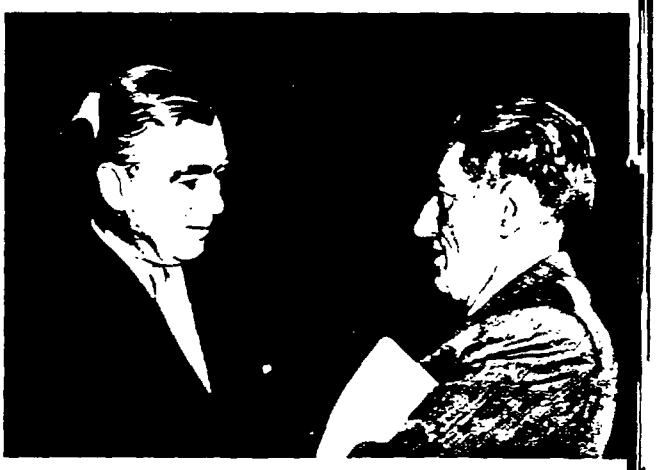


ETC 29141

CAMERA CANDIDS

Milo Dahl, of Midland Cooperative Wholesale, and Ralph Booker, executive vice president of National Cooperative Refinery Association.

Making up this happy group are E. H. Johnson, Enjay Company; C. M. Davison, Penola Oil president; and S. W. Fay, of Enjay.



Left, a camera study of G. E. Wynn, Mid-Continent Petroleum vice president . . . Right, Arthur Jago, of Shell Oil, and Charles Warner, Houston Oil vice president.

In this California delegation are L. F. Strader, Richfield Oil; Milton Lewis, of Ralph M. Parsons Co.; N. F. Simmonds and C. R. McKay, of Richfield, and M. F. Weill, of Ethyl.

ETC 29142

API 34TH ANNUAL MEETING

Robert M. Bartlett as he called the Division of Marketing's group session in the Grand Ballroom to order.

TWO WELL-ATTENDED MEETINGS, the first a group session on Monday afternoon and the second an open business meeting of the General Committee on Tuesday morning, were conducted by the Division of Marketing. Robert M. Bartlett, vice president of Gulf Oil and outgoing API vice president for Marketing, presided at both.

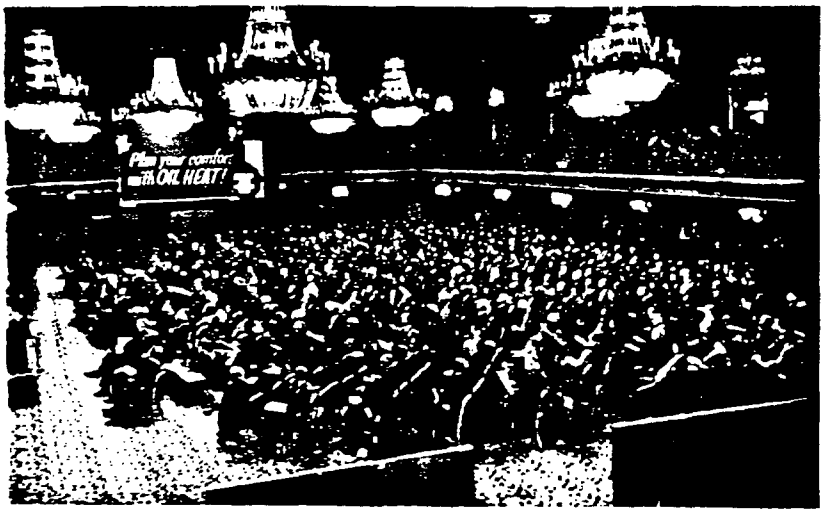
Featured speakers at the group session were Malcolm P. Murdock, vice president of Ethyl Corporation, who introduced that Company's new film on service station personnel recruiting; Edward F. Howrey, chairman of the Federal Trade Commission; James E. Dyer, president of Sinclair Refining; A. M. Rippel, of Phillips Petroleum; and M. N. Vining, of Diesel Oil Sales.

New API vice president for Marketing is J. G. Jordan, vice president of Shell Oil, shown here as he delivered a committee report at the business meeting.

Below, enjoying a pre-session chat are J. M. Gardiner, president of Republic Oil Refining, and Harry B. Hilts, secretary of Empire State Petroleum Association. . . . Below right, Edward F. Howrey, who spoke on "The Federal Trade Commission and Business."

ETC 29143

MARKETING



The hotel's Grand Ballroom was filled nearly to capacity for the Monday afternoon group session, first of two meetings held by the Division of Marketing.

Malcolm P. Murdock told about Ethyl Corporation's R-T Program and introduced a motion picture used in connection with this project.

James E. Dyer, A. M. Rippel and M. N. Vining spoke on various phases of the general topic "The Factual Story of Natural Gas Vs. Distillate Fuels."

Certificate of Appreciation winners in Marketing included Russell S. Williams, of Gaseteria; Henry Schwartz, of Paragon Oil; James E. Dyer, of Sinclair Refining; Robert M. Bartlett, of Gulf Oil; Adrian Ogle, of National Congress of Petroleum Retailers; and B. I. Graves, retired, of Tide Water Associated. John Harper, president of Harper Oil (extreme right), made the presentations.

MARKETING

These interested session-goers are Horace Davenport, vice president of Pocahontas Fuel, and E. B. Faust and Edward Diggs, of Esso Standard.

Below right, in the audience at a Service Station Advisory committee meeting are Leon Serven, of Atlantic Refining; A. W. Holmes, vice president of Miller & Holmes; and A. C. Stapf, of Gulf Oil.

Below, J. H. Meyers, of Socony-Vacuum, and Herbert Willetts, Socony-Vacuum vice president.

Frank A. Watts, of Humble, making a Marketing committee report.

S. H. Elliott, Standard of Ohio vice president, reporting on nominations.

Everett Wells, Ashland Oil executive vice president, calling the roll.

Photographed at a Division of Marketing display table were J. R. Patton, vice president of Trinidad Leaseholds; Helen Griffin, of Pacific Iron Products; James B. McNallen, of the API; Kitty Brown, of Pure Oil; and James D. Elder, of Cooperative Refinery Assn.

API 34TH ANNUAL MEETING TRANSPORTATION

VARIED ASPECTS of the vital role of transportation in the oil industry were covered by several papers and discussions at three group sessions and several committee meetings.

Brig. Gen. Evan M. Houseman, speaking for Maj. Gen. Paul F. Yount, U. S. Army Chief of Transportation, told a Monday audience that more than 65 percent of the tonnage shipped overseas during the Korean conflict consisted of petroleum and petroleum products. For shipments inside the United States he cited the growth of pipelines as "the most spectacular development of oil transportation in the past few years."

Other topics discussed at sessions included radiographic inspection of petroleum pipelines, filtering practices, corrosion, and transportation's role in the growth of integration.

George H. Hill, Jr., Cities Service Petroleum vice president, presided at the Monday session.

Brig. General Evan M. Houseman, U. S. Army Transportation Corps, spoke Monday.

Transportation's part in industry integration was the subject of a talk by Prof. John G. McLean, of Harvard University.

The nominating committee report was presented by Edward F. Morrill, Sohio.

Harry G. Schad, Atlantic Refining vice president, spoke on "Good Will Is Good Business."

ETC 29146

TRANSPORTATION

Speakers at the Pipeline Symposium Tuesday morning were J. C. Stirling, Service Pipe Line; R. K. Paine, Standard of California, who presided; W. G. Horstman, Plantation Pipe Line vice president; and Harold Hovland, president of Industrial X-Ray Engineers.

At the afternoon Pipeline Symposium, L. F. Kahle, Standard of Jersey (left), presided. He is shown here with speakers S. G. Kershner, Texas Pipe Line vice president, and W. L. Kennedy, Jr., and A. H. Newberg, both of Service Pipe Line.

M. S. Collett, Atlantic Refining, talked on microwave operations.

G. R. Olson, of United Gas Pipe Line, and A. L. Christy, of Pure Oil, check the Transportation program.

A view of part of the audience at one of the Transportation group sessions in the Red Lacquer Room at the Palmer House.

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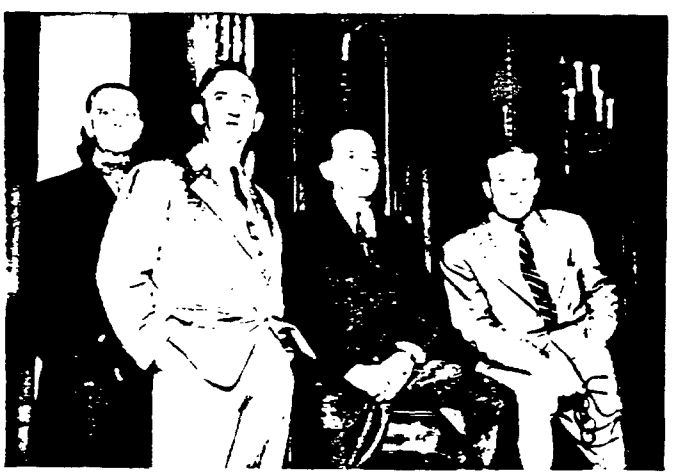
TRANSPORTATION

Among recipients of Certificates of Appreciation at a Transportation group session are S. S. Smith, Shell Oil (retired); F. B. Hufnagel, Jr., Sun; A. M. Gee, Ohio Oil (retired); G. H. Hill, Jr., Cities Service Petroleum, who made the presentations; W. F. Jones, Gulf; A. B. Gorman, Esso Standard; and H. L. McReynolds, Socony-Vacuum (retired).

C. W. Keith, and T. R. Aude, both of Service Pipe Line, head for a session.

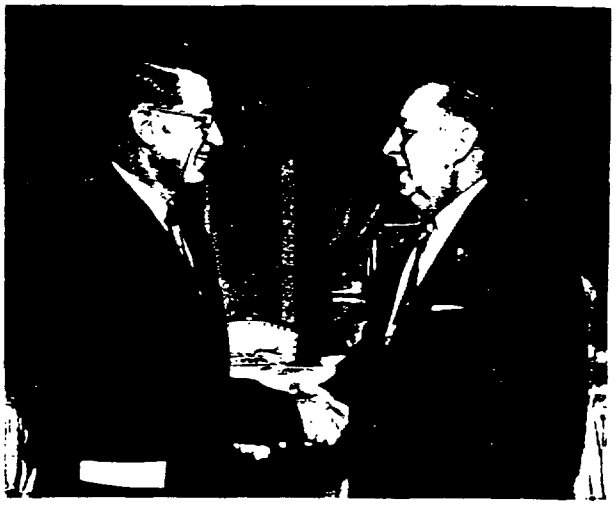


J. E. B. Gibbons, Koppers Co.; C. C. Keane, Great Lakes Pipe Line; C. D. Faires, and H. E. Dischinger, both of Shell, listen to a speaker at the Monday group session.

A. L. Klein, Republic Oil; William M. Johnson, Gulf; and J. H. Gies, Esso Standard, form a threesome at the Transportation Club dinner.

This Ohio Oil quintet includes Vice President H. C. King, W. J. Wilson, L. B. McCammon (retired), and retired Vice Presidents E. B. Redpath and O. F. Moore.

TRANSPORTATION



Incoming president of the Pipe Liners Club, Loren F. Kahle, Standard of Jersey, is congratulated by retiring president, J. L. Latimer, Magnolia Petroleum president.

Earl R. Smith, Vendome Tank Car Co., and F. C. Brentlinger, El Dorado Refining.

Transportation Club officers are: R. R. Hooper, Cities Service, secretary-treasurer; Lee R. Cowles, Standard of Indiana, outgoing president; Clyde F. Dowd, Tide Water Associated, incoming president; Paul J. Bond, Pure Oil, 1st vice president, and W. O. Narry, Richfield Oil, 2nd vice president.

J. W. Fagan, Cities Service Pipe Line, and P. H. DuVal, Arkansas Fuel Oil vice president, at a group session.

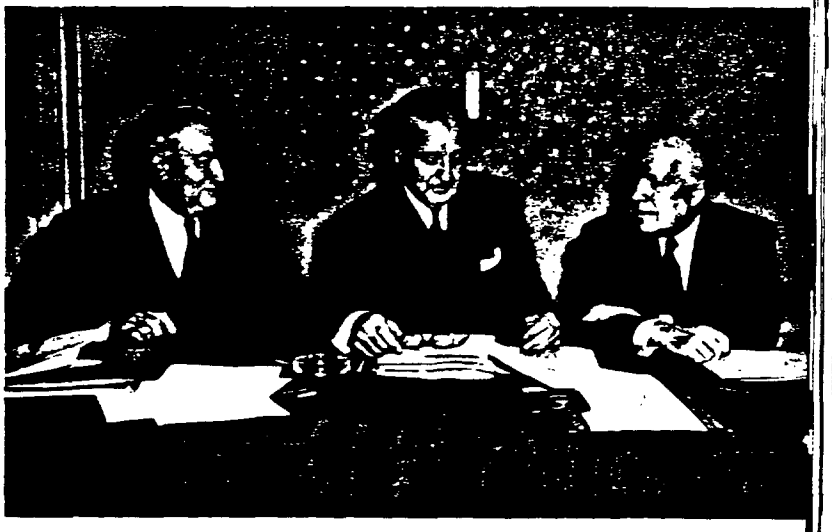
An overall view of the Pipe Liners Club dinner.

ETC 29149

API 34TH ANNUAL MEETING

BOARD OF DIRECTORS

Below, at the head table at the several meetings of the Board of Directors were API officers Lacey Walker, secretary; P. C. Spencer, chairman; and Frank M. Porter, president.



THE INSTITUTE'S Board of Directors, as is customary, met several times during the annual meeting. Among other matters, it reelected P. C. Spencer, president of Sinclair Oil, as API board chairman; Frank M. Porter, president of Fain-Porter Drilling, president; Charles S. Jones, president of Richfield Oil, vice president for Transportation; Lacey Walker, secretary; and B. Brewster Jennings, president of Socony-Vacuum, treasurer. New API vice presidents named were E. B. McConnell, Standard of Ohio vice president (Refining); A. W. Thompson, of his own firm (Production); and J. G. Jordan, Shell Oil vice president (Marketing).

Above left, among the units within the Board of Councillors meeting on Tuesday morning to select candidates for election to the Board was this Refining group. . . . Above, David Stroop, of the API, and Joseph Russell, Gulf Oil vice president, presided at the Councillors' gathering.

Left, a general view of some of the API board members in attendance at one of that group's meetings.

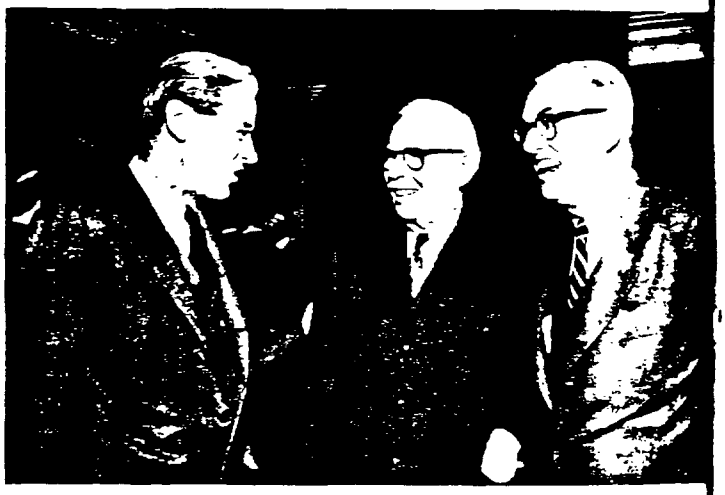
ETC 29150

BOARD OF DIRECTORS

Joseph L. Dwyer, of the API staff, records attendance at a meeting of the Board.

Reese H. Taylor, Union Oil president, and J. J. Cosgrove, Continental Oil board chairman, in conversation at the Board reception.

Wiley Butler, Coastal Oil president; Charles L. Suhr, chairman of Pennzoil; and Paul G. Blazer, Ashland Oil chairman.



Right, pictured informally before the start of a meeting are H. B. Fuqua, chairman of Texas Pacific Coal and Oil, and Maston Nixon, president of Southern Minerals. . . . Below, Deep Rock President W. H. Garbade and Cosden Petroleum President R. L. Tollett.

ETC 29151

BOARD OF DIRECTORS

Eugene Holman, chairman of the board of Standard Oil Company (New Jersey), and L. S. Wescoat, chairman of The Pure Oil Company's executive committee.

Above, a camera close-up of Frank Buttram, president of Buttram Petroleum, and Alfred Jacobsen, president of Amerada Petroleum.

In this directors' foursome are John M. Lovejoy, Seaboard Oil director; J. N. Pew, Jr., Sun Oil board chairman; Stanton K. Smith, Smith Oil & Refining president; and R. L. Milligan, Pure Oil president.

Below, A. W. Peake, president, and M. G. Paulus, vice president, both of Standard of Indiana, host company at the directors' reception.

M. H. Robineau, president of Frontier Refining, checks his hat and coat before attending an annual meeting session.

ETC 29152

API 34TH ANNUAL $ MEETING

J. R. Mulvey, of Humble Oil & Refining, receives an API Certificate of Appreciation from Max Lorimore, Financial and Accounting committee chairman.

IN WHAT AMOUNTED to an all-day meeting broken only by lunch, the API Financial and Accounting committee sponsored morning and afternoon group sessions on the annual meeting's second day.

Main speakers were an oil company president (Robert G. Dunlop, of Sun Oil), a professor of business conditions (P. W. McCracken, of the University of Michigan), an economist (Edwin B. George, of Dun and Bradstreet), and the assistant comptroller of an oil company (Max Lorimore, of Union Oil).

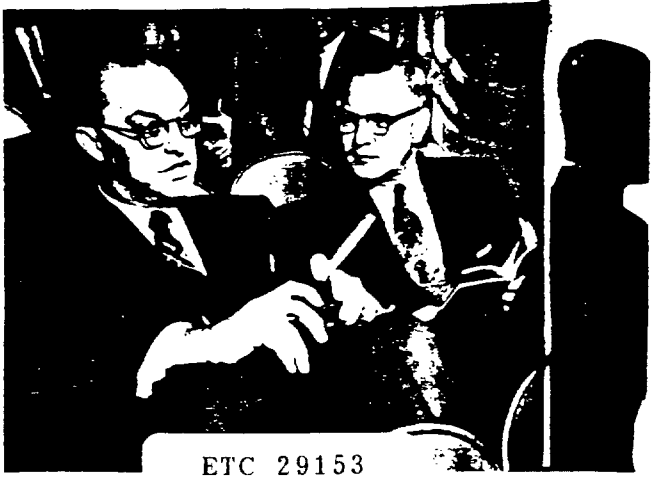
It was a busy day for Mr. Lorimore in particular. In addition to addressing the afternoon session, he presided at the morning meeting.

While A. R. Bell, Jr., of General Crude Oil, looks on, W. F. Styler, Jr., of Deep Rock Oil, fastens his Financial and Accounting name badge.

Prof. P. W. McCracken spoke at the morning session on "Taxation and Economic Progress."

Large audiences attended both Financial and Accounting sessions. Below is part of the morning group.

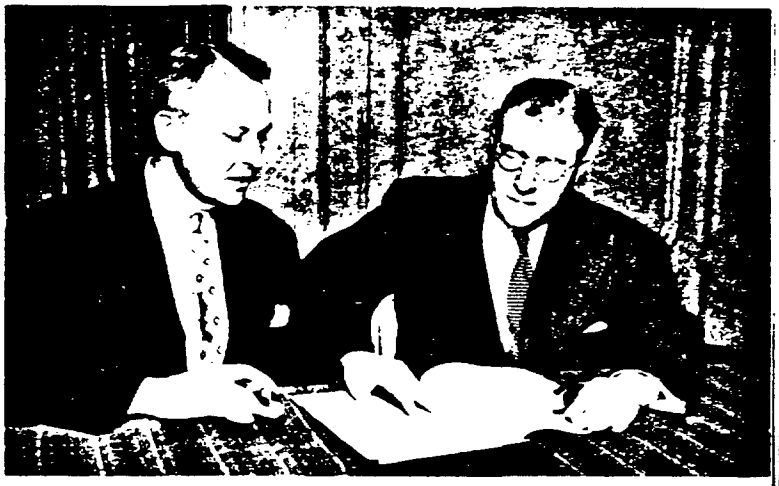
Two company controllers in the afternoon audience were A. A. Buzzi, of Shell Oil, and Ralph Martin, of Standard Oil Company (Ohio).



ETC 29153

FINANCIAL AND ACCOUNTING

Robert G. Dunlop addressing the morning session on "The Challenge of Industrial Change."



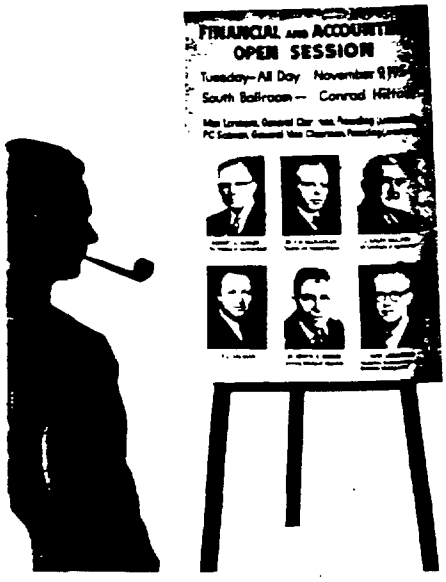
P. C. Salman, of Socony-Vacuum Oil, who presided in the afternoon, with Edwin B. George, one of the session's speakers.

The South Ballroom, scene of the two group sessions, was filled to overflowing on each occasion. These are some of the standees.

Right, taking things easy for a moment are William J. Nuelle, vice president of Petrolite, and O. K. Pryor, partner in Price Waterhouse.

Below left, S. D. Williams, of Sohio Petroleum, gets a preview from a poster.

Below, at the morning session were Edwin H. Brown, vice president of Clark Oil & Refining; Ralph A. Hart, of Standard of Ohio; and G. L. Townsan, of American Republics.



ETC 29154

API 34TH ANNUAL MEETING DA

THE WORLD was told about the 34th annual meeting of the American Petroleum Institute by every available means of communication. Thousands of words were written by reporters and feature writers for newspapers and magazines, hundreds of press photographs were taken, and scores of radio broadcasts and telecasts featuring oil news and personalities either emanated "live" or were recorded and filmed for studio showing at a later time.

The Association of Petroleum Writers (APW), as customary, staged its annual meeting in conjunction with the API convention.

An annual meeting fixture is the Monday morning press conference of API President Frank M. Porter. With him is Fred VanCovern, of the API.

New officers of the Association of Petroleum Writers are Henry Ralph, of *The Oil and Gas Journal*, board chairman; LeRoy Menzing, of *Fort Worth Star-Telegram*, vice president; Russell Palmer, of *Petroleum World*, president; and Clarence Mantooth, of *Tulsa World*, secretary-treasurer.

Two of the busier press members were Wanda Jablonski, of McGraw-Hill, and Robert Spann, of *World Oil*.

Busy getting news over the telephone is Joe C. Chatfield, managing editor of *World Petroleum*.

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ETC 29155

DATELINE: CHICAGO

In this group are Milburn Petty, of *The Oil Daily* and *Petty's Oil Letter;* Keith Fanshier, of *The Oil Daily;* Eloise Michel, of the API press room staff; and George Weber, of *The Oil and Gas Journal.*

Dolores Schavone, of the OIIC Chicago office, and J. Richard Shaner, of the API, register W. W. Flenniken and F. E. Woodring, president and executive vice president of the Rocky Mountain Oil & Gas Association, at the APW dinner gathering.

On an API broadcast with Bob Elson, the noted commentator (left), are James E. Boudreau, of Ethyl Corporation, and Carl B. Anderson, Jr., vice president of An-Son Petroleum Corporation.

Brig. Gen. W. W. White, director of petroleum logistics, Department of Defense, chats with Herbert Yocom, editor of *National Petroleum News.*

Hard at work in the API press room are L. J. Logan, of *World Oil;* Lawrence Eldred, of *Associated Press;* Fletcher Swank, of *Daily Oklahoman;* Karl Hess, of the OIIC; and Fred Orehek, of *Chicago American* (back to camera).

API 34TH ANNUAL MEETING

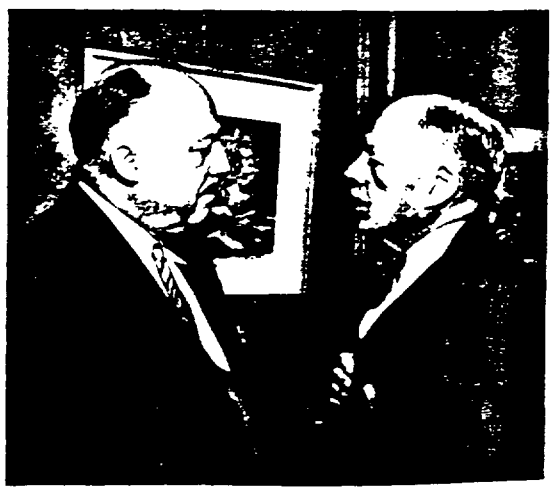
J. H. Sheehan, of Lion Oil; Raynor Sturgis, Jr., treasurer of Pure Oil; and John Gray, of Lion Oil, in the Lion Oil headquarters room.

Enjoying a corridor chat are J. O. Balzer, of Ethyl Corporation, and J. L. Sewell, Taylor Oil and Gas president.

H. E. Brandli, president of Cities Service Oil (Pa.); George H. Shaw, a director of Cities Service Company; and S. B. Irelan, president of Cities Service Oil (Del.).

Below left, in pleasant conversation are E. Allan Morrow, president of Roosevelt Oil, and W. E. Randolph, of the same company.

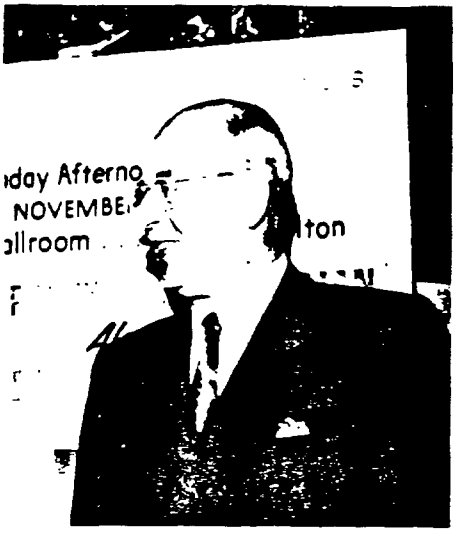
Midwesterners both are G. W. Sanders, assistant vice president of Pure Oil, and George Woodruff, Globe Oil & Refining secretary and treasurer.



ETC 29157

OFFSTAGE

Roy S. Reed, of his own company, listens intently to R. A. Wotowitch, well-known retired oilman who is organizing a "caravan" to the 1955 API Annual Meeting in San Francisco.



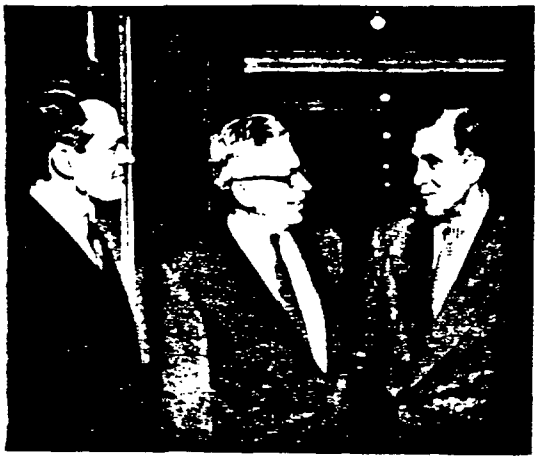
Up from Tulsa was T. E. Fitzgerald, vice president of Mid-Continent Petroleum.

Above, Clark Oil & Refining men all are John Stackner, company treasurer, R. L. Grogan, R. G. Atkinson and I. H. Dawes, company vice president. . . . Left, an all-Canadian group is formed by W. R. MacArthur, vice president of North Star Oil; Oscar B. Lewis, vice president of Ethyl Antiknock, Ltd.; and John Holliday and W. J. Dubesky, of North Star.

Below left, W. E. Schoeneck, vice president of British American Oil, and R. O. Garrett, of Arkansas Louisiana Gas. . . . Below right, L. A. Dollahan, of Ethyl Corporation; Gus Hansen, executive vice president of Osceola Refining, and Donald R. Nelson, of Leonard Refineries.

ETC 29158

OFFSTAGE



R. D. Bushell, of Ethyl; T. A. Mangelsdorf, of The Texas Company; and T. B. Kimball, of Sinclair Refining.

Time out from a busy round of annual meeting sessions is taken by L. W. Moore and T. A. Aldridge, both vice presidents of The American Oil Company.

Both of Aurora Gasoline Company are Soma Kurtis and Peter A. Blasco.

Paul G. Benedum, president of Hiawatha Oil & Gas, and Erle G. Christian, secretary of Cities Service.

Below, Edward W. Gould, Jr., president of Cape Cod Oil; W. W. Wilson, secretary of Cushman-Wilson Oil; and V. H. Kellerman, secretary-treasurer of Star Oil.

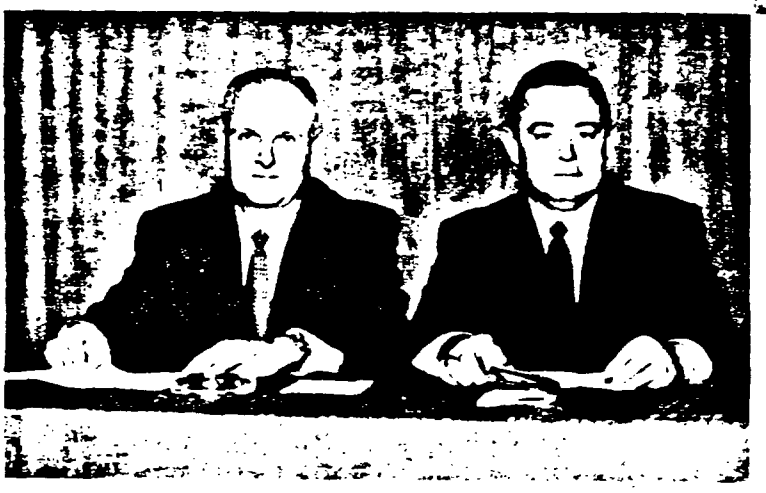
Photographed as he buzzed for a Conrad Hilton Hotel elevator was C. A. Day, of Richfield Oil.

API 34TH ANNUAL MEETING PRODUCTION

GROUP SESSIONS conducted by the Division of Production on Tuesday and Wednesday afternoons presented seven speakers who voiced, among others, these evaluations and forecasts:

The Federal Government does not "want to socialize the natural gas industry;" petroleum producers are spending record sums of money in competing for offshore oil; the petrochemical industry will not "come anywhere near revolutionizing the market outlook for oil and gas production;" settlement of its oil dispute may enable Iran to balance its budget within a year without any direct U. S. aid; Canada, despite its huge expansion in recent years, still is able to produce only about 65 percent of its petroleum product needs.

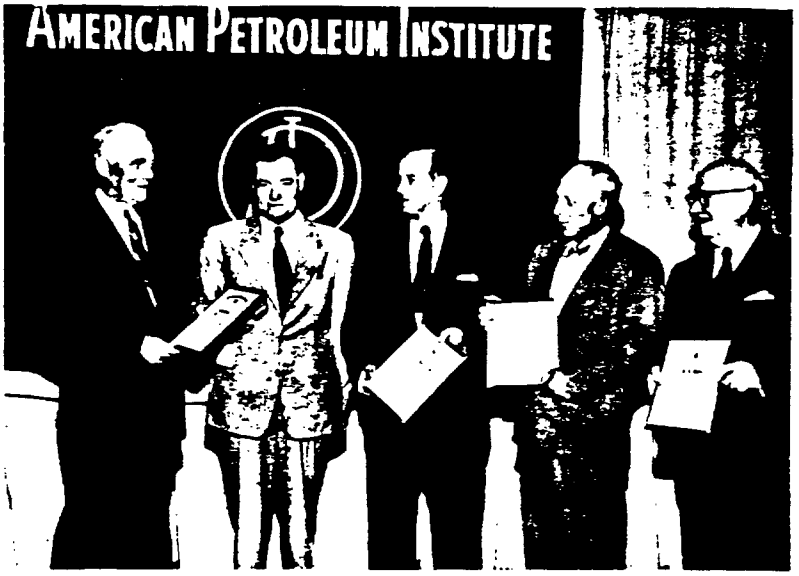
A. W. Thompson, president of his own company, was elected the new API vice president for Production.



Left, two of the speakers at the first Production session were Jerome K. Kuykendall, chairman of the Federal Power Commission, and T. G. Hughes, president of Oronite Chemical.

Below left, co-chairmen on Tuesday were S. C. Oliphant, vice president of Tennessee Production, and Harold Denton, of Sun Oil . . . Below, Gardiner Symonds, Tennessee Gas Transmission president, another featured speaker.

PRODUCTION

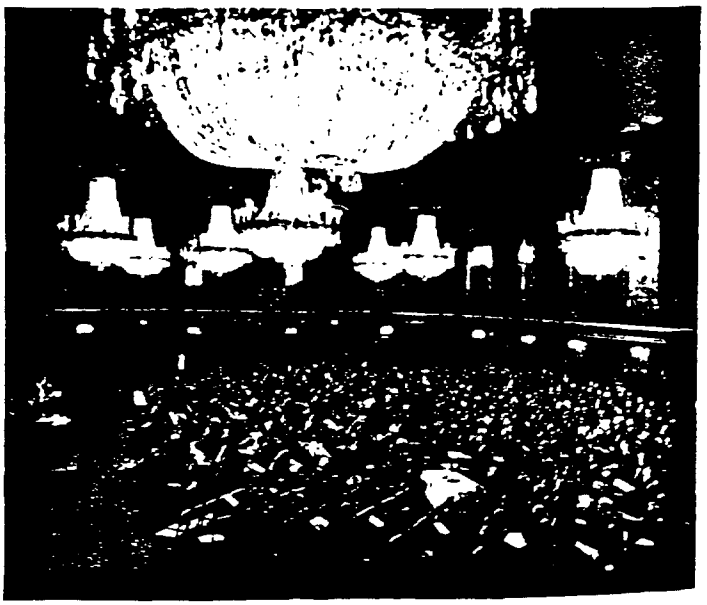


Four of Production's five Certificate of Appreciation winners are shown with John G. Pew, Sun Oil vice president and outgoing API vice president (extreme left), who made the presentations. They are D. V. Carter, of Magnolia Petroleum; C. E. Reistle, Jr., a Humble Oil director; J. C. Johnston, of Continental Oil; and P. A. Mills, president of Moody Engineering.

Wednesday afternoon session participants were (seated) N. E. Tanner, president of Trans-Canada Pipe Lines; R. L. Minckler, president of General Petroleum; Howard Page, Standard of Jersey director; and Dean A. McGee, president of Kerr-McGee Oil Industries. Standing behind them are George E. Cannon, of Humble Oil, and Milan G. Arthur, of Union Oil, who presided.

U. S. Senator Robert S. Kerr, board chairman of Kerr-McGee Oil Industries, scans a newspaper before the start of a session.

Above, in the audience were Don L. Collins, vice president of Republic Supply; T. M. Kerr, executive vice president of Kerr-McGee; and W. C. Savage, also Kerr-McGee. . . . Right, a view of the Tuesday group session in the Grand Ballroom.



API 34TH ANNUAL MEETING — APIC

AN OVERFLOW AUDIENCE attending the American Petroleum Industries Committee group session was called "to arms to keep industry free from government controls." The strong appeal to fight government intervention was voiced by B. L. Majewski, president of Great American Oil. He was the session's only speaker after Governor George Craig of Indiana had to cancel his scheduled talk.

Left, B. L. Majewski addressing the Tuesday afternoon meeting in the North Ballroom. . . . Below, Oscar John Dorwin, Texaco vice president, was among those seated at the speakers' table.

Joseph P. Walsh, of Sinclair Oil, the APIC chairman, who presided at the session.

By a poster announcing the APIC session are F. S. Clulow, Shell Oil vice president, and T. B. Rendel, also of Shell.

John H. Bivins, director of the American Petroleum Industries Committee (left), and Cyrus S. Gentry, Wolverine Pipe Line president, sat on the rostrum.

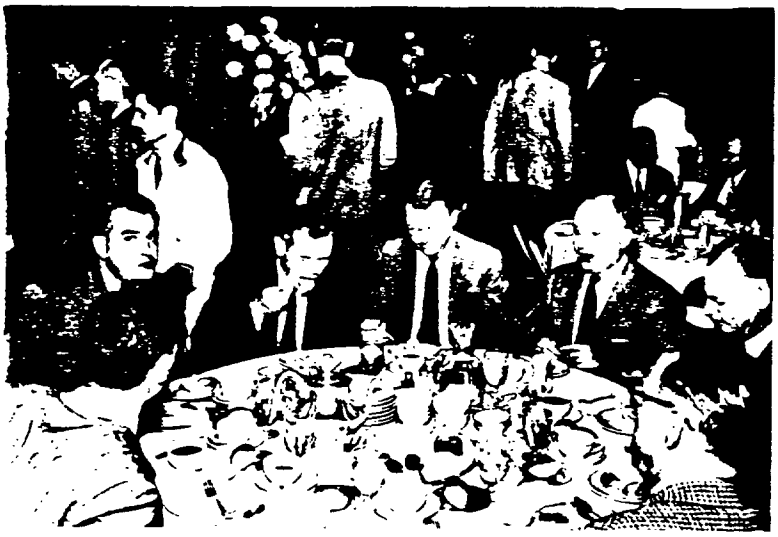
ETC 29162

API 34TH ANNUAL MEETING RE

This over-all view of the Continental party shows the bountiful serving tables and attractive settings.

Above, at the Continental-Youngstown-Emsco reception, (reading clockwise) were R. S. Ramsay and Claude F. Reynolds, both of General Motors; Robert Denny, Cherokee Labs; M. J. Rzasa, Cities Service Research and Development; Wallace Barrett, Fox Rig & Lumber; David A. Garrick, Cherokee Labs; and W. W. Scheumann, Cities Service Research and Development vice president. . . . Left, H. L. Hunt and H. L. Williford, both of Hunt Oil, share a small table. . . . Below, at a Dresser Industries luncheon table (reading counterclockwise), are Leonard F. Ward, president of Ward Williston Drilling; L. S. Richardson, A. W. John, Claude Leach, F. W. Hertel, A. M. Mouser, and J. M. Tharp, Jr., all of Tide Water.

Allan V. Hoffman, of Pennzoil, was one of the many who attended a Sinclair reception.



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RECEPTIONS

A threesome at the Sinclair reception are C. F. McGoughran, Sinclair Oil Corp. secretary, Herbert B. Smith, president of Sinclair Oil & Gas, and Gelston Howell, of Ethyl Corporation.

Vice presidents Harry A. Jackson and Herschel Hyde, of Tide Water, pictured at the Gulf Oil gathering.

Among those serving themselves at the Dresser luncheon are (from left) W. A. Skibbe, Davison Chemicals, and Frank B. Burnes, Kerr-McGee Oil Industries.

W. B. Simpson, Hope Natural Gas, and F. H. Willibrand, Sohio Petroleum, are greeted by J. B. O'Connor, executive vice president of Dresser Industries, at the latter company's Tuesday luncheon.

ETC 29164

API 34TH ANNUAL MEETING 1s

Frank Porter, API president, as he delivered his annual report on Wednesday morning.

THE ANNUAL MEETING'S two general sessions, both of which were presided over by P. C. Spencer, chairman of the API Board of Directors and president of Sinclair Oil, were held Wednesday and Thursday mornings in the Conrad Hilton's Grand Ballroom.

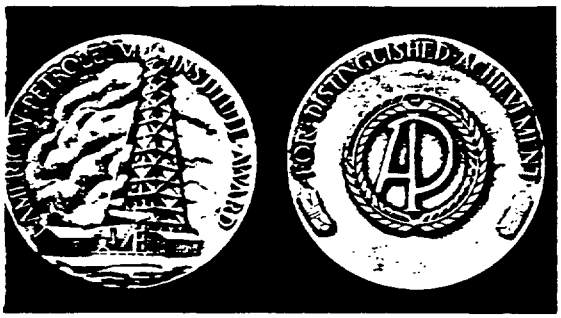
API President Frank Porter delivered his traditional annual report at the first session. Speaking on the same program were M. J. Rathbone, Standard of Jersey president, and Douglas McKay, Secretary of the Interior.

Mr. Rathbone discussed some of the problems the oil industry faces. Secretary McKay, addressing the session for the second consecutive year, pointed out that sales of oil leases on the outer continental shelf will benefit every individual in the country by adding to the federal treasury.

On the program of the 1st General Session were M. J. Rathbone, president of Standard Oil Company (N. J.); P. C. Spencer, API board chairman; Douglas McKay, Secretary of the Interior; Frank Porter, API president, and Wallace Pratt, geologist and retired Jersey Standard vice president.

A balcony view of part of the audience that attended the session.

1st GENERAL SESSION

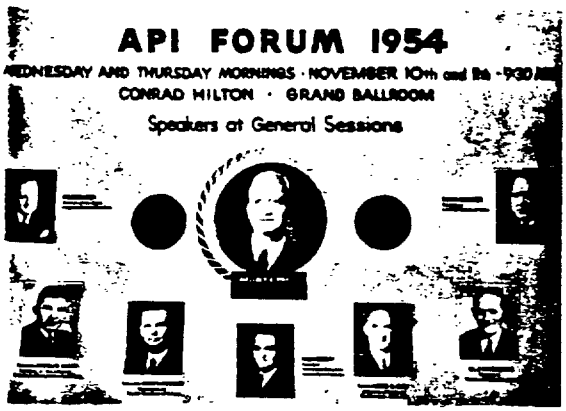


A HIGHLIGHT of the 1st General Session was presentation of the API Gold Medal for Distinguished Achievement to Wallace E. Pratt, internationally known geologist and retired vice president of Standard Oil Company (N. J.).

In awarding the coveted medal, API Board Chairman Spencer read the accompanying scroll, which noted, in part, that Mr. Pratt's "career has been rich not only in material services to your countrymen, but in spiritual gifts as well."

Mr. Pratt, in response, lauded the petroleum industry for having contributed more than any other source to the science of geology. The 69-year-old recipient, an author and philosopher of note, as well as an outstanding geologist, termed "the absence of political barriers" the key to the success of the American oil industry.

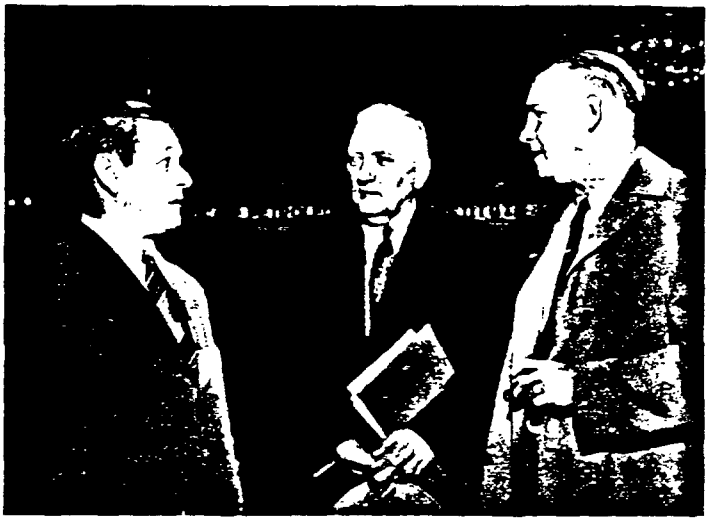
Top left, views of the two sides of the API Gold Medal . . . Above, P. C. Spencer and Mr. and Mrs. Pratt admire the illuminated scroll . . . Below, Mr. Pratt delivering his speech.



1st GENERAL SESSION

Gilbert & Barker Manufacturing was represented by J. A. MacDonnell, Lawrence Marchese, and President I. C. Jacobs.

D. A. Harris and J. E. Morgan, both of Standard of Indiana, at the session.



M. H. Marr, president of Marr Co.; D. T. Ring, Waverly Oil vice president, and J. P. Jones, of Pennsylvania Grade Crude Oil Assn.

B. S. Winters and G. W. Smith, both of Sinclair Refining, were in the audience.

R. R. Johnston, of Gulf Refining, and G. E. Millican, of Gulf Oil.

Fred Moore, of Magnolia Petroleum; F. W. Bartlett, a Socony-Vacuum director; and Henry Cortes, a Magnolia director.

API 34TH ANNUAL MEETING LUBRICATION

THE INCREASINGLY IMPORTANT role of engineers in petroleum marketing was described by B. G. Symon, of Shell Oil, at the Lubrication group session on Wednesday afternoon.

Mr. Symon said the marketing of upgraded petroleum products makes it "inevitable that better and higher-paid sales engineers will become more numerous and that their prestige will increase greatly."

P. V. Keyser, Jr., of Socony-Vacuum Oil, told the session that the supply of lubricating oils exceeds estimated 1954 demand by about 25 percent, compared with 10 percent in 1948.

A third speaker was Capt. W. C. Latrobe, supervisor of shipbuilding for the U. S. Navy and Naval Inspector of Ordnance. His topic was "Coordinated Agreements Imperative to Naval Petroleum Logisticians."

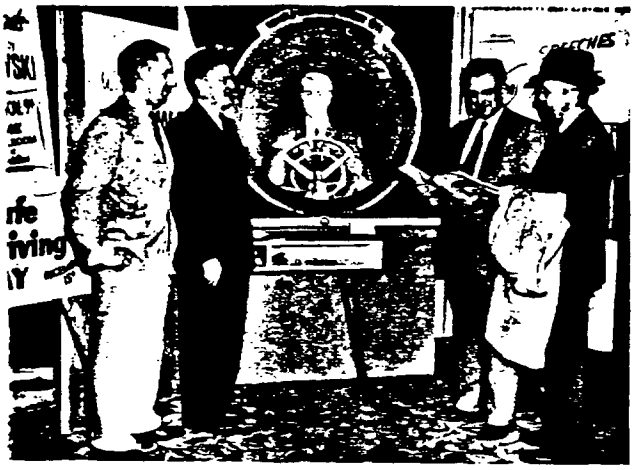
Speakers at the Wednesday afternoon Lubrication group session were P. V. Keyser, Jr., B. G. Symon and U. S. Navy Capt. W. C. Latrobe.

Left, unpacking his bulging briefcase before start of the session, at which he presided, is Rudolph Cubicciotti, vice president of L. Sonneborn Sons.

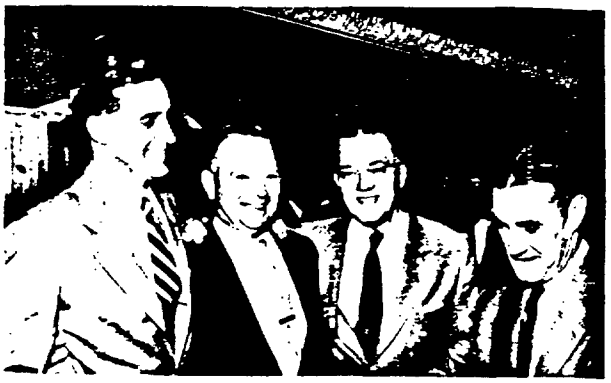
A portion of the large audience that attended the Lubrication session in the North Ballroom.

ETC 29168

API 34TH ANNUAL MEETING AT



In front of an APIC display are Robert Sears, of Phillips Petroleum; Charles E. Webber, of Sun Oil; Carroll D. Fentress, of Department of the Interior, and Walter C. Huffman, of Sun Oil.



Above, a smiling foursome, are Malcolm McDuffie, Mohawk Petroleum vice president; W. H. Sievert, Ethyl Corporation; C. K. Viland, Tide Water; and Clay Thompson, of Mohawk.

Right, Lawrence Cade, a Creole Petroleum director.

Above, W. B. Aronow, Unity Petroleum president, and Edward V. Frary, Union Oil, relax in a company suite at the Hilton . . . Below, A. H. Bingham, Ethyl Corporation, and R. C. Sauer, vice president of Standard of Ohio.

The 25-Year Club held its annual dinner meeting the Chicago

AT RANDOM

Pondering a display of company signs is F. M. Moffitt, of Ashland Oil.

Above, Paul Elliott, L. R. Kamperman, vice president, and Charles Fiske, all of Leonard Refineries, and G. H. Young, of Ohio Oil.

Left, L. C. Berger, Naph-Sol Refining vice president.

Above, in the lobby of the Hilton are R. F. Baker, executive vice president, and W. A. Clark, both of Texaco . . . Below, R. W. McClenahan, of Gulf Oil, and J. K. McCausland, of Wood Gundy & Co.

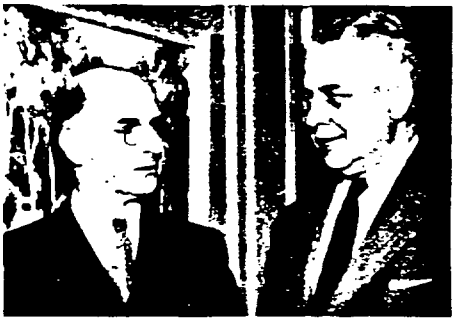
Chicago Club on Tuesday evening.

ETC 29170

AT RANDOM

Otis H. Ellis, counsel for the National Oil Jobbers Council, at a committee meeting.

This fivesome is W. T. Davis, president of Aetna Oil; C. J. Livingstone, of Gulf Oil; E. J. Gay, consultant; Col. E. S. Ronan, Jr., Defense Services Committee, and Col. A. C. Gilliam, director of Armed Services Petroleum Purchasing Agency.



Two company vice presidents: W. F. Stroud, of Atlantic Refining, and H. S. Chase, of Tide Water Associated.

Above, talking in the registration room are A. M. Bell, of Gulf Oil; Warwick M. Downing, chairman of the Colorado Oil and Gas Conservation Commission; and Hugh A. Stewart, U. S. Department of the Interior . . . Below, relaxing are Russell B. Brown, Independent Petroleum Association; Jeff Davis, of Lion Oil; and C. N. Barton, vice president of Lion.

Above, W. K. Warren, chairman of Warren Petroleum, and Palmer Hughes, of M. W. Kellogg . . . Below, two Standard of Indiana men snapped between sessions were Charles Chapman and Martin H. Hassold.

ETC 29171

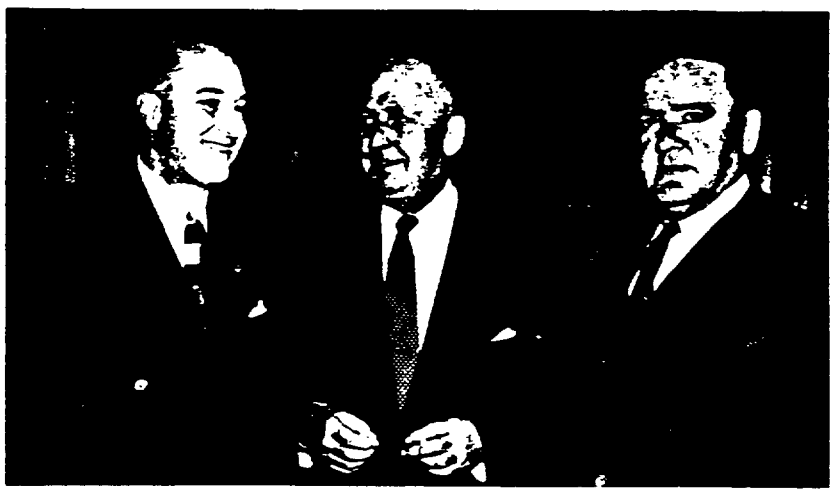
API 34TH ANNUAL MEETING

SAFETY AND FIRE PROTECTION

PRESENTATION of an API Certificate of Appreciation to a retired oilman and two talks on highway safety were features of the Safety and Fire Protection group session on Wednesday afternoon.

Joseph P. Walsh, of Sinclair Oil, spoke on "A Balanced Program for Highway Safety." He suggested the nation's motorists be taught pride in skillful driving rather than fear of careless driving.

Stanley Learned, chairman of the Executive committee of Phillips Petroleum, outlined a comprehensive safety program for oil companies to follow in the operation of their vehicles.



B. G. Crane, of DuPont, who presided at the session, is flanked by speakers Stanley Learned and Joseph P. Walsh.

Franklin G. Wilson, API safety director, presents a Certificate of Appreciation to William E. Soden, retired from Sun Oil.

A joint meeting of the central committees on Accident Prevention and Fire Protection was held on Thursday morning.

ETC 29172

API 34TH ANNUAL MEETING

Two of the speakers at the annual meeting's closing assemblage were General Lucius D. Clay and Robert B. Anderson.

CLIMAX of the record-breaking 34th annual meeting was the 2nd General Session held Thursday morning. Before departing for home, oilmen once again gathered in the Grand Ballroom —this time to hear a leader of their own industry, a former military hero who is now an outstanding businessman, and an oilman who is filling a position of high trust in the Federal Government. In order of appearance, the speakers were W. M. Vaughey, president of the Independent Petroleum Association of America; Gen. Lucius D. Clay, board chairman of Continental Can Company; and Robert B. Anderson, Deputy Secretary of Defense. In honor of Veterans' Day, the November 11 session was opened with an invocation by Dr. Robert B. Hayward, of Chicago's Fourth Presbyterian Church, and the singing of "The Star-Spangled Banner."

P. C. Spencer, president of Sinclair Oil and API board chairman (above left), presided at the session. W. M. Vaughey (above right) was the leadoff speaker. His topic was "The Minors and The Majors."

Although many oilmen had already left the convention city, the 2nd General Session was well attended.

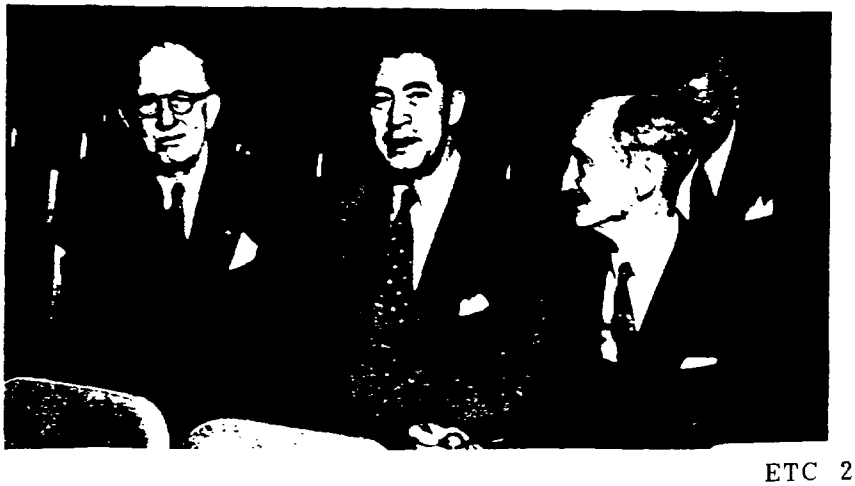
2nd GENERAL SESSION

Among the early arrivals were V. L. Elliot, Leon Serven and C. E. Mullins. All are with The Atlantic Refining Co.

In observance of Veterans' Day, the General Session opened with the singing of the national anthem by Louis Sudler, of Chicago.

Above, W. R. Boyd III, of Cities Service, and C. E. Cummings, of The Texas Company.

This audience threesome is L. V. Stanford, vice president of Sinclair Refining; E. L. Steiniger, president of Venezuelan Petroleum; and A. E. Watts, vice president of Sinclair Oil.



API 34TH ANNUAL MEETING STATISTICS

A GROUP SESSION sponsored by the Committee on Petroleum Statistics and featuring predictions of the outlook for business in general and the petroleum industry in particular for the coming year attracted a large audience to the South Ballroom on Wednesday afternoon.

John W. Boatwright, of Standard Oil Company (Indiana), predicted that 1955 would see a 4.3 percent rise in total demand for all oils, to a level of 8,460,000 barrels a day.

In his speech, Allyn P. Evans, president of Lionel D. Edie and Company, told the session that the over-all business picture for next year is "a normal four percent growth."

Speakers Allyn P. Evans and John W. Boatwright.

Above, H. P. Hohenadel, of Cities Service, and J. C. Walker, Cities Service Research and Development, at the meeting . . . Above right, Henry Schwall, of Shell Oil, who presided . . . Right, K. E. Beall, Phillips Petroleum vice president; J. A. Carlson, of Kewanee Oil; and H. W. Hinkle, of Phillips Petroleum.

API 34TH ANNUAL MEETING

COMMITTEES AT WORK

THERE WAS far more to the annual meeting, as always, than the busy schedule of group and general sessions. Behind the scenes, committees were hard at work on matters ranging from cementing practices to pipeline hydraulics to personal protective equipment. In all, more than 130 committee meetings were held. These began on Friday, three days before the convention's formal opening, and continued through the last day, when the central committees on Accident Prevention and Fire Protection staged a joint meeting.

Carter Camp, of Standard of California, addressing the Marketing Personnel Training Committee. Flanking him are E. J. McClanahan, committee chairman and Standard of California vice president, and L. T. White, of Cities Service Petroleum.

Left, addressing the Service Station Advisory Committee, of which he is chairman, is C. Z. Hardwick, Ohio Oil vice president. At the table are William Tell and M. A. Dimling, both Ohio Oil; R. J. Connor, of Gulf Oil; and A. M. Ogle, NCPR vice president . . . Below, at the Central Committee on Highway Transportation meeting were Fred Hague, of Sun Oil; J. J. Powelson, of Esso Standard; M. E. Nuttila, of Cities Service, chairman; W. D. Carlson, of Standard of Indiana; and C. T. Thomas, of General Petroleum.

ETC 29176

COMMITTEES AT WORK

Chairman T. A. Atkinson, Douglas Oil vice president, and R. B. Sale, of Continental Oil, of the Program and Publications Committee.

Above, H. W. Ladd, of Stanolind Oil and Gas, and C. S. Perkins, of Union Oil, who addressed the Petroleum Industry Buyers Committee . . . Above right, B. Brewster Jennings, Socony-Vacuum president, a featured speaker at the same meeting. Beside him is A. R. Eimer, Standard of California, chairman.

Left, a general view of the Smoke and Fumes Committee meeting. W. L. Stewart, Jr., Union Oil vice president, is chairman . . . Below left, the Jobber Advisory Committee in session on Sunday.

C. E. Davis, Shell Oil vice president and chairman of the Automotive Research Committee, and William Gunn, of the API staff.

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ETC 29177

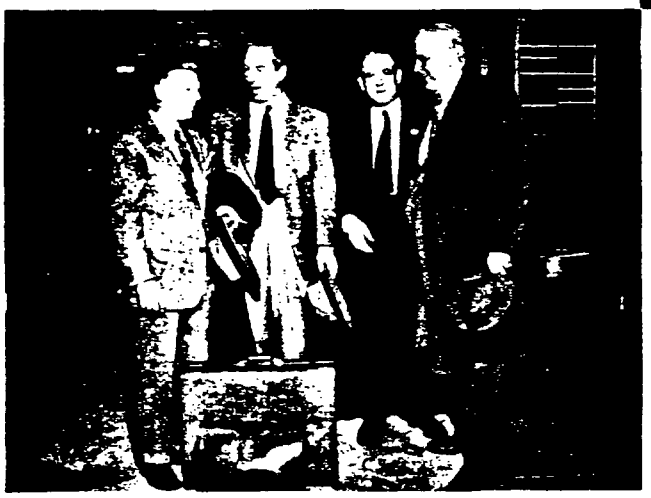
API 34TH ANNUAL MEETING

UNTIL NEXT YEAR

INEVITABLY THURSDAY rolled around and the biggest American Petroleum Institute annual meeting in its 34-year-old history came to a close. With the convention officially over upon completion of the morning General Session, the record crowd of oilmen prepared for their trips home.

There could be no doubt that not only was this the best attended of all API annual meetings, but it was also one of the most serious and productive.

In the hotel checkout line are F. C. Smelter, of Walworth Company; Luis Herrera, of Mene Grande Oil; and Lee Guill, of Chicksan Company.



Preparing to leave from the Conrad Hilton lobby are E. D. Brockett, of Mene Grande Oil; M. F. Hazel, of Oil Well Supply; A. E. Chester, Magnolia Petroleum vice president, and U. S. Senator Robert S. Kerr, of Oklahoma.

Left, R. O. Baumgartner, of Socony-Vacuum, rings for an elevator . . . Center, P. A. Peterson, of Cities Service, and R. K. Schulze, of Shell Oil, set to return to New York . . . Right, J. B. Sleeper, of Skelly Oil, makes a last-minute telephone call.

UNTIL NEXT YEAR

Above, at the Hilton's railroad ticket office are J. A. Mussler and Ross A. Brewer, both of Continental Supply. . . . Left, before he returned to California, the camera made this candid shot of David E. Day, Richfield Oil vice president.

R. C. Brown, president of Hudson's Bay Oil & Gas, waits for a taxicab.

John Harper, president of Harper Oil, boards the bus for the airport.

Loaded down but smiling is Wayne E. Kuhn, of Texaco.

ETC 29179

American Petroleum Institute

35th Annual Meeting

SAN FRANCISCO

November 14-17, 1955

ETC 29180

Through this hose passes one of today's greatest bargains!

To show what a tremendous bargain gasoline is today, both quality and pricewise, there's nothing like the facts and figures.

First of all, two gallons of today's gasoline will do the work of three gallons of 1925 fuel. Obviously, modern high-octane gasoline is worth more!

Second—and here's the surprising thing—the price* of this far better gasoline is only slightly higher.

Why is gasoline such a bargain? Two reasons:

1. *U. S. oil companies have spent millions to develop new and better refining processes to make continuously better gasoline.*

2. *Keen competition among the nation's thousands of oil companies has held down the price of these better gasolines.*

So next time you say, "Fill 'er up!"—remember, you're getting top value for your money.

*EXCLUSIVE OF TAXES

2,000,000 petroleum people are doing a great job!

Because Americans have enjoyed a bountiful supply of petroleum products at low cost for so many years, the average person is likely to take for granted the wonderful service performed by the U. S. petroleum industry. To give this splendid record the recognition it truly deserves, this message is published by

ETHYL CORPORATION, New York 17, N.Y.

manufacturers of "Ethyl" antiknock compound used by refiners to improve gasoline

ONE OF A SERIES OF ADVERTISEMENTS IN SUPPORT OF THE OIL INDUSTRY'S PUBLIC RELATIONS PROGRAM

ETC 29181